Final Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan

August 2014

NOAA FISHERIES

FINAL

AMENDMENT 7 TO THE 2006 CONSOLIDATED ATLANTIC HIGHLY MIGRATORY SPECIES FISHERY MANAGEMENT PLAN

Including:

A Final Environmental Impact Statement

A Final Regulatory Impact Review

A Final Regulatory Flexibility Analysis

A Final Social Impact Analysis

2014

Highly Migratory Species Management Division
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Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS)

Fishery Management Plan (FMP)

Actions: Reallocate Atlantic bluefin tuna quotas; implement several actions applicable to the pelagic longline fishery, including Individual Bluefin Quotas, two new Gear Restricted Areas, access to current closed areas based on performance criteria, closure of the pelagic longline fishery when annual bluefin tuna quota is reached, elimination of target catch requirements, mandatory retention of legal-sized bluefin tuna, expanded monitoring requirements including electronic monitoring via cameras for pelagic longline vessels and reporting via Vessel Monitoring System (VMS) for pelagic longline and purse seine vessels, authorization for future development of an industry funded observer program, and transiting provisions for pelagic and bottom longline vessels; require VMS use and reporting by the Purse Seine category; change start date of Purse Seine category to June 1; expand Automated Catch Reporting System use to the General and Harpoon categories; provide additional flexibilities for inseason adjustment of the General category quota and Harpoon category retention limits; allocate a portion of the Angling category Trophy South subquota to the Gulf of Mexico; implement a U.S. North Atlantic (northern) albacore tuna quota; modify rules regarding permit category changes; and implement minor regulatory changes.

Type of statement: Final Environmental Impact Statement (FEIS); Final Regulatory Impact Review; Final Regulatory Flexibility Analysis; Final Social Impact Statement

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Abstract: NMFS is amending the 2006 Consolidated HMS FMP to address bluefin tuna management due to recent trends and characteristics of the bluefin tuna fishery. This action is necessary to meet domestic management objectives of the Magnuson-Stevens Fishery Conservation and Management Act including preventing overfishing, achieving optimal yield, and minimizing bycatch to the extent practicable, as well as the objectives of the Atlantic Tunas Convention Act and obligations pursuant

to binding recommendations of the International Commission for the Conservation of Atlantic Tunas. NMFS takes these actions to reduce bluefin tuna dead discards and account for dead discards in all categories; optimize fishing opportunities in all categories; enhance reporting and monitoring; and adjust other aspects of the 2006 Consolidated HMS FMP as necessary. NMFS published the proposed rule for Amendment 7 on August 21, 2013 (78 FR 52032). On August 30, 2013, the Environmental Protection Agency published a Notice of Availability of the Draft Environmental Impact Statement (78 FR 53754). After considering public comments received, NMFS has prepared this FEIS, which describes a range of alternatives that could impact commercial fishermen using pelagic longline gear, handgear, or purse seines to catch Atlantic bluefin tuna or northern albacore, recreational fishermen using handgear to catch Atlantic bluefin tuna or northern albacore, and dealers that buy Atlantic bluefin tuna or northern albacore.

Executive Summary

Background

Management Authority

Atlantic Highly Migratory Species (HMS) fisheries are managed under the dual authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and the Atlantic Tunas Convention Act (ATCA). Under the Magnuson-Stevens Act, NMFS must manage fisheries to maintain optimum yield on a continuing basis while preventing overfishing. ATCA authorizes the Secretary of Commerce (Secretary) to promulgate regulations, as may be necessary and appropriate to carry out recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The authority to issue regulations under the Magnuson-Stevens Act and ATCA has been delegated from the Secretary to the Assistant Administrator for Fisheries, NMFS.

Amendment 7 builds upon an extensive regulatory framework for management of the domestic bluefin tuna fishery pursuant to a rebuilding program first adopted by ICCAT in 1998 and then implemented in the 1999 FMP and continued under the 2006 Consolidated HMS FMP. The existing rebuilding program and ICCAT total allowable catch take into account uncertainties in the scientific information regarding the status of the bluefin tuna stock. The final rule implementing Amendment 7 would *not* increase or decrease the overall authorized bluefin tuna harvest levels by bluefin tuna fisheries. Rather, the management measures would affect the time, place, and manner in which U.S. fisheries may harvest the U.S. quota and the relative volumes of fish that may be caught by the domestic fisheries.

The bluefin tuna fishery is a quota-managed fishery and dead discards must be accounted for.

Annual implementation of the existing domestic allocation quota system has become more difficult in recent years due to a change in the way dead discards are calculated which increased the estimate of bluefin dead discards, a larger percentage of the adjusted quota being landed within the directed fisheries, and lastly, changes in ICCAT requirements regarding accounting for dead discards and allowable carryforward of unused quota.

The annual U.S. bluefin quota (recommended by ICCAT) is allocated among seven quota categories. The amount of quota allocated to each category is expressed as a percentage of the U.S. quota, as first established in the 1999 Fishery Management Plan (FMP) based on landings from 1983-1991 and continued unchanged in the 2006 Consolidated HMS FMP. Total catch generally consists of landings and dead discards. The amount of quota allocated to each category was specified in 1999, based upon historical landings, and did not account for dead discards. Landings were the only portion of catch that were factored into the 1999 FMP percentage allocation analysis because, at that time, dead discards were accounted for under a separate quota allowance (68 mt) per ICCAT recommendations. However, in 2006, the separate dead discard allowance was discontinued per ICCAT recommendation and dead discards must now be accounted for within each country’s annual quota allocations.

The Longline category is currently allocated 8.1% of the total U.S. quota for landings, but catches (landings plus dead discards) have been significantly over that subquota in recent years, resulting in a need for NMFS to rely on underharvest and annual quota adjustments from the Reserve category to cover pelagic longline operations while ensuring that the United States remains within its annual U.S. bluefin quota. The amount of unharvested quota from one year that may be carried forward and utilized in the subsequent year is limited by ICCAT. The percentage of quota that can be carried forward has been reduced from 100 percent of the total U.S. quota, to 50 percent of the total U.S. quota, to the current 10% of total U.S. quota level. Reliable estimates of dead discards are available only for the pelagic longline fishery, which has a 100% logbook reporting requirement and a minimum of 8% observer coverage due to measures needed to reduce bycatch of sea turtles and protect ESA-listed and other species. Dead discards were observed in the purse seine fishery for the first time in 2013 by observers placed to meet ICCAT requirements consistent with ATCA.

In recent years, the bluefin tuna quota system was able to fully account for both dead discards and landings, and not exceed the U.S. bluefin quota, because a portion of the allocated quota remained unharvested.

Because the U.S. quota has been insufficient to account for landings and anticipated dead discards at the beginning of the fishing year, the quota specifications were based on the underlying premise that full and final accounting for dead discards would occur at the end of the fishing year, and that such accounting would be possible due to the likelihood of unharvested quota at the end of the fishing year. However, recent trends have included increased dead discards and a larger percentage of the adjusted quota being landed; thereby decreasing unharvested quota at the end of the fishing year. The combined effect of the domestic quota system and the need to account for dead discards results in an annual allocation/accounting challenge: How to both account for anticipated dead discards as well as optimize fishing opportunity for all categories in a fair manner while ensuring that the United States remains within its overall allocated quota.

Development of Amendment 7

NMFS began to formally address some of the quota accounting issues at the September 2011 HMS Advisory Panel meeting by presenting a summary of recent issues and a white paper on bluefin bycatch in the HMS fisheries. The 2011 HMS AP meeting reiterated comments received on a 2009 Advanced Notice of Proposed Rulemaking (June 1, 2009; 74 FR 26174) on HMS fisheries issues overall and further demonstrated the need for a comprehensive review of bluefin quota management and associated measures. The HMS Advisory Panel discussed issues related to the Longline category as well as issues in the bluefin fishery as a whole and suggested an array of measures as potential solutions. In preparation for the formal process of amending the 2006 Consolidated HMS FMP, NMFS presented a preliminary version of a scoping document (“Preliminary White Paper”) to the HMS Advisory Panel meeting at the March 2012 meeting (NMFS, March 2012). The HMS Advisory Panel expressed qualified support for further exploring and analyzing the range of measures in the Preliminary White Paper, and suggested several additional measures which were incorporated into a final scoping document (NMFS, April 2012).

On April 23, 2012, NMFS published a Notice of Intent to conduct scoping and develop a Draft Environmental Impact Statement (DEIS) and FMP amendment (78 FR 24161). During the scoping meetings in May and June 2012, NMFS described the results of the recent bluefin tuna stock assessment, the latest relevant ICCAT recommendations, issues concerning HMS management with respect to the Atlantic tuna fisheries, and options or alternatives that may be considered to achieve objectives. NMFS also consulted with the five Atlantic Fishery Management Councils (New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, and the Caribbean). The comment period on the scoping document closed July 15, 2012. The contents of the scoping document and this DEIS are based largely upon the comments, suggestions, and discussions regarding bluefin management by various members of the bluefin fisheries, the HMS Advisory Panel, interested organizations, members of the public, and NMFS staff since 2009.

In September 2012, NMFS presented a pre-draft of Amendment 7 to the HMS Advisory Panel and made the document available to the public through the HMS website (http://www.nmfs.noaa.gov/sfa/hms). The Predraft included a suite of potential management measures based on public input. NMFS requested that the HMS Advisory Panel and HMS Consulting Parties (Atlantic, Gulf, and Caribbean Fishery Management Councils, Marine Fisheries Commissions, U.S. Coast Guard, and other State and Federal Agency representatives) submit comments on the Predraft by October 20, 2012. Public comment supported the conclusion that substantive changes to the 2006 Consolidated HMS FMP were warranted, and it is important to rebuild the stock while optimizing fishing opportunity for all categories in a fair manner.

In light of the management challenges described, and based on the Predraft and comments from the HMS Advisory Panel, NMFS developed a Draft Environmental Impact Statement (Amendment 7 to the 2006 Consolidated HMS FMP Environmental Impact Statement (Amendment 7 DEIS, July 2013)).

NMFS published a proposed rule in the Federal Register on August 21, 2013 (78 FR, 52032), which proposed the “preferred alternatives” analyzed in the DEIS document and solicited public comments on the measures. On August 22, 2013 (78 FR 52123), NMFS published a Federal Register Notice, informing the public of the date and locations of public hearings on Amendment 7. From August 2013 to January 2014, NMFS conducted 11 public hearings, and consulted with the New England Fishery Management Council, the Gulf of Mexico Management Council, and the South Atlantic Fishery Management Council. NMFS provided the DEIS and proposed rule to the Mid-Atlantic and Caribbean Fishery Management Councils. The hearings were held in diverse locations in Atlantic and Gulf of Mexico coastal states. On August 30, 2013, the Environmental Protection Agency published a Notice of Availability of the DEIS (78 FR 53754; August 30, 2013).

The HMS Advisory Panel discussed the proposed rule and DEIS during its September 2013 meeting. The August 21, 2013 Amendment 7 proposed rule set the end of the public comment period as October 23, 2013, but given the length and complexity of the rule, and to provide additional time for consideration of public comments in light of the November meeting of the International Commission on the Conservation of Atlantic Tunas (ICCAT), the comment period was extended to December 10, 2013 (78 FR 57340; September 18, 2013). Subsequently, due to the government shutdown in October 2013 and NMFS' inability to respond to constituents during that time frame and based on requests for an extension due to the complexity and interplay of the measures covered in the DEIS, NMFS again extended the end of the public period until January 10, 2014 to provide additional opportunity for informed comment (78 FR 75327; December 11, 2013). On December 26, 2013, NMFS published a Federal Register notice that announced a public hearing conference call and webinar to provide additional opportunity for public comment from all geographic areas (78 FR 78322).

Amendment 7 Objectives

NMFS identified the following objectives with regard to Amendment 7 to the 2006 Consolidated HMS FMP:

- Prevent overfishing and rebuild bluefin tuna, achieve on a continuing basis optimum yield, and minimize bluefin bycatch to the extent practicable by ensuring that domestic bluefin tuna fisheries continue to operate within the overall TAC set by ICCAT consistent with the existing rebuilding plan;
- Optimize the ability for all permit categories to harvest their full bluefin quota allocations; account for mortality associated with discarded bluefin in all categories; maintain flexibility of the regulations to account for the highly variable nature of the bluefin fishery; and maintain fairness among permit/quota categories;
- Reduce dead discards of bluefin and minimize reductions in target catch in both directed and incidental bluefin fisheries, to the extent practicable;
- Improve the timeliness and quality of catch data through enhanced reporting and monitoring to ensure that landings and dead discards do not exceed the quota and to improve accounting for all sources of fishing mortality;
- Adjust other aspects of the 2006 Consolidated HMS FMP as necessary and appropriate.

Management Alternatives

Introduction

The measures analyzed in this amendment and which would be implemented through associated final rulemaking are developed under the authority of the Magnuson-Stevens Act and ATCA.

NMFS analyzed a range of alternative management measures in a Draft Environmental Impact Statement (DEIS) to achieve the purpose, need, and objectives listed above. A full description and analysis of the different alternatives can be found in Chapter 2 of this document. The list of preferred alternatives in this FEIS can be found below (). NMFS organized the alternatives into five groups, according to the type of management measures. The following list is a summary of the common themes of each of the five groups:

1. *Allocation Alternatives* would make modifications to how the U.S. bluefin quota is allocated among the quota categories;
2. *Area Based Alternatives* would implement restrictions on the use of pelagic longline gear in various time and area combinations;

3. *Bluefin Quota Controls* would strictly limit the total catch (landings and dead discards) of bluefin in the Longline category using different strategies;
4. *Enhance Reporting Alternatives w*ould implement a variety of new bluefin reporting requirements;
5. *Other Measures* would make modifications to the rules that control how the various quota categories utilize quota, and implement a northern albacore tuna quota.

Based on public comments, further consideration, and additional analyses, NMFS modified some of the alternatives as described below.

Preferred Alternatives

The Amendment 7 preferred alternatives are listed in Table 0.1 below. The preferred alternatives in the FEIS no longer include the alternative in the DEIS that would have allowed pelagic longline vessels to fish under General category rules (Alternative B 1d in DEIS) or the alternative that would have allowed limited conditional access to the current pelagic longline closed areas (Alternative B 3b in DEIS). The two preferred pelagic longline gear restricted area alternatives have been modified from what was preferred and analyzed in the DEIS. The Individual Bluefin Quota alternative was also slightly modified based on public comment and additional analyses. The transiting alternative (Alternative E 7b) from the DEIS is now referred to as Alternative B 1i.

Table 0.1 The preferred alternatives in Final Amendment 7 to the 2006 Consolidated HMS FMP and the Quota Category to which the Alternative would apply.

	Preferred Alternatives in FEIS	Regulated Quota Category
	Quota Allocation	
Codified Reallocation	Alternative A 2a – Reallocation to Longline Category Based on Historical 68-mt Dead Discard Allowance	Longline, Purse Seine, General, Harpoon, Angling
Annual Reallocation	Alternative A 3a – Annual Reallocation of Bluefin Quota from Purse Seine Category	Longline, Purse Seine, General, Harpoon, Angling
Reserve Category	Alternative A 4b – Modify Reserve Category	Longline, Purse Seine, General, Harpoon, Angling
	Area Based Measures	
Gear Restricted Areas	Alternative B 1d – Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access based on Performance Alternative B 1i – Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas Alternative B 1j – Pelagic and Bottom	Longline

	Preferred Alternatives in FEIS	Regulated Quota Category
Gear Measures	Longline Transiting Closed Areas Alternative B 2a - No Action	Longline
	Bluefin Tuna Quota Controls	
Individual Bluefin Quotas (IBQs)	Alternative C 2 - Individual Bluefin Quotas Alternative C 2i – Cost Recovery Alternative C 2j - Appeals of Quota Shares Alternative C 2k – Control Date Alternative C 2l - Measures Associated with an IBQ – Elimination of Target Catch Requirements, Mandatory Retention of Legal-Size Bluefin	Longline
NMFS Authority to Close the Pelagic Longline Fishery	Alternative C 4b – NMFS Ability to Close the Pelagic Longline Fishery	Longline
	Enhanced Reporting Measures	
VMS Requirements	Alternative D 1b – VMS Requirements for the Purse Seine and Longline Categories	Longline, Purse Seine
Electronic Monitoring of Longline Category	Alternative D 2b –Electronic Monitoring of Longline Category	Longline
Automated Catch Reporting	Alternative D 3b - Automated Catch Reporting	General, Harpoon, Charter/Headboat
Deployment of Observers	Alternative D 4a – No Action	Longline, Purse Seine, General, Harpoon, Angling, Charter/Headboat
Logbook Requirement	Alternative D 5a – No Action	General, Harpoon, Angling
Expand the Scope of the Large Pelagics Survey	Alternative D 6a – No Action	Angling
	Other Measures	
Modify General Category Time-Period Subquota Allocations	Alternative E 1c – Provide Additional Flexibility for General Category Quota Adjustment	General
NMFS Authority to Adjust Harpoon Category Retention	Alternative E 2b – NMFS Authority to Adjust Harpoon Category Retention Limits Inseason	Harpoon

	Preferred Alternatives in FEIS	Regulated Quota Category
Limits Inseason		
Angling Category Trophy Subquota Distribution	Alternative E 3b – Allocate a Portion of the Trophy South Sub-Quota to the Gulf of Mexico	Angling, Charter/Headboat
Change Start Date of Purse Seine Category to June 1	Alternative E 4b – Change Start Date of Purse Seine Category to June 1	Purse Seine
Rules Regarding Permit Category Changes	Alternative E 5b – Modify Rules Regarding Permit Category Changes	Longline, Purse Seine, General, Harpoon, Angling, Charter/Headboat, Trap
North Atlantic Albacore Tuna Quota	Alternative E 6b – Implement North Atlantic Albacore Tuna Quota	Longline, Purse Seine, General, Harpoon, Angling, Charter/Headboat, Trap

Summary of Ecological Impacts

The action can be expected to have moderate beneficial cumulative ecological impacts on bluefin in the short and long term, and neutral or minor beneficial cumulative ecological impacts on bluefin tuna and other specified species and protected resources in the short and long term. The preferred alternatives would reduce dead discards; provide strong incentives to avoid bluefin bycatch in the longline fishery; substantially increase the accountability of the quota system and improve quota management overall by reducing the risk that dead discards and landings will exceed the total U.S. quota; and enhance reporting through new requirements and incentives. The preferred alternatives would be consistent with ICCAT's bluefin rebuilding plan, Magnuson-Stevens Act and ATCA requirements, and the 2006 Consolidated HMS FMP, and would support the elimination of overfishing and further stock rebuilding for bluefin.

Ecological Impacts of the Preferred Alternatives – Reallocation Measures (All Categories)

- The ecological impacts of allocation alternatives, including codified reallocation, annual reallocation, and modification of the Reserve category, in conjunction with the quota control and enhanced reporting alternatives would be beneficial to bluefin because of the increased ability to account for bluefin dead discards within the quota system and the reduced risk that landings and dead discards will exceed the U.S. quota. There would be neutral or moderate beneficial impact on other HMS and protected species, as a result of changes in fishing effort. There would be shifts in quota among the various quota categories, but the alternatives would not affect the total amount of bluefin caught, which is set by the overall U.S. bluefin quota (and not an element of Amendment 7) as recommended by ICCAT and which implement the international bluefin rebuilding program. It is likely that a substantial portion of the revised Longline category baseline quota would not be landed, but would be used to account for dead discards.

Ecological Impacts of Preferred Alternatives – Longline Category Measures

- The Modified Cape Hatteras Gear Restricted Area with Access based on Performance, and the Modified Spring Gulf of Mexico Gear Restricted Areas would reduce pelagic longline interactions with bluefin and reduce dead discards. The number of dead discards in the Atlantic and Gulf of Mexico would be reduced by approximately 34 percent and 6 percent, respectively, for a combined 'savings' of approximately 67.2 mt of bluefin. Minor benefits for other HMS, prohibited species, and protected resources are expected. The preferred alternatives in this FEIS would achieve a greater reduction in bluefin tuna dead discards than the preferred alternatives of the DEIS.
- NMFS Closure of the Longline Fishery would prohibit the use of pelagic longline gear when the Longline category quota is attained, and the Individual Bluefin Quota (IBQ) system would provide accountability at the level of an individual vessel and effectively incentivize the avoidance of bluefin. The IBQ alternative in this FEIS has been modified from that in the DEIS by incorporation of 2012 data, and the use of an August 21, 2013 reference date for the determination of eligible vessels and quota shares. IBQ allocations are likely to restrict the fishing behavior of approximately 25 percent of vessels (if they neither lease additional quota nor modify their behavior to reduce the number of bluefin interactions). If no leasing of bluefin allocations were to occur (or no change in fishing behavior to avoid bluefin), there could be a reduction of 1.8 million pounds of designated species (particular target species defined in Chapter 2) landings per year. This reduction in landings is less than that analyzed in the DEIS (which was a reduction of 2.4 million pounds), as a result of modifications to the IBQ alternative in this FEIS (based on public comment). The reduced landings would have a neutral or slightly positive impact on the target species stocks. IBQ is divided between the Atlantic and the Gulf of Mexico. Gulf of Mexico IBQ may be used in the Atlantic, but the Atlantic IBQ may not be used for bluefin caught in the Gulf of Mexico. Thus, the total proportion of the IBQ that may be used in the Gulf of Mexico is limited. Forty-seven vessels (35% of the total vessels with bluefin shares) have Gulf of Mexico IBQ. These quota controls may limit pelagic longline fishing effort for some vessels in and there would be additional beneficial impacts on other HMS and protected species as a result of slightly reduced catch.
- Reporting of bluefin discards via VMS and electronic monitoring of the pelagic longline category fishery would improve the quality and timeliness of dead discard reporting, support the monitoring and enforcement of the IBQ system, create a quota system with reduced management uncertainty, and facilitate compliance with ICCAT recommendations. Enhanced reporting and monitoring measures would result in positive ecological impacts because the measures would increase the likelihood that catch will not exceed quotas, and support the longterm conservation goals of the FMP.
- Allowing pelagic longline and bottom longline vessels to transit through closed and restricted areas with gear stowed would have a neutral ecological impact.

Ecological Impacts of Preferred Alternatives – General Category Measures

- The requirement for General category vessels to report their bluefin catch (i.e., landings and discards) using an automated catch reporting system would provide data on the

number of bluefin tuna discarded dead and alive and increase the accuracy of bluefin fishing mortality estimates.
- The alternative that would provide NMFS the flexibility to transfer subquota from one time period to another time period earlier in the calendar year would have a neutral ecological impact.

Ecological Impacts of Preferred Alternatives – Purse Seine Category Measures

- Reporting of bluefin discards via VMS would improve the quality and timeliness of dead discard reporting, create a quota system with reduced management uncertainty, and facilitate compliance with ICCAT recommendations.
- The change of the start date of the Purse Seine category fishery from July 15 to June 1, and providing NMFS the authority to delay the season start date from June 1 to no later than August 15, would have a neutral ecological impact as other commercial and recreational bluefin fisheries are typically open and active from June 1 through July 14, including in the areas and for the sizes that purse seine vessels typically target.

Ecological Impacts of Preferred Alternatives – Harpoon Category Measures

- The requirement for Harpoon category vessels to report their bluefin catch (i.e., landings and discards) using an automated catch reporting system would provide data on the number of bluefin tuna discarded dead and alive and increase the accuracy of bluefin fishing mortality estimates.
- Implementation of a daily retention limit of large medium bluefin tuna over a range of two to four bluefin, with a default large medium limit set at two fish, would have a neutral ecological impact.

Ecological Impacts of Preferred Alternatives – Angling Category Measures

- The alternative that would allocate a portion of the trophy south subquota specifically for the Gulf of Mexico by dividing the trophy subquota equally among the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico (33% each) would have neutral ecological impacts, as the effect of this measure would be to convert a small number of potential dead discards in the Gulf of Mexico to potential landings.

Ecological Impacts of Preferred Alternatives – Northern Albacore Quota

- The alternative that would implement the U.S. annual quota of northern albacore recommended by ICCAT and establish provisions for the accounting of overharvest and underharvest of the quota via annual specifications would result in moderate, beneficial ecological impacts.

Summary of Socio-Economic Impacts

For vessels that have a history of avoiding bluefin tuna and continue to avoid bluefin tuna, the socio-economic impacts would be moderate and adverse, with the principal impact being the costs associated with electronic monitoring and VMS reporting. For pelagic longline vessels that have a history of interacting with many bluefin and continue to interact with bluefin in the future, the cumulative socio-economic impacts would be major and adverse, due to the combined impacts of the IBQ, the gear restricted areas, and the enhanced reporting measures (see Chapters 5 through 8 for specific details). For the Purse Seine category, the cumulative economic impacts would be minor adverse due to the potential reallocation of quota, although reallocation only occurs where quota is going unused, and the enhanced reporting requirements. For the General, Harpoon, Charter/Headboat, and Angling categories, the cumulative economic impacts would be neutral or minor adverse due to the modifications to the rules that dictate how the category specific quota is managed, and the enhanced reporting requirements.

Socio-Economic Impacts of Preferred Alternatives on the Longline Category

- The Codified Reallocation alternative would result in an additional 62.5 mt of quota for the Longline category on an annual basis (an 83.5% increase), which, under the current U.S. bluefin quota of 923.7 mt, would result in a revised baseline quota of 137 mt. If the Longline category were to land this additional 62.5 mt of bluefin quota, it would be worth approximately $1 million dollars; however, such landings are unlikely, given that some portion of the revised baseline quota would not be landed, but would be needed to account for dead discards.
- The Annual Reallocation alternative would enable the agency to make additional quota available to all quota categories, including the Longline category. For example, it could increase the amount of quota available for use by the Longline category to 216.7 mt, assuming the permanent reallocation is finalized and 50% of the Purse Seine category quota were reallocated to the Longline category (under the current U.S. bluefin quota of 923.7 mt). If the Longline category landed this additional 79.5 mt of bluefin quota, it would be worth approximately $1.3 million, however such landings are unlikely as some portion of the revised quota would not be landed, but would be used to account for dead discards.
- The Modified Cape Hatteras Gear Restricted Area with Access Based on Performance would potentially reduce revenue for the 14 vessels that would not initially be allowed access, based on their historical catch of bluefin and designated species ratio, compliance with reporting, and/or compliance with observer requirements. Specifically, if the vessels do not redistribute any of their fishing effort to other areas outside the Modified Cape Hatteras Gear Restricted Area, the loss in revenue would be approximately $313,000 ($201,000 from swordfish; $24,000 from bluefin; and $24,000 from yellowfin, among others). If some of the vessels are able to redistribute a portion of their fishing effort to other areas, the loss in revenue could be reduced to approximately $211,000 ($121,000 from swordfish; $20,000 from bluefin; and $20,000 from yellowfin, among others).
- The Modified Spring Gulf of Mexico Gear Restricted Areas would potentially reduce revenue for approximately 49 vessels that have historically fished in the Modified Spring Gulf of Mexico Gear Restricted Areas during the months of April and May. Specifically, if the vessels do not redistribute any of their fishing effort to other areas outside the Modified Spring Gulf of Mexico Gear Restricted Areas, the loss in revenue would be approximately $528,000 ($141,000 from swordfish; $53,000 from bluefin; and $317,000 from yellowfin). If some of the vessels are able to redistribute a portion of their fishing

effort to other areas, the loss in revenue could be reduced to approximately $282,000 ($42,000 from swordfish; $37,000 from bluefin; and $202,000 from yellowfin). Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term beneficial economic impacts by potentially reducing fuel costs and time at sea for vessels that need to transit the closed or restricted areas.

- Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term beneficial economic impacts by potentially reducing fuel costs and time at sea for vessels that need to transit the closed or restricted areas.
- The IBQ alternatives would issue bluefin shares to 135 currently permitted vessels that have been active pelagic longline vessels ("active" is defined as having reported in the HMS Logbook successfully setting pelagic longline gear at least once between 2006 and 2012). Vessels would be issued shares of 1.2%, 0.60%, or 0.37% of the Longline category quota, and based on the revised baseline Longline category bluefin quota of 137 mt, vessels would be allocated 1.64 mt, 0.82 mt, or 0.51 mt of bluefin, respectively. The IBQ quota allocations based on 137 mt would constrain approximately 25 % of pelagic longline vessels (34% of vessels with Gulf of Mexico IBQ and 20% of vessels with Atlantic IBQ). In other words, 25 percent of vessels would need to lease additional bluefin quota in order to land their historical average amount of designated species (if they do not change their behavior to reduce their historical rate of bluefin interactions). In total, the vessels would need to lease an additional 51 mt of bluefin. Seventy-five percent of pelagic longline vessels would need no additional bluefin quota in order to land their historical average amount of designated species, and those vessel with a 'surplus' (or not fishing) would be able to lease allocation and obtain additional revenue (approximately 82.7 mt of bluefin allocation would be available for leasing). If no leasing of bluefin allocation were to occur, there could be a reduction of 1.8 million pounds of designated species landing per year with an associated reduction in revenue of approximately 22 percent ($7.6 million dollars, or about $56,000 per vessel).
- If NMFS prohibited the use of pelagic longline gear for the fishery as a whole under the alternative "NMFS Closure of the Pelagic Longline Fishery" when the entire Longline category quota is attained, the impact would depend principally upon the duration of the fishing season prior to the closure. For example, if the use of pelagic longline gear is prohibited at the end of March, approximately 19% of the annual revenue from all species would have been obtained by the fishery, but 81% of the annual revenue from fishing with pelagic longline gear would be foregone ($28million). If the use of pelagic longline gear is prohibited at the end of August, approximately 60% of the annual revenue from all species would have been obtained, while approximately 40% of the annual revenue would be foregone ($16 million). This alternative could result in a major short-term adverse direct economic impact to the pelagic longline fishery and this economic impact would continue into the long-term if landings and dead discard rates continue along the current trend. Adverse economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries would likely occur when a closure happens.
- The requirement for Longline category vessels to install cameras and participate in an electronic monitoring program would cost vessels an average of about $ 5,500 a year, and

a total of about $ 734,500 fleet-wide. This alternative would result in moderate direct and indirect adverse economic impacts to pelagic longline vessel owners in the short- and long-term.

- The requirement for Longline vessels to make various declarations and report bluefin through a VMS unit would cost vessels approximately $44 per month; however, the costs vary based on the E-MTU VMS unit and communication service provider selected, and the amount of vessel activity.

Socio-Economic Impacts of Preferred Alternatives on the General Category

- The Codified Reallocation alternative would result in reducing the General category quota by approximately 32 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.35% reduction in quota, and would reduce potential revenue by approximately $542,000.
- The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the General category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the General category were allocated 47.1 percent of the 85.9 mt, its gain in bluefin quota would be 40 mt (with a value of approximately $678,000 and enough to offset the 32-mt reduction in quota that would result from the "Permanent Reallocation Alternative").
- The alternative "Modifications to the Reserve Category" could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.
- The Automated Catch Reporting requirement would result in minor, long-term adverse, economic and social impacts associated with the burden of reporting all bluefin catch.
- Providing additional flexibility for General category quota adjustment would have neutral to minor, short-term impacts, with beneficial social and economic impacts for January fishery participants and negative impacts for those participating in June through December.
- The change in the Purse Seine category start date would result in neutral to minor adverse economic and social impacts to participants in the General category because of additional market competition and potential conflicts resulting from vessels fishing different gear types in the same location and time.

Socio-Economic Impacts of Preferred Alternatives on the Harpoon Category

- The Codified Reallocation alternative would result in reducing Harpoon category quota by 2.6 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.5% reduction in quota, and would reduce potential revenue by approximately $46,000 for Harpoon category vessels. The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the Harpoon category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the Harpoon category were allocated 3.9% of the 85.9 mt, its gain in bluefin quota would be 3.4 mt (with a value of approximately $55,000). This would offset the 2.6 mt reduction in quota that results from the "Permanent Reallocation Alternative".

- The alternative "Modifications to the Reserve Category" could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category. The Automated Catch Reporting requirement would result in minor, long-term adverse, economic and social impacts associated with the burden of reporting all bluefin catch.
- The ability to adjust the Harpoon category retention limit of large medium bluefin inseason could result in minor, short-term adverse economic and social impacts, but to the extent that the result may be a longer season, this could be mitigated by increased ex-vessel price/lb.
- The change in the Purse Seine category start date would result in neutral to minor adverse economic and social impacts on the Harpoon category associated with additional market competition and gear conflict.

Socio-Economic Impacts of Preferred Alternatives on the Purse Seine Category

- The Codified Reallocation alternative would result in reducing Purse Seine quota by 12.6 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.4% reduction in quota, and would reduce potential revenue by approximately $215,000.
- The Annual Reallocation alternative would make up to a maximum of 75% of the Purse Seine category quota available to other categories and would result in direct, minor, adverse impacts in the short term. For example, under the U.S. bluefin quota of 923.7 mt, if 75% of the Purse Seine category quota (128.8 mt) were reallocated to other categories, the loss in potential revenue from bluefin would be approximately $2 million. This loss in potential revenue would not result in the reduction of actual revenue, however, because the Purse Seine category has had little or no revenue from bluefin in recent years. If the Purse Seine category participants increase their catch to specified threshold levels, the quota in the subsequent year would be increased and potential losses in revenue would be reduced accordingly.
- The IBQ alternative, which would include the opportunity to lease quota allocation from Purse Seine category participants to the Longline category, would provide revenue for those participants. Even if 75% of a Purse Seine category participants quota is reallocated to other categories under the "Annual Reallocation Alternative," that Purse Seine category participant would be allocated 25% of its baseline quota, which could then be leased by the individual Purse Seine category participant to Longline category vessels.
- The alternative "Modifications to the Reserve Category" could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.
- The change in the Purse Seine category start date would result in neutral to minor beneficial economic and social impacts.

Socio-Economic Impacts of Preferred Alternatives on the Angling Category

- The Codified Reallocation alternative would result in reducing the Angling category quota by 13.4 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.4% reduction in quota, and would reduce fishing opportunities and reduce revenue to businesses that support recreational angling.
- The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the Angling category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the Angling category were allocated 19.7% of the 85.9 mt, its gain in bluefin quota would be 16.9 mt (enough to offset the 13.4 mt reduction in quota that results from the "Permanent Reallocation Alternative").
- The alternative "Modifications to the Reserve Category" could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.
- The Trophy category subquota redistribution could have minor, short-term, beneficial social impacts for Gulf of Mexico participants and minor, short-term, adverse economic (charter vessels) and social impacts for participants in the southern area outside the Gulf of Mexico.
- The change in the Purse Seine category start date would result in neutral to minor adverse and social impacts on the Angling category associated with gear conflict.

Socio-Economic Impacts of Preferred Alternatives on the Charter/Headboat Category

- The impacts of the preferred alternatives would impact the Charter/Headboat category in a unique way, given the potential applicability of either the Angling category restrictions and the General category regulations on a particular trip, based on the fishing choices made by the vessel operator to target commercial-sized bluefin (measuring 73 inches or greater) or recreational-sized bluefin (measuring 27 to less than 73 inches). The socio-economic impacts that would apply to Charter/Headboat category are described under the General and Angling category sections.

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1 INTRODUCTION

1.1 Brief Management History

This section provides a brief overview of Atlantic Highly Migratory Species (HMS) management and recent information on the Atlantic bluefin tuna fishery. More detail regarding bluefin tuna management can be found in Section 3.2.

1.1.1 Legal Authority

Atlantic HMS are managed under the dual authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and the Atlantic Tunas Convention Act (ATCA). Under the Magnuson-Stevens Act, the National Marine Fisheries Service (NMFS) must, consistent with ten National Standards, manage fisheries to maintain optimum yield (OY) by rebuilding overfished fisheries and preventing overfishing. Under ATCA, NMFS is authorized to promulgate regulations, as may be necessary and appropriate to carry out binding recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). Additionally, any management measures must be consistent with other domestic laws including, but not limited to, the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), and the Coastal Zone Management Act (CZMA).

In 1985, NMFS implemented a Fishery Management Plan (FMP) for Atlantic Swordfish and, in 1988, an FMP for Atlantic Billfishes. On November 28, 1990, the President signed into law the Fishery Conservation Amendments of 1990 (Pub. L. 101-627). This law amended the Magnuson Fishery Conservation and Management Act (later renamed the Magnuson-Stevens Fishery Conservation and Management Act or Magnuson-Stevens Act) and gave the Secretary of Commerce (Secretary) the authority to manage HMS in the exclusive economic zone of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea under authority of the Magnuson-Stevens Act (16 U.S.C. § 1811). This law also transferred from the Fishery Management Councils to the Secretary management authority for HMS in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea (16 U.S.C. §1854(f)(3)). At that time, the Secretary delegated authority to manage Atlantic HMS to NMFS. In 1993, NMFS implemented an FMP for Sharks of the Atlantic, and, in 1999, Amendment 1 to the Atlantic Billfish Fishery Management Plan. In September 1997 and September 1998, NMFS declared the western Atlantic bluefin tuna "overfished" and in 1998 ICCAT adopted a rebuilding program for the stock

In 1999, NMFS finalized the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks (NMFS 1999), including a rebuilding plan. The 1999 FMP was then amended in 2003 (NMFS 2003). NMFS then consolidated the Atlantic Tunas, Swordfish, and Sharks FMP and its amendments and the Atlantic Billfish FMP and its amendments in the 2006 Consolidated Atlantic HMS FMP (NMFS 2006). The Consolidated HMS FMP was amended in 2008 (NMFS 2008), 2009, 2010, 2012, and 2013. Amendment 7 further amends the 2006 Consolidated HMS FMP.

In managing Atlantic HMS through FMPs and implementing regulations, NMFS must comply with all applicable provisions of the Magnuson-Stevens Act (16 U.S.C. § 1852(a)(3)). The HMS regulations are located in the Code of Federal Regulations (CFR) at 50 CFR Part 635. When a fishery is determined to be in or approaching an overfished condition, NMFS must include in the FMP conservation and management measures to prevent or end overfishing and rebuild the fishery, stock, or species (16 U.S.C. §§ 1853(a)(10); 1854(e)). NMFS must consider the National Standards in developing FMPs, including requirements to use the best scientific information as well as the potential impacts on residents of different States, efficiency, costs, fishing communities, bycatch, and safety at sea (16 U.S.C. § 1851 (a)(1-10)). The Magnuson-Stevens Act also has a specific section that addresses preparing and implementing FMPs for Atlantic HMS (16 U.S.C. §1854 (g)(1)(A-G)). This section of the Magnuson-Stevens Act includes, but is not limited to, requirements to:

- Consult with and consider the views of affected Councils, Commissions, and advisory groups.
- Evaluate the likely effects of conservation and management measures on fishery participants and minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors;
- Provide fishing vessels with a reasonable opportunity to harvest any allocation or quota authorized under an international fishery agreement;
- Diligently pursue, through international entities, such as the International Commission for the Conservation of Atlantic Tunas (ICCAT), comparable international fishery management measures; and,
- Ensure that conservation and management measures promote international conservation of the affected fishery, take into consideration traditional fishing patterns of fishing vessels, are fair and equitable in allocating fishing privileges among U.S. fishermen and do not have economic allocation as the sole purpose, and promote, to the extent practicable, implementation of scientific research programs that include the tagging and release of Atlantic HMS.

The 2006 Consolidated HMS FMP contains a broad range of management objectives including (but not limited to) preventing overfishing of Atlantic HMS; rebuilding overfished Atlantic HMS stocks; monitoring and controlling all components of fishing mortality so as to ensure long-term sustainability of the stocks and promote Atlantic-wide stock recovery; minimizing bycatch; managing for continuing optimum yield so as to provide the greatest overall benefit to the Nation; minimizing, to the extent practicable, adverse social and economic impacts; providing a framework to take necessary action under ICCAT recommendations; and simplifying HMS management and regulatory requirements to assist the regulated community.

1.1.2 Bluefin Tuna Quota Management

Under the 2006 Consolidated HMS FMP, bluefin tuna is quota managed species.

The annual U.S. bluefin quota (recommended by ICCAT) is allocated among seven quota categories. The amount of quota allocated to each category is expressed as a percentage of the U.S. quota, as first established in the 1999 Fishery Management Plan (FMP) based on landings from 1983-1991 and continued unchanged in the 2006 Consolidated HMS FMP. Total catch generally consists of landings and dead discards. The amount of quota allocated to each category was specified in 1999, based upon historical landings, and did not account for dead discards.

Landings were the only portion of catch that were factored into the 1999 FMP percentage allocation analysis because, at that time, dead discards were accounted for under a separate quota allowance (68 mt) per ICCAT recommendations. However, in 2006, the separate dead discard allowance was discontinued per ICCAT recommendation and dead discards must now be accounted for within each country's annual quota allocations.

Annual implementation of the existing domestic allocation quota system has become more difficult in recent years due to a change in the way dead discards are calculated which increased the estimate of bluefin dead discards, a larger percentage of the adjusted quota being landed within the directed fisheries, and lastly, changes in ICCAT requirements regarding accounting for dead discards and allowable carryforward of unused quota.

In 2010, ICCAT implemented Recommendation 10-03, which reiterated that ICCAT parties "shall monitor and report on all sources of bluefin fishing mortality, including dead discards, and shall minimize dead discards to the extent practicable."

The Longline category is currently allocated 8.1% of the total U.S. quota for landings, but catches (landings plus dead discards) have been significantly over that subquota in recent years, resulting in a need for NMFS to rely on underharvest and annual quota adjustments from the Reserve category to cover pelagic longline operations while ensuring that the United States remains within its annual U.S. bluefin quota. The amount of unharvested quota from one year that may be carried forward and utilized in the subsequent year is limited by ICCAT. The percentage of quota that can be carried forward has been reduced from 100 percent of the previous year's underharvest, to 50 percent of the previous year's underharvest, to the current 10% level. Reliable estimates of dead discards are available only for the pelagic longline fishery, which has a 100% logbook reporting requirement and a minimum of 8% observer coverage due to measures needed to reduce bycatch of sea turtles and protect ESA-listed and other species. Dead discards were observed in the purse seine fishery for the first time in 2013 by observers placed to meet ICCAT requirements consistent with ATCA.

The combined effect of the domestic quota allocation system and ICCAT requirements have resulted in an annual allocation/accounting challenge: Using the limited amount of available quota, how do we optimize fishing opportunity for all categories and account for anticipated dead discards in a way that meets our fishery management obligations. NMFS has some limited flexibility in carrying out quota management annually. For example, NMFS may transfer quota among quota categories in certain ways. NMFS also has some flexibility in how and when it accounts for dead discards.

In recent years, the bluefin tuna quota system was able to fully account for both dead discards and landings, and not exceed the U.S. bluefin quota, because a portion of the allocated quota remained unharvested. For example, in 2011, during the annual bluefin quota specifications or "quota rule" process setting out the quota allocations domestically for the year, it became apparent that the adjusted quota for 2011 was insufficient to account for anticipated 2011 dead discards while also providing full base allocations to the directed fishing categories per the established allocation percentages (see 76 FR 39019; July 5, 2011.). The total U.S. baseline quota was 923.7 mt, the baseline quota for the Longline category was 74.8 mt, and the estimated amount of 2011 Longline category dead discards was 122.3 mt, based on the most recent information available at that time (i.e., 2010 estimated dead discards). Three factors made accounting for anticipated discards in the 2011 Quota Rule more challenging than in previous years: (1) Adjustments to the ICCAT western Atlantic bluefin tuna management recommendations, including reductions in Total Allowable Catch (TAC) and the amount of underharvest that can be carried forward ("carry-forward") paired with the earlier elimination of the dead discard allowance; (2) increases in the estimates of domestic pelagic longline dead discards due to changes in estimation methodology and an increase in bluefin interactions in the pelagic longline fishery; and (3) recent increases in landings of bluefin caught in the directed categories.

After extensive public comment on the proposed 2011 quota rule, NMFS accounted for half of the estimated dead discards "up front," deducting half the expected dead discards directly from the Longline category quota to provide some incentive for fishermen to reduce interactions that may result in dead discards. NMFS then applied half of the underharvest that was allowed to be carried forward to the Longline category and maintained the other half in the Reserve category to provide maximum flexibility in accounting for 2011 landings and dead discards. Full and final accounting for dead discards would occur at the end of the fishing year, and would be possible due to the likelihood of unharvested quota at the end of the fishing year.

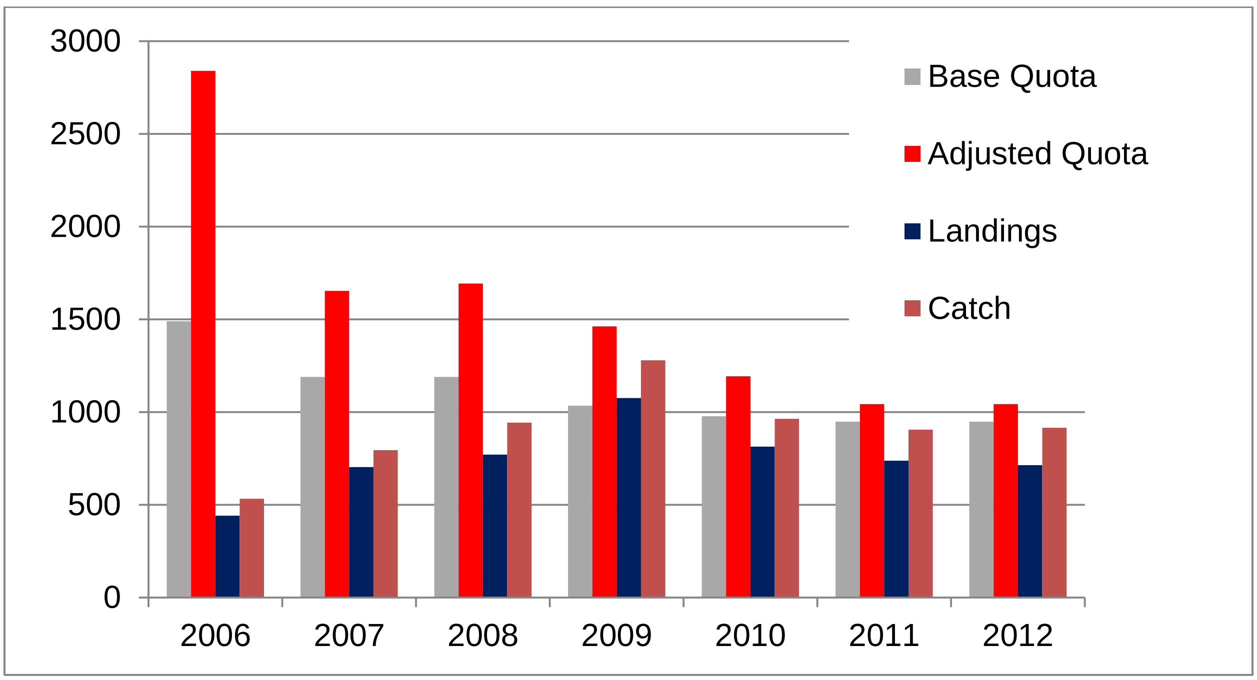


Figure 1.1 Bluefin Tuna Landings, Catch, Base Quota, and Adjusted Quota

Figure 1.1 shows information on recent landings compared to base and adjusted quotas. The recent trend is a larger percentage of the adjusted quota being landed than 2006. As explained in Chapter 2, the years 2006 through 2012 are shown because they reflect the relevant trends in the fishery in recent years and form the basis of the analyses in this Amendment.

The range of comments received on the proposed 2011 Quota Rule (76 FR 13583; March 14, 2011) and discussions at HMS Advisory Panel meetings reiterated comments received on a 2009 Advanced Notice of Proposed Rulemaking (74 FR 26174; June 1, 2009) on HMS fisheries issue overall and further demonstrated the need for a comprehensive review of bluefin quota management and associated measures. Many comments raised issues that were outside the scope of that rulemaking and would require additional analyses because of the potential impacts on the fisheries and fishery participants. Some of the issues raised included holding each quota category accountable for its own dead discards and revisiting the methodology used for estimating dead discards; the accounting for bluefin landings relative to the 2006 Consolidated HMS FMP percentage allocations; changing domestic allocations among fishing categories; reducing bluefin bycatch; modifying the permit structure for the fisheries; improving monitoring of catch in all bluefin fisheries; providing incentives to the Longline category to reduce interactions with bluefin; and reducing dead discards in the pelagic longline fishery.

In the final 2011 Quota Rule, NMFS stated that “in light of the issues involving U.S. quotas and domestic allocations, pelagic longline discards, the need to account for dead discards that result from fishing with other gears, and bycatch reduction objectives, as well as public comment, NMFS intends to undertake a comprehensive review of bluefin management in the near future to determine whether existing management measures need to be adjusted to meet the multiple goals for the bluefin fishery.”

NMFS began to more formally address some of the quota accounting issues described in Section 1.1 at the September 2011 meeting of the HMS Advisory Panel by presenting summary of recent issues and a white paper on bluefin bycatch in the HMS fisheries. The HMS Advisory Panel discussed issues related to the Longline category as well as issues in the bluefin fishery as a whole and offered an array of suggested measures for consideration as potential solutions. In preparation for the formal process of evaluating potential amendments to the fishery management plan, NMFS presented a preliminary version of a scoping document (“Preliminary White Paper”) to the HMS Advisory Panel meeting at its March 2012 meeting for its consideration (NMFS, March 2012). The HMS Advisory Panel expressed qualified support for further exploring and analyzing the range of measures in the Preliminary White Paper, and suggested several additional measures which were incorporated into a final scoping document (NMFS, April 2012).

1.2 Purpose and Need and Objectives

Because the U.S. quota has been insufficient to account for landings and anticipated dead discards at the beginning of the fishing year, the quota specifications were based on the underlying premise that full and final accounting for dead discards would occur at the end of the fishing year, and that such accounting would be possible due to the likelihood of unharvested quota at the end of the fishing year. However, recent trends have included increased dead discards and a larger percentage of the adjusted quota being landed; thereby decreasing unharvested quota at the end of the fishing year. The combined effect of the domestic quota system and the need to account for dead discards results in an annual allocation/accounting challenge: How to both account for anticipated dead discards as well as optimize fishing opportunity for all categories in a fair manner while ensuring that the United States remains within its overall allocated quota.

On April 23, 2012, NMFS published a Notice of Intent (NOI) in the Federal Register (78 FR 24161), which announced our intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a Draft Environmental Impact Statement (DEIS), and a potential amendment to the 2006 Consolidated HMS FMP. The NOI stated that NMFS is examining the regulations that affect all bluefin fisheries, both commercial and recreational, to determine if existing measures are the best means of achieving current management objectives and providing additional flexibility to adapt to management needs in the future. The NOI also announced the availability of the scoping document and notified the public of scoping meetings and consultations with regional fishery management councils. During May and June of 2012, NMFS conducted public meetings to present the scoping document and receive public comments in Toms River, New Jersey; Gloucester, Massachusetts; Belle Chasse, Louisiana; Manteo, North Carolina; and Portland, Maine. During June 2012, NMFS consulted with the Mid-Atlantic Fishery Management Council, the New England Fishery Management Council, and the South Atlantic Fishery Management Council, while the scoping document was shared with the Gulf of Mexico Fishery Management Council and the Caribbean Fishery Management Council. NMFS accepted public comment on the scoping document through July 15, 2012. Details regarding the specifics of the scoping hearings and consultations, and a summary of the public comments, are contained in Section 1 of the Appendix.

On September 20, 2012, NMFS presented a Predraft document to the HMS Advisory Panel (NMFS, September 2012). A Predraft, which is a precursor to a DEIS, allows NMFS to obtain additional information and input from Consulting Parties and the public on potential alternatives prior to development of the formal DEIS and proposed rule. As such, NMFS requested comments on the Predraft from the HMS Advisory Panel, and made the document available to the public through the HMS website (http://www.nmfs.noaa.gov/sfa/hms). Comments on the Predraft from the Consulting Parties were accepted through October 29, 2012. In light of the management challenges described, and based on the Predraft and comments from the HMS Advisory Panel, NMFS developed a DEIS (Amendment 7 to the 2006 Consolidated HMS FMP (Amendment 7 DEIS, July 2013)).

NMFS published a proposed rule in the Federal Register on August 21, 2013 (78 FR 52032), which proposed the "preferred alternatives" analyzed in the DEIS document and solicited public comments on the measures. On August 22, 2013 (78 FR 52123), NMFS published a Federal Register Notice, informing the public of the date and locations of public hearings on Amendment 7. From August 2013 to January 2014, NMFS conducted 11 public hearings, and consulted with the New England Fishery Management Council, the Gulf of Mexico Fishery Management Council, and the South Atlantic Fishery Management Council. The hearings were held in diverse locations in Atlantic and Gulf of Mexico coastal states (Table 10.1). On August 30, 2013, the Environmental Protection Agency published a Notice of Availability of the DEIS (78 FR 53754).

The August 21, 2013 Amendment 7 proposed rule set October 23, 2013 as the end of the public comment period, but given the length and complexity of the rule, and to provide additional time for consideration of public comments in light of the November meeting of ICCAT, the end of the comment period was rescheduled to December 10, 2013 (78 FR 57340; September 18, 2013). Subsequently, due to the government shutdown in October 2013, NMFS' inability to respond to constituents during that time frame, and requests for an extension due to the complexity and interplay of the measures covered in the DEIS, NMFS again extended the end of the public period until January 10, 2014 to provide additional opportunity for informed comment (78 FR 75327; December 11, 2013). On December 26, 2013, NMFS published a Federal Register notice that announced a public hearing conference call and webinar to provide additional opportunity for the public from all geographic areas to comment (78 FR 78322).

The comments received on Draft Amendment 7 and its proposed rule, and our responses to those comments, are summarized in the Appendix in the section labeled "Response to Comments." The table below summarizes some of the events and milestones relevant to the development of Amendment 7.

Table 1.1 Events and Milestones Related to the Development of Amendment 7

Date	Milestone
June 7, 2009	Advance Notice of Proposed Rulemaking (ANPR), requesting specific comments on potential regulatory changes that would increase fishing opportunities for the bluefin and swordfish fisheries (74 FR 26174). Comments received on this ANPR were wide-ranging and were indications that a more broad evaluation of issues may be warranted.
November 2010	ICCAT Recommendation 10-03, which reiterated that ICCAT parties "shall monitor and report on all sources of bluefin fishing mortality, including dead discards, and shall minimize dead discards to the extent practicable."
March 14, 2011	Proposed 2011 Quota Rule (76 FR 13583)
July 5, 2011	Final 2011 Quota Rule (76 FR 39019)
September 2011	HMS Advisory Panel Meeting discussion – white paper of bluefin tuna bycatch in the Pelagic Longline Fishery
March 2012	HMS Advisory Panel Meeting discussion – preliminary scoping document
April 23, 2012	Notice of Intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a DEIS, and a potential amendment to the 2006 Consolidated HMS FMP (78 FR 24161). The NOI also announced the availability of the scoping document and notified the public of scoping meetings and consultations with regional fishery management councils.
May and June 2012	Public meetings and consultations on scoping document
July 5, 2012	End of scoping comment period
September 20, 2012	Predraft document presented to the HMS Advisory Panel, and made available to the public
October 29, 2012	Last day of input on Predraft from Advisory Panel

Date	Milestone
August 21, 2013	Amendment 7 Proposed rule published in Federal Register (78 FR 52032)
August 22, 2013	Federal Register Notice, informing the public of the date and locations of public hearings on Amendment 7.
August 30, 2013	Environmental Protection Agency published a Notice of Availability of the DEIS (78 FR 53754)
August 2013 through January 2014	Public Hearings on Amendment 7 (see Appendix)
September 18, 2013	Federal Register notice, rescheduling end of comment period (78 FR 57340)
October 2013	U.S. Government shut-down
December 11, 2013	Federal Register notice, rescheduling end of comment period (78 FR 75327)
December 26, 2013	Federal Register notice, announcing a public hearing conference call and webinar to provide additional opportunity for the public from all geographic areas to comment (78 FR 78322)
January 10, 2014	End of public comment period
March 2014	Presentation of public comments to HMS Advisory Panel (see APPENDIX)
August 2014	Finalization of FEIS
October 2014	Anticipated publication of Amendment 7 final rule in Federal Register
Late 2014 to early 2015	Expected implementation of Amendment 7 measures

Proposed Action

Based on the recent history of the bluefin fishery described above, NMFS would amend the 2006 Consolidated HMS FMP in conformance with applicable requirements under the Magnuson-Stevens Act to prevent overfishing, achieve optimal yield, and minimize bycatch to the extent practicable.

Purpose

The purpose of the preferred measures is to manage the Atlantic HMS resources in a manner that maximizes resource sustainability and fishing opportunity, while minimizing, to the greatest extent possible, the socioeconomic impacts on affected fisheries.

Need

An amendment to the 2006 Consolidated HMS FMP is needed to address bluefin tuna management due to the recent trends and characteristics of the bluefin fishery and the need to continue to comply with both domestic and international management objectives and obligations identified below. Annual implementation of the existing domestic allocation quota system has become more difficult due to a change in calculation methodology that resulted in increases in calculated bluefin dead discards, a larger percentage of the adjusted quota being landed within certain segments of the fishery, and changed ICCAT requirements regarding accounting for dead discards and allowable carryforward of unused quota. Public comment has supported the need for substantive changes to the 2006 Consolidated HMS FMP, and it is important to rebuild the fishery, end overfishing, ensure long-term sustainability, and optimize fishing opportunity for all categories in an equitable manner. To achieve the above purpose, NMFS considered a suite of actions designed to reduce dead discards, account for dead discards, enhance monitoring, and optimize fishing opportunity.

Addressing the specific objectives listed below directly supports achievement of the more broad goals of the 2006 Consolidated HMS FMP including: To prevent overfishing of Atlantic tunas, rebuild overfished Atlantic HMS stocks, monitor and control all components of fishing mortality also as to ensure long-term sustainability of the stocks and promote Atlantic wide stock recovery, minimize bycatch, manage for continuing optimum yield so as to provide the greatest overall benefit to the Nation, minimize to the extent practicable adverse social and economic impacts, provide a framework to take necessary action under ICCAT recommendations, and simplify HMS management and regulatory requirements to assist the regulated community.

<u>Objectives</u>: NMFS identified the following objectives with regard to this proposed action:

- Prevent overfishing and rebuild bluefin tuna, achieve on a continuing basis optimum yield, and minimize bluefin bycatch to the extent practicable by ensuring that domestic bluefin tuna fisheries continue to operate within the overall TAC set by ICCAT consistent with the existing rebuilding plan;
- Optimize the ability for all permit categories to harvest their full bluefin quota allocations; account for mortality associated with discarded bluefin in all categories; maintain flexibility of the regulations to account for the highly variable nature of the bluefin fisheries; and maintain fairness among permit/quota categories;
- Reduce dead discards of bluefin tuna and minimize reductions in target catch in both directed and incidental bluefin fisheries, to the extent practicable;
- Improve the scope and quality of catch data through enhanced reporting and monitoring to ensure that landings and dead discards do not exceed the quota and to improve accounting for all sources of fishing mortality;
- Adjust other aspects of the 2006 Consolidated HMS FMP as necessary and appropriate.

1.3 Social and Economic Considerations

The mandates of subsections 303(a)(9), 301(a)(8), and 304(g)(1)(C) of the Magnuson-Stevens Act are consistent with the requirements under NEPA to identify and evaluate the direct, indirect and cumulative impacts of the preferred measures on the social and economic elements of the human environment. These requirements are summarized below and the effects of the alternatives are analyzed and discussed in Chapters 4, 5, and 6.

The Magnuson-Stevens Act subsection 303(a)(9) requires any FMP to include a fishery impact statement which shall assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for:

- Participants in the fisheries and fishing communities affected by the plan or amendment;
- Participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants; and
- The safety of human life at sea, including whether and to what extent such measure may affect the safety of participants in the fishery.

A similar analysis using much of the same economic and social data is included to ensure consistency with the Magnuson-Stevens Act National Standard 8, which requires that conservation and management measures, including those developed to end overfishing and rebuild fisheries:

- Take into account the importance of fishery resources to fishing communities in order to provide for their sustained participation; and
- To the extent practicable, minimize the adverse economic impacts on such communities.

Additionally, subsection 304(g)(1)(C) requires the Secretary to:

- Evaluate the likely effects, if any, of conservation and management measures on participants in the affected fisheries; and
- Minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors.

1.4 Scope and Organization of this Document

In considering the preferred management measures outlined in this document, NMFS is responsible for complying with a number of Federal statutes, including NEPA. Under NEPA, the purpose of an EIS is to provide an environmental analysis to support the Secretary's regulatory decision and to encourage and facilitate involvement by the public in the environmental review process.

This FEIS assesses potential impacts on the biological and human environments associated with the establishment under Federal regulation of various management measures for fisheries that catch and interact with bluefin tuna and other HMS. This document reflects revisions to the DEIS measures and analyses, based on public comments and further analyses. In this document, NMFS evaluates and compares the potential impacts of management-based alternatives on the fishery, along with other impacts (e.g., biological, social, and economic - see Chapters 4 and 5). The chapters that follow describe the preferred management measures and their alternatives (Chapter 2), the affected environment as it currently exists (Chapter 3), the probable consequences on the human environment that may result from the implementation of the preferred management measures and their alternatives and any mitigating measures (Chapters 4, 5, and 6).

In developing this document, NMFS adhered to the procedural requirements of NEPA; the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations (CFR) 1500-1508) 28, and NOAA's procedures for implementing NEPA. NOAA Administrative Order (NAO) 216-6 identifies NOAA's procedures to meet the requirements of NEPA to:

- Fully integrate NEPA into the agency planning and decision making process; fully consider the impacts of NOAA's proposed actions on the quality of the human environment;
- Involve interested and affected agencies, governments, organizations and individuals early in the agency planning and decision making process when significant impacts are or may be expected to the quality of the human environment from implementation of proposed major Federal actions; and
- Conduct and document environmental reviews and related decisions appropriately and efficiently.

The following definitions were generally used to characterize the nature of the various impacts evaluated with this EIS.

- <u>Short-term or long-term impacts</u>. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.
- <u>Direct or indirect impacts</u>. A direct impact is caused by a preferred action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a preferred action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- <u>Minor, moderate, or major impacts</u>. These relative terms are used to characterize the magnitude of an impact. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in their context and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus,

warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

- Adverse or beneficial impacts. An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.
- Cumulative impacts. CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

In addition to NEPA, NMFS must comply with other Federal statutes and requirements such as the Magnuson-Stevens Act, Executive Order 12866 and the Regulatory Flexibility Act. This document comprehensively analyzes the alternatives considered for all these requirements. Chapter 5 provides the economic analyses; Chapter 6 meets the requirements under Executive Order 12866; Chapter 7 provides the Initial Regulatory Flexibility Analysis required under the Regulatory Flexibility Act; and Chapters 8 and 9 also provide additional information that is required under various statutes. While some of the chapters were written in a way to comply with the specific requirements under these various statutes and requirements, it is the document as a whole that meets these requirements and not any individual chapter.

1.5 Public Review and Comment

Public comment on the DEIS and proposed rule were accepted from August 21, 2013 through January 10, 2014. The contents of the DEIS and this FEIS are based largely upon the comments, suggestions, and discussions regarding bluefin management by various members of the bluefin tuna fisheries, the HMS Advisory Panel, interested organizations, members of the public, and NMFS staff since 2009. As described in the DEIS and this FEIS, the development of Amendment 7 was a multistage process (Table 1.1). Public hearings were held in coastal states of the Atlantic and Gulf of Mexico, and via teleconference (see APPENDIX).

2 MANAGEMENT ALTERNATIVES

Development of Management Alternatives

As described in detail in Chapter 1, NMFS is considering various alternatives to address several issues with current management of the directed (handgear/purse seine) and incidental (pelagic longline) bluefin tuna fisheries and to meet the objectives of the Magnuson-Stevens Act and the 2006 Consolidated HMS FMP. The management alternatives described below and analyzed in Chapters 4.0 through 6.0 were developed as part of an iterative process based upon HMS Advisory Panel input, public suggestions and comments, and the Amendment 7 scoping and predraft documents, and the proposed rule (as noted in this Section, and in the Appendix). Chapter 1 contains the sequence of events in developing these alternatives. As a result of this process, this FEIS considers a wide range of management tools. Most of the alternatives are not mutually exclusive and are combined with one another to fully address the Amendment 7 objectives. Because there are a large number of management tools, as well as numerous alternatives for the specific design of each management tool, many combinations of alternatives are possible, not all of which were considered. Alternatives are organized and analyzed in combinations that would best achieve the objectives and simplify understanding of the alternatives. The preferred alternatives are management tools designed to achieve the objectives in a balanced manner. In some cases where there are many elements of a management alternative, the elements are described individually but are analyzed together.

Among the alternatives, some consider management tools that could be implemented in the future via subsequent rulemaking. NMFS included broad descriptions and general analyses of these alternatives in this rulemaking, although they are largely conceptual and may lack specific details. Preliminary consideration of these concepts in this Amendment is intended to help facilitate their future development and provide additional context for the alternatives analyzed and the actual measures NMFS is considering for implementation with this action. The effects of these alternatives are discussed but were not analyzed as were the other alternatives, including the Preferred Alternatives. Development and implementation of such alternatives would not be undertaken at this time as a result of this action. A complete effects analysis for these actions would be completed when and if the actions are actually proposed (through separate rulemaking) in the future.

NEPA requires that any Federal agency proposing a major Federal action consider all reasonable alternatives in addition to the proposed action. An FEIS evaluates alternatives to help the Secretary ensure that any unnecessary impacts are avoided by assessing alternative ways to achieve the project's purpose that may result in less environmental harm.

To warrant detailed evaluation by NMFS, an alternative must be reasonable and meet the action's purpose and need (see Chapter 1; Section 1.2). NMFS considered the following screening criteria to determine whether an alternative is reasonable: (1) Consistency with the Magnuson-Stevens Act including the ten National Standards; (2) administrative feasibility (i.e., the costs associated with implementing an alternative cannot be prohibitive or require unattainable infrastructure for NMFS, the fishing industry or both); (3) enforceability; and (4) consistency with other applicable laws (e.g., ATCA, ESA, MMPA). This chapter includes a full range of reasonable alternatives designed to meet the purpose and need for action described in Chapter 1 and address public comments received during the scoping and public comment process.

The descriptions of management alternatives in this chapter are organized by type of management tool. For example, the chapter first considers alternatives that involve how bluefin quota is allocated ("Allocation Alternatives"). Next, it considers alternatives that would restrict the use of certain gears in certain areas ("Area Alternatives"). All of the alternatives are grouped this way (by ‘management tool type’) to help the reader understand the alternatives in relation to the Purpose and Need for the action. In contrast, the Executive Summary contains summary tables of management alternatives arranged by quota category to help the reader see which management alternatives are being considered for each quota category. Similarly, the chapters that discuss the environmental impacts of the measures (Chapters 4, 5, and 6) provide information by quota category to help the reader understand and evaluate the alternatives. In the case where multiple alternatives are listed as ‘preferred” within an alternative grouping, all of the preferred alternative would be implemented if selected and finalized.

Except where noted, the alternatives analyzed in the DEIS were based upon data from 2006 through 2011. The 2006 through 2011 time period was selected at the DEIS stage because: (1) NMFS wanted the analysis to reflect the vessels operating under the current regulatory environment (i.e., post-2006 Consolidated HMS FMP implementation); and (2) pelagic longline logbook data for 2012 were not finalized and ready for inclusion in these analyses at the time of publication of the proposed rule. For purposes of the DEIS, NMFS stated that the 2006 through 2011 time period “provided a reasonable range of historical fishing activity, including recent years” and also stated that NMFS would update data to reflect information that became available for 2012 after the DEIS was published NMFS also received numerous public comments and requests to include 2012 data and/or “the most recent years of data available” in the IBQ allocation calculations and GRA area access calculations (see Response to Comments 26 and 77).

NMFS interprets “available” to mean that the data from a given year have been quality controlled for management purposes by the Southeast Fisheries Science Center (SEFSC). At the time of development and publication of the proposed rule, 2012 data were quality controlled for inclusion in analyses supporting the development of the proposed rule. However, by the development of supporting analyses for the final rule, sufficient time had passed for the SEFSC to conduct thorough quality control/review of the 2012 data, such that these data could be included. Thus, in the FEIS, except where noted, the alternatives described below (and analyzed in Chapters 4 and 5) were based upon data from 2006 through 2012. NMFS has not made significant changes to the proposed action as a result of including the 2012 information, and the information does not constitute “significant new circumstances or information.”

Clarification of the Quota-Setting and Adjustment Process

Several commenters requested clarification of the quota setting and adjustment process that was set out in the DEIS in various sections and alternatives. NMFS envisions future implementation of, and adjustment to, bluefin tuna quotas and subquotas under Amendment 7 via three mechanisms, as follows:

1. Proposed and final rulemaking (without additional FMP amendment, consistent with framework provisions of HMS regulations)

Changes to the U.S. quota (i.e., pursuant to an ICCAT recommendation regarding the western Atlantic bluefin tuna) and subquotas (consistent with the preferred Codified Reallocation alternative, A2a) would be made through proposed and final rulemaking.

2. Federal Register Action

Notice and announcement of fishing year subquotas and adjustments to the Reserve consistent with the preferred Annual Reallocation and Modification of Reserve alternatives, (A 3a and A 4b) would be made via Federal Register action. These actions would, among other things, notify the public of landings levels or dead discard levels for a particular year; announce quota changes pursuant to the formulas prescribed in Amendment 7; and inform the public of the Purse Seine category landings for the year and the subsequent amount of quota that would be put into the Reserve category the following year (see Preferred Annual Reallocation alternative, A 3a).

3. Inseason Actions (following consideration of regulatory determination criteria)

As a result of Amendment7 and in addition to the routine inseason actions (e.g., retention limit adjustments, closure notices), NMFS anticipates publishing potentially multiple inseason actions in the Federal Register to transfer quota from the Reserve to fishing categories, as warranted. Consistent with preferred Alternative E 1c (Modify General Category Time-Period Subquota Allocations), NMFS may take inseason action to transfer quota from one General category subquota period to another, earlier in the calendar year (e.g., December to January of the same year). NMFS would consider the regulatory determination criteria, which would be expanded in Amendment 7, prior to taking such actions.

2.1 Allocation Alternatives

Objectives and Considerations

These alternatives would either modify the base allocations (percentages of the U.S. quota designated to particular for bluefin quota categories) and remain the same until and if changed by future amendment, or would set up a regulatory mechanism for modifying the quotas annually or in certain years based on defined criteria. As described in detail in Chapter 1, under the 2006 Consolidated HMS FMP, NMFS allocates each bluefin quota category a percentage of the total U.S. quota. To achieve the objectives of the 2006 Consolidated HMS FMP, NMFS would continue to have the regulatory authority to provide for maximum utilization of the bluefin quota by conducting various types of inseason actions, including transferring quota to/from any fishing category or to the Reserve.

The allocation alternatives analyzed here were designed to be consistent with all of the MSA National Standards, including National Standard 4 (which requires management measures to be fair and equitable, but which recognizes that fishing privileges may need to be allocated among fishermen), and National Standard 8 (requiring management measures to minimize adverse economic impacts, to the extent practicable, on fishing communities), and National Standard 9 (conservation and management measures shall, to the extent practicable, minimize bycatch and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch) as well as work in concert with the other alternatives, and provide a balance among the Amendment 7 objectives. The objectives of quota allocation alternatives, which stem from the current challenges associated with bluefin quota management (as briefly described above, and described in more detail in Chapter 1) are the following:

- Account for bluefin dead discards within quota categories using the best available information;
- Reduce uncertainty in annual quota allocation and accounting;
- Optimize fishing opportunity by increasing flexibility in the current bluefin quota allocation system; and
- Ensure that the various quota categories are regulated fairly in relation to one another.

The objectives and design of the reallocation alternatives ensure the United States continues to operate within the ICCAT recommended quota, which is established consistent with the rebuilding plan for the species, and to improve management of and accounting in the current domestic bluefin quota system. Immediate quota allocation measures (described below) among the fishery categories would provide more long-term predictability in carrying out the fisheries, whereas annual reallocation measures (described below) would provide more flexibility to react to conditions as they occur.

Increased allocation for the Longline category, paired with measures to reduce bycatch and increase accountability, would align the quota allocation more closely with recent levels of catch; provide a means to more proactively account for levels of catch that otherwise could exceed the current allocation; reflect the change in ICCAT recommendations regarding permissible carryover and dead discard accounting within the quota; reflect the 2007 change in methodology used to calculate dead discards; and address the issue of fairness among user groups. The different quota categories represent diverse fisheries with unique characteristics, which as a result, are subject to different regulations. NMFS considers whether the regulations are fair with respect to the amount of fishing opportunity and burden they impose on the different categories. As discussed more fully in Chapter 1, quota allocations for the categories were originally (1999) based on historical bluefin landings, with a separate ICCAT allowance for dead discards based on logbook tallies of reported dead discards. Thus, the original domestic quota allocations were intended to cover landings only, and not dead discards. As of 2006 (Recommendation 06-06), the ICCAT quota recommendations no longer included a dead discard allowance. Instead, dead discards must be accounted for within a country’s quota. The inconsistency between the basis of the quotas (landings) and the need to account for both landings and dead discards is one of the reasons for considering reallocation alternatives.

The pelagic longline fishery interacts with bluefin tuna when it targets swordfish, yellowfin tuna, bigeye tuna, and other species, because the occurrence of those species overlaps as a result of their similar biology and ecology. The Longline category is required to account for dead discards and landings, yet the historical basis for the relative size of the Longline category's quota allocation (8.1 percent) was only landings, and did not include any consideration of the amount of quota that may be necessary to account for both dead discards and landings. Based on the best available information, an allocation of 8.1 percent has been inadequate to account for both landings and dead discards since the inception of the ICCAT requirement to account for dead discards. In recent years, NMFS has accounted for pelagic longline bluefin dead discards by relying in part upon underharvest of quota by other quota categories.

As described under each alternative, the different allocation alternatives utilize different strategies. Alternative A 2a, Codified Allocation, is based upon the historic ICCAT dead discard set-aside to account for bluefin discards by the pelagic longline fishery; Alternative A 2b is based on recent catch; and Alternative A 2c focuses on reallocation from the Purse Seine category.

The annual reallocation alternatives (A 3a and A 3b) provide other strategies that may be used in conjunction with codified reallocation. These annual reallocation alternatives would provide NMFS the ability to make modifications to quota allocations annually, based upon a specific formula, in order to optimize quota allocations in a flexible, but predictable, manner to account for variability in the fishery. A combined strategy relying on both codified and annual allocation alternatives (i.e., implementing both codified and annual reallocation alternatives) may achieve the objectives, but also minimize any negative economic impacts.

It is important to note that the quota allocation alternatives that would increase the amount of quota available to the Longline category are not designed to be implemented in isolation. Quota allocation alternatives would be combined with alternatives that would increase quota accountability, reduce discards, minimize bycatch and the mortality of such bycatch, and provide incentives for pelagic longline vessels to reduce the number of interactions with bluefin.

2.1.1 Alternative A 1 - No Action

The No Action alternative would make no changes to the current percentages that each quota category is allocated (General: 47.1 percent; Harpoon: 3.9 percent; Purse Seine: 18.6 percent; Longline: 8.1 percent; Trap: 0.1 percent; Angling: 19.7 percent; Reserve: 2.5 percent). Dead discards would continue to be accounted for separately from the quota allocations through the annual quota specifications process.

2.1.2 Alternative A 2 – Codified Reallocation

Alternative A 2a - Codified Reallocation to Longline Category Reflecting the Historical 68 mt Dead Discard Allowance (Preferred)

This alternative would codify a quota category increase of 62.5 metric tons (mt) whole weight to the Longline category reflecting the historical 68 mt dead discard allowance and the current allocation percentages. All of the categories, including the Longline category, would contribute to the 68 mt historical allowance, with a net increase of 62.5 to the Longline category after its share of the deduction (i.e., based on the current 8.1 percent allocation, the Longline category portion of the 68 mt is 5.5 mt; 68 mt – 5.5 mt = 62.5 mt; hence, an increase of 62.5 mt) (Note: Unless otherwise indicated, all references to metric tons hereafter are in whole weight). NMFS based this number on ICCAT Recommendation 98-07's dead discard allowance of 79 mt for all of the countries with a share of the western Atlantic bluefin quota, of which the United States' portion was 85.72 percent, or approximately 68 mt. This dead discard allowance was in effect when NMFS calculated the 1999 FMP allocation percentages. Figure 2.1 shows that the 68 mt allowance was separate from the quota allocations. Beginning with Recommendation 06-06, the ICCAT recommendations no longer included a separate allowance for dead discards and instead stipulated that dead discards must be accounted for within a country's quota. Although the codified reallocation measure is intended to facilitate accounting for dead discards by the Longline category, the specific amount (68 mt) is not intended to serve as an estimate of current dead discards, or establish a proportion of discards to landings. Chapter 1 contains a full discussion of the accounting issues that resulted in the need for modifications to the 2006 HMS Consolidated FMP.

Thus, this alternative would increase the Longline category allocation by 62.5 mt based on the 68 mt dead discard allowance that existed when the category allocation percentages were first established to more accurately account for that category's incidental bluefin catch while also considering the historic basis of the category allocation percentages.

Under this alternative, the 68 mt would be subtracted from the total U.S. quota prior to allocation to each quota category, with the initial effect of reducing the allocations to all categories. Each category's deduction is proportionate to its current allocation percentages of the total U.S. bluefin quota. After the reductions, 62.5 mt would be added to the Longline category allocation.

For example, using the General category allocation of 47.1 percent and reflecting the 68 mt historical dead discard allowance, the General category quota would be reduced by 32 mt, its proportionate share of the 68 mt based on its current allocation (multiply 68 by 0.471).

Achieving the quota allocation objectives through the implementation of this Preferred Alternative would affect all quota categories. It is appropriate that all quota categories are involved in addressing the dead discard problem. As explained above, the dead discard problem did not arise solely as a result of the fishing behavior of pelagic longline vessels, but results from many factors, including the different circumstances and restrictions among the categories. The Longline category is required to account for dead discards and landings, yet the historical basis for the relative size of the Longline category's quota allocation (8.1 percent) was only landings, and did not include any consideration of the amount of quota that may be necessary to account for both dead discards and landings. Based on the best available information, an allocation of 8.1 percent has been inadequate to account for both landings and dead discards since the inception of the ICCAT requirement to account for dead discards. The Preferred Alternative provides a balanced approach by recognizing the need to be fair and equitable, consistent with National Standard 4, while also taking into account economic considerations of National Standard 8, and the variability in circumstances and regulations, consistent with National

Standard 6 (conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches). Furthermore, the Preferred Alternative takes into consideration the different allocations in the fishery by deducting quota in proportion to each category's share of the overall quota.

Procedurally, the base quotas (in mt) would be based on the total U.S. quota, and implemented in conjunction with the total U.S. quota in the codified regulations via proposed and final rulemaking. If the 68 mt were treated as a percentage instead of a fixed amount, the Longline category allocation could increase beyond 68 mt if the U.S. quota increased. However, by treating the 68 mt as a fixed amount and subtracting the 68 mt from the U.S. quota prior to allocation to the categories, the historical allowance of 68 mt would not expand, or contract, in the future. This concept is illustrated in the right side of Table 2.1 and in Figure 2.1. This would be a codified reallocation to the base quotas, unless later changed by an FMP amendment.

Table 2.1 Codified Reallocation – Allocations reflecting 68 mt of dead discards

Category	Current Allocation (%)	Current Allocation (mt)[i]	Contributions to 68 mt	Revised Allocation[i] after Deducting (or Adding) Portion of 68 mt
General	47.1	435.1	32.1	403.0
Harpoon	3.9	36.0	2.6	33.4
Purse Seine	18.6	171.8	12.7	159.1
Longline	8.1	74.8	5.5	137.3[ii]
Trap	0.1	0.9	0.1	0.9
Angling	19.7	182.0	13.4	168.6
Reserve	2.5	23.1	1.7	21.4
Totals		923.7	68.0[iii]	923.7
Net Reallocation			62.5[iv]	

[i] Based on a U.S. quota of 923.7, subject to rounding error; [ii] Reflects the addition of the 62.5 mt; [iii] Totals subject to rounding errors; [iv] Net reallocation to the Longline category equates to 62.5 mt as Longline category proportionately shares initial reduction of 5.5 mt as its portion of the 68 mt historic dead discard allowance (68 - 5.5 = 62.5).

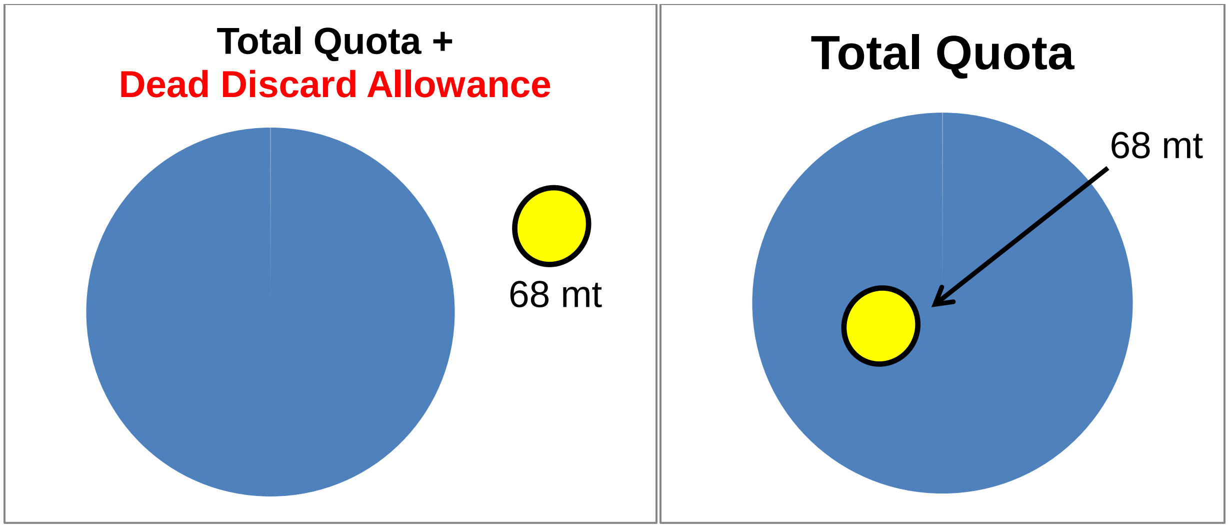


Figure 2.1 Where does the 68 mt Come From? Historical (left) vs. Alternative A 2a (right)

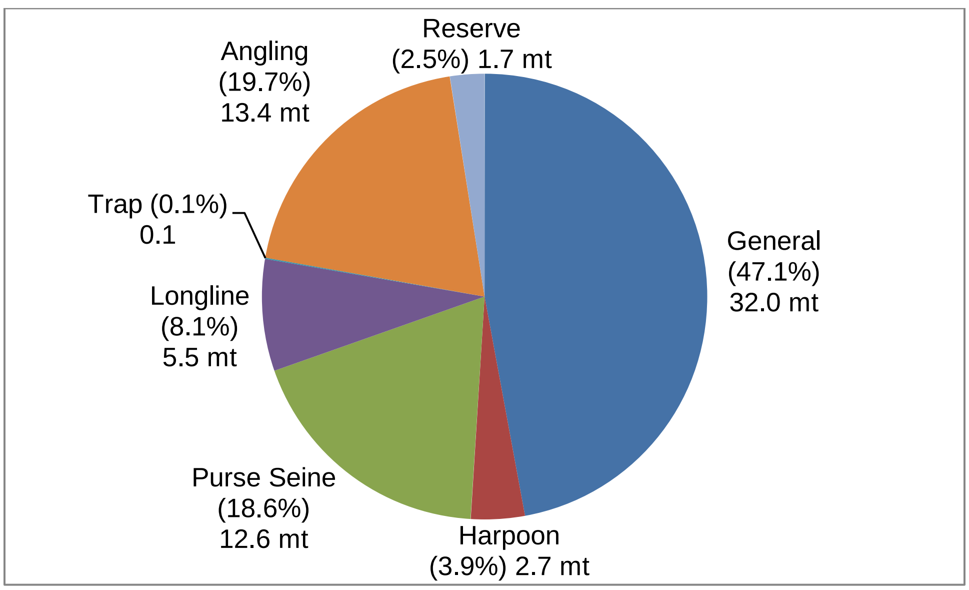


Figure 2.2 Proportions of 68 mt by Quota Category

Alternative A 2b - Reallocation Incorporating Recent Catch Data

This alternative would revise the quota allocation percentages for all categories, basing the new allocations on both the current codified allocations (50%) and recent catch (50%) as applicable to each quota category. Equal weighting of the two elements would address the objectives of reallocation (by incorporating recent catch), but also minimize divergence from the current allocation system in order to strike a balance between the requirements of National Standard 4 (which requires management measures to be fair and equitable, but which recognizes that fishing privileges may need to be allocated among fishermen), and National Standard 8 (requiring management measures to minimize adverse economic impacts, to the extent practicable, on fishing communities. Recent landings (and pelagic longline dead discards) for each quota category are expressed as the average percentage of the total catch from 2008 through 2010. Although most of the analyses in this FEIS are based upon data from the period 2006 through 2012, the years 2008 to 2010 were selected as the appropriate time period for this analysis because it is within the seven-year period covered by most of the analyses in this document and for consistency with the Amendment 7 Predraft and DEIS analyses. As explained below, the time period selected has little effect on the resulting allocations due to the incorporation of both of the two elements (i.e., current codified allocations and recent catch). Table 2.2 contains the proportion of total catch (landings and dead discards) by each category, and Table 2.3 shows the resulting allocations, based on the data in Table 2.2, and the current allocation percentages.

Table 2.2 Proportion of Total Bluefin Landings and Dead Discards by Category & Year (%)

Category	2008	2009	2010	Average
General	26.00	28	57	37.00
Harpoon	2.00	3	2	3.00
Purse Seine	.00	1	0	.30
Longline*	24.00	20	21	22.00
Trap	.03	0	0	.01
Angling	48.00	48	19	38.00
Total	100.00	100	100	100.00

* Not including NED data

An example of how the revised allocation would be calculated follows:

The Longline category, as illustrated in Table 2.2, averaged 22 percent of the total bluefin landings and dead discards. Under equal weighting, the allocation formula is: (.5 × current allocation) + (.5 × average recent catch) = revised allocation. Therefore, using the Longline category, the current Longline allocation is 8.1 percent and the average bluefin catch from 2008 through 2010 represents 22 percent of the average total U.S. catch. Therefore the revised allocation for the Longline category under equal weighting would be: (.5 × .081) + (.5 × .22) = .149, or 14.9 percent (Table 2.3).

Due to the influence of recent catch, the Longline and Angling categories would have an increased allocation (compared with the current allocation), while the General, Purse Seine, and Harpoon categories would have a decreased allocation compared with the current allocation. Data from 2006 through 2012 were also analyzed as the basis for this alternative, and the resulting allocation percentages differed very little from those based on the period 2008 through 2010 (because when weighted 50 percent, differences in the average catch had relatively little influence). As noted in the introduction to this chapter, the alternatives presented here use updated data through 2012, so some of the landings and quota levels are slightly different than those presented in the DEIS; however, none of this updated data changed the underlying measures. The Purse Seine fishery had a period of relative inactivity until the 2013 season. Inclusion of 2013 data would likely result in slightly higher allocation for the Purse Seine category than this analysis indicates; however during the development of this FEIS, complete 2013 data for all quota categories was not available. This alternative is intended to account for dead discards by more closely aligning allocations with recent catch.

Equal weighting of the currently codified allocation percentage and recent catch provides a balanced approach. By limiting the weighting of recent catch to one-half, the formula takes into consideration the variability in recent catch resulting from variability in bluefin availability to the different categories.

Table 2.3 Reallocation of Quota based upon Recent Catch and Current Allocations

Category	Current Allocation* (%)	Revised Allocation (%)	Current Allocation (mt)	Revised Allocation* (mt)
General	47.1	42.00	435.1	387.9
Harpoon	3.9	3.30	36.0	30.4
Purse Seine	18.6	9.50	171.8	87.6
Longline	8.1	14.90	74.8	137.5
Trap	0.1	.05	0.9	0.4
Angling	19.7	29.00	182.0	267.8
Reserve	2.5	1.30	23.1	12.0
Total	100.0	100.0	923.7	923.7

* Based on a U.S. quota of 923.7 (i.e., not including NED)

Alternative A 2c - Reallocation from Purse Seine to Longline Category

This alternative would reallocate two-fifths (40 percent) of the current Purse Seine category quota to the Longline category. Under current regulations, the Purse Seine category is allocated 18.6 percent of the U.S. quota. Each year, the Purse Seine category quota is divided equally among Purse Seine category participants that have requested in writing an allocation for that year.

Under the current regulations, a permit that is not associated with a vessel is not eligible to receive a quota allocation. NMFS has, however, via a Letter of Authorization, deemed all five of the existing long-term purse seine fishery participants who have received quota allocations in the past to continue to be eligible for allocations if requested. Thus, although two of the five Purse Seine participants' permits are no longer associated with vessels, they remain eligible for allocations and for renewed participation in the fishery. Under this alternative, the Purse Seine category base allocation percentage would be reduced by two–fifths, from 18.6 percent to 11.2 percent of the U.S. quota, while the Longline base allocation would be increased from 8.1 percent to 15.5 percent of the U.S. quota.

Thus, for example, if the total U.S. quota is 923.7 mt, the Purse Seine quota would decline from 171.8 under the existing allocation methodology to 103.1 mt under this alternative, while the Longline quota would increase from 74.8 to 143.5 mt.

The rationale for this strategy is based upon two factors: (1) There has been very low (and in some years no) catch of bluefin by the purse seine fishery since 2006; and (2) although there are currently five participants in the Purse Seine category, two of the permits are not associated with active or readily available purse seine fishing vessels, and therefore there has been no fishing activity associated with those two Purse Seine permits. However, the Purse Seine fishery participants have requested annual quota allocations. Thus, a reduction for the category analyzed under this alternative could be warranted because the category does not need as much quota for its operations as it did historically when all five permits were active in the fishery.

2.1.3 Alternative A 3 - Annual Reallocation

Alternative A 3a - Annual Reallocation of Bluefin Quota from Purse Seine Category (Preferred)

Under this alternative, 25 percent of the Purse Seine category bluefin quota would be guaranteed to be available to the five historically permitted fishery participants (permit holders) in that category, but beyond that, the bluefin quota would be based on the previous year’s landings and dead discards. Based on a formula, quota may be reallocated from the Purse Seine category to the Reserve category annually. The allocation formula is designed to allocate a minimum level of quota to permitted fishery participants, as well as enable quota to increase over successive years, in order to avoid being too restrictive. Note that NMFS would still have the regulatory authority to transfer quota inseason to or from any fishing category to or from the Reserve, and could continue to transfer any amount of quota inseason, even if purse seine vessels received the minimum amount of quota (25 percent) at the start of the season. Consistent underutilization of quota by a particular quota category is inefficient; it limits the Agency’s ability to provide reasonable opportunities to harvest the U.S. quota and thereby runs counter to optimizing fishing opportunities by decreasing flexibility in the bluefin quota allocation system. By moving portions of the Purse Seine quota (that based on the previous year’s activity may be anticipated to remain unused) to the Reserve category annually, this alternative would give NMFS more flexibility in administering the quota system each year. With this increased flexibility, NMFS would be able to respond better to variability in bluefin interactions and catch across the different fisheries across years. This would also give NMFS some additional discretion to more efficiently distribute and utilize the bluefin quota while ensuring it is done in a fair and equitable manner.

Based on public comment, this alternative has been modified from the version in the DEIS.

Under the modified alternative, annual reallocation would be based on the previous year’s individual purse seine vessel catch rather than category-wide catch. The modified alternative would tie quota allocation more closely to individual vessel catch and create incentive for fishery participants to remain active in the fishery. Thus, the individual allocation could either increase or decrease. Without this modification to the alternative, individual allocations would be tied to the catch of the other vessels in the fishery, which could have unfair results if catch were to vary greatly among the vessels. For example, in a year where overall category landings were low, an individual purse seine vessel could be allocated a relatively low amount of quota, even if it landed a substantial portion of its allocation the previous year. As such, the alternative would not tie the allocation to catch and thus would not encourage full use of the category quota, which would be inconsistent with the intent of this alternative.

Under this alternative as modified, each fishery participant would initially be given a fifth of the quota available to the category for the year (e.g., 159.1 mt divided by five participants equals 31.8 mt per participant). Next, NMFS would determine the annual quota available for use by each individual Purse Seine participant that year, based on the previous year's performance. Each participant would have available either 25 percent, 50 percent, 75 percent, or 100 percent of its allocation share of the base Purse Seine quota, depending upon the level of their bluefin catch the previous year (see Table 2.4 and Figure 5). At a minimum, each participant would have available 6.36 mt annually (25 percent), assuring them some level of fishing opportunity each year. Using the 50, 75, and 100 percent thresholds provides opportunity to increase the available Purse Seine quota allocation in the subsequent years and not lock-in low, or high, levels of allocation.

After individual allocations have been made, NMFS would then annually determine how much category quota is available for reallocation to the Reserve category. If the cumulative catch for all of the participants were high (i.e., greater than 70 percent of the baseline category quota), no Purse Seine category quota would be reallocated to the Reserve category. Conversely, if cumulative catch for all vessels were low (i.e., between 0 and 20 percent), a percentage of the category's cumulative baseline allocation would be available to reallocate to the Reserve category. Any quota not allocated to the Purse Seine category would be allocated to the Reserve category to support other objectives, based on the authority and criteria described above and in Section 2.1.4 (Modifications to Reserve Category). The total amount allocated to the Reserve category would depend on the level of bluefin catch by all of the fishery participants in the previous year. This annual adjustment formula is based on the total Purse Seine category quota, which would reflect a total quota based upon the preferred codified allocation alternative, Alternative A 2a, if implemented.

If an Individual Bluefin Quota system (IBQ) is implemented and trading is authorized between the limited access categories (see Purse Seine and Longline categories (Alternative C 2c)), quota traded to the Longline category from the Purse Seine category would not count as quota "caught" by the Purse Seine category for the purpose of determining the subsequent year's quota allocation for individual vessels. This alternative is designed to provide quota that may otherwise be unused by the Purse Seine category, to the Reserve category, but also ensure that a minimum amount of quota is available for the purse seine vessels to catch, and to enable the purse seine fishery to increase in its level of activity over time. The quota allocation to the Purse Seine category would not be based on trading of IBQ during the previous year, because NMFS does not want to encourage vessels to lease quota instead of catch quota, and the need to also optimize quota allocation among all the other quota categories.

Table 2.4 Annual Reallocation of Bluefin Quota from Purse Seine Participants (using a Purse Seine quota of 159.1 mt as an example; five purse seine participants receive 31.8 mt each)

Year A	Year A + 1		
Amount of Purse Seine Base Quota *Caught* by Purse Seine Participant	Amount of Purse Seine Base Quota *Allocated* to Purse Seine Participant	Amount of Purse Seine Base Quota *Available for Reallocation* to other Categories per Participant	Maximum Amount of Total Purse Seine Base Quota *Available for Reallocation* to other Categories
0 to 6.4 mt (0 to 20%)	8 mt 25% (minimum quota)	23.8 mt 75%	119 mt 75%
>6.4 to 14.3 mt (>20% to 45%)	15.9 mt 50%	15.9 mt 50%	79.5 mt 50%
>14.3 to 22.3 mt (>45% to 70%)	23.8 mt 75%	8 mt 25%	40 mt 25%
>22.3 to 31.8 mt (>70% to 100%)	31.8 mt 100%	0 mt 0%	0 mt 0%

As noted above, there are currently five participants in the Purse Seine category. Using a Purse Seine category quota of 159.1 mt as an example, each purse seine participant would have a baseline allocation of 31.8 mt. If a purse seine participant does not catch any bluefin in year A, then the following year, it would be allocated 25 percent of the baseline quota (i.e., if year A catch is 0 – 20% of the base quota, then year A + 1 quota would be 25% of base quota). Following the same logic, if a purse seine participant were to catch 21 – 45% of the base quota in year A, then they would be allocated 50% of the base in year A + 1; if 46 – 70% of the base was caught in year A, then 75% would be allocated in year A + 1, and lastly, if 71% or greater was harvested, then 100 percent of the baseline allocation would be available to catch in year A + 1. Figure 2.3 depicts the various allocation scenarios graphically while Table 2.4 shows the various allocation levels based on the previous year's catch (i.e., Year A). To ensure the purse seine participants are not locked-in to low levels of allocation, the amount of catch needed to move to a different allocation bracket has been staggered (5%). See the first row in Table 2.4: If catch is between 0 and 6.4 mt, the vessel would remain at the 8 mt allocation in the following year; however if catch were to be between 6.4 mt and 14.3 mt, then the subsequent year's allocation would jump a level and become 15.9 mt. If the formula were not staggered (i.e., catching greater than 20% of base quota yields a quota of 50% of base quota in the next year), a vessel would be fixed at a low level of quota. For example, if the formula were that if a vessel catches 25% of the quota it still is limited to 25% of the quota the next year, a vessel would be unable to increase the amount of quota it is allocated. The staggered formula results in a system where, if a vessel catches the majority of what they are allocated, they would get additional quota the following year (catch greater than 20%, and the vessel gets 50%; catch greater than 45% , the vessel gets 75%; catch greater than 70%, the vessel gets 100%.). A vessel catching zero would be allocated

25%, but if they caught greater than 20% they would be bumped up to an allocation of 50%, and so on.

The amount of purse seine base quota available for reallocation in Year A + 1 would be based on each vessel's catch in the previous year (Year A), as shown in Table 2.4. For example, if an individual vessel catches between 0 and 6.4 mt in Year A and remains at the 8 mt (25%) allocation in Year A + 1, as described above, 23.8 mt (75%) would be available for reallocation (baseline allocation of 31.8 mt – 8 mt allocated to vessel = 23.8 mt available for reallocation). The maximum amount of total purse seine base quota available for reallocation in Year A + 1 would depend on the catch of each individual participant. Following the same example, if 23.8 mt is available for reallocation in Year A + 1 from each of the five purse seine participants, a total of 119 mt, or 75% of the Purse Seine category base quota, would be available for reallocation (23.8 mt X 5 vessels = 119 mt). The actual amount of total purse seine base quota available for reallocation may differ as each purse seine vessel may catch a different percentage of its allocation and therefore receive different allocations in the following year, ranging from 25 to 100 percent for each vessel.

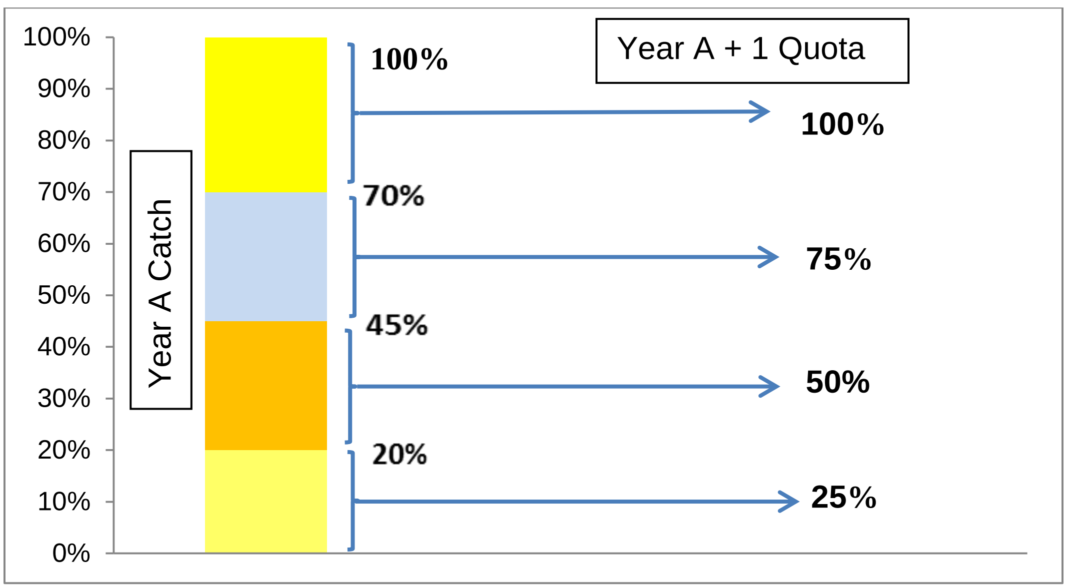


Figure 2.3 Annual Reallocation: Relationship between Individual Vessel's Year A Catch and Year A + 1 Quota

Alternative A 3b – Annual Purse Seine Allocation Commensurate with the Number of Purse Seine Vessels

This alternative would make Purse Seine category quota available annually to that category based on the number of active Purse Seine vessels and would reallocate the remainder to the Reserve category. Under current regulations, all Purse Seine category permit holders must request their allocation in writing prior to April 15 each year and 100 percent of the Purse Seine category quota allocated, even if only three of the five Purse Seine category permits holders make the request, thus each vessel would receive 33.3% of the entire Purse Seine category quota.

In contrast, under this alternative, only those requests from active Purse Seine category permitted vessels would receive an annual allocation. An active Purse Seine vessel would be defined as a vessel with a valid Purse Seine category permit, has requested and received an allocation in accordance with the regulations (§ 635.27(a)(4)), and is capable of fishing purse seine gear (defined at § 635.21(e)(vi)) to harvest Atlantic bluefin tuna. The net result would be only those Purse Seine category permit holders with active vessels would receive Purse Seine quota and individually they would be allocated one fifth of the overall Purse Seine base quota, acknowledging the preferred codified allocation alternative (Alternative A 2a) under which the Purse Seine base quota would be 159.1 mt. This alternative would address the fact that the Purse Seine allocation was intended to be an amount for five limited access permitted purse seine vessels, but the amount of fishing activity has been very low, with two of the permits not even being associated with vessels. The total Purse Seine allocation would be prorated downward to reflect the actual size of the active purse seine fishery. Table 2.5 below shows how the number of permitted Purse Seine vessels would affect the allocation. In the DEIS the numbers in this table were slightly larger because the calculation did not reflect the incorporation of the "Codified Reallocation Alternative," which has the effect of reducing the total Purse Seine quota by 12.7 mt.

Table 2.5 Purse Seine Category Allocation Based on Potential Number of Permitted Vessels

Number of Permitted Purse Seine Vessels	Purse Seine Quota (based on example of 159.1 mt)	Quota Available for Transfer to Reserve Category from the Purse Seine Category
1	31.8	127.3
2	63.6	95.5
3	95.5	63.6
4	127.3	31.8
5	159.1	0

2.1.4 Alternative A 4 - Modifications to Reserve Category

Alternative A 4a - No Action

Under the No Action alternative, there would be no changes to the allocation to the Reserve category or the determination criteria that are considered prior to making any adjustments to/from this category. The Reserve category would be allocated the current 2.5 percent of the U.S. annual quota, and NMFS could allocate any portion of the Reserve category quota for inseason or annual adjustments to any other quota category provided NMFS considered the current determination criteria and other relevant factors first. The current determination criteria are: (1) The usefulness of information obtained from catches in the particular category for biological sampling and monitoring of the status of the stock; (2) the catches of the particular category quota to date and the likelihood of closure of that segment of the fishery if no adjustment is made; (3) the projected ability of the vessels fishing under the particular category quota to harvest the additional amount of bluefin before the end of the fishing year; (4) the estimated amounts by which quotas for other gear categories of the fishery might be exceeded;

(5) effects of the adjustment on bluefin rebuilding and overfishing; (6) effects of the adjustment on accomplishing the objectives of the fishery management plan; (7) variations in seasonal distribution, abundance, or migration patterns of bluefin; (8) effects of catch rates in one area precluding vessels in another area from having a reasonable opportunity to harvest a portion of the category's quota; and (9) review of dealer reports, daily landing trends, and the availability of bluefin on the fishing grounds. NMFS would publish a Notice in the Federal Register as well as provide other public notification of any such inseason or annual adjustment.

Alternative A 4b - Modify Reserve Category (Preferred)

This alternative would increase the amount of quota that may be put into the Reserve category from several sources and expand the potential uses of Reserve category quota. Specifically, it would potentially increase the Reserve category quota beyond the current baseline allocation of 2.5 percent and broaden the determination criteria to be considered in making adjustments to/from the Reserve category. The potential sources of additional quota that could be put into the Reserve category are the following: (1) Unharvested U.S. quota from the previous year (to the extent carryforward is allowable); (2) available quota from the Purse Seine category under the annual reallocation alternative (Alternative A 3a); and/or (3) quota not allocated to the Purse Seine category when fewer than five of the permitted Purse Seine vessels are active (Alternative A 3b).

For example, under the annual reallocation alternative (A 3a), if NMFS were to determine that less than 45 percent of the Purse Seine quota had been caught (category wide, summing the catch among the permits allocated quota) during that year and therefore in the subsequent year, 50 percent of the Purse Seine quota would be reallocated into the Reserve category (see Figure 2.3 or Table 2.4).

To broaden the potential uses of Reserve category quota, this alternative would add the following five criteria to the current list of nine criteria at 635.27(a)(8), and described in Alternative A 4a, as relevant factors NMFS considers when making inseason or annual quota adjustments: (10) optimize fishing opportunity; (11) account for dead discards; (12) facilitate quota accounting; (13) support other fishing monitoring programs through quota allocations and/or generation of revenue; and (14) support research through quota allocations and/or generation of revenue. By including these additional criteria, NMFS could transfer Reserve bluefin quota to the General category if pelagic longline vessels were authorized to fish under General category rules (Subalternative B 1b), or bluefin quota from the Reserve category could be used to support research, account for dead discards, etc. With the new criteria, NMFS could also use the reserve to "restore" quota that was reallocated pursuant to Alternative A 2a (Codified Reallocation to Longline Category Reflecting the Historical 68 mt Dead Discard Allowance). These six additions to the quota adjustment criteria are intended to provide additional flexibility to enhance and facilitate the management of the fishery.

2.2 Area Based Alternatives

The management alternatives in this section are geographically based and rely principally upon either restricting the use of pelagic longline gear in specific areas or providing vessels that possess pelagic longline gear conditional access to current closed areas. This document refers to the currently existing area-based restrictions as “closed areas,” and refers to the alternatives under consideration as “gear restricted areas.”

2.2.1 Alternative B 1 – Pelagic Longline Gear Restricted Areas

The primary objectives of considering pelagic longline gear restricted areas are to reduce bluefin interactions, thereby decreasing the potential for dead discards, and to optimize fishing opportunity consistent with National Standard 8 by taking into account the importance of fishery resources to fishing communities, National Standard 9 by reducing bycatch and bycatch mortality, to the extent practicable, and National Standard 4 by selecting measures that do not discriminate between residents of different states. Reducing bluefin dead discards would support the goals of the 2006 Consolidated HMS FMP by reducing bycatch and bycatch mortality while also minimizing the economic and social impact on the pelagic longline fishery.

The gear restricted area alternatives are designed based upon the identification of areas with relatively high bluefin interaction rates with pelagic longline gear based on HMS logbook and observer data. Modifications to the Cape Hatteras and Gulf of Mexico Gear Restricted Areas in the FEIS (both preferred alternatives) are based on public comment and resulting additional considerations and analyses. These modifications are presented as new alternatives so that the environmental, ecological, and economic impacts are clear, and to allow clear comparison between the DEIS and the revised alternatives. The modifications do not, however, rise to the level of “substantial changes” to the proposed action that result in environmental impacts beyond the range analyzed in the DEIS. In fact, the changes result in alternatives that better meet the stated objectives of the proposed action, within the anticipated range of the environmental effects analyzed in the DEIS, while being responsive to public comment and concerns about the action’s ability to meet those objectives as originally proposed. The “Modified Cape Hatteras Pelagic Longline Gear Restricted Area” in this FEIS is based on modifications of the Cape Hatteras Pelagic Longline Gear Restricted Area” analyzed in the DEIS. Specifically, the shape and total size of the area was modified by removal of a small triangular portion of the southeast corner of the rectangle that was proposed, to relieve unintended effects on fishing outside the closed area that would have resulted from the GRA as originally proposed.

The “Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area” in this FEIS was based upon modifications to the “Small Gulf of Mexico Gear Restricted Area” analyzed in the DEIS. In addition to our intent to update analyses with 2012 data when available, specific public comments in response to the DEIS stated that NMFS should update and reconsider the logbook and observer data for the eastern Gulf of Mexico before selecting an alternative in the final action. The modifications were based on updating the data with the most recent information and reconsidering it, which indicated some adjustment was needed to better reflect shifts in bluefin distribution over time. Because there are consistent patterns of interactions (i.e., particular vessels having a high number of bluefin interactions over several years), some of the alternatives focus on specific high-interaction vessels in order to reduce the potential economic impacts of the gear restricted area on the fishery as a whole, while achieving meaningful reductions in bluefin interactions. The modifications do not, however, rise to the level of “substantial changes” to the proposed action that result in environmental impacts beyond the range analyzed in the DEIS. In fact, the changes result in alternatives that better meet the stated objectives of the proposed action, within the anticipated range of the environmental effects analyzed in the DEIS, while being responsive to public comment and concerns about the action's ability to meet those objectives as originally proposed.

Discussion of the Use of Gear Restricted Areas

The effectiveness of these alternatives would depend upon the defined area and time of the restriction(s) coinciding with the presence of bluefin in the area(s), the availability of the target species outside of the gear restricted area(s), the presence of bluefin outside the gear restricted area(s), annual variability in bluefin interactions, environmental conditions that may drive the distribution of bluefin (e.g., the Gulf Stream), and other factors that affect the feasibility of fishing for the target species outside of the gear restricted area(s).For example, fishing opportunities may be reduced in gear restricted areas if vessels cannot relocate to nearby areas during that time (e.g., nearby areas are already heavily fished, or are inaccessible due to cost or safety concerns).

Restrictions on the use of pelagic longline gear within a specific geographic area during a period when there is a high likelihood of bluefin catch could effectively reduce dead discards, while potentially minimizing disruption of the pelagic longline fishery. A successful gear restricted area would balance the ecological benefits of the restriction (reduction in interactions resulting in dead discards and minimizing interactions with protected/restricted resources) with the economic costs (e.g., reduction in pelagic longline fishing opportunity for target species, increased costs of accessing other areas).

Alternative B 1a – No Action

This alternative would maintain the existing time/area closures applicable to all permitted HMS vessels fishing with pelagic longline gear and would not implement additional pelagic longline gear restricted areas (i.e., a defined area and time period in which the use of pelagic longline gear is prohibited). The current closures are depicted in Figure 2.4.

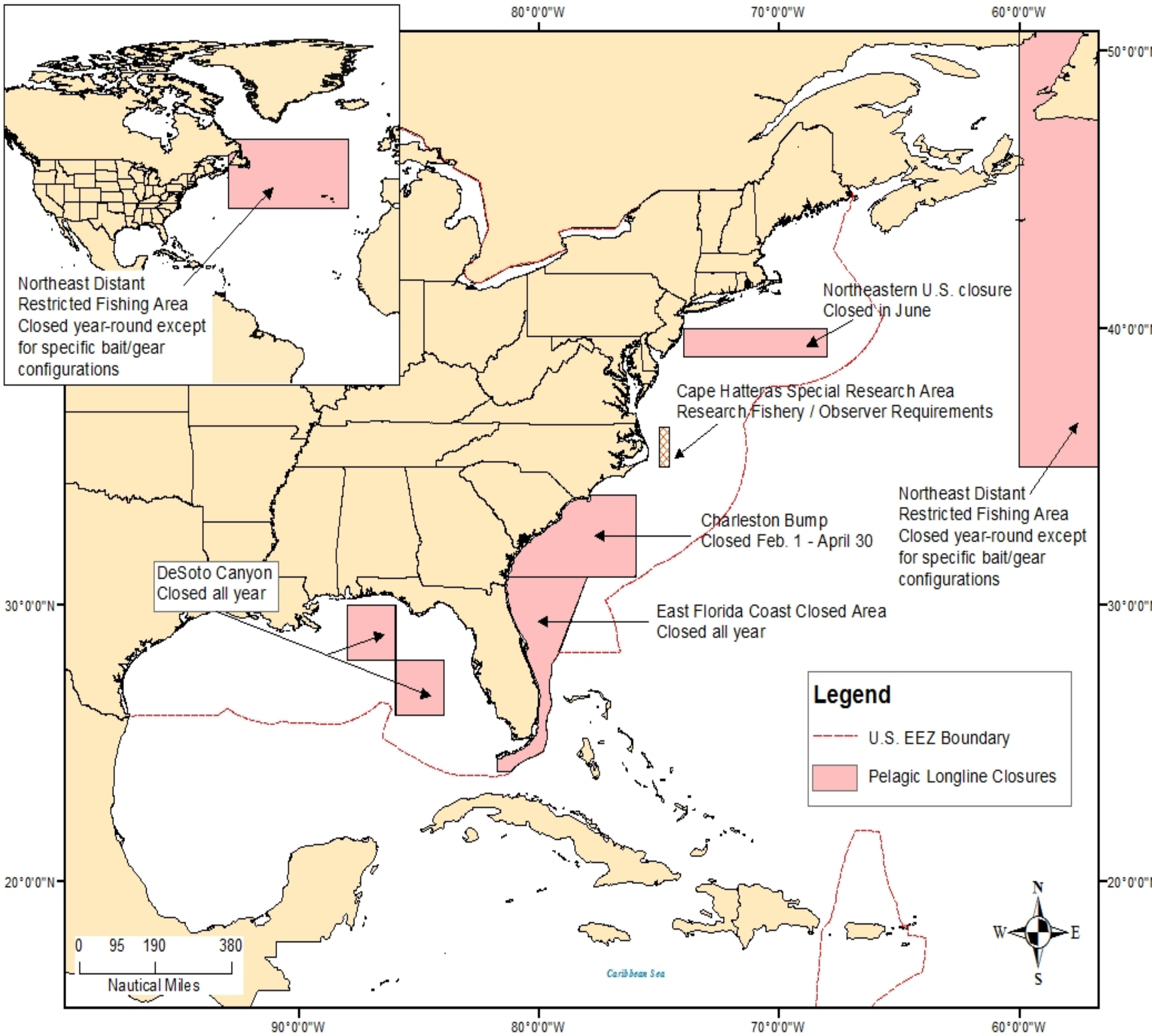


Figure 2.4 Current Highly Migratory Species Pelagic Longline Closed Areas

Alternative B 1b – Cape Hatteras Pelagic Longline Gear Restricted Area

This alternative would define a modified rectangular area off Cape Hatteras, North Carolina, and prohibit the use of pelagic longline gear annually during the five-month period from December through April. Other gear types authorized for use by pelagic longline vessels, such as buoy gear, green-stick gear, or rod and reel, would be allowed. Alternative B 2b would provide additional flexibility for such vessels to use buoy gear. The Cape Hatteras Gear Restricted Area coordinates are found in the text box of the map in Figure 2.5.

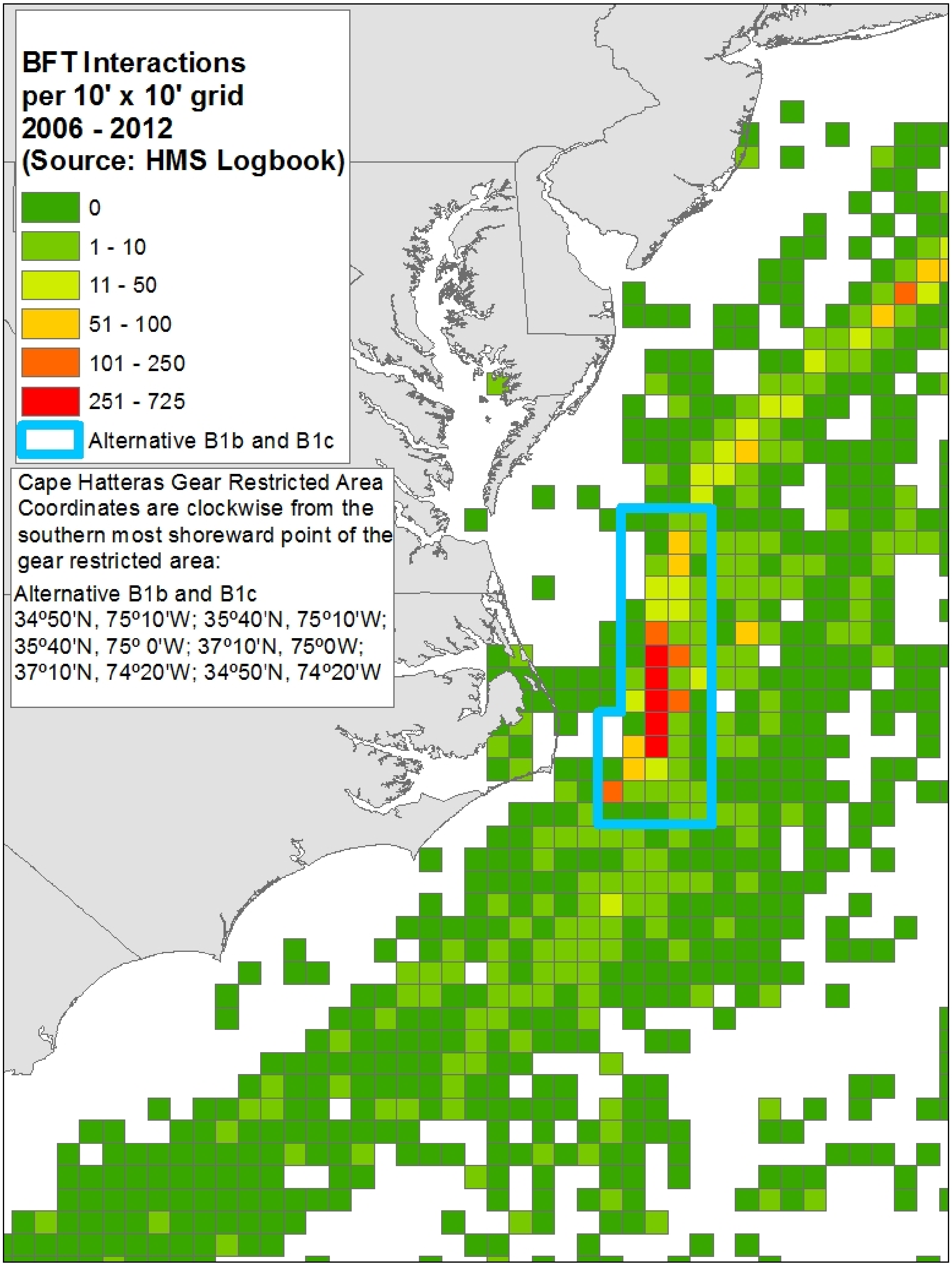


Figure 2.5 Cape Hatteras Gear Restricted Area, Showing Number of Bluefin Interactions with Pelagic Longline Gear (2006 – 2012)

This region off North Carolina contains seasonally consistent concentrations of bluefin and catches by the pelagic longline fleet. Logbook and observer data indicate that historically there have been relatively high catches and catch rates of bluefin by pelagic longline vessels in this region. The specific time and area of the Cape Hatteras Gear Restricted Area represents a time and area combination likely to result in reduced interactions based on past patterns of interactions.

Alternative B 1c – Cape Hatteras Pelagic Longline Gear Restricted Area with Access based on Performance

Under this alternative, NMFS would annually review pelagic longline vessel performance using three performance metrics and, based on that review, authorize some vessels fishing with pelagic longline gear to have access to the Cape Hatteras Gear Restricted Area. As described in more detail below, the performance metrics are: (1) level of bluefin interactions/avoidance; (2) observer program participation; and (3) logbook submissions. NMFS would notify vessel owners by mail whether or not they are authorized to fish in the area. This alternative would use the same area off Cape Hatteras, North Carolina, as in Alternative B 1b, and would define criteria for access by HMS permitted vessels fishing with pelagic longline gear during the five-month period from December through April. Vessels that are determined by NMFS to have a relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements would be allowed to fish in the area using pelagic longline gear. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel has demonstrated its ability to avoid bluefin, but has had poor compliance with reporting and monitoring requirements, it would not be allowed to fish with pelagic longline gear in this area from December through April. Individual vessel data would be evaluated annually for the purpose of determining access, and results would be communicated to the individual permit holders via a permit holder letter. This evaluation would be based on the most recent complete information available in order to provide future opportunities and accommodate changes in fishing behavior, both positively and negatively, based on performance.

Under this alternative, the use of other authorized gear types such as buoy gear, green-stick gear, or rod and reel, would be allowed in the Cape Hatteras Gear Restricted Area by all pelagic longline vessels. NMFS could stop access by all pelagic longline vessels to the area via inseason action to address issues including: (1) Failure to achieve or effectively balance the objective of reducing dead discards with the objective of providing fishing opportunity; (2) bycatch of bluefin tuna or other HMS that may be inconsistent with the objectives or regulations or the 2006 Consolidated HMS FMP or ICCAT recommendations; or (3) bycatch of marine mammals or protected species that is inconsistent with the MMPA, Pelagic Longline Take Reduction Plan (PLTRP), or relevant biological opinions.

The principal objective of conditional access would be to balance reducing dead discards with providing reasonable fishing opportunities. The secondary objective would be to provide strong incentives to avoid bluefin tuna and to reduce dead discards by modifying fishing behavior, as well as incentives to comply with reporting and monitoring requirements. This approach would address the fact that relatively few vessels have consistently been responsible for the majority of the bluefin dead discards. Compliance with reporting and monitoring requirements reflects the critical importance of fishery data to the successful management of the fishery. NMFS decided that performance metrics should be simple, objective, and quantifiable in order to be easily understood and relatively straightforward to implement.

If in the future NMFS determines that the performance metrics should be re-evaluated, NMFS would consider revising the conditions for access through separate proposed and final rulemaking to ensure that the performance metrics continue to support the objectives of the gear restricted area. For example, NMFS could re-define numerical measures of vessel performance that would reflect the rate of interactions with bluefin and compliance with logbook reporting and observer monitoring requirements.

Performance Metrics

Bluefin Interactions Performance Metric

NMFS would score vessels on their ability to avoid bluefin. As detailed below, NMFS would define a numeric system that would reflect a vessel's bluefin avoidance history, which would contribute toward the vessel's overall performance score. The initial bluefin avoidance history would be based upon a vessel's rate of interactions during 2006 through 2012, and future scores would be based upon the most recent complete three-year period. Specifically, the ratio of the number of bluefin interactions (number of fish; landings, dead discards, and live discards) to the weight of designated target species landings (in pounds) would be used to reflect the level of bluefin interactions.

Only HMS logbook data would be used to evaluate performance. NMFS received comments from pelagic longline fishermen that suggested that NMFS also include Coastal Fisheries Logbook data in the calculation of designated target species landings. However, there are fundamental differences between the types of data that are collected through the two logbook programs (e.g., in the Coastal Fisheries Logbooks, data are reported at the trip level vs. by set, data are reported in aggregate weight by species instead of individual fish weights, data are reported by map grid vs latitude/longitude for each set) that make the data inconsistent with the HMS logbook data. Evaluation of performance using data that is inconsistent may reduce the overall quality and utility of the data, by increasing uncertainty, and the cost of its use. Furthermore, discard information is only provided by the vessel operators on a fraction of the Coastal Fisheries Logbooks because they are not required to do so, unless selected. Therefore, one of the key data elements (discard data) is not well documented in the Coastal Fisheries Logbook database. Vessel reporting through the Coastal Fisheries logbook represents a minority of the active pelagic longline vessels. The Coastal Fisheries landings represent approximately one percent of the HMS logbook landings. Thirty-one vessels reported catching pelagic indicator species through the Coastal Fisheries logbook (using pelagic longline gear between 2006 and 2012). Of those vessels, only 14 caught more than 1,000 lb of pelagic indicator species per year (on average). For these reasons, NMFS would only incorporate HMS logbook data into the designated target species calculations. Furthermore, all commercial fishermen with HMS on board are required to report these fish through the HMS logbook.

Designated species would consist of the more common marketable catch by pelagic longline vessels such as swordfish, yellowfin tuna, bigeye tuna, albacore, skipjack, dolphin, wahoo, porbeagle, shortfin mako, and thresher sharks. The use of a ratio incorporating both designated target species landings and bluefin interactions provides a metric that is intended to eliminate bias resulting from the differences among vessels in size or fishing effort. The ratio would utilize the vessels' designated species landings (expressed as weight) from NMFS's dealer data (weigh-out slips) and HMS logbook information, and the bluefin tuna logbook catch data. The ratio of bluefin discards to designated species landings would enable the identification of specific vessels that have not demonstrated the ability to avoid bluefin at the level exhibited by the majority of the fleet.

Levels of bluefin interactions would be scored and would serve as one of the determining factors for access to the Cape Hatteras Gear Restricted Area. To develop this alternative, NMFS analyzed and ranked the data at the vessel level to determine the overall distribution (i.e., the pattern) of the ratios in the fishery. In order to select the thresholds for scoring, NMFS considered both the Amendment 7 objective of reducing dead discards and the objective of optimizing fishing opportunity. The bluefin tuna interactions to designated species landings (× 10,000) ratio performance metric scoring system is below in Table 2.6.

Table 2.6 Bluefin Tuna Interactions to Designated Species Landings (× 10,000) Ratio Performance Metric Scoring

Ratio of Bluefin Interactions to Designated Species Landings (× 10,000)					
Data Range	0	> 0 to < 1	≥ 1 to < 2	≥ 2 to < 3	≥ 3
Score	5	4	3	2	1

This scoring system would enable the majority of vessels to continue to fish in the gear restricted areas, yet would substantially reduce bluefin dead discards by precluding those with high designated species to bluefin interaction ratios. Figure 2.6 shows the frequency distribution of the bluefin interactions to designated target species landings ratio among vessels. The first two vertical bars illustrate the number of vessels with a bluefin interactions to designated species landings ratio (ratio) of zero (24 vessels), and a ratio of greater than zero and less than one (69 vessels), respectively. Vessels that have a POP Compliance Score of 3, 4, or 5 would, provided that the bluefin-to-designated target species ratio was low enough, have access to the Modified Cape Hatteras Gear Restricted Area. This equates to nearly 84 percent of the fleet; however, not all of these vessels fish in areas close enough to the Modified Cape Hatteras Gear Restricted Area to take advantage of access privileges.

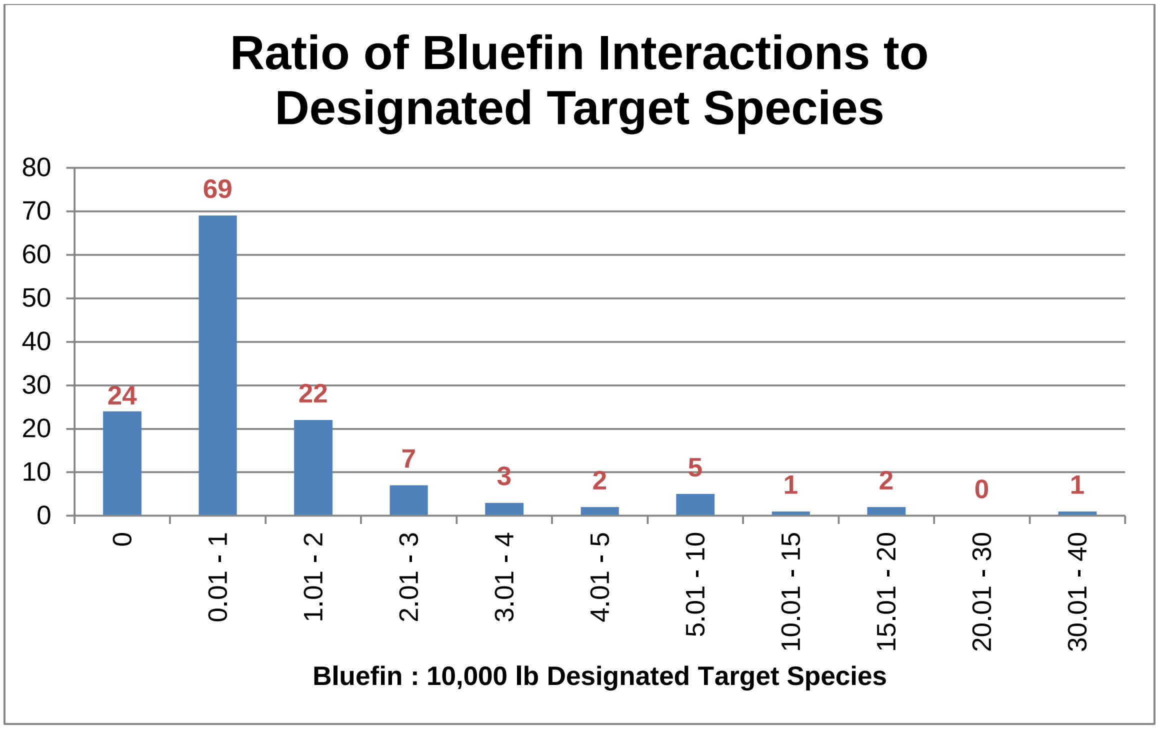
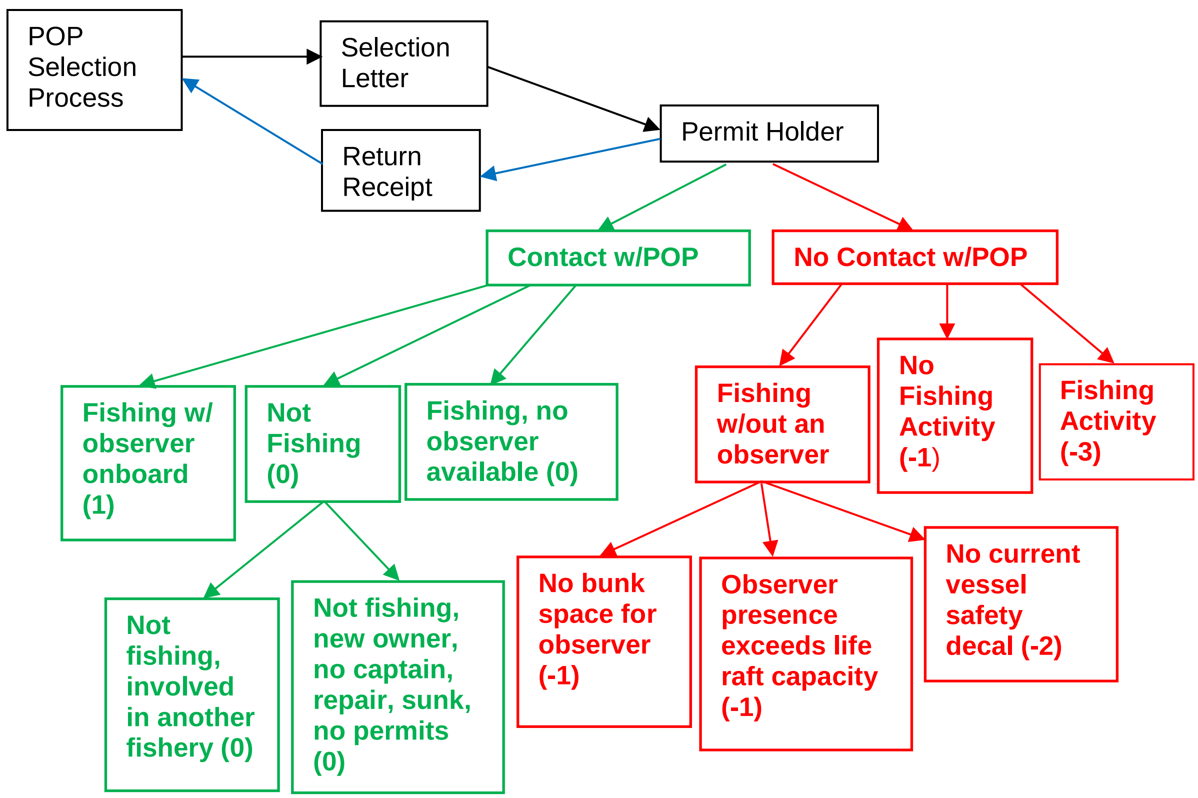


Figure 2.6 Frequency Distribution of Ratio of Bluefin Interactions to Designated Target Species Catch (× 10,000)

Note the shift in the size of the bins along the x-axis (relatively narrow increments of interactions to wider increments).

Pelagic Observer Program Compliance Performance Metric

Under this performance metric, NMFS would score vessels based on their compliance with POP requirements. Specifically, NMFS would utilize POP data to define a numeric scoring system that would reflect compliance with the POP requirements. The scores would be associated with the compliance with the communications, and timing of those communications, with the POP; presence/absence of a USCG safety decal; life raft capacity, bunk space, vessel selection, and observer deployment. The scoring system is designed to be neutral with respect to valid reasons that a vessel may have been selected by the observer program, but did not take an observer (e.g., no observer was available, or the vessel did not fish using pelagic longline gear (for a variety of reasons)). The scoring system is also designed to weigh the communication elements/requirements more heavily than the safety aspects, as well as consider evidence of fishing activity, for purposes of determining eligibility for access (observer safety is prioritized by the agency because observers will not be placed on vessels that do not meet those requirements). This performance metric would contribute toward the vessel's overall performance score (used to determine access to the gear restricted area).



Circumstances identified by the POP for which a vessel may not have taken an observer upon selection:

<u>Reason</u>	<u>Description (score assigned by NMFS for Amendment 7)</u>
1	**no bunk available (-1)**
2	**observer presence exceeds life raft capacity (-1)**
3	**no current CFVSE decal (-2)**
4a	**no communication with POP office; no evidence of fishing activity (-1)**
4b	**no communication with POP office, evidence of fishing activity (-3)**
5	**not fishing; involved in another fishery (0)**
6	**not fishing; new owner, captain, repair, sunk, no permits (0)**

Figure 2.7 Flowchart detailing the communication between the Pelagic Observer Program and permit holders, and how subsequent actions were scored to develop a POP Compliance Score

In certain limited circumstances, a permit holder (or vessel) can be compliant with the regulations without taking an observer for a selected trip. The permit holder would need to contact the POP office when selected and communicate a valid reason for not being able to take an observer. Examples of this could include that the vessel was not fishing, or the vessel was fishing in another fishery. These selected trips would be scored as 0 as opposed to 1, for which an observer was taken, or with a negative score for not having a valid reason for non-compliance. Non-compliance includes failure to contact the POP office when selected (-1) and no fishing activity, or failure to contact the POP office when selected. Non-compliance with evidence of fishing activity would constitute the worst case scenario and result in a score of (-3). If an observer was not available to be deployed to a vessel selected for observer coverage, that vessel could go fishing and be in compliance with the regulations (score would be 0).

Table 2.7 Final POP Scoring Reference Table – (full description in the Appendix)

Percent Compliant	100%	80 - 100%	80 - 100%	< 80%	N/A
Percent Observed*	90 - 100%	> 60 - 90%	> 33 - 60%	0 - 33%	N/A
Initial Score	5	4	3	2	1
Final Scores	Equal to initial score unless evidence of fishing activity after either refusing to take an observer or non-communication with Pelagic Observer Program, which reduced the initial score by one. Vessels with a composite score less than 1 receive a final score of 1.				

* Percentage of Trips Observed

Logbook Compliance Performance Metric

Vessels with an Atlantic Tunas Longline category permit are required to submit HMS logbooks, including a separate form for each longline set. Fishermen are required to report the numbers of each species caught, the numbers of animals retained or discarded alive or discarded dead, the location of the set, the types and size of gear, and the duration of the set. The vessel owner/operator is required to submit the HMS logbook forms postmarked within seven days of offloading the catch, and, if no fishing occurred during a month, a no-fishing form must be submitted postmarked no later than 7 days after the end of that month.

NMFS would define a numeric system that would reflect compliance with the HMS logbook requirements, which would contribute toward the vessel's overall performance score. The initial logbook compliance score would be based upon the timeliness of the submissions during 2006 through 2012, and future scores would be based upon the most recent complete three-year period. The logbook performance metric would reflect the timeliness of the submission of the logbooks, and not address other aspects such as completeness and accuracy. NMFS could modify the performance metric through future rulemaking to incorporate other elements. Specifically, the following scoring system was developed (Table 2.11).

Table 2.8 Logbook Compliance Performance Metric Scoring

Logbook Compliance					
Data Type	Days Between Offload and Mail Opening				
Data Range	≤ 7	> 7 to ≤ 30	> 30 to ≤ 60	> 60 to ≤ 90	> 90
Score	5	4	3	2	1

Combining Scoring Elements into a Single Performance Score

Using the bluefin interactions performance metric, the POP compliance metric, and the HMS logbook compliance performance metric, an overarching performance formula was developed in order to derive a "yes" or "no" answer with respect to whether a vessel is granted access to the Modified Cape Hatteras Pelagic Longline Gear Restricted Area. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel can avoid bluefin but has poor compliance with reporting and monitoring requirements, it would not be allowed to fish with pelagic longline gear in this area. Specifically, vessels would be scored annually using data averaged from the most recent three consecutive-years to determine their ability to access this area in the upcoming year.

The first performance metric is that vessels with a bluefin tuna interaction score of 1 may not fish in the Modified Cape Hatteras Pelagic Longline Gear Restricted Area using pelagic longline gear. This metric supports the objective of reducing dead discards of bluefin by excluding vessels with a history of a substantial number of interactions with bluefin. The second performance metric is if a vessel’s POP Compliance score is 2 or less, a vessel may not have access to the area, unless the third performance metric of HMS vessel’s logbook compliance score is 4 or 5. The second and third performance metrics reflect the importance of compliance with the POP requirements as well as logbook reporting requirements. The performance formula includes these three metrics in order to provide some flexibility and additional incentives for vessels to comply with the POP and logbook requirements.

Annual Revision of Performance Metrics

Due to potential delays in processing the available data, the three consecutive-year period used during the annual qualification process may not align precisely with the previous calendar year. For example, data from the most recent complete three consecutive-year period would be used (e.g., 2011, 2012, and 2013 data would be used to determine performance metrics applicable to the 2015 fishing year, as 2014 POP and or HMS logbook data may not be finalized in a timely enough manner to be used in the subsequent year). Vessel owners would be notified annually of the status of the relevant vessel via a permit holder letter, and only aggregate information would be made available to the public. NMFS would have the ability to modify the performance metrics and the performance formula via a subsequent regulatory action, in order to optimize the achievement of the objectives of the gear restricted area.

Appeals and the Use of Historical Data

Permitted vessels owners would be able to appeal their performance scores to NMFS via the HMS Management Division and the National Appeals Office of NMFS by submitting a written request to appeal, indicating the reason for the appeal and providing supporting documentation for the appeal (e.g., copies of landings records and/or permit ownership, etc.). See Alternative C 2j for a description of the two-stage appeal process. The appeal would be evaluated based upon the following criteria: (1) The accuracy of NMFS records regarding the relevant information; and (2) correct assignment of historical data to the vessel owner/permit holder. The current owner of a permitted vessel may also appeal on the basis of historical changes in vessel ownership or permit transfers. Appeals based on hardship factors would not be considered.

In general, the use of historical data as part of management criteria can be complex due to historical transfers of the limited access permit from one vessel to another or changes in vessel ownership. It is therefore helpful to designate the relevant historical ‘platform’ (i.e., vessel or permit). Theses performance metrics (as well as Alternative C 2b) are based upon historical data associated with a permitted vessel. NMFS determined that the historical ‘platform’ upon which to base the quota share should be the vessel history instead of the permit history for the reasons discussed under Alternative C 2b.

Data Accuracy Performance Metric

NMFS considered a performance metric that would address the issue of data accuracy, and indicate how closely the vessel’s HMS logbook information reflects observer information, but decided not to include this metric among the criteria for access in order to simplify the overall criteria, and due to the variability in the number of observed trips in the fleet. NMFS may consider incorporating this metric into the overall criteria for access in the future.

Alternative B 1d – Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance (Preferred)

This alternative would delineate a gear restricted area off Cape Hatteras, North Carolina and prohibit the use of pelagic longline gear in the area annually during the five-month period from December through April. Access to the gear restricted area would be evaluated annually for each permitted vessel in the pelagic longline fleet using the same performance metrics discussed under Alternative B 1c.

This is a new alternative, which modifies the Cape Hatteras Gear Restricted Area analyzed in the DEIS. Public comment on that proposal reflected that the southeast portion of the proposed Cape Hatteras Gear Restricted Area had few bluefin interactions and is an important fishing area, raising questions about the necessity and efficiency of closing off restricting access to this particular portion of the gear restricted area. In response, NMFS analyzed additional spatial and temporal configurations of the Cape Hatteras Gear Restricted Area and determined that little conservation benefit could be expected from limiting access to this area and that the associated economic costs were not warranted.

Furthermore, commercial fishermen commented that as proposed, gear would tend to drift into the gear restricted area. Specifically, currents in this region are very strong and would push pelagic longline gear set south and west of the Cape Hatteras Gear Restricted Area into the southeastern corner of the originally analyzed Cape Hatteras Gear Restricted Area shortly after deployment. To avoid this result (i.e., to keep longline gear from floating into the restricted area) fishermen commented that they would have to avoid fishing in adjacent fishing areas, effectively resulting in a much larger-than-intended restricted area. Thus the prevailing currents would have, effectively, closed productive fishing grounds southwest of the Gear Restricted Area (in federal waters off the coast of central and southern North Carolina). Therefore, commercial fishermen in public comments, asked NMFS to consider modifying the proposed Cape Hatteras Gear Restricted Area by removing its southeastern corner. As a result of these analyses, and considerations, NMFS has modified the preferred alternative to a gear restricted area during the same months (December through April), but with a slightly different configuration.

Figure 2.8 shows the distribution of bluefin interactions with pelagic longline gear per 10’ x 10’ grid cell, and Figure 2.9 shows the average set revenue per 10’ x 10’ grid cell. This modification would not result in a large increase in bluefin interactions or pelagic longline effort, but would allow access to productive fishing grounds that were effectively closed by the original alternative. This alternative is as effective at reducing dead discards as would have similar the originally-proposed Cape Hatteras Gear Restricted Area while minimizing economic impacts to the extent practicable, consistent with the objectives of Amendment 7. The modified alternative thereby strikes a better balance between reducing dead discards of bluefin and continued operation of the pelagic longline fleet in the Atlantic. Therefore, NMFS prefers this modification (i.e., shaving off the southeast corner of the restricted area) to balance environmental, ecological, and economic impacts of the alternative.

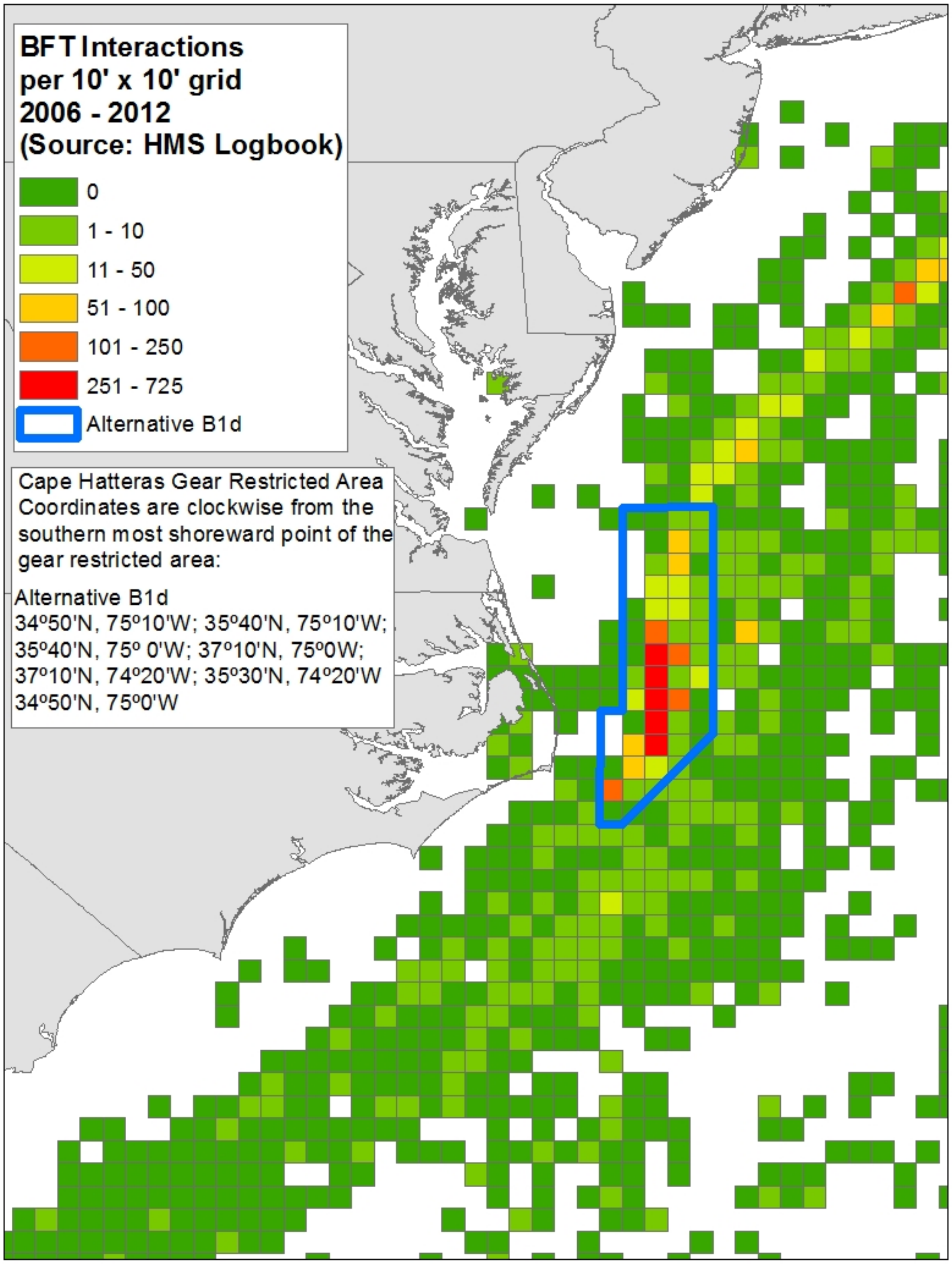


Figure 2.8 Modified Cape Hatteras Gear Restricted Area, showing number of bluefin interactions with pelagic longline gear (2006 – 2012)

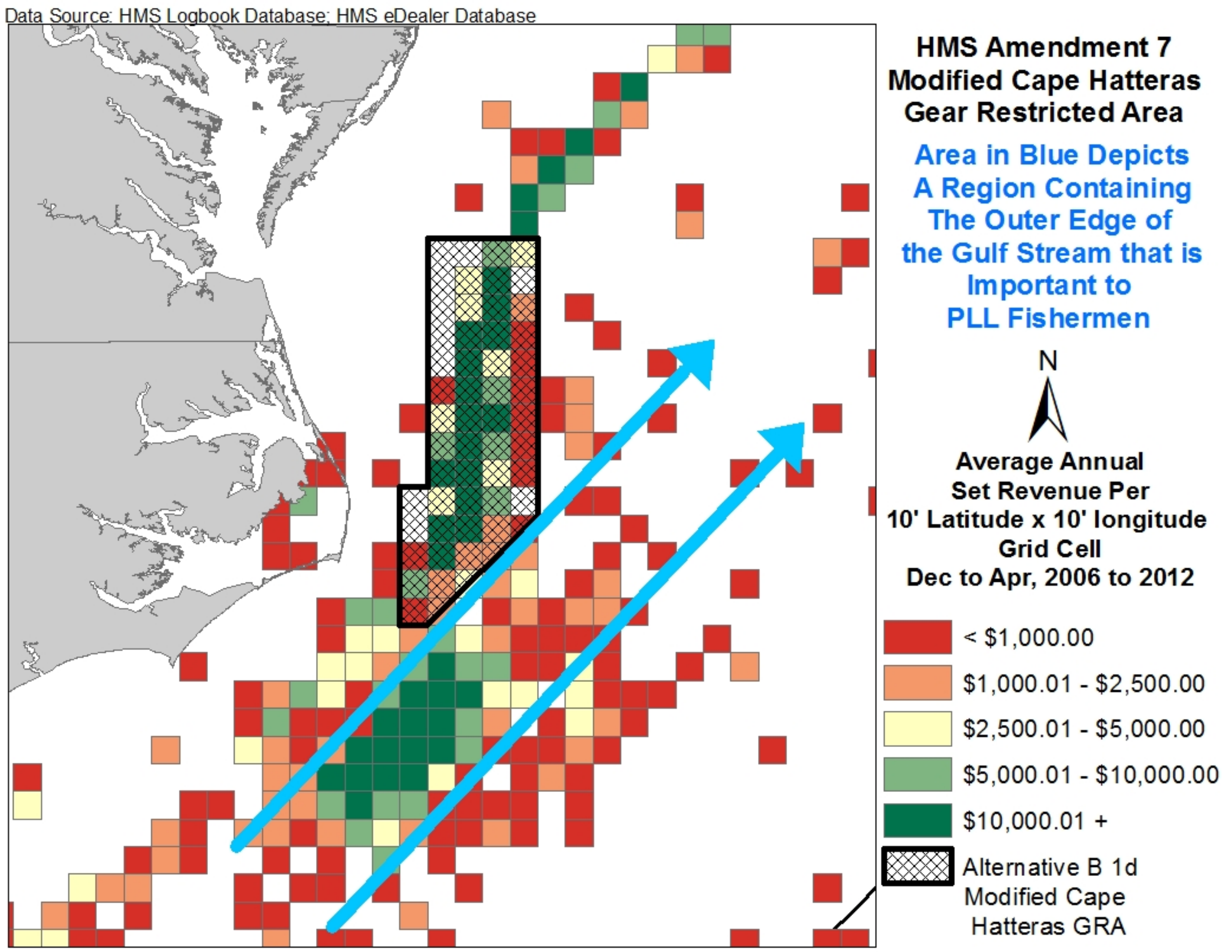


Figure 2.9 Modified Cape Hatteras Gear Restricted Area, showing average annual set revenue per 10 minute latitude x 10 minute longitude grid cell (2006 – 2012)

Alternative B 1e - Allow Pelagic Longline Vessels to Fish under General Category Rules

This alternative would let permitted vessels that are not allowed to fish with pelagic longline gear in the Cape Hatteras Gear Restricted Area (because of their Performance Metric score under Alternatives B1c or 1d) to instead fish for bluefin under General category rules. Currently, permitted pelagic longline vessels cannot retain bluefin unless they are caught incidentally on pelagic longline gear. Specifically, this alternative would allow vessels with valid HMS longline permits (Atlantic Tunas Longline category permit, Swordfish and Shark limited access permits) that are not allowed to fish with pelagic longline gear in the Cape Hatteras Gear Restricted Area to fish under the rules/regulations applicable to the General category. Such vessels would be able to target bluefin with gear authorized under the General category, including: rod and reel, handline, harpoon, etc., in the area defined as the Cape Hatteras Gear Restricted Area, during the time of the restriction (December through April), when the General category is open. The vessels would be subject to the bluefin retention limits in effect for the General category. The bluefin landed with authorized handgear would be counted against the General category quota.

The objective of this measure is to provide additional fishing opportunity for pelagic longline vessels and mitigate any potential negative economic impacts of the Cape Hatteras Gear Restricted Area, particularly for pelagic longline vessels that may not be able to fish in other areas during the time of the restriction. Prior to each trip, vessels would be required to declare through VMS their intent to fish under the General category rules, and report their catch daily through VMS.

The alternative was preferred in the DEIS; however, based upon public comment and further consideration, this alternative is no longer preferred in this FEIS, due to concerns about fairness, ecological impacts, and uncertain economic benefits. Other commenters were concerned about the expansion of a targeted bluefin fishery in the Cape Hatteras GRA, an area that already has large numbers of interactions with bluefin. Some noted concern about the potential impacts on the rate of harvest of the General category quota, which is limited, and the indirect impacts on General category vessels. Others noted that the replacement of pelagic longline gear with handgear (targeting bluefin) is not economically viable due to the size of the pelagic longline vessels and the associated trip expenses. Based on these public comments, NMFS determined that the potential benefits of allowing pelagic longline vessels, who are part of a limited access fishery, to fish under the open-access General category rules, do not outweigh the potential costs and risks associated with this activity at this time.

Alternative B 1f – Gulf of Mexico Exclusive Economic Zone (EEZ) Pelagic Longline Gear Restricted Area

This alternative would prohibit the use of pelagic longline gear in the Gulf of Mexico, defined as Federal waters west of 82° West longitude, for three months each year (March through May). Other gear types authorized for use by permitted HMS pelagic longline vessels such as buoy gear (see Alternative B 2b), greenstick gear, or rod and reel would be allowed, provided the vessel abides by any rules/regulations that accompany those gear types (e.g., bluefin tuna cannot be retained in the Gulf of Mexico if caught on rod and reel).

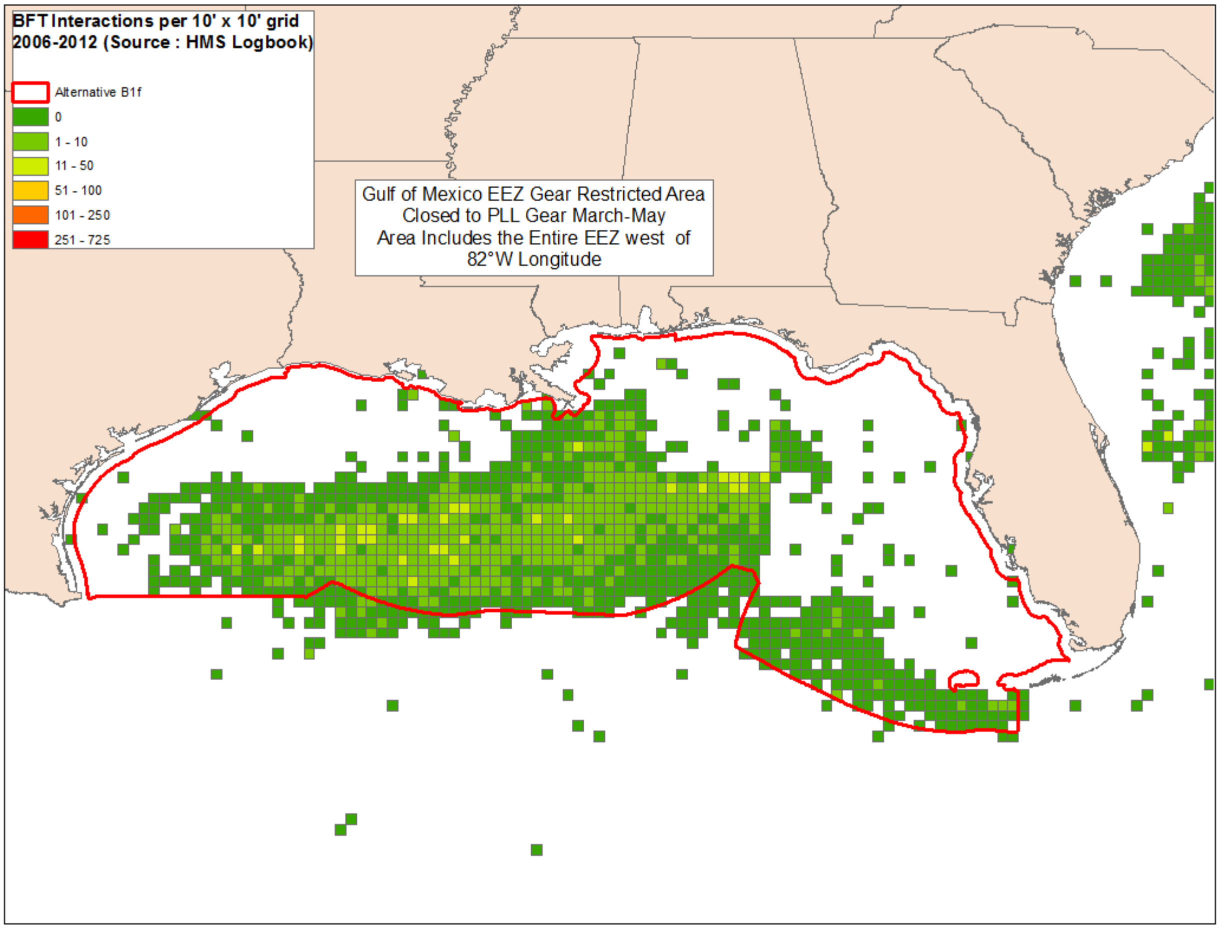


Figure 2.10 Gulf of Mexico Exclusive Economic Zone Gear Restricted Area (Alternative B 1f) Number of Bluefin Interactions with Pelagic Longline Gear (2006 – 2012)

The Gulf of Mexico is one of the areas where there are seasonal concentrations of bluefin tuna, as well as consistent catches by the pelagic longline fleet. HMS logbook and observer data indicate that historically there have been relatively high catch and catch rates of bluefin by pelagic longlines. Because bluefin tuna in the Gulf of Mexico consist of large fish that are likely sexually mature or spawning individuals, reducing interactions with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth. The specific time and area of the Gulf of Mexico EEZ Gear Restricted Area in this alternative represents a time and area combination likely to reduce interactions based on past patterns of interactions, as indicated by logbook and observer data (Figure 2.10). The large area would maximize the likelihood that the gear restricted area would account for the variability of bluefin location and result in reduced interactions (and dead discards). This alternative would also preclude all pelagic longline fishing in the Gulf of Mexico for three consecutive months, and have negative socio-economic impacts on pelagic longline owners and crew, associated businesses, and communities. The negative economic impacts may be both short and long-term. The ecological and socio-economic impacts are discussed in Chapters 4 and 5, respectively. This alternative is not preferred because, when compared with the Preferred Alternative, the negative socio-economic impacts outweigh the positive ecological impacts.

Alternative B 1g – Small Gulf of Mexico Pelagic Longline Gear Restricted Area

This alternative would define the Small Gulf of Mexico Gear Restricted Area and prohibit the use of pelagic longline gear in that area during the two-month period from April through May. Other gear types authorized for use by permitted HMS pelagic longline vessels such as buoy gear (see Alternative B 2b), greenstick gear, or rod and reel would be allowed, provided the vessel abides by any rules/regulations that accompany those gear types. The Small Gulf of Mexico Gear Restricted Area coordinates are found in the text box of the map in Figure 2.11.

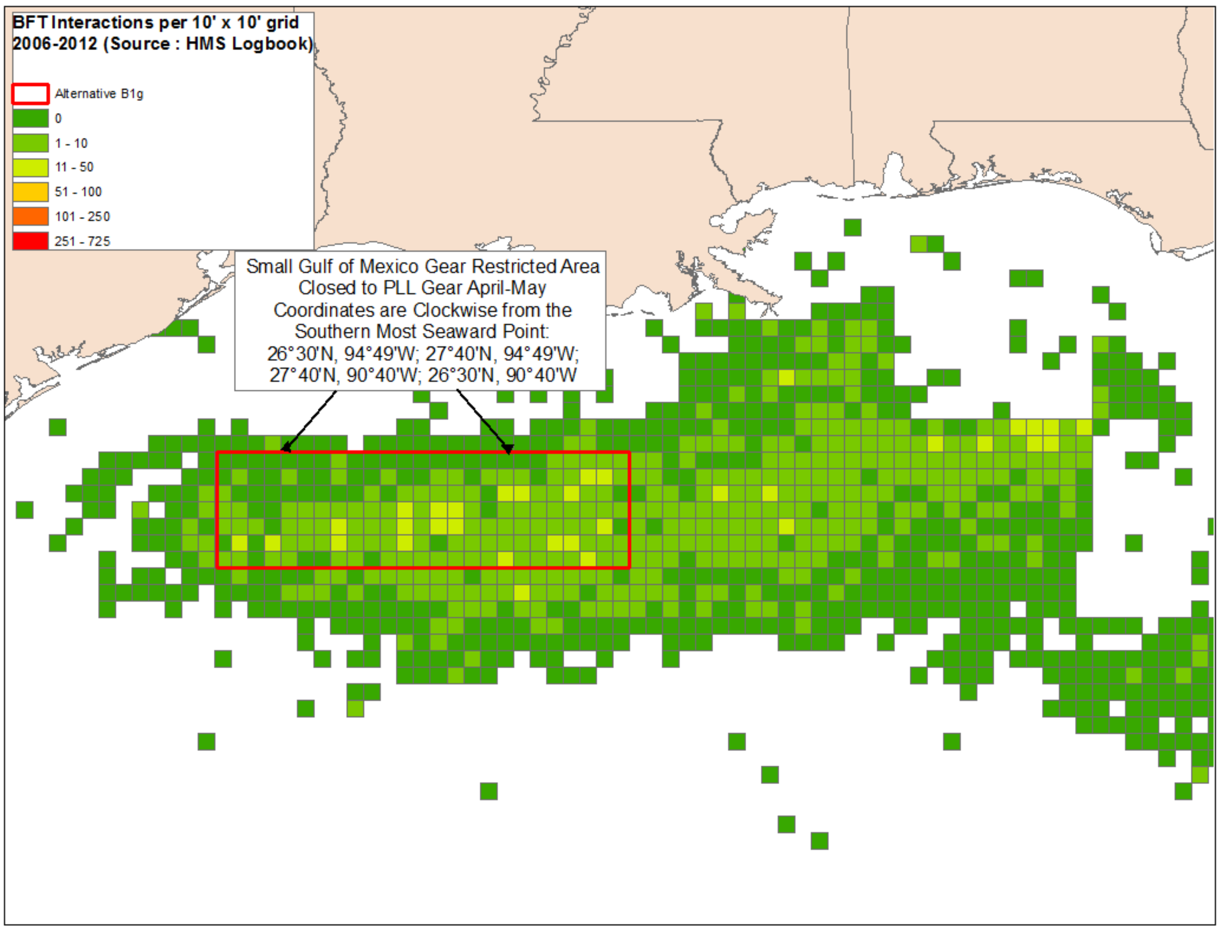


Figure 2.11 Small Gulf of Mexico Gear Restricted Area (Alternative B 1g) Number of Bluefin Interactions with Pelagic Longline Gear (2006 – 2012)

The Gulf of Mexico is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet. HMS logbook and observer data indicate that historically there have been relatively high bluefin catches and catch rates of bluefin by pelagic longline vessels in this region. Because bluefin tuna in the Gulf of Mexico are comprised of large fish that are likely sexually mature or spawning, reducing interactions with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth The alternative was not designed based on spawning season per se, but to maximize reduction in interactions. That said, the season during which the highest number of interactions occurs is a subset of the peak spawning season. Furthermore it is difficult to quantify the ecologic benefits of the ‘saving’ spawning fish versus non-spawners.

The specific time and area combination of the Small Gulf of Mexico Gear Restricted Area is likely to result in reduced interactions based on past patterns of interactions. The Small Gulf of Mexico Gear Restricted Area would provide a narrower restriction temporally and geographically than the Gulf of Mexico EEZ Gear Restricted Area. The Small Gulf of Mexico Gear Restricted area encompasses the larger levels of bluefin interactions based on the historical concentrations of bluefin interactions, and would provide a different balance of achieving the principal objectives of this amendment by reducing the time and areas restricted but reducing the potential for bluefin and pelagic longline gear interactions.

This alternative was preferred in the DEIS. However, after incorporating an additional year of data (2012), conducting an additional analysis (a year-by-year spatial distribution analysis of bluefin interactions, Figure 2.11), and considering public comments related to the configuration of a gear restricted area in the Gulf of Mexico, NMFS does not prefer this alternative in the FEIS. The new analysis indicated that there is a recent persistent trend in fishing effort shifting to the east of this area. Given this trend, and the known variability in the fishery in general (which the most recent data highlights), NMFS re-evaluated the costs and benefits associated with this GRA, and determined that a larger area in combination with an area in the eastern Gulf of Mexico would better achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico (see Alternative B 1i).

Alternative B 1h – Gulf of Mexico Pelagic Longline EEZ Gear Restricted Area (year-round)

This alternative would prohibit the use of pelagic longlines in the same area as in the Gulf of Mexico EEZ Gear Restricted Area (Alternative B 1f) (i.e., anywhere in the Gulf of Mexico), year-round. This comprehensive gear restricted area would provide the maximum amount of reduction in bluefin discards in the Gulf of Mexico. The Gulf of Mexico is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet. HMS logbook and observer data indicate that historically there have been relatively high catches and catch rates between pelagic longlines and bluefin tuna in this region. Because bluefin in the Gulf of Mexico are comprised of large fish that are likely sexually mature or spawning, reducing all interactions with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth. This alternative would also preclude all pelagic longline fishing in the Gulf of Mexico for the entire year, and have negative socio-economic impacts on pelagic longline owners and crew, associated businesses, and communities. The negative economic impacts may be both short and long-term. The ecological and socio-economic impacts are discussed in Chapters 4 and 5, respectively. This alternative is not preferred because, when compared with the Preferred Alternative, the negative socio-economic impacts outweigh the positive ecological impacts.

Alternative B 1i –Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas (preferred)

This alternative would establish modified gear restricted areas in the central Gulf of Mexico that would prohibit the use of pelagic longlines from April through May. This alternative is based upon an additional year of data (2012), consideration of public comments related to the configuration of the Small Gulf of Mexico Gear Restricted Area, which was the preferred alternative in the DEIS and resulting analyses (a year-by-year spatial distribution analysis of bluefin interactions, Figure 3.18 - Figure 3.38). The total area of the Modified Spring Gulf of Mexico Gear Restricted Areas is slightly larger than that of the Small Gulf of Mexico Gear Restricted Area. The Modified Spring Gulf of Mexico Gear Restricted Areas are comprised of two separate areas: an area based on the Small Gulf of Mexico Gear Restricted Area preferred in the DEIS, but extended to the east, and reduced in size on the western and northern borders, and a second area that is adjacent to the southern border of the Desoto Canyon Closed Area's northwestern 'block.' The modifications do not, however, rise to the level of "substantial changes" to the proposed action that result in different environmental impacts or impacts beyond the range analyzed in the DEIS. In fact, the changes result in alternatives that better meet the stated objectives of the proposed action, within the anticipated range of the environmental effects analyzed in the DEIS, while being responsive to public comment and concerns about the action's ability to meet those objectives as originally proposed.

Public comments both in support of and opposition to the GOM GRA alternatives in the DEIS and proposed rule were numerous. Given the high level of public interest, it was clear that updated analysis and consideration were warranted, consistent with our stated intent at the DEIS stage to update data as available. The updated analysis indicated that there is a recent persistent trend in fishing effort shifting to the east of this area. Given this trend, and the known variability in the fishery in general (which the most recent data highlights), NMFS re-evaluated the costs and benefits associated with this GRA, and determined that a modified, slightly expanded area in combination with an area in the eastern Gulf of Mexico would better achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico. A geographic area larger than what was proposed would, over a multiple year time frame, be more effect at reducing bluefin tuna interactions than a smaller area (the previously preferred alternative), given the variability of the fishery. The specific boundaries of the area were determined by an iterative process, by selecting areas of historical pelagic longline interactions with bluefin, and comparing both the anticipated reduction in bluefin interactions, and the estimated reduction in revenue, of different configurations. The eastward shift in the location of the gear restricted area (compared to the previously preferred area) reflects the eastward shift in fishing effort over recent years. Inclusion of the area adjacent to the DeSoto Canyon Closed Area (Figure 2.12, Box B) reflects the pattern of concentrated bluefin interactions in that area, due to the location of bluefin and known fishing behavioral patterns (where vessels tend to fish along the margins of closed areas). The shift in the location of the western and northern borders compared to the previously preferred alternative provides some additional areas for fishing opportunity. Chapters 4 and 5 contain the detailed analyses.

NMFS will conduct a three-year review to evaluate the effectiveness of the Modified Spring Gulf of Mexico Gear Restricted Areas during the review of the Individual Bluefin Quota program described in Section 2.3.2, and will consider any changes at that time as appropriate.

The Modified Spring Gulf of Mexico Gear Restricted Areas consist of straight lines connecting points described in the text boxes on the following map (Figure 2.12).

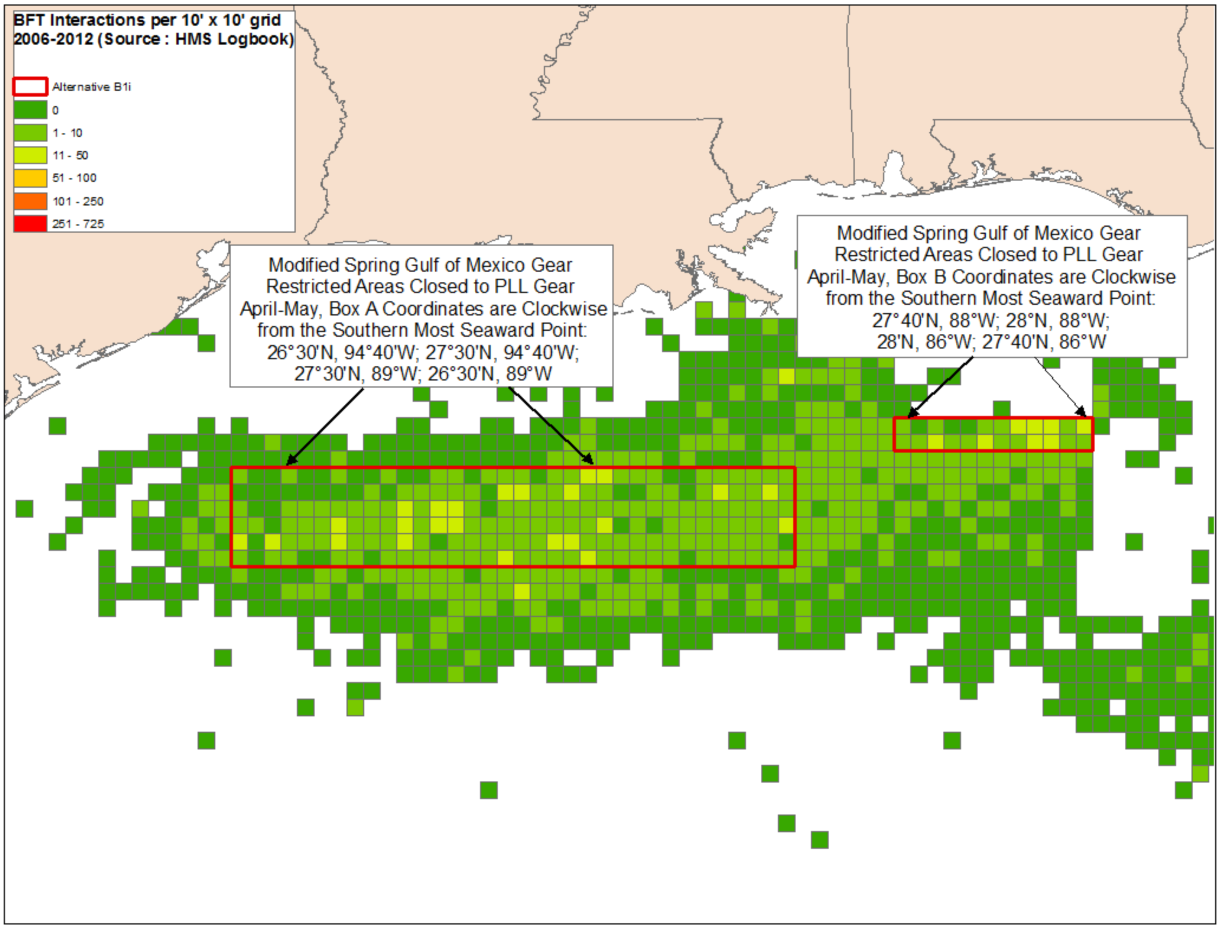


Figure 2.12 Modified Spring Gulf of Mexico Gear Restricted Areas (Alternative B 1i) Number of Bluefin Interactions with Pelagic Longline Gear (2006 – 2012)

Alternative B 1j – Pelagic and Bottom Longline Transiting Closed Areas (Preferred)

This alternative, although not directly associated with the Gear Restricted Areas or the performance criteria to access those areas, and preexisting closed areas, would allow HMS vessels that possess bottom or pelagic longline gear on board to transit areas with this gear type provided they remove and stow the gangions, hooks, and buoys from the mainline and drum. The hooks would not be allowed to be baited. There are currently a number of time/area closures for vessels possessing pelagic and bottom longline gear in effect, and Amendment 7 would implement additional area-based restrictions. The current regulations do not provide vessels to which these restrictions apply (i.e. those fishing with pelagic or bottom longline) the ability to stow their gear and transit the areas. Instead, the vessels must go around the areas to remain in compliance with the regulations. This alternative would allow vessels to transit the following pelagic longline closed and restricted areas, provided the conditions are met: Northeastern U.S. Closure, Northeast Distant Restricted Fishing Area, Charleston Bump, Modified Cape Hatteras Pelagic Longline Gear Restricted Area, East Florida Coast Closed Area, DeSoto Canyon Closed Area, and Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area. This alternative would allow vessels to transit the following bottom longline closed areas in effect: Mid-Atlantic Shark, Snowy Grouper Wreck, Northern South Carolina, Edisto, Charleston Deep Artificial Reef, Georgia, North Florida, St Lucie Hump, East Hump, Madison-Swanson, Steamboat Lumps, and Edges 40 Fathom Contour.

In addition to the economic costs associated with indirect routes of travel (more time at sea and more fuel, etc.), the fact that vessel have not been able to transit restricted areas has caused safety-at-sea concerns among vessel operators. If vessels may legally steam home taking direct routes, instead of steaming around closed and restricted areas, time at sea is minimized, and associated risks are reduced.

2.2.2 Alternative B 2 - Gear Measures

Alternative B 2a– No Action (Preferred)

The “no action” alternative would not change current authorized gear requirements (with respect to the use of buoy gear and associated restrictions on possession of bigeye, albacore, yellowfin, and skipjack tunas (BAYS) and bluefin) applicable to those vessels with an Atlantic tunas Longline category permit and either a Swordfish Directed or Swordfish Incidental permit. Currently, vessels with an Atlantic tunas Longline category permit must also have both a Swordfish Directed or Incidental permit, and a Shark Directed or Incidental permit.

The following aspects of the current gear restrictions under the No Action Alternative that are most relevant to the management measures analyzed in this amendment are the following: (1) Vessels with the Atlantic Tunas Longline category permit are allowed to fish for BAYS using a variety of gears, including handgear (e.g., rod and reel, handline, and harpoon), but are only allowed to retain bluefin when fishing with pelagic longline or greenstick gear; (2) vessels with the Atlantic Tunas Longline category permit and a Swordfish Directed permit are allowed to use buoy gear to harvest swordfish, but may not retain tuna (BAYS or bluefin) using buoy gear; and (3) vessels with the Swordfish Incidental permit may not fish with buoy gear at all.

These restrictions are illustrated by the two following scenarios created by two potential permit combinations. In the first scenario, a vessel is issued an Atlantic Tunas Longline category permit and a Swordfish Directed permit. If vessel operators wish to retain incidentally caught tuna, they may not use buoy gear. Although the Swordfish Directed permit allows a vessel to fish with buoy gear, the retention of tunas when fishing with buoy gear is not allowed by the Atlantic Tunas Longline category permit because buoy gear is not an authorized gear type for Atlantic tunas. Vessels with the Swordfish Directed permit may fish with buoy gear north of 5 degrees North latitude, but may deploy no more than 35 buoys, and may only retain swordfish when using buoy gear (and must discard tunas). In the second scenario, a vessel is issued an Atlantic Tunas Longline category permit and a Swordfish Incidental permit. Under this scenario, the vessel operator may not use buoy gear to harvest swordfish or BAYS tunas because buoy gear is not authorized for use under either permit.

Table 2.9 shows when pelagic longline, buoy, and greenstick gear may be used to harvest tunas and swordfish depending upon what permits a vessel has.

Alternative B 2b – Authorization of Vessels with a Swordfish Incidental Permit to Use Buoy Gear

This alternative would authorize vessels with a Swordfish Incidental permit to fish with buoy gear, except vessels fishing in the East Florida Coast Closed Area, defined in §635.2. Under this alternative, vessels would still be limited to 35 buoys. The rationale for this alternative is to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities. There is currently a 35 buoy limit for the commercial sector, which was implemented to prevent excessive amounts of unattended floating gear from being lost while allowing vessels to possess spare gear onboard.

Authorizing the use of buoy gear in the East Florida Coast Closed Area under a Swordfish Incidental permit is not preferred in order to not increase fishing effort in the area and reduce potential gear conflicts that could occur due to the large number of fishermen in proximity to the area. The amount of fishing effort in the region is an important management consideration because this area is a unique migratory corridor, which provides important habitat for many highly migratory species and protected species, including swordfish, marlin, sailfish, sea turtles, and marine mammals. The east coast of Florida, and in particular the Florida Straits, contains one of the richest concentrations of marine life in the Atlantic Ocean. A 2003 United Nations Food and Agriculture Organization study stated that the Florida Straits had the highest biodiversity in the Atlantic Ocean, and is home to 25 endemic species.

Alternative B 2c – Allow Vessels with a Swordfish Directed or Incidental Permit and an Atlantic Tunas Longline Permit to Retain BAYS and Bluefin when Fishing with Buoy Gear

This alternative would allow vessels with an Atlantic Tunas Longline category permit and the Swordfish Directed or Incidental permit to retain BAYS and bluefin when fishing with buoy gear. The rationale for this alternative is the same as for Alternative B 2b: to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities in the context of new restrictions that may be implemented by Amendment 7. This alternative would have no effect on vessels with a Swordfish Incidental permit, unless Alternative B 2b is adopted. On its own, this alternative would provide additional flexibility for vessels with a Swordfish Directed permit and an Atlantic Tunas Longline permit.

Because vessels with pelagic longline gear on board have many associated restrictions that are triggered by the possession of this gear type (i.e., closed areas; hook, gangion, and bait restrictions; Protected Species Workshop attendance, observer coverage, etc.), this alternative would affect such restrictions.

For example, if a vessel affected by this alternative removes the pelagic longline gear and fishes instead with buoy gear, it would no longer be subject to the closed areas that apply to vessels fishing with pelagic longline gear, or the pelagic longline gear hook and bait restrictions.

Table 2.9 No Action Compared to Increased Flexibility to Use Buoy Gear

Valid Permits Issued to Vessel	**Alternative B2a - No Action (*preferred*)**		**Alternative B2b**		**Alternative B2c**	
	Allowed Gear*	Allowed Tunas and Swordfish	Allowed Gear*	Allowed Tunas and Swordfish	Allowed Gear*	Allowed Tunas and Swordfish**
Atlantic Tunas Longline Swordfish Directed [Shark Directed or Incidental]	Pelagic longline	Bluefin Swordfish BAYS	Pelagic longline	Bluefin Swordfish BAYS	Pelagic longline	Bluefin Swordfish BAYS
	Greenstick	Bluefin BAYS	Greenstick	Bluefin BAYS	Greenstick	Bluefin BAYS
	Buoy gear	Swordfish	Buoy gear	Swordfish	Buoy gear	Swordfish BAYS
Atlantic Tunas Longline Swordfish Incidental [Shark Directed or Incidental]	Pelagic longline	Bluefin Swordfish BAYS	Pelagic longline	Bluefin Swordfish BAYS	Pelagic longline	Bluefin Swordfish BAYS
	Greenstick	Bluefin BAYS	Greenstick	Bluefin BAYS	Greenstick	Bluefin BAYS
			Buoy gear**	Swordfish	Buoy gear**	Swordfish BAYS

* The scope of this table only includes Pelagic longline, Greenstick, and Buoy gear. ** Except in the East Florida Coast closed area.

2.2.3 Alternative B 3 - Access to Closed Areas Using Pelagic Longline Gear

Background

NMFS has closed a number of areas to fishermen who have pelagic longline gear on board to reduce bycatch. The Northeastern closure was designed to reduce bluefin tuna discards; the Charleston Bump, East Florida Coast, and DeSoto Canyon closures were designed to reduce the discards of undersized swordfish, billfish, sharks, and other species; and the NED restrictions are designed to reduce interactions with leatherback and loggerhead turtles. NMFS continues to explore methods of reducing bycatch in all HMS fisheries and for all gear types.

Alternatives

These alternatives would annually allow a small number of vessels to fish commercially in the current closed areas. The alternatives include various conditions including carrying an observer, reporting catch via VMS, and other vessel-specific criteria. Specifically, the alternatives in this section consider allowing some limited, conditional access to these areas to provide some limited additional fishing opportunities and to collect commercial fishery data that may inform future management decisions and stock assessments and help to evaluate the effects of the closure. The limits and conditions of the alternative (described below) would ensure the continuation of the protective effects of the closures. These alternatives will be considered in conjunction with the Gear Restricted Area alternatives (Section 2.2.1) and would help mitigate negative economic impacts that could result from those restrictions. The collection of commercial fishery data from closed areas is important because many areas have been closed for a long time, and regulations and the stock status of some species have changed since the areas were closed to pelagic longline gear.

For example, in the time since the existing closed areas were implemented, circle hook, bait, and weak hook restrictions have been implemented and North Atlantic swordfish have been rebuilt. Because the regulatory and ecological context of the closed areas has changed, commercial data from within the areas would be informative.

Although Exempted Fishing Permits (EFPs) currently allow research in these areas, commercial fishing behavior is different from field research based on an experimental design. Commercial data would further augment NMFS's understanding of closed areas.

Alternative B 3a – No Action (Preferred)

This alternative would maintain the current regulations that do not allow vessels to enter a closed area with pelagic longline gear during the time of the closure, unless issued an Exempted Fishing Permit. Although in the DEIS the No Action alternative was not preferred, in this FEIS, the No Action is the Preferred Alternative, based upon additional information, public comment, and further consideration of potential administrative costs (as explained below in Alternative B 3b).

Alternative B 3b – Limited Conditional Access to Closed Areas

This alternative would allow restricted and conditional access to the following closed areas: Charleston Bump closed area (February through April), a portion of the East Florida Coast closed area (year-round), the DeSoto Canyon closed area (year-round), and the Northeastern U.S. closed area (June). This alternative would provide some access to the portion of the East Florida Coast closed area north of 28° 17' 10" North latitude, east of the 100 fathoms curve. The area south of 28° 17' 10" North latitude, and west of the 100 fathoms curve would be precluded due to south Florida's unique importance as a swordfish and tuna migratory corridor and as juvenile swordfish habitat that is easily accessible to a large population center with many fishermen (also see discussion under Alternative B 2b).

The objectives of this alternative would be to maintain the relevant conservation aspects of closure areas, balance the objectives of the closures, provide commercial data from within the closures, provide additional fishing opportunities for permitted pelagic longline vessels, and mitigate the potential negative economic impacts of other draft Amendment 7 alternatives that may be implemented. Commercial data from within the closed areas may be used to evaluate the effectiveness and/or impacts of closed areas as well as for stock assessments or other management measures.

Vessels selected to take an observer in a given statistical area and that qualify under the performance formula would be eligible to access closed areas and fish using pelagic longline gear provided the closed area fell within the statistical area they were selected for and an observer is deployed for that trip. Vessels would be informed annually whether they qualify via a permit holder letter, and about the status of the access program. Current NMFS POP vessel selection procedures would be used to select vessels using the current strata (i.e., the procedures that select vessels to obtain observer coverage each calendar quarter, and deploy in each of various geographic (statistical) areas).

For example, if a vessel was selected to take an observer for the Mid-Atlantic Bight statistical area or the Northeast Central statistical area, and the vessel qualified under the performance formula, the vessel would be able to fish in the Northeastern U.S. closed area in June as long as an observer is onboard (the Northeastern U.S. closed area straddles two statistical areas). If the vessel were selected to take an observer for the Gulf of Mexico and again the vessel qualified under the performance formula, the vessel would be able to fish in the DeSoto Canyon closed area during the quarter selected for observer coverage as long as an observer is on board.

The scope of the alternative and its effects would depend upon the level of observer coverage. Currently, a minimum of eight percent of fishing effort is covered and funded wholly by NMFS. Due to the limits on the level of observers, observer coverage would serve as the principal constraint to the amount of access. If an industry-funded observer program is developed and implemented, in a subsequent regulatory action, the procedures for observer deployment may be modified and access could potentially increase. Participating vessels would be required to "declare in" to the area via their VMS unit and report species caught and effort daily via VMS.

NMFS would have the ability to terminate access to each closed area overall if warranted, , in order to address issues including: (1) Bycatch of marine mammals or protected species that is inconsistent with the MMPA, Pelagic Longline Take Reduction Plan, or the relevant BiOp; (2) failure to achieve or effectively balance the objective of reducing dead discards with the objective of providing fishing opportunity; or (3) bycatch of bluefin tuna or other HMS that may be inconsistent with the objectives or regulations or the 2006 Consolidated HMS FMP, or ICCAT recommendations. Depending on when NMFS becomes aware new information as it pertains to the issues listed above, terminating an individual vessel's access, or access to each closed area overall, could be conducted annually or inseason.

When considering whether or not to terminate access to a closed area, NMFS would evaluate the following criteria and other relevant factors relating to issues one through three above: (a) The usefulness of information on catch obtained from observers, logbooks, VMS reporting, and dealer reports; (b) the type of species caught, numbers caught, rate of catch, animal length, weight, condition, and location; (c) variations in the seasonal distribution, abundance, or migration patterns of a bycatch species or target species; (d) condition or status of the stock or species of concern and impacts of continued access to the closed area on all species; (e) catch data on comparable species from outside the closed area (both target species and bycatch); (f) implications on quota management of relevant stocks; (g) relevant data regarding the effectiveness of other closed areas and their individual or cumulative impacts in relation to the objectives of the closed areas, and the 2006 Consolidated HMS FMP; and (h) the criteria listed under § 635.27(a)(8). NMFS would consider relevant data and criteria and notify the public in the Federal Register (and through other means) that access to the area with pelagic longline gear would be prohibited for the duration of the relevant time period (depending upon the closed area).

This alternative was preferred in the DEIS, however, based upon additional information, public comment, and further consideration of potential administrative costs, NMFS no longer prefers this alternative. NMFS may obtain data from within the closures through the use of exempted fishing permits. The potential benefits of allowing pelagic longline vessels limited conditional access to the closed areas would not outweigh the potential costs and risks associated with this activity. The objectives of this alternative were to maintain the relevant conservation aspects of the closure, balance the objectives of the closures, provide commercial data from within the closures, and provide additional fishing opportunities for permitted longline vessels (mitigating the potential negative economic impacts of Amendment 7).

The East Florida Coast, Charleston Bump, and DeSoto Canyon Closed Area were implemented as a part of a bycatch reduction strategy, based on three objectives: (1) To maximize the reduction in the incidental catch of billfish and of swordfish less than 33 lb. dressed weight; (2) to minimize the reduction in the target catch of larger swordfish and other marketable species; and (3) to ensure that the incidental catch of other species (e.g., bluefin, marine mammals, and sea turtles) either remains unchanged or is reduced. Upon implementation of these closed areas, NMFS recognized that all three objectives might not be met to the maximum extent and that conflicting outcomes would require some balancing of the objectives (64 FR 69982; December 15, 1999; 65 FR 47214; August 1, 2000; 66 FR 17389; March 30, 2001).

Public comment indicated that the alternative did not achieve a proper balance among the objectives of access. Although the swordfish stock has rebuilt, the public clearly believed that access to the closed area would undermine the benefits associated with the closures. In other words, the first objective of the alternative (to maintain the relevant conservation aspects of the closure), was not being met.

There is data that supports the assertion that the closed areas have contributed to the achievement of their objectives, in concert with other management measures. NMFS provides an annual review of the potential effectiveness of the current suite of management measures, including closed areas, at reducing bycatch in its annual SAFE report for HMS. Although this review does not isolate and quantify out the effectiveness of closed areas as a separate management tool, the estimated reductions in discards of swordfish, blue marlin, white marlin, sailfish, and spearfish, as a result of all management measures, have remained consistently high (-50 to -70 percent), suggesting that the current suite of international and domestic management measures have played a significant role in allowing the United States to reduce its bycatch interactions.

Research conducted in the Florida East Coast Pelagic Longline Closed Area and the Charleston Bum Pelagic Longline closed area to obtain baseline catch data (72 FR 62441; November 5, 2007), indicated significantly higher catch rates of juvenile swordfish in the closed areas compared with outside areas (Kerstetter 2011). Researchers advised against a public reopening of the closed areas without additional highly-monitored research to further refine baseline data, develop historical comparisons of catch rates, and to define bycatch limits for the region. Although the applicability of the results of this research to the evaluation of the alternative is limited by the scope of the research and the fact that they used a different hook size than is common in the fishery (18/0 non-offset), it provides some relevant information. There has been no research conducted in the DeSoto Canyon closure with which to evaluate the potential impacts of conditional access to these areas.

Given the likely benefits of the closed areas, the difficulty in determining the precise magnitude of the benefits of the closed areas in the context of other management measures, as well as the difficulty predicting the potential impacts that access to closed areas would have, NMFS believes that there is uncertainty whether in fact the first objective of the alternative (maintain relevant conservation aspects of the closure) would in fact be met. The access to closed areas alternative does not include defined bycatch limits, but relies upon the assumption that low levels of fishing effort is sufficient to prevent excessive bycatch. Furthermore, there would be administrative costs associated with the access program. Therefore, the benefits associated with providing additional fishing opportunities (by providing access) would not outweigh the costs in terms of the risk of undermining the conservation benefits of the closed areas. With respect to providing commercial data from within the closures, as stated previously, NMFS may obtain data from within the closures through the use of exempted fishing permits. As noted in the draft Atlantic HMS Management-Based Research Needs and Priorities (July 2014), among the topics identified as a high priority research need is “Assessing the long-term ecological and socioeconomic impacts of closed areas for HMS.”

2.3 Bluefin Tuna Quota Controls

Background

Under current regulations, target catch requirements for pelagic longline vessels limit the number of incidentally-caught bluefin that can be retained on a particular trip, but do not limit the number of bluefin that can be interacted with, and thus discarded dead on a trip. Once the annual Longline category quota has been reached (based on the amount of bluefin landed), vessels using pelagic longline gear are prohibited from retaining bluefin but may continue to fish for other species. These vessels will likely continue to have bluefin interactions, and some portion will be discarded dead. The current regulations have the net effect of limiting only the amount of bluefin landed, and thus include an incentive to avoid bluefin, but ultimately have not effectively limited the number of bluefin interactions. Therefore, bluefin may continue to be discarded dead even after the Longline category's incidental bluefin quota has been filled.

Bluefin Quota Controls are Closely Related to Quota Monitoring and Accounting

Both landings and dead discards need to be accounted for within the total U.S. quota. If quota controls were implemented, to limit the catch of both landings and dead discards (at either the level of the individual vessel, or at the category level),landings and dead discards of bluefin would need to be monitored and accounted for by NMFS in real-time during the season. NMFS would develop inseason estimates of dead discards based on one or more sources of data, and in conjunction with bluefin landings information, estimate total longline catch. Alternatives below include reporting and monitoring alternatives in support of a quota control system. If accounting for dead discards were to occur at the end of the season, there may be insufficient quota remaining to account for all bluefin discarded dead. If accounting for dead discards were to occur wholly at the beginning of the season based on estimates, the estimate may be too high or too low. Alternatives below include management tools that are designed to work in conjunction with quota controls.

Common Aspects of the Bluefin Quota Control Alternatives

These alternatives include management to limit the total annual amount of bluefin landings and dead discards in the Longline category by prohibiting the use of pelagic longline gear when the quota has been, or is projected to be, reached. Further limiting fishing mortality of bluefin caught by the pelagic longline vessels would enhance the measures of the 2006 Consolidated HMS FMP designed to achieve stock rebuilding and end overfishing. It would also minimize bycatch and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch, consistent with National Standard 9 of the MSA. Both bluefin landings and dead discards would count toward the Longline category quota. Alternatives analyzed would control landings and dead discards at the level of the individual vessel and at the level of regions, or groups of vessels. In support of the concept of limiting bluefin landings and dead discards at the scale of individual vessels, there are detailed alternatives regarding quotas for individual vessels, referred to in this context as Individual Bluefin Quotas (IBQs). Because limiting both landings and dead discards (so that the annual quota is not exceeded) would involve a threshold amount of landings and dead discards that would trigger a prohibition on pelagic longline use, implementation of quota controls would require additional reporting by vessel owners and additional monitoring by NMFS.

One means of quota control that may be used in combination with several other alternatives would be for NMFS to prohibit vessels from fishing with pelagic longline gear once the threshold amount of bluefin catch (landings and dead discards) has been attained, and therefore limit the level of landings and dead discards on an annual basis (see Regional and Group Quota Control Alternatives, C 3). When the quota is reached (or a threshold portion of the quota), the use of pelagic longline gear would be prohibited for the remainder of the year. Under a system of individual quotas (Alternative C 2) the individual vessel's use of pelagic longline gear would be prohibited when the quota is reached (unless more bluefin tuna quota is procured via leasing or trading, if allowed). A successful quota control system would increase the accountability of individual pelagic longline vessels by limiting the amount of bluefin landings and dead discards, but also provide flexibility for the vessels to remain operational, although it may be with other gears such as described in Section 2.2.2.

2.3.1 Alternative C 1 - No Action

Under this alternative, there would be no change to the current regulations that restrict pelagic longline vessel retention of bluefin once the Longline category quota has been reached; hence, the total amount of dead discards would not be restricted. Under current regulations, when the incidental landings of bluefin reaches the Longline quota, permitted pelagic longline vessels are prohibited from retaining and landing bluefin, but may continue to fish for their target species and must discard all bluefin. The amount of bluefin that are caught (landed or discarded dead) by vessels fishing with pelagic longline gear would not be capped. Although there are many factors that influence the amount of fishing effort in the pelagic longline fishery, there would not be a specific limit on the amount of bluefin the fishery could catch. The amount of bluefin that this gear interacts with would be indirectly restrained by other regulations and factors.

2.3.2 Alternative C 2 - Individual Bluefin Quotas (Preferred)

This alternative would implement Individual Bluefin Quotas (IBQs) in the Atlantic tunas Longline category that would result in prohibiting the use of pelagic longline gear when a vessel has caught the applicable annual pelagic longline IBQ. In determining initial quota share eligibility and calculating the initial quota share, NMFS would use the history and data associated with vessels permitted in the Atlantic tunas Longline category provided they also hold necessary limited access swordfish and shark permits). After the initial quota share disbursement the quota share would be associated with the permit holder into the future.

This alternative would also make minor alterations to the Purse Seine category quota system in conjunction with some of the IBQ subalternatives.

The disbursement of IBQ share and allocation to Atlantic tunas longline permit holders, as well as a provision for the annual leasing of IBQ allocations, would reduce bluefin tuna dead discards by capping the amount of catch (landings and dead discards); provide strong incentives to reduce interactions and flexibility for vessels to continue to operate profitably; accommodate different fishing practices within the pelagic longline fleet; and create new potential for revenue (from a market for leasable IBQ allocation). Trade of IBQ allocation is important because the catch of bluefin among pelagic longline vessels is not evenly distributed geographically or amongst the fleet (i.e., most of the interactions with bluefin are by relatively few vessels). It would be very difficult to allocate enough IBQ quota to individual longline permit holders in a way that all permit holders would have the amount of quota that they ‘need’ to account for their bluefin tuna landings and dead discards during their directed fishing operations for other species. The ability to lease, or eventually sell, quota and augment the amount of quota a permit holder (or the pelagic longline fishery as a whole) has available would provide flexibility to account for different levels of catch (landings and dead discards) needed to support continued fishing operations for other species while limiting bluefin bycatch. Sale of shares is not allowed at this time, as it can directly affect the ability of the resulting IBQ management program to respond to any initial allocation anomalies; control future entry and exit to the fishery; help achieve goals for reducing overcapacity and improving economic efficiency; and achieve other established biological, economic and social objectives established (NOAA, Catch Share Policy, 2010). Both bluefin landings and dead discards would count toward a permit holder's IBQ share and/or allocation. Various aspects and elements of an IBQ program are described separately as different alternatives below. The relationship of a particular alternative to another alternative is discussed where relevant. The specific objectives of the IBQ program are the following:

1. Limit the amount of bluefin landings and dead discards in the pelagic longline fishery;
2. Provide strong incentives for the vessel owner and operator to avoid bluefin tuna interactions, and thus reduce bluefin dead discards;
3. Provide flexibility in the quota system to enable pelagic longline vessels to obtain bluefin quota from other vessels with available individual quota in order to enable full accounting for bluefin landings and dead discards, and minimize constraints on fishing for target species;
4. Balance the objective of limiting bluefin landings and dead discards with the objective of optimizing fishing opportunities and maintaining profitability; and
5. Balance the above objectives with potential impacts on the directed permit categories that target bluefin tuna, and the broader objectives of the 2006 Consolidated HMS FMP and MSA.

The alternatives for the IBQ program listed below relate closely to the five objectives of the program, as well as the characteristics of the bluefin tuna quota system.

For example, as discussed below in Alternative C 2c, the scope of the subalternatives regarding trading is limited because only two bluefin quota categories are associated with limited access permits. NMFS is not considering the creation of additional limited access permits at this time.

In the IBQ alternatives below, the quota associated within the scope of the IBQ program does not include the NED subquota because it is managed under a separate quota allocation under ICCAT. Inclusion of the NED subquota in the quota associated with the IBQ program would complicate the IBQ program and management of the NED area, without commensurate benefits, due to the limited nature of the NED fishery. As explained under Alternative C 2b.4 (Regional Designations and Restrictions), there is not an alternative that would designate quota as NED quota. As explained under Alternative C 2l.1 (Elimination of Target Catch Requirements), the target catch requirement would not apply to any PLL vessel, including those fishing in the NED.

The minimum bluefin allocation required in order to depart on a trip in the Atlantic would be 0.125 mt whole weight (approximately 276 lb). Bluefin catch in the NED would only count against the vessel's IBQ *after* the 25 mt NED set-aside is caught.

Individual Fishing Quotas (IFQs) are defined in Section 3(23) of the Magnuson-Stevens Act as "a Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person." An IBQ would be an IFQ specifically for Western Atlantic Bluefin tuna. As an IFQ, an IBQ would not confer any right to compensation and there would be no rights, title, or interest in any bluefin until it is landed. IBQs represent a quantity of catch expressed as a percentage (catch share) of the overall Total Allowable Catch. The components of the alternatives below are based upon the requirements of the Magnuson-Stevens Act regarding Limited Access Privileges Programs (LAPPs). In developing these IBQs, NMFS has outlined the initial allocation procedure to ensure it is fair and equitable as it relates to the initial allocations by reviewing and considering the current and historical bluefin interactions, dependence on the fishery, and the level of participation in the fishery at the individual vessel level. The IBQs were also designed after considering public comment on the draft documents associated with Amendment 7, and after careful consideration of how to provide for and promote sustainable participation in the pelagic longline fishery and the businesses/communities that depend on this fishery. Lastly, NMFS prefers (upon implementation of Amendment 7) the alternatives that would allow leasing of quota allocation (the duration of the transaction limited to a year), but not allow permanent sale of quota shares to preclude any permanent consolidation of quota shares. Consideration of permanent sale of quota shares would occur during the formal program review after three years of IBQ program operation. The alternatives below include those relevant to the issue of consolidation.

A permitted vessel's quota share, expressed as a percentage, would be applied to the relevant annual Longline category bluefin quota to determine the amount of annual IBQ (measured in weight (mt) or numbers of fish) associated with that vessel on an annual basis. As explained in some of the alternatives below, the IBQ would depend upon the scope of the program and its restrictions, as well as any other factors that influence the quota allocations as part of the annual specifications process, including U.S. quota recommendations from ICCAT.

Quota Transactions: Nomenclature

The term "IBQ" is a generic term that applies to the overall regulatory program, and may be used to refer to bluefin quota associated with a particular vessel. However, more precise terms are "quota share" and "quota allocation." For the purpose of this amendment, these terms are defined as follows:

Quota Share

A quota share is the percentage of the Longline category quota that is associated with a permitted vessel, based upon the quota share formula and the relevant vessel history (Alternative C 2b).

Quota Allocation

A quota allocation is the amount (mt) of bluefin quota that is associated with a permitted vessel, based upon the relevant quota share(s), and the annual Longline category quota.

Calculation of Quota Allocation

As described above, based upon an individual permitted vessel's quota share (expressed as a percentage of the Longline category quota)), and the size of the Longline category quota (mt), a specific amount of bluefin quota (mt) would be allocated to a permitted vessel.

For example, if permitted vessel A has a quota share of 0.33 percent, and the Longline category quota for the year were 74.8 mt, the permitted vessel's annual allocation would be 0.25 mt (i.e., .0033 X 74.8 mt = 0.25 mt).

Sale of Quota Shares

Sales of quota share (percentage) between permitted vessels are formal trades of fishing privileges. Once a quota share is sold, the permitted vessel buying the quota share holds it across multiple years or until he/she sells it. If Permitted Vessel A sold its entire quota share (0.33 percent) to Permitted Vessel B, Vessel A subsequently would have no quota share (0 percent). The sale of quota share from one vessel to another thus would result in a standing decrease in the amount of quota share associated with the vessel selling the quota share, and a fixed increase in the amount of quota share associated with the purchasing vessel.

Leasing of Quota Allocations

In contrast, a "quota allocation" is expressed in weight (lb, or mt), and transactions between permitted vessels of these quota allocations are temporary leases. The lease of a quota allocation by one vessel from another could increase the amount of quota available for use by the receiving vessel during a single calendar year.

For example, Permitted Vessel A could lease 0.25 mt of its quota allocation to Permitted Vessel B for a particular calendar year without affecting either vessel's allocated quota shares. The next year, if the Longline category quota is still 74.8 mt, Vessel A would still have an annual allocation of 0.25 mt. Its quota share would not change.

Bluefin quota allocations would be based on fishing history associated with a particular vessel, as described in Alternatives C 2a and C 2b.

In order to fish with pelagic longline gear for any HMS, a vessel with limited access permits for Atlantic tunas, swordfish, and shark would be required to have a minimum quota allocation of bluefin to reduce the risk that vessels would land or discard dead bluefin without an allocation. The minimum bluefin allocation required in order to depart on a trip would be either 0.25 mt whole weight (approximately 551 lb) if fishing in the Gulf of Mexico, or 0.125 mt whole weight (approximately 276 lb) if fishing in the Atlantic, (including the NED). A larger minimum quota allocation would be required for the Gulf of Mexico because the average size of the bluefin encountered by pelagic longline gear in the Gulf of Mexico is larger than the average size of the bluefin tuna encountered in the Atlantic. The two minimum increments reflect the historical patterns of bluefin catch in the pelagic longline fishery in the Gulf of Mexico. If a vessel has insufficient bluefin allocation to account for bluefin that they retain or discard dead, they must obtain additional quota allocation from another vessel (via lease) prior to departing on a subsequent trip.

Example A:

If a permitted vessel has a quota allocation of 0.25 mt, it would be able to start a trip and fish for target species with pelagic longline gear in the Gulf of Mexico. If the vessel incidentally caught 0.25 mt of bluefin, it would be used to account for the bluefin caught, and the vessel would have a quota allocation balance of zero. If the vessel intended to fish on a second trip in the Gulf of Mexico, it would have to lease an additional 0.25 mt of bluefin before leaving on a subsequent trip.

Example B:

If a permitted vessel has an allocation of 0.25 mt, and caught 0.50 mt on its trip, it could land the 0.50 mt of bluefin, but would be required to lease 0.25 mt of bluefin to repay the 'quota debt.' If the vessel planned to take a subsequent trip, it would then need to lease an additional 0.25 (before leaving on the next pelagic longline trip) to meet the minimum departure requirement. The same rules would apply if the bluefin is discarded dead, instead of landed.

If the permitted vessel satisfies its quota debt, but is not able to obtain additional quota (i.e., the minimum amount of 0.25 mt required to depart on a pelagic longline trip), the vessel would not be able to fish with pelagic longline gear. If a vessel has not satisfied its quota debt and is not able to obtain the requisite amount of bluefin quota by 6 pm December 31, their quota allocation would be reduced accordingly in the subsequent year. If that vessel has insufficient quota during the following fishing year to account for the previous year's quota debt, they would not be able to fish using pelagic longline gear until the quota debt is settled and they have the minimum quota allocation that is required to fish. If a vessel does not use its quota allocation, it may not carry forward the unused quota the following year. Consistent with the 2006 Consolidated HMS FMP and ICCAT recommendations, NMFS would annually adjust and implement quotas and carry forward any underharvest as allowable. Carryforward of any unused Pelagic Longline category quota would be done on a category-wide basis (i.e., the sum of unused quota from individual vessels). There would be no individual carry-forward of unused quota.

The ability to buy, sell, and/or lease allocation enables a longer planning horizon for vessel owners, and flexibly in acquiring quota is generally considered more economically efficient than a fixed term quota. Also, the longer the duration of privileges, the greater the fishermen's stake in the fishery and the stronger the desire to conserve and protect the resource (Anderson and Holliday, 2007). Alternatives and subalternatives of the IBQ program are listed below in Table 2.10.

Table 2.10 Individual Bluefin Quota (IBQ) Alternatives

Alternative	Subalternatives (read across rows)			
C 2a **Vessels eligible to receive bluefin allocation**	C 2a.1 Any permitted Atlantic tunas longline vessel	C 2a.2 Active permitted Atlantic tunas longline vessels (preferred)		
C 2b **Bluefin quota allocations**	C 2b.1 Equal quota shares of bluefin	C 2b.2 Based on HMS landings	C 2 b.3 Based on historic MS Landings and the Ratio of Bluefin Catch to HMS Landings (preferred)	C 2b.4 Regional designations and restrictions (preferred)
C 2c **Defining the scope of trading**	C 2c.1 Trade of Quota among Pelagic Longline Vessels Only	C 2c.2 Trade among Pelagic Longline and Purse Seine (preferred)		
C 2d **Duration of quota trades**	C 2d.1 Quota Allocation Trades (Annual Leasing of Quota) (preferred)	C 2d.2 Quota Share Trades (Sale of Quota)	C 2d.3 Future Development of Quota Share Trades (Sale of Quota) (preferred)	
C 2e **Trade execution and tracking**	C 2e.1 Vessel owner executed trades Electronic IBQ trade monitoring (preferred)	C 2e.2 NMFS executed trades Paper-based IBQ trade monitoring		
C 2f **Vessel and category limits on trading**	C 2f.1 Vessel Limits on Quota Allocation Trades (preferred)	C 2f.2 Category Limits on Quota Allocation Trades (preferred)	C 2f.3 Future Development of Limits on Quota Allocation Trades (preferred)	

Alternative	Subalternatives (read across rows)			
C 2g **Monitoring and enforcement of IBQs**	C 2g.1 VMS reporting (preferred)	C 2g.2 Electronic monitoring (EM) of Longline category (preferred)	C 2g.3 NMFS Extrapolation of observer data (preferred)	
C 2h **Program evaluation**	C 2h.1 Program evaluation after 3 years (preferred)	C 2h.2 Program evaluation after 5 years		
C 2i **Cost recovery**	Cost Recovery up to 3% of costs (preferred)			
C 2j **Appeals of quota shares**	Administrative procedure for appeals of quota shares (preferred)			
C 2k **Control date**	Implementation of a control date in conjunction with the IBQ program (preferred)			
C 2l **Measures associated with a catch cap**	C 2l.1a Elimination of target catch requirement-No Action	C 2l.1b Elimination of target catch requirement (preferred)	C 2l.2a Mandatory retention of legal-sized bluefin (dead)-No Action	C 2l.2b Mandatory retention of legal-sized bluefin (dead) (preferred)

Alternative C 2a – Vessels Eligible to Receive Bluefin Quota Shares

These alternatives would define the pool of vessels that would be eligible to receive initial bluefin quota shares. There are two subalternatives, one representing the largest scope of permitted vessels, the other allowing participation only by the subset of active vessels.

Subalternative C 2a.1 – Any Permitted Atlantic Tunas Longline Vessel

This subalternative would define the scope of vessels eligible to be issued bluefin quota shares. Any vessel with a valid Atlantic Tunas Longline category permit would be eligible to receive bluefin shares. The rationale for subalternative C 2a.1 is to use a simple definition of eligible vessels without eligibility criteria beyond holding a valid Atlantic Tunas Longline category permit. This would create a large pool of eligible vessels. When the analysis for the DEIS was initiated, complete information for the 2012 year was not available. The FEIS includes updated permit information as of the date of publication of the Proposed Rule (August 21, 2013), at which time 223 vessels had Atlantic Tunas Longline category permits. A permit that is not associated with a vessel, such as a permit characterized as “No Vessel ID,” would not be eligible to receive quota share pursuant to the alternatives described under Subalternative C 2a.1, but would be eligible to later lease or buy quota allocation, if and when it was re-associated with a vessel (with other required limited access permits, i.e., swordfish and shark).

Subalternative C 2a.2 – Active Permitted Atlantic Tunas Longline Vessels Only (Preferred)

Subalternative C 2a.2 would define the eligibility of vessels to receive bluefin quota shares. Vessels must meet two requirements to be eligible to receive IBQ shares: (1) vessels must have a valid Atlantic Tunas Longline category permit, and (2) vessels must be deemed to be “active.”

Active Vessels

“Active” vessels are those vessels that made at least one set using pelagic longline gear from 2006 through 2012 based on pelagic longline logbook data. At the DEIS stage, this criterion was based on logbook data for 2006-2011. Logbook data for 2012 data became available after publication of the DEIS, however. NMFS stated in the DEIS that analyses would be updated where 2012 data became available for the FEIS, and public comment on the DEIS also reflected the need to update these analyses. Thus, the FEIS uses 2006 to 2012 data. The range of seven years provides a reasonable representation of historical fishing activity, including recent years. Seven years is long enough to prevent short-term circumstances from disproportionately impacting a vessel but recent enough to reflect current fishery participation.

At the time of proposed rule publication, NMFS determined that 161 vessels met the criterion to be deemed “active” based on 2006-2011 data. By including 2012 data, nine more vessels meet the criteria to be deemed “active” for purposes of IBQ eligibility.

Note: NMFS has noticed that there may have been some inconsistent use of the terms “active” and “eligible” in the discussion of this alternative at the DEIS stage. In the FEIS, therefore, we are providing additional explanation to clarify their application.

Valid Longline Category Permit

In addition to being “active,” vessels must have a valid Atlantic Tunas Longline category permit. NMFS clarifies here that, for purposes of IBQ share eligibility, a “valid Atlantic Tunas Longline category permit” is one held as of the date the proposed rule was published, which was August 21, 2013.

Application of Criteria

Upon implementation of this alternative, NMFS would send certified letters to permit holders to inform them of the final measures including the permitted vessel status with respect to its IBQ eligibility, the appeals process, and related information. After the proposed rule was published, NMFS notified potential IBQ participants who met both criteria of their initial eligibility. As part of this process, NMFS analyzed records , including HMS tuna permit transfer records, SERO permit records, and NMFS Pelagic Observer Program records and determined that 35 of the vessels were no longer eligible for IBQ shares for various reasons, including, for example, that the vessels had been damaged or destroyed; were no longer in the fishery; that some vessel owners had not renewed permits or placed them in No Vessel ID (NOVESID) status; or that other situations whereby the permit owners no longer own the vessel that acquired history in the fishery. One hundred and thirty-five permit (135) vessels both held a valid permit as of the date of publication of the proposed rule and had a longline set in the specified period (2006-2011), and the permit holders were notified of initial eligibility based on the proposed rule criteria. Permit holders for vessels that did not meet these criteria were also notified by letter.

The rationale for Subalternative C 2a.2 (active permitted Atlantic Tunas Longline vessels only) is to explore and analyze eligibility criteria that accurately and fairly reflect participation in the fishery. By allocating only to “active” vessels, this alternative would facilitate continued participation in the fishery by vessels that have made past investments in the fishery. Permitted vessels that do not meet the initial eligibility criteria necessary to receive bluefin quota share allocation would still be eligible to obtain quota through a trade of quota allocation, if implemented (Alternatives 2c, 2d, 2e, and 2f). New Entrants to the Fishery – This subalternative would alter the status quo for non-participants interested in participating in the pelagic longline fishery. Because the pelagic longline fishery is currently a limited access fishery, with a fixed maximum number of permits issued, potential new entrants must obtain (purchase) a limited access permit (this aspect would remain unchanged). This subalternative would mean that new entrants to the fishery would also need to either obtain a limited access permit with associated quota share, or obtain bluefin quota through lease in order to fish.

Alternative C 2b –Bluefin Quota Share Formulas

These alternatives analyze potential methods of determining how much quota share an eligible permitted vessel would receive. Permit-holders would be notified through U.S. mail of the quota share associated with the eligible permitted vessel. IBQ shares represent a specific percentage of the total available pelagic longline quota. If the total pelagic quota is modified as a result of an ICCAT recommendation, the specific percentage associated with an eligible permit would not change, but would result in a modified amount of quota allocation (mt).

In general, the use of historical data as part of an individual quota share (or a performance criteria as in subalternative B 3b) can be complex due to historical transfers of the limited access permit from one vessel to another or changes in vessel ownership. The quota share formulas under Alternatives C 2b.2 and C 2b.3 are based upon historical data associated with a permitted vessel. In other words, in determining initial quota share eligibility and calculating the initial quota share, NMFS is using data associated with a vessel’s history (permitted vessel). NMFS determined that the historical 'platform' upon which to base the quota share should be the vessel history instead of the permit history for the following reasons: (1) Vessel history reflects current and historical participation in the fishery; (2) the regulations regarding the transfer of Atlantic Tunas Longline category permits do not address fishing history (i.e., do not specify whether when an Atlantic Tunas Longline category permit is transferred from one vessel to another, whether the fishing history also transfers; and (3) the structure of the databases in which the logbook data resides uses the vessel as a key organizing feature, and therefore the compilation of data associated with a particular vessel is simpler and less prone to error (i.e., it is more complex to compile data based on an individual permit history).

However, once the initial shares are established, bluefin quota shares would be associated with the permit for future vessel transactions. In other words, even though in determining a permitted vessel's initial quota share eligibility and calculating the initial quota share NMFS is using data associated with a vessel's history, in the future, the quota share would be associated with the permit. For example, if a permitted vessel has quota shares, and the owner of the permitted vessel decided to sell the permit but keep the vessel, the seller of the permit would no longer have any privileges with respect to the IBQ program. In contrast, the buyer of the permit would have the eligibility for the IBQ associated with that permit (although the permit buyer would need to put that permit on a vessel in order to receive quota allocation).

For Alternatives C 2b.2 and C 2b.3, when NMFS determines that all the valid requests for quota share adjustments and appeals have been resolved, NMFS may adjust all quota share percentages downward slightly in order to accommodate permitted vessels that have been deemed eligible or provided an increased quota share through the appeals process. NMFS would make such an adjustment through a Federal Register action, and notify shareholders through the IBQ system. NMFS considered setting aside a small portion of the quota in order to provide quota for permitted vessels that may be provided quota share through appeals (in the future), but decided that an initial quota set aside was not the best strategy to provide quota for appellants because a quota set aside upon implementation would decrease quota shares immediately. Providing a larger quota share for permitted vessels upon implementation of the IBQ program would enhance the likelihood that vessels would have sufficient quota.

Subalternative C 2b.1 – Equal Quota Shares of Bluefin

This subalternative would provide equal shares of bluefin to the pool of eligible vessels defined under Alternative C 2a. The rationale for equal shares of bluefin is to create a simple share system that does not rely on formulas or criteria and provides all eligible vessels the same quota share regardless of differences in catch history or vessel characteristics. The amount of quota allocation (by weight) per permitted vessel that the quota share results in would depend upon the number of vessels the total quota is split among as well as the size of the Longline category quota. Table 2.11 includes estimates of what the quota allocation (mt) per vessel would be under various scenarios, including splitting the total quota among permitted active vessels, or permitted vessels, and the amounts of quota that would result from the allocation alternatives (Codified and Annual).

Table 2.11 IBQ Allocation (mt) per Vessel Based Upon Equal Shares under Various Quota Alternatives

Longline Category Quota (mt) by Allocation Alternative		**Quota Allocation per Vessel based on Number of Eligible Vessels**	
Alternative(s)	mt	135 Active Permitted Vessels (mt)	223 Permitted Vessels (mt)
No Codified Reallocation (A 1)	74.8	0.55	< 0.34
68 mt Codified Reallocation (A 2a) or Incorporation of Recent Catch (A 2b)	137.0	1.01	0.61
Codified Reallocation from Purse Seine to Longline category (A 2c)	143.5	1.06	0.64
No Codified Reallocation (A 1) and Annual Reallocation of Unused Purse Seine Quota (A 3a)*	160.7	1.19	0.72
Codified Reallocation from Purse Seine to Longline category (A 2c) and Annual Reallocation of Unused Purse Seine Quota (A 3a)*	195.0	1.44	0.87
68 mt Codified Reallocation (A 2a) or Incorporation of Recent Catch (A 2b) and Annual Reallocation of Unused Purse Seine Quota (A 3a)*	216.7	1.61	0.97

* Under the Annual Reallocation Alternative (A 3), for the purpose of analysis, the potential amount of quota available from the Purse Seine category that would be reallocated to the Longline category is toward the upper end of the range (zero to 119 mt; Table 2.4). The number of permitted vessels is as of August 21, 2013.

Subalternative C 2b.2 – Based on Designated Species Landings

This subalternative would provide bluefin quota shares to the pool of eligible vessels (defined under alternative C 2a) based upon historical landings of “designated” species: yellowfin, bigeye, albacore, and skipjack tunas, swordfish, dolphin, wahoo, and porbeagle, shortfin mako, and thresher sharks. Specifically, a quota share would be based upon a vessel’s landings expressed as weight during the seven-year period from 2006 through 2012, using NMFS’s dealer data (weigh-out slips) and logbook information.

The rationale for subalternative C 2b.2 (bluefin quota shares based on landings of designated species) is to allocate quota to vessels using the past and recent pelagic longline activity levels. The creation of bluefin quota shares based on this criterion would result in larger bluefin quota shares to some vessels than others, and reflects that some vessels catch more bluefin than others, and may reflect dependence upon the HMS fishery, or level of employment in the fishery. Landings of the "designated" species are an indicator of both the level of fishing effort and activity as well as vessel success at targeting those species. This subalternative recognizes that greater levels of fishing activity are likely to be correlated with a greater number of bluefin interactions, and reasons that vessels landing higher levels of target species should be allocated more bluefin. The historical landings and/or catch of bluefin are not included as criteria in this subalternative in order to minimize the influence of historical bluefin catch and regulations on the future bluefin allocations. This would avoid creating a system that rewards vessels with historical dead discards that may have been avoidable or bluefin landings in excess of regulations with increased bluefin quota share. The designated species were utilized instead of a more narrow set of 'target species' (i.e., swordfish, yellowfin tuna, and bigeye tuna) to determine bluefin quota share because catch of these species reflects the scope of the relevant fishery, as these species are commonly landed by pelagic longline fishermen. The underlying objective is to develop a method to allocate bluefin to participants in the pelagic longline fishery defined as active vessels issued the Atlantic Tunas Longline permit that is using pelagic longline gear. From 2006 through 2012, these designated species were caught by close to 100 percent of vessels that kept the 'target species,' with many vessels catching half as many, if not more, of these species as 'target species.'

The 161 "active" permitted vessels in the pelagic longline fleet (Subalternative C 2a.2) were sorted according to the total designated species landings from 2006 through 2011, according to the data available for analysis in the DEIS, and then divided into three equal groups ("bins"), based on percentiles of landings from lowest to highest:

Low: 0 to < 33 percent;

Medium: 33 to < 66 percent; and

High: 66 to 100 percent

The date range of 2006 to 2011 (noted above) refers to the data that was used to create the bins, which are part of the structure of the alternative. In contrast, the date range of 2006 to 2012 was the date range of the data that was used to place the vessels in the three bins. The August 21, 2013 date is the administrative reference date that was used in conjunction with the eligibility criteria (to which any/ all of the quota allocation formulas apply).

This division into three equal bins was described in letters sent to Atlantic Tunas Longline category permit holders at the time the proposed rule published, and therefore have remained the same in the FEIS. In other words, to create the bin cutoffs, NMFS only used 2006-2011 because using the data through 2012 for this aspect of the quota share design would have resulted in more vessels in the lower bins and receiving lower shares. Each vessel within a particular bin would be allocated the same (percentage of) bluefin quota share. The use of bins as it pertains to quota shares is preferable to assigning each vessel a unique percentage because this method is simpler, and it provides a fair way to take into account the potential for minor historical data omissions or errors. Minor errors in the data would in most cases not affect the designation of a vessel to a particular bin. The application and appeals process (Alternative C 2j) would address valid concerns regarding the data used. As noted above, for the calculation of the distribution of bluefin among the three bins, NMFS analyzed a range of Longline category bluefin quotas of 74.8 mt, 137 mt, and 216.7 mt in the DEIS. For discussion purposes of the application of the quotas among the three bins, NMFS used 74.8 mt as an example in the DEIS. In the FEIS, now that NMFS has selected 137 mt as the preferred alternative (see Codified Reallocation Alternative A 2a), we use 137 mt as the example. The percentages associated with the quota shares do not change as a result of using 74.8 mt or 137 mt as the example.

Table 2.12 shows the three bins, average annual designated species landings in each bin, the number of vessels in each category, and other relevant information. In the DEIS, NMFS determined the distribution of bluefin among the three bins, based upon providing the equivalent of at least one bluefin tuna (of 0.25 mt) to each vessel, using a 74.8 mt Longline category bluefin quota. Based upon the number of vessels in the "low" bin, the total amount of bluefin allocated to that bin is 13.5 mt (i.e., 54 vessels times the minimum allocation of 0.25 mt = 13.5 mt). The remaining 82 percent of the quota was then divided up to provide the equivalent of approximately 2 bluefin to the medium bin and 3 bluefin to the high bin.

In the FEIS, NMFS followed this same approach in determining the distribution of bluefin among the three bins based on a Longline category bluefin quota of 137 mt and providing at least two bluefin tuna (i.e., 0.51 mt) to each vessel. The percentage of the total bluefin quota allocated to each bin is shown in Table 2.12. Based upon the number of vessels in the "low" bin, the total amount of bluefin allocated to that bin is 18.4 mt (i.e., 36 vessels times the minimum allocation of 0.51 mt = 18.4 mt). The remaining 87 percent of the quota was then divided up to provide approximately 3 bluefin per vessel to the medium bin and 6 bluefin per vessel to the high bin.

Table 2.12 IBQ Allocation (mt) per Vessel Based on Designated Species Landings

Total Designated Species Landings Bins						
Percentile	**Average Annual Catch (lb)**	**# of Vessels**	**% of Active Vessels**	**% of Total Quota**	**Individual % of quota (quota share)**	**Bluefin Allocation Per Vessel* (mt)**
High 100 – 66%	≥ 61,269	52	38.5	59	1.15	1.58
Medium < 66 – 33%	61,268 – 21,179	47	34.8	28	0.60	0.82
Low < 33 – 0%	< 21,179	36	26.7	13	0.37	0.51

* Based on 137 mt and a conversion of 0.125 mt = 1 bluefin in the Atlantic and 0.25 mt = 1 bluefin in the Gulf of Mexico.

When NMFS determines that all the valid requests for quota share adjustments and appeals have been resolved, NMFS may adjust all quota share percentages downward slightly in order to accommodate permitted vessels that have been deemed eligible or provided an increased quota share through the appeals process.

Subalternative C 2b.3 – Based on Designated Species and the Ratio of Bluefin Catch to HMS Landings (Preferred)

In this subalternative, the amount of bluefin caught in the past is considered, in addition to the amount of target catch (i.e., designated species landings). This allocation formula would reward past bluefin tuna avoidance. Past fishing that resulted in minimal bluefin interactions (for whatever reason) would result in a larger quota share percentage of bluefin. NMFS calculated bluefin catch to designated species ratios to explore the development of an alternative based solely on the ratio of bluefin to target catch. As explained below, NMFS determined that the bluefin-to-designated-species landings ratio should not be used as the sole criterion. Furthermore, because vessels that had low fishing activity often had lower than average bluefin tuna catch to designated species ratios, and thus would get higher allocations. An allocation formula based upon only bluefin catch is discussed in the Considered, but Not Analyzed Further section of this document (2.6).

This subalternative would utilize both historical designated species landings (described in detail in subalternative C b2) and the bluefin catch to designated species landings ratio as two factors to allocate bluefin quota (2006 – 2012). The use of the two factors is intended to ensure a fair and equitable initial allocation, and take into consideration the diversity in vessel and harvest characteristics. Specifically, the quota share would be based upon: (1) A vessel's designated species landings in weight during the seven-year period from 2006 through 2012, using NMFS's dealer data (weigh-out slips) and logbook information, and (2) bluefin tuna catch (2006 – 2012), using logbook information. Because the bluefin interactions to designated species landings ratio is very small, landings were multiplied by 10,000 in order to derive a ratio that is more practical (i.e., 0.95 instead of 0.000095). In order to combine the two metrics, scores were assigned to each metric (historical designated species landings and the bluefin catch to HMS landings ratio) and then the two scores combined to form the basis of the allocation. As explained under subalternative B2, active vessels were assigned to quota share categories in order to simplify the quota share system and minimize the importance of potential imprecision in the data. The 135 permitted active vessels in the pelagic longline fleet (Subalternative C 2a.2) were sorted into three categories, using total designated species landings from 2006 through 2012, and then divided into three categories, based on percentiles of landings (based on the 2006-2011 logbook data analyzed in the DEIS) from lowest to highest (low, medium, and high, 0 to < 33 percent; 33 to < 66 percent and 66 to 100 percent, respectively). Similarly, the active vessels were sorted according to the ratio of bluefin interactions to HMS landings, from lowest to highest.

Scores were assigned to each category (1 to 3, "Low" to "High") in order to allow the two metrics to be combined.

For example, as shown in Table 2.13, a vessel with a 2006 – 2012 average annual weight of designated species landings of greater than or equal to 61,269 lb (the 66 to 100th percentile of landings) would be placed in the "High" category and assigned a score of 3. In contrast, a vessel with a total designated species landing of only an annual average of 15,000 pounds for 2006 through 2012 would receive a designated species landings score of 1. A vessel with a bluefin to designated species landings ratio of less than 0.2884 (66 to 100th percentile of bluefin to designated species landings ratios), would place in the top category and receive a bluefin to designated species landings ratio score of 3. A low ratio indicates relatively few bluefin interactions and therefore receives a high score.

For each vessel, the score for designated species landings was added to the score for bluefin to designated species ratio.

For example, if a vessel scored in the “High” category for both designated species landings and bluefin to designated species landings its combined score would be 6 (3 + 3). For a vessel scored High for bluefin ratio, but Low for designated landings would be scored a 4 (1 + 3) and it would be placed in the Medium rating score bin (Table 2.14). Vessels assigned to a particular bin would get equal shares of bluefin tuna quota (i.e., each vessel in the Low category in Table 2.14 would be allocated a share of 0.33%).

Table 2.13 Scoring of the Two Factors that Determine IBQ Allocation in Subalternative B3

Bins (Based on Percentiles)	Designated Species Landings (average lb/year)	Bluefin to Designated Species Landings Ratio*
High (66 - 100%)	> 61,269 (Score 3)	< 0.2884 (Score 3)
Medium (33 - < 66%)	61,268 – 21,180 (Score 2)	0.2884 – 0.9427 (Score 2)
Low (0 - < 33%)	< 21,179 (Score 1)	> 0.9427 (Score 1)

* Multiplied by 10,000 to derive a ratio that is more practical (i.e., 0.95 instead of 0.000095).

Table 2.14 IBQ Allocation per Vessel (mt) Based on Designated Species Landings and the Ratio of Bluefin Catch to HMS Landings.

Categories (Based on Scores)	# Vessels	% of Active Permitted Vessels	% of Total Quota	Individual % of quota (quota share)	Bluefin allocation Per Vessel* (mt)	Bluefin allocation Per Bin* (mt)
High (6 – 5)	43	32	51	1.20	1.64	70.52
Medium (4)	61	45	37	0.60	0.82	50.02
Low (3 – 2)	31	23	12	0.37	0.51	15.81

* Based on 137 mt and a conversion of 0.125 mt = 1 bluefin in the Atlantic and 0.25 mt = 1 bluefin in the Gulf of Mexico.

In the DEIS, NMFS determined how to divide the bluefin among the three categories based on the numbers of vessels in each category, and by first providing the lowest category allocations at least one bluefin tuna (i.e., 0.25 mt), based on a 74.8 mt Longline category bluefin quota. This amount of quota (0.25 mt) is equivalent to 0.33% of the total quota, therefore the quota share for a vessel in the “Low” category would be 0.33%. By ensuring an allocation for all active vessels, rather than allocating zero bluefin for some vessels, the alternative would provide for sustained participation in the fishery. Based upon the number of vessels in the “Low” category (43), the total amount of bluefin allocated to the “Low” category is 10.75 mt (i.e., 43 vessels × 0.25 mt/vessel = 10.75 mt). The remaining 85.6 percent of the quota was then divided to provide approximately two bluefin to the Medium category and three bluefin to the High category as an allocation.

In the FEIS, NMFS determined the distribution of bluefin among the three bins based on a Longline category bluefin quota of 137 mt and by providing the lowest category allocations at least two bluefin tuna (i.e., 0.51 mt). This amount of quota (0.51 mt) is equivalent to 0.37% of the total quota, therefore the quota share for a vessel in the “Low” category would be 0.37%. The percentage of the total bluefin quota allocated to each bin is shown in Table 2.14. Based upon the number of vessels in the “Low” category (31), the total amount of bluefin allocated to the “Low” category is 15.81 mt (i.e., 31 vessels × 0.25 mt/vessel = 15.81 mt). The remaining 88 percent of the quota was then divided to provide approximately three bluefin to the Medium category and six bluefin to the High category as a per vessel allocation.

As noted above, for the calculation of the distribution of bluefin among the three bins, NMFS utilized a Longline category bluefin quota of 74.8 mt in the DEIS, and a quota of 137 mt in this FEIS. The use of 137 mt reflects incorporation of the Codified Reallocation Alternative (Preferred) that has the effect of increasing the Longline category quota. This analytical difference provides a more useful illustration of quota allocations that would be expected if the Preferred Alternatives are implemented. The percentages associated with the quota shares do not change as a result of the use of 137 mt. The Preferred Alternative (Designated Species Landings and the Ratio of Bluefin Catch to HMS Landings) would result in allocations of 0.28 mt, 0.45 mt, and 0.90 mt, for the low, medium, and high bins, respectively under a quota scenario of 74.8 mt (see Chapter 5). The percentage shares are larger in this FEIS (under all three quota allocation alternatives) because, based on public comment, NMFS refined the number of eligible vessels by only including the number of Atlantic Tuna Longline category limited access permits associated with a vessel on August 21, 2013 that actively fished between 2006 and 2012. This reduced the number of eligible vessels for IBQ allocation to 135, and therefore, resulted in an increase in initial allocation for all eligible vessels.

When NMFS determines that all the valid requests for quota share adjustments and appeals have been resolved, NMFS may adjust all quota share percentages downward slightly in order to accommodate permitted vessels that have been deemed eligible or provided an increased quota share through the appeals process.

Subalternative C 2b.4 – Regional Designations and Restrictions (Preferred)

After issuing quota shares based upon the share formula (Alternatives C 2b.1, C 2b.2, or C 2b.3), this subalternative would then designate all pelagic longline quota shares and allocations as either "Gulf of Mexico" or "Atlantic" based upon the geographic location of sets (associated with the permitted vessel's fishing history used to determine the vessel's quota share). Gulf of Mexico quota allocation could be used in either the Gulf of Mexico or the Atlantic, but Atlantic quota allocation could only be used in the Atlantic (and not the Gulf of Mexico). For a permitted vessel to fish in the Gulf of Mexico, the vessel would be required to have the minimum amount of bluefin quota to depart on a trip to fish with pelagic longline gear, but the quota would have to be Gulf of Mexico quota. This alternative would also designate all quota allocated to Atlantic Tunas Purse Seine vessels as "Atlantic," subject to the restriction that it may only be used in the Atlantic (by either a Purse Seine or via a trade to a pelagic longline vessel).

If a permitted vessel had fishing history in both the Gulf of Mexico and Atlantic, it may receive quota shares of both the Gulf of Mexico and Atlantic, depending upon the amount of quota share and the proportion of fishing history in the two areas. A relatively small percentage of sets in one area would not be reflected in the quota share. If, based on the system described under subalternative C 2b.3, a vessel would be issued a share that results in an allocation less than a minimum amount for a particular area, based on a small amount of fishing in an area (i.e., less than 0.125 mt for the Atlantic or less than 0.25 mt for the Gulf of Mexico), the share and allocation would instead be designated to the other of the two designations. That is, if the distribution of quota share between Atlantic and Gulf of Mexico based on historical location of catch would result in allocations of less than the minimum share amount (required to fish) all the quota would be distributed to either the Atlantic or Gulf of Mexico, in order to prevent such a situation. For example, if a vessel qualifies for a quota share of 0.37 % (which in these examples equates to a quota allocation of 0.51 mt), and had historically fished 75 percent of its sets in the Gulf of Mexico, the vessel would not receive a separate quota share for the Atlantic. Splitting a 0.37% quota share between the Gulf of Mexico and the Atlantic reflecting the 75% history in the Gulf of Mexico and 25% history in the Atlantic is not possible, given minimum quota increments defined. Twenty five percent of a quota allocation of 0.37 mt is 0.09 mt, which is less than the minimum quota allocation increment of 0.125 mt. The vessel would be allocated a 0.51% Gulf of Mexico quota share and no Atlantic quota share. It should also be noted that Gulf of Mexico quota shares can be fished in the Atlantic and therefore, under this example, the vessel would be able to operate as they had historically

This alternative is intended to prevent potential increases in bluefin catch in the Gulf of Mexico, which could occur if fishing effort was redistributed from the Atlantic to the Gulf of Mexico through either vessel or permit movement, or trade of quota allocation. This alternative would also reflect the regional differences in the fisheries between the Gulf of Mexico and the Atlantic. Because bluefin tuna in the Gulf of Mexico are comprised of large fish that may be sexually mature or spawning, limiting the potential for increases in fishing effort with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth. NMFS would have the ability to remove or alter this restriction through inseason action in accordance with the criteria that pertain to quota adjustment. For the purposes of this alternative, the Gulf of Mexico region includes all waters of the U.S. EEZ west and north of the boundary stipulated at 50 CFR 600.105(c) and the Atlantic region includes all other waters of the Atlantic Ocean.

Regional Designation of quota for the Northeast Distant Area (NED) is not included in this alternative. Allocation of NED specific quota would involve designating a portion of the quota as NED quota, and development of criteria for vessels to receive NED quota shares. If vessels were allocated quota that could only be used in the NED, such vessels may be disadvantaged because of the unique characteristics of the NED fishery (e.g., remote Atlantic Ocean). If is better to provide flexibility for any vessel to determine whether is wishes to fish in the NED or not. Furthermore, allocation of NED specific quota would complicate the quota system in general because the quota associated with the quota is part of a separate allocation of quota resulting from a different ICCAT recommendation. The impact of managing this area separately is minimized due to the limited amount of quota and limited number of vessels that fish in the area.

Alternative C 2c –Defining the Scope of IBQ Trading

Only two subalternatives were analyzed because only two permit categories in the directed and incidental bluefin fishery are limited access systems. Only the Longline and Purse Seine categories have a limited number of fishing permits issued. The other permit categories such as General category or Angling category are open access, and there is not a limit to the number of vessels that may obtain a permit. This is relevant because the logistical and administrative aspects of leasing or selling quota, as well as the associated economic incentives, require a known and stable universe of participating vessels. Other categories (e.g., General category) would not be authorized to lease or sell bluefin quota. Allowing trading with the other permit categories would not be feasible because they are open access fisheries, without a defined pool of eligible participants. Furthermore, such fisheries do not have individual vessel allocations. Without a limited access system and the allocation of individual quotas, there is little justification for allowing the trading of quota. A limited access fishery and individual quota system are usually prerequisites for quota trading. NMFS is not currently considering the creation of limited access fisheries for the open access permit categories.

Subalternative C 2c.1 – Trade of Quota among Pelagic Longline Vessels Only

This subalternative would allow trading (leasing or selling) of bluefin quota shares or quota allocation among permitted Atlantic Tunas Longline category vessels only, and would not include trading with other limited access quota categories such as Atlantic Tunas Purse Seine category. The rationale for this subalternative is to provide flexibility for pelagic longline vessels to obtain, via lease or sale, quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This subalternative would constrain the amount of bluefin quota available to the Longline category vessels to Longline category quota, and not make additional quota available. Quota trades would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel).

Subalternative C 2c.2 – Trade among Pelagic Longline and Purse Seine (Preferred)

This subalternative would allow trade of bluefin quota shares (sale) or quota allocation (lease) between those vessels/participants permitted in the limited access Atlantic Tunas Longline and Purse Seine categories. This subalternative would provide flexibility for pelagic longline vessels to lease, or buy/sell quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This subalternative would not constrain the amount of bluefin quota available to pelagic longline vessels (i.e., through the Longline category quota), but would make additional quota available if Purse Seine category participants are willing to lease/sell quota. The alternatives that address the issue of limiting the amount of trading are found below (Alternative C 2f; Vessel and Category Limits on Trades). This alternative would also modify the Purse Seine category regulations which currently restrict the trade of Purse Seine quota to participants within the Purse Seine category. Purse Seine quota would be tradable to vessels with an Atlantic Tunas Longline category permit. Similarly, Purse Seine participants would be able to lease/buy quota allocation from pelagic longline vessels. Quota trades would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased/bought from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel). In other words, the lessee (vessel catching the fish) gets the 'credit' for the landings and dead discards, and not the lessor (the vessel that leased the quota allocation to the catching vessel).

Alternative C 2d – Duration of Quota Trades

Subalternative C 2d.1 – Leasing Quota Allocation (Annual) (Preferred)

This subalternative would allow temporary leasing of bluefin quota among eligible vessels on an annual basis. Temporary quota leasing would give vessels flexibility to acquire quota, but as a separate and distinct type of transaction versus the actual sale of quota share. Vessel owners would be able to obtain quota on an annual basis to facilitate their harvest of target species. Sub-leasing of quota would be allowed (i.e., quota leased from Vessel A to Vessel B, then to vessel C). This subalternative may be combined with Subalternative C 2d.2 (Sale of Quota share) if implemented. IBQ allocation leases of one year duration would coincide with the time period of annual quota allocation for the fishery as a whole. For a particular calendar year, an individual lease transaction would be valid from the time of the lease until December 31.

Subalternative C 2d.2 – Sale of Quota Share

This subalternative would allow for the sale of quota share among eligible vessels. Through this subalternative, vessel owners would be able to purchase (or sell) quota share and perpetually increase (or decrease) their quota share percentage. Formal sale of quota share provides a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year. Vessel owners may be able to save money through a single quota share transaction instead of reoccurring annual quota allocation transactions. This subalternative may be combined with the temporary leasing of quota, but is a separate and distinct type of transaction. (Note, that elsewhere in this document NMFS considers measures for codified quota reallocation alternatives unrelated to an IBQ program; see Alternative A 2). To enable effective accounting and reduce program complexity, formal quota share sales would become effective in the subsequent year to the sale itself, and would have to be executed prior to the annual allocation of quota to quota shareholders. Annual allocation of quota needs to occur at one time, based on a fixed pool of quota share owners. Quota shares eligible for sale would be limited to the amount of quota an individual entity could trade in order to prevent the accumulation of an excessive share of quota.

Subalternative C 2d.3 – Future Development of Sale of Quota Share (Preferred)

This alternative would not allow the permanent sale of quota share upon implementation of Amendment 7, but could consider the development of such a measure through future proposed and final rulemaking.

For practical purposes, this alternative represents No Action, with respect to allowing the sale of quota upon implementation of Amendment 7, because the sale of quota shares could be an important component of the IBQ system in the future, this alternative was developed to discuss the subject and is therefore titled “Future Development of Sale of Quota Share.”

This subalternative would allow for the sale of quota shares among eligible vessels, in the future, after NMFS and fishery participants have multiple years of experience with the IBQ program. Until NMFS develops and implements an IBQ sale program, vessels would only be able to conduct temporary (annual) leasing of quota allocation, and therefore vessels would not be able to purchase (or sell) quota share in order to increase (or decrease) their quota share percentage. A phased-in approach would reduce risks for vessels during the initial stages of the IBQ program, when the market for bluefin quota shares would be new and uncertain. During the first years of the IBQ program, price volatility may be reduced, as well as undesirable outcomes of selling or buying quota shares at the “wrong” time or price. Furthermore, a stock assessment is scheduled for 2015 that could have implications regarding the implementation of the IBQ program. NMFS would develop a program to allow the sale of quota share in the future because it would provide a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year, in a manner that would be informed by several years of the temporary leasing market. NMFS may wait until a formal evaluation of the IBQ program before developing this alternative (see IBQ Program Evaluation Alternatives C 2h.1 and C 2h.2). This subalternative may be combined with the temporary annual leasing of quota allocation, but is a separate and distinct type of transaction.

In conjunction with the sale program, NMFS would establish a maximum share, and other limits on quota share accumulation as necessary in order to comply with the MSA § 303A requirement that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program. A limit on the accumulation of quota shares may reduce the likelihood of changes in the characteristics of the pelagic longline and/or Purse Seine fishery that have negative effects on participating vessels or fishing communities, or potential new participants (e.g., the number of active vessels, distribution of fishing effort, inequitable concentration of limited access privileges, etc.). A delayed approach to the development of quota share accumulation limits would enable NMFS to develop a share accumulation limit that is based on relevant data from the IBQ program. NMFS would utilize data on the temporary leasing of bluefin allocation under the IBQ program, as well as related data on vessel ownership in order to effectively implement and enforce accumulation limits. This alternative would not allow the permanent sale of quota share upon implementation of Amendment 7, but would designate the permanent sale of quota shares as a measure that could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations. See 50 CFR 635.34.

Alternative C 2e –Trade Execution and Tracking

NMFS would implement an administrative system for the IBQ system upon implementation of Amendment 7, if the IBQ alternative is implemented. NMFS carefully considered the design of the administrative system that would support execution and tracking of bluefin quota allocation leasing and future quota share sales. The processes and tools for executing transactions affect if, how, and at what costs fishermen acquire the quota they need and trade the quota they do not need. If quota transactions occur fairly easily and quickly, fishermen have the flexibility needed to react to changing conditions and needs (Cap Log Report 2012). NMFS may consider one administrative system for the leasing of quota allocation and a second for the sale of quota shares. NMFS would be involved in the administration and tracking of any quota trade system. The essential difference between the two alternatives is whether the system is an automated system (administered by NMFS) with the trades executed by the vessel owner, or whether the system is a paper based system with applications submitted to NMFS for review.

Subalternative C 2e.1 – Electronic IBQ Trade Monitoring (Preferred)

Under this subalternative, quota allocation leases and/or quota share sales would be executed by the owners of permitted vessels, or their representatives via a web-based system. For example, the two vessel owners involved in a lease of quota, or, if implemented via a subsequent action, the sale of quota, could log into a password protected web-based computer system (i.e., a NMFS database), and execute the trade. Owner-executed electronic trades would provide the quickest execution of leases, or sales, because any eligibility criteria would be verified automatically based on information loaded into that system, and would not involve the submission or review of a paper application, as well as any potential lag time associated with NMFs staff being directly involved in the approval process.,.

Subalternative C 2e.2 – Paper based IBQ Trade Monitoring

Under this subalternative, quota allocation and quota share trades would be executed by NMFS staff via paper applications. A complete application for lease, or sale, of quota share could be submitted by the two owners of permitted vessels involved in the quota share transaction, and NMFS would review and approve/disapprove the transaction based on eligibility criteria as well as processing the approved transactions to track the various trades. This method would not include the use of a web-based system, but would rely upon mail or facsimile submission of applications by the vessel owners to NMFS.

Alternative C 2f – Vessel and Category Limits on Trades

Subalternative C 2f.1 – Individual Vessel Limits on Quota Allocation Trades (Preferred)

Under this subalternative, upon implementation of Amendment 7, the initial limit on the amount of quota allocation an individual vessel (Longline or Purse Seine) could lease annually would be the combined Longline and Purse Seine category allocations, more refined limits could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations. See 50 CFR 635.34.

Permit holders are prevented from accruing excessive shares by purchasing multiple permits by existing regulations, which limit the consolidation of HMS limited access permits to no more than five percent of vessels (see 50 C.F.R. 645.4(l)(2)(iii)). Furthermore, the cost of limited access permits is high (typically in the tens of thousands of dollars) and effectively prevents the accumulation of multiple permits. Although there would be a relatively high limit on the leasing of shares, the duration of these leases would be limited to a single year with no rollover provision,

This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin to facilitate their directed fishing operations as appropriate, and enable the development of an unrestricted quota leasing market.

It would be difficult to develop an effective share accumulation limit at the inception of the IBQ program because at the start of the IBQ program there would be no relevant data from the IBQ program regarding, for example, the number of vessels that will remain active following implementation of Amendment 7 or the workings of the IBQ market. For those vessels with low allocations that encounter bluefin in excess of their allocation, the ability to lease quota may be essential to their ability to continue to fish for their targeted species

Individual vessel owners may be able to lease quota during a fishing year for use, but at the end of the year the quota would not be usable for the subsequent year. Information gained from this leasing market could be used to develop future limits on quota leasing if necessary, (through proposed and final rulemaking) and/or used to inform the development of future restrictions on the sale of quota shares. NMFS prefers this alternative due to the importance of a functioning leasing market; the Preferred Alternatives do not include permanent sale of quota; the lack of relevant information with which to base additional restrictions on at the inception of the IBQ program and NMFS' intent to collect relevant information and consider implementation of a restriction that would prevent consolidation at the time of a three year program review.

Subalternative C 2f.2 – Category Limits on Quota Allocation Trades (Preferred)

For practical purposes, this alternative represents the No Action alternative, with respect to setting quota category limits on the leasing of quota upon implementation of Amendment 7. Under this subalternative, upon implementation of Amendment 7, the limit set on the total amount of quota that either the Longline or Purse Seine categories (in their entirety) could lease annually, would be the sum of those two category quota allocations. A refined category limit could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations. This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of an unrestricted market.

Because the duration of a temporary lease would be limited to a single year, the impacts on a market for bluefin quota would be limited in duration and by the amount of quota allocated to these two categories. This alternative is preferred because setting additional limits on leasing at the category level may undermine achieving the objectives of the IBQ leasing alternative. Information on the leasing market could be used to develop future restrictions (through separate proposed and final rulemaking), if necessary. The amount of leasing from the Purse Seine category to the Pelagic Longline category would be limited if the “Annual Reallocation” alternative is implemented. If Purse Seine participants are inactive (i.e., not catching bluefin), they would be allocated only 25 percent of their baseline category quota. In that case, only 25 percent of the Purse Seine baseline quota would be available for the Purse Seine participant to either account for bluefin caught, or to lease to one-another or pelagic longline vessels.

Subalternative C 2f.3 – Future Development of Category Limits on Quota Allocation Trades (Preferred)

Under this subalternative, NMFS would consider the development of further limits on the amount of quota allocation an individual vessel (Longline or Purse Seine), or the Longline or Purse Seine categories (in their entirety) could lease annually (in the future, during the formal review of the IBQ program). Upon implementation of Amendment 7, this subalternative would designate the limitation of quota allocation trades as a measure that could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations (see 50 CFR 635.34). This alternative is preferred because at the inception of the IBQ program there would be no information upon which to base a more refined limit, however, information on the leasing market collected during the first several years of IBQ program operation, could be used to develop future restrictions if necessary. At the initiation of the IBQ program, such a limit is not necessary because the amount of leasing from the Purse Seine category to the Pelagic Longline category would be limited to the sum of the two categories and if the “Annual Reallocation” alternative is implemented. If Purse Seine participants are inactive (i.e., not catching bluefin), they would be allocated only 25 percent of their baseline category quota. In that case, only 25 percent of the Purse Seine baseline quota would be available for the Purse Seine participants to either account for bluefin caught, or to lease to one-another or pelagic longline vessels. Due to the “Annual Reallocation” rules, leasing a large percentage of quota (instead of landing) would result in reduced quota allocation in the subsequent year, and therefore any consolidation of quota would be limited to one year. Future development of category limits may be deemed necessary if the balance sought by the preferred alternatives (to provide flexibility and collect information at the inception of the IBQ program) is not achieved, or other potential problems arise related to the number of active vessels or the distribution of fishing effort. Any such a restriction would be developed through proposed and final rulemaking.

Alternative C 2g – Monitoring and Enforcement of IBQs

The measures under this alternative are based on the premise that the success of an IBQ program rests upon the ability to: Track ownership of quota shares and quota allocation holders; allocate the appropriate amount of annual harvest privileges (quota allocation); reconcile landings and dead discards against those privileges; and then balance the amounts against the total allowable quota. The current pelagic longline reporting requirements and the monitoring program that provide data on pelagic longline bluefin landings and dead discards were not designed to support inseason accounting of dead discards. More timely information on catch would be necessary in order to monitor a pelagic longline IBQ, inclusive of dead discards.

Subalternative C 2g.1 – VMS Reporting (Preferred)

This subalternative is the same management alternative described in Alternative D 1b of this document. This alternative is intended to support the implementation of a pelagic longline IBQ.

Subalternative C 2.g.2 - Electronic Monitoring (EM) of Longline category (Preferred)

This subalternative is the same management alternative described in Alternative D 2b of this document. This alternative is intended to support the implementation of a pelagic longline IBQ.

Subalternative C 2g.3 – NMFS Extrapolation of Observer Data (Preferred)

Under this subalternative (which would not make any regulatory changes, but is intended to inform the public and solicit comment on a management method), in order to conduct inseason quota monitoring and estimate total bluefin dead discards and landings, NMFS may extrapolate observer-generated data (inseason) regarding bluefin discards (rate, number, location, etc.) by pelagic longline vessels, based on reasonable statistical methods, and available observer data. This approach would not require a regulatory change, but would inform the public that NMFS would consider this as an acceptable management practice if warranted. NMFS could then use this observer information in conjunction with or in place of vessel-generated estimates of bluefin discards in order to develop inseason estimates of total bluefin landings and dead discards. NMFS may use this method to estimate dead discard rates of bluefin for individual vessels in the context of an IBQ program. This management approach would address the potential for uncertain dead discard data from the pelagic longline fleet that may result from challenges in the implementation of new regulations, technical problems relating to the reporting and monitoring system, or time lags in the availability of data. In other words, NMFS may estimate dead discards based upon the use of multiple sources of data, and prohibit the use of pelagic longline under Amendment 7 preferred alternatives (see Alternative C 4b, "NMFS Closure of the Pelagic Longline Fishery").

Alternative C 2h – Formal IBQ Program Evaluation

Subalternative C 2h.1 – IBQ Program Evaluation after 3 years (Preferred)

Under this subalternative, NMFS would formally evaluate the program after three years of operation and provide the HMS Advisory Panel with a publicly-available written document with its findings. NMFS would utilize its standardized economic performance indicators as part of its review (NMFS, Office of Science and Technology). The standardized economic performance indicators are listed in Table 2.15. NMFS developed standardized indicators in order to measure the success and performance of catch share programs. For example, to evaluate the Amendment 7 IBQ program, NMFS would compare the revenues (performance measure) prior to implementation of the IBQ program to the revenues during the first 3 years of the program. Specifically, in order to measure revenues, NMFS would use the indicators listed in Table 2.15 (e.g., aggregate revenue from target species). Most, but not all of the indicators in Table 2.15 are relevant to the evaluation of this IBQ program. The definitions of these indicators are included in the Appendix. Other indicators would include the number of and distribution of bluefin interactions. This alternative is preferred because NMFS believes that 3 years of fishery operation is an adequate time period to provide information with which to begin evaluating the new management measures.

Table 2.15 List of Tier I Performance Indicators for Catch Share Programs

Performance Measure	**Indicator**
Catch and Landing	Quota allocated to catch share program
	Aggregate landings
	Quota exceeded (Y/N)
Effort	Entities holding Quota share
	Active vessels
	Season length
	Trips
	Days at sea
Revenues	Aggregate revenue from catch share species (bluefin tuna)
	Aggregate revenue from non-catch share species (target species)
	Non-catch share species revenue
	Gini Coefficient
Accumulation	Share cap in place (Y/N)
Cost recovery	Cost recovery fee
Derived Indicators	
Prices	Average price
Revenues	Total revenue
	Revenue per active vessel
	Revenue per trip
	Revenue per day at sea
Catch and landings	% utilization

Source: NMFS Office of Science and Technology

Subalternative C 2h.2 – IBQ Program Evaluation after3 years

Under this subalternative, NMFS would conduct a formal evaluation of the IBQ program after three years of operation and provide the HMS Advisory Panel with a written document with its findings. As described above, NMFS would utilize its standardized economic performance indicators (and associated standardized definitions) as part of its review. This alternative is not preferred because NMFS believes five years is too long a time period prior to the first formal review of the program.

Alternative C 2i – Cost Recovery (Preferred)

Under this alternative, NMFS would develop and implement a cost recovery program of up to 3 percent of the costs of management, data collection and analysis, and enforcement activities.

Section 303A(e) of the Magnuson-Stevens Act requires that, in establishing a LAPP, a Council shall develop a methodology and the means to identify and assess the management, data collection and analysis, and enforcement programs that are directly related to and in support of the LAPP; and provide for a program of fees paid by LAPP holders that will cover the costs of management, data collection and analysis, and enforcement activities. Such fees may not exceed 3 percent of the ex-vessel value of fish harvested under the LAPP. Here, a cost recovery program would not be implemented until after the IBQ program evaluation (after 3 years). While section 303A(e) requires development of cost recovery in establishing a LAPP, NMFS believes that this step-wise approach is consistent with the purpose of section 303A(e) and appropriate given the nature of the LAPP being proposed. The purpose of section 303A(e) is to collect fees to cover management, data collection and analysis, and enforcement activities. During the initial years of IBQ implementation, NMFS does not believe it needs cost recovery from LAPP holders to cover costs of these activities. NMFS anticipates that the incremental costs of administering the IBQ program are likely to be low. However, the cost of administering a cost recovery program may be high relative to the amount of money recovered, because some active vessels have very high fishing activity whereas others have relatively low activity. NMFS also notes that the underlying objective of the IBQ is to reduce incidental catch of bluefin tuna, which will impact the amount and ex-vessel value of fish harvested. Immediate implementation of a cost recovery program, without obtaining further information about the operation of the fishery with IBQs, would be very difficult and would increase costs and uncertainty for fishing vessels during a time period when the fishery would be bearing other new costs and sources of uncertainty. For the above reasons, NMFS proposes not implementing cost recovery until after it conducts the program evaluation.

Alternative C 2j - Appeals of Quota Shares (Preferred)

This alternative would implement a two-step appeals process for administrative review of the Secretary's decisions regarding initial allocation of quota shares for the IBQ program. This alternative is modified from the DEIS to add a review step by the HMS Management Division to adjust their initial quota share, prior to review of the appeal by the National Appeals Office and to add details on acceptable documentation. This modification is based on public comment requesting clarification of the process.

As discussed in Alternative C 2b, upon publication of the Amendment 7 final rule, NMFS would notify all permit holders by letter of their initial allocation. As a first step, vessels owners would be able to submit a written request to adjust their initial quota share to the HMS Management

Division, indicating the reason for the requested change and providing supporting documentation (see below). All requests for changes to initial allocation of quota shares must be submitted to NMFS within 90 days of publication of the final rule. HMS Management Division staff would evaluate all requests and accompanying documentation, then notify the requestor by letter, signed by the HMS Division Chief, of NMFS' decision to approve or deny the request for adjustment. If the request is approved, then NMFS would issue the appropriate adjustment to the initial quota share and allocation. If denied, the permit holder may appeal the decision within 90 days of receipt of the notice of denial by submitting a written petition of appeal. Any appeal under this program will be processed by the NMFS National Appeals Office. Appeals will be governed by the regulations and policy of the National Appeals Office. The National Appeals Office regulations can be found at 15 CFR part 906. National Appeals Office regulations detail the procedure for requesting an appeal (§ 906.3). See Appendix 11.9 for details.

Specifically, the items subject to adjustment and appeal would be: (1) Initial eligibility for quota shares based on ownership of an active vessel with a valid Atlantic Tunas Longline category permit combined with the required shark and swordfish limited access permits; (2) the accuracy of NMFS records regarding that vessel's amount of designated species landings and/or bluefin interactions; and (3) correct assignment of target species landings and bluefin interactions to the vessel owner/permit holder. NMFS permit records would be the sole basis for determining permit transfers. As discussed under Alternatives C 2b.2 and C 2b.3, the quota share formulas are based upon historical data associated with a permitted vessel. Because vessels may have changed ownership or permits transferred during 2006 through 2012, the current owner of a permitted vessel may also appeal on the basis of historical changes in vessel ownership or permit transfers.

NMFS would consider only written requests for adjustments and appeals. When permit holders are informed of their initial allocations, they will be provided instructions regarding the process of appealing their quota shares. Landings eligibility criteria require evidence of documented legal landings during the time frame from January 1, 2006, through December 31, 2012. Public comment on the DEIS and proposed rule reflected a need to clarify aspects of the appeals process. Regarding what will be considered "documented legal landings," NMFS will consider in support of an appeal official NMFS logbook records or weighout slips for landings between January 1, 2006, through December 31, 2012, that were submitted to NMFS prior to March 2, 2013 (60 days after the cutoff date for eligible landings). Landings data are required to be submitted within 7 days of landing under the applicable regulations. Recognizing that somewhat-late reporting could have occurred for a variety of reasons, however, NMFS is clarifying that it will consider "documented" landings for appeals purposes to be those reported within 60 days to include those that were slightly late. NMFS would count only those designated species landings that were landed legally when the owner had a valid permit. Appeals based on landings data or permit history would be based on NMFS logbook data, weighout slips, verifiable sales slips, receipts from registered dealers, state landings records, and permit records. Appeals based on bluefin interactions may be based on HMS logbook records as described, observer data, or other NMFS data. No other proof of catch history would be considered. Photocopies of the written documents are acceptable in the original application or appeal; NMFS may request the originals at a later date. NMFS would refer any submitted materials that are of questionable authenticity to the NMFS Office of Enforcement for investigation. Appeals based on hardship factors would not be considered. Consistent with most limited effort and catch share programs, hardship is not a valid basis for appeal due to the multitude of potential definitions of hardship and the difficulty and complexity of administering such criteria in a fair manner.

When NMFS determines that all the valid requests for quota share adjustments and appeals have been resolved, NMFS may adjust all quota share percentages downward slightly in order to accommodate permitted vessels that have been deemed eligible or provided an increased quota share through the appeals process. Permit-holders with quota shares would be notified of any changes in quota shares.

A full explanation of this process is described in the quota share formula alternatives (see Chapter 2, Alternative C 2b Bluefin Quota Share Formulas).

Alternative C 2k – Control Date (Preferred)

If an IBQ program is implemented, this alternative would establish a control date in conjunction with the implementation (effective date) of the IBQ program. The control date would serve as a reference date that may be utilized with future management measures. The establishment of a control date by itself would have no effect, but would provide NMFS with a potential management tool that may be utilized if necessary as part of a future management measure. A control date is typically used to discourage speculative fishing behavior or speculative entry into a fishery and notifies the public that a date may be used in conjunction with future management measures. With a control date, NMFS may implement management measures that give variably weighted consideration to vessels before and after the control date on the basis of catch, fishing activity, or other criteria. It is possible that the implementation of an IBQ program could result in speculative fishing behavior or quota transactions, undesirable distributions of harvesting privileges, or other unintended consequences. If a regulatory response to such changes in the fishery is warranted, the existence of a control date coincident with implementation of the IBQ program would provide NMFS the flexibility to consider the control date as part of its regulatory response. The timing of a control date (i.e., establishment of a control date prior to potential changes in the fishery) may be important to the effectiveness of a future management measure. NMFS may also choose to take no future action with respect to the control date, or may choose a different control date in the future.

Alternative C 2l - Measures Associated with an IBQ

Subalternative C 2l.1 – Elimination of Target Catch Requirement

Subalternative C 2l.1a - No Action

Under this subalternative, the current target catch requirements would remain in effect. Currently, NMFS restricts the number of incidentally caught bluefin a pelagic longline vessel may retain in relation to the amount of target species retained and sold. Under current regulations, one large medium or giant bluefin (73” or greater) per vessel per trip may be landed, provided that at least 2,000 lb of species other than bluefin are legally caught, retained, and offloaded from the same trip and are recorded on the dealer weighout slip as sold; two large medium or giant bluefin may be landed incidentally to at least 6,000 lb of species other than bluefin; and three large medium or giant bluefin may be landed incidentally to at least 30,000 lb of species other than bluefin. These limits apply in all areas, including the NED.

Subalternative C 2l.1b - Elimination of Target Catch Requirement (Preferred)

This subalternative would eliminate the current target catch requirements for pelagic longline vessels. This alternative is intended to work in conjunction with an IBQ. The objective of this alternative is to reduce bluefin dead discards and optimize fishing opportunity for target species. The target catch requirement acts at the level of an individual trip to limit bluefin retention, but does not prevent interactions potentially resulting in discarding bluefin dead (although it is intended to dis-incentivize interactions with bluefin by reducing any financial incentive for such interactions by limiting retention). The target catch requirement therefore contributes to the discarding of bluefin if the amount of target catch species is insufficient to retain the numbers of bluefin caught. If an IBQ program is implemented, elimination of the target catch requirement could reduce dead discards, and enable vessels to fish for target species in a more flexible manner. A vessel that has caught some bluefin but has insufficient target species to meet the target catch requirement would no longer have to choose between discarding bluefin or fishing for more target species; rather, the vessel would use the annual IBQ. Thus, the IBQ would replace the target catch requirement as the means of limiting the amount of bluefin landed and discarded dead per vessel on an annual basis, instead of on a per trip basis.

Elimination of target catch requirements would also apply to the NED, in order to reduce dead discards in the NED and to simplify application of the regulations to the extent possible. Target catch requirements were implemented in the NED in 2011 (76 FR 39019; July 5, 2011), in order to reduce economic incentives to increase fishing effort and retain bluefin, and align bluefin catch with available quotas, consistent with NMFS' efforts to address bycatch issues (76 FR 13583; March 14, 2011). In the context of the IBQ program and other Amendment 7 Preferred Alternatives (which serve to decrease dead discards as well as align catch with available quota), the target catch requirements are no longer necessary for the NED. The fact that vessels will need the minimum allocation of IBQ quota in order to fish with pelagic longline gear on any trip in the NED, and will be required to account for all bluefin tuna retained or discarded dead with IBQ outside the NED (and in the NED after the 25 mt NED allocation has been caught), will provide a strong incentive not to target bluefin tuna within the NED, particularly given the distance vessels would have to travel to reach the NED and related profitability concerns. Designation of the 25 mt of separate NED quota as subject to IBQ shares would complicate the quota allocation system, complicate the IBQ program, require the development of criteria for allocation of NED quota, and may reduce the flexibility of vessels fishing in the NED. Because the NED fishery is a unique fishery prosecuted in a relatively remote location for most vessels, vessels should have flexibility to choose to fish there if weather and market conditions allow, and NMFS prefers this alternative because it provides that flexibility.

Eliminating the target catch requirements in conjunction with a regional quota or group quota is not being considered. If the target catch requirement were eliminated in the context of a regional or group quota, there would be little incentive for vessels to reduce or avoid interactions with bluefin because there would be no limitation on bluefin landings or dead discards or accountability at the level of the individual vessel. Under a regional or group quota, if the target catch requirement were removed, a vessel could catch large amounts of bluefin, and have a disproportionate impact on 'filling' the overall quota. A relatively small number of vessels could cause the prohibition of the use of pelagic longline gear and end such fishing opportunities for the rest of a year. Elimination of the target catch requirement in the context of a regional or group quota may not achieve the objectives of Amendment 7.

Subalternative C 2l.2 – Mandatory Retention of Commercial Legal-Sized Bluefin

Subalternative C 2l.2a - No Action

This subalternative would maintain the status quo regarding retention of bluefin by pelagic longline vessels. There would be no requirement to retain commercial legal-sized fish. Vessels would be able to discard bluefin even if they are of commercial legal-size (i.e., 73" or greater) and dead In the event the IBQ alternative is finalized, all dead discards would be accounted for under that program.

Subalternative C 2l.2b - Mandatory Retention of Legal-Sized Bluefin (dead) (Preferred)

Pelagic longline vessels would be required to retain all incidentally caught legal-sized commercial bluefin tuna that are dead at haul-back. This measure is intended to function in conjunction with the IBQ system and elimination of the target catch requirements. Requiring the retention of all legal-sized commercial (i.e., 73" or greater) dead bluefin is intended to reduce dead discards and would eliminate the situation where it is legal to discard a legal-sized commercial bluefin, if dead at haul-back. Because these fish would be required to be retained, legal discards and the waste of fish would be decreased, and it would be more likely that such fish are accurately accounted for, and result in a positive use (marketed, used for scientific information, etc.). Paired with limited individual quota allocated on a vessel basis, this alternative would create incentive for vessels to reduce or avoid interactions with bluefin to avoid reaching their IBQ limit, which would require them to stop their directed fishing. At the same time, it would reduce wasteful regulatory dead discards.

A requirement to retain all legal-sized commercial dead bluefin in conjunction with a regional or group quota is not considered. If a mandatory retention limit were implemented in the context of a regional or group quota, there would be little incentive for vessels to reduce or avoid interactions with bluefin because there would be no limitation on bluefin landings or dead discards or accountability at the level of the individual vessel. Under a regional or group quota, if there were a mandatory retention requirement, a vessel could catch large amounts of bluefin, and have a disproportionate impact on 'filling' the overall quota. A relatively small number of vessels could cause the prohibition of the use of pelagic longline gear and end such fishing opportunities for the rest of a year. A mandatory retention requirement in the context of a regional or group quota may not achieve the objectives of Amendment 7.

2.3.3 Alternative C 3 – Regional and Group Quota Controls

Alternative C 3a – Regional Quotas

This alternative would implement annual bluefin quotas by region for vessels possessing the Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would result in prohibiting the use of pelagic longline gear when a particular region's annual bluefin quota has been caught. Both bluefin landings and dead discards would count toward the regional quota. Annual bluefin quotas would be associated with defined geographic regions. The rationale for this alternative is that regional quotas may be simpler than an IBQ system and have advantages over a single quota allocated for the entire Longline category. Regional quotas associated with specified regions would be relatively independent from one another, and therefore reduce the potential for 'derby' fishing behavior (where there is the incentive for individual vessels to fish sooner rather than later). There is more accountability for those fishing in a particular region, because there would be limits in each region rather than a single limit for the entire category, with no restriction on the relative number of bluefin that could be landed or discarded dead in a particular region.

Specifically, the regions would be those currently defined to support the Longline category reporting requirements: Caribbean (CAR), Gulf of Mexico (GOM), Florida East Coast (FEC), South Atlantic Bight (SAB), Mid-Atlantic Bight (MAB), Northeast Coastal (NEC), Northeast Distant (NED), North Central Atlantic (NCA), Sargasso (SAR), and Southern Atlantic Tuna SAT). Figure 2.13 shows the regions. NMFS would be able to transfer quota between regions.

The design of a regional quota system in the above regions is complicated by the fact that the current Longline category quota is divided into northern and southern subquotas, allocated 40 and 60 percent of the overall quota, respectively. The latitudinal line that separates the regions to which the northern and southern quotas apply (31° 00' North Latitude) does not coincide with the junctions of the regions, but runs through the middle of the Sargasso Region and the North Central Atlantic Region, and is just north of the junction of the Florida East Coast Region and the South Atlantic Bight (at 30° 00' North Latitude). Furthermore, the Northeast Distant area would continue to be allocated a separate amount of bluefin (25 mt), consistent with ICCAT recommendations. When NMFS projects that the quota for a region is going to be reached, it would file a closure notice with the Office of the Federal Register for publication, and fishing with pelagic longline gear would be prohibited in that area. Vessels would be required to complete scheduled and ongoing trips prior to the closure date/time. Criteria for NMFS consideration for closure could include elements such as: total estimated bluefin catch in relation to the regional quota; the estimated amount by which the bluefin quota might be exceeded; usefulness of data relevant to monitoring the quota; relatively high uncertainty in the documented or estimated dead discards or total catch of bluefin; high amount of bluefin caught within a short time; the effects of continued fishing on bluefin rebuilding and overfishing; provision of reasonable opportunity for pelagic longline vessels to pursue the target species; and variations in seasonal distribution, abundance or migration patterns of bluefin, etc. When fishing with pelagic longline gear has been prohibited, the use of other authorized gear such as green-stick or buoy gear may continue.

The relative size of each regional quota would be based on bluefin landings and dead discard data in each region, and expressed as a fixed percentage of each particular region's historical share of the north or south subquota. The Northeast Distant area quota would not be included in the calculation because it has its own specified ICCAT quota recommendation. Although the percentage allocated to each region would be a fixed percentage of a longline subquota, the amount (mt) of the regional quota would be specified annually. The percentages in Table 2.16 below were derived based only on numbers of bluefin interactions, and did not take into account weight of individual fish. Numbers of fish is a metric that can be more easily applied across the geographic regions, which differ in the average size of bluefin. Separation of regions into North and South would minimize any influence in numbers of fish that may result from differences in fish size among regions. The historical bluefin interactions data associated with the Sargasso or North Central Atlantic regions were not parsed out between the north and south when deriving regional catch caps that considered the northern and southern hierarchy. The North Central Atlantic region was not included because there were no bluefin interactions. The Sargasso region, which had very few bluefin interactions, was considered part of the Northern interactions.

Table 2.16 Regional Quotas Based on the Annual Percentage of Northern or Southern Interactions

Northern Region	Annual Percentage of Interactions						Regional Quota (% of Northern quota)	Regional Quota* (mt) (% × 24.4 mt)
	2006	2007	2008	2009	2010	2011		
MAB	58.8	93.8	89.8	61.5	66.8	39.2	68.30	16.7
NEC	36.7	3.6	6.4	30.6	28.0	51.5	26.10	6.4
NED	-	-	-	-	-	-	-	25.0
SAB	1.1	0.8	2.1	4.1	2.6	5.9	2.80	0.7
SAR	3.4	1.4	1.4	3.9	2.7	3.4	2.70	0.7
SAT	0	0.4	0	0	0	0	.07	.02
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.00	24.4*
Southern Region	**Annual Percentage of Interactions**						**Regional Quota (% of Southern quota)**	**Regional Quota** (mt) (% × 36.7 mt)**
	2006	**2007**	**2008**	**2009**	**2010**	**2011**		
CAR	0	0	0.8	0	0	0	0.1	.04
FEC	8.6	5.9	11.3	26.8	31.9	75.9	27.0	9.9
GOM	91.4	94.1	88.7	73.2	68.1	24.1	73.0	26.8
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	36.7*

* Based upon northern area quota of 24.4 mt (not including Northeast Distant area of 25 mt); ** Based upon southern area quota of 36.7 mt

The Northeast Distant area is not included because it has its own specified ICCAT-recommended 25 mt quota, which cannot be altered absent agreement at ICCAT. Two regions would be utilized in the initial calculation of the regional quotas due to the historical division of the quota into north and south as well as the fact that there are differences in the characteristics of the northern and southern fisheries (e.g., size of fish, seasonality, etc.).

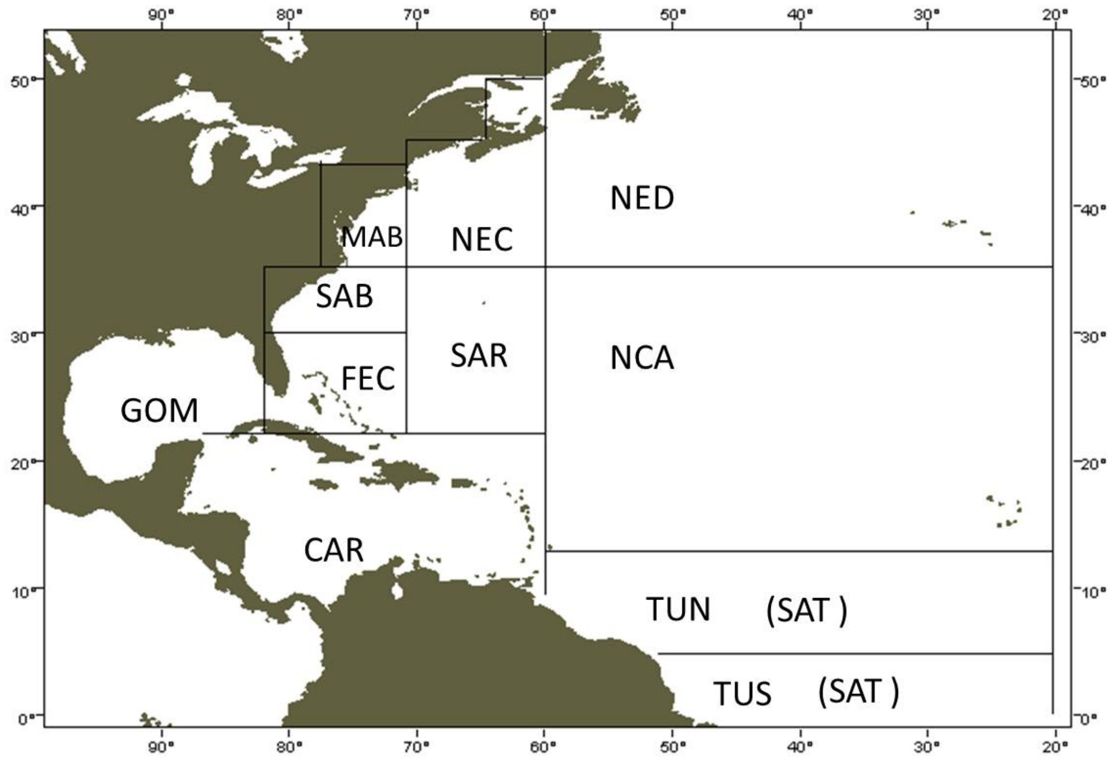


Figure 2.13 Pelagic Longline Reporting Areas

Alternative C 3b – Group Quotas

This alternative would implement a quota system for vessels possessing an Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would define three bluefin quota groups and assign vessels with a valid permit to one of the three groups. Both bluefin landings and dead discards would count toward the group quotas. Each quota group would be allocated quota based upon the number of eligible vessels in the group. Eligible vessels (n = 135) would be defined as those vessels that made at least one set using pelagic longline gear in 2006 through 2012 (i.e., "active") and had a valid Atlantic Tunas Longline permit on a vessel on August 21, 2013, the date of publication of the proposed rule.

Each eligible vessel would be assigned to a quota group based upon the associated permit's historical bluefin interactions to "designated species" landings ratio. Eligible vessels with relatively high numbers of bluefin interactions would be assigned to one quota group, eligible vessels with a moderate level of bluefin interactions would be assigned to a second group, and the eligible vessels with a low level of bluefin interactions would be assigned to a third quota group. All vessels with a valid permit that are inactive (i.e., did not make a pelagic longline set from 2006-2012) would be assigned to the quota group with the lowest bluefin to designated species landings ratios. NMFS would have the ability to transfer quota inseason from one quota group to another in order to optimize fishing opportunity. For purposes of quota monitoring, prior to each trip vessels would be required to make a VMS declaration indicating their quota group.

The rationale for proposing this alternative is that a group quota system may be simpler than an IBQ system and may have advantages over a single quota allocated for the entire Longline category. Group quotas would be relatively independent of one another, and therefore may reduce the potential for 'derby' fishing behavior (where there is the incentive for individual vessels to fish sooner rather than later) compared with a single quota for the entire category. Group quotas are different from regional quotas because vessels fishing under the same quota may be fishing in diverse regions, but would have a similar fishing history with respect to bluefin. Because some vessels have high interactions with bluefin (Section 3.3.5; Figure 3.40) creating quota groups of vessels with similar bluefin fishing histories may reduce the likelihood that vessels with high interactions with bluefin would disadvantage other vessels that do not tend to interact with bluefin. In other words, vessels that are able to avoid bluefin interactions may be insulated from the fishing behavior of vessels that do not avoid bluefin interactions (and cause the quota to be reached, with the resultant prohibition on the use of pelagic longline gear). The rate at which each quota is attained would result from the fishing behavior of the grouped vessels.

When NMFS projects that the quota for a group would be reached, it would file a closure notice with the Office of Federal Register for publication, and fishing with pelagic longline gear would be prohibited for vessels assigned to that group. Vessels would be required to complete scheduled and ongoing trips prior to the closure date/time. Criteria for NMFS consideration for closure could include elements such as: total estimated bluefin catch in relation to the regional quota; the estimated amount by which the bluefin quota might be exceeded; usefulness of data relevant to monitoring the quota; relatively high uncertainty in the documented or estimated dead discards or total catch of bluefin; high amount of bluefin caught within a short time; the effects of continued fishing on bluefin rebuilding and overfishing; provision of reasonable opportunity for pelagic longline vessels to pursue the target species; and variations in seasonal distribution, abundance or migration patterns of bluefin, etc. When fishing with pelagic longline gear has been prohibited, the use of other authorized gear such as green-stick, handgear, or buoy gear may continue.

Specifically, the quota groups would be based upon designated species landings information (dealer data and logbook data) expressed as weight during the seven-year period from 2006 through 2012; and bluefin tuna interactions (landings, discarded live and discarded dead), using logbook information. NMFS would compile a list of vessels and the associated bluefin to designated species landings ratio, and put the vessel list in descending order from highest to lowest bluefin to designated species landings ratio. The vessels would be divided into three groups, based on percentiles of ratios from highest (low bluefin avoiders, medium bluefin avoiders, and high bluefin avoiders, at 0 to < 33 percent, 33 to < 66 percent, and 66 to 100 percent, respectively). Table 2.17 shows some of the characteristics of the groups, and the amount of quota that would be allocated to each group under some of the quota alternatives.

Note that the quota groups have similar amounts of quota because the amount allocated to each quota group is based on the number of vessels in the quota group.

Table 2.17 Quota Groups Characteristics and Quota (mt) for Each Quota Group under Three Quota Reallocation Scenarios

Quota Group	Average # bluefin interactions from 2006 to 2012	# of Eligible Vessels	Quota Scenarios* 74.8	137	216.7
			Group Quotas (mt)		
Low Avoiders	1,136	45	24.9	45.5	72.0
Medium Avoiders	229	49	27.1	49.5	78.4
High Avoiders	16	41	22.7	41.4	65.6

*Quota Scenarios: see Table 4.40.

2.3.4 Alternative C 4 - NMFS Closure of the Pelagic Longline Fishery

Alternative C 4a – No Action

Under this alternative, the current regulation would continue, in which NMFS does not prohibit the use of pelagic longline gear when the Longline category bluefin quota is attained. When the bluefin quota is projected to be reached, pelagic longline vessels may no longer retain, possess, or land bluefin, but may continue to fish for their target species, and must discard any bluefin caught.

Alternative C 4b – NMFS Closure of the Pelagic Longline Fishery (Preferred)

Under this alternative, NMFS would close the pelagic longline fishery (i.e., prohibit the use of pelagic longline gear) when the total Longline category quota is reached; projected to be reached; is exceeded; or, in order to prevent overharvest of the Longline category quota and prevent further discarding of bluefin; or when there is high uncertainty regarding the estimated or documented levels of bluefin catch. When NMFS projects that the quota would be reached, it would file a closure action with the Office of the Federal Register for publication. Vessels would be required to complete scheduled and ongoing trips prior to the closure date/time. Criteria for NMFS consideration would include elements such as: total estimated bluefin catch (landings and dead discards) in relation to the quota; the estimated amount by which the bluefin quota might be exceeded; usefulness of data relevant to monitoring the quota; uncertainty in the documented or estimated dead discards or landings of bluefin; amount of bluefin landings or dead discards within a short time; the effects of continued fishing on bluefin rebuilding and overfishing; provision of reasonable opportunity for pelagic longline vessels to pursue the target species; variations in seasonal distribution, abundance or migration patterns of bluefin; or other relevant factors.

This alternative would be implemented in conjunction with any of the other Bluefin Tuna Quota Control alternatives under Section 2.3. If implemented under the current quota system, or an individual quota system that does not have robust inseason reporting and monitoring, to proactively account for dead discards, NMFS could utilize an historical estimate for pelagic longline dead discards as a proxy for anticipated dead discards, and subtract an estimate of dead discards "off the top" of the quota, as necessary. This would result in a substantially lower quota for bluefin landings, and the pelagic longline fishery when the bluefin landings quota is attained. If the quota allocated to the Longline category represents both landings and dead discards, if an estimate of dead discards were subtracted "off the top," the remaining quota would represent only bluefin landings. In other words, if an estimation of dead discards on a fishery-wide basis would result in a more precise or accurate estimate of dead discards than would reliance upon only vessel-reported information at the scale of individual vessels, NMFS could account for dead discards on a fishery-wide basis and reduce individual quotas accordingly in order to derive a landings quota.

Prohibition of the use of pelagic longline gear when NMFS estimates that the Pelagic Longline category quota has been attained (i.e., the amount of bluefin retained and dead discarded dead is estimated to be equal to or greater than the quota established for the Pelagic Longline category), would limit dead discarding in excess of the quota, and would provide incentives for vessels to avoid bluefin tuna (prior to reaching the quota). Whether NMFS relies upon a dead discard proxy generated from multiple data sources, or relies upon dead discard information provided by vessel-operators, NMFS could prohibit the use of pelagic longline gear in order to limit bycatch.

2.4 Enhance Reporting Measures

The objective of the alternatives to enhance reporting measures is to continue to improve the reporting and monitoring of the quota system, including its scope, timeliness, and accuracy. Timely and accurate information is integral to successful management of fisheries.

2.4.1 Alternative D 1 - VMS Requirements

Alternative D 1a – No Action

Purse Seine Category

Under the No Action alternative, there would be no requirement under HMS regulations for an Atlantic Tunas Purse Seine category vessel to obtain an E-MTU VMS unit and there would be no change to the reporting requirements applicable to purse seine vessels.

Pelagic Longline Category

This alternative would make no changes to the current VMS reporting requirements applicable to vessels possessing pelagic longline gear.

Alternative D 1b – VMS Requirements for the Purse Seine and Longline Categories (Preferred)

This alternative would require vessels with an Atlantic Tunas Purse Seine category permit to have an E-MTU VMS unit installed by a qualified marine electrician in order to remain eligible for the Purse Seine category permit. This alternative would be in addition to any relevant VMS rulemaking that would implement National VMS measures applicable to these fisheries.

This alternative would require vessels fishing for Atlantic tunas with purse seine gear or pelagic longline gear to report daily the number of bluefin retained, and discarded dead, and fishing effort (number of sets, number of hooks, respectively). This alternative is intended to support the inseason monitoring of the purse seine and pelagic longline fisheries. Although NMFS currently has the authority to require logbook reporting for the purse seine fishery, NMFS has not exercised this authority. Current information on the catch of the purse seine fishery includes dealer data on sold fish, and limited information on discarded bluefin or other species caught and/or discarded from periodic observer coverage. Inseason information on catch, including dead discards, would enhance NMFS' ability to monitor and manage all quota categories. The characteristics of the purse seine fishery are unique. Many bluefin may be caught in a relatively short period of time, and the proportion of discarded to retained fish may be high in some instances. More timely information on retained bluefin would improve the current monitoring of bluefin landings. This alternative would provide timely information on purse seine fishing effort, and improve NMFS' ability to interpret and utilize the bluefin data in the context of the fishery as a whole.

With respect to pelagic longline vessels, this alternative is intended to support the implementation of a pelagic longline catch cap, whether individual, regional, or group, described under Section 2.3. For example, under an IBQ program, each vessel must not catch more than is permitted by the total of his/her quota allocation. IBQ programs require the ability to track quota shares and quota allocations, reconcile landings and dead discards against individual quota allocations, and then balance the amounts against the total allowable quota for the Longline category. Although the current pelagic longline reporting requirements and the observer program provides data on pelagic longline landings and discards, and enables inseason monitoring and management based upon landings, the reporting requirements and monitoring requirements were not designed to support inseason monitoring of dead discards. More timely information on dead discards would be necessary in order to monitor and enforce a pelagic longline catch cap (IBQ, regional or group quotas). Although the current information on bluefin discards from the pelagic longline fishery obtained through logbook data (effort) and catches from the observer program (catches) is sufficient to estimate bluefin dead discards on an annual basis, the time lag associated with the current information is not useful for "real-time" in-season monitoring of a bluefin catch cap. Specifically, there is a time lag between the time logbooks are submitted or the field information is recorded by the observer during the fishing trip, the time the data are entered into a database, and the time the data are finalized (after a process of quality control) and available for use. A trip declaration requirement would provide NMFS with real-time information on pelagic longline catches and fishing effort, and support management of the fishery as a whole.

2.4.2 Alternative D 2 - Electronic Monitoring of Longline Category

Alternative D2a – No Action

Under this alternative, there would be no requirement to install or use electronic monitoring equipment.

Alternative D 2b –Electronic Monitoring of Longline Category (preferred)

This alternative would require the use of electronic monitoring, including video cameras, by all vessels issued an Atlantic Tunas Longline category permit that intend to fish for HMS. Specifically, vessels would be required to install and maintain video cameras and associated data recording and monitoring equipment in order to record all longline catch and relevant data regarding pelagic longline gear retrieval and deployment. The objective of this alternative is for NMFS to use the recorded data as a principal source of information used to verify the accuracy of counts and identification of bluefin reported through VMS and logbooks by the vessel owner/operator. Secondly, electronic monitoring would enable the collection of video image and fishing effort data that may be used in conjunction with other sources of information to estimate bluefin dead discards. Lastly, electronic monitoring would augment the ability of an observer to fulfill their duties, by providing a record of catch during the time periods the observer may be unable to observer the catch directly.

More specifically, this alternative would require the installation of NMFS-approved equipment that may include one to four video cameras, a recording device, video monitor, hydraulic pressure transducer, winch rotation sensor, system control box, or other equipment needed to achieve the objectives. Vessel owner/operators would be required to install, maintain, allow inspection of the equipment by NMFS, and obtain NMFS approval of the equipment or vendors selling such equipment. There would be a requirement to install the camera(s) to provide a view of the area where the longline gear is retrieved and catch removed from the hook (prior to placing in the hold or discarding) and a requirement that such a system be connected to the mechanical hauling device so that recording is initiated by gear retrieval. The vessel owner/operator would be required to store and make the data available to NMFS for at least 120 days, and submit the data to NMFS. The vessel operator would be responsible for ensuring that all bluefin are handled in a manner than enables the electronic monitoring system to record such fish, and must identify a crew person or employee responsible for ensuring that all handling, retention, and sorting of bluefin occurs in accordance with the regulations.

While the electronic monitoring program is being implemented, NMFS would continue to use all other sources of data including, VMS, logbook, observer, and landings information to assess catch by the pelagic longline fleet. NMFS would communicate instructional information in writing with the vessel owners during all phases of the program to provide direction and assistance to vessel owners, and facilitate the provision of technical assistance.

As described above, the rationale for this subalternative is to reduce the uncertainty regarding the data that will be obtained pursuant to new reporting requirements under an IBQ system, as well as create a platform for potential future reporting and monitoring efficiencies and opportunities.

2.4.3 Alternative D 3 - Automated Catch Reporting

Automated catch reporting is the use of the internet or an interaction voice response telephone system to report catch (in contrast to a paper-based or VMS reporting system).

Alternative D 3a - No Action

Under this alternative, there would be no automated catch reporting requirement applicable to the commercial Atlantic Tunas General or Harpoon categories or the HMS Charter/Headboat category, when fishing commercially.

Alternative D 3b - Automated Catch Reporting (Preferred)

This measure would require Atlantic Tunas General, Harpoon, and HMS Charter/Headboat categories to report their bluefin catch through an automated catch reporting system (for example, via either a web-based, or an interactive voice response telephone system) at the end of each trip. NMFS currently operates a similar automated landings reporting system (ALRS) for recreational bluefin catch in the HMS Angling category. Although information on commercial bluefin landings as currently reported by dealers is sufficient for NMFS to monitor the landings (which count toward the relevant sub-quotas), NMFS does not obtain information on bluefin that may be discarded as a result of the capture of fish that are discarded (either because the fish is less than the required minimum size or for another reason) from all categories. Such discard information would enhance NMFS' ability to more fully and accurately account for all sources of fishing mortality, consistent with ICCAT recommendations. Additional catch information from all of these categories could result in more equitable data collection among the diverse participants in the bluefin and HMS fisheries and enhance management of all HMS fisheries. Automated catch reporting would enable NMFS to obtain information about the magnitude of discards. NMFS would be able to share such information, in aggregate, with the bluefin fishery participants with the objective of reducing regulatory discards. Information on discarding would enable NMFS to consider a wider range of information when making decisions regarding quota management, and bluefin tuna management in general. Verification of data through observer coverage of these fisheries would augment the value of this data (see Section 2.4.4).

2.4.4 Alternative D 4 - Deployment of Observers

Alternative D 4a - No Action (Preferred)

Under this alternative, there would be no changes to the current observer coverage in the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. In the Longline category, the average percentage coverage in the pelagic longline fishery is approximately 8 percent (including a higher level of coverage in the Gulf of Mexico, particularly during the bluefin spawning period). None of the other quota categories (i.e., the directed bluefin fisheries) currently are selected to carry observers; however, NMFS has the authority to deploy observers in these categories.

Alternative D 4b – Increase NMFS-Funded Observer Coverage

This alternative would increase the level of NMFS-funded observers on a portion of trips by vessels fishing under the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. NMFS currently has the regulatory authority to select all vessels in these categories to take observers if requested, but currently only the pelagic longline fishery and purse seine fishery are selected. This alternative is intended to enhance the quantity and precision of data obtained from the pelagic longline fishery above the requirements of the 2004 BiOp, and to provide observer data for the directed bluefin categories, especially discard data. Observer data are critical to meeting numerous NMFS mandates including the Magnuson-Stevens Act, ESA, and MMPA. Historically, NMFS has generally provided funding to support observers to meet these various mandates in U.S. fisheries. At the same time, there are also examples where industry has contributed funding to achieve a desired level of observer coverage.

2.4.5 Alternative D 5 - Logbook Requirement

Alternative D 5a - No Action (Preferred)

This alternative would make no changes to the current logbook requirements applicable to any of the permit categories.

Alternative D 5b - Logbook Requirement for Atlantic Tunas and HMS Category Permit Holders

This measure would require the reporting of catch by Atlantic Tunas General, Harpoon, or HMS Charter/Headboat category vessels targeting bluefin through submission of an HMS logbook to NMFS. Additional catch information from these categories could result in more equitable data collection among the diverse participants in the bluefin fisheries and enhance management. Logbooks provide a means to record and submit to NMFS a wide variety of fishery information. Logbook data would enable the submission of information on bluefin discards on a regular basis (e.g., weekly/monthly) and could support the submission of additional information in the future. NMFS would be able to share such information, in aggregate, to the bluefin fishery participants with the objective of reducing regulatory discards. Verification of data through observer coverage of these fisheries would augment the value of this data.

2.4.6 Alternative D 6 - Expand the Scope of the Large Pelagics Survey

Alternative D 6a - No Action (Preferred)

This alternative would make no changes to the scope of the Large Pelagics Survey, which is an important component of the data used to estimate landings of recreationally caught and landed HMS, including bluefin, and to monitor the Angling category quota. The Large Pelagic Survey collects data from June through October from Maine through Virginia. The data are used in conjunction with the North Carolina and Maryland census programs and the Automated Landings Reporting System to estimate recreational landings. NMFS's Office of Science and Technology is currently exploring the concept of expanding and/or modifying the Large Pelagics Survey, under its Marine Recreational Information Program (MRIP).

Alternative D 6b - Expand the Scope of the Large Pelagics Survey

This alternative would expand the scope of the Large Pelagics Survey. Specifically, the Large Pelagics Survey would be expanded to encompass states south of Virginia, inclusive of the Gulf of Mexico, and include the months of May, November, and December. This would be expected to increase the amount of data collected and improve landings estimates derived from these data. The Large Pelagics Survey is an important component of the data used to estimate landings of recreationally caught bluefin, as well as other HMS, and to monitor the Angling category quota. The data are used in conjunction with data from North Carolina and Maryland census programs, and the Automated Landings Reporting System to estimate catch and landings. Currently, the Large Pelagics survey collects data from June through October from Maine through Virginia.

2.5 Other Measures

2.5.1 Alternative E 1 - Modify General Category Subquota Allocations

Alternative E 1a - No Action

The No Action alternative would make no changes to the current General category subquota allocations which allocate 5.3 percent of the General category quota to the January subquota period; 50 percent to June through August; 26.5 percent to September; 13 percent to October-November, and 5.2 percent to December. Although it is called the "January subquota," the regulations allow the General category fishery under this quota to continue until the January subquota is reached, or March 31, whichever comes first. Unused quota rolls forward within the fishing year, which coincides with the calendar year, and is available for use in subsequent time periods. Underharvest from the previous fishing year also may be carried forward, but underharvest from the previous fishing year typically is not available to the January subquota period due to the timing of the annual specifications (finalized mid-year) that implement the annual quotas and distribute any underharvest that is carried forward.

Alternative E 1b - Establish 12 Equal Monthly Subquotas

The alternative would establish 12 equal monthly subquotas and continue to allow unused quota to roll forward within the fishing year, which coincides with the calendar year. The objective of this alternative is to optimize fishing opportunity. Modification of the current General category subquota allocations would alter the distribution of quota among seasons, may provide increased fishing opportunity for some vessels, and may decrease fishing opportunities for other vessels. General category participants in the January fishery perceive they are disadvantaged with respect to the amount of quota available because currently the January subquota period benefits from neither the previous nor current fishing year underharvests. Currently, because unused quota rolls forward within a fishing year, and because of the timing of the annual specifications (finalized mid-year), there are often greater opportunities to land bluefin in the second half of the fishing year than in January, at the beginning of the fishing year.

Alternative E 1c – Provide Additional Flexibility for General Category Quota-Adjustment (Preferred)

Under this alternative, NMFS could proactively transfer quota from one or more of the subquotas following the January subquota to the January or other subquotas, through inseason action and

Federal Register Notice. In other words, under this alternative NMFS could transfer quota from one subquota period to another, earlier in the calendar year. For example, in December of a particular year, NMFS would, through its authority to conduct inseason quota adjustments, make an adjustment for the subsequent year and transfer quota from December to January (December to January of the subsequent year), via Federal Register Notice, and other communication with the fishery participants.

NMFS received public comment on this alternative seeking clarification on NMFS' intent regarding transfers from one subquota period to another. Following consideration of these comments, NMFS clarifies that priority would be given to transfer subquota from the winter fishery that occurs in December to the winter fishery that occurs in January within a calendar year, which tends to involve similar geographic areas and participants. For example, subquota could be transferred from the December time period to the January subquota period for that same calendar year. Unused quota would continue to roll forward within the calendar year. For purposes of this example, unused quota that rolls forward from prior subquota periods (e.g., from the September period to the October through November period, etc.) may accrue to the December period even if NMFS previously transferred quota to the January period through a prior inseason action. Although NMFS could transfer quota from one subquota period to any other subquota period, NMFS would prioritize transfer from the winter fishery that occurs in December to the winter fishery that occurs in January within a calendar year (e.g., in January of Year A, NMFS would prioritize transferring quota allocated for December of Year A to further fishing opportunities early in January of that year). The objective of this alternative is to optimize opportunities for the January fishery, but retain the current structure of the General category quota system. NMFS would add the following new objective of "quota adjustment" to the current list of criteria and relevant factors NMFS considers when making inseason or annual quota adjustments: For the General category, proactively transfer quota from one or more of the subquota periods following the January subquota period to the January or other subquota periods.

2.5.2 Alternative E 2 - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason

Alternative E 2a - No Action

In November 2011, NMFS published a final rule to address adjustments to the bluefin General and Harpoon category regulations. This final rule increased the General category maximum daily retention limit from three to five large medium or giant bluefin (measuring 73" CFL or greater), allowed the General category season to remain open until the January subquota was reached (or March 31, whichever was sooner), and increased the Harpoon category daily incidental retention limit of large medium bluefin from two to four fish per vessel (76 FR 74003; November 30, 2011). This action enabled more thorough utilization of the available U.S. bluefin quota for the General and Harpoon categories; minimized bycatch and bycatch mortality to the extent practicable; expanded fishing opportunities for participants in the commercial winter General category fishery; and increased NMFS' flexibility for setting the General category retention limit depending on available quota.

The No Action alternative would make no changes to the current retention limits applicable to the Harpoon category. The retention limit would remain at four large medium (73” CFL to less than 81” CFL) bluefin per vessel per day (and unlimited giants, 81” CFL or greater).

Alternative E 2b - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason (Preferred)

Following implementation of the increased large medium retention limit applicable to the Harpoon category, NMFS has received requests from Harpoon category participants to manage the large medium size class retention limit over a range, similar to how NMFS manages the daily General category retention limit, for increased flexibility in setting the limit based on consideration of applicable factors.

Under this alternative, NMFS would have the ability to increase or decrease the daily retention limit of large medium bluefin (greater than 73” CFL and less than 81” CFL) within a range of two to four fish. This range is based on the former (i.e., two fish) and current (i.e., four fish) daily retention limit of large medium bluefin for the Harpoon category. Any adjustment would be based upon the current regulatory determination criteria that apply to inseason bluefin adjustments, including: The usefulness of information obtained from catches in the particular category for biological sampling and monitoring of the status of the stock; effects of the adjustment on bluefin rebuilding and overfishing; effects of the adjustment on accomplishing the objectives of the fishery management plan; variations in seasonal distribution, abundance, or migration patterns of bluefin; effects of catch rates in one area precluding vessels in another area from having a reasonable opportunity to harvest a portion of the category's quota; and review of dealer reports, daily landing trends, and the availability of the bluefin on the fishing grounds, as well as any other relevant factors. The default Harpoon category daily retention limit of large medium bluefin would be two fish per vessel (i.e., the large medium bluefin daily retention limit that applied prior to the 2011 regulatory change). The retention limit of giant bluefin (81” CFL or greater) would remain unlimited.

The objective of this alternative is to optimize fishing opportunity for the Harpoon category participants within the available quota. NMFS currently cannot adjust this retention limit via inseason action. In contrast, for the General category, NMFS can increase or decrease the daily retention limit for large medium or giant bluefin within a specified range, via inseason action, following consideration of the regulatory determination criteria. This alternative would enhance NMFS’ ability to more precisely manage the landing rate of large medium bluefin by the Harpoon category, thereby optimizing opportunities while preventing landings from exceeding the subquota. It would be appropriate that the determination criteria for inseason adjustments would be the same as for the General category because they are both commercial categories, with similar regulatory and fishery conditions.

2.5.3 Alternative E 3 - Angling Category Trophy Subquota Distribution

Alternative E 3a - No Action

Under the No Action alternative, there would be no change to the current Angling category trophy subcategory quota allocations. Trophy-sized bluefin (greater than 73” CFL) caught by recreational vessels in the Atlantic and Gulf of Mexico count against either the northern area subquota (for fish landed north of 39° 18’ N. latitude; i.e., off Great Egg Inlet, NJ) or the southern area subquota (for fish landed south of 39° 18’ N. latitude). Therefore, bluefin from the Gulf of Mexico and the Atlantic south of 39° 18’ N. latitude count toward the same recreational subquota (the trophy south subquota). The dividing line was intended to provide an equitable geographical and temporal distribution of recreational fishing opportunities. The currently codified subquotas are 2.8 mt (66.7%) for the southern area and 1.4 mt (33.3%) for the northern area.

Pursuant to ICCAT recommendations, targeting of bluefin in the Gulf of Mexico by either commercial or recreational vessels has been prohibited for many years. Therefore, recreational vessels fishing in the Gulf of Mexico are subject to different bluefin regulations than vessels fishing in the Atlantic. Recreational vessels fishing in the Gulf of Mexico may not target bluefin, but may retain one incidental trophy-sized bluefin per vessel per year if the southern trophy subquota has not been reached. Recreational vessels fishing in the Atlantic may target bluefin, subject to the size and daily retention limits in effect, provided the relevant subquota has not been attained.

Alternative E 3b - Allocate a Portion of the Trophy South Subquota to the Gulf of Mexico (Preferred)

Under current regulations, a situation may be created whereby the entire southern trophy subquota could be filled by bluefin caught in the Atlantic, thus precluding any opportunities for the incidental catch and retention of trophy-sized bluefin in the Gulf of Mexico. Under this alternative, a portion of the trophy south subquota would be allocated specifically for the Gulf of Mexico. Specifically, the trophy subquota would be divided to provide 33% each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. At the current average trophy fish weight, this would allow up to approximately 8 trophy bluefin to be landed annually in each of the three areas. To distinguish bluefin caught in the Gulf of Mexico from those caught in the Atlantic, for the purposes of this alternative, the Gulf of Mexico region includes all waters of the U.S. EEZ west and north of the boundary stipulated at 50 CFR 600.105(c) and the Atlantic region includes all other waters of the Atlantic Ocean. The objective of this alternative is to provide a reasonable fishing opportunity for recreational vessels in the Atlantic and Gulf of Mexico, reduce discards, and account for incidentally caught bluefin. It may be equitable to split the southern subquota for trophy-sized bluefin to create a separate Gulf of Mexico subquota. A separate subquota allocation for the Gulf of Mexico could improve the equity of the trophy-sized fish allocation by increasing the likelihood that there will be trophy quota available to account for incidental catch of bluefin in that area (while still providing incentives not to target bluefin).

2.5.4 Alternative E 4 – Change Start Date of Purse Seine Category to June 1

Alternative E 4a – No Action

Under the No Action alternative, there would be no change to the start date of the Purse Seine category fishery, which is currently set at July 15. NMFS may delay the start date from July 15 to no later than August 15, by publishing a notice in the Federal Register. Vessels fishing in the Purse Seine category target giant bluefin (81” or greater CFL), but may retain large medium size bluefin (73 to < 81” CFL) in amounts not exceeding 15 percent, by weight, of the total amount of giant bluefin landed during that fishing year (and may retain bluefin smaller than 73” CFL, in an amount not exceeding 1 percent, by weight, of the skipjack and yellowfin tuna landed on a trip).

Alternative E 4b – Change Start Date of Purse Seine Category to June 1 (Preferred)

Alternative E 4b would change the start date of the Purse Seine category fishery from July 15 to June 1, and provide NMFS the ability to delay the season start date from June 1 to no later than August 15, by publishing a notice in the Federal Register. The objective of this alternative is to optimize fishing opportunity for Purse Seine category vessels. The opportunity for Purse Seine category vessels to harvest their quota, which consists principally of giant bluefin, may be constrained due to the restriction on the amount of large medium bluefin they may retain. A Purse Seine vessel operator may choose not to fish if bluefin schools are composed of a high proportion of large medium fish in addition to giants in order to avoid sets in which a large portion of the catch would have to be discarded due to fish size. In addition to optimizing fishing opportunity, other considerations with respect to the timing of the start date of the fishery are potential gear conflicts and market considerations.

2.5.5 Alternative E 5 - Rules Regarding Permit Category Changes

Alternative E 5a - No Action

Under the No Action alternative, there would be no changes made to current regulations regarding changes to permit categories. The current regulations prohibit a vessel issued an Atlantic Tunas or an HMS permit from changing the category of the permit after 10 calendar days from the date of issuance.

Alternative E 5b - Modify Rules Regarding Permit Category Changes (Preferred)

This alternative would allow a vessel owner to modify the category of an Atlantic Tunas or HMS permit for up to 45 days from date of issuance provided the vessel has not landed bluefin, as verified via landings data. The current restriction is meant to preclude vessels from fishing in more than one category during a year and to discourage speculative use of fishing permits. However, based on feedback NMFS has received over a number of years from vessel owners affected by the 10-day restriction, NMFS has concluded that limiting the time period during which a vessel may change permit categories to 10 calendar days is overly restrictive, and may not allow the flexibility to resolve the problems of a permit issued by mistake. This measure may achieve a better balance of allowing flexibility for vessel owners, while still preventing fishing in more than one permit category during a fishing year.

2.5.6 Alternative E 6 - North Atlantic Albacore Tuna Quota

Alternative E 6a - No Action

Under the No Action alternative, there would be no new regulations regarding Atlantic albacore tuna. There are currently no regulations regarding the quota management of Atlantic albacore tuna.

Alternative E 6b - Implement U.S. North Atlantic Albacore Tuna Quota (Preferred)

The alternative would implement the U.S. annual quota of north Atlantic albacore tuna (or "northern albacore") recommended by ICCAT (Recommendation 13-05; Supplemental Recommendation by ICCAT Concerning The North Atlantic Albacore Rebuilding Program) and would establish provisions for the accounting of overharvest and underharvest of the quota via annual specifications. Specifically, the codified U.S. northern albacore quota would be adjusted as appropriate for prior year's catch, including delayed or multiyear adjustments. Carry-forward of unused quota would be limited to 25 percent of the initial quota, consistent with the current ICCAT recommendation. NMFS would adjust and implement the following via regulatory framework adjustments: Actions to implement ICCAT recommendations, as appropriate; allocating and refining domestic allocation of the U.S. quota; establishing retention limits; implementing effort restrictions, etc. Although an FMP amendment is not needed, framework adjustments still go through extensive public and analytical review and must be consistent with the Magnuson-Stevens Act and other applicable law.

Since 1998, ICCAT has made recommendations regarding the northern albacore fishery. A multiyear management measure for northern albacore was first adopted in 2003, setting the TAC at 34,500 mt. At the latest northern albacore stock assessment (2009), ICCAT's Standing Committee on Research and Statistics concluded that the northern albacore stock continues to be overfished with overfishing occurring, and recommended a level of catch of no more than 28,000 mt to meet ICCAT management objectives by 2020. In 2009, ICCAT established a northern albacore rebuilding program via Recommendation 09-05, setting a 28,000-mt TAC and including several provisions to limit catches by individual ICCAT parties (for major and minor harvesters) and reduce the amount of unharvested quota that could be carried forward from 50 percent to 25 percent of a party's initial catch quota. The 2009 recommendation expired in 2011.

In 2011, ICCAT Recommendation 11-04 set a TAC of 28,000 mt for 2012 and 2013 and contained specific recommendations regarding the northern albacore rebuilding program, including an annual TAC for 2012 and 2013 allocated among the European Union, Chinese Taipei, the United States, and Venezuela. The U.S. quota for 2012 and 2013 is 527 mt. The recommendation limits Japanese northern albacore catches to 4 percent in weight of its total Atlantic bigeye tuna longline catch, and limits the catches of other ICCAT parties to 200 mt. The 2013 northern albacore recommendation maintained the 28,000-mt TAC for 2014, 2015, and 2016. It also specifies that quota adjustments for underharvest or overharvest during a given year be made within two years from the subject year (i.e., adjustments based on 2015 catches would be made for 2017). Pursuant to this recommendation, it is appropriate for the United States to implement the U.S. quota and establish provisions to adjust the base quota via annual quota specifications.

2.5.7 Alternative E 7 – Minor Regulatory Changes

This section addresses minor corrections, clarifications, the removal or modification of obsolete cross-references, and minor changes to definitions and prohibitions that will improve the administration and enforcement of HMS regulations. Several of these items have been identified by constituents over the past few years or were raised during scoping hearings. Most of the corrections, clarifications, changes in definitions, and modifications to remove obsolete cross-references are consistent with the intent of previously analyzed and approved management measures. These changes would have no effect either individually or cumulatively upon the human environment. Under NOAA Administrative Order 216-6, actions that modify previously analyzed actions and that do not affect the human environment, minor technical additions, corrections, or changes to existing regulations are categorically excluded from the requirements of an EA or EIS. Changes that meet these criteria, and that are therefore exempt from the NEPA requirements, are described below.

Table 2.18 Regulatory Changes that Do Not Need Alternatives

Item	Current Regulation	Amendment and Rationale
1	635.5(c)(1)	The reporting requirement currently states “catch”, but should state “landings” instead. The relevant internet address would be updated.
2	635.20(a)	The method of determining length of Atlantic tunas currently states that it applies only to swordfish permitted vessels, but it should apply regardless of permit type.
3	635.21(c)(5)(iii)(C)	The current reference to the NED in this context refers to the area as a “closed” area instead of a “gear restricted area.”
4	635.27(a)(7)	The reference to research in this paragraph is too specific. “Fishery-independent research” would be changed to “research.”
5	635.27(a)(1)(iii)	The descriptor “coastwide”, when referring to the General category fishery, is no longer necessary and would be deleted.
6	635.71(b)(13)	The current prohibition would be corrected to clarify that the relevant amount of bluefin is the “applicable limit” instead of “a” bluefin.

2.6 Considered but Not Analyzed Further

2.6.1 Research in Gear Restricted and Closed Areas and Modification to Northeastern U.S. Closed Area

NMFS Ability to Conduct Research in Gear Restricted Areas and Closed Areas

This alternative would have considered regulatory changes to facilitate NMFS' ability to conduct research in gear restricted and closed areas. HMS Advisory Panel discussions in 2012 included suggestions that NMFS make it "easier" to conduct research in closed areas. NMFS considered, but did not analyze further modifications of regulations to achieve this objective. NMFS concluded that no changes to the regulations with respect to the procedures utilized to conduct research are necessary. The EFP regulations and associated administrative procedures (and similar authorizations) are sufficient to provide a standardized process through which research into closed areas may be authorized and conducted. EFPs, display permits, LOAs, and SRPs are issued under the authority of the Magnuson-Stevens Act and/or ATCA. EFPs are issued to individuals for the purpose of conducting research or other fishing activities using private (non-NOAA) vessels, whereas an SRP would be issued to agency scientists who are using NOAA vessels or "bona fide" research vessels (e.g., state research vessels) as their research platform. Similar to SRPs, LOAs are issued to individuals conducting research from "bona fide" research vessels on species that are only regulated by Magnuson-Stevens Act and not ATCA. EFPs authorize activity that would otherwise be prohibited (such as research with pelagic longline gear in a closed area).

The current procedure for issuing EFPs is adequate for providing research opportunities. NMFS strives to balance the needs of researchers for reasonable requirements and timely consideration of applications with its responsibility to evaluate and authorize research proposals consistent with legal obligations. Annually, NMFS accepts and reviews applications for research activities, informs the public of such applications, provides opportunities for public comment, and informs the public regarding the content of comments received. The process makes use of the Federal Register as well as other means to communicate with the public. Because NMFS has determined that its current procedures for authorizing research are meeting its objectives, this alternative is not considered "reasonable" at this time because it is not necessary and redundant with current regulations.

2.6.2 IBQs based on historical bluefin catch

This alternative would have based IBQ quota shares on historical catch of bluefin, utilizing vessel logbook information. The individual catch allocation would be expressed as a percentage of the Longline category quota, and based upon an average of multiple years. The Amendment 7 predraft document contained data to illustrate this alternative and showed a range of numbers of historical longline interactions with bluefin. NMFS is not considering this alternative further at this time because allocation of bluefin in proportion to historical catch of bluefin would facilitate the future fishing opportunity of those vessels that have historically caught bluefin tuna more than vessels that have historically caught less bluefin. Facilitating future opportunity for vessels that have caught more bluefin is not consistent with the Amendment 7 objective of reducing dead discards of bluefin, and therefore, is not a reasonable alternative. Additionally, this alternative was generally not supported by members of the HMS Advisory Panel and public, who generally perceive this as providing incentive to catch more bluefin or legitimizing historical bluefin interactions, rather than creating an incentive to minimize bycatch. Furthermore, the method would not reflect the diversity in the pelagic longline fleet with respect to the amount of target catch, and the relationship between target catch and bluefin catch. For these reasons this alternative would not achieve objectives two and four, of the IBQ program.

2.6.3 Reduction in Minimum Size for Commercial Categories

This alternative would have reduced the current minimum size applicable to pelagic longline vessels fishing in the Atlantic to 47" or 59" CFL. A 47" CFL minimum size is equivalent to the ICCAT minimum size and 59" CFL is the lower end of the small medium size class. The objective of this alternative would be to reduce regulatory discards, while limiting interactions, and maintain consistency with ICCAT requirements. Reduction of the minimum size may reduce regulatory discards, and could enable the sale of fish that would otherwise have been discarded. Because current data indicate that there is substantially less regulatory discarding of undersized bluefin in the Gulf of Mexico than in the Atlantic, there is little justification for reduction of the minimum size in the Gulf of Mexico; therefore, this alternative is not reasonable for that region. In the Atlantic region, a 59" CFL minimum size would increase the complexity of the regulations and reduce enforcement capabilities by eliminating the ability to distinguish commercial and recreational bluefin. For these reasons, a reduction in minimum size for commercial categories in the Atlantic region is not a reasonable alternative and is not considered further at this time.

2.6.4 Angling Category: Maximum Bluefin Catch Limit

This alternative would have set a maximum catch limit per trip for bluefin (including kept and released fish) for the HMS Angling category and for the HMS Charter/Headboat category (when fishing recreationally), in order to limit the number of fish caught and released and therefore potential post-release mortalities. The catch limit would be specified in relation to the retention limit (e.g., two, or three times the retention limit).

For example, if the retention limit is one bluefin per trip and the maximum catch limit was set at twice the retention limit, the vessel could catch a total of two fish, and therefore could retain one legal-sized fish and release one fish, or release two fish.

The objective of this alternative would be to reduce recreational post-release mortality on a particular trip, due to size restrictions, improper gear, environmental conditions, or high-grading among other reasons. This alternative could provide incentives to limit excessive discarding in certain situations, and may reduce the amount of overall discards. However, this alternative is not considered further at this time due the lack of enforcement capabilities and because it would be contrary to the positive incentives and fishing practices inherent in current tag-and-release or catch-and-release programs that support scientific data collection and are consistent with current regulations.

2.6.5 Modification of Tolerance Rules for Purse Seine Vessels

This alternative would modify the current annual incidental retention limit or "tolerance" of large medium bluefin (no more than 15 percent of the total amount of giant bluefin (81 inches or greater) per year, by weight for the Purse Seine category) or the Purse Seine retention limit for targeting mixed tuna schools (bluefin smaller than 73 inches may not constitute more than 1 percent per trip of the skipjack and yellowfin tuna, by weight). The amount of large medium bluefin that Purse Seine category vessels would be allowed to harvest would be increased in order to reduce dead discards.

Modification of the purse seine tolerances could reduce bluefin discards and provide more flexibility in optimizing fishing opportunities for this category. Although there has been past interest in altering this limit, e.g., the issue was raised in the comments on the 2006 Consolidated HMS FMP, this alternative was not considered further in the DEIS because there was very little data available to determine whether such as change might be warranted and to assess the impacts of such a change given recent low catch/landings from the Purse Seine category. Data are now available on dead discards by size relative to retained catch for the Purse Seine category from the 2013 fishing year. NMFS believes that additional analysis about the potential benefits of altering the limit, both by reducing dead discards and improving the Purse Seine category's opportunity to harvest its quota, may be warranted and beneficial to the stock and the fishery. Additional data are needed to conduct such analyses and to make fishery management decisions. On August 1, 2014, NMFS issued an Exempted Fishing Permit to enable the collection of data necessary to fully evaluate this issue.

2.6.6 Allow Storage of Unauthorized Gear when Fishing for Bluefin

This alternative would allow a vessel with a directed Atlantic Tunas permit fishing for or possessing bluefin tuna to have on board gear that is not authorized to capture bluefin tuna.

For example, a vessel could fish for groundfish (Northeast Multispecies) using a trawl or gillnet, but also fish for bluefin with handgear on the same trip, provided the unauthorized gear was stowed, in accordance with the governing regulations for that gear type/fishery.

The objective of this alternative would be to provide additional flexibility for vessels in order to fish more efficiently. Under current regulations (635.21(e)), an Atlantic Tunas permitted vessel may not possess at the same time bluefin and any gear that is not authorized under the 2006 Consolidated HMS FMP. This alternative would ease that restriction in order to allow a vessel greater flexibility to fish more efficiently and catch bluefin when bluefin are available.

This alternative is not considered further at this time because it would reduce the enforceability of the gear restrictions because it would be difficult to determine whether bluefin has been caught using authorized gear or not.

2.6.7 Define and Authorize the Use of Bait Nets while Fishing for Bluefin

This alternative would allow a vessel with an Atlantic tunas General, HMS Angling, or HMS Charter/Headboat category permit to have on board and deploy bait net for the capture of fish intended as bait for bluefin. Vessels operators may wish to capture baitfish on the same trip on which they intend to fish for bluefin, but current gear restrictions preclude this practice. Under current regulations, such vessels may not possess bluefin and any gear that is not authorized under the 2006 Consolidated HMS FMP. For example, because gillnets are not authorized for bluefin, they cannot be onboard. Therefore, fishermen must either fish for bait using a gillnet on a separate trip, catch it in another manner, or purchase bait. This measure is not considered further at this time. The use of a large net or net that is not tended could potentially impact bluefin, and therefore the allowable range of bait net specifications should be defined, and the net should be tended. It would be difficult to develop a useful specification that is consistent with fishing practices, as there are many interpretations as to what constitutes a "bait net" (e.g., gillnet, cast net, mid-water trawl, bottom trawl, herring seine, etc.). Enforcement of bait net regulations would be difficult due to the varying interpretations of "bait net."

2.6.8 Real-time Monitoring and Closure of "Hot-Spots"

Under this alternative, NMFS would implement a real-time bluefin catch monitoring system and utilize the information to take inseason actions to close geographic areas with high rates of bluefin interaction with pelagic longline gear to reduce dead discards. Real-time monitoring by NMFS to detect the occurrence of high numbers of interactions, and inseason closure of such areas to the use of pelagic longline gear could prevent the continuation of those interactions. This measure is not considered further at this time because a reporting and monitoring system to support this measure does not currently exist, and development and administration of such a system would be complex and require substantial resources; therefore, this is not a reasonable alternative at this time.

2.6.9 Facilitation of an Industry-Based Bluefin Avoidance System

This alternative would be implemented in conjunction with a catch cap. NMFS would work with the pelagic longline fishery to facilitate the communication of hot-spots by developing of a fishery-based "bluefin avoidance system" where vessels voluntarily provide real-time information regarding the location of bluefin. A fishing industry organization or a third party such as an academic or research organization would compile the fleet information and email the locations of hot-spots back to the fleet. Based on this information, pelagic longline vessels would avoid fishing in locations with relatively higher availability of bluefin. The objective of this alternative would be to reduce bluefin discards. Enhanced knowledge of the location of bluefin may enable vessels to avoid interactions with bluefin. An analogous system has been useful in other fisheries such as Georges Bank yellowtail flounder, and the use of a third-party could address sensitivities in sharing this information or may preserve the integrity of the information shared by the fleet.

This alternative is not considered further at this time because, although NMFS fully supports the concept of fishing industry members collaborating and communicating in an effort to avoid and reduce interactions with bluefin, development of a regulatory structure and administration of such a system would be complex and require substantial resources; therefore, this is not a reasonable alternative at this time.

2.6.10 Smart-Phone Reporting

This alternative would require Atlantic tunas General, Harpoon, and HMS Charter/Headboat categories to report their bluefin catch through a smart-phone application ("app") at the end of each trip. Although information on bluefin landings by commercial vessels currently reported by dealers is sufficient for NMFS to monitor the landings (which count toward the relevant subquotas), NMFS does not obtain information on bluefin that may be discarded as a result of the capture of fish that are less than the required minimum size (or discarded for another reason). Smart-phone reporting would enhance NMFS' ability to more fully and accurately account for all sources of fishing mortality.

This alternative is not considered further at this time because, although NMFS fully supports the concept of the use of smart-phones for data reporting, the development and implementation of a smart phone "app" would be more costly and take more time than enhancement of the existing automatic data reporting system; therefore, this alternative is not reasonable at this time. Additionally, not all participants in the fishery have smart phones, yet most have access to a computer and all have access to a telephone.

2.6.11 Prohibition of the Use of Pelagic Longline Gear in the HMS Fishery

This alternative would prohibit the use of pelagic longline gear in the HMS fishery in order to reduce bluefin tuna dead discards. Prohibition of the use of pelagic longline gear to target HMS would reduce dead discards of bluefin tuna and reduce bycatch of other HMS, marine mammals, and other species.

This alternative is not considered further at this time because it would not provide a balanced approach to achieving the Amendment 7 objectives or be consistent with the provisions of the MSA. Specifically, this alternative would not address the Amendment 7 objective to optimize fishing opportunity and would have unnecessary significant adverse economic impacts due to the cessation of the pelagic longline fishery for swordfish, yellowfin tuna and other HMS, contrary to National Standard (NS) 8 which requires that management measures provide for the sustained participation of fishing communities and to the extent practicable, minimize adverse economic impacts on such communities.

2.7 Chapter 2 References

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3 DESCRIPTION OF AFFECTED ENVIRONMENT

This chapter serves several purposes. It describes the affected environment (the fishery, the gears used, the communities involved, etc.), and provides a view of the current condition of the fishery, which serves as a baseline against which to compare potential impacts of the different alternatives. This chapter also provides a summary of information concerning the biological status of Atlantic bluefin and northern albacore tuna stocks; the marine ecosystems in the fishery management unit; the social and economic condition of the fishing interests, fishing communities, and fish processing industries

The domestic management of Atlantic tunas is combined with the management of swordfish, sharks, and billfish in the 2006 Consolidated HMS FMP and its amendments. International management of Atlantic tunas occurs primarily through ICCAT which adopts binding recommendations that are then implemented domestically under ATCA. The management background information in this chapter is limited in scope to information needed to understand the Affected Environment discussion. More extensive and specific discussion is included in Chapters 1, 2, and 9. Additional background information and documents may be found under the Documents tab of the HMS website: www.nmfs.noaa.gov/sfa/hms/.

3.1 Bluefin Tuna Quota Management

The Atlantic bluefin tuna fisheries are managed domestically through a quota system, in conjunction with other management measures including gear restrictions, minimum fish sizes, closed areas, and trip limits, among others. ICCAT recommendations include establishing an annual TAC of bluefin for the western Atlantic management area, as well as other management measures. The western Atlantic management area is separated from the eastern Atlantic and Mediterranean management area at the 45° West longitude line in the northern hemisphere. Under existing recommendations, the U.S. portion of the ICCAT-designated western Atlantic bluefin TAC is 54 percent of the overall TAC plus an additional 25 mt for bycatch related to longline fisheries in the Northeast Distant management area. NMFS implements the ICCAT U.S. quota recommendation, as required by ATCA, and further divides the quota among U.S. fishing categories through the domestic rulemaking process. Through such a rule, NMFS divides the annual U.S. bluefin quota among several domestic categories based on allocation percentages first established in the 1999 FMP (NMFS 1999a), and further subdivides these domestic category allocations into subquotas (i.e., on a temporal, geographic, and/or size class basis) to further meet the objectives of the Magnuson-Stevens Act, ATCA, and the 2006 Consolidated HMS FMP. NMFS adjusts the U.S. bluefin quota through annual domestic quota specifications, as needed, to appropriately account for overharvest or underharvest during the previous year, consistent with ICCAT recommendations.

3.1.1 Domestic Subquotas

NMFS implements ICCAT-adopted quotas through rulemaking. Domestically, consistent with the 2006 Consolidated HMS FMP, the base quota for each of the quota categories is expressed as a percentage of the total U.S. quota, and the base quotas are codified in the regulations.

The U.S. BFT quota and subquotas for the General, Angling, Harpoon, Purse Seine, Longline, Trap, and Reserve categories are codified in the HMS regulations at 50 CFR § 635.27; these allocations (in metric tons) were most recently established via a 2011 final rule (76 FR 39019, July 5, 2011) following the 2010 ICCAT recommendation, which revised the western Atlantic bluefin TAC. As an example, applying the 19.7% allocation to the 923.7-mt U.S. quota (not including any quota recommended for longline bycatch in the vicinity of the management area boundary) resulted in an Angling category quota of 182 mt.

Table 3.1 Bluefin Base Quota Allocations by Quota Category – As a Percentage of U.S. Quota.

Category	Current Allocation (%)	Category	Current Allocation (%)
Angling	19.7	Purse Seine	18.6
General	47.1	Trap	0.1
Harpoon	3.9	Reserve	2.5
Longline	8.1		

3.1.2 Bluefin Quota Specifications

In addition to implementing the ICCAT-recommended quota by regulation, NMFS also annually adjusts the quota as appropriate for overharvest or underharvest consistent with ICCAT recommendations. The quota specifications are based on the ICCAT-recommended U.S. quota for a particular year, the under/overharvest of the prior year, the recommended limit on the amount of quota that may be carried forward, and the codified category quotas and subquotas. In recent years, NMFS has proactively accounted for a portion or all of the estimated dead discards "up front," (i.e., at the beginning of the fishing year) via the specifications process.

In the 2007 through 2010 quota specifications, NMFS accounted for pelagic longline dead discards within the Longline category quota, and deducted the best available estimate of dead discards from the current year Longline base quota. In the quota specifications for these years, NMFS also carried forward the full amount of prior-year underharvest allowed by ICCAT and distributed the underharvest to: (1) ensure that the Longline category had sufficient quota to operate during the fishing year after the required accounting for BFT dead discards; (2) maintain 15 percent of the 2010 U.S. quota in Reserve for potential transfer to other ICCAT Contracting Parties and other domestic management objectives, if warranted; and (3) provide the non-Longline quota categories a share of the remainder of the underharvest consistent with the allocation percentages established in the Consolidated HMS FMP.

In the annual specifications for 2011 through 2013, NMFS took the proactive measure of accounting for half of the dead discard estimate "up front" (i.e., at the beginning of the fishing year). For those years, dead discard information was available only from the pelagic longline fishery. Thus, NMFS deducted that portion of the dead discard estimate directly from the Longline category quota. In the 2011 specifications, NMFS applied half of the 2010 underharvest that was allowed to be carried forward to the Longline category and maintained the other half in the Reserve category. This was intended to provide maximum flexibility in accounting for 2011 landings and dead discards.

In 2012 and 2013, NMFS proposed the same method of distributing the underharvest that was allowed to be carried forward to the following year. However, in both 2012 and 2013, NMFS closed the pelagic longline fishery to BFT retention by the time that the specifications were finalized and, therefore, ultimately provided a larger portion to the Longline category in the final rule to account for actual BFT landings. Specifically, in 2012, NMFS closed the Longline category fishery to BFT retention in the southern area on May 29 (77 FR 31546; May 29, 2012), and in the northern area on June 30 (77 FR 38011; June 26, 2012), for the remainder of 2012, because landings had met the codified subquotas for those areas. Given that the incidental Longline fishery for BFT was closed, NMFS accounted fully for those landings in the final rule by applying 76.2 of the available 94.9-mt underharvest to the Longline category (resulting in an adjusted Longline category subquota of 78.4 mt, not including the separate 25-mt allocation for the Northeast Distant gear restricted area) and maintaining the remaining underharvest (18.7 mt) in the Reserve category (77 FR 44161; July 27, 2012). Providing this amount to the Longline category allowed NMFS to adjust the Longline South and Longline North subquotas to the amounts actually taken in those areas at the time of the closure, and to provide greater transparency than year-end accounting would.

In 2013, NMFS closed the southern and northern areas effective June 25 and applied all of the 2012 underharvest that could be carried forward to 2013 (i.e., 90.9 mt) to the Longline category, resulting in an adjusted Longline category subquota of 46 mt (74.8 mt - 119.75 mt + 90.9 mt = 46 mt), not including the separate 25-mt allocation for the Northeast Distant gear restricted area (78 FR 36685; June 19, 2013). For the last 3 years, NMFS has maintained all of the directed fishing categories at their baseline quotas.

3.2 Biological Environment: Life History and Stock Status

The following information focuses only on Atlantic bluefin and northern albacore due to the scope of the measures considered in this document. Biological information on the other HMS may be found in the 2006 Consolidated HMS FMP.

3.2.1 Atlantic Bluefin Tuna Life History and Biology

A thorough review of Atlantic bluefin life history and biology is contained in the “Status Review Report of Atlantic Bluefin Tuna” (Atlantic Bluefin Tuna Status Review Team, 2011) and the “Report of the Standing Committee on Research and Statistics” (SCRS 2013). A brief summary is below:

Atlantic bluefin tuna are highly migratory pelagic fish (scombrids, a family within the class Actinopterygii and order Perciformes) that range across most of the North Atlantic and its adjacent seas, particularly the Mediterranean Sea. They are distributed from the Gulf of Mexico to Newfoundland in the West Atlantic, from roughly the Canary Islands to south of Iceland in the East Atlantic, and throughout the Mediterranean Sea. They are the largest of the tuna species and can reach up to 13 feet and 2,000 pounds.

Archival tagging and tracking information have confirmed that bluefin tuna are endothermic (i.e., able to endure cold as well as warm temperatures while maintaining a stable internal body temperature). While bluefin tuna dive frequently to deeper depths, they generally spend most of their time in waters less than 500 m, and often much shallower.

Similar to other large predators, juvenile and adult bluefin tuna are opportunistic feeders, with a diet that may consist of a variety of species including fish, crabs, octopus, jellyfish, salps, and sponges. Juveniles typically feed on crustaceans, fish and cephalopods while adults are generally piscivorous, primarily eating available baitfish such as herring, anchovy, sand lance, sardine, sprat, bluefish, and mackerel. Bluefin tuna larvae consume zooplankton, primarily copepods. Sharks, marine mammals (including killer whales and pilot whales), and large fishes feed on bluefin tuna. Bluefish and seabirds also prey upon juvenile bluefin tuna.

Bluefin tuna occur over the continental shelf and in embayments, especially during the summer months when they feed actively on herring, mackerel, and squids in the North Atlantic. Larger individuals move into higher latitudes than do smaller fish. Changes in important fisheries indicate that apparent variations in the spatial dynamics of bluefin tuna may be the result of interactions between biological factors (e.g., prey distribution), environmental variations and fishing practices.

Currently, bluefin tuna are assumed to be sexually mature at age 4 (25 kg) in the eastern Atlantic and Mediterranean (at 25 kg) and at age 9 (145 kg) in the western Atlantic. Recent information received by the SCRS indicated that some individuals caught in the West Atlantic as small as 47 kg (age 5) were mature. Bluefin tuna are oviparous (i.e., lay eggs) and iteroparous (i.e., spawn regularly), and are multiple batch spawners. The number of eggs produced is dependent on the size of the fish. Females can produce up to 10 million eggs a year. The eggs are fertilized in the water column and hatch in about 2 days.

In the West Atlantic, bluefin tuna are thought to spawn from mid-April into June in the Gulf of Mexico and in the Florida Straits. Juveniles are thought to occur in the summer over the continental shelf, primarily from about 34°N to 41°N and offshore of that area in the winter. In the East Atlantic, bluefin tuna generally spawn from late May to July depending on the spawning area, in several areas around the Balearic Islands, Tyrrhenian Sea, and central and eastern Mediterranean where the sea-surface temperature of the water is about 24°C. Sexually mature fishes have also been recently observed in May and June in the eastern Mediterranean (between Cyprus and Turkey).

Atlantic bluefin tuna grow more slowly than other tunas and have a long life span, up to 20 years or more. They can grow to over 300 cm and reach more than 650 kg. Juvenile growth is rapid for a teleost fish (about 30 cm/year), but slower than other tuna and billfish species. Fish born in June attain a length of about 30-40 cm long and a weight of about 1 kg by October. After one year, fish reach about 4 kg and 60 cm long. Growth in length tends to be lower for adults than juveniles, but growth in weight increases. At 10 years old, a bluefin tuna is about 200 cm and 170 kg and reaches about 270 cm and 400 kg at 20 years. The oldest age considered reliable is 20 years, based on an estimated age at tagging of two years and about 18 years at liberty, although it is believed that bluefin tuna may live to older ages. Bluefin tuna are, thus, characterized by a late age at maturity (thus, a large number of juvenile classes) and a long life span (about 40 years, as indicated by recent studies from radiocarbon deposition). These factors contribute to make bluefin tuna well adapted to variations in recruitment success, but more vulnerable to fishing pressure than rapid growth species such as tropical tuna species. Bluefin tuna in the West Atlantic generally reach a larger maximum size compared to bluefin caught in the East Atlantic.

3.2.2 Northern Albacore Life History and Biology

The thorough review of northern albacore life history and biology is contained in the "Report of the Standing Committee on Research and Statistics" (SCRS 2013) and NOAA' website "FishWatch" (http://www.fishwatch.gov/). Below is a brief summary:

Albacore is a temperate tuna widely distributed throughout the Atlantic Ocean and Mediterranean Sea. For assessment purposes, the existence of three stocks is assumed based on available biological information: northern and southern Atlantic stocks (separated at 5º N. latitude), and a Mediterranean stock.

Like other species of tuna, albacore have unique biological characteristics that enable them to swim at speeds over 50 miles per hour and cover vast areas during annual migrations. Albacore tuna feed near the top of the food chain, preying upon a variety of fish, crustaceans, and squid. They are also prey for many top predators, including sharks, rays, larger tunas, and billfishes.

The expected life-span for albacore is around 15 years. Present available knowledge on habitat, distribution, spawning areas and maturity of Atlantic albacore is based on limited studies, mostly from past decades. Sexual maturity is considered to occur at about 90 cm FL (age five) in the Atlantic, and at smaller size (62 cm, age two) in the Mediterranean. Until this age, they are mainly found in surface waters.

In the spring and summer, northern albacore spawn in subtropical waters of the Atlantic and throughout the Mediterranean Sea. Depending on their size, females have between 2 million and 3 million eggs per spawning season.

3.2.3 Status of Western Atlantic Bluefin Tuna and Northern Albacore

A review of how the status of HMS stocks is determined may be found in the 2013 Stock Assessment and Fishery Evaluation (SAFE) Report.

It is important to note that ICCAT applies a different threshold for stock status determination of these species (specifically the definition of "overfished"), as follows:

- ICCAT considers overfished status to be $B_{year}/B_{MSY} < 1.0$. For some stocks, including bluefin and northern albacore, ICCAT may use spawning stock biomass (SSB) as a proxy for biomass.
- NMFS considers overfished status, as described in the 1999 Atlantic HMS FMP, to be $B_{year} < B_{MSST}$. Minimum Stock Size Threshold (MSST) that applies for bluefin and

albacore tuna is the biomass limit of $(1\text{-}M)B_{MSY}$, where M = natural mortality. In many cases, an average M across age classes or sensitivity runs from a stock assessment model is used to calculate MSST.

- ICCAT considers overfishing to be occurring when $F_{year}/F_{MSY} > 1.0$. NMFS considers overfishing to be occurring when $F_{year} > F_{MSY}$, as described in the 1999 Atlantic HMS FMP. These two definitions result in the same conclusions.

Specific to the Atlantic tunas discussed in this section, and as shown in Table 3.2, ICCAT considers the stocks to be overfished when $SSB_{current}/SSB_{MSY}$ is less than 1. NMFS considers bluefin to be overfished when $SSB_{current}/SSB_{MSY}$ is less than 0.86, and considers northern albacore to be overfished when $SSB_{current}/SSB_{MSY}$ is less than 0.7. The western Atlantic bluefin tuna stock is managed under a rebuilding plan with international management measures to fully rebuild the stock by 2019. The last full stock assessment was conducted in 2012 by ICCAT's SCRS (SCRS 2012), and included information through 2011. The stock assessment included the use of two alternative recruitment scenarios, one assuming low potential recruitment and one assuming high potential recruitment. Therefore, the stock assessment produced two sets of results, and the status of the stock depends upon which recruitment scenario is considered. Under the low recruitment scenario, the stock is not overfished and overfishing is not occurring, while under the high recruitment scenario, the stock is overfished and overfishing is occurring. The SCRS, as stated in the stock assessment, has no strong evidence to favor either scenario over the other and notes that both are reasonable (but not extreme) lower and upper bounds on rebuilding potential. ICCAT conducted a bluefin tuna stock assessment update in 2013, although the results were not substantially different than those of the 2012 assessment.

The northern albacore stock is managed under a rebuilding plan with international management measures to fully rebuild the stock by 2020. SCRS conducted an assessment of northern albacore in 2013 (SCRS 2013), and included information through 2011; information from the 2009 assessment was included in the DEIS. While ICCAT continues to consider northern albacore to be overfished, NMFS now considers the stock to be rebuilding (not overfished) because both the point estimate and range of $SSB_{current}/SSB_{MSY}$ are greater than 0.7 (the minimum stock size threshold used domestically to determine stock status). Both ICCAT and NMFS consider overfishing to not be occurring for northern albacore because the point estimate and range of $F_{current}/F_{MSY}$ are both less than 1, indicating that $F_{current}$ is below the maximum fishing mortality threshold of F_{MSY}.

Table 3.2 summarizes stock assessment information and the current status of Atlantic bluefin tuna and northern albacore tuna as of 2013. NMFS updates all U.S. fisheries stock statuses each quarter and provides a Status of U.S. Fisheries Report to Congress on an annual basis.

The status of the stock reports are available at:
http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/

The bluefin tuna and northern albacore stock assessments can be found online at:
http://www.iccat.int/Documents/Meetings/Docs/2012_BFT_ASSESS.pdf
http://www.iccat.int/Documents/Meetings/Docs/2013_ALB_ASSESS_REP_ENG.pdf.

Table 3.2 Stock Assessment Summary for Western Atlantic Bluefin and Northern Albacore.

	Current Relative Biomass Level	Biomass at Maximum Sustainable Yield	Minimum Stock Size Threshold	Current Relative Fishing Mortality Rate	Maximum Fishing Mortality Threshold	Outlook – From Status of Stocks for U.S. managed species	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)
Western Atlantic Bluefin Tuna	SSB_{11}/SSB_{MSY}= 1.4 (1.14-1.72) (low recruitment) SSB_{11}/SSB_{MSY}= 0.19 (0.13-0.29) (high recruitment)	12,943 mt (low recruitment; 12,717-13,268 mt) 93,621 mt (high recruitment; 77,288-116,679 mt)	Domestic threshold: 0.86 SSB_{MSY} (11,131 mt; low recruitment) (80,514 mt; high recruitment) ICCAT threshold: 1.0 SSB_{MSY}	F_{08-10}/F_{MSY}* = 0.61 (0.49-0.74) (low recruitment) F_{08-10}/F_{MSY}* = 1.57 (1.24-1.95) (high recruitment)	Domestic and ICCAT threshold: 1.0 $F_{MSY}F_{MSY}$ = 0.17 (0.14-0.19) (low recruitment) F_{MSY} = 0.064 (0.056-0.074) (high recruitment)	Low recruitment scenario: Not overfished; overfishing is not occurring. High recruitment scenario: Overfished; overfishing is occurring	20	5/1/1999 (2019)
Northern Albacore Tuna	B_{07}/B_{MSY} =0.94 (0.74-1.14)	SSB_{MSY}=88,110 mt	Domestic threshold: $0.7B_{MSY}$ (56,777 mt; based on SSB_{MSY}) ICCAT threshold: 1.0 SSB_{MSY}	$F_{current}/F_{MSY}$ = 0.72 (0.55-0.89)	F_{MSY} =0.1486	Not overfished (rebuilding); overfishing not occurring.	10	1/1/2010 (2020)

*Where F year refers to the geometric mean of the estimates for 2008-2010 (a proxy for recent F levels).

3.2.4 Physical Environment / Habitat

HMS may be found in large expanses of the world's oceans, straddling jurisdictional boundaries. Although many of the species frequent other oceans of the world, the scope of the U.S. management of HMS is in Federal, state or territorial waters, including areas of the U.S. Caribbean, the Gulf of Mexico and the Atlantic coast of the United States to the seaward limit of the U.S. EEZ. These areas are connected by currents and water patterns that influence the occurrence of HMS at particular times of the year. On the largest scale, the North and South Equatorial currents occur in the U.S. Caribbean islands. The North Equatorial Current continues through the Caribbean Basin to enter the Gulf of Mexico through the Yucatan Straits. The current continues through the Florida Straits to join the other water masses (including the Antilles Current) to form the Gulf Stream along the eastern coast of the United States. Variations in flow capacities of the Florida Straits and the Yucatan Straits produce the Loop Current, the major hydrographic feature of the Gulf of Mexico. These water movements in large part influence the distributions of the pelagic life stages of HMS.

Tuna, swordfish, and billfish distributions are most frequently associated with hydrographic features such as density fronts between different water masses. The scales of these features may vary. For example, the river plume of the Mississippi River extends for miles into the Gulf of Mexico and is a fairly predictable feature, depending on the season. Fronts that set up over the DeSoto Canyon in the Gulf of Mexico, or over the Charleston Bump or the Baltimore Canyon in the Mid-Atlantic, may be of a much smaller scale. The locations of many fronts or frontal features are statistically consistent within broad geographic boundaries. These locations are influenced by riverine inputs, movement of water masses, and the presence of topographic structures underlying the water column, thereby influencing the habitat of HMS. For a detailed description of tuna coastal, continental shelf, and slope area habitats of the Atlantic, Gulf of Mexico, and U.S. Caribbean, please refer to Section 3.3.2 of the 2006 Consolidated HMS FMP.

3.2.5 Essential Fish Habitat

Section 303(a)(7) of the Magnuson-Stevens Act, 16 U.S.C. §§ 1801 et seq., requires FMPs to describe and identify essential fish habitat (EFH), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat.

NMFS originally described and identified EFH and related EFH regulatory elements for all HMS in the management unit in the 1999 FMPs, which were updated in Amendment 1 to the 1999 Tunas, Swordfish, and Shark FMP and implemented in 2003 (NMFS 1999b; NMFS 2003). The EFH regulations require NMFS to conduct a comprehensive review of all EFH related information at least once every five years and revise or amend the EFH boundaries if warranted. To that effect, NMFS undertook a comprehensive five-year review of information pertaining to EFH for all HMS in the management unit in the 2006 Consolidated HMS FMP (NMFS 2006). Based on the findings of this review, NMFS issued a Notice of Intent to amend EFH for HMS through Amendment 1 to the 2006 Consolidate HMS FMP on November 7, 2006 (71 FR 65087). In the Notice of Intent, NMFS described its intent to prepare an EIS to examine alternatives for updating existing HMS EFH, consider additional Habitat Areas of Particular Concern (HAPCs), analyze fishing gear impacts, and if necessary, identify ways to avoid or minimize, to the extent practicable, adverse fishing impacts on EFH consistent with the Magnuson-Stevens Act and other relevant Federal laws. At that time, NMFS requested new information not previously considered in the 2006 Consolidated HMS FMP, comments on potential HAPCs, and information regarding potential fishing and non-fishing impacts that may adversely affect EFH.

On June 12, 2009, NMFS published a Notice of Availability of the Final Environmental Impact Statement for EFH Amendment 1 to the 2006 Consolidated HMS FMP (74 FR 28018) (NMFS 2009). This amendment updated and revised EFH boundaries for HMS, designated a new HAPC for bluefin tuna in the Gulf of Mexico, and analyzed fishing and non-fishing impacts on EFH. To facilitate public outreach, an internet-based mapping program (HMS EFH Evaluation Tool) was created to show the updated and revised EFH boundaries for HMS.

On March 24, 2014, NMFS again announced its intent to conduct a five-year review of EFH for all Atlantic HMS (79 FR 15959). Based on a review of information available since Amendment 1 was finalized, NMFS will determine whether it is necessary to amend EFH for any Atlantic HMS.

Habitat Areas of Particular Concern

To further the conservation and enhancement of EFH, the EFH guidelines encourage FMPs to identify HAPCs. HAPCs are areas within EFH that meet one or more of the following criteria: they are ecologically important, particularly vulnerable to degradation, undergoing stress from development, or are a rare habitat type. HAPCs can be used to focus conservation efforts on specific habitat types that are particularly important to managed species. Currently, HAPC have been designated for two HMS species: sandbar sharks and bluefin tuna. The areas off of North Carolina, Chesapeake Bay, MD, and Great Bay, NJ, have been identified as a HAPC for sandbar sharks (NMFS 1999a). HAPC for bluefin tuna was designated in Amendment 1 to the 2006 Consolidated HMS FMP and is located across the western, northern, and central Gulf of Mexico (Figure 3.1). Maps of these areas are available on the HMS Management Division website at: http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am1/index.html

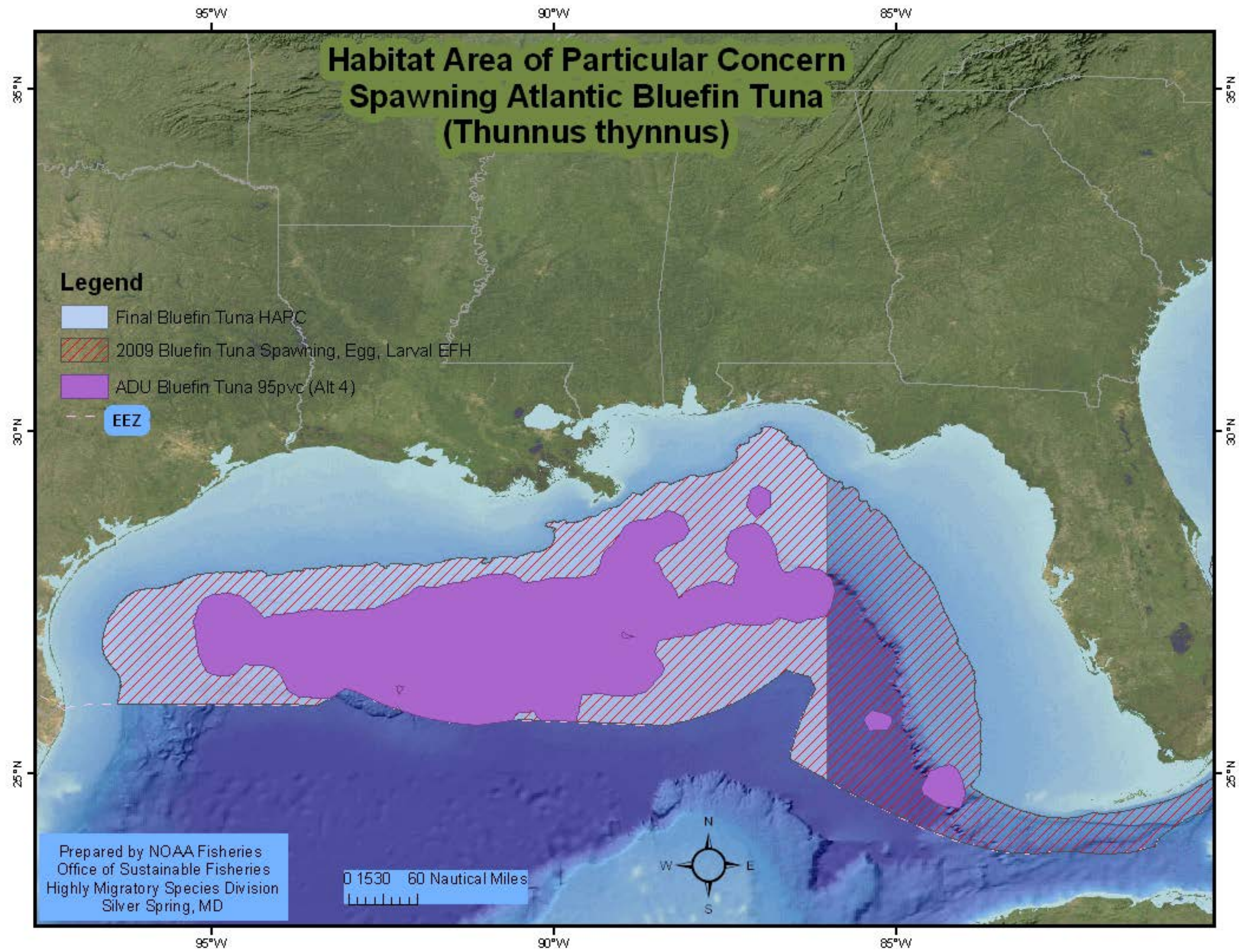

Figure 3.1 Spawning adult bluefin tuna Habitat Area of Particular Concern in the Gulf of Mexico.

3.2.6 Bycatch Issues in the Physical Environment

A thorough regulatory and management review of bycatch in HMS fisheries, and bycatch of HMS in other fisheries, may be found in previous SAFE reports (e.g., the 2013, 2012, and 2011 HMS SAFE Report). The 2011 HMS SAFE Report includes a more focused review on implications under the Endangered Species Act and Marine Mammal Protection Act. The 2013 HMS SAFE Report should be referenced for the most recent analyses on the effectiveness of HMS regulations on reducing bycatch (updated annually).

Bycatch in commercial and recreational fisheries has become an important issue for the fishing industry, resource managers, scientists, and the public. These interactions can result in death or injury to the discarded fish, and it is essential that this component of total fishing-related mortality be incorporated into fish stock assessments and evaluation of management measures. Bycatch precludes other more productive uses of fishery resources and decreases the efficiency of fishing operations. Although not all discarded fish die, bycatch can in some fisheries become a large source of mortality, which can slow the rebuilding of overfished stocks. Bycatch imposes direct and indirect costs on fishing operations by increasing sorting time and decreasing the amount of gear available to catch target species. Incidental catch concerns also apply to populations of marine mammals, sea turtles, seabirds, and other components of ecosystems which may be protected under other applicable laws and for which there are no commercial or recreational uses but for which existence values may be high.

There are benefits associated with the reduction of bycatch, including the reduction of uncertainty concerning total fishing-related mortality, which improves the ability to assess the status of stocks, to determine the appropriate relevant controls, and to ensure that overfishing levels are not exceeded. NMFS also has an obligation to ensure that conservation and management measures shall, to the extent practicable, minimize bycatch and, to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

It is also important to consider the bycatch of HMS in fisheries that target other species as a source of mortality for HMS and to work with fishery constituents and resource manager partners on an effective bycatch strategy to maintain sustainable fisheries. This strategy may include a combination of management measures in the domestic fishery, and if appropriate, multi-lateral measures recommended by international bodies such as ICCAT or coordination with Regional Fishery Management Councils or States. The bycatch in each fishery and effectiveness of bycatch reduction measures are summarized annually in the SAFE Report for Atlantic HMS fisheries.

A number of options are currently employed (*) or available for bycatch reduction in Atlantic HMS fisheries. These include but are not limited to:

Commercial

1. *Gear Modifications (including hook and bait types)
2. *Circle Hooks
3. *Weak Hooks
4. *Time/Area Closures
5. Performance Standards
6. *Education/Outreach
7. *Effort Reductions (i.e., Limited Access)
8. Full Retention of Catch
9. *Use of De-hooking Devices (mortality reduction only)

Recreational

1. *Use of Circle Hooks (mortality reduction only; for bluefin tournaments)
2. Use of De-hooking Devices (mortality reduction only)
3. Full Retention of Catch
4. *Formal Voluntary or Mandatory Catch-and-Release Program for all Fish or Certain Species
5. Time/Area Closures

There are probably no fisheries in which there is zero bycatch because none of the currently legal fishing gears are perfectly selective for the target of each fishing operation (with the possible exception of the swordfish/tuna harpoon fishery and speargun fishery). Therefore, to totally eliminate bycatch of all non-target species in Atlantic HMS fisheries would be impractical. The goal then is to minimize the amount of bycatch to the extent practicable and minimize the mortality of species caught as bycatch.

Standardized Reporting of Bycatch

Section 303(a)(11) of the Magnuson-Stevens Act requires that an FMP establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery. Bycatch is usually estimated using the following methods: (1) fishery-independent surveys; (2) self-reporting through logbooks, trip reports, dealer reports, port sampling, and recreational surveys; (3) at-sea observation, including observers, digital video cameras, digital observers, and alternative platform and remote monitoring; and (4) stranding networks. All of the methods may contribute to useful bycatch estimation programs, but at-sea observation (observers or electronic monitoring) provides the best mechanism to obtain reliable and accurate bycatch estimates for many fisheries. Often, observer programs also will be the most cost-effective of these alternatives. However, observers are not always the most cost-effective or practicable method for assessing bycatch (NMFS 2004a).

The effectiveness of any Standardized Bycatch Reporting Method (SBRM) depends on its ability to generate estimates of the type and quantity of bycatch that are both precise and accurate enough to meet the conservation and management needs of a fishery. The National Bycatch Report (NMFS 2004a) contains an extensive discussion of how precision relates to sampling and to assessments.

The other important aspect of obtaining bycatch estimates that are useful for management purposes is accuracy. Efficient allocation of sampling effort within a stratified survey design improves the precision of the estimate of overall discard rates (Rago et al. 2005). Accuracy of sample estimates can be evaluated by comparing performance measures (e.g., landings, trip duration) between vessels with and without observers present. While there are differences between the terms accuracy and bias they have been used interchangeably. A “biased” estimate is inaccurate while an “accurate” estimate is unbiased (Rago et al. 2005).

The NWGB recommended that at-sea sampling designs should be formulated to achieve precision goals for the least amount of observation effort, while also striving to increase accuracy (NMFS 2004a).

The recommended precision goals for estimates of bycatch are defined in terms of the CV of each estimate. For marine mammals and other protected species, including seabirds and sea turtles, the recommended precision goal is a 20 to 30 percent CV for estimates of interactions for each species/stock taken by a fishery. For fishery resources, excluding protected species, caught as bycatch in a fishery, the recommended precision goal is a 20 to 30 percent CV for estimates of total discards (aggregated over all species) for the fishery; or if total catch cannot be divided into discards and retained catch, then the goal is a 20 to 30 percent CV for estimates of total catch

(NMFS 2004a). The report also states that attainment of these goals may not be possible or practical in all fisheries and should be evaluated on a case-by-case basis.

The CV of an estimate can be reduced and the precision increased by increasing sample size.

Although the precision goals for estimating bycatch are important factors in determining observer coverage levels, other factors are also considered when determining actual coverage levels. These may result in lower or higher levels of coverage than that required to achieve the precision goals for bycatch estimates. In general, factors that may justify lower coverage levels include lack of adequate funding; incremental coverage costs that are disproportionately high compared to benefits; and logistical consideration such as lack of adequate accommodations on a vessel, unsafe conditions, and lack of cooperation by fishermen (NMFS 2004a).

Factors that may justify higher coverage levels include incremental coverage benefits that are disproportionately high compared to costs and other management focused objectives for observer programs. The latter include total catch monitoring, in-season management of total catch or bycatch, monitoring bycatch by species, monitoring compliance with fishing regulations, monitoring requirements associated with the granting of Experimental Fishery Permits, or monitoring the effectiveness of gear modifications or fishing strategies to reduce bycatch. In some cases, management may require one or even two observers to be deployed on every fishing trip. Increased levels of coverage may also be desirable to minimize bias associated with monitoring “rare” events with particularly significant consequences (such as takes of protected species), or to encourage the introduction of new “standard operating procedures” for the industry that decrease bycatch or increase the ease with which bias can be monitored (NMFS, 2004a).

NMFS utilizes self-reported logbook data (Fisheries Logbook System or FLS, and the supplemental discard report form in the reef fish/snapper-grouper/king and Spanish mackerel/shark logbook program), at-sea observer data, and survey data (recreational fishery dockside intercept and telephone surveys) to produce bycatch estimates in HMS fisheries. The number and location of discarded fish are recorded, as is the disposition of the fish (i.e., released alive vs. released dead). Post-release mortality of HMS can be accounted for in stock assessments to the extent that the data allow.

The fishery logbook systems in place are mandatory programs, and it is expected that the reporting rates are generally high (Garrison 2005). Due to the management focus on HMS fisheries, there has been close monitoring of reporting rates, and observed trips can be directly linked to reported effort. In general, the gear characteristics and amount of observed effort is consistent with reported effort. However, under-reporting is possible, which can lead to a negative bias in bycatch estimates. Cramer (2000) compared dead discards of undersized swordfish, sailfish, white and blue marlin, and pelagic sharks from HMS logbook and POP data in the U.S. Atlantic pelagic longline fishery. Cramer (2000) provided the ratio of catch estimated from the POP data divided by the reported catch in the HMS logbooks. The ratio indicated the amount of underreporting for each species in a given area. However, the data analyzed by Cramer (2000), was based on J-hook data from 1997 – 1999 and that gear is no longer authorized for pelagic longline gear. In some instances, logbooks are used to provide effort information against which bycatch rates obtained from observers are multiplied to estimate bycatch. In other sectors/fisheries, self-reporting provides the primary method of reporting bycatch because of limited funding, priorities, etc.

3.3 Quota Categories

Management approaches for bluefin tuna are highly focused on the different quota categories within the fishery and therefore regulations vary by category, as well as the amount of information available about each fishery. The reporting requirements for each individual category also vary based on the type of permits a vessel may hold and where catch information is being accounted for. Therefore, the following discussion is organized by Quota Category, and provides a brief description of the fishery and relevant management measures that apply.

Bluefin Tuna Size Classes

The size of bluefin is an important attribute for management. Different permit categories within the bluefin fishery tend to target different sized bluefin tuna as a function of the gear used and type of fishing (commercial versus recreational). Basing the regulations around size classes provides a mechanism to minimize user conflict, as well as meeting other management objectives. The regulations are also intended to shift the commercial fishery towards targeting larger fish, in order to provide for opportunities for spawning. Table 3.3 contains the names of bluefin size classes and associated size ranges used for management. Please see the 2013 HMS SAFE Report for a complete description of permit types issued by species, gear, or fishery as of November 2013 (NMFS 2014).

Table 3.3 Bluefin Size Classes (in inches)

Size Class	Curved Fork Length (CFL) - inches	Notes
Young school	less than 27	May not retain
School	27 to less than 47	Recreational Size Range
Large School	47 to less than 59	
Small Medium	59 to less than 73	
Large Medium	73 to less than 81	Commercial Size Range*
Giant	greater than 81	

* One “trophy” (large medium or giant) bluefin may be landed per year by recreational vessels while the trophy fishery is open

3.3.1 Recreational Categories – HMS Angling and HMS Charter/Headboat

Recreational fishing for medium and giant bluefin tuna generally takes place between December and February off North Carolina, and in Cape Cod Bay, the Gulf of Maine, and other New England waters during summer and early fall. Smaller bluefin tuna are targeted off Virginia, Delaware and Maryland in early to mid-summer, with the center of activity moving northward into the New York Bight as the season progresses. Fishing usually takes place between eight and 200 km from shore. Beyond these general patterns, the availability of bluefin tuna at a specific location and time is highly dependent on environmental variables that fluctuate from year-to-year. Tournaments tend to concentrate fishing effort into a small area (NMFS 1999a). In recent years, school bluefin have been increasingly available to southern New England fisheries, in that school bluefin have been appearing and caught further north than in the past. Fishery landings and school bluefin availability generally decline in the fall with colder water temperatures and degrading fishing conditions (NMFS 2011). Charter/headboats have been targeting school bluefin tuna off New York and New Jersey since the early 1900s. Small bluefin tuna are typically caught by trolling with artificial lures, although chunking has become popular in some areas, using rod and reel (NMFS 1999a). A survey of anglers that participated in the 1997 winter fishery off Cape Hatteras, NC found that 73 percent of 1,390 vessel trips for bluefin tuna were taken on charterboats (Ditton et al. 2000).

Recreational Bluefin Fishery Regulations for the HMS Angling and HMS Charter/Headboat Categories

The open-access Angling Category applies to private recreational vessels with HMS Angling permits, and to vessels with HMS Charter/Headboat permits that are fishing recreationally. Vessels cannot be simultaneously issued Angling Category and Charter/Headboat Category permits. The recreational fishery is limited to using handgear (rod and reel, handline, bandit gear (Charter/Headboat permit only), and Green-stick (Charter/Headboat permit only)) to capture HMS, including bluefin. Speargun use is allowed for the “BAYS” tunas (bigeye, albacore, yellowfin, and skipjack) only, not for bluefin tuna. Recent size and retention limits for the Angling and Charter/Headboat permit categories are summarized in Table 3.4 and Table 3.5. All restrictions are applied to the vessel, per day and/or trip.

The Angling category is allocated 19.7 percent of the baseline bluefin quota. The Angling category quota is further subdivided into size class subquotas (school, large school/small medium, and large medium/giant) and then areas (north and south, divided at 39° 18’ North latitude, or Great Egg Inlet, NJ) (Table 3.4). Recreational anglers must also comply with retention limits, reporting requirements, applicable regulations for the bluefin fishery, and the general regulations for HMS fisheries.

Vessels with an HMS Charter/Headboat category permit can fish for bluefin under the Angling category recreational rules or the General category commercial rules on a particular fishing trip. The rules that apply depend upon the size of the first bluefin retained on that particular trip. For example, if the first bluefin retained is a school, large school, or small medium, the Angling category rules would apply (i.e., these bluefin are of the recreational size classes). If the first fish is a large medium or giant, the General category rules would apply, and the vessel would be required to abide by the size and retention limits applicable to the General category, and would be able to sell the fish. Landed bluefin tuna count toward their respective category quotas.

Other species authorized for harvest with an HMS Angling permit include: sharks, swordfish, white and blue marlin, sailfish, roundscale spearfish, and federally regulated Atlantic tunas (yellowfin, bigeye, skipjack, and albacore). Atlantic HMS caught, retained, possessed, or landed by persons on board vessels with an HMS Angling Category permit may not be sold or transferred to any person for a commercial purpose. By definition, recreational landings of Atlantic HMS are those that cannot be marketed through commercial channels, therefore it is not possible to monitor anglers' catches through ex-vessel transactions as in the commercial fishery. Instead, NMFS conducts statistical sampling surveys of the recreational fisheries.

Table 3.4 Angling Category Bluefin Quota Rules

Description	Amount
Total Angling quota	19.7 % of total U.S. quota
Large medium or giant	No more than 2.3 % of annual Angling category quota
School	No more than 10 % of annual U.S. BFT quota may be school BFT (27- 47")
School reserve	18.5 % of school Angling category quota
After deducting the school reserve the following school subquotas are calculated:	
School south	52.8 %
School north	47.2 %
Large school/small medium south	52.8 %
Large school/small medium north	47.2 %
Large medium/giant south	66.7 %
Large medium/giant north	33.3 %

Table 3.5 Recent Retention Limits for the Angling and Charter/Headboat Permitted Vessels

Date Range	Permit Category	Restriction
Jan 1 – Jun 11, 2010	Angling & Charter/Headboat	1 BFT 27" to less than 73"/day 1 BFT greater than 73" ("Trophy")/year
June 12 – Dec 31, 2010	Angling & Charter/Headboat	June 12-Dec 31: Trophy South Fishery closed July 18 – Dec 31: Trophy North fishery closed
	Angling	1 BFT 27" to less than 59" .day
	Charter/Headboat	1 BFT 27" to less than 47"/day; and 1 BFT from 47" to less than 59"/day (59 to 73" prohibited)
Jan 1- Apr 1, 2011	Angling & Charter/Headboat	1 BFT 27" to less than 73"/day

Date Range	Permit Category	Restriction
Apr 2- Dec 31, 2011	Angling & Charter/Headboat	Apr 2 – Dec 31: Trophy South fishery closed July 29 – Dec 31: Trophy North fishery closed
	Angling	1 BFT 27” to less than 73”/day
	Charter/Headboat	1 BFT 27” to less than 47”/day; and 1 BFT 47” to less than 59”/day (47 to 73” prohibited)
Jan 1 – Apr 6, 2012	Angling & Charter/Headboat	1 BFT 27” to less than 73”/day 1 BFT greater than 73” (“Trophy”)/year
Apr 7 – Dec 31, 2012	Angling & Charter/Headboat	Apr 7-Dec 31: Trophy South fishery closed
	Angling	1 BFT 27” to less than 73”/day
	Charter/Headboat	1 BFT 27” to less than 47” and 1 BFT 47” to less than 73”/day
Jan 1 – Apr 4, 2013	Angling & Charter/Headboat	1 BFT 27” to less than 73”/day 1 BFT greater than 73” (“Trophy”)/year
Apr 5 – Dec 31, 2013	Angling & Charter/Headboat	Apr 5 – Dec 31: Trophy South fishery closed
	Angling	1 BFT 27” to less than 73”/day
	Charter/Headboat	1 BFT 27” to less than 47” and 1 BFT 47” to less than 73”/day

There were 21,686 HMS Angling permits and 3,968 HMS Charter/Headboat permits issued as of October 2013. For more information, including a breakdown of HMS Angling Category permits by state of residency and by home port, please see the 2013 SAFE Report (NMFS 2014).

Recreational Bluefin Fishery Data

Recent catch and landings

The recreational landings database for Atlantic HMS consists of information obtained through surveys including the Marine Recreational Information Program (MRIP), Large Pelagic Survey (LPS), Southeast Headboat Survey (HBS), Texas Headboat Survey, Recreational Billfish Survey

(RBS) tournament data, and the recreational non-tournament swordfish and billfish landings database. Descriptions of these surveys, the geographic areas they include, and their limitations are discussed in the 2006 Consolidated HMS FMP and previous HMS SAFE Reports.

Updated landings for HMS recreational rod and reel fisheries are presented below in Table 3.6 from 2003 through 2012; landings by the recreational fishery of different size classes of bluefin are presented in Table 3.7.

Table 3.6 Domestic landings (mt ww) for the Atlantic Tunas and Swordfish Recreational Rod & Reel Fishery (2003–2012)

Species	Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bluefin tuna*	NW Atlantic	314.6	370.2	254.4	158.2	398.6	352.2	143.3	111.4	173.3	148.7
	GOM	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
	Total	314.6	370.2	254.4	158.8	398.6	352.2	143.3	111.4	173.3	148.7
Bigeye tuna**	NW Atlantic	188.5	94.6	165.0	422.3	126.8	70.9	77.6	116.8	72.4	269.6
	GOM	0.0	6.0	0.0	24.3	0.0	0.0	0.0	0.8	34.9	0.1
	Caribbean	4.0	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0
	Total	192.5	100.6	165.0	446.6	126.8	70.9	77.6	117.6	109.6	269.7
Albacore**	NW Atlantic	333.8	500.5	356.0	284.2	393.6	125.2	22.8	46.2	170.6	144.3
	Caribbean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	103.4	0.0	0.7
	Total	333.8	500.5	356.0	284.2	393.6	125.2	22.8	149.6	170.6	145.0
Yellowfin tuna**	NW Atlantic	4,672.1	3,433.7	3,504.8	4,649.2	2,726.0	657.1	742.6	1,209.0	1,134	1,433
	GOM	640.0	247.1	146.9	258.4	227.6	366.3	264.7	18.0	362.8	294.1
	Caribbean	16.0	0.0	0.0	0.0	12.4	0.0	3.5	4.5	0.9	0.0
	Total	5,328.0	3,684.8	3,651.7	4,907.6	2,966.0	1,023.4	1,010.8	1,231.5	1,497.7	1,721.1
Skipjack tuna**	NW Atlantic	34.1	27.3	8.1	34.6	27.4	21.0	75.7	29.1	50.3	98.0
	GOM	11.1	6.3	3.1	6.4	23.9	16.3	22.0	15.5	23.7	2.5
	Caribbean	15.7	40.4	3.9	7.7	0.2	11.3	4.3	0.4	3.0	3.0
	Total	60.9	74.0	15.1	48.7	51.5	48.6	102.0	45.0	77.0	103.5
Swordfish	Total	6.1	25.2	61.2	52.7	68.2	75.7	31.6	49.3	53.6	70.8

* Rod and reel catch and landings estimates of bluefin tuna < 73 in curved fork length (CFL) based on statistical surveys of the U.S. recreational harvesting sector. Rod and reel catch of bluefin tuna > 73 in CFL are commercial and may also include a few metric tons of "trophy" bluefin (recreational bluefin ≥ 73 in). ** Rod and reel catches and landings for Atlantic tunas represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

Source: NMFS 2014

Table 3.7 Observed or Reported Number of Bluefin Tuna Kept in the Rod and Reel Fishery (ME-VA, 2003 – 2012)

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Giant bluefin tuna[1]	58	50	48	15	15	20	46	54	51	65
Large medium bluefin tuna[1]	11	13	12	1	5	11	0	36	28	23
Small medium bluefin tuna	83	30	22	48	69	48	205	11	14	21
Large school bluefin tuna	287	291	179	171	298	398	107	174	77	73
School bluefin	509	927	638	84	314	228	180	201	180	146
Young school bluefin	4	16	25	0	3	4	1	2	0	2

[1] Includes some commercial handgear landings.

Source: NMFS 2014; Large Pelagics Survey

Bycatch, Incidental Catch, and Protected Species

Bycatch in the recreational rod and reel fishery is difficult to quantify because many fishermen simply value the experience of fishing and may not be targeting a particular species. Amendment 1 to the Atlantic Billfish FMP established a catch-and-release fishery management program for the recreational Atlantic billfish fishery. As a result of this program, all Atlantic billfish that are released alive, regardless of size, are not considered bycatch. The recreational white shark fishery is by regulation a catch-and-release fishery only, and white sharks are not considered bycatch.

Bycatch can result in death or injury to discarded fish; therefore, bycatch mortality is incorporated into fish stock assessments, and into the evaluation of management measures. The number of kept and released fish reported or observed through the LPS dockside intercepts for 2003 – 2012 is presented in Table 3.7 and Table 3.8.

An outreach program to address bycatch and to educate anglers on the benefits of circle hooks has been implemented by NMFS. In January 2011, NMFS developed and released a brochure that provides guidelines on how to increase the survival of hook-and-line caught large pelagic species intended for release.

Table 3.8 Observed or Reported Number of Bluefin Tuna Released in the Rod and Reel Fishery (ME-VA, 2003 – 2012)

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Giant bluefin tuna[1]	0	3	0	3	0	0	0	1	0	0
Large medium bluefin tuna[1]	0	36	4	1	3	11	7	22	2	9
Small medium	13	21	30	18	32	23	93	46	32	45

bluefin tuna										
Large school bluefin tuna	40	107	141	85	99	286	77	172	53	64
School bluefin tuna2	174	1,297	1,917	290	347	358	173	392	345	184
Young school bluefin tuna[2]	10	1,885	282	117	83	55	52	68	44	21

[1] Includes some commercial handgear landings; [2] Includes dead releases in 2010.

Source: NMFS 2014; Large Pelagics Survey

There is concern about the accuracy of discard estimates in the recreational rod and reel fishery for Atlantic HMS due to the low number of observations by the LPS and MRIP. Recreational bycatch estimates (numbers of fish released alive and dead) are not currently available, except for bluefin tuna. For some species, encounters are considered rare events, which might result in bycatch estimates with considerable uncertainty. Due to improvements in survey methodology, increased numbers of intercepts (interviews with fishermen) have been collected since 2002. NMFS may develop bycatch estimates (live and dead discards) and estimates of uncertainty for the recreational fishery from the LPS.

Tournaments

An Atlantic HMS tournament is defined as any fishing competition involving Atlantic HMS in which participants must register or otherwise enter or in which a prize or award is offered, for catching or landing such fish. Atlantic HMS tournaments are conducted from ports along the U.S. Atlantic coast, Gulf of Mexico, and Caribbean (i.e., the U.S. Virgin Islands and Puerto Rico). Some foreign tournaments (e.g., those held in the Bahamas, Bermuda, and the Turks and Caicos) may voluntarily register because their participants are mostly U.S. citizens. Since 1999, Federal regulations have required that tournament registration with NMFS take place at least four weeks prior to the commencement of tournament fishing activities. Tournament operators may be selected by NMFS for reporting, in which case a record of tournament catch and effort must be submitted to NMFS within seven days of the conclusion of the tournament. HMS Tournament registration data are presented in Table 3.9, Table 3.10, and Figure 3.2.

Recent trends in recreational catch and landings of HMS (including tournament landings information), including bluefin and BAYS tunas, can be found in Table 3.6.

Table 3.9 Number of Registered Atlantic HMS Tournaments by Year (2003 – 2012)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*	Average**
Total	244	215	256	259	299	267	270	270	249	235	259

*As of October 2012. **Averages only final numbers (2003-2011); excludes preliminary 2012 number.

Source: NMFS 2012; NMFS Atlantic HMS Tournament Registration Database

Table 3.10 Number of Atlantic HMS Tournaments per species (2011 – 2012)

Species	2011	2012
Blue marlin	146	139
White marlin	134	124
Longbill spearfish	66	59
Roundscale spearfish	30	42
Sailfish	151	139
Swordfish	75	67
Bluefin tuna	86	78
Bigeye tuna	85	58
Albacore tuna	36	37
Yellowfin tuna	137	133
Skipjack tuna	21	33
Pelagic sharks	55	71
Small coastal sharks	15	16
Non-ridgeback sharks	16	15
Ridgeback sharks	17	13

Sources: NMFS 2014; NMFS Atlantic HMS Tournament Registration Database

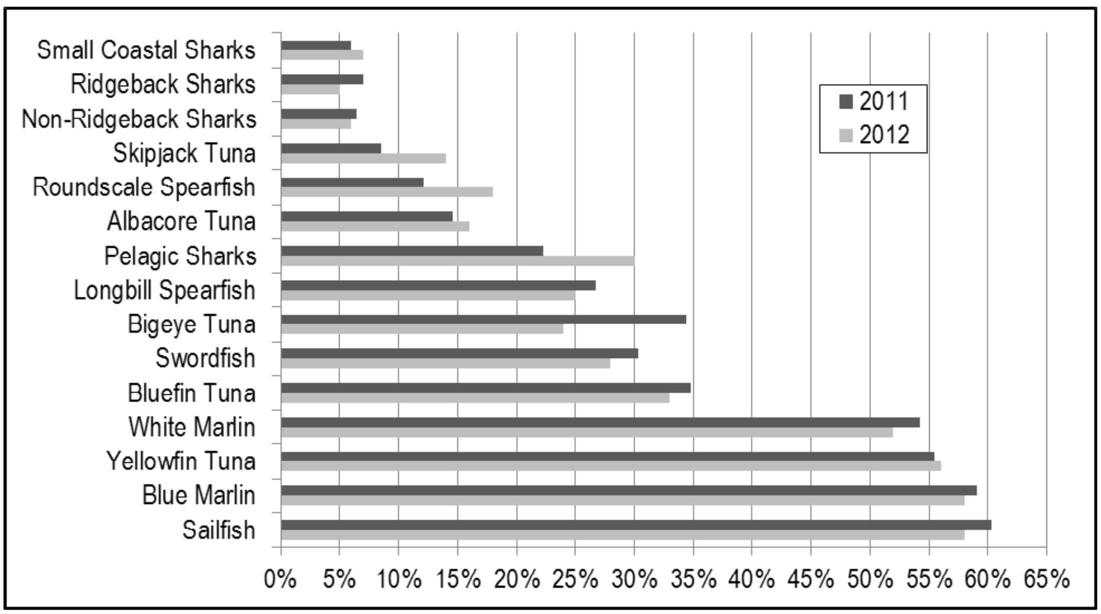

Figure 3.2 Species composition of HMS Tournaments (2011-2012)

Sources: NMFS 2014; NMFS Atlantic HMS Tournament Registration Database

3.3.2 Commercial Handgear: Atlantic Tunas General Category and Harpoon Category

Commercial handgear vessels that wish to sell their Atlantic tunas must obtain a commercial handgear permit in one of the following categories: Atlantic tunas General (rod and reel, harpoon, handline, bandit gear), Atlantic tunas Harpoon (harpoon only), or HMS Charter/Headboat (rod and reel and handline). HMS Charter/Headboat category regulations, recent catch data, and bycatch data are discussed in Section 3.2.2.

Commercial handgears are used to fish for bluefin and other HMS by fishermen on private vessels, charter vessels, and headboat vessels. Rod and reel gear may be deployed from a vessel that is at anchor, drifting, or underway (i.e., trolling). In general, trolling consists of dragging baits or lures through, on top of, or even above the water's surface. While trolling, vessels often use outriggers, kites, or green-sticks to assist in spreading out or elevating baits or lures and to prevent fishing lines from tangling. For more information on green-stick fishing gear, and the configurations allowed under current regulations, please refer to the discussion of green-stick gear in Section 4.8 of the 2013 HMS SAFE Report.

Operations, frequency and duration of trips, and distance ventured offshore vary widely. Most of the vessels are greater than seven meters in length and are privately owned by individual fishermen. The handgear fisheries are typically most active during the summer and fall, although in the South Atlantic and Gulf of Mexico fishing occurs during the winter months. Fishing usually takes place between eight and 200 km from shore and for those vessels using bait, the baitfish typically includes herring, mackerel, whiting, mullet, menhaden, ballyhoo, butterfish, and squid. The commercial handgear fishery for bluefin traditionally occurred mainly in New England, but more recently has also flourished off the coast of southern Atlantic states, such as Virginia, North Carolina, and South Carolina, with vessels targeting large medium and giant bluefin. This fishery is highly variable due to bluefin distribution and abundance, which varies with oceanographic and ecological conditions, etc.

Commercial handgear vessels may need additional permits from the states they operate out of in order to land and sell their catch. All commercial permit holders are encouraged to check with their local state fish/natural resource management office regarding these requirements. There are also U.S. Coast Guard safety regulations that apply to vessels with commercial permits. Permitted vessels are also required to sell their Atlantic tunas to federally permitted Atlantic tuna dealers.

3.3.3 Atlantic Tunas General Category

The Atlantic tunas General category permit is an open access permit. The General category is allocated 47.1 percent of the baseline U.S. quota. The General category quota is further subdivided into subquotas, shown in Table 3.11, that are based upon historical fishery patterns and the seasonal distribution of bluefin.

Table 3.11 Atlantic Tunas General Category Sub-Quotas by Month

Months	Percentage of General Category Annual Quota

January*	5.3
June through August	50
September	26.5
October and November	13
December	5.2

* Although it is called the “January subquota,” the regulations allow this fishery to continue until the subquota is reached, or March 31, whichever comes first.

The Atlantic tunas General category fishery has, over a number of years, landed a large percentage of the total bluefin landings (e.g., 64% in 2012; NMFS 2014). Landings can vary considerably however, and in recent years, fishermen have noted a substantial decline in the availability of large medium and giant bluefin in the New England area (NMFS 2011). During certain periods, for example, between 2004 through 2008, the availability of commercial-sized bluefin to the commercial fisheries, particularly off New England appeared to have declined dramatically, while the Canadian commercial quota was approached or met (SCRS 2010).

Recent Catch and Landings

In 2012, bluefin commercial handgear landings accounted for approximately 66 percent of the total U.S. bluefin landings, and almost 84 percent of commercial bluefin landings. Figure 3.3 and Table 3.12 show the U.S. Atlantic bluefin landings in metric tons by quota category since 1997. Note that the commercial handgear landings are comprised of bluefin landed by both the Atlantic tunas General and Harpoon categories.

Table 3.13 displays the estimated number of rod and reel and handline trips targeting large pelagic species (e.g., tunas, billfishes, swordfish, sharks, wahoo, dolphin, and amberjack) from Maine through Virginia, in 2003 through 2012. The trips include commercial and recreational trips, and are not specific to any particular species. Total number of trips made in Virginia, the Delmarva region, off southern New Jersey, and in New York by private vessels decreased between 2003 and 2012. Private vessels made more trips in 2012 than in 2003 in states bordering the Gulf of Maine (Massachusetts, New Hampshire, and Maine), in Connecticut and Rhode Island, and in northern New Jersey. The number of trips made by Charter vessels decreased by 679 between 2003 and 2012; minor increases in the number of trips made occurred in the Gulf of Maine states, northern New Jersey, and Virginia.

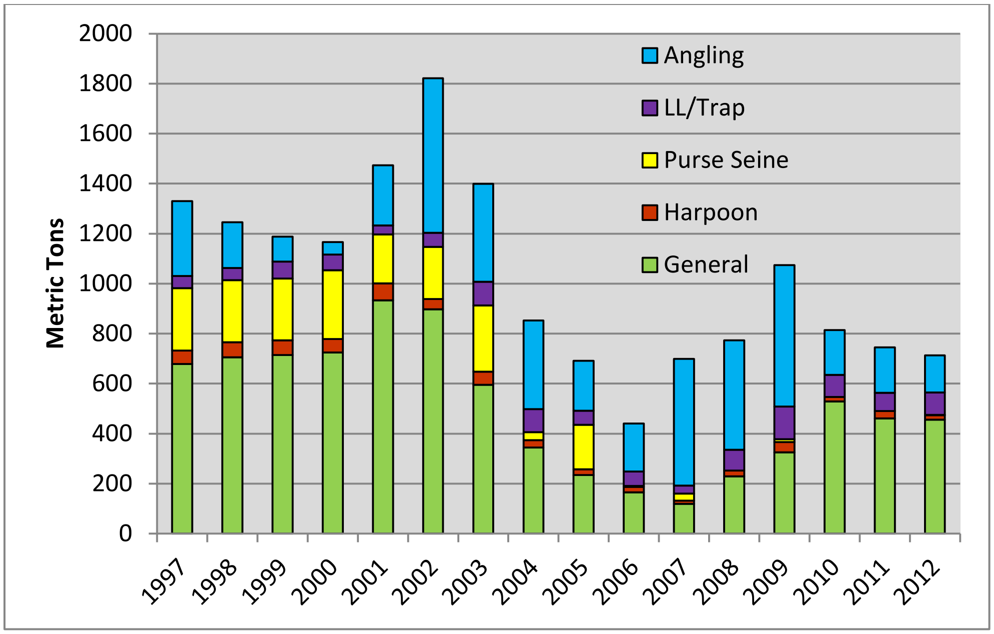

Figure 3.3 Landings of bluefin by quota category, 1997 – 2012

Longline (LL) and Trap landings are combined (these gears are permitted incidental landings only) Landings by HMS Charter/headboats are contained in the General and Angling categories respectively.

Source: NMFS 2014; NMFS Commercial BFT Landings Database.

Table 3.12 U.S. Atlantic commercial handgear landings of bluefin tuna by gear type, 2004 – 2012

Species	Gear	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bluefin tuna	Rod and Reel	353.2	226.6	164.1	120.8	226.6	301.7	515.1	418.6	419.5
	Handline	1.5	2.3	0.3	0.0	0.6	0.1	2.7	0.9	1.3
	Harpoon	41.2	31.5	30.3	22.5	30.2	66.1	29.0	70.1	52.3
	Total	395.9	260.4	194.7	143.3	257.4	367.9	546.8	489.6	473.1

Source: NMFS 2014.

Table 3.13 Estimated number of rod and reel and handline trips targeting Atlantic large pelagic species, by state (ME-VA, 2003- 2012)

	AREA							
Year	NH/ME	MA	CT/RI	NY	NJ (North)	NJ (South) and MD/DE	VA	Total
Private Vessels								
2003	4,501	13,411	2,869	12,466	3,214	21,619	5,067	63,147
2004	2,025	10,033	3,491	11,525	3,632	22,433	4,406	57,545
2005	4,607	12,052	7,603	8,051	2,446	19,759	4,631	59,148
2006	3,303	24,951	5,430	11,114	3,043	19,187	5,274	72,302
2007	5,929	25,139	6,020	6,809	5,875	17,712	5,012	72,496
2008	3,873	19,157	3,546	7,587	3,099	15,807	3,081	56,150
2009	4,724	27,066	2,670	8,274	3,633	15,458	4,299	66,122
2010	6,102	19,679	2,276	6,737	3,898	12,493	2,591	53,776
2011	6,931	20,227	2,175	5,480	4,549	12,109	2,630	54,101
2012	8,408	19,096	6,189	6,425	5,447	13,682	2,445	61,692
Charter Vessels								
2003	221	2,561	1,246	2,035	1,331	5,201	546	13,141
2004	312	2,021	1,564	2,285	1,094	5,080	1,579	13,935
2005	329	2,397	551	2,033	1,024	3,476	763	10,573
2006	96	1,294	677	1,057	891	3,452	828	8,296
2007	789	4,073	1,141	1,445	1,420	4,579	610	14,057
2008	892	3,295	751	1,525	1,026	4,340	370	12,199
2009	568	4,930	726	1,677	1,142	3,348	534	12,923
2010	917	3,581	549	1,432	1,111	2,679	511	10,780
2011	1,318	4,339	322	2,019	1,279	3,685	774	13,736
2012	1,570	4,248	465	1,211	1,437	2,910	619	12,462

Source: NMFS 2014; Large Pelagics Survey database.

Bycatch, Incidental Catch, and Protected Species

NMFS has not estimated bycatch in the General category commercial rod and reel tuna fishery although anecdotal evidence indicates that some undersized bluefin tuna and pelagic sharks may be captured.

3.3.4 Atlantic Tunas Harpoon Category

The Atlantic tunas Harpoon category is allocated 3.9 percent of the U.S. baseline bluefin quota. Vessels that are permitted in the Harpoon category fish under the Harpoon category rules and regulations. The Harpoon category is an open access permit fishery. Vessels with a Harpoon category permit may retain up to four bluefin measuring 73 inches to less than 81 inches curved fork length per vessel per trip per day while the fishery is open. There is no limit on the number of giant bluefin (measuring 81 inches or greater), as long as the Harpoon category season is open. The Harpoon category season opens on June 1 of each year and remains open until November 15, or until the quota is filled. The Harpoon fishery is a highly specialized fishery that is reported to have begun in the early 1800s off the coast of New England (for swordfish), with vessels operating out of Rhode Island and Massachusetts. Some Harpoon category vessels work in conjunction with spotter planes to locate schools of bluefin.

Recent Catch and Landings

Catch and landings in the Atlantic tunas Harpoon category are presented in Figure 3.3 and Table 3.12. The Harpoon category has always comprised a small proportion of U.S. bluefin landings; however, landings have increased within the category since 2007 as larger bluefin became more available to the fishery.

Bycatch, Incidental Catch, and Protected Species

NMFS has not estimated bycatch in the bluefin tuna harpoon fishery because these fishermen historically have not been selected to submit logbooks or take observers since the deliberate fishing nature of the gear is such that bycatch is expected to be low. Therefore, there are no recorded instances of non-target finfish caught with harpoons and NMFS cannot currently quantify the bycatch of undersized bluefin tuna in this fishery. Bycatch and bycatch mortality of commercial handgear is considered to be low, particularly for harpoons, which are thrown at individual fish determined by the fisherman to be greater than the minimum commercial size Bycatch of other species in the harpoon fishery is expected to be virtually, if not totally, non-existent. Hook-and-line and harpoon gear are classified as Category III fisheries under the MMPA. Strict control and operations of these fishing gears means these gear types are not likely to result in mortality or serious injury of marine mammals or sea turtles.

3.3.5 The Pelagic Longline Fishery

The pelagic longline fishery for Atlantic HMS primarily targets swordfish, yellowfin tuna, and bigeye tuna in various areas and seasons. Secondary target species include dolphin, albacore tuna, and, to a lesser degree, pelagic sharks. Although this gear can be modified (e.g., depth of set, hook type, hook size, bait, etc.) to target swordfish, tunas, or sharks, it is generally a multi-species fishery. These vessel operators are opportunistic, switching gear style and making subtle changes to target the best available economic opportunity of each individual trip. Pelagic longline gear sometimes attracts and hooks non-target finfish with little or no commercial value as well as species that cannot be retained by commercial fishermen due to regulations, such as billfish. Pelagic longline gear may also interact with protected species such as marine mammals, sea turtles, and seabirds. Thus, this gear has been classified as a Category I fishery with respect to the Marine Mammal Protection Act (MMPA). Any species (or undersized catch of permitted species) that cannot be landed due to fishery regulations is required to be released, regardless of whether the catch is dead or alive.

A thorough description of the pelagic longline fishery, common gear configurations, and deployment strategies by target species may be found in the 2013 HMS SAFE Report (Section 4.1, page 37). Descriptions of the different U.S. EEZ pelagic longline fisheries (e.g., Gulf of

Mexico yellowfin tuna fishery, the South Atlantic swordfish fishery) may be found in the 2011 HMS SAFE report (Section 4.2).

Alternative Gears

The use of greenstick gear and/or buoy gear to target yellowfin tuna, swordfish, or other non-bluefin tuna species instead of using pelagic longline gear may result in the reduction of bluefin interactions and dead discards. It has been demonstrated that these gear types catch relatively few bluefin compared with pelagic longline gear. Buoy gear is successfully used to commercially target swordfish, and greenstick gear is successfully used to commercially target yellowfin tuna and other tunas. Research has indicated that the use of buoy gear would provide opportunity to harvest swordfish, while reducing bycatch of many species, including bluefin tuna. Tended buoy gear has been associated with a high survival rate of catch species. Bycatch of bluefin by greenstick gear is relatively low, while the survival rate of bluefin caught is high. The use of either buoy gear or greenstick gear may result in less efficient catch of target species when compared with pelagic longline gear (NMFS 2011). Additional information on the use of buoy gear and greenstick gear, as well as recent data on catches and discards is found in the 2013 SAFE Report (Sections 4.7 and 4.8, NMFS 2014).

Fishing Effort in the Pelagic Longline Fishery

The number of hooks per set varies with line configuration and target species. Table 3.14 shows the average number of hooks per pelagic longline set by target species, from 2003 through 2012. Most recently, sets targeting dolphin had the highest average number of hooks per set, whereas pelagic longline sets targeting sharks had the lowest average number of hooks per set.

Table 3.14 Average Number of Hooks per Pelagic Longline Set by Target Species (2003 – 2012)

Target Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Swordfish	711	701	747	742	672	708	687	759	733	683
Bigeye tuna	967	400	634	754	773	751	755	653	802	865
Yellowfin tuna	720	696	691	704	672	678	689	687	635	628
Mix of tuna species	765	779	692	676	640	747	744	837	786	728
Shark	696	717	542	509	494	377	354	455	348	525
Dolphin	692	1,033	734	988	789	989	1,033	1,131	1,095	1,129
Other species	865	270	889	236	N/A	N/A	N/A	467	400	300
Mix of species	747	777	786	777	757	749	781	761	749	758

Source: HMS Logbook Data.

Figure 3.5 shows the number of pelagic longline hooks fished by year, and Table 3.15 shows the percentage of total hooks fished by area. Overall, the number of hooks per set fished by target species has not changed dramatically for vessels targeting swordfish, bigeye tuna, yellowfin tuna, or multi-species. A large increase in the average number of hooks per longline set occurred between 2002 and 2012 by vessels targeting dolphin. The average number of hooks per set dropped between 2004 and 2011, before increasing in 2012, for vessels targeting sharks, likely a result of stricter retention limits and other management measures that were enacted after 2006. Early in the time period of interest, the greatest percentage of effort was concentrated in the Gulf of Mexico (e.g., greater than 50 percent of the hooks were fished in the Gulf of Mexico from 2002-2005). However, in 2010 and 2011, the distribution of effort was more even between the Mid-Atlantic Bight, the South Atlantic Bight, the Gulf of Mexico, and the Florida East Coast management regions. In 2012, the greatest percentage of effort was again concentrated in the Gulf of Mexico. Table 3.16 shows the average percentage of total hooks fished by area during two time periods in order to illustrate some of the trends. While fishing effort decreased in the Gulf of Mexico through 2011, it increased in the other regions. However, in 2012 fishing effort was greatest in the Gulf of Mexico. Figure 3.4 shows the distribution of average pelagic longline hooks fished per set between 2006 and 2012; smaller numbers of hooks per set are typically set in continental shelf or nearshore regions, whereas the highest mean number of hooks fished per pelagic longline set occurred in offshore regions south of Nova Scotia. The greatest numbers of hooks were fished by the pelagic longline fleet along the continental shelf break in the Atlantic and in the middle of the Gulf of Mexico (Figure 3.4).

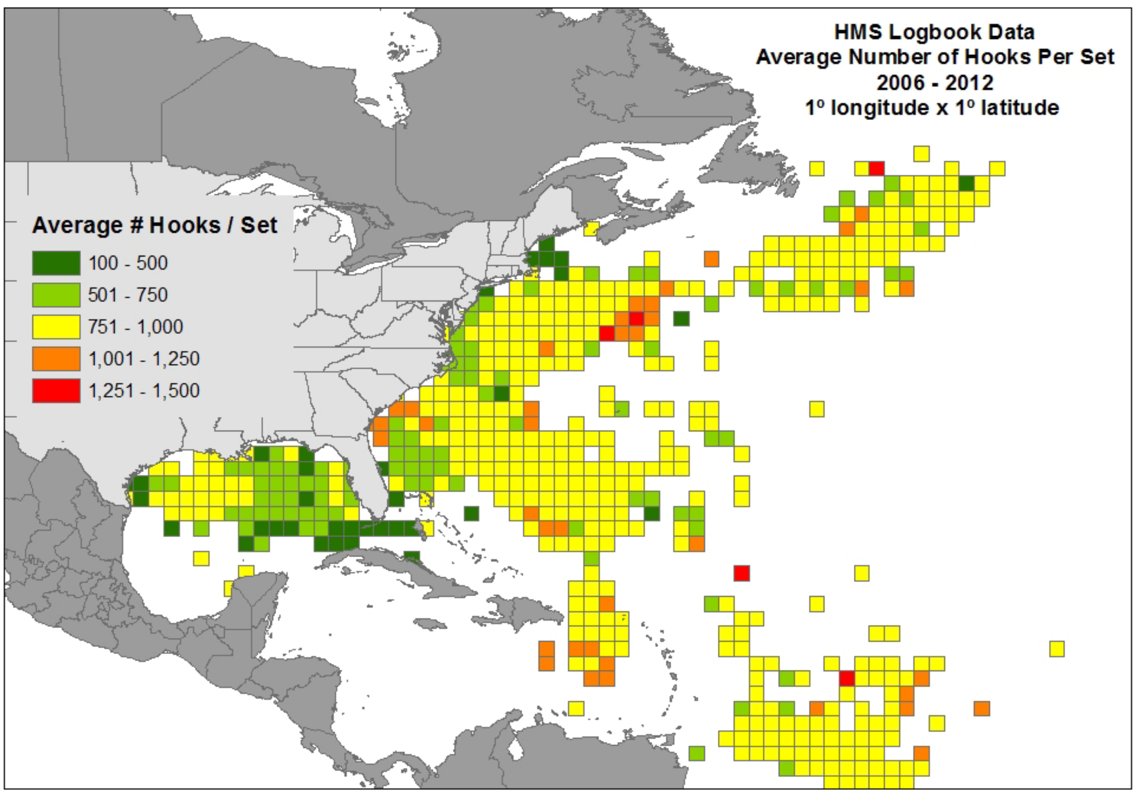

Figure 3.4 HMS logbook pelagic longline data from 2006 – 2012 averaged over 1º x 1º grid cells to show the spatial distribution of average hooks per set

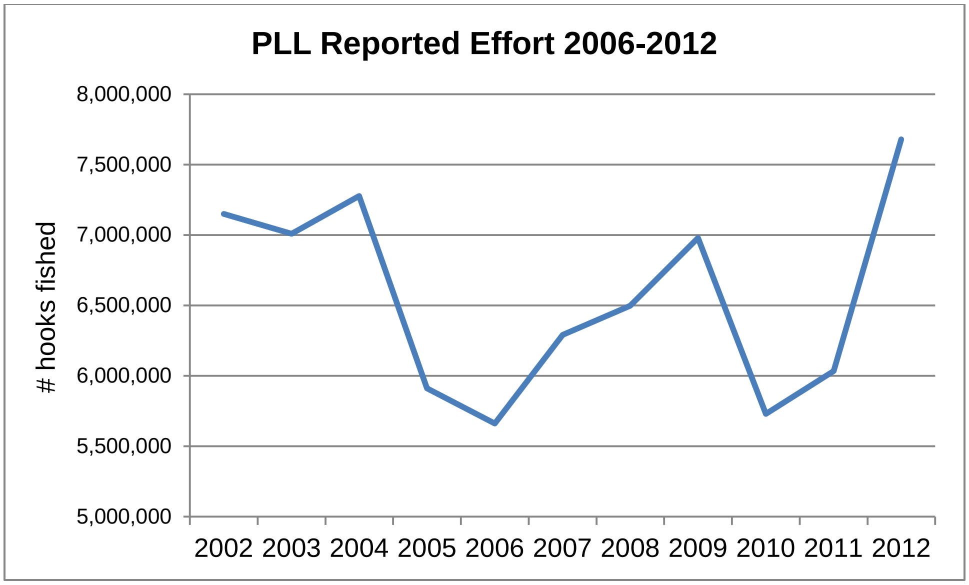

Figure 3.5 Pelagic Longline Fishing Effort (Hooks Fished) by Year (2002 – 2012)

Source: HMS Logbook Data; NMFS 2014.

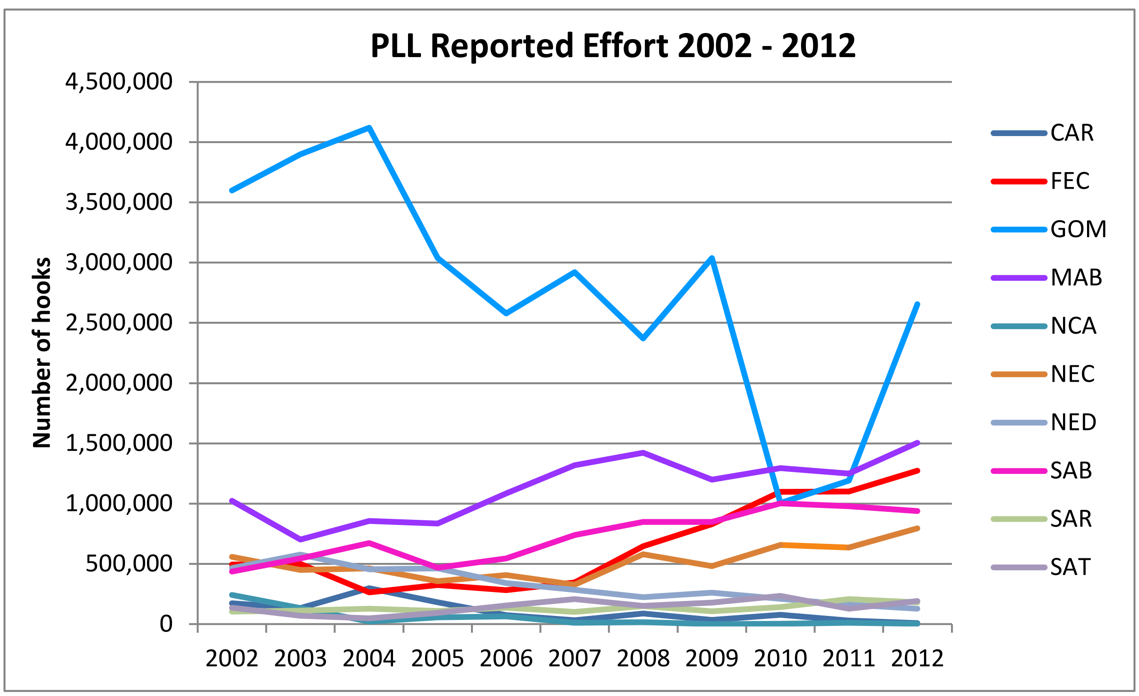

Figure 3.6 Pelagic Longline Fishing Effort (Hooks Fished) by Year and Area (2002 – 2012)

Source: HMS Logbook Data.

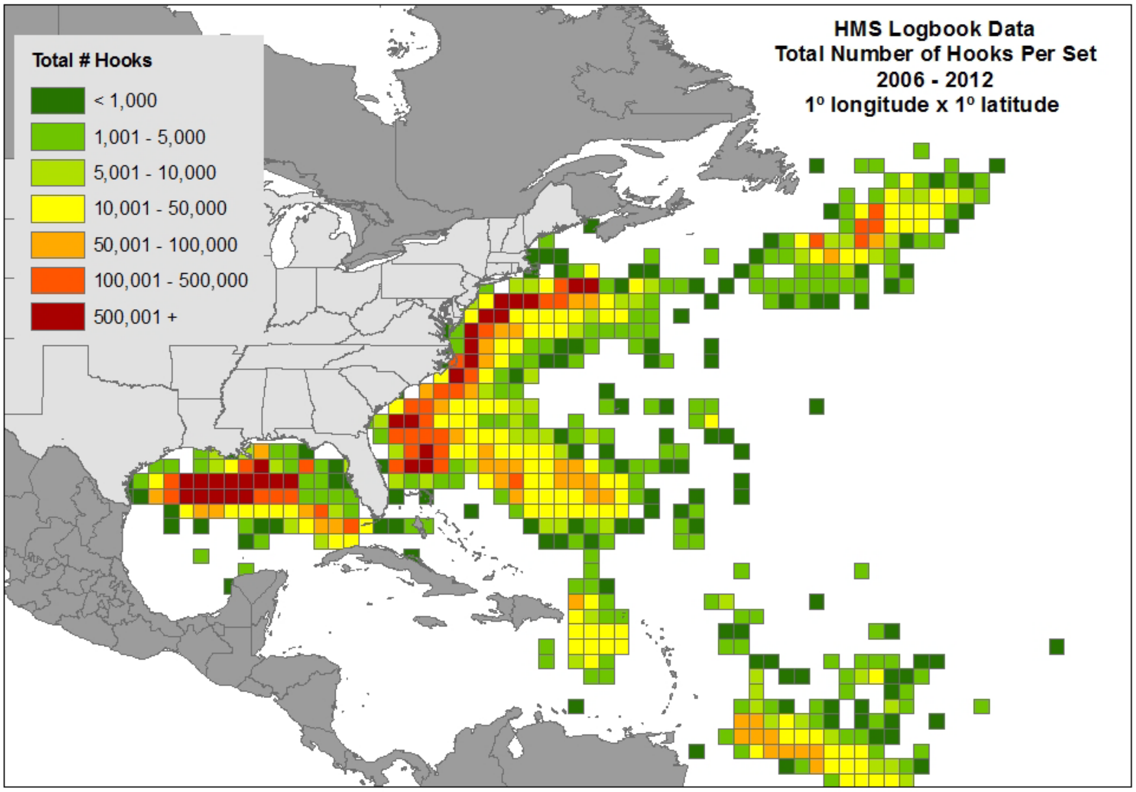

Figure 3.7 Reported hooks fished by the HMS pelagic longline fleet (2006 - 2012)

Values in 1º x 1º grid cells are the sum of all reported hooks reported to be fished within that grid cell. Source: HMS Logbook Data.

Table 3.15 Percentage of Total Hooks Fished by Area (2002 – 2012)

Area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CAR	2	2	4	3	1	1	1	0	1	1	1
FEC	7	7	4	5	5	6	10	12	19	19	13
GOM	50	55	56	51	46	46	36	44	18	21	35
MAB	14	10	12	14	19	21	22	17	23	22	20
NCA	3	2	0	1	1	0	0	0	0	0	0
NEC	8	6	6	6	7	5	9	7	11	11	9
NED	6	8	6	8	6	5	3	4	4	3	4
SAB	6	8	9	8	10	12	13	12	18	17	13
SAR	1	2	2	2	2	2	2	2	2	4	2
SAT	2	1	1	2	3	3	2	3	4	2	3

Acronyms represent domestic reporting regions, and include: CAR = Caribbean; FEC = Florida East Coast; GOM = Gulf of Mexico; MAB = Mid-Atlantic Bight; NCA = North Central Atlantic; NEC = Northeast Coastal; NED = Northeast Distant waters; SAB = South Atlantic Bight; SAR = Sargasso Sea; and, SAT = Tuna North & Tuna South.

Source: HMS Logbook Data.

Table 3.16 Average Percentage of Total Hooks Fished, by Area, 2002 – 2012

Area	Average Percentage of Hooks 2002 to 2006	Average Percentage of Hooks 2007 to 2012
GOM	52	34
FEC	6	14
MAB	14	20
SAB	8	14

Source: HMS Logbook Data.

The total number of hooks fished by the pelagic longline fishery shows a slight declining trend (Figure 3.5). The average number of hooks fished per year from 2002 through 2006 was 6,652,108, and the average number of hooks fished per year from 2007 through 2011 was 6,535,119. The areas with the greatest fishing effort are the Gulf of Mexico, Mid-Atlantic Bight, South Atlantic Bight, Florida East Coast, and the Northeast Coastal. Since 2002, there have been notable trends in the distribution of pelagic longline fishing effort among the different areas. The percentage of total hooks fished in the Gulf of Mexico has declined through 2011, and the percentage of total hooks fished in the Florida East Coast, Mid-Atlantic Bight, and South Atlantic Bight have increased through 2011 (Figure 3.6). However, in 2012, the total number of hooks fished in the Gulf of Mexico increased, while the percentage of total hooks fished in the Florida East Coast, Mid-Atlantic Bight, and South Atlantic Bight decreased. Gulf of Mexico fishermen were detrimentally affected by the Deepwater Horizon Oil Spill, as evidenced by large declines in both number of hooks and percentage of effort exerted in the Gulf of Mexico between 2009 and 2011. The total number of hooks fished in the FEC and the MAB actually increased between 2010 and 2012, while the total number of hooks fished in the SAB has decreased marginally (Figure 3.6). Changes in the percent distribution of effort are therefore more likely influenced by the activity of the Gulf of Mexico fleet in 2012.

Management of the U.S. Pelagic Longline Fishery

Regulations for the U.S. Atlantic pelagic longline fishery vary by target species and include bluefin target catch requirements; minimum sizes for swordfish, yellowfin tuna, bigeye tuna, and bluefin; gear and bait requirements; limited access vessel permits; observers, time/area closures, protected species incidental take limits; reporting requirements (including logbooks); mandatory workshop requirements; regional quotas for swordfish; and shark regulations. Current billfish regulations prohibit the retention of billfish by commercial vessels, or the sale of billfish from the Atlantic Ocean. As a result, all billfish hooked on pelagic longline gear must be discarded, and are considered bycatch. Pelagic longline is a heavily managed gear type and is strictly monitored. Because it is difficult for pelagic longline fishermen to avoid undersized or prohibited fish in some areas, NMFS has closed areas in the Gulf of Mexico and along the U.S. East Coast. The intent of these closures was to decrease bycatch in the pelagic longline fishery by closing areas with the highest bycatch rates. There are also time/area closures for pelagic longline fishermen designed to reduce the incidental catch of bluefin and sea turtles. In order to enforce time/area closures and to monitor the fishery, NMFS requires all pelagic longline vessels to report positions on an approved VMS.

In addition to the regulations mentioned above, to protect sea turtles, vessels with pelagic longline gear onboard must, at all times, in all areas open to pelagic longline fishing except the Northeast distant, possess onboard and/or use only 16/0 or larger non-offset circle hooks and/or 18/0 or larger circle hooks with an offset not to exceed 10 degrees. Only whole finfish and squid baits may be possessed and/or utilized with allowable hooks. Vessels fishing in the Northeast distant are required to use 18/0 or larger circle hooks with an offset not to exceed 10 degrees and whole mackerel or squid baits. All pelagic longline vessels must possess and use sea turtle handling and release gear in compliance with NMFS careful release protocols. Additionally, all pelagic longline vessel owners and operators must be certified in the use of the protected species handling and release gear. Certification must be renewed every three years and can be obtained by attending a training workshop. Approximately 18 - 24 workshops are conducted annually, and they are held in areas with significant numbers of pelagic longline permit holders.

In 2009, to protect pilot whales and Risso's dolphins, the Pelagic Longline Take Reduction Plan (PLTRP) (74 FR 23349, May 19, 2009) included a requirement that pelagic longline vessel operators fishing in the Cape Hatteras Special Research Area must contact NMFS at least 48 hours prior to a trip, and carry observers if requested. The PLTRP also established a 20 nm upper limit on mainline length for all pelagic longline sets in the Mid-Atlantic Bight, and required that an informational placard be displayed in the wheelhouse and on the working deck of all active pelagic longline vessels in the Atlantic fishery. In April 2011, NMFS implemented a requirement for pelagic longline vessels to use "weak hooks" - hooks that are designed to release spawning bluefin while retaining yellowfin tuna and swordfish – when fishing in the Gulf of Mexico (76 FR 18653; April 5, 2011). This action provided protection for spawning bluefin in the Gulf of Mexico and helps to better align landings and dead discards of bluefin with the Longline category bluefin subquota.

The 1999 FMP established six different limited access permit types: (1) directed swordfish, (2) incidental swordfish, (3) swordfish handgear, (4) directed shark, (5) incidental shark, and (6) Atlantic tunas longline. To reduce bycatch in the pelagic longline fishery, these permits were designed so that the swordfish directed and incidental permits are valid only if the permit holder also holds both an Atlantic tunas longline and a shark permit. Similarly, the Atlantic tunas longline permit is valid only if the permit holder also holds both a swordfish (directed or incidental, not handgear) and a shark permit. This allows limited retention of species likely to be caught on pelagic longline, which might otherwise have been discarded. In order to minimize bycatch and bycatch mortality in the domestic pelagic longline fishery, NMFS implemented regulations to close certain areas to this gear type (see Figure 3.8) and has banned the use of live bait by pelagic longline vessels in the Gulf of Mexico.

As described in Chapter 4, on March 31, 2014, NMFS requested reinitiation of consultation of the pelagic longline BiOp due to new information on mortality rates and total mortality estimates for leatherback turtles that exceed those specified in the reasonable and prudent alternative (RPA); changes in information about leatherback and loggerhead populations and new information on sea turtle mortality. While the mortality rate measure needs to be re-evaluated, this does not affect the overall ability of the RPA to avoid jeopardy during the reinitiation.

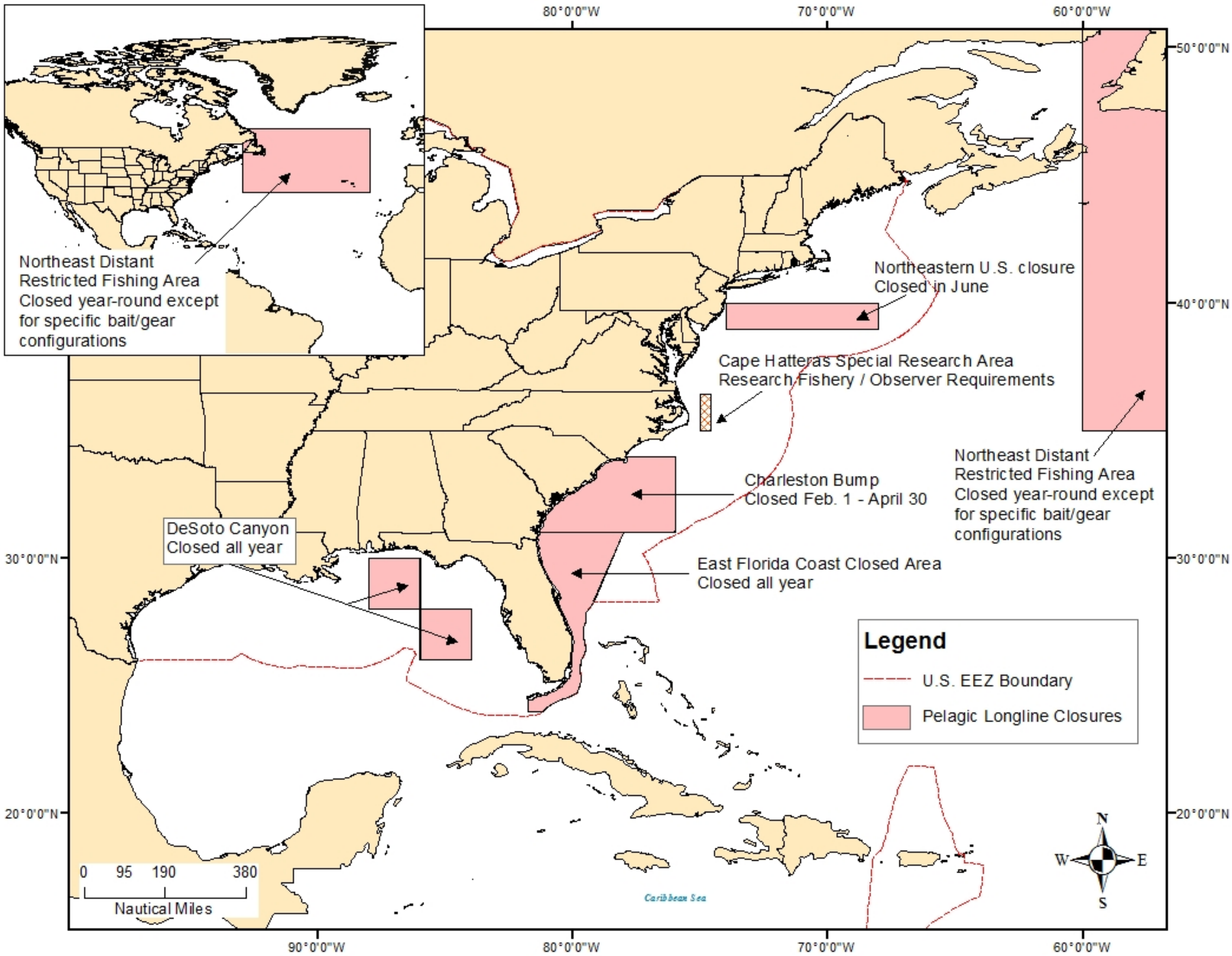

Figure 3.8 Areas Closed to Pelagic Longline Fishing by U.S. Flagged Vessels.

Recent Catches and Landings

Table 3.17 Catch Reported in the U.S. Atlantic Pelagic Longline Fishery, in Number of Fish per Species (2003-2012)

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Swordfish kept	51,835	46,440	41,139	38,241	45,933	42,800	45,378	33,831	38,012	51,544
Swordfish discarded	11,829	10,675	11,134	8,900	11,823	11,194	7,484	6,107	8,510	7,996
Blue marlin discarded	595	712	567	439	611	687	1,013	504	539	896
White marlin discarded	809	1,053	989	557	744	670	1,064	605	921	1,432
Sailfish discarded	277	424	367	277	321	506	774	312	556	795
Spearfish discarded	108	172	150	142	147	197	335	212	281	270
Bluefin tuna kept	273	475	375	261	337	343	629	392	355	392
Bluefin tuna discarded	881	1,031	765	833	1,345	1,417	1,290	1,488	764	563
Bigeye, albacore, yellowfin, and skipjack tunas kept	63,321	76,962	57,132	73,058	70,390	50,108	57,461	51,786	68,401	84,707
Pelagic sharks kept	3,037	3,440	3,149	2,098	3,504	3,500	3,060	3,872	3,694	2,794
Pelagic sharks discarded	21,705	25,355	21,550	24,113	27,478	28,786	33,721	45,511	43,778	23,038
Large coastal sharks kept	5,326	2,292	3,362	1,768	546	115	403	434	130	86
Large coastal sharks discarded	4,813	5,230	5,877	5,326	7,133	6,732	6,672	6,726	6,085	7,716
Dolphin kept	29,372	38,769	25,707	25,658	68,124	43,511	62,701	30,454	29,442	42,445
Wahoo kept	3,919	4,633	3,348	3,608	3,073	2,571	2,648	749	1,848	3,121
Sea turtle interactions	399	369	152	128	300	476	137	94	66	61
Number of Hooks (× 1,000)	7,008	7,276	5,911	5,662	6,291	6,498	6,979	5,729	5,530	7,679

Source: HMS Logbook Data.

Table 3.18 Reported Landings (mt ww) in the U.S. Atlantic Pelagic Longline Fishery (2003-2012)

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Yellowfin tuna	2,164.0	2,492.2	1,746.2	2,009.9	2,394.50	1,324.50	1,700.1	1,188.8	1,468.6	2,281.0
Skipjack tuna	1.4	0.7	0.6	0.2	0.02	1.45	0.5	1.4	0.7	0.4
Bigeye tuna	283.9	310.1	311.9	520.6	380.70	407.70	430.1	443.2	627.1	583.2
Bluefin tuna	133.9	180.1	211.5	204.6	164.30	232.60	335.0	238.7	220.4	291.9
Albacore tuna	107.6	120.4	108.5	102.9	126.80	126.50	158.3	159.9	267.6	261.4
Swordfish (N)	2,756.3	2,518.5	2,272.8	1,960.8	2,474.00	2,353.60	2,691.30	2,206.2	2,681.2	3,384.5
Swordfish (S)	20.5	15.7	0	0	0	0	0	0.3	0	0.0

Source: NMFS ICCAT National Report 2013.

Catch and discards for target and non-target species by the pelagic longline fishery are summarized in Table 3.17. Table 3.18 provides a summary of U.S. Atlantic pelagic longline landings, as reported to ICCAT. Additional information regarding U.S. Atlantic landings are available in the 2013 U.S. National Report to ICCAT. Table 3.19 and Table 3.20 show summaries of landings and dead discards by region and year for the Atlantic and Gulf of Mexico, and for the NED, respectively.

Distribution of live and dead discards of bluefin from 2011 for the East Coast, Gulf of Mexico, and the NED were analyzed and are shown in Figure 3.9, Figure 3.10 and Figure 3.11 respectively. Additional years of data are available for consideration in the Appendices. The 73" minimum size is shown on these graphs as a dashed line. Large numbers of reported dead discards of smaller bluefin were apparent in the Atlantic; larger numbers of reported dead discards of larger bluefin were reported in the Gulf of Mexico. Few dead discards were reported in the NED reporting region in 2011. Spatial distribution of pelagic longline target species CPUE (catch per 1,000 hooks) are shown in Figure 3.12 to Figure 3.17; these maps show CPUE averaged over 1º latitude x 1º longitude grid cells. The pelagic longline fishery experienced moderately high CPUEs for swordfish across much of the fishing grounds in the Atlantic, with CPUE hotspots occurring off New England, Florida, and in the Sargasso Sea. Mahi CPUE hotspots occurred mainly within coastal regions of the South Atlantic Bight. Two regional hotspots for yellowfin tuna are apparent in the Gulf of Mexico, and between North Carolina and Georges Bank. In comparison to these three species, CPUE is much lower and more dispersed for bigeye tuna and shortfin mako. A moderate CPUE hotspot is apparent just outside of the Florida East Coast Closure, and moderately high CPUEs for shortfin mako are apparent off southern Georges Bank.

Table 3.19 Atlantic* and Gulf of Mexico (GOM) Pelagic Longline Landings and Discards (mt) (2006-2012)

	2006	2007	2008	2009	2010	2011	2012	Average
Landings								
GOM	17.5	32.5	25.7	33.2	20.8	3.7	31.9	23.5
Atlantic	29.8	31.3	40.5	46.3	54.6	65.1	53.5	45.9
Total	47.3	63.8	66.2	79.5	75.4	68.8	85.4	69.5
Dead Discards								
GOM	70.6	49.3	86.0	78.4	35.5	9.5	69.3	56.9
Atlantic	74.6	60.3	67.0	120.4	110.1	151.2	135.9	102.8
Total	145.2	109.6	153.0	198.8	145.6	160.7	205.2	159.7
Landings and Dead Discards Total	192.5	173.4	219.2	278.3	221.2	298.3	290.6	239.0

*not including NED

Source: BFT Dealer Report database; POP data; PLL Logbook Program.

Table 3.20 NED pelagic longline landings and discards (mt) from 2006 to 2012

	2006	2007	2008	2009	2010	2011	2012	Average
Landings	10.1	10.4	8.8	51.0	13.8	6.2	3.3	14.8
Dead discards	2.0	1.7	3.4	5.6	4	5.1	0.6	3.2
Landings and Dead Discards Total	12.1	12.1	12.2	56.6	17.8	11.3	3.9	18.0

Source: BFT Dealer Report database; POP data; PLL Logbook Program.

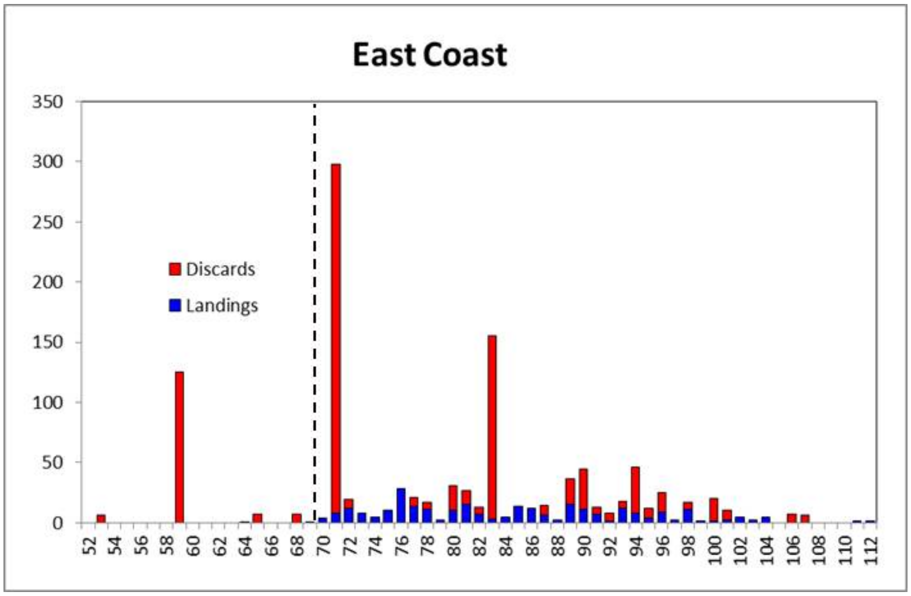

Figure 3.9 Pelagic Longline Live and Dead Discards of Bluefin Tuna in the U.S. East Coast Reporting Regions (not including the NED) in 2012

The dashed line represents the minimum commercial size of 70” SFL.

Source: NMFS.

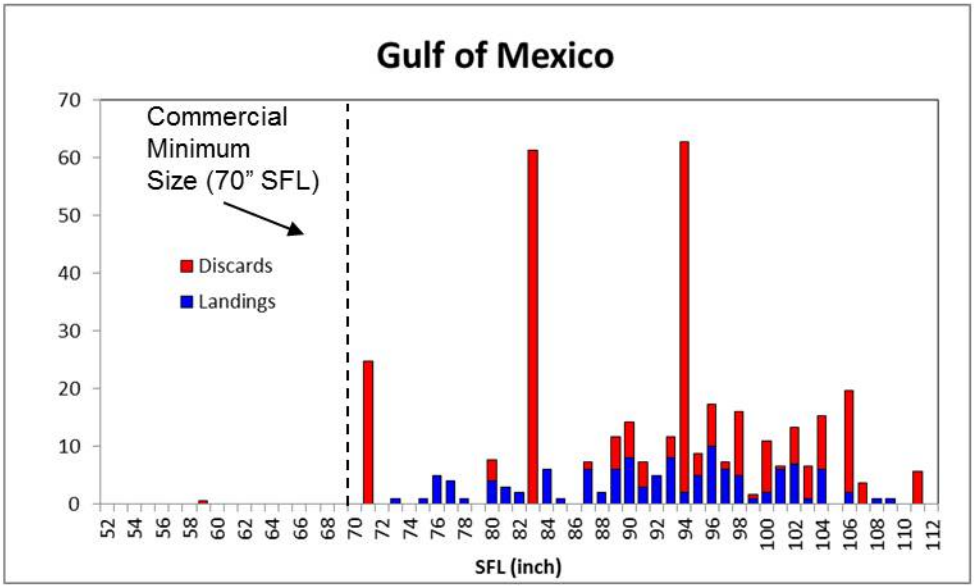

Figure 3.10 Pelagic Longline Live and Dead Discards of Bluefin Tuna in the U.S. Gulf of Mexico Reporting Region in 2012

The dashed line represents the minimum commercial size of 70" SFL
Source: NMFS.

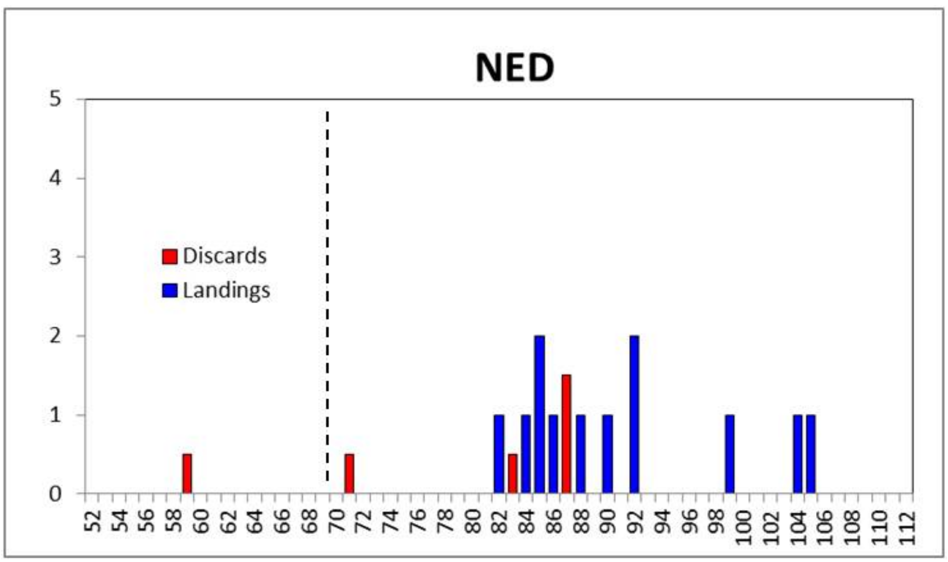

Figure 3.11 Pelagic Longline Live and Dead Discards of Bluefin Tuna in the U.S. NED Reporting Region in 2012

The dashed line represents the minimum commercial size of 70" SFL
Source: NMFS.

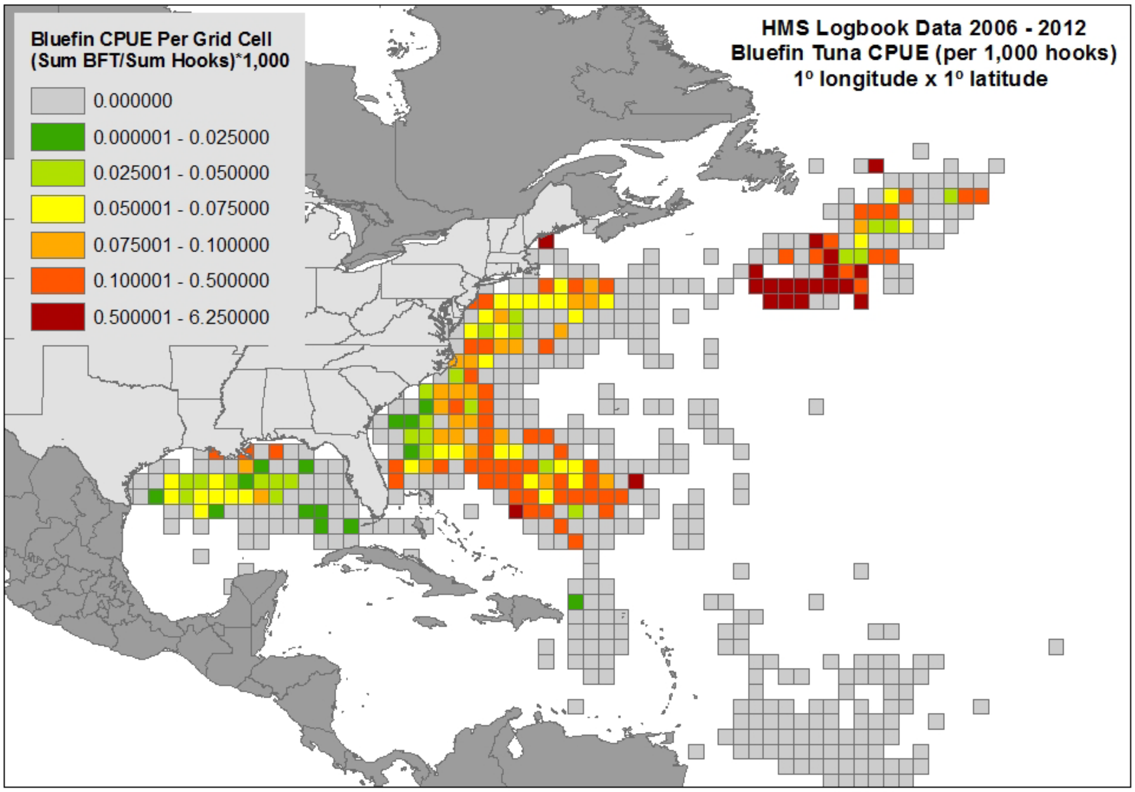

Figure 3.12 Average Catch per Unit Effort of Bluefin Tuna (number of bluefin kept per thousand hooks set) per 1º Latitude × 1º Longitude Grid Cells

CPUE per cell = (sum of all bluefin tuna kept in a cell/sum of all hooks deployed in a cell) × 1000.

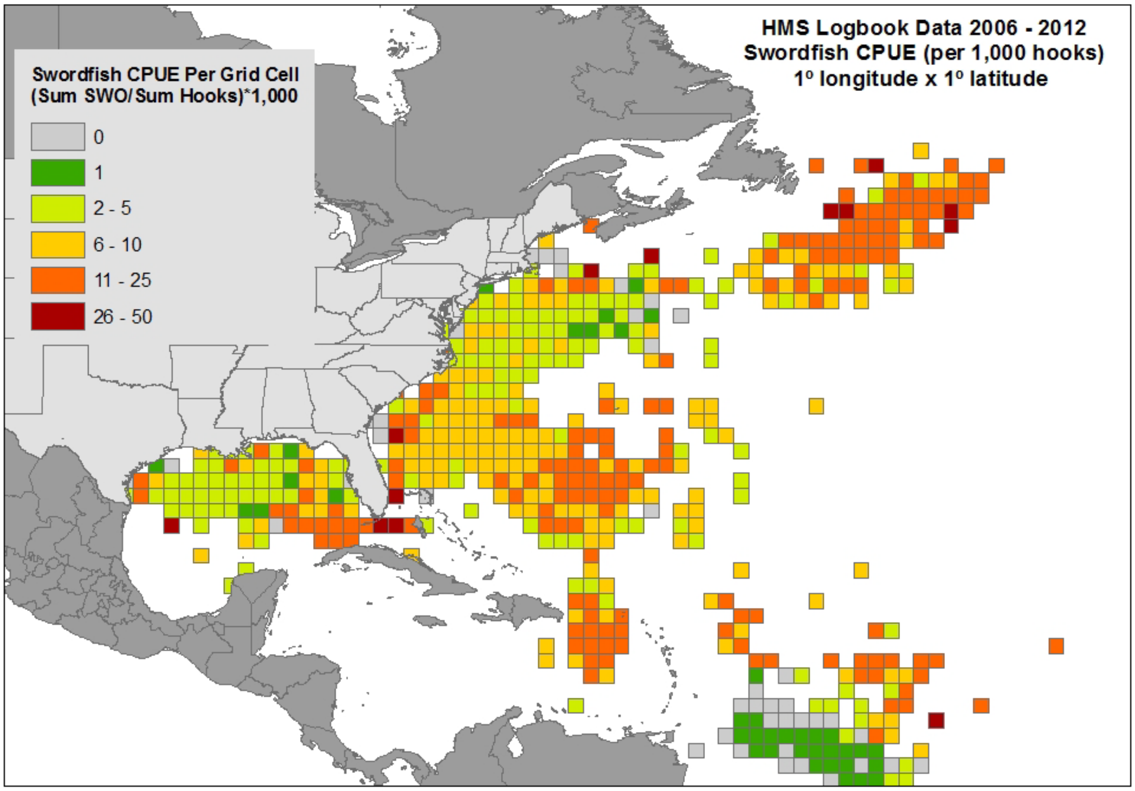

Figure 3.13 Average Catch per unit Effort of Swordfish (number of swordfish kept per thousand hooks set) per 1º Latitude x 1º Longitude Grid Cells

CPUE per cell = (sum of all swordfish kept in a cell/sum of all hooks deployed in a cell) × 1000.

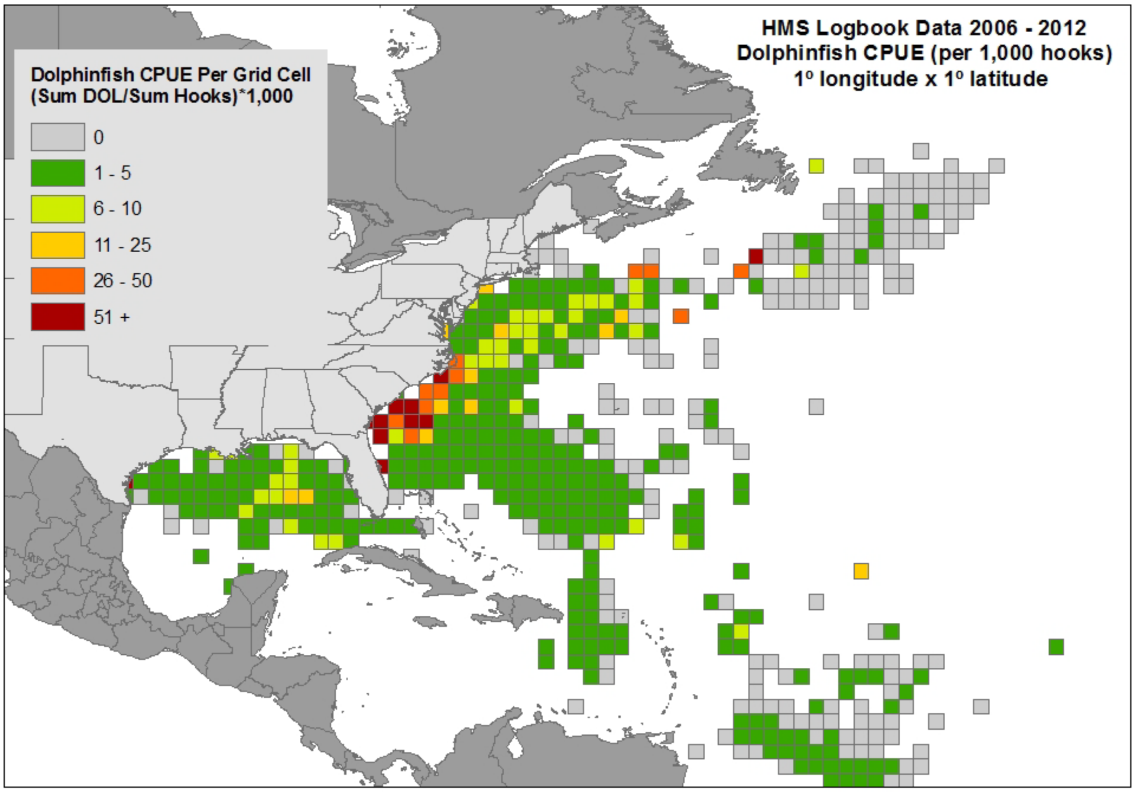

Figure 3.14 Average Catch per unit Effort of Dolphinfish (number of dolphin kept per thousand hooks set) per 1º Latitude × 1º Longitude Grid Cells

CPUE per cell = (sum of all dolphinfish kept in a cell/sum of all hooks deployed in a cell) × 1000.

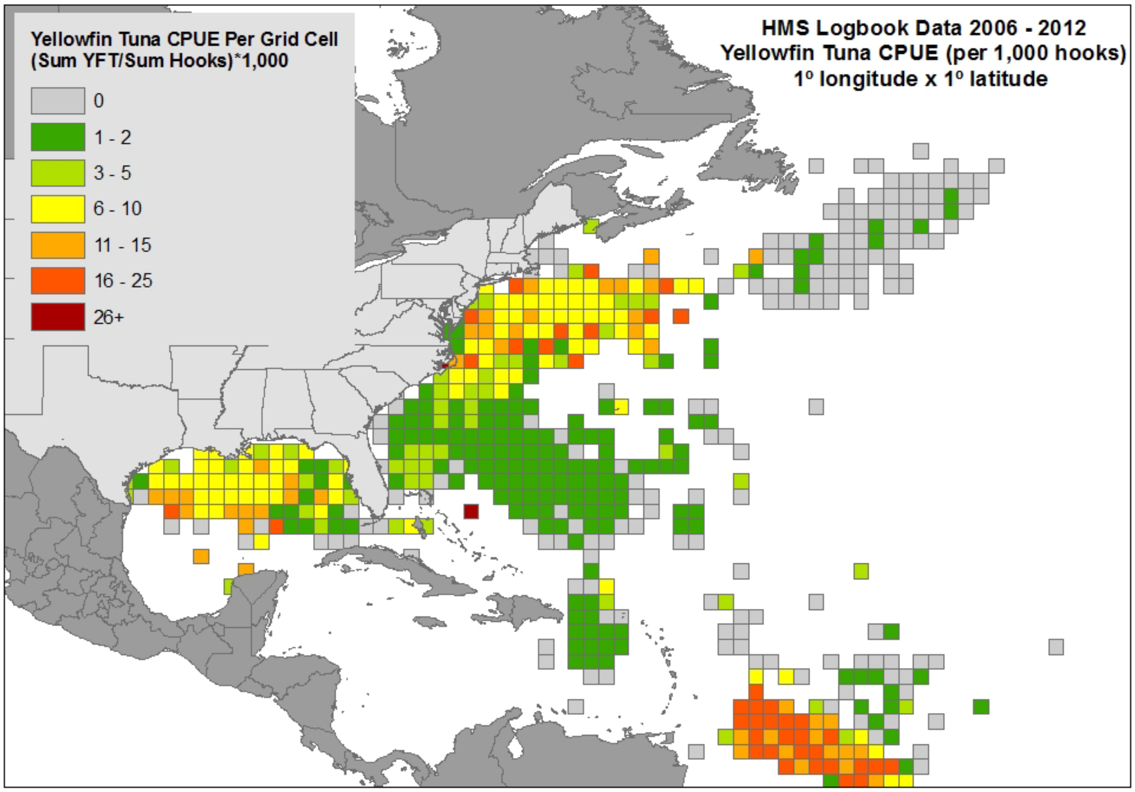

Figure 3.15 Average Catch per unit Effort of Yellowfin Tuna (number of yellowfin kept per thousand hooks set) per 1º Latitude × 1º Longitude Grid Cells

CPUE per cell = (sum of all yellowfin kept in a cell/sum of all hooks deployed in a cell) × 1000

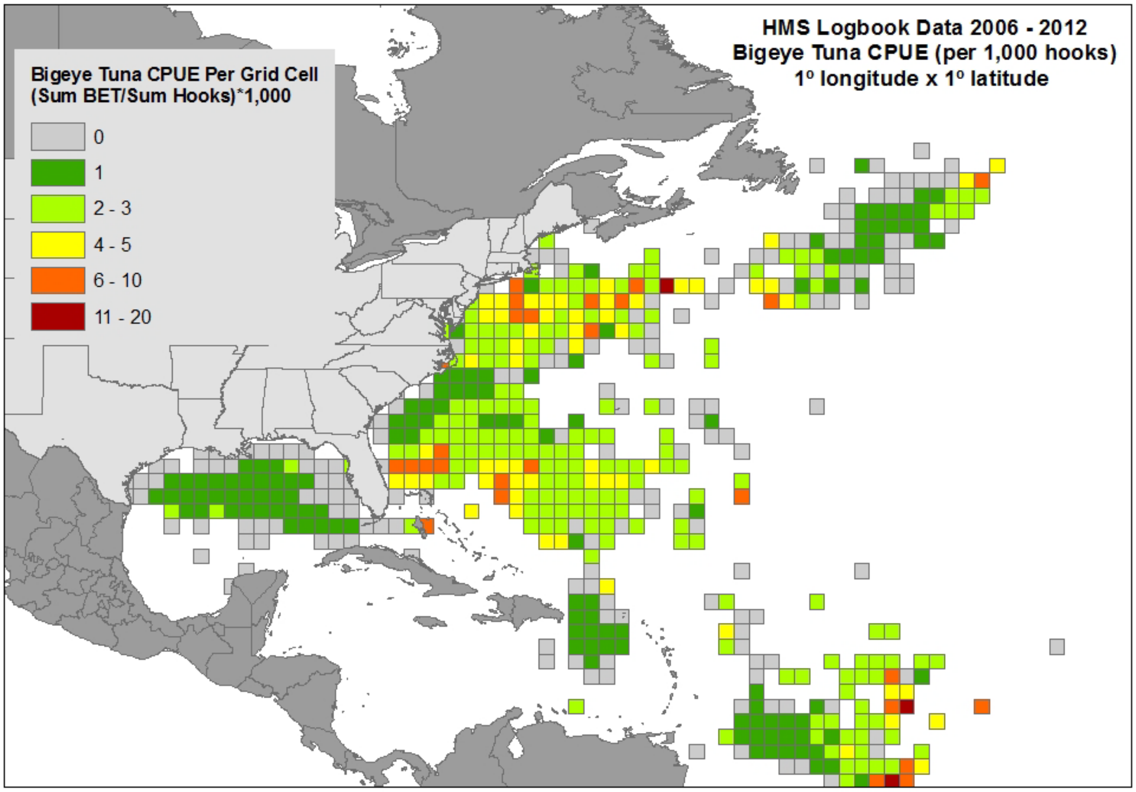

Figure 3.16 Average Catch per unit Effort of Bigeye Tuna (number of yellowfin kept per thousand hooks set) per 1º Latitude × 1º Longitude Grid Cells

CPUE per cell = (sum of all bigeye kept in a cell/sum of all hooks deployed in a cell) × 1000

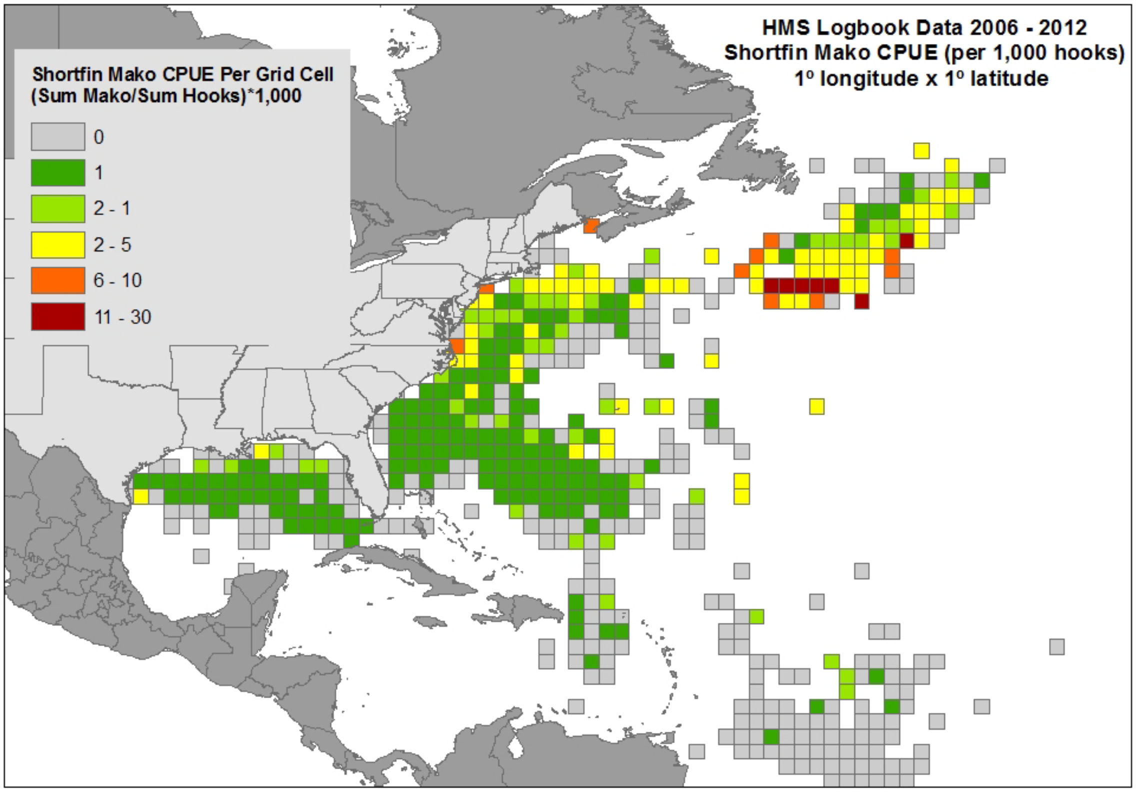

Figure 3.17 Average Catch per unit Effort of Shortfin Mako (number of yellowfin kept per thousand hooks set) per 1º Latitude × 1º Longitude Grid Cells

CPUE per cell = (sum of all shortfin mako kept in a cell/sum of all hooks deployed in a cell) × 1000

Bluefin Tuna Interaction and Discard Hotspots

NMFS analyzed observer data (see Figure 3.52 and Figure 3.53) and HMS logbook data (2006 – 2012) to identify regions where a disproportionate number of bluefin interactions, especially discards, were occurring in the pelagic longline fishery. The regions selected during this analysis ae the focus of gear restricted area alternatives presented in Chapter 4.

The Cape Hatteras Gear Restricted Area is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet by season (Figure 3.12 and Table 3.21) and by year (Figure 3.12 and Table 3.22). Most bluefin interactions in this area occur in March and April (Table 3.21). Numbers of bluefin interactions reported in the HMS logbook declined between 2006 and 2012 (Table 3.23). Total number of bluefin interactions (kept and discarded) peaked in March 2007 (Table 3.23).

Table 3.21 Bluefin interactions (in number of fish) reported in the HMS logbook by month in the proposed Cape Hatteras Gear Restricted Area, 2006 - 2012

Month	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total Interactions
January	38	340	85	463
February	53	552	139	744
March	39	634	218	891
April	33	581	260	874
December	33	202	70	305

Logbook data were summed by month of capture. Source: HMS Logbook Data.

Table 3.22 All bluefin interactions (kept, discarded alive, and discarded dead) reported in the HMS logbook by year within the proposed Cape Hatteras Gear Restricted Area, 2006-2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total Interactions
2006	25	248	97	370
2007	42	710	196	948
2008	19	351	116	486
2009	26	291	88	405
2010	18	471	160	649
2011	23	103	81	207
2012	43	135	34	212

Logbook data were summed by month of capture. Source: HMS Logbook Data.

Table 3.23 Bluefin interactions reported in the HMS logbook by month and year in the proposed Cape Hatteras Gear Restricted Area, 2006 - 2012

Month	2006	2007	2008	2009	2010	2011	2012
January	4	4	84	94	161	33	83
February	88	98	92	144	226	35	61
March	154	340	2	87	247	1	60
April	124	242	285	80	2	133	8
December	0	264	23	0	13	5	0

Logbook data were summed by month of capture. Source: HMS Logbook Data.

The Modified Cape Hatteras Gear Restricted Area is very similar to the original proposed Cape Hatteras Gear Restricted Area in terms of numbers of interactions by month (Table 3.24), year (Table 3.25), and by month versus year (Table 3.26). The only difference between the two areas is the removal of the southeastern portion of the GRA. Very few sets were actually made in this portion of the GRA, and minimal bluefin interactions were noted in the area that was removed from the GRA. Due to confidentiality concerns, NMFS cannot show any maps that have point locations of sets. There were only 31 sets made in the SE corner of the GRA between 2006 and 2012. In comparison, there were 5,651 sets made in the rest of the Cape Hatteras GRA. Only 2 bluefin interactions were reported from sets that were deployed in the SE corner.

Table 3.24 Bluefin interactions (in number of fish) reported in the HMS logbook by month in the Modified Cape Hatteras Gear Restricted Area, 2006 - 2012

Month	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
January	38	340	85	463
February	53	552	139	744
March	37	634	218	889
April	34	583	260	877
December	33	202	70	305

Logbook data were summed by month of capture. Source: HMS Logbook Data.

Table 3.25 All bluefin interactions (kept, discarded alive, and discarded dead) reported in the HMS logbook by year within the Modified Cape Hatteras Gear Restricted Area, 2006-2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Totals
2006	25	248	97	370
2007	42	710	196	948
2008	19	351	116	486
2009	27	293	88	408
2010	18	471	160	649
2011	23	103	81	207
2012	41	135	34	210

Logbook data were summed by month of capture. Source: HMS Logbook Data.

Table 3.26 Bluefin interactions reported in the HMS logbook by month and year in the Modified Cape Hatteras Gear Restricted Area, 2006 - 2012

Month	2006	2007	2008	2009	2010	2011	2012
January	4	4	84	94	161	33	83
February	88	98	92	144	226	35	61
March	154	340	2	87	247	1	58
April	124	242	285	83	2	133	8
December	0	264	23	0	13	5	0

Logbook data were summed by month of capture. Source: HMS Logbook Data.

The Gulf of Mexico is also an area with seasonal concentrations of bluefin and consistent catches by the pelagic longline fleet by season and by year. Bluefin tuna congregate in the Gulf of

Mexico every spring to spawn. The Gulf of Mexico is currently the only known spawning ground for western Atlantic bluefin tuna, although there is ongoing research investigating the potential use of certain areas in the Western Atlantic for spawning. During the compilation of response to comments and the consideration of new alternatives, NMFS reviewed several recent peer-reviewed literatures regarding the distribution of Atlantic bluefin tuna while spawning in the Gulf of Mexico (including Teo et al. 2010). Although NMFS reviewed these publications the areas of ocean considered for a gear restricted area were chosen consistent to the DEIS for Amendment 7 (HMS logbook data).

There are especially high seasonal concentrations of bluefin tuna in the Gulf of Mexico in the spring. Table 3.27 shows the total numbers of bluefin tuna kept, discarded alive, and discarded dead in the Gulf of Mexico by month and year; these tables were tallied directly from logbook reports of trips made between 2006 and 2012 that occurred within the Gulf of Mexico. Between 2006 and 2012, a total of 110, 104, and 133 bluefin were reported kept in March, April, and May (respectively) in the HMS logbooks (Table 3.27). The number of bluefin kept in May was noticeably higher in 2006, 2008, and 2009; more bluefin were captured in March in 2012. Numbers of bluefin kept in the Gulf of Mexico were generally low in 2011 compared to other years. Discards were higher in April and May than in March. Total live bluefin discards across all years in March, April, and May were 81, 193, and 136, respectively. Total bluefin dead discards across all years in March, April, and May were 75, 201, and 227, respectively.

Table 3.27 Total bluefin tuna interactions reported in the HMS logbooks from the Gulf of Mexico EEZ Gear Restricted Area during the months of March, April and May

Year	**Total Bluefin Interactions**	**Bluefin Kept**			**Bluefin Discarded Alive**			**Bluefin Discarded Dead**		
		March	April	May	March	April	May	March	April	May
2006	103	4	13	24	6	5	12	10	9	20
2007	192	29	13	12	23	25	18	22	18	32
2008	301	9	13	43	8	26	41	14	49	98
2009	247	18	18	26	3	38	33	3	54	54
2010	146	23	12	3	19	40	7	14	23	5
2011	24	2	5	6	0	2	6	0	1	2
2012	247	25	30	19	22	57	19	12	47	16
Total	1260	110	104	133	81	193	136	75	201	227

Source: HMS pelagic longline logbook data.

In comparison, an analysis of logbook data across all months within the Gulf of Mexico (Table 3.28 and Table 3.29) show that sizable numbers of bluefin interactions occur between December and June. Total interactions were somewhat similar in 2007, 2008, and 2009; in 2010 total interactions within the Gulf of Mexico decreased by 46 percent from the previous year (Table 3.28). The month of May consistently had the greatest number of reported interactions across the entire Gulf of Mexico. In total, there were 1,712 self-reported bluefin tuna interactions in the Gulf of Mexico (Table 3.29). In comparison, there were 1,260 reported bluefin tuna interactions in the Gulf of Mexico during the months of March to May (74 percent of total bluefin interactions) (Table 3.29).

Table 3.28 Numbers of bluefin tuna reported kept, discarded alive, or discarded dead in the HMS Logbooks between 2006 and 2012 within the year-round Gulf of Mexico Gear Restricted Area

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
2006	73	26	49	148
2007	116	83	103	302
2008	98	84	170	352
2009	115	95	133	343
2010	61	75	48	184
2011	23	13	6	42
2012	137	115	89	341
Total	623	491	598	1,712

Source: HMS Logbook Data.

Table 3.29 Numbers of bluefin tuna kept, discarded alive, or discarded dead reported in the HMS logbooks by month within the year-round Gulf of Mexico Gear Restricted Area

Month	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
January	66	10	7	83
February	108	21	20	149
March	110	81	75	266
April	104	193	201	498
May	133	136	227	496
June	30	40	46	116
July	4	5	4	13
August	0	2	1	3
September	0	2	11	13
October	13	1	2	16
November	13	0	0	13
December	42	0	4	46
Total	623	491	598	1,712

Logbook data were summed by month of capture (e.g., 43 bluefin tuna were caught in every January between 2006 and 2012). Source: HMS Logbook Data.

NMFS also identified a smaller area within the Gulf of Mexico that contained a majority of bluefin tuna interactions, based on self-reported logbook data from 2006 to 2012. Logbook data from this area are presented in Table 3.30, Table 3.31, and Table 3.32. This smaller area contained a high percentage of the Gulf of Mexico bluefin interactions between 2006 and 2011. The greatest number of bluefin dead discards was reported in the logbook in May and April;

these months also had the greatest number of self-reported bluefish live discards and bluefin kept by HMS-permitted pelagic longline vessels. The greatest number of interactions reported in the HMS logbook occurred in 2008 (n = 207). In recent years (2010 and 2011), total number of reported interactions with bluefin tuna have decreased by over 90 percent (from 207 reported interactions in 2008 to 21 reported interactions in 2010). The month and year with the highest number of bluefin interactions was May 2008; however, trends in reported interactions between 2006 and 2009 are fairly consistent by month.

Table 3.30 Bluefin interactions reported in the HMS logbook by month in the proposed Small Gulf of Mexico Gear Restricted Area, 2006 - 2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
January	36	2	2	40
February	44	9	13	66
March	47	26	37	110
April	57	85	104	246
May	53	43	126	222
June	2	4	5	11
July	0	0	0	0
August	0	0	0	0
September	0	0	1	1
October	0	1	2	3
November	6	0	0	6
December	11	0	0	11
Total	256	170	290	716

Logbook data were summed by month of capture (e.g., 222 bluefin tuna were caught across all years during the month of May). Source: HMS Logbook Data.

Table 3.31 Bluefin interactions reported in the HMS logbook by year in the proposed Small Gulf of Mexico Gear Restricted Area, 2006 - 2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
2006	39	13	25	77
2007	39	45	56	140
2008	37	44	126	207
2009	65	44	57	166
2010	7	8	6	21
2011	4	0	0	4
2012	65	16	20	101
Total	256	170	290	716

Source: HMS Logbook Data.

Table 3.32 All bluefin interactions (kept, discarded alive, and discarded dead) reported in the HMS logbook by month and year within the proposed Small Gulf of Mexico Gear Restricted Area, 2006-2012

Month	2006	2007	2008	2009	2010	2011	2012
January	2	3	2	11	0	0	22
February	3	14	7	19	3	0	20
March	8	32	22	18	3	0	27
April	21	43	66	77	15	0	24
May	40	34	110	33	0	0	5
June	0	5	0	6	0	0	0
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	1	0	0	0
October	0	0	0	0	0	0	3
November	0	6	0	0	0	0	0
December	3	3	0	1	0	4	0

Source: HMS Logbook Data.

After consideration of public comment, NMFS identified two areas within the Gulf of Mexico that contained a majority of bluefin tuna interactions, based on self-reported logbook data from 2006 to 2012. One area is a modification of the Small Gulf of Mexico Gear Restricted Area. The other is a small region adjacent to DeSoto Canyon. Logbook data from these areas were tallied and are collectively presented in Table 3.33, Table 3.34, and Table 3.35. These areas contained a high percentage of the Gulf of Mexico bluefin interactions between 2006 and 2012. The greatest number of bluefin dead discards were reported in the logbook in April and May; these months also had the greatest number of self-reported bluefish live discards and bluefin kept by HMS-permitted pelagic longline vessels. The greatest number of interactions reported in the HMS logbook occurred in 2012 (n = 254). In 2010 and 2011, total number of reported interactions with bluefin tuna decreased by over 90 percent (from 207 reported interactions in 2008 to 21 reported interactions in 2010). However, total number of reported interactions with bluefin tuna in these areas rebounded to a number that was similar to the interactions reported in 2008 and 2009. The month and year with the highest number of bluefin interactions was May 2008, however, trends in reported interactions between 2006 and 2009, and in 2012, are fairly consistent by month.

Table 3.33 Bluefin interactions reported in the HMS logbook by month in the Spring Modified Gulf of Mexico Gear Restricted Area, 2006 - 2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
January	38	4	3	45
February	62	13	15	90
March	64	48	46	158
April	76	147	151	374
May	79	87	172	338
June	14	21	30	65
July	0	0	0	0
August	0	0	0	0

September	0	0	1	1
October	13	1	2	16
November	6	0	0	6
December	12	0	0	12
Total	364	321	420	1,105

Source: HMS Logbook Data.

Table 3.34 Bluefin interactions reported in the HMS logbook by year in the Spring Modified Gulf of Mexico Gear Restricted Area, 2006 - 2012

Year	Bluefin Kept	Bluefin Discarded Alive	Bluefin Discarded Dead	Total
2006	40	16	25	81
2007	60	63	78	201
2008	51	52	142	245
2009	79	66	87	232
2010	20	37	20	77
2011	7	6	2	15
2012	107	81	66	254
Total	364	321	420	1,105

Source: HMS Logbook Data.

Table 3.35 All bluefin interactions (kept, discarded alive, and discarded dead) reported in the HMS logbook by month and year within the Spring Modified Gulf of Mexico Gear Restricted Area, 2006-2012

Month	2006	2007	2008	2009	2010	2011	2012
January	2	3	5	10	2	0	23
February	3	24	11	19	5	0	28
March	9	55	24	16	15	0	39
April	21	43	67	90	52	0	101
May	43	46	131	67	2	8	41
June	0	21	6	28	1	3	6
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	1	0	0	0
October	0	0	0	0	0	0	16
November	0	6	0	0	0	0	0
December	3	3	1	1	0	4	0

Source: HMS Logbook Data.

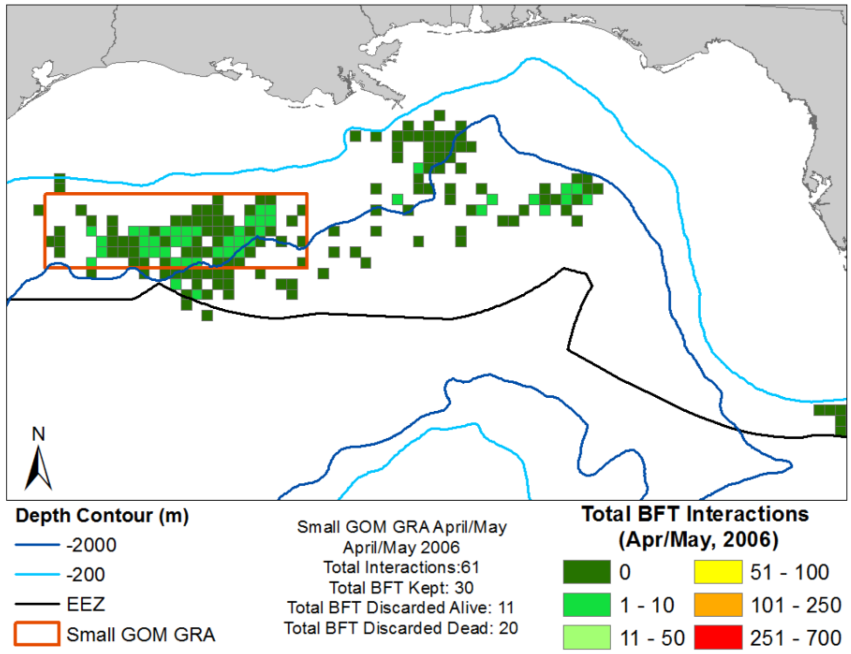

Figure 3.18 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2006

Source: HMS Logbook

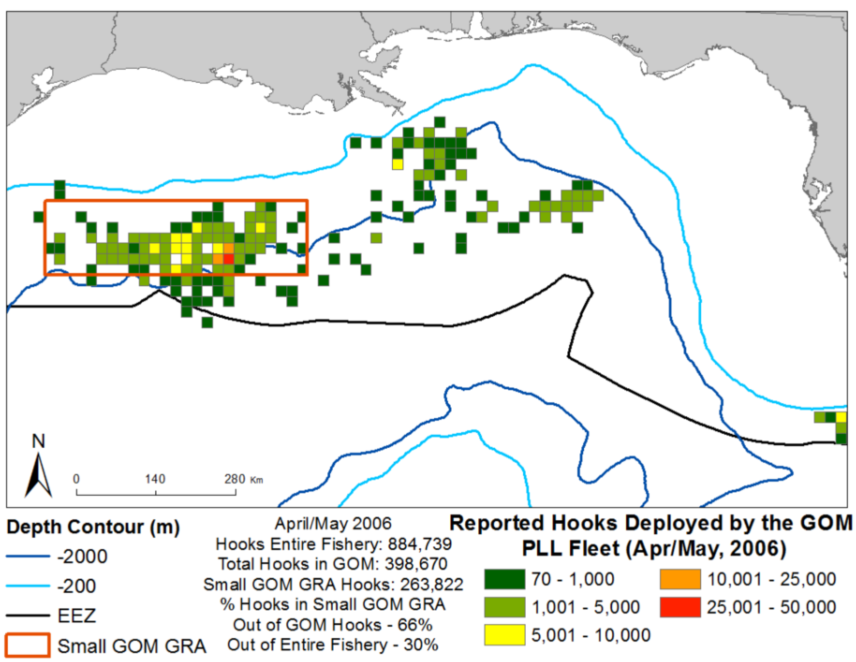

Figure 3.19 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2006

Source: HMS Logbook

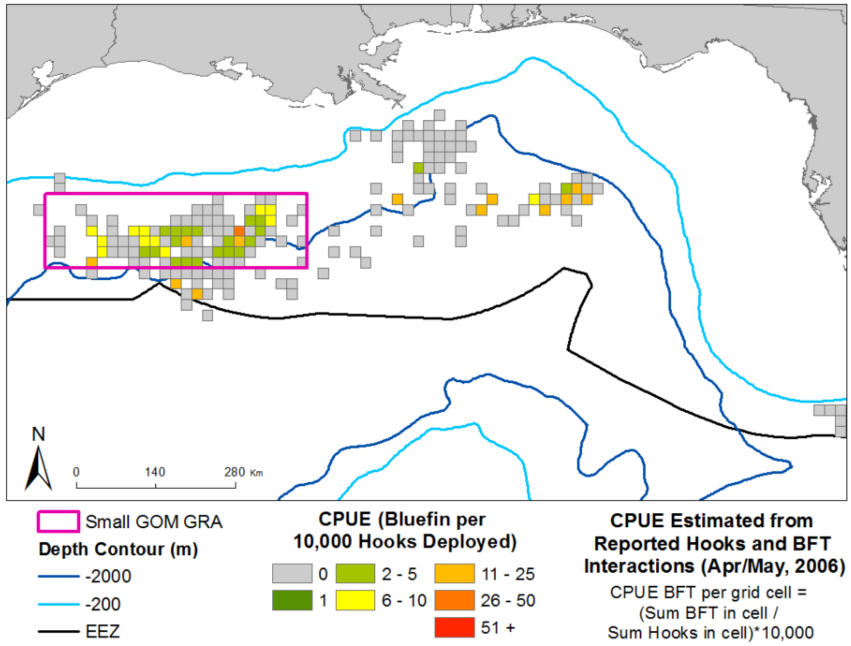

Figure 3.20 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2006

Source: HMS Logbook

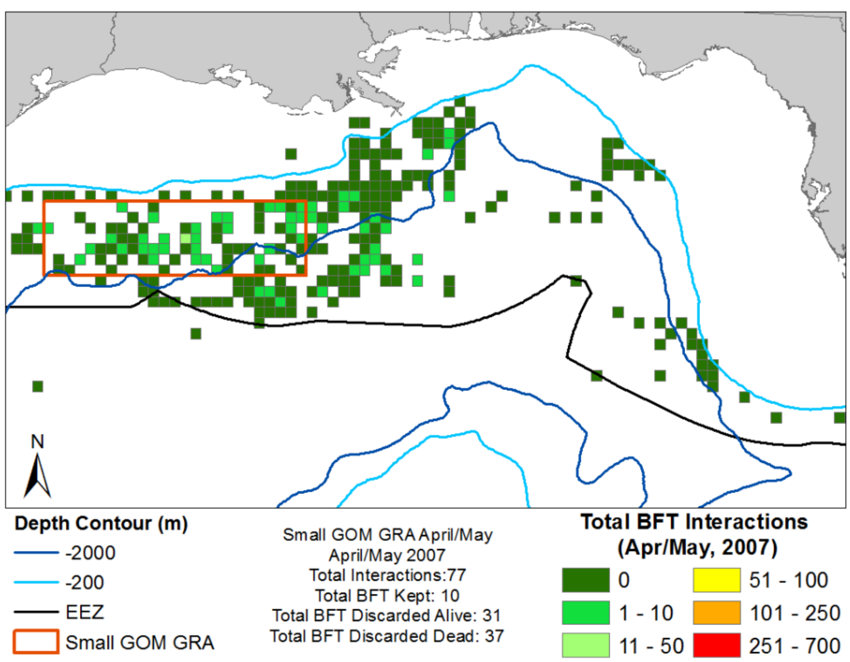

Figure 3.21 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2007

Source: HMS Logbook

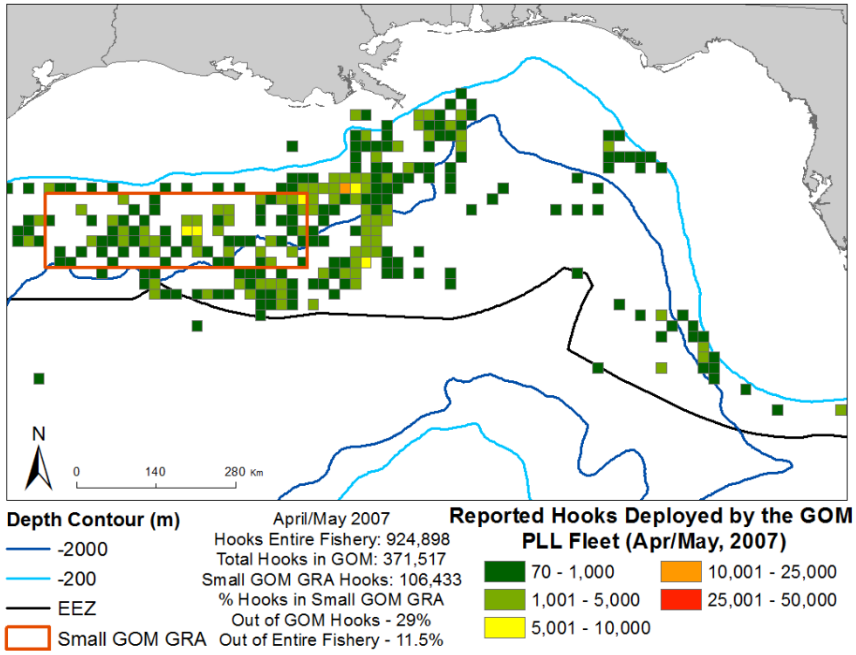

Figure 3.22 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2007

Source: HMS Logbook

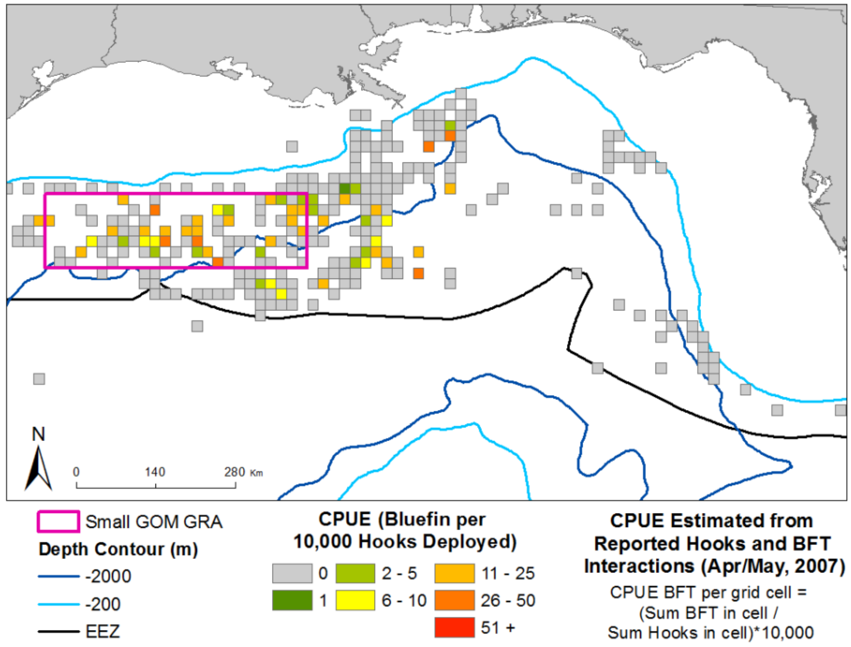

Figure 3.23 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2007

Source: HMS Logbook

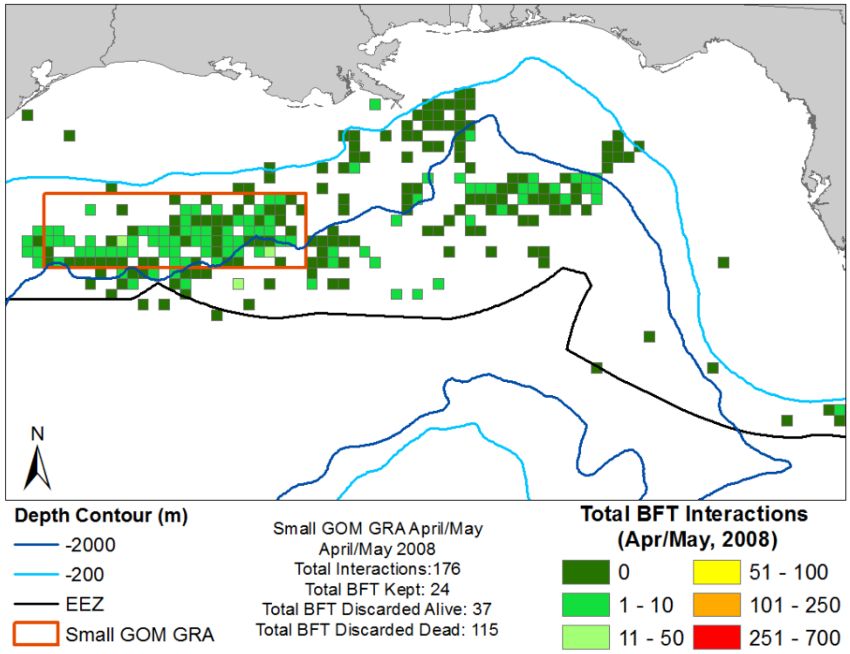

Figure 3.24 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2008

Source: HMS Logbook

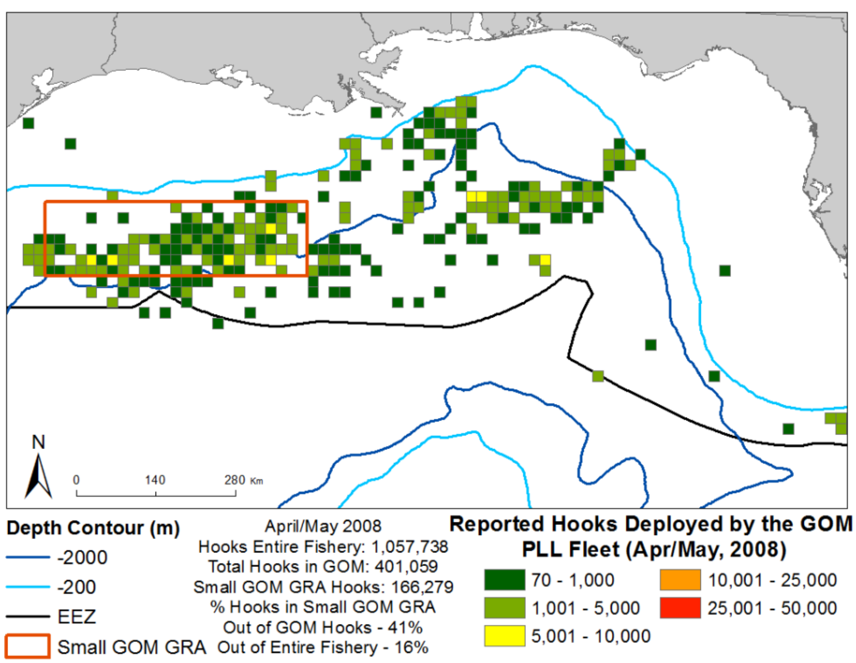

Figure 3.25 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2008

Source: HMS Logbook

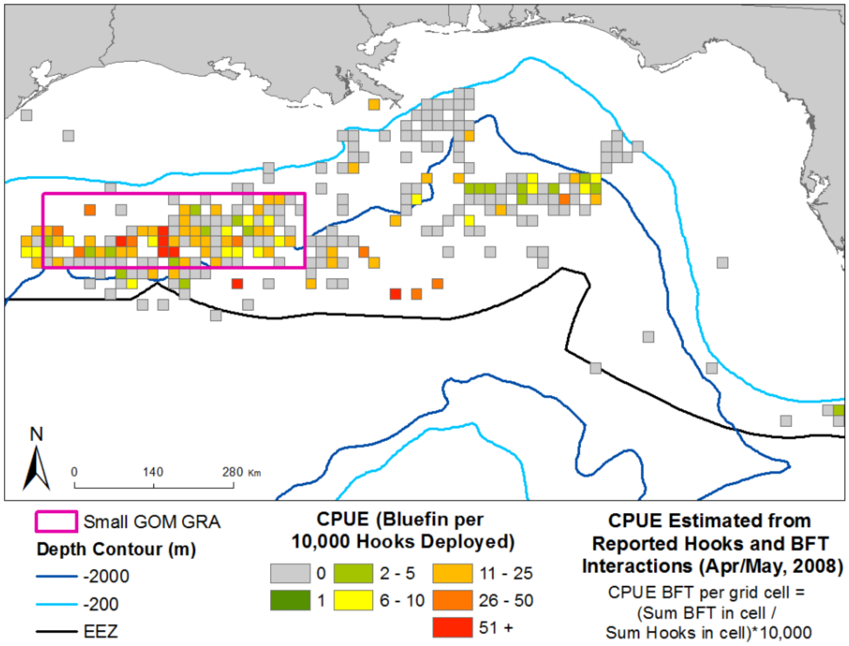

Figure 3.26 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2008

Source: HMS Logbook

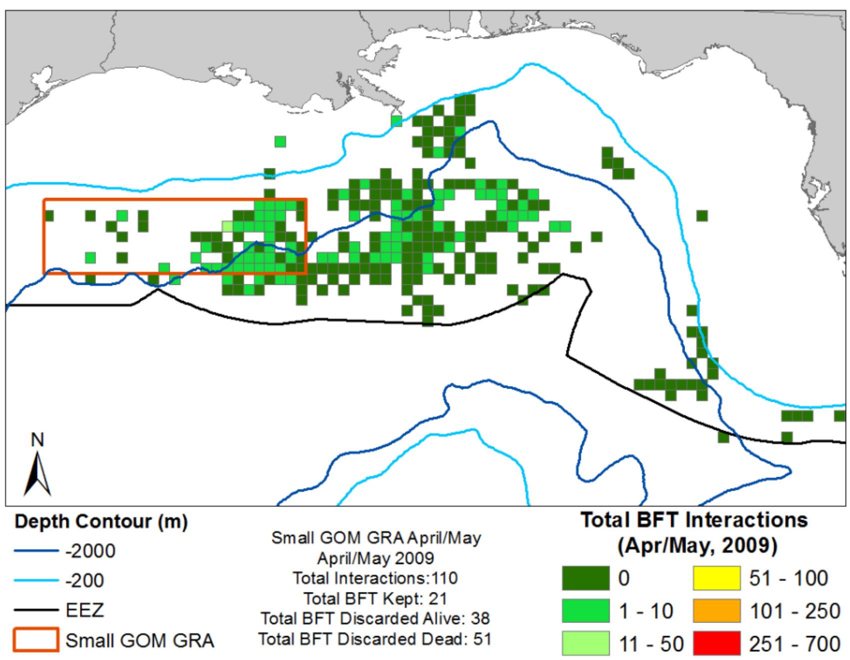

Figure 3.27 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2009

Source: HMS Logbook

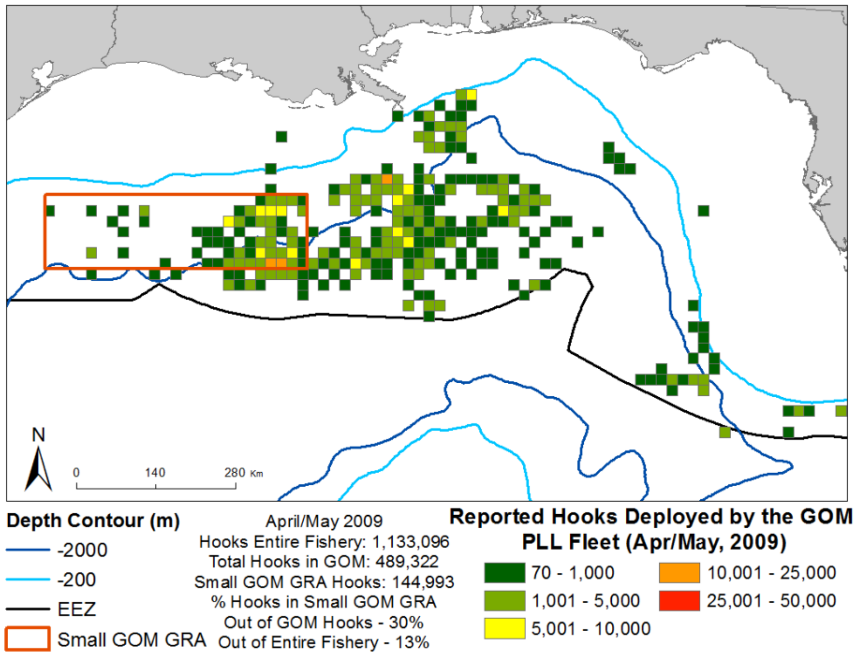

Figure 3.28 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2009

Source: HMS Logbook

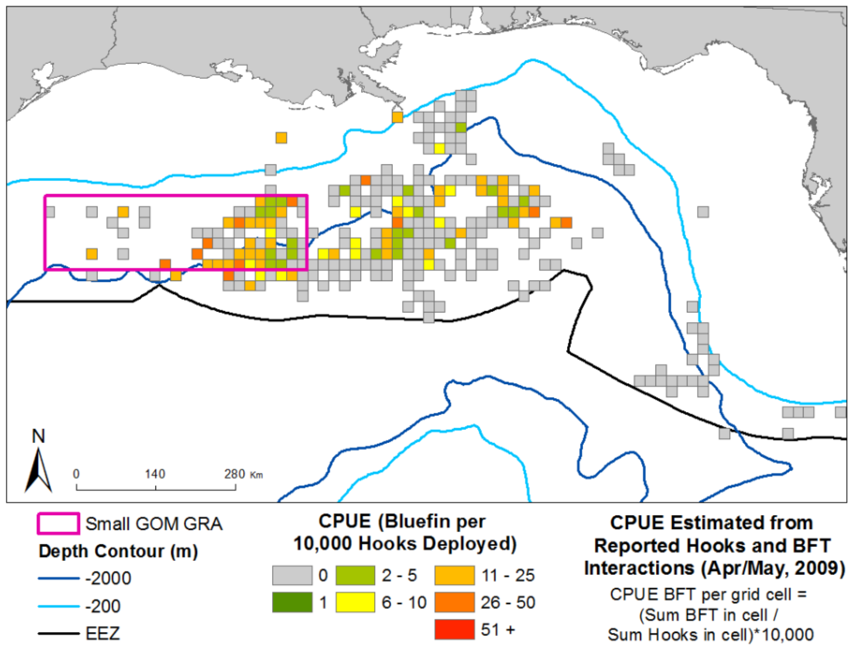

Figure 3.29 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2009

Source: HMS Logbook

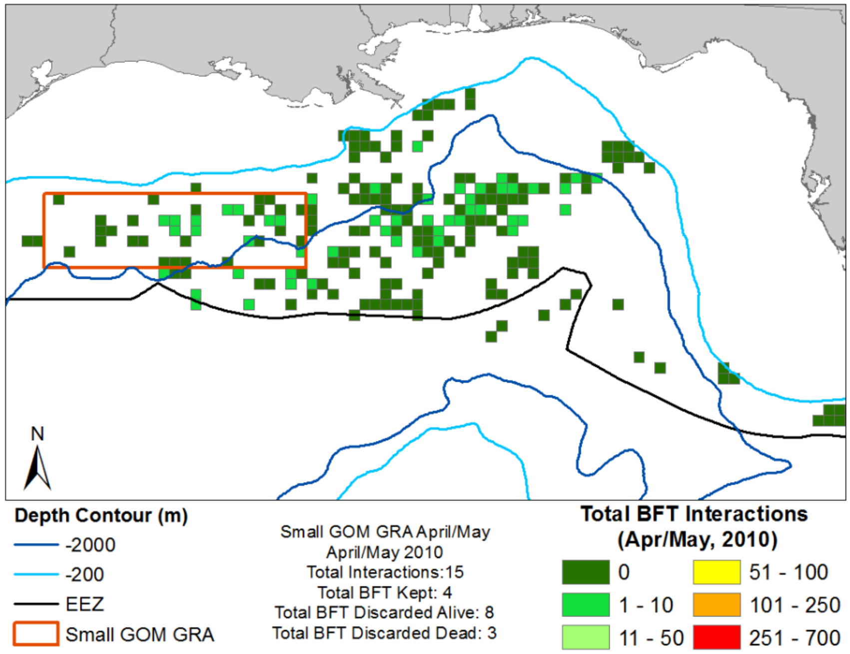

Figure 3.30 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2010

Source: HMS Logbook

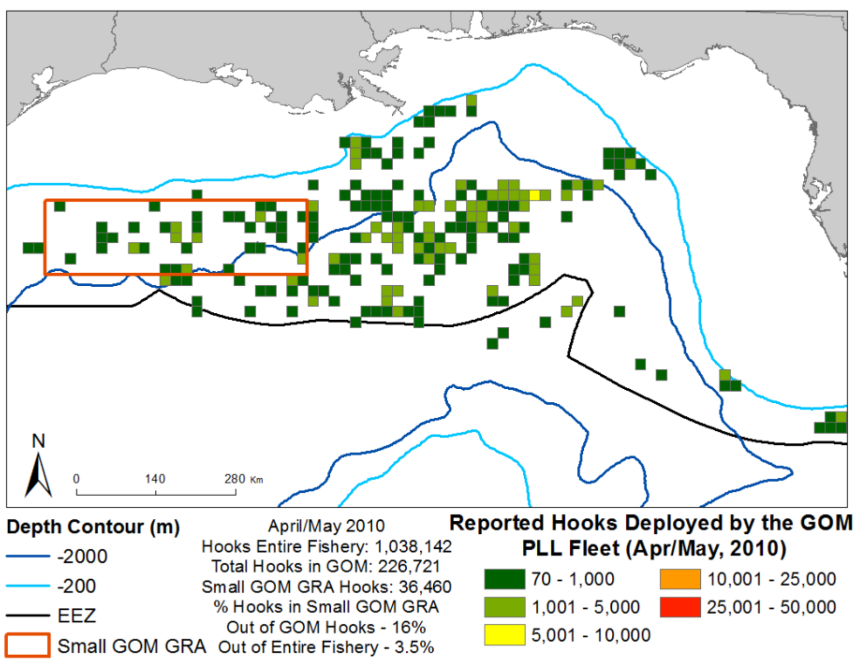

Figure 3.31 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2010

Source: HMS Logbook

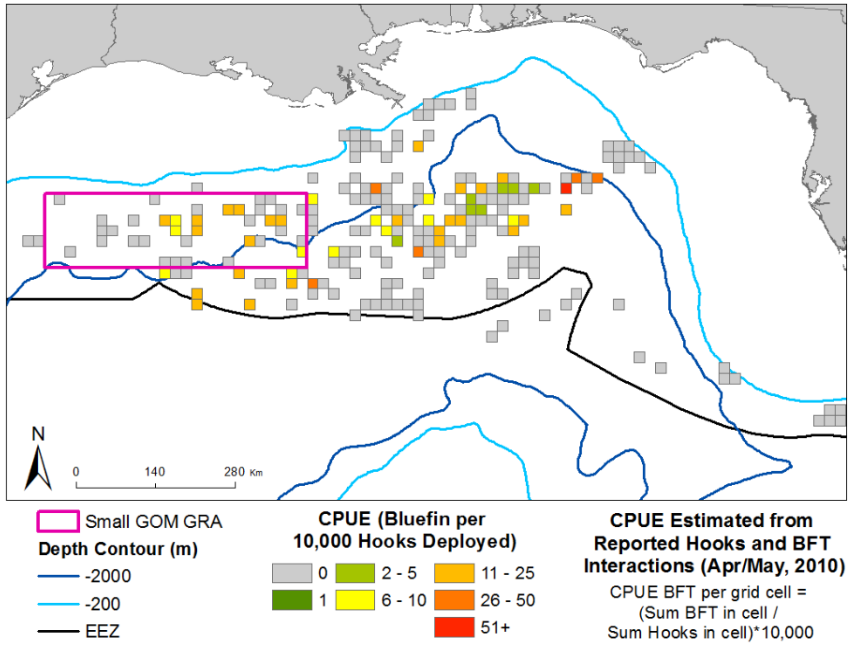

Figure 3.32 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2010

Source: HMS Logbook

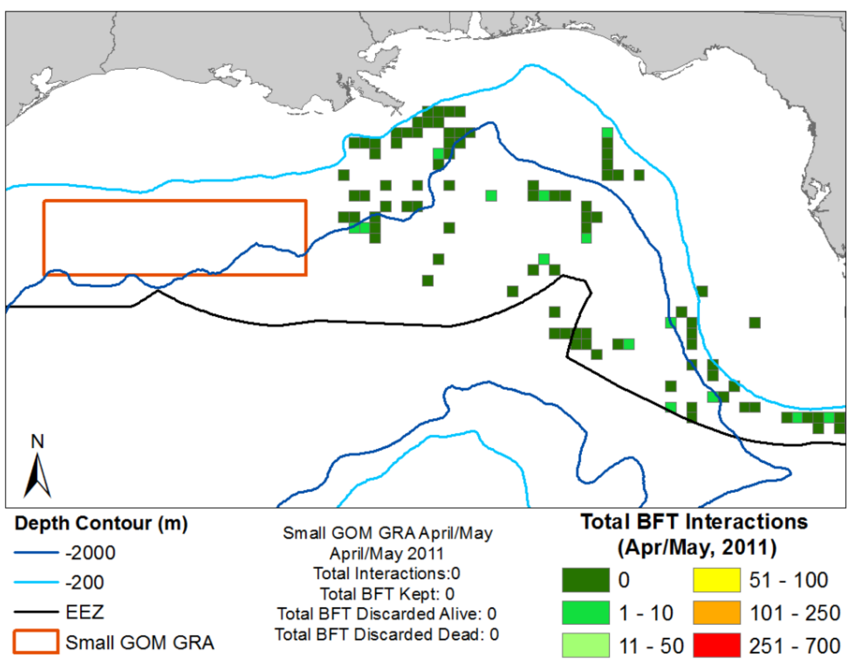

Figure 3.33 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2011

Source: HMS Logbook

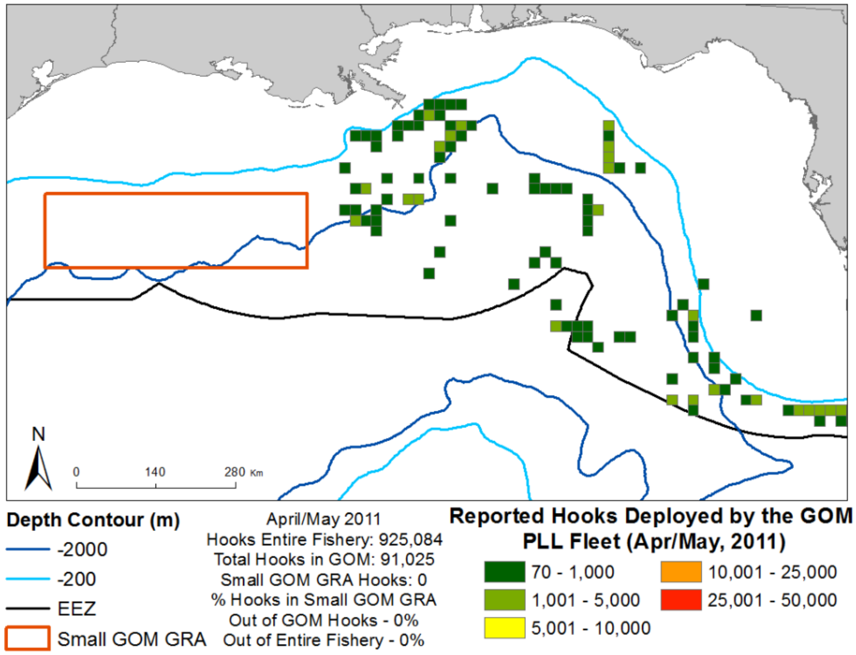

Figure 3.34 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2011

Source: HMS Logbook

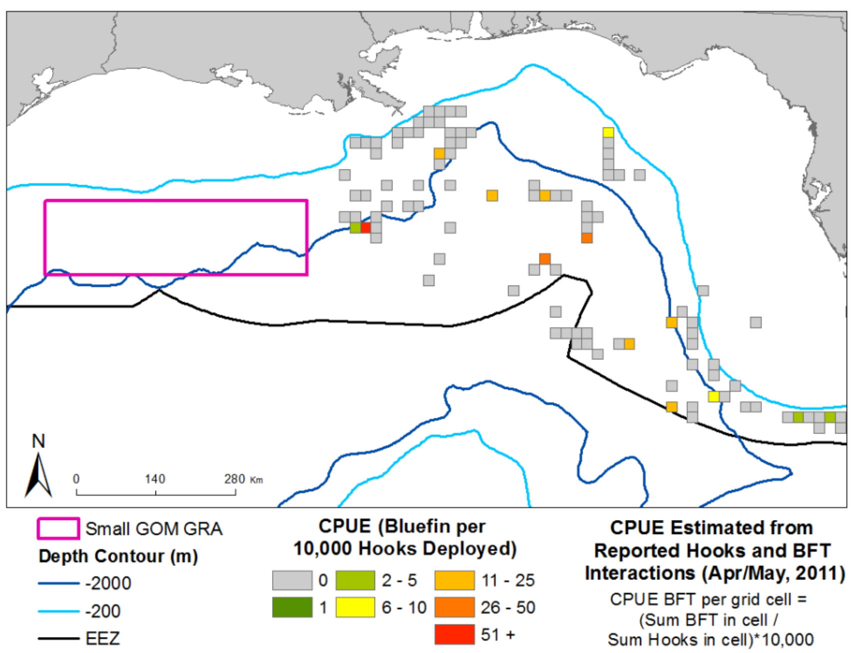

Figure 3.35 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2011

Source: HMS Logbook

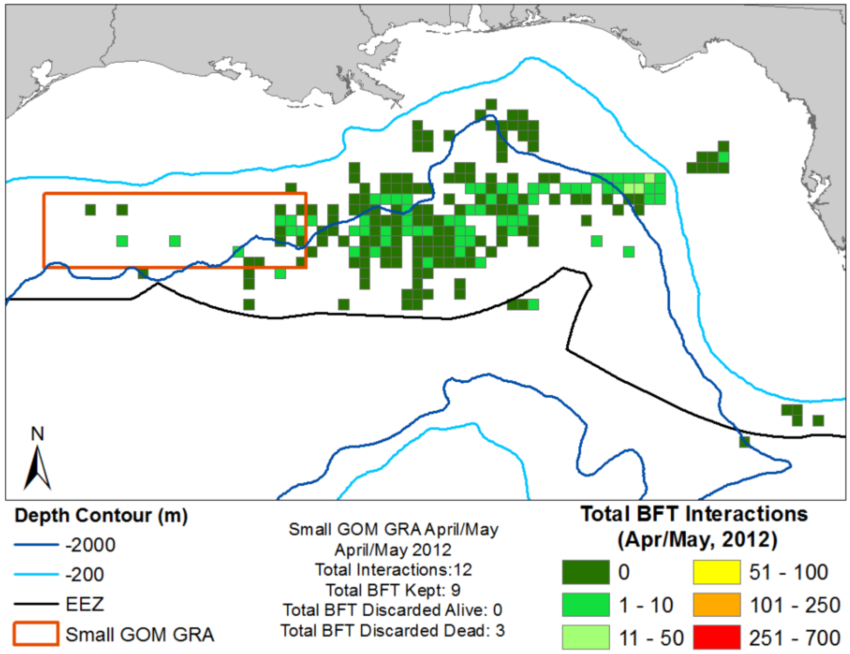

Figure 3.36 Sum of bluefin tuna interactions in a 10' X 10' grid in the Gulf of Mexico from April-May of 2012

Source: HMS Logbook

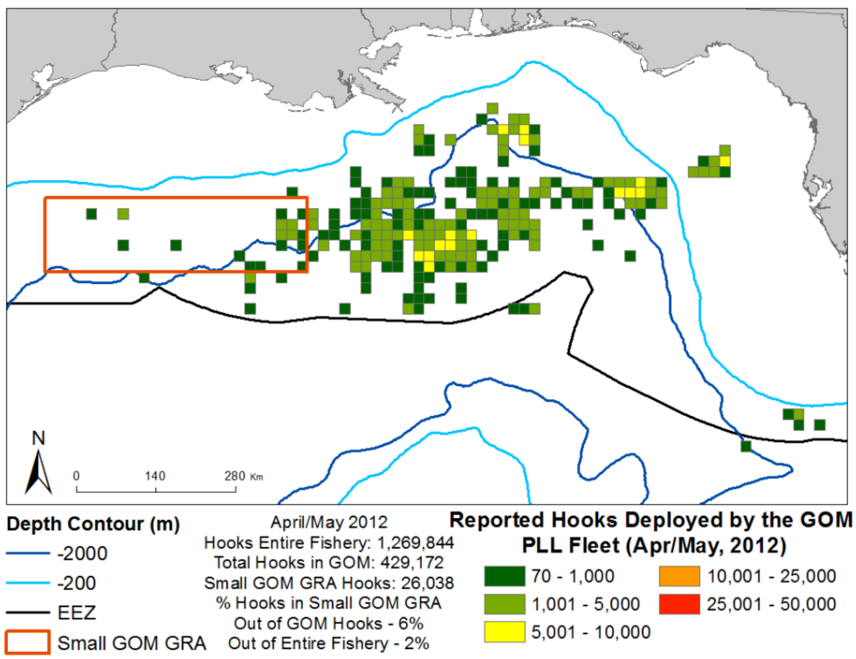

Figure 3.37 Sum of hooks in a 10' X 10' grid in the Gulf of Mexico from April-May of 2012

Source: HMS Logbook

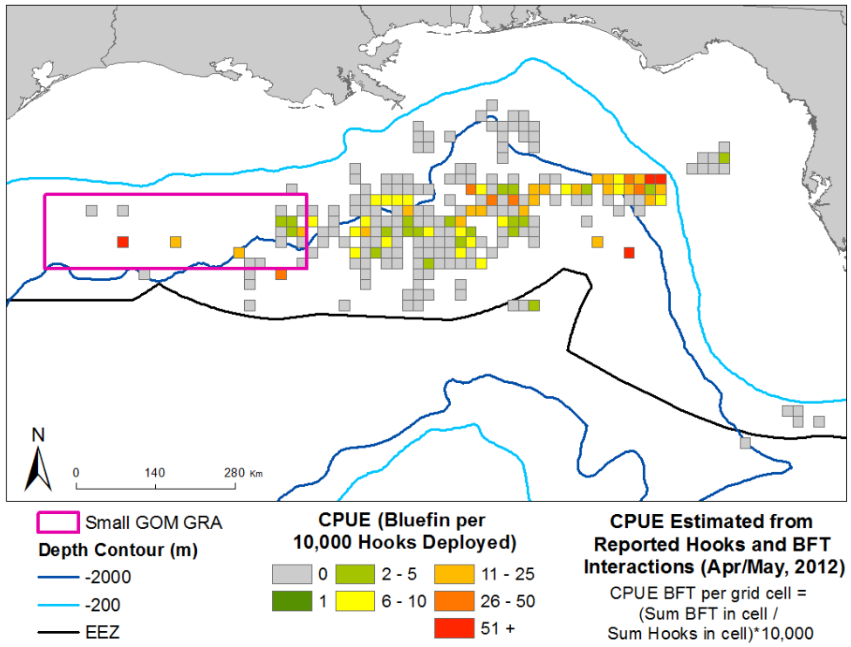

Figure 3.38 CPUE of bluefin tuna in a 10' X 10' grid in the Gulf of Mexico from April-May of 2006

Source: HMS Logbook

Bycatch, Incidental Catch, and Protected Species

Regulations to Reduce Pelagic Longline Bycatch

NMFS utilizes both self-reported data (mandatory logbooks for all vessels) and observer data to monitor bycatch in the pelagic longline fishery. The observer program has been in place since 1992 to document finfish bycatch, characterize fishery behavior, and quantify interactions with protected species (Beerkircher et al., 2002). The program is mandatory for those vessels selected, and all vessels with directed and indirect swordfish permits are selected. The program had a target coverage level of five percent of the U.S. fleet within the North Atlantic (waters north of 5o N. latitude), as was agreed to by the United States at ICCAT. Actual coverage levels achieved from 1992 – 2003 ranged from two to nine percent depending on quarter and year. Observer coverage was 100 percent for vessels participating in the NED experimental fishery during 2001 – 2003. Overall observer coverage in 2003 was 11.5 percent of the total sets made, including the NED experiment. The program began requiring an eight percent coverage rate due to the requirements of the 2004 BiOp for Atlantic pelagic longline Fishery for HMS (NMFS, 2004b). Observer coverage in 2005-2007 ranged from 7.5 – 10.8 percent. NMFS increased the coverage of the pelagic longline fleet operating in the Gulf of Mexico during March/April through June for 2007-2010 to monitor BFT interactions, attempting 100 percent observer coverage from 2007-2009 and 50 percent in 2010. Since 1992, data collection priorities have been to collect catch and effort data of the U.S. Atlantic pelagic longline fleet on HMS, although information is also collected on bycatch of protected species.

Fishery observer effort is allocated among eleven large geographic areas and calendar quarter based upon the historical fishing range of the fleet (Walsh and Garrison 2006). The target annual coverage is eight percent of the total reported sets, and observer coverage is randomly allocated based upon reported fishing effort during the previous fishing year/quarter/statistical reporting area (Beerkircher et al., 2002). Bycatch rates of protected species (catch per 1,000 hooks) are quantified based upon observer data by year, fishing area, and quarter (Garrison, 2005). The estimated bycatch rate is then multiplied by the fishing effort (number of hooks) in each area and quarter reported to the FLS program to obtain estimates of total interactions for each species of marine mammal and sea turtle (Garrison, 2005).

NMFS adopted fleet-wide VMS requirements in the Atlantic pelagic longline fishery in May 1999 in part to address bycatch concerns, but was subsequently sued by an industry group. By order dated September 25, 2000, the U.S. District Court for the District of Columbia prevented any immediate implementation of VMS in the Atlantic pelagic longline fishery, and instructed to “undertake further consideration of the scope of the [VMS] requirements in light of any attendant relevant conservation benefits.” On October 15, 2002, the court issued a final order that denied plaintiff’s objections to the VMS regulations. Based on this ruling, NMFS implemented the VMS requirement in September 2003.

On December 2, 2011, NMFS published a final rule requiring all HMS vessels currently required to replace their Mobile Transmitting Unit VMS with Enhanced Mobile Transmitting Unit VMS units. These installations must be performed by a qualified marine electrician. These units are capable of two way communication, and vessel operators must provide information on target species and fishing gear onboard by sending a hail out message using their VMS at least two-hours prior to leaving port. Vessels are also required to send a hail in message indicating when and where they would be returning to port with their VMS two hours before returning. These requirements were effective January 1, 2013 (original final rule, 76 FR 75492; delayed implementation and new effective date, 77 FR 61727).

Bycatch Data

NMFS collects data on the disposition (released alive or dead) of bycatch species from logbooks submitted by fishermen in the pelagic longline fishery. Observer reports also include disposition of the catch as well as information on hook location, trailing gear, and injury status of protected species interactions. These data are used to estimate post-release mortality of sea turtles and marine mammals based on guidelines for each (Angliss and DeMaster 1998, Ryder et al. 2006). See Section 4.1 of the 2012 HMS SAFE Report for recent estimates of sea turtle and marine mammal bycatch estimates.

The pelagic longline fishery encounters a variety of species in addition to the target species, including sea turtles, marine mammals, seabirds, sharks, and bluefin tuna. This discussion focuses on bluefin tuna, the principal subject of this amendment. Information on the incidental catch/bycatch of bluefin tuna is presented first, followed by information on other species. The information below presents most of the information regarding bluefin tuna in terms of interactions, which include all bluefin tuna that interacted with the gear included bluefin retained (and landed) as well as discarded (live and dead). The number of interactions is a useful metric because it provides an indication of the magnitude of the number of encounters between pelagic longline gear and bluefin.

Figure 3.39 shows the number of bluefin interactions (landings plus discards) with pelagic longline gear from 2003 through 2012. The number of bluefin interactions ranges from 995 to 1,919 bluefin per year. From 2003 through 2006, the average number of bluefin interactions was 1,223. From 2007 through 2012 (the recent time period under which the fishery has been managed as part of the Consolidated HMS FMP), the average number of bluefin interactions was 1,551 fish/year. There is a clear increase in the number of bluefin interactions from 2006 through 2010. There is a notable decline in the number of interactions in 2011, and a continuing declining trend through 2012. Figure 3.39 and Table 3.36 show the percentage of total bluefin interactions by area. The relative number of interactions in the Mid-Atlantic Bight (MAB) have been declining, and the number of interactions in the FEC have been increasing. The relative number of interactions in the Gulf of Mexico have increased in 2012. It is more difficult to characterize the trends in the other regions.

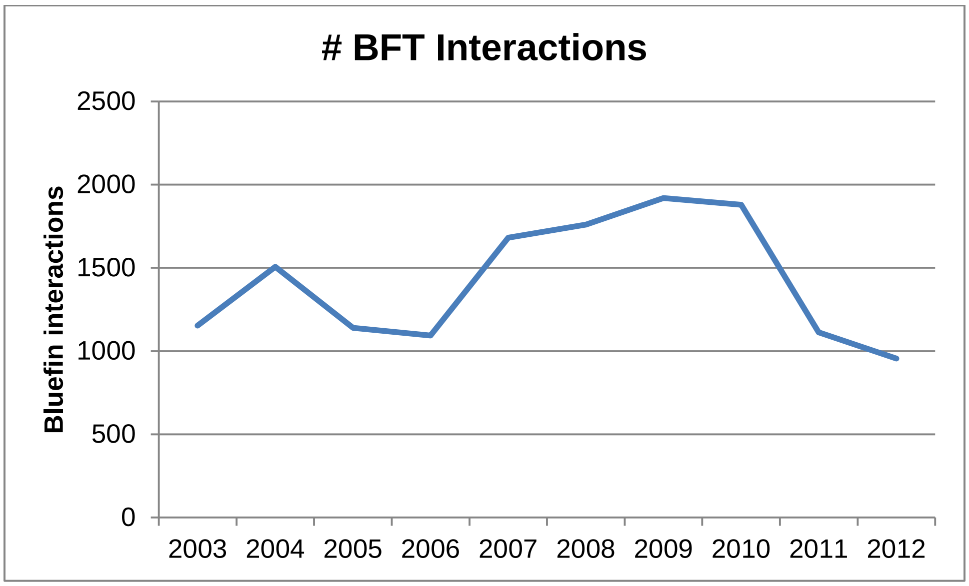

Figure 3.39 Total number of pelagic longline Bluefin tuna interactions reported in the HMS logbook between 2003 and 2012.

Table 3.36 Percentage of Total Bluefin tuna interactions by area and year, as reported in the HMS logbooks between 2002 and 2012.

Area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CAR	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
FEC	3	1	1	1	1	1	3	7	5	12	13
GOM	29	32	35	28	14	18	20	18	10	3	36
MAB	13	26	23	46	48	74	68	38	55	29	32
NCA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NEC	40	21	32	13	30	3	5	19	23	38	7
NED	12	16	5	8	3	2	2	14	4	10	2

Area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
SAB	<1	2	2	2	1	1	2	3	2	4	7
SAR	2	3	2	2	3	1	1	2	2	2	3
SAT	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 3.37 Average Percentage of Total Interactions by Area and Average Number of Bluefin Interactions per 1,000 Hooks (pelagic longline gear), 2006 – 2012

Area	Average Percentage of Total Interactions	Average Number of Bluefin Interactions per 1,000 hooks
MAB	51	.59
NEC	17	.44
GOM	17	.11
NED	6	.36
FEC	5	.10
SAB	2	.04
SAR	2	.21
SAT	< 1	.01

Average bluefin interactions/thousand hooks = (sum bluefin interactions/sum hooks) × 1000, for each area. Source: HMS logbook data.

The average percentage of total number of bluefin interactions from 2006 through 2012 is shown in Table 3.37. The rate of bluefin interactions with pelagic longline gear was estimated by dividing the number of bluefin interactions by the number of hooks (for the relevant area and/or time period). Because the number of bluefin interaction per hook is low, in order to facilitate the presentation of data the calculations are expressed as the number of interactions per 1,000 hooks.

Figure 3.40 shows the frequency distribution of bluefin interactions among pelagic longline vessels by year from 2006 through 2012 based on logbook data. Table 3.38 characterizes the bluefin interactions in the pelagic longline fleet, showing the number of vessels deploying pelagic longline gear, the number of vessels reporting bluefin interactions, and the percentage of vessels with and without interactions.

Figure 3.41 shows the cumulative frequency distribution of bluefin interactions with pelagic longline gear, and the number of vessels responsible for 80% of the interactions. The number of vessels is on the horizontal axis and the cumulative percentage of interactions is on the vertical axis. For example in 2011, 22 vessels were responsible for 80% of the interactions. The trend over all the years is that fewer than 10 vessels were responsible for between 50 and 70% of the interactions. The pattern diverged from this trend in 2012, however. Eighty percent of the bluefin interactions were made by 41 vessels. Vessels with the highest overall interactions in 2012 reported fewer disaster sets, and more vessels reported moderate and low levels of interactions.

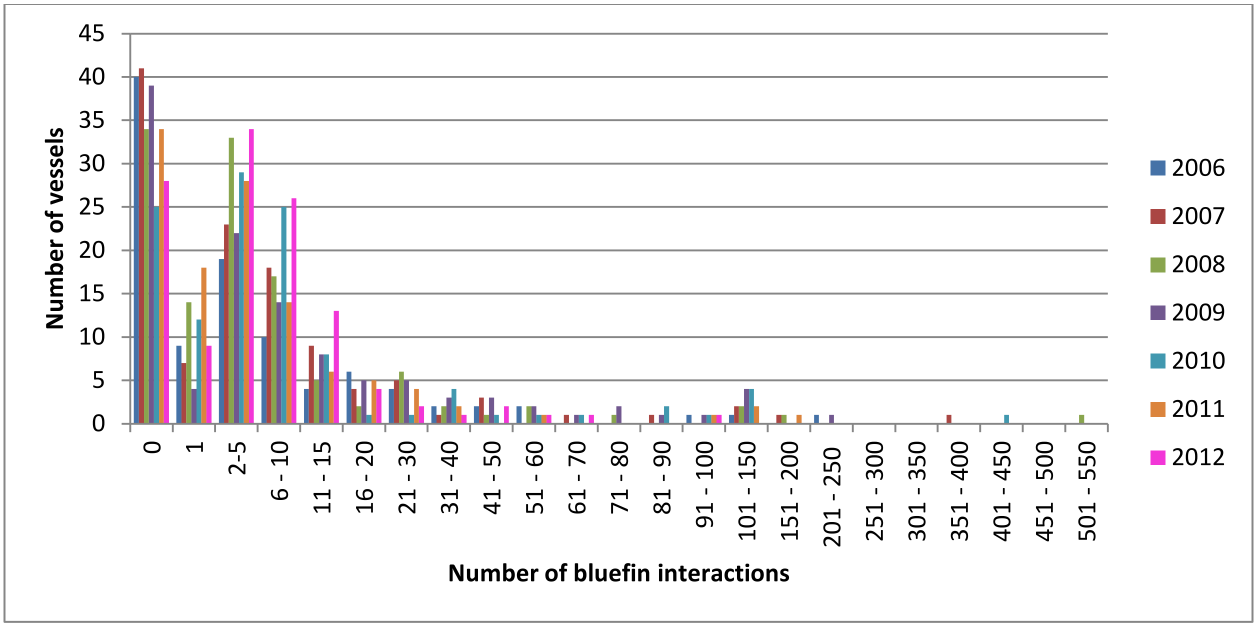

Figure 3.40 Frequency of interactions with bluefin tuna by vessels as reported in the HMS logbook (e.g., 1 vessel reported interacting with between 351 and 400 bluefin in 2007)

Source: HMS Logbook Data.

Table 3.38 Bluefin Interactions Across the Pelagic Longline Fleet, 2006 to 2012

Year	Vessels Deploying PLL Gear	Vessels Reporting BFT Interactions	Percent w Interactions	Percent w/o interactions
2006	101	61	60	40
2007	117	76	65	35
2008	121	87	72	28
2009	115	76	66	34
2010	116	91	78	22
2011	116	82	71	29
2012	122	94	77	23

Source: HMS Logbook Data.

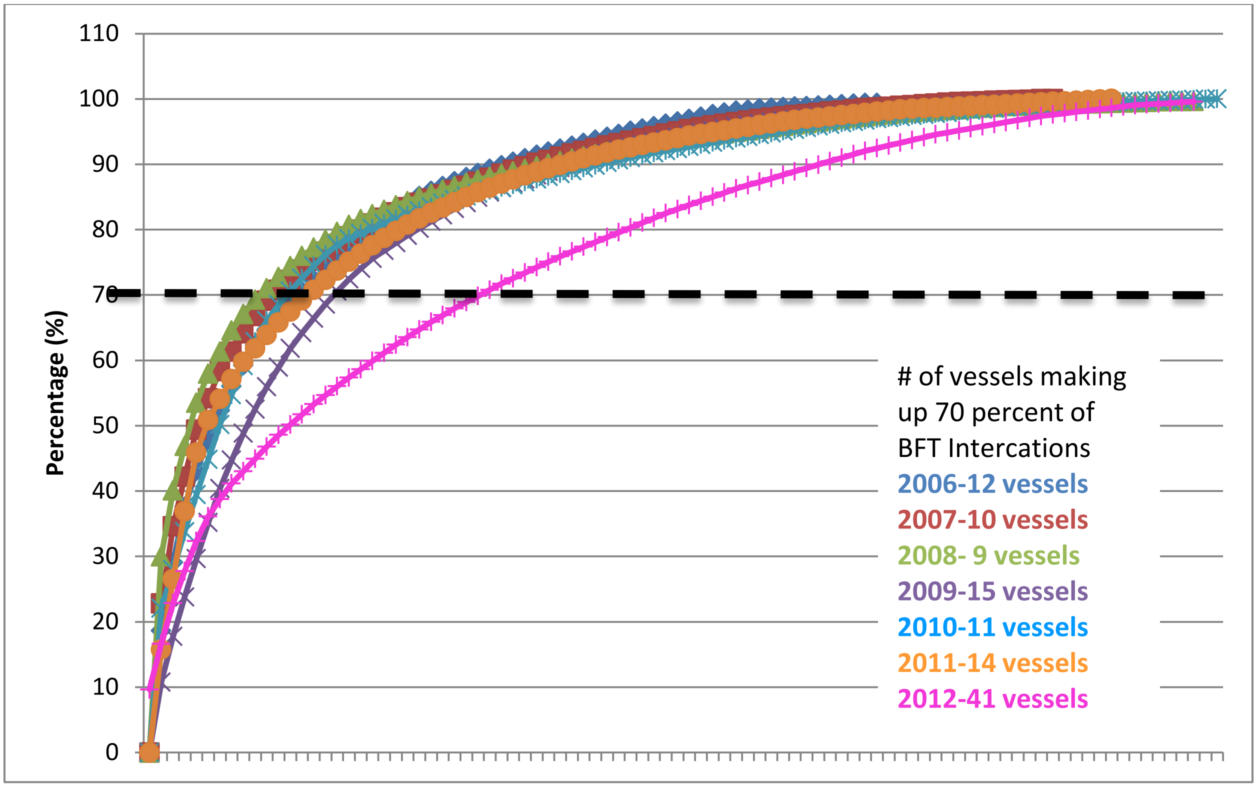

Figure 3.41 Cumulative Frequency Distribution of Bluefin Interactions and Number of Vessel, 2006 – 2012

Source: HMS Logbook Data.

The spatial distribution of logbook-reported catch per unit effort (number per 1,000 hooks set) of several pelagic longline bycatch species between 2006 and 2012, including bluefin tuna discards, sea turtles, and billfish, are shown in Figure 3.42 through Figure 3.51. The data indicate distinct patterns in distributions. The reader is encouraged to reference Figure 3.4, which shows how the average number of hooks per set varies spatially across the U.S. EEZ. Average number of hooks per set along the continental shelf regions between Florida and Georges Bank tended to range between 500 and 1000 hooks per set. A grid cell in the bycatch maps with a catch of 1 animal per 1,000 hooks in a region where the mean number of hooks per set is between 500 and 1,000 implies that there are locations where 1 animal is caught per set, on average. Some of the general distributional patterns are as follows: Bluefin discards reflect the primary locations of effort along the continental shelf between North Carolina and Georges Bank, in the central Gulf of Mexico, and in the NED. Swordfish discards (likely undersized, juvenile swordfish) are moderately high across the Atlantic, with peaks in areas around South Florida and Georges Bank compared with other locations (Figure 3.43). Turtle interactions also reflect this general trend, however higher mean CPUEs of loggerheads were noted for the NED compared to other geographic areas (Figure 3.45 and Figure 3.45). Dusky shark bycatch was also predominantly noted along the continental shelf break in the Atlantic (Figure 3.46). Higher night shark mean CPUE was noted along the continental shelf break between South Carolina and Florida (Figure 3.47). White and blue marlin interactions also reflect locations of higher effort (Figure 3.48).

High sailfish CPUE was noted off of South America (compared with other locations), while areas of higher spearfish CPUE occurred off the Bahamas (Figure 3.50 and Figure 3.51).

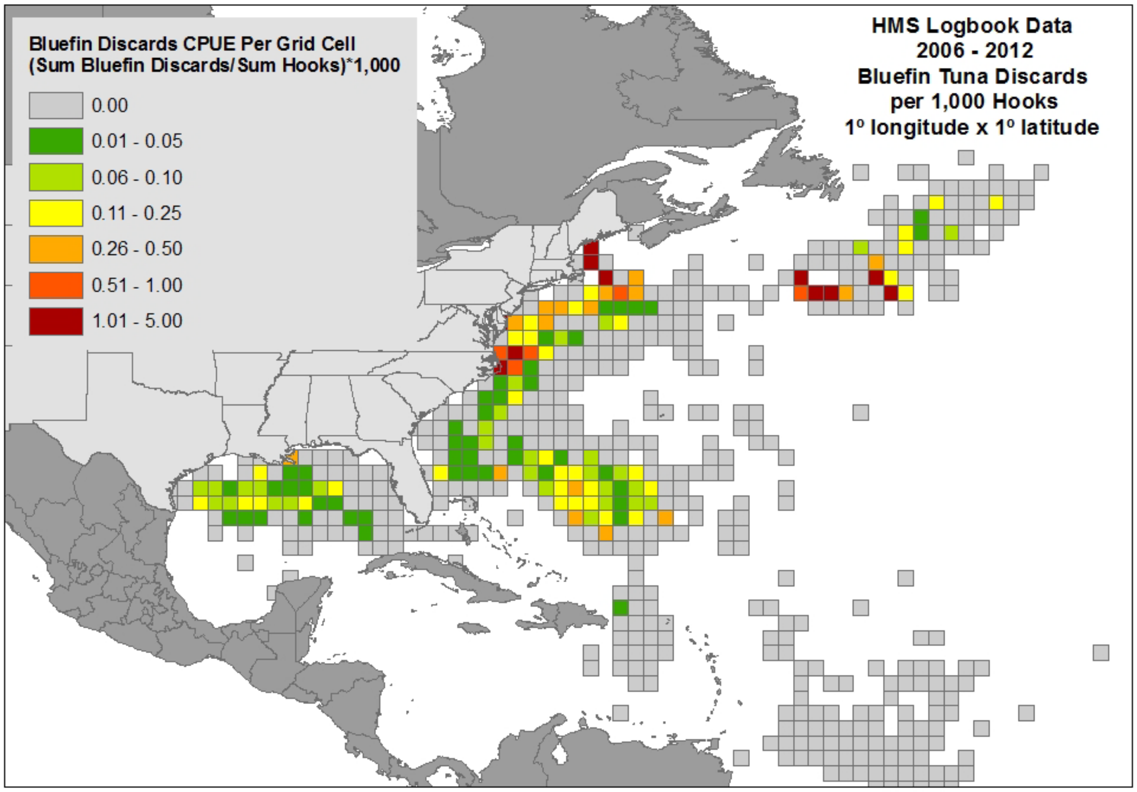

Figure 3.42 Spatial distribution of bluefin tuna discards within the pelagic longline fishery

Grid Cell CPUE (# bluefin discarded per 1,000 hooks) = (sum of all bluefin discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

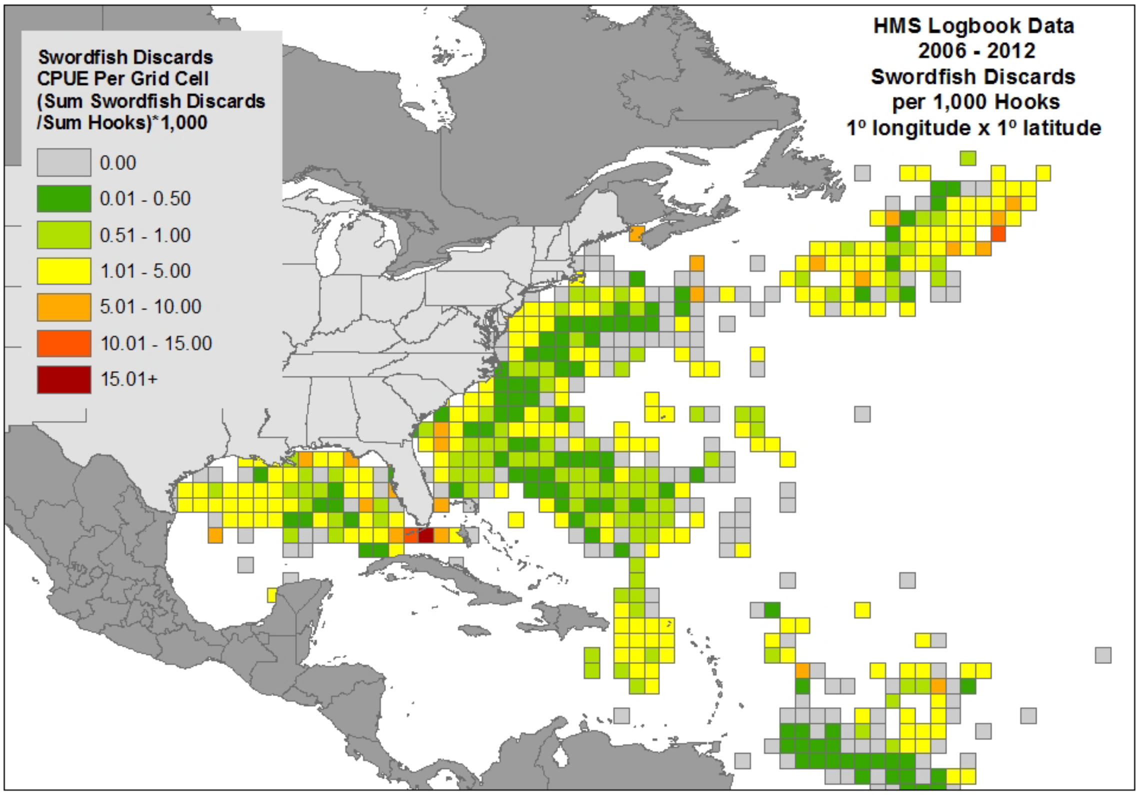

Figure 3.43 Spatial distribution of swordfish discards within the pelagic longline fishery

Grid Cell CPUE (# swordfish discarded per 1,000 hooks) = (sum of all swordfish discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

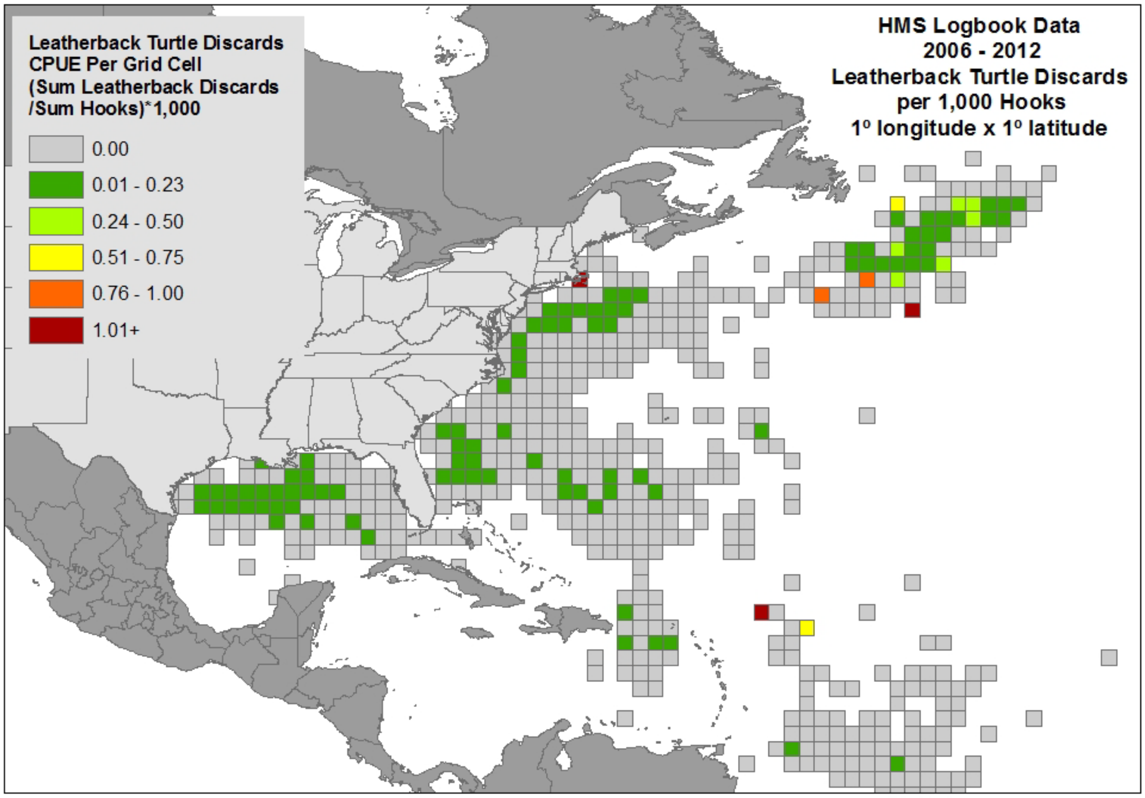

Figure 3.44 Spatial distribution of leatherback sea turtle interactions within the pelagic longline fishery

Grid Cell CPUE (# leatherback discarded per 1,000 hooks) = (sum of all leatherback discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

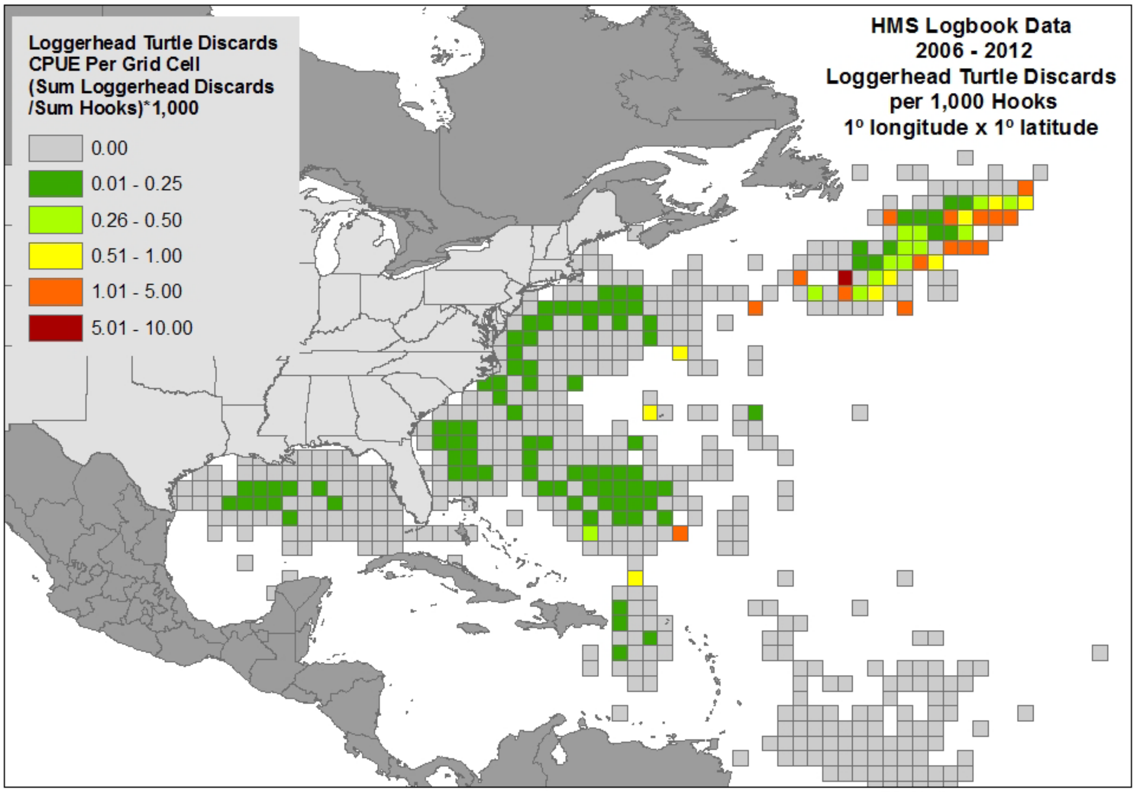

Figure 3.45 Spatial distribution of loggerhead turtle interactions within the pelagic longline fishery

Grid Cell CPUE (# loggerhead discarded per 1,000 hooks) = (sum of all loggerhead discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

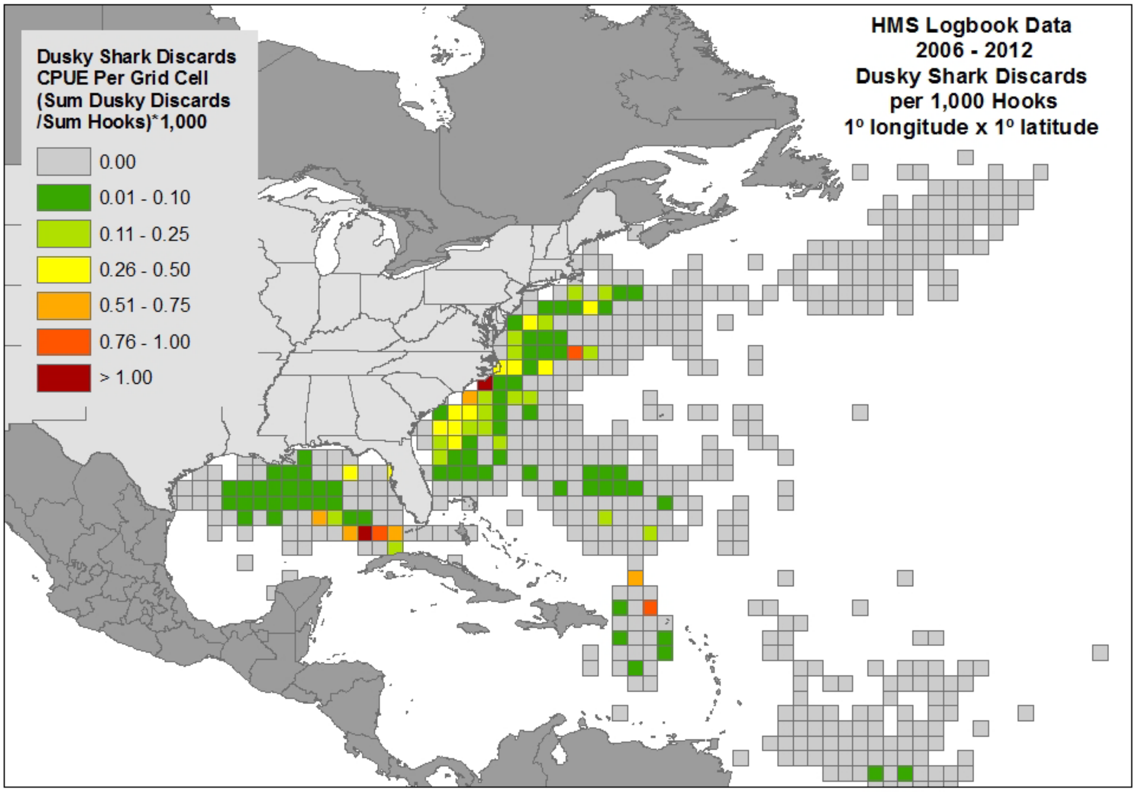

Figure 3.46 Spatial distribution of dusky shark interactions within the pelagic longline fishery

Grid Cell CPUE (# dusky sharks discarded per 1,000 hooks) = (sum of all dusky sharks discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

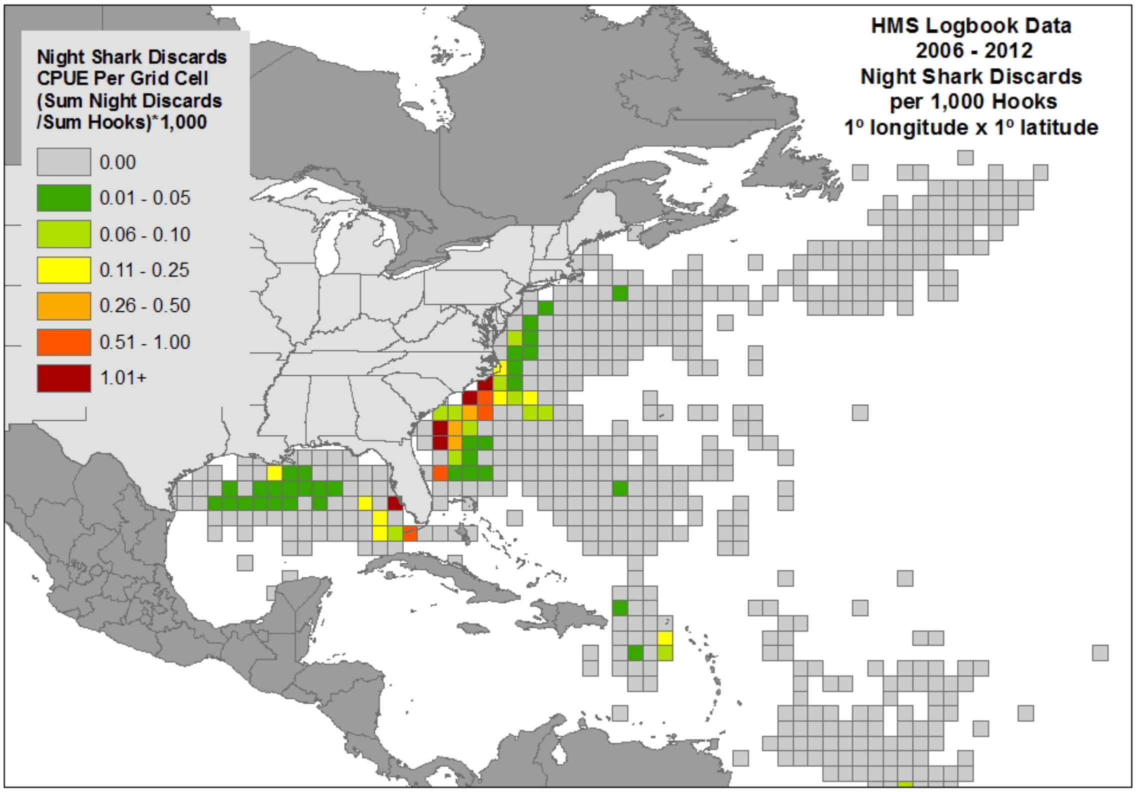

Figure 3.47 Spatial distribution of night shark interactions within the pelagic longline fishery

Grid Cell CPUE (# night shark discarded per 1,000 hooks) = (sum of all night shark discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

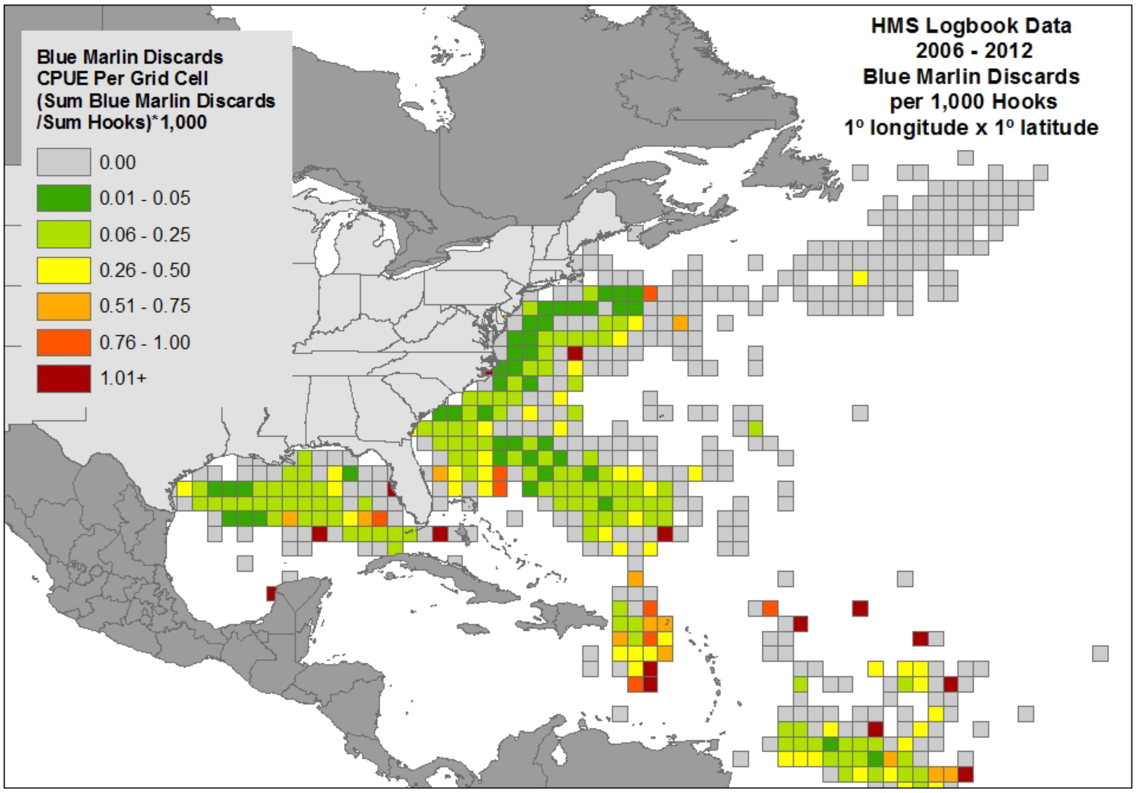

Figure 3.48 Spatial distribution of blue marlin interactions within the pelagic longline fishery

Grid Cell CPUE (# blue marlin discarded per 1,000 hooks) = (sum of all blue marlin discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

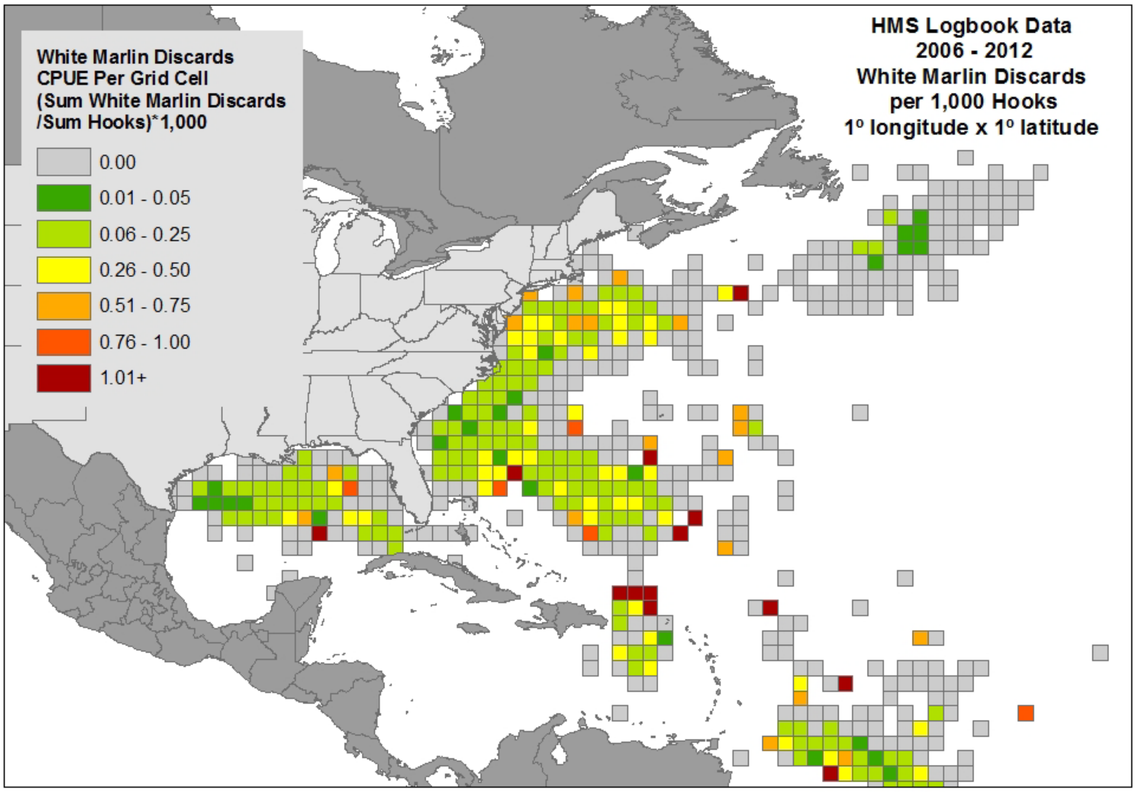

Figure 3.49 Spatial distribution of white marlin interactions within the pelagic longline fishery

Grid Cell CPUE (# white marlin discarded per 1,000 hooks) = (sum of all white marlin discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

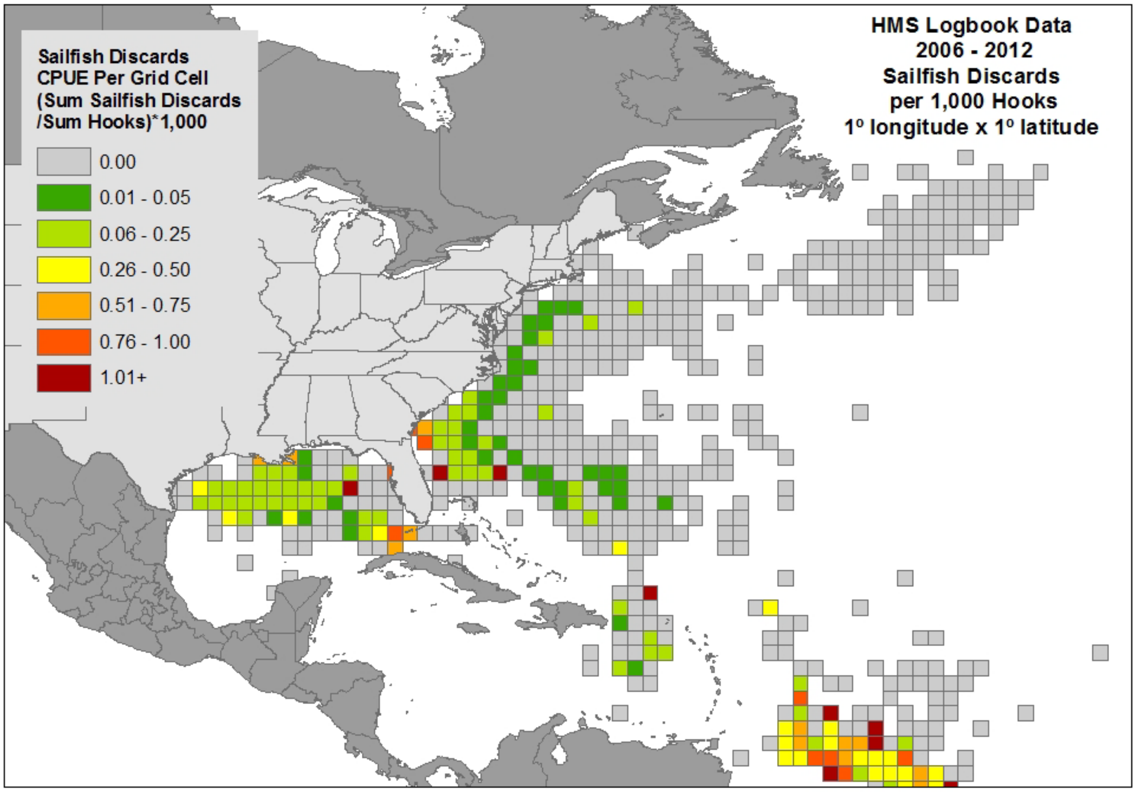

Figure 3.50. Spatial distribution of sailfish interactions within the pelagic longline fishery

Grid Cell CPUE (# sailfish discarded per 1,000 hooks) = (sum of all sailfish discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

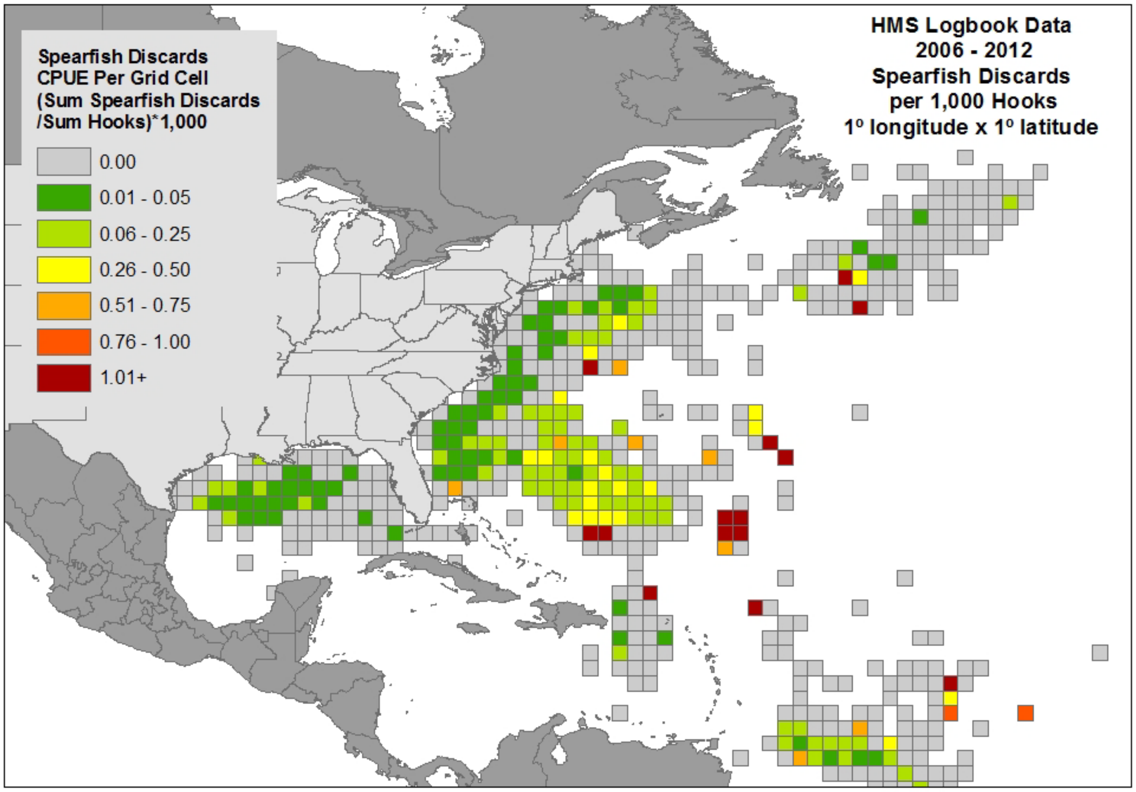

Figure 3.51. Spatial distribution of spearfish interactions within the pelagic longline fishery

Grid Cell CPUE (# sailfish discarded per 1,000 hooks) = (sum of all sailfish discards in grid cell / sum of all hooks in grid cell) × 1,000

Source: HMS Logbook Data.

Estimated number of sea turtle interactions in the pelagic longline fishery by year is shown in Table 3.39. Estimated turtle interactions of leatherback and loggerhead turtles have generally decreased since the early 2000s. Marine mammal interactions, on the other hand, may be trending upwards from the lowest number of interactions reported in a decade (in 2009).

Table 3.39 Estimated sea turtle interactions by species in the US Atlantic pelagic longline fishery, 2003-2012, and Incidental Take Levels (ITS)

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	3 year ITS 2004-06 / 2007-09* Total
Leatherback	1,112	1,362	368	415	500	385	286	168	239	598	1,981 / 1,764
Loggerhead	727	734	282	558	542	772	243	344	438	681	1,869 / 1,905
Other/ unidentified sea turtles	38	0	0	11	1	0	0	3	4	15	105 / 105
Marine mammals	300	164	372	313	151	265	144	238	452	413	N/A

* Applies to all subsequent 3-year ITS periods

3.3.6 Atlantic Tunas Purse Seine Category

Purse seine gear consists of a floated and weighted encircling net that is closed by means of a drawstring, known as a purseline, threaded through rings attached to the bottom of the net.

Atlantic tuna purse seining operations typically use spotter aircraft to locate fish schools. The vessels might decide to not even leave the docks until suitable concentrations of fish are located. Although the fishing season officially opens July 15, the actual start of the purse seine fishing occurs when, after the season opens fish are available in schools large and dense enough to offset fishing costs. Once a school is spotted, the vessel, with the aid of a smaller skiff, intercepts and uses the large net to encircle it. Once the school is encircled, the purseline is pulled, closing the bottom of the net and preventing escape. The net is hauled back onboard using a powerblock, and the tunas are removed and placed onboard the larger vessel.

A number of purse seine vessels targeted and landed bluefin off the coast of Gloucester, Massachusetts as early as the 1930s and purse seine vessels participated in the U.S. Atlantic tuna fishery continuously since the 1950s, although in recent years (2006 through 2012) there have been little or no purse seine landings. In 1958, continued commercial purse seining effort for Atlantic tunas began with a single vessel in Cape Cod Bay, Massachusetts and expanded rapidly into the mid-Atlantic region between Cape Hatteras and Cape Cod during the early 1960s. The purse seine fishery between Cape Hatteras and Cape Cod was directed mainly at small and medium bluefin, yellowfin, and skipjack tuna primarily for the canning industry. North of Cape Cod, purse seining was directed at giant bluefin. High catches of juvenile bluefin were sustained throughout the 1960s and into the early 1970s. These high catch rates by U.S. purse seine vessels are believed to have played a role in establishing the U.S. quota share at ICCAT, but also the decline in stock abundance during subsequent years.

A limited entry permit system with non-transferable individual vessel quotas for purse seining was established in 1982, effectively excluding any new entrants into this category. Equal baseline quotas of bluefin are assigned to individual vessels by regulation; the individual vessel quota system is possible given the small pool of ownership in this sector of the fishery, i.e., five qualified participants. In 1996, the quotas were made transferable among the five participants provided they notified NMFS in writing. Under the current regulations, a permit that is not associated with a vessel is not eligible to receive a quota allocation. NMFS has, however, via a Letter of Authorization, deemed all five of the existing long-term purse seine fishery participants who have received quota allocations in the past to continue to be eligible for allocations if requested. Thus, although two of the five Purse Seine participants' permits are no longer associated with vessels, they remain eligible for allocations and for renewed participation in the fishery. The 1999 FMP and its implementing regulations established bluefin baseline percentage quota shares for each of the domestic fishing categories. These percentage shares were based on allocation procedures that NMFS developed over several years. The baseline percentage quota shares established in the 1999 FMP were carried forward in the 2006 Consolidated HMS FMP (effective since June 1, 1999) and set the Purse Seine category allocation at 18.6 percent of the U.S. quota.

Vessels participating in the Atlantic tunas purse seine fishery are currently required to target the larger size class bluefin, more specifically the giant size class (81 inches or larger) and are granted a tolerance limit for large medium size class bluefin (73 to less than 81 inches); i.e., large medium catch may not exceed 15 percent by weight of the total amount of giant bluefin landed during a season. These vessels may commence fishing starting on July 15 of each year and may continue through December 31, provided the vessel has not fully attained its individual vessel quota.

Recent Catch and Landings

Table 3.40 shows U.S. purse seine landings of Atlantic bluefin tuna from 2004 through 2012. Purse seine landings historically have made up approximately 20 percent of the total annual U.S. landings of bluefin tuna (about 25 percent of total commercial landings), but recently only account for a small percentage. In the 1980s and early 1990s, purse seine landings of yellowfin tuna were often over several hundred metric tons. Over 4,000 mt ww of yellowfin were recorded landed in 1985. Over the past 15 years, via informal agreements with other sectors of the tuna industry, the purse seine fleet has opted not to direct any effort on HMS other than bluefin tuna; therefore, catch and landing numbers only include bluefin tuna. In 2013, the Purse Seine fishery landed 28.8 mt, and discarded 13.7 mt (observer data).

The U.S. purse seine fleet has historically accounted for a small percentage of the total international Atlantic tuna landings. Table 3.40 and Table 3.41 show that over the past 10 years, the U.S. purse seine fishery has contributed less than 0.15 percent of the total purse seine landings reported to ICCAT.

Table 3.40 Domestic Atlantic bluefin tuna landings (mt ww) for the Purse Seine Fishery in the Northwest Atlantic Fishing Area (2004 – 2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin	31.8	178.3	3.6	27.9	0.0	11.4	0.0	0.0	1.7	28.8

Source: NMFS 2014; U.S. National Report to ICCAT, 2013.

Table 3.41 Estimated international purse seine Atlantic tuna landings in the Atlantic and Mediterranean, 2004-2012 (mt ww)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bluefin Tuna	19,895	23,524	20,356	22,980	12,641	9,479	4,985	4,293	6,096
Yellowfin Tuna	62,228	61,410	62,761	52,733	70,047	77,757	74,172	69,802	70,716
Skipjack Tuna	93,284	89,704	71,215	81,335	73,080	84,494	125,467	149,307	157,666
Bigeye Tuna	18,417	18,595	16,457	17,553	15,536	22,658	23,769	27,544	21,469
Albacore	717	949	3432	1289	169	259	213	192	586
Total	194,541	194,182	174,221	175,890	171,473	194,659	228,606	251,138	256,533
U.S. Total	32	178	4	28	0	11	0	0	2
U.S. Percentage	0.02%	0.09%	<0.01%	0.02%	0%	<0.01%	0%	0%	<0.01%

Source: NMFS 2014; SCRS, 2013.

Bycatch, Incidental Catch, and Protected Species

Bluefin purse seine fishery bycatch typically consists of undersized target species and non-target finfish (NMFS 2014). The bluefin purse seine fishery is classified as a Category III fishery under the MMPA, and operates under a specified Incidental Take Statement that was issued as part of the June 21, 2001 BiOp on HMS fisheries.

NMFS has limited observer data on the bluefin purse seine fishery given the relative limited effort over the past few years. There are no recorded instances of non-tuna finfish, other than minimal numbers of blue sharks, caught in Atlantic tuna purse seines. Anecdotal evidence indicates that if a school of bluefin is determined to be comprised exclusively of sublegal (<73") bluefin, they can be released from the net. However, if the school is comprised of mixed size classes (e.g., large mediums and giants), those fish exceeding the large medium tolerance limit will likely be discarded dead.

3.3.7 Trap Category

Owners of vessels conducting trap operations that may result in the incidental taking of large medium and giant bluefin tuna must obtain a Trap category permit in order to land an incidentally-caught bluefin tuna. There were eight permits issued in this category during the 2012 season. Authorized gears include only pound net and fish weir. Trap category permit holders may retain one large medium or giant bluefin tuna per vessel per year. No other Atlantic tunas taken incidentally may be retained. Very few Atlantic bluefin tuna are taken with trap gear; between 2007 and 2012, only one bluefin tuna was landed (710 pounds or 0.3 metric tons)(Table 3.42). Landings of bluefin under this gear category are typically rare.

Table 3.42 Trap Category Landings of Bluefin Tuna and BAYS Tunas (2007 - 2012)

Species	2007	2008	2009	2010	2011	2012
Bluefin tuna	0	0.3	0	0	0	0
Yellowfin Tuna	0	0.05	0.1	0.5	0	0
Bigeye Tuna	0	0	0.3	1.2	0	0
Albacore Tuna	0.4	0.005	0.01	0.01	0	0
Skipjack tuna	0	0	0	0	0	0

Source: 2013 ICCAT National Report; December 2008 HMS Landings Report for Bluefin Tuna.

3.4 Reporting and Monitoring

The reporting requirements implemented in the 2006 Consolidated HMS FMP vary according to the permit category, as well as the relevant species. Reporting requirements regarding bluefin are summarized in the following sections.

3.4.1 General Category, Harpoon Category, Purse Seine, and Trap Category

Monitoring of the commercial bluefin fishery is conducted primarily through the dealer reporting system. Separate dealer permits are required for the commercial receipt of Atlantic tuna, swordfish, and sharks. Dealers are required to record each Atlantic bluefin purchase on a landing card and provide the information to NMFS within 24 hours of the purchase or receipt of the fish. The landing cards, which are used to monitor the bluefin quota, include the following information: dealer number, dealer name, date the fish was landed, harvest gear, fork length, weight (whole or dressed), identification tag number, area where fish was caught, port where landed, Atlantic tunas or HMS permit number, vessel name, and the name and dated signature of the vessel’s master. Discard information is currently not obtained. In 1998, NMFS began using FAX/Optical Character Recognition (OCR) technology for bluefin landing cards in order to facilitate data entry and quota monitoring. Bluefin dealers are also required to submit summary reports to NMFS on a biweekly basis, which provide additional economic data including the destination of the fish, price per pound, and quality rating. Permits for dealers to purchase species in the swordfish or shark management unit are issued by the NMFS Southeast Regional Office and permits for the Atlantic tuna fishery, including bluefin, are issued by the NMFS Greater Atlantic Regional Fishery Office. Atlantic tuna dealer permits are issued for a calendar year (January 1 through December 31). Dealer reports must be submitted to NMFS twice a month for all swordfish, sharks and tunas.

As of January 1, 2013, Federal Atlantic swordfish, shark, and tuna dealers were required to report receipt of Atlantic sharks, swordfish, and BAYS tunas to NMFS through an electronic reporting system on a weekly basis (77 FR 47303; August 8, 2012). HMS dealers will not be required to report bluefin through this electronic reporting system, as the previously described reporting system is in place for bluefin.

NMFS regulations for international trade of commercially landed bluefin tuna have permitting, documentation, and reporting components. These regulations implement recommendations of ICCAT and other regional fishery management organizations which were developed as a means to ensure that bluefin tuna entering into trade among member nations are harvested in a manner that does not diminish the effectiveness of ICCAT's bluefin tuna conservation and management measures. In the United States, each business importing or exporting bluefin tuna, swordfish, frozen bigeye tuna, or shark fins must obtain an International Trade Permit from NMFS, and submit biweekly reports summarizing trading activity. In addition, traders must ensure that each imported or exported shipment of bluefin tuna is accompanied by a bluefin tuna catch document that includes data about the harvest and previous trade of the shipment. Although this tracking system is currently paper-based, ICCAT is developing an electronic system which is scheduled to be effective in March 2015. Additionally, NMFS is developing regulations to consolidate several international trade permits into one International Fisheries Trade Permit and require electronic submission of trade documentation, consistent with the requirements of the Security and Accountability for Every (SAFE) Port Act of 2006.

NMFS currently has the authority to select for at-sea observer coverage any vessel that has an Atlantic HMS tunas, shark, or swordfish permit (50 CFR § 635.7), but, currently only vessels fishing with pelagic longline or purse seine gear have been selected.

3.4.2 Longline Category

Vessel Monitoring System (VMS) Requirements

All vessels with pelagic longline on board must have a VMS unit installed and operating. The VMS unit must be a NMFS-approved Enhanced Mobile Transmitting Unit (E-MTU) (76 FR 75492; and 76 FR 75523; December 2, 2011). VMS units are used to track the location and fishing activity of pelagic longline vessels year-round, and must report vessel position at one hour intervals. At least two hours prior to each trip, the vessel owner must report to NMFS any HMS fishery in which the vessel will participate and the type(s) of fishing gear that will be on board the vessel ("hail out"). At least 3 hours prior to landing, a vessel owner or operator must report a notice of landing to NMFS ("hail in"). Vessels are allowed to turn off their VMS units once they return to port at the end of a fishing trip. If suspicious fishing activity is detected via a vessel's VMS signal (including sudden failure of a vessel's VMS unit to report positional information), NMFS Office of Law Enforcement and/or the U.S. Coast Guard may investigate, including at-sea boarding, overflight, or meeting the fishing vessel once it returns to port. VMS may be used to determine compliance with the closed area restrictions, and allows pelagic longline vessels to transit through areas closed to the use of pelagic longline gear. Owners or operators of vessels with VMS units may be eligible for reimbursement of the cost of their VMS unit up to $3,100.

Logbook Requirement

In 1986, a comprehensive logbook program was initiated for the pelagic longline fisheries in the Atlantic, Gulf of Mexico, and Caribbean. Because the pelagic longline fishery uses gear deployed for a relatively long period (6 to 10 hours), catch and effort data are collected for each set. Thus, a separate form is required for each set. Fishermen are required to report the numbers of each species caught, the numbers of animals retained or discarded alive or discarded dead, the location of the set, the types and size of gear, and the duration of the set.

Because some of the needed catch/effort information for pelagic longline fisheries remains the same for the entire trip (i.e., it would be redundant to report it for every set), a supplemental form is used to report this type of data. Information on the port of departure and return, unloading dealer and location, number of sets, number of crew, date of departure and landing are reported on the Trip Summary form. In addition, information on costs associated with the trip can be reported on this form. Through the logbooks, NMFS collects data on the disposition of bycatch species in addition to bluefin. In conjunction with the observer reports, the data are used to estimate the weight of bluefin dead discards, and post-release mortality of sea turtles and marine mammals.

Pelagic Observer Program

The Southeast Fisheries Science Center (Miami, FL), has been managing NMFS' pelagic observer program (POP) since 1992. POP observers monitor a mobile U.S. pelagic longline fleet ranging from the Grand Banks to Brazil to the Gulf of Mexico while onboard fishing vessels. The POP targets a minimum 8% level of coverage of the vessels based on the fishing effort of the fleet (8% of sets), and an expanded observer coverage with target coverage of 50-100 percent of the trips in the Gulf of Mexico has been implemented during the bluefin spawning season since 2007 to better characterize the interaction of the U.S. pelagic longline fleet with this species. The 8 percent target minimum coverage level was mandated by the 2004 biological opinion for sea turtles (http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/HMS%20BO%206_01_04%20secured%20final%20with%20signed%20cover%20page.pdf), while taking into consideration ICCAT guidance and NOAA Fisheries' guidelines for fisheries observer coverage levels. The POP has multiple objectives in addition to the estimation of bluefin discards. The available funds have permitted NMFS to increase coverage within the Gulf of Mexico substantially during the bluefin tuna spawning season, and to exceed the minimum recommended 8% in certain areas and quarters outside of that.

The POP information, which includes fish species, length, weight, sex, location, and environmental information, is used in conjunction with the logbook information to monitor retained bluefin and estimate discarded bluefin. The United States applies the SCRS-approved methodology to calculate and report dead discards for both stock assessment purposes and quota compliance purposes. The amount of dead discards is generated by estimating discard rates from data collected by the POP and extrapolating these estimates using the effort (number of hooks) reported in the Pelagic Logbooks. This methodology is applied within each time/area stratum (e.g., catch rates from the Gulf of Mexico are used to estimate discards from the Gulf of Mexico, not the Northeast Distant area).

Table 3.43 Observer Coverage of the Pelagic Longline Fishery

Year	Number of Sets Observed			Percentage of Total Number of Sets		
1999			420			3.8%
2000			464			4.2%
	Total	Non-NED	NED	Total	Non-NED	NED
2001[1]	584	398	186	5.4%	3.7%	100%
2002[1]	856	353	503	8.9%	3.9%	100%
2003[1]	1,088	552	536	11.5%	6.2%	100%
	Total	Non-EXP	EXP	Total	Non-EXP	EXP
2004[2]	702	642	60	7.3%	6.7%	100%
2005[2]	796	549	247	10.1%	7.2%	100%
2006	568	-	-	7.5%	-	-
2007	944	-	-	10.8%	-	-
2008[3]	1,190	-	101	13.6%	-	100%
2009[3]	1,588	1,376	212	17.3%	15.0%	100%
2010[3]	884	725	159	11.0%	9.7%	100%
2011[3]	879	864	15	10.9%	10.1%	100%
2012[3]	1,060	945	115	9.5%	8.6%	100%

NED – Northeast Distant Area; EXP – experimental. [1]In 2001, 2002, and 2003, 100 percent observer coverage was required in the NED research experiment. [2]In 2004 and 2005, there was 100 percent observer coverage in EXP. [3]In 2008- 2011, 100 percent observer coverage was required in experimental fishing in the FEC, Charleston Bump, and GOM, but these sets are not included in extrapolated bycatch estimates because they are not representative of normal fishing. Source: Yeung, 2001; Garrison, 2003; Garrison and Richards, 2004; Garrison, 2005; Fairfield-Walsh and Garrison, 2006; Fairfield-Walsh & Garrison, 2007; Fairfield & Garrison, 2008; Garrison, Stokes & Fairfield, 2009; Garrison and Stokes, 2010, 2011, 2012, 2013

During 2010, NMFS observers recorded 725 pelagic longline sets for overall non-experimental fishery coverage of 9.7 percent. Total reported fishing effort reported in Garrison and Stokes (2013) included 11,025 sets during 2012, 945 of which were observed by the POP program, for an overall percent coverage as a proportion of sets of 9.5 percent (Garrison and Stokes, 2010). In the Pelagic Longline Take Reduction Plan (PLTRP), it was recommended that NMFS increase observer coverage to 12 to 15 percent throughout all Atlantic pelagic longline fisheries that interact with pilot whales and Risso's dolphins to ensure representative sampling of fishing effort. If resources are not available to provide such observer coverage for all fisheries, regions, and seasons, the Pelagic Longline Take Reduction Team (PLTRT) recommended NMFS allocate observer coverage to fisheries, regions, and seasons with the highest observed or reported bycatch rates of pilot whales. The Pelagic Longline Take Reduction Team recommended that additional coverage be achieved either by increasing the number of NMFS observers who have been specially trained to collect additional information supporting marine mammal research, or by designating and training special "marine mammal observers'' to supplement traditional observer coverage. Table 3.43 contains information on the observer coverage of the pelagic longline Fishery.

The distribution of observed bluefin interactions between 2006 and 2012 is shown in Figure 3.52. The greatest numbers of interactions were observed off Cape Hatteras, within the Gulf of

Mexico, and off Georges Banks. Higher resolution (10' latitude x 10' longitude) distribution data showing observed bluefin interactions are shown in Figure 3.53 (focusing on the Gear Restricted Area alternatives off Cape Hatteras and in the western Gulf of Mexico). Observer data was mapped based on the set location, and therefore the grid cells are an approximation of where the interactions actually occurred. The observer data corroborate the general locations of interest identified as Gear Restricted Areas. Figure 3.54 shows the total number of hooks that were deployed on sets where bluefin interactions were observed by the Pelagic Observer Program.

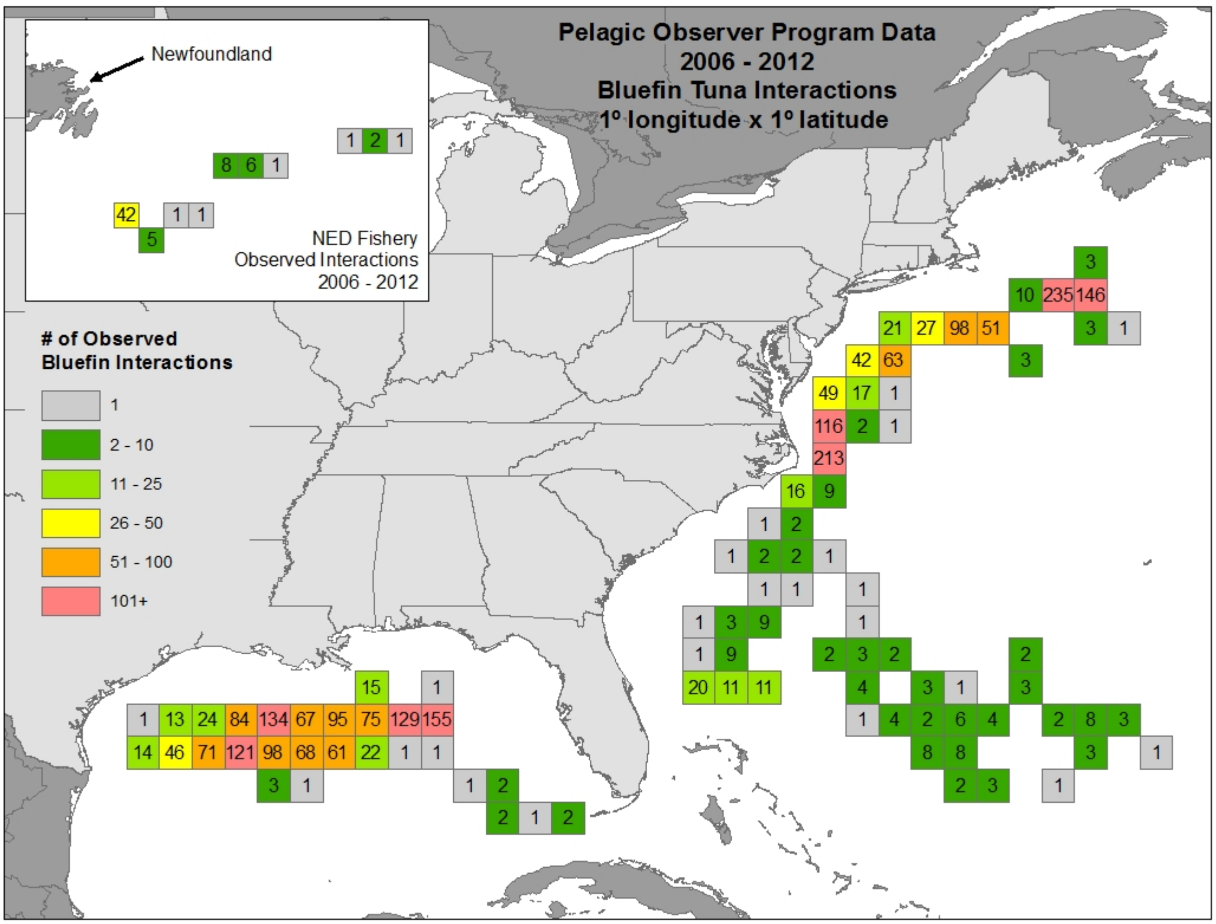

Figure 3.52 Total pelagic longline observed Bluefin tuna interactions between 2006 – 2012. Grid cell values are the sum of all interactions that fall within a 1° latitude x 1° longitude cell.

Source: Pelagic Longline Observer data.

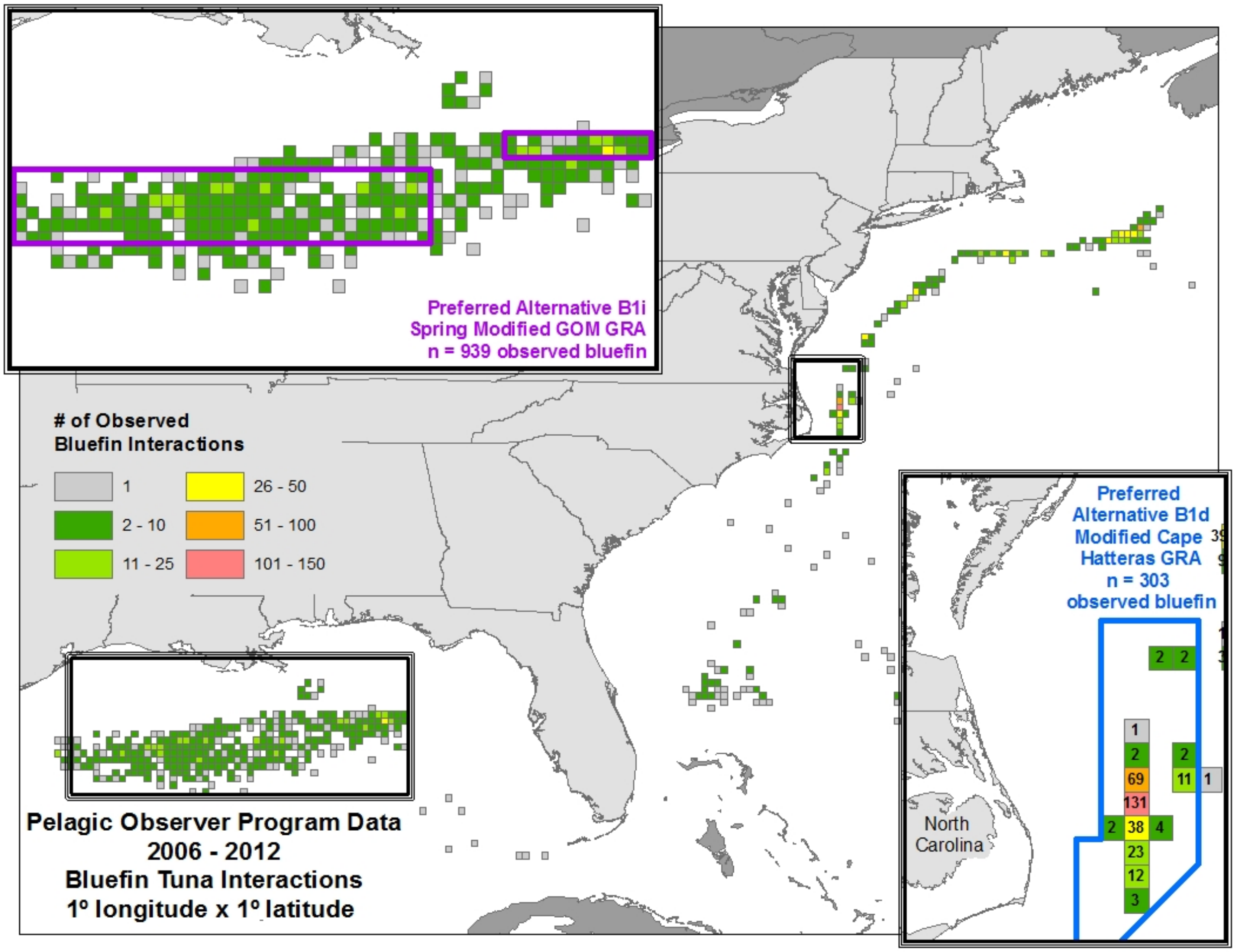

Figure 3.53 Pelagic longline observed Bluefin tuna interactions between 2006 – 2012. Grid cell values are the sum of all interactions that fall within a 10’ latitude x 10’ longitude cell

Source: Pelagic Longline Observer data.

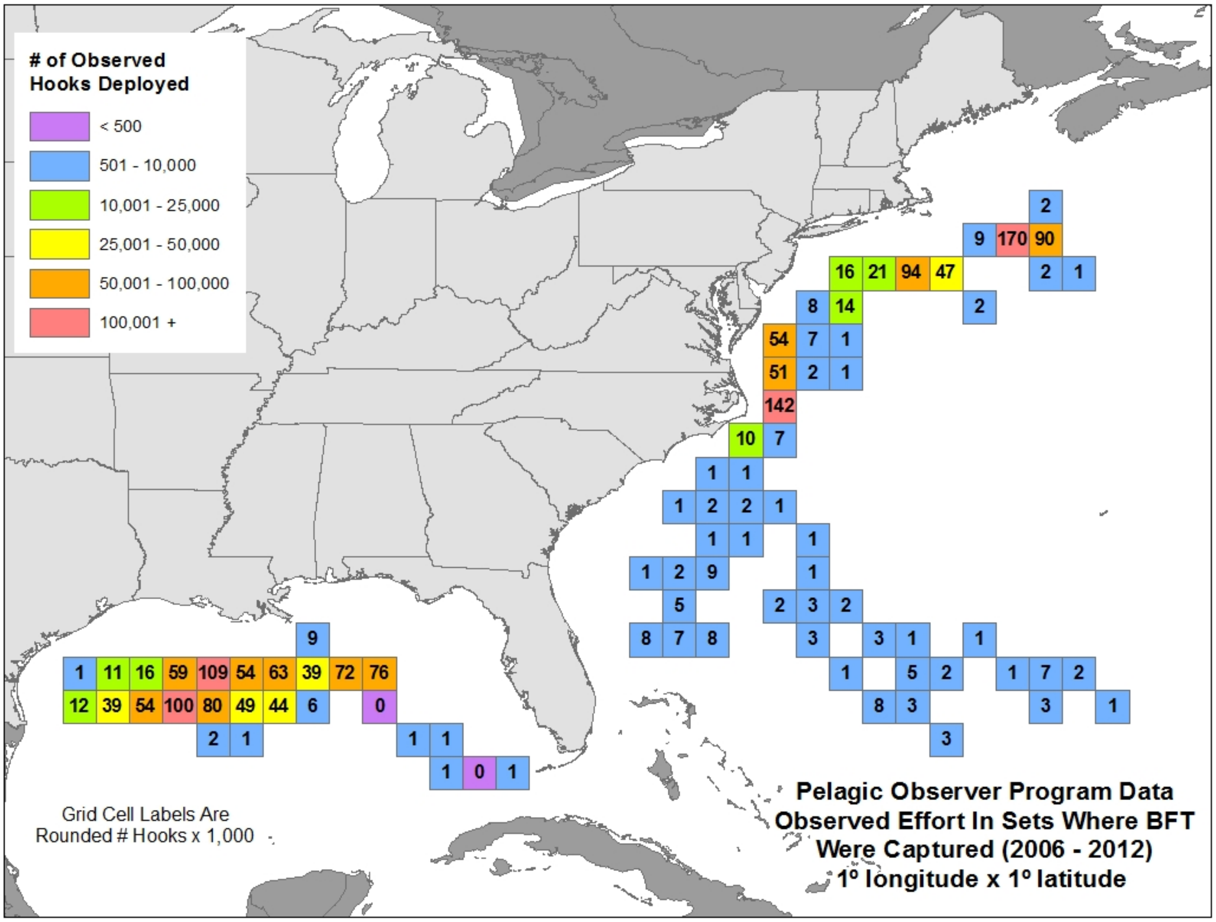

Figure 3.54 Sum of hooks deployed on sets where bluefin tuna were observed. Grid cell values are the sum of all observed hooks on all sets where bluefin tuna were captured by pelagic longline vessels

Source: Pelagic Longline Observer data.

3.4.3 HMS Angling and HMS Charter/Headboat Categories

Data used to monitor and manage the recreational bluefin fishery are collected through several programs, including programs in which vessels self-report, surveys administered by NMFS, and state administered programs. The owner of a vessel with an HMS Angling or HMS Charter/Headboat category permit must report all bluefin landings under the Angling category quota through an Automated Landings Reporting System (ALRS) with the exception of tuna landings in North Carolina or Maryland. Individuals may report online (https://hmspermits.noaa.gov/) or through an interactive voice response telephone system (888-USA-TUNA). Reports must be made within 24 hours of the landing. If reporting by phone, the vessel owner must provide their name, phone number, HMS permit number, species caught, size of fish, fish released (both alive and dead), as well as some other data elements. The online program includes these same fields for providing this information. NMFS provides a confirmation number for the reported landing. Vessels landing in the states of North Carolina or Maryland must instead report bluefin, and some other HMS, landed at state-operated reporting stations (catch-card programs, see below).

Large Pelagic Survey

NMFS administers a recreational survey called the Large Pelagics Survey, LPS, which collects information during the period from June through October, covering the geographic area from Maine south to Virginia. If contacted on the dock or by phone, recreational anglers must participate in the survey as a condition of their permit. The LPS is specifically designed to collect information on recreational fishing directed at bluefin and large pelagic species (e.g., tunas, billfishes, swordfish, sharks, wahoo, dolphin, and amberjack). Offshore trips targeting large pelagics typically make up a relatively small proportion of all recreational fishing trips. Using this specialized survey design allows for higher levels of sampling large pelagic trips, which ultimately improves estimates of catch and effort for large pelagics. The LPS has been conducted since 1992.

The LPS includes two independent, complementary surveys which provide the effort and average catch per trip estimates needed to estimate total catch by species. The Large Pelagics Intercept Survey (LPIS) is a dockside survey of captains who have just completed fishing trips directed at large pelagic species. This survey is conducted at fishing access sites that are likely to be used by offshore anglers, and is primarily designed to collect detailed catch data. The Large Pelagics Telephone Survey (LPTS) collects fishing effort information directly from captains holding HMS permits. The LPTS is stratified by permit category: HMS Angling and Atlantic tunas General permits and HMS Charter/Headboat permits. Data from the phone survey are used to estimate the total number of boat trips on which anglers fished with rod and reel or handline for large pelagic species. The LPS differs from the standard marine recreational fishing surveys mainly in estimating effort and catch by boat, rather than by angler. Information on the number of anglers per boat-trip is collected by the LPIS, but the primary unit for all estimates is the boat-trip, or boat-day of fishing. Additional information collected during LPIS and LPTS interviews include target species, tournament participation, fishing method used, fishing location, water depth, and water temperature.

State of Maryland

In Maryland, NMFS worked with the Maryland Department of Natural Resources (MDNR) to implement an Atlantic Bluefin Tuna Catch Card and Tagging Program as an alternative method to the ALRS system, in 1999. In 2002, billfishes were added to the list of species required to be reported through MDNRs Catch Card and Tagging Program. Since 2002, the Bluefin/Billfish Catch Card and Tagging Program has supplied NMFS with bluefin and billfish landings in the State of Maryland. The objectives of the MDNR catch card program are: 1) continue a long-term monitoring study of all recreationally landed Atlantic bluefin tuna and billfishes (white marlin, blue marlin, swordfish, and sailfish) in Maryland and supply those data to NMFS for use in their coastwide assessment; and 2) continue development of program awareness among recreational anglers in order to increase compliance rates.

Anglers are responsible for completing a catch card when they return to port for each bluefin or billfish on board their vessel. A tag is provided for each completed catch card and the angler is required to place this tag around the tail of the fish before removing it from the vessel. Trailered boats cannot be removed from the water until the tag is in place. Nine marinas qualify as a Recreational BFT/Billfish Reporting Station. Marinas distribute and collect catch cards, issue tags, and return leftover supplies to MDNR at the conclusion of the fishing season. In addition to the marinas, an after-hours kiosk is available at the MDNR field office. Anglers that use the kiosk must complete the catch card and the attached receipt, which replaces the tag. The catch card is deposited into the locked box at the kiosk.

State of North Carolina

As part of a program launched in 1998, more than 25 reporting stations have been established in North Carolina. HMS Angling category vessels landing bluefin in North Carolina are required to comply with the program requirements instead of the NMFS call-in or website reporting process. Vessel operators must report at one of the reporting stations, and are required to fill out a catch reporting card for each bluefin tuna, and must have a landing tag affixed to the tail before removing the fish from the vessel. Information on these angler catch cards is entered into a NMFS database.

3.4.4 Purse Seine Category

Owners or operators of purse seine vessels directing on Atlantic tunas must request to have their fishing gear inspected for mesh size by a NMFS enforcement agent prior to commencing fishing for the season in any fishery that may result in the harvest of Atlantic tunas. The request must be made at least 24 hours before commencement of the first fishing trip of the season. If NMFS does not inspect the vessel within 24 hours of such notification, the inspection requirement is waived. In addition, at least 24 hours before commencement of offloading any bluefin after a fishing trip, the owner/operator must request an inspection of the vessel and catch by notifying NMFS. If, after notification by the vessel, NMFS does not arrange to inspect the vessel and catch at offloading, the inspection requirement is waived. As indicated above, NMFS currently has the authority to select Purse Seine category vessels for at-sea observer coverage (50 CFR § 635.7).

3.4.5 Dealer Permits

Dealer permits are required for commercial receipt of Atlantic tunas, swordfish, and sharks, and are described in further detail in the 2006 Consolidated HMS FMP (NMFS 2006). Dealer permits are open access. Anyone who receives Atlantic tunas (bluefin, bigeye, albacore, yellowfin, or skipjack tunas) from U.S. vessels must have a Federal Atlantic tunas dealer permit. Prior to January 1, 2013, bi-weekly reports were required to be completed by all dealers that receive Atlantic bluefin and/or BAYS tunas. Bi-weekly report forms were distributed to dealers along with, or shortly after, their permits. Bi-weekly reports for any Atlantic tunas that were received by a permitted Atlantic tunas dealer between the 1st and 15th of each month were required to be completed and received by the appropriate NMFS office by the 25th of that month. Bi-weekly reports for tunas received between the 16th and the last day of each month were required to be completed and received by the appropriate NMFS office by the 10th day of the following month. As of January 1, 2013, all Federal Atlantic tunas dealers that receive BAYS tunas must report on a weekly basis through an approved electronic system (77 FR 47303, August 8, 2012). Dealers must keep copies of all reports for a period of two years from the date that the report was required to be received by NMFS. There were 705 Atlantic HMS dealer permits distributed in 2013, as of October 2013. Three hundred and eighteen of those permits were for bluefin and BAYS tunas, 183 were for swordfish and 97 were for sharks. Please see the 2013 SAFE Report for additional information (NMFS 2014).

3.5 Northern Albacore Tuna Management

Since 1998, ICCAT has made recommendations regarding the North Atlantic albacore fishery.

In 1998, ICCAT recognized that the SCRS' advice to not increase mortality on the northern albacore stock as it was close to full exploitation, and therefore recommended that Contracting Parties limit commercial to the average of the 1993-1995 levels. Since that time, the United States has complied with the requirement to submit lists of commercial vessels that may fish for albacore. A multi-year management measure for northern albacore was first adopted in 2003, setting the TAC at 34,500 mt for 2004 through 2006, with a U.S. annual quota of 607 mt. At the 2009 northern albacore stock assessment (SCRS 2009), the SCRS concluded that the northern albacore stock continued to be overfished with overfishing occurring, and recommended a level of catch no more than 28,000 mt to meet ICCAT management objectives by 2020. In 2009, ICCAT established a North Atlantic albacore rebuilding program via Recommendation 09-05, setting a 28,000-mt TAC and including several provisions to limit catches by individual ICCAT parties (for major and minor harvesters) and reduce the amount of unharvested quota that could be carried forward from 50% to 25% of a party's initial catch quota. The 2009 recommendation expired in 2011.

In 2011, ICCAT Recommendation 11-04 set a TAC of 28,000 mt for 2012 and for 2013 and contained specific recommendations regarding the North Atlantic albacore rebuilding program, including an annual TAC for 2012 and 2013 allocated among the European Union, Chinese Taipei, the United States, and Venezuela. The U.S. quota for 2012 and 2013 was 527 mt. The recommendation limits Japanese catches to 4 percent in weight of its total Atlantic bigeye tuna longline catch, and limits the catches of other ICCAT parties to 200 mt. The recommendation specified that quota adjustments for underharvest or overharvest during a given year be made for either two or three years from the subject year (e.g., adjustments based on 2013 catches would be made for either 2015 or 2016). It also requested the SCRS to develop a Limit Reference Point for the stock.

SCRS assessed the northern albacore stock again in 2013, and concluded that the stock was overfished but with overfishing no longer occurring. Note that as discussed in Section 3.2.3, based on domestic stock status thresholds (minimum stock size and maximum fishing mortality threshold), NMFS considers northern albacore to be rebuilding (not overfished). Through Recommendation 13-05 (Supplemental Recommendation by ICCAT concerning the North Atlantic Albacore Rebuilding Program), ICCAT maintained the 28,000-mt TAC for 2014 through 2016, the specific quotas for the European Union, Chinese Taipei, the United States, and

Venezuela, the 4% incidental limit for Japan, and 200-mt limit for other parties. The U.S. quota continues to be 527 mt and parties may continue to carryover 25% of their initial quota (to be used within 2 years from the year of catch—the adjustment year was simplified and clarified in this recommendation). Recommendation 13-05 calls on the SCRS to continue development of a Limit Reference Point and Harvest Control Rules for northern albacore.

Pursuant to the current northern albacore recommendation, it is appropriate for the United States to implement the U.S. quota and establish provisions to adjust the base quota via annual quota specifications.

In the United States, northern Atlantic albacore tuna are caught and landed primarily in rod and reel and pelagic longline fisheries. Catch in the pelagic longline fishery is typically opportunistic as vessels interact with schools of albacore tuna while targeting swordfish or other pelagic tunas in the northwest Atlantic Ocean. Rod and reel fisheries target albacore tuna in the northwest Atlantic and Caribbean Sea. Reported commercial catches were relatively low prior to 1986; however, these catches increased substantially and have remained at higher levels throughout the 1990s, with nearly all of the production coming from the northeastern U.S. coast. The U.S. landings from the Caribbean increased in 1995 to make up over 14% of the total U.S. harvest of albacore, but have since remained below 4% of the total. Total catches have been variable since 2000, ranging from 189 mt/year to 646 mt/year. Estimated total catches of albacore were 425 mt in 2012, an increase of 3 mt from 2011 (Table 3.45). (NMFS2012b).

Table 3.44 Annual Landings (mt) of North Atlantic Albacore Tuna from 2007 to 2012.

Area	Gear	2007	2008	2009	2010	2011	2012
Northwest and North Central Atlantic	Longline	110.2	115.9	141.3	87.8	138.2	158.3
	Gillnet	1.0	2.1	5.6	0.5	0.2	5.7
	Handline	5.4	0.2	0.5	1.9	1.7	0.6
	Trawl	0.3	0.01	0.08	0.2	2.0	0.3
	Trap	0.4	0.005	0.01	0.01	0.0	0.0
	Troll	0.2	0.2	0.07	0.04	0.0	0.0
	Rod and Reel*	393.6	125.2	22.8	46.2	170.6	144.3
	Unclassified	4.2	1.9	1.3	2.2	7.8	11.1
Gulf of Mexico and Caribbean	Longline	16.6	10.6	17.0	72.1	101.8	103.1
	Rod and Reel*	0.0	0.0	0.0	103.4	0.0	0.7
	Handline	0.2	0.64	0.01	0.05	0.1	0.4
	Total	532.1	256.7	188.8	314.5	422.4	424.5

*Rod and Reel estimates based on statistical surveys of the U.S. recreational harvesting sector. Source: Annual Report of the United States to ICCAT, 2013.

Table 3.45 U.S. Northern Albacore Quota, Adjusted Quota, and Landings (mt)

Year	Quota	Adjusted Quota	Landings
2007	607	910.5	532
2008	538	672.5	248
2009	538	672.5	189
2010	527	658.75	315
2011	527	658.75	422
2012	527	658.75	425

Source: Annual Report of the United States to ICCAT, 2013.

Scientific studies on albacore in the North Atlantic have shown trends in environmental variability having a serious potential impact on albacore stocks, affecting fisheries by changing the fishing grounds (as well as recruitment levels and potential MSY of the stocks which may be a factor in availability to U.S. vessels). U.S. quota and annual landings for the last 5 years are presented in Table 3.45.

Under the current recommendation (Rec. 13-05), any unused portion or excess of a Contracting Party's annual quota may be added or shall be deducted from, according to the case, the respective quota during or before the adjustment year (which is 2 years from the year of catch). For example, if the year of the catch is 2013, the adjustment year would be 2015.

Thus far, in submitting information to ICCAT regarding compliance with the recommendation, the United States has reflected adjustments for quota underharvest in the following year, e.g., under-harvest of 2011 quota added to 2012 initial quota, within the current limit on carryforward of 25% of the initial U.S. quota. For instance, in the Annual Report to ICCAT, the 2012 initial quota of 527 mt was adjusted to 658.75 mt, the maximum possible under the applicable annual quota. Although the 2011 adjusted quota was underharvested by over 200 mt, the most the United States could carry forward was 25% of the initial quota, or 131.75 mt.

3.6 Gulf of Mexico Oil Spill

On April 20, 2010, an explosion on the BP/Deepwater Horizon MC252 drilling platform in the Gulf of Mexico caused the rig to sink and oil began leaking into the Gulf. Before it was finally capped in mid-July, more than 4 million barrels of oil were released into the Gulf. The spill caused significant impacts to wildlife, fisheries, habitat, and the fishing community along the large coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida. The Federal response to the oil spill is a major multi-agency effort. NOAA is a lead Federal trustee for coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals, and their habitats. NOAA acted quickly to begin preliminary assessments and plan for restoration along the coast. To help determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of the spill, NOAA is conducting a Natural Resource Damage Assessment.

NOAA Fisheries scientists and other researchers continue to study the possible effects the 2010 Deepwater Horizon/BP oil spill on Atlantic bluefin tuna. Since the April 2010 disaster, NOAA has been monitoring bluefin tuna in the Gulf of Mexico by collecting larval samples during spring spawning seasons, analyzing reports from scientific observers aboard fishing vessels, and tracking the movement of satellite-tagged bluefin tuna. Southeast Area Monitoring and Assessment Program (SEAMAP) surveys have been conducted since 1982, providing a long time-series of information on bluefin tuna larvae that helps scientists analyze trends in the data. April and May are the peak spawning months for the tuna, and scientists have been concerned about possible impacts of oil and dispersants used to clean up spilled oil on this important fish species.

In May 2010, NOAA scientists deployed satellite tags on four bluefin tuna caught in the vicinity of the oil spill. All fish completed their migration up to the Grand Banks and Gulf of St. Lawrence, where the tags separated from the fish on schedule after 90 days, floated to the surface, and reported data on the bluefin's movements via satellites passing overhead. In 2011 and following years, researchers deployed additional tags as part of an expanded study to assess the range of depths inhabited by bluefin tuna and the length of time they spend in the Gulf of Mexico each year. The bluefin tagging studies will contribute to the understanding of their potential exposure to hazardous chemical compounds following the BP/Deepwater Horizon spill.

Available information indicates that Deepwater Horizon oil and/or dispersants has had the potential to impact bluefin tuna. Muhling et al. (2012) studied the overlap between Atlantic Bluefin tuna spawning grounds and observed Deepwater Horizon surface oil in the northern Gulf of Mexico, and their preliminary estimate of the effects of the spill on larval bluefin mortality concluded that less than 12% of larval bluefin were predicted to have been located within contaminated waters in the northern Gulf of Mexico, on a weekly basis. Recent studies found that oil samples from the Deepwater Horizon spill had the potential to impact cardiac development in bluefin tuna embryos (Incardona et al. 2014) and the function of in vitro juvenile bluefin tuna heart cells (Brette et al. 2014).

In 2010, in response to a petition to list bluefin under the Endangered Species Act submitted by the Center for Biological Diversity, NMFS convened a status review team (Team) to review the status of western Atlantic bluefin. As described on pages 48 through 50 of the Bluefin Status Review Report (published in May 2011 and available at www.nmfs.noaa.gov/stories/2011/05/docs/bluefin_srr_final.pdf), the Team evaluated the potential effect of the Deepwater Horizon/BP oil spill on the future abundance of bluefin under various scenarios for oil spill impacts, ranging from lower to greater, at different life stages of bluefin tuna. Details of the evaluation may be found at the reference above and are not repeated here.

NOAA continues to study and assess the impacts of the oil and is expected to release a report in the future that includes more definitive information about impacts of the oil spill on bluefin tuna. All Deepwater Horizon/BP restoration work plans and latest restoration information may be found at the following link: http://www.gulfspillrestoration.noaa.gov/oil-spill/gulf-spill-data/. The number and range of years selected by NMFS as the analytical basis for the measures in Amendment 7 (2006 through 2012), were selected because seven years is long enough to detect meaningful trends and patterns in the fishery data, as well as prevent short-term circumstances (such as the 2010 oil spill) from masking trends or disproportionately impacting a vessel (in the case of quota allocations). A longer time period may not reflect current fishery patterns and participation.

3.7 Economic Status of Highly Migratory Species Fisheries

Consumers spent an estimated $82.6 billion for fishery products in 2012, including $55.2 billion at food service establishments, $26.8 billion in retail sales for home consumption, and $570 million for industrial fish products. The commercial marine fishing industry contributed $42 billion (in value added) to the U.S. Gross National Product in 2012 (NMFS 2013b).

3.7.1 Commercial HMS Fisheries

Economic information presented in this section is reviewed in greater detail in Chapter 5 of this document and in the 2013 HMS SAFE Report (NMFS 2014). The average ex-vessel prices per pound dressed weight (dw) for 2005 to 2012 by Atlantic HMS and area are summarized in Table 3.46. Prices are reported in nominal dollars. The ex-vessel price depends on a number of factors including the quality of the fish (e.g., freshness, fat content, method of storage), the weight of the fish, the supply of fish, and consumer demand. Data for Atlantic HMS landings weight is as reported per the U.S. National Report (NMFS 2013a), the information used in the shark stock assessments, information given to ICCAT (Cortés pers. comm., 2013), as well as price and weight reported to the NMFS Greater Atlantic Regional Fisheries Office by Atlantic bluefin tuna dealers. These values indicate that the estimated total annual revenue of Atlantic HMS fisheries has increased in 2012 to $60.4 million from $50.0 million in 2011. From 2011 to 2012, the Atlantic tuna fishery's total revenue increased by $9.7 million. A majority of that increase can be attributed to the increased commercial landings of yellowfin tuna. From 2011 to 2012, the annual revenues for the shark fisheries remained virtually unchanged. Finally, the annual revenues for swordfish increased by $4.4 million from 2011 to 2012 due to an increase in landings.

Table 3.46 Average ex-vessel price per pound, total weight (lb dw) and total fishery revenue for various HMS

Species		2005	2006	2007	2008	2009	2010	2011	2012
Bigeye tuna	Ex-vessel $/lb dw	$4.38	$4.80	$5.20	$5.26	$5.09	$5.22	$5.77	$6.42
	Weight lb dw	563,325	960,863	706,361	736,520	774,087	799,934	1,122,619	1,039,585
	Fishery revenue	$2,467,364	$4,612,142	$3,673,077	$3,874,095	$3,940,103	$4,175,655	$6,477,512	$6,674,136
Bluefin tuna	Ex-vessel $/lb dw	$6.43	$8.51	$8.63	$9.35	$8.18	$8.35	$10.08	$11.15
	Weight lb dw	772,500	528,404	515,176	720,823	899,477	1,119,937	996,661	995,583
	Fishery revenue	$4,967,175	$4,496,718	$4,445,969	$6,739,695	$7,357,722	$9,351,474	$10,046,343	$11,100,750
Yellowfin tuna	Ex-vessel $/lb dw	$2.66	$2.50	$2.90	$3.22	$2.87	$3.52	$3.60	$4.16
	Weight lb dw	3,379,951	3,849,095	4,521,240	2,423,498	3,159,665	2,154,728	2,676,682	4,349,482
	Fishery revenue	$8,990,670	$9,622,738	$13,111,596	$7,803,664	$9,068,239	$7,584,643	$9,636,055	$18,093,845
Skipjack tuna	Ex-vessel $/lb dw	$1.16	$0.75	$0.75	$1.01	$0.91	$1.13	$1.17	$1.06
	Weight lb dw	26,103	21,693	26,455	32,628	30,688	16,269	12,931	17,804
	Fishery revenue	$30,337	$16,303	$19,793	$32,950	$28,057	$18,451	$15,164	$18,949
Albacore tuna	Ex-vessel	$0.82	$0.86	$0.97	$1.15	$1.11	$1.36	$1.29	$1.31

Species		**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
	$/lb dw								
	Weight lb dw	232,808	203,354	244,272	216,759	291,187	290,827	491,133	489,800
	Fishery revenue	$191,382	$175,198	$237,681	$248,400	$324,439	$394,754	$632,450	$639,370
Total tunas	Fishery revenue	$16,646,927	$18,923,099	$21,488,116	$18,698,804	$20,718,559	$21,524,977	$26,807,524	$36,527,050
Swordfish	Ex-vessel $/lb dw	$3.66	$3.54	$3.99	$3.68	$3.46	$4.40	$4.50	$4.41
	Weight lb dw	3,466,728	3,002,597	3,643,926	3,414,513	3,762,280	3,676,324	4,473,140	5,561,605
	Fishery revenue	$12,682,655	$10,639,324	$14,544,604	$12,577,768	$13,031,079	$16,186,878	$20,130,595	$24,534,334
Large coastal sharks	Ex-vessel $/lb dw	$0.64	$0.62	$0.48	$0.70	$0.54	$0.60	$0.53	$0.59
	Weight lb dw	3,147,196	3,808,662	2,329,272	1,451,423	1,532,969	1,566,741	1,469,142	1,445,597
	Fishery revenue	$2,027,439	$2,363,068	$1,122,051	$1,009,138	$828,003	$938,044	$779,993	$854,916
Pelagic sharks	Ex-vessel $/lb dw	$1.19	$1.17	$1.12	$1.21	$1.18	$1.23	$1.35	$1.43
	Weight lb dw	252,815	192,843	262,179	234,546	225,575	312,195	314,314	314,084
	Fishery revenue	$299,593	$224,911	$294,036	$284,113	$266,548	$382,527	$425,831	$449,759
Small coastal sharks	Ex-vessel $/lb dw	$0.65	$0.61	$0.70	$0.69	$0.69	$0.69	$0.75	$0.87
	Weight	634,885	763,327	618,191	639,842	708,279	397,766	590,174	667,501

Species		2005	2006	2007	2008	2009	2010	2011	2012
	lb dw								
	Fishery revenue	$414,774	$465,586	$432,816	$440,108	$488,374	$272,590	$441,269	$578,126
Shark fins (5% of all sharks landed)	Ex-vessel $/lb dw	$14.22	$14.80	$11.63	$12.43	$12.45	$14.02	$11.90	$8.96
	Weight lb dw	201,745	238,242	160,482	116,291	123,341	113,835	118,682	121,359
	Fishery revenue	$2,868,863	$3,525,871	$1,865,900	$1,444,918	$1,535,469	$1,596,472	$1,412,129	$1,086,979
Total sharks	Fishery revenue	$5,610,669	$6,579,436	$3,714,802	$3,178,277	$3,118,394	$3,189,633	$3,059,222	$2,969,779
Total HMS	Fishery revenue	$34,940,251	$36,141,860	$39,747,522	$34,454,849	$36,868,033	$40,901,488	$49,997,341	$64,031,163

Source: NMFS 2014; NMFS Northeast Commercial Fisheries Database Service; Pelagic Dealer Compliance Program

NMFS has collected operating cost information from commercial permit holders via logbook reporting. Each year, 20 percent of active Atlantic HMS commercial permit holders completing logbooks (i.e., pelagic longline vessels) are selected to report economic information along with their Atlantic HMS logbook or Coast Fisheries logbook submissions. In addition, NMFS also receives voluntary submissions of the trip expense and payment section of the logbook form from non-selected vessels.

The primary expenses associated with operating an Atlantic HMS permitted pelagic longline commercial vessel include labor, fuel, bait, ice, groceries, other gear, and light sticks on swordfish trips. Unit costs are collected on some of the primary variable inputs associated with trips. The unit costs for fuel, bait, and light sticks from vessels selected for reporting are shown in Table 3.47. Fuel costs increased over 89 percent from 2005 to 2012 while the cost per pound for bait remained fairly constant from 2005 to 2010 but nearly doubled between 2010 and 2011 and has remained at this new level in 2012. The unit cost per light sticks has actually declined from 2005 to 2011, but increased in 2012.

Table 3.48 provides the median total cost per trip of vessels selected for reporting for the major variable inputs associated with Atlantic HMS trips taken by pelagic longline vessel. Fuel costs are one of the largest variable expenses. While fuel costs increased slightly in 2012, total fuel costs per trip decreased by 14 percent in 2012 suggesting that shorter trips were taken in 2012.

Labor costs are also an important component of operating costs for HMS pelagic longline vessels. Table 3.49 lists the number of crew on a typical pelagic longline trip of vessels selected for reporting. The median number of crew members has been consistently three from 2005 to 2012. Most crew and captains are paid based on a lay system. According to Atlantic HMS logbook reports, owners are typically paid 50 percent of revenues. Captains receive a 25 percent share and crew in 2012 received 30 percent on average. These shares are typically paid out after costs are netted from gross revenues. Median total shared costs per trip on pelagic longline vessels have ranged from $5,000 to $11,306 from 2005 to 2012.

Table 3.47 Pelagic longline vessel median unit costs for fuel, bait, and light sticks (2005 – 2012)

Input Unit Costs ($)	2005	2006	2007	2008	2009	2010	2011	2012
Fuel (per gallon)	1.85	2.15	2.25	3.55	1.73	2.50	3.38	3.50
Bait (per lb)	0.84	0.85	0.85	0.81	0.81	0.85	1.53	1.58
Light sticks (per stick)	0.50	0.46	0.36	0.37	0.37	0.28	0.25	0.30

Source: NMFS 2014; HMS Logbook Data.

Table 3.48 Median input costs for pelagic longline vessel trips (2005 – 2012)

Input Costs ($)	2005	2006	2007	2008	2009	2010	2011	2012
Fuel	2,786	1,728	3,012	3,600	3,000	2,480	3,445	2,963
Bait	1,200	1,115	1,200	1,500	1,875	1,731	3,671	3,600
Light sticks	700	728	648	600	600	493	663	750
Ice costs	495	498	540	540	625	225	726	759

Input Costs ($)	2005	2006	2007	2008	2009	2010	2011	2012
Grocery expenses	793	696	786	800	1,000	752	900	900
Other trip costs	1,500	1,200	1,500	1,651	1,670	1,500	2,000	1,443

Source: NMFS 2014; HMS Logbook Data.

Table 3.49 Median labor inputs for pelagic longline vessels (2005 – 2012)

Labor	2005	2006	2007	2008	2009	2010	2011	2012
Number of crew	3	3	3	3	4	3	3	3
Owner share (%)	50	50	47	45	45	50	50	50
Captain share (%)	20	20	20	20	20	23	20	25
Crew share (%)	12	13	15	15	30	29	29	30
Total shared costs ($)	5,000	5,657	5,566	6,037	7,000	6,500	11,306	9,000

Source: NMFS 2014; HMS Logbook Data.

In 2013, NMFS created a cost model to estimate trip expenses (Table 3.50) across the entire fishery. Trip expenses included fuel, bait, light sticks, grocery expenses, and other trip costs. Average trip expenses, trip revenue, and trip net-income are presented by region and year in Table 3.50, Table 3.51, and Table 3.52, respectively. Revenue equals total ex-vessel sale of all species landed on a particular trip. Net revenue per trip is trip revenue minus trip expenses. Average profit margin by trip is shown in Table 3.53.

Table 3.50 Average trip expenses by region and year for Atlantic HMS fisheries (2006 - 2012)

Region	2006	2007	2008	2009	2010	2011	2012	Average
SouthAtl	$4,481	$4,900	$6,772	$6,377	$7,139	$8,855	$8,387	$6,857
NorthEast	$17,600	$19,300	$19,009	$17,443	$16,803	$21,304	$22,814	$19,229
MidAtl	$6,025	$6,338	$8,191	$7,408	$7,853	$10,771	$10,757	$8,228
Gulf	$9,339	$9,831	$12,695	$10,533	$11,261	$12,442	$13,558	$11,209
Caribbean	$18,295	$16,007	$22,602	$14,788	$18,642	$19,454	$22,802	$18,837
Average*	$7,940	$8,104	$10,329	$8,986	$9,454	$11,410	$11,538	$9,702

* Includes trips that were not assigned to a region. Source: HMS Cost Earnings Database; HMS Logbook Data

Table 3.51 Average trip revenue by region and year for Atlantic HMS fisheries (2006 - 2012)

Region	2006	2007	2008	2009	2010	2011	2012	Average
SouthAtl	$14,364	$17,561	$15,952	$17,283	$18,191	$22,044	$21,142	$18,350
NorthEast	$46,874	$50,160	$37,218	$47,101	$39,520	$52,264	$60,081	$47,390
MidAtl	$19,401	$20,079	$16,710	$17,871	$22,837	$33,394	$28,991	$22,666
Gulf	$14,201	$16,283	$17,069	$17,735	$16,752	$30,878	$30,417	$19,917
Caribbean	$40,773	$44,935	$38,637	$33,376	$41,580	$40,168	$44,936	$40,556
Average*	$18,258	$20,210	$19,047	$20,270	$22,126	$28,841	$28,267	$22,507

* Includes trips that were not assigned to a region. Source: HMS Cost Earnings Database; HMS Logbook Data

Table 3.52 Average trip net-income by region and year for Atlantic HMS fisheries between 2006 and 2012

Region	2006	2007	2008	2009	2010	2011	2012	Average
SouthAtl	$9,883	$12,661	$9,180	$10,906	$11,051	$13,189	$12,755	$11,493
NorthEast	$29,273	$30,860	$18,208	$29,658	$22,716	$30,961	$37,266	$28,161
MidAtl	$13,375	$13,740	$8,429	$10,462	$14,984	$22,623	$18,234	$14,419
Gulf	$4,862	$6,452	$4,375	$7,202	$5,492	$18,436	$16,859	$8,709
Caribbean	$22,478	$28,928	$16,035	$18,587	$22,939	$20,715	$22,135	$21,719
Average*	$10,318	$12,106	$8,705	$11,284	$12,672	$17,431	$16,729	$12,802

* Includes trips that were not assigned to a region. Source: HMS Cost Earnings Database; HMS Logbook Data

Table 3.53 Average operating profit margin per trip by region and year for Atlantic HMS fisheries between 2006 and 2012

Region	2006	2007	2008	2009	2010	2011	2012	Average
SouthAtl	51%	54%	36%	31%	31%	43%	35%	40%
NorthEast	40%	51%	-17%	24%	-5%	21%	10%	15%
MidAtl	45%	49%	16%	10%	6%	46%	44%	31%
Gulf	-1%	4%	-31%	16%	-13%	36%	37%	7%
Caribbean	44%	48%	14%	44%	49%	30%	40%	38%
Average*	30%	35%	8%	24%	18%	39%	34%	27%

* Includes trips that were not assigned to a region. Source: HMS Cost Earnings Database; HMS Logbook Data

It should be noted that operating costs for the Atlantic HMS commercial fleet vary considerably from vessel to vessel. The factors that impact operating costs include unit input costs, vessel size, target species, and geographic location among other things.

Average ex-vessel prices for bluefin tuna have risen 11 percent since 2011 (Table 3.54). The ex-vessel prices for bluefin tuna can be influenced by many factors, including market supply and the Japanese Yen/U.S. Dollar (¥/$) exchange rate. Figure 3.55 shows the average ¥/$ exchange rate, plotted with average ex-vessel bluefin tuna prices, from 1971 to 2012.

Table 3.54 Average ex-vessel prices per pound for bluefin tuna by area and year.

Species	Area	2005	2006	2007	2008	2009	2010	2011	2012
Bluefin tuna	Gulf of Mexico	4.56	4.78	5.63	4.51	4.65	5.42	6.38	7.16
	S. Atlantic	10.64	10.42	11.16	13.29	14.43	8.75	7.34	8.20
	Mid-Atlantic	8.14	7.92	6.95	7.94	10.10	8.94	10.64	10.95
	N. Atlantic	5.54	7.68	8.31	8.31	7.06	8.38	10.21	11.57

Source: NMFS 2014.

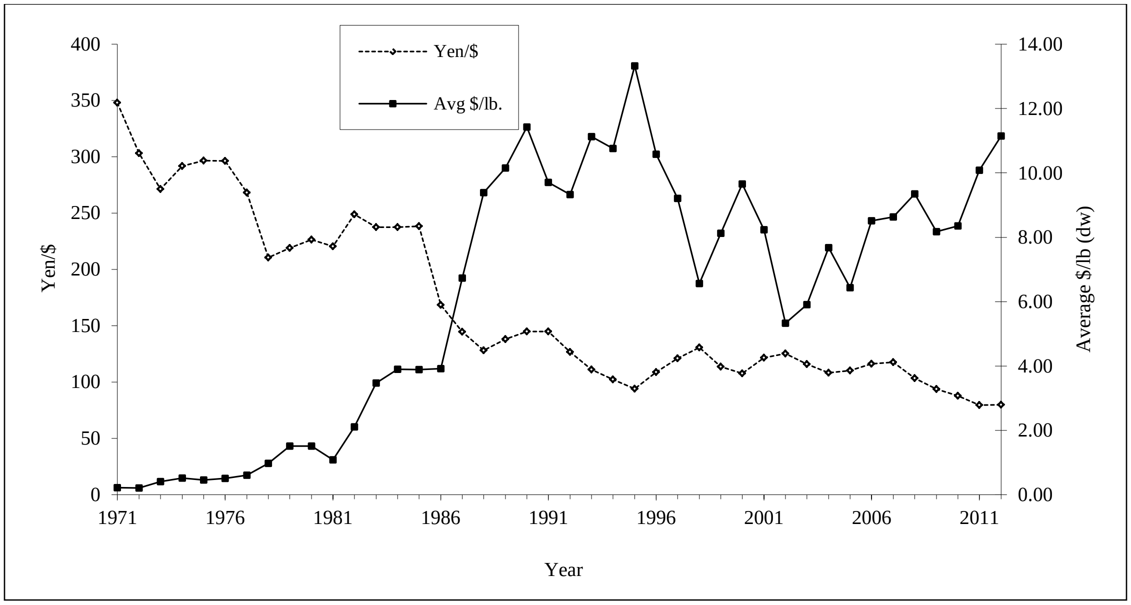

Figure 3.55 Average price per pound (dw) of Atlantic bluefin tuna landed in the U.S. (right-axis) compared to the exchange rate between the Japanese yen and the U.S. dollar (left-axis) by year for all gears

Source: NMFS 2014; Federal Reserve Bank (research.stlouisfed.org) and NMFS Northeast Regional Office.

Distribution of average set revenue is shown in Figure 3.56. Set revenue for all sets reported within 1º x 1º grid cells were averaged to protect confidential business information. Across the 2006 to 2012 time period of interest, the greatest average set revenue for HMS occurred in high seas regions of the Sargasso Sea and in the NED. The Appendices show the spatial distribution of mean set revenue by month. Coastal Atlantic regions had higher average set revenue between March – June and October – December.

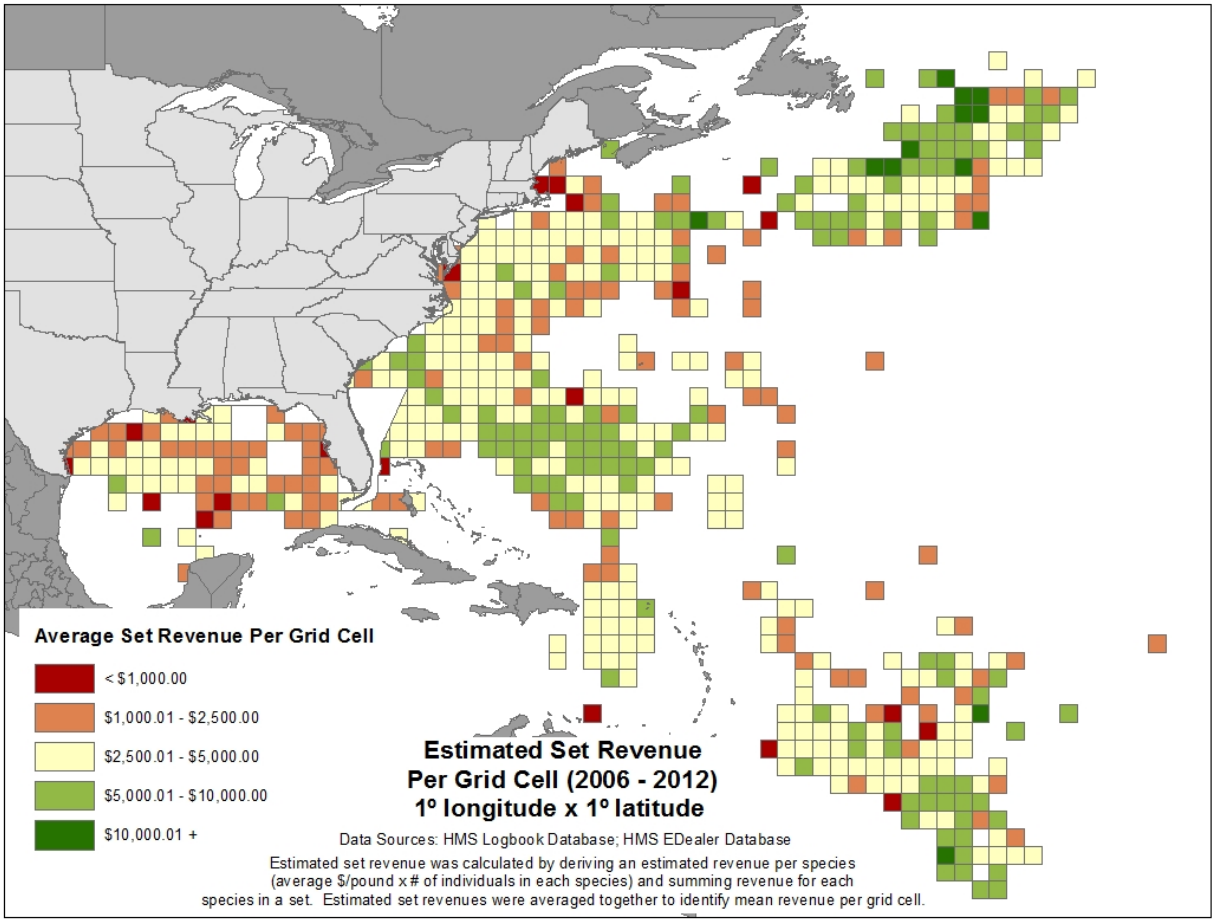

Figure 3.56 Average Pelagic Longline Set Revenue (2006 – 2012) by One Degree Grids

Source: HMS Logbook Data.

3.7.2 Recreational Fisheries

The 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was released in August 2012. The final national report and the data CD-ROM are available from the U.S. Fish and Wildlife Service (USFWS). The 2011 National Survey data show that hunters, anglers and wildlife watchers spent $145 billion last year on related gear, trips and other purchases such as licenses, tags and land leasing or ownership. More information on the 2011 national survey is available at http://www.fws.gov/pacific/news/news.cfm?id=2144375111.

The previous survey by the USFWS was conducted in 2006. The economic survey found that for the entire United States, 7.7 million saltwater anglers (including anglers in state waters) went on approximately 67 million fishing trips and spent approximately $8.9 billion (USFWS and USCB 2006). These participation rates are down from the 2001 survey which found 9.1 million saltwater anglers (including anglers in state waters) went on approximately 72 million fishing trips and spent approximately $8.4 billion (USFWS 2001). The 2006 survey found saltwater anglers spent $5.3 billion on trip-related costs and $3.6 billion on equipment (USFWS, 2006). Expenditures on trip-related costs increased 17 percent from 2001, but equipment expenditures declined by seven percent. These expenditures included lodging, transportation to and from the coastal community, vessel fees, equipment rental, bait, auxiliary purchases (e.g., binoculars, cameras, film, foul weather clothing, etc.), and fishing licenses. Approximately 79 percent of the saltwater anglers surveyed fished in their home state in 2006, compared to 76 percent in 2001 (USFWS and USCB 2001).

The American Sportfishing Association (ASA) also has a report listing the 2006 economic impact of sportfishing on specific states. This report states that all sportfishing (in both Federal and state waters) has an overall economic importance of $125 billion dollars. ASA estimates 8,528,000 anglers participate in saltwater fishing. These saltwater anglers spent $11 billion in retail sales, resulting in 263,000 jobs, and $9 billion in salaries, wages, and business earnings in 2006. Saltwater fishing contributed $30 billion of the overall economic impact estimated. Florida, Texas, South Carolina, and North Carolina are among the top ten states in terms of overall economic expenditures for both saltwater and freshwater fishing. Florida is also one of the top states in terms of economic impact of saltwater fishing with $3.0 billion in angler expenditures, $5.1 billion in overall economic impact, $1.6 billion in salaries and wages related to fishing, and 51,588 fishing related jobs (ASA 2008).

HMS recreational fishing provides significant positive economic impacts to coastal communities that are derived from individual angler expenditures, recreational charters, tournaments, and the shoreside businesses that support those activities.

The 2011 National Marine Recreational Fishing Expenditure Survey (Lovell et al. 2013) included a separate survey of HMS Angling permit holders from the LPS region (Maine to Virginia) plus North Carolina. Estimated trip-related expenditures and the resulting economic impacts for HMS recreational fishing trips are presented in Table 3.55. For the HMS Angler Expenditure Survey, randomly selected HMS Angling permit holders were surveyed every two months, and asked to provide data on the most recent fishing trip in which they targeted HMS. Anglers were asked to identify the primary HMS they targeted, and their expenditures related to the trip. Of the 1,249 HMS anglers that returned a survey, the vast majority (84% or 1,047 anglers) indicated they targeted a species of tuna (i.e., bluefin, yellowfin, bigeye, or albacore tuna) on their trip, or simply indicated they fished for tuna in general without identifying a specific species. The rest of those surveyed were fairly evenly divided between billfish (i.e., blue marlin, white marlin, and sailfish) or shark (i.e., shortfin mako, thresher shark, blacktip shark) trips. Average trip expenditures ranged from $540/trip for tuna trips to $1,151 for billfish trips. Boat and automotive fuel was the primary trip-related expenditure for all HMS trips, and made up over 80 percent of trip costs for billfish trips, which is not unexpected given the predominance of trolling as a fishing method for billfish species such as marlin. Total trip-related expenditures for 2011 were estimated by expanding average trip-related expenditures by estimates of total directed boat trips per species group from the LPS and MRIP. Total expenditures were then divided among the appropriate economic sectors, and entered into an input-output model to estimate total economic output and employment supported by the expenditures within the study region (coastal states from Maine to North Carolina). Overall,

$24.6 million of HMS angling trip-related expenditures generated approximately $31.2 million in economic output, and supported 202 full time jobs from Maine to North Carolina in 2011.

Table 3.55 HMS Recreational Fishing Trip Related Expenditures and Economic Impacts for Directed HMS Private Boat Trips (ME - NC, 2011)

Variable	Tuna Trips	Billfish Trips	Shark Trips	All HMS Trips
Sample size by species targeted	1,047	95	107	1,249
Average trip expenditures	$540	$1,151	$565	$624
Total directed HMS private boat trips*	27,648	5,123	6,669	39,440
Total trip-related expenditures	$14,935,141	$5,896,128	$3,771,066	$24,602,335
Total economic output	$18,990,136	$7,496,728	$4,699,144	$31,186,008
Employment (Full time job equivalents)	123	48	31	202

Source: NMFS 2014; Lovell et al. 2013; *Large Pelagics Survey.

Fishing tournaments can sometimes generate a substantial amount of money for surrounding communities and local businesses (NMFS 2011). Generally, HMS tournaments last from three to seven days, but lengths can range from one day to an entire fishing season. Similarly, average entry fees can range from approximately $0 to $5,000 per boat (average approximately $500/boat – $1,000/boat), depending largely upon the magnitude of the prize money that is being awarded. The entry fee would pay for a maximum of two to six anglers per team during the course of the tournament. Additional anglers can, in some tournaments, join the team at a reduced rate of between $50 and $450. The team entry fee did not appear to be directly proportional to the number of anglers per team, but rather with the amount of money available for prizes and, possibly, the species being targeted.

Cash awards distributed in HMS tournaments can be quite substantial; see Chapter 5 of the 2011 HMS SAFE Report for a description of some of the high-dollar tournaments. Prizes may include citations, T-shirts, trophies, fishing tackle, automobiles, boats, or other similar items, but most often consists of cash awards. In general, it appears that billfish and tuna tournaments charge higher entry fees and award more prize money than shark and swordfish tournaments, although all species have a wide range. Prize money is often determined by the number of tournament participants. Compared to recent previous years, overall prize money and number of participants declined noticeably in 2011.

Ditton et al. (2000) estimated that the total expenditure (direct economic impact) associated with the 1999 Pirates Cove Billfish Tournament, not including registration fees, was approximately $2,072,518. The total expenditure (direct economic impact) associated with the 2000 Virginia Beach Red, White, and Blue Tournament was estimated at approximately $450,359 (Thailing et al. 2001). These estimated direct expenditures do not include economic effects that may ripple through the local economy leading to a total impact exceeding that of the original purchases by anglers (i.e., the multiplier effect). Less direct, but equally important, fishing tournaments may serve to generally promote the local tourist industry in coastal communities. In a survey of participants in the 1999 Pirates Cove Billfish Tournament, Ditton et al., (2000) found that almost 80 percent of tournament anglers were from outside of the tournament's county. For this reason, tourism bureaus, chambers of commerce, resorts, and state and local governments often sponsor fishing tournaments.

At the end of 2004 and 2012, NMFS collected market information regarding advertised charterboat rates (NMFS 2011; NMFS 2014). The analysis of this data focused on observations of advertised rates on the internet for full day charters. Full day charters vary from 6 to 14 hours long with a typical trip being 10 hours. Most vessels can accommodate six passengers, but this also varies from two to 12 passengers. The average price for a full day boat charter was $1,053 in 2004 and $1,200 in 2012. Sutton et al. (1999) surveyed charterboats throughout Alabama, Mississippi, Louisiana, and Texas in 1998 and found the average charterboat base fee to be $762 for a full day trip. Holland et al. (1999) conducted a similar study on charterboats in Florida, Georgia, South Carolina, and North Carolina and found the average fee for full day trips to be $554, $562, $661, and $701, respectively. Comparing these two studies conducted in the late 1990s to the average advertised daily HMS charterboat rate in 2004 and 2012, it is apparent that there has been a significant increase in charterboat rates.

3.8 Description of Fishing Communities

The Magnuson-Stevens Act requires, among other things, that all FMPs include a fishery impact statement intended to assess, specify, and describe the likely effects of the measures on fishermen and fishing communities (§303(a)(9)).

NEPA requires Federal agencies to consider the interactions of natural and human environments by using a "systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences... in planning and decision-making" (§102(2)(A)). Moreover, agencies need to address the aesthetic, historic, cultural, economic, social, or health effects, which may be direct, indirect, or cumulative. Consideration of social impacts is a growing concern as fisheries experience increased participation and/or declines in stocks. The consequences of management actions need to be examined to better ascertain and, to the fullest extent possible, mitigate regulatory impacts on affected constituents.

Social impacts are generally the consequences to human populations resulting from some type of public or private action. Those consequences may include alterations to the ways in which people live, work or play, relate to one another, and organize to meet their needs. In addition, cultural impacts, which may involve changes in values and beliefs that affect people's way of identifying themselves within their occupation, communities, and society in general are included under this interpretation. Social impact analyses help determine the consequences of policy action in advance by comparing the status quo with the projected impacts. Community profiles are an initial step in the social impact assessment process. Although public hearings and scoping meetings provide input from those concerned with a particular action, they do not constitute a full overview of the fishery.

The Magnuson-Stevens Act outlines a set of National Standards (NS) that apply to all fishery management plans and the implementation of regulations. Specifically, NS 8 notes that:

"Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (1) provide for the sustained participation of such communities; and (2) to the extent practicable, minimize adverse economic impacts on such communities" (§301(a)(8)). See also 50 CFR §600.345 for NS 8 Guidelines.

"Sustained participation" is defined to mean continued access to the fishery within the constraints of the condition of the resource (50 CFR §600.345(b)(4)). It should be clearly noted that NS 8 "does not constitute a basis for allocation of resources to a specific fishing community nor for providing preferential treatment based on residence in a fishing community" (50 CFR §600.345(b)(2). The Magnuson-Stevens Act further defines a "fishing community" as: "a community that is substantially dependent upon or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, crew, and fish processors that are based in such communities" (§301(16)).

Likewise, specific to development and amendment of HMS FMPs, the Magnuson-Stevens Act, paragraph 304(g)(1)(C), requires the Secretary to:

1. Evaluate the likely effects, if any, of conservation and management measures on participants in the affected fisheries; and
2. Minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors.

NMFS (2001) guidelines for social impact assessments specify that the following elements are utilized in the development of FMPs and FMP amendments:

The size and demographic characteristics of the fishery-related work force residing in the area; these determine demographic, income, and employment effects in relation to the work force as a whole, by community and region.

The cultural issues of attitudes, beliefs, and values of fishermen, fishery-related workers, other stakeholders, and their communities.

The effects of proposed actions on social structure and organization; that is, on the ability to provide necessary social support and services to families and communities.

The non-economic social aspects of the proposed action or policy; these include life-style issues, health and safety issues, and the non-consumptive and recreational use of living marine resources and their habitats.

The historical dependence on and participation in the fishery by fishermen and communities, reflected in the structure of fishing practices, income distribution and rights.

Methodology and Previous Community Profiles and Assessments

A complete description of the updated community profiles and assessments can be found in Chapter 6 of the 2013 SAFE Report (NMFS 2014). Chapter 6 of the 2013 SAFE Report includes social indicators of vulnerability and resilience developed by Jepson and Colburn (2013) for 25 communities selected for having a greater than average number of HMS permits associated with them. Jepson and Colburn (2013) developed a series of indices using social indicator variables that could assess a coastal community's vulnerability or resilience to potential economic disruptions such as those resulting from drastic changes in fisheries quotas and seasons, or natural and anthropogenic disasters. Indices and index scores were developed using factor analyses of data from the United States Census, permit sales, landings reports, and recreational fishing effort estimates from the MRIP survey (Jepson and Colburn, 2013). This section uses radar graphs to present four indices related to fishing dependence vulnerability (recreational and commercial fishing reliance and engagement indices, Figure 3.57 and Figure 3.58), two indices related to social vulnerability (personal disruption index and poverty index, Figure 3.59), and two related to gentrification vulnerability (retiree migration index and natural amenities index, Figure 3.60). Each index is scored so that higher values indicate increased community vulnerability to disruption with mean index scores standardized to zero. Communities with index scores greater than one standard deviation above the mean are considered to be the most vulnerable, and this threshold is illustrated on each figure with a black circular line (Jepson and Colburn 2013).

Fishing Reliance and Engagement Indices

Jepson and Colburn (2013) developed two indices each to measure community reliance and engagement with recreational and commercial fishing, respectively. The recreational fishing engagement index was measured using MRIP estimates of the number of charter, private boat, and shore recreational fishing trips originating in each community. The recreational fishing reliance index was generated using the same fishing trip estimates adjusted to a per capita basis. In Figure 3.57, recreational fishing reliance and engagement index scores are presented for 25 HMS communities. The communities of Orange Beach, AL; Apalachicola, FL; Destin, FL; Grand Isle, LA; Venice, LA; Ocean City, MD; Atlantic Beach, NC; Barnegat Light, NJ; Cape May, NJ; and Montauk, NY all exceed the one standard deviation threshold for both recreational reliance and engagement indicating that each exhibits exceptionally high numbers of annual fishing trips both in absolute numbers and adjusted per capita. This suggests that each of these communities are highly vulnerable to economic disruption from potential declines in fishing participation be they due to seasonal fishing closures or disasters such as Super Storm Sandy or the Deepwater Horizon oil spill. Other communities such as Panama City, FL; Islamorada, FL; Pompano Beach, FL; Dulac, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Morehead City, NC; Brielle, NJ; and Wakefield-Peacedale, RI all had scores in excess of the one standard deviation threshold on the recreational fishing engagement index, but not on the recreational fishing reliance index. This indicates these communities exhibit large absolute numbers of fishing trips annually, but only moderate numbers of trips on a per capita basis. This would indicate these communities are also economically vulnerable to declines in recreational fishing participation, but not as severely as other HMS communities.

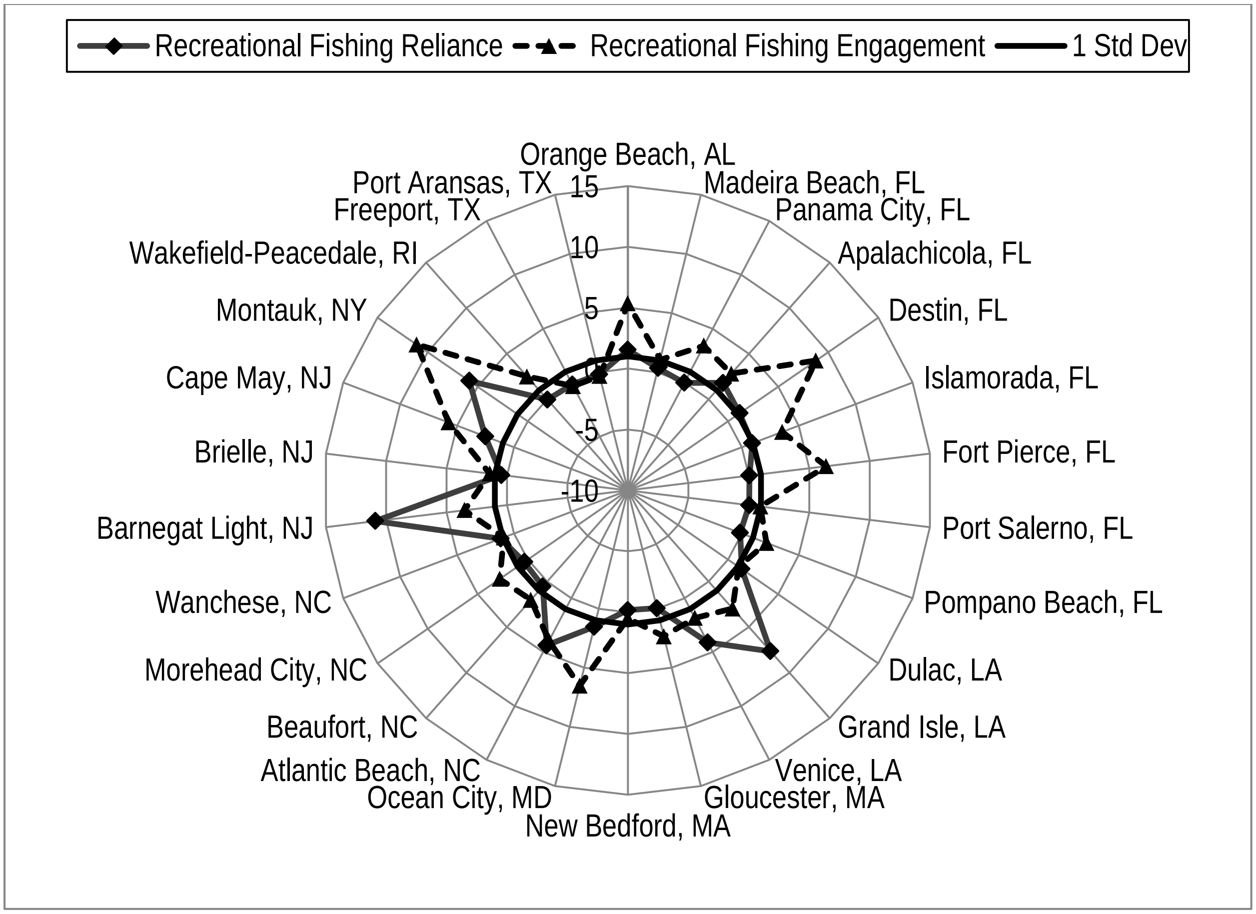

Figure 3.57 Recreational Fishing Engagement and Reliance Indices by HMS Community

Jepson and Colburn (2013) also calculated indices measuring community reliance on and engagement with commercial fishing. Commercial fishing engagement was assessed based on pounds of landings, value of landings, number of commercial fishing permits sold, and number of dealers with landings. Commercial fishing reliance was assessed based on value of landings per capita; number of commercial permits per capita; dealers with landings per capita; and percentage of people employed in agriculture, forestry, and fishing. Figure 3.58 shows that Dulac, LA; Grand Isle, LA; Venice, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; and Montauk, NY all score above the one standard deviation threshold for both indices indicating they are all dependent upon commercial fishing. Several communities including Gloucester, MA; New Bedford, MA; Barnegat Light, NJ; and Cape May, NJ exhibited particularly high index scores on one of the two indices suggesting they are particularly dependent on commercial fishing.

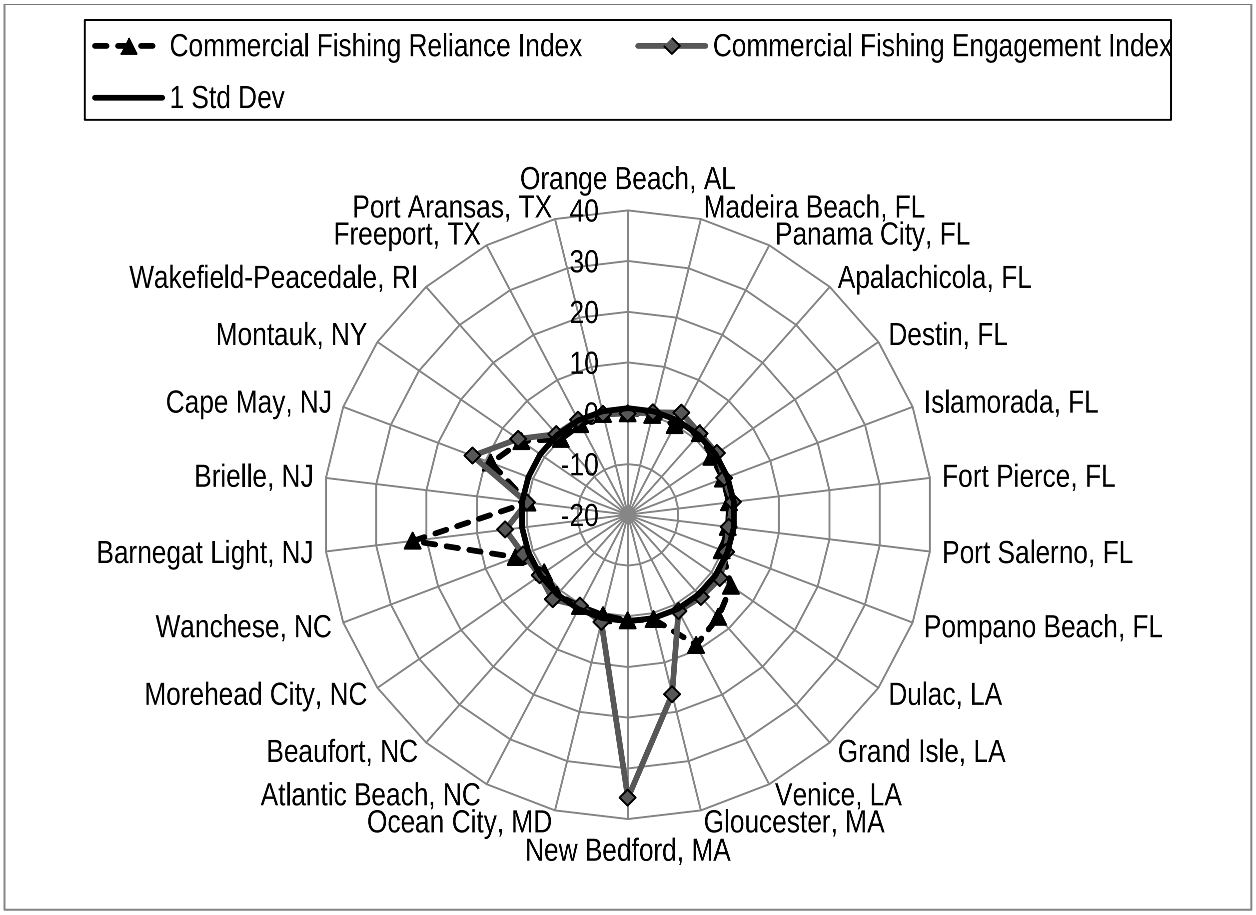

Figure 3.58 Commercial Fishing Engagement and Reliance Indices by HMS Community

Social Vulnerability Indices

Two indices of social vulnerability developed by Jepson and Colburn (2013) are presented in this section. The personal disruption index includes the following community variables representing disruptive forces in family lives: percent unemployment, crime index, percent with no diploma, percent in poverty, and percent separated females. The poverty index includes several variables measuring poverty levels within different community social groups including: percent receiving government assistance, percent of families below the poverty line, percent over 65 in poverty, and percent under 18 in poverty. Figure 3.59 shows that the communities of Apalachicola, FL; Fort Pierce, FL; and New Bedford, MA each score above the one standard deviation threshold on both of the social vulnerability indices, while the communities of Dulac, LA; Venice, LA; and Freeport, TX each score above the threshold on one index. These scores suggest these communities would likely experience greater difficulty recovering from economic hardships caused by job losses in the recreational and commercial fishing sectors.

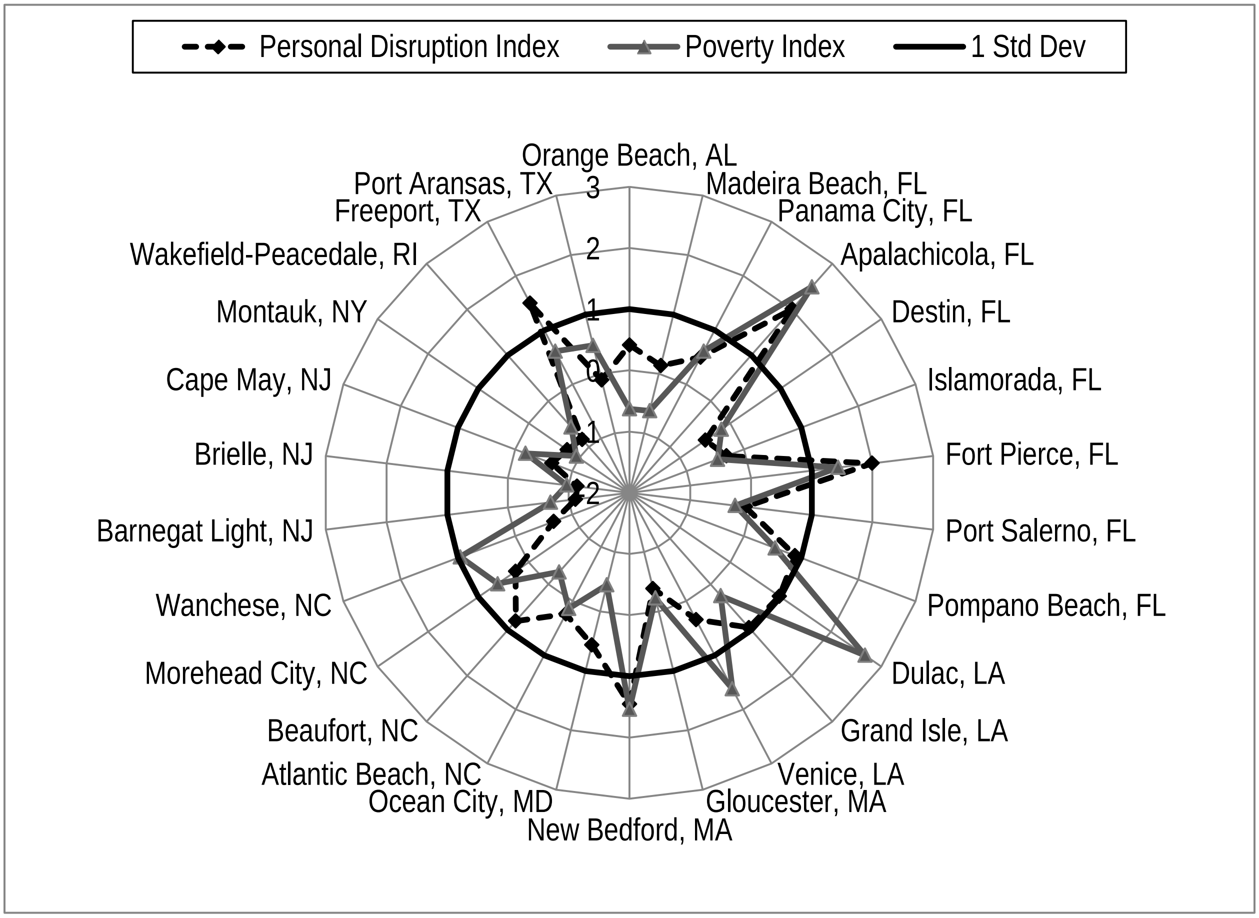

Figure 3.59 Social Vulnerability Indices by HMS Community

Gentrification Indices of Vulnerability

Finally, this section includes two indices measuring community vulnerability to gentrification developed by Jepson and Colburn (2013). Gentrification is a process whereby community structure changes as a result of an influx in higher income households, and the businesses that cater to them, to the point community social networks and power structures change, and traditional community families are threatened to be displaced (Jepson and Colburn, 2013). The retiree migration index includes variables that measure the influx of retirees to a community and includes: households with one or more over 65, percent population receiving social security, percent receiving retirement income, and percent in labor force. The natural amenities index includes variables that represent community characteristics that can determine the areas attractiveness to emigrants which include: rental vacancy rate, percent homes vacant, boat launches per capita, and percent water cover. Figure 3.60 shows that the communities of Ocean City, MD; Barnegat Light, NJ; and Brielle, NJ all possess index scores in excess of the one standard deviation threshold for both indices indicating that these communities are likely seeing signs of gentrification. Additionally, the communities of Orange Beach, AL; Grand Isle, LA; Atlantic Beach, NC; Montauk, NY; and Port Aransas, TX each exceed the threshold for the natural amenities index, and are approaching the threshold for the retiree migration index suggesting the these communities are vulnerable to or in the early stages of gentrification.

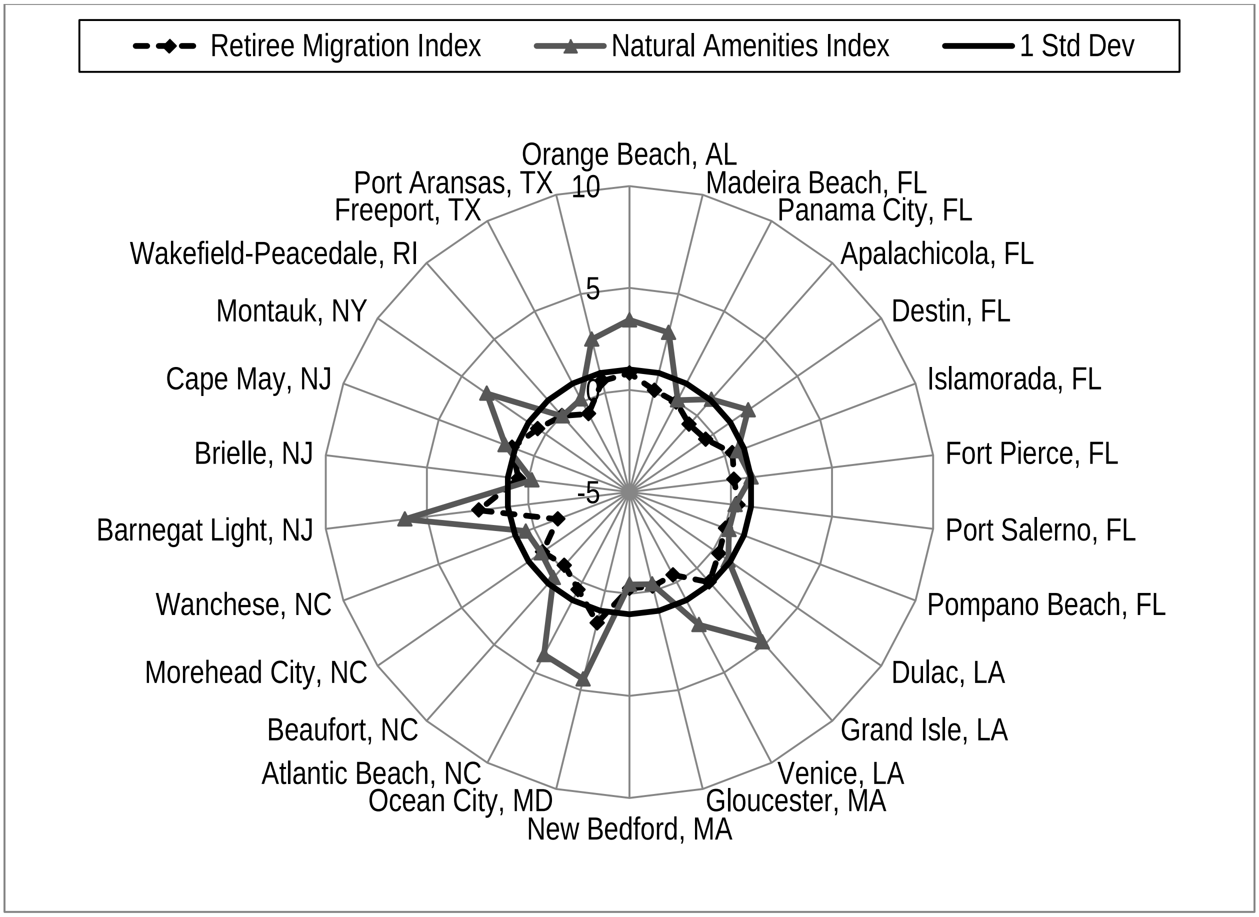

Figure 3.60 Gentrification Vulnerability Indices by HMS Community

Each of the management alternatives in Chapter 5 includes an assessment of the potential social and economic impacts associated with the alternatives. The preferred alternatives were selected to minimize economic impacts and provide for the sustained participation of fishing communities, while taking the necessary actions to end overfishing and/or rebuild overfished fisheries as required by the Magnuson-Stevens Act. Please see Chapter 6 for additional information on how preferred alternatives were selected to minimize social and economic impacts.

3.9 International Trade and Fish Processing

Data and information regarding international trade and fish processing of HMS is annually updated in the HMS SAFE Report. The most recent information may be found in the 2013 HMS SAFE Report (Chapter 5, Section 5.3). The following information is specific to international trade and processing of bluefin tuna.

Table 3.56 gives bluefin tuna export data for exports from the United States since 2002 and includes data from the NMFS BCD program and Census Bureau data. The Census Bureau usually reports a greater amount of bluefin tuna exported when compared to the amount reported by NMFS. Additional quality control measures are taken by NMFS to ensure data for other species (e.g., Southern bluefin tuna) or other transaction types (e.g., re-exports) are not erroneously included with bluefin tuna export data.

In the time series shown in Table 3.56 and depicted in Figure 3.61 through Figure 3.63, U.S. exports of Atlantic bluefin tuna generally increased when commercial landings increased, while domestic consumption of U.S. landings remained fairly constant from year to year. Most U.S. bluefin tuna exports are destined for the sushi markets in Japan. As shown in Figure 3.61 and Figure 3.62, the percentage of the commercial U.S. bluefin tuna catch that was exported was lowest when landings declined to their lowest point, from 2006 to 2008.

Table 3.56 United States exports of Atlantic and Pacific bluefin tuna (2002 – 2012)

Year	Atlantic BFT Commercial Landings[1] (mt dw)	Atlantic BFT Exports[2] (mt dw)	Pacific BFT Exports[2] (mt dw)	Total U.S. Exports[2] (mt dw)	Total U.S. Exports[3] (mt)	Value of U.S. Exports[3] ($ million)
2002	964.0	730.4	0.1	730.5	922	10.74
2003	756.9	578.7	2.1	580.8	998	11.36
2004	428.6	247.3	0.0	247.3	370	4.50
2005	419.4	245.7	125.1	370.8	454	5.30
2006	204.6	93.1	0.0	93.1	281	3.60
2007	196.4	85.4	8.2	93.6	238	2.90
2008	266.4	146.5	0.0	146.5	177	2.49
2009	408.5	236.2	0.0	236.2	300	4.05
2010	509.5	334.2	0.0	334.2	346	4.90
2011	453.6	329.5	0.8	330.5	293	4.03
2012	452.2	334.5	0.0	334.5	511	4.91

Note: Most exports of Pacific bluefin tuna (BFT) were in round (whole) form, although some exports were of dressed and gilled/gutted fish; Atlantic exports were almost entirely dressed, but also included whole and other product forms (dw); data are preliminary and subject to change.

Source: [1]Northeast Regional Office, [2]NMFS Bluefin Catch Document Program, and [3]U.S. Census Bureau.

Table 3.57 U.S. Imports and Re-exports of Atlantic and Pacific Bluefin Tuna (2002 – 2012).

	NMFS BFT Catch Document Program		U.S. Customs and Border Protection Data	
Year	Imports (mt)	Re-exports (mt)	Imports (mt)	Value ($ million)
2002	529.8	9.9	605.0	9.75
2003	649.9	38.4	780.3	11.67
2004	823.4	17.1	886.1	15.25
2005	966.1	10.4	1,064.0	19.96

	NMFS BFT Catch Document Program		U.S. Customs and Border Protection Data	
Year	**Imports (mt)**	**Re-exports (mt)**	**Imports (mt)**	**Value ($ million)**
2006	791.5	18.5	865.2	17.05
2007	584.6	17.7	697.1	13.97
2008	412.7	16.8	487.1	11.91
2009	407.7	33.6	476.8	10.29
2010	569.5	61.6	682.5	15.75
2011	442.5	35.1	555.4	14.01
2012	400.2	25.9	770.4	14.74

Note: Most imports of bluefin tuna (BFT) were in dressed form, and some were round and gilled/gutted fish, fillets or belly meat (dw); data are preliminary and subject to change. Southern BFT trade was included in figures for Atlantic and Pacific BFT trade prior to 2002.

Source: NMFS 2014; NMFS Bluefin Tuna Catch Document Program and U.S. Customs and Border Protection.

All import shipments must be reported to the CBP. “General” imports are reported when a commodity enters the country, and "consumption" imports consist of entries into the United States for immediate consumption combined with withdrawals from CBP bonded warehouses. “Consumption” import data reflect the actual entry of commodities originating outside the United States into U.S. channels of consumption. As discussed previously, CBP data for certain products are provided to NMFS for use in implementing consignment document programs. U.S. Census Bureau import data are used by NMFS as well. United States imports and re-exports of bluefin tuna for 2002 through 2012, as reported through both CBP and BCD program data, are shown in Table 3.57.

The rise in popularity of sashimi in the United States may have generated the increase in imports of bluefin tuna in the mid part of the decade, as seen in Table 3.57. Dealers have reported an expanded domestic market for both locally-caught and imported raw tuna. U.S. consumption of bluefin tuna (landings + imports – exports – re-exports) generally increased from 1996 to a high of approximately 800 mt in 2005, and generally ranged between 400 and just over 500 mt since 2008 (Figure 3.63). Consumption of domestic landings was fairly consistent and ranged between about 100 mt to 200 mt per year. Consumption of imported bluefin tuna is more variable and ranged from a low in 1997 of less than 50 mt to a high in 2006 of almost 700 mt. Figure 3.64 shows U.S. domestic landings of Atlantic bluefin tuna and trade of bluefin tuna since 1996. From 2004 through 2012, the United States imported more bluefin tuna than it exported (except for 2010). This trade gap was greatest between 2005 and 2007, but narrowed over the last several years.

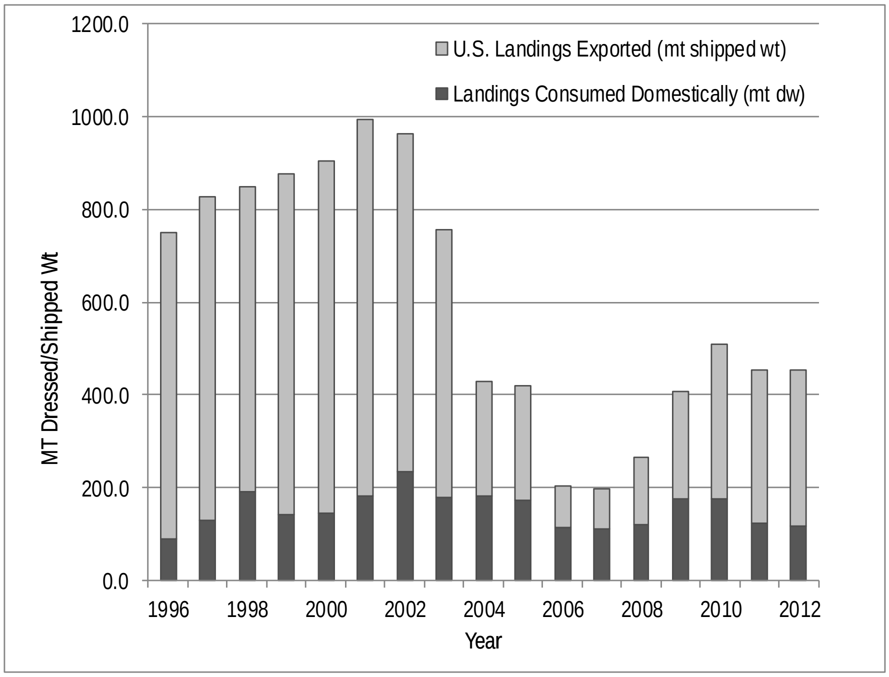

Figure 3.61 Annual U.S. domestic landings of Atlantic Bluefin tuna, divided into U.S. export (mt shipped weight) and U.S. domestic consumption (mt dw) (1996 – 201)

Source: NMFS 2014.

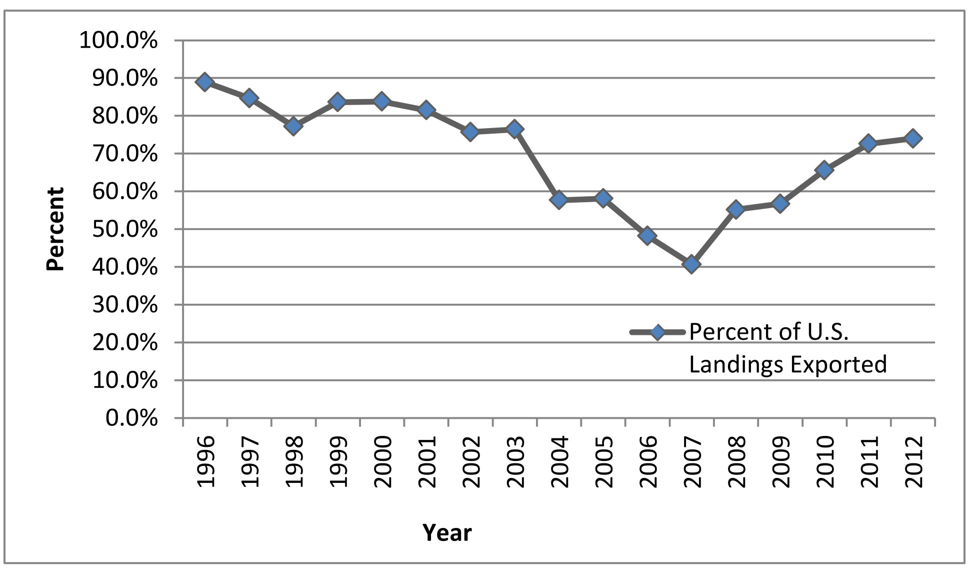

Figure 3.62 Annual percentage (by weight) of commercially-landed U.S. Atlantic bluefin tuna that was exported (1996 – 2012)

Source: NMFS 2014.

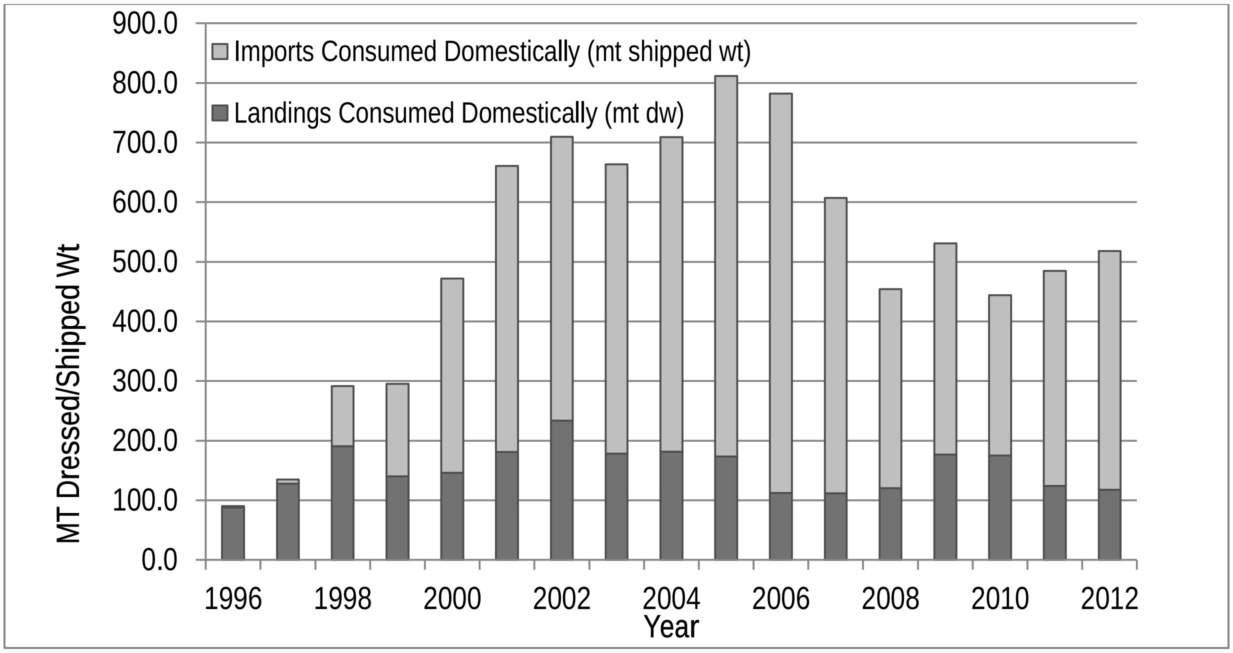

Figure 3.63 U.S. annual consumption of bluefin tuna, by imports and U.S. landings (1996 – 2012)

Source: NMFS 2014.

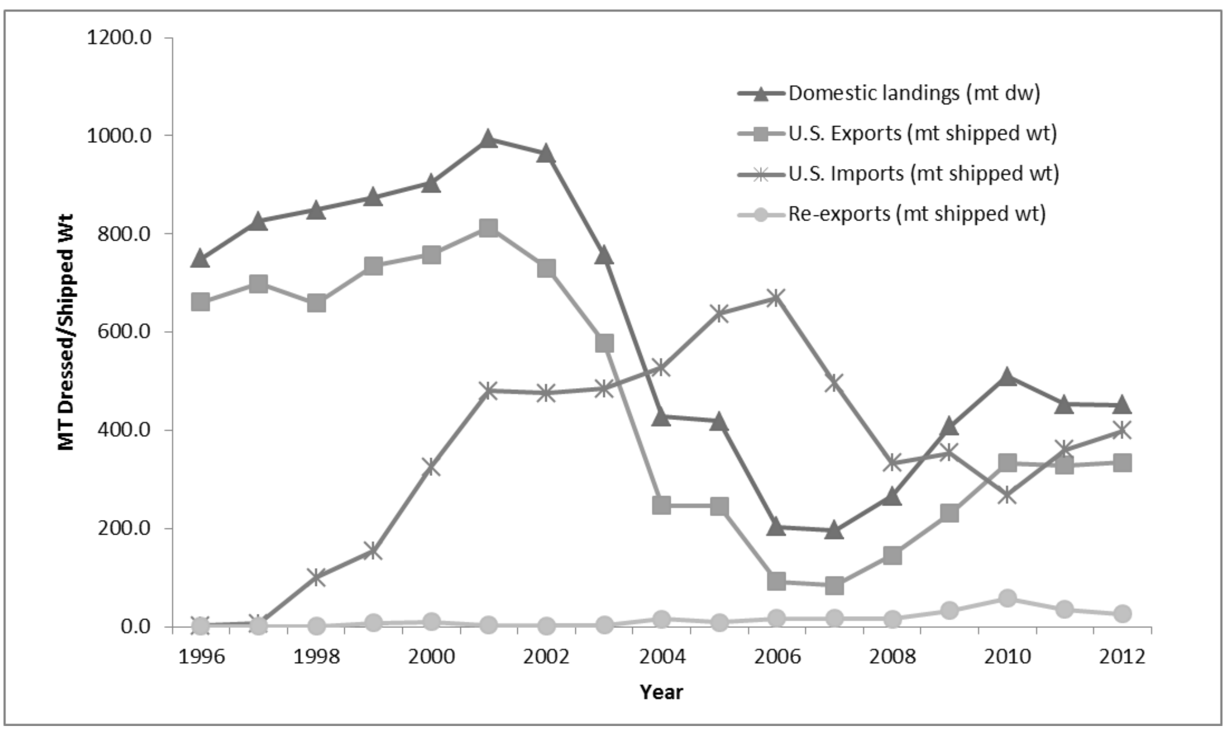

Figure 3.64 U.S. domestic landings (mt dw) and trade (mt shipped wt) of bluefin tuna (1996 – 2012)

Source: NMFS 2014.

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4 BIOLOGICAL AND ECOLOGICAL CONSEQUENCES

The purpose of this chapter is to analyze the biological and ecological effects of the alternatives described in Chapter 2. The chapter focuses on the impacts of the alternatives on bluefin tuna, other HMS, protected species, and essential fish habitat.

4.1 Impacts on Bluefin and Other HMS

Methods

Management measures have either quantitative or qualitative analyses associated with them (or both). The biological impacts of the measures are analyzed individually and/or combined into groups of measures. Individual alternatives are analyzed as a group if the biological impacts of the individual alternatives are very similar (i.e., reporting requirements). The organizational structure of the analysis mirrors the structure of Chapter 2, but in addition, the principal management tools applicable to each quota category were combined together for analysis because the quota categories are subject to the same regulations. Several analyses were conducted in order to analyze different combinations of alternatives that would encompass the full range of impacts. For example, for the Longline category, the area-based measures (Section 2.2) were analyzed separately. The quota related measures (Sections 2.1 and 2.3) were analyzed separately and then combined. All of the possible combinations of all measures were not analyzed for several reasons. Not all measures have the same scale or type of impacts, and analyzing such measures together is not particularly useful to the evaluation of measures. For example, the biological impacts of each of the area-based measures (Longline category) are not combined with the analysis of alternatives applicable to the General category. The area-based measures affect the Longline category, which targets primarily swordfish, yellowfin, and bigeye tunas, and therefore affect a different group of fishermen and has different biological impacts than changes to the General category, which targets bluefin. Secondly, analyzing all possible combinations of measures would be too long, complicated, and include combinations that are not likely to achieve the action's stated objectives and ultimately would not inform the decision-making process but would confuse the analyses and the regulated community and thus would not reasonably be included within the range of alternatives analyzed.

What are the Biological Impacts of the individual alternatives and groups of similar alternatives?

Table 4.2 , Table 4.19, Table 4.34, Table 4.36 and Table 4.39 in Sections 4.1.2, 4.1.3, and 4.1.5summarize the impacts of individual and similar alternatives.

What are the Biological Impacts by Quota Category?

Section 4.1.6 summarizes the impacts by Quota Category for the Longline, Purse Seine, General, Harpoon, and Angling Categories, respectively.

Are All Possible Combinations of Alternatives Shown?

Section 4.1.1 discusses the impacts of all the alternatives, but not all combinations of alternatives are analyzed for the reasons mentioned above. Information with which to evaluate each combination of alternatives is contained in the tables.

What are the Biological Impacts of All the Preferred Alternatives?

Table 4.79 lists the preferred alternatives and the biological impacts.

4.1.1 Allocation Alternatives

The biological impacts of each of the allocation alternatives are discussed below. The biological impacts of the quota allocation alternatives are short-term and indirect. The quota allocation alternatives would not modify the annual quota, nor the fishing mortality associated with that quota. Each alternative would implement the total allowable catch of bluefin tuna set by ICCAT consistent with the existing rebuilding plan, which, given two conflicting possible stock recruitment scenarios (high and low), considers scientific uncertainties related to the status of the stock. No strong evidence exists to favor either the low or high recruitment scenario over the other. Nevertheless, the ICCAT scientific body (SCRS) has indicated that under either recruitment scenario, a total allowable catch of western Atlantic bluefin of 1,800 metric tons “should allow the biomass to continue to increase.” Thus, all of the alternatives manage the domestic fisheries within the United States' overall quota, which is expected to allow for continued stock growth under both the low and high stock recruitment scenarios. The TAC and resulting quotas comprise a step in a longer-term stock rebuilding program designed to stabilize fishing pressure and allow the stock to rebuild to higher levels (NMFS 2011). The allocation alternatives contribute to determining when and where fishing mortality occurs, but would not alter the overall allowable mortality allowed under the quota. Due to the differences in the bluefin size restrictions among quota categories, the reallocation alternatives may result in some differences in the number of each size class of bluefin caught by some categories. The size composition of the stock may be important to the reproduction of the species, maintenance of stock size, and the likelihood of stock growth. However, due to the small amount of the potential quota shifts in this Amendment relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), potential changes in allocations under the preferred alternatives are not expected to affect the overall size composition of the stock.

The impact of the identified reallocation alternatives on other HMS would be neutral because substantial changes in fishing effort are not expected in the long-term. The bluefin reallocation alternatives would not impact the amount of Longline category fishing effort for target species, unless combined with a bluefin quota control alternative as discussed in Section 4.1.6.

Alternative A 1 - No Action

The No Action alternative would make no changes to the current percentages of the quota that each quota category is allocated (General: 47.1%; Harpoon: 3.9%; Purse Seine: 18.6%; Longline: 8.1%; Trap: 0.1%; Angling: 19.7%; Reserve: 2.5%). The biological impacts on bluefin tuna would depend upon whether the current allocation system can account for all catch (landings and dead discards), and whether catch remains within the total U.S. quota. The biological impacts on other HMS stocks would vary, depending upon which specific quota category is being analyzed and the amount of fishing effort. For the directed fishing categories, maintaining the current quota category allocations at the current level would not affect fishing effort for other HMS, which may be caught in conjunction with bluefin tuna. For the Longline category, maintaining the current quota category allocations of bluefin would not affect fishing effort for other HMS, unless a bluefin quota control alternative were also implemented (which could constrain fishing effort for other HMS).

As noted in Chapter 1, annual implementation of the domestic quota system has become more difficult due to increases in bluefin dead discards, a larger percentage of the adjusted quota being landed, and changed ICCAT requirements regarding accounting for dead discards and allowable carry-forward of unharvested quota. The No Action alternative may result in neutral, or minor, adverse, short-term ecological impacts on bluefin. The No Action alternative would have a minor adverse impact on bluefin if the quota is exceeded or all bluefin dead discards are not accounted for. There are numerous hypothetical scenarios in which the Longline category quota or the overall U.S. quota could be exceeded under the No Action alternative, and it is difficult to precisely project the impacts; however, consistent overharvest of the U.S quota, which is set based on biological targets, would have negative long-term impacts on stock growth and rebuilding. If the Purse Seine and other non-Longline categories fully harvest their quotas and there are continuing dead discards by the Longline category which results in exceeding the U.S. total quota, the impacts of the No Action alternative could be moderate and adverse, but short term. If the total U.S. quota were exceeded the overharvest would be accounted for during the following year, consistent with ICCAT requirements and domestic regulations. The No Action alternative would have a neutral effect on other HMS stocks if the overall bluefin quota is not exceeded, and dead discards are accounted for, because Longline category effort should continue at recent levels. It is likely to be increasingly difficult to operate within the allowable overall quota, and therefore, maintaining the current allocation in the No Action alternative would have adverse impacts. Because the No Action Alternative includes an allocation for the Longline category that is much less than the historical catch of that category, it would result in continued high levels of discarding, and increase the likelihood that the U.S. quota would be exceeded.

Alternative A 2 – Codified Reallocation

Codified reallocation Alternatives A 2a (Reallocation to Longline Category Reflecting the Historical 68 mt Dead Discard Allowance), A 2b (Reallocation Incorporating Recent Catch), and A 2c (Reallocation from Purse Seine category to Longline category) would reallocate quota and result in increased bluefin quota for the Longline category, and would therefore alleviate some of the current challenges associated with the domestic quota system. Under Alternative A 2a, the quota percentages for all quota categories with the exception of the Longline category would be reduced and, under Alternative A 2b, the quota percentages for all categories except the Angling and Longline categories would be reduced. Under Alternative A 2c, only the quota percentage for the Purse Seine category would be reduced. Table 4.1 compares the percentage change in quota allocation for the three codified reallocation alternatives (with the No Action Alternative).

Table 4.1 Percent Change in Quota Allocation Compared to the No Action Alternative, under a Total Quota of 927.3 mt

Category	Alternative A 2a (68 mt) (*Preferred*)	Alternative A 2b (Based on Current Allocation and Recent Catch)	Alternative A 2c (From Purse Seine to Longline)
General	-7.4 %	-10.8 %	N/A
Harpoon	-7.5 %	-15.4 %	N/A
Purse Seine	-7.4 %	-48.9 %	-39.8 %
Longline	+83.6 %	+84.0 %	+91.4 %
Trap	-7.6 %	-50.0 %	N/A
Angling	-7.4 %	+47.2 %	N/A
Reserve	-7.4 %	-48.0 %	N/A

Impacts on Bluefin Tuna

The biological impacts of this codified reallocation on bluefin would be neutral or minor beneficial because the total amount of bluefin caught would be unaffected, and the amount of quota allocated to the Longline category would be less than recent levels of bluefin catch by the Longline category. It is important to note that the total amount of bluefin tuna caught (and the overall fishing mortality) is determined primarily by the amount of total quota. In conjunction with the ICCAT minimum size, the amount of the quota recommended by ICCAT is the management tool utilized to limit overall fishing mortality. The biological impacts would be indirect because the reallocation would not affect the total amount of bluefin quota available for harvest compared to the No Action Alternative. The amount of the quota is based upon ICCAT recommendations (as described in Chapter 3).

Increased quota to the Longline category alone, without other effort controls and management measures, may not affectthe number of bluefin caught by pelagic longline vessels because as currently implemented, the bluefin quota does not constrain the directed fishing effort of the Longline category and associated incidental catch as long as the United States' overall quota is not exceeded. However, increasing the quota could result in lower discarding, because the total amount of allowable bluefin landings would increase.

The quota shifts are principally from directed categories to the incidental (Longline) category. The amount of bluefin quota landed by the Longline category, and the amount of dead discards would depend also upon which other Amendment 7 alternatives would be implemented (such as Alternative C 2, the IBQ, or Alternative C 4, NMFS Closure of the Pelagic Longline Fishery, etc.). This alternative, if implemented without other alternatives would only affect the amount of bluefin landings by the Longline category, whereas if a quota control alternative were also implemented, catch would be limited. If for example, this alternative were combined with a quota control alternative, although the amount of *quota* for the Longline category would increase compored to the No Action, the *catch* would be restricted at a level than is less than recent levels of catch. Because past levels of catch of bluefin by the Longline category have been three to four times the Longline category quota, increasing the Longline category quota within a limited range would not increase bluefin catch by the Longline category. The Codified Reallocation alternative would reduce bluefin dead discards by the Longline category by more closely aligning the quota allocation with recent levels of catch.

The commercial directed categories have the same minimum size as the Longline category, and the allocation shifts in these alternatives would have a neutral impact on bluefin tuna. A shift from the Angling category, (which catches smaller fish than the commercial categories) to the Longline category would slightly increase the number of large medium bluefin caught and decrease the number of school, large school, and small medium bluefin caught. However, due to the small amount of the potential quota shift (from one category to another) relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), potential changes in the catch of different sized bluefin tuna under this alternative would not affect the overall size composition of the stock. An increase to the allocation of the Longline category in concert with the other effort control measures in this FEIS is expected to result in a decrease in incidental bluefin tuna catch in the pelagic longline fishery compared to historical levels. The level of incidental catch by the Longline category resulting from these alternatives ultimately would depend upon the net effects of all the alternatives implemented and relevant regulatory and other non-regulatory factors. Historical average total catch (landings and dead discards) of bluefin by the Longline category (2006 to 2012) has been 239 mt, which has exceeded the average Longline category base allocation of 88 mt in those years (not including the NED). Therefore, if the future bluefin catch is greater than 239 mt, it would represent an increase in incidental bluefin catch by the category, and if future catch is less than 239 mt, it would represent a decrease in incidental bluefin catch by the category (compared with the historical average). As explained further in the Section titled “Combining and Comparing Alternatives”, under this alternative (and an overall quota of 927.3), the quota for the Pelagic Longline category would be 137 mt, substantially less than the historical average total catch. Section 4.1.6 contains quantitative information on the range of quotas that would be associated with the combinations of the alternatives applicable to the Longline category. If combined with quota control alternatives, this Alternative would result in reduced likelihood that quotas would be exceeded and would reduce dead discards.

Impacts on Fishing Effort

Reductions in allocations for non-Longline, or directed, categories may reduce fishing effort for bluefin by vessels fishing in such categories, because they direct on bluefin tuna, and may not land bluefin once the quota is attained. However, there are other important factors that determine fishing effort in addition to quota, such as fish availability, weather, and fuel prices, etc., such that a reduction in allocation would be only one of many factors affecting effort level.

The impacts of an increase in quota allocation to the Longline category on fishing effort would depend on the other measures implemented in conjunction with the quota, as well as other important influences on fishing effort such as other regulations (e.g., gear requirements and closed areas), fuel costs, market conditions, fish availability, oceanographic conditions (e.g., the Gulf Stream location), weather, and safety considerations. The limited increase in quota to the Longline category may not affect the effort expended by pelagic longline vessels because as currently implemented, the bluefin quota does not constrain the directed fishing effort of the Longline category and associated incidental catch as long as the United States’ overall quota is not exceeded. This limited increase reflects historic catch levels, therefore historic levels of fishing effort may be anticipated to continue. The level of fishing effort in the pelagic longline fishery is not likely to increase if the increase in quota is implemented in conjunction with other measures limiting overall catch. The level of bluefin catch would be less than the historic range of bluefin catch, and quota would be used to account for dead discards. If codified relocation is implemented with a bluefin tuna quota control alternative, fishing effort would be constrained for some vessels.

Impacts on Other HMS

If reductions to bluefin allocations for non-Longline, or directed, categories that target bluefin affect the amount of fishing effort of vessels in those categories, the amount of catch of other HMS could be affected, but such effects would be minimal, as the amount of other species targeted by such vessels is relatively minor (such as yellowfin tuna by General category vessels). As described above, codified reallocation to the Longline category is not likely to result in a meaningful change to the amount of fishing effort by that category, and therefore would have little impact on the catch of other HMS. The combined impacts of both a codified reallocation with other measures such as annual reallocation and catch caps are described in Section 4.1.6.

Alternative A 3 - Annual Reallocation

Annual reallocation Alternatives A 3a (Annual reallocation from the Purse Seine category) and A 3b (Annual Purse Seine allocation based on permitted vessels) would reallocate anticipated unharvested quota from the Purse Seine category to other quota categories, and allocate to the Purse Seine category in proportion to the number of permitted vessels (respectively). This alternative has been modified slightly from that analyzed in the DEIS (and described in the proposed rule) in order to base the participants' allocations on individual performance rather than on category-wide performance. The biological impacts would not be any different as a result of this modification becauseit would have only a minor influence on the amount of quota reallocated from the Purse Seine to the Longline category.

Impacts on Bluefin Tuna

The biological impacts of annual reallocation on bluefin would be neutral or minor beneficial because the total amount of bluefin caught is determined primarily by the amount of total quota. Any biological impacts would be indirect because the reallocation would not affect the total amount of bluefin quota available for harvest, and would be short term, because quota allocations are annual. The amount of the quota is based upon ICCAT recommendations (as described in Chapter 3). These alternatives would provide flexibility within the domestic quota system and therefore would facilitate improved catch accounting, especially if all quota categories catch their full allocations. Therefore, with respect to quota accounting, the impacts of the annual reallocation options on bluefin would be neutral or minor beneficial. As noted above, an increase to the allocation of the Longline category would not necessarily result in an increase in bluefin catch over historical levels. Reallocation from the Purse Seine to the Longline or other commercial categories could result in minor decreases in the amount of large medium fish discarded, because Purse Seine vessels may retain only 15 percent (by weight) of the total amount of giant bluefin landed in a year. Reallocation from the Purse Seine category to the Angling category would increase the number of bluefin caught less than 73 inches, but due to the small amount of the potential quota shift relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), potential changes in the catch of different sized bluefin would not affect the overall size composition of the stock.

Impacts on Fishing Effort

Potential impacts to fishing effort would depend upon how the annual reallocation was distributed amount the quota categories. An increase in quota allocation to one of the directed bluefin categories may result in increased fishing effort for bluefin tuna. As described above, an increase in quota to the Longline category may not affect the amount of bluefin incidentally caught by the pelagic longline fishery, because as currently implemented, the bluefin quota does not constrain the directed fishing effort of the Longline category and associated incidental bluefin catch as long as the United States' overall quota is not exceeded. Increasing the Longline category quota would not impact directed fishing effort, unless combined with a quota control alternative that could cause the bluefin quota to become constraining for some vessels. In the absence of a quota control alternative, the amount of directed fishing effort in the pelagic longline fishery is not likely to change due to a change in the amount of bluefin allocation because other factors are likely to be more important. For example, other regulations such as gear requirements and closed areas, as well as many other potential constraints such as fuel costs, market conditions, target fish availability (e.g., swordfish, yellowfin, or bigeye tuna), oceanographic conditions (e.g., the Gulf Stream location), weather, and safety considerations would be more important in determining fishing effort. Annual reallocation to the Longline category is not likely to result in a meaningful change to the amount of fishing effort by that category. The combined impacts of both an annual reallocation with other measures such as codified reallocation and catch caps are described in Section 4.1.6.

Impacts on other HMS

There would be little or no impact on the catch of other HMS by those categories directing on bluefin tuna because the allocation of bluefin has little or no impact on the catch of these other species. The Longline category, however, is the only category that directs on non-bluefin species of HMS and as such, if bluefin management measures such as the annual reallocation alternatives impact the amount of Longline category fishing effort, they could impact the amount of other HMS caught. As described above, annual reallocation to the Longline category is not likely to result in a meaningful change to the amount of fishing effort by that category, and therefore would have little impact on the catch of other HMS.

Alternative A 4 - Modifications to Reserve Category

The preferred alternative, Alternative A 4b (Modify Reserve Category), would give NMFS management flexibility to augment the amount of quota in the Reserve category beyond the current allocation (2.5%) and add to the determination criteria NMFS considers in moving/redistributing quota to or from the Reserve category.

The current determination criteria are limited to specific considerations of data, the fishery, and impacts. The additional criteria would include allocations to any quota category for inseason or annual adjustments and make the objectives and reasons for such adjustments explicit: to optimize fishing opportunity, account for dead discards, or facilitate quota accounting; support fishery monitoring programs through quota allocations and/or generation of revenue; or research.

Impacts on Bluefin Tuna

These modifications are intended to provide flexibility to enhance and facilitate the management of the fishery. It would therefore have a neutral or minor beneficial impact on bluefin. These impacts would be indirect and short term. The total amount of bluefin quota allocation would remain unaffected by this measure (as it results from ICCAT recommendations), and there may be minor shifts in the relative amounts of bluefin caught by the different quota categories, as well as minor shifts in location of catch because fishing practices vary among the quota categories.

Impacts on Fishing Effort

The reserve category would be used as a means to hold quota in reserve for potential future use within a given fishing year, and the placement of quota in the Reserve category would not have any impacts on fishing effort. The potential impacts on fishing effort would depend upon the subsequent disposition of the quota from the Reserve category. The impacts on fishing effort of providing additional quota to the various quota categories are described above under description of impacts of the codified and annual reallocation alternatives.

Impacts on other HMS

There would be little or no impact on the catch of other HMS because substantial changes in fishing effort are not expected and the amount of bluefin quota has limited impact on the catch of other HMS. The Longline category is the only category that directs on non-bluefin species of HMS. As such, if measures such as the annual reallocation alternatives impact the amount of Longline category fishing effort, they could impact the amount of other HMS caught.

Summary of Impacts of Allocation Alternatives

Symbol Key for Table 4.2			
o	Neutral Impacts	◑ –	Minor Adverse Impacts
◑ +	Minor Beneficial Impacts	ø –	Moderate Adverse Impacts
ø +	Moderate Beneficial Impacts	●–	Significant Adverse Impacts
●+	Significant Beneficial Impacts		

Table 4.2 Summary of Biological Impacts of the Allocation Alternatives.

Alternative	Quality	Timeframe	Impacts
No Action	Indirect	Short-term	o / ◑ –
Codified Reallocation			
Reallocation to Longline category [based on 68 mt]	Indirect	Short-term	o / ◑ +
Reallocation Incorporating Recent Catch Data	Indirect	Short-term	o / ◑ +
Reallocation from Purse Seine to Longline category	Indirect	Short-term	o / ◑ +
Annual Reallocation			
Annual Reallocation of Bluefin Quota from Purse Seine Category	Indirect	Short-term	o / ◑ +
Annual Purse Seine Allocation Commensurate with Number of Purse Seine vessels	Indirect	Short-term	o / ◑ +
Modifications to Reserve Category			
No Action	Indirect	Short-term	o / ◑
Modify Reserve Category	Indirect	Short-term	o / ◑ +

Shaded alternatives are preferred alternatives.

4.1.2 Area Based Alternatives

Gear Restricted Areas

NMFS considered a range of alternatives to reduce pelagic longline interactions with bluefin tuna when directing on other species, from maintaining existing pelagic longline closures (the no action alternative) to a year-round gear restricted area of the entire Gulf of Mexico EEZ (west of 82º W. longitude). Based on public comment, NMFS considered and evaluated some updated information about the efficacy of the closed areas as proposed and also about unintended effects of the Cape Hatteras proposed closure on non-BFT fishing outside the closed area. As a result, for both GRAs, NMFS prefers alternatives that slightly modify the geographic designations. Both modifications are being presented/numbered as new alternatives in the FEIS, not because they are substantially different in scope or effect from the DEIS preferred alternatives, but for ease of comparison with the originally-preferred alternatives from the DEIS (i.e., the original geographic designation is clearly spelled out in the old alternative; the modification is the new alternative). These are not substantial changes to the proposed action that are relevant to environmental concerns; in fact, the modified alternatives better meet the original design goals and intended effects of the GRAs. The new information considered does not constitute "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."

NMFS received numerous public comments on the gear restricted areas. Comments for the Cape Hatteras Gear Restricted Area designation were generally supportive. Public comment did, however, reflect the need to slightly modify the geographic boundaries of a small portion of that area. Thus, NMFS prefers what is designated as a "new" alternative for the pelagic longline gear restricted area off the coast of North Carolina, although it is only a small geographic modification of the preferred alternative in the DEIS. This modification is designed to allow the commercial fleet access to key fishing grounds southwest of the gear restricted area, which would have effectively (and inadvertently) have been closed by the DEIS designation (Alternative B 1d Modified Cape Hatteras Gear Restricted Area with Access Based on Performance). Comments on the Gulf of Mexico Gear Restricted Area indicated that the DEIS-preferred alternative needed to be larger and adjusted in time and space to accomplish the stated objectives. Thus, NMFS prefers an expanded gear restricted area in the central Gulf of Mexico in addition to an area south of the DeSoto Canyon northern block (Alternative B 1i Spring Modified Gulf of Mexico Gear Restricted Areas). After considering public comment, NMFS has retained the same time periods for final preferred alternatives as those for the corresponding preferred alternatives in the DEIS.

In comparison to the DEIS, NMFS has adjusted the analyses for the FEIS to include an additional year of data (2012) to reflect the best available data. Tables that outline the impact to fishing effort (hooks) and ecological impacts to designated species and protected/restricted species for each gear restricted area considered (Table 4.4 - Table 4.9, Table 4.12 - Table 4.18, and Table 4.87 - Table 4.92) were adjusted accordingly. NMFS also considered potential redistribution of fishing effort that could result from the Gear Restricted Areas but did not receive comments from the public regarding the methods used in the redistribution analyses, and did not change the analytical methods in the FEIS. Impacts to species are calculated by averaging the data from 2006-2012 (referred herein as the "average annual number of interactions") in an effort to reduce interannual variability. References to average annual number of interactions therefore are the total number of interactions that occurred within a given area divided by 7 (2006 to 2012 represents 7 years of data). All of the tables have a consistent layout throughout the description of each gear restricted area, with the exception of the Gulf of Mexico EEZ alternatives (Alternative B 1f and Alternative B 1h) since, based on current analytical methods and data on individual vessel fishing patterns, NMFS assumed no redistribution of effort would occur under these alternatives. The following paragraphs are a description of how best to read and interpret the redistribution tables below.

The following description applies to Table 4.4 (Alternative B 1b, Cape Hatteras Gear Restricted Area Without Performance-Based Access), Table 4.5 (Alternative B 1c, Cape Hatteras Gear Restricted Area with Performance-Based Access), Table 4.6 - Table 4.7 (Alternative B1d, Modified Cape Hatteras Gear Restricted Area), Table 4.13 - Table 4.14 (Alternative B 1e, Small

Gulf of Mexico Gear Restricted Area), and Table 4.17 - Table 4.18 (Alternative B 1i, Spring Modified Gulf of Mexico Gear Restricted Areas).

- The first 12 rows of data (A-L) show the average annual number of hooks and species that occur during each month in the gear restricted area (see "Methods – Data Sources (Gear Restricted Areas)" for a description of the data). Months that are bolded and italicized indicate when the preferred gear restricted area alternative(s) would be effective for pelagic longline gear.
- Row M is the anticipated reduction in the amount of hooks and species without redistribution of effort, which can be calculated by summing the numbers for all months that are bolded.
- The number of hooks and change in species interactions anticipated to occur through redistribution is located in row N. A detailed description about the methods NMFS used to redistribute effort can be found later in section 4.1.2.
- The net change in effort and species interactions with redistribution is found in row O and is calculated by summing rows M and N.
- Row P is the average number of hooks deployed, or the average number of species interactions that occurred, in the gear restricted area for the entire year. Row P is calculated by summing the first 12 rows of data.
- Row Q is the percent change in hooks or interactions in each gear restricted area and is calculated by dividing the number of hooks or interactions occurring with redistribution (row O) by the average annual number of hooks or interactions in each area (row P) and multiplying by 100.
- Average fishery-wide pelagic longline effort and interactions are found in row R.
- The percent change fishery-wide for each gear restricted area is found in row S. Similar to calculation for percent change in area, the fishery-wide percent change was calculated by dividing the number of hooks or interactions occurring with redistribution (row O) by the average annual number of hooks or species interactions fishery-wide (row R) by and multiplying by 100.

Based on current analytical methods and data on individual vessel fishing patterns (pelagic longline logbook data in section 4.1.2), NMFS assumed no redistribution of effort would occur in the Gulf of Mexico EEZ gear restricted area alternatives (full EEZ closures). Therefore, the tables (Table 4.12, Alternative B 1e, Gulf of Mexico EEZ Gear Restricted Area (March – May); and Table 4.15 - Table 4.16, Alternative B 1g, Gulf of Mexico EEZ Gear Restricted Area (Year-Round)) for both Gulf of Mexico EEZ alternatives did not include rows for the anticipated numbers of hooks or species redistributed, or the net change in effort and species interactions with redistribution.

- The first 12 rows of data (A-L) show the average annual number of hooks and species that occur during each month in the gear restricted area (see "Methods – Data Sources (Gear Restricted Areas)" for a description of the data). Months that are bolded indicate when the preferred gear restricted area alternative(s) would be effective for pelagic longline gear.

- Row M is the anticipated reduction in the amount of hooks and species without redistribution of effort, which can be calculated by summing the numbers for all months that are bolded.
- Row N is the average annual reduction in the number of hooks deployed that is expected to occur as a result of the proposed gear restricted area (and is the same across the entire row). Row O contains the average annual number of hooks and species interactions in the proposed gear restricted area for the entire year, and is calculated by summing Rows A-L.
- Row P is the average annual percent change in species interactions or hooks deployed as a result of the proposed closure. Row P is calculated by dividing Row M by Row O, and multiplying by 100.
- Row Q contains the average annual hooks and species interactions across the entire fishery.
- The average annual percent change in species interactions as a result of the proposed alternative across the entire fishery is presented in Row R.

Methods - Data Sources (Gear Restricted Areas)

Fishery dependent data were used to determine the current levels of bluefin interactions in the pelagic longline fishery. The pelagic longline fishery, targeting swordfish and BAYS tunas, reports harvest and discard data on a set-specific basis in HMS logbooks. Bluefin interactions reported by pelagic longline fishermen targeting other tuna and swordfish include latitude and longitude coordinates, permitting delineation of bluefin interactions on individual sets. In the FEIS, NMFS used the number of bluefin interactions reported in the HMS logbook from 2006-2012; this time series was chosen because the last significant bluefin fishery management action was the 2006 Consolidated HMS FMP. In the DEIS, NMFS used the number of bluefin interactions reported in the HMS logbook from 2006-2011 but noted that updated data would be used as available at the FEIS stage. Thus, in the FEIS, NMFS included the additional year of available logbook data (2012) in the impact analyses for the Gear Restricted Area alternatives. As a result, there are some differences between the results of the analyses in the DEIS and the FEIS where impacts are quantified through redistribution models associated with the retaining or discarding of bluefin tuna or designated target species. Use of the updated data does not result in substantial changes to the proposed action or result in substantive environmental or socioeconomic impacts beyond the scope of the full range of alternatives originally analyzed for the gear restricted area alternatives in the DEIS (which ranged up to full closure of the GOM). In fact, the modified alternatives better meet the original design goals and intended effects of the GRAs and are based on the best available data.

Extending the time series further back in time to include additional years might encompass fishing effort that occurred under different regulations, making them less representative of the existing regulatory environment. HMS logbook data were used to calculate bluefin interactions because they provide specific latitude/longitude coordinates for sets that interacted with bluefin, and this approach alleviates the need to extrapolate interactions for the entire fishery based on observed trips, and the data encompass all of the fishery dependent interactions with HMS-permitted participants in the pelagic longline fishery. However, NMFS recognizes that these are self-reported data, and therefore, could under-represent the number of bluefin interactions.

However, because observer data do not cover the entire fleet and extrapolations would not provide the spatial detail needed to define the smallest areas for potential gear restrictions, NMFS decided that the fishery dependent logbook data provides the most comprehensive approach for determining spatially-explicit interactions of bluefin within the pelagic longline fishery.

Landings of designated target species were tallied from HMS logbook data. NMFS received comments from pelagic longline fishermen that requested the Agency include landings of these designated target species (primarily dolphinfish) reported in the Coastal Fisheries Logbook in calculations used to assess IBQ and bluefin ratios used for performance access. NMFS has decided to not include landings of these species reported in the Coastal Fisheries Logbook in the assessment of performance metrics for several reasons:

(1) The Coastal Fisheries Logbook would not contain landings of the primary target species of the HMS pelagic longline fishery (swordfish and BAYS tunas), and would not provide for the reporting of bluefin tuna interactions. Therefore, the actual ratio of landings of designated target species to bluefin interactions cannot be accurately calculated for sets reported in the Coastal Fisheries Logbook. (2) Fishermen in the southeast Atlantic that report in the Coastal Fisheries Logbook could have an advantage over fishermen in the Gulf of Mexico or New England that do not have the same type of reporting requirements and the same mechanism to report retention of dolphinfish. (3) The HMS logbook and the Coastal Fisheries Logbook require different types of data to be reported which creates a mismatch in how the data can be combined and collectively analyzed, which could result in inconsistencies between the two data sets. (4) Specific geographic data (i.e., latitude and longitude for each set) that would were reported in the HMS logbook and used to identify and evaluate the ecological and economic effects of gear restricted areas are unavailable through the Coastal Fisheries Logbook. Rather, fishermen report location where the majority of all catches of each species were made through reference to a 1º latitude × 1º longitude grid cell. If NMFS were to incorporate data at the finest scale available (1º latitude × 1º longitude), NMFS would have to disregard the overwhelming number of requests for management (and visualization/depiction of data) at a finer scale. (5) The Coastal Fisheries Logbook requires landings per trip to be reported by weight whereas the HMS Logbook requires all interactions per set to be reported by number. Fishermen reporting in the Coastal Fisheries Logbook may report gutted or whole weight. (6) A percentage (20%) of fishermen reporting through the Coastal Fisheries Logbook are selected to report discarded fish through a Supplemental Discard and Gear Trip Report form at the trip level whereas all fishermen reporting in the HMS Logbook must provide this information for every set, which also creates a mismatch in how data can be combined and collectively analyzed.

Each of the gear restricted area alternatives would have varying degrees of ecological impacts on different species, dependent on how and to what extent fishing effort is redistributed. The methods for conducting the redistribution analyses are explained in detail below. Summary tables show the changes in the numbers of landings and discards by species. The summary tables describe the impacts of each gear restricted area, with and without redistribution of fishing effort, using individual vessel fishing performance within each pelagic longline statistical area and fishery-wide impacts. In general, the text in this section highlights ecological impacts to designated species, restricted/protected species, and essential fish habitat on a fishery-wide basis because that is consistent with how species are managed. Within this chapter, NMFS focuses on bluefin, swordfish, yellowfin tuna, bigeye tuna, dolphin, wahoo, and shortfin mako sharks that either are the common targets of pelagic longline trips, or tend to comprise the majority of pelagic longline landings reported in the HMS logbooks. Summary tables detailing ecological effects on skipjack tuna, albacore tuna, porbeagle shark, and thresher shark populations are also presented. Summary tables for protected/restricted species (white marlin, blue marlin, sailfish, and sea turtles) are presented in section 4.2.

NMFS used a Geographic Information System (ArcGIS10) program to plot observed (Pelagic Observer Program) and reported (HMS logbook) interactions of all bluefin to spatially delineate potential gear restricted areas that would reduce overall bluefin interactions. NMFS analyzed catch per unit effort (CPUE: number of animals per 1,000 hooks) of bluefin but did not use the CPUE data results to determine the areas warranted for a gear restricted area, because the number of interactions can be compared more directly with the other relevant metrics in this FEIS. Rather, NMFS developed the areas using logbook data on the number and location of interactions. The spatial and temporal patterns of the logbook data were compared with observer data to confirm the patterns of bluefin interactions. Maps with HMS logbook and Pelagic Observer Program data are available in Section 3.3.5.

Analytical Methods - Redistribution of Effort (Gear Restricted Areas)

NMFS determined the anticipated effects of each gear restricted area on a fishery-wide level using individual vessel CPUEs and effort. Pelagic longline set data from 2006-2012 were plotted using ArcGIS10. Sets that fell within gear restricted areas were isolated to determine which vessels fished within the time periods of each area. The percentage of those selected vessels' sets inside and outside of the gear restricted areas were calculated. Vessels were sorted by the proportion of sets made inside the gear restricted area and plotted to assess patterns within the fleet; natural breaks from the resulting histogram (Figure 4.1) were identified and used as thresholds which identified how a vessel was classified in redistribution analyses. For vessels that had less than or equal 40 percent of their sets inside a gear restricted area, we predicted that 100 percent of their effort would be redistributed to outside the gear restricted area; for vessels that had between 40 and 75 percent of their sets inside a gear restricted area we predicted that 50 percent of their effort would be redistributed to outside the gear restricted area; and for vessels that made greater than 75 percent of their sets inside a gear restricted area, none of their effort would be redistributed and were captured in the no redistributions calculations. Summary data tables (Table 4.4 - Table 4.9 and Table 4.12 - Table 4.18) that describe anticipated ecological impacts (both with and without redistribution of effort, depending on the alternative) for each gear restricted area can be found under the description of ecological impacts for each alternative.

In addition to fleet-wide analyses, NMFS calculated the ecological impacts of redistribution of effort on an individual vessel level for each gear restricted area alternative. NMFS calculated vessel-specific regional CPUE rates for each species and disposition (landed, discarded dead, and discarded alive). First, NMFS totaled all the landings and discards for designated pelagic longline species and protected/prohibited species, by number of animals, in the logbook data by vessel and U.S. domestic pelagic longline statistical area. A sum of the total number of hooks fished by each vessel in each U.S. domestic pelagic longline statistical area was calculated. To determine the regional CPUE for each species for each vessel, in each gear restricted area, NMFS divided the total number of each species landed and discarded by the sum of hooks fished within each statistical reporting area.

NMFS calculated the percent frequency of sets made in open portions of U.S. domestic statistical reporting areas (outside of the gear restricted area) for each vessel during the period of restriction to identify probable redistribution areas for each vessel. The total number of hooks displaced due to the gear restricted area was calculated for each vessel. The respective redistribution percentages described above (100 percent or 50 percent or zero) were applied to the displaced hooks. The portion of displaced hooks was multiplied by percent frequency of sets made in each of the U.S. domestic pelagic longline statistical reporting area outside of the gear restricted area. This determined the proportion of displaced hooks to apply to each U.S. domestic pelagic longline statistical area for each vessel.

Once CPUEs and displaced hooks of each vessel were calculated for each of the U.S. domestic pelagic longline statistical areas, NMFS estimated the number of designated pelagic longline species and protected/restricted species interactions with redistribution of effort from gear restricted areas. In past FMPs and FMP Amendments, NMFS used a general method to estimate the impacts of redistribution of effort by the pelagic longline fleet. In the 2006 Consolidated HMS FMP, NMFS assumed that any new closures occurring in the U.S. EEZ would cause effort to be redistributed evenly across the open areas of the U.S. EEZ. Comments received on that action stated that even distribution across open areas did not accurately reflect historic fishing effort patterns.

In contrast, in Draft Amendment 5 to the 2006 Consolidated HMS FMP, effort from each proposed closure was redistributed evenly to the respective U.S. domestic pelagic longline statistical area in which each proposed closure occurred. During the comment period on Draft Amendment 5, NMFS received a range of comments that criticized this approach to the redistribution of effort estimated by NMFS as being too general and not fully describing regional or vessel-specific impacts. Stakeholders requested a vessel-specific estimation of biological and socio economic impacts in addition to fleet-level impacts.

In part in response to comments on Draft Amendment 5, as described above in this Chapter and in Appendix 11.8 (Redistribution of Effort Analysis), Amendment 7 modified the previous methodology of analyzing area-based measures. NMFS calculated the ecological impacts of redistribution of effort on an individual vessel level for each gear restricted area alternative. NMFS calculated vessel-specific, regional CPUE rates for each species and disposition (landed, discarded dead, and discarded alive). NMFS developed these methods to use each vessel's unique fishing history to estimate where that vessel would fish if new gear restricted areas were implemented. The method of redistribution analysis in Amendment 7 represents a more focused approach (than previous analyses) to estimating how vessels may redistribute their effort and potential impacts on a more localized scale by using vessel- specific fishing history in addition to fleet-wide impacts. As a result, Amendment 7 does not estimate that same level of impacts on bycatch species due to redistribution of effort that the 2006 Consolidated HMS FMP or Draft Amendment 5 predicted. Additional information on the redistribution analysis is available in Appendix 11.8.

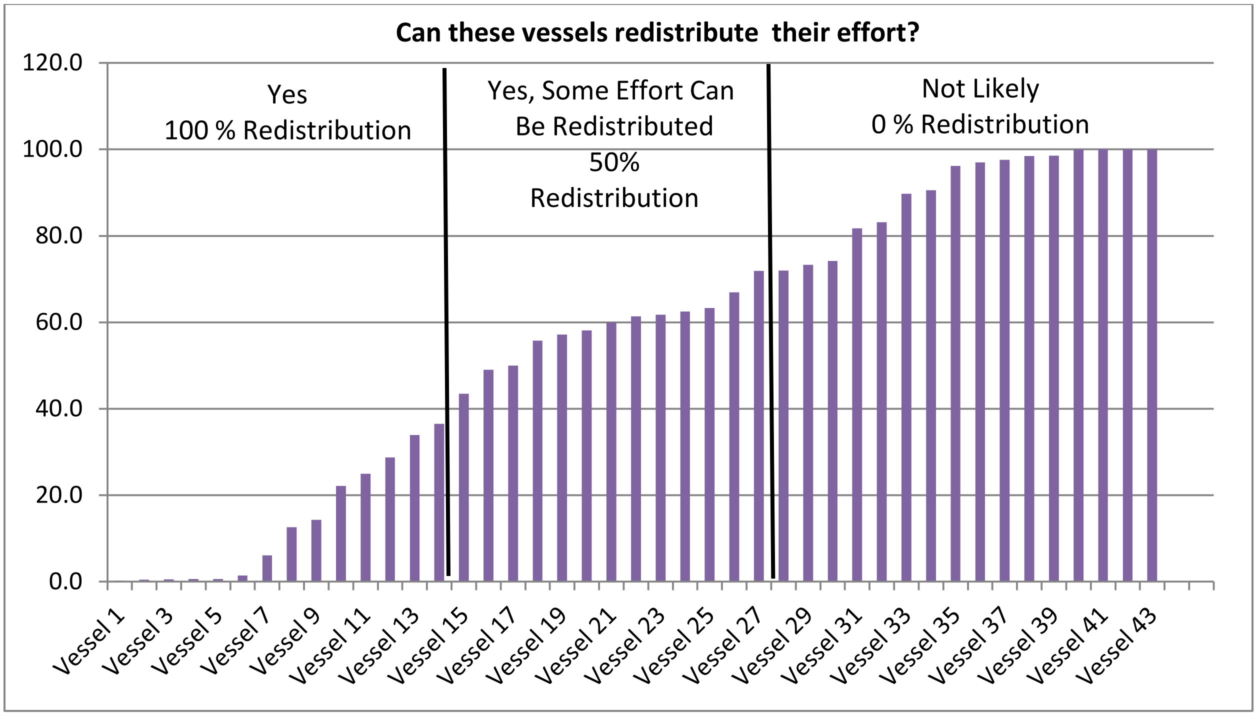

Figure 4.1 Assumptions regarding vessel ability to redistribute effort - natural categorical percentage breaks (<40 percent; 40 to 75 percent; >75 percent) were visualized from the data curve and used to identify the likelihood that a vessel could redistribute effort outside of the redistribution area.

Alternative B 1a – No Action

Effects on Bluefin

The No Action alternative would maintain the existing closed areas (see Figure 3.8), and result in long-term neutral or minor negative impacts on bluefin. In total, there have been 10,401 bluefin tuna interactions reported in the HMS logbooks between 2006 and 2012 (2,700 bluefin kept; 5,369 bluefin discarded alive; 2,332 bluefin discarded dead). Roughly, this translates to 386 bluefin kept per year and 1,100 bluefin tuna discarded per year (total). The data indicate that large numbers of interactions of pelagic longline gear with bluefin occur in discrete areas (which are outside the current closed areas) during predictable and consistent time periods.

Section 3.3.5 in Chapter 3 (“Bluefin Interaction and Discard Hotspots”, page 194) shows the total number of bluefin tuna interactions self-reported in the HMS logbooks that occurred in the selected hotspot areas between 2006 and 2012. In the Cape Hatteras Gear Restricted Area, there were 3,277 bluefin reported as either kept, discarded alive, or discarded dead. Observer data corroborate the high number of interactions in this area (see “Pelagic Observer Program” section under Chapter 3, Table 3.43, and Figure 3.52 - Figure 3.54). The NMFS Pelagic Observer Program observed 302 bluefin interactions off the coast of North Carolina in an area that roughly corresponds to the Modified Cape Hatteras Gear Restricted Area from 2006-2012. For the Gulf of Mexico, a total of 1,712 bluefin interactions were reported by pelagic longline vessels in the

HMS logbook for fishing locations within the Gulf of Mexico and the NMFS Pelagic Observer Program observed at least 1,274 bluefin within the Gulf of Mexico from 2006-2012. In the area within the Gulf of Mexico that corresponds to the Modified Spring Gulf of Mexico Gear Restricted Areas, 1,105 bluefin were reported in the HMS logbook and 866 bluefin were observer by the NMFS Pelagic Observer Program.

The No Action alternative would not reduce dead discards. The magnitude of the discards in the fishery are more likely to stay the same under the No Action alternative, without implementation of a new gear restricted area, because bluefin are caught consistently in certain areas and time periods and no changes in fishing effort are expected.

Impacts on Fishing Effort

There were 6,407,101 hooks fished annually, on average, across the pelagic longline fishery between 2006 and 2012 (Table 4.4, Row R under the “Hooks” column). A thorough discussion of total fishing effort (Figure 3.5, Figure 3.6), fishing effort across the U.S. EEZ and adjacent high seas (Figure 3.4 and Figure 3.7), fishing effort (number of hooks deployed) by species (Table 3.14) and area (Figure 3.6, Table 3.15) is available in Chapter 3. The no action alternative would not be expected to change fishing effort, and NMFS therefore expects current levels of fishing effort to continue under the no action alternative across the fishery.

Impacts on other HMS

There would be little or no impact on the catch of other HMS because substantial changes in the overall level of pelagic longline fishing effort are not expected. Under the No Action Alternative, NMFS expects that the average annual number of other pelagic longline designated target species kept and discarded would likely be comparable to the estimates for the 2006 – 2012 time period (Table 4.3). These estimates of average annual interactions incorporate fishery behavior as it occurs under current regulations.

Table 4.3 Average annual number of fishery interactions with selected target species in the pelagic longline fishery (2006 – 2012)

Species	Kept	Discarded
Bluefin	386	1,100
Swordfish	42,337	8,889
Yellowfin	45,723	1,260
Bigeye	12,396	378
Dolphin	43,278	471
Wahoo	2,527	70
Shortfin Mako	2,827	904
Albacore	7,016	298
Skipjack	105	982
Porbeagle	6	267
Thresher	50	117

Source: HMS Logbook Data

Alternative B 1b – Cape Hatteras Gear Restricted Area

This alternative would define a modified rectangular area in the Atlantic and would prohibit the use of pelagic longline gear during a five-month period from December through April. The specific time and area of the Cape Hatteras Gear Restricted Area represents a time and area combination likely to result in reduced interactions based on past patterns of interactions. NMFS analyzed and delineated the Cape Hatteras Gear Restricted Area using a 10' latitude x 10' longitude grid; this is a much finer scale that what has been used in previous rulemakings to delineate areas for gear restrictions or closures. The goal with using a finer scale analysis was to maximize the reductions in bluefin tuna interactions and minimize the area where pelagic longline gear is restricted.

In addition to the modified rectangle described above, NMFS also developed a buffer area when considering the impacts to pelagic longline vessels fishing in the Cape Hatteras Gear Restricted Area. During the Draft Amendment 5 to the 2006 Consolidated HMS FMP comment period, NMFS considered a time/area closure for pelagic longline gear in a similar area to the Cape Hatteras Gear Restricted Area. Comments received on the Draft Amendment 5 closure informed NMFS that the affected area was much larger than the closure boundaries, due to the Northwest current of the Gulf Stream. Pelagic longline gear would need to be set further to the southeast to prevent the gear from drifting into the gear restricted area from December through April, therefore making the Cape Hatteras Gear Restricted Area affected area much larger. During the consideration of biological and socioeconomic impacts of the Cape Hatteras Gear Restricted Area; NMFS delineated a "buffer area" to the south and southwest of the Cape Hatteras Gear Restricted Area (Figure 4.2).

Using a sample of 1,109 HMS logbook sets off the coast of North Carolina in the mid-Atlantic and South Atlantic Bights between 2006 and 2011, NMFS calculated an average set time of 17 hours per set. Based on comments received on Draft Amendment 5 to the 2006 Consolidated

HMS FMP, NMFS used a 6 knot (~7 mph) current speed as the maximum current speed found in the Cape Hatteras area. Based on average soak time and current speed, NMFS determined that an appropriate buffer area extends 119 miles due south from the southernmost seaward point (34°50’N, 74°20’W) of the Cape Hatteras gear restricted area, and due west encompassing all sets to the shore. Figure 4.2 shows the buffer area plotted on Arc GIS 10.

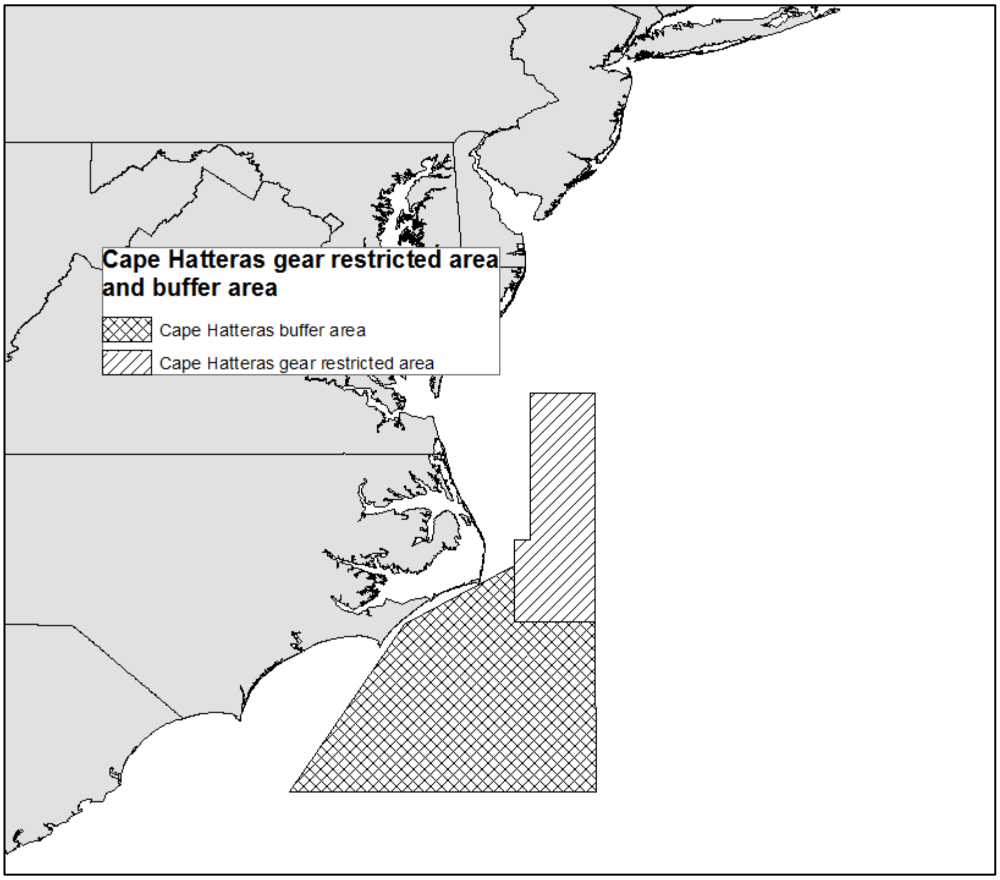

Figure 4.2 Map of Cape Hatteras gear restricted area and buffer area.

Impacts on Bluefin

The Cape Hatteras Gear Restricted Area is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet by season and by year. Pelagic longline logbook and observer data indicate that historically there have been relatively high bluefin catches and catch rates of bluefin by pelagic longline vessels in this region. An analysis of recent logbook data (2006 – 2012) indicated that discards in the Cape Hatteras Gear Restricted Area are elevated from December through April and are particularly high in February, March, and April; between 2006 and 2012, there were 3,277 bluefin interactions from 5,703 sets reported in the pelagic longline logbooks during these months The data is slightly different from the data presented in the DEIS due to inclusion of 2012 data in the FEIS (see Chapter 3, Table 3.23, for reported logbook interactions in the Cape Hatteras Gear Restricted Area).

Expected ecological effects on bluefin as a result of this alternative are presented in Table 4.4. The analysis of this alternative redistributed fishing effort outside of the Cape Hatteras Gear Restricted Area and a buffer region to the south of the gear restricted area. This alternative would result in a 42 percent (-23 fish/year, on average) reduction in bluefin kept and 79 percent (-463 fish/year, on average) reduction in bluefin discarded with redistribution of effort in this area (see Table 4.4, Row Q for percent reduction in the area and Row O for the net change in interactions with redistribution). Fishery-wide, this alternative is expected to result in an average annual reduction of bluefin kept by 6 percent and an average annual reduction of bluefin discarded by 33 percent. Large numbers of bluefin often congregate seasonally in this area due to the unique bathymetric and oceanographic conditions which result in an extremely productive environment. This alternative would restrict all HMS-permitted pelagic longline vessels from the use of pelagic longline gear within the boundaries of the Cape Hatteras Gear Restricted Area to maximize the likelihood of reduced interactions and dead discards. Given the notable localized reductions in bluefin kept and discarded, and the reduction fishery-wide of bluefin discards by one-third, NMFS anticipates long-term, direct, moderate beneficial ecological impacts on bluefin as a result of this alternative. These reductions in bluefin kept and discarded by pelagic longline vessels would equate to 46.2 mt on average per year.

Impacts on Fishing Effort

This alternative is expected to have, with redistribution, an annual average reduction in localized fishing effort by 25 percent (171,842 hooks/year, on average (Row O, Table 4.4). Fishery-wide, this alternative would result in an average annual reduction in fishing effort by 3 percent. This reduction in effort would likely result in long term, direct, minor to moderate beneficial ecological impacts on bluefin and other HMS stocks.

Impacts on other HMS

Expected ecological effects on designated target species as a result of this alternative are presented in Table 4.4 and Table 4.5. NMFS estimates the potential effects of this alternative fishery-wide for all designated target species to be minor with redistribution. Swordfish kept and discarded would decrease by 2 and 3 percent, respectively; bigeye tuna kept would be reduced by 2 percent; and, yellowfin tuna kept and discarded would be reduced by 3 and 4 percent, respectively (Table 4.4). Albacore tuna kept would decrease by 3 percent (Table 4.5). NMFS anticipates minimal to no changes to the number of wahoo kept or discarded, dolphin kept or discarded, and bigeye tuna discarded. Fishery-wide, this alternative would reduce the number of thresher sharks kept and discarded by 76 and 16 percent, respectively. This alternative would also reduce the number of shortfin mako sharks kept and discarded by 25 percent and 4 percent, respectively. This five-month gear restriction, with redistribution, would result in localized average annual area reduction of the number of swordfish kept by 36 percent (-1,470 fish/year, on average) and discarded by 29 percent (-212 fish/year, on average; note this increase in discards, which was estimated at 9 percent in the DEIS, is due to the inclusion of 2012 data, a year in which discards increased) and the number of yellowfin tuna kept by 15 percent (-1,499 fish/year, on average) and discarded by 31 percent (-52 fish/year, on average). NMFS also anticipates the following localized effects: bigeye tuna kept (-195 fish/year, on average) would decrease by 9 percent; bigeye discards would not change; wahoo kept would decrease by 2 percent (-16 fish/year, on average) and discards would not change (0 percent, 0 fish/year); albacore kept and discarded would increase by 93 percent (+242 fish/year) and 100 percent (1 fish/year); skipjack tuna kept and discarded, and porbeagle kept would not change (0 percent and 0 fish/year); porbeagle discarded would decrease by 100 percent (1 fish/year); thresher kept and discarded would decrease by 90 percent (-38 fish/year) and 76 percent (-19 fish/year); and shortfin mako kept (-706 fish/year, on average) and discarded (-39 fish/year, on average) would decrease respectively by 64 and 65 percent. Because there would be minimal impacts fishery-wide for these designated target species (likely due to the small size of the gear restricted area compared to the range of these stocks), NMFS determined that this alternative would have minor, beneficial ecological effects due to the localized impacts of the gear restricted area.

Table 4.4 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1b (Cape Hatteras Gear Restricted Area) on bluefin and designated target species

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discards
A	January	41,596	6	61	432	127	113	1	300	27	2	0	3	0
B	February	38,435	9	100	422	67	28	0	269	2	6	0	5	0
C	March	53,611	8	123	434	46	22	0	402	6	44	0	4	0
D	April	82,444	5	120	642	45	40	0	345	3	157	0	3	0
E	May	90,408	8	10	496	60	76	1	743	5	4,174	3	3	0
F	June	86,490	9	3	252	34	113	2	1322	28	3,061	5	10	0
G	July	64,198	2	1	107	26	211	2	1775	28	428	3	11	0
H	August	38,067	2	0	49	10	250	2	794	13	38	1	7	0
I	September	46,871	0	0	53	18	434	5	1322	12	26	0	8	0
J	October	55,587	0	0	150	59	409	3	1338	19	19	0	6	0
K	November	48,729	1	6	474	108	230	4	918	23	6	0	5	0
L	December	49,028	5	39	605	123	156	1	342	18	2	0	1	0
M	Dec-Apr Reduction of Catch/Hooks with no redistribution (-(A+B+C+D+L)	-265,114	-33	-443	-2,535	-408	-359	-2	-1,658	-56	-211	0	-16	0
N	Dec-Apr change in catch with redistribution	93,272	10	77	1,065	196	164	2	159	4	169	1	15	0

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discards
O	Net Change with redistribution (M +N)	-171,842	-23	-366	-1,470	-212	-195	0	-1,499	-52	-42	1	-1	0
P	Average Annual # Interactions in Proposed Gear Restricted Area (SUM of A to L)	695,464	55	463	4,116	723	2,082	21	9,870	184	7,963	12	66	0
Q	Percent change in Area with redistribution ((O/P)×100)	-25%	-42%	-79%	-36%	-29%	-9%	0%	-15%	-28%	-1%	8%	-2%	0%
R	Average # Interactions in entire fishery(Σ(All PLL Interactions 2006 - 2012)/7)	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discards
S	Percent change in fishery ((O/R)×100)	-3%	-6%	-33%	-3%	-2%	-2%	0%	-3%	-4%	0%	0%	0%	0%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Table 4.5 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1b (Cape Hatteras Gear Restricted Area) on pelagic longline designated target species

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discarded	Skipjack Kept	Skipjack Discarded	Porbeagle Kept	Porbeagle Discarded	Thresher Kept	Thresher Discarded	Shortfin Mako Kept	Shortfin Mako Discards
A	***January***	***14***	***0***	***0***	***0***	***0***	***1***	***5***	***7***	***157***	***21***
B	***February***	***31***	***0***	***0***	***0***	***0***	***0***	***12***	***10***	***166***	***5***
C	***March***	***65***	***0***	***0***	***0***	***0***	***0***	***6***	***1***	***79***	***5***
D	***April***	***31***	***0***	***0***	***0***	***0***	***0***	***14***	***1***	***242***	***7***
E	May	3	0	0	0	0	0	2	1	134	5
F	June	13	0	5	1	0	0	1	1	44	3
G	July	0	0	18	2	0	0	0	1	24	2
H	August	1	0	2	1	0	0	0	0	10	1
I	September	2	0	1	1	0	0	0	0	6	1
J	October	10	0	7	0	0	0	0	1	28	1
K	November	48	0	0	0	0	0	0	1	107	5
L	***December***	***43***	***0***	***0***	***0***	***0***	***0***	***2***	***1***	***108***	***4***

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discarded	Skipjack Kept	Skipjack Discarded	Porbeagle Kept	Porbeagle Discarded	Thresher Kept	Thresher Discarded	Shortfin Mako Kept	Shortfin Mako Discards
M	Dec-Apr Reduction of Catch/Hooks with no redistribution	-184	0	0	0	0	-1	-39	-20	-752	-42
N	Dec-Apr change in catch during closure with redistribution	426	1	0	0	0	0	1	1	46	3
O	Net Change with redistribution	242	1	0	0	0	-1	-38	-19	-706	-39
P	Average Annual # Interactions in Proposed Gear Restricted Area	261	0	33	5	0	1	42	25	1105	60
Q	Percent change in Area with redistribution ((O/P)×100)	93%	100%	0%	0%	0%	-100%	-90%	-76%	-64%	-65%
R	Average # Interactions in entire fishery (Σ(All Pll Interactions	7,016	298	105	982	6	267	50	117	2,827	904

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discarded	Skipjack Kept	Skipjack Discarded	Porbeagle Kept	Porbeagle Discarded	Thresher Kept	Thresher Discarded	Shortfin Mako Kept	Shortfin Mako Discards
	2006 - 2011)/6)										
S	Percent change in fishery ((O/R)×100)	3%	0%	0%	0%	0%	0%	-76%	-16%	-25%	-4%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1c -Cape Hatteras Gear Restricted Area with Access Based on Performance

This alternative would implement the Cape Hatteras Gear Restricted Area and buffer area as described in Alternative B 1b and define criteria for access by HMS-permitted vessels fishing with pelagic longline gear during the five-month period from December through April. This Alternative was the Preferred Alternative in the DEIS, but is not the Preferred Alternative in this FEIS for reasons described fully under Alternative B 1d below (the Preferred Alternative, which removes the southeast corner of the area, would minimize the likelihood that pelagic longline gear set south and west of the Cape Hatteras Gear Restricted Area would drift into the area). Vessels that are determined by NMFS to have relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements, would be allowed to fish in the area using pelagic longline gear. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel can avoid bluefin, but has poor compliance with reporting and monitoring requirements, that vessel would not be allowed to fish with pelagic longline gear in this area, from December through April. Individual vessel data would be evaluated annually for the purpose of determining access, in order to provide future opportunities and reflect changes in fishing behavior, both positively and negatively, based on performance.

Based on the performance criteria outlined in Chapter 2 and in the Appendices, NMFS determined that, of 135 eligible vessels that have both a permit and “active” qualifying history in the entire pelagic longline fleet, 35 vessels fished in the Cape Hatteras Gear Restricted Area or buffer region. Of these 35 eligible vessels, 14 vessels that fished in the Cape Hatteras Gear Restricted Area or buffer region did not meet the performance criteria for access based on their inability to avoid bluefin, and/or compliance with POP observer and logbook reporting requirements. Five of the 14 restricted vessels made at least 75 percent of their sets in the Cape Hatteras Gear Restricted Area; five vessels made between 40 and 75 of their sets in the Cape Hatteras Gear Restricted Area; and four vessels made fewer than 40 percent of their sets in the Cape Hatteras Gear Restricted Area. Performance criteria for access to this area is described in Section 2.2.1.

Impacts on Bluefin

Expected ecological effects on bluefin as a result of this alternative are presented in Table 4.6. The Cape Hatteras Gear Restricted Area is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet by season and by year (see Chapter 3, Table 3.22 for reported logbook interactions in the Cape Hatteras Gear Restricted Area). Numbers of bluefin interactions reported in the HMS logbook declined between 2006 and 2012. The year with the greatest number of bluefin interactions in this area was 2007; 2011 and 2012 had the fewest number of interactions. The total number of bluefin interactions (kept and discarded) peaked in March 2007 (n = 340).

This five-month gear restricted area, with redistribution and access for vessels that only meet performance criteria, would result in localized average annual area reduction of bluefin kept by 53 percent (-29 fish/year, on average) and bluefin discards by 80 percent (-372 fish/year, on average); fishery-wide, restricted access would reduce bluefin kept by 8 percent and bluefin discards by 34 percent. Consequently, this alternative would have direct, moderate beneficial impacts for bluefin due to reductions in interactions with HMS-permitted pelagic longline vessels. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 47.7 mt on average per year.

Impacts on Fishing Effort

This alternative is expected to have an annual average reduction in localized fishing effort for vessels that do not have access to the area, by 34 percent (235,010 hooks/year, on average). Fishery-wide, this alternative would result in an average annual reduction in fishing effort by 4 percent. This would result in long-term, direct, and minor to moderate beneficial ecological impacts on bluefin and other HMS stocks due to a reduction in effort. Vessels that will maintain access to the Cape Hatteras Gear Restricted Area are not expected to have any change in their historical effort.

Impacts on other HMS

Expected direct ecological effects on designated target species as a result of this alternative are presented in Table 4.6 and Table 4.7. This five-month gear restricted area, with redistribution and access for vessels that only meet performance criteria, would result in localized average annual area reduction of: swordfish kept by 53 percent (- 2,188 fish/year, on average) and discarded by 41 percent (-299 fish/year, on average); the number of yellowfin kept by 16 percent (-1,605 fish/year, on average) and discarded by 30 percent (-55 fish/year, on average); and the number of bigeye kept by 15 percent (-307 fish/year, on average) and discarded by 10 percent (-2 fish/year, on average). A localized average annual area reduction in dolphin kept (- 2 percent, or -179 fish/year) is expected; however the number of dolphin discarded would increase locally with redistribution (+1 fish/year, or +8 percent). While no change is expected in the number of wahoo discarded as a result of this alternative, the total number of wahoo kept would decrease by 14 percent (-9 fish/year). This alternative would also reduce the number of albacore kept by 21 percent (-54 fish/year); reduce the number of thresher kept (-93 percent) and discarded (-80 percent) by 39 and 20 fish/year, respectively; and decrease the number of shortfin mako kept by 66 percent (-728 fish/year, on average) and discarded by 68 percent (-41 fish/year, on average). Fishery-wide, this alternative would result in a reduction of swordfish, yellowfin tuna, bigeye tuna, dolphin, and wahoo kept and discarded equal to or less than 5 percent. This alternative would also reduce thresher kept and discarded by 78 percent (-39 fish/year) and 17 percent (-20 fish/year), respectively. It would also reduce the total number of shortfin mako kept and discarded by 26 percent (-728 fish/year) and 5 percent (-41 fish/year), respectively. Alternative B1c would result in long-term direct, moderate localized benefits and neutral to minor fishery-wide ecological benefits on swordfish, yellowfin tuna, bigeye tuna, and shortfin mako.

Table 4.6 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Preferred Alternative B 1c (Cape Hatteras Gear Restricted Area with Access Based on Performance) on bluefin and selected species

2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
A January	41,596	6	61	432	127	113	1	300	27	2	0	3	0
B February	38,435	9	100	422	67	28	0	269	2	6	0	5	0
C March	53,611	8	123	434	46	22	0	402	6	44	0	4	0
D April	82,444	5	120	642	45	40	0	345	3	157	0	3	0
E May	90,408	8	10	496	60	76	1	743	5	4,174	3	3	0
F June	86,490	9	3	252	34	113	2	1322	28	3,061	5	10	0
G July	64,198	2	1	107	26	211	2	1775	28	428	3	11	0
H August	38,067	2	0	49	10	250	2	794	13	38	1	7	0
I September	46,871	0	0	53	18	434	5	1322	12	26	0	8	0
J October	55,587	0	0	150	59	409	3	1338	19	19	0	6	0
K November	48,729	1	6	474	108	230	4	918	23	6	0	5	0
L December	49,028	5	39	605	123	156	1	342	18	2	0	1	0
M Dec-Apr Reduction of Catch/Hooks with no redistribution -(A+B+C+D+L)	-265,114	-33	-443	-2,535	-408	-359	-2	-1,658	-56	-211	0	-16	0
N Dec-Apr change in catch during restriction with redistribution	30,104	4	71	347	109	52	0	53	1	32	1	7	0

	2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
O	Net Change with redistribution (M+N)	-235,010	-29	-372	-2,188	-299	-307	-2	-1,605	-55	-179	1	-9	0
P	Average Annual # Interactions in Proposed Gear Restricted Area (SUM of A to L)	695,464	55	463	4,116	723	2,082	21	9,870	184	7,963	12	66	0
Q	Percent change in Area with redistribution ((O/P)×100)	-34%	-53%	-80%	-53%	-41%	-15%	-10%	-16%	-30%	-2%	8%	-14%	0%
R	Average # Interactions in entire fishery (Σ(All PLL Interactions 2006 - 2011)/6)	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70
S	Percent change in fishery ((O/R)×100)	-4%	-8%	-34%	-5%	-3%	-2%	-1%	-4%	-4%	0%	0%	0%	0%

Values are rounded to the nearest whole number. Source: HMS Logbook data.

Table 4.7 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Preferred Alternative B 1c (Cape Hatteras Gear Restricted Area with Access Based on Performance) on designated target species

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discards	Skipjack Kept	Skipjack Discards	Porbeagle Kept	Porbeagle Discards	Thresher Kept	Thresher Discards	Shortfin Mako Kept	Shortfin Mako Discards
A	***January***	***14***	***0***	***0***	***0***	***0***	***1***	***5***	***7***	***157***	***21***
B	***February***	***31***	***0***	***0***	***0***	***0***	***0***	***12***	***10***	***166***	***5***
C	***March***	***65***	***0***	***0***	***0***	***0***	***0***	***6***	***1***	***79***	***5***
D	***April***	***31***	***0***	***0***	***0***	***0***	***0***	***14***	***1***	***242***	***7***
E	May	3	0	0	0	0	0	2	1	134	5
F	June	13	0	5	1	0	0	1	1	44	3
G	July	0	0	18	2	0	0	0	1	24	2
H	August	1	0	2	1	0	0	0	0	10	1
I	September	2	0	1	1	0	0	0	0	6	1
J	October	10	0	7	0	0	0	0	1	28	1
K	November	48	0	0	0	0	0	0	1	107	5
L	***December***	***43***	***0***	***0***	***0***	***0***	***0***	***2***	***1***	***108***	***4***
M	Dec-Apr Reduction of Catch/Hooks with no redistribution	-184	0	0	0	0	-1	-39	-20	-752	-42
N	Dec-Apr change in catch during closure with redistribution	130	0	0	0	0	0	0	0	24	1
O	Net Change with redistribution	-54	0	0	0	0	-1	-39	-20	-728	-41

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discards	Skipjack Kept	Skipjack Discards	Porbeagle Kept	Porbeagle Discards	Thresher Kept	Thresher Discards	Shortfin Mako Kept	Shortfin Mako Discards
P	Average Annual # Interactions in Proposed Gear Restricted Area	261	0	33	5	0	1	42	25	1105	60
Q	Percent change in Area with redistribution ((O/P)×100)	-21%	0%	0%	0%	0%	-100%	-93%	-80%	-66%	-68%
R	Average # Interactions in entire fishery (Σ(All Pll Interactions 2006 - 2011)/6)	7,016	298	105	982	6	267	50	117	2,827	904
S	Percent change in fishery ((O/R)×100)	-1%	0%	0%	0%	0%	0%	-78%	-17%	-26%	-5%

Values are rounded to the nearest whole number. Source: HMS Logbook data.

Alternative B 1d – Modified Cape Hatteras Gear Restricted Area with Access Based on Performance (Preferred)

Based on public comment regarding currents and pelagic longline fishing patterns in the area, NMFS prefers in this FEIS a gear restricted area that is substantially the same as that preferred at the DEIS stage but with a minor geographical change. This alternative would restrict fishing with pelagic longline gear during the same months (December through April) but with a small geographic modification. The change is responsive to public input but is a minor variation on Alternative B 1c discussed in the DEIS, and the environmental effects are qualitatively within the spectrum of alternatives that were discussed in the DEIS. This geographic modification is being made to avoid effects on fishing outside the restricted area; effects that were not intended by the original preferred alternative and are not necessary for the conservation measure to be effective. The change is being presented/numbered as a "new alternative" here, even though it only modifies a previously-analyzed alternative (and in a way that still provides the same benefit to BFT), to allow the public to clearly see the difference between the two and to thoroughly explain the reason for the modification.

Public comment highlighted that the original Cape Hatteras Gear Restricted Area (Alternative B 1b and Alternative B 1c) would, due to prevailing current patterns in the region, result in an effective closure of productive fishing grounds southwest of the Gear Restricted Area in federal waters off the coast of central and southern North Carolina. Fishermen setting gear south and west of the Cape Hatteras Gear Restricted Area are fishing along the seaward edge of the Gulf Stream. Currents in this region are very strong, and would push pelagic longline gear through the southeastern corner of the Cape Hatteras Gear Restricted Area shortly after deployment. If Alternative B 1c were implemented, fishermen would have a de facto restriction from setting gear in these open, highly productive areas south and east of the Gear Restricted Area that tend to have few bluefin interactions.

This modification would minimize the likelihood that pelagic longline gear set south and west of the Cape Hatteras Gear Restricted Area would drift into the area. This modification would not increase in bluefin interactions or pelagic longline effort, but would allow access to productive fishing grounds. This alternative sustains the ecological benefits of the Cape Hatteras Gear Restricted Area preferred in the DEIS while minimizing economic impacts to the extent practicable, consistent with the objectives of Amendment 7. It strikes a better balance between reducing dead discards of bluefin and continued operation of the pelagic longline fleet in the Atlantic, though, by avoiding the unintended consequence of seriously affecting certain fishing outside the restricted area. Therefore, NMFS prefers this modification (i.e., shaving off the southeast corner) to balance environmental, ecological, and economic impacts of the Cape Hatteras Gear Restricted Area.

This alternative would implement a modification of the Cape Hatteras Gear Restricted Area as described in Alternative B 1c, and define criteria for access by HMS-permitted vessels fishing with pelagic longline gear during the five-month period from December through April. Vessels that are determined by NMFS to have relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements, would be allowed to fish in the area using pelagic longline gear. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel can avoid bluefin, but has poor compliance with reporting and monitoring requirements, that vessel would not be allowed to fish with pelagic longline gear in this area, from December through April. Individual vessel data would be evaluated annually for the purpose of determining access, in order to provide future opportunities and reflect changes in fishing behavior, both positively and negatively, based on performance. Evaluations would consider the previous three years of data. New entrants to the fishery would not have access to the Modified Cape Hatteras Gear Restricted Area until they have indicated an ability to avoid bluefin (i.e., a new entrant would be evaluated at the end of Year 1 based on Year 1 data; at the end of Year 2 based on Year 1 and Year 2 data; at the end of Year 3 based on Years 1-3, etc.).

NMFS determined that 184 vessels reported at least one set in the HMS logbook between 2006 and 2012. NMFS estimates that there are 135 vessels with sufficient history to participate in the IBQ program that also held a valid Atlantic tunas longline permit on the date of publication of the proposed rule, August 21, 2003. Based on the performance criteria outlined in Chapter 2 and in the Appendices, NMFS determined that, of the 135 eligible vessels in the entire pelagic longline fleet, 34 vessels fished in the Modified Cape Hatteras Gear Restricted Area between the months of December and April (2006 – 2012). Of these 34 eligible vessels that fished in the Modified Cape Hatteras Gear Restricted Area, 14 vessels did not meet the performance criteria for access based on their inability to avoid bluefin, and/or compliance with POP observer and logbook reporting requirements. Four of the 14 restricted vessels made at least 75 percent of their sets, and 3 vessels made between 40 and 75 percent of their sets in the Modified Cape Hatteras Gear Restricted Area during this time.

Impacts on Bluefin

Expected ecological effects on bluefin as a result of this alternative are presented in Table 4.8. The Modified Cape Hatteras Gear Restricted Area is one of the areas where there are seasonal concentrations of bluefin, as well as consistent catches by the pelagic longline fleet by season and by year (see Chapter 3, Table 3.24 – Table 3.26 for reported logbook interactions in the Modified Cape Hatteras Gear Restricted Area). This five-month gear restricted area, with redistribution and access for vessels that only meet performance criteria, would result in localized average annual area reduction of bluefin kept by 60 percent (-25 fish/year, on average) and bluefin discards by 83 percent (-379 fish/year, on average); fishery-wide, restricted access would reduce bluefin kept by 6 percent and bluefin discards by 34 percent. Consequently, this alternative would have direct, moderate beneficial impacts for bluefin due to reductions in interactions with HMS-permitted pelagic longline vessels. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 48.0 mt on average per year.

Impacts on Fishing Effort

This alternative is expected to have an annual average reduction in localized fishing effort for vessels that do not have access to the area by 25 percent (126,396 hooks/year, on average). Fishery-wide, this alternative would result in an average annual reduction in fishing effort by 2 percent. This would result in longterm, direct, minor to moderate beneficial ecological impacts on bluefin and other HMS stocks due to the reduction in fishing effort. Vessels that will maintain access to the Modified Cape Hatteras Gear Restricted Area are not expected to have any change in their historical effort. The level of reduced fishing effort estimated for the Preferred Alternative in this FEIS is less than that associated with the DEIS Preferred Alternative, yet the Preferred Alternative in this FEIS would achieve slightly greater reductions in interactions (the difference in alternatives and analyses between the DEIS and FEIS being the inclusion of 2012 data and elimination of the southeast corner of the area). Amendment 7 objectives do not include a reduction in fishing effort for pelagic longline vessels but do include reduction in bluefin interactions and avoidance and minimization of bluefin bycatch, and this alternative better meets that goal without the unintended effect on fishing outside the restricted area.

Impacts on other HMS

Expected direct ecological effects on designated target species as a result of this alternative are presented in Table 4.8 and Table 4.9. This five-month gear restricted area, with redistribution and access for vessels that only meet performance criteria, would result in localized average annual area reduction of: swordfish kept by 49 percent (-1,344 fish/year, on average) and discarded by 46 percent (-275 fish/year, on average); the number of yellowfin kept by 10 percent (-862 fish/year, on average) and discarded by 26 percent (-44 fish/year, on average); and the number of bigeye tuna kept by 15 percent (-310 fish/year, on average) and discarded by 10 percent (-2 fish/year, on average). This alternative would have long-term, neutral, localized ecological benefits for dolphin due to very low interaction rates (+3 dolphin fish kept/year and -3 dolphin discarded/year). Fishery-wide, this alternative would result in a reduction of swordfish, yellowfin tuna, bigeye tuna, and dolphin kept and discarded equal to or less than 3 percent. Alternative B1d would result in long-term direct, moderate localized benefits and neutral to minor fishery-wide ecological benefits on swordfish, yellowfin tuna, bigeye tuna, and shortfin mako. This alternative is expected to have a neutral impact on wahoo (both localized and fishery-wide). This alternative would result in localized increases in the number of albacore kept by 18 percent (+23 fish/year). This alternative would also result in localized reductions in the number of porbeagle discarded by 100 percent (-1 fish/year); thresher kept and discarded by 93 percent (-37 fish/year) and 79 percent (-19 fish/year); and the number of shortfin mako kept by 65 percent (-663 fish/year, on average) and discarded by 67 percent (-39 fish/year, on average). NMFS does not expect localized or fishery-wide changes in the numbers of albacore discarded, skipjack kept or discarded, and porbeagle kept as a result of this alternative.

Table 4.8 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Preferred Alternative B 1d (Modified Cape Hatteras Gear Restricted Area with Access Based on Performance) on bluefin and selected target species

	2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
A	January	37,924	5	61	393	119	111	1	274	27	1	0	0	0
B	February	27,153	8	99	332	58	22	0	94	1	1	0	0	0
C	March	15,401	5	122	150	24	15	0	64	0	2	0	1	0
D	April	23,862	5	120	150	17	34	0	154	1	23	3	3	0
E	May	40,094	4	7	213	23	74	1	663	3	682	3	9	0
F	June	55,827	5	2	116	24	89	2	1,242	28	1,385	1	7	0
G	July	60,730	2	1	89	22	207	2	1,759	28	371	0	8	0
H	August	37,867	2	0	49	10	248	2	790	13	38	0	6	0
I	September	45,362	0	0	51	17	432	4	1,291	9	24	0	5	0
J	October	55,536	0	0	150	59	413	3	1,335	18	17	0	1	0
K	November	48,465	1	6	473	108	230	4	917	22	6	0	0	0
L	December	47,603	5	39	577	120	155	1	337	17	1	0	0	0
M	Dec-Apr Reduction of Catch/Hooks with no redistribution - (A+B+C+D+L)	-151,943	-28	-441	-1,602	-338	-337	-2	-923	-46	-28	-3	-4	0
N	Dec-Apr change in catch during restriction with redistribution	25,547	3	62	258	63	27	0	61	2	31	0	4	0
O	Net Change with redistribution (M+N)	-126,396	-25	-379	-1,344	-275	-310	-2	-862	-44	3	-3	0	0
P	Average Annual # Interactions in Proposed Gear Restricted Area (SUM of A to L)	495,824	42	457	2,743	601	2,030	20	8,920	167	2,551	7	40	0

	2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
Q	Percent change in Area with redistribution ((O/P)×100)	-25%	-60%	-83%	-49%	-46%	-15%	-10%	-10%	-26%	0%	-43%	0%	0%
R	Average # Interactions in entire fishery (Σ(All PLL Interactions 2006 - 2011)/6)	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70
S	Percent change in fishery ((O/R)×100)	-2%	-6%	-34%	-3%	-3%	-3%	-1%	-2%	-3%	0%	-1%	0%	0%

Values are rounded to the nearest whole number. Source: HMS Logbook data.

Table 4.9 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Preferred Alternative B 1d (Modified Cape Hatteras Gear Restricted Area with Access Based on Performance) on designated target species

	2006-2012 Average Annual Interactions	Albacore Kept	Albacore Discarded	Skipjack Kept	Skipjack Discarded	Porbeagle Kept	Porbeagle Discarded	Thresher Kept	Thresher Discarded	Shortfin Mako Kept	Shortfin Mako Discarded
A	***January***	***14***	***0***	***0***	***0***	***0***	***1***	***5***	***7***	***151***	***21***
B	***February***	***4***	***0***	***0***	***0***	***0***	***0***	***11***	***10***	***156***	***5***
C	***March***	***1***	***0***	***0***	***0***	***0***	***0***	***5***	***1***	***55***	***4***
D	***April***	***2***	***0***	***0***	***0***	***0***	***0***	***14***	***0***	***213***	***6***
E	May	0	0	0	0	0	0	2	1	124	5
F	June	2	0	5	1	0	0	1	1	42	3
G	July	0	0	17	2	0	0	0	1	24	2
H	August	1	0	2	1	0	0	0	0	10	1
I	September	2	0	1	0	0	0	0	0	6	1
J	October	11	0	7	0	0	0	0	1	28	1

	2006-2012 Average Annual Interactions	**Albacore Kept**	**Albacore Discarded**	**Skipjack Kept**	**Skipjack Discarded**	**Porbeagle Kept**	**Porbeagle Discarded**	**Thresher Kept**	**Thresher Discarded**	**Shortfin Mako Kept**	**Shortfin Mako Discarded**
K	November	48	0	0	0	0	0	0	1	108	5
L	***December***	***43***	***0***	***0***	***0***	***0***	***0***	***2***	***1***	***108***	***4***
M	Dec-Apr Reduction of Catch/Hooks with no redistribution -(A+B+C+D+L)	-64	0	0	0	0	-1	-37	-19	-683	-40
N	Dec-Apr change in catch during closure with redistribution	87	0	0	0	0	0	0	0	20	1
O	Net Change with redistribution	23	0	0	0	0	-1	-37	-19	-663	-39
P	Average Annual # Interactions in Proposed Gear Restricted Area (SUM of A to L)	128	0	32	4	0	1	40	24	1025	58
Q	Percent change in Area with redistribution ((O/P)×100)	18%	0%	0%	0%	0%	-100%	-93%	-79%	-65%	-67%
R	Average # Interactions in entire fishery (Σ(All Pll Interactions 2006 - 2011)/6)	7,016	298	105	982	6	267	50	117	2827	904
S	Percent change in fishery ((O/R)×100)	0%	0%	0%	0%	0%	0%	-74%	-16%	-23%	-4%

Values are rounded to the nearest whole number. Source: HMS Logbook data.

Alternative B 1e – Allow Pelagic Longline Vessels to Fish under General Category Rules

This alternative would allow vessels with an Atlantic Tunas Longline category permit to fish under the rules/regulations applicable to the General category as they pertain to targeting bluefin using non-pelagic longline gear (gear authorized under the General category, including: rod and reel, handline, harpoon, etc.), in the area defined as the Cape Hatteras Gear Restricted Area, during the time of the restriction (December through April), when the General category fishery is open. The bluefin landed with authorized handgear would be counted against the General category quota. This alternative was preferred in the DEIS, but based upon public comment and further review as described below, this alternative is no longer preferred.

This alternative is equivalent to increasing the number of participants in the General category fishery from December until the January sub-quota is caught (or the end of March, whichever comes first). This alternative would have a neutral impact on bluefin because the catch of bluefin would count towards, and be limited by, the December and January bluefin sub-quotas allocated to the General category fishery. It is difficult to predict the impact of this alternative on bigeye, albacore, yellowfin, and skipjack tunas, but it is likely that the amount of fishing effort on these tuna species under General category rules in the Cape Hatteras Gear Restricted Area (with handgear) would be less than if the vessel were fishing elsewhere with pelagic longline or under the status quo of fishing with pelagic longlines in the Cape Hatteras Gear Restricted Area. Table 4.10 and Table 4.11 show information on historic catches of yellowfin and skipjack by pelagic longline gear and handgear (handline and rod and reel) for vessels landing in North Carolina.

Table 4.10 Yellowfin (YFT) and Skipjack (SKJ) Tuna Landings in North Carolina by Commercial Handgear, in 2010 and 2011 by month (dw, lb)

	2010		2011	
Month	**YFT**	**SKJ**	**YFT**	**SKJ**
Jan			18	
Feb				
Mar				
Apr	2,787			
May	7,134	80	854	17
Jun	26,098	1,054	6,255	354
Jul	2,963	124	14,410	618
Aug	913		13,400	310
Sep			445	
Oct			702	
Nov	447		1,112	
Dec	1,540		3,379	31

Source: NMFS Dealer Data.

Table 4.11 Yellowfin (YFT) and Skipjack (SKJ) Tuna Landings in North Carolina by Pelagic Longline gear, in 2010 and 2011 by month (dw, lb)

	2010		2011	
Month	**YFT**	**SKJ**	**YFT**	**SKJ**
Jan	3,867		2,834	
Feb	2,507		11,533	
Mar	16,325		2,916	
Apr	9,250		4,688	
May	11,905	16	5,647	17
Jun	11,846	12	27,628	311
Jul	56,089		80,602	86
Aug	53,761	6	80,304	30
Sep	24,729		39,758	193
Oct	17,087		26,470	17
Nov	4,657		12,002	2
Dec	1,058		6,718	

Source: NMFS Dealer Data

December through April, the months during which the pelagic longline vessels would be fishing under General category rules, are months of relatively few landings of yellowfin and skipjack tuna (by vessels using pelagic longline or handgear).

Based on historical data, the December sub-quota period has generally remained open until through the end of the December and the January sub-quota period has remained open until at least the third week of January and, following the 2011 change to allow the “January” fishery to remain open until March 31 or until the available quota is caught, it remained open until the middle of February in 2012. Based on the analysis of the Cape Hatteras Gear Restricted Area above, there are approximately 39 pelagic longline vessels that typically fish in this area and therefore, would be most affected by the Cape Hatteras Gear Restricted Area, which may be interested in fishing with handgear gear. However, 30 of the pelagic longline vessels that typically fish in the Cape Hatteras Gear Restricted Area also fish in other areas during December through April and so may choose to move to continue fishing with pelagic longline gear in those areas.

The vessels that decide to fish under the General category rules would also be able to target yellowfin tuna or other tunas. Yellowfin and skipjack tuna are two of the species caught by the pelagic longline fleet in this area, during all the months of the year, with the highest catches from July to September. In 2011, 3% of the commercial yellowfin catch and 81% of the commercial skipjack catch was attributed to commercial handgear. In contrast, commercial handgear caught less than one percent of the commercial albacore and bigeye tuna catch (SAFE 2012).

Some commenters’ concerns were focused on the socio-economic or management implications of allowing pelagic longline fishermen to fish under a different category, while others were concerned about potential biological impacts. Based upon public comment and further consideration, NMFS is not preferring this alternative in the FEIS, given the uncertainty regarding the economic benefits as well as public concerns.

Alternative B 1f – Gulf of Mexico Exclusive Economic Zone (EEZ) Gear Restricted Area (March – May)

The Gulf of Mexico is one of the areas where there are seasonal concentrations of bluefin as a result of spawning behavior. Pelagic longline logbook and observer data indicate that historically there have been consistent, relatively high annual catch and catch rates of bluefin with pelagic longline gear in the Gulf of Mexico. An analysis of recent logbook data (2006 – 2012) indicated that discards in the Gulf of Mexico EEZ Gear Restricted Area are particularly high in March, April, and May; between 2006 and 2012, there were 1,260 bluefin interactions reported in the Pelagic longline logbooks during these months (see Chapter 3, Table 3.27, for reported logbook interactions in the Gulf of Mexico EEZ Gear Restricted Area). The analysis in the FEIS was based on data from the years 2006 through 2012, in contrast to the DEIS analysis, which was based on data from 2006 through 2011. As noted in the DEIS, data from all of 2012 was not available at the time the DEIS was developed, but was available at the time the FEIS was developed, and was therefore included in order to base the analyses on the best available information. The DEIS noted that updated information would be used at the FEIS/Final Rule stage (see DEIS, "Management Alternatives" at pp 70-71).

Impacts on Bluefin

Expected ecological effects on bluefin as a result of this alternative are presented in Table 4.12 The analysis of this alternative did not include a step where effort was redistributed outside of the Gulf of Mexico, as an analysis of logbook data (at the level of individual vessels) indicated that very few vessels that fished in the Gulf of Mexico also fished in Atlantic regions (< 1 percent of vessels). Previous analyses in the 2006 Consolidated HMS FMP analyzed a range of redistribution of effort including no redistribution of effort for large pelagic longline time/area closures, similar to this alternative, as well as some level of redistribution of effort for smaller pelagic longline time/area closure alternatives, and concluded that the actual redistribution would likely fall within the range analyzed and vary for individual vessels based on individual circumstances.

With respect to this alternative in Amendment 7, based on the current analytical methods (a more refined vessel-specific analyses), as well as additional years of logbook data indicating few Gulf of Mexico vessels fished in the Atlantic region, NMFS predicts that these vessels would not redistribute their effort outside of the Gulf of Mexico region. More information on the analytical methods is in the introduction to this section, above.

This alternative would reduce average annual numbers of bluefin kept by 56 percent (- 50 fish/year) and discarded by 83 percent (-131 fish/year) within the Gulf of Mexico EEZ. Fishery-wide, this alternative is expected to result in an average annual reduction of bluefin kept and discarded by approximately 13 percent and 12 percent, respectively. Because bluefin in the Gulf of Mexico consist of large fish that are sexually mature and/or spawning, reducing interactions with pelagic longline gear during March, April, and May in the Gulf of Mexico may also enhance spawning potential and stock growth. The Gulf of Mexico EEZ Gear Restricted Area would maximize the likelihood that the gear restricted area would account for the variability of bluefin distribution and reduce interactions and dead discards. Therefore, this alternative is expected to have direct, moderate beneficial impacts for bluefin due to reductions in interactions with HMS-permitted pelagic longline vessels and overall reduction of fishing effort in the only known western Atlantic spawning grounds. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 44.2 mt on average per year.

Impacts on Fishing Effort

This alternative would cease pelagic longline fishing by HMS-permitted vessels in the region from March through May, and therefore reduce fishing effort by all vessels fishing in the Gulf of Mexico during these months. The Gulf of Mexico pelagic longline fleet deployed an average of 527,979 hooks per year during the months of March through May. Vessels fishing in the Gulf of Mexico are assumed to not redistribute to regions outside of the Gulf of Mexico.

Impacts on Other HMS

Expected direct ecological effects on designated target species as a result of this alternative are presented in Table 4.12. This three-month gear restricted area would reduce Gulf of Mexico swordfish kept by 36 percent (-2,312 fish/year, on average) and discarded by 38 percent (-1,050 fish/year, on average); this Alternative would also reduce swordfish kept and discarded fishery-wide by 5 percent and 12 percent, respectively. NMFS therefore anticipates long-term, direct moderate ecological benefits to swordfish stocks from this alternative. This alternative would result in localized reductions in numbers of yellowfin tuna kept by 16 percent (-2,910 fish/year) and fishery-wide reductions by 6 percent. Localized reductions in bigeye tuna kept of 7 percent (-23 fish) are expected under this alternative; however, from a fishery-wide perspective, this reduction has a neutral effect on bigeye stocks (0 percent change). Localized discards of bigeye tuna (-2 fish/year), yellowfin tuna (-145 fish/year), dolphin (-20 fish/year), and wahoo (-5 fish, on average) would be reduced by 25 percent, 26 percent, 21 percent, and 22 percent, respectively. Fishery-wide reductions in catch and discards of these species as a result of the gear restricted area would be less than 15 percent. Alternative B 1e would likely result in long-term, direct, moderate localized benefits and minor fishery-wide ecological benefits on these four designated species caught or targeted by the pelagic longline fishery, as this alternative would cease pelagic longline fishing by HMS-permitted vessels from March to May, and therefore reduce fishing effort on these stocks.

Ecological effects of this alternative on other species of tunas may be seen in Table 4.12. Localized reductions in numbers of shortfin mako kept and discarded in this area would be 54 percent (-63 fish/year) and 39 percent (-27 fish/year), respectively. However, from a fishery-wide perspective, this gear restricted area would result in only a 2 percent reduction in shortfin mako kept and a 3 percent reduction in shortfin mako discarded; therefore direct ecological impacts for this species are considered to be minor and beneficial. Localized and fishery-wide impacts on the numbers of thresher kept, and porbeagle kept and discarded would be neutral. This alternative would result in a localized reduction in the number of thresher discarded by 41 percent (-9 fish/year); of albacore kept and discarded by 6 (-27 fish/year) and 9 (-9 fish/year) percent, respectively; and of skipjack kept and discarded by 35 percent (-17 fish/year) and 13 percent (-122 fish/year), respectively.

An additional biological impact of a Gulf of Mexico Gear Restricted Area, that was not discussed in the DEIS, but is noted in this FEIS, is the potential impact of a Gulf of Mexico Gear Restricted Area on the amount of fishery dependent data (collected from the Gulf of Mexico pelagic longline fishery), that would be available for use in bluefin stock assessments. NMFS estimates a bluefin tuna catch-per-unit-effort (CPUE) time series for the pelagic longline fleet operating in the Gulf of Mexico using data collected through the HMS logbook. Such CPUE series have been used for stock assessment purposes by the SCRS as an index of abundance of western Atlantic bluefin tuna spawning stockers. Therefore, one secondary consequence of an EEZ Gear Restricted Area in the Gulf of Mexico would be the interruption and reduction in precision of the CPUE data series of western Atlantic bluefin tuna spawning stock that is currently used in stock assessments. Reduction in the amount of data as a result of an EEZ Gear Restricted Area could reduce the precision of the index of abundance.

Table 4.12 Summary of logbook data (2006 -2012) and calculation of anticipated ecological effects of Alternative B 1e, Gulf of Mexico EEZ Gear Restricted Area, on bluefin and selected species

	2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
A	January	181,357	9	2	557	253	51	1	1,926	33	23	2	70	2
B	February	164,161	15	6	646	256	33	0	1,180	26	19	0	65	0
C	***March***	***184,052***	***16***	***23***	***903***	***303***	***14***	***1***	***851***	***30***	***19***	***0***	***64***	***1***
D	***April***	***154,243***	***15***	***57***	***799***	***375***	***5***	***0***	***761***	***37***	***44***	***2***	***35***	***0***
E	***May***	***189,684***	***19***	***51***	***610***	***380***	***4***	***1***	***1,298***	***78***	***653***	***18***	***97***	***4***
F	June	189,842	4	13	327	184	10	2	1,753	142	2,105	43	290	6
G	July	245,591	1	2	378	164	12	0	2,375	68	1,598	16	509	3
H	August	206,694	0	0	325	130	12	2	1,940	34	648	6	500	4
I	September	195,302	0	2	436	152	18	0	1,659	25	135	3	155	2
J	October	170,183	2	0	472	169	35	0	1,414	15	51	1	67	0
K	November	183,756	2	0	548	207	78	0	1,564	25	54	2	55	0
L	December	166,646	6	1	446	212	37	1	1,438	37	35	2	42	1
M	Average Annual Reduction of Catch (-(C+D+E))	-527,979	-50	-131	-2,312	-1,058	-23	-2	-2,910	-145	-716	-20	-196	-5
N	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	2,231,511	89	157	6,447	2,785	309	8	18,159	550	5,384	95	1,949	23
O	Average Annual Percent change in Area ((M/N)×100)	-24%	-56%	-83%	-36%	-38%	-7%	-25%	-16%	-26%	-13%	-21%	-10%	-22%

	2006 – 2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Discards	Swordfish Kept	Swordfish Discards	Bigeye Kept	Bigeye Discards	Yellowfin Kept	Yellowfin Discards	Dolphin Kept	Dolphin Discards	Wahoo Kept	Wahoo Discard
P	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70
Q	Average Annual Percent change in fishery ((M/P)×100)	-8%	-13%	-12%	-5%	-12%	0%	-1%	-6%	-12%	-2%	-4%	-8%	-7%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1g– Small Gulf of Mexico Gear Restricted Area (April – May)

This alternative would define a rectangular area in the Gulf of Mexico and prohibit the use of pelagic longline gear during April and May. The specific time and area of the Small Gulf of Mexico Gear Restricted Area represents a time and area combination likely to result in reduced bluefin interactions based on past patterns of interactions by the pelagic longline fishery. The Small Gulf of Mexico Gear Restricted Area would provide a narrower restriction based upon the locations of historical bluefin interactions, and would provide a different balance of achieving the principal objectives than the Gulf of Mexico EEZ Gear Restricted Area. Since the Small Gulf of Mexico Gear Restricted Area is smaller in size and shorter in time than the Gulf of Mexico EEZ Gear Restricted Area, NMFS expects a smaller ecological impact on commercial fisheries. Pelagic longline logbook and observer data indicate that historically there have been relatively high bluefin catches and catch rates of bluefin by pelagic longline vessels in this region. An analysis of recent logbook data (2006 – 2012) indicated that discards in the Small Gulf of Mexico Gear Restricted Area were highest in this area in April and May. Sixty-seven percent (n = 468) of bluefin interactions were reported from this area in the HMS logbooks during these months (see Chapter 3, Table 3.30, for reported logbook interactions in the Small Gulf of Mexico Gear Restricted Area). Because bluefin in the Gulf of Mexico are comprised of large fish that are sexually mature and/or spawning, reducing interactions with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth. This alternative was preferred in the DEIS but is no longer preferred in the FEIS for the reasons described below.

Impacts on Bluefin

Expected direct ecological effects on bluefin as a result of this alternative are presented in the analysis of ecological effects of this alternative included a step where effort was redistributed outside of the Small Gulf of Mexico Gear Restricted Area to adjacent, open fishing grounds in the Gulf of Mexico. This alternative would reduce bluefin kept by 30 percent (-11 fish/year, on average) and discarded by 57 percent (-37 fish/year, on average). Fishery-wide, the number of bluefin kept and discarded is expected to be reduced by 3 percent. When the total reduction of catch with and without redistribution from the Small Gulf of Mexico Gear Restricted Area is compared to total reduction in the Gulf of Mexico (Table 4.13, row “M” for bluefin tuna), there are notable ecological gains from this gear restricted area in the Gulf of Mexico. Without redistribution (Table 4.15, row “M” for bluefin divided by Table 4.12, row “N” for bluefin tuna), this alternative would account for 18 percent and 32 percent of the reduction in bluefin kept and discarded within the entire Gulf of Mexico. With redistribution, (Table 4.15, row “O” for bluefin tuna divided by Table 4.13, row “N” for bluefin tuna), this alternative would account for 12 percent of the reduction in bluefin tuna kept and 24 percent of the bluefin tuna discarded within the entire Gulf of Mexico. When considering the comparison of relative impacts in the Gulf of Mexico, it is important to note that the Small Gulf of Mexico Gear Restricted Area covers roughly 8 percent of the Gulf of Mexico EEZ. While the savings are not as significant under this alternative as they would be under a year-round Gulf of Mexico EEZ Gear Restricted Area, Alternative B 1f could result in a notable reduction (-28 percent) of bluefin discards within the Gulf of Mexico.

However, NMFS determined that this alternative would have direct, minor, beneficial ecological impacts due to the local ecological benefits of reducing pelagic longline interactions within this gear restricted area. Bluefin tuna in the Gulf of Mexico are comprised of large fish that are sexually mature or spawning fish. Reducing interactions with pelagic longline gear in the Small Gulf of Mexico Gear Restricted Area would protect a portion of the spawning stock, and could increase spawning potential and stock growth. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 11.8 mt on average per year.

Impacts on Fishing Effort

This alternative is expected to have an annual average reduction in localized fishing effort for vessels that do not have access to the area by 6 percent (40,654 hooks/year, on average). Fishery-wide, this alternative would result in an average annual reduction in fishing effort by 1 percent. This would result in long term, direct, minor to moderate beneficial ecological impacts on bluefin and other HMS stocks.

Impacts on Other HMS

Expected direct ecological effects on designated target species as a result of this alternative are presented in Table 4.13 and Table 4.14. This two-month gear restricted area, with redistribution, would result in localized average annual area reduction of swordfish kept by 1 percent (-21 fish/year, on average) and discarded by 11 percent (-92 fish/year, on average). The localized average annual area reduction of yellowfin tuna kept would decrease by 5 percent (-258 fish/year, on average) and discarded by 12 percent (-12 fish/year, on average). With redistribution, NMFS anticipates potential localized increases in the number of dolphin kept (+ 15 percent, +68 fish/year, on average); dolphin discarded (+33 percent, 3 fish/year, on average). Localized effects of this alternative on bigeye tuna kept, with redistribution, are expected to be minimal (1 percent, 1 fish kept and 33 percent, 1 fish discarded). Due to the smaller restricted area and the relatively small increase in the expected number of interactions for these species, localized ecological impacts as a result of this alternative are expected to be neutral. Fishery-wide changes as a result of this alternative for most designated target species were considered to be minimal (±1 percent) with redistribution (Table 4.13, Table 4.14). NMFS therefore expects the fishery-wide long term overall direct impact on designated target stocks to be minor and beneficial due to a localized reduction in fishing effort.

Expected direct ecological effects on other designated target species as a result of this alternative are presented in Table 4.14. As a result of this alternative, NMFS expects minor reductions in thresher sharks discarded by 67 percent (-2 fish/year), albacore tuna kept by 1 percent (-3 fish/year), and skipjack tuna kept by 69 percent (-9 fish/year) and discards by 4 percent (-2 fish/year). Minor increases in the catch of shortfin mako are expected by kept (+25 percent, +2 fish/year) and discards (+13 percent, +1 fish/year) NMFS does not expect localized or fishery-wide changes in the numbers of thresher sharks kept, porbeagle kept or discarded, and albacore discarded.

This alternative was preferred in the DEIS. However, after considering public comments related to the configuration of a gear restricted area in the Gulf of Mexico, incorporating an additional year of data (2012) as anticipated in the DEIS, and further analysis, NMFS does not prefer this alternative in the FEIS. The revised analysis indicated that there is a recent persistent trend in fishing effort shifting to the east of this area. Given this trend, and the known variability in the fishery in general (which the most recent data highlights), NMFS re-evaluated the costs and benefits associated with this GRA, and determined that a somewhat larger area in combination with an area in the eastern Gulf of Mexico would better achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico (see Alternative B 1i).

Table 4.13 Summary of logbook data (2006-2012) and calculation of anticipated ecological effects of Alternative B 1f (Small GOM Gear Restricted Area) on bluefin and selected species

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
A	January	68,364	5	0	161	90	15	0	919	13	11	0	16	0
B	February	49,652	6	3	127	60	7	0	389	6	6	0	11	0
C	March	45,006	7	9	89	66	2	1	255	8	6	0	10	0
D	***April***	***51,298***	***8***	***27***	***116***	***100***	***1***	***0***	***257***	***9***	***7***	***0***	***7***	***0***
E	***May***	***60,624***	***8***	***24***	***133***	***120***	***1***	***0***	***378***	***23***	***33***	***2***	***18***	***1***
F	June	30,790	0	2	49	39	3	0	210	7	70	1	49	0
G	July	53,418	0	0	81	43	2	0	552	8	138	2	171	1
H	August	64,687	0	0	117	62	1	2	541	6	112	2	242	0
I	September	59,338	0	0	155	57	5	0	386	2	22	1	49	0
J	October	44,788	0	0	148	64	9	0	373	4	10	0	12	0
K	November	62,754	1	0	176	79	17	0	622	4	14	0	14	0
L	December	57,106	2	0	108	76	8	0	523	9	12	1	11	0
M	Average Annual Reduction of Catch or Hooks (-(D+E))	-111,922	-16	-51	-249	-220	-2	0	-635	-32	-40	-2	-25	-1
N	Apr-May change in catch during closure with redistribution	71,268	5	14	228	128	3	1	377	20	108	5	18	1
O	Net Change with redistribution (M+N)	-40,654	-11	-37	-21	-92	1	1	-258	-12	68	3	-7	0
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	647,825	37	65	1,460	856	71	3	5,405	99	441	9	610	2

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
Q	Average Annual Percent change in Area ((O/P)×100)	-6%	-30%	-57%	-1%	-11%	1%	33%	-5%	-12%	15%	33%	-1%	0%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70
S	Average Annual Percent change in fishery ((O/P)×100)	-1%	-3%	-3%	0%	-1%	0%	0%	-1%	-1%	0%	1%	0%	0%

Values are rounded to the nearest whole number. Source: HMS logbook data

Table 4.14 Summary of logbook data (2006-2012) and calculation of anticipated ecological effects of Alternative B 1f (Small GOM Gear Restricted Area) on other designated species

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
A	January	0	1	0	1	0	0	54	11	0	4
B	February	1	1	0	0	0	0	41	7	0	1
C	March	1	1	0	0	0	0	18	4	1	2
D	***April***	***1***	***2***	***0***	***1***	***0***	***0***	***3***	***0***	***2***	***2***
E	***May***	***1***	***0***	***0***	***1***	***0***	***0***	***0***	***1***	***8***	***8***
F	June	1	0	0	0	0	0	0	0	0	0
G	July	1	2	0	0	0	0	0	0	0	3
H	August	1	0	0	0	0	0	0	0	0	0
I	September	1	0	0	0	0	0	3	0	0	3
J	October	0	0	0	0	0	0	5	2	0	8
K	November	0	0	0	0	0	0	53	9	0	8
L	December	0	1	0	0	0	0	96	19	2	10

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
M	Average Annual Reduction of Catch (-(D+E))	-2	-2	0	-2	0	0	-3	-1	-10	-10
N	Apr-May change in catch during closure with redistribution	4	3	0	0	0	0	0	1	1	8
O	Net Change with redistribution (M+N)	2	1	0	-2	0	0	-3	0	-9	-2
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	8	8	0	3	0	0	273	53	13	49
Q	Average Annual Percent change in Area ((O/P)×100)	25%	13%	0%	-67%	0%	0%	-1%	0%	-69%	-4%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	2,827	904	50	117	6	267	7,016	298	105	982
S	Average Annual Percent change in fishery ((O/P)×100)	0%	0%	0%	-2%	0%	0%	0%	0%	-9%	0%

Values are rounded to the nearest whole number. Source: HMS logbook data

Alternative B 1h – Gulf of Mexico Gear EEZ Restricted Area (year-round)

Alternative B 1h would implement a year-round gear restriction in the entire Gulf of Mexico EEZ (west of 82º longitude). Pelagic longline logbook and observer data indicate that historically there have been relatively high catches and catch rates between pelagic longline gear and bluefin in this region (Chapter 3, Table 3.30). Bluefin are known to annually congregate in the Gulf of Mexico to spawn. An analysis of recent logbook data (2006 – 2012) indicated that most interactions in the Gulf of Mexico EEZ Gear Restricted Area occurred between December and June, coinciding with the seasonal distribution and migratory nature of the species (Chapter 3, Table 3.30). There were 1,486 bluefin interactions reported in the pelagic longline logbooks during these months (Table 4.15; also see Chapter 3, Table 3.28 for reported logbook interactions in the Gulf of Mexico EEZ Gear Restricted Area).This alternative would provide additional protection for bluefin during the other months of the year (July through November) compared to Alternatives B 1e (Gulf of Mexico EEZ March through May) and Alternative B 1f (Small Gulf of Mexico April and May).

Impacts on Bluefin

Expected direct ecological effects on bluefin as a result of this alternative are presented in Table Table 4.15. The analysis of this alternative did not include a step where effort was redistributed outside of the Gulf of Mexico, as logbook data from 2006 - 2012 indicate that very few vessels that fished in the Gulf of Mexico also fished in Atlantic regions (< 1 percent of vessels). NMFS therefore presumes that these vessels would not redistribute their effort outside of the Gulf of Mexico region. Within the Gulf of Mexico, this alternative would result in a 100 percent reduction in the number of bluefin kept (-89 fish/year) and discarded (-157 fish/year). Fishery-wide, this would result in a decrease in bluefin kept by 23 percent and discarded by 14 percent. Because bluefin in the Gulf of Mexico are comprised of large fish that are sexually mature and/or spawning, and this is the only known spawning ground for western Atlantic bluefin, this alternative is expected to provide the maximum amount of ecological benefit to the bluefin stock. NMFS has determined that this alternative would have long-term direct, moderate beneficial ecological effects on the western Atlantic bluefin tuna stock. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 59.2 mt on average per year.

Impacts on Fishing Effort

This alternative would cease pelagic longline fishing by HMS-permitted vessels in the region, and therefore reduce fishing effort by all vessels fishing in the Gulf of Mexico. On average, the Gulf of Mexico pelagic longline fleet deploys 2,231,511 hooks in the Gulf of Mexico EEZ per year. Vessels are assumed not to redistribute.

Impacts on Other HMS

Expected indirect ecological effects on designated target species as a result of this alternative are presented in Table 4.15 and Table 4.16. Within the Gulf of Mexico, this alternative would result in a 100 percent reduction in the number of swordfish, bigeye tuna, yellowfin tuna, dolphin, wahoo, skipjack, albacore, porbeagle, thresher, and shortfin mako kept and discarded. Fishery-wide, a year-round gear restriction in the Gulf of Mexico EEZ would result in a decrease in swordfish kept by nearly 15 percent (-6,447 fish/year) and discarded by 31 percent (-2,785 fish/year). Yellowfin tuna kept would be reduced by approximately 40 percent (-18,159 fish/year) and discarded by 44 percent (-550 fish/year). Fishery-wide, the number of dolphin kept under this alternative is expected to decrease by 12 percent (-5,384 fish/year); discards would decrease by 20 percent (-95 fish). The number of wahoo kept under this alternative would decrease by 77 percent (an average annual reduction of 1,949 fish/year); wahoo discards would decrease by 33 percent (-23 fish/year, on average). This alternative is expected to result in a fishery-wide reduction in the percentage of bigeye tuna kept (-309 fish/year, on average) and discarded (-8 fish/year, on average) by 2 percent each. Under this alternative, shortfin mako kept and discarded fishery-wide are expected to decrease by 4 percent (-116 fish/year) and 8 percent (- 69 fish/year), respectively; thresher discards would decrease by 19 percent (-22 fish/year); albacore kept and discarded would decrease by 6 percent (-455 fish/year) and 33 percent (-99 fish/year), respectively; and skipjack kept and discarded would decrease by 47 percent (-49 fish/year) and 93 percent (-909 fish/year), respectively. Depending on the target species, there could also be substantial reductions in the number of animals kept and discarded, fishery-wide. Therefore, NMFS has determined that implementing a year-round Gulf of Mexico EEZ Gear Restricted Area would likely result in direct, moderate ecological benefits for designated target species.

An additional biological impact of a Gulf of Mexico gear restricted area that was not discussed in the DEIS but is noted in this FEIS, is the potential impact of a GOM gear restricted area on the amount of fishery dependent data (collected from the GOM pelagic longline fishery), that would be available for use in bluefin stock assessments. NMFS estimates a bluefin tuna catch-per-unit-effort (CPUE) time series for the pelagic longline fleet operating in the Gulf of Mexico using data collected through the HMS logbook. Such CPUE series have been used for stock assessment purposes by the SCRS as an index of abundance of western Atlantic bluefin tuna spawners. Therefore, one secondary consequence of an EEZ gear restricted area in the GOM would be the interruption of the CPUE data series of western Atlantic bluefin spawners that is currently used in stock assessments. Reduction in the amount of data as a result of an EEZ gear restricted area could reduce the precision of the index of abundance.

Table 4.15 Summary of logbook interactions (2006-2012) and calculation of anticipated ecological effects of Alternative B 1h (Gulf of Mexico EEZ Year-Round), on bluefin and selected target species

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
A	***January***	***181,357***	***9***	***2***	***557***	***253***	***51***	***1***	***1,926***	***33***	***23***	***2***	***70***	***2***
B	***February***	***164,161***	***15***	***6***	***646***	***256***	***33***	***0***	***1,180***	***26***	***19***	***0***	***65***	***0***
C	***March***	***184,052***	***16***	***23***	***903***	***303***	***14***	***1***	***851***	***30***	***19***	***0***	***64***	***1***
D	***April***	***154,243***	***15***	***57***	***799***	***375***	***5***	***0***	***761***	***37***	***44***	***2***	***35***	***0***
E	***May***	***189,684***	***19***	***51***	***610***	***380***	***4***	***1***	***1,298***	***78***	***653***	***18***	***97***	***4***
F	***June***	***189,842***	***4***	***13***	***327***	***184***	***10***	***2***	***1,753***	***142***	***2,105***	***43***	***290***	***6***
G	***July***	***245,591***	***1***	***2***	***378***	***164***	***12***	***0***	***2,375***	***68***	***1,598***	***16***	***509***	***3***
H	***August***	***206,694***	***0***	***0***	***325***	***130***	***12***	***2***	***1,940***	***34***	***648***	***6***	***500***	***4***
I	***September***	***195,302***	***0***	***2***	***436***	***152***	***18***	***0***	***1,659***	***25***	***135***	***3***	***155***	***2***
J	***October***	***170,183***	***2***	***0***	***472***	***169***	***35***	***0***	***1,414***	***15***	***51***	***1***	***67***	***0***
K	***November***	***183,756***	***2***	***0***	***548***	***207***	***78***	***0***	***1,564***	***25***	***54***	***2***	***55***	***0***
L	***December***	***166,646***	***6***	***1***	***446***	***212***	***37***	***1***	***1,438***	***37***	***35***	***2***	***42***	***1***
M	Average Annual Reduction of Catch or Hooks (-(SUM A to L))	-2,231,511	-89	-157	-6,447	-2,785	-309	-8	-18,159	-550	-5,384	-95	-1,949	-23
N	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	2,231,511	89	157	6,447	2,785	309	8	18,159	550	5,384	95	1,949	23
O	Average Annual Percent change in Area ((M/N)×100)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
P	Average Annual # Interactions (Σ(All PLL Interactions	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
	2006 - 2011))													
Q	Average Annual Percent change in fishery ((M/P)×100)	-35%	-23%	-14%	-15%	-31%	-2%	-2%	-40%	-44%	-12%	-20%	-77%	-33%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Table 4.16 Summary of logbook interactions (2006-2012) and calculation of anticipated ecological effects of Alternative B 1h (Gulf of Mexico EEZ Year-Round), on selected target species

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
A	***January***	***4***	***4***	***0***	***3***	***0***	***0***	***101***	***16***	***1***	***52***
B	***February***	***7***	***3***	***0***	***2***	***0***	***0***	***61***	***11***	***2***	***46***
C	***March***	***13***	***9***	***0***	***2***	***0***	***0***	***23***	***5***	***3***	***31***
D	***April***	***35***	***10***	***0***	***4***	***0***	***0***	***4***	***2***	***3***	***31***
E	***May***	***15***	***8***	***0***	***3***	***0***	***0***	***0***	***2***	***11***	***60***
F	***June***	***5***	***7***	***0***	***3***	***0***	***1***	***0***	***1***	***8***	***116***
G	***July***	***7***	***10***	***0***	***1***	***0***	***0***	***0***	***7***	***8***	***119***
H	***August***	***5***	***4***	***0***	***1***	***0***	***0***	***0***	***2***	***3***	***58***
I	***September***	***7***	***2***	***0***	***0***	***0***	***0***	***5***	***1***	***1***	***50***
J	***October***	***5***	***3***	***0***	***0***	***0***	***0***	***16***	***3***	***4***	***56***
K	***November***	***8***	***5***	***0***	***1***	***0***	***0***	***91***	***15***	***2***	***160***
L	***December***	***5***	***4***	***0***	***2***	***0***	***0***	***154***	***34***	***3***	***130***
M	Average Annual Reduction of Catch (-(SUM A to L))	-116	-69	0	-22	0	-1	-455	-99	-49	-909
N	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	116	69	0	22	0	1	455	99	49	909

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
O	Average Annual Percent change in Area ((M/N)×100)	-100%	-100%	0%	-100%	0%	-100%	-100%	-100%	-100%	-100%
P	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	2,827	904	50	117	6	267	7,016	298	105	982
Q	Average Annual Percent change in fishery ((M/P)×100)	-4%	-8%	0%	-19%	0%	0%	-6%	-33%	-47%	-93%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1i - Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area (preferred)

This alternative would establish modified gear restricted areas in the central Gulf of Mexico based upon additional consideration and analyses after including 2012 data and public comments on the Small Gulf of Mexico Gear Restricted Area, which was the preferred alternative in the DEIS. The change is responsive to public input but is a minor variation on the Small GOM GRA discussed in the DEIS, and the environmental effects are qualitatively within the spectrum of alternatives that were discussed in the DEIS. Revised analysis revealed that modification of the originally-preferred GRA and addition of a small geographic area would improve its efficacy by reflecting the locations of historical interactions while also considering the variability of the fishery and recent shifts in the location of fishing effort. As discussed in Chapter 5, both the originally-preferred Small Gulf of Mexico Gear Restricted Area and the now-preferred Modified Spring Gear Restricted Area are expected to have moderate short- and long-term economic impacts. The original proposal was expected to have economic impacts that would reduce pelagic longline fleet revenues by $93 thousand annually. In comparison, the modified alternative is expected to have economic impacts that would reduce pelagic longline fleet revenues by $281 thousand annually. In terms of overall fleet revenue, the economic effect of both alternatives can be characterized as moderate, given the overall fleet revenue of about $25 million per year.

NMFS received many public comments regarding the area and duration of a gear restricted area in the Gulf of Mexico. Comments ranged from support of establishing the Gulf of Mexico EEZ gear restricted area either year-round or from March through May, support for Alternative B 1f (Small Gulf of Mexico Gear Restricted Area) and opposition to the establishment of any gear restricted area(s) in the Gulf of Mexico.

This alternative would define two separate rectangular areas in the Gulf of Mexico and prohibit the use of pelagic longline gear during April and May. The specific time and areas of the Modified Spring Gulf of Mexico Gear Restricted Areas represents time and area combinations likely to result in reduced bluefin interactions based on past patterns of interactions by the pelagic longline fishery. The Modified Spring Gulf of Mexico Gear Restricted Areas would encompass a larger area than the Small Gulf of Mexico Gear Restricted Area preferred in the DEIS.

In addition to reviewing public comments related to the Small Gulf of Mexico Gear Restricted Area, NMFS conducted year -by -year spatial distribution analysis of bluefin tuna interactions, and catch per unit effort distributions of bluefin tuna on pelagic longline gear in the Gulf of Mexico, including 2012 data (Figure 3.18 – Figure 3.38). Pelagic longline logbook and observer data indicate that historically there have been relatively high bluefin catches and catch rates of bluefin by pelagic longline vessels in these regions. An analysis of recent logbook data (2006 – 2012) indicated that discards in the Modified Spring Gulf of Mexico Gear Restricted Areas were highest in this area in April and May. Sixty-four percent (n = 712) bluefin interactions were reported from this area in the HMS logbooks during these months (see Table 3.33- Table 3.35**)** for reported logbook interactions in the Modified Spring Gulf of Mexico Gear Restricted Areas).

The updated analysis indicated that there is a recent persistent trend in fishing effort shifting to the east of this area. Given this trend, and the known variability in the fishery in general (which the most recent data highlights), NMFS re-evaluated the costs and benefits associated with this GRA, and determined that a modified, slightly expanded area in combination with an area in the eastern Gulf of Mexico would better achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico. A geographic area larger than what was proposed would, over a multiple year time frame, be more effect at reducing bluefin tuna interactions than a smaller area (the previously preferred alternative), given the variability of the fishery. The specific boundaries of the area were determined by an iterative process, by selecting areas of historical pelagic longline interactions with bluefin, and comparing both the anticipated reduction in bluefin interactions, and the estimated reduction in revenue, of different configurations. The eastward shift in the location of the gear restricted area (compared to the previously preferred area) reflects the eastward shift in fishing effort over recent years. Inclusion of the area adjacent to the DeSoto Canyon Closed Area reflects the pattern of concentrated bluefin interactions in that area, due to the location of bluefin and known fishing behavioral patterns (where vessels tend to fish along the margins of closed areas). The shift in the location of the western and northern borders compared to the previously preferred alternative provides some additional areas for fishing opportunity.

Because bluefin in the Gulf of Mexico are comprised of large fish that are sexually mature and/or spawning, reducing interactions with pelagic longline gear in the Gulf of Mexico may also enhance spawning potential and stock growth. This alternative is a logical outgrowth from the Small Gulf of Mexico Gear Restricted Area because it represents a minor modification to the Preferred Alternative in the DEIS, is within the range of alternatives described in the DEIS, and the impacts area within the range of impacts analyzed in the DEIS.

Impacts on Bluefin

Analysis of this alternative included a step where effort was redistributed outside of the Modified Spring Gulf of Mexico Gear Restricted Areas to adjacent, open fishing grounds in the Gulf of Mexico. This alternative would reduce bluefin kept by 31 percent (-16 fish/year, on average) and discarded by 58 percent (-62 fish/year, on average). Fishery-wide, the number of bluefin kept and discarded is expected to be reduced by 4 percent and 6 percent respectively. When the total reduction of catch with and without redistribution from the Modified Spring Gulf of Mexico Gear Restricted Areas is compared to total reduction in the Gulf of Mexico (Table 4.12 or Table 4.15, row “N” for bluefin tuna), there are notable ecological gains from this preferred gear restricted area in the Gulf of Mexico. Without redistribution (Table 4.17, row “M” for bluefin divided by Table 4.15, row “N” for bluefin tuna), this alternative would account for 25 percent and 51 percent of the reduction in bluefin kept and discarded within the entire Gulf of Mexico. With redistribution, (Table 4.17 row “O” for bluefin tuna divided by Table 4.15, row “N” for bluefin tuna), this alternative would account for 18 percent of the reduction in bluefin tuna kept and 39 percent of the bluefin tuna discarded within the entire Gulf of Mexico. When considering the comparison of relative impacts in the Gulf of Mexico, it is important to note that the Modified Spring Gulf of Mexico Gear Restricted Areas covers roughly 11 percent of the Gulf of Mexico EEZ. While the savings are not as significant under this alternative as they would be under a year-round Gulf of Mexico EEZ Gear Restricted Areas, Alternative B 1i would result in a notable reduction (-39.4 percent) of bluefin discards within the Gulf of Mexico. Compared to the Small GOM GRA (Preferred in the DEIS), the Modified Spring GOM GRA would result in slightly larger reductions in number of bluefin kept and discarded, as well as a greater annual reduction in the weight of bluefin caught. As explained above, the eastward shift in bluefin effort over time and the overall variability of the bluefin interactions were important considerations in the evaluation of the Modified Spring GOM GRA ecological impacts, in addition to the reductions in the bluefin interactions. Although the Small GOM GRA would have achieved similar (but lower) reductions in bluefin interactions , the larger and more easterly configuration of the Modified Spring GOM GRA is warranted, given the eastward shift and variability of the fishery.

NMFS determined that this alternative would have direct, moderate, beneficial ecological impacts due to the local ecological benefits of reducing pelagic longline interactions within this gear restricted area. Bluefin tuna in the Gulf of Mexico are comprised of large fish that are sexually mature or spawning fish. Reducing interactions with pelagic longline gear in the Modified Spring Gulf of Mexico Gear Restricted Areas would protect a portion of the spawning stock, and could increase spawning potential and stock growth in addition to reducing bluefin dead discards, and avoiding and minimizing bluefin bycatch. These reductions in bluefin kept and discarded by pelagic longline vessels equates to 19.2 mt on average per year.

Impacts on Fishing Effort

This alternative is expected to have an annual average reduction in localized fishing effort for vessels that do not have access to the area by 9 percent (91,122 hooks/year, on average). Fishery-wide, this alternative would result in an average annual reduction in fishing effort by 1 percent. This would result in long term, direct, moderate beneficial ecological impacts on bluefin and other HMS stocks.

Impacts on Other HMS

Expected direct ecological effects on designated target species as a result of this alternative are presented in Table 4.17 and Table 4.18. This two-month gear restricted area, with redistribution, would result in localized average annual area reduction of swordfish kept by 5 percent (-95 fish/year, on average) and discarded by 13 percent (-142 fish/year, on average). The localized average annual area reduction of yellowfin tuna kept would decrease by 9 percent (-753 fish/year, on average) and discarded by 13 percent (-30 fish/year, on average). Reductions in bigeye tuna kept as a result of this alternative would be 3 percent (-4 fish/year, on average). The reductions in kept and discarded wahoo would be 3 percent (-28 fish/year, on average) and 17 percent (-1 fish/year, on average) respectively. Discards are expected to be reduced by 3 percent (-1 fish/year, on average) by this alternative. With redistribution, NMFS anticipates potential localized increases in the number of bigeye tuna discards by 50 percent (+1 fish/year, on average) and dolphin kept by 5 percent, (+78 fish/year, on average). The relatively small increase in the expected number of interactions for these species, localized ecological impacts as a result of this alternative are expected to be neutral. Fishery-wide changes as a result of this alternative for many designated target species were considered to be minimal (~1 percent or less) with redistribution (Table 4.17). NMFS therefore expects the fishery-wide long term overall direct impact on designated target stocks to be minor and beneficial due to a localized reduction in fishing effort.

Expected direct ecological effects on other designated target species (as explained in Chapter 2, a defined list of certain target species for the purpose of the analyses and alternatives) as a result of this alternative are presented in Table 4.18. As a result of this alternative, NMFS expects minor reductions in thresher sharks discarded by 33 percent (-2 fish/year), albacore tuna kept by 1 percent (-3 fish/year) and discarded by 2 percent (-1 fish/year, on average), and skipjack tuna discarded by 7 percent (-21 fish/year). Minor increases in the catch of shortfin mako are expected by kept (+50 percent, +4 fish/year) and skipjack kept by 6 percent (-21 fish/year, on average). NMFS does not expect localized or fishery-wide changes in the numbers of shortfin mako sharks discarded, thresher sharks kept, and porbeagle kept or discarded

Table 4.17 Summary of logbook interactions (2006-2012) and calculation of anticipated ecological effects of Alternative B 1i (Modified Spring Gulf of Mexico GRA) on bluefin and selected target species.

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
A	January	82,305	5	1	192	107	20	0	1,038	16	11	1	23	1
B	February	65,879	9	4	161	79	14	0	525	13	8	0	20	0
C	March	69,785	9	14	126	85	6	0	391	18	6	0	16	0
D	***April***	***76,492***	***11***	***43***	***172***	***142***	***4***	***0***	***483***	***23***	***15***	***1***	***13***	***0***
E	***May***	***97,142***	***11***	***37***	***188***	***159***	***3***	***0***	***723***	***41***	***181***	***8***	***45***	***2***
F	June	77,696	2	7	111	78	7	0	712	46	578	13	129	2
G	July	95,889	0	0	131	66	5	0	983	32	506	8	229	1
H	August	85,229	0	0	136	65	4	2	804	7	227	2	269	0
I	September	79,375	0	0	185	67	8	0	617	5	51	1	64	0
J	October	71,012	2	0	203	81	17	0	569	7	23	0	23	0
K	November	87,496	1	0	230	97	37	0	801	6	19	0	20	0
L	December	73,598	2	0	154	91	13	0	642	10	15	1	15	0
M	Average Annual Reduction of Catch or Hooks (-(D+E))	-173,634	-22	-80	-360	-301	-7	0	-1,206	-64	-196	-9	-58	-2
N	Apr-May change in catch during closure with redistribution	82,512	6	18	265	159	3	1	453	34	274	8	30	1
O	Net Change with redistribution (M+N)	-91,122	-16	-62	-95	-142	-4	1	-753	-30	78	-1	-28	-1
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	961,898	52	106	1,989	1,117	138	2	8,288	224	1,640	35	866	6

	2006-2012 Average Annual Interactions	Hooks	Bluefin Kept	Bluefin Disc	Swordfish Kept	Swordfish Disc	Bigeye Kept	Bigeye Disc	Yellowfin Kept	Yellowfin Disc	Dolphin Kept	Dolphin Disc	Wahoo Kept	Wahoo Disc
Q	Average Annual Percent change in Area ((O/P)×100)	-9%	-31%	-58%	-5%	-13%	-3%	50%	-9%	-13%	5%	-3%	-3%	-17%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	6,407,101	386	1,100	42,337	8,889	12,396	378	45,723	1,260	43,278	471	2,527	70
S	Average Annual Percent change in fishery ((O/P)×100)	-1%	-4%	-6%	0%	-2%	0%	0%	-2%	-2%	0%	0%	-1%	-1%

Table 4.18 Summary of logbook data (2006-2012) and calculation of anticipated ecological effects of Alternative B 1i (Modified Spring Gulf Of Mexico Gear Restricted Areas) on selected species

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
A	January	0	1	0	1	0	0	61	11	1	19
B	February	1	1	0	1	0	0	46	7	1	21
C	March	1	1	0	0	0	0	19	3	2	16
D	***April***	***1***	***3***	***0***	***1***	***0***	***0***	***4***	***2***	***2***	***22***
E	***May***	***2***	***1***	***0***	***1***	***0***	***0***	***0***	***0***	***3***	***19***
F	June	1	2	0	2	0	0	0	1	1	42
G	July	1	3	0	0	0	0	0	0	4	40
H	August	1	1	0	0	0	0	0	0	1	14
I	September	0	0	0	0	0	0	3	0	1	16
J	October	0	1	0	0	0	0	12	1	0	24
K	November	0	0	0	0	0	0	72	10	0	44
L	December	0	1	0	0	0	0	115	23	2	28
M	Average Annual Reduction of Catch (-(D+E))	-3	-4	0	-2	0	0	-4	-2	-5	-41
N	Apr-May change in catch during closure with	7	4	0	0	0	0	1	1	6	20

	2006-2012 Average Annual Interactions	Shortfin Mako Kept	Shortfin Mako Disc	Thresher Kept	Thresher Disc	Porbeagle Kept	Porbeagle Disc	Albacore Kept	Albacore Disc	Skipjack Kept	Skipjack Disc
	redistribution										
O	Net Change with redistribution (M+N)	4	0	0	-2	0	0	-3	-1	1	-21
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	8	15	0	6	0	0	332	58	18	305
Q	Average Annual Percent change in Area ((O/P)×100)	50%	0%	0%	-33%	0%	0%	-1%	-2%	6%	-7%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	2,827	904	50	117	6	267	7,016	298	105	982
S	Average Annual Percent change in fishery ((O/P)×100)	0%	0%	0%	-2%	0%	0%	0%	0%	1%	-2%

Values are rounded to the nearest whole number. Source: HMS logbook data

Summary of Impacts of Gear Restricted Area Alternatives on Bluefin and Other HMS.

Table 4.19 - Table 4.25 contain a summary of the impacts of the gear restricted area alternatives on selected species. The three Cape Hatteras Gear Restricted Area alternatives, the Spring Modified Gulf of Mexico Gear Restricted Areas, and the Small Gulf of Mexico Gear Restricted Area analyses considered the fact that fishing effort will likely be redistributed to other locations outside of the gear restricted area based on vessel-specific information on fishing areas as described in this chapter. The Gulf of Mexico EEZ closure alternatives were analyzed under the assumption that due to the size and temporal extent of the closure, and based on previous analyses, vessels that fished in the Gulf of Mexico EEZ would not likely redistribute effort outside of the Gulf of Mexico. The second and third columns from the left show estimated annual change in numbers of animals and in metric tons whole weight (mt ww). These estimates are derived from the data summary tables presented under each alternative, and include both the numbers of fish kept and discarded. The last row in each table shows the total overall estimated annual savings (both raw numbers of fish and the corresponding mt ww), and the total overall fishery-wide percent change in numbers of selected species kept and discarded. These overall estimates were derived from summing the numbers of fish/year, the corresponding mt ww, and the fishery-wide percent reduction in selected species of the preferred alternatives. The fishery-wide percent change for each alternative is calculated based on the total number of a particular species kept or discarded across the entire fishery. Therefore, these numbers can be added to derive an estimated impact of the preferred alternatives combined. Percent change within an area or region is relative to the total number of animals kept or discarded within that region; therefore, these estimates are not comparable and cannot be added together.

Table 4.19 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Bluefin

Alternative		Estimated Annual Change (#BFT/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Bluefin Kept	Numbers of Bluefin Discarded	Numbers of Bluefin Kept	Numbers of Bluefin Discarded
B 1b**	Cape Hatteras GRA; all vessels	-389	-46.2	-42%	-79%	-6%	-33%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-401	-47.7	-53%	-80%	-8%	-34%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	-404	-48.0	-60%	-83%	-6%	-34%
B 1f	GOM EEZ GRA (March – May)	-181	-44.2	-56%	-83%	-13%	-12%

Alternative		Estimated Annual Change (#BFT/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Bluefin Kept	Numbers of Bluefin Discarded	Numbers of Bluefin Kept	Numbers of Bluefin Discarded
B 1g**	Small GOM GRA (April – May)	-48	-11.8	-30%	-57%	-3%	-3%
B 1h	GOM EEZ GRA (year round)	-246	-59.2	-100%	-100%	-23%	-14%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	-78	-19.2	-31%	-58%	-4%	-6%
B 1d + B 1i	Combined Preferred	-482	-67.2	--	--	-11%	-40%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

The annual change in bluefin tuna catch was estimated by adding together the number of bluefin kept and discarded (see Row M in the anticipated ecological effects tables in areas where redistribution of effort was not considered, and Row O in the anticipated ecological effects tables in areas where redistribution of effort was considered, under each alternative in this chapter). The estimated annual reduction in mt ww of bluefin in the Gulf of Mexico was estimated by multiplying the number of fish by the mean weight of bluefin kept (216 kg) and discarded (255 kg), and then multiplying by 0.001 to convert kg to mt. The estimated annual change (mt ww) within the Modified Cape Hatteras Gear Restricted Area was estimated by multiplying the number of fish by the mean weight of bluefin kept (159 kg) and discarded (116 kg), and then multiplying by 0.001 to convert kg to mt. Landed bluefin weights were calculated from the dealer data and averaged from 2006-2012 for the Gulf of Mexico and North Carolina regions. Discard data from the Pelagic Observer Program from 2006-2012 was used to determine the average weight of bluefin discarded in the pelagic longline fishery. Similar to landed bluefin, the average weights were regionalized between the Gulf of Mexico and North Carolina.

NMFS estimates that, from a fishery-wide perspective, the three alternatives considered for the Cape Hatteras Gear Restricted Area would generate very similar fishery-wide reductions in the percentage of bluefin discarded (-33 to -34 percent). The Preferred Alternative results in slightly greater savings in terms of numbers of bluefin when less effort is redistributed out into adjacent areas (likely north of the gear restricted area along the continental shelf). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access based on Performance, would result in a fishery-wide reduction of bluefin discards by 34 percent. The difference between the greatest (Modified Cape Hatteras Gear Restricted Area, Alternative B1d) and least (Cape Hatteras Gear Restricted Area, Alternative B1b) bluefin savings in average numbers of fish per year is 15 bluefin. It is important to recall that the analysis of Preferred Alternative B1d does not include a buffer. NMFS considered a buffer in the analysis of the non-preferred alternatives based on potential fishing patterns and the direction of the prevailing current. This was not needed for the Preferred Alternative, because its GRA shape takes into consideration the direction of the prevailing currents and resultant implications for the fishery. Gear would be allowed to drift through the southeastern corner of the preferred Modified Cape Hatteras Gear Restricted Area.

With respect to the Gulf of Mexico GRA alternatives under consideration, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (Year Round), would generate the greatest overall fishery-wide reduction in the percentage of bluefin kept (-23 percent). Alternative B 1g, the Small Gulf of Mexico Gear Restricted Area (the preferred alternative the DEIS), would generate the least overall fishery-wide reduction in the percentage of bluefin kept (-3 percent). Preferred Alternative B 1i, Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would reduce fishery-wide bluefin discards by 6 percent, which equates to an average annual reduction in discards of 62 bluefin per year (see Table 4.17, Row “O” for net change in bluefin discards after redistribution of effort).

NMFS compared the potential reductions that could be achieved by the Spring Modified Gulf of Mexico GRAs (which represents approximately 11 percent of the Gulf of Mexico) to a historical estimate of dead discards in the whole Gulf of Mexico. NMFS estimates average annual discards within the Gulf of Mexico EEZ to be 157 bluefin per year (Table 4.15, Row “N” for bluefin discards). Therefore, NMFS estimates that by restricting geographic access to approximately 11 percent of the area of the Gulf of Mexico, the Spring Modified Gulf of Mexico GRA would reduce bluefin discards by 58 percent.

Total fishery-wide impacts of the preferred alternatives are shown in the bottom row of Table 4.19. NMFS estimates that the preferred alternatives would collectively generate average annual reductions of 482 bluefin tuna per year (67.2 mt). For bluefin tuna, the preferred alternatives would result in a collective reduction in bluefin kept and discarded by 11 percent (- 41 fish/year on average) and 40 percent (-441 fish/year on average).

Bluefin tuna interactions in the Gulf of Mexico are broadly distributed and smaller in number than in other locations within the Atlantic. Between 2006 and 2012, annual bluefin discards within the Gulf of Mexico EEZ ranged between 19 fish (2011) and 254 fish (2008). Protection of spawning Gulf of Mexico bluefin is an important part of bluefin management; however, to achieve appreciable reductions in dead discards NMFS also had to consider areas outside of the Gulf of Mexico. The Modified Cape Hatteras Gear Restricted Area, which is just over one-quarter the size of the Spring Modified Gulf of Mexico Gear Restricted Areas, accounts for nearly one-third of bluefin discards in the fishery.

Table 4.20 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Swordfish

Alternative		Estimated Annual Change (#fish/year)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-1,682	-65.6	-36%	-29%	-3%	-2%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-2,487	-97.0	-53%	-41%	-5%	-3%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	1,619	63.1	-49%	-46%	-3%	-3%
B 1f	GOM EEZ GRA (March – May)	-3,370	-131.4	-36%	-38%	-5%	-12%
B 1g**	Small GOM GRA (April – May)	-113	- 4.4	-1%	-11%	-3%	0%
B 1h	GOM EEZ GRA (year round)	- 9,232	-360.0	-100%	-100%	-15%	-30%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	-237	-9.2	-5%	-13%	0%	-2%
B 1d + B 1i	Combined Preferred	-1,856	-72.3	--	--	-3%	-5%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of swordfish discarded (- 30 percent) and swordfish kept (-15 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would result in a fishery-wide reduction of swordfish discards by 3 percent and swordfish kept by 3 percent. Preferred Alternative B 1i, the Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would reduce swordfish discards by 2 percent. This alternative is not expected to appreciably change the number of swordfish kept across the fishery (0 percent).

Total fishery-wide impacts of the preferred gear restricted area alternatives on swordfish landings and discards are shown in the bottom row of Table 4.20. NMFS estimates that the preferred alternatives would generate average annual reductions of 1,856 swordfish per year (72.3 mt) due to a reduction in swordfish kept by 3 percent (-1,439 fish/year on average) and discarded by 5 percent (-417 fish/year on average).

Table 4.21 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Yellowfin Tuna

Alternative		Estimated Annual Change (#fish/year)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-1,551	-45.0	-15%	-28%	-3%	-4%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-1,660	-48.1	-16%	-30%	-4%	-4%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	-906	- 26.3	-10%	-26%	-2%	-3%
B 1f	GOM EEZ GRA (March – May)	-3,055	-88.6	-16%	-26%	-6%	-12%
B 1g**	Small GOM GRA (April – May)	-270	-7.83	-5%	-12%	-1%	-1%
B 1h	GOM EEZ GRA (year round)	-18,709	-542.6	-100%	-100%	-40%	-44%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	-783	-22.7	-9%	-13%	-2%	-2%
B 1d + B 1i	Combined Preferred	-1,689	-49.0	--	--	-4%	-6%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, that Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of yellowfin discarded (- 44 percent) and yellowfin kept (- 40 percent). The Small

Gulf of Mexico Gear Restricted Area would result in a fishery-wide reduction of yellowfin kept and discarded by 1 percent each. Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would result in a fishery-wide reduction of yellowfin kept of 2 percent and discarded by 3 percent. Preferred Alternative B 1i, Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would reduce yellowfin kept and discard by 2 percent each.

Total fishery-wide impacts of the gear restricted area preferred alternatives on yellowfin tuna landings and discards are shown in the bottom row of Table 4.21. NMFS estimates that the preferred alternatives would generate average annual reductions of 1,689 yellowfin tuna per year (49.0 mt) due to a reduction in yellowfin kept and discarded by 4 percent (-1,615 fish/year on average) and 6 percent (-74 fish/year on average), respectively.

Table 4.22 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Bigeye Tuna

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-195	-5.7	-9%	-0%	-2%	-0%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-309	-9.0	-15%	-10%	-2%	-3%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	-312	-9.0	-15%	-10%	-3%	-1%
B 1f	GOM EEZ GRA (March – May)	-25	-0.7	-7%	-25%	0%	-1%
B 1g**	Small GOM GRA (April – May)	+1	+0.05	+1%	-4%	0%	0%
B 1h	GOM EEZ GRA (year round)	-317	-9.2	-100%	-100%	-2%	-2%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	-5	0.1	-3%	-50%	0%	0%
B 1d + B 1i	Combined Preferred	-317	-9.2	--	--	-3%	-1%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, the Cape Hatteras Gear Restricted Area (Alternative B1 c), would generate the greatest overall reduction in the fishery-wide percentage of bigeye discarded (- 3 percent), and Alternative B 1d, Modified Cape Hatteras Gear Restricted Area, would result in the greatest reduction of bigeye kept (-3 percent). Preferred Alternative B 1d, Cape Hatteras Gear Restricted Area with Access Based on Performance, could result in a fishery-wide reduction of bigeye discarded by 1 percent. Preferred Alternative B 1i, Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would not be expected to result in an appreciable change in the numbers of bigeye tuna kept or discarded.

Total fishery-wide impacts of the gear restricted area preferred alternatives on bigeye tuna landings and discards are shown in the bottom row of Table 4.22. NMFS estimates that the preferred alternatives would generate average annual reductions of 317 bigeye tuna per year (9.2 mt) due to a reduction in bigeye tuna kept by 2.5 percent (-314 fish/year on average) and bigeye tuna discarded by 1 percent (3 fish/year on average).

Table 4.23 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Dolphin

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-41	-0.3	-1%	+8%	0%	0%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-178	-1.35	-2%	+8%	0%	0%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	0 (+3 kept, -3 discarded)	0	0%	-43%	0	-1%
B 1f	GOM EEZ GRA (March – May)	-736	-5	-13%	-21%	-2%	-4%
B 1g**	Small GOM GRA (April – May)	+71	+0.5	+15%	+33%	0%	+1%
B 1h	GOM EEZ GRA (year round)	-5,479	-41.6	-100%	-100%	-12%	-20%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	+77	+0.6	+5 %	-3 %	0%	0%
B 1d + B 1i	Combined Preferred	+78	+0.6	--	--	0%	-1%

Alternative	Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change Numbers of Fish Kept	GRA % Change Numbers of Fish Discarded	Fishery-Wide % Change Numbers of Fish Kept	Fishery-Wide % Change Numbers of Fish Discarded
**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.						

NMFS estimates that, from a fishery-wide perspective, that Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of dolphin discarded (-20 percent) and kept (-12 percent). Preferred Alternative B 1d, the Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to result in any appreciable changes in the number of dolphin kept; localized and fishery wide discards are expected to decrease by 43 percent and 1 percent, respectively. Preferred Alternative B 1i, the Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), is not expected to change the numbers of fish kept or discarded across the fishery.

Total fishery-wide impacts of the gear restricted area preferred alternatives on dolphin landings and dead discards are shown in the bottom row of Table 4.23. NMFS estimates that the preferred alternatives would collectively generate average annual increases in interactions by 78 dolphin per year (+0.6 mt) due to an slight decrease in dolphin discarded by 1 percent (-4 fish fish/year on average) and a negligible increase in the number of dolphin discarded (0 percent change, +78 fish/year on average).

Table 4.24 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Wahoo

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change Numbers of Fish Kept	GRA % Change Numbers of Fish Discarded	Fishery-Wide % Change Numbers of Fish Kept	Fishery-Wide % Change Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-1	0	-2%	0%	-0%	0%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-9	+0.02	-14%	0%	0%	0%
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	0	0	0%	0%	0%	0%
B 1f	GOM EEZ GRA (March – May)	-201	-3.4	-10%	-22%	-8%	-7%
B 1g**	Small GOM GRA (April – May)	-7	-0.3	-1%	0%	0%	0%

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1h	GOM EEZ GRA (year round)	-1,972	-33.5	-100%	-100%	-77%	-33%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	-29	0.5	-3%	-17%	-1%	-1%
B 1d + B 1i	Combined Preferred	-29	-0.5	--	--	-1%	-1%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, that Alternative B 1g, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of wahoo discarded (- 33 percent) and wahoo kept (-77 percent). Preferred Alternative B 1d, the Modified Cape Hatteras Gear Restricted Area with Access based on Performance, would not be expected to result in appreciable changes to the numbers of wahoo kept and discarded across the fishery. Preferred Alternative B 1i, Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would decrease the number of wahoo kept (-28 fish/year) and discarded (-1 fish/year) by 1 percent each.

Total fishery-wide impacts of the gear restricted area preferred alternatives on wahoo landings and dead discards are shown in the bottom row of Table 4.24. NMFS estimates that the preferred alternatives will generate collective average annual reductions of 29 wahoo per year (-0.5 mt) due to negligible reductions in wahoo kept (-1 percent, -28 fish/year on average) and discarded (-1 percent, -1 fish/year on average).

Table 4.25 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Shortfin Mako

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B 1b**	Cape Hatteras GRA; all vessels	-745	-22.4	-64%	65%	-25%	-4%
B 1c**	Cape Hatteras GRA; Performance-Based Access	-769	-23.1	-66%	-68%	-26%	-5%

Alternative		Estimated Annual Change (#fish/yr)	Estimated Annual Change (mt ww)	GRA % Change		Fishery-Wide % Change	
				Numbers of Fish Kept	Numbers of Fish Discarded	Numbers of Fish Kept	Numbers of Fish Discarded
B1d ** Preferred	Modified Cape Hatteras GRA; Performance – Based Access	-702	21.1	-65%	-67%	-23%	-4%
B 1f	GOM EEZ GRA (March – May)	-90	-2.7	-54%	-39%	-2%	-3%
B 1g**	Small GOM GRA (April – May)	+3	+0.09	+25%	+13%	0%	0%
B 1h	GOM EEZ GRA (year round)	-185	-5.6	-100%	-100%	-4%	-8%
B 1i ** Preferred	Spring Modified GOM GRAs (April – May)	+4	+0.1	+50%	0%	0%	0%
B 1d + B 1i	Combined Preferred	-698	-20.9	--	--	-23%	-4%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, that Alternative B 1c, the Cape Hatteras Gear Restricted Area with Performance-Based Access, would generate the greatest overall reduction in the percentage of shortfin mako kept (-26 percent), while Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (Year Round), would generate the greatest overall reduction in the numbers of shortfin mako discarded (-8 percent). Preferred Alternative B 1d, the Modified Cape Hatteras Gear Restricted Area with Access based on Performance, would result in a fishery-wide reduction of shortfin mako discards and numbers kept by 23 percent and 4 percent, respectively. Preferred Alternative B 1i, the Spring Modified Gulf of Mexico Gear Restricted Areas (April-May), would not be expected to result in appreciable changes to the numbers of shortfin mako kept and discarded across the fishery (0 percent each).

Total fishery-wide impacts of the gear restricted area preferred alternatives on shortfin mako landings and discards are shown in the bottom row of Table 4.25. NMFS estimates that the preferred alternatives will generate average annual reductions of 698 shortfin mako per year (20.9 mt) due to a reduction in shortfin mako kept by 23 percent (-659 fish/year on average) and discarded by 4 percent (-39 fish/year on average).

Alternative B 1h–Pelagic and Bottom Longline Transiting Closed Areas

No Action

Under the No Action alternative, those HMS permitted vessels that possess longline gear, inclusive of both pelagic longline and bottom longline, would not be allow to enter the existing longline closed areas or preferred gear restricted areas, even for purposes of transiting the area. Instead, the vessels must go around these closed/gear restricted areas to remain in compliance with the regulations. As the No Action alternative would not alter fishing practices, it would have neutral impacts on bluefin, other HMS, and restricted/protected species, and would not have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Pelagic and Bottom Longline Transiting Closed Areas (Preferred)

Under this alternative, NMFS would allow HMS permitted vessels that possess bottom or pelagic longline gear on board to transit closed areas and preferred gear restricted areas, if the longline gear is stowed in such a fashion that renders the gear unavailable for use. This alternative would require fishermen to remove and stow the gangions, hooks, and buoys from the mainline and drum. The hooks could not be baited. As this alternative would not alter fishing practices, it would have neutral impacts on bluefin, other HMS, and restricted/protected species, and would not have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Alternative B 2 - Gear Measures

Alternative B 2a – No Action (preferred)

The “no action” alternative would not change current authorized gear requirements (with respect to the use of buoy gear and associated restrictions on possession of bigeye, albacore, yellowfin, and skipjack tunas (BAYS) and bluefin) applicable to those vessels with an Atlantic tunas Longline category permit and either a Swordfish Directed or Swordfish Incidental permit. Currently, vessels with an Atlantic tunas Longline category permit must also have both a Swordfish Directed or Incidental permit, and a Shark Directed or Incidental permit.

The following aspects of the current gear restrictions under the No Action Alternative that are most relevant to the management measures analyzed in this amendment are the following: (1) Vessels with the Atlantic Tunas Longline category permit are allowed to fish for BAYS using a variety of gears, including handgear (e.g.; rod and reel, handline, and harpoon), but are only allowed to retain bluefin when fishing with pelagic longline or greenstick gear; (2) vessels with the Atlantic Tunas Longline category permit and a Swordfish Directed permit are allowed to use buoy gear to harvest swordfish, but may not retain tuna (BAYS or bluefin) using buoy gear; and (3) vessels with the Swordfish Incidental permit may not fish with buoy gear at all.

These restrictions are illustrated by the two following scenarios created by two potential permit combinations. In the first scenario, a vessel is issued an Atlantic Tunas Longline category permit and a Swordfish Directed permit. If vessel operators wish to retain incidentally caught tuna, they may not use buoy gear. Although the Swordfish Directed permit allows a vessel to fish with buoy gear, the retention of tunas when fishing with buoy gear is not allowed by the Atlantic Tunas Longline category permit because buoy gear is not an authorized gear type for Atlantic tunas. Vessels with the Swordfish Directed permit may fish with buoy gear north of 5 degrees North latitude, but may deploy no more than 35 buoys, and may only retain swordfish when using buoy gear (and must discard tunas). In the second scenario, a vessel is issued an Atlantic Tunas Longline category permit and a Swordfish Incidental permit. Under this scenario, the vessel operator may not use buoy gear to harvest swordfish or BAYS tunas because buoy gear is not authorized for use under either permit. Buoy gear fishing effort, catch, and landings data from logbooks from 2007-2011 are reported in the 2012 SAFE Report (NMFS 2012). In 2011, 50 vessels conducted 603 trips with an average of 12.2 buoy gears deployed per trip. The average number of hooks per gear was 1.2 and the total number of hooks set was 8,858. In 2011 logbook data, swordfish were 97% (by weight) of total buoy gear landings and comprised 85% (by number) of buoy gear catch. Of the swordfish caught by buoy gear in 2011, 51% (by number) were kept, 45% were released alive, and 4% were released dead. After undersized swordfish, the next most commonly caught bycatch species in 2011 were night shark, hammerhead shark (unspecified), blue shark, blacktip shark, and silky shark, which comprised a combined 5% of the total catch by number.

The Florida east coast buoy gear fishery for swordfish was characterized by Kerstetter and Bayse (2009) who found that the catch rate of swordfish with buoy gear in this area was higher than pelagic longline gear in the Atlantic. Kerstetter and Bayse also found that buoy gear used off the Florida east coast had a lower catch rate of bycatch species than pelagic longline gear.

Under the No Action alternative, Alternative B2a, and assuming no change in the amount of pelagic longline fishing effort over space and time, the catch rates of pelagic longline target and bycatch species are not anticipated to change. Therefore, the direct and short-term ecological impacts would be neutral.

Alternative B 2b – Authorization of Vessels with a Swordfish Incidental Permit to Use Buoy Gear

This alternative would authorize vessels with a Swordfish Incidental permit to fish with buoy gear, except vessels fishing in the East Florida Coast Closed Area, defined in §635.2 Under this alternative, vessels would still be limited to 35 buoys. The rationale for this alternative is to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities. There is currently a 35 buoy limit for the commercial sector, which was implemented to prevent excessive amounts of unattended floating gear from being lost while allowing vessels to possess spare gear onboard.

Authorizing the use of buoy gear in the East Florida Coast Closed Area under a Swordfish Incidental permit is not preferred in order to not increase fishing effort in the area and reduce potential gear conflicts that could occur due to the large number of fishermen in proximity to the area. The amount of fishing effort in the region is an important management consideration because this area is a unique migratory corridor, which provides important habitat for many highly migratory species and protected species, including swordfish, marlin, sailfish, sea turtles, and marine mammals. The east coast of Florida, and in particular the Florida Straits, contains one of the richest concentrations of marine life in the Atlantic Ocean. A 2003 United Nations

Food and Agriculture Organization study stated that the Florida Straits had the highest biodiversity in the Atlantic Ocean, and is home to 25 endemic species. Impacts on Fishing Effort

In 2012, there were 73 Swordfish Incidental permits issued, the majority (52%) of which were issued to vessels home ported in Florida (NMFS 2012). Other states where Swordfish Incidental permits are issued include New Jersey, North Carolina, Louisiana, Texas, New York, Massachusetts, and South Carolina. The authorization of buoy gear by these 73 vessels under Alternative B 2b would increase the number of vessels allowed to use buoy gear by 40% from the existing 184 vessels with a Swordfish Directed permit.

It is difficult to estimate the impacts of providing additional opportunities to use buoy gear. Vessels with Swordfish Incidental permits may choose to fish buoy gear instead of or in addition to pelagic longline gear and may use buoy gear in areas where it is not currently used very frequently, if at all. The available buoy gear catch, bycatch, and effort information described under Alternative B 2a above is from gear used in and near the Florida Straits. There is little currently available data for buoy gear use outside of the Florida Straits. Some data are currently being collected from a small number of buoy gear boats participating in a demonstration fishery in the Northern Gulf of Mexico. This alternative may increase the amount of fishing effort with buoy gear.

Impacts on Bluefin and Other HMS

As mentioned under Alternative B 2a above, buoy gear used in and near the Florida Straits has been shown to be efficient at catching swordfish with a relatively low bycatch rate. However, due to a lack of data, it is unknown what the catch and bycatch of buoy gear would be in other areas of the Atlantic, Gulf of Mexico, U.S. Caribbean, and high seas. This lack of information makes assessing an expansion in the use of buoy gear for swordfish difficult, especially considering the potential to interact with adult bluefin tuna in the Gulf of Mexico or protected species in other areas such as off the Outer Banks of North Carolina (as examples).

At this time, NMFS does not prefer alternative B 2b because of the lack of available information needed to assess the ecological impacts of expanded buoy gear use when used to target swordfish. NMFS will continue to assess additional information as it becomes available and may re-evaluate buoy gear fishery regulations in the future.

Alternative B 2c – Allow Vessels with a Swordfish Directed or Incidental Permit and an Atlantic Tunas Longline Permit to Retain BAYS and Bluefin when Fishing with Buoy Gear

This alternative would allow vessels with an Atlantic Tunas Longline category permit and the Swordfish Directed or Incidental permit to retain BAYS and bluefin when fishing with buoy gear. The rationale for this alternative is the same as for Alternative B 2b: to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities in the context of new restrictions that may be implemented by Amendment 7. This alternative would have no effect on vessels with a Swordfish Incidental permit, unless Alternative B 2b is adopted. On its own, this alternative would provide additional flexibility for vessels with a Swordfish Directed permit and an Atlantic Tunas Longline permit.

Because vessels with pelagic longline gear on board have many associated restrictions that are triggered by the possession of this gear type (i.e., closed areas, hook, gangion, bait restrictions; Protected Species Workshop attendance, observer coverage, etc.), this alternative would affect such restrictions.

For example, if a vessel affected by this alternative removes the pelagic longline gear and fishes instead with buoy gear, it would no longer be subject to the closed areas that apply to vessels fishing with pelagic longline gear, or the pelagic longline gear hook and bait restrictions.

Impacts on Fishing Effort

As described under Alternative B 2a above, buoy gear is currently used in and near the Florida Straits at night to fish for swordfish. Tuna fishing commonly occurs during the daytime, thus authorization of buoy gear for Atlantic tunas would provide incentive for fishermen to use buoy gear during the daytime. Thus, Alternative B 2c would represent an expansion of the time period (to daylight hours) that buoy gear would be used. In 2012, NMFS finalized Amendment 4 to the 2006 Consolidated HMS FMP that created the HMS Commercial Caribbean Small Boat (CCSB) permit, which is valid only in the U.S. Caribbean. Vessels must be <45 ft length overall to be eligible for the permit. Under this permit, buoy gear was authorized for the harvest of BAYS tunas with retention limit of 8 BAYS per vessel per trip. This permit was created with restrictive measures in place that, among other things, limited the use of buoy gear for BAYS tunas to the small scale fisheries of the U.S. Caribbean. Landings information from vessels with the CCSB permit are obtained by the territorial governments and provide to NMFS. There have been 16 CCSB permits issued since the CCSB permit became available in late 2012 and landings data are not yet available from those vessels. This alternative could increase fishing effort with buoy gear.

Impacts on Bluefin and Other HMS

Due to a lack of data, it is unknown what the catch and bycatch of buoy gear would be when used during the daytime. This lack of information makes assessing an expansion of the use of buoy gear for BAYS and bluefin difficult, especially considering the potential to interact with some unknown amount of additional bycatch of other species, including billfish, which feed near the surface during daylight hours or protected species in areas off the Outer Banks of North Carolina (as examples). Alternative B 2c would create possibilities for some unknown amount of BAYS and bluefin tuna harvest throughout the Atlantic, Gulf of Mexico, U.S. Caribbean, and high seas.

At this time, NMFS does not prefer Alternative B 2c because of the lack of available information needed to assess the ecological impacts of expanded buoy gear use when used to target BAYS or bluefin in the Atlantic and Gulf of Mexico. NMFS will continue to assess additional information as it becomes available and may re-evaluate buoy gear fishery regulations in the future.

Alternative B 3 - Access to Pelagic Longline Closed Areas

These alternatives would annually allow a small number of vessels to fish commercially in the current DeSoto Canyon, Charleston Bump, and Northeastern pelagic longline closed areas; and the portion of the Florida East Coast closed area north of 28o 17' 10" North latitude, east of the 100 fathoms curve (near Cape Canaveral). The alternatives include various conditions including carrying an observer, reporting catch via VMS, and other vessel-specific criteria. Specifically, the alternatives in this section consider allowing some limited, conditional access to these areas to provide some limited additional fishing opportunities and to collect commercial fishery data that may inform future management decisions and stock assessments and help to evaluate the effects of the closures. Although the limits and conditions of the alternative (described below) were designed to ensure the continuation of the protective effects of the closures, it is difficult to predict the potential impacts that access to closed areas would have.

Alternative B 3a - No Action (Preferred)

This alternative would maintain the current regulations that prohibit pelagic longline vessels from fishing in a closed area with pelagic longline gear during the time of the closure. The biological impacts would be neutral because there would be no change to the closed area regulations and no additional fishing activity in the areas. This Alternative was not preferred in the DEIS, but is currently preferred, for reasons explained under "Conditional Access to Certain Pelagic Longline Closed Areas".

Alternative B 3b – Conditional Access to Certain Pelagic Longline Closed Areas

Methods

A qualitative analysis was conducted for this alternative instead of a quantitative analysis for several reasons. Historical catch data from prior to the implementation of each closure would be of limited use in assessing the potential future impacts of this alternative because historical catch rates may not be indicative of current or future catch rates. Prior to the closures, J-hooks were utilized and currently circle hooks are required. Secondly, the stock status of target species such as swordfish and sharks has changed (turtles and billfish are roughly the same). Specifically, swordfish were overfished when the closures were implemented but are now rebuilt whereas the dusky shark stock status has not improved. Lastly, it is likely that fishing behavior and the pelagic longline fleet characteristics are different from the time prior to the implementation of the closed areas. There are little data from within the closed areas since the time they were closed.

Florida East Coast, Charleston Bump, and DeSoto Canyon Closed Areas

The Florida East Coast, Charleston Bump, and DeSoto Canyon Closed Areas were implemented as part of a bycatch reduction strategy, based on three objectives: (1) To maximize the reduction in the incidental catch of billfish and of swordfish less than 33 lb dressed weight; (2) to minimize the reduction in the target catch of larger swordfish and other marketable species; and (3) to ensure that the incidental catch of other species (e.g., bluefin, marine mammals, and turtles) either remained unchanged or was reduced. NMFS recognized that all three objectives might not be met to the maximum extent and that conflicting outcomes would require some balancing of the objectives. The implementation of these closed areas was the result of a comprehensive approach to time/area closures and NMFS considered a broad range of closure alternatives (NMFS 2001).

The Florida East Coast Closed Area was implemented in 2001 and extends along the full east coast of Florida between 31° 00' N. lat., near Jekyll Island, Georgia, and Key West, FL. The area is defined as: the Atlantic Ocean seaward of the inner boundary of the U.S. EEZ from a point intersecting the inner boundary of the U.S. EEZ at 31°00' N. lat. near Jekyll Island, Georgia, and proceeding due east to connect by straight lines the following coordinates in the order stated: 31°00' N. lat., 78°00' W. long.; 28°17' 10'' N. lat., 79°11' 24'' W. long.; then proceeding along the outer boundary of the EEZ to the intersection of the EEZ with 24°00' N. lat.; then proceeding due west to the following coordinates: 24°00' N. lat., 81°47' W. long.; then proceeding due north to intersect the inner boundary of the U.S. EEZ at 81°47' W. long. near Key West, Florida. This area is closed year-round to pelagic longline vessels.

The Charleston Bump Closed Area was implemented on February 1, 2001, and is located off Georgia, South Carolina, and North Carolina, between 31° 00’ N. lat., near Jekyll Island, Georgia, and 34° 00’ N. lat., near Wilmington Beach, North Carolina, to 76° 00’ W. long. The area is defined as: the Atlantic Ocean seaward of the inner boundary of the U.S. EEZ from a point intersecting the inner boundary of the U.S. EEZ at 34°00' N. lat. near Wilmington Beach, North Carolina, and proceeding due east to connect by straight lines the following coordinates in the order stated: 34°00' N. lat., 76°00' W. long.; 31°00' N. lat., 76°00' W. long.; then proceeding due west to intersect the inner boundary of the U.S. EEZ at 31°00' N. lat. near Jekyll Island, Georgia This area is closed to pelagic longline vessels from February 1 through April 30 each year.

The DeSoto Canyon Closed Area was implemented on November 1,2000 based on the following rationale: (1) “The first is to prohibit fishing in an area with an historically low ratio of swordfish kept to number of undersized swordfish discarded, which over the period of 1993 to 1998 has averaged less than one swordfish kept to one swordfish discarded”; (2) “The second is to prevent further increases in swordfish discards as a result of effort displacement into this area from the Florida East Coast year-round closure”. The area is bounded by straight lines connecting the following coordinates, in the order given: 30°00' N. lat., 88°00' W. long.; 30°00' N. lat., 86°00' W. long.; 28°00' N. lat., 86°00' W. long.; 28°00' N. lat., 84°00' W. long.; 26°00' N. lat., 84°00' W. long.; 26°00' N. lat., 86°00' W. long.; 28°00' N. lat., 86°00' W. long.; 28°00' N. lat., 88°00' W. long.; 30°00' N. lat., 88°00' W. long. The DeSoto Canyon Closed Area is closed to pelagic longline vessels year-round.

Northeastern Closed Area

The Northeastern Closed Area was implemented on July 1, 1999, in order to reduce incidental catch of bluefin by pelagic longline gear, while minimizing the negative impact to targeted fishing activities (64 FR 29090; May 28, 1999). The Northeastern Closed Area is bounded by straight lines connecting the following coordinates, in the order given: 40°00' N. lat., 74°00' W.

long.; 40°00' N. lat., 68°00' W. long.; 39°00' N. lat., 68°00' W. long.; 39°00' N. lat., 74°00' W. long. This area is closed to pelagic longline vessels during the month of June.

Impacts on Fishing Effort

It is unknown whether any fishing that occurs in the closed areas would represent an increase in fishing effort, or a shift, especially in consideration of the other Amendment 7 alternatives that this alternative may be combined with. For example, as a result of the preferred gear restricted areas, there may be a shift in the location of fishing effort, but such effort may not represent an increase in overall effort. Additionally, vessels that may be able to fish in the closed areas would otherwise fish in open areas so the only change in fishing effort is the location, not the amount.

Impacts on Bluefin and Other HMS

Given the improved stock status of swordfish, as well as the gear modifications required since the closed areas were implemented (circle hooks, bait restrictions, workshop requirements, weak hooks, etc.), limited conditional access to the Florida East Coast, DeSoto Canyon, Charleston Bump, and Northeastern pelagic longline closed areas would be expected to have neutral impacts on swordfish. Although the impacts on bluefin and other HMS would be expected to be neutral and short term due to the limited number of potential trips, there is limited information with which to evaluate potential impacts, and public comment indicated that the alternative did not achieve a proper balance among the objectives the alternative. The objectives of the proposed measure were to maintain the relevant conservation aspects of the closure, balance the objectives of the closures, provide commercial data from within the closures, and provide additional fishing opportunities for permitted longline vessels (mitigating the potential negative economic impacts of Amendment 7). Although the swordfish stock has rebuilt, the public clearly believed that access to the closed area would undermine the benefits and objectives of the closures. In other words, the first objective of the alternative (to maintain the relevant conservation aspects of the closure), may not be met if NMFS allowed pelagic longline access to the closed areas. NMFS determined that the benefits of allowing access do not outweigh the risk of undermining the conservation benefits of the closed areas. This option would allow access to certain pelagic longline closed areas on a limited basis. Eligibility for access to certain closed areas would be based on performance criteria as described in Alternative B 1c. Vessels that are determined by NMFS to have relatively low rate of interactions with bluefin based on past performance and that are compliant with reporting and monitoring requirements would be allowed to fish in these areas using pelagic longline gear if an observer is onboard. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in these areas; or if a vessel can avoid bluefin, but has poor compliance with reporting and monitoring requirements, it would not be allowed to fish with pelagic longline gear in these areas even if an observer is onboard. The specific numeric scoring criteria would be the same as for Alternative B 1c.

Qualified vessels (based on the performance criteria) that are also selected for observer coverage from the Pelagic Observer Program for a given statistical area would be able to access the Florida East Coast, DeSoto Canyon, Charleston Bump, and Northeastern pelagic longline closed areas in the statistical area for which the vessel was selected if the vessel has an observer onboard. For example, a qualified vessel selected for observer coverage during January-March (Quarter 1) and selected to fish within the Gulf of Mexico, would have the ability to fish in the DeSoto closed area for trips on which an observer is onboard the vessel. If the vessel does not have an observer onboard, it would not be allowed to fish in the closed area. It is unknown whether any fishing effort in the closed areas would be new effort or represent a shift in the location of current fishing effort.

Both the application of performance criteria and the requirement for an observer would limit the maximum possible number of trips into closed areas. The target rate of observer coverage is 8% of pelagic longline sets. The Pelagic Observer Program protocols are described in Alternative B 1c (Chapter 2). It is reasonable to assume that future deployment of observers will remain at or near historical levels, based on both the amount of future fishing effort in the pelagic longline fishery, as well as the likely future limitations on observer funding. Therefore, the historical rates of observer coverage are useful for projecting the maximum number of trips that may be taken in the closed areas under this alternative. Table 4.26 below provides information on the number of observed trips per quarter in the relevant statistical areas.

Table 4.26 Range and Average Number of Observed Trips by Statistical Area, from 2006 through 2012

Statistical Area	Range of Observed Trips per Quarter	Average Number of Observed Trips per Quarter
FEC	1 – 9	5
GOM*	4 – 80	16
MAB	1 – 14	6
NEC	1 – 4	1
SAB	1 – 9	3

Source: NMFS Pelagic Observer Program data.

For example, based on the average number of observed trips in the Gulf of Mexico (16), the maximum number of trips into the DeSoto Canyon Closed Area (a year-round closure in the Gulf of Mexico statistical area), would be 64 (approximately 16 per quarter). In contrast, the maximum number of trips into the Northeast Closed Area (closed for the month of June, located in the Northeast Coastal statistical area) is likely to be about 1 or 2. The maximum number of trips in the Charleston Bump Closed Area (closed February through April, located in the South Atlantic Bight) would be about 3. These estimates are high, given the variable number of observed trips and the low likelihood of all observed vessels fishing in these areas.

Vessels would be required to declare through VMS (prior to leaving port) that they would be fishing in one of the areas, and would be required to report catch daily via VMS. NMFS would have the ability to terminate access to each area inseason in order to address issues including: (1) bycatch of marine mammals or protected species that is inconsistent with the Marine Mammal Protection Act, Pelagic Take Reduction Plan, or the Pelagic Longline BiOp (2004); (2) failure to achieve or effectively balance the objective of reducing dead discards with the objective of providing fishing opportunity; or (3) bycatch of bluefin or other HMS that may be inconsistent with the objectives or regulations or the 2006 Consolidated HMS FMP, or ICCAT recommendations.

This alternative was preferred in the DEIS, however, based upon additional information, public comment, and further consideration of potential administrative costs, NMFS no longer prefers this alternative. NMFS may obtain data from within the closures through the use of exempted fishing permits. Not-withstanding the above qualitative analysis, the potential benefits of allowing pelagic longline vessels limited conditional access to the closed areas would not outweigh the potential costs and risks associated with this activity. The objectives of this alternative were to maintain the relevant conservation aspects of the closure, balance the objectives of the closures, provide commercial data from within the closures, and provide additional fishing opportunities for permitted longline vessels (mitigating the potential negative economic impacts of Amendment 7).

The East Florida Coast, Charleston Bump, and DeSoto Canyon Closed Area were implemented as a part of a bycatch reduction strategy, based on three objectives: (1) To maximize the reduction in the incidental catch of billfish and of swordfish less than 33 lb dressed weight; (2) to minimize the reduction in the target catch of larger swordfish and other marketable species; and (3) to ensure that the incidental catch of other species (e.g., bluefin marine mammals, and turtles) either remains unchanged or is reduced. Upon implementation of these closed areas, NMFS recognized that all three objectives might not be met to the maximum extent and that conflicting outcomes would require some balancing of the objectives (64 FR 69982; December 15, 1999; 65 FR 47214; August 1, 2000; 66 FR 17389; March 30, 2001).

There are data that support the assertion that the closed areas have contributed to the achievement of their objectives, in concert with other management measures. NMFS provides an annual review of the potential effectiveness of the current suite of management measures, including closed areas, at reducing bycatch in its annual SAFE report for HMS. Although this review does not isolate and quantify the effectiveness of closed areas as a separate management tool, the estimated reductions in discards of swordfish, blue marlin, white marlin, sailfish, and spearfish, as a result of all management measures, have remained consistently high (-50 to -70 percent), suggesting that the current suite of international and domestic management measures have played a significant role in allowing the United States to reduce its bycatch interactions.

Research conducted in the Florida East Coast Pelagic Longline Closed Area and the Charleston Bum Pelagic Longline closed area to obtain baseline catch data (72 FR 62441; November 5, 2007), indicated significantly higher catch rates of juvenile swordfish in the closed areas compared with outside areas (Kerstetter 2011). Researchers advised against a public reopening of the closed areas without additional highly-monitored research to further refine baseline data, develop historical comparisons of catch rates, and to define bycatch limits for the region. Although the applicability of the results of this research to the evaluation of the alternative is limited by the scope of the research and the fact that they used a different hook size than is common in the fishery (18/0 non-offset) it provides some relevant information. There has been no research conducted in the DeSoto Canyon closure with which to evaluate the potential impacts of conditional access to these areas.

Given the likely benefits of the closed areas, the difficulty in determining the precise magnitude of the benefits of the closed areas in the context of other management measures, as well as the difficulty predicting the potential impacts that access to closed areas would have, NMFS believes that there is uncertainty whether the first objective of the alternative (maintain relevant conservation aspects of the closure) would in fact be met. The access to closed areas alternative does not include defined bycatch limits, but relies upon the assumption that low levels of fishing effort would be sufficient to prevent excessive bycatch. Furthermore, there would be administrative costs associated with the access program associated with observer selection and placement and coordination with the enforcement personnel. Therefore, NMFS has concluded the benefits associated with providing additional fishing opportunities (by providing access) would not outweigh the costs in terms of the risk of undermining the conservation benefits of the closed areas at this time. With respect to providing commercial data from within the closures, as stated previously, NMFS may obtain data from within the closures through the use of exempted fishing permits. As noted in the draft Atlantic HMS Management-Based Research Needs and Priorities (July 2014), among the topics identified as a high priority research need is “Assessing the long-term ecological and socioeconomic impacts of closed areas for HMS.” NMFS will continue to evaluate mechanisms to evaluate the long-term ecological and socio-economic impacts of the closed areas for HMS in the future.

Summary of Impacts of Area Based Alternatives

Table 4.27 Summary of Biological Impacts of Area Based Alternatives

Alternative	Quality	Timeframe	Impacts
Gear Restricted Areas			
No Action	Direct	Long-term	o / ◓ –
Cape Hatteras Gear Restricted Area	Direct	Long-term	ø +
Cape Hatteras Gear Restricted Area with Limited Conditional Access	Direct	Long-term	ø +
Modified Cape Hatteras Gear Restricted Area with Limited Conditional Access	Direct	Long-term	ø +
Allow Pelagic Longline Vessels to Fish under General Category Rules	Direct	N/A	o
Gulf of Mexico EEZ Gear Restricted Area (March –May)	Direct	Long-term	ø +
Small Gulf of Mexico Gear Restricted Area (April – May)	Direct	Long-term	ø +
Gulf of Mexico Gear Restricted Area (year-round)	Direct	Long-term	ø +
Modified Spring Gulf of Mexico Gear Restricted Areas	Direct	Long-term	ø +
Pelagic and Bottom Longline Transiting Closed Areas	Indirect	N/A	o
Gear Measures			
No Action	Direct	N/A	o
Authorization of Swordfish Incidental Permit to Use Buoy Gear	Direct	Short-term	o / ◓ +
Allow BAYS and Bluefin to be Retained with Buoy Gear	Direct	Short-term	o / ◓
Access to Closed Areas Using Pelagic Longline Gear			
No Action	Direct	N/A	o
Limited Conditional Access to Closed Areas	Direct	N/A	o

Alternative	Quality	Timeframe	Impacts
Performance Criteria for Access to Closed Areas	Direct	N/A	o

Preferred Alternatives Shaded

4.1.3 Bluefin Tuna Quota Controls

Alternative C 1 - No Action

Under this alternative, there would be no change to the current regulations that restrict pelagic longline vessel retention of bluefin, but which do not restrict the amount of dead discards. Under current regulations, when the projected landings of bluefin by pelagic longline vessels reaches the quota, Longline category vessels are prohibited from retaining and landing bluefin, but may continue to fish for their target species and must discard bluefin. The amount of bluefin caught by vessels fishing with pelagic longline gear would not be capped. Although there are many factors that influence the amount of fishing effort in the pelagic longline fishery, and the amount of bluefin caught would be indirectly restrained by other regulations and factors, there would not be a specific limit on the amount of bluefin the fishery would be allowed to catch.

The net impact of the no action alternative on bluefin would be continued discarding of bluefin. Based on the catch in recent years, it is likely that the resultant total catch of bluefin by the Longline category would continue to exceed the Longline category quota of 8.1%. During 2009, 2010, and 2011, the amount of bluefin discarded by the Longline category was greater than the amount of bluefin landed (by pelagic longline vessels). Total catch of bluefin by the Longline category ranged between one and two times the adjusted quota (278.3 mt in 2009; 221 mt in 2010; 213.4 mt 2011). The discarded fish represent a source of fishing mortality, in addition to the landed fish. Although NMFS would account for the bluefin discards by the pelagic longline fishery such that United States would not likely exceed its total bluefin quota, the need to account for this catch would continue to make quota accounting challenging, and increase uncertainty in the fishery. If the need to account for large numbers of discarded bluefin makes it more likely that the overall quota would be exceeded, or if the mortality associated with discarded fish decreases spawning potential, discards may undermine the attainment of the biological objectives of the 2006 Consolidated HMS FMP. Although it is unknown what the survival rate of discarded bluefin is, it can be said with certainty that a portion of the discarded fish will be dead when they are discarded, or will subsequently die as a result of the direct or indirect effects of capture. In addition to the potential biological impacts of discards, there are economic and social impacts associated with wasted fish, and the need to account for discarded fish (described in Chapter 5).

Alternative C 2 - Individual Bluefin Quotas (IBQs)

This alternative would implement individual bluefin quotas (IBQs) for qualified Atlantic Tuna Longline category permit holders that would result in prohibiting the use of pelagic longline gear when the permit holder's individual bluefin quota has been caught. The distribution of IBQ shares and allocation to individual permit holders as well as a provision for leasing of that quota allocation would reduce bluefin dead discards by capping the catch (landings and dead discards),and providing incentives to reduce discarding and flexibility for permit holders to continue to operate in the fishery. Compared to the No Action Alternative, IBQs would reduce dead discarding by capping catch of bluefin because the cap would limit the landings and dead discards of pelagic longline category permit holders. The IBQ program would have direct beneficial biological impacts on bluefin due to the restriction of total bluefin catch. Restriction of the Longline category bluefin catch through the use of IBQs would make it less likely that the overall bluefin quota would be exceeded because the Longline category would be subject to a specific, enforceable limit on the amount of bluefin that may be caught. The IBQ program would essentially limit fishing mortality by the Longline category, and therefore may indirectly enhance bluefin spawning potential and facilitate achievement of the biological objectives of the 2006 Consolidated HMS FMP. The amount of target species catch such as swordfish and yellowfin would depend primarily upon the amount of fishing effort and whether the IBQs become constraining. If the IBQs result in reductions in pelagic longline fishing effort, because bluefin quota constrains permit holders, there may be some minor beneficial biological impacts on non-bluefin target stocks. If the number of permit holders declines, the amount of total bluefin catch could be further reduced and the catch of target species may be reduced further.

Not all of the individual elements of the IBQ program are analyzed separately with respect to their biological impacts. Some of the elements of the IBQ program (e.g., reporting and monitoring) have economic and social impacts, but only indirect biological impacts.

Bluefin Allocations

The amount of overall fishing effort and the amount of bluefin catch would depend not only upon the total Longline bluefin quota (see Section 2.1, Allocation Alternatives, and Section 4.1.6), but also may be affected by the number and type of vessels eligible to receive bluefin shares and allocations, the amounts of quota allocated to individual permit holders, and the distribution of quota allocation and shares among permit holders. For most pelagic longline permit holders, the amount of bluefin share and allocation is not likely to change the amount of fishing effort because most pelagic longline vessels do not interact with many bluefin, and other factors are likely to be more important. The historical data indicate that the majority of bluefin have been caught by relatively few vessels (Figure 3.40). Other factors that will limit fishing effort are regulations such as gear requirements and closed areas, fuel costs, market conditions, fish availability, oceanographic conditions (e.g., the Gulf Stream location), weather, and safety considerations. However, for some permit holders, individual bluefin shares and/or allocations would constrain fishing effort. The constraining effect of the IBQs on the pelagic longline fishery as a whole is discussed here, but the socio-economic impacts of IBQ shares and allocations on individual permit holders are discussed in Chapter 5. The overall biological impact of IBQ allocations would be direct, short-term, beneficial and moderate because they would limit the landings and dead discards of bluefin by the Longline category and provide incentives to reduce interactions with bluefin.

As discussed in detail in Section 4.1.6, the number of eligible vessels that would be constrained by their IBQ share (if they do not alter fishing behavior) depends upon the specific bluefin quota share formula. Under Alternative C 2b.1 (Equal Shares), between 13% and 40% of vessels would be constrained by their IBQ quota share, depending upon the amount of quota allocation. Under Alternative C 2b.2 (Based on Designated Species Landings), between 24% and 43% of vessels would be constrained by their IBQ share. Under Alternative C 2b.3 (Preferred Alternative; Based on Designated Species Landings and the Ratio of Bluefin Catch to Designated Species), between 20% and 36% of vessels would be constrained by their IBQ share. Based on this information, there would be incentives to avoid bluefin and there may be reductions in fishing effort, if constrained vessels neither avoid bluefin nor obtain additional bluefin quota. Additional quantitative information on the biological impacts of the IBQ allocations is provided in Section 4.1.6 (Combining the Quota Allocation Alternatives with the IBQ Allocation Alternatives). The impacts of IBQ shares on individual vessels, which are considered as economic and social impacts, are analyzed in Chapter 5.

Under Alternative C 2a.1, any permitted vessel would be eligible to receive quota shares (253 vessels), and under Alternative C 2a.2, only permitted active vessels would be eligible to receive quota shares (135 vessels). At the time of publication of the proposed rule, NMFS determined that 161 vessels met the criteria to be deemed "active". The addition of 2012 data resulted in the addition of 9 vessels to the pool of "active" vessels; in other words, 170 vessels were deemed "active" under the proposed IBQ program. However, this number of "active" vessels does not consider whether the vessel was associated with the permit at the time the proposed rule published. Although the DEIS indicated 161 vessel were eligible, only those permit holders that had a permit associated with a vessel as of August 21, 2013 were notified that they were eligible through a letter. Of the 170 vessels that reported a set in the HMS logbook between 2006 and 2012, 135 vessels had valid Atlantic Tunas Longline category permits on a vessel as of the publication of the proposed rule (August 21, 2013). Therefore, 135 permit holders are considered eligible under both requirements to receive IBQ shares under this subalternative.

Whether or not a bluefin allocation is constraining to a particular permit holder was quantified using the same data that was utilized to develop the individual bluefin quota allocations (based on the ratio of bluefin to designated species landings).

Leasing

With respect to the scope of the leasing, if leasing were allowed between the Longline and Purse Seine categories, the net amount of bluefin interactions by the pelagic longline fishery under a system of IBQs would likely be more than under a system in which such leases were prohibited. Because the potential costs of obtaining new quota may be relatively high, the amount of available quota allocation for leasing would likely exceed the amount of quota allocation actually leased and used. The total amount of landings and dead discards would depend upon the combination of alternatives. A combined amount of landings and dead discards greater than about 239 mt would represent an increase over the historical average (2006 to 2012). Section 4.1.6 provides data on the amount of quota available to the Longline category under various combinations of alternatives (reallocation alternatives and IBQ initial share formulas). Leasing would contribute toward an effective IBQ system, but would not have a biological impact distinct from the impact of the IBQ system as a whole.

Monitoring and Enforcement

The monitoring and enforcement alternatives of the IBQ system include VMS reporting, electronic monitoring, NMFS authority to close the pelagic longline fishery, NMFS authority to extrapolate dead discards, and increased observer coverage. All of these management measures would contribute toward an effective IBQ system. The IBQ alternative would require a method of accounting for both landings and dead discards in order to fully account for the catch contributing toward the quota, and monitoring the status of the quota. In the discussion of the impacts of this alternative, the separate elements of catch that contribute towards the quota (landings and dead discards) are not distinguished. The discussion of the biological impacts includes the assumption that inseason monitoring of dead discards and landings is occurring, or if only inseason monitoring of landings is occurring, that dead discards are accounted for by deducting quota ‘up front’ from the Longline or Reserve categories. The enforcement and monitoring alternatives would enhance the likelihood that the IBQ program will achieve its biological objective. Under an IBQ program, there may be increased incentives to misreport catch, or not comply with other aspects of the regulations due to the accountability at the level of individual permit holders. Additional management uncertainty would result from the possibility that some permit holders will misreport or illegally discard fish. Management uncertainty is a useful concept in evaluating management tools in a qualitative way, and for the purposes of this document, is defined as the ability to control catch and the adequacy of catch data. Low management uncertainty equates to a high likelihood that management measures will result in a level of catch that is less than or equal to the catch objective, and high management uncertainty equates to a lesser likelihood that management measures will result in the desired level of catch.

The monitoring and enforcement measures would mitigate this management uncertainty, and when compared with the No Action Alternative, the IBQ alternative would result in increased incentives to avoid bluefin and an increase in overall accountability. This increase in overall accountability for bluefin in the pelagic longline fishery would contribute toward an effective IBQ system, but would not have a biological impact distinct from the impact of the IBQ system as a whole.

NMFS’ ability to take action inseason to close the fishery when it projects that the total quota will be caught would provide an enforceable means to stop the landings and dead discarding of bluefin in order to prevent exceeding the quota. Furthermore, NMFS would be able to close the fishery if there is high uncertainty regarding the amount of catch of bluefin relative to the quota. This ‘backstop’ would further ensure that the biological impacts would be beneficial. The amount of target species catch such as swordfish and yellowfin would depend primarily upon the amount of fishing effort and whether the IBQs become constraining. If the IBQs result in reducing pelagic longline fishing effort, there may be some minor positive biological impacts on target stocks. Additional analysis of NMFS closure of the Longline category is found in Section 4.1.3 (Biological Impacts of NMFS Closure of Pelagic Longline Fishery).

VMS reporting of dead discards, electronic monitoring, and NMFS ability to extrapolate observer data and implement new observer requirements would provide enhanced data with which to manage bluefin catch by the pelagic longline fishery via inseason action.

Alternative C 2l.1 - Measures Associated with an IBQ - Elimination of Target Catch Requirement (Preferred)

In this alternative, the current target catch requirements for pelagic longline vessels would be eliminated. This measure would be implemented in conjunction with a pelagic longline IBQ catch cap. The target catch requirement acts at the level of an individual trip, limiting bluefin retention, but does not prevent discarding of bluefin. The target catch requirement therefore contributes to the discarding of bluefin if the amount of target catch species is insufficient to retain the numbers of bluefin caught. If an annual pelagic longline IBQ catch cap is implemented, elimination of the target catch requirement would reduce discarding, and enable vessels to fish for their target species in a more flexible manner. A vessel that has caught some bluefin but has insufficient target species to meet the target catch requirement would no longer have to choose between discarding bluefin or fishing for more target species, but would be able to stop fishing with any ratio of bluefin to target catch on board. To the extent that this alternative would eliminate the fishing scenario where a vessel fishes for additional target species in order to satisfy the ratio of target catch to bluefin, this alternative may reduce fishing effort. The annual IBQ catch cap would replace the target catch requirement as the means of limiting the amount of bluefin caught on an annual basis, instead of on a per trip basis. The net result would be a direct, beneficial minor, short-term biological impact.

Impacts on Bluefin

NMFS analyzed logbook data to explore patterns in bluefin retained and discarded in relation to the amount of target catch, and infer the reason for discarding on historical trips. This data illustrate discarding as a result of the target catch requirements, and support the conclusion that elimination of the target catch requirement would reduce discarding.

The analysis is based upon 2011 data on the number of trips landing bluefin (as well as the number of bluefin kept), organized according to the amount of bluefin allowed to be retained (per the target catch requirements). A single year of data was analyzed to simplify the analysis, which provides an example of some retention patterns in the fishery, and illustrates the impacts of the target catch requirement. The underlying data were analyzed according to the amount of target species on a trip (all fish species landed, not including bluefin).

Table 4.28 Number of Trips on which Bluefin were Allowed (based on target catch per trip) versus number of Bluefin that were Kept in 2011

# BFT	**# BFT Kept**						
Allowed	0	1	2	3	4	10	**Total Trips**
0	242	21	1	1			265
1	459	88	10		1	1	559
2	322	54	66	6			448
3	3			1			4
Total Trips	1,026	163	77	8	1	1	1,276

Source: 2011 HMS Logbook Data.

For example, Table 4.28, for those trips on which the allowable amount of bluefin was zero (because those trips had less than 2,000 lb of target species retained), there were 242 trips with zero bluefin kept (which is compliant with the target catch requirement), but there were 23 trips that do not appear to be in compliance with the target catch requirements (based on the number of bluefin kept (1, 2, or 3). NOAA's Office of Law Enforcement is aware of this information.

These data were used to derive a compliance rate for each year. This information was summarized for the years 2006 through 2011 and is shown in Table 4.29. Table 4.29 also includes the number of trips at each target catch level in order to show their relative frequency.

Table 4.29 Percentage of Trips Compliant with Target Catch Requirements and Number of Trips for Each Target Catch Level

	2006	2007	2008	2009	2010	2011
Compliant trips	98 %	97 %	97 %	97 %	96 %	97 %
Non-Compliant trips	2 %	3 %	3 %	3 %	4 %	3 %
Number of Trips:						
< 2,000 lb (0 BFT allowed)	295	300	362	308	364	265
2,000 to 5,999 lb (1 BFT allowed)	524	724	686	631	603	559
6,000 to 29,999 lb (2 BFT allowed)	467	472	344	471	310	448
30,000 lb and over (3 BFT allowed)	2	8	7	12	7	4

Source: Logbook Data.

According to the logbook data, a high percentage of the trips were in compliance with the target catch requirements with respect to the number of bluefin that were retained. As mentioned above, these logbook data were also utilized to infer the reason for discarding. To infer the reason for discarding, the analysis focused only on trips with discards. Two classifications of trips were created: (1) Discarding after the maximum allowable number of bluefin had been retained, and (2) discarding for another reason (if the maximum amount of bluefin had not been retained). The data were organized according to the allowable amount of bluefin that could be retained per trip, as well as the amount of bluefin retained per trip. For example, if a trip is allowed retention of two bluefin, but there was zero or one bluefin retained on the trip, and bluefin were discarded, it was concluded that the reason for discarding was not the target catch requirement (because the number of bluefin on that trip did not appear to be at the maximum amount). Similarly, trips on which bluefin were discarded and for which the number of retained bluefin was at the maximum allowed number, the discard reason was concluded to be the target catch requirement. Table 4.30 shows data for 2011 as an example.

For example, based on Table 4.30, during 2011, on trips where 1 bluefin was allowed to be retained, there were 10 trips that discarded bluefin even though the trips had zero bluefin retained, and 13 trips that discarded bluefin that had retained 1 bluefin. Similarly, on trips where 2 bluefin were allowed to be retained, three were 10 trips that discarded bluefin even though the trips had zero bluefin retained, and there were 20 trips that discarded bluefin tuna where they had retained 2 bluefin. In Table 4.30, the data is summarized for trips with between 2,000 and 5,999 lb of target catch (Allowed bluefin = 1; and for trips between 6,000 and 29,999 lb (Allowed BFT = 2) to determine the reason for discarding bluefin. For trips with less than 2,000 lb of target catch (Allowed BFT = 0), the data were not summarized because the discard reason could not be inferred. There was very little data for trips with target catches of 30,000 lb or greater.

Table 4.30 Number of Trips on Which Bluefin Discarded, by Number of Bluefin Retained, for Trips on Which One and Two Bluefin Were allowed to be Retained in 2011

		# Trips	
	# BFT Retained	0 BFT Discards	> 0 BFT Discards
1 BFT allowed to be retained	0	449	10
	1	75	13
	2	9	1
	4	0	1
	10	1	0
	Total	534	25
2 BFT allowed to be retained	0	312	10
	1	46	8
	2	46	20
	3	1	5
	Total	405	43

Source: Logbook Data

Table 4.31 Percentage of Trips Discarding Due to Retaining the Maximum Allowable Number of Bluefin, or Other Reason for Discards

Discard Reason	Allowed BFT	Percentage of Trips					
		2006	2007	2008	2009	2010	2011
BFT maximum hit	1	80	67	77	79	61	60
Other Reason		20	33	23	21	39	40
BFT maximum hit	2	68	40	40	51	49	58
Other Reason		32	61	60	49	51	42

Source: Logbook Data

In other words, according to Table 4.30 and Table 4.31, the target catch requirement was the reason for discarding between 60 and 80 percent on trips where one bluefin was allowed to be retained (target catch was between 2,000 and 6,000 lb, and one bluefin was retained). Similarly, NMFS concluded that the target catch requirement was the reason for discarding for between 40 and 68 percent of trips on which two bluefin were allowed to be retained (target catch was between 6,000 and 30,000 lb, and two bluefin were retained).

Impacts on Fishing Effort and Other HMS

Elimination of the target catch requirement would facilitate fishing for the target species by removing the requirement that a certain amount of target species be landed in order to land a particular amount of bluefin. Although the quota control alternatives would constrain fishing effort based on bluefin quota, there would not be a regulatory link between the amount of bluefin and the amount of target catch.

Alternative C 2l.2 - Mandatory Retention of Legal-Sized Dead Fish (Preferred)

Under this alternative, pelagic longline vessels would be required to retain all legal-sized bluefin tuna that are dead. This alternative is intended to be implemented in conjunction with the IBQ alternative and elimination of the target catch requirements. Requiring the retention of all legal-sized dead bluefin is intended to reduce dead discards and would eliminate the situation where it is legal to discard a legal-sized dead bluefin. Because these fish would be required to be retained, legal discards and the waste of fish would be decreased, and it may be more likely that such fish are accurately accounted for, and result in a positive use (marketed, used for scientific information, etc.). The biological impacts are expected to be direct, short-term, beneficial and minor. Based on the data in Chapter 3 regarding size of dead discards, this alternative (if implemented with Alternative C 21.1, Elimination of the Target Catch Requirement) would result in retention of legal-sized bluefin that under current regulations would be discarded . There are legal sized fish that are currently discarded. Table 4.32 contains information on the number of live and dead bluefin tuna caught by the pelagic longline fishery.

Table 4.32 Reported Disposition of Bluefin Tuna Reported by Pelagic Longline Fishery

Year	Kept	Discarded Dead	Discarded Alive	Total Number of Interactions	Percent of Interactions Discarded Alive
1999	270	221	383	874	44 %
2000	236	354	384	974	39 %
2001	183	152	196	531	37 %
2002	178	284	309	771	40 %
2003	275	361	520	1,156	45 %
2004	476	475	556	1,507	37 %
2005	376	289	477	1,142	42 %
2006	261	284	549	1,094	50 %
2007	337	387	958	1,682	57 %
2008	343	414	1,003	1,760	57 %
2009	629	404	886	1,919	46 %
2010	392	401	1,087	1,880	58 %
2011	347	246	519	1,112	47 %
2012	393	197	367	957	38 %
Average	335	319	585	1,239	46 %

Source: NMFS logbook data.

Based upon information from 1999 through 2012, approximately 46% of the bluefin caught were released alive. Although this information does not indicate how many bluefin may be retained or discarded under this alternative (compared to the No Action Alternative), it is relevant to considering the biological impacts of dead discards. Of those fish discarded, approximately 46% were discarded alive.

Alternative C 3 - Regional and Group Quotas

Regional Quotas

Regional catch caps would close designated geographic regions to the use of pelagic longline gear when it is projected that the relevant bluefin tuna cap will be caught. Compared to the No Action Alternative, the regional catch cap alternative would reduce dead discarding by capping catch of bluefin. The overall biological impact of regional quotas is expected to be direct, moderate beneficial and short-term as a result of capping the amount the bluefin that the pelagic longline fishery may land or discard dead, and prohibiting the use of pelagic longline gear when this level is projected to be reached. Restriction of the Longline category bluefin catch may make it less likely that the overall quota would be exceeded, and may enhance spawning potential and facilitate achievement of the biological objectives of the 2006 Consolidated HMS FMP. The amount of overall fishing effort and the amount of bluefin catch would depend primarily upon the amount of total bluefin quota. The bluefin catch may also be further constrained by the regional quotas. Compared with the No Action Alternative, implementation of regional catch caps may result in different levels of catch on a regional basis. The relative percent of the quota allocated to each region would determine the maximum catch of bluefin for each region. As discussed below, the method used to account for dead discards would affect the operation of the regional quota program.

Impact on Fishing Effort, Bluefin, and Other HMS

It is difficult to predict the total amount of fishing effort that would occur under Regional quotas, and the amount of bluefin quota that would be caught. The most important factor would be the size of the Longline quota, which would be determined by the U.S. quota, as well as if an Amendment 7 quota alternative is implemented that would result in increased availability of quota for the Longline category. There is likely to be less fishing effort under the Regional quota alternative (compared with the No Action alternative) because a few vessels could catch a large number of bluefin and cause the closure of the entire area to the use of pelagic longline gear. The historical data indicate that the majority of bluefin have been caught by relatively few vessels. The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the regional catch caps or IBQs become constraining. If the regional catch caps reduce pelagic longline fishing effort, there may be some minor positive biological impacts on target stocks.

The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the regional catch caps become constraining. If the regional catch caps reduce pelagic longline fishing effort, there may be some minor beneficial indirect short-term biological impacts on target stocks.

To illustrate the effect of a regional catch cap, the Mid-Atlantic Bight is used as an example. Table 4.33 shows the number of interactions, the associated conversion to metric tons, and the cumulative amount to indicate how long the catch cap would last, based on past catch patterns. This example uses a Mid-Atlantic Bight annual catch cap of 16.7 mt (out of a total quota of mt 61.1 mt) based on Table 4.33 using the number of interactions by month in 2009, 2010, and 2011, and a conversion weight of 419 lb per fish. If a future catch cap were 16.7 mt, and the catch is similar to that in 2009, 2010, or 2011, the Mid-Atlantic Bight would close to the use of pelagic longline gear in January (2009 and 2010), or April (2011). This analysis represents the greatest biological impacts likely associated with this alternative as a result of the assumptions used. This analysis may overestimate the impacts due to the weight of the fish used (419 lb) which is heavier than the average bluefin landed in the Atlantic, and overestimates the number of interactions because the number of historical interactions includes live discards, which would not count against the quota.

In contrast, if the average weight was smaller, and the number of interactions was reduced, the quota would last longer. Even though it is difficult to predict how long a regional quota would last, it is clear that it would constrain bluefin landings and dead discards to levels below recent levels. The most important factor would be the size of the Longline quota, which would be determined by the U.S. quota, as well as if an Amendment 7 quota alternative implemented that would result in increased availability of quota for the Longline category. If the overall Longline quota were larger than 61.1 (e.g., 216.7 mt; see Sections 2.1.2 and 2.1.3, Alternatives A 2 and A 3, respectively), the regional quota for MAB would be larger (e.g., 59.2 mt), and it would take longer for the quota to be attained.

Table 4.33 Regional Quota Control Exploration of Mid-Atlantic Bight Example. Number of Interactions and Weight by Month.

	2009			2010			2011		
Month	#	mt	mt (cumulative)	#	mt	mt (cumulative)	#	mt	mt (cumulative)
Jan	94	17.7	17.7	168	31.7	31.7	33	6.2	6.2
Feb	147	27.7	45.5	226	42.6	74.3	35	6.6	12.8
Mar	87	16.4	61.9	247	46.6	121.0	1	0.2	13.0
Apr	83	15.7	77.6	7	1.3	122.3	134	25.3	38.3
May	11	2.1	79.6	33	6.2	128.5	17	3.2	41.5
Jun	8	1.5	81.1	8	1.5	130.0	37	7.0	48.5
Jul	28	5.3	86.4	17	3.2	133.2	7	1.3	49.8
Aug	1	0.2	86.6	0	0	133.2	2	0.4	50.2
Sep	0	0	86.6	11	2.1	135.3	0	0.0	50.2
Oct	17	3.2	89.8	19	3.6	138.9	2	0.4	50.6
Nov	109	20.6	110.4	275	51.9	190.8	29	5.5	56.0
Dec	142	26.8	137.2	15	2.8	193.6	24	4.5	60.6
Total	727		137.2	1,026		193.6	321		60.6

Group Quotas

This alternative would implement a quota system with three defined bluefin quota groups and assign permits to one of the three groups. The use of pelagic longline gear would be prohibited on vessels associated with permits assigned to a particular quota group when it is projected that the relevant bluefin group quota will be caught. Compared to the No Action Alternative, the group quota alternative would reduce dead discards. The overall biological impact of group quotas is expected to be direct, moderate, beneficial and short-term as a result of capping the amount the bluefin tuna that the pelagic longline fishery may land or discard dead, and prohibiting the use of pelagic longline gear when this level is projected to be reached. Restriction of the Longline category bluefin catch may make it less likely that the overall quota would be exceeded, and may enhance spawning potential and facilitate achievement of the biological objectives of the 2006 Consolidated HMS FMP. The amount of overall fishing effort and the amount of bluefin catch would depend primarily upon the amount of total bluefin quota. The bluefin catch may also be further constrained by the group quotas. Compared with the No Action Alternative, implementation of group quotas may result in different levels of catch among the different quota groups. The combined amount of bluefin landings and dead discards by each quota group would determine whether the quota is attained and the use of pelagic longline gear is restricted. As discussed below, the method used to account for dead discards would affect the operation of the group quota program.

The analysis below used the specific group quotas as discussed in Chapter 2 and historical information on the number of interactions with bluefin in order to address the question of whether the quota groups would have adequate bluefin quota to continue fishing for their target species, or whether the quota would be attained. To determine if a quota would be attained the number of interactions with bluefin was used to represent the rate of historical bluefin, which includes live discards (as well as dead discards and landings), and is a larger number than if only dead discards and landings were analyzed. The use of the number of interactions simplifies the analysis and takes into account the fact that the number of bluefin discarded live (versus dead) varies. However, for quota accounting under the quota control alternatives, only the dead discards and landings would count toward the quota. The number of interactions therefore overestimates the likelihood that the quota would be attained, and represents a ‘worst case’ scenario.

Under the current quota allocation (8.1%) and the 2012 quota (74.8 mt) to illustrate, the low avoider quota group (see Chapter 2 explanation of the alternative) would be allocated 24.1 mt and the medium and high avoider quota groups would be allocated 25.1 mt. Although the three quota groups have almost the identical number of vessels assigned to them (53, 54, 54, respectively), as well as similar quota, the average amount of bluefin that they caught historically varies from group to group. The number of bluefin tuna interactions from 2006 to 2011 for the low, medium, and high avoiders was 8,050, 1,348, and 95, respectively. Converted to averages, the average number of bluefin interactions would be 1,342, 225, and 16. Utilizing a rough conversion factor of .125 mt per fish, 225 fish is equivalent to 28 mt. The high and medium avoider groups are likely to have adequate quota, whereas the low avoider group would have inadequate quota if the future interaction rate of the vessels is similar. The average number of interactions associated with the low avoider group equates to approximately 168 mt. This analysis overestimates the amount of metric tons that would be needed, because (as explained above) the number of interactions includes bluefin discarded live, which would not count towards the quota.

It is difficult to predict the total amount of fishing effort that would occur under the group quota, and the amount of quota that would be caught. The most important factor would be the size of the Longline quota, which would be determined by the U.S. quota, as well as if an Amendment 7 quota alternative implemented that would result in increased availability of quota for the Longline category. It is likely that the group quota associated with vessels with the highest historical rate of bluefin interactions would be attained first. Two of the three group quotas may not be attained. The historical data indicate that the majority of bluefin have been caught by relatively few vessels. The amount of quota allocated to each quota group would be based upon the number of vessels in each quota group, and result in almost identical amounts of quota. The rate at which each quota is attained would result from the fishing behavior of the relevant vessels. The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the group quotas become constraining. If the group quotas reduce pelagic longline fishing effort, there may be some minor beneficial indirect short-term biological impacts on target stocks.

Accounting for Dead Discards under Regional or Group Quotas

Both the Regional and Group Quota alternatives would require a method of accounting for both landings and dead discards in order to fully account for the catch contributing toward the quota, and monitoring the status of the quota. In the discussion of the impacts of the alternatives above, the separate elements of catch that contribute towards the quota (landings and dead discards) are not distinguished. The discussion of the above biological impacts includes the assumption that inseason monitoring of dead discards and landings is occurring. An alternate way to implement either the regional or group quota alternative would be to proactively account for dead discards instead of monitoring dead discards inseason. To proactively account for dead discards, NMFS could utilize an historical estimate for pelagic longline dead discards as a proxy for anticipated dead discards, and subtract an estimate of dead discards “off the top” of the quota. This would result in a substantially lower quota, which would be a landings quota. The biological impacts of the quota systems may be similar regardless of which method utilized to account for dead discards, provided the quota system results in the appropriate level of catch with respect to the quota, that is, an amount that does not exceed the quota.

Alternative C 4 - Closure of the Pelagic Longline Fishery

Alternative C 4a – No Action

Under this alternative, the current regulatory situation would continue, in which NMFS does not prohibit the use of pelagic longline gear when the pelagic longline bluefin tuna subquota is attained. When the subquota is projected to be reached, pelagic longline vessels may no longer retain bluefin tuna, but may continue to fish for their target species, and must discard any bluefin tuna caught. The biological impacts of this alternative would be direct short-term adverse and moderate due to the absence of a direct limit on the amount of bluefin tuna caught by pelagic longline vessels. The bluefin quota for Longline category vessels would continue to limit bluefin landings, but not bluefin dead discards. If the overall U.S. quota for bluefin remains similar to the quota in recent years, the overall level of landings and dead discards may be similar to the range of levels shown in Table 3.17 in Chapter 3.

Alternative C 4b – NMFS Closure of the Pelagic Longline Fishery (preferred)

Under this preferred alternative, NMFS would close the pelagic longline fishery (i.e., prohibit the use of pelagic longline gear) when the total Longline category quota for bluefin is caught, projected to be caught, is exceeded, or, in order to prevent excessive dead discards of bluefin, when there is high uncertainty regarding the estimated or documented levels of bluefin catch. This alternative would provide an enforceable means to stop the landings and dead discarding of bluefin in order to prevent exceeding the quota.

Impacts on Bluefin

The biological impacts of this alternative would be direct short-term beneficial and substantial/moderate due to the direct limit on the amount of bluefin tuna caught by pelagic longline vessels. The bluefin quota for Longline category vessels (i.e., the IBQ, Regional, or Group quota controls) would limit bluefin landings and dead discards, and reduce management uncertainty in the fishery compared with the No Action Alternative.

Impacts on Fishing Effort and Other HMS

Closure of the Longline category when the bluefin tuna quota is attained would prohibit the use of pelagic longline gear and therefore also impact the catch of swordfish, yellowfin and bigeye tuna, and other target species. Fishing effort with pelagic longline gear would cease for the remainder of the fishing year, but the use of other gear could continue. The precise scope of the biological impacts (i.e., substantial or moderate) would depend upon the size of the U.S. bluefin quota, and whether this alternative is combined with other alternatives that reduce dead discards, modify quota allocations, or provide incentives to avoid bluefin tuna. The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the quota controls (regional or group quotas, or IBQs) become constraining. If the quota controls reduce pelagic longline fishing effort, there may be some minor positive biological impacts on target stocks. The impacts of combined pelagic longline alternatives are discussed in Section 4.1.6.1. Table 4.34 provides some information on the percentage reductions in numbers of target HMS landed if the duration of the pelagic longline fishery were shortened.

Table 4.34 Duration of the Pelagic Longline Fishery, by Month and Percentage Reduction in Numbers of Swordfish (SWO) and bigeye, albacore, yellowfin, and skipjack tunas (BAYS) Landed. Based on average landings 2006 – 2012.

Percent Reduction in Target HMS Landings	Month Through Which Use of Pelagic Longline Gear Allowed											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Swordfish	92	86	79	73	64	57	50	40	29	17	9	0
BAYS	94	89	85	82	77	69	55	42	28	15	6	0

Source: HMS logbook data.

For example, in the use of pelagic longline gear were prohibited at the end of June, there would be a 57 percent reduction in the number of swordfish landed and a 69 percent reduction in the number of BAYS landed. The socio-economic impacts of NMFS closure of the pelagic longline fishery is discussed in Chapter 5.

Summary of Biological Impacts of Bluefin Tuna Quota Control Alternatives

Table 4.35 Summary of Biological Impact of Bluefin Tuna Quota Control Alternatives

Bluefin Quota Controls			
Alternative	**Quality**	**Timeframe**	**Impacts**
No Action	Direct	Short-term	ϕ –
IBQ system	Direct	Short-term	ϕ +
IBQ rules (bluefin allocations, trading, monitoring and Enforcement)	Direct	Short-term	o / ◓ +
Elimination of Target Catch Requirement	Direct	Short-term	◓ +
Mandatory Retention of Legal-sized Bluefin	Direct	Short-term	◓ +
Regional and Group Quotas			
Regional Quotas	Direct	Short-term	ϕ +
Group Quotas	Direct	Short-term	ϕ +
NMFS Closure of Pelagic Longline Fishery			
No Action	Direct	Short-term	ϕ –
NMFS Closure of Pelagic Longline Fishery	Direct	Short-term	●+ / ϕ +

Preferred Alternatives Shaded

4.1.4 Enhanced Reporting Alternatives

VMS Requirements

The preferred alternative would require Atlantic Tunas Purse Seine category-permitted vessels to install an E-MTU VMS unit and hail in and out of port. Purse seine and pelagic longline vessels fishing for Atlantic tunas would be required to report length of bluefin retained or discarded dead, and effort information. The preferred alternative would have indirect short-term minor, beneficial impacts on bluefin tuna since it would provide previously unavailable estimates of dead discards for the purse seine fishery, which would improve estimates of fishing mortality, although discards of bluefin in this fishery are reportedly low. The pelagic longline VMS requirements in this alternative primarily address timely data collection for more precise inseason management of the bluefin tuna fishery, and would have a neutral or slightly beneficial impact on other HMS because additional data (effort information) would be collected on other HMS. There would be no impact from the “No Action” alternative.

Electronic Monitoring of Longline Category

The preferred alternative would require the use of electronic monitoring (i.e., video cameras) by all Atlantic Tunas Longline permit holders. This alternative would be used to audit and verify reported data. An audit approach would have certain advantages over a census approach (Stanley et. al., 2011). This alternative would provide indirect short-term, minor beneficial impacts for bluefin and other HMS by contributing to the development of a robust reporting system. The “No Action” alternative would have no impact. As discussed above under the impacts of Regional or Group quotas, the biological impacts of the quota control alternatives includes the assumption that inseason monitoring of dead discards and landings is occurring. NMFS would audit vessel reported catch information using the electronic monitoring systems when that requirement is effective in January 2015.

After the implementation of Amendment 7 in 2015, NMFS would consider all relevant sources of data, including observer, logbook, VMS, and dealer data, in order to estimate Longline category dead discards inseason. However, given the implementation of the electronic monitoring system in January 2015 and the need to develop new estimation procedures, NMFS, upon implementation of Amendment 7 may proactively account for dead discards. To proactively account for dead discards, NMFS may utilize an historical estimate for pelagic longline dead discards as a proxy for anticipated dead discards, and subtract an estimate of dead discards “off the top” of the quota. This would result in a substantially lower quota, which would be a landings quota. The biological impacts of the quota system may be similar regardless of which method utilized to account for dead discards, provided that catch does not exceed the quota.

Automated Catch Reporting

The preferred alternative on automated catch reporting alternative would require Atlantic Tunas General, Harpoon and HMS Charter/Headboat permit holders to report their bluefin catch (i.e., landings and discards) using an expanded version of the NMFS recreational automated landings reporting system (ALRS). This alternative would provide data on the number of bluefin tuna released dead and alive by these permit groups, and increase the accuracy of fishing mortality estimates. The additional data would likely have indirect, short-term, minor beneficial impacts on bluefin tuna, and, to the degree that it might provide information on discards of other HMS, may have minor beneficial impacts on other HMS as well. The “No Action” alternative would have no impacts.

Deployment of Observers

The preferred alternative is the "No Action" alternative, which would have no impact on bluefin tuna or other HMS. Under the no action alternative, there would be no changes to the current observer coverage in the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. In the Longline category, the average percentage coverage in the pelagic longline fishery is approximately 8 percent (including a higher level of coverage in the Gulf of Mexico, particularly during the bluefin spawning period). None of the other quota categories (i.e., the directed bluefin fisheries) currently are selected to carry observers; however, NMFS has the authority to deploy observers in these categories. As described in Chapter 3 in detail, the Pelagic Observer Program information, which includes fish species, length, weight, sex, location, and environmental information, is used in conjunction with the logbook information to monitor retained bluefin and estimate discarded bluefin. The United States applies the SCRS-approved methodology to calculate and report dead discards for both stock assessment purposes and quota compliance purposes. Under the No Action alternative, NMFS would still be able to estimate bluefin dead discards. The precise impacts of the No Action Alternative, (continuation of the current level of observer coverage) would depend in part upon the other Amendment 7 alternatives implemented (such as quota controls), and whether other data sources, or enhanced methods of reporting and/or monitoring are implemented. Additional data sources and methods of reporting or monitoring would augment observer data, and provide additional information with which to estimate dead discards. Analysis of the preferred reporting and monitoring alternatives are described in Sections 4.1.4 and 4.1.4. Analysis of the combined impacts of the preferred alternatives applicable to the Longline category are described in Section 4.1.6.

Alternative D 4b would increase the number NMFS funded observers to provide increased observer coverage in the pelagic longline fishery and expansion of the observer program to cover other permit categories. This could increase the accuracy of pelagic longline catch data, and add a source of catch data for the directed commercial bluefin tuna permit categories, respectively. This information would likely have indirect, short-term, minor, beneficial impacts on bluefin tuna because of improved accuracy of fishing mortality and effort estimates for pelagic longline vessels and new catch and effort data for the other directed commercial categories, for use in bluefin tuna stock assessments.

Logbook Requirement

The preferred alternative is No Action for logbook reporting, which would have no impacts on bluefin tuna or other HMS. The non-preferred alternative would require the reporting of catch by Atlantic Tunas General, Harpoon, and HMS Charter/Headboat category vessels targeting bluefin through submission of an HMS logbook to NMFS. This alternative would provide data on the number of bluefin tuna released dead and alive and fishing effort by these permit groups, and improve the accuracy of fishing mortality and effort estimates for use in stock assessments. The improvement in data would likely have indirect, short-term, minor beneficial impacts on bluefin tuna, and to the degree that the expanded data collection would provide discard data for other HMS, may have minor beneficial impacts for other HMS as well. Table 4.36 is a summary of the biological impacts of the enhanced reporting alternatives.

Table 4.36 Summary of Biological Impacts of Enhanced Reporting Alternatives

Enhanced Reporting Alternatives			
Alternative	**Quality**	**Timeframe**	**Impacts**
No Action	Indirect	N/A	o
VMS Requirement for Purse Seine and Longline Categories	Indirect	Short-term	◓ +
Electronic Monitoring of Longline Category	Indirect	Short-term	◓ +
Automated Catch Reporting (General and Harpoon Categories)	Indirect	Short-term	◓ +
Deployment of Observers – NMFS Funded Observers	Indirect	Short-term	◓ +
Logbook Requirement	Indirect	Short-term	◓ +
Expand the Scope of the Large Pelagics Survey	Indirect	Short-term	◓ +

Preferred Alternatives Shaded

Summary Narrative

The No Action alternatives would make no changes to the current reporting requirements and therefore make no changes to the means, scope, or timeliness of data collected. The No Action alternatives would have a neutral biological impact. Under the No Action alternatives, the reporting of important data would continue, and would support management of bluefin and other HMS, but would not enable improvement of management. As such, the No Action alternatives support bluefin stock rebuilding but do not increase the effectiveness of the 2006 Consolidated HMS FMP in attaining rebuilding.

In contrast, the enhanced reporting alternatives would increase the scope and timeliness of data collected. The enhanced reporting alternatives represent a range of alternatives that would improve reporting, some of which represent different means of enhancing reporting for the same vessels (e.g., logbook and automated catch reporting for General, Harpoon, and Charter Headboat categories). These alternatives would have indirect, short–term, minor, beneficial impacts on bluefin tuna as they would result in more accurate or precise data on bluefin tuna catch or increased biological information on bluefin tuna. VMS reporting would result in more real-time information and enhance NMFS' ability to more precisely manage the bluefin quota. Increased precision of quota management would reduce the risk of exceeding the quota and may provide more fishing opportunity for all vessels. Similarly, these alternatives would have indirect, short- term, minor, beneficial impacts on other HMS caught if they result in more accurate or precise data on HMS catch or increased biological information.

4.1.5 Other Alternatives

Alternative E 1 - Modify General Category Subquota Allocations

Alternative E 1a – No Action

If no action is taken to modify the General category subquota allocations, biological impacts would be neutral. Because the January period remains open until the January subquota is used or until March 31, whichever comes first, there would be no General category activity during the months of April and May on an annual basis. Depending on how quickly the available January subquota is used, it is likely based on the closure date in the last few years (e.g., January 22, 2012, and February 15, 2013, and March 21, 2014) that there may not be General category fishing activity in part or all of February or March as well. During the months of January through May, bluefin tend to be located off the mid- and south Atlantic states of North Carolina, South Carolina, Georgia, and the Florida East Coast. However, the pelagic longline fishery and the HMS Angling category (handgear) fishery would be open during these months so fishing activity would potentially occur in these areas regardless of the subquota management of the General category.

Alternative E 1b – Establish 12 Equal Monthly Subquotas

This alternative was considered in the 2011 Environmental Assessment for a Rule to Adjust the Atlantic Bluefin Tuna General and Harpoon Category Regulations. It would revise the subquotas so that they are evenly distributed throughout the year (i.e., the base quota of 435.1 mt would be divided into monthly subquotas of 8.3 percent of the General category base quota, or 36.1 mt). NMFS would continue to carry forward unharvested General category quota from one time period to the next time period and may need to close the fishery each month if the available subquota is harvested. This alternative could result in a shift in bluefin tuna landings, both temporally (to later in the season) and geographically to the South (i.e., off the mid- and south Atlantic states of North Carolina, South Carolina, Georgia, and the Florida East Coast). For instance, the time-period subquota percentage for January would be increased (from 5.3 percent (23.1 mt) being available for the first three months as a whole to 36.1 mt per month, for a total of 108.3 mt of bluefin being available for January through March. The amount available for the current June-August subperiod would decrease from 47.1 percent (217.6 mt) to 24.9 percent (108.3 mt). The amount available for the current September subperiod would decrease from 115.3 mt to 36.1 mt. The amount available for the current October-November period would increase from 56.6 mt to 72.2 mt. Lastly, the amount available for December would increase from 22.6 mt to 36.1 mt. These changes are summarized in Table 4.37. Although this alternative would create more of a “year-round” fishery, note that for each period, it is possible that NMFS would close the fishery within a period when it is projected that the available subquota has been reached. This could mean multiple closures and automatic re-openings on the first of the month throughout the year.

Table 4.37 Comparison of General category quota amounts mt available by time period, under the No Action and the Preferred Alternatives

<table>
<tr><th rowspan="2">Alternative</th><th colspan="12">Time Periods and Allocations</th></tr>
<tr><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td>Under No Action (Alternative E 1a)</td><td colspan="3">23.1</td><td>0</td><td>0</td><td colspan="3">217.6</td><td>115.3</td><td colspan="2">56.6</td><td>22.6</td></tr>
<tr><td>12 equal monthly subquotas (Alternative E 1b)</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td><td>36.1</td></tr>
<tr><td>For comparison purposes, Alternative E 1b under current time periods</td><td colspan="3">36.1×3 = 108.3</td><td>36.1</td><td>36.1</td><td colspan="3">36.1×3 = 108.3</td><td>36.1</td><td colspan="2">36.1×2=72.2</td><td>36.1</td></tr>
</table>

Alternative E 1b could result in increased harvest in the earlier portions of the General category bluefin tuna season, with a corresponding decrease in harvest in the later portions of the season. However, the number of bluefin harvested from the large medium and giant size classes would remain consistent with the levels of bluefin mortality used in the stock assessment and overall the ecological impacts are expected to be neutral. This alternative would be expected to broaden the range of data available for scientific research, although the scope may be relatively small. Because there would be a dedicated quota for each month of the year, Alternative E 1b could provide commercial fisheries data for times (i.e., February through May) when the fishery has traditionally been closed.

Alternative E 1c – Provide Additional Flexibility for General Category Quota Adjustment (Preferred)

Under this alternative, NMFS could transfer subquota from one time period to another time period, earlier in the calendar year. This alternative, similar to Alternative E 1b, could result in a shift in the distribution of fishing effort and landings from the mid- and later portions of the calendar to the earlier portion(s) of the calendar year. There would be more flexibility within the quota system to allocate among time periods to optimize fishing opportunity among times and geographic areas. As with Alternative E 1b, biological impacts would be expected to be neutral.

Alternative E 2 - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason

Alternative E 2a – No Action

If no action is taken to provide NMFS the flexibility to set the Harpoon category daily retention limit of large medium bluefin over a range of two to four fish, Harpoon category participants would continue to have the ability to retain and land up to four large medium fish per vessel per day, as well as unlimited giants.

There were 13 vessels permitted in the Harpoon category in 2012, down from 24 in 2011 and 29 in 2010. Of the 128 bluefin taken by Harpoon vessels in 2010, 51 were large mediums and 77 were giants. Of the 63 successful trips taken by Harpoon category vessels in 2012 (i.e., trips on which at least one bluefin was landed), there were 31 trips on which no large medium bluefin were landed, 19 trips on which one large medium was landed, nine trips on which two large mediums were landed, two trips on which three large mediums were landed, and two trips on which four large mediums were landed. In 2012, the Harpoon category landings were 17.2 mt out of 36 mt of available quota, resulting in an underharvest of 18.8 mt. As described above, underharvest carried forward (from one year to the next) to each quota category is limited by the ICCAT recommendation and other domestic management considerations.

In the analyses that NMFS prepared for the 2011 General and Harpoon category regulatory amendment (NMFS 2011), NMFS estimated that the discard of large medium bluefin in the Harpoon category was greater in 2010 than in 2008, given that 12 of 87 trips (14 percent) landed the incidental limit in 2008 and 32 of 104 trips (31 percent) landed the incidental limit in 2010. This was consistent with information from NMFS' Large Pelagics Survey that showed that a large proportion of the bluefin available off the U.S. coast in 2010 had entered the large medium size class. That cohort of fish is now estimated to be in the giant size class. Harpoon category participants have commented over the years that it is common for schools to be comprised of bluefin of different size classes, so fishing on schools of giant bluefin exclusively is difficult. Under Alternative E 2a, NMFS anticipates neutral to minor, direct, short-term adverse biological impact as there were only two trips in 2012 on which four large medium were landed, which indicates it was not necessary for a vessel to have released a bluefin of that size to stay within the daily retention limit of large mediums.

Alternative E 2b - NMFS Ability to Adjust Harpoon Category Retention Limits Inseason

If NMFS changes the regulations to implement the daily retention limit of large medium bluefin tuna over a range of two to four bluefin, the default large medium limit would be set at two fish. The impact of this alternative would be neutral overall, and would depend on availability of large mediums to Harpoon category vessels on a per trip basis and the actual retention limit that NMFS sets inseason (or that is in place by default). NMFS can estimate potential impacts of this change by determining the number of trips on which three or four large mediums were landed in 2012 and assuming that any large mediums, in excess of the established retention limit, that are inadvertently harpooned while targeting giants would have to be discarded dead each year. For instance, if a new default level of two large mediums is maintained, and there were two trips on which three large mediums were landed and two trips on which four large mediums were landed in 2012, that would represent six bluefin that would be converted from landings to dead discards, if inadvertently killed while targeting giants. This would be a short-term, direct, minor, adverse impact. This impact may be mitigated by a fisherman's decision to not throw the harpoon based on the size of the fish. To the extent that the implementation of a lower retention limit (set over the range of two to four fish) might decrease effort on large medium bluefin, there could be minor, short- and long-term, direct, beneficial impacts from decreased bycatch and bycatch mortality of small medium bluefin (measuring 59 to less than 73 inches).

A reduction of the daily retention limit from the current four-fish level may reduce the incentive to target large medium bluefin. Generally, the ability to set the retention limit for this size class over a range may be considered a management tool that could help limit the amount of large medium bluefin taken in a particular year, e.g., a year in which the cohort of this size fish is thought to be low. However, looking specifically at 2012, only 3 percent of Harpoon category trips landed three and four large mediums, respectively, and NMFS does not expect changes in fishing behavior as a result of these Harpoon category alternatives.

The alternative may result in the removal of a lower number of large medium bluefin than the status quo. An increase in the number of large mediums, relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), would not affect the overall size composition of the stock. Although few data are available, it is believed that the selective nature of harpoon gear has minimal impact on discards or interactions with non-target species.

Alternative E 3 - Angling Category Subquota Distribution

Alternative E 3a – No Action

Under the No Action alternative, there would be no change to the current Angling category trophy subcategory quota allocation system (i.e., 66.7% of the large medium and giant bluefin subquota for the area south of 39°18' N. lat., with 33.3% north of 39°18' N. latitude; currently these amounts are 2.8 mt and 1.4 mt, respectively). Bluefin landed in the Gulf of Mexico and the Atlantic south of 39º18' N. lat. would continue to count toward the same recreational subquota (the southern quota).

From year to year, the proportion of southern trophy landings varies between the Gulf of Mexico and the Atlantic southern area. Table 4.32 shows the number of trophy bluefin landed per year in the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. In 2012, 2013, and 2014, NMFS closed the southern area trophy fishery on April 7, April 4, and April 11, respectively, because the subquota was projected to be taken. In 2012 and 2013 particularly, trophy-sized bluefin were more available than they had been in prior years at the beginning of the calendar year off Virginia and North Carolina. None of the southern trophy bluefin landings in 2012 through 2014 were from the Gulf of Mexico.

Table 4.38 Trophy bluefin landings (in numbers) by area

Year	North	South (outside Gulf of Mexico)	Gulf of Mexico
2006	3	2	4
2007	7	9	0
2008	8	6	3
2009	5	0	0
2010	16	26	0
2011	12	30	0
2012	7	43	0

Source: NMFS Automated Landings Reporting System and North Carolina Catch Card data.

The biological impacts of the no action alternative would be neutral, as there would be no expected change in fishing behavior and maintaining or dividing the southern trophy area ultimately results in conversion of dead discards to landings, or vice versa, all thing remaining equal, and depending on availability of trophy-sized bluefin at different times of year. The average weight of a recreationally-caught large medium or giant bluefin in 2012 was 366 lb, although there is substantial variability of weight of this size fish depending on age and location and factors involving feeding and reproduction. The current southern trophy subquota therefore represents approximately 17 average-weight large medium/giants. The number of fish it would take to fill the southern area subquota would be higher if the average weight is lower. Although the Gulf of Mexico is the known spawning ground and directed fishing on bluefin is prohibited for that reason, the removal of this number of potentially spawning adults is unlikely to have significant adverse impact on the stock.

Alternative E 3b – Allocate a Portion of the Trophy South Subquota to the Gulf of Mexico (Preferred)

Under this alternative, a portion of the trophy south subquota would be allocated specifically for the Gulf of Mexico. Specifically, the trophy subquota would be divided as 33% to each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. At the current average trophy fish weight, this would allow annually up to 8 trophy bluefin to be landed in each of the three areas. NMFS would not expect fishing behavior to change as a result of this alternative, in part because there should not currently be targeted effort on bluefin in the Gulf of Mexico regardless of the incidental trophy fish allowance. Biological impacts on bluefin would be expected to be neutral, as the effect of this measure would be to convert a small number of potential dead discards in the Gulf of Mexico to potential landings.

Alternative E 4 - Change Start Date of Purse Seine Category to June 1

No Action

Under the No Action alternative, there would be no change to the start date of the Purse Seine category fishery, which is currently set at July 15. Biological impacts would be neutral.

Change Start Date of Purse Seine Category to June 1 (Preferred)

This alternative would change the start date of the Purse Seine category fishery from July 15 to June 1, and provide NMFS the ability to delay the season start date from June 1 to no later than August 15, by publishing a notice in the Federal Register. Biological impacts would be neutral as other commercial and recreational bluefin fisheries are typically open and active from June 1 through July 14, including in the areas and for the sizes that purse seine vessels would be targeting. Although a later start date may have minor, short-term, indirect, beneficial social and economic impacts for other quota categories due to reduced gear conflict and market competition, there is no biological reason to specifically preclude Purse Seine category landings during months when other fisheries in the same area and for the same size fish are open and active. Regardless of start date, a purse seine vessel operator may choose not to make a set if bluefin schools are composed of a high proportion of fish smaller than giants, much of which would need to be released from the net alive or discarded dead.

Alternative E 5 - Rules Regarding Permit Category Changes

Alternative E 5a – No Action

Under the No Action alternative, there would be no changes made to current regulations regarding the ability of an applicant to make a correction to their permit category. The current regulations prohibit a vessel issued an open-access Atlantic Tunas or an HMS permit from changing the category of the permit after 10 calendar days from the date of issuance. As this No Action alternative is administrative in nature, the biological impacts associated with bluefin would be neutral.

Alternative E 5b – Modify Rules Regarding Permit Category Changes

This measure would allow a vessel owner to modify the category of an open-access Atlantic Tunas or HMS permit issued up to 45 days beyond the date of issuance, provided the vessel has not landed bluefin, as verified via landings data. This alternative would have neutral biological impacts because it is administrative in nature and the number of fishing vessels affected by this alternative is very low. Approximately 20 permit applicants per year contact NMFS to request a change in permit category after the 10 days from permit issuance.

Alternative E 6 - Northern Albacore Tuna Quota (Preferred)

Alternative E 6 a– No Action

Under the No Action alternative, there would be no new regulations regarding Atlantic albacore tuna. There are currently no regulations regarding the quota management of Atlantic albacore tuna. If no action is taken to implement the U.S.-recommended northern albacore quota, biological impacts would be neutral. However, to the extent that potential excesses of the U.S. quota might contribute to excesses of the TAC, minor adverse biological impacts could result. The impacts would be considered slight because the U.S. quota represents less than 2% of the ICCAT-recommended TAC. Given the relatively small size of the U.S. quota in relation to the total quota, even exceeding the ICCAT-recommended quota is likely to have only minor impacts on the overall fishing mortality in the short term.

Alternative E 6b – Implement U.S. North Atlantic Albacore Tuna Quota

Domestic implementation of a quota for northern albacore would contribute to the successful international management of the stock, particularly to the extent that active management of the quota would help limit annual landings to the U.S. quota, which is a small portion of the scientifically-recommended northern albacore TAC. NMFS would be able to use its existing framework procedures as established in § 635.34(b) to actively manage the northern albacore fishery inseason, if appropriate/needed, to constrain landings to the available quota. (e.g., through fishing seasons, recreational and commercial retention limits). If necessary, NMFS would implement such management measures through proposed and final rulemaking. For example, through proposed and final rulemaking NMFS could implement a default commercial retention limit or a range of commercial retention limits that could be adjusted on an inseason basis in a manner analogous to bluefin tuna retention limits. Based on recent landings (Chapter 3, Table 3.44), there is little evidence to suggest that implementation of quota would constrain fishing effort for northern albacore in the future (under similar levels of quota).

This alternative would have moderate, short- and long-term, direct beneficial biological impacts. To the extent there may be a reduction in fishing effort if NMFS exercises framework authority to more tightly control catches, there may be minor, short- and long-term, direct, beneficial impacts to other species.

Summary of Impacts of Other Measures

Table 4.39 Summary of Impacts of Other Measures

Alternative	Quality	Timeframe	Impacts
Modify General Category Subquota Allocations			
No Action	Indirect	n/a	o
Establish 12 Equal Monthly Subquotas	Indirect	n/a	o
Provide Additional Flexibility for General Category Quota Adjustment	Indirect	n/a	o
NMFS Authority to Adjust Harpoon Category Retention Limits Inseason			
No Action	Indirect	Short-term	o/ ◓ –
NMFS Authority to Adjust Harpoon Category Retention Limits Inseason	Indirect	n/a	o
Angling Category Trophy Subquota Distribution			
No Action	Indirect	n/a	o
Allocate a Portion of the Subquota to the Gulf of Mexico	Indirect	n/a	o
Change Start Date of Purse Seine Category to June 1			
No Action	Indirect	n/a	o
Change Start Date of Purse Seine Category to June 1	Indirect	n/a	o

Rules Regarding Permit Category Changes			
No Action			
Modify Rules Regarding Permit Category Changes	Indirect	n/a	o
Northern Atlantic Albacore Tuna Quota			
No Action	Indirect	Short-term	o/ ◓ –
Implement U.S. Northern Albacore Tuna Quota	Indirect	Long-term	ø +

Preferred alternatives shaded

4.1.6 Combining and Comparing Alternatives

Pelagic Longline Alternatives

As previously described, the biological impacts of the alternatives were analyzed individually and then combined into groups of alternatives. Some alternatives are analyzed as a group if the biological impacts of the individual alternatives are very similar (i.e., reporting requirements). The principal management tools applicable to each quota category were combined together. Several analyses were conducted in order to analyze different combinations of alternatives that would encompass the full range of impacts. For example, for the Longline category, the area based alternatives (gear restricted areas, access to closed areas, and fishing as a General category vessel) were combined, and the quota related alternatives (IBQ and reallocation alternatives) were combined. These suites of alternatives are also useful for analyzing the economic and social impacts. The organizational structure for analysis of the alternatives that apply to the Longline category is depicted in Figure 4.3.

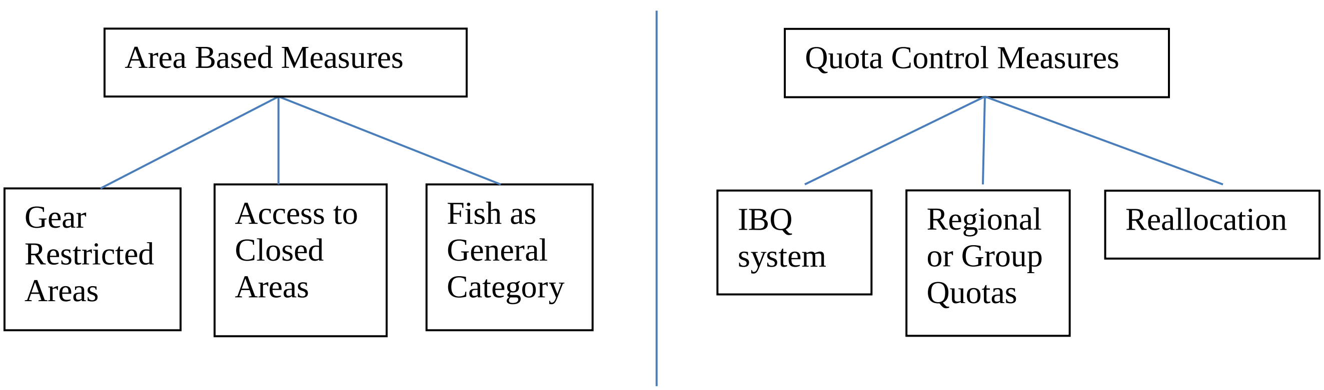

Figure 4.3 Organizational Structure of Biological Analysis

Area Based Alternatives

The area based alternatives would act in conjunction with the quota allocation alternatives and quota control alternatives. The area based alternatives implemented would either have a neutral effect or minor beneficial effect on bluefin discards. See Table 4.19 for a summary of those impacts. The effects of the area based alternatives are essentially additive to the other alternatives.

Combining the Quota Allocation Alternatives with IBQ Trading

The IBQ system would cap catch, but also may allow the leasing of quota allocation between the Longline and Purse Seine categories. Through trading quota allocation, the Longline category would have access to more quota than available from its base allocation. As described in Section 4.1.1, an increase to the allocation of the Longline category would not necessarily result in an increase in bluefin catch over historical levels. The level of catch would depend upon the net effects of all the relevant regulations (and other non-regulatory factors). Historical average total catch (landings and dead discards) of bluefin by the Longline category (2006 to 2012) has been 239.0 mt, which exceeds the Longline category allocation of 8.1%. Therefore, if the future bluefin catch is greater than 239.0 mt, it would represent an increase, and if future catch less than 239.0 mt, it would represent a decrease (compared with the historical average).If regional or group quotas or IBQs were combined with an increase in quota allocation, the total amount of potential catch (landings and dead discards) of bluefin by pelagic longline vessels would be greater than the current Longline category quota allocation of 8.1%. The annual quota reallocation (Alternative A3), which would enable NMFS to utilize anticipated unused Purse Seine quota could result in increases over the baseline annual quota for all quota categories, including the Longline category. The biological impacts of the combined reallocation and IBQ alternatives on bluefin tuna and other HMS can be represented by the amount of Bluefin tuna and other HMS that would be caught.

The concept of how the baseline quota would be augmented by transfers of quota under the IBQ alternative, and further augmented by annual reallocation from the Purse Seine category (anticipated unused quota) are illustrated below in Figure 4.4. Note that when annual reallocation would occur from the Purse Seine category, the remaining quota that would be allocated to the Purse Seine category (e.g., 50% of baseline quota) may be fished by purse seine vessels or transferred via IBQs to the Longline category. Therefore, there is a linkage between the amount of quota that would be annually reallocated from the Purse Seine category, and the amount of quota available to be transferred via IBQ. For example, if 25% of the Purse Seine category quota were transferred to other categories under the annual reallocation alternative, the amount of Purse Seine quota available for IBQ transfers would be 75% of their baseline quota.

The management measures that would determine the amount of bluefin quota available to the Longline category were combined into suites of measures to analyze their combined biological impacts (and to serve as the basis for estimating the economic impacts). For each of the four codified reallocation options (including No Action), the amount of total quota available to the Longline category was calculated under each of three annual reallocation scenarios, in the context of both a regional catch cap and an IBQ (for a total of 24 combinations). The three annual reallocation scenarios were: (1) No annual reallocation; (2) reallocation of 50% of the Purse Seine quota to the Longline category; and (3) reallocation of 4% of the Purse Seine quota to the Longline category. An annual quota reallocation scenario in which 50% of the Purse Seine quota is reallocated to the Longline category was selected (see combinations “B” and “E”) because it represents the largest amount of quota that would be reallocated under that alternative (i.e., 50% of the Purse Seine quota would be reallocated, and all of the reallocated quota goes to the Longline category). A reallocation of four percent was also explored (see combinations "C" and "F") because it is representative of a scenario in which 50% of the unused Purse Seine quota would be reallocated, but it would be reallocated to all the other quota categories according to their current percentages. Only a fraction of that quota (8%) would be reallocated to the Longline category and the rest of the unused Purse Seine quota would be reallocated to the other quota categories (8% of the unused 50% is equivalent to 4% of the total Purse Seine quota). The Annual Reallocation alternative (A 3b), was not included as a distinct scenario in this analysis due to its similarity to the Permanent Reallocation Alternative (A 2c) that would reallocate from the Purse Seine category to the Longline category.

The total bluefin quota for the 2012 quota specifications (923.7 mt) provides the context for the examples. There is uncertainty regarding the availability of quota under the IBQ system, because a successful market for quota, although likely, is not guaranteed. Figure 4.4 below shows the combinations of alternatives that were analyzed.

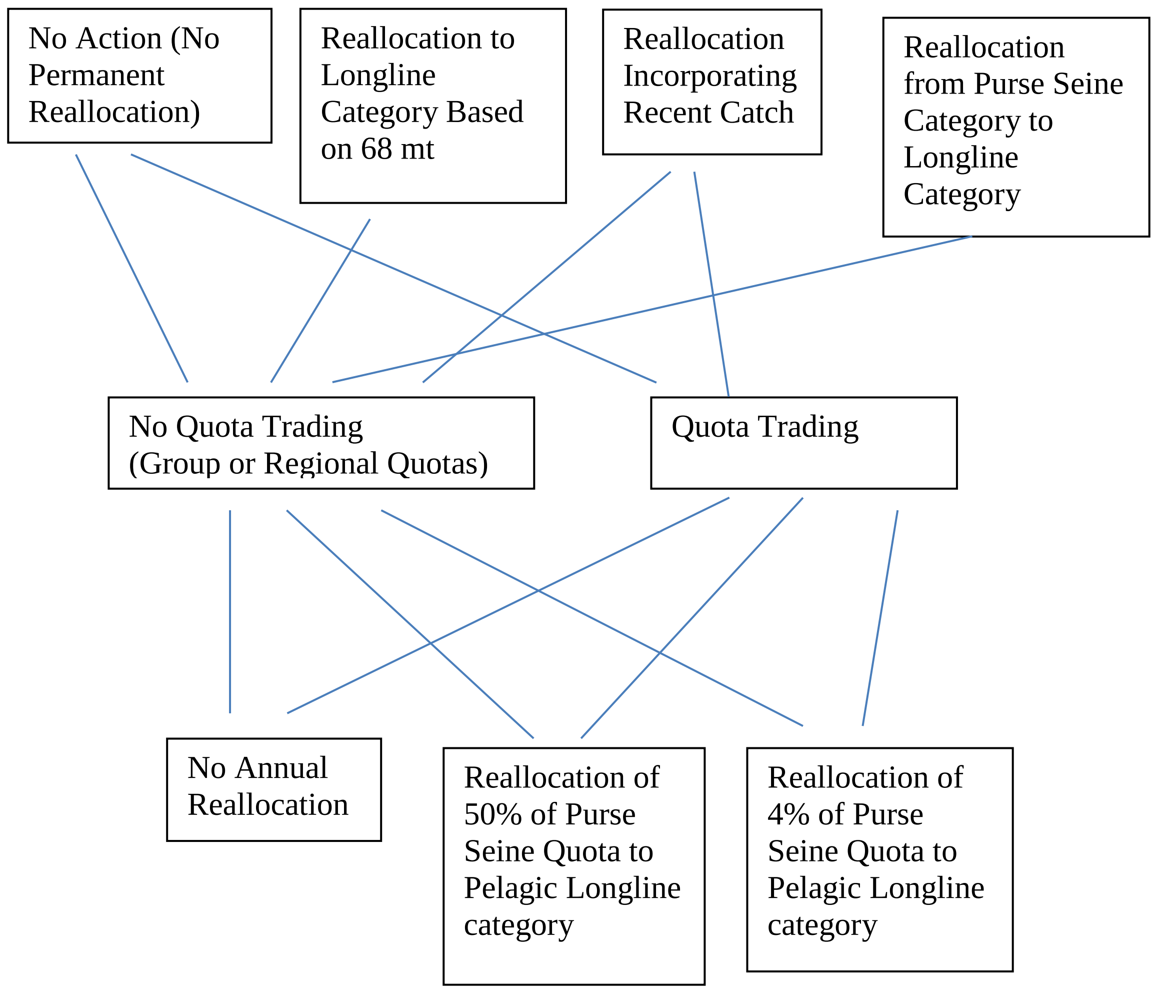

Figure 4.4 Combination of Alternatives Analyzed to Determine Range of Quota Available

The tables that show the full details of how the quota components are combined to result in a single quota value are in the Appendices along with additional discussion. Table 4.40 below compares the net amount of quota available for use by the Longline category under the combinations of alternatives. The two principal scenarios are no IBQ leases (i.e. Regional or Group quotas; columns A, B, C), or IBQ allocation leases (columns D, E, F).

Table 4.40 Summary Comparison of Net Quota Available for Use by Longline Category (mt). Based on a total bluefin quota for 923.7 mt (2012 quota specifications) and Appendices.

	IBQ and Annual Reallocation Combinations					
	Regional Quota Control			**IBQ, assuming Purse Seine quota leased to Longline category**		
Codified Quota Reallocation Alternative	A No Annual Reallocation of Purse Seine quota	B Annual reallocation of 50% (of Purse Seine quota) to Longline category	C Annual reallocation of 4% of Purse Seine quota) to Longline category	D No Annual Reallocatio n of Purse Seine quota	E Annual reallocation of 50% (of Purse Seine quota) to Longline category	F Annual reallocation of 4% of Purse Seine quota) to Longline category
No Action	74.8	160.7	81.7	246.6.0	246.6	167.6
Alternative A 2a (Based on 68 mt)	137.0	216.7	143.7	296.0	296	222.9
Alternative A 2b (Recent Catch and Current Allocation)	137.0	180.5	140.5	224.0	224.0	184.0
Alternative A 2c (From Purse Seine Category)	143.5	195.0	147.6	246.5	246.5	199.1

Note, Columns D and E also represent the net quota available for use by the Longline category under (Annual Purse Seine Reallocation Commensurate with the Number of Purse Seine Vessels), if all reallocated quota were allocated to the Longline category and all Purse Seine ITQ quota were leased to the Longline category.

No Quota Allocation Leasing (Columns A, B, and C):

For example, under the preferred codified quota reallocation alternative (A 2a; based on 68 mt), the base quota for the Longline category would be increased each year, in this case increased to 137 mt (based on the total bluefin quota of 923.7 mt + 62.5 mt). If, in addition, the annual reallocation of Purse Seine quota were implemented, and 50% of the quota were available (based on Purse Seine catch) and it was all allocated to the Longline category, there would be 216.7 mt available. If 50% of the quota was available from the Purse Seine category, but only 4% were provided to the Longline category, the net amount of available quota would be 143.7 mt.

With Quota Allocation Leasing (Columns D, E, and F)

Under these examples, the amounts of available quota are larger (than columns A, B, and C), because they include the maximum amount of additional quota that would be available for the Longline category if vessels obtained more IBQ allocation by leasing from the Purse Seine category. These amounts take into consideration how much quota the Purse Seine category would have available to lease to the Longline category, as a result of the effect of the reallocation alternatives that affect the Purse Seine category. Tables in the Appendices show the details of the calculations. Therefore, for the example given above (137 mt), if this combination of reallocation alternatives were combined with an IBQ with trading, there would be 296 mt available to the Longline category.

Discussion

It is important to note that the maximum amount of available quota is not a predictor for the amount of bluefin catch that would be anticipated. As discussed below, total bluefin catch is expected to be below the total amount of bluefin quota available to the Longline category, as a result of the measures that reduce dead discards (e.g., gear restricted areas) and provide incentives for vessels fishing with pelagic longline to avoid interactions with bluefin (e.g., IBQs), or other reasons. Another reason why total bluefin catch would be below the theoretical maximum quota amounts is that not all available quota from the Purse Seine category would be leased to the Longline category. Not all combinations of measures were analyzed because of the similarity among alternatives. For example, the alternative “Annual Purse Seine Reallocation Commensurate with the Number of Purse Seine Vessels” (Alternative A 3b), is not included in the table above. However, based on the range of quotas allocated to the Purse Seine category in that alternative (and the associated amounts of quota available for reallocation), the maximum amount of quota that would be available for use by the Longline category would be 246.6 mt in the above example (246.6 is equivalent to the sum of the Longline category quota and the base Purse Seine quota (74.8 and 171.8, respectively)).

Combining the quota reallocation alternatives with other alternatives would provide a method of quota allocation and accounting that is flexible enough to account for highly variable levels of catch in the directed and incidental fisheries. A quota alternative that results in potential bluefin catch greater than the historical range of bluefin catch may not be consistent with the objective of reducing dead discards, because the amount of dead discards may increase. Similarly, a bluefin quota allocation that substantially reduces the potential catch of target species (e.g., swordfish or yellowfin tuna) may not be consistent with the object of optimizing fishing opportunity and maintaining fairness among users.

It is important to remember that these highest available numbers reflect particular scenarios. That is, if there is annually reallocated quota, and 50% of the Purse Seine quota is allocated only to the Longline category, and all quota that may be available for leasing under an ITQ program is leased to the Longline category, then Longline category quota would be the largest of all possible scenarios.

Under the annual reallocation alternative (Section 2.1.3; Alternative A 3a), up to 75% of the Purse Seine quota could be available for reallocation (the quota goes to the Reserve category and NMFS may consider reallocation). This analysis only considers the scenario in which 50% of the Purse Seine quota is reallocated to the Longline category, and not a greater amount, because the resultant amount of net quota available would be larger than 296 mt, which is at the high end of the historical range of bluefin catch by the Longline category. The analysis of the Purse Seine alternatives analyzes the impacts of reallocation of the full 75% (but with not the entire quota being reallocated to the Longline category). The different methods of arriving at the result however have different economic and social impacts, as explained in Chapter 5.

The maximum amount of quota that would be available to the Longline category (296 mt) is slightly less than the total catch (landings and dead discards) of bluefin by the Longline category in 2011 (298.3 mt; Table 3.19), the highest in the recent time series, and 24 percent higher than the 2006 to 2012 average (239.0 mt). As stated above, the biological impacts of the combined reallocation and IBQ alternatives on bluefin tuna and other HMS can be represented by the amount of bluefin tuna and other HMS that would be caught. However, as explained further below, total bluefin catch is expected to be below the total amount of bluefin quota available to the Longline category, as a result of the measures that reduce dead discards (e.g., gear restricted areas) and provide incentives for vessels fishing with pelagic longline to avoid interactions with bluefin (e.g., IBQs). An IBQ system may affect the total amount of bluefin quota available to be fished but may also limit fishing effort for target species if bluefin quota is constraining to some vessels.

A shift in quota from the Purse Seine or Angling categories to other quota categories, as would occur with the Codified Reallocation Option B, may affect the size distribution of bluefin caught. However, potential changes in the catch of different sized bluefin would not affect the overall size composition of the stock, due to the small amount of the potential quota shift (from one category to another) relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt).

Combining Regional Quota Alternative and Quota Allocation Alternatives

The analysis summarized in Table 4.40 above shows the amount of quota that would be available to the Longline category as a whole, combining the regional quota control alternative with the codified and annual reallocation alternatives. In contrast, the data below in Table 4.41 illustrate the amount that would be available to a particular region (the Mid-Atlantic bight) under a regional quota control system and quota reallocation alternatives. A regional catch cap system combined with codified or temporary reallocation of quota would have the effect of increasing the amount of quota for all regions and lengthening the period during which vessels are allowed to fish with pelagic longline gear. It is difficult to predict how long a particular regional quota would last based on the historical pattern of bluefin interactions in the Mid-Atlantic Bight (see Table 4.33, exploration of regional quota) due to the variability of the catch patterns.

Notwithstanding the variable patterns of interactions, it is clear that additional allocations of quota through codified or temporary reallocations would substantially lengthen the time until the regional catch cap is caught. The duration of the pelagic longline fishery in the Mid-Atlantic

Bight would depend upon the amount of quota reallocated to the Longline category, and based on historical catches, would be highly variable. The bluefin quota allocated to the Mid-Atlantic Bight region may be caught in as little time as a month, or last most of the year (Table 4.33; Regional Catch Cap Exploration of Mid-Atlantic Bight Example). Table 4.41 calculates the amount of bluefin quota available to the Mid-Atlantic Bight region based on Alternative C 3a, combined with the different codified and annual reallocation alternatives. As described in Chapter 2, Alternative C 3a(Regional Quota Control) is based upon the Mid-Atlantic Bight receiving 67.5% of the Northern sub-quota (which is 40% of the Longline quota).

Table 4.41 Regional Catch Cap Quota Available for Mid-Atlantic Bight Under Various Scenarios (mt)

Codified Reallocation Alternative	No Annual reallocation of Purse Seine quota to Longline category	Annual reallocation of 50% of Purse Seine quota to Longline category	Annual reallocation of 4% of Purse Seine quota to Longline category
No Action	20.2	43.4	22.1
Based on 68 mt	37.0	58.5	38.9
Recent Landings and Current Allocation	37.0	48.7	37.9
From Purse Seine	38.7	52.7	39.9

Compared to the No Action Alternative, either of the catch cap measures (Regional or IBQ) would reduce dead discarding by capping catch of bluefin. Either the Regional or IBQ measures would have short-term, direct, moderate beneficial biological impacts on bluefin due to the restriction of total catch. Restriction of the Longline category catch would make it less likely that the overall quota would be exceeded, and may enhance spawning potential and facilitate achievement of the biological objectives of the 2006 Consolidated HMS FMP. It is difficult to predict the total amount of fishing effort that would occur under the different scenarios of either Regional Catch Caps or IBQs. There is likely to be less fishing effort under the Regional catch cap alternative because a few vessels could catch a large number of bluefin and cause the closure of the entire area to the use of pelagic longline gear. The historical data indicate that the majority of bluefin have been caught by relatively few vessels. In contrast, under an IBQ system, a vessel would not be prohibited from fishing with pelagic longline gear unless it had caught its annual harvest privilege, and vessels would be able to obtain additional quota from other vessels.

The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the regional catch caps or IBQs become constraining. If the regional catch caps result in reducing pelagic longline fishing effort, there may be some minor positive biological impacts on target stocks.

Combining the Quota Allocation Alternatives with the IBQ Initial Quota Share Formula Alternatives

An analysis was done to combine the impacts of the codified and annual quota allocation alternatives and the IBQ initial quota share alternatives. The following analysis characterizes and quantifies the amount of each vessel's share and allocation relative to the vessel's historical amount of bluefin landed and discarded dead. Because bluefin discarded alive would not count against their individual quota, only bluefin dead discards and landings were included in the analysis. In contrast, the allocation was based upon bluefin interactions.

The analysis answers the following two-part question: (1) If the vessel fishes under an IBQ system and continues to catch its historical rate of bluefin, is the amount of bluefin share and allocation sufficient to catch the historical amount of HMS landings? (2) Does the vessel have less than enough bluefin share and allocation or more than enough bluefin? Specifically, the analysis compared each vessel share and equivalent allocation to the amount of allocation that would be needed to catch the vessel's average amount of HMS landings, using the vessel's average HMS landings and the ratio of bluefin interactions to HMS landings. This analysis represents the scenario in which vessels do not modify their behavior to avoid or reduce the rate of bluefin interactions, and do not obtain additional bluefin tuna via transfers of IBQ allocation.

Whether a particular permit holder may be constrained due to bluefin interactions on the vessel associated with their permit, and the total number of permit holders constrained, depends upon the specific allocation method used as well as the total amount of quota available. "Quota Scenario" represents the amount of available quota for the Longline category as a whole. The quota amounts associated with combinations of alternatives shown below (i.e., 74.8, 137, and 216.7 mt) were derived as explained above and shown in Table 4.40 (based on not trading of IBQ). Table 4.42, Table 4.43, and Table 4.44 below show data on the number of permit holders (based on associated history of eligible vessels) that would need no additional bluefin tuna quota in order to land their average HMS landings, the number of permit holders (based on associated history of eligible vessels) that would need additional bluefin tuna quota, the amounts of bluefin quota (surplus or needed), and the reductions in HMS landings if bluefin quota were constraining. This information is shown for several of the quota scenarios (i.e., amounts of quota), and for each of the IBQ allocation alternatives. Based on this data, there is a discussion of the relevant trends below, as well as additional tables that compare and rank the alternatives.

Table 4.42 Analysis of Initial Allocation of Individual Bluefin Quotas by Quota Scenario (see Table 4.25), and Area

Equal Shares Quota Allocation Formula, Quota Scenario (mt)	and Area Designation	# permit holders that need no additional bluefin to land historical average HMS landings	Total Amount of surplus bluefin (mt)	# permit holders that need additional bluefin to land historical average HMS landing (%)	Total Amount of additional bluefin needed (in addition to initial allocation) to land historical average HMS landings (mt)	Reduction in landings if No bluefin obtained via trading (lb)
74.8	GOM	23	9	24 (51%)	25	893,877
	Atlantic	58	17	30 (34%)	38	2,068,845
	Total	81	25	54(40%)	63	2,962,722
137	GOM	28	19	19 (40%)	16	445,782
	Atlantic	71	41	17 (19%)	27	1,089,956
	Total	99	60	36 (27%)	43	1,535,738
216.7	GOM	39	35	8 (17%)	9	218,621
	Atlantic	79	67	9 (10%)	20	645,338
	Total	118	102	17 (13%)	29	863,960

Allocations Based on Equal Shares (Alternative C 2b.1)

Table 4.43 Analysis of Initial Allocation of Individual Bluefin Quotas by Quota Scenario (see Table 4.34), and Area

Quota Allocation Formula Based on Designated Species Landings, Quota Scenario (mt)	and Area Designation	# permit holders that need no additional bluefin to land historical average HMS landings	Total Amount of surplus bluefin (mt)	# permit holders that need additional bluefin to land historical average HMS landings	Total Amount of additional bluefin needed (in addition to initial allocation) to land historical average HMS landings (mt)	Reduction in landings if No bluefin obtained via trading (lb)
74.8	GOM	22	6	25 (53%)	39	969,967
	Atlantic	54	15	34 (39%)	109	2,335,136
	Total	76	21	59 (43%)	148	3,305,104
137	GOM	27	15	20 (43%)	28	526,016
	Atlantic	62	39	26 (30%)	92	1,445,199
	Total	189	54	46 (34%)	120	2,007,215
216.7	GOM	32	32	15 (32%)	18	310,723
	Atlantic	70	77	18 (20%)	77	897,664
	Total	102	109	33 (24%)	95	1,208,388

Allocations Based on Designated Species Landings (Alternative C 2b.2)

Table 4.44 Analysis of Initial Allocation of Individual Bluefin Quotas by Quota Scenario (see Table 4.34), and Area.

Quota Allocation Formula Based on Designated Species Landings & Bluefin to Designated Species Landings, Quota Scenario (mt) and Area Designation		# permit holders that need no additional bluefin to land historical average HMS landings	Total Amount of surplus bluefin (mt)	# permit holders that need additional bluefin to land historical average HMS landings	Total Amount of additional bluefin needed (in addition to initial allocation) to land historical average HMS landings (mt)	Reduction in landings if No bluefin obtained via trading (lb)
	GOM	27	11	20 (43%)	27	858,791
74.8	Atlantic	60	23	28 (32%)	39	1,888,220
	Total	87	34	48 (36%)	66	2,743,011
	GOM	31	27	16 (34%)	21	598,475
137	Atlantic	70	56	18 (20%)	30	1,226,727
	Total	101	83	34 (25%)	51	2,825,202
	GOM	33	49	14 (30%)	16	410,543
216.7	Atlantic	75	101	13 (15%)	24	754,269
	Total	108	150	27 (20%)	40	1,164,811

Allocations Based on Designated Species Landings and Bluefin to Designated Species Landings Ratio (Alternative C 2b.3) (Preferred)

Trends in Numbers of Vessels for which Fishing Effort May be Constrained by the IBQ

Trends with Respect to Pelagic Longline Quota Amount and Bluefin Quota Share Formula

The number of permit holders (percentage) that need additional quota ranges from 13 to 43%, depending upon the size of the quota (74.8, 137, or 216.7 mt) and the method of quota allocation (Alternative C 2b.1, C b2.2, or C 2b.3). The larger the pelagic longline quota, the fewer number of permit holders 'need' additional quota. The largest number of permit holders would need additional quota under the bluefin quota share Alternative C 2b.2, Based on Designated Species Landings. Table 4.55 provides a comparison of the proportion of permit holders that need quota, in a ranked order from lowest to highest. At a quota level of 137 mt (the preferred allocation amount), a lower proportion of permit holders (25 percent) need quota under the Bluefin Ratio that under the other two quota share alternatives. This is true also when the data is analyzed by area (Table 4.58).

Regional Trends (Gulf of Mexico versus Atlantic IBQ):

The percentage of permit holders that would need additional quota in general, would be greater for Gulf of Mexico IBQ than for Atlantic IBQ (i.e., between 17 and 53% of Gulf of Mexico IBQ permit holders would need additional quota; between 10 and 39% of Atlantic IBQ permit holders would need additional quota). Under a quota scenario of 137 mt (the preferred allocation amount), the preferred quota share formula would result in the lowest percentage of permit holders that need additional quota (34 % for GOM and 20% for the Atlantic). Table 4.42 - Table 4.44 provide comparisons by area.

Trends in the Amount of Additional Quota Needed:

With respect to the total amount of quota needed (in addition to the allocation resulting from the IBQ share), the trend is similar to the trend in the number of permit holders that need quota. The total amount of quota needed in order to land the average amount of designated species would be larger for the bluefin quota shares based on Designated Species Landings (Alternative C 2b.2), and the least for quota shares based upon equal shares (Alternative C 2b.1). The amount of quota needed for permit holders with Atlantic IBQ with bluefin shares based upon Designated Species landings (Alternative C 2b.2) would be notably larger than under the other region/quota share formula combinations. Under the preferred alternatives (137 mt and Bluefin Ratio quota share formula), 51 mt of quota would be needed in total (21 mt needed in the Gulf of Mexico and 30 mt needed in Atlantic). Estimated on a per entity basis, for those permit holders that need additional quota, the amount of quota needed would be 1.3 mt for permit holders in the Gulf of Mexico and 1.7 mt for permit holders in the Atlantic.

Trends in Potential Reductions in HMS Landings:

If the IBQ shares provided to permit holders constrain their fishing, the total reductions in HMS landings would be largest under the Designated Species Landings alternative, and least under the equal shares alternative. The potential reductions in numbers of designated species landed (assuming the historical amount of bluefin relative to landings, and no change in fishing behavior to avoid bluefin) range from 863,960 (216.7 mt quota, equal shares quota share formula) to 3,305,104 fish (74.8 mt quota, Designated Species Landings quota share formula). For all three of the quota share formula alternatives, the total reductions in HMS landings (number of fish) would be greater for the permit holders allocated Atlantic IBQ than the reductions associated with Gulf of Mexico IBQ permit holders.

Trends in IBQ Quota by Home Port State

In response to public comment, in this FEIS, NMFS analyzes trends in IBQ quota shares by home port state. Table 4.45 - Table 4.53 below show the percentage of permit holders that would need additional bluefin tuna quota in order to land their average HMS landings, the amounts of bluefin quota (surplus or needed), and the reductions in HMS landings if bluefin quota were constraining. This information is shown for several of the quota scenarios (i.e., amounts of quota), and for each of the IBQ allocation alternatives. Based on this data, there is a discussion of the relevant trends below.

The percentage of permit holders that need quota ranges from zero to 100 percent, for each of the quota allocation alternative and quota scenarios. Vessels home ported in the states of Louisiana, Florida, New Jersey, New York, and North Carolina comprise 82 percent of the vessels associated with permits that would be allocated quota under the Preferred Alternatives and, therefore, this discussion focuses on those states. The values of each of the parameters measuring impacts of the Preferred Alternatives are in the approximate middle of the range of impacts.

Among the 9 combinations of quota scenarios and quota allocation alternatives analyzed, the reduction in the amount of designated species landings that would occur (if no additional quota were leased) ranges from 777,945 lb (74.8 mt and Designated Species Landings), to 1,138 lb (216.7 mt and Designated Species Landings). For the preferred alternatives, the reduction in designated species landings (for the five aforementioned states) ranges from 490,472 lb (Louisiana) to 33,347 lb (North Carolina).

Table 4.45 Impacts of IBQ allocation by Home Port State, for Preferred Quota Allocation Alternative (Bluefin Ratio) and Preferred Quota Scenario (137 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	52%	17.4	-490,472	10.4
FL	43	12%	6.8	-373,856	34.3
NJ	18	22%	3.9	-316,813	11.1
DE	2	50%	2.0	-155,662	0.8
NY	11	27%	13.4	-152,654	4.8
MD	5	40%	4.0	-111,575	1.3
PA	2	100%	1.5	-92,386	0.0
ME	4	25%	2.0	-92,267	1.8
NC	14	14%	0.3	-33,347	9.4
MA	4	25%	0.1	-6,172	2.2
CT	1	0%	0.0	0	0.3
SC	3	0%	0.0	0	4.0
TX	3	0%	0.0	0	2.3

Table 4.46 Impacts of IBQ allocation by Home Port State, Quota Allocation Alternative (Equal Shares) and Preferred Quota Scenario (137 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	64%	13.5	-379,348	3.4
NJ	18	28%	4.1	-364,897	8.7
FL	43	12%	5.2	-294,368	29.0
DE	2	50%	1.8	-140,595	-0.5
NY	11	36%	12.2	-119,516	2.7
MD	5	40%	3.3	-93,334	1.8
ME	4	25%	1.8	-83,255	2.5
PA	2	100%	0.8	-53,333	0.0
NC	14	7%	0.1	-7,091	5.7
CT	1	0%	0.0	0	0.1
MA	4	0%	0.0	0	1.2
SC	3	0%	0.0	0	3.0
TX	3	0%	0.0	0	2.1

Table 4.47 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Landings) and Preferred Quota Scenario (137 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	64%	20.5	-445,911	5.6
NJ	18	33%	11.6	-417,486	7.4
FL	43	14%	13.4	-391,921	24.6
NY	11	55%	47.7	-217,682	2.5
DE	2	100%	5.1	-171,102	0.0
MD	5	40%	13.5	-124,249	1.2
PA	2	100%	4.4	-98,212	0.0
ME	4	50%	1.8	-70,905	1.0
NC	14	21%	1.5	-64,024	6.0
CT	1	100%	0.4	-5,722	0.0
MA	4	0%	0.0	0	1.8
SC	3	0%	0.0	0	2.1

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
TX	3	0%	0.0	0	1.9

Table 4.48 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Bluefin Ratio) and Quota Scenario (74.8 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	68%	22.5	-722,943	3.1
NJ	18	33%	6.4	-549,428	5.1
FL	43	14%	8.6	-499,966	15.9
NY	11	36%	14.4	-190,775	1.4
DE	2	50%	2.4	-184,978	0.0
NC	14	43%	1.4	-149,400	3.8
MD	5	60%	4.8	-147,323	0.6
PA	2	100%	2.1	-138,562	0.0
ME	4	50%	2.4	-110,004	0.9
MA	4	25%	0.4	-49,633	0.7
CT	1	0%	0.0	0	0.1
SC	3	0%	0.0	0	2.2
TX	3	0%	0.0	0	1.0

Table 4.49 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Equal Shares) and Quota Scenario (74.8 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	80%	21.8	-774,504	1.4
NJ	18	39%	6.7	-611,080	5.1
FL	43	19%	7.9	-471,430	12.4
NY	11	55%	14.4	-299,655	0.6
DE	2	100%	2.6	-235,222	0.0
NC	14	29%	1.4	-178,972	1.8
MD	5	40%	4.3	-117,988	0.4
PA	2	100%	1.7	-117,240	0.0
ME	4	25%	2.2	-104,882	1.1
MA	4	50%	0.4	-51,749	0.3
CT	1	0%	0.0	0	-0.3
SC	3	0%	0.0	0	1.6
TX	3	0%	0.0	0	0.8

Table 4.50 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Landings) and Quota Scenario (74.8 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	76%	29.9	-777,945	1.5
NJ	18	39%	15.9	-662,387	3.3
FL	43	21%	17.4	-560,179	10.2
NY	11	55%	50.7	-373,332	0.9
DE	2	100%	6.5	-263,256	0.0
NC	14	43%	4.1	-223,923	2.1
MD	5	60%	14.9	-155,501	0.5
PA	2	100%	5.5	-141,743	0.0
ME	4	50%	2.7	-99,178	0.6
MA	4	50%	0.5	-38,360	0.2
CT	1	100%	0.6	-9,300	0.0
SC	3	0%	0.0	0	1.1
TX	3	0%	0.0	0	0.7

Table 4.51 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Bluefin Ratio) and Quota Scenario (216.7 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
LA	25	44%	0.0176	-338,219	21.9
FL	43	9%	0.002163332	-269,708	58.5
NY	11	27%	0.024793388	-130,327	9.3
DE	2	50%	0.25	-118,097	1.7
NJ	18	17%	0.009259259	-114,848	19.6
MD	5	40%	0.08	-90,597	2.6
ME	4	25%	0.0625	-69,798	3.1
PA	2	100%	0.5	-33,218	0.0
CT	1	0%	0	0	0.6
MA	4	0%	0	0	4.5
NC	14	0%	0	0	17.6
SC	3	0%	0	0	6.4
TX	3	0%	0	0	4.1

Table 4.52 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Equal Shares) and Quota Scenario (216.7 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
FL	43	7%	0.001622499	-201,914	50.6
LA	25	24%	0.0096	-191,614	8.6
NJ	18	17%	0.009259259	-155,130	14.2
NY	11	18%	0.016528926	-95,711	4.0
DE	2	50%	0.25	-94,265	0.1
MD	5	20%	0.04	-69,782	-1.7
ME	4	25%	0.0625	-55,544	4.3
CT	1	0%	0	0	0.7
MA	4	0%	0	0	3.6
NC	14	0%	0	0	12.6
PA	2	0%	0	0	-3.6
SC	3	0%	0	0	4.7
TX	3	0%	0	0	3.9

Table 4.53 Impacts of IBQ allocation by Home Port State, for Quota Allocation Alternative (Landings) and Quota Scenario (216.7 mt)

Home Port State	Number of Vessels Associated with Permits Receiving Quota Share in State	Percent that Need Quota	Total Amount of Needed Quota (mt)	Total Reduction in Designated Species Landings (lb)	Total Amount of Surplus Quota (mt)
FL	43	9%	9.9	-273,002	44.5
LA	25	48%	12.8	-231,675	15.1
NJ	18	28%	7.0	-196,599	13.6
NY	11	36%	45.3	-173,138	6.0
DE	2	50%	4.2	-140,779	0.9
MD	5	40%	12.1	-110,644	2.7
PA	2	100%	3.1	-42,433	0.0
ME	4	25%	0.9	-35,932	1.9
NC	14	7%	0.1	-3,047	13.0
CT	1	100%	0.1	-1,138	0.0
MA	4	0%	0.0	0	4.5
SC	3	0%	0.0	0	3.3
TX	3	0%	0.0	0	3.6

Comparison of the final analysis with the analysis in the DEIS: The analysis in this FEIS, based upon fewer eligible vessels, results in different numbers than contained in the DEIS, but exhibits similar trends as those noted in the DEIS. The impacts on vessels are less however (less reduction in landings, fewer vessels would need quota, the amount of quota needed is less, and the amount of surplus quota is more).

The tables that follow, Table 4.54 - Table 4.61, compare combined impacts of the nine potential combinations of quota measures based on three IBQ share formulas and three quota scenarios (total reductions in landings; amount of surplus quota; proportion of permit holders that need quota (based on historical landings of vessel associated with permit); amount of surplus quota; amount of needed quota; proportion of permit holders that need quota by area; average amount of quota needed per permit holder by area; amount of surplus quota by area; and amount of needed quota by area).

Table 4.54 Total Reductions in HMS Landings (lb) (ranked) if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario.

Rank Order According to Reduction in HMS Landings	IBQ Allocation Alternative	Quota Scenario (mt)	Reduction in HMS Landings (lb)
1	Equal Shares	216.7	863,960
2	Bluefin Ratio	216.7	1,164,811
3	Landings	216.7	1,208,388
4	Equal Shares	137.0	1,535,738
5 (preferred)	Bluefin Ratio	137.0	1,825,202
6	Landings	137.0	2,007,215
7	Bluefin Ratio	74.8	2,743,012
8	Equal Shares	74.8	2,962,722
9	Landings	74.8	3,305,104

Table 4.55 Proportion of Permit Holders that Need Quota (ranked), Based on Historical Landings of the Vessel Associated with Permits, if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

Rank Order According to Proportion of Permit Holders that need Quota	IBQ Allocation Alternative	Quota Scenario (mt)	Proportion of Permit Holders that Need Quota
1	Equal Shares	216.7	0.13
2	Bluefin Ratio	216.7	0.20
3	Landings	216.7	0.24
4 (Preferred)	Bluefin Ratio	137.0	0.25
5	Equal Shares	137.0	0.27
6	Landings	137.0	0.34
7	Bluefin Ratio	74.8	0.36
8	Equal Shares	74.8	0.4
9	Landings	74.8	0.43

Table 4.56 Amount of Surplus Quota (mt, ranked) if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

Rank Order According to Amount of Surplus Quota	IBQ Allocation Alternative	Quota Scenario (mt)	Amount of Surplus Quota (mt)
1	Bluefin Ratio	216.7	150
2	Landings	216.7	109
3	Equal Shares	216.7	102
4 (Preferred)	Bluefin Ratio	137.0	83
5	Equal Shares	137.0	60
6	Landings	137.0	54
7	Bluefin Ratio	74.8	34
8	Equal Shares	74.8	25
9	Landings	74.8	21

Table 4.57 Amount of Needed Quota (ranked) if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

Rank Order According to Amount of Needed Quota	IBQ Allocation Alternative	Quota Scenario (mt)	Amount of Needed Quota (mt)
1	Equal Shares	216.7	29
2	Bluefin Ratio	216.7	40
3	Equal Shares	137.0	43
4 (Preferred)	Bluefin Ratio	137.0	51
5	Equal Shares	74.8	63
6	Bluefin Ratio	74.8	66
7	Landings	216.7	95
8	Landings	137.0	120
9	Landings	74.8	148

Table 4.58 Proportion of Permit Holders that Need Quota, by Area (ranked) if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

	Gulf of Mexico			Atlantic		
Rank Order	IBQ Allocation Alternative	Quota Scenario (mt)	Proportion of Permit Holders	IBQ Allocation Alternative	Quota Scenario (mt)	Proportion of Permit Holders
1	Equal Shares	216.7	0.17	Equal Shares	216.7	0.1
2	Bluefin Ratio	216.7	0.3	Bluefin Ratio	216.7	0.15
3	Landings	216.7	0.32	Equal Shares	137.0	0.19
4 (Preferred)	Bluefin Ratio	137.0	0.34	Bluefin Ratio	137.0	0.2
4				Landings	216.7	0.2
5	Equal Shares	137.0	0.4	Landings	137.0	0.3
6	Bluefin Ratio	74.8	0.43	Bluefin Ratio	74.8	0.32
6	Landings	137	0.43			
7	Equal Shares	74.8	0.51	Equal Shares	74.8	0.34
8	Landings	74.8	0.53	Landings	74.8	0.39

Table 4.59 Average Amount of Quota Needed per Permit Holder by Area (ranked), if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario.

	Gulf of Mexico			Atlantic		
Rank Order	IBQ Allocation Alternative	Quota Scenario (mt)	Amount of Quota Needed (mt)	IBQ Allocation Alternative	Quota Scenario (mt)	Amount of Quota Needed (mt)
1	Equal Shares	137	0.8	Equal Shares	74.8	1.3
2	Equal Shares	74.8	1.0	Bluefin Ratio	74.8	1.4
3	Equal Shares	216.7	1.1	Equal Shares	137.0	1.6
3	Bluefin Ratio	216.7	1.1			
4	Landings	216.7	1.2	Bluefin Ratio	137.0	1.7
5	Bluefin	137	1.3	Bluefin	216.7	1.8

	Gulf of Mexico			**Atlantic**		
	Ratio			Ratio		
6	Landings	137	1.4	Equal Shares	216.7	2.2
6	Bluefin Ratio	74.8	1.4			
7	Landings	74.8	1.6	Landings	74.8	3.2
8				Landings	137	3.5
9				Landings	216.7	4.3

Table 4.60 Amount of Surplus Quota by Area (ranked), if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

	Gulf of Mexico			**Atlantic**		
Rank Order	IBQ Allocation Alternative	Quota Scenario (mt)	Surplus Quota (mt)	IBQ Allocation Alternative	Quota Scenario (mt)	Surplus Quota (mt)
1	Bluefin Ratio	216.7	49	Bluefin Ratio	216.7	101
2	Equal Shares	216.7	35	Landings	216.7	77
3	Landings	216.7	32	Equal Shares	216.7	67
4	* Bluefin Ratio	137.0	27	* Bluefin Ratio	137.0	56
5	Equal Shares	137.0	19	Equal Shares	137.0	41
6	Landings	137.0	15	Landings	137.0	39
7	Bluefin Ratio	74.8	11	Bluefin Ratio	74.8	23
8	Equal Shares	74.8	9	Equal Shares	74.8	17
9	Landings	74.8	6	Landings	74.8	15

*Preferred Alternative

Table 4.61 Amount of Needed Quota by Area (ranked), if No Bluefin Quota Obtained via Trading, Indicating Allocation Alternative and Quota Availability Scenario

	Gulf of Mexico			Atlantic		
Rank Order	IBQ Allocation Alternative	Quota Scenario (mt)	Quota Needed (mt)	IBQ Allocation Alternative	Quota Scenario (mt)	Quota Needed (mt)
1	Equal Shares	216.7	9	Equal Shares	216.7	20
2	Bluefin Ratio	216.7	16	Bluefin Ratio	216.7	24
2	Equal Shares	137.0	16			
3	Landings	216.7	18	Equal Shares	137.0	27
4	*Bluefin Ratio	137.0	21	*Bluefin Ratio	137.0	30
5	Equal Shares	74.8	25	Equal Shares	74.8	38
6	Bluefin Ratio	74.8	27	Bluefin Ratio	74.8	39
7	Landings	137.0	28	Landings	216.7	77
8	Landings	74.8	39	Landings	137.0	92
9				Landings	74.8	109

*Preferred Alternative

Pelagic Longline Preferred Alternatives

Table 4.62 Biological Impacts of the Pelagic Longline Preferred Alternatives

Preferred Alternative	Quality	Timeframe	Impacts
Codified and Annual Reallocation	Indirect	Short-term	o/ ◓ +
Modifications to Reserve Category	Indirect	Short-term	o/ ◓ +
Modified Cape Hatteras Gear Restricted Area with Access	Direct	Long-term	ø +
Modified Spring Gulf of Mexico Gear Restricted Areas	Direct	Long-term	ø +
Pelagic and Bottom Longline Transiting Closed Areas	n/a	n/a	o
IBQs	Direct	Short-term	ø +
NMFS Closure of the Pelagic Longline Fishery (when quota reached)	Direct	Short-term	●+/ ø +
Elimination of Target Catch Requirement	Direct	Short-term	ø +
Mandatory Retention of Legal-sized bluefin	Direct	Short-term	◓ +
VMS Reporting	Indirect	Long-term	o
Electronic Monitoring	Indirect	Long-term	◓ +

Accounting for Dead Discards Under Amendment 7

These following illustrations are intended to show the flexibility in the system to account for various levels of dead discards.

How Would NMFS Account for Dead Discards Under Amendment 7?

The method of accounting for dead discards is closely linked to the type of quota system (Section 4.1.3, Bluefin Tuna Quota Controls), as well as the timing and amount of data used to monitor the fishery (Section 4.1.4, Enhance Reporting Alternatives). In the context of IBQs (Alternative C 2, Sections 2.3.2 and 4.1.3) dead discards would be accounted for on an individual permit holder basis, provided robust data regarding the dead discards are available. If NMFS determines that robust dead discard data from individual permit holders are not available, or would not be available, NMFS may account for dead discards by subtracting all or a portion of the estimated bluefin dead discards from the Longline quota in a single sum, “up front” (resulting in a landings quota). In this case only landings would count toward a permit holder’s IBQ. NMFS would have the ability to set a landings quota for the Longline category based on its current authority to allocate quota and account for dead discards.

If NMFS ability to close the pelagic longline fishery were implemented (Section 4.1.3), NMFS may estimate dead discards and rely upon NMFS ability to close the pelagic longline fishery when it projects that the bluefin quota will be caught (Subalternative C2g.4).

What are the Range of Potential Quotas and Dead Discards that would be Accounted For?

Based on the 2012 Longline category bluefin quota, under the Amendment 7 preferred alternatives, the range of bluefin quota possibly available to the pelagic longline fishery would be between 74.8 mt and 296 mt depending upon the combination of alternatives (and relevant assumptions). It is important to note that the amount of quota that is likely to be available to the Longline category would be less, because the estimate of 296 mt of available quota is based on two assumptions (transfer of quota from the Reserve to the Longline category, and extensive leasing from the Purse Seine category to the Longline category). The amount of dead discards that must be accounted for in the future is estimated at 87 mt based on the 2009 to 2012 historical average of total dead discards (**160 mt**), and taking into account approximately 73 mt of ‘savings’ from the Gear Restricted Areas (**160 mt – 73 mt = 87 mt**). If fishing behavior is modified so that more bluefin are avoided, or fishing effort decreases, the amount of dead discards that would need to be accounted for would be less.

Examples of Quota Allocations and Dead Discard Accounting Under Amendment 7

The tables below illustrate the flexibility NMFS would have under the preferred alternatives to conduct quota allocation and accounting in a manner that accounts for dead discards at or below the historical level and that addresses multiple Amendment 7 objectives. The tables show six specific possible quota allocation and accounting examples under the preferred alternatives, that include a landings quota (i.e., taking dead discards off the top), and no trading with Purse Seine participants. Note, there are many other potential examples, but these illustrate a reasonable range based the Amendment 7 analyses, and historical information on the pelagic longline fishery landings and discards of bluefin. For each of the examples A through F, there is a table that shows allocations for all the quota categories, and an associated table that focuses on accounting within the Longline category, and illustrates in more detail accounting for dead discards.

It is important to note that not all of the examples assume reductions in dead discards as a result of the IBQ alternative or the Gear Restricted Areas. The IBQ alternative would reduce dead discards by an unknown amount due to the increased incentive to avoid bluefin and the preferred Gear Restricted Area alternatives would decrease dead discards by approximately 73 mt. If the reduction in dead discards as a result of the gear restricted areas is factored into these tables, the use of underharvest or the Reserve category quota to account for dead discards would be reduced or eliminated (depending upon the amount of quota, etc.). Similarly, with reductions in the amount of dead discards from Gear Restricted Areas included, the need for additional quota (in excess of the base allocation) to account for Longline category dead discards would be reduced, and therefore there would be more flexibility to use reallocated Purse Seine category quota to distribute to all quota categories, instead of more narrowly to the Longline category. It is possible that an increase in stock size may result in an increase amount of total dead discards by the pelagic longline fishery even if the fishing effort does not increase. As demonstrated in these examples, the flexibility of the quota accounting system would enable successful quota accounting and management to continue.

Most of the six examples set landings quotas of 65 mt based on the historical range of pelagic longline landings, and reflect the Codified Reallocation Alternative (A 2a). A landings quota of 65 mt used in these examples was selected because the average landings of bluefin by the Longline category, from 2006 through 2012 was 69.5 mt. The examples include Longline category quotas of 137.3 mt, 176.8 mt, and 216.8 mt; Annual Reallocation from the Purse Seine Category (Alternative A 3a) of zero, 50% and 25%; the use of underharvest to account for Longline category dead discards (zero mt, 20 mt, 45 mt, and 78 mt); and the use of Reserve category quota to account for Longline category dead discards (zero mt, 20 mt, 20.7 mt, 45 mt, and 78 mt). The amount of bluefin tuna dead discards accounted for under these examples are **87 mt,** 117.3 mt, 131.8 mt, 150.3 mt, and 151.8 mt, and the combined amounts of landings and dead discards are 137.3, 215.3 mt, 182.3 mt, 216.8 mt, and 196.8 mt.

Example A (Table 4.63 and Table 4.64) illustrates a simple scenario where there is a 137.3 mt allocation to the Longline category, and no use of reserve or underharvest to account for dead discards. This scenario takes into account the combined effect of the gear restricted areas in reducing the amount of dead discards that need to be accounted for.

Table 4.63 Illustration of Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example A

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36

Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Underharvest from Previous Year		N/A				
Subtotal		21.4				
Use of Reserve to Account for Dead Discards		N/A				
Subtotal		21.4				

Table 4.64 llustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example A

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	137.3		137.3	
Deduction for Dead Discards		-87	50.3	87
Landings Allocation		-50.3	0	
Quota from Reserve used to Account for Dead Discards			0	0
Final			0	87
Landings and Dead Discards Total: 50.3 + 87 = 137.3				

Example B (Table 4.65 and Table 4.66), which is the combined effect of Alternative A 2a (Codified Reallocation), the use of 80 mt from the previous year's underharvest to augment the Reserve category, the use of 78 mt from the Reserve category to account for Longline category dead discards, the deduction of 72.3 mt from the Longline category to account for dead discards, and a 65 mt landings quota for the Longline category. In this example, 150.3 mt of dead discards are accounted for, an amount slightly less than the historical average of 159.7 mt (from 2006 to 2012). Example B does not consider the anticipated reductions in dead discards that would result from the implementation of the preferred gear restricted areas.

Table 4.65 Illustration of Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example B

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36
Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Underharvest from Previous Year		+ 80				
Subtotal		101.4				
Use of Reserve to Account for Dead Discards		- 78				
Subtotal		23.4				

Table 4.66 llustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example B

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	137.3		137.3	
Deduction for Dead Discards		-72.3	65	72.3
Landings Allocation		-65	0	
Quota from Reserve used to Account for Dead Discards			0	78
Final			0	150.3
Landings and Dead Discards Total: 65 + 150.3 = 215.3				

Therefore, in Example B, the Longline category has a quota allocation of 137.3 mt, but 72.3 mt is deducted ‘up front’ to account for dead discards, leaving the Longline category a landings quota of 65 mt. An additional 78 mt to dead discards are accounted for from the Reserve category, which results in a total of 150.3 mt of dead discards accounted for.

In contrast, Example C (Table 4.67 and Table 4.68) shows how a lesser amount of total dead discards (93 mt) could be accounted for reflecting the beneficial impacts of the preferred gear restricted areas.

Table 4.67 Illustration of Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example C

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36
Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Underharvest from Previous Year		0				
Subtotal		21.4				
Use of Reserve to Account for Dead Discards		- 20.7				
Subtotal		0.7				

Table 4.68 Illustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example C

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	137.3		137.3	
Deduction for Dead Discards		-72.3	65	72.3
Landings Allocation		-65	0	
Quota from Reserve used to Account for Dead Discards			0	20.7
Final			0	93.0
Landings and Dead Discards Total: 65 + 93 = 158				

Therefore, in Example C, the Longline category has a quota allocation of 137.3 mt, but 72.3 mt is deducted ‘up front’ to account for dead discards, leaving the Longline category a landings quota of 65 mt. An additional 20.7 mt of dead discards are accounted for from the Reserve category, which results in a total of 93 mt of dead discards accounted for, which would be sufficient to account for the anticipated dead discards, considering the combined effects of the preferred gear restricted area alternatives.

Example D (Table 4.69 and Table 4.70), illustrates the combined effect of Alternative A 2a (Codified Reallocation), Alternative A 3a (Annual Reallocation of quota from the Purse Seine Category); the use of 90 mt from the previous year's underharvest to augment the Reserve category, the use of 45 mt from the Reserve category to account for dead discards, the deduction of 72.3 mt from the Pelagic longline category to account for dead discards, and a 65 mt landings quota for the Pelagic longline category. This example illustrates how quota from the Purse Seine category (50%) is used to 'give back' to the categories from which the 68 mt was deducted. In this example, 117 mt of dead discards are accounted for (less than the historical average dead discards of 159.7), but there is still 85.2 mt of quota in the Reserve category which could be used either to provide additional fishing opportunity or account for dead discards if necessary. Example D does not consider the anticipated reductions in dead discards that would result from the implementation of the preferred gear restricted areas.

Table 4.69 Illustration of Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example D (Annual Reallocation from Purse Seine used to 'Give back' 68 mt)

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36
Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Annual Reallocation (50%) (Alternative A 3a) & Modify Reserve (Alternative A 4b)	N/A	+ 79.5	- 79.5	N/A	N/A	N/A
Subtotals	137.3	100.9	79.5	403.1	168.6	33.3
Modify Reserve (Alternative A 4b)	0	-60.7	+ 12.6	+ 32	+ 13.4	+ 2.7
Subtotals	137.3	40.2	92.1	435.1	182	36
Underharvest from Previous Year		+ 90				
Subtotal		130.2				
Use of Reserve to Account for Dead		- 45				

Discards			
Subtotal		85.2	

Table 4.70 Illustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example D

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	137.3		137.3	
Deduction for Dead Discards		-72.3	65	72.3
Landings Allocation		-65	0	
Quota from Reserve used to Account for Dead Discards			45	45
Final			0	117.3
Landings and Dead Discards Total: 65 + 117.3 = 182.3				

Example E (Table 4.71 and Table 4.72), which is the combined effect of Alternative A 2a (Codified Reallocation), Alternative A 3a (Annual Reallocation of quota from the Purse Seine Category); no use of quota from the previous year's underharvest to augment the Reserve category, no use of quota from the Reserve category to account for dead discards, the deduction of 151.8 mt from the Longline category to account for dead discards, and a 65 mt landings quota for the Longline category. This example illustrates how the quota from the Purse Seine category (50%) is provided only to the Longline category. In this example, 151.8 mt of dead discards are accounted for (slightly less than the historical average dead discards of 159.7 mt).

Table 4.71 Illustration of Possible Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example E

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36
Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Annual Reallocation (50%)	0	+79.5	-79.5			

(Alternative A 3a) & Modify Reserve (Alternative A 4b)			
Subtotals	137.3	100.9	79.5
Modify Reserve (Alternative A 4b)	+79.5	-79.5	
Subtotals	216.8	21.4	
Underharvest from Previous Year		0	
Subtotal		21.4	
Use of Reserve to Account for Dead Discards		0	
Subtotal		21.4	

Table 4.72 Illustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example E

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	216.8		216.8	
Deduction for Dead Discards		151.8	65	151.8
Landings Allocation		-65	0	
Quota from Reserve used to Account for Dead Discards			0	0
Final			0	151.8
Landings and Dead Discards Total: 65 + 151.8 = 216.8				

Example F (Table 4.73 and Table 4.74) illustrates the combined effect of Alternative A 2a (Permanent Reallocation), Alternative A 3a (Annual Reallocation of quota from the Purse Seine Category); the use of 20 mt from the previous year's underharvest to augment the Reserve category, the use of 20 mt from the Reserve category to account for dead discards, the deduction of 111.8 mt from the Longline category to account for dead discards, and a 65 mt landings quota for the Longline category. This example illustrates how the quota from the Purse Seine category (25%) is provided only to the Longline category. In this example, 131.8 mt of dead discards are accounted for (less than the historical average dead discards of 159.7).

Table 4.73 llustration of Possible Bluefin Quota Allocation and Quota Accounting Possible under Preferred Alternatives (mt); Example F

Quota Element	Longline	Reserve	Purse Seine	General Category	Angling	Harpoon
Base Allocation	74.8	23.1	171.8	435.1	182	36
Codified Reallocation (Alternative A 2a)	+ 62.5	- 1.7	- 12.6	- 32.0	- 13.4	- 2.7
Subtotals	137.3	21.4	159.2	403.1	168.6	33.3
Annual Reallocation (25%) (Alternative A 3a) & Modify Reserve (Alternative A 4b)	0	+39.75	-39.75			
Subtotals	137.3	61.15	119.45			
Modify Reserve (Alternative A 4b)	+39.75	-79.5				
Subtotals	176.8	21.4				
Underharvest from Previous Year		+ 20.0				
Subtotal		41.4				
Use of Reserve to Account for Dead Discards		- 20.0				
Subtotal		21.4				

Table 4.74 llustration of Longline Category Quota Accounting Possible under Preferred Alternatives (mt); Example F

Quota Element	In	Out	Longline Category Balance	Dead Discards Accounted for
Initial Allocation	176.8		176.8	
Deduction for Dead Discards		111.8	65	111.8
Landings Allocation		-65	0	
Quota from Reserve used to Account for Dead Discards			0	20
Final			0	131.8
Landings and Dead Discards Total: 65 + 131.8 = 196.8				

Purse Seine Category Measures

The combined biological impacts of the measures applicable to the Purse Seine category would result principally from impacts of the reallocation alternatives and the VMS reporting requirements and would be indirect impacts. Under any of the combinations of codified and annual reallocation alternatives, the Purse Seine quota would be reduced compared to the No Action alternative. These quota reductions would improve the likelihood of successful quota accounting, but not the size of the total U.S. quota. It is difficult to compare the effect of quota shifts among categories on bluefin because there is little information on the historical level of discards of categories other than the Longline category. Because the different quota categories have different minimum size restrictions (as described in Section 3.2.3), a shift in quota from the Purse Seine to other quota categories may affect the size distribution of bluefin caught. The reduction in the number of large medium, or giant bluefin that are caught by the Purse Seine category may affect the total numbers of large medium or giant bluefin caught by the fishery as a whole. Due to the small amount of shift in quota relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), potential changes in the catch of different sized bluefin would not affect the overall size composition of the stock. If reductions to bluefin quota allocations reduce the amount of fishing effort by the Purse Seine category, the amount catch of other HMS caught incidentally by Purse Seine vessels may be reduced. The reporting requirements would have a minor, beneficial impact because they would provide previously unavailable estimates of dead discards for the purse seine fishery, which would improve estimates of fishing mortality, although discards of bluefin in this fishery are reportedly low. The VMS requirements in this alternative primarily address timely data collection for more precise inseason management of the bluefin tuna fishery. In summary, the biological impacts of the Purse Seine category measures are likely to be indirect, long-term neutral, or minor beneficial.

Table 4.75 Purse Seine Quota Allocation (mt) under Combinations of Reallocation Measures, based on a total bluefin quota for 923.7 mt (2012 quota specifications)

Codified Quota Reallocation Alternative	No Annual Reallocation	Annual reallocation of 50% of Purse Seine quota to Longline category
No Action	171.8	85.9
Based on 68 mt (preferred)	159	79.5
Recent Catch and Current Allocation	87	43.5
From Purse Seine Category	103	51.5

General Category

The combined impacts of the measures applicable to the General category are the combined impacts of the reallocation and reporting alternatives, the ability to reallocate quota from a later time period to an earlier one, as well as the rules that would modify the timing of changes to permit categories. The combined biological impacts of the measures applicable to the General category are expected to be neutral (indirect), and would result principally from impacts of the reallocation alternatives. Compared to the No Action alternative, under the two reallocation alternatives in Table 4.75, the General category would be allocated 7.4% less; under the 68 mt alternative), and 10.8 % less (under the recent allocation and current catch alternative). These quota reductions would not alter the size of the total U.S. quota, and the size range of fish harvested by the General category is the same as the other commercial categories. Therefore, the alternatives are likely to have neutral biological impacts. As described in the analysis of the reporting alternatives, the enhanced reporting alternative applicable to the General category would have minor beneficial effects. In summary, the biological impacts of the General category alternatives are likely to be indirect, long- term neutral, or minor beneficial.

Table 4.76 General Category Allocations (mt) under Codified Reallocation Measures, based on a total bluefin quota for 923.7 mt (2012 quota specifications)

Codified Quota Reallocation Alternative	Revised Allocations
No Action	47.1% (435.1 mt)
Based on 68 mt	47.1% - 32 mt = 403 mt
Recent Catch and Current Allocation	42% (388 mt)

Harpoon Category

The combined impacts of the measures applicable to the Harpoon category are the combined impacts of the reallocation and reporting alternatives, the ability to adjust retention limits inseason, as well as the rules that would modify the timing of changes to permit categories. The combined biological impacts of the measures applicable to the Harpoon category are expected to be neutral to minor, beneficial (indirect), and would result principally from impacts of the reallocation alternatives. Compared to the No Action alternative, under the two reallocation alternatives in Table 4.77, the Harpoon category would be allocated 8% less (under the 68 mt alternative), and 17% less (under the recent allocation and current catch alternative). These quota reductions would not alter the size of the total U.S. quota, and the size range of fish harvested by the Harpoon category is the same as the other commercial categories. Therefore, the alternatives are likely to have neutral biological impacts. As described in the analysis of the reporting alternatives, the enhanced reporting alternative applicable to the Harpoon category would have minor beneficial effects. In summary, the biological impacts of the Harpoon category alternatives are likely to be indirect, long-term neutral, or minor beneficial.

Table 4.77 Harpoon Category Allocations (mt) under Codified Reallocation Measures, based on a total bluefin quota for 923.7 mt (2012 quota specifications)

Codified Quota Reallocation Alternative	Revised Allocations
No Action	3.9% (36 mt)
Based on 68 mt	3.9% - 2.7 mt = 33.3 mt
Recent Catch and Current Allocation	3.3% (30 mt)

Angling Category

The combined impacts of the measures applicable to the Angling category are the combined impacts of the reallocation and reporting alternatives, as well as the rules that would allocate a portion of the trophy south sub-quota to the Gulf of Mexico, and modify the timing of changes to permit categories. The combined biological impacts of the measures applicable to the Angling category are expected to be neutral (indirect) and would result principally from impacts of the reallocation alternatives. Compared to the No Action alternative, under the two reallocation alternatives in Table 4.78, the Angling category would be allocated 7% less (under the 68 mt alternative), and 47 % more (under the recent allocation and current catch alternative). These quota modifications would not alter the size of the total U.S. quota, and are likely to have neutral biological impacts.

Under the reallocation alternative based on recent catch and current allocation, because the Angling category allocation would increase, and the Angling category targets a lower size range of bluefin as a result of the lower minimum size restrictions (as described in Section 3.2.3), this alternative may affect the number of fish caught in each size class by the fishery as a whole. Due to the small amount of quota shift relative to the size of the bluefin stock as a whole (spawning stock biomass of approximately 18,000 mt), potential changes in the catch of different sized bluefin would not affect the overall size composition of the stock. In summary, the biological impacts of the Angling category alternatives are likely to be indirect, long-term neutral, or minor beneficial.

Table 4.78 Angling Category Allocations (mt) under Codified Reallocation Measures, based on a total bluefin quota for 923.7 mt (2012 quota specifications)

Codified Quota Reallocation Alternative	Revised Allocations
No Action	19.7% (182 mt)
Based on 68 mt	19.7% - 13.4 mt = 169 mt
Recent Catch and Current Allocation	29.1% (268 mt)

All Alternatives

This section provides summary information regarding the biological impacts, which are shown in Table 4.79.

Table 4.79 Biological Impacts of the Preferred Alternatives and Affected Quota Category

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
A 2a	Reallocation to Longline Category Based on Historical 68 mt Dead Discard	All	Indirect	Short-term	o /◓ +

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
	Allowance				
A 3a	Annual Reallocation of Bluefin Quota from Purse Seine Category	Purse Seine, Longline	Indirect	Short-term	o /◓ +
A 4b	Modify Reserve Category	All	Indirect	Short-term	o /◓ +
B 1d	Modified Cape Hatteras Gear Restricted Area	Longline	Direct	Long-term	ø +
B 1i	Modified Spring Gulf of Mexico Gear Restricted Areas	Longline	Direct	Long-term	ø +
B 1j	Pelagic and Bottom Longline Transiting Closed Areas	Longline	Indirect	Short-term	o
B 2a	Gear Measures	Longline	Direct	Short-term	o
B 3	Access to Closed Areas Using Pelagic Longline Gear	Longline	Indirect	Short-term	o /◓ +
C 2	Individual Bluefin Quotas (IBQs)	Longline Purse Seine	Direct	Short-term	ø +
C 4b	NMFS Closure of the Pelagic Longline Fishery	Longline	Direct	Short-term	◓ +/ø +
D 1b	Vessel Monitoring System (VMS) Requirements	Longline Purse Seine	Indirect	Short-term	◓ +
D 2b	NMFS Authority to Require Electronic Monitoring of Longline Category	Longline	Indirect	Short-term	◓ +
D 3b	Automated Catch Reporting	General Harpoon Charter/Headboat	Indirect	Short-term	◓ +
D 4b	Deployment of Observers	Longline, Purse Seine, General, Harpoon,	Indirect	Short-term	◓ +

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
		Angling, Charter/Headboat			
D 5a	Logbook Requirement	General, Harpoon, Charter/Headboat	Indirect	Short-term	◓ +
D 6a	Expand the Scope of Large Pelagics Survey	Angling, Charter/Headboat	Indirect	Short-term	◓ +
E 1c	Provide Additional Flexibility for General Category Quota Adjustment	General	Direct	Short-term	o
E 2b	NMFS Authority to Adjust Harpoon Category Retention Limits Inseason	Harpoon	Direct	Short-term	o
E 3b	Allocate a Portion of the Trophy South Sub-Quota to the Gulf of Mexico	Angling	Direct	Short-term	o
E 4b	Change Start Date of Purse Seine Category to June 1	Purse Seine	Direct	n/a	o
E 5b	Modify Rules Regarding Permit Category Changes	General, Harpoon, Angling, Charter/Headboat	Direct	n/a	o
E 6b	Implement U.S. Northern Atlantic Albacore Tuna Quota	All	Direct	Long-term	◓ +

4.2 Impacts on Protected Species and Essential Fish Habitat

Impacts on Essential Fish Habitat

Pursuant to 16 U.S.C. 1853(a)(7), and as implemented by 50 C.F.R. § 600. 815, the Magnuson-Stevens Act requires that an FMP identify and describe essential fish habitat (EFH) for each life stage of managed species, minimize to the extent practicable adverse effects of fishing activities on EFH including the cumulative effects of multiple fisheries activities, and identify other actions to encourage the conservation and enhancement of such habitat If NMFS determines that fishing gears are having an adverse effect on HMS EFH, or other species' EFH, then NMFS must include management measures that minimize adverse effects to the extent practicable. The analysis in the 2006 Consolidated HMS FMP indicated that most HMS gears are fished in the water column and the impacts on EFH are generally considered negligible. HMS gears do not normally affect the physical characteristics that define HMS EFH such as salinity, temperature, dissolved oxygen, and depth. Similarly, most HMS gears are not expected to impact other fisheries' EFH, with the possible exception of shark bottom longline gear, depending on the area where it is fished. In the 2006 Consolidated HMS FMP, a determination was made that HMS gears, other than shark bottom longline, were not having a negative impact on EFH. Similarly, other state and federally managed gears were also determined not to have an impact on HMS EFH, with the possible exception of some bottom-tending gears in shark nursery areas in coastal bays and estuaries (for which NMFS anticipates any resulting impacts would be minimal and only temporary in nature).Ecological impacts to EFH due to actions in this draft amendment would likely be neutral and have no adverse effects as the preferred alternatives would not affect the range of gears used in the fishery or the nature of the use of gear. The preferred alternatives may change the amount of particular gear type used, but such changes would not affect EFH. Because the actions in this amendment also would not significantly alter fishing gears or practices, it is anticipated that it would not have any adverse impacts to EFH, and the conclusion for the 2006 Consolidated HMS FMP is still applicable, so further consultation is not necessary.

Overview of Impacts on Protected Species

On June 14, 2001, NMFS released a Biological Opinion (BiOp), which stated that the continued operation of recreational and commercial handgear fisheries (i.e., handgear, including rod and reel) may adversely affect, but is not likely to jeopardize, the continued existence of any endangered or threatened species under NMFS jurisdiction. NMFS has implemented the Reasonable and Prudent Measures and Terms and Conditions of the 2001 BiOp.

In June 2004, NMFS released a BiOp that concluded that the Atlantic pelagic longline fishery was not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley or olive ridley sea turtles but was likely to jeopardize the continued existence of leatherback sea turtles. NMFS has implemented the Reasonable and Prudent Alternative and Terms and Conditions specified in the BiOp (e.g., hook type, bait type, mandatory workshops).

The fisheries managed under the 2006 Consolidated Atlantic HMS FMS and its amendments have undergone formal and/or informal Section 7 consultation and collectively address the ongoing Atlantic HMS fisheries.

On August 15, 2013, NMFS determined that the proposed measures in Amendment 7 to the 2006 Consolidated HMS FMP would not require reinitiation of formal consultation. The environmental effects of the preferred alternatives in this FEIS are substantially the same as those analyzed in the DEIS, although some different alternatives are now preferred and two of the alternatives have been slightly modified. No additional or substantively different effects on listed species are expected as a result of these changes.

In 2014, however, NMFS determined that it needed to reinitiate consultation for the pelagic longline fishery. That fishery operates consistent with a 2004 BiOp that concluded that the

Atlantic pelagic longline fishery was not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley or olive ridley sea turtles but was likely to jeopardize the continued existence of leatherback sea turtles. NMFS implemented the Reasonable and Prudent Alternative and Terms and Conditions specified in that BiOp (e.g., hook type, bait type, mandatory workshops). On March 31, 2014, NMFS requested reinitiation of consultation of the pelagic longline BiOp due to new information on mortality rates and total mortality estimates for leatherback turtles that exceed those specified in the RPA, changes in information about leatherback and loggerhead populations, and new information on sea turtle mortality. While the mortality rate measure needs to be re-evaluated, this does not affect the overall ability of the RPA to avoid jeopardy during the reinitiation.

NMFS will continue to implement these RPAs during the reinitiation of consultation and has previously determined that ongoing operations in compliance with that BiOp comply with requirements under sections 7(a)(2) and 7(d) of the ESA. Section 7(a)(2) prohibits Federal actions that jeopardize the continued existence of listed species or that destroy or adversely modify their critical habitat. Section 7(d) of the ESA prohibits federal agencies and permit applicants from making any "irreversible or irretrievable commitment of resources" that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures during consultation under section 7(a)(2). Implementation of the preferred alternatives in the FEIS will not affect NMFS's ability to comply with those requirements the RPAs and RPMs in that BiOp and will not alter the proposed action in a way that triggers additional ESA requirements or considerations pertaining to the pelagic longline fishery and listed sea turtles and other species covered in the 2004 BiOp.

NMFS has determined that other conclusions of the 2004 BiOp and a 2001 BiOp for HMS pelagic longline fisheries and HMS commercial and recreational handgear fisheries, respectively, are still applicable. Amendment 7 measures (including those that could reduce fishing effort) implemented in conjunction with current measures in the HMS fisheries would not change the determination that ongoing operations are unlikely to jeopardize the continued existence of the right whale, humpback, fin, or sperm whales, or Kemp's ridley, green, loggerhead, hawksbill or leatherback sea turtles. A complete discussion of the effect of the alternatives applicable to the Longline category on quota allocation and fishing effort is located in Section 4.1.6.1.

On July 3, 2014, NMFS published a final rule to list four Distinct Populations Segments (DPS) of scalloped hammerhead sharks (Sphyrna lewini): two as threatened (Central and Southwest Atlantic DPS and Indo-West Pacific DPS) and two as endangered (Eastern Atlantic DPS and Eastern Pacific DPS) under the Endangered Species Act (79 FR 38214). The Central and Southwest Atlantic DPS consists primarily of the population found in the Caribbean Sea and off the Atlantic coast of Central and South America (includes all waters of the Caribbean Sea, including the U.S. EEZ off Puerto Rico and the U.S. Virgin Islands). The Central and Southwest Atlantic DPS occurs within the boundary of Atlantic HMS commercial and recreational fisheries.

NMFS will be developing a more detailed analysis regarding any effects to the Central and Southwest DPS of scalloped hammerhead sharks to be used in consultation on the Atlantic HMS fisheries. As a preliminary matter, the Division has determined that ongoing operation of the fisheries consistent with the RPAs and RPMs in existing biological opinions and consistent with ongoing conservation and management measures is not likely to jeopardize the continued existence of the species or result in an irreversible or irretrievable commitment of resources which would foreclose formulation or implementation of any reasonable and prudent alternative measures. None of the measures in Amendment 7 would be expected to have an effect on the threatened Central and Southwest DPS of scalloped hammerhead sharks that would affect this determination. NMFS has established additional management measures to reduce serious injury and mortality of long-finned and short-finned pilot whales, and Risso's dolphins in the U.S. East Coast Atlantic pelagic longline fishery (74 FR 23349, May 19, 2009). These measures include a requirement to post a marine mammal handling placard, restrict pelagic longline mainline length to 20 nm in the Mid-Atlantic Bight area, and develop observer and research participation requirements to operate in the Cape Hatteras Special Research Area.

Chapter 7 of the 2012 SAFE Report list the 22 marine mammal species that are or could be of concern with respect to potential interactions with HMS fisheries. Those sections discuss interactions and the Endangered Species Act, including six endangered whale species. A summary of marine mammal interactions in the pelagic longline fishery from 1992 through 2005 is provided in Section 3.4.1.2 of the 2006 Consolidated HMS FMP and is updated for 2002 through 2011 in the 2012 SAFE Report.

4.2.1 Reallocation Alternatives

The impacts of the alternatives affecting quota allocation on protected species and essential fish habitat would result principally from potential changes in fishing effort in the Longline category, and the amount of pelagic longline gear deployed. The pelagic longline fishery is defined as a Category I fishery, with “frequent serious injury or incidental mortality to marine mammals.” In contrast, based on gear types, the fisheries associated with of the other quota categories are classified as Category III, with “remote likelihood of serious injury or known incidental mortality to marine mammals.”

The impacts of the reallocation alternatives depend upon whether other alternatives are implemented in conjunction with the reallocation alternative(s). As explained in Section 4.1.6.1 (combined impacts of pelagic longline measures), reallocation alternatives combined with other alternatives would not result in an increase in fishing effort and therefore would have a neutral or minor beneficial effect on protected species and habitat. If fishing effort is constrained by alternatives designed to limit bluefin catch, impacts on protected species would also be constrained, resulting in direct minor beneficial impacts. If the reallocation alternatives were implemented without other alternatives, there would be no indirect constraint on fishing effort, and the amount of fishing effort could increase (for reasons unrelated to Amendment 7), so the impacts on protected species would be neutral (if fishing effort did not increase) or minor adverse (if fishing effort increased).

No Action

The no action alternative would result in a neutral impact on protected species and essential fish habitat because it would not affect the amount of fishing effort in the pelagic longline fishery.

Codified Reallocation

The codified reallocation alternatives would result in increased bluefin quota for the Longline category. As explained in the introductory paragraph above, the impacts would depend upon the other alternatives implemented. If fishing effort is constrained by alternatives designed to limit bluefin catch, impacts on protected species would also be constrained, resulting in the minor beneficial impacts.

Annual Reallocation

The annual reallocation alternatives would result in a decreased quota allocation for the Purse Seine category and an increased bluefin quota allocation for the all quota categories, or only some or one of the categories. Potential impacts to protected species would depend upon any changes to the Longline category quota, and as explained in the introductory paragraph above, the impacts would depend upon the other alternatives implemented. If fishing effort is constrained by alternatives designed to limit bluefin catch, impacts on protected species would also be constrained, resulting in the minor beneficial impacts.

Modification to Reserve Category

A modification to the Reserve category regarding the sources of quota that go into the Reserve category, and the range of objectives the Reserve category supports, would have a neutral impact on protected species, because no change in the amount of fishing effort or methods of gear use is expected.

4.2.2 Area Based Alternatives

Gear Restricted Areas

Alternative B 1b - Cape Hatteras Gear Restricted Area

The alternative is expected to have a neutral impact on sailfish and leatherback turtles (i.e., no effect on sailfish or leatherback turtle discards in the area or fishery-wide). The alternative is expect to decrease loggerhead turtle interactions by 100 percent in the area (-2 turtle/year, on average) and by 2 percent fishery-wide. The percent reduction with redistribution of average annual discards of white and blue marlin in the Cape Hatteras Gear Restricted Area and across the fishery are 5 percent (-2 fish/year, on average) and 0 percent, and 15 percent (- 3 fish/year, on average) and 0 percent, respectively. These changes in catch can be found in Table 4.80. Indirect impacts on HMS bycatch and protected resources under this alternative are expected to be neutral due to minimal change in the number of interactions with HMS-permitted pelagic longline vessels. Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.80 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1b, Cape Hatteras Gear Restricted Area, on prohibited species and protected resources

	2006 – 2012 Average Annual Interactions	White Marlin Disc	Blue Marlin Disc	Sailfish Disc	Spearfish Disc	Leatherback Sea Turtles	Loggerhead Sea Turtles
A	***January***	***0***	***1***	***0***	***0***	***0***	***0***
B	***February***	***1***	***0***	***0***	***0***	***0***	***0***
C	***March***	***2***	***1***	***0***	***1***	***0***	***1***
D	***April***	***4***	***4***	***1***	***0***	***0***	***1***
E	May	6	4	1	1	0	0
F	June	10	2	3	0	0	0
G	July	10	3	2	1	0	0
H	August	5	2	2	0	0	0
I	September	4	2	1	1	0	0
J	October	2	0	4	0	0	0
K	November	0	1	0	0	0	0
L	***December***	***0***	***0***	***0***	***1***	***0***	***0***
M	Dec-Apr Reduction of Catch/Hooks with no redistribution	-7	-6	-1	-2	0	-2
N	Dec-Apr change in catch during closure with redistribution	5	3	1	0	0	0
O	Net Change with redistribution (M+N)	-2	-3	0	-2	0	-2
P	Average Annual # Interactions in Proposed Gear Restricted Area	44	20	14	5	0	2
Q	Percent change in Area with redistribution ((O/P)×100)	-5%	-15%	0%	-40%	0%	-100%
R	Average # Interactions in entire fishery (Σ(All PLL Interactions 2006 - 2012)/7)	859	670	509	226	61	118
S	Percent change in fishery ((C/F)×100)	0%	0%	0%	-1%	0%	-2%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1c - Cape Hatteras Gear Restricted Area with Access Based on Performance

Expected indirect ecological effects on prohibited species and protected resources as a result of this alternative are presented in Table 4.81. The five-month gear restricted area, with redistribution and access for vessels that only meet certain predefined criteria, would result in localized average annual area reduction of: white marlin discards by 11 percent (-5 fish/year, on average); blue marlin discards by 25 percent (-5 fish/year, on average); sailfish discards by 7 percent (1 fish/year, on average); and leatherback by 0 percent (0 turtles/year, on average); and loggerhead turtles by 100 percent (2 turtles/year, on average. Indirect impacts on all HMS bycatch and protected resources under this alternative are expected to have a neutral localized ecological benefit due to the low number of interactions. Indirect impacts on all HMS bycatch and protected resources under this alternative are expected to have a neutral fishery-wide ecological benefit since fishery-wide reductions are less than 10 percent for all species.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.81 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1c (Cape Hatteras Gear Restricted Area with Access Based on Performance) on protected resources and prohibited species

	2006 – 2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	Leatherback Sea Turtles	Loggerhead Sea Turtles
A	January	0	1	0	0	0	0
B	February	1	0	0	0	0	0
C	March	2	1	0	1	0	1
D	April	4	4	1	0	0	1
E	May	6	4	1	1	0	0
F	June	10	2	3	0	0	0
G	July	10	3	2	1	0	0
H	August	5	2	2	0	0	0
I	September	4	2	1	1	0	0
J	October	2	0	4	0	0	0
K	November	0	1	0	0	0	0
L	December	0	0	0	1	0	0
M	Dec-Apr Reduction of Catch/Hooks with no redistribution	-7	-6	-1	-2	0	-2
N	Dec-Apr change in catch during closure with redistribution	2	1	0	0	0	0
O	Net Change with Redistribution (M+N)	-5	-5	-1	-2	0	-2
P	Average Annual # Interactions in Proposed Gear Restricted Area	44	20	14	5	0	2
Q	Percent change in Area with redistribution ((O/P)×100)	-11%	-25%	-7%	-40%	0%	-100%
R	Average # Interactions in entire fishery (Σ(All PLL Interactions 2006 - 2012)/7)	859	670	509	226	61	118
S	Percent change in fishery ((C/F)×100)	-1%	-1%	0%	-1%	0%	-2%

Values are rounded to the nearest whole number. Source: HMS Logbook Data.

Alternative B 1d – Modified Cape Hatteras Gear Restricted Area with Access Based on Performance (Preferred)

Expected indirect ecological effects on prohibited species and protected resources as a result of this alternative are presented in Table 4.82. The alternative is expected to have a neutral impact on sailfish, spearfish, and leatherback and loggerhead turtles (i.e., no effect because of 0 discards in area in the area or fishery-wide). The five-month gear restricted area, with redistribution and access for vessels that only meet certain predefined criteria, would result in localized average annual area increase of: white marlin discards by 8 percent (+2 fish/year, on average). NMFS anticipates a decrease in blue marlin discards by 13 percent (-1 fish/year, on average. Indirect impacts on all HMS bycatch and protected resources under this alternative are expected to have a neutral localized ecological benefit due to the low number of interactions. Indirect impacts on all HMS bycatch and protected resources under this alternative are expected to have a neutral fishery-wide ecological benefit since fishery-wide reductions are 0 percent for all species.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.82 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1d (Modified Cape Hatteras Gear Restricted Area with Access Based on Performance) on protected resources and prohibited species

	2006 – 2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	Leatherback Sea Turtles	Loggerhead Sea Turtles
A	January	0	1	0	0	0	0
B	February	0	0	0	0	0	0
C	March	0	0	0	0	0	0
D	April	0	1	0	0	0	0
E	May	1	0	0	0	0	0
F	June	6	0	2	0	0	0
G	July	9	3	2	0	0	0
H	August	5	2	2	0	0	0
I	September	3	1	0	0	0	0
J	October	2	0	4	0	0	0
K	November	0	0	0	0	0	0
L	December	0	0	0	0	0	0
M	Dec-Apr Reduction of Catch/Hooks with no redistribution	0	-2	0	0	0	0
N	Dec-April change in catch during	2	1	0	0	0	0

	2006 – 2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	Leatherback Sea Turtles	Loggerhead Sea Turtles
	closure with redistribution						
O	Net Change with redistribution	2	-1	0	0	0	0
P	Average Annual # Interactions in Proposed Gear Restricted Area	26	8	10	0	0	0
Q	Percent change in Area with redistribution ((O/P)×100)	8%	-13%	0%	0%	0%	0%
R	Average # Interactions in entire fishery (Σ(All PLL Interactions 2006 - 2011)/6)	859	670	509	226	61	118
S	Percent change in fishery ((O/R)×100)	0%	0%	0%	0%	0%	0%

Values are rounded to the nearest whole number. Source: HMS Logbook Data.

Alternative B 1e - Allow Pelagic Longline Vessels to Fish under General Category Rules

Allowing Longline category vessels to fish under the General category rules during the time of restriction in the Cape Hatteras Gear Restricted Area means that any activity by pelagic longline vessels in that area would be converted from Category I fishing to Category III fishing for the duration of the December and January General category time periods. This alternative would have a short-term, direct, minor beneficial impact on HMS bycatch species and protected resources due to an expected reduction in the number of interactions with handgear use relative to pelagic longline use. Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear and handgear typically do not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Alternative B 1f - Gulf of Mexico Exclusive Economic Zone (EEZ) Gear Restricted Area (March – May)

Expected indirect ecological effects on prohibited species and protected resources as a result of this alternative are presented in Table 4.83. The three-month gear restricted area would result in a localized average annual reduction of Gulf of Mexico discards of white marlin by 15 percent (-

42 fish/year, on average) and blue marlin by 22 percent (-58 fish/year, on average); discards of sailfish by 20 percent (48 fish/year, on average); and spearfish by 6 percent (4 fish/year, on average); however, when considered fishery-wide, the average annual reductions in interactions with these species is less than 10 percent For leatherback turtle populations, this alternative would reduce interactions by nearly 59 percent (-17 turtles) in the Gulf of Mexico. Fishery-wide reductions in leatherback interactions as a result of this alternative would decrease by 19 percent. Loggerhead turtle interactions would be reduced by 100 percent; however, this reflects an average annual reduction of approximately 2 loggerhead turtles per year and a fishery-wide reduction of 2 percent. This difference is due to the relatively low abundance of loggerhead turtles in the Gulf of Mexico compared to leatherback turtles. Therefore, NMFS expects that indirect impacts on HMS bycatch and protected resources under this alternative would be longterm minor and beneficial due to an expected reduction in the number of interactions with HMS-permitted pelagic longline vessels.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.83 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1f, Gulf of Mexico EEZ Gear Restricted Area (March – May) on prohibited species and protected resources

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
A	January	6	4	6	2	0	0
B	February	1	3	4	1	0	0
C	***March***	***3***	***3***	***7***	***0***	***0***	***0***
D	***April***	***7***	***10***	***10***	***0***	***3***	***0***
E	***May***	***32***	***45***	***31***	***4***	***7***	***2***
F	June	49	43	33	7	3	0
G	July	62	45	46	16	0	0
H	August	33	36	30	8	1	0
I	September	35	34	26	10	1	0
J	October	21	21	21	8	0	0
K	November	19	17	16	9	1	0
L	December	12	7	9	4	1	0
M	Average Annual Reduction of Catch (-(C+D+E))	-42	-58	-48	-4	-10	-2
N	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	280	268	239	69	17	2
O	Average Annual Percent change in Area ((M/N)×100)	-15%	-22%	-20%	-6%	-59%	-100%
P	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	859	670	509	226	61	118
Q	Average Annual Percent change in fishery ((M/P)×100)	-5%	-9%	-9%	-2%	-16%	-2%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1g - Small Gulf of Mexico Gear Restricted Area (April – May)

Expected indirect ecological effects on prohibited species and protected resources as a result of this alternative are presented in Table 4.84. The percent changes with redistribution of average annual discards of white marlin in the area considered under this alternative and across the fishery are 6 percent and 5 percent, respectively. Total fishery impacts of this gear restriction for blue and white marlin were negligible (0 percent). With redistribution, this alternative would reduce the number of localized sailfish by 9 percent (-13 fish/year, on average), the number of localized leatherback sea turtles by 40 percent (-2 turtle/year, on average), and the number of localized loggerhead sea turtle interactions, by 100 percent (-1 turtle/year, on average). A 5 percent increase (+1 fish/year, on average) in spearfish discards is anticipated with this gear restricted area. Fishery-wide, the total percent change in the number of interactions of sailfish, spearfish, and leatherback and loggerhead turtles was expected to change with redistribution of effort by less than 5 percent for each species. Therefore, NMFS determined that the indirect ecological effects of this alternative on prohibited species and protected resources were long term, minor, and beneficial due to localized reductions in fishing effort and corresponding reductions in bycatch.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.84 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1g, Small Gulf of Mexico Gear Restricted Area (April – May) on prohibited species and protected resources

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
A	January	1	0	6	1	0	0
B	February	0	0	0	0	0	0
C	March	1	0	2	0	0	0
D	***April***	***1***	***2***	***4***	***0***	***1***	***0***
E	***May***	***4***	***7***	***14***	***0***	***3***	***1***
F	June	7	4	14	1	0	0
G	July	10	5	30	5	0	0
H	August	10	7	26	3	0	0
I	September	8	8	14	4	0	0
J	October	5	3	14	3	0	0
K	November	4	2	12	4	0	0
L	December	3	0	12	0	1	0
M	Average Annual Reduction of Catch (-(D+E))	-5	-9	-18	0	-4	-1

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
N	Apr-May change in catch during closure with redistribution	8	11	5	1	2	0
O	Net Change with redistribution (M+N)	3	2	-13	1	-2	-1
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	54	38	148	21	5	1
Q	Average Annual Percent change in Area ((M/N)×100)	6%	5%	-9%	5%	-40%	-100%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	859	670	509	226	61	118
S	Average Annual Percent change in fishery ((M/P)×100)	0%	0%	-3%	0%	-3%	-1%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1h – Gulf of Mexico Gear Restricted Area (year-round)

A year-round gear restriction would result in a reduction of fishery-wide discards of white and blue marlin by 33 percent (-280 fish) and 40 percent (-268 fish), respectively. Sailfish and spearfish discards are expected to be reduced by 47 percent (-239 fish) and 31 percent (-69 fish). This alternative would reduce fishery-wide interactions of leatherback turtles by 28 percent (-17 turtles). Loggerhead turtle interactions would also be reduced fishery-wide by 2 percent; however, this reflects an average annual reduction of approximately 2 loggerhead turtles per year. These changes in catch can be found in Table 4.85. This alternative would reduce fishing effort by HMS-permitted vessels in the region. Since there is a direct relationship between the amount of fishing effort and the amount of bycatch, NMFS expects that indirect long term impacts under this alternative are expected to be moderate and beneficial for white and blue marlin, and indirect, long term, minor, and beneficial for sailfish, loggerhead, and leatherback turtles.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.85 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1h, Gulf of Mexico Gear Restricted Area (year-round) on prohibited species and protected resources

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
A	***January***	***6***	***4***	***6***	***2***	***0***	***0***
B	***February***	***1***	***3***	***4***	***1***	***0***	***0***
C	***March***	***3***	***3***	***7***	***0***	***0***	***0***
D	***April***	***7***	***10***	***10***	***0***	***3***	***0***
E	***May***	***32***	***45***	***31***	***4***	***7***	***2***
F	***June***	***49***	***43***	***33***	***7***	***3***	***0***
G	***July***	***62***	***45***	***46***	***16***	***0***	***0***
H	***August***	***33***	***36***	***30***	***8***	***1***	***0***
I	***September***	***35***	***34***	***26***	***10***	***1***	***0***
J	***October***	***21***	***21***	***21***	***8***	***0***	***0***
K	***November***	***19***	***17***	***16***	***9***	***1***	***0***
L	***December***	***12***	***7***	***9***	***4***	***1***	***0***
M	Average Annual Reduction of Catch (-(SUM A to L))	-280	-268	-239	-69	-17	-2
N	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	280	268	239	69	17	2
O	Average Annual Percent change in Area ((M/N)×100)	-100%	-100%	-100%	-100%	-100%	-100%
P	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	859	670	509	226	61	118
Q	Average Annual Percent change in fishery ((M/P)×100)	-33%	-40%	-47%	-31%	-28%	-2%

Values are rounded to the nearest whole number. Source: HMS logbook data.

Alternative B 1i – Modified Spring Gulf of Mexico Gear Restricted Areas (April – May) (Preferred)

Expected indirect ecological effects on prohibited species and protected resources as a result of this alternative are presented in Table 4.86. The percent changes with redistribution of average annual discards of white marlin in the area considered under this alternative and across the fishery are 10 percent and 11 percent, respectively. Total fishery impacts of these gear restricted area for blue and white marlin were negligible (1 percent). With redistribution, this alternative would reduce the number of localized sailfish by 4 percent (-4 fish/year, on average), the number of localized leatherback sea turtles by 14 percent (-1 turtle/year, on average), and the number of localized loggerhead sea turtle interactions, by 100 percent (-1 turtle/year, on average). A 3 percent increase (+1 fish/year, on average) in spearfish discards is anticipated with these gear restricted areas. Fishery-wide, the total percent change in the number of interactions of all protected species was expected to change with redistribution of effort by less than 5 percent. Therefore, NMFS determined that the indirect ecological effects of this alternative on prohibited species and protected resources were long term, minor, and beneficial due to localized reductions in fishing effort and corresponding reductions in bycatch.

Impacts on essential fish habitat and HAPCs would likely be neutral, since pelagic longline gear typically does not come into contact with sensitive bottom habitats. Given expected minor impacts on other species, impacts of this alternative on ecosystem function and predator/prey relationships are expected to be neutral.

Table 4.86 Summary of logbook data (2006 – 2012) and calculation of anticipated ecological effects of Alternative B 1i, Modified Spring Gulf of Mexico Gear Restricted Area (April – May) on prohibited species and protected resources

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
A	January	1	1	3	1	0	0
B	February	1	0	0	0	0	0
C	March	1	1	1	0	0	0
D	April	5	4	3	0	1	0
E	May	16	22	10	1	3	1
F	June	25	16	15	4	1	0
G	July	20	13	19	8	0	0
H	August	14	11	14	5	0	0
I	September	15	13	10	4	0	0
J	October	8	8	9	4	0	0
K	November	7	4	9	5	1	0
L	December	3	1	6	1	1	0
M	Average Annual Reduction of Catch (-(D+E))	-21	-26	-13	-1	-4	-1

	2006-2012 Average Annual Interactions	White Marlin Discards	Blue Marlin Discards	Sailfish Discards	Spearfish Discards	All Leatherback	All Loggerhead
N	Apr-May change in catch during closure with redistribution	9	16	9	2	3	0
O	Net Change with redistribution (M+N)	-12	-10	-4	1	-1	-1
P	Total Average Annual # Interactions (or Hooks) in Proposed Gear Restricted Area (SUM A to L)	116	94	99	33	7	1
Q	Average Annual Percent change in Area ((M/N)×100)	-10%	-11%	-4%	3%	-14%	-100%
R	Average Annual # Interactions (Σ(All PLL Interactions 2006 - 2011))	859	670	509	226	61	118
S	Average Annual Percent change in fishery ((M/P)×100)	-1%	-1%	-1%	0%	-2%	-1%

Values are rounded to the nearest whole number. Source: HMS logbook data

Summary of Impacts of Gear Restricted Area Alternatives on Protected Species

Table 4.87 - Table 4.92 contains a summary of the impacts of the gear restricted area alternatives on selected species. The three Cape Hatteras Gear Restricted Area alternatives and the Small Gulf of Mexico Gear Restricted Area and Modified Spring Gulf of Mexico Gear Restricted Areas analyses took into consideration the fact that fishing effort will likely be redistributed to other locations outside of the gear restricted area. The second and third columns from the left show estimated annual change in numbers. These estimates are derived from the data summary tables presented under each alternative. The last row in each table shows the total overall estimated annual savings in numbers of fish or turtles, and the total overall fishery-wide percent change in numbers of selected species discarded. These overall estimates were derived from summing the numbers of fish/year and the fishery-wide percent reduction in selected species of the preferred alternatives. The fishery-wide percent change for each alternative is calculated based on the total number of a particular species across the entire fishery. Therefore, these numbers can be added to derive an estimated impact of the preferred alternatives combined. Percent change within an area is relative to the total number of animals kept or discarded within that GRA; therefore, these estimates are not comparable and cannot be added together.

Table 4.87 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on White Marlin

Alternative		Estimated Annual Change (# fish/year)	Area/Region Change in Numbers of Fish Discarded (%)	Fishery-Wide Change in Numbers of Fish Discarded (%)
****B 1b**	Cape Hatteras GRA; all vessels	-2	-5	0
****B 1c**	Cape Hatteras GRA; Performance-Based Access	-5	-11	1
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	+2	8	0
B 1f	GOM EEZ GRA (March – May)	-42	-15	-5
****B 1g**	Small GOM GRA (April – May)	+3	+6	0
B 1h	GOM EEZ GRA (year round)	-280	-100	-33
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-12	-10	-1
B 1d + B1i	Combined Preferred	-10	--	-1

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of white marlin discarded (- 33 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with white marlin (0 percent). Preferred Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Areas (April-May), would decrease white marlin discards (-12 fish), but result in negligible effects across the fishery (-1 percent).

Total fishery-wide impacts of the preferred gear restricted area alternatives on white marlin interactions are shown in the bottom row of Table 4.87. NMFS estimates that the preferred alternatives would collectively generate a slight decrease in the number of interactions of white marlin across the fishery.

Table 4.88 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Blue Marlin

Alternative		Estimated Annual Change (# fish/year)	Area/Region Change in Numbers of Fish Discarded (%)	Fishery-Wide Change in Numbers of Fish Discarded (%)
****B 1b**	Cape Hatteras GRA; all vessels	-3	-15	0
****B 1c**	Cape Hatteras GRA; Performance-Based Access	-5	-25	-1
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	-1	-13	0
B 1f	GOM EEZ GRA (March – May)	-58	-22	-9
****B 1g**	Small GOM GRA (April – May)	+2	+5	0
B 1h	GOM EEZ GRA (year round)	-268	-100	-40
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-26	-11	-1
B 1d + B1i	Combined Preferred	-27	--	-1

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

Table 4.88 summarizes the ecological impacts of all alternatives on blue marlin. NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of blue marlin discarded (- 40 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with blue marlin (0 percent). Preferred Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Areas (April-May), would decrease the fishery-wide interactions with blue marlin by 1 percent.

Total fishery-wide impacts of the preferred gear restricted area alternatives on blue marlin interactions are shown in the bottom row of Table 4.88. NMFS estimates that the preferred alternatives would collectively generate a 1 percent decrease in the number of interactions of blue marlin across the fishery.

Table 4.89 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Sailfish

Alternative		Estimated Annual Change (# fish/year)	Area/Region Change in Numbers of Fish Discarded (%)	Fishery-Wide Change in Numbers of Fish Discarded (%)
****B 1b**	Cape Hatteras GRA; all vessels	0	0	0
****B 1c**	Cape Hatteras GRA; Performance-Based Access	-1	-7	-1
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	0	0	0
B 1f	GOM EEZ GRA (March – May)	-48	-20	-9
****B 1g**	Small GOM GRA (April – May)	-13	-9	-3
B 1h	GOM EEZ GRA (year round)	-239	-100	-47
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-4	-4	-1
B 1d + B1i	Combined Preferred	-4	--	-1

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

Table 4.89 summarizes the ecological impacts of all alternatives on sailfish. NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of sailfish discarded (- 47 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with sailfish (0 percent). Preferred Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Areas (April-May), would result in a reduction of sailfish discards by 1 percent.

Total fishery-wide impacts of the preferred gear restricted area alternatives on sailfish interactions are shown in the bottom row of Table 4.89. NMFS estimates that the preferred alternatives would collectively reduce the number of sailfish interactions across the fishery by 1 percent.

Table 4.90 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Spearfish

Alternative		Estimated Annual Change (# fish/year)	Area/Region Change in Numbers of Fish Discarded (%)	Fishery-Wide Change in Numbers of Fish Discarded (%)
****B 1b**	Cape Hatteras GRA; all vessels	-2	-40	-1
****B 1c**	Cape Hatteras GRA; Performance-Based Access	-2	-40	-1
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	0	0	0
B 1f	GOM EEZ GRA (March – May)	-4	-6	-2
****B 1g**	Small GOM GRA (April – May)	+1	5	0
B 1h	GOM EEZ GRA (year round)	-69	-100	-31
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-1	-3	-0
B 1d + B1i	Combined Preferred	-1	--	0

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

Table 4.90 summarizes the ecological impacts of all alternatives on spearfish. NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of spearfish discarded (-31 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with spearfish (0 percent). Preferred Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Area (April-May), would have similar effects (0 percent).

Total fishery-wide impacts of the preferred gear restricted area alternatives on spearfish interactions are shown in the bottom row of Table 4.90. NMFS estimates that the preferred alternatives would collectively reduce the number of sailfish interactions across the fishery by 0 percent.

Table 4.91 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Leatherback Sea Turtles

Alternative		Estimated Annual Change (# turtles/year)	Area/Region Change in Numbers of Turtle Interactions (%)	Fishery-Wide Change in Numbers of Turtle Interactions (%)
****B 1b**	Cape Hatteras GRA; all vessels	0	0%	0%
****B 1c**	Cape Hatteras GRA; Performance-Based Access	0	0%	0%
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	0	0%	0%
B 1f	GOM EEZ GRA (March – May)	-10	-59%	-16%
****B 1g**	Small GOM GRA (April – May)	-2	-40%	-3%
B 1h	GOM EEZ GRA (year round)	-17	-100%	-28%
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-1	-14%	-1%
B 1d + B1i	Combined Preferred	-1	--	-1%

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

Table 4.91 summarizes the ecological impacts of all alternatives on leatherback sea turtles. NMFS estimates that, from a fishery-wide perspective, Alternative B 1h, the Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of leatherback sea turtles interactions (- 28 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with leatherback sea turtles (0 percent). Preferred

Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Area (April-May), would result in a reduction of leatherback sea turtle interactions by 1 percent.

Total fishery-wide impacts of the preferred gear restricted area alternatives on leatherback sea turtle interactions are shown in the bottom row of Table 4.91. NMFS estimates that the preferred alternatives would collectively reduce the numbers of leatherback sea turtles interactions across the fishery by 1 percent.

Table 4.92 Summary of Impacts of Gear Restricted Area (GRA) Alternatives on Loggerhead Sea Turtles

Alternative		Estimated Annual Change (# turtles/year)	Area/Region Change in Numbers of Fish Discarded (%)	Fishery-Wide Change in Numbers of Fish Discarded (%)
****B 1b**	Cape Hatteras GRA; all vessels	-2	-100	-2
****B 1c**	Cape Hatteras GRA; Performance-Based Access	-2	-100	-2
****B 1d Preferred**	Modified Cape Hatteras GRA Performance- Based Access	0	0	0
B 1f	GOM EEZ GRA (March – May)	-2	-100	-2
****B 1g**	Small GOM GRA (April – May)	-1	-100	-1
B 1h	GOM EEZ GRA (year round)	-2	-100	-2
****B 1i Preferred**	Modified Spring GOM GRAs (April - May)	-1	-100	-1
B 1d + B1i	Combined Preferred	-1	--	-1

**Percent change calculated with redistribution of effort is starred; otherwise, the alternative did not include redistribution.

Table 4.92 summarizes the ecological impacts of all alternatives on loggerhead sea turtles. NMFS estimates that, from a fishery-wide perspective, Alternative B 1f, the Gulf of Mexico EEZ Gear Restricted Area (April-May) and Alternative B 1h, Gulf of Mexico EEZ Gear Restricted Area (year round), would generate the greatest overall reduction in the percentage of loggerhead sea turtles discarded (- 2 percent). Preferred Alternative B 1d, Modified Cape Hatteras Gear Restricted Area with Access Based on Performance, would not be expected to change fishery-wide interactions with loggerhead sea turtles (0 percent). Preferred Alternative B 1i, the Modified Spring Gulf of Mexico Gear Restricted Areas (April-May), would result in a reduction of loggerhead sea turtle discards by 1 percent.

Total fishery-wide impacts of the preferred gear restricted area alternatives on loggerhead sea turtle discards are shown in the bottom row of Table 4.92. NMFS estimates that the preferred alternatives would collectively reduce the numbers of loggerhead sea turtles interactions across the fishery by 1 percent.

Alternative B 1h - Pelagic and Bottom Longline Transiting Closed Areas (Preferred)

No Action

Under the No Action alternative, those HMS permitted vessels that possess longline gear, inclusive of both pelagic longline and bottom longline, would not be allowed to enter the existing longline closed areas or proposed gear restricted areas, even for purposes of transiting the area. Instead, the vessels must go around these closed/gear restricted areas to remain in compliance with the regulations. As the No Action alternative would not alter fishing practices, it would have neutral impacts on restricted/prohibited HMS and protected species, and would not have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Pelagic and Bottom Longline Transiting Closed Areas (Preferred)

Under this alternative, NMFS would allow HMS permitted vessels that possess bottom or pelagic longline gear on board to transit closed areas and proposed gear restricted areas, if the longline gear is stowed in such a fashion that renders the gear unavailable for use. This alternative would require fishermen to remove and stow the gangions, hooks, and buoys from the mainline and drum. The hooks could not be baited. As this alternative would not alter fishing practices, it would have neutral impacts on restricted/prohibited HMS and protected species, and would not have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Gear Measures

Alternative B 2b would authorize vessels with Swordfish Incidental Permit to use buoy gear, and Alternative B 2c would allow vessels with a Swordfish Directed or Incidental permit and an Atlantic Tunas Longline permit to retain BAYs and bluefin when fishing with buoy gear. Allowing vessels fishing with buoy gear to retain bluefin or BAYs may provide incentive for vessels that previously fished at night for swordfish, to fish during the daytime for BAYs.

These alternatives would have a neutral effect on protected species, although it is difficult to predict due to the lack of relevant data. Although more billfish may be caught as a result of fishing during the day, there may be a beneficial impact on protected species if fishing effort with pelagic longline gear declines.

Access to Closed Areas

No Action

The no action alternative would have a minor positive impact on billfish and protected species by continuing the protection from pelagic longline impacts during the time of the closures.

Access to Certain Pelagic Longline Closed Areas

It is difficult to predict the impacts of access to certain pelagic longline closed areas due to the lack of recent commercial fishing data in those areas. The alternative was designed in order to have a neutral impact on billfish and protected species and essential fish habitat. The design of the alternative, which includes limited, conditional access, with reporting requirements, would result in a limited amount of access to closed areas with 100 percent observer by NMFS. NMFS could close access to the area if it determines that bycatch of marine mammals or protected species that is inconsistent with the Marine Mammal Protection Act, Pelagic Longline Take Reduction Plan, or the Pelagic Longline BiOp (2004). Despite the design, due to the lack of information, many public commenters believed that the risk of negative potential biological impacts associated with access to the closed areas, including those on protected species, outweighed the potential economic benefits of access.

4.2.3 Bluefin Tuna Quota Controls

No Action

Under this alternative, there would be no anticipated change in the catch of protected species or impact on essential fish habitat.

Individual Bluefin Quotas (IBQs)

The amount of protected species caught under this alternative would depend upon the amount of fishing effort by the Longline category, as well as the location of fishing, and whether or not individual permit holders reach their IBQ and subsequently fish with gear other than pelagic longline. The amount of total fishing effort and the amount of protected species catch would depend not only upon the total bluefin quota, but also may be affected by the number and type of eligible permits to receive bluefin allocations and the amount of allocations (based on historical activity of the vessel associated with Atlantic tunas longline permits). If the number of eligible participants declines or the IBQs have the effect of reducing fishing effort, due to the constraining effect of bluefin quota on some permit holders, the amount of protected species catch could be reduced. The proportion of permit holders that needs additional quota (based on historical interactions of the vessel associated with Atlantic tunas longline permits) ranges from 14 to 42 percent, depending upon the size of the quota, the method of calculating IBQ share. This provides an indication that bluefin may constrain pelagic longline fishing effort if permit holders do not obtain additional bluefin via a quota lease. The amount of fishing effort associated with the IBQ alternative would depend upon which alternatives it is combined with such as bluefin category reallocation measures or new gear restricted areas, or access to closed areas. For most pelagic longline vessels, the amount of fishing effort would not be determined by the amount of bluefin IBQ, but would be related to other factors.

The preferred alternative to eliminate target catch requirements for pelagic longline vessels may eliminate the fishing scenario where a vessel fishes for additional target species in order to satisfy the ratio of target catch to bluefin, which may reduce fishing effort by pelagic longline vessels and have a slight beneficial impact on protected species.

The alternative to require pelagic longline vessels to retain all legal-sized bluefin tuna that are dead would be expected to have neutral impacts on protected species, because the alternative would have little or no impact on fishing effort or the deployment of gear.

In summary, the IBQ and associated alternatives (elimination of target catch requirement and mandatory retention of all legal-sized fish) would have a neutral or indirect, minor, beneficial impact on protected species, due to the potential effect on fishing effort.

Regional and Group Quota Controls

Regional or group quota controls would close designated geographic regions (or groups of vessels) to the use of pelagic longline gear when it is projected that the relevant bluefin tuna quota will be caught. The amount of overall fishing effort and the potential protected species catch would depend primarily upon the amount of total bluefin quota, but is not expected to exceed the amount of fishing effort associated with the No Action Alternative. The fishing effort by pelagic longline vessels may also be further constrained by the regional quotas. Compared with the No Action Alternative, implementation of regional or group quota controls may result in different levels of fishing on a regional basis. The relative percent of the quota allocated to each region or group would determine the maximum catch of bluefin for each region or group, as well as the associated fishing effort with pelagic longline gear. If future patterns of fishing effort by region change, or the seasonal distribution of bluefin changes, the pattern of fishing effort with pelagic longline gear may be altered. It is difficult to predict potential patterns of effort redistribution that may result from regional quota controls, but there may be regional reductions or increases in fishing effort and minor beneficial or adverse impacts, respectively on protected species. The pelagic longline fishing effort in all regions would be indirectly constrained by the bluefin quota.

In summary, the impacts of regional or group quotas on protected species would be neutral or minor beneficial.

4.2.4 Enhanced Reporting

The enhanced reporting alternatives include VMS reporting requirements for the Longline and Purse Seine categories; authorizing NMFS to require electronic monitoring of the Longline category; automated catch reporting for the General, Harpoon, and Charter/Headboat categories;

increased levels of observer deployment; a logbook requirement for the General and Harpoon categories; and expansion of the scope of the Large Pelagics Survey.

These alternatives would have indirect, long–term, minor, beneficial impacts on protected species if they result in more accurate or precise data on protected species or increased biological information. Specifically, the future increased levels of observer deployment may be likely to have positive biological impacts on protected species, because protected species information is collected by observers. The other reporting alternatives do not pertain to protected species so would not impact protected species data, unless implemented and modified in the future to include data on protected species.

The enhanced reporting measures would not impact essential fish habitat.

4.2.5 Other Alternatives

Modify General Category Subquota Allocations

The 2011 action to extend the January fishery through March 31 or until the January subquota is reached, whichever happens first, may result in temporal and spatial shifts in landings depending on the date the available subquota is reached. The available (codified) quota for the January time period since this change was effective has lasted until January 22, 2012, February 15, 2013, and March 21, 2014. NMFS anticipated in the 2011 EA that the action likely would lengthen the General category season by only a few weeks, with the duration of the extension dependent on weather conditions and availability of large medium and giant bluefin to the fishery during the winter months. Under the status quo alternative, the shift in bluefin landings, both temporally (to later in the season) and geographically to the South (i.e., off the mid- and south Atlantic states of North Carolina, South Carolina, Georgia, and the Florida East Coast) could result in a slight decrease or increase in protected resource interactions, discards, and incidental catch of other finfish. However, given the limited nature of this alternative, NMFS does not expect any adverse ecological impacts.

Temporal and spatial shifts in landings associated with the alternative to divide the General category quota into 12 equal subquotas (Alternative E 1b) and the alternative to allow transfer of quota from a later period to an earlier one (Alternative E 1c) could decrease or increase protected resource interactions, discards, and incidental catch of other finfish, depending on the time of year. The recreational bluefin fishery, commercial fisheries for other tunas, and pelagic longline fishery are open year round, so handgear and longline gear is currently able to be used in all open areas even during the months of April and May. NMFS would continue to carry forward unharvested General category quota from one subquota to the next. The biological impacts with respect to protected species are expected to be neutral under these alternatives, because the measures would have little impact on fishing effort and the deployment of gear. Therefore, the preferred alternative should not have adverse impacts on protected species, or have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

NMFS Authority to Adjust Harpoon Category Retention Limits

Under the preferred alternative for NMFS adjustment of Harpoon category retention limits, the biological impacts with respect to protected species are expected to be neutral, because the alternative would have little impact on fishing effort and the deployment of gear. Although few data are available, it is believed that the selective nature of harpoon gear has minimal impact on discards or interactions with non-target species. Therefore, the preferred alternative should not have adverse impacts on protected species, or have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Angling Category Subquota Distribution

Under the preferred alternative to modify the Angling category subquota distribution, the biological impacts with respect to protected species are expected to be neutral, because the alternative would have little impact on fishing effort and the deployment of gear. NMFS would not expect fishing behavior to change as a result of this alternative, in part because there should not currently be targeted effort on bluefin in the Gulf of Mexico regardless of the incidental trophy fish allowance. Therefore, the preferred alternative in this should not have adverse impacts on protected species, or have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Change Start Date of Purse Seine Category to June 1

Under the preferred alternative to change the start date of the Purse Seine category, the biological impacts with respect to protected species are expected to be neutral, because the alternative would have little impact on fishing effort and the deployment of gear, other than the ability for the gear to be used up to six weeks earlier (i.e., beginning June 1, when the commercial handgear fisheries for bluefin resume). Therefore, the preferred alternative should not have adverse impacts on protected species, or have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Rule Regarding Permit Category Changes

Under the preferred alternative to provide additional flexibility for vessels obtaining an open access Atlantic Tunas or an HMS permit, the biological impacts with respect to protected species are expected to be neutral as this action is administrative in nature. Therefore, this preferred alternative would have neutral impacts on protected species, and would not change impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 BiOp and in the 2006 Consolidated HMS FMP.

Northern Albacore Tuna Quota

Based on recent landings (Table 3.44), there is no evidence to suggest that implementation of quota would constrain fishing effort for northern albacore in the future (under similar levels of quota). To the extent there may be a reduction in fishing effort if NMFS exercises framework ability to more tightly control catches, there may be indirect, minor, beneficial impacts to other species. The preferred alternatives for the northern albacore quota, including the implementation of an annual domestic quota and framework authority for inseason management, are not expected to significantly alter current fishing practices or bycatch mortality rates in general, and would not be expected to change previously analyzed endangered species or marine mammal interaction rates or magnitudes. Therefore, the preferred alternatives should not have adverse impacts on protected species, or have any further impacts on endangered species, marine mammals, or critical habitat beyond those considered in the 2001 and 2004 BiOps and in the 2006 Consolidated HMS FMP.

4.2.6 Combined Measures

Longline Category Measures

The pelagic longline fishery is defined as a Category I fishery, with "frequent serious injury or incidental mortality to marine mammals." The combined biological impacts of the alternatives applicable to the Longline category would result principally from impacts of the Gear Restricted Areas, quota controls, and reallocation alternatives. The gear restricted area impacts depend upon the specific gear restricted area. All of the gear restricted area alternatives would have a minor beneficial effect on protected species, with the exception of the Cape Hatteras Gear Restricted Area, which would have a neutral effect. These impacts are due to potential minor changes in the number of interactions between pelagic longline gear and protected species due to redistribution or localized reductions in fishing effort caused by the gear restricted areas. The IBQ alternative would have a neutral or minor beneficial impact as a result of potential reductions in fishing effort. The regional or group quotas would have a neutral impact, but if regional shifts in effort occur, could have a minor adverse impact. Any regional shifts in effort would likely be minor due to the constraining effect of regional and group quotas.

The quota reallocation alternatives combined with quota control alternatives would not result in an increase in fishing effort and therefore would have a neutral or minor beneficial effect on protected species and habitat. If fishing effort is constrained by alternatives designed to limit bluefin catch, impacts on protected species would also be constrained, resulting in the minor beneficial effort. The net impact of the preferred alternatives affecting the Longline category on protected species would be neutral or minor beneficial. A complete discussion of effect of the alternatives applicable to the Longline category on quota allocation and fishing effort is located in Section 4.1.6.1. The impacts of the alternatives affecting the Longline category on EFH would be neutral.

Purse Seine Category Measures

The combined biological impacts of the alternatives applicable to the Purse Seine category would result principally from impacts of the reallocation alternatives. Under any of the combinations of codified and annual reallocation alternatives, the Purse Seine quota would be reduced compared to the No Action alternative. A reduction to bluefin quota allocations may reduce the amount of potential fishing effort by the Purse Seine category. The impact is likely to be neutral however, because purse seine gear is classified as Category III ("remote likelihood of serious injury or known incidental mortality to marine mammals"), and the Purse Seine category has been relatively inactive for several years. The alternatives applicable to the Purse Seine category would have a neutral impact on essential fish habitat.

General Category Measures

The impacts of the alternatives applicable to the General category are the combined impacts of the reallocation and reporting alternatives, the ability to reallocate quota from a later time period to an earlier one, as well as the rules that would modify the timing of changes to permit categories. The alternatives would result in relatively minor changes to the amount and timing of General category fishing effort. The impacts of the alternatives applicable to the General category on protected species and essential fish habitat are expected to be neutral. Handgear used by the General category is classified as Category III ("remote likelihood of serious injury or known incidental mortality to marine mammals").

Harpoon Category Measures

The impacts of the alternatives applicable to the Harpoon category are the combined impacts of the reallocation and reporting alternatives, the ability to adjust retention limits inseason, as well as the rules that would modify the timing of changes to permit categories. The alternatives would result in relatively minor changes to the amount and timing of Harpoon category fishing effort. The impacts of the alternatives applicable to the Harpoon category on protected species and essential fish habitat are expected to be neutral. Harpoon gear used by the Harpoon category is classified as Category III ("remote likelihood of serious injury or known incidental mortality to marine mammals").

Angling Category Measures

The combined impacts of the alternatives applicable to the Angling category are the combined impacts of the reallocation and reporting alternatives, as well as the rules that would allocate a portion of the trophy south sub-quota to the Gulf of Mexico, and modify the timing of changes to permit categories. The combined biological impacts of the alternatives applicable to the Angling category are expected to be neutral. Handgear used by the Angling category is classified as Category III ("remote likelihood of serious injury or known incidental mortality to marine mammals").

4.3 Chapter 4 References

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5 SOCIAL AND ECONOMIC IMPACTS

This chapter assesses the social and economic impacts of the alternatives presented in this document. The primary purpose of this chapter is to provide the baseline economic data and economic impact analysis for the Regulatory Impact Review (RIR) in Chapter 7 and the Final Regulatory Flexibility Analysis in Chapter 8. Furthermore, the NEPA implementing regulations (40 C.F.R. 1508.14) require that when an EIS is prepared and “economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.” The alternatives have social and economic impacts interrelated with impacts on the human environment and thus are incorporated into the FEIS. While this chapter provides an economic analysis, it is not a stand-alone analysis as it refers back to, provides background data for, and builds upon the specific data and analyses provided in Chapters 3 and 4. Where available, the FEIS includes updated data for 2012, which may result in slightly different figures when compared to the DEIS. None of these updates resulted in substantial differences as compared with the results reported in the DEIS.

5.1 Allocation Alternatives

5.1.1 Alternative A 1 – No Action

The No Action alternative would make no changes to the current percentages that each quota category is allocated (General: 47.1 percent; Harpoon: 3.9 percent; Purse Seine: 18.6 percent; Longline: 8.1 percent; Trap: 0.1 percent; Angling: 19.7 percent; Reserve: 2.5 percent). Dead discards would continue to be accounted for through the annual specification process without altering the baseline allocations.

In the short-term, if NMFS made no changes to the current percentages that each quota category is allocated (General: 47.1 percent; Harpoon: 3.9 percent; Purse Seine: 18.6 percent; Longline: 8.1 percent; Trap: 0.1 percent; Angling: 19.7 percent; Reserve: 2.5 percent) and continued to address the dead discards with the same accounting methodology it has used the past several years through the annual specifications process, this alternative could have minor to moderate direct adverse economic impacts on the Longline category when the category reaches its adjusted quota as fishing with this gear type would need to cease (under Alternative C4b, NMFS Closure of the Pelagic Longline Fishery, the fleet would be required to shut down) or under the current regulations all bluefin tuna would be required to be discarded. For example, in 2012, NMFS projected that the Longline category was likely to fill its allocated quota before the end of the fishing year, and closed the southern area to fishing for, retaining, possessing, or landing BFT in the Longline category southern area for the remainder of 2012 on May 29, 2012 (77 FR 31546) and the northern area on June 30, 2012 (77 FR 38011; June 26, 2012). In 2013, the Longline category northern and southern areas were closed on June 25, 2013 (78 FR 36685, June 19, 2013) because the adjusted quota had been reached, although dead discards of BFT continued with Longline directed fishery operations. For now, NMFS has been able to cover all of the landings and dead discards within the overall available quota. In the future, however, if recent trends continue (such as increased bluefin tuna interactions), annual scenarios are very likely to arise in which there is not enough quota to cover all of the fishery’s operations as they are currently carried out. This would result in uncertainty in the fisheries particularly if the Longline category continues to operate as it does, without reducing its bluefin tuna interactions. In order to stay within the existing overall quota in this situation, NMFS would be faced potentially with seeking closure of the pelagic longline fishery or reducing fishing quotas in other categories. Both would have costs in the form of lost revenue for the affected fisheries.

In the long-term, there could be additional minor to moderate direct adverse economic impacts if other bluefin quota categories are closed early in the fishing year to account for other categories' dead discards, since this would reduce the amount of bluefin landings and associated revenues. This situation could occur if dead discards exceed the estimated dead discards by a sufficient threshold and cause NMFS to reallocate from directed users in other categories to maintain ICCAT compliance with the overall quota. Table 5.1 provides data on percent of adjusted quota being utilized each year by category. As can be seen from the data, quota utilization has increased in recent years in many categories. With the inclusion of dead discards, the total percent of baseline quota used by all categories overall has risen to 93 percent in 2011 and 100 percent in 2012. If this trend continues, under this Alternative it would be likely that the Longline category would not be able to land bluefin tuna after the first few months of operation but that dead discards would continue with continued Longline operations and incidental interaction with bluefin tuna. Those dead discards would still have to be accounted for within the overall U.S. quota, and could be expected to affect the amount of quota available to other categories. As a result, revenues from bluefin landings would likely be reduced in all categories, since much of the quota would be utilized to cover dead discards.

Table 5.1 Trends in the baseline bluefin quota utilized from 2006 to 2012

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Category	**Percent of Baseline Quota Used**						
General	23	22	43	69	118	106	105
Harpoon	39	26	48	105	50	81	48
Longline	46	29	63	122	87	75	90
	109 incl DD	105 incl DD	195 incl DD	313 incl DD	233 incl DD	241 incl DD	295 incl DD
Trap	0	0	25	0	0	0	0
Purse Seine	1	13	0	6	0	0	1
Angling	66	221	191	284	95	100	82
TOTAL	30	59	65	104	83	79	75
TOTAL (incl. DD)	36	67	79	124	99	93	100

2007 "bridge period" fishing year was June 2007-December 2007; 2006 fishing year was June 2006-May 2007 and was the result of reverting back to a calendar year management cycle.

NMFS considers potential change in revenue to be the primary direct social impact of each allocation alternative. The magnitude of the impact of the current trend in bluefin quota utilization and of not taking action regarding quota allocation on individual fishermen could vary based on the number of permit holders per category (Table 5.2), and the extent to which the fishermen in the commercial categories rely on revenue from bluefin landings. For example, the General category has a large number of permit holders, but it is comprised of both fishermen whose sole income comes from commercial fishing, as well as a large number of individuals who have other primary sources of income. Additionally for this category, a large percentage of bluefin landings are made by a relatively small number of individuals, and some General category fishermen target tunas other than bluefin. NMFS collects data about all bluefin tuna fishing but does not differentiate within categories to this sub-level of activity (i.e., whether fishermen are targeting other tunas on specific trips, whether fishermen have other sources of income, etc.). As a result, that aspect of this social impacts analysis must be generalized and/or qualitative. For the Harpoon category, relative impacts for individual permit holders could be of a greater magnitude since they are divided among a smaller pool 14 of permit holders with corresponding bluefin tuna landings. The Charter/Headboat category is comprised of individuals who may fish for any of the HMS covered under the permit, depending upon their location and interests. Bluefin landings may be assigned to either the Angling or General category quotas depending upon the size class of bluefin retained, and vary on a trip by trip basis. Social impacts to this category are likely to vary between those identified for the General and Angling categories.

Secondary social impacts for these alternatives could include changes in degree of satisfaction and attitudes based on the increase or decrease in the availability of fishing opportunities. In some cases, the availability of a fishing opportunity (i.e., Angling category, some General category fishermen) may be as important as retaining a fish. In addition, the prohibition on keeping bluefin after NMFS closes a category, even if a bluefin has been killed incidentally while fishing for other species, could result in dissatisfaction and thus an adverse social impact. During scoping for this amendment, fishermen from several categories, including the Longline category, commented on the waste associated with dead discards of bluefin in the pelagic longline fishery and the undesirability of such waste.

Table 5.2 Number of permit holders per permit category as of October 2013

	Number of Permit Holders	
Permit Category	**2012**	**2013**
Angling	23,061	21,686
Charter/Headboat	4,129	3,968
General	4,084	3,783
Longline	253	252
Harpoon	13	14
Trap	8	7
Purse Seine	3	3

Source: NMFS 2012, NMFS 2014

Like the minor to moderate, direct, adverse, short-term economic impacts discussed above for this No Action alternative, similar social impacts for this alternative would likely be limited to the Longline category, which includes a relatively small number of permit holders. Minor to moderate longer-term direct adverse impacts of having less quota available within a category could also impact the other categories in the future.

5.1.2 Alternative A 2 – Codified Reallocation

The Permanent Reallocation Alternatives would redistribute baseline quota percentages among categories. To analyze the potential economic impacts of the reallocation alternatives among quota categories, NMFS first examined the average ex-vessel price of bluefin from 2006 to 2012.

Table 5.3 Average Ex-vessel price per pound of Bluefin Tuna (2006 – 2012)

Year	Ex-vessel price per pound (nominal dollars)	GDP Implicit Price Deflator	Ex-vessel price per pound (2012 dollars)
2006	$8.51	103.2	$9.43
2007	$8.63	106.2	$9.31
2008	$9.35	108.6	$9.90
2009	$8.18	109.5	$8.59
2010	$8.35	111.0	$8.66
2011	$10.08	113.4	$10.26
2012	$11.15	115.4	$11.15
Average	$9.18		$9.61

Source: http://research.stlouisfed.org/fred2/graph/?id=GDPDEF

To adjust for inflation, the Gross Domestic Product (GDP): Implicit Price Deflator (an economic index of price levels for all domestically produced, final goods and services in the economy) was used to calculate the average ex-vessel price per pound of bluefin in 2012 dollars. The ratio of the 2012 GDP Implicit Price Deflator (115.4) to the GDP Implicit Price Deflator for the year being examined was used to calculate the real ex-vessel price per pound in 2012 dollars. These calculations are detailed in Table 5.3. The average ex-vessel price of bluefin per pound from 2006 to 2012 was $9.61 in 2012 dollars. To determine any potential change in revenue associated with quota adjustment alternatives, NMFS looked at how each alternative would change the metric tons (ww) allocated to each commercial quota category. To convert bluefin metric tons of whole weight to pounds of dressed weight, NMFS multiplied the tonnage difference by 2,204.62 mt per pound to convert the metric tons into pounds and then divided by 1.25, the average ratio of whole weight to dressed weight for tuna. The resulting change in pounds dressed weight was then multiplied by $9.61 (the average ex-vessel price from 2006-2012) to estimate the potential changes in revenue.

In general, depending upon the allocation alternative strategy, redistributing a limited quota would likely result in positive economic impacts for fishermen in categories that receive an increase in quota and negative impacts for those that lose quota.

Alternative A 2a – Codified Reallocation to Longline Category Reflecting the Historical 68 mt Dead Discard Allowance (Preferred)

This alternative would codify a quota category increase of 62.5 metric tons (mt) whole weight to the Longline category reflecting the historical 68 mt dead discard allowance and the current allocation percentages. All of the categories, including the Longline category, would contribute to the 68 mt historical allowance, with a net increase of 62.5 to the Longline category after its share of the deduction. This reallocation could have negative economic effects on vessel owners in categories that land bluefin tuna but that lose quota under the reallocation in this alternative. Table 5.4 lists the number of vessels in each category that landed at least one bluefin between 2006 and 2012 and are considered “active.” The category quota changes are detailed in Table 5.5 and the potential revenue change per vessel is based on the maximum number of vessels that landed at least one bluefin from 2006 to 2012.

Table 5.4 Number of commercial vessels by category and by year that landed at least one bluefin

Category	2006	2007	2008	2009	2010	2011	2012	Average	Maximum
General	366	314	378	475	552	592	638	474	638
Harpoon	14	17	14	19	17	17	10	15	19
Longline	60	73	87	76	92	78	94	80	94
Purse Seine	2	1	0	1	0	0	1	1	2
Total	442	405	479	571	661	687	743	570	743

By allowing pelagic longline vessels to land, rather than discard, incidentally-caught bluefin tuna (greater than 73 inches CFL), the reallocation of 68 mt would increase the potential revenue from bluefin for the entire Longline category by approximately $1 million per year. The General category could face a potential reduction in the maximum revenue from bluefin of approximately $542,000 per year. The Harpoon category could face a potential reduction in the maximum revenue from bluefin of approximately $46,000 per year. The Purse Seine category could face a potential reduction in the maximum revenue from bluefin of approximately $215,000 per year. In addition, the Angling category, which does not commercially sell bluefin but derives economic benefit from associated activities, for example charter operations or support businesses, could potentially face unquantified reductions in economic and social activity associated with the 7.36 percent reduction in available quota.

Table 5.5 Impacts of a reallocation to Longline category based on historical 68 mt dead discard allowance

Category	Current Allocation (mt)	Revised Allocation* after Deducting (or Adding) Portion of 68 mt	Total Change	Percent Change	Potential Revenue Change (± $)	Potential Revenue Change per Active Vessel
General	435.1	403.1	-32	-7.35%	-$542,372	-$850
Harpoon	36	33.3	-2.7	-7.50%	-$45,763	-$2,409
Purse Seine	171.8	159.1	-12.7	-7.39%	-$215,254	-$107,627
Longline	74.8	137.3	+62.5	83.56%	$1,059,320	$11,269
Trap	0.9	0.9	0	0.00%	$0	0
Angling	182	168.6	-13.4	-7.36%	NA	NA
Reserve	23.1	21.4	-1.7	-7.36%	-$28,814	NA
Totals	923.7	923.7	0	0.00%	$0	NA

NA indicates categories that do not commercially sell bluefin. See Table 5.4 for the number of active vessels by category (2006-2012).

The adverse long-term direct social impacts of reduced revenue for individual permit holders/participants varies, keeping in mind that this quantitative estimate (reduced revenue) is not useful for all categories. For example, although the magnitude of potential revenue loss per Purse seine category participant appears to be high, this alternative would likely have minor adverse social impacts on Purse Seine participants since actual landings in this category have recently been very low. Purse seine category participants state that they have chosen not to fish on the mixed size-class schools of bluefin that have been available on the fishing grounds in order to avoid high discard mortality of smaller fish, although at least one purse seine fisherman continues to express interest in fishing, which may indicate that the purse seine vessels may become more active in the future if fishery and market conditions change. The potential revenue reduction of the reallocation in this alternative per active Purse Seine participant (i.e., made one set between 2006 and 2012) is approximately $107,627 annually. Impacts are moderate for the other categories losing revenue. Active vessels in the General category could experience a reduction of $850 in revenue annually per vessel and active vessels in the Harpoon category could experience a reduction of $2,409 annually per vessel. Direct impacts of potential increased revenue for Longline category permit holders would be moderate, long-term, and beneficial. Longline category fishermen may perceive this as a fair way to adjust for the loss of the 68 mt dead discard allowance from ICCAT, while fishermen in other categories may be unwilling to accept any quota reductions to account for dead discards in a different fishery. This is a preferred alternative because it would balance adverse impacts among all categories by distributing the impacts of the 68 mt dead discard reallocation across the General, Harpoon, Purse Seine, Angling, and Reserve categories to offset the potentially sizable economic impacts dead discard accounting could have on the Longline category.

Alternative A 2b - Reallocation Incorporating Recent Catch Data

This alternative would revise the quota allocation percentages for all categories, basing the new allocations on both the current codified allocations (50%) and recent catch (50%) as applicable to each quota category. Table 5.6 details this quota reallocation and how it compares to the current allocation. Reallocating the quota based on recent catch data would result in an 83.56% increase in the Longline category quota and an increase in the Angling category of 47.1%. However, this reallocation alternative would result in a decrease in the quotas of the General, Harpoon, Purse Seine, Trap, and Reserve categories of 10.85%, 15.56%, 49.01%, 55.56%, and 48.05% respectively.

Table 5.6 Impacts of reallocation based on incorporating recent catch data

Category	Current Allocation (mt)	Revised Allocation* (mt)	Total Change (mt)	Percent Change	Potential Revenue Change (± $)	Potential Revenue Change per Active Vessel
General	435.1	387.9	-47.2	-10.85%	-$799,998	-$1,254
Harpoon	36	30.4	-5.6	-15.56%	-$94,915	-$4,996
Purse Seine	171.8	103.1	-84.2	-49.01%	-$1,427,116	-$713,558
Longline	74.8	143.5	62.7	83.82%	$1,062,710	$11,305
Trap	0.9	0.4	-0.5	-55.56%	-$8,475	-$4,237
Angling	182	267.8	85.8	47.14%	NA	NA
Reserve	23.1	12	-11.1	-48.05%	-$188,135	NA
Total	923.7	923.7	0	0.00%	$0	NA

NA indicates categories that do not commercially sell bluefin. See Table 5.2 for the number of permit holders by category.

The codified quota allocation would potentially allow pelagic longline vessels to land, rather than discard, a larger percentage of incidentally-caught bluefin tuna, provided they are of legal minimum size. This alternative's revised quota allocation could increase the potential revenue from incidentally-caught bluefin for the Longline category by approximately $1.1 million per year, however, this is unlikely since some portion of these bluefin will be below the commercial minimum size and therefore would be accounted for with no economic gain. The General category could face a potential reduction in the maximum revenue from bluefin of approximately $800,000 per year. The Harpoon category could face a potential reduction in the maximum revenue from bluefin of approximately $95,000 per year. The Purse Seine category, as a whole, could face a potential reduction in the maximum revenue from bluefin of approximately $1.4 million per year. The Reserve category could face a potential reduction in the maximum revenue from bluefin of approximately $188,000 per year. In addition, the Angling category, which does not commercially sell bluefin but derives economic benefit from associated recreational and related shoreside activities, would potentially face unquantified gains in economic and social activity associated with 47.1 percent increase in available quota.

This alternative may be considered unfair by some fishermen, likely those in the categories that would have reduced quotas. Because bluefin landings and catch can vary for a variety of ecological and anthropogenic reasons, including regulatory actions, basing reallocations on recent catch data could result in allocation outcomes that do not reflect long-term trends in fishing activity by category.

Although the magnitude of revenue loss appears to be high for the Purse Seine category as a whole, this alternative would likely have minor adverse social impacts on Purse Seine participants since actual landings in this category have recently been very low, as discussed in the previous alternative. The Longline category would benefit from direct, moderate, long-term gains in revenue.

Alternative A 2c - Reallocation from Purse Seine to Longline Category

This alternative would reallocate two-fifths (40 percent) of the current Purse Seine category quota to the Longline category. A permanent reallocation of two-fifths of the Purse Seine category to the Longline category would result in 91.84% increase in the Longline category quota and a decrease the Purse Seine quota by 39.99%. These changes are detailed in Table 5.7.

Table 5.7 Impacts of a reallocation from Purse Seine to Longline Category

Category	Current Allocation (mt)	Revised Allocation* (mt)	Total Change (mt)	Percent Change	Potential Revenue Change (± $)	Potential Revenue Change per Active Vessel
General	435.1	435.1	0	0.00%	$0	0
Harpoon	36	36	0	0.00%	$0	0
Purse Seine	171.8	103.1	-68.7	-39.99%	-$1,164,404	-$582,202
Longline	74.8	143.5	68.7	91.84%	$1,164,404	$12,387
Trap	0.9	0.9	0	0.00%		0
Angling	182	182	0	0.00%		NA
Reserve	23.1	23.1	0	0.00%		NA
Total	923.7	923.7	0	0.00%	$0	NA

NA indicates categories that do not commercially sell bluefin. See Table 5.2 for the number of permit holders by category.

The permanent reallocation of two-fifths of the Purse Seine category quota to the Longline category would increase the potential revenue from incidentally-caught bluefin for the Longline category by approximately $1.2 million per year, however this is unlikely since some portion of these bluefin will be below the commercial minimum size and therefore could not be sold, and would be discarded with no use or economic gain. The Purse Seine category as a whole could face a potential reduction in the maximum revenue from bluefin of an equivalent $1.2 million per year. The other bluefin quota categories would not be impacted by this alternative because their quotas would not change. In addition to the adverse economic consequences, this alternative would likely be considered unfair by Purse Seine category participants since their allocation would be singled out for reduction. Longline category fishermen would have moderate, direct, long-term, beneficial social impacts from this alternative due to the increase in revenue and quota, as described in previous alternatives.

5.1.3 Alternative A 3 – Annual Reallocation

Annual reallocation Alternatives A 3a and A 3b would reallocate anticipated unused quota from the Purse Seine category to other quota categories and allocate a reduced amount of quota to the Purse Seine category in proportion to the number of permitted vessels (respectively).

Alternative A 3a - Annual Reallocation of Bluefin Quota from Purse Seine Category (Preferred)

Under this alternative, 25 percent of the Purse Seine category bluefin quota would be guaranteed to be available to the five historically permitted fishery participants in that category, but beyond that, the bluefin quota would be based on the previous year's landings and dead discards. Based on a formula, quota may be reallocated from the Purse Seine participants to the Reserve category annually. Table 5.8 details how this reallocation would work and how it might impact the potential revenue associated with the respective participants.

Table 5.8 Annual Reallocation of Bluefin Quota from Purse Seine Participants; based on Purse Seine quota of 159.1 mt as an example (five purse seine participants receive 31.8 mt each)

Amount of Purse Seine Base Quota Caught by Purse Seine Participant in Year A	Amount of Purse Seine Base Quota Allocated to Purse Seine Participant in Year A + 1	Amount of Purse Seine Base Quota Available for Reallocation to other Categories per Participant in Year A + 1	Change if Maximum Quota Available for Reallocation is Utilized	Maximum Potential Revenue Change for all Participants (± $)
0 to 6.4 mt (0 to 20%)	8.0 mt 25% (minimum quota)	23.8 mt 75%	-119 mt -75%	-$2,016,945
>6.4 to 14.3 mt (>20% to 45%)	15.9 mt 50%	15.9 mt 50%	-79.5 mt -50%	-$1,347,455
>14.3 to 22.3 mt (>45% to 70%)	23.8 mt 75%	8.0 mt 25%	-40 mt -25%	-$677,965
>22.3 to 31.8 mt (>70% to 100%)	31.8 mt 100%	0 mt 0%	0	$0

In recent years, very little of the Purse Seine category quota has been landed (See Chapter 3). If that continues into the future, under alternative A 3a, a Purse Seine participants' quota could be reduced by a maximum 75 percent. However, as Purse Seine participants become more active in the fishery (demonstrated by catch) their respective allocation would increase over time. The category wide 119 mt associated with that reduction (23.8 mt per participant) would reduce the potential maximum revenue from bluefin that the purse seine fleet could land by $2.0 million annually (or $400,000 per participant). However, given the low levels of recent bluefin catch by the purse seine fleet as a whole, and by some individual participants, it is unlikely that future bluefin landings would be constrained substantially by this reduction. This alternative is designed to re-evaluate catch and allocations at the participant level on an annual basis. Therefore, alternative A 3a would likely only result in minor direct adverse short-term economic impacts to those inactive Purse Seine category participants. Economic impacts to the other categories are likely to vary in the short-term due to potential inseason quota transfers from the Reserve category and thereby potentially increased revenue and fishing opportunities.

Adverse social impacts on inactive Purse Seine category participants are likely because of potential annual reductions to quota; however, the magnitude will likely be minor since the impacts are short-term, i.e., only as long as they remain inactive. All Purse Seine category participants are allocated a minimum level of quota and will be re-evaluated every year and therefore would not reduce Purse Seine category fishing activity in the long-term. Other categories may benefit from potential inseason quota transfers from the Reserve category, which could lead to increased revenues. This alternative may provide a better business planning environment for NMFS and fishermen by putting to use the large reservoir of currently unused Purse Seine quota and making it available via the Reserve category by considering the determination criteria associated with conducting inseason quota transfers earlier in the season while allowing for continued participation of the Purse Seine category participants in this fishery

Alternative A 3b – Annual Purse Seine Allocation Commensurate with the Number of Purse Seine Vessels

This alternative would make Purse Seine category quota available annually to that category based on the number of active Purse Seine vessels and would reallocate the remainder to the Reserve category. Table 5.9 lays out the various scenarios and the potential quota change associated with each number of permitted vessels.

Table 5.9 Purse Seine Category Allocation Based on Potential Number of Permitted Vessels

Number of Permitted Purse Seine Vessels	Purse Seine Quota (based on example of 159.1 mt)	Quota Available for Transfer to Reserve Category from Purse Seine Category	Current Allocation	Total Change (mt)	Percent Change	Economic Impact (± $)
1	31.8	127.3	159.1	-127.3	-80.01%	-$2,157,623
2	63.6	95.5	159.1	-95.5	-60.03%	-$1,618,641
3	95.5	63.6	159.1	-63.6	-39.97%	-$1,077,964
4	127.3	31.8	159.1	-31.8	-19.99%	-$538,982
5	159.1	0	159.1	0	0.00%	$0

The impacts of Alternative A 3b would be similar to A 3a. Alternative A 3b would also likely result in minor direct adverse short-term economic impacts if current bluefin fishing levels within the purse seine fishery remain the same. Minor adverse short-term social impacts include the loss of potential revenue, and change in the culture of the purse seine fishery to reflect the recent loss of fishing vessels and reduction in participation.

5.1.4 Alternative A 4 – Modifications to Reserve Category

Alternative A 4a - No Action

Under the No Action alternative, there would be no changes to the allocation to the Reserve category or the determination criteria that are considered prior to making any adjustments to/from this category. There would be neutral short or long-term economic impacts associated with maintaining the allocation to the Reserve category and the determination criteria.

Alternative A 4b - Modify Reserve Category (Preferred)

This alternative would increase the amount of quota that may be put into the Reserve category from several sources and expand the potential uses of Reserve category quota. Specifically, it would potentially increase the Reserve category quota beyond the current baseline allocation of 2.5 percent and broaden the determination criteria to be considered in making adjustments to/from the Reserve category. This could result in moderate beneficial economic impacts if unused quota from a previous year could be reallocated to the Reserve category to potentially offset any overharvests in another category, consistent with ICCAT recommendations on carry-forward of unharvested quota.

To broaden the potential uses of Reserve category quota, this alternative would add the following five criteria to the current list of nine criteria at 635.27(a)(8), and described in Alternative A 4a, as relevant factors NMFS considers when making inseason or annual quota adjustments: (10) optimize fishing opportunity; (11) account for dead discards; (12) facilitate quota accounting; (13) support other fishing monitoring programs through quota allocations and/or generation of revenue; and (14) support research through quota allocations and/or generation of revenue. By including these additional criteria, NMFS could transfer Reserve bluefin quota to the General category if pelagic longline vessels were authorized to fish under General category rules (Subalternative B 1b), or bluefin quota from the Reserve category could be used to support research, account for dead discards, etc. With the new criteria, NMFS could also use the reserve to "restore" quota that was reallocated pursuant to Alternative A 2a (Codified Reallocation to Longline category Reflecting the Historical 68 mt Dead Discard Allowance). These five additions to the quota adjustment criteria are intended to provide additional flexibility to enhance and facilitate the management of the fishery. These combined modifications would potentially result in short-term moderate beneficial economic impacts because the additional flexibility in using the Reserve category would allow for the optimization of fishing opportunity and better accommodate accounting for dead discards and quota compliance.

5.2 Area Based Alternatives

The management alternatives in this section are geographically based and rely principally upon either restricting the use of pelagic longline gear in specific areas or providing vessels that possess pelagic longline gear conditional access to current closed areas. This document refers to the currently existing area-based restrictions as "closed areas," and refers to the alternatives under consideration as "gear restricted areas."

5.2.1 Alternative B 1 – Pelagic Longline Gear Restricted Areas

NMFS considered a range of alternatives from maintaining existing pelagic longline closures (the no action alternative) to a year-round gear restricted area of the entire Gulf of Mexico EEZ (west of 82º longitude) in order to reduce interactions with bluefin tuna. These alternatives consider restrictions on pelagic longline gear off the coast of North Carolina and in the Gulf of Mexico, and the use of handgear by pelagic longline vessels in certain gear restricted areas.

Alternative B 1a – No Action

The No Action Alternative would maintain the status quo. Although the current closed areas would remain effective, the data indicate that large numbers of interactions of pelagic longline gear with bluefin occur in consistent areas during predictable time periods, many of which are outside of the current closed areas. The No Action alternative thus would not reduce dead discards. The magnitude of the discards in the pelagic longline fishery is more likely to stay the same or increase under the No Action alternative, without implementation of any new gear restricted areas. This could result in moderate long-term adverse social and economic impacts when the Longline category exceeds its quota earlier in the fishing year because of dead discards and therefore cannot land bluefin for the remainder of the year or, under Alternative C4b, NMFS Closure of the Pelagic Longline Fishery, the fleet is required to shut down.

Alternative B 1b – Cape Hatteras Pelagic Longline Gear Restricted Area

This alternative would define a modified rectangular area off Cape Hatteras, North Carolina, and prohibit the use of pelagic longline gear annually during the five-month period from December through April. The specific time and area of the Cape Hatteras Gear Restricted Area represents a time and area combination likely to result in reduced interactions based on past patterns of interactions.

This alternative is expected to have moderate short and long-term direct adverse economic impacts on 50 vessels that have historically fished in the Cape Hatteras Gear Restricted Area during the months of December through April. The average annual revenue from 2006 through 2012 from all fishing sets made in what this alternative would make a gear restricted area has been approximately $1.4 million during the restricted months, if we were to assume that fishing effort does not move to other areas.

However, it is likely that some of the vessels that would be impacted by this gear restricted area would redistribute their effort to other fishing areas. Based on natural breaks in the percentage of sets vessels made inside and outside of this alternative's gear restricted area, NMFS estimated that if a vessel historically made less than 40% of its sets in the gear restricted area, it would likely redistribute all of its effort. If a vessel made more than 40% but less than 75% of its sets in the gear restricted area, it would likely redistribute 50% of its effort impacted by the gear restricted area to other areas. Finally, if a vessel made more than 75% of its sets solely within the gear restricted area, NMFS assumed the vessel would not likely shift its effort to other areas. Based on these individually calculated redistribution rates, the percent of fishing in other areas during the gear restriction time period, and the catch per unit effort for each vessel in each statistical area, NMFS estimated the potential landings associated with redistributed effort associated with fishing sets displaced by the gear restricted area. The net impact of the Cape Hatteras Gear Restricted Area on fishing revenues after considering likely redistribution of effort is estimated to be $894,000 per year. This estimate is higher than the $781,000 per year estimate in the DEIS because it include data from fishing in 2012. Overall fishing revenues were higher in 2012, and thus including 2012 data increased the estimated economic impacts of the gear restricted area impacts in general. This is $504,000 less annually than the estimated impact under an assumption of no effort redistribution. Table 5.10 provides details on the loss of revenues before and after redistribution by major species landed.

Table 5.10 Fishery-wide Estimated revenue impacts ($) of the Cape Hatteras Gear Restricted Area on 50 affected vessels

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue with no redistribution	77,169	951,398	133,340	150,508	9,116	1,400	74,428	1,397,359
Loss of Revenue with redistribution	54,472	558,060	72,768	136,226	2,017	82	69,941	893,562

Alternative B 1b would result in moderate short- and long-term adverse social and economic impacts as a result of restricting longline vessels from fishing in the Cape Hatteras Gear Restricted Area thus causing decreased revenues and increased costs associated with fishing in potentially more distant waters if vessels operators redistribute their effort.

Alternative B 1c – Cape Hatteras Pelagic Longline Gear Restricted Area with Access based on Performance

Under this alternative, NMFS would annually review pelagic longline vessel performance using three performance metrics and, based on that review, authorize some vessels fishing with pelagic longline gear to have access to the Cape Hatteras Gear Restricted Area. As described in more detail below, the performance metrics are: (1) level of bluefin interactions/avoidance; (2) observer program participation; and (3) logbook submissions. NMFS would notify vessel owners by mail whether or not they are authorized to fish in the area. This alternative would use the same area off Cape Hatteras, North Carolina, as in Alternative B 1b, and would define criteria for access by HMS permitted vessels fishing with pelagic longline gear during the five-month period from December through April. Vessels that are determined by NMFS to have a relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements would be allowed to fish in the area using pelagic longline gear. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel has demonstrated its ability to avoid bluefin, but has had poor compliance with reporting and monitoring requirements, it would not be allowed to fish with pelagic longline gear in this area from December through April. Individual vessel data would be evaluated annually for the purpose of determining access, and results would be communicated to the individual permit holders via a permit holder letter. This evaluation would be based on the most recent complete information available in order to provide future opportunities and accommodate changes in fishing behavior, both positively and negatively, based on performance.

Based on the performance criteria outlined in Chapter 4 and in the Appendices, NMFS determined that, of 135 eligible vessels in the entire pelagic longline fleet, 50 vessels fished in the Cape Hatteras Gear Restricted Area or buffer region during the five-month period from December through April from 2006 through 2012. Of these 50 eligible vessels, 16 vessels that fished in the Cape Hatteras Gear Restricted Area or buffer region would not meet the criteria for access based on their inability to avoid bluefin tuna, and/or compliance with POP observer and logbook reporting requirements. The average annual revenue from fishing sets made in the gear restricted area by these 16 vessels is approximately $468,000 during the restricted months.

However, it is likely that some of the vessels that would be impacted by this alternative's implementation of the gear restricted area would redistribute their effort to other fishing areas. Six of the 16 restricted vessels made at least 75 percent of their sets in the Cape Hatteras Gear Restricted Area. NMFS assumed those vessels would not likely redistribute effort. However, 3 vessels made between 40 and 75 percent of their sets outside of the gear restricted area, so NMFS estimated that those would likely redistribute 50% of effort impacted by the gear restricted area to other areas and the final 7 vessel are assumed to likely redistribute all of their effort to other areas. The net impact of Alternative B 1c on fishing revenues after redistribution of effort is estimated to be $302,000 per year. This is $166,000 less annually than the estimated impact with no redistribution and $592,000 less than Alternative B 1b (where the gear restricted area would apply regardless of performance). Table 5.11 provides details on the loss of revenues before and after redistribution by major species landed.

Table 5.11 Estimated revenue impacts ($) of the Cape Hatteras Gear Restricted Area with access based on performance

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue with no redistribution	26,646	336,333	39,868	35,760	2,149	326	27,041	468,124
Loss of Revenue with redistribution	18,447	206,309	20,673	31,103	716	-244	24,647	301,651

*Negative loss refers to an increase in revenue.

Alternative B 1c would result in moderate short- and long-term adverse social and economic impacts as a result of restricting longline vessels from fishing in the Cape Hatteras Gear Restricted Area during certain times, thus causing decreased revenues and increased costs associated with fishing in potentially more distant waters if vessels operators redistribute their effort.

This alternative was preferred in the DEIS but is no longer preferred for the reasons described in Alternative B 1d.

Alternative B 1d – Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance (Preferred)

This alternative would delineate a gear restricted area off Cape Hatteras, North Carolina and prohibit the use of pelagic longline gear in the area annually during the five-month period from December through April. Access to the gear restricted area would be evaluated annually for each permitted vessel in the pelagic longline fleet using the same performance metrics discussed under Alternative B 1c.

This is a new alternative, which modifies the Cape Hatteras Gear Restricted Area analyzed in the DEIS. Public comment on that proposal reflected that the southeast portion of the proposed Cape Hatteras Gear Restricted Area had few bluefin interactions and is an important fishing area, raising questions about the necessity and efficiency of closing off restricting access to this particular portion of the gear restricted area. In response, NMFS analyzed additional spatial and temporal configurations of the Cape Hatteras Gear Restricted Area and determined that little conservation benefit could be expected from limiting access to this area and that the associated economic costs were not warranted.

Furthermore, commercial fishermen commented that currents in this region are very strong and would push pelagic longline gear set south and west of the Cape Hatteras Gear Restricted Area fish along the seaward edge of the Gulf Stream into the southeastern corner of the originally analyzed Cape Hatteras Gear Restricted Area shortly after deployment. Thus the prevailing currents would have, effectively, closed productive fishing grounds southwest of the Gear Restricted Area in federal waters off the coast of central and southern North Carolina would tend to drift into the gear restricted area (as proposed) . To avoid this result (i.e., to keep longline gear from floating into the restricted area) fishermen commented that they would have to avoid fishing in adjacent fishing areas, effectively resulting in a much larger-than-intended restricted area. Therefore, commercial fishermen in public comments, asked NMFS to consider modifying the Restricted Area by removing its southeastern corner. As a result of these analyses, and considerations, NMFS has modified the preferred alternative to a gear restricted area during the same months (December through April), but with a slightly different configuration. This modification would not result in a large increase in bluefin interactions or pelagic longline effort, but would allow access to productive fishing grounds that were effectively closed by the original alternative.

NMFS determined that only 14 vessels that fished in the Modified Cape Hatteras Gear Restricted Area would not meet the criteria for access based on their inability to avoid bluefin tuna, and/or compliance with POP observer and logbook reporting requirements. The average annual revenue from fishing sets made in the gear restricted area by these 14 vessels is approximately $313,000 annually during the restricted months based on past fishing patterns from 2006-2012.

However, it is likely that some of the vessels that would be impacted by this alternative's implementation of the gear restricted area would redistribute their effort to other fishing areas. Four of the 14 restricted vessels made at least 75 percent of their sets in the Modified Cape Hatteras Gear Restricted Area. NMFS assumed those vessels would not likely redistribute effort. However, 3 vessels made between 40 and 75 percent of their sets outside of the gear restricted area, so NMFS estimated that those would likely redistribute 50% of effort impacted by the gear restricted area to other areas and the final 7 vessel are assumed to likely redistribute all of their effort to other areas. The net impact of Alternative B 1d on fishing revenues after redistribution of effort is estimated to be $211,000 per year. This is $102,000 less annually than the estimated impact with no redistribution and $592,000 less than Alternative B 1c. Table 5.12 provides details on the loss of revenues before and after redistribution by major species landed.

Table 5.12 Estimated revenue impacts ($) of the Modified Cape Hatteras Gear Restricted Area with access based on performance

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue with no redistribution	24,408	200,968	38,266	24,356	324	174	24,688	313,183
Loss of Revenue with redistribution	19,970	121,199	28,235	19,669	-792	-174	22,848	210,956

*Negative loss refers to an increase in revenue.

Alternative B 1d would result in moderate short- and long-term adverse social and economic impacts as a result of restricting longline vessels from fishing in the Modified Cape Hatteras Gear Restricted Area thus causing decreased revenues and increased costs associated with fishing in potentially more distant waters if vessels operators redistribute their effort.

Alternative B 1e - Allow Pelagic Longline Vessels to Fish under General Category Rules

This alternative would let permitted vessels that are not allowed to fish with pelagic longline gear in the Cape Hatteras Gear Restricted Area (because of their Performance Metric score under Alternatives B1c or 1d) to instead fish for bluefin under General category rules. Currently, permitted pelagic longline vessels cannot retain bluefin unless they are caught incidentally on pelagic longline gear. Specifically, this alternative would allow vessels with valid HMS longline permits (Atlantic Tunas Longline category permit, Swordfish and Shark limited access permits) that are not allowed to fish with pelagic longline gear in the Cape Hatteras Gear Restricted Area to fish under the rules/regulations applicable to the General category. Such vessels would be able to target bluefin with gear authorized under the General category, including: rod and reel, handline, harpoon, etc., in the area defined as the Cape Hatteras Gear Restricted Area, during the time of the restriction (December through April), when the General category is open. The vessels would be subject to the bluefin retention limits in effect for the General category. The bluefin landed with authorized handgear would be counted against the General category quota. The alternative was preferred in the DEIS; however, based upon public comment and further consideration, this alternative is no longer preferred in this FEIS, due to concerns about fairness, ecological impacts, and uncertain economic benefits.

The amount of bluefin landings allowed under this alternative would be limited by the available General category subquotas for December and for the January period (under the preferred Alternative E 1c). Alternative B 1e would result in short-term, direct, minor, beneficial economic impacts for Longline category fishermen that otherwise would not be able to fish for bluefin in the Cape Hatteras Gear Restricted Area. It would result in short-term, direct, minor, adverse economic impacts for General category participants to the extent that any Longline category vessel landings bluefin under General category rules results in the available subquota being met earlier than it would otherwise. Average 2011 and 2012 prices were $6.10 and $6.19 for the Longline category, respectively, and $8.90 and $9.31 for the General category, respectively. At an average 2012 weight of 372 lb for a bluefin caught in the General category and an average price of $9.31, a loss or gain of one fish is approximately $3,500 (more than the average Longline value of approximately $2,500 per incidental bluefin, at an average weight of 402 lb for a bluefin landed in the Longline northern area and a price of $6.19/lb). However, if NMFS transferred quota to January within the General category allocation to offset the amount used by pelagic longline vessels fishing under the General category rules (from Purse Seine category annual reallocation), impacts on General category vessels could be reduced or even neutral.

If a Longline category vessel chooses to fish with General category gear in the Cape Hatteras Gear Restricted Area versus outside the area with pelagic longline gear, the ability to land and sell bigeye, albacore, yellowfin, and skipjack from that area would result in short-term, direct, minor, beneficial economic impacts, although substantially less so than continuing to use longline gear, which accounts for a much larger proportion of catch of bigeye, albacore, and yellowfin tuna than does handgear.

Alternative B 1f – Gulf of Mexico Exclusive Economic Zone (EEZ) Pelagic Longline Gear Restricted Area

This alternative would prohibit the use of pelagic longline gear in the Gulf of Mexico, defined as Federal waters west of 82° West longitude, for three months each year (March through May).

This alternative is expected to have moderate short and long-term direct adverse economic impacts on 69 vessels that have historically fished in the Gulf of Mexico EEZ during the months of March through May. The average annual revenue from fishing sets made in the gear restricted area is approximately $1.79 million during the closure months. There would also be benefits in the long-term if the gear restricted area helps the stock recover.

Often vessels are able to redistribute their effort when faced with an area closure. However, pelagic longline vessels based in the Gulf of Mexico have reported very little fishing activity (less than 1 percent of sets) outside of the Gulf of Mexico based a review of logbook records from 2006 through 2012. This indicates that there is a low likelihood that pelagic longline vessels based in the Gulf of Mexico would shift their fishing effort to other areas for the months of March through May, at least in the short-term. Therefore, the economic impact of the Gulf of Mexico Gear Restricted Area on fishing revenues is estimated to be $1.79 million per year. Table 5.13 provides details on the loss of revenues by major species landed.

Table 5.13 Estimated revenue impacts ($) of the Gulf of Mexico EEZ Gear Restricted Area

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue	125,296	835,193	10,320	771,646	25,708	17,999	7,760	1,793,922

Alternative B 1g – Small Gulf of Mexico Pelagic Longline Gear Restricted Area

This alternative would define the Small Gulf of Mexico Gear Restricted Area and prohibit the use of pelagic longline gear in that area during the two-month period from April through May. The specific time and area combination of the Small Gulf of Mexico Gear Restricted Area is likely to result in reduced interactions based on past patterns of interactions. The Small Gulf of Mexico Gear Restricted Area would provide a narrower restriction temporally and geographically than the Gulf of Mexico EEZ Gear Restricted Area. The Small Gulf of Mexico Gear Restricted area encompasses the larger levels of bluefin interactions based on the historical concentrations of bluefin interactions, and would provide a different balance of achieving the principal objectives of this amendment by reducing the time and areas restricted but reducing the potential for bluefin and pelagic longline gear interactions. This alternative was preferred in the DEIS but is no longer preferred for the reasons described in Alternative B 1i.

This alternative is expected to have moderate short and long-term direct adverse economic impacts on 36 vessels that have historically fished in the Small Gulf of Mexico Gear Restricted Area during the months of April and May. The average annual revenue from total fishing sets made in the gear restricted area is approximately $269,000 during the restricted months.

However, it is likely that some of the vessels that would be impacted by this gear restricted area would be able to redistribute their effort to other fishing areas within the Gulf of Mexico. Based on natural breaks in the percentage of sets vessels made inside and outside of the proposed gear restricted area, NMFS estimated that if a vessel historically made less than 40% of their sets in the gear restricted area, it would likely redistribute all of its effort. If a vessel made more than 40%, but less than 75% of its sets in the gear restricted area, it would likely redistribute 50% of its effort impacted by the gear restricted area to other areas, within the Gulf of Mexico. Finally, if a vessel made more than 75% of its sets solely within the gear restricted area, NMFS assumed it would not likely shift its effort to other areas, within the Gulf of Mexico. Based on these individually calculated redistribution rates, the percent of fishing done in other areas during the gear restriction time period, and the catch per unit effort for each vessel in each statistical area, NMFS estimated the potential landings associated with redistributed effort associated with fishing sets displaced by the gear restricted area. The net impact of the Small Gulf of Mexico Gear Restricted Area on fishing revenues after redistribution of effort is estimated to be $93,000 per year. This is $176,000 less annually than the estimated impact with no redistribution. Table 5.14 provides details on the loss of revenues before and after redistribution by major species landed.

Table 5.14 Estimated revenue impacts ($) of the Small Gulf of Mexico Gear Restricted Area

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue with no redistribution	38,252	91,698	776	134,215	1,631	2,366	488	269,427
Loss of Revenue with redistribution	26,299	11,639	-388*	57,897	-2,563*	637	-163*	93,357

*Negative loss refers to an increase in revenue.

Alternative B 1h – Gulf of Mexico Pelagic Longline EEZ Gear Restricted Area (year-round)

This alternative would prohibit the use of pelagic longlines in the same area as in the Gulf of Mexico EEZ Gear Restricted Area (Alternative B 1f) (i.e., anywhere in the Gulf of Mexico), year-round. This comprehensive gear restricted area would provide the maximum amount of reduction in bluefin discards in the Gulf of Mexico.

This alternative is expected to have moderate short and long-term direct adverse economic impacts on 75 vessels that have historically fished in the Gulf of Mexico EEZ. The average total annual revenue made in the gear restricted area is approximately $7.63 million.

Often vessels are able to redistribute their effort when faced with an area closure. However, pelagic longline vessels based in the Gulf of Mexico have reported very little fishing activity (less than 1 percent of sets) outside of the Gulf of Mexico based a review of logbook records from 2006 through 2012. This indicates that there is a low likelihood that pelagic longline vessels based in the Gulf of Mexico would shift their fishing effort to other areas, at least in the short-term. Therefore, the economic impact of the year-round Gulf of Mexico Gear Restricted Area on fishing revenues is estimated to be the full $7.63 million per year. Table 5.15 provides details on the loss of revenues by major species landed.

Table 5.15 Estimated revenue impacts ($) of the Year-Round Gulf of Mexico Gear Restricted Area

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo Tuna	Shortfin Mako	Total
Loss of Revenue	249,204	2,347,681	141,356	4,520,102	195,829	163,818	16,259	7,634,250

Alternative B 1i –Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas (preferred)

This alternative would establish modified gear restricted areas in the central Gulf of Mexico that would prohibit the use of pelagic longlines from April through May. This alternative is based upon an additional year of data (2012), consideration of public comments related to the configuration of the Small Gulf of Mexico Gear Restricted Area, which was the preferred alternative in the DEIS and resulting analyses (a year-by-year spatial distribution analysis of bluefin interactions). The total area of the Modified Spring Gulf of Mexico Gear Restricted Areas is slightly larger than that of the Small Gulf of Mexico Gear Restricted Area. The Modified Spring Gulf of Mexico Gear Restricted Areas are comprised of two separate areas: an area based on the Small Gulf of Mexico Gear Restricted Area preferred in the DEIS, but extended to the east, and reduced in size on the western and northern borders, and a second area that is adjacent to the southern border of the Desoto Canyon Closed Area’s northwestern ‘block.’ NMFS will conduct a three-year review to evaluate the effectiveness of the Modified Spring Gulf of Mexico Gear Restricted Areas during the review of the Individual Bluefin Quota program described in Alternative C 2h.1, and will consider any changes at that time as appropriate.

This alternative is expected to have moderate short and long-term direct adverse economic impacts on 49 vessels that have historically fished in the Modified Spring Gulf of Mexico Gear Restricted Areas during the months of April and May. The average annual revenue from total fishing sets made in the gear restricted area is approximately $269,000 during the restricted months.

However, it is likely that some of the vessels that would be impacted by this gear restricted area would be able to redistribute their effort to other fishing areas within the Gulf of Mexico. Based on natural breaks in the percentage of sets vessels made inside and outside of the proposed gear restricted area, NMFS estimated that if a vessel historically made less than 40% of their sets in the gear restricted area, it would likely redistribute all of its effort, within the Gulf of Mexico. If a vessel made more than 40%, but less than 75% of its sets in the gear restricted area, it would likely redistribute 50% of its effort impacted by the gear restricted area to other areas, within the Gulf of Mexico. Finally, if a vessel made more than 75% of its sets solely within the gear restricted area, NMFS assumed it would not likely shift its effort to other areas, within the Gulf of Mexico. Based on these individually calculated redistribution rates, the percent of fishing done in other areas during the gear restriction time period, and the catch per unit effort for each vessel in each statistical area, NMFS estimated the potential landings associated with redistributed effort associated with fishing sets displaced by the gear restricted area. The net impact of the Modified Spring Gulf of Mexico Gear Restricted Areas on fishing revenues after redistribution of effort is estimated to be $282,000 per year. This is $246,000 less annually than the estimated impact with no redistribution. Table 5.16 provides details on the loss of revenues before and after redistribution by major species landed.

Table 5.16 Estimated revenue impacts ($) of the Modified Spring Gulf of Mexico Gear Restricted Areas

	Bluefin Tuna	Swordfish	Bigeye Tuna	Yellowfin Tuna	Dolphin	Wahoo	Shortfin Mako	Total
Loss of Revenue with no redistribution	52,586	140,592	2,953	317,419	7,660	5,699	654	527,563
Loss of Revenue with redistribution	36,582	41,504	1,969	202,110	-2,529*	2,850	-871*	281,614

*Negative loss refers to an increase in revenue.

Alternative B 1j – Pelagic and Bottom Longline Transiting Closed Areas (Preferred)

This alternative, although not directly associated with the Gear Restricted Areas or the performance criteria to access those areas, and preexisting closed areas, would allow HMS vessels that possess bottom or pelagic longline gear on board to transit areas with this gear type provided they remove and stow the gangions, hooks, and buoys from the mainline and drum. The hooks would not be allowed to be baited.

Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term minor beneficial economic impacts by potentially reducing fuel costs and time at sea for vessels that need to transit the closed or restricted areas. Allowing transit through these areas could also potentially improve safety at sea by allowing more direct transit routes and reducing transit time, particularly during inclement weather.

5.2.2 Alternative B 2 – Gear Measures

Alternative B 2a– No Action (Preferred)

The "no action" alternative would not change current authorized gear requirements (with respect to the use of buoy gear and associated restrictions on possession of bigeye, albacore, yellowfin, and skipjack tunas (BAYS) and bluefin) applicable to those vessels with an Atlantic tunas Longline category permit and either a Swordfish Directed or Swordfish Incidental permit. Currently, vessels with an Atlantic tunas Longline category permit must also have both a Swordfish Directed or Incidental permit, and a Shark Directed or Incidental permit. There are no economic impacts associated with this "no action" alternative.

Alternative B 2b – Authorization of Vessels with a Swordfish Incidental Permit to Use Buoy Gear

This alternative would authorize vessels with a Swordfish Incidental permit to fish with buoy gear, except vessels fishing in the East Florida Coast Closed Area, defined in §635.2 Under this alternative, vessels would still be limited to 35 buoys. The rationale for this alternative is to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities. This would result in short- and long-term direct minor beneficial economic impacts by providing greater flexibility in the gear type that can be used and also by reducing the need to acquire a different permit to use buoy gear. Providing greater flexibility in the gear types that can be used allows vessel greater ability to use the most efficient fishing technology for the vessel and fishing conditions, reducing costs associated with discarding, and reducing the costs associated with the potential need to acquire different permits while fishing with buoy gear.

Alternative B 2c – Allow Vessels with a Swordfish Directed or Incidental Permit and an Atlantic Tunas Longline Permit to Retain BAYS and Bluefin when Fishing with Buoy Gear

This alternative would allow vessels with an Atlantic Tunas Longline category permit and the Swordfish Directed or Incidental permit to retain BAYS and bluefin when fishing with buoy gear. The rationale for this alternative is the same as for Alternative B 2b: to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities in the context of new restrictions that may be implemented by Amendment 7. This would result in short- and long-term direct beneficial economic impacts by increase the potential revenue opportunities by allowing additional species to be landed when using buoy gear, reducing costs associated with discarding, and reducing the costs associated with the potential need to acquire different permits while fishing with buoy gear. This alternative would have no effect on vessels with a Swordfish Incidental permit, unless Alternative B 2b is adopted. On its own, this alternative would provide additional flexibility for vessels with a Swordfish Directed permit and an Atlantic Tunas Longline permit.

5.2.3 Alternative B 3 – Access to Closed Areas using Pelagic Longline Gear

Alternative B 3a – No Action (Preferred)

This alternative would maintain the current regulations that do not allow vessels to enter a closed area with pelagic longline gear during the time of the closure, unless issued an Exempted Fishing Permit. There would be no new economic impacts as a result of this alternative.

Alternative B 3b – Limited Conditional Access to Closed Areas

This alternative would allow restricted and conditional access to the following closed areas: Charleston Bump closed area (February through April), a portion of the East Florida Coast closed area (year-round), the DeSoto Canyon closed area (year-round), and the Northeastern U.S. closed area (June).

All trips into any of the eligible closed areas would be required to be observed. The scope of the alternative and its effects would depend upon the level of observer coverage. Currently, a minimum of eight percent of fishing effort is covered and funded wholly by NMFS. Due to the limits on the level of observers, observer coverage would serve as the principal constraint to the amount of access. If an industry-funded observer program is developed and implemented, in a subsequent regulatory action, the procedures for observer deployment may be modified and access could potentially increase. Participating vessels would be required to “declare in” to the area via their VMS unit and report species caught and effort daily via VMS. There would be minor short- and long-term direct beneficial economic and social impacts associated with the added option for vessels to potentially fish in these areas. That could potentially increase landings revenues and decrease fishing costs by providing access to closer and/or more productive fishing areas.

In addition to the requirement to carry an observer and to declare and report catch via VMS, this alternative would further require that permitted pelagic longline vessels meet various performance criteria to be authorized to fish in a closed area. The performance criteria may lead to beneficial social and economic incentives for fishery participants to better comply with reporting and monitoring requirements and reduce bluefin interaction rates.

Revenue that potentially would be gained if this alternative were implemented is shown in Table 5.17. In Chapter 4, the maximum number of potential observed trips into the closed areas was estimated based on historical rates of observer coverage (per quarter) in various statistical areas, and the fact that observer coverage would be a condition of a trip into a closed area. The table below provides an estimate of potential revenue based on the maximum number of trips into the closed areas (per year), and the average revenue per trip by geographic area. It is import to note that these revenue estimates are an overestimate, with a large amount of uncertainty. The estimates are high because it is very unlikely that all observed trips in a particular statistical area would fish in a closed area. The estimates are uncertain because the average revenue per trip data is from locations outside the closed areas, and may not represent the potential revenue from inside the closed areas.

Table 5.17 Potential Revenue from Access to Closed Areas

Statistical Area	Average Revenue per Trip (2006-2011)	Closed Area that May be Accessed	Projected Maximum Number of Trips into Closed Area per Year*	Potential Revenue
FEC	$ 17,575	Portion of FEC	20	$ 351,500
GOM	$ 17,692	DeSoto Canyons	80	$ 1,415,360
NEC	$ 40,726	Northeast Closure	2	$ 81,452
SAB	$ 17,575	Charleston Bump	5	$ 87,875

* See discussion in Chapter 4, based on number of observed trips. Source: NMFS Pelagic Observer Program data, and Table 3.45.

The FEC and SAB average revenue values are based on a single estimate of revenue per trip for the south Atlantic region, and not separate estimates for each statistical area.

This alternative was preferred in the DEIS, however, based upon additional information, public comment, and further consideration of potential administrative costs, NMFS no longer prefers this alternative. NMFS may obtain data from within the closures through the use of exempted fishing permits. The potential benefits of allowing pelagic longline vessels limited conditional access to the closed areas would not outweigh the potential costs and risks associated with this activity.

5.3 Bluefin Tuna Quota Controls

These alternatives include management to limit the total annual amount of bluefin landings and dead discards in the Longline category by prohibiting the use of pelagic longline gear when the quota has been, or is projected to be, reached. Both bluefin landings and dead discards would count toward the Longline category quota. Alternatives analyzed would control landings and dead discards at the level of the individual vessel and at the level of regions, or groups of vessels.

5.3.1 Alternative C 1 – No Action

Under this alternative, there would be no change to the current regulations that restrict pelagic longline vessel retention of bluefin once the Longline category quota has been reached; hence, the total amount of dead discards would not be restricted. Under current regulations, when the incidental landings of bluefin reaches the Longline quota, permitted pelagic longline vessels are prohibited from retaining and landing bluefin, but may continue to fish for their target species and must discard all bluefin. The amount of bluefin that are caught (landed or discarded dead) by vessels fishing with pelagic longline gear would not be capped. Although there are many factors that influence the amount of fishing effort in the pelagic longline fishery, there would not be a specific limit on the amount of bluefin the fishery could catch. The amount of bluefin that this gear interacts with would be indirectly restrained by other regulations and factors. The social and economic impacts of the No Action alternative are neutral in the short- and long-term.

5.3.2 Alternative C 2 – Individual Bluefin Quotas (Preferred)

This alternative would implement Individual Bluefin Quotas (IBQs) in the Atlantic tunas Longline category that would result in prohibiting the use of pelagic longline gear when a vessel has caught the applicable annual pelagic longline IBQ.

Alternative C 2a – Vessels Eligible to Receive Bluefin Quota Shares

These alternatives would define the pool of vessels that would be eligible to receive initial bluefin quota shares. There are two subalternatives, one representing the largest scope of permitted vessels, the other allowing participation only by the subset of active permitted vessels.

Subalternative C 2a.1 – Any Permitted Atlantic Tunas Longline Vessel

This subalternative would define the scope of vessels eligible to be allocated bluefin quota shares. Any vessel with a valid Atlantic Tunas Longline category permit would be eligible to receive bluefin shares. To examine the impact of Subalternative C 2a.1, NMFS reviewed the number of Atlantic Tunas Longline category limited access permits from 2006 through 2013. Table 5.18 provides those permit numbers.

Table 5.18 Number of Atlantic Tuna Longline Limited Access Permits (2006-2013)

Category	2006	2007	2008	2009	2010	2011	2012	2013*
Longline	214	218	241	259	248	242	253	249

* As of August 21, 2013. The actual number of 2013 permit in each category is subject to change as individuals renew their permits or allow them to expire.

The FEIS includes updated permit information as of the date of publication of the Proposed Rule (August 21, 2013), at which time 223 vessels had Atlantic Tunas Longline category permits. A permit that is not associated with a vessel, such as a permit characterized as "No Vessel ID," would not be eligible to receive quota share pursuant to the alternatives described under Subalternative C 2a.1 (i.e., 26 of the 249 permits as of the date of publication), but would be eligible to later lease or buy quota allocation, if and when it was re-associated with a vessel (with other required limited access permits, i.e., swordfish and shark). When the DEIS was published, there were 253 valid Longline category limited access permit holders, since only 2012 permit data was available at the time.

While this alternative might be more inclusive of all members of the fishery, it would reduce the amount of IBQ distributed to each permit holder. Permit holders that have been inactive from 2006 through 2012 would not likely utilize the IBQ allocation for their own fishing. Those inactive vessels may decide to only lease their IBQ and remain inactive, which the other participants in the fishery may view as unfair, and thus would have negative social consequences. There would also likely be negative short-term and potentially long-term direct adverse economic impacts associated with reduced initial IBQ allocation distributed to the most active participants in the fishery. Their initial allocations would likely be insufficient to maintain their current levels of fishing activity and they may not be able to find IBQ to lease or have sufficient capital to lease a sufficient amount of IBQ. This would have negative short-term and potentially long-term direct adverse economic impact on those vessels because it would likely reduce revenues for most of the active Longline category vessels by an even greater extent than Alternative C 2a.2, IBQ allocation to active permitted Atlantic Tunas Longline vessels only.

Subalternative C 2a.2 – Active Permitted Atlantic Tunas Longline Vessels Only (Preferred)

Subalternative C 2a.2 would define the eligibility of vessels to receive bluefin quota shares. Vessels must meet two requirements to be eligible to receive IBQ shares: (1) vessels must have a valid Atlantic Tunas Longline category permit, and (2) vessels must be deemed to be "active." "Active" vessels are those vessels that made at least one set using pelagic longline gear from 2006 through 2012 based on pelagic longline logbook data. For purposes of IBQ share eligibility, a "valid Atlantic Tunas Longline category permit" is one held as of the date the proposed rule was published, which was August 21, 2013.

Based on pelagic longline logbook data, there were 135 vessels that both held a valid permit as of the date of publication of the proposed rule and had a longline set in the specified period (2006-2012). While there were 249 Atlantic Tunas Longline category permits in 2013, 114 of those permits were not associated with a longline vessel that was deemed "active" between 2006 and 2012. Disbursement of quota shares to a smaller number of permit holders may reduce the likelihood that a permitted vessel without quota shares will fish and increase the likelihood that available quota will be sufficient for active vessels. One socioeconomic consequence of this alternative is that some inactive vessels may have been planning to be active in the future, invested in preparing to become active in the fishery, but either became active after the period of eligibility or had not yet completed preparations for entering the fishery. These inactive permit holders may view this disbursement as being inequitable. This would have negative short-term and potentially long-term direct adverse economic impact on those vessels because they would not have the option to go fishing in the future unless they leased IBQ from vessels that were eligible to receive IBQ shares.

Alternative C 2b –Bluefin Quota Share Formulas

These alternatives analyze potential methods of determining how much quota share an eligible permitted vessel would receive. Those alternatives include equal quota shares of bluefin, based on designated species landings, based on designated species landings and the ratio of bluefin catch to HMS landings, and regional designations and restrictions. The following sections discuss the social and economic consequences of these alternatives.

Subalternative C 2b.1 – Equal Quota Shares of Bluefin

This subalternative would provide equal shares of bluefin to the pool of eligible vessels defined under Alternative C 2a. Table 2.11 includes estimates of what the quota allocation (mt) per vessel would be under various scenarios, including splitting the total quota among active vessels, or permitted vessels, and the amounts of quota that would result from the allocation alternatives (Codified and Annual). Based on 223 Atlantic Tunas Longline category permit holders on the 2013 proposed rule publication date, there would only be sufficient quota for allocation of 1 bluefin per permit holder (74.8 mt/223 = 0.34 mt/permit). Based on 135 eligible Longline category vessels, an "equal share" would mean that 0.62% of the quota would be distributed to each vessel. Given the current 74.8 mt Longline category base quota and 0.25 mt per bluefin, there would be 2 bluefin available for each vessel (0.55 mt IBQ allocation per vessel). Given that the preferred alternative is to have active permitted vessels be eligible for IBQs, the following analysis assumes quota share is only distributed to the 135 vessels described in Subalternative C 2a.2.

To determine the value of landings associated with the Longline category, NMFS examined the landings weight and ex-vessel prices of the following designated species: swordfish, yellowfin tuna, bigeye tuna, albacore tuna, skipjack tuna, dolphin, wahoo, blue shark, porbeagle, shortfin mako, and thresher shark. These values are listed in 5.18. Based on the total revenue divided by the total pounds of these species landed from 2006 to 2012, NMFS determined the average ex-vessel price per pound for designated species to be $4.10. This average price of designated species landings is used to estimate the change in revenues associated with the various allocations.

Table 5.19 Average ex-vessel price of designated species 2006 - 2012

Species	Pounds	Ex-Vessel Price per lb 2012 ($)	Revenue ($)
Swordfish	26,428,035	4.41	116,547,634
Yellowfin	21,044,847	4.16	87,546,564
Bigeye	5,711,607	6.42	36,668,517
Albacore	1,962,669	1.31	2,571,096
Skipjack	7,346	1.06	7,787
Dolphin	4,974,395	2.20	10,943,669
Wahoo	669,623	3.12	2,089,224
Blue shark	120,427	1.43	172,211
Porbeagle	4,104	1.43	5,869
Shortfin Mako	1,440,293	1.43	2,059,619
Thresher shark	52,349	1.43	74,859
Shark fin	80,859	8.96	724,494
Total	62,496,554		259,411,542
Average		$4.15	

Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. These calculations are listed in Table 5.20. In addition, the total amount of IBQ needed by each vessel to maintain historical landings is also estimated and the surplus (i.e., unused IBQ) for each vessel was also calculated and summed across the fleet for each scenario and provided in Table 5.20. If transfers are allowed under Alternatives C 2c, much of the surplus IBQ could be leased or sold to vessels with shortfalls. Under the 74.8 mt scenario, NMFS estimates that there could be a reduction of 2.1 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 36 percent and result in a reduction in annual revenues or approximately $12.3 million. Under the 137 mt scenario, NMFS estimates that there could be a reduction of 1.5 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 19 percent and result in a reduction in annual revenues or approximately $6.4 million. Under the 216.7 mt scenario, NMFS estimates that there could be a reduction of 0.9 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 10 percent and result in a reduction in annual revenues or approximately $3.6 million. These impacts are slightly lower than those reported in the DEIS as a result of the inclusion of 2012 fishing data, which reported higher fishery revenues than average and lower bluefin tuna interaction rates.

Table 5.20 Impact of Equal Quota Shares of Bluefin

Quota Scenario (mt)	Vessel Allocation (mt)	Reduction in designated species landings (lb)	Reduction in Annual Landings Revenue ($)	Percent Change (%)	Total IBQ shortfall to maintain historical landings (mt)	Surplus IBQ potentially available for trade (mt)
74.8	0.55	-2,068,845	-12,295,297	-35.88	63.31	25.41
137	1.01	-1,535,738	-6,373,311	-18.60	42.69	59.75
216.7	1.61	-863,960	-3,585,433	-10.46	28.81	102.03

Subalternative C 2b.2 – Based on Designated Species Landings

This subalternative would provide bluefin quota shares to the pool of eligible vessels (defined under alternative C 2a) based upon historical landings of “designated” species: yellowfin, bigeye, albacore, and skipjack tunas, swordfish, dolphin, wahoo, and porbeagle, shortfin mako, and thresher sharks. Specifically, a quota share would be based upon a vessel’s landings expressed as weight during the seven-year period from 2006 through 2012, using NMFS’s dealer data (weigh-out slips) and logbook information.

The 161 active vessels in the pelagic longline fleet (Subalternative C 2a.2) were sorted according to the total designated species landings from 2006 through 2011, according to the data available for analysis in the DEIS, and then divided into three equal groups (“bins”), based on percentiles of landings from lowest to highest. The date range of 2006 to 2011 refers to the data that was used to create the bins, which are part of the structure of the alternative. In contrast, the date range of 2006 to 2012 was the date range of the data that was used to place the vessels in the three bins. Table 2.12 lists these bins and the average annual levels of designated species landings associated with each bin.

In the DEIS, NMFS determined the distribution of bluefin among the three bins, based upon providing the equivalent of at least one bluefin tuna (of 0.25 mt) to each vessel, using a 74.8 mt Longline category bluefin quota. Based upon the number of vessels in the “low” bin, the total amount of bluefin allocated to that bin is 13.5 mt (i.e., 54 vessels times the minimum allocation of 0.25 mt = 13.5 mt). The remaining 82 percent of the quota was then divided up to provide the equivalent of approximately 2 bluefin to the medium bin and 3 bluefin to the high bin. However, since the development of the DEIS, NMFS has refined the number of eligible vessels as described in Subalternative C 2a.2. This would result in an increase in initial IBQ shares and allocation for all eligible vessels. Table 5.21 details the revised estimated outcomes associated with these allocations based on designated species landings from 2006 through 2012. In addition, the total amount of IBQ needed by each vessel to maintain historical landings is also estimated and the surplus (i.e., unused IBQ) for each vessel was also calculated and summed across the fleet for each scenario and provided in Table 5.21. If trades are allowed under Alternative C 2c, much of the surplus IBQ could be leased or sold to vessels with shortfalls.

Table 5.21 IBQ allocation based on designated species landings

Quota Scenario (mt)	Vessel Allocations by Bin (mt)	Reduction in designated species landings (lb)	Estimated Reduction in Annual Landings Revenue ($)	Percent Change (%)	Total IBQ shortfall to maintain historical landings (mt)	Surplus IBQ potentially available for trade (mt)
74.8	0.28 (low), 0.45 (medium), 0.86 (high)	-2,205,104	-13,716,181	-40.03	148.60	21.08
137	0.51 (low), 0.82 (medium), 1.51 (high)	-2,007,215	-8,329,941	-24.31	119.88	54.19
216.7	0.80 (low), 1.30 (medium), 2.38 (high)	-1,208,388	-5,014,809	-14.63	95.51	109.06

Under the status quo 74.8 mt Longline category scenario, as described in Chapter 2, vessels in the Low bin would receive an IBQ allocation of 0.28 mt annually, vessels in the Medium bin would receive 0.45 mt, and vessels in the High bin would receive 0.82 mt. Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. Under the 74.8 mt scenario, NMFS estimates that there could be a reduction of 2.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 40 percent and result in a reduction in annual revenues of approximately $13.7 million.

Under the preferred 137 mt Longline category scenario, as described in Chapter 2, vessels in the Low bin would receive an IBQ allocation of 0.51 mt annually, vessels in the Medium bin would receive 0.86 mt, and vessels in the High bin would receive 1.51 mt. Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. Under the 137 mt scenario, NMFS estimates that there could be a reduction of 2.0 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 24 percent and result in a reduction in annual revenues or approximately $8.3 million.

Under the 216.7 mt Longline category scenario, vessels in the Low bin would receive an IBQ allocation of 0.80 mt annually, vessels in the Medium bin would receive 1.30 mt, and vessels in the High bin would receive 2.38 mt. Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. Under the 216.7 mt scenario, NMFS estimates that there could be a reduction of 1.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 15 percent and result in a reduction in annual revenues or approximately $5.0 million.

Subalternative C 2b.3 – Based on Designated Species Landings and the Ratio of Bluefin Catch to HMS Landings (Preferred)

This subalternative would utilize both historical designated species landings (described in detail in Subalternative C 2b.2) and the bluefin catch to designated species landings ratio as two factors to allocate bluefin quota (2006 – 2012). The use of the two factors is intended to ensure a fair and equitable initial allocation, and take into consideration the diversity in vessel and harvest characteristics. Specifically, the quota share would be based upon: 1) A vessel’s designated species landings in weight during the seven-year period from 2006 through 2012, using NMFS’s dealer data (weigh-out slips) and logbook information, and 2) bluefin tuna catch (2006 – 2012), using logbook information.

In order to develop a two factor approach to allocating bluefin tuna, the active vessels in the pelagic longline fleet from 2006 to 2011 were initially divided into 3 equal bins sorted by total target catch (swordfish, yellowfin tuna, and bigeye tuna) and also by the ratio of bluefin to target catch. However, after further study, NMFS determined that other pelagic species also contributed greatly to pelagic longline revenues. NMFS designated the following species for consideration in calculating the two factors: swordfish, yellowfin tuna, bigeye tuna, albacore tuna, skipjack tuna, dolphin, wahoo, blue shark, porbeagle, shortfin mako, and thresher shark. NMFS initially used the number of fish to determine these ratios, but after noticing the much larger number of smaller dolphin and wahoo landings, NMFS calculated these ratios based on the weight of the designated species landings. With the addition of 2012 data, NMFS also changed the designated species landings metric from total landings to an annual average in order to maintain the same distribution across bins and be compatible with the previous 2006 to 2011 shorter time period analysis reported in the DEIS.

Table 5.22 Scoring of the Two Factors That Determine IBQ Allocation in Subalternative C 2b.3

Bins (Based on Percentiles)	Designated Species Landings (average lb/year)	Bluefin / Designated Species Landings Ratio*
High (66 - 100%)	> 61,269 (Score 3)	< 0.2884 (Score 3)
Medium (33 - < 66%)	61,268 – 21,180 (Score 2)	0.2884 – 0.9427 (Score 2)
Low (0 - < 33%)	< 21,179 (Score 1)	>0.9427 (Score 1)

* Multiplied by 10,000 to derive a ratio that is more practical (i.e., 0.95 instead of 0.000095).

A score of 1 to 3 (low to high) was assigned to each bin in order to allow the two metrics to be combined (Table 5.22). For example, a vessel with a 2006-2012 average annual pounds of designated species landings of 100,000 would be placed in the high bin and assigned a score of 3. If that vessel also had a bluefin tuna/designated species landings ratio of less than 0.001, it would be placed in the top bin and get a bluefin to designated species ratio (i.e., bluefin avoidance score) score of 3. The combined score for the high total designated species landings and high avoidance of bluefin would be 6 (3 + 3). On the other hand, a vessel with an average annual 2006 to 2012 total designated species landings of only 5,000 pounds would receive a total designated species landings score of 1. If that vessel also never interacted with bluefin during that period, it would receive a score of 3 (high) for its bluefin to designated species landings ratio. The overall score for this vessel would be a 4 (1 + 3) and it would be placed in the Medium rating score bin. Vessels assigned to a particular bin would get equal shares of bluefin tuna quota (i.e., each vessel in the Low category in Table 5.22 would be allocated a share of 0.37%).

Table 5.23 IBQ Allocation per Vessel (mt) Based on Designated Species Landings and the Ratio of Bluefin Catch to HMS Landings

Categories (Based on Scores)	# Vessels	% of Active Permitted Vessels	% of Total Quota	Individual % of quota (quota share)	Per Vessel bluefin allocation* (mt)	Per Bin bluefin allocation* (mt)
High (6 – 5)	43	32	51	1.20	1.64t	70.52
Medium (4)	61	45	37	0.60	0.82t	50.02
Low (3 – 2)	31	23	12	0.37	0.51	15.81

* Based on 137 mt and a conversion of 0.125 mt = 1 bluefin in the Atlantic and 0.25 mt = 1 bluefin in the Gulf of Mexico.

There are several benefits associated with using these allocation bins. The individual allocations reward fishermen that have avoided bluefin tuna. It also differentiates quota allocations to highly active vessels versus vessels with fairly low fishing activity, which may be perceived as more fair. Using a tiered rating system, versus a formulaic continuous allocation method, reduces the sensitivity of the allocation outcome on the accuracy of historical fishing records because a small adjustment in historical logbook records would not likely result in a change in the individual quota that an individual is assigned. The disadvantage is that the two tiered system of scoring is a bit more complicated and not as easy to explain. Also, some highly active vessels with high bluefin interaction rates would still end up being in the Medium tier, which may be perceived as unfair. The individual vessel scoring and allocations have been calculated for this alternative. Table 5.24 details the estimated outcomes associated with these allocations based on designated species landings.

Table 5.24 IBQ allocation based on designated species landings and the ratio of bluefin catch to designated species landings

Quota Scenario (mt)	Vessel Allocations (mt)	Reduction in designated species landings (lb)	Estimated Reduction in Annual Landings Revenue ($)	Percent Change (%)	Total IBQ shortfall to maintain historical landings (mt)	Surplus IBQ potentially available for trade (mt)
74.8	0.28 (low), 0.45 (medium), 0.90 (high)	-2,743,012	-11,383,498	-33.22	65.21	34.72
137	0.51(low), 0.82 (medium), 1.64 (high)	-1,825,202	-7,574,590	-22.10	51.78	82.74
216.7	0.80 (low), 1.30 (medium), 2.60 (high)	-1,164,811	-4,833,967	-14.11	39.12	149.96

Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. These calculations are listed in Table 5.24. Under the 74.8 mt scenario, NMFS estimates that there could be a reduction of 2.7 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 33 percent and result in a reduction in annual revenues for the Longline category of approximately $11.4 million. Under the 137 mt scenario, NMFS estimates that there could be a reduction of 1.8 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 22 percent and result in a reduction in annual revenues or approximately $7.6 million. Under the 216.7 mt scenario, NMFS estimates that there could be a reduction of 1.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQ occurs. This would be a reduction of annual landings of approximately 14 percent and result in a reduction in annual revenues or approximately $4.8 million.

Subalternative C 2b.4 – Regional Designations and Restrictions (Preferred)

After allocating quota shares based upon the allocation formula (Alternatives C 2b.1, C 2b.2, or C 2b.3), this subalternative would then designate all pelagic longline quota shares and allocations as either “Gulf of Mexico” or “Atlantic” based upon the geographic location of sets (associated with the permitted vessel’s fishing history used to determine the vessel’s quota share). Gulf of Mexico quota allocation could be used in either the Gulf of Mexico or the Atlantic, but Atlantic quota allocation could only be used in the Atlantic (and not the Gulf of Mexico). For a permitted vessel to fish in the Gulf of Mexico, the vessel would be required to have the minimum amount of bluefin quota to depart on a trip to fish with pelagic longline gear, but the quota would have to be Gulf of Mexico quota. This alternative would also designate all quota allocated to Atlantic Tunas Purse Seine vessels as “Atlantic,” subject to the restriction that it may only be used in the Atlantic (by either a Purse Seine or via a trade to a pelagic longline vessel). The minimum IBQ amount required to fish in the Gulf of Mexico would be 0.25 mt based on the larger average size of bluefin in the Gulf of Mexico. The minimum IBQ amount required to fish in the Atlantic would be 0.125 mt based on the smaller average size of bluefin tuna encountered in the Atlantic.

The economic impact of creating these two regional designations would primarily be associated with the larger minimum quota required to fish in the Gulf of Mexico and the restriction from transferring or using Atlantic quota in the Gulf of Mexico. This would reduce the number of potential trading partners for IBQs in the Gulf of Mexico region, thus potentially leading to less available IBQs that could be leased and potentially making it more difficult to find potential trading partners and therefore increasing transaction costs for conducting a lease.

Alternative C 2c –Defining the Scope of IBQ Trading

Only two subalternatives were analyzed because only two permit categories in the directed and incidental bluefin fishery are limited access systems. Only the Longline and Purse Seine categories have a limited number of fishing permits issued. The other permit categories such as General category or Angling category are open access, and there is not a limit to the number of vessels that may obtain a permit. This is relevant because the logistical and administrative aspects of leasing or selling quota, as well as the associated economic incentives, require a known and stable universe of participating vessels. Other categories (e.g., General category) would not be authorized to lease or sell bluefin quota. Allowing trading with the other permit categories would not be feasible because they are open access fisheries, without a defined pool of eligible participants. In general, trading should decrease the adverse short- and long-term economic impacts associated with IBQ by allowing vessels constrained by their initial quota share and allocation the ability to acquire more IBQ and thus increase their ability to land more fish. Vessels that have sufficient IBQ can also benefit by earning lease revenue if they are successful in trading their surplus IBQ.

Subalternative C 2c.1 – Trade of Quota among Pelagic Longline Vessels Only

This subalternative would allow trading (leasing or selling) of bluefin quota shares or quota allocation among permitted Atlantic Tunas Longline category vessels only, and would not include trading with other limited access quota categories such as Atlantic Tunas Purse Seine category. The rationale for this subalternative is to provide flexibility for pelagic longline vessels to obtain, via lease or sale, quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This subalternative would constrain the amount of bluefin quota available to the Longline category vessels to Longline category quota, and not make additional quota available. Quota trades would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel).

Table 5.25 IBQ Analysis by Home Port State under a 74.8 mt scenario

Home Port State	Number of Vessels with Quota Share in State	Number of Vessels That Need Additional Quota	Total Reduction in Designated Species Landings (lb)	Total Amount of Needed Quota (mt)	Total Amount of Surplus Quota (mt)
LA	25	17	-722,943	22.5	3.1
NJ	18	6	-549,428	6.4	5.1
FL	43	6	-499,966	8.6	15.9
NY	11	4	-190,775	14.4	1.4
DE	2	1	-184,978	2.4	0.0
NC	14	6	-149,400	1.4	3.8
MD	5	3	-147,323	4.8	0.6
PA	2	2	-138,562	2.1	0.0
ME	4	2	-110,004	2.4	0.9
MA	4	1	-49,633	0.4	0.7
CT	1	0	0	0.0	0.1
SC	3	0	0	0.0	2.2
TX	3	0	0	0.0	1.0
Total				65.3	34.7

Table 5.26 IBQ Analysis by Home Port State under a 137 mt scenario

Home Port State	Number of Vessels with Quota Share in State	Number of Vessels That Need Additional Quota	Total Reduction in Designated Species Landings (lb)	Total Amount of Needed Quota (mt)	Total Amount of Surplus Quota (mt)
LA	25	13	-490,472	17.4	10.4
FL	43	5	-373,856	6.8	34.3
NJ	18	4	-316,813	3.9	11.1
DE	2	1	-155,662	2.0	0.8
NY	11	3	-152,654	13.4	4.8

Home Port State	Number of Vessels with Quota Share in State	Number of Vessels That Need Additional Quota	Total Reduction in Designated Species Landings (lb)	Total Amount of Needed Quota (mt)	Total Amount of Surplus Quota (mt)
MD	5	2	-111,575	4.0	1.3
PA	2	2	-92,386	1.5	0.0
ME	4	1	-92,267	2.0	1.8
NC	14	2	-33,347	0.3	9.4
MA	4	1	-6,172	0.1	2.2
CT	1	0	0	0.0	0.3
SC	3	0	0	0.0	4.0
TX	3	0	0	0.0	2.3
Total				51.3	82.7

Table 5.27 IBQ Analysis by Home Port State under a 216.7 mt scenario

Home Port State	Number of Vessels with Quota Share in State	Number of Vessels That Need Additional Quota	Total Reduction in Designated Species Landings (lb)	Total Amount of Needed Quota (mt)	Total Amount of Surplus Quota (mt)
LA	25	11	-338,219	13.2	21.9
FL	43	4	-269,708	5.0	58.5
NY	11	3	-130,327	12.3	9.3
DE	2	1	-118,097	1.5	1.7
NJ	18	3	-114,848	1.6	19.6
MD	5	2	-90,597	3.3	2.6
ME	4	1	-69,798	1.5	3.1
PA	2	2	-33,218	0.7	0.0
CT	1	0	0	0.0	0.6
MA	4	0	0	0.0	4.5
NC	14	0	0	0.0	17.6
SC	3	0	0	0.0	6.4
TX	3	0	0	0.0	4.1
Total				39.1	150.0

There are regional differences associated with the number of vessels that might need additional bluefin quota above their initial allocation to continue fishing at their historic rates. Table 5.25, Table 5.26, and Table 5.27 list the number of vessels with quota share in each state, the estimated number of vessels that would likely need additional quota to continue fishing at their historical levels, the additional amount of quota the vessels would need to fish at historic levels, and the amount of unused quota (i.e., surplus quota) that some vessels would have based on their historical fishing practices under each of the three quota scenarios. Under the preferred 137 mt scenario in Table 5.26 the total additional amount of quota needed in to continue fishing at historical levels is estimated to total 51.3 metric tons across all the vessels needing additional quota. Many vessels, however, will not need their full initial IBQ allocation to continue fishing at their historic levels. The total of this surplus quota across all vessels that would likely not fully use their initial IBQ allocation is estimated to be 82.8 mt under the 137 mt scenario. The total surplus of quota exceeds the total amount need under the 137 mt scenario, so the transfer of quota among pelagic longline vessels should reduce potential economic impacts of the IBQ program. The regions with the largest amount of additional IBQ needed include Louisiana, New York, and Florida, respectively. While vessels with home ports in Florida, New Jersey, and Louisiana have the most surplus quota available to trade.

Table 5.28 Economic impacts of annual allocation trading on IBQ scenarios

Quota (mt)	Reduction in designated species landings (lb)	Estimated Reduction in Annual Landings Revenue	Total IBQ shortfall to maintain historical landings (mt)	Surplus IBQ potentially available for trade (mt)	Additional IBQ needed after 1st trade*	Additional IBQ needed after 2nd trade*	Potential Change in Designated Species Landings after trading
74.8	-2,743,012	-$11,383,498	65.31	34.72	22.64	10.38	-$2,409,049
137	-1,825,202	-$7,574,590	51.34	82.74	6.24	0	-$2,612
216.7	-1,164,811	-$4,833,967	39.12	149.96	0	0	$0

*Based on equal acquisition of surplus IBQ.

The economic impacts of the three main IBQ quota scenarios are substantially reduced if the trading of annual allocation is authorized. NMFS examined the estimated amount of IBQs each vessel would use based on their historical fishing practices. Some vessel would have an estimated shortfall of IBQs while other vessels would have a surplus of IBQs given their historical fishing practices. NMFS assumed that the total surplus of IBQs would potentially be traded to vessels with IBQ shortfalls. To simulate trading, the total amount of IBQs surplus was divided equally by the number of vessels that needed additional IBQs. This occurred in two rounds of trades. The outcome of these transfers is detailed in Table 5.28. Under the 74.8 mt quota scenario, the estimated reduction in annual revenues goes from $11.4 million under no trading down to $2.4 million with trading. Under the 137 mt quota scenario, the estimated reduction in annual revenues goes from $7.6 million under no trading down to $2,600 with trading. Finally, under the 216.7 mt quota scenario, the estimated reduction in annual revenues goes from $4.8 million under no trading down to no change in annual revenues with trading since there would be a sufficient amount of surplus quota to easily cover the vessels that do not receive initial IBQ allocations to cover their historical fishing levels. While this alternative would have short-term direct minor beneficial economic impacts, those beneficial impacts would be lower than those under Subalternative C 2c.2.

Subalternative C 2c.2– Trade among Pelagic Longline and Purse Seine (Preferred)

This subalternative would allow trade of bluefin quota shares (sale) or quota allocation (lease) between those vessels/participants permitted in the limited access Atlantic Tunas Longline and Purse Seine categories. This subalternative would provide flexibility for pelagic longline vessels to lease, or buy/sell quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This subalternative would not constrain the amount of bluefin quota available to pelagic longline vessels (i.e., through the Longline category quota), but would make additional quota available if Purse Seine category participants are willing to lease/sell quota. The alternatives that address the issue of limiting the amount of trading are found below (Alternative C 2f; Vessel and Category Limits on Trades). This alternative would also modify the Purse Seine category regulations which currently restrict the trade of Purse Seine quota to vessels with Purse Seine category permits. Purse Seine quota would be tradable to vessels with an Atlantic Tunas Longline category permit. Similarly, Purse Seine vessels would be able to lease/buy quota allocation from pelagic longline vessels. Quota trades would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased/bought from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel). In other words, the lessee (vessel catching the fish) gets the ‘credit’ for the landings and dead discards, and not the lessor (the vessel that leased the quota allocation to the catching vessel).

Allowing the trade of IBQ between the Pelagic Longline and Purse Seine category participants would likely increase the overall pool of IBQ available for trade. This would likely reduce transaction costs associated with finding available IBQ and potentially reduce the overall cost of acquiring IBQ given the larger supply available for trade. Therefore, this alternative would have short-term direct moderate beneficial economic impacts.

Alternative C 2d – Duration of Quota Trades

NMFS considered both annual leasing of quota allocation and sale of quota shares. The following two subalternatives consider both options.

Subalternative C 2d.1 –Leasing Quota Allocation (Annual) (Preferred)

This subalternative would allow temporary leasing of bluefin quota among eligible vessels on an annual basis. Temporary quota leasing would give vessels flexibility to acquire quota, but as a separate and distinct type of transaction versus the actual sale of quota share. Vessel owners would be able to obtain quota on an annual basis to facilitate their harvest of target species. Sub-leasing of quota would be allowed (i.e., quota leased from Vessel A to Vessel B, then to vessel C). This subalternative may be combined with Subalternative C 2d.2 (Sale of Quota share) if implemented. IBQ allocation leases of one year duration would coincide with the time period of annual quota allocation for the fishery as a whole. For a particular calendar year, an individual lease transaction would be valid from the time of the lease until December 31. Based on the analysis in Table 5.28, NMFS estimates that allowing the annual leasing of quota allocation would dramatically reduce the economic impacts of IBQ. For example under the preferred 137 mt scenario, the potential reduction in designated species landings is reduced from $11.4 million with no trading to $2.4 million annually with trading. Given this potential reduction in negative revenue impacts associated with annual leasing, this alternative would have short-term direct moderate beneficial economic impacts to participants in the fishery. However, in the long-term, the annual transaction costs associated with matching lessors and lessees, the costs associated with drafting agreements, and the uncertainty vessel owners would face regarding quota availability would reduce some of the economic benefits associated with leasing.

Subalternative C 2d.2 –Sale of Quota Share

This subalternative would allow for the sale of quota share among eligible vessels. Through this subalternative, vessel owners would be able to purchase (or sell) quota share and perpetually increase (or decrease) their quota share percentage. Formal sale of quota share provides a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year. Vessel owners may be able to save money through a single quota share transaction instead of reoccurring annual quota allocation transactions. This subalternative may be combined with the temporary leasing of quota, but is a separate and distinct type of transaction. (Note, that elsewhere in this document NMFS considers measures for codified quota reallocation alternatives unrelated to an IBQ program; See Alternative A 2). To enable effective accounting and reduce program complexity, formal quota share sales would become effective in the subsequent year to the sale itself, and would have to be executed prior to the annual allocation of quota to quota shareholders. Annual allocation of quota needs to occur at one time, based on a fixed pool of quota share owners. Quota shares eligible for sale would be limited to the amount of quota an individual entity could trade in order to prevent the accumulation of an excessive share of quota. This alternative would have long-term direct moderate beneficial economic impacts to participants in the fishery by allowing the ownership of IBQ shares to shift to where they provide the best economic benefit in the long-term. However, in the short-term, there could be issues associated with the price discovery with these new IBQ. Experiences in other catch share programs have shown that fishermen may not know how to effectively value the IBQ initially and uncertainty in this new market may cause IBQ to be undervalued in the first few years. There could be inefficiently priced sales of quota share if sales were authorized when IBQ is first introduced. This could result in economic losses to fishermen who underprice the value of their IBQ and then sell them and this could also result in disputes among fishermen involved in permanent sale transactions if they were not fully informed. This could result in both adverse social and economic impacts in the fishing community if participants sell out of the IBQ market in the early years for less than the long-term value of the IBQ.

Subalternative C 2d.3 – Future Development of Sale of Quota Share (Preferred)

This subalternative would allow for the sale of quota shares among eligible vessels, in the future, after NMFS and fishery participants have multiple years of experience with the IBQ program. Until NMFS develops and implements an IBQ sale program, vessels would only be able to conduct temporary (annual) leasing of quota allocation, and therefore vessels would not be able to purchase (or sell) quota share in order to increase (or decrease) their quota share percentage. A phased-in approach would reduce risks for vessels during the initial stages of the IBQ program, when the market for bluefin quota shares would be new and uncertain. During the first years of the IBQ program, price volatility may be reduced, as well as undesirable outcomes of selling or buying quota shares at the "wrong" time or price. Furthermore, a stock assessment is scheduled for 2015 that could have implications regarding the implementation of the IBQ program. NMFS would develop a program to allow the sale of quota share in the future because it would provide a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year, in a manner that would be informed by several years of the temporary leasing market. NMFS may wait until a formal evaluation of the IBQ program before developing this alternative (see IBQ Program Evaluation Alternatives C 2h.1 and C 2h.2). This subalternative may be combined with the temporary annual leasing of quota allocation, but is a separate and distinct type of transaction. While this specific alternative may result in long-term moderate beneficial economic impacts, the current uncertainty regarding the timeline may make business planning for permit holders and IBQ shareholders more difficult and result in some minor adverse economic impacts.

In conjunction with the sale program, NMFS would establish a maximum share, and other limits on quota share accumulation as necessary in order to comply with the MSA § 303A requirement that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program. A limit on the accumulation of quota shares may reduce the likelihood of changes in the characteristics of the pelagic longline and/or Purse Seine fishery that have negative effects on participating vessels or fishing communities, or potential new participants (e.g., the number of active vessels, distribution of fishing effort, inequitable concentration of limited access privileges, etc.). A delayed approach to the development of quota share accumulation limits would enable NMFS to develop a share accumulation limit that is based on relevant data from the IBQ program. NMFS would utilize data on the temporary leasing of bluefin allocation under the IBQ program, as well as related data on vessel ownership in order to effectively implement and enforce accumulation limits. This alternative would not allow the permanent sale of quota share upon implementation of Amendment 7, but would designate the permanent sale of quota shares as a measure that could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations. See 50 CFR 635.34. In the long-term, this quota share accumulation limit may have minor adverse economic impacts, especially for those vessels with the most need or owners of multiple pelagic longline vessels, since it will be designed to restrict their ability to accumulate excessive IBQ share. However, it may have beneficial social and economic impacts by avoiding equity issues and market power concentration that would otherwise occur if a few large operators were able to accumulate a significant share of the IBQ.

Alternative C 2e –Trade Execution and Tracking

NMFS would implement an administrative system for the IBQ system upon implementation of Amendment 7, if the IBQ alternative is implemented. NMFS carefully considered the design of the administrative system that would support execution and tracking of bluefin quota allocation leasing and future quota share sales. The processes and tools for executing transactions affect if, how, and at what costs fishermen acquire the quota they need and trade the quota they do not need. If quota transactions occur fairly easily and quickly, fishermen have the flexibility needed to react to changing conditions and needs (Cap Log Report 2012). NMFS may consider one administrative system for the leasing of quota allocation and a second for the sale of quota shares. NMFS would be involved in the administration and tracking of any quota trade system. The essential difference between the two alternatives is whether the system is an automated system (administered by NMFS) with the trades executed by the vessel owner, or whether the system is a paper based system with applications submitted to NMFS for review.

Subalternative C 2e.1 – Electronic IBQ Trade Monitoring (Preferred)

Under this subalternative, quota allocation leases and/or quota share sales would be executed by the owners of permitted vessels, or their representatives via a web-based system. For example, the two vessel owners involved in a lease of quota, or, if implemented via a subsequent action, the sale of quota, could log into a password protected web-based computer system (i.e., a NMFS database), and execute the trade. Owner-executed electronic trades would provide the quickest execution of leases, or sales, because any eligibility criteria would be verified automatically based on information loaded into that system, and would not involve the submission or review of a paper application, as well as any potential lag time associated with NMFS staff being directly involved in the approval process. The reduced labor and opportunity costs associated with more rapidly self-executed trades would help to reduce administrative costs associated with IBQ transactions. This would result in short- and long-term minor beneficial economic impacts resulting from reduced transactions costs.

Subalternative C 2e.2 – Paper-based IBQ Trade Monitoring

Under this subalternative, quota allocation and quota share trades would be executed by NMFS staff via paper applications. A complete application for lease, or sale, of quota share could be submitted by the two owners of permitted vessels involved in the quota share transaction, and NMFS would review and approve/disapprove the transaction based on eligibility criteria as well as processing the approved transactions to track the various trades. This method would not include the use of a web-based system, but would rely upon mail or facsimile submission of applications by the vessel owners to NMFS. In comparison to subalternative C 2e.1, this alternative may result in some minor adverse economic impacts if delays in NMFS' review of applications results in increased transactions costs and fewer trades.

Alternative C 2f – Vessel and Category Limits on Trades

NMFS considered three alternatives for vessel and category limits on transfers. These include individual vessel limits C 2f.1, category limits C 2f.2, and future development of limits on quota allocation trades C 2f.3.

Subalternative C 2f.1 – Individual Vessel Limits on Quota Allocation Trades (Preferred)

Under this subalternative, upon implementation of Amendment 7, the initial limit on the amount of quota allocation an individual vessel (Longline or Purse Seine) could lease annually would be the combined Longline and Purse Seine category allocations, more refined limits could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations (see 50 CFR 635.34).

Permit holders are prevented from accruing excessive shares by purchasing multiple permits by existing regulations, which limit the consolidation of HMS limited access permits to no more than five percent of vessels. See 50 C.F.R. 645.4(l)(2)(iii). Furthermore, the cost of limited access permits is high (typically in the tens of thousands of dollars) and effectively prevents the accumulation of multiple permits. Although there would be a relatively high limit on the leasing of shares, the duration of these leases would be limited to a single year with no rollover provision.

This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin to facilitate their directed fishing operations as appropriate, and enable the development of an unrestricted quota leasing market.

Because the duration of a temporary lease would be limited to a single year, and the anticipated value of the IBQ is likely to be at a level higher than the actual dockside price for bluefin due to the impacts the IBQ has on prosecuting a trip (i.e., value of all catch), the ability to accumulate excessive shares would be limited due to time and/or capital limitations. Information on this newly emerging market could be used to develop future restrictions if necessary, especially if permanent sale/trading were introduced. This alternative would result in short- and long-term minor beneficial economic impacts by accommodating the various needs of vessel owners for IBQ trades.

Subalternative C 2f.2 – Category Limits on Quota Allocation Trades (Preferred)

For practical purposes, this alternative represents the No Action alternative, with respect to setting quota category limits on the leasing of quota upon implementation of Amendment 7. Under this subalternative, upon implementation of Amendment 7, the limit set on the total amount of quota that either the Longline or Purse Seine categories (in their entirety) could lease annually would be the combined Longline and Purse Seine category allocations. A more refined category limit could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations. This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of an unrestricted market.

Because the duration of a temporary lease would be limited to a single year, the impacts on the market for bluefin quota would be limited in duration and by the amount of quota allocated to these two categories. This alternative is preferred because setting more refined limits on leasing at the category level may undermine achieving the objectives of the IBQ leasing alternative. Information on the leasing market could be used to develop future restrictions (through separate proposed and final rulemaking), if necessary. This alternative would result in short- and long-term minor beneficial economic impacts by accommodating the various needs of vessel owners for IBQ trades.

Subalternative C 2f.3 – Future Development of Category Limits on Quota Allocation Trades (Preferred)

Under this subalternative, NMFS would consider the development of additional limits on the amount of quota allocation an individual vessel (Longline or Purse Seine), or the Longline or Purse Seine categories (in their entirety) could lease annually (in the future, during the formal review of the IBQ program). Upon implementation of Amendment 7, this subalternative would designate the limitation of quota allocation trades as a measure that could be developed later through proposed and final rulemaking consistent with the framework provisions in the HMS regulations (see 50 CFR 635.34). This alternative is preferred because at the inception of the IBQ program there would be no information upon which to base additional limits; however, information on the leasing market collected during the first several years of IBQ program operation, could be used to develop future restrictions if necessary. At the initiation of the IBQ program, such a limit is not necessary because the amount of leasing from the Purse Seine category to the Longline category would also be limited if the “Annual Reallocation” alternative is implemented. If Purse Seine participants are inactive (i.e., not catching bluefin), they would be allocated only 25 percent of their baseline category quota. In that case, only 25 percent of the Purse Seine baseline quota would be available for the Purse Seine participants to either account for bluefin caught, or to lease to one-another or pelagic longline vessels. Due to the “Annual Reallocation” rules, leasing a large percentage of quota (instead of landing) would result in reduced quota allocation in the subsequent year, and therefore any consolidation of quota would be limited to one year. Future development of category limits may be deemed necessary if the balance sought by the preferred alternatives (to provide flexibility and collect information at the inception of the IBQ program) is not achieved, or other potential problems arise related to the number of active vessels or the distribution of fishing effort. Any such a restriction would be developed through proposed and final rulemaking. This alternative could result in long-term minor adverse economic impacts if the limits cause some fishery participants to be unable to acquire sufficient IBQ for their fishing activity needs.

Alternative C 2g – Monitoring and Enforcement of IBQs

The measures under this alternative are based on the premise that the success of an IBQ program rests upon the ability to: Track ownership of quota shares and quota allocation holders; allocate the appropriate amount of annual harvest privileges (quota allocation); reconcile landings and dead discards against those privileges; and then balance the amounts against the total allowable quota. The current pelagic longline reporting requirements and the monitoring program that provide data on pelagic longline bluefin landings and dead discards were not designed to support inseason accounting of dead discards. More timely information on catch would be necessary in order to monitor a pelagic longline IBQ, inclusive of dead discards.

Subalternative C 2g.1 – VMS Reporting (Preferred)

This subalternative is the same management alternative described in Alternative D 1b of this document. This alternative is intended to support the implementation of a pelagic longline IBQ. The economic impacts are detailed in the section below discussing Alternative D 1b.

Subalternative C 2.g.2 - Electronic Monitoring (EM) of Longline category (Preferred)

This subalternative is the same management alternative described in Alternative D 2b of this document. This alternative is intended to support the implementation of a pelagic longline IBQ. The economic impacts are detailed in the section below discussing Alternative D 2b.

Subalternative C 2g.3 – NMFS Extrapolation of Observer Data (Preferred)

Under this subalternative (which would not make any regulatory changes, but is intended to inform the public and solicit comment on a management method), in order to conduct inseason quota monitoring and estimate total bluefin dead discards and landings, NMFS may extrapolate observer-generated data (inseason) regarding bluefin discards (rate, number, location, etc.) by pelagic longline vessels, based on reasonable statistical methods, and available observer data. This approach would not require a regulatory change, but would inform the public that NMFS would consider this as an acceptable management practice if warranted. NMFS could then use this observer information in conjunction with or in place of vessel-generated estimates of bluefin discards in order to develop inseason estimates of total bluefin landings and dead discards. NMFS may use this method to estimate dead discard rates of bluefin for individual vessels in the context of an IBQ program. This management approach would address the potential for uncertain dead discard data from the pelagic longline fleet that may result from challenges in the implementation of new regulations, technical problems relating to the reporting and monitoring system, or time lags in the availability of data. In other words, NMFS may estimate dead discards based upon the use of multiple sources of data, and prohibit the use of pelagic longline under Amendment 7 preferred alternatives (see Alternative C 4b; "NMFS Closure of the Pelagic Longline Fishery"). This alternative would potentially have short-term minor or neutral indirect beneficial economic impacts by addressing the potential for fishery disruptions if there are issues in the transition to an IBQ monitoring system.

Alternative C 2h – Formal IBQ Program Evaluation

Subalternative C 2h.1 – IBQ Program Evaluation after 3 years (Preferred)

Under this subalternative, NMFS would formally evaluate the program after three years of operation and provide the HMS Advisory Panel with a publicly-available written document with its findings. NMFS would utilize its standardized economic performance indicators as part of its review (NMFS, Office of Science and Technology). The standardized economic performance indicators are listed in Table 2.15. This would result in neutral economic and social impacts because it is administrative in nature.

Subalternative C 2h.2 – IBQ Program Evaluation after 5 years

Under this subalternative, NMFS would conduct a formal evaluation of the IBQ program after five years of operation and provide the HMS Advisory Panel with a written document with its findings. As described above, NMFS would utilize its standardized economic performance indicators (and associated standardized definitions) as part of its review. This alternative is not preferred because NMFS believes five years is too long a time period prior to the first formal review of the program. This alternative would result in neutral economic and social impacts because it is administrative in nature.

Alternative C 2i – Cost Recovery (Preferred)

Under this alternative, NMFS would develop and implement a cost recovery program of up to 3 percent of the costs of management, data collection and analysis, and enforcement activities.

Section 303A(e) of the Magnuson-Stevens Act requires that, in establishing a LAPP, a Council shall develop a methodology and the means to identify and assess the management, data collection and analysis, and enforcement programs that are directly related to and in support of the LAPP; and provide for a program of fees paid by LAPP holders that will cover the costs of management, data collection and analysis, and enforcement activities. Such fees may not exceed 3 percent of the ex-vessel value of fish harvested under the LAPP. Here, a cost recovery program would not be implemented until after the IBQ program evaluation (after 3 years). While section 303A(e) requires development of cost recovery in establishing a LAPP, NMFS believes that this step-wise approach is consistent with the purpose of section 303A(e) and appropriate given the nature of the LAPP being proposed. The purpose of section 303A(e) is to collect fees to cover management, data collection and analysis, and enforcement activities. During the initial years of IBQ implementation, NMFS does not believe it needs cost recovery from LAPP holders to cover costs of these activities. NMFS anticipates that the incremental costs of administering the IBQ program are likely to be low. However, the cost of administering a cost recovery program may be high relative to the amount of money recovered, because some active vessels have very high fishing activity whereas others have relatively low activity. NMFS also notes that the underlying objective of the IBQ is to reduce incidental catch of bluefin tuna, which will impact the amount and ex-vessel value of fish harvested. Immediate implementation of a cost recovery program, without obtaining further information about the operation of the fishery with IBQs, would be very difficult and would increase costs and uncertainty for fishing vessels during a time period when the fishery would be bearing other new costs and sources of uncertainty. For the above reasons, NMFS proposes not implementing cost recovery until after it conducts the program evaluation. This alternative could result in direct long-term moderate adverse economic impacts to the industry.

Alternative C 2j - Appeals of Quota Shares (Preferred)

This alternative would implement a two-step appeals process for administrative review of the Secretary’s decisions regarding initial allocation of quota shares for the IBQ program. The appeals process for administrative review of NMFS’s decisions regarding initial allocation of quota shares for the IBQ program would result in neutral economic impacts because it would utilize the National Appeals Office procedures and ensure a standardized and centralized appeals process, which would provide procedural certainty to the participants.

Alternative C 2k – Control Date (preferred)

If an IBQ program is implemented, this alternative would establish a control date in conjunction with the implementation (effective date) of the IBQ program. The control date would serve as a reference date that may be utilized with future management measures. The establishment of a control date by itself would have no effect, but would provide NMFS with a potential management tool that may be utilized if necessary as part of a future management measure. A control date is typically used to discourage speculative fishing behavior or speculative entry into a fishery and notifies the public that a date may be used in conjunction with future management measures. This alternative would likely result in neutral economic impacts and would only result in beneficial short-term economic impacts if it actually discouraged speculative fishing behavior that may have occurred without the control date, especially as the individual quotas are for bycatch species.

Alternative C 2l - Measures Associated with an IBQ

Subalternative C 2l.1 – Elimination of Target Catch Requirement

Subalternative C 2l.1a - No Action

Under this subalternative, the current target catch requirements would remain in effect. Currently, NMFS restricts the number of incidentally caught bluefin a pelagic longline vessel may retain in relation to the amount of target species retained and sold. Under current regulations, one large medium or giant bluefin (73” or greater) per vessel per trip may be landed, provided that at least 2,000 lb of species other than bluefin are legally caught, retained, and offloaded from the same trip and are recorded on the dealer weighout slip as sold; two large medium or giant bluefin may be landed incidentally to at least 6,000 lb of species other than bluefin; and three large medium or giant bluefin may be landed incidentally to at least 30,000 lb of species other than bluefin. These limits apply in all areas, including the NED. This would have neutral economic impacts since it would not change what is currently in place.

Subalternative C 2l.1b - Elimination of Target Catch Requirement (Preferred)

This subalternative would eliminate the current target catch requirements for pelagic longline vessels. This alternative is intended to work in conjunction with an IBQ. The objective of this alternative is to reduce bluefin dead discards and optimize fishing opportunity for target species. The target catch requirement acts at the level of an individual trip to limit bluefin retention, but does not prevent interactions potentially resulting in discarding bluefin dead (although it is intended to dis-incentivize interactions with bluefin by reducing any financial incentive for such interactions by limiting retention). The target catch requirement therefore contributes to the discarding of bluefin if the amount of target catch species is insufficient to retain the numbers of bluefin caught. If an IBQ program is implemented, elimination of the target catch requirement could reduce dead discards, and enable vessels to fish for target species in a more flexible manner. A vessel that has caught some bluefin but has insufficient target species to meet the target catch requirement would no longer have to choose between discarding bluefin or fishing for more target species; rather, the vessel would use the annual IBQ. Thus, the IBQ would replace the target catch requirement as the means of limiting the amount of bluefin landed and discarded dead per vessel on an annual basis, instead of on a per trip basis. This alternative would likely have direct short- and long-term minor beneficial economic impacts for pelagic longline vessels because they would have increased flexibility in conducting their fishing operations and would no longer be required to discard valuable bycatch as a result of not having enough other designated species onboard at the time of landing.

Subalternative C 2l.2 – Mandatory Retention of Commercial Legal-Sized Bluefin

Subalternative C 2l.2a - No Action

This subalternative would maintain the status quo regarding retention of bluefin by pelagic longline vessels. There would be no requirement to retain commercial legal-sized fish. Vessels would be able to discard bluefin even if they are of commercial legal-size (i.e., 73” or greater) and dead In the event the IBQ alternative is finalized, all dead discards would be accounted for under that program. This alternative would have neutral economic impacts since it does not change what is currently occurring.

Subalternative C 2l.2b - Mandatory Retention of Legal-Sized Bluefin (dead) (Preferred)

Pelagic longline vessels would be required to retain all incidentally caught legal-sized commercial bluefin tuna that are dead at haul-back. This measure is intended to function in conjunction with the IBQ system and elimination of the target catch requirements. Requiring the retention of all legal-sized commercial (i.e., 73” or greater) dead bluefin is intended to reduce dead discards and would eliminate the situation where it is legal to discard a legal-sized commercial bluefin, if dead at haul-back. Because these fish would be required to be retained, legal discards and the waste of fish would be decreased, and it would be more likely that such fish are accurately accounted for, and result in a positive use (marketed, used for scientific information, etc.). Paired with limited individual quota allocated on a vessel basis, this alternative would create incentive for vessels to reduce or avoid interactions with bluefin to avoid reaching their IBQ limit, which would require them to stop their directed fishing. At the same time, it would reduce wasteful regulatory dead discards.

Mandatory retention would likely have positive socio-economic impacts resulting from increased bluefin revenues. However, given that current behavior may be to discard some catch in order to optimize landings value of bluefin tuna, there could be minor adverse economic impacts associated with this alternative from loss of sale of higher valued bluefin versus the potentially lower value of bluefin that would now be retained under mandatory retention.

5.3.3 Alternative C 3 – Regional and Group Quota Controls

In addition to IBQ, NMFS also considered regional quotas and group quotas for the pelagic longline fishery as part of quota control measures.

Alternative C 3a – Regional Quotas

This alternative would implement annual bluefin quotas by region for vessels possessing the Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would result in prohibiting the use of pelagic longline gear when a particular region’s annual bluefin quota has been caught. Both bluefin landings and dead discards would count toward the regional quota. Annual bluefin quotas would be associated with defined geographic regions. The rationale for this alternative is that regional quotas may be simpler than an IBQ system and have advantages over a single quota allocated for the entire Longline category. Regional quotas associated with specified regions would be relatively independent from one another, and therefore reduce the potential for ‘derby’ fishing behavior (where there is the incentive for individual vessels to fish sooner rather than later). There is more accountability for those fishing in a particular region, because there would be limits in each region rather than a single limit for the entire category, with no restriction on the relative number of bluefin that could be landed or discarded dead in a particular region.

Specifically, the regions would be those currently defined to support the Longline category reporting requirements: Caribbean (CAR), Gulf of Mexico (GOM), Florida East Coast (FEC), South Atlantic Bight (SAB), Mid-Atlantic Bight (MAB), Northeast Coastal (NEC), Northeast Distant (NED), North Central Atlantic (NCA), Sargasso (SAR), and Southern Atlantic Tuna (SAT).

While regional quotas may be simpler than an IBQ system and have advantages over a single quota allocated for the entire Longline category, some regions may face chronic shortages of bluefin quota if that region experiences increased fishing effort or bluefin interaction rates. It is difficult to predict the total amount of fishing effort that would occur under regional quotas, and the amount of bluefin quota that would be caught. There is likely to be less fishing effort under the Regional quota control alternative (compared with the No Action alternative) because a few vessels could catch a large number of bluefin, and cause the closure of the entire area to the use of pelagic longline gear. The historical data indicate that the majority of bluefin have been caught by relatively few vessels. The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the regional quotas or IBQ become constraining. If the regional quotas reduce pelagic longline fishing effort, there may be some minor adverse economic and social impacts on regional fishing communities where effort is reduced.

Alternative C 3b – Group Quotas

This alternative would implement a quota system for vessels possessing an Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would define three bluefin quota groups and assign vessels with a valid permit to one of the three groups. Both bluefin landings and dead discards would count toward the group quotas. Each quota group would be allocated quota based upon the number of active vessels in the group. Eligible vessels (n = 135) would be defined as those vessels that made at least one set using pelagic longline gear in 2006 through 2012 and had a valid Atlantic Tunas Longline permit on a vessel on August 21, 2013, the date of publication of the proposed rule.

Each eligible vessel would be assigned to a quota group based upon the associated permit’s historical bluefin interactions to “designated species” landings ratio. Eligible vessels with relatively high numbers of bluefin interactions would be assigned to one quota group, eligible vessels with a moderate level of bluefin interactions would be assigned to a second group, and the eligible vessels with a low level of bluefin interactions would be assigned to a third quota group. All vessels with a valid permit that are inactive (i.e., did not make a pelagic longline set from 2006-2012) would be assigned to the quota group with the lowest bluefin to designated species landings ratios. NMFS would have the ability to transfer quota inseason from one quota group to another in order to optimize fishing opportunity. For purposes of quota monitoring, prior to each trip vessels would be required to make a VMS declaration indicating their quota group.

The rationale for proposing this alternative is that a group quota system may be simpler than an IBQ system and may have advantages over a single quota allocated for the entire Longline category. Group quotas would be relatively independent of one another, and therefore may reduce the potential for 'derby' fishing behavior (where there is the incentive for individual vessels to fish sooner rather than later) compared with a single quota for the entire category. Group quotas are different from regional quotas because vessels fishing under the same quota may be fishing in diverse regions, but would have a similar fishing history with respect to bluefin. Because some vessels have high interactions with bluefin (Figure 3.40) creating quota groups of vessels with similar bluefin fishing histories may reduce the likelihood that vessels with high interactions with bluefin would disadvantage other vessels that do not tend to interact with bluefin. In other words, vessels that are able to avoid bluefin interactions may be insulated from the fishing behavior of vessels that do not avoid bluefin interactions (and cause the quota to be reached, with the resultant prohibition on the use of pelagic longline gear). The rate at which each quota is attained would result from the fishing behavior of the grouped vessels.

Under the current quota allocation (8.1%) and the 2012 quota (74.8 mt) to illustrate, the low avoider quota group would be allocated 24.1 mt and the medium and high avoider quota groups would be allocated 25.1 mt. Although the three quota groups have almost the identical number of vessels assigned to them (53, 54, 54, respectively), as well as similar quota, the average amount of bluefin that they caught historically varies from group to group. The number of bluefin tuna interactions from 2006 to 2012 for the low, medium, and high avoiders was 7,949, 1,601, and 110, respectively. Converted to averages, the average number of bluefin interactions would be 1,136, 229, and 16. Utilizing a rough conversion factor of a .125 mt per fish, 229 fish is equivalent to 29 mt. The high and medium avoider groups are likely to have adequate quota, whereas the low avoider group would have inadequate quota if the future interaction rate of the vessels is similar. The average number of interactions associated with the low avoider group equates to approximately 142 mt. It is likely that the group quota associated with vessels with the highest historical rate of bluefin interactions would be attained first. This indicates that there would be potentially significant direct short- and long-term adverse economic impacts to the low avoider group. However, there could be moderate to minor positive economic impacts to the high and medium avoider groups.

5.3.4 Alternative C 4 – NMFS Closure of the Pelagic Longline Fishery

Alternative C 4a – No Action

Under this alternative, the current regulation would continue, in which NMFS does not prohibit the use of pelagic longline gear when the Longline category bluefin quota is attained. When the bluefin quota is projected to be reached, pelagic longline vessels may no longer retain, possess, or land bluefin, but may continue to fish for their target species, and must discard any bluefin caught. The social and economic impacts of this alternative would lead to short- and long-term direct minor economic and social impacts due the loss of revenue from bluefin tuna. If the overall U.S. quota for bluefin remains similar to the quota in recent years, the overall level of landings and dead discards may be similar to the range of levels shown in Table 3.17.

Alternative C 4b – NMFS Closure of the Pelagic Longline Fishery (Preferred)

Under this alternative, NMFS would close the pelagic longline fishery (i.e., prohibit the use of pelagic longline gear) when the total Longline category quota is reached; projected to be reached; is exceeded; or, in order to prevent overharvest of the Longline category quota and prevent further discarding of bluefin; or when there is high uncertainty regarding the estimated or documented levels of bluefin catch. The economic impacts of this alternative would depend upon when the closure occurred, ranging from January through December. The time the pelagic longline fishery would be closed would depend upon many factors, including the size of the Longline category quota, the type of quota control alternative and other alternatives implemented by Amendment 7, and non-regulatory factors. The range of quotas that would be available to the Longline category would depend upon the combination of alternatives implemented, and is discussed in detail in Section 4.1.6. This analysis does not focus on predicting when a closure might occur, but provides a range of impacts based upon historical data, and the range of possible closure times. Potential impacts were quantified by using the total revenue from pelagic longline sets per month.

Table 5.29 shows the number of reported pelagic longline trips by month, and the average number of trips per month. Table 5.30 shows average revenue by month based all the pelagic longline sets made in that month based on logbook reports, weighout slips, and ex-vessel prices from dealer reports.

Table 5.29 Number of Reported Pelagic Longline Trips by Month, 2006- 2012

Month	2006	2007	2008	2009	2010	2011	2012	Total	Average # Trips per Month
Jan	88	132	114	102	128	86	147	797	114
Feb	66	84	90	72	80	63	151	606	87
Mar	71	101	82	91	115	64	154	678	97
Apr	66	95	88	82	102	93	156	682	97
May	127	138	140	145	124	127	209	1,010	144
Jun	128	125	121	130	101	124	190	919	131
Jul	142	163	160	153	123	130	208	1,079	154
Aug	139	152	143	163	120	126	187	1,030	147
Sep	139	135	121	158	104	139	193	989	141
Oct	131	152	133	139	133	136	175	999	143
Nov	98	120	105	104	84	116	145	772	110
Dec	93	107	102	83	70	115	131	701	100
Total	1,288	1,504	1,399	1,422	1,284	1,319	2,046	10,262	1,466

Source: HMS Logbook data.

Table 5.30 Average Revenue by Month from 2006 – 2012 (Based on HMS Logbook data, weighout slips, and dealer reports)

Month	Revenue ($)	Percent	Cumulative Percent	Remaining Percent
Jan	2,108,162	6.63	6.63	93.37
Feb	1,953,676	6.15	12.78	87.22
Mar	1,910,396	6.01	18.79	81.21
Apr	1,971,413	6.20	25.00	75.00
May	2,795,492	8.80	33.79	66.21
Jun	2,404,998	7.57	41.36	58.64
Jul	2,656,172	8.36	49.72	50.28
Aug	3,238,432	10.19	59.91	40.09
Sep	3,649,677	11.48	71.39	28.61
Oct	3,950,569	12.43	83.82	16.18
Nov	2,736,080	8.61	92.43	7.57
Dec	2,405,715	7.57	100.00	0.00
Total	31,780,783			

For example, if the use of pelagic longline gear is prohibited at the end of March, approximately 19 percent of the annual revenue would have been obtained by the fishery, but 81 percent of the annual revenue from fishing with pelagic longline gear would be forgone. If the use of pelagic longline gear is prohibited at the end of August, approximately 60 percent of the annual revenue would have been obtained, but approximately 40 percent of the annual revenue would be forgone.

Table 5.31 Estimated revenue loss of Longline Category closure based on month of closure

Closure Month	Estimated Revenue Loss ($)
January	31,780,783
February	29,672,620
March	27,718,944
April	25,808,548
May	23,837,135
June	21,041,643
July	18,636,646
August	15,980,473
September	12,742,041
October	9,092,364
November	5,141,795
December	2,405,715

Based on the Longline category being closed in late spring and early summer over the past few years and the 2013 closure occurring in June, NMFS estimates that a June closure is a plausible example to examine. Table 5.31 lists the potential revenue loss by month of closure. A June closure of the pelagic longline fishery would result in a potential loss of revenue of approximately $21.0 million. This would result in a major short-term adverse direct economic impact to the pelagic longline fishery and this economic impact would continue into the long-term if landings and dead discard rates continue along the current trend. Adverse economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries would likely occur when a closure happens.

Under the IBQ alternative (Alternative C 2), closure of the pelagic longline fishery as a whole is less likely to occur because individual vessels would have vessel-specific limits on their catch (dead discards and landings) of bluefin. In contrast, under a regional or group quota alternative (Alternative C 3), where individual vessels would not be constrained with respect to the amount of bluefin they may discard, relatively few vessels with a high number of bluefin interactions could result in closure of the fishery, or a portion of the fishery.

5.4 Enhanced Reporting Alternatives

5.4.1 Alternative D 1 - VMS Requirements

Alternative D 1a – No Action

Purse Seine Category

Under the No Action alternative, there would be no requirement under HMS regulations for an Atlantic Tunas Purse Seine category vessel to obtain a VMS unit and there would be no change to the reporting requirements applicable to purse seine vessels.

This alternative would result in indirect and direct neutral impacts in the short and long-term because it would not change current management of Atlantic Tunas purse seine fishery. Purse seine vessels are not currently required to have an E-MTU VMS as a condition of their Atlantic tunas permit. However, because many of these vessels are engaged in other fisheries managed by the New England Fishery Management Council that have similar VMS requirements, they already have E-MTU VMS installed and functioning consistent with regulations for Northeast Multispecies and/or scallop fisheries.

Pelagic Longline Category

This alternative would make no changes to the current VMS reporting requirements applicable to vessels possessing pelagic longline gear.

This alternative would result in indirect and direct neutral impacts in the short and long-term for pelagic longline vessel owners because it would not change current management of the Atlantic HMS pelagic longline fishery. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected. This alternative would make no changes to the current VMS reporting requirements applicable to vessels possessing pelagic longline gear. Existing regulations require all Atlantic HMS vessels that are required to use VMS to provide a hail-out declaration using their E-MTU VMS units, indicating target species and gear possessed onboard the vessel, at least two hours before leaving port on every trip. Further, vessels are required to provide a hail-in declaration, using their E-MTU VMS units, providing information on the timing and location of landing at least three hours before returning to port. At this time, vessels can turn their units off when they are at port, however, a proposed rule is in development that would consider requiring 24/7 position reporting for pelagic longline vessels.

Alternative D 1b – VMS Requirements for the Purse Seine and Longline Categories (Preferred)

E-MTU VMS installation and operation

Purse Seine Category

This alternative would require vessels with an Atlantic Tunas Purse Seine category permit to have an E-MTU VMS unit installed by a qualified marine electrician in order to remain eligible for the Purse Seine category permit. This alternative would be in addition to any relevant VMS rulemaking that would implement National VMS measures applicable to these fisheries.

All of the three vessels that are currently authorized to deploy purse seine gear for Atlantic tunas have already installed E-MTU VMS units in compliance with regulations for other Council-managed fisheries, including Northeast Multispecies and/or Atlantic scallop. If vessels have not already had a type-approved E-MTU VMS unit installed, or if permits were transferred to vessels that have not yet installed E-MTU VMS, they may be eligible for reimbursement (up to $3,100) to offset the costs of procuring a type-approved unit subject to availability of funds. This reimbursement would only cover the cost of the E-MTU VMS and could not be applied to offset installation costs by a qualified marine electrician ($400) or monthly communication costs ($44). Initial costs, per vessel, for compliance with E-MTU VMS requirements included in this alternative would be $3,500 if no reimbursement were received and $400 if a reimbursement were received. On a monthly basis, vessels would be required to establish a communication service plan corresponding to the type-approved E-MTU VMS selected. Costs vary based on the E-MTU VMS unit and communication service provider that is selected, however, these costs average $44/month and include hourly transmission reporting and a limited amount of hail in and hail out declarations. Charges vary by communication service provider for additional messaging or transmission of data in excess of what is allowed in their individual plans. Furthermore, costs might vary depending on how many trips a vessel makes on a monthly basis as the number of declarations (hail in/hail out) increase proportionately. For this analysis, all communication costs were expected to be covered under baseline monthly plan costs (i.e., $44/month).

If a vessel has already installed a type-approved E-MTU VMS unit, this alternative would have neutral direct and indirect socioeconomic impacts in the short and long-term as the only expense would be monthly communication service fees which they are already paying for participation in a Council-managed fishery. If vessels do not have an E-MTU VMS unit installed or an Atlantic tunas purse seine permit is transferred to another vessel lacking VMS, direct, adverse, short-term socioeconomic impacts are expected as a result of having to pay for the E-MTU VMS unit and a qualified marine electrician to install the unit. In the long-term, direct economic impacts would become minor, because monthly communication service provider costs ($44) would be the only expense. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Pelagic Longline Fishery

Pelagic longline vessels are already required to use an E-MTU VMS that has been installed by a qualified marine electrician to provide hourly position reports and hail in/out declarations to provide information on target species, gear possessed, and expected time/location of landing. Therefore, this alternative would result in neutral socioeconomic impacts in the short and long term. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Reporting Bluefin tuna interactions using E-MTU VMS

This alternative would require vessels fishing for Atlantic tunas with purse seine gear or pelagic longline gear to report daily the number of bluefin retained, and discarded dead, and fishing effort (number of sets, number of hooks, respectively). This alternative is intended to support the inseason monitoring of the purse seine and pelagic longline fisheries. Although NMFS currently has the authority to require logbook reporting for the purse seine fishery, NMFS has not exercised this authority (see Section 2.3.7). Current information on the catch of the purse seine fishery includes dealer data on sold fish, and limited information on discarded bluefin or other species caught and/or discarded from periodic observer coverage. Inseason information on catch, including dead discards, would enhance NMFS' ability to monitor and manage all quota categories. The characteristics of the purse seine fishery are unique. Many bluefin may be caught in a relatively short period of time, and the proportion of discarded to retained fish may be high in some instances. More timely information on retained bluefin would improve the current monitoring of bluefin landings. This alternative would provide timely information on purse seine fishing effort, and improve NMFS' ability to interpret and utilize the bluefin data in the context of the fishery as a whole.

Purse Seine

Vessel operators fishing for Atlantic tunas with purse seine gear would already be required to have an E-MTU VMS unit installed and capable of submitting hourly position reports while fishing in addition to hail out/in declarations before and after fishing. This alternative would, however, increase the amount of information that vessel operators provide using their E-MTU VMS units. Typically, fishermen would make a single declaration for each set that details the quantity and size of bluefin retained. This alternative would result in neutral economic impacts in the short and long-term because of the fact that the vessel owners would already be paying, on average, $44 per month to cover the costs of a communication service provider. The number of additional characters transmitted to report bluefin retained and discarded dead are expected to be less than 50 characters per set, and are not expected to exceed the typical monthly allowance for data sent using the E-MTU VMS. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Pelagic Longline

With respect to pelagic longline vessels, this alternative is intended to support the implementation of a pelagic longline catch cap, whether individual, regional, or group, described under Section 2.3. For example, under an IBQ program, each vessel must not catch more than is permitted by the total of his/her quota allocation. IBQ programs require the ability to track quota shares and quota allocations, reconcile landings and dead discards against individual quota allocations, and then balance the amounts against the total allowable quota for the Longline category. Although the current pelagic longline reporting requirements and the observer program provides data on pelagic longline landings and discards, and enables inseason monitoring and management based upon landings, the reporting requirements and monitoring requirements were not designed to support inseason monitoring of dead discards. More timely information on dead discards would be necessary in order to monitor and enforce a pelagic longline catch cap (IBQ, regional or group quotas). Although the current information on bluefin discards from the pelagic longline fishery obtained through logbook data (effort) and catches from the observer program (catches) is sufficient to estimate bluefin dead discards on an annual basis, the time lag associated with the current information is not useful for "real-time" in-season monitoring of a bluefin catch cap. Specifically, there is a time lag between the time logbooks are submitted or the field information is recorded by the observer during the fishing trip, the time the data are entered into a database, and the time the data are finalized (after a process of quality control) and available for use. A trip declaration requirement would provide NMFS with real-time information on pelagic longline catches and fishing effort, and support management of the fishery as a whole.

HMS logbook data (2006-2012) indicate that, on average, pelagic longline vessels have 1 interaction (9,660 interactions/10,262 trips = 0.94 interactions/trip) with a bluefin per vessel per trip. This alternative would require all pelagic longline vessel operators to report all interactions (kept, discarded dead, discarded alive) and estimate fish size (> or < than 73" CFL) using their E-MTU VMS within 12 hours. Furthermore, additional information on fishing effort, including the number of hooks deployed on the set that had a bluefin would also be reported.

This alternative is expected to have neutral to minor adverse socioeconomic impacts on pelagic longline vessel operators and owners in the short and long-term. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected. Existing regulations require all pelagic longline vessel operators to provide hail out/in declarations and provide location reports on an hourly basis at all times while they are away from port. In order to comply with these regulations, vessel owners must subscribe to a communication service plan that includes an allowance for sending similar declarations (hail out/in) describing target species, fishing gear possessed, and estimated time/location of landing using their E-MTU VMS. This alternative would require, on average, 1 additional report per trip that describes bluefin interactions and fishing effort. Each report is expected to be comprised of less than 50 characters. Because of the minimal time (approximately 5 minutes) required to submit these short reports and the fact that owners would likely already be enrolled in a communication service plan that would encompass transmission of these additional characters, adverse socioeconomic impacts are not expected.

5.4.2 Alternative D 2 - Electronic Monitoring of Longline Category

Alternative D 2a – No Action

Under this alternative, there would be no requirement to install or use electronic monitoring equipment. This alternative would result in neutral economic impacts in the short and long-term because it would maintain existing requirements. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Alternative D 2b –Electronic Monitoring of Longline Category (Preferred)

This alternative would require the use of electronic monitoring, including video cameras, by all vessels issued an Atlantic Tunas Longline category permit that intend to fish for HMS. Specifically, vessels would be required to install and maintain video cameras and associated data recording and monitoring equipment in order to record all longline catch and relevant data regarding pelagic longline gear retrieval and deployment. The objective of this alternative is for NMFS to use the recorded data as a principal source of information used to verify the accuracy of counts and identification of bluefin reported through VMS and logbooks by the vessel owner/operator. Secondly, electronic monitoring would enable the collection of video image and fishing effort data that may be used in conjunction with other sources of information to estimate bluefin dead discards. Lastly, electronic monitoring would augment the ability of an observer to fulfill their duties, by providing a record of catch during the time periods the observer may be unable to observer the catch directly.

More specifically, this alternative would require the installation of NMFS-approved equipment that may include one to four video cameras, a recording device, video monitor, hydraulic pressure transducer, winch rotation sensor, system control box, or other equipment needed to achieve the objectives. Vessel owner/operators would be required to install, maintain, allow inspection of the equipment by NMFS, and obtain NMFS approval of the equipment or vendors selling such equipment. There would be a requirement to install the camera(s) to provide a view of the area where the longline gear is retrieved and catch removed from the hook (prior to placing in the hold or discarding) and a requirement that such a system be connected to the mechanical hauling device so that recording is initiated by gear retrieval. The vessel owner/operator would be required to store and make the data available to NMFS for at least 120 days, and submit the data to NMFS. The vessel operator would be responsible for ensuring that all bluefin are handled in a manner than enables the electronic monitoring system to record such fish, and must identify a crew person or employee responsible for ensuring that all handling, retention, and sorting of bluefin occurs in accordance with the regulations.

While the electronic monitoring program is being implemented, NMFS would continue to use all other sources of data including, VMS, logbook, observer, and landings information to assess catch by the pelagic longline fleet. NMFS would communicate instructional information in writing with the vessel owners during all phases of the program to provide direction and assistance to vessel owners, and facilitate the provision of technical assistance.

This alternative would require both fixed and variable costs over the service life of each camera installed onboard. The cost of an electronic system bought in 2010, over its five year projected lifespan, is about $3,565 a year. This includes 4% of the purchase price for maintenance costs and a 7% interest rate on the loan to buy a system (NMFS - NOPAT, 2013). The variable costs for vessel owners include data retrieval ($45/hour; 2 hr per trip; technician travel ($0.5/mile; 100 miles for each trip); fishing activity interpretation ($47/hour; 0.25 hr/trip); and catch data interpretation ($47/hour; 1.5 hr/trip). The estimated total variable costs would be approximately $225 per trip and the annual fixed costs would be $3,835 for the purchase and installation of the equipment, and six services per year; $45/hour; 1 hr six times per year). Based on the 135 eligible pelagic longline vessels that have fished between 2006 and 2012, NMFS estimates that the total annual costs to the fleet would be approximately $734,000 per year.

The average number of pelagic longline trips per vessel was 8 per year. Figure 5.1shows the distribution of the number of vessels by the average number of trips per year (from 2006-2012). Figure 5.2 shows the distribution of electronic monitoring costs per trip, not including the cost of purchase and installation of the equipment, based upon the average number of trips, and Figure 5.3 shows the distribution of electronic monitoring costs per trip, including the cost of purchase and installation of the equipment, based upon the average number of trips. At this level of fishing activity, the cost to an individual vessel would be $5,343 per year. This estimate based upon the use of electronic monitoring as an auditing tool, and 100% of the data is not analyzed. This cost estimate is lower than some of the published data because most of the published information is based upon monitoring programs where up to 100% of the video footage is analyzed, and therefore there is a high cost associated with catch data interpretation. This estimate is based upon catch data interpretation of one longline haul per trip.

This alternative would result in moderate direct and indirect adverse economic impacts to pelagic longline vessel owners in the short- and long-term. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

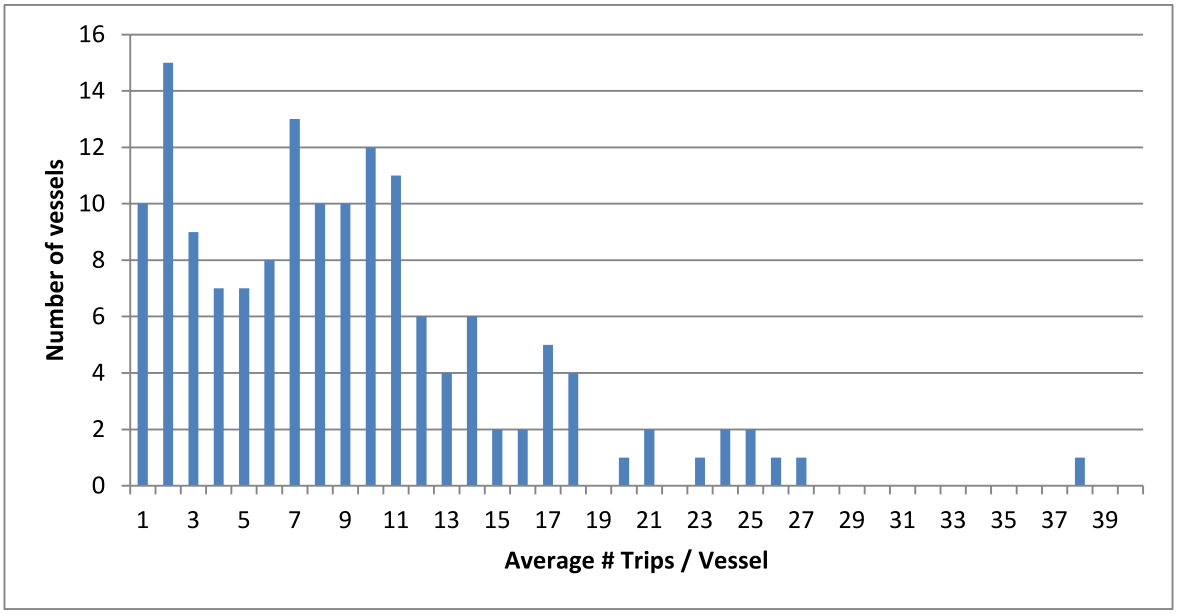

Figure 5.1 Number of pelagic longline vessels by average number of pelagic longline trips per vessel (2006 – 2012)

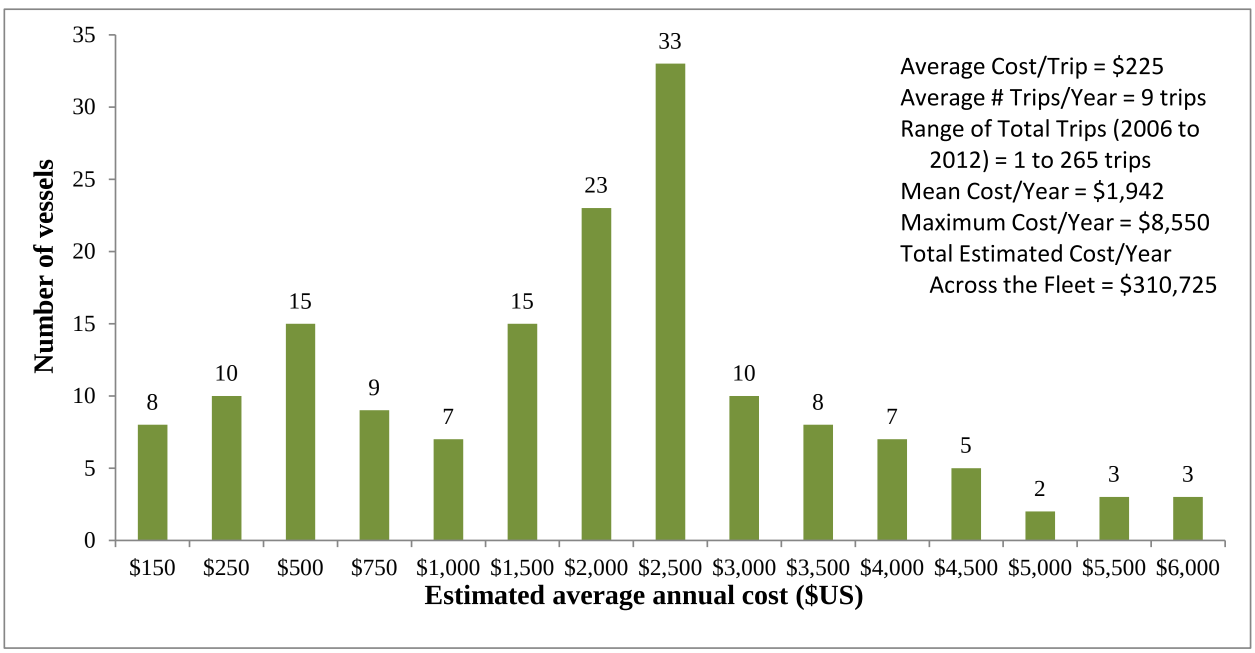

Figure 5.2 Number of pelagic longline vessels and estimated average costs for electronic monitoring based upon the number of trips (not including cost of purchase and installation of equipment)

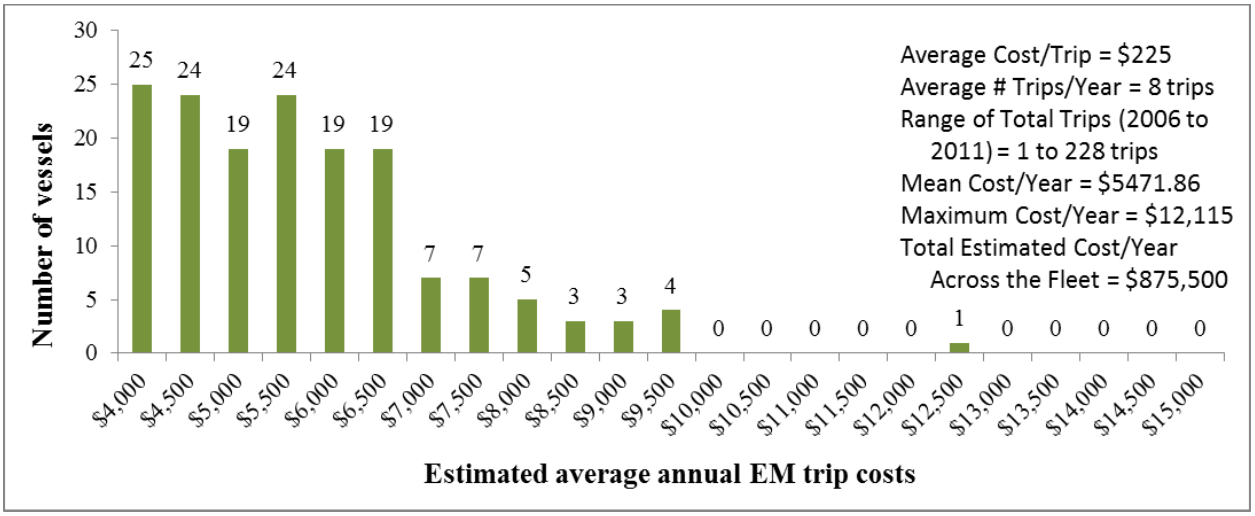

Figure 5.3 Number of pelagic longline vessels and estimated average annual electronic monitoring costs, based on number of trips per year (not including cost of purchase and installation of equipment).

5.4.3 Alternative D 3 - Automated Catch Reporting

Alternative D 3a - No Action

Under this alternative, there would be no automated catch reporting requirement applicable to the commercial Atlantic Tunas General or Harpoon categories or the HMS Charter/Headboat category, when fishing commercially. The "No Action" alternative is not preferred and would have no social or economic impacts.

Alternative D 3b - Automated Catch Reporting (Preferred)

This measure would require Atlantic Tunas General, Harpoon, and HMS Charter/Headboat categories to report their bluefin catch through an automated catch reporting system (for example, via either a web-based, or an interactive voice response telephone system) at the end of each trip. NMFS currently operates a similar automated landings reporting system (ALRS) for recreational bluefin catch in the HMS Angling category. Although information on commercial bluefin landings as currently reported by dealers is sufficient for NMFS to monitor the landings (which count toward the relevant sub-quotas), NMFS does not obtain information on bluefin that may be discarded as a result of the capture of fish that are discarded (either because the fish is less than the required minimum size or for another reason) from all categories. Such discard information would enhance NMFS' ability to more fully and accurately account for all sources of fishing mortality, consistent with ICCAT recommendations. Additional catch information from all of these categories could result in more equitable data collection among the diverse participants in the bluefin and HMS fisheries and enhance management of all HMS fisheries. Automated catch reporting would enable NMFS to obtain information about the magnitude of discards. NMFS would be able to share such information, in aggregate, with the bluefin fishery participants with the objective of reducing regulatory discards. Information on discarding would enable NMFS to consider a wider range of information when making decisions regarding quota management, and bluefin tuna management in general. Verification of data through observer coverage of these fisheries would augment the value of this data (see Section 2.4.4).

The primary direct minor long-term adverse social and economic impacts of the preferred alternative are the amount of time the new reporting requirement would take, and the reporting costs, respectively.

NMFS estimated the potential annual catch for each permit category based on previous year's data (Table 5.32) and multiplied it by the 5 minutes it takes to complete a report (NMFS 2013) for each fish to estimate a total reporting burden of 607 hours affecting a total of potentially 8,226 permit holders as a result of this alternative. Since the data are collected online or via telephone, there are no monetary costs to fishermen or direct economic impacts to fishermen from this alternative.

Table 5.32 Estimated annual catch for each permit category based on previous years data

Permit Category	Number of Permit holders in 2012 (NMFS 2012)	Number of Bluefin Landed in 2012 (NMFS BLUEFIN Dealer Landings data; LPS)	Projected Annual Number of Bluefin Caught and Released	Projected Total Annual Catch (Number of Fish)	Total Amount of Time (hr) @ 5 min per Response / 60 min / hr
General	4,084	2727	123	2850	238
Harpoon	13	128	128	256	21
Charter/Headboat	4,129	3721	458	4179	348
TOTAL	8,226	6,576	709	7285	607

Adjustments to both the online and IVR systems of the ALRS to implement catch reporting for General, Harpoon, and HMS Charter/Headboat category permit holders are estimated to cost NMFS between $15,000 and $35,000 (B. McHale, pers. comm.) Annual maintenance would likely cost approximately $8,700 per year, which is the current cost for maintaining the ALRS and the call-in system for reports of other recreational HMS landings (NMFS 2013).

Other social and economic impacts of this alternative could include a perception of increased fairness in distribution of reporting requirements among the diversity of participants in the fishery, and a potential reduction in fishing opportunities and income from increased accounting for dead discards. Currently, catch reporting is only required of recreational fishermen and the pelagic longline category (aside from LPS interviews of Charter/Headboat and General category fishermen). Fishermen in the recreational and pelagic longline fisheries may consider more similar data collection requirements among the different quota categories, to be a positive social impact. Although additional estimates of dead discards could reduce the amount of quota available for harvest, better estimates of fishing mortality would improve international management of bluefin, and better data on location and extent of bluefin catch could increase effectiveness of inseason domestic management, both of which could in part mitigate negative economic impacts.

5.4.4 Alternative D 4 - Deployment of Observers

Alternative D 4a - No Action (Preferred)

Under this alternative, there would be no changes to the current observer coverage in the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. Therefore, there would be no additional cost to small businesses.

Alternative D 4b – Increase NMFS-Funded Observer Coverage

This alternative would increase the level of NMFS-funded observers on a portion of trips by vessels fishing under the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. There might be some minor costs to vessel operators with the increased chance that they will be selected for observer coverage and will have to accommodate an observer.

5.4.5 Alternative D 5 - Logbook Requirement

Alternative D 5a - No Action (Preferred)

This alternative would make no changes to the current logbook requirements applicable to any of the permit categories. It would have neutral economic and social impact on fishing vessel owners.

Alternative D 5b - Logbook Requirement for Atlantic Tunas and HMS Category Permit Holders

This measure would require the reporting of catch by Atlantic Tunas General, Harpoon, or HMS Charter/Headboat category vessels targeting bluefin through submission of an HMS logbook to NMFS. The direct social and economic impacts of this non-preferred alternative include the amount of time to complete logbook forms and the cost of submission (i.e., mailing) for all fishermen permitted in the affected permit categories. These impacts would be minor, adverse, and long-term. A high-end proxy for the impacts of this alternative is the current reporting burden and cost for the entire HMS logbook program, which have been estimated for all commercial HMS fisheries (28,614 permits; NMFS 2011a). The annual reporting burden for the entire program is estimated at 36,189 hours and costs are $94,779 for postage. A more refined estimate is also presented here which estimates the number of fishermen impacted as those likely to conduct directed fishing trips for bluefin as the total number of General, Charter/Headboat, and Harpoon category permit holders in the states from Maine through South Carolina (6,735, Table 5.33). This is likely also an over-estimate, since many General and Charter/Headboat permit holders in these states fish for yellowfin, or other tunas rather than bluefin, or, for Charter/Headboat permit holders, other HMS. The average annual number of trips that each permit holder per category takes was previously calculated by NMFS (2011a) and is given in

Table 5.33. This method estimates an annual reporting burden of 16,526 hours and a cost of $8,263.

Table 5.33 Estimated logbook costs by permit category

Permit Category	Number of Permits (ME through SC, NMFS 2012)	Number of Trips per Year	Total Number of Trips	Reporting Burden (in hours, based on 12 min/report)	Cost (in $, based on $0.50/report)
General	3,666	10	36,660	7,332	3,666
Harpoon	13	10	130	26	13
Charter/Headboat	3,056	15	45,840	9,168	4,584
Total	6,735			16,526	8,263

Currently, NMFS spends approximately $450,165 on the HMS Logbook program (NMFS 2011a). With the possible addition of approximately 50% more reporting hours (16,526), the cost for NMFS could increase by 50% ($225,082).

Like the alternative to require automatic catch reporting for these same permit categories, additional social impacts of this alternative could be a perception of increased fairness in distribution of reporting requirements among the diversity of participants in the fishery, and a potential reduction in fishing opportunities from increased accounting for dead discards. Currently, only pelagic longline vessels are selected for HMS logbook reporting which includes accounting of dead discards and effort, although some other HMS permit holders may be required to submit logbooks because of the other (i.e., non-HMS) permits they hold. Fishermen in the pelagic longline fishery may consider more similar data collection requirements to be a positive social impact. Although additional estimates of dead discards could reduce the amount of quota available for harvest, better estimates of fishing mortality would improve international management of bluefin, and better data on location and extent of bluefin catch could increase effectiveness of inseason domestic management, which could in part mitigate negative economic impacts.

5.4.6 Alternative D 6 - Expand the Scope of the Large Pelagics Survey

Alternative D 6a - No Action (Preferred)

This alternative would make no changes to the scope of the Large Pelagics Survey, and would have no social or economic impacts.

Alternative D 6b - Expand the Scope of the Large Pelagics Survey

This alternative would expand the scope of the Large Pelagics Survey. Specifically, the Large Pelagics Survey would be expanded to encompass states south of Virginia, inclusive of the Gulf of Mexico, and include the months of May, November, and December. This would be expected to increase the amount of data collected and improve landings estimates derived from these data.

The Large Pelagics Survey is an important component of the data used to estimate landings of recreationally caught bluefin, as well as other HMS, and to monitor the Angling category quota. The data are used in conjunction with data from North Carolina and Maryland census programs, and the Automated Landings Reporting System to estimate catch and landings. Currently, the Large Pelagics survey collects data from June through October from Maine through Virginia.

The direct social impact of this non-preferred alternative is the amount of time that fishermen would expend participating in the survey. The impacts would be minor, adverse, and long-term. There are no direct costs to fishermen since the survey is conducted in person and over the phone, and there would be no direct economic impacts to fishermen for this alternative. NMFS estimates that the dockside survey takes 5 minutes on average, the phone survey takes 8 minutes, and collection of supplemental biological information takes about 1 minute. Previously, NMFS estimated that annual implementation of the Large Pelagics Survey throughout Atlantic and Gulf coastal states using the current target sample-size of 7,870 for the dockside survey, 10,780 for the phone survey and 1,500 for the biological survey would result in a reporting burden of 656 hours, 924 hours, and 25 hours respectively, for a total reporting burden of 1,730 hours (NMFS 2011b). This estimate could be used as a high-end proxy for the reporting burden associated with this alternative. Another method for estimating the reporting burden associated with this alternative is to use a ratio comparing the sample frame (i.e., number of permits) used in the coastwide estimate with the sample frame for the alternative (i.e., number of permits in states south of VA). Using this method, the reporting burden estimate is 559 hours (Table 5.34). Because of the sampling design, adding the months of May, November, and December is not expected to add any reporting burden or cost (Ron Salz, pers. comm.).

At a fully funded level, the average annual cost to the Federal government for the Large Pelagics Survey is approximately $2.2 million. Again, this cost could be used as a high-end estimate for costs to the government for this alternative because, based on current program costs, the cost would likely be lower. Applying the sampling frame ratio factor of 0.075 to this figure produces a lower cost estimate of $165,000.

Table 5.34 Burden estimate for the Large Pelagics Survey

Geographic Sampling Frame	Number of Angling and CHB Permits (NMFS 2012)	Number of Burden Hours (Permits × .075)
NC, SC, GA, FL	7,457	559
Total	23,061	1730

5.5 Other Alternatives

5.5.1 Alternative E 1 – Modify General Category Subquota Allocations

Alternative E 1a – No Action

The No Action alternative would make no changes to the current General category subquota allocations which allocate 5.3 percent of the General category quota to the January subquota period; 50 percent to June through August; 26.5 percent to September; 13 percent to October-

November, and 5.2 percent to December. Although it is called the "January subquota," the regulations allow the General category fishery under this quota to continue until the January subquota is reached, or March 31, whichever comes first. Unused quota rolls forward within the fishing year, which coincides with the calendar year, and is available for use in subsequent time periods. Underharvest from the previous fishing year also may be carried forward, but underharvest from the previous fishing year typically is not available to the January subquota period due to the timing of the annual specifications (finalized mid-year) that implement the annual quotas and distribute any underharvest that is carried forward.

Ex-vessel gross revenues (nominal values) from recorded sales of bluefin in all commercial categories for the last 7 years are presented in Table 5.35. The combination of stable or reduced ex-vessel prices (Table 5.36) and reduced commercial landings (Table 5.37) had a severe impact on ex-vessel gross revenues in 2006 and 2007, but increased overall ex-vessel prices and landings, particularly in the General category, led to a modest total increase in ex-vessel gross revenues in 2008 through 2012. Revenues for the General category were $9,167,720 in 2012, at the highest level since 2002.

Table 5.35 Ex-vessel gross revenues ($) in the U.S. Atlantic Bluefin fishery by commercial fishing category, 2000-2012

Year	General	Harpoon	Incidental (Longline/Trap)	Purse Seine	Total
2012	9,167,720	346,245	1,184,722	46,137	10,744,824
2011	8,799,627	455,859	972,575	--	10,228,061
2010	7,814,366	202,643	878,908	--	8,895,917
2009	5,040,772	498,877	1,247,600	149,934	6,937,183
2008	3,975,244	313,781	722,016	--	5,011,041
2007	2,259,194	160,845	807,954	451,390	3,679,383
2006	2,526,052	265,951	558,022	33,819	3,383,844

Revenues contained in the table reflect calendar year summaries. Source: Bluefin Dealer Report Database.

The bluefin fishery was managed on a fishing year basis (June through May) versus a calendar year basis (January through December) starting with the implementation of the 1999 FMP in 2000 until January 2008, when management reverted to a calendar year basis. Revenues are presented on a calendar year (versus fishing year) basis for 2008. The 2007 fishing year was June 1, 2007-December 31, 2007.

Prior to the 2007 bluefin specifications, NMFS reported values as converted to 1996 dollars (using the Consumer Price Index Conversion Factors). In this table, all prices are presented as nominal dollars, consistent with methods used in the Consolidated HMS FMP.

There were no Purse Seine category landings in 2008, 2010, or 2011.

Table 5.36 Ex-vessel average price (per lb, round weight) for bluefin by commercial fishing category, 2006-2012

Category	2006	2007	2008	2009	2010	2011	2012
General	7.60	7.82	8.44	7.60	6.93	8.90	9.31
Harpoon	5.45	5.98	6.36	5.50	5.75	7.12	9.13
Incidental (Longline/Trap)	4.84	4.98	4.78	4.48	4.96	6.10	6.19
Purse Seine	4.28	7.31	n/a	5.96	n/a	n/a	12.46*

* Price likely reflects relatively small amount of purse seine-caught bluefin on market. Source: Bluefin Dealer Report Database.

Prices contained in the table reflect calendar year averages. The bluefin fishery was managed on an offset fishing year basis (June through May) versus a calendar year basis (January through December) starting with the implementation of the 1999 HMS FMP in 2000 until January 2008, when management reverted to a calendar year basis. Prices are presented on a calendar year (versus offset fishing year) basis for 2008 and 2009. The 2007 fishing year was June 1, 2007-December 31, 2007.

Prior to the 2007 bluefin specifications, NMFS reported values as converted to 1996 dollars (using the Consumer Price Index Conversion Factors). In this table, all prices are presented as nominal dollars, consistent with methods used in the Consolidated HMS FMP.

There were no Purse Seine category landings in 2008, 2010, and 2011.

Table 5.37 Bluefin landings (metric tons) by year and category, 2000-2012

Category	2006	2007	2008	2009	2010	2011	2012
General	160	122	235	327	528	462	456
Harpoon	22	12	22	41	18	29	17
Purse Seine	4	28	0	11	0	0	2
Longline North & NED	28	26	33	77	45	38	39
Longline South	38	9	42	54	44	37	51
Trap	0	0	0.3	0	0	0	0
Angling	187	507	438	566	179	182	144
Total	439	704	773	1,076	814	748	709

Source: NERO dealer report database, LPS, Maryland and North Carolina catch card data, and NMFS Automated Landings Reporting System.

The bluefin fishery was managed on a fishing year basis (June through May) versus a calendar year basis (January through December) starting with the implementation of the 1999 FMP in 2000 until January 2008, when management reverted to a calendar year basis. Landings are presented on a calendar year (versus fishing year) basis for 2008 through 2010. The 2007 fishing year was June 1, 2007-December 31, 2007.

Totals are subject to rounding error.

Alternative E 1b – Establish 12 Equal Monthly Subquotas

The alternative would establish 12 equal monthly subquotas and continue to allow unused quota to roll forward within the fishing year, which coincides with the calendar year. The objective of this alternative is to optimize fishing opportunity. Modification of the current General category subquota allocations would alter the distribution of quota among seasons, may provide increased fishing opportunity for some vessels, and may decrease fishing opportunities for other vessels. General category participants in the January fishery perceive they are disadvantaged with respect to the amount of quota available because currently the January subquota period benefits from neither the previous nor current fishing year underharvests. Currently, because unused quota rolls forward within a fishing year, and because of the timing of the annual specifications (finalized mid-year), there are often greater opportunities to land bluefin in the second half of the fishing year than in January, at the beginning of the fishing year.

As discussed in Section 4.1.5 and shown in Table 4.31, this alternative would result in increased harvest in the earlier portions of the General category bluefin season and decreased harvest in the later portions of the season. To calculate potential changes in revenues, the amount of potential landings and the value of those landings per current time period can be examined (assuming full harvest). For example, for the current January period (which continues until the available subquota is taken, or March 31, whichever comes first), the base quota is 23.1 mt. Under this alternative, 36.1 mt would be available per month, so the total base quota available for January through March is 108.3 mt. General category price information for these three months is, for the purposes of this analysis that includes data through 2012, available for January only as the General category fishery closed in January in 2012 following implementation of the 2011 General and Harpoon category regulatory amendment that extended the end date of the January fishery to March 31. Table 5.38 and Table 5.39 show current and potential annual gross revenues per time period under the No Action alternative and Alternative E 1b. For early season (January-March) General category participants, an additional 85.2 mt would be available (i.e., 108.3-23.1 mt). At $9.13/lb, this represents potential increased revenue of approximately $1.7 million overall during this time period, nearly five times the current amount. Using $9.13/lb as an estimate for the ex-vessel prices for the early season, potential revenues for each of those months would be $726,621 (i.e. 36.1 mt × 9.13/lb). Potential revenues for the current June-August and September periods would decrease by approximately $2.2 million (50%) and $1.7 million (69%), given recent average price ($9.13 and $9.61, respectively). For October-November and for December, potential revenues would increase by approximately $317,000 (28%) and $287,000 (60%) at $9.21/lb and $9.65/lb, respectively. Relative to the No Action alternative, under Alternative E 1b, there would generally be substantially increased revenues for January through May and October through December and substantially decreased revenues for June through September, and total annual revenues would decrease by approximately $100,000 (1%).

Table 5.38 Potential General Category Gross Revenues from Base Quotas under Current Subquota Allocation Percentages

Time Period	% of General Category Quota	Current Annual Base Quota Equivalent in mt*	Current Annual Base Quota Equivalent in lb*	Average Ex-Vessel $ (2012)	Potential Annual Gross Revenues ($)

Time Period	% of General Category Quota	Current Annual Base Quota Equivalent in mt*	Current Annual Base Quota Equivalent in lb*	Average Ex-Vessel $ (2012)	Potential Annual Gross Revenues ($)
Jan-Mar	5.3	23.1	50,926	9.13	464,954
Apr-May	N/A	N/A	N/A	N/A	N/A
Jun-Aug	50.0	217.6	479,721	9.13	4,379,853
September	26.5	115.3	254,190	9.61	2,442,766
Oct-Nov	13.0	56.6	124,780	9.21	1,149,224
December	5.2	22.6	49,824	9.65	480,802
TOTAL	100.0	435.2			8,917,599

*Totals subject to rounding error

Table 5.39 Comparative Potential General Category Gross Revenues from Base Quotas under Alternative E 1b (12 Equal Monthly Subquotas).

Time Period	% of General Category Quota	Current Annual Base Quota Equivalent in mt*	Current Annual Base Quota Equivalent in lb*	Average Ex-Vessel $ (2012)	Potential Annual Gross Revenues ($)
Jan-Mar	25	108.3	238,758	9.13	2,179,861
Apr-May	16.7	72.2	159,172	9.13**	1,453,240
Jun-Aug	25	108.3	238,758	9.13	2,179,861
September	8.3	36.1	79,586	9.61	764,821
Oct-Nov	16.7	72.2	159,172	9.21	1,465,974
December	8.3	36.1	79,586	9.65	768,005
TOTAL	100.0	435.2			8,811,765

*Totals subject to rounding error ** Assumed, based on January and Jun-Aug average prices

Alternative E 1c – Provide Additional Flexibility for General Category Quota-Adjustment (Preferred)

Under this alternative, NMFS could proactively transfer quota from one or more of the subquotas following the January subquota to the January or other subquotas, through inseason action and Federal Register Notice. In other words, under this alternative NMFS could transfer quota from one subquota period to another, earlier in the calendar year. For example, in December of a particular year, NMFS would, through its authority to conduct inseason quota adjustments, make an adjustment for the subsequent year and transfer quota from December to January (December to January of the subsequent year), via Federal Register Notice, and other communication with the fishery participants.

For example, in 2011 and 2012, June through August General category landings totaled 140.3 mt and 192.2 mt, out of an available (base) quota of 217.6 mt. In 2010, June through August General category landings totaled 125.4 mt of an available (adjusted) quota of 269.4 mt. If quota that is anticipated to be unused in the first part of the summer season is made available to January period General category participants and bluefin are landed against the January period subquota, it would potentially result in improved and fuller use of the General category quota. Also, because bluefin price per lb is often higher in the January period than during the summer, shifting quota to this earlier period would result in beneficial impacts to early season General category participants off the mid- and south Atlantic states. It is possible, however, that an increase of bluefin on the market in the January period could reduce the average price for that time of year. Participants in the summer fishery may perceive such quota transfer to be a shift away from historical participants in the traditional General category bluefin fishing areas off New England and thus adverse. However, because unused quota rolls forward within a calendar year from one period to the next, any unused quota from the adjusted January period would return to the June through August period and onward if not used completely during that period. Overall, short-term, direct impacts depend on the amount and timing of quota transferred inseason and would be expected to be neutral to minor, beneficial for January fishery participants and neutral to minor, adverse impacts for participants in the June through December General category fishery.

5.5.2 Alternative E 2 – NMFS Authority to Adjust Harpoon Category Retention Limits Inseason

Alternative E 2a – No Action

The No Action alternative would make no changes to the current retention limits applicable to the Harpoon category. The retention limit would remain at four large medium (73” CFL to less than 81” CFL) bluefin per vessel per day (and unlimited giants, 81” CFL or greater). The economic impact of the No Action alternative is expected to be direct and neutral to slightly beneficial and short-term as participants would continue to be able to retain and land a 3rd and 4th large medium bluefin, if available, and would not have to discard these fish if caught while targeting giant bluefin. In 2012, the first year following implementation of the four-fish limit on large mediums, there were only two trips on which three large mediums were landed and two trips on which four large mediums were landed, or 6% total of successful trips.

Harpoon quota revenues in 2012 were 24 percent lower than 2011 and 71 percent higher than in 2010.

Alternative E2b - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason (Preferred)

Under this alternative, NMFS would have the ability to increase or decrease the daily retention limit of large medium bluefin (greater than 73” CFL and less than 81” CFL) within a range of two to four fish. This range is based on the former (i.e., two fish) and current (i.e., four fish) daily retention limit of large medium bluefin for the Harpoon category. On a per-trip basis, there would be minor short-term direct adverse social and economic impacts that would depend on availability of large mediums to Harpoon category vessels on a per trip basis and the actual retention limit that NMFS sets inseason (or that is in place by default). Looking at successful 2012 trips, NMFS can estimate potential impacts of this change by determining the number of trips on which three or four large mediums were landed in 2012 and assuming that those fish may not be able to be landed under this alternative. Using 2012 successful trip data, if the limit was set at two large mediums, the revenue from up to six large mediums would be foregone for the season, and with a three fish limit, the revenue of up to two large mediums would be foregone. At an average 2012 weight of 296 lbs and an average price of $9.13/lb for the Harpoon category, a loss of one to six fish would be approximately $2,702 to $16,215 for the Harpoon category as a whole for the year.

Potentially beneficial social and economic impacts are possible if a lower limit at the beginning of the season results in the Harpoon category quota lasting longer into the season, as the average price/lb is generally higher in July and August than it is in June. NMFS has not needed to close the Harpoon category in recent years (i.e., as a result of the quota being met), but depending on the size of the amount of quota available and the number of Harpoon category participants, this may be a consideration.

5.5.3 Alternative E 3 – Angling Category Subquota Distribution

Alternative E 3a – No Action

Under the No Action alternative, there would be no change to the current Angling category trophy subcategory quota allocations. Trophy-sized bluefin (greater than 73” CFL) caught by recreational vessels in the Atlantic and Gulf of Mexico count against either the northern area subquota (for fish landed north of 39° 18’ N. latitude, i.e., off Great Egg Inlet, NJ) or the southern area subquota (for fish landed south of 39° 18’ N. latitude). Therefore, bluefin from the Gulf of Mexico and the Atlantic south of 39° 18’ N. latitude count toward the same recreational subquota (the trophy south subquota). The dividing line was intended to provide an equitable geographical and temporal distribution of recreational fishing opportunities. The currently codified subquotas are 2.8 mt (66.7%) for the southern area and 1.4 mt (33.3%) for the northern area.

The social impact of the No Action alternative is expected to vary by geographic area and be dependent of availability of trophy-sized bluefin on the fishing grounds. If the pattern of high activity off Virginia and North Carolina continues, fishermen in the mid-Atlantic may have greater opportunities to land a bluefin and participants in the Gulf of Mexico may have no opportunity to land a bluefin when the fish are in their area as the southern trophy fishery may already be closed for the year. For Angling and Charter/Headboat fishermen, based on the last two years, there would be direct, beneficial, short-term social impacts in the mid-Atlantic and direct, adverse, short-term impacts for participants south of that area, including the Gulf of Mexico. The issue of economic costs for Angling category participants is not relevant as there is no sale of tunas by Angling category participants. For charter vessels, which sell fishing trips to recreational fishermen, economic impacts are expected to be neutral to beneficial for those in the mid-Atlantic and neutral to adverse for those south of that area, including the Gulf of Mexico, as the perceived opportunity to land a trophy bluefin may be diminished. This should be tempered in the Gulf of Mexico, where there is no directed fishing for bluefin allowed. Given that the current southern trophy bluefin subquota of 2.8 mt represents approximately 17-30 individual fish, impacts are expected to be minor.

Alternative E 3b – Allocate a Portion of the Trophy South Subquota to the Gulf of Mexico (Preferred)

Under current regulations, a situation may be created whereby the entire southern trophy subquota could be filled by bluefin caught in the Atlantic, thus precluding any opportunities for the incidental catch and retention of trophy-sized bluefin in the Gulf of Mexico. Under this alternative, a portion of the trophy south subquota would be allocated specifically for the Gulf of Mexico. Specifically, the trophy subquota would be divided to provide 33% each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. At the current average trophy fish weight, this would allow up to approximately 8 trophy bluefin to be landed annually in each of the three areas.

There would be minor, short-term, direct, beneficial social impacts to a small number of vessels in the Gulf of Mexico given the small amount of fish that would be allowed to be landed (as well as indirect beneficial economic impacts for charter vessels), but the perception of greater fairness among southern area participants may result in indirect, longer-term, beneficial, social impacts. There would be minor, short-term, direct and indirect adverse social impacts (and economic impacts for charter vessels) for those outside the Gulf of Mexico as the perceived opportunity to land a trophy bluefin may be diminished.

5.5.4 Alternative E 4 – Change Start Date of Purse Seine Category to June 1

Alternative E 4 – No Action

Under the No Action alternative, there would be no change to the start date of the Purse Seine category fishery, which is currently set at July 15. Economic impacts would be expected to be direct and neutral to adverse depending on availability of schools of bluefin for purse seine operators to decide to make a set on. That is, currently, if conditions would warrant making a set (e.g., based on information from spotter pilots) before July 15, purse seine operators would not be able to fish and would miss the economic opportunity to land and sell bluefin while the other commercial bluefin fisheries are open. Social impacts would be minor and neutral to adverse for purse seine fishery participants and would be minor and neutral to beneficial for fishermen in other categories due to reduced actual or perceived gear conflict from June 1 through July 14.

Alternative E 4b – Change Start Date of Purse Seine Category to June 1 (Preferred)

Alternative E 4b would change the start date of the Purse Seine category fishery from July 15 to June 1, and provide NMFS the ability to delay the season start date from June 1 to no later than August 15, by publishing a notice in the Federal Register. The objective of this alternative is to optimize fishing opportunity for Purse Seine category vessels. Economic impacts would be expected to be direct and neutral to moderate and beneficial depending on availability of schools of bluefin for purse seine operators to decide to make a set on and market conditions. Social impacts would be minor and neutral to beneficial for purse seine fishery participants and would be minor and neutral to adverse for fishermen in other categories due to increased actual or perceived gear conflict from June 1 through July 14. In 2012, the average price per pound was \$12.46, although the price likely reflects the relatively small amount of purse seine-caught bluefin on the market that year. In 2009, the last year in which there were Atlantic purse seine bluefin landings, the average price per pound was $5.96.

5.5.5 Alternative E 5 – Rule Regarding Permit Category Changes

Alternative E 5a – No Action

Under the No Action alternative, there would be no changes made to current regulations regarding changes to permit categories. The current regulations prohibit a vessel issued an Atlantic Tunas or an HMS permit from changing the category of the permit after 10 calendar days from the date of issuance. This No Action alternative is administrative in nature, and therefore the social and economic impacts associated with it would be neutral for most applicants. However, for those applicants who discover their permit category may not allow the vessel to fish in a manner as intended, they may experience moderate adverse social and economic impacts at an individual level. For example, if a commercial fishermen obtained an Angling category permit (recreational) versus a General category permit (commercial) and did not discover the error until after the 10 calendar day window, their vessel would not be allowed to fish commercially for Atlantic tunas for the remainder of that year. Likewise, if recreational fishermen obtained a General category permit (commercial) versus an Angling category permit (commercial) and did not discover the error until after the 10 calendar window, their vessel would not be allowed to fish under the recreational rules and regulations for the remainder of the year. These two examples demonstrate the potential in lost fishing opportunities as a result of the No Action alternative.

Alternative E 5b – Modify Rules Regarding Permit Category Changes (Preferred)

This alternative would allow a vessel owner to modify the category of an Atlantic Tunas or HMS permit for up to 45 days from date of issuance provided the vessel has not landed bluefin, as verified via landings data. This alternative would result in neutral social and economic impacts for most applicants as there are approximately 20 requests annually that would fall outside the 10 calendar day window. However, for those applicants who discover their permit category may not allow the vessel to fish in a manner as intended (~20 per year), they would experience moderate beneficial social and economic impacts provided they discover the error in the liberalize window (e.g., 30, 45, or 60 days). Using the two examples illustrated above and assuming no bluefin were caught in either case, each applicant would be allowed to correct their open-access HMS permit category to match their intended fishing practices for the remainder of that year, thereby mitigating the potential of lost fishing opportunities, as well as potential income.

5.5.6 Alternative E 6 – North Atlantic Albacore Tuna Quota

Alternative E 6a – No Action

Under the No Action alternative, there would be no new regulations regarding Atlantic albacore tuna. There are currently no regulations regarding the quota management of Atlantic albacore tuna. Therefore, expected short-term, direct economic impacts and social impacts under the No

Action alternative would be neutral. If future overharvests result in the United States being out of compliance with the ICCAT recommendation, the United States would need to put control measures in place and neutral to adverse longer-term direct economic and social impacts could occur if the resulting annual quota needs to be reduced by the amount of the overharvest.

Alternative E 6b – Implement U.S. North Atlantic Albacore Tuna Quota (Preferred)

The alternative would implement the U.S. annual quota of north Atlantic albacore tuna (or "northern albacore") recommended by ICCAT (Recommendation 13-05; Supplemental Recommendation by ICCAT Concerning The North Atlantic Albacore Rebuilding Program) and would establish provisions for the accounting of overharvest and underharvest of the quota via annual specifications. If NMFS implements a domestic quota for northern albacore and recent catch levels continue, and the U.S. quota (including the adjusted quota) recommended by ICCAT is maintained at the current amount, economic and social impacts would not be expected. However, if either the U.S. quota is reduced as part of a new TAC recommendation or catches increase above the current adjusted U.S. quota, there could be adverse impacts resulting from reduced future fishing opportunities and ex-vessel revenues. At an average price of $1.29/lb for commercially-landed albacore in 2011, a reduction of one mt would represent approximately $2,800 under a full quota use situation. Actual impacts would largely depend on the availability of northern albacore and the ability of fishery participants to harvest the quota. In addition, any adverse social and economic impacts of exceeding the TAC, which was adopted as part of the overall ICCAT northern albacore rebuilding program, would be reduced and, in the long term, may be beneficial for fishermen as the stock grows. There may be slight differences in the level of economic and social impacts experienced by the specific individuals of the northern albacore fishery, as well as by participants within a particular fishery sector.

5.6 Combining and Comparing Alternatives

This section considers the combined social and economic impacts of the management measures. For vessels that have a history of avoiding bluefin tuna, and continue to avoid bluefin tuna, the socio-economic impacts would be moderate and adverse, with the principal impact being the costs associated with electronic monitoring and VMS reporting. For pelagic longline vessels that have a history of interacting with many bluefin, and continue to interact with bluefin in the future, the cumulative socio-economic impacts would be major and adverse, due to the combined impacts of the IBQ, the gear restricted areas, and the enhanced reporting measures. For the Purse Seine category, the cumulative economic impacts would be minor adverse due to the potential reallocation of quota and the enhanced reporting requirements. For the General, Harpoon, Charter/Headboat, and Angling categories, the cumulative economic impacts would be neutral or minor adverse due to the modifications to the rules that dictate how the category specific quota is managed, and the enhanced reporting requirements.

Socio-Economic Impacts of Preferred Alternatives on the Longline Category

The Codified Reallocation alternative would result in an additional 62.5 mt of quota for the Longline category on an annual basis (an 83.5% increase), which, under the current U.S. bluefin quota of 923.7 mt, would result in a revised baseline quota of 137 mt. If the Longline category were to land this additional 62.5 mt of bluefin quota, it would be worth approximately $1 million dollars; however, it is unlikely as some portion of the revised baseline quota would not be landed, but would be needed to account for dead discards.

The Annual Reallocation alternative would enable the agency to make additional quota available to all quota categories, including the Longline category. For example, it could increase the amount of quota available for use by the Longline category to 216.7 mt, assuming the permanent reallocation is finalized and 50% of the Purse Seine category quota were reallocated to the Longline category (under the current U.S. bluefin quota of 923.7 mt). If the Longline category landed this additional 79.5 mt of bluefin quota, it would be worth approximately $1.3 million, however it is unlikely as some portion of the revised quota would not be landed, but would be used to account for dead discards.

The Modified Cape Hatteras Gear Restricted Area with Access Based on Performance would potentially reduce revenue for the 14 vessels that would not initially be allowed access, based on their historical catch of bluefin and designated species ratio, compliance with reporting, and/or compliance with observer requirements. Specifically, if the vessels do not redistribute any of their fishing effort to other areas outside the Modified Cape Hatteras Gear Restricted Area, the loss in revenue would be approximately $313,000 ($201,000 from swordfish; $24,000 from bluefin; and $24,000 from yellowfin, among others). If some of the vessels are able to redistribute a portion of their fishing effort to other areas, the loss in revenue could be reduced to approximately $211,000 ($121,000 from swordfish; $20,000 from bluefin; and $20,000 from yellowfin, among others).

The Modified Spring Gulf of Mexico Gear Restricted Areas would potentially reduce revenue for approximately 49 vessels that have historically fished in the Modified Spring Gulf of Mexico Gear Restricted Areas during the months of April and May. Specifically, if the vessels do not redistribute any of their fishing effort to other areas outside the Modified Spring Gulf of Mexico Gear Restricted Areas, the loss in revenue would be approximately $528,000 ($141,000 from swordfish; $53,000 from bluefin; and $317,000 from yellowfin). If some of the vessels are able to redistribute a portion of their fishing effort to other areas, the loss in revenue could be reduced to approximately $282,000 ($42,000 from swordfish; $37,000 from bluefin; and $202,000 from yellowfin).

Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term beneficial economic impacts by potentially reducing fuel costs and time at sea for vessels that need to transit the closed or restricted areas.

The IBQ alternatives would issue bluefin shares to 135 eligible pelagic longline vessels (permitted at the time of the DEIS and deemed “active,” defined as having reported in the HMS Logbook successfully setting pelagic longline gear at least once between 2006 and 2012). Vessels would be allocated shares of 1.2%, 0.60%, or 0.37% of the Longline category quota, and based on the revised baseline Longline category bluefin quota of 137 mt, vessels would be allocated 1.64 mt, 0.82 mt, or 0.51 mt of bluefin, respectively. The IBQ quota shares based on 137 mt would constrain approximately 25 % of pelagic longline vessels (34% of vessels with

Gulf of Mexico IBQ and 20% of vessels with Atlantic IBQ). In other words, 25 percent of vessels would need to lease additional bluefin quota in order to land their historical average amount of designated species (if they do not change their behavior to reduce their historical rate of bluefin interactions). In total, the vessels would need to lease an additional 51 mt of bluefin. Seventy-five percent of pelagic longline vessels would need no additional bluefin quota in order to land their historical average amount of designated species, and those vessel with a 'surplus' (or not fishing) would be able to lease allocation and obtain additional revenue (approximately 82.7 mt of bluefin allocation would be available for leasing). If no leasing of bluefin allocation were to occur, there could be a reduction of 1.8 million pounds of designated species landing per year with an associated reduction in revenue of approximately 22 percent ($7.6 million dollars, or about $56,000 per vessel).

If NMFS prohibited the use of pelagic longline gear for the fishery as a whole under the alternative "NMFS Closure of the Pelagic Longline Fishery" when the entire Longline category quota is attained, the impact would depend principally upon the duration of the fishing season prior to the closure. For example, if the use of pelagic longline gear is prohibited at the end of March, approximately 19% of the annual revenue from all species would have been obtained by the fishery, but 81% of the annual revenue from fishing with pelagic longline gear would be foregone ($28 million). If the use of pelagic longline gear is prohibited at the end of August, approximately 60% of the annual revenue from all species would have been obtained, while approximately 40% of the annual revenue would be foregone ($16 million). This alternative could result in a major short-term adverse direct economic impact to the pelagic longline fishery and this economic impact would continue into the long-term if landings and dead discard rates continue along the current trend. Adverse economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries would likely occur when a closure happens.

The requirement for Longline category vessels to install cameras and participate in an electronic monitoring program would cost vessels an average of about $5,500 a year, and a total of about $734,500 fleet-wide. This alternative would result in moderate direct and indirect adverse economic impacts to pelagic longline vessel owners in the short- and long-term.

The requirement for Longline vessels to make various declarations and report bluefin through a VMS unit would cost vessels approximately $44 per month, however, the costs vary based on the E-MTU VMS unit and communication service provider selected, and the amount of vessel activity.

Socio-Economic Impacts of Preferred Alternatives on the General Category

The Permanent Reallocation alternative would result in reducing the General category quota by approximately 32 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.35% reduction in quota, and would reduce potential revenue by approximately $542,000.

The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the General category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the General category were allocated 47.1 percent of the 85.9 mt, its gain in bluefin quota would be 40 mt (with a value of approximately $678,000 and enough to offset the 32-mt reduction in quota that would result from the “Permanent Reallocation Alternative”).

The alternative “Modifications to the Reserve Category” could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.

The Automated Catch Reporting requirement would result in minor, long-term adverse, economic and social impacts associated with the burden of reporting all bluefin catch.

Providing additional flexibility for General category quota adjustment would have neutral to minor, short-term impacts, with beneficial social and economic impacts for January fishery participants and negative impacts for those participating in June through December.

The change in the Purse Seine category start date would result in neutral to minor adverse economic and social impacts to the General category associated with additional market competition and gear conflict.

Socio-Economic Impacts of Preferred Alternatives on the Harpoon category

The Permanent Reallocation alternative would result in reducing Harpoon category quota by 2.6 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.5% reduction in quota, and would reduce potential revenue by approximately $46,000. The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the Harpoon category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the Harpoon category were allocated 3.9% of the 85.9 mt, its gain in bluefin quota would be 3.4 mt (with a value of approximately $55,000 and would offset the 2.6 mt reduction in quota that results from the “Permanent Reallocation Alternative”).

The alternative “Modifications to the Reserve Category” could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.

The Automated Catch Reporting requirement would result in minor, long-term adverse, economic and social impacts associated with the burden of reporting all bluefin catch.

The ability to adjust the Harpoon category retention limit of large medium bluefin inseason could result in minor, short-term adverse economic and social impacts, but to the extent that the result may be a longer season, this could be mitigated by increased ex-vessel price/lb.

The change in the Purse Seine category start date would result in neutral to minor adverse economic and social impacts on the Harpoon category associated with additional market competition and gear conflict.

Socio-Economic Impacts of Preferred Alternatives on the Purse Seine category

The Permanent Reallocation alternative would result in reducing Purse Seine quota by 12.6 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.4% reduction in quota, and would reduce potential revenue by approximately $215,000.

The Annual Reallocation alternative would make up to 75% of the Purse Seine category quota available to other categories and would result in direct, minor, adverse impacts in the short term. For example, under the U.S. bluefin quota of 923.7 mt, if 75% of the Purse Seine category quota (128.8 mt) were reallocated to other categories, the loss in potential revenue from bluefin would be approximately $2.0 million. This loss in potential revenue would not result in the reduction of actual revenue, however, because the Purse Seine category has had little or no revenue from bluefin in recent years. If the Purse Seine vessels increase their catch to specified threshold levels, the quota in the subsequent year would be increased and potential losses in revenue would be reduced accordingly.

The IBQ alternative, which would include the opportunity to lease quota allocation from the Purse Seine category to the Longline category, would provide revenue for Purse Seine participants. Even if 75% of the Purse Seine quota is reallocated to other categories under the "Annual Reallocation Alternative," the Purse Seine category would be allocated 25% of its baseline quota, which could then be leased by individual Purse Seine participants to Longline category vessels.

The alternative "Modifications to the Reserve Category" could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.

The change in the Purse Seine category start date would result in neutral to minor beneficial economic and social impacts.

Socio-Economic Impacts of Preferred Alternatives on the Angling category

The Permanent Reallocation alternative would result in reducing the Angling category quota by 13.4 mt as part of the 68-mt contribution to the Longline category. This would represent a 7.4% reduction in quota, and would reduce fishing opportunities and reduce revenue to businesses that support recreational angling.

The Annual Reallocation alternative would make a portion of the Purse Seine category quota available to other categories, including the Angling category, and could result in direct, moderate, beneficial impacts in the short term. For example, under a U.S. bluefin quota of 923.7 mt, if 50% of the Purse Seine category quota were reallocated to other categories (i.e., 85.9 mt), and the Angling category were allocated 19.7% of the 85.9 mt, its gain in bluefin quota would be

16.9 mt (enough to offset the 13.4 mt reduction in quota that results from the “Permanent Reallocation Alternative”).

The alternative “Modifications to the Reserve Category” could provide minor to moderate beneficial economic and social impacts in the short term if the additional Reserve category quota could be used to offset any overharvests in another category.

The Trophy category subquota redistribution could have minor, short-term, beneficial social impacts for Gulf of Mexico participants and minor, short-term, adverse economic (charter vessels) and social impacts for participants in the southern area outside the Gulf of Mexico.

The change in the Purse Seine category start date would result in neutral to minor adverse and social impacts on the Angling category associated with gear conflict.

Socio-Economic Impacts of Preferred Alternatives on the Charter/Headboat category

The impacts of the preferred alternatives would impact the Charter/Headboat category in a unique way, given the potential applicability of either the Angling category restrictions and the General category regulations on a particular trip, based on the fishing choices made by the vessel operator to target commercial-sized bluefin (measuring 73” or greater) or recreational-sized bluefin (measuring 27 to less than 73”). The socio-economic impacts that would apply to Charter/Headboat category are described under the General and Angling category sections.

The information this discussion is based upon may be found in Sections 5.6. Although the focus of this analysis is on the preferred alternatives, and does not detail the impacts of all potential combinations of management measures, the information contained in Sections 5.6 discuss the impacts of all the measures. Table 5.40 lists the preferred alternatives and summarizes the – social and economic impacts.

Symbol Key for Table 5.40

o	Neutral Impacts	◐ –	Minor Adverse Impacts
◐ +	Minor Beneficial Impacts	◑ –	Moderate Adverse Impacts
◑ +	Moderate Beneficial Impacts	●–	Significant Adverse Impacts
●+	Significant Beneficial Impacts		

Table 5.40 Economic Impacts of the Preferred Alternatives

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
A 2a	Codified Reallocation to Longline Category Reflecting the Historical 68 mt Dead	All	Direct	Short- and Long-term	◐ +

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
	Discard Allowance				
A 3a	Annual Reallocation of Bluefin Quota from Purse Seine Category	Purse Seine, Longline	Direct	Short- and Long-term	◓ +
A 4b	Modify Reserve Category	Reserve Category	Indirect	Short- and Long-term	◓ +
B 1c	Cape Hatteras Gear Restricted Area	Longline	Direct	Short- and Long-term	◓ –
B 1d	Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance	Longline, General	Direct	Short- and Long-term	◓ +
B 1i	Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas	Longline	Direct	Short- and Long-term	◓ –
B 1i	Pelagic and Bottom Longline Transiting Closed Areas	Longline	Direct	Short- and Long-term	◓ –
B 2a	Gear Measures – No Action	Longline	Direct	Short- and Long-term	
C 2	Individual Bluefin Quotas (IBQs)	Longline Purse Seine	Direct	Short- and Long-term	ø –
D 1b	Vessel Monitoring System (VMS) Requirements	Longline Purse Seine	Direct	Short- and Long-term	◓ –
D 2b	Electronic Monitoring of Longline Category	Longline	Direct	Long-term	◓ –
D 3b	Automated Catch Reporting	General Harpoon Charter/Headboat	Direct	Short- and Long-term	◓ –
E 1c	Provide Additional Flexibility for General Category Quota Adjustment	General	Direct	Short- and Long-term	o

Alternative	Description	Affected Quota Category	Quality	Timeframe	Impacts
E 2b	NMFS Ability to Adjust Harpoon Category Retention Limits Inseason	Harpoon	Direct	Short- and Long-term	o
E 3b	Allocate a Portion of the Trophy South Sub-Quota to the Gulf of Mexico	Angling	Direct	Short-term	o
E 4b	Change Start Date of Purse Seine Category to June 1	Purse Seine	Direct	Short-term	o
E 5b	Modify Rules Regarding Permit Category Changes	General, Harpoon, Angling, Charter/Headboat	Direct	Short-term	o
E 6b	Implement U.S. Northern Atlantic Albacore Tuna Quota	All	Direct	Short- and Long-term	◓ +
E 7b	Minor Regulatory Changes	All	Direct	Short- and Long-term	◓ +

5.7 Chapter 5 References

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6 CUMULATIVE IMPACTS

A cumulative effects assessment (CEA) is a required part of an EIS according to the Council on Environmental Quality (CEQ) regulations (40 CFR part 1508.7). Cumulative impacts are the impacts on the environment which result from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts include the total effect on a natural resource, ecosystem, or human community due to federal, non–federal, public, and private entities. Cumulative impacts may also include the effects of natural processes and events, depending on the specific resource. The goal of this section is to describe the cumulative ecological, economic, and social impacts of past, present, and reasonably foreseeable future actions in association with the preferred alternatives presented in this document. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective but rather, the intent is to focus on those effects that are truly meaningful. This chapter serves to examine the potential direct and indirect effects of the alternatives in Amendment 7 together with past, present, and reasonably foreseeable future actions that affect the environment. It should also be noted that the predictions of potential synergistic effects from multiple actions, past, present and/or future will generally be qualitative in nature due to the difficulty in quantitatively analyzing the anticipated effects of such actions

As described in detail in the Affected Environment (Chapter 3), the valued ecosystem components considered in this cumulative impacts analysis are the following: bluefin tuna, other highly migratory species, Protected Species, Essential Fish Habitat, and the human community. The scope of the components is a result of the geographic distribution of the HMS fishery and the gear types and fishing practices utilized in the fishery. The species caught by the fishery and the impacts of the fishery fall within the scope of the above ecosystem components.

The temporal scope of the valued ecosystem components includes actions that have taken place since the adoption of the ICCAT rebuilding plan for bluefin tuna in 1998, but focuses on actions since 2006, when the Consolidated HMS FMP was implemented. The bluefin fishery is management pursuant to both ATCA and Magnuson-Stevens Act, and the context set by the rebuilding plan (1998) and FMP amendment (2006) provide a logical time period for the analysis. The geographic scope of the analysis is the range of western bluefin tuna in the U.S. EEZ, as described in the Affected Environment section (Chapter 3) of this FEIS.

6.1 Past, Present, and Reasonably Foreseeable Actions

Most of the past, present, and reasonably foreseeable actions contributing to the cumulative effects and considered in this section and Section 6.2 are fishery-related activities (e.g., Federal fishery management actions). These activities have fairly straightforward effects on environmental conditions, and were, are, or will be taken, in large part, to improve those conditions. The cumulative impacts the past, present, and future Federal fishery management actions, including the Amendment 7 Preferred Alternatives, on the ecosystem components considered in this analysis will be positive long-term outcomes. Nevertheless, regulatory actions can be associated with negative socio-economic impacts. For example, reducing dead discards or increasing the quota accountability of a fishery may result in negative short-term socio-economic impacts for fishery participants. However, these impacts are usually necessary to bring about long-term sustainability of the resource and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the managed resource.

Non-fishing activities also contribute to the cumulative effects and were considered when determining the combined effects from past, present, and reasonably foreseeable future actions, including the preferred alternatives. Activities that have meaningful effects on the ecosystem components include the introduction of chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment. These activities pose a risk to all of the ecosystem components in the long term. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these ecosystem components to the impacts of fishing effort.

6.1.1 Fishing Activities

International Management

Atlantic tunas, including bluefin tuna, are managed federally under the dual authority of the Magnuson-Stevens Act and ATCA, which authorizes the Secretary to promulgate regulations as may be necessary and appropriate to implement recommendations of International Commission for the Conservation of Atlantic Tunas (ICCAT). ICCAT is an inter-governmental fishery organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas. ICCAT adopts management measures (called "recommendations") for tunas and tuna-like species based on scientific advice. Those recommendations are binding on parties, including the United States, and address aspects of fishery management such as quotas, minimum sizes, trade restrictions, statistical documents, vessel lists, etc. ICCAT also compiles fishery statistics from its members and from entities fishing for these species in the Atlantic Ocean and coordinates research, including stock assessments, on behalf of its members. Thus, ICCAT's management actions contribute to the cumulative effects considered here.

For purposes of the cumulative effects analysis, the adoption of the ongoing ICCAT bluefin tuna rebuilding plan in 1998 provides the relevant time frame. Since 1998, NMFS management actions (pursuant to ATCA and the Magnuson-Stevens Act) pertaining to bluefin have had minor positive ecological impacts by continuing to limit bluefin mortality by fishermen in accordance with the strict quota limits set by ICCAT. The ICCAT quota in turn provides the United States' allocation which then limits bluefin mortality by the United States' fishery participants. Table 6.1 is a brief summary of some ICCAT recommendations that have affected U.S. domestic bluefin tuna management and the western Atlantic bluefin tuna stock; currently ICCAT recommendations 11-06 and 13-09 are the active primary management measures for western Atlantic bluefin tuna management. The preferred alternatives listed in this document are consistent with the active ICCAT recommendations and continue to advance the United States' participation in the 20-year rebuilding program (1999 – 2018).

The 1999 FMP adopted ICCAT's 20-year stock rebuilding program for western Atlantic bluefin, which included, among other things, NMFS' plan to implement ICCAT's bluefin quota allocation on a yearly basis through a framework procedure. In 2006, the FEIS for the 2006 Consolidated HMS FMP (NMFS 2006) concluded that the cumulative long-term impact of the final implementing actions, including the ICCAT bluefin rebuilding program and annual quota allocation process, would be to establish sustainable fisheries for Atlantic HMS.

Because the western and eastern stocks of Atlantic bluefin tuna mix, western Atlantic bluefin are also affected by fishing pressure in the eastern Atlantic. There was rampant overfishing in the eastern Atlantic/Mediterranean during the 1990's and early 2000s. However, in recent years, catches in the eastern Atlantic have been reduced to levels consistent with scientific advice, and new monitoring and control measures have been adopted to address illegal, unreported and unregulated fishing on that stock. SCRS scientists advise that improved stock conservation in the eastern Atlantic would likely benefit the western stock as well.

Table 6.1 A list of some ICCAT recommendations that have affected domestic U.S. bluefin tuna management

ICCAT Rec	Description	Effective (Quota Year)
74-01	Minimum size limit of 6.4 kg (14 lb) with 15% tolerance (number or weight)	1975
81-01	Catches prohibited , except 800 mt annually to enable scientific studies	1982
82-01	Scientific monitoring quota established; Limit of bluefin < 120 cm set at 15% of TAC; No directed fishing on BFT in Gulf of Mexico	1983
91-01	Reduction of quota for following period if exceed quota (overage); Minimum size of 30 kg (66 lb) or 115 cm (45") with 8% tolerance by weight	1992
93-05	Unused quota can be carried over to the subsequent year	1994
96-04 and 96-14	Discard monitoring, reporting, and minimization requirements; penalty for exceeding quota in 2 consecutive management periods.	1997
98-07	Initiation of 20-year rebuilding program; Dead discards to be deducted from TAC: 79 mt or 2.82% of TAC (whichever is bigger); Dead discards distributed between the United States, Canada, and Japan (85.72%, 7.14%, and 7.14%, respectively); Small fish tolerance (8%) now to be an average over 4 years	1999
02-07	United States and Canada receive bycatch quotas (25 and 15 mt, respectively) to account for longline bycatch in vicinity of management area boundary	2003

ICCAT Rec	Description	Effective (Quota Year)
06-06	Amount of underharvest that each Contracting Party may carry forward limited to 50% of its initial quota; Elimination of dead discard allowance; Small fish tolerance now 10% by weight, over a four-year period (2007-2010)	2007
08-04	Amount of underharvest that each Contracting Party may carry forward limited to 10% of TAC after 2010; Period of small fish tolerance (10%) changed to two years (2009-2010)	2009
10-03	If the SCRS stock assessment detects a serious threat of stock collapse, the Commission shall suspend all bluefin fisheries in the western Atlantic for the following year; Small fish tolerance (10%) maintained for 2011-2012 period; Report catches of bluefin to ICCAT monthly; Enhance biological sampling	2011
11-06 (active)	Exemptions for scientific institutions (20 mt research mortality allowance (RMA); size, gear, and closures) to allow research	2011
12-02	Prohibits the taking and landing of bluefin less than 67 cm (27”); changed quota transfer provisions such that transferred underharvest must be used to support cooperative research	2013
13-09 (active)	Prohibits the sale of recreationally harvested fish of any size and reiterates an existing requirement that all vessels use a data recording system	2014

Source: ICCAT web page (http://www.iccat.int/en/RecsRegs.asp).

In October 2009, Monaco submitted a proposal to list Atlantic bluefin tuna in Appendix I of the Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), which would prohibit international trade of the species. At the March 2010 CITES 15th Conference of Parties meeting in Doha, Qatar, the proposal was not adopted. The U.S. Department of the Interior, which is the lead Federal agency on CITES issues, subsequently issued a press release indicating that the United States will continue to work with ICCAT parties to conserve and recover bluefin. ICCAT reviewed the status of Atlantic bluefin stocks in 2012 and addressed the western Atlantic bluefin TAC at the November 2012 ICCAT meeting. The results of the 2012 bluefin stock assessment and bluefin recommendations stemming from the 2012 ICCAT annual meeting are available and did not substantially change from previous assessments and recommendations. The assessment included the use of two alternative recruitment scenarios, one assuming low potential recruitment and one assuming high potential recruitment. Therefore, the stock assessment produced two sets of results, and the current status of the stocks depends upon which recruitment scenario is considered. Under the low recruitment scenario, the stock is not overfished, and overfishing is not occurring, while under the high recruitment scenario, the stock is overfished and overfishing is occurring. The SCRS stated that it has not strong evidence to favor either scenario, but notes that both are reasonable (but not extreme) lower and upper bounds on rebuilding potential. The stock assessment will be updated in the fall of 2014, and the next full assessment is scheduled for 2015.

ICCAT's bluefin tuna catch document program is scheduled to be implemented electronically in on March 1, 2015 (Recommendation 13-17). The catch document program was first implemented in 2007 as a means to track bluefin tuna from capture through farming operations, landing and trade. Transformation of the program into an electronic system is expected to more accurately monitor trade of bluefin tuna product. In conjunction with domestic implementation of the International Trade Data System under Executive Order 13659 (Streamlining the Export/Import Process for America's Businesses), which will require electronic submission of all U.S.-required trade documentation, trade data for bluefin tuna is expected to be available on a real time basis, and compliance with bluefin tuna import admissibility requirements will likely increase.

Domestic Management

A review of domestic management of Atlantic tunas, including western Atlantic bluefin tuna, is available in Chapter 3 of this DEIS. Atlantic bluefin fisheries are managed through a quota-based system whereby quota specifications are established annually, and the fishery is closely monitored and managed with inseason actions or temporary rules. A list of some recent, major rulemakings that have affected the bluefin fishery since the FEIS for the Consolidated HMS FMP was published is presented in Inseason actions are not included in this list, because these actions are designed to achieve the objectives of the 2006 Consolidated HMS FMP (which established the management framework for the bluefin fishery). The potential effects of these actions were already considered in the analysis of the 2006 Consolidated HMS FMP.

Table 6.2 The following past and ongoing actions had or would have varying degrees of synergistic impacts on the human environment when considered in conjunction with Amendment 7 to the 2006 Consolidated HMS FMP

Federal Register Citation	Date Published	Rule or Notice
71 FR 30619	5/30/2006	Atlantic Bluefin Tuna Quota and Effort Controls for the General and Angling Categories
71 FR 58085	10/2/2006	Final Rule for the 2006 Consolidated HMS FMP
72 FR 7417	2/15/2007	Revised List of Equipment Models for Careful Release of Sea Turtles in the Pelagic and Bottom Longline Fisheries
72 FR 33401	6/18/2007	Atlantic Bluefin Tuna Quota and Effort Controls
72 FR 74193	12/31/2007	2008 Atlantic Bluefin Tuna Quota Specifications and Effort Controls
73 FR 31380	6/2/2008	International Trade Permit Program; Bluefin Tuna Catch Documentation Program
73 FR 54721	9/23/2008	Final Rule; Pelagic and Bottom Longline Fisheries; Gear Authorization and Turtle Control Devices

Federal Register Citation	Date Published	Rule or Notice
74 FR 26110	6/1/2009	2009 Atlantic Bluefin Tuna Quota Specifications and Effort Controls
74 FR 26174	6/1/2009	ANPR for Atlantic HMS Management and Permitting
74 FR 28018	6/12/2009	Final Rule for Amendment 1 to the 2006 Consolidated HMS FMP; Essential Fish Habitat
75 FR 30732	6/2/2010	2010 Atlantic Bluefin Tuna Quota Specifications
76 FR 2313	1/13/2011	Bluefin Tuna Bycatch Reduction in the Gulf of Mexico Pelagic Longline Fishery
76 FR 18653	4/5/2011	Bluefin Tuna Bycatch Reduction in the Gulf of Mexico Pelagic Longline Fishery (Weak Hook Rule)
76 FR 30919	7/5/2011	2011 Atlantic Bluefin Tuna Quotas and Management Measures
76 FR 75492	12/2/2011	Final rule to Require New Vessel Monitoring System (VMS) Units and Establish Additional Requirements in Atlantic HMS Fisheries
77 FR 24161	4/23/2012	Notice of Intent for Amendment 7 to the 2006 Consolidated HMS FMP
77 FR 44161	7/27/2012	Final Rule for the 2012 Bluefin Tuna Quota Specifications
77 FR 47303	8/8/2012	Final Rule to Require Electronic Dealer Reporting for Atlantic HMS Dealers
77 FR 52259	8/29/2012	Final Rule Regarding the Trade of HMS
77 FR 59842	10/1/2012	Final Rule for Amendment 4 to the 2006 Consolidated HMS FMP; Caribbean HMS Management
78 FR 12273	2/22/2013	Proposed Rule for Amendment 8 to the 2006 Consolidated HMS FMP; Swordfish Handgear Management
78 FR 29100	5/17/2013	90-Day Finding on Petitions to List the Dusky Shark as Threatened or Endangered under the Endangered Species Act
78 FR 36685	6/19/2013	Final Rule for the 2013 Bluefin Tuna Quota Specifications
78 FR 40318	7/3/2013	Final Rule for Amendment 5a to the 2006 Consolidated HMS FMP; Shark Management
78 FR 50032	8/16/2013	Negative 90-Day Finding on a Petition to List the Whale Shark as Threatened or Endangered Under the Endangered Species Act
78 FR 52032	8/21/2013	Proposed Rule for Amendment 7 to the 2006 Consolidated HMS FMP

Federal Register Citation	Date Published	Rule or Notice
78 FR 52012	8/21/2013	Final Rule for Amendment 8 to the 2006 Consolidated HMS FMP for Management of Atlantic Swordfish
78 FR 68757	11/15/2013	Final Rule to Modify Vessel Monitoring System Requirements in Atlantic HMS Fisheries
79 FR 15959	3/24/2014	Notice of Initiation of 5 Year Essential Fish Habitat Review
79 FR 38255	7/7/2014	Final Rule for the 2014 Bluefin Tuna Quota Specifications

List does not include inseason actions; see HMS SAFE Reports for a comprehensive listing of all bluefin tuna Federal Register notices by year. Source: HMS SAFE Reports.

NMFS published the 2006 Consolidated HMS FMP on July 14, 2006 (71 FR 40096). The 2006 Consolidated HMS FMP combined management measures and regulations for all Atlantic HMS in the current management unit. More recent rulemakings (since 2009) and other domestic management activities that affected bluefin are listed below, and, where appropriate, related to the alternatives considered in Amendment 7. These more recent events are more relevant to the context of Amendment 7 than are older events, because many management measures function to replace previous measures and do not act synergistically with all of the previous management actions.

- On June 1, 2009, NMFS released an Advance Notice of Proposed Rulemaking (ANPR) (74 FR 26174). The ANPR requested public comment on potential adjustments to the regulations primarily governing the U.S. Atlantic tuna and bluefin tuna, and North Atlantic swordfish to enable more thorough utilization of the available bluefin tuna and swordfish quotas. Some management measures that were included in the ANPR were included in the proposed rule to adjust the Atlantic bluefin tuna regulations (Nov. 4, 2009, 74 FR 57218). At the time, NMFS declared its intent to explore new regulatory programs that would balance efforts to end overfishing of, and rebuild bluefin tuna while providing an opportunity to harvest the U.S. quota and revitalize the swordfish fishery.
- On June 12, 2009, NMFS published the Notice of Availability for Final Amendment 1 to the 2006 Consolidated HMS FMP for EFH (74 FR 28018). The amendment updated EFH for Atlantic HMS including designation of a new Habitat Area of Particular Concern (HAPC) for bluefin in the Gulf of Mexico. The amendment also analyzed potential fishing impacts on EFH and concluded that HMS gears were not having more than a minimal and temporary effect on EFH. As a result, no management measures were proposed to minimize fishing impacts on EFH.
- On May 24, 2010, NMFS received a petition from the Center for Biological Diversity (CBD) to list bluefin as threatened or endangered under the Endangered Species Act (ESA) and designate critical habitat concurrently with its listing. On September 21, 2010, NMFS announced a 90-day finding (75 FR 57431) that the petition presents substantial

scientific information indicating the petitioned action may be warranted. NMFS conducted a species status review of bluefin to determine if the petitioned action is warranted. On May 27, 2011, NOAA announced that listing bluefin as endangered or threatened is not warranted at this time. NOAA committed to revisit this decision when more information would be available about the effects of the Deepwater Horizon/BP oil spill. NOAA also announced on May 27, 2011, that it is formally designating both the western Atlantic and eastern Atlantic and Mediterranean stocks of bluefin as "species of concern" under the ESA. This places the species on a watchlist for concerns about its status and threats to the species.

- In April 2011, NMFS published a final rule requiring the use of weak hooks on pelagic longline vessels fishing in the Gulf of Mexico (76 FR 18653; April 5, 2011). The purpose of that action was to reduce pelagic longline catch of bluefin in the Gulf of Mexico, the only known spawning area for the western Atlantic bluefin stock. Both that action and the NED action (see below) were intended to address bluefin bycatch issues in pelagic longline fisheries, including managing bluefin catch (landings and dead discards) within available quotas.
- On July 5, 2011, NMFS published a final rule for Atlantic bluefin quotas and Atlantic tuna fisheries management measures. NMFS modified Atlantic bluefin base quotas for all domestic fishing categories; established bluefin quota specifications for the 2011 fishing year; reinstated pelagic longline target catch requirements for retaining bluefin in the NED; amended the Atlantic tunas possession-at-sea and landing regulations to allow removal of Atlantic tunas tail lobes; and clarifying the transfer-at-sea regulations for Atlantic tunas (76 FR 39019).
- On December 2, 2011, NMFS published a final rule on VMS requirements (76 FR 75492) to facilitate enhanced communication with HMS vessels at sea, provide HMS fishery participants with an additional means of sending and receiving information at sea, ensure that HMS VMS units are consistent with the current VMS technology and type approval requirements that apply to newly installed units, and to provide NMFS enforcement with additional information describing gear onboard and target species.
- On August 21, 2013, NMFS published the final rule for Amendment 8 to the 2006 Consolidated HMS FMP (78 FR 52012). Amendment 8 implemented new and modified commercial vessel permits that allow permittees to retain and sell a limited number of swordfish caught on handgear. The purpose of Amendment 8 is to provide additional opportunities for U.S. fishermen to harvest swordfish using selective handgears that are low in bycatch, given the rebuilt status of swordfish and their resulting increased availability. These management measures are intended to allow the United States to more fully utilize its domestic swordfish quota allocation, which is based on ICCAT recommendations. NMFS anticipates Amendment 8 would primarily affect the commercial handgear fishery, although the pelagic longline fishery could experience minor, adverse cumulative socio-economic effects as a combined result of Amendment 7 and Amendment 8.
- On November 15, 2013, NMFS published a final rule modifying VMS requirements for HMS fisheries (78 FR 68757). The modifications reduce reporting burden by allowing vessels to "declare out" of an HMS fishery and associated VMS reporting requirements if it is not fishing for HMS. It also requires hourly position reporting and hail in/hail out when a vessel is fishing for or retaining HMS. These modified provisions are more in

line with other Atlantic fisheries. The provisions apply to pelagic longline and purse seine vessels which are also affected by Amendment 7.

In addition, reasonably foreseeable future actions that may result in additional incremental cumulative impacts include:

- Amendment 5b to the 2006 Consolidated HMS FMP: This amendment will address overfishing of dusky sharks. This amendment could affect individuals in shark or pelagic longline fisheries in conjunction with the preferred alternatives affecting the pelagic longline fishery. The dusky shark management measures considered previously included time/area closures that, if proposed in Amendment A5b, could result in moderate, adverse cumulative socio-economic effects on the fishery.
- On November 14, 2012, NMFS received a petition from WildEarth Guardians to list the dusky shark as threatened or endangered under the ESA throughout its entire range, or, as an alternative, to list the Northwest Atlantic/Gulf of Mexico Distinct Population Segment (DPS) as threatened or endangered. The petitioners also requested that critical habitat be designated for the dusky shark under the ESA. On February 1, 2013, NMFS received a petition from Natural Resources Defense Council to list the northwest Atlantic DPS of dusky shark as threatened, or, as an alternative, to list the dusky shark range-wide as threatened, and a request that critical habitat be designated. These two petitions were combined and analyzed, and a positive 90-day finding was published on April 17, 2013. The outcome of the petition has the potential to affect HMS fisheries that have incidental interactions with dusky sharks, including fisheries managed under this Amendment.
- The 2014 ICCAT meeting will adopt new measures for western Atlantic bluefin and skipjack tunas. New measures could potentially affect all bluefin fishery participants and pelagic longline fishery participants that also fish for swordfish and northern albacore. The specific measures are not known at this time.
- NMFS review of the ESA designation of bluefin as a “species of concern” when more information is available about the effects of the Deepwater Horizon oil spill.
- NMFS is considering additional actions to implement industry-funded observer programs and IBQ trading provisions as described in Chapters 2, 4, and 5.
- Fishery related Natural Resources Damage Assessment activities in the Gulf of Mexico as a result of the Deepwater Horizon oil spill.
- Since pelagic longline fishermen that incidentally land bluefin tuna often participate in the dolphin/wahoo fishery managed by the South Atlantic Fishery Management Council (SAFMC), NMFS also expects that there are cumulative effects from management actions implemented by the SAFMC, when fishermen have to adapt pelagic longline fishing practices to comply with both fisheries regulations. For example, pelagic longline vessels permitted in the shark and swordfish fisheries are subject to the HMS hook size regulations, which have impacted their ability to simultaneously fish for dolphin by attaching smaller-hooked gangions directly to their pelagic longline gear.

NMFS published a final rule (77 FR 15916; March 12, 2012) to implement the SAFMC’s Comprehensive ACL Amendment to the FMPs for the Snapper-Grouper Fishery, the Golden Crab Fishery, the Dolphin and Wahoo Fishery, and the Pelagic Sargassum Habitat. This final rule specified ACLs and AMs for dolphin and wahoo; prohibited recreational sales of dolphin harvested from for-hire vessels; and established a minimum size limit for dolphin of 20 inches (50.8 cm) fork length to include the Federal waters off South Carolina to ensure consistency in the regulations as well as help prevent the large scale harvest of very small dolphin. A final rule published on June 9, 2014 (79 FR 32878) to implement Amendment 5 to the Fishery Management Plan for the Dolphin and Wahoo Fishery off the Atlantic States. The final rule would increase the allowable biological catches, ACLs, and AMs for dolphin and wahoo based on new data inputs. The increase is expected to have minor positive economic impacts on fishermen who harvest these species.

Improved blueline tilefish stock status can be expected as a result of an April 17, 2014 emergency rule (79 FR 21636) that removed blueline tilefish from the deep-water grouper complex and established a separate commercial annual catch limit for this species. In December 2013 the SAFMC evaluated a new stock assessment for blueline tilefish and found that the stock was overfished and undergoing overfishing. The emergency rule is effective through October 14, 2014, unless superseded by another rulemaking. Approximately half of the blueline tilefish landed commercially are caught with longline gear, and most are landed in North Carolina. Although pelagic longline fishermen who fish for blueline tilefish (and incidentally land bluefin tuna) may be negatively impacted by this action in the short term, improved stock status would result in future positive ecological and socio-economic impacts.

Additional management measures taken by other Regional Fishery Management Councils and Interstate Marine Fisheries Commissions, such as the eight Marine Protected Areas implemented by the SAFMC's Amendment 14, de-hooking requirements by the Gulf of Mexico Fishery Management Council, the Interstate Shark Plan implemented by the Atlantic States Marine Fisheries Commission, and the requirement to use non-stainless steel, circle hooks in the reef fish fishery as well as other rules that have been recently implemented for protected species and to protect EFH, would all have moderate adverse cumulative socioeconomic impacts on fishery participants including pelagic longline, angling, charter/headboat and bottom longline vessels. However, these measures were implemented to help reduce interactions with protected species or increase post-release survival of non-target species and protected species, to help rebuild overfished fish stocks and end overfishing, or to protect EFH for deep-water species. Such measures would help conserve fishery resources in the long-term, which could ultimately have beneficial cumulative economic and social impacts for fishermen in the long-term.

State Fisheries Management

Atlantic tunas are under Federal jurisdiction from the outer boundary of the EEZ to the shoreline, including state waters, with the following three exceptions: state waters of Maine, Connecticut, and Mississippi. Federal HMS regulations apply in all other state waters of the Atlantic, Gulf of Mexico, and Caribbean. NMFS periodically reviews state tuna regulations for federal consistency as required under ATCA. A summary of current regulations for HMS in each state is available in Chapter 1 of the 2013 SAFE report. NMFS participates in management of migratory species such as coastal sharks via the interstate fishery management programs of the Atlantic and Gulf States Marine Fisheries Commissions. Notwithstanding the above cooperative management actions, the geographic distribution of many of the stocks managed under the 2006 Consolidated HMS FMP is principally in the EEZ, outside of waters within state jurisdiction.

6.1.2 Non-Fishing Activities

Non-fishing activities were also considered when determining the combined effects from past, present, and reasonably foreseeable future actions. Potential sources of non-fishing impacts are numerous and varied, and include the introduction of chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment. Non-fishing activities that may affect EFH are described in Section 10.5 of the 2006 Consolidated HMS FMP (NMFS 2006) and Amendment 1 to the 2006 Consolidated HMS FMP (NMFS 2009). Broad categories of activities that may adversely affect HMS EFH include, but are not limited to: (1) actions that physically alter structural components or substrate, e.g., dredging, filling, excavations, water diversions, impoundments and other hydrologic modifications; (2) actions that result in changes in habitat quality, e.g., point source discharges; (3) activities that contribute to non-point source pollution and increased sedimentation; (4) introduction of potentially hazardous materials; or (5) activities that diminish or disrupt the functions of EFH. If these actions are persistent or intense enough, they can result in major changes in habitat quantity as well as quality, conversion of habitats, or in complete abandonment of habitats by some species.

Gulf of Mexico Oil Spill

On April 20, 2010, an explosion on the BP/Deepwater Horizon MC252 drilling platform in the Gulf of Mexico caused the rig to sink and oil began leaking into the Gulf. Before it was finally capped in mid-July, almost 5 million barrels of oil were released into the Gulf. The spill caused significant impacts to wildlife, fisheries, habitat, and the fishing community along the large coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida.

Available information indicates that Deepwater Horizon oil and/or dispersants has had the potential to impact bluefin tuna. Muhling et al. (2012) studied the overlap between Atlantic Bluefin tuna spawning grounds and observed Deepwater Horizon surface oil in the northern Gulf of Mexico, and their preliminary estimate of the effects of the spill on larval bluefin mortality concluded that less than 12% of larval bluefin were predicted to have been located within contaminated waters in the northern Gulf of Mexico, on a weekly basis. Recent studies found that oil samples from the Deepwater Horizon spill had the potential to impact cardiac development in bluefin tuna embryos (Incardona et al. 2014) and the function of in vitro juvenile bluefin tuna heart cells (Brette et al. 2014).

NOAA continues to study and assess the impacts of the oil and is expected to release a report in the future that includes more definitive information about impacts of the oil spill on bluefin tuna. NOAA and NMFS maintain publicly-accessible websites regarding the oil spill and its impacts at: http://www.noaa.gov/deepwaterhorizon/index.html and http://sero.nmfs.noaa.gov/deepwater_horizon/index.html.

Climate Change

The health, security of marine resources, and socio-economic well-being of those who utilize these resources are closely tied to climate and weather. On May 14, 2014, the U.S. Global

Change Research Program released the third National Climate Assessment. This report confirmed that that our nation is warming, and that climatic changes are triggering wide-ranging impacts in every region of the country. The public, businesses, resource managers, and policy leaders are increasingly seeking information to help them understand how and why climate conditions are changing and how those changes may impact their daily lives. Even though climate change is apparent, and natural climate patterns like El Niño can have a major impact on weather, and in turn marine resources, being able to accurately predict the impact of these events is still rather complex. If oceanographic conditions in the Atlantic or Gulf of Mexico change as a result of climate change, it is conceivable that one or more bluefin tuna life stages may be impacted, due to the extremely wide geographic range that bluefin life history occurs in**,** and the importance of oceanographic conditions to the life cycle of marine organisms. Muhling et al. (2011) used climate model simulations to predict the potential average temperature increase in the upper waters of the Gulf of Mexico, and subsequent suitability for bluefin tuna spawning activity. The researchers predicted that areas of suitable temperature during the late spring, when bluefin tuna currently spawn, could be reduced by over 90% by the end of the 21^{st} century, and that early spring could become more suitable for bluefin tuna spawning activity.

The results of research and analyses on the effects of climate change in marine systems are becoming more widely available as NOAA continues to work with partners across various sectors to provide useful and timely climate information. Without NOAA's long-term climate monitoring, research, and modeling capabilities, quantifying where and how climate conditions have changed, or predicting where and how they're likely to change would be close to impossible. Typically, the past is relied on for evidence needed to predict the future, but when the context for a change is unprecedented, basic understanding of physical, ecological, and sociological processes and their interactions must be used. At this point it can be stated with relative certainty that changes will occur, however the timing or magnitude of changes or environmental responses remain unknown. As NOAA continues to work on assessing climate conditions, results of these analyses would be shared with the SCRS so they can be incorporated into stock assessments as necessary.

6.2 Cumulative Ecological and Socio-Economic Impacts

The actions considered in this FEIS regarding Atlantic tunas management measures are expected to not increase or decrease the overall authorized bluefin tuna harvest levels by bluefin tuna fisheries. Rather, the measures would affect the time, place, and manner in which U.S. fisheries may harvest the U.S. quota and the relative volumes of fish that may be caught by the domestic fisheries. The ecological and socio-economic impacts of these changes are summarized below. A detailed discussion of the ecological impacts of each of the alternatives is contained in Chapter 4, and a detailed discussion of the socio-economic impacts is contained in Chapter 5. The cumulative effects analysis is presented below and summarized by a table at the end of the chapter.

Discussion of Cumulative Ecological Impacts of Preferred Alternatives

The Amendment 7 alternatives were designed to complement each other, and therefore the cumulative ecological impacts are best assessed from the perspective of evaluating the alternatives in combination.

The ecological impacts of the preferred allocation alternatives, including codified reallocation, annual reallocation, and modification of the Reserve category, in conjunction with the preferred quota control and enhanced reporting alternatives would be beneficial to bluefin because of the increased ability to account for bluefin dead discards within the quota system and the reduced risk that landings and dead discards will exceed the U.S. quota. Managing the U.S. bluefin fishery within its quota, which was established as part of the scientifically-recommended TAC in the recommendation regarding the western Atlantic bluefin tuna rebuilding program, would have a long-term positive effect for the species. There would be neutral or moderate beneficial impacts on other HMS and protected species, as a result of potential reductions in fishing effort with pelagic longline. There would be shifts in quota among the various quota categories, but the alternatives would not affect the total amount of bluefin caught, which is set by the overall U.S. bluefin quota (and not an element of Amendment 7) as recommended by ICCAT, and which implements the international bluefin rebuilding program. Overall, the cumulative ecological impacts of preferred allocation, quota control, and enhanced reporting alternatives are expected to be minor and beneficial.

The ecological impacts of the preferred gear restricted area alternatives would be moderately beneficial to bluefin; neutral or beneficial for designated target species, and neutral or beneficial for protected species. Implementation of gear restricted areas, in the areas and times where pelagic longline interactions with bluefin consistently occur, would reduce such interactions and reduce dead discards. The redistribution of effort models take into account the previously implemented pelagic longline closed areas. The Modified Spring Gulf of Mexico Gear Restricted Areas are mostly contained within the bluefin HAPC and would provide additional protection for bluefin by reducing the interactions longline gear has with this species. The cumulative ecological effects of the Modified Cape Hatteras Gear Restricted Area with Access based on Performance, and the Modified Spring Gulf of Mexico Gear Restricted Areas tuna are expected to be moderate and beneficial for bluefin when considered in conjunction with previous rulemakings. The Modified Cape Hatteras Gear Restricted Area with Performance-Based Access and the Modified Spring Gulf of Mexico Gear Restricted Areas would reduce the number of dead discards by 34 percent and 6 percent, respectively, for a combined ‘reduction of approximately 67 mt of bluefin. Benefits for designated target species, prohibited species, and protected resources are expected to be minor and beneficial due to reductions in fishing effort.

The bluefin tuna quota control alternatives would have beneficial impacts on bluefin due to combined effect of a limit on the catch of bluefin by the Longline category and prohibition of the use of pelagic longline gear when that limit is attained. These quota control alternatives would work concurrently with the other preferred alternatives designed to reduce bluefin bycatch and enhance reporting and monitoring, as well as the suite of management measures currently in place (e.g., current time/area closures; gear and bait requirements; prohibition on targeting in Gulf of Mexico; quota allocation; reporting requirements; and season openings and closures) that collectively advance NMFS’ goal to reduce bluefin discards while still providing equitable opportunities for all categories. The IBQ program would provide accountability at the level of an individual vessel and effectively incentivize the avoidance of bluefin by pelagic longline vessels that are targeting other HMS. Because the Atlantic IBQ may not be used for bluefin caught in the Gulf of Mexico, the total proportion of the IBQ that may be used in the Gulf of Mexico is limited. Forty-seven vessels (35% of the total vessels with bluefin shares) have Gulf of Mexico IBQ. If the quota controls constrain pelagic longline fishing effort, which is likely for at least some vessels in the short term, there would be additional beneficial impacts on other HMS and protected species as fishing effort with pelagic longline gear would decrease.

The preferred reporting alternatives would have minor beneficial ecological impacts by improving the quantity and timeliness of dead discard reporting in all commercial categories, and therefore supporting a more robust quota system with reduced management uncertainty, and facilitate compliance with ICCAT recommendations. The other management alternatives, which are designed principally to modify the specific quota category rules (that control when and how each category is allowed to catch its quota, but would not change the overall effort), are expected to have a neutral cumulative ecological impact.

Summary

The cumulative ecological impacts on bluefin are expected to be moderate beneficial in the short and long term and the cumulative ecological impacts on designated target species and protected resources are expected to be neutral, or minor beneficial in the short and long term. The preferred alternatives would reduce dead discards; provide incentives to avoid bluefin; substantially increase the accountability of the quota system and improve quota management overall by reducing the risk that dead discards and landings will exceed the total U.S. quota; and enhance reporting through new requirements and incentives. The preferred alternatives would be consistent with ICCAT's bluefin rebuilding plan, Magnuson-Stevens Act requirements under the national standards including National Standard One, and the 2006 Consolidated HMS FMP, and would support the elimination of overfishing and further stock rebuilding for bluefin.

Discussion of Cumulative Socio-Economic Impacts

The Amendment 7 alternatives were developed to achieve the ecological objectives while at the same time optimizing fishing opportunities. The socio-economic impacts of the preferred reallocation alternatives would have a minor adverse impact on the General, Harpoon, Angling, and Charter/Headboat categories due to reduced quotas. However, there is flexibility within the system to move quota to these categories if the quota is available, such that the adverse impacts may be reduced. The cumulative socio-economic impacts of the reallocation alternatives on the pelagic longline fishery would likely be minor and beneficial, as the reallocation scenarios for the Longline category, would allow for accounting of dead discards, and may help avoid early closures of the category that would otherwise occur to meet domestic and international management objectives. Cumulative socio-economic effects on the Purse Seine category would depend upon its level of activity (i.e., the percentage of its quota caught, including dead discards). The socio-economic impacts would be minor adverse in the short term, if recent low levels of fishing activity continue. In the long term, the impacts would continue to be minor, but could be neutral if the level of fishing activity increased and the full quota were allocated.

The cumulative direct socioeconomic effects of the preferred gear restricted areas is expected to be minor to moderate and adverse, as some affected vessels may not be able to easily redistribute fishing effort to other areas, or; switch to new gear types. Bluefin quota control measures would likely result in adverse cumulative socio-economic impacts for the pelagic longline fishery as a result of an IBQ system and NMFS closure of the fishery when the bluefin quota is attained. All eligible vessels would be allocated bluefin quota share, but based on historical information, some vessels would have to modify their fishing behavior to avoid bluefin, or lease additional quota allocation. NMFS closure of the pelagic longline fishery would result in major adverse socio-economic impacts if the closure occurred early in the year, and moderate or minor impacts if the closure occurred relatively late in the year.

Enhanced reporting and monitoring requirements would result in moderate adverse socio-economic impacts to the Longline category resulting from the new VMS reporting requirements and the electronic monitoring (video camera) requirements. The Purse Seine category would have minor adverse socio-economic impacts from the VMS reporting requirements. The other commercial permit categories would have minor adverse socio-economic impacts from the preferred alternative which would require increased time spent by fishermen to report their catch.

The other management alternatives, which are designed principally to modify the specific quota category rules (that control when and how each category is allowed to catch its quota, but would not change the overall effort), are expected to have neutral to minor and beneficial cumulative socio-economic impacts. These alternatives are expected to allow NMFS greater flexibility in management, and participants more opportunities to maximize socio-economic benefits within the fishery.

Summary

For pelagic longline vessels that have a history of interacting with many bluefin, and continue to interact with bluefin in the future, the cumulative socio-economic impacts would be major and adverse, due to the combined impacts of the IBQ program, the gear restricted areas, and the enhanced reporting measures. For vessels that have a history of avoiding bluefin tuna, and continue to avoid bluefin tuna, the socio-economic impacts would be moderate and adverse, with the principal impact being the costs associated with electronic monitoring and VMS reporting. For the Purse Seine category, the cumulative economic impacts would be minor adverse due to the potential reallocation of quota and the enhanced reporting requirements. For the General, Harpoon, Charter/Headboat, and Angling categories, the cumulative economic impacts would be neutral or minor adverse due to the reallocation alternatives, modifications to the rules that dictate how the category specific quota is managed, and the enhanced reporting requirements.

Table 6.3 below compares the cumulative impacts of the preferred alternatives.

Symbol Key:

Ο	Neutral Impacts	Ο –	Minor Adverse Impacts
Ο +	Minor Beneficial Impacts	Ø –	Moderate Adverse Impacts

Ø + Moderate Beneficial Impacts ● – Significant Adverse Impacts

● + Significant Beneficial Impacts

Table 6.3 Comparison of the cumulative impacts of preferred alternatives.

Alternative	Ecological	Protected Resources and EFH	Socio-economic
Alternative A 2a – Codified Reallocation to Longline Category based on Historical 68 mt Dead Discard Allowance	O / Θ +	O / Θ +	Θ +
Alternative A 3a – Annual reallocation of Bluefin Quota from Purse Seine Category	O / Θ +	O	Θ +
Alternative A 4b – Modify Reserve Category	Θ +	O	Θ +
Alternative B 1d – Modified Cape Hatteras Gear Restricted Area With Access Based on Performance	Ø +	O	Θ +
Alternative B 1i – Modified Spring Gulf of Mexico Gear Restricted Areas	Ø +	Θ +	Θ –
Alternative B 1j – Pelagic and Bottom Longline Transiting Closed Areas	O	O	Θ +
Alternative B 2a – Gear Measures (No Action)	O	O	O
Alternative B 3a – Access to Closed Areas Using Pelagic Longline Gear (No Action)	O	O	O
Alternative C 2 – Individual Bluefin Quotas (IBQ) Assumes all preferred subalternatives (see Table 2.13 for a complete list)	Ø +	O / Θ +	Ø –
Alternative C 4b – NMFS Closure of the Pelagic Longline Fishery	O if open	O if open	O if open

	● + if closed	● + if closed	● – if closed
Alternative D 1b – VMS Requirements for Purse Seine and Longline Categories	ʘ +	O	ʘ _
Alternative D 2b – Electronic Monitoring Requirement for Atlantic Tunas Longline Permit Holders	Ø +	ʘ +	Ø _
Alternative D 3b - Automated Catch Reporting	Ø +	O	ʘ _
Alternative D 4a- Deployment of Observers (No Action)	O	O	O
Alternative D 5a- Logbook Requirements (No Action)	O	O	O
Alternative D 6a - Expand Scope of Large Pelagics Survey (No Action)	O	O	O
Alternative E 1c- Provide Additional Flexibility for General Category Quota Adjustment	O	O	O
Alternative E 2b – NMFS Authority to Adjust Harpoon Category Retention Limits Inseason	O	O	O
Alternative E 3b - Angling Category Trophy Subquota Distribution; Allocate a Portion to the Gulf of Mexico	O	O	O
Alternative E 4b – Change Start Date of Purse Seine Category to June 1	O	O	O
Alternative E 5b – Modify Rules Regarding Permit Category Changes	O	O	O
Alternative E 6b – Implement U.S. North Atlantic Albacore Tuna Quota	ʘ +	O	ʘ +
Alternative E 7 – Minor	O	O	O

Regulatory Changes

6.3 Mitigation and Unavoidable Impacts

Mitigation is an important mechanism that Federal agencies can use to minimize, prevent, or eliminate damage to the human and natural environment associated with their actions. As described in the Center for Environmental Quality regulations, agencies can use mitigation to reduce environmental impact in several ways. Mitigation may include one or more of the following: avoiding the impact by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments. The mitigation measures discussed in an EIS must cover the range of impacts of the proposal and must be considered even for impacts that by themselves would not be considered "significant." If a proposed action is considered as a whole to have significant effects, all of its specific effects on the environment must be considered, and mitigation measures must be developed where it is feasible to do so. NMFS may consider mitigation provided that the mitigation efforts do not circumvent the goals and objectives of the rulemaking or the mandate to rebuild fisheries under the Magnuson-Stevens Act.

The preferred alternatives are explained in detail in Chapters 2, 4, 5, and in the first part of this Chapter. Alternatives and methods that mitigate adverse impacts on the human environment are discussed below.

6.3.1 Mitigation Measures

The range of alternatives, including the preferred alternatives, would result in a range of ecological and socio-economic impacts. The individual alternatives were identified as preferred because they individually, or in concert with the other preferred alternatives, achieve the objectives, including optimizing fishing opportunity in a balanced manner. Because the cumulative ecological impacts are expected to be moderate beneficial for bluefin and neutral to minor beneficial for other HMS and protected resources, optimization of fishing opportunity is the objective which explicitly relates to consideration of the potential fishing effort, revenue, etc., and mitigating adverse socio-economic impacts. The manner in which the preferred alternatives mitigate adverse socio-economic impacts is discussed below.

The preferred codified reallocation alternative “Reallocation to Longline Category Reflecting the Historical 68 mt Dead Discard Allowance,” would mitigate impacts by utilizing a strategy that relies on all quota categories to fully account for landings and dead discards instead of a single quota category to derive quota (i.e., “Reallocation from Purse Seine Category”). Additionally, the preferred alternative would not result in very large changes to the quota category allocations, unlike the alternative “Reallocation Incorporating Recent Catch Data.” The annual reallocation alternative mitigates impacts by the flexibility to either reallocate from the Purse Seine category to other quota categories, or not, depending upon the previous year’s Purse Seine catch. A combined strategy relying on both permanent and annual reallocation alternatives mitigates impacts by providing a predictable quota system, in contrast to the No Action alternative, which is less predictable. The “Modification to the Reserve Category” alternative would provide additional flexibility and authority to ensure continued availability of quota to all categories, and mitigate potential adverse effects that result from the permanent or annual reallocation alternatives.

The preferred Gear Restricted Area alternatives mitigate impacts because they have less adverse socio-economic impacts than the non-preferred alternatives. The preferred alternative for the Modified Cape Hatteras Gear Restricted Area mitigates the negative impacts of an area closure by allowing access to those vessels with a proven track record in avoiding bluefin tuna. Negative impacts of the seasonal gear restricted areas in the Gulf of Mexico have been somewhat mitigated by refining the restricted areas. Furthermore, the preferred alternative for transiting closed areas mitigates the impacts of the preferred area gear restricted areas and all other areas closed to pelagic and bottom longline fishing by allowing these vessels to transit the area with their gear onboard. Vessels were previously required to go around closed areas, which resulted in increased fuel cost and occasional safety at sea concerns.

The preferred Bluefin Tuna Quota Control alternative, the IBQ, reduces the likelihood that an individual vessel would be negatively impacted by the fishing behavior of another vessel, and provides flexibility for a vessel to obtain additional quota allocation via leasing. This point is best illustrated by contrasting the non-preferred alternatives: Under a regional or group quota, an individual vessel subject to a regional or group quota would be subject to a prohibition on the use of pelagic longline gear when that quota is attained, regardless of whether the particular vessel had caught any bluefin or not. Under an IBQ, it is less likely an individual vessel would be subject to a broad prohibition on the use of pelagic longline gear, if it had not attained its individual quota (that situation could occur if there was high uncertainty regarding the status of the overall Longline category quota). The opportunity to lease additional quota allocation mitigates the impact of a situation where a vessel, despite its best intention, catches more bluefin than it can account for (with its quota), and provides an opportunity for additional revenue for vessels in a position to lease the quota allocation. The specific alternatives that set out the rules for the IBQ alternative, such as the “Vessels Eligible to Receive Bluefin Quota Share” and “Bluefin Quota Share Formula,” were selected as preferred, in consideration of both their ecological impacts, but also their impacts on individual vessels in order to mitigate potential adverse socio-economic impacts.

The scope of the reporting requirements, including the VMS requirements for Longline and Purse Seine category vessels, electronic monitoring for Longline category vessels, and automated catch reporting for the other commercial categories, was limited in order to mitigate adverse economic impacts while still providing timely data for management purposes. For example, the VMS reporting requirement does not include all species caught and size information, but focuses narrowly on bluefin landings and discards. The electronic monitoring program would be an audit program, designed to work in conjunction with other data sources, instead of as a stand-alone census of all fishing activity, in part to mitigate the costs associated with catch data interpretation.

The "Other Alternatives," including "Provide Additional Flexibility for General Category Quota Adjustment," "Angling Category Trophy Subquota Distribution," and "Change Start Date of Purse Seine Category to June 1" would mitigate some of the potential adverse economic impacts of the other preferred alternatives by providing additional flexibility with the rules applicable to the General, Angling, and Purse Seine categories, respectively.

6.3.2 Unavoidable Adverse Impacts

While there are adverse socio-economic impacts, these impacts are not avoidable, given the need to achieve all the objectives of Amendment 7, the requirements of the Magnuson-Stevens Act, and ICCAT recommendations.

6.3.3 Irreversible and Irretrievable Commitment of Resources

The management measures in many of the preferred alternatives would not result in any irreversible and irretrievable commitment of resources. There are expected to be positive ecological impacts because of the establishment of new management tools and reporting requirements. NMFS has already codified a framework for flexible bluefin management that allows the Agency to open and close the fishery, make inseason adjustment transfers, adjust quotas, etc.

The principal commitment of new resources would be related to implementation of the IBQ program (tracking and monitoring and trading), electronic monitoring (administration, oversight, maintenance, ongoing analysis), the VMS requirements (program development and ongoing monitoring), and automated catch reporting (program development and ongoing monitoring). Other existing programs such as quota monitoring, and enforcement of closed areas, and the observer program protocols would require less substantial modifications or resources.

6.4 Chapter 6 References

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7 REGULATORY IMPACT REVIEW

The Regulatory Impact Review (RIR) is conducted to comply with Executive Order 12866 (E.O. 12866) and provides analyses of the economic benefits and costs of each alternative to the nation and the fishery as a whole. Certain elements required in an RIR are also required as part of this final environmental impact statement (FEIS). This RIR builds upon the data and analysis presented in Chapters 4, 5, and 6 of this FEIS. The information contained in Chapter 7, taken together with the data and analysis incorporated by reference, comprise the complete RIR.

The requirements for all regulatory actions specified in EO 12866 are summarized in the following statement from the order:

> *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits should be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

E.O. 12866 further requires Office of Management and Budget review of proposed regulations that are considered to be "significant." A significant regulatory action is one that is likely to:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments of communities;
- Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the president's priorities, or the principles set forth in this Executive Order.

7.1 Description of the Management Objectives

Please see Chapter 1 for a full description of the objectives of Amendment 7 to the 2006 Consolidated HMS FMP and implementing regulations, including proposed fishery management actions. NMFS identified the following objectives with regard to the fishery management actions:

- ➢ Prevent overfishing and rebuild bluefin tuna, achieve on a continuing basis optimum yield, and minimize bluefin bycatch to the extent practicable by ensuring that domestic bluefin tuna fisheries continue to operate within the overall TAC set by ICCAT consistent with the existing rebuilding plan;

- Optimize the ability for all permit categories to harvest their full bluefin quota allocations; account for mortality associated with discarded bluefin in all categories; maintain flexibility of the regulations to account for the highly variable nature of the bluefin fisheries; and maintain fairness among permit/quota categories;
- Reduce dead discards of bluefin tuna and minimize reductions in target catch in both directed and incidental bluefin fisheries, to the extent practicable;
- Improve the scope and quality of catch data through enhanced reporting and monitoring to ensure that landings and dead discards do not exceed the quota and to improve accounting for all sources of fishing mortality;
- Adjust other aspects of the 2006 Consolidated HMS FMP as necessary and appropriate.

7.2 Description of the Fishery

Please see Chapter 3 for a description of the fisheries that could be affected by these management actions.

7.3 Statement of the Problem

Please see Chapter 1 for a full discussion of the purpose and need for these management actions.

An amendment to the 2006 Consolidated HMS FMP is needed to address bluefin management due to the recent trends and characteristics of the bluefin fisheries and the need to continue to comply with both domestic and international management objectives and obligations. These other management objects and obligations include: implementing the U.S. annual quota for north Atlantic albacore tuna as recommended by ICCAT, modifying rules regarding permit category changes, and other minor regulatory changes. Annual implementation of the existing domestic allocation quota system has become more difficult due to a change in calculation methodology that resulted in increases in calculated bluefin dead discards, a larger percentage of the adjusted quota being landed within certain segments of the fishery, and changed ICCAT requirements regarding accounting for dead discards and allowable carryforward of unused quota. Public comment has supported the need for substantive changes to the 2006 Consolidated HMS FMP, and it is important to rebuild the fishery, end overfishing, ensure long-term sustainability, and optimize fishing opportunity for all categories in an equitable manner. To achieve the above purposes, NMFS considered a suite of actions designed to reduce dead discards, account for dead discards, enhance monitoring, and optimize fishing opportunity.

7.4 Description of Each Alternative

Please see Chapter 2 for a summary of each alternative and Chapters 4 and 5 for a complete description of each alternative and its expected ecological, social, and economic impacts. Chapter 8 provides additional information related to the economic impacts of the alternatives.

7.5 Economic Analysis of Expected Effects of Each Alternative Relative to the Baseline

Table 7.1 Net Economic Benefits and Costs of Each Alternative

Alternative	Net Economic Benefits	Net Economic Cost
	Allocation	
A 1 - No changes to the current percentages that each quota category is allocated (No Action)	No change in economic benefits.	Insufficient quota to support Longline category operations. Long-term, there could be additional minor to moderate direct adverse economic impacts if other quota categories are closed early in the fishing year.
A 2a - Codified Reallocation to Longline Category Based on Historical 68 mt Dead Discard Allowance (Preferred)	Increased annual revenue potential for the Longline category quota of +$1,059,320.	Reduced annual revenue potential for the following quota categories: General: -$542,372 Harpoon: -$45,763 Purse Seine: -$215,254 Reserve: -$28,814 Angling: -7.36%
A 2b –Reallocation Incorporating Recent Catch Data	Increased annual revenue potential for the following quota categories: Longline: +$1,062,710 Angling: +47.14%	Reduced annual revenue *potential* for the following quota categories: General: -$799,998 Harpoon: -$94,915 Purse Seine: -$1,427,116 Trap: -$8,475
A 2c – Reallocation from Purse Seine to Longline Category	Increased annual revenue potential for the Longline category quota of +$1,164,404.	Reduced annual revenue potential for the Purse Seine category quota of -$1,164,404.
A 3a - Annual Reallocation of Bluefin Quota from Purse Seine Category (Preferred)	Potentially increase the amount of quota available to other categories, via the Reserve, if Purse Seine category continues current	Short-term minor economic impacts to the Purse Seine category could occur if a sudden change in effort happened within a year as

Alternative	Net Economic Benefits	Net Economic Cost
	levels of bluefin landings. Bluefin revenues for other categories could increase by $2.0 million.	allocation is associated with prior years catch levels.
A 3b – Annual Purse Seine Allocation Commensurate with the Number of Purse Seine Vessels	Potentially increase the amount of quota available to other categories if Purse Seine category continues current levels of bluefin landings. Bluefin revenues for other categories could increase by $2.2 million.	Similar to A 3a, short-term minor economic impacts to the Purse Seine category could occur if a sudden change in number of purse seine vessels changed within a year.
A 4a - Modifications to Reserve Category (No Action)	No change in economic benefits.	No change in economic costs.
A 4b - Modify Reserve Category (Preferred)	Could result in moderate beneficial economic impacts if unused quota from a previous year could be reallocated to the Reserve category to potentially offset any over-harvests or provide additional opportunities in another category.	No change in economic costs.
Area Based Measures		
B 1a - Gear Restricted Areas (No Action)	No change in economic benefits.	Could result in moderate long-term economic costs if the Longline category exceeds its quota earlier in the fishing year because of dead discards and is required to shut down.
B 1b – Cape Hatteras Pelagic Longline Gear Restricted Area	Could reduce dead discards and help to extend the fishing year for the Longline category.	Could reduce annual revenue from fishing in the Cape Hatteras Gear Restricted Area by $894,000 to $1.40 million depending on the amount of effort redistribution that occurs.
B 1c – Cape Hatteras Gear Restricted Area with Access based on Performance	Could reduce dead discards and help to extend the fishing year for the Longline category.	Could reduce annual revenue from fishing in the Cape Hatteras Gear Restricted Area by $468,000 to $302,000 depending on the amount of effort redistribution that occurs.

Alternative	Net Economic Benefits	Net Economic Cost
B 1d - Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance (Preferred)	Could reduce dead discards and help to extend the fishing year for the Longline category.	Could reduce annual revenue from fishing in the Modified Cape Hatteras Gear Restricted Area by $313,000 to $211,000 depending on the amount of effort redistribution that occurs.
B 1e - Allow Pelagic Longline Vessels to Fish under General Category Rules	Could provide increased opportunities for pelagic longline vessels to earn revenues even during a gear restricted area period.	Could result in economic impacts to the General category participants if the General category subquota is met earlier than it would be otherwise.
B 1f – Gulf of Mexico Exclusive Economic Zone (EEZ) Gear Restricted Area	Could reduce dead discards and help to extend the fishing year for the Longline category.	Could reduce annual revenue from fishing in the Gulf of Mexico EEZ Gear Restricted Area by $1.79 million.
B 1g – Small Gulf of Mexico Gear Restricted Area	Could reduce dead discards and help to extend the fishing year for the Longline category.	Could reduce annual revenue from fishing in the Small Gulf of Mexico Gear Restricted Area by $93,000 to $269,000 depending on the amount of effort redistribution that occurs.
B 1h – Gulf of Mexico Pelagic Longline EEZ Gear Restricted Area (year-round)	Could reduce dead discards and help to extend the fishing year for the Longline category in other areas.	Could reduce annual revenue from fishing in the Gulf of Mexico by $7.63 million.
B 1i - Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas (preferred)	Would reduce dead discards and help to extend the fishing year for the Longline category in other areas.	Would reduce annual revenue from fishing in the Modified Spring Gulf of Mexico Gear Restricted Areas by $282,000 to $528,000 depending on the amount of effort redistribution that occurs.
B 1j - Pelagic and Bottom Longline Allow Transiting Closed Areas (Preferred)	Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term minor beneficial economic impacts by potentially reducing fuel	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
	costs and time at sea for vessels that need to transit the closed or restricted areas. Allowing transit through these areas could also potentially improve safety at sea by allowing more direct transit routes and reducing transit time, particularly during inclement weather.	
B 2a - Gear Measures (No Action) (Preferred)	No change in economic benefits.	No change in economic costs.
B 2b – Authorization of Vessels with a Swordfish Incidental Permit to Use Buoy Gear	Would result in beneficial economic impacts by providing greater flexibility in the gear type that can be used and also by reducing the need to acquire a different permit to use buoy gear.	No change in economic costs.
B 2c – Allow Vessels with a Swordfish Directed or Incidental Permit and an Atlantic Tunas Longline Permit to Retain BAYS and Bluefin when Fishing with Buoy Gear	Would result in beneficial economic impacts by increase the potential revenue opportunities by allowing additional species to be landed when using buoy gear, reducing costs associated with discarding, and reducing the costs associated with the potential need to acquire different permits while fishing with buoy gear.	No change in economic costs.
B 3a – No Action regarding Access to Closed Areas Using Pelagic Longline Gear (Preferred)	No change in economic benefits.	No change in economic costs.
B 3b – Limited Conditional Access to Closed Areas	There would be beneficial economic impacts associated with the added option for vessels to potentially fish in these areas, which could potentially increase landings revenues and decrease fishing costs by providing access to closer and/or more productive fishing areas.	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
	The estimated potential increase in annual revenue for pelagic longline vessels could be as high as $1.9 million.	
	Quota Controls	
C 1 – Bluefin Quota Controls (No Action)	No change in economic benefits.	No change in economic costs.
C 2 - Individual Bluefin Quotas (Preferred)	Vessels that do not often interact with bluefin would likely benefit from the reduced risk of a Longline category closure resulting from the higher bluefin interactions of other vessels in the fleet.	Some vessels would be constrained by the amount of individual quota they are allocated and this could reduce their revenues.
	C 2a – Vessels Eligible to Receive Bluefin Allocation	
C 2a.1 - Any Permitted Atlantic Tunas Longline Vessel	More inclusive of all members of the fishery.	There would be economic impacts associated with reduced initial allocation of IBQs to the most active participants in the fishery. The initial allocations would likely be insufficient for many vessels to maintain their current levels of fishing activity and they may not be able to find IBQs to lease or have sufficient capital to lease a sufficient amount of IBQs.
C 2a.2 - Active Permitted Atlantic Tunas Longline Vessels Only (Preferred)	Some inactive Longline category permit holders would not receive an initial allocation.	Allocation of quota shares to a smaller number of eligible vessels would increase the likelihood that available quota will be sufficient for vessels.
	C 2b – Bluefin Quota Allocations	
C 2b.1 - Equal Quota Shares of Bluefin	Same as C 2.	Would result in reductions in annual landings revenue (without trading) for each of the quota scenarios as follows:

Alternative	Net Economic Benefits	Net Economic Cost
		74.8 mt: -$12,295,297 137 mt: -$6,373,311 216.7 mt: -$3,585,433
C 2b.2 - Based on Designated Species Landings	Same as C 2.	Would result in reductions in annual landings revenue (without trading) for each of the quota scenarios as follows: 74.8 mt: -$13,716,181 137 mt: -$8,329,941 216.7 mt: -$5,014,809
C 2 b.3 - Based on Designated Species Landings and the Ratio of Bluefin Catch to Designated Species Landings (Preferred)	Same as C 2.	Would result in reductions in annual landings revenue (without trading) for each of the quota scenarios as follows: 74.8 mt: -$11,383,498 137 mt: -$7,574,590 216.7 mt: -$4,833,967
C 2b.4 - Regional Designations and Restrictions (Preferred)	This would allow for a lower minimum quota of bluefin required to fish in the Atlantic and allow for more fishing activity and thus more fishing revenues per mt of IBQ.	The economic impact of creating these two regional designations would primarily be associated with the larger minimum quota required to fish in the Gulf of Mexico and the restriction from transferring or using Atlantic quota in the Gulf of Mexico. This would reduce the number of potential trading partners for IBQs in the Gulf of Mexico region, thus potentially leading to less available IBQs that could be leased and potentially making it more difficult to find potential trading partners and therefore increasing transaction costs for conducting a lease.
C 2c – Defining the Scope of Trading		
C 2c.1 - Transfer of Quota	Would have short-term minor beneficial	Costs would be associated with lease costs and

Alternative	Net Economic Benefits	Net Economic Cost
among Pelagic Longline Vessels Only	economic impacts; those beneficial impacts would be lower than those under subalternative C 2c.2.	other transaction costs.
C 2c.2 - Transfer among Pelagic Longline and Purse Seine (Preferred)	Would have short-term direct moderate beneficial economic impacts.	Costs would be associated with lease costs and other transaction costs.
C 2d – Duration of Quota Trades		
C 2d.1 - Leasing Quota Allocation (Preferred)	The ability to lease quota would have beneficial impacts to participants in the fishery by allowing them to increase their quota or sell their unneeded quota.	In the long-term, the annual transaction costs associated with matching lessors and lessees, the costs associated with drafting agreements, and the uncertainty vessel owners would face regarding quota availability would reduce some of the economic benefits associated with leasing.
C 2d.2 - Sale of Quota Share	This alternative would have the same benefits as C 2d.1. In addition, sale of quota share provides a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year.	In the short-term, there could be issues associated with the price discovery with these new IBQs. This could result in relative adverse economic impacts in the fishing community if participants sell out of the IBQ market in the early years for less than the long-term value of the IBQs.
C 2d.3 - Future Development of Sale of Quota Share (Preferred)	Similar benefits to alternative C 2d.2 in the long-term.	The uncertainty regarding the implementation timeline may make business planning for vessel owners and IBQ holders more difficult and result in some minor adverse economic impacts.
C 2e – Trade Execution and Tracking		
C 2e.1 - Electronic IBQ Trade Monitoring (Preferred)	Would result in short- and long-term minor beneficial economic impacts resulting from	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
	reduced transactions costs.	
C 2e.2 - Paper based IBQ Trade Monitoring	No change in economic benefits.	This alternative could result in some minor adverse economic impacts if needed time for additional step of NMFS' review of applications results in increased transactions costs and fewer trades.
	C 2f – Vessel and Category Limits on Trading	
C 2f.1 - Vessel Limits on Quota Allocation Transfers (Preferred)	Would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of a market.	No change in economic costs.
C 2f.2 - Category Limits on Quota Allocation Trades (Preferred)	Would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of a market.	No change in economic costs.
C 2f.3 - Future Development of Limits on Quota Allocation Trades (Preferred)	Would reduce the potential for any particular IBQ owner from gaining market power that could distort prices.	Could result in long-term minor adverse economic impacts if the limits cause some vessel owners to not be able to acquire sufficient IBQs for their fishing activity needs.
	C 2g – Monitoring and Enforcement of IBQs	
C 2g.1 - VMS Reporting (Preferred)	Would support the implementation of a pelagic longline IBQ.	Would result in increased costs associated with VMS reporting. See D 1b
C 2g.2 - Electronic Monitoring (EM) of Longline Category (Preferred)	Would support the implementation of a pelagic longline IBQ.	Would result in increased costs associated with electronic monitoring. See D 2b.
C 2g.3 - NMFS Extrapolation of	This alternative would potentially have short-	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
Observer Data (Preferred)	term minor or neutral indirect beneficial economic impacts by addressing the potential for fishery disruptions if there are issues in the transition to an IBQ monitoring system.	
C 2h – Program Evaluation		
C 2h.1 - Program Evaluation after 3 years (Preferred)	No change in economic benefits.	No change in economic costs.
C 2h.2 - Program Evaluation after 5 years	No change in economic benefits.	No change in economic costs.
C 2i – Cost Recovery (Preferred)	No change in economic benefits.	The cost recovery amount would reduce net profits of participants in the IBQ program.
C 2j – Appeals of Quota Shares (preferred)	No change in economic benefits.	No change in economic costs.
C 2k - Control Date (preferred)	May result in short-term economic benefits if it actually discouraged speculative fishing behavior that may have occurred without the control date.	No change in economic costs.
C 2l – Measures associated with Quota Controls		
C 2l.1b - *Elimination of Target Catch Requirement (Preferred)*	Would allow increased revenues from bluefin that would have previously been discarded due to the target catch requirement.	No change in economic costs.
C 2l.2b - Mandatory Retention of Legal-Sized Bluefin (dead) (Preferred)	Because these fish would be required to be retained, regulatory discards and the waste of fish would be decreased, and it would be more likely that such fish are accurately accounted for, and result in a positive use (marketed, used for scientific information, etc.) resulting in greater economic benefits.	Given that current behavior may be to discard some bluefin in order to optimize landings value of other bluefin, there could be minor adverse economic impacts associated with this alternative since vessel operators would no longer have the option to discard legal-sized bluefin.

Alternative	Net Economic Benefits	Net Economic Cost
C 3a – Regional Quotas	There would be more accountability for those fishing in a particular region, because there would be limits in each region rather than a single limit for the entire category, with no restriction on the relative number of bluefin that could be landed or discarded dead in a particular region. This could allow for longer fishing seasons and greater revenues in regions that are able to stay within their quotas.	Some regions may face chronic shortages of bluefin quota if that region experiences increased fishing effort or bluefin interaction rates. There would likely be less fishing effort under the Regional Quota Control alternative (compared with the No Action alternative) because a few vessels could catch a large number of bluefin, and could cause the closure of the entire area to the use of pelagic longline gear.
C 3b – Group Quotas	The high and medium avoider groups are likely to have adequate quota without risk of an early closure and thus generate greater revenues.	The low avoider group would likely have inadequate quota if the future interaction rate of the vessels is similar to historic levels. The inadequate quota would result in reduced revenues.
C 4a – NMFS Closure of the Pelagic Longline Fishery (No Action)	No change in economic benefits.	No change in economic costs.
C 4b – NMFS Closure of the Pelagic Longline Fishery (Preferred)	No change in economic benefits.	Would result in moderate to major reductions in pelagic longline vessel revenues if closures occur early in the year. See Tables 5.25-27.
	Enhanced Reporting	
D 1a – VMS Requirements (No Action)	No change in economic benefits.	No change in economic costs.
D 1b – VMS Requirements for the Purse Seine and Longline Categories (Preferred)	No change in economic benefits.	All of the three vessels that are currently authorized to deploy purse seine gear for Atlantic tunas have already installed E-MTU VMS units in compliance with regulations for other Council-managed fisheries, including

Alternative	Net Economic Benefits	Net Economic Cost
		Northeast Multispecies and/or Atlantic scallop.
D2a – Electronic Monitoring of Longline Category (No Action)	No change in economic benefits.	No change in economic costs.
D 2b –Electronic Monitoring of Longline Category (Preferred)	No change in economic benefits.	First year fixed and variable costs total $734,000 for the fleet.
D 3a - Automated Catch Reporting (No Action)	No change in economic benefits.	No change in economic costs.
D 3b - Automated Catch Reporting (Preferred)	No change in economic benefits.	Adjustments to both the online and IVR systems of the ALRS to implement catch reporting for General, Harpoon, and HMS Charter/Headboat category permit holders are estimated to cost NMFS between $15,000 and $35,000. Annual maintenance would likely cost approximately $8,700 per year, which is the current cost for maintaining the ALRS and the call-in system for reports of other recreational HMS landings.
D 4a - Deployment of Observers (No Action)(Preferred)	No change in economic benefits.	No change in economic costs.
D 4b – Increase NMFS-Funded Observer Coverage	No change in economic benefits.	There might be some minor costs to vessel operators with the increased chance that they will be selected for observer coverage and will have to accommodate an observer.
D 5a - Logbook Requirement (No Action) (Preferred)	No change in economic benefits.	No change in economic costs.
D 5b - Logbook Requirement for Atlantic Tunas and HMS Category Permit Holders	No change in economic benefits.	Would increase reporting costs for General, Harpoon, and Charter/Headboat category permit holders by approximately $8,263

Alternative	Net Economic Benefits	Net Economic Cost
		annually for the fleet. NMFS estimates its logbook program costs could increase by $225,082 per year.
D 6a - Expand the Scope of the Large Pelagics Survey (No Action) (Preferred)	No change in economic benefits.	No change in economic costs.
D 6b - Expand the Scope of the Large Pelagics Survey	No change in economic benefits.	Would result in costs to NMFS from potentially a high of $2.2 million to a lower estimate of $165,000, depending whether the estimate is based on the full funding costs of the Large Pelagics Survey or applying the sampling frame ratio factor.
Other Measures		
E 1a - Modify General Category Time-Period Subquota Allocations (No Action)	No change in economic benefits.	No change in economic costs.
E 1b - Establish 12 Equal Monthly Subquotas	Would allow the General category to remain open year-round and would revise subquotas so that they are evenly distributed throughout the year.	Would potentially decrease General category revenues by $106,000 annually.
E 1c - Provide Additional Flexibility for General Category Quota Adjustment (Preferred)	Similar to Alternative E 1b, could result in a shift in the distribution of quota and thus fishing opportunities to the earlier portion of the year. Would be expected to be neutral to minor beneficial impacts for January fishery participants.	Neutral to minor adverse impacts for participants in the June through December General category fishery.
E 2a - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason (No	No change in economic benefits.	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
Action)		
E 2b - NMFS Authority to Adjust Harpoon Category Retention Limits Inseason (Preferred)	Potential beneficial economic impacts are possible if a lower limit at the beginning of the season results in the Harpoon category quota lasting longer into the season, as the average price per pound is generally higher in July and August than it is in June.	Would be minor short-term direct adverse economic impacts that would depend on availability of large mediums to Harpoon category vessels on a per trip basis and the actual retention limit that NMFS sets inseason.
E 3a - Angling Category Trophy Subquota Distribution (No Action)	No change in economic benefits.	No change in economic costs.
E 3b - Allocate a Portion of the Trophy South Subquota to the Gulf of Mexico (Preferred)	Would be minor, short-term, direct, beneficial social impacts to a small number of vessels in the Gulf of Mexico given the small amount of fish that would be allowed to be landed (as well as indirect beneficial economic impacts for charter vessels), but the perception of greater fairness among southern area participants may result in indirect, longer-term, beneficial, social impacts.	Would be minor, short-term, direct and indirect adverse social impacts (and economic impacts for charter vessels) for those outside the Gulf of Mexico as the perceived opportunity to land a trophy bluefin may be diminished.
E 4a – Change Start Date of Purse Seine Category to June 1 (No Action)	Would be minor neutral to beneficial for fishermen in other categories due to reduced actual or perceived gear conflict from June 1 through July 14.	Would be minor and neutral to adverse for purse seine fishery participants.
E 4b – Change Start Date of Purse Seine Category to June 1(Preferred)	Economic impacts to purse seine operators would be expected to be direct and neutral to moderate and beneficial depending on availability of schools of bluefin for purse seine operators to decide to make a set on and market conditions.	No change in economic costs.

Alternative	Net Economic Benefits	Net Economic Cost
E 5a - Rules Regarding Permit Category Changes (No Action)	No change in economic benefits.	No change in economic costs.
E 5b - Modify Rules Regarding Permit Category Changes (Preferred)	There would be some minor economic benefits by increasing the flexibility associated with permit category changes.	No change in economic costs.
E 6a - North Atlantic Albacore Tuna Quota (No Action)	No change in economic benefits.	No change in economic costs.
E 6b - Implement U.S. North Atlantic Albacore Tuna Quota (Preferred)	No change in economic benefits.	If either the U.S. quota is reduced as part of a new TAC recommendation or catches increase above the current adjusted U.S. quota, there could be adverse impacts resulting from reduced future fishing opportunities and ex-vessel revenues.
E 7b – Minor Regulatory Changes (Preferred)	No change in economic benefits.	No change in economic costs.

7.6 Conclusions

As noted above under E.O. 12866, a regulation is a "significant regulatory action" if it is likely to: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; and (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the legal mandates, the President's priorities, or the principles set forth in the Executive Order; or, (4) raise novel legal or policy issues arising out of legal mandates, the president's priorities, or the principles set forth in this Executive Order. The preferred alternatives described in this document do not meet the above criteria. The preferred alternatives would have an annual effect on the economy less than $100 million and would not adversely affect the aforementioned parameters (see Table 7.1). The preferred alternatives would also not create an inconsistency or interfere with an action taken by another agency. Furthermore, the preferred alternatives would not materially alter the budgetary impact of entitlements, grants, user fees, the President's priorities, or the principles set forth in E.O. 12866. Nor would the proposed regulations raise any unique legal or policy issues. The Secretary, through NMFS, has managed Atlantic HMS since 1990. In addition, NMFS has participated in international efforts to develop management measures for stocks affected by multiple nations. The preferred alternatives and other alternatives do not materially depart from this management approach. Therefore, under E.O. 12866, the preferred alternatives described in this document have been determined to be not significant for the purposes of E.O. 12866. The Office of Management and Budget (OMB) concurred with this determination provided in the listing memo for this proposed rule. A summary of the expected net economic benefits and costs of each alternative, which are based on supporting text in Chapters 4 and 5, can be found in Table 7.1.

8 FINAL REGULATORY FLEXIBILITY ANALYSIS

The Final Regulatory Flexibility Analysis (FRFA) is conducted to comply with the Regulatory Flexibility Act (5 USC 601 et. seq.) (RFA). The goal of the RFA is to minimize the economic burden of federal regulations on small entities. To that end, the RFA directs federal agencies to assess whether the proposed regulation is likely to result in significant economic impacts to a substantial number of small entities, and identify and analyze any significant alternatives to the proposed rule that accomplish the objectives of applicable statutes and minimizes any significant effects on small entities. Certain data and analysis required in an FRFA are also included in other chapters of this FEIS. Therefore, this FRFA incorporates by reference the economic analyses and impacts in Chapter 5 of this FEIS and the summary information in Chapter 7.

8.1 Statement of the Need for and Objectives of this Final Rule

Please see Chapter 1 for a description of the need for these proposed management actions. An amendment to the 2006 Consolidated HMS FMP is needed to address bluefin tuna management due to the recent trends and characteristics of the bluefin fishery and the need to continue to comply with both domestic and international management objectives and obligations. Annual implementation of the existing domestic allocation quota system has become more difficult due to a change in calculation methodology that resulted in increases in calculated bluefin dead discards, a larger percentage of the adjusted quota being landed within certain segments of the fishery, and changed ICCAT requirements regarding accounting for dead discards and allowable carryforward of unused quota. Public comment has supported the need for substantive changes to the 2006 Consolidated HMS FMP, and it is important to rebuild the fishery, end overfishing, ensure long-term sustainability, and optimize fishing opportunity for all categories in an equitable manner. To achieve the above objectives, NMFS considered a range of alternatives designed to reduce dead discards, account for dead discards in the pelagic longline fishery, enhance reporting and monitoring, and optimize fishing opportunity.

Addressing the specific objectives listed below directly supports achievement of the more broad goals of the 2006 Consolidated HMS FMP including: To prevent overfishing of Atlantic tunas, rebuild overfished Atlantic HMS stocks, monitor and control all components of fishing mortality so as to ensure long-term sustainability of the stocks and promote Atlantic wide stock recovery, minimize bycatch, manage for continuing optimum yield so as to provide the greatest overall benefit to the Nation, minimize to the extent practicable adverse social and economic impacts, provide a framework to take necessary action under ICCAT recommendations, and simplify HMS management and regulatory requirements to assist the regulated community.

NMFS identified the following objectives with regard to the fishery management actions:

- Prevent overfishing and rebuild bluefin tuna, achieve on a continuing basis optimum yield, and minimize bluefin bycatch to the extent practicable by ensuring that domestic bluefin tuna fisheries continue to operate within the overall TAC set by ICCAT consistent with the existing rebuilding plan;
- Optimize the ability for all permit categories to harvest their full bluefin quota allocations; account for mortality associated with discarded bluefin in all categories;

maintain flexibility of the regulations to account for the highly variable nature of the bluefin fisheries; and maintain fairness among permit/quota categories;

- Reduce dead discards of bluefin tuna and minimize reductions in target catch in both directed and incidental bluefin fisheries, to the extent practicable;
- Improve the scope and quality of catch data through enhanced reporting and monitoring to ensure that landings and dead discards do not exceed the quota and to improve accounting for all sources of fishing mortality;
- Adjust other aspects of the 2006 Consolidated HMS FMP as necessary and appropriate.

8.2 A Summary of the Significant Issues Raised By the Public Comments in Response to the Initial Regulatory Flexibility Analysis, a Summary of the Agency's Assessment of Such Issues, and a Statement of Any Changes Made in the Rule as a Result of Such Comments

NMFS received many comments on the proposed rule and DEIS during the public comment period. Summarized public comments and the Agency's responses to them are included in the Appendix of this document and also will be addressed in the final rule. The specific economic concerns raised in the comments are also summarized and addressed here.

Comment 2: Many commenters, particularly those with small businesses involved in the pelagic longline fishery expressed concern regarding the potential for negative economic impacts of Amendment 7 on jobs, families, and communities, and noted the importance of pelagic longline-caught fish in supplying high quality seafood to the nation. These commenters were concerned about the potential for the Amendment 7 measures to put people out of business, and "destroy the pelagic longline fishery." Commenters stated that vessels that are currently only marginally economically viable would be at particular risk of going out of business, but were also concerned about any secondary impacts on related businesses such seafood dealers, gear manufacturers, etc. They urged NMFS to use a balanced regulatory approach to address the Amendment 7 objectives, and stated that Amendment 7 measures would increase uncertainty in the pelagic longline fishery.

Response: The seafood supplied to the Nation by the pelagic longline fleet is valuable as both a source of food, and for the generation of income supporting local jobs, communities, and the broader economy. NMFS designed management measures to minimize economic impacts by relying on the combined effects of multiple management tools and incorporating flexibility into the system. The preferred measures would affect all permit/quota categories and reflect the balance of addressing the issues confronting the bluefin tuna stock and management of the fishery while maintaining the viability of the pelagic longline and other fisheries dependent upon bluefin tuna. For example, reductions in dead discards would be achieved through the use of multiple measures, including gear restricted areas, the IBQ system, and quota allocation measures. The preferred measures would modify the quota system to increase management flexibility in order to allocate quota among categories to maximize opportunities to catch available quota, account for dead discards, and respond to changing conditions in the fishery. As the pelagic longline fleet is adjusting to the suite of new measures, NMFS would have the flexibility to allocate a limited amount of additional quota to the pelagic longline vessels if necessary to prevent a fishery closure, and still, as a result of the gear restricted areas, and IBQ system, reduce the net amount of bluefin catch from the levels recently caught. The management measures work together to reduce dead discards and otherwise reduce bycatch to the extent practicable, increase accountability, enhance reporting and monitoring, and optimize quota allocation, in a predictable but flexible manner. The potential economic impacts of the measures affecting the pelagic longline fleet are analyzed in Chapters 5 and 7, and the economic rationale is summarized in the Final Regulatory Flexibility Analysis. Public comments that address specific measures are addressed below in the responses to more specific comments.

Comment 3: Commenters stated that when determining whether the pelagic longline fleet should be subject to additional restrictions, that NMFS should consider the current and past regulatory environment and other factors as context. Commenters stated the pelagic longline fishery is already heavily regulated to minimize its environmental impacts, especially in the Gulf of Mexico (e.g., closures, weak hook requirement, observer deployment, bait requirements), and that progress is being made. Furthermore, increases in fuel costs strain fishers' ability to make a living, and events such as the 2010 oil spill in the GOM continue to bear relevant. Commenters noted that bluefin tuna is managed at the international level and believe that the United States manages its citizens in a more effective and responsible way than other countries, and that NMFS should not further regulate bluefin tuna and increase the management disparity between the United States and other countries .

Response: The context in which vessels operate, including current regulations and other factors was a relevant factor NMFS considered in determining whether new regulations were justified. NMFS took into consideration many factors in order to selecting preferred measures which address the diverse objectives of Amendment 7 in a balanced manner. Chapter 6 contains a cumulative impacts analysis which is broad in scope and takes into consideration past, present, and reasonably foreseeable factors. In addition, Chapter 2 contains a description of measures and the rationale for the preferred measures. The Final Regulatory Flexibility Analysis includes a description of the steps taken to minimize the economic impacts on small entities, and the reasons for the preferred measures.

The United States manages its exclusive economic zone in accordance with applicable U.S. laws and in response to the unique characteristics of its fisheries, and therefore the U.S. regulations regarding bluefin tuna are different from the rules affecting citizens of other countries, which operate under different laws and circumstances. Where U.S. regulations are more restrictive than those abroad, NMFS believes that the corresponding ecological and socio-economic benefits that result from such restrictions are also likely to be greater than those abroad.

Comment 12: Many commenters strongly opposed reallocating quota to the Longline category because of concerns about the economic impacts on a particular geographic region (e.g., New England or mid-Atlantic), or quota category (e.g., the General category or the Angling category). Some commenters urged NMFS to respect the historical allocation percentages, and noted that reallocation would have the effect of pitting the different categories against each other. Some commenters suggested that NMFS consider other regulatory and economic circumstances facing vessels that may be impacted by a reduced quota.

For example, Congressional representatives from Massachusetts, and the New England Fishery Management Council (Council) stated that the proposed reallocation would disadvantage the New England Fishery, the traditional Massachusetts fleet, and shore-side infrastructure, and would allow fleets from other regions to use a disproportionate amount of quota. They were concerned about the commercial fleet that is experiencing economic damage due to the decline in key stocks in the groundfish fishery. The Council suggested that NMFS assess the port-specific impacts of reallocation. A commenter was concerned that recreational vessels in the mid-Atlantic region would be disproportionately affected by quota reallocation because the quota may not last until the time the bluefin are off the mid-Atlantic coast.

Response: A reduction in quota may impact the revenue associated with a particular quota category or geographic region, or result in secondary economic impacts on a community. The FEIS analysis estimates that reallocation of quota to the Longline category could reduce revenue for individual vessels with a General category permit by $850 and result in total reduction in maximum revenue of $542,000 for all General category vessels. Although thirty percent of the General category permits are associated with the State of Massachusetts (1,150 permits as of October 2013), the total number of active vessels is substantially lower. Of the total number of General category permits issued throughout the Atlantic coast (3,783), the average number of General category vessels landing at least one bluefin between 2006 and 2012 was 474 vessels (total). Thus, the number of active vessels in Massachusetts can be presumed to be substantial fewer than 1,150.

When considering the social and economic impacts of actions, different communities and regions may be impacted to different degrees due to their unique regulatory and economic circumstances. The FEIS contains an analysis of the community impacts from the 2010 Deepwater Horizon/BP Oil Spill, and a 2013 analysis that presents social indicators of vulnerability and resistance for 25 communities selected for having a greater than average number of HMS permits associated with them. Those communities with relatively higher dependence upon commercial fishing included Dulac, LA; Grand Isle, LA; Venice, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; and Montauk, NY. The analyses are principally at a fishery-wide, or permit category level. The bluefin tuna fisheries (and other HMS fisheries) are widely distributed and highly variable due to the diversity of participants (location, gear types, commercial, recreational), and because bluefin tuna are highly migratory over thousands of miles, with an annual distribution that is highly variable. The specific ports and communities that provide the goods and services to support the fishery may vary as well, as vessels travel over large distances to pursue their target species. Due to this variability, it is difficult to predict potential revenue and secondary impacts of preferred management measures by port or by state. Vessels fishing in any geographic area in the Atlantic or Gulf of Mexico are likely to have only limited access to bluefin tuna, unless they travel long distances within the bluefin's migratory range.

It is important to note that the actual economic impacts of reallocation of quota would depend upon the total amount of quota allocated to (and harvested from) each of the quota categories, as a result of the combined effect of all of the measures that affect quota. For example, in addition to the amount of quota available as a result of the percentage allocations, and deductions for the 68 mt Annual Reallocation, there may be quota available for redistribution to various quota categories. Specifically, pursuant to the preferred “Annual Reallocation” measure, as described in Chapter 2 of this FEIS, if the Purse Seine category has not caught 70 percent of its quota during the previous year, quota may be moved to the Reserve category and subsequently reallocated across multiple user groups. Furthermore, in recent years, many categories have not fully harvested their amount of quota available to them. Thus, the actual impacts of reallocation may be minor or may be mitigated by future reallocation when available.

Reallocation of quota may result in frustration or negative attitudes among fishery participants of different quota categories, due to the changes to an historically accepted quota allocation system, or perceptions of unfairness. However, the modifications to the quota system are warranted for the reasons described in the response to comments 8 through 11 and fair due to the fact that all quota categories are affected in proportion to their quota percentage.

As explained in the response to Comment# 9 above, NMFS designed the quota allocation alternatives to minimize the economic impacts on the non-longline categories. The alternatives take into consideration the relative size of each category quota (in the case of the “Codified Reallocation Alternative”, or the level of activity of vessels (“Annual Reallocation Alternative”), and are designed to consider changing levels of quota or landings, respectively, in ways that reduce economic impacts.

Comment 13: Many recreational anglers wanted to insulate the Angling category from any potential effect of quota reallocation to the Longline category, citing the economic impacts and high value of the recreational bluefin fishery to the economy, as well as the economic investments of the participants and the current regulatory burden such vessels face. Vessel owners with General category commercial permits expressed concern about the potential impacts to the General category. Commenters requested additional quantitative analyses comparing the different quota categories, including primary and secondary impacts.

Response: As stated above in the response to the previous comment, a reduction in quota may impact the revenue associated with a particular quota category or result in secondary economic impacts on a community. The objective of the preferred allocation measures is not to reallocate quota based on economic optimization, but to: account for bluefin dead discards within the Longline category; reduce uncertainty in annual quota allocation and accounting; optimize fishing opportunity by increasing flexibility in the current bluefin quota allocation system; and ensure that the various quota categories are regulated fairly in relative to one another.

The preferred reallocation measures would minimize adverse economic impacts to the extent practicable because the relative amount of quota reallocated is small and proportional to the size of the category quota, and the overall quota system would be more flexible and predictable and able to offset some or all of the negative economic impacts. This approach was developed consistent with our obligation under National Standard 6 (Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches and National Standard 8 (Conservation and management measures shall, consistent with the conservation requirements of this chapter (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.)

Although the FEIS includes estimates of the value of bluefin tuna quota by quota category for comparative purposes, the preferred codified reallocation was not based on a specific economic analysis, but the achievement of the stated objectives.

An elaborate quantitative analysis that compares the economic value of the Angling, Longline, and General category fisheries was not conducted due to the different characteristics of the Angling, Longline and General category fisheries, the variable amount of data associated with these fisheries, and the large number of factors and assumptions that contribute to estimating the value of a fishery. For example, under the preferred IBQ system , bluefin tuna quota may be a limiting factor for a pelagic longline vessel, and therefore the lack of adequate bluefin quota, by even a small amount, could result in a vessel being prohibited from fishing with pelagic longline gear. In that circumstance, the value of the bluefin quota to the vessel owner may be very high, and related to the value of the target catch (e.g., swordfish or yellowfin tuna). On the other hand, the value of a bluefin tuna to a recreational angler or to the recreational fishery at- large may include the value of the recreational experience to the angler, as well as the associated goods and service supporting the fishing trip. The FEIS indicates that the Angling category would potentially face unquantified reductions in economic and social activity associated with the 7.36 percent reduction in available quota.

In contrast, for a vessel fishing commercially in the General category, a high quality bluefin tuna sold to Japan may be extremely valuable and other catch is far less important.

Comment 20: NMFS should avoid closures to the pelagic longline fishery. Any closure would disrupt markets.

Response: NMFS acknowledges that gear restricted areas designed to reduce bluefin tuna interactions and regulatory discards and to thus decrease bycatch have costs associated with them, and may have disruptive effects on local markets. NMFS designed the gear restricted areas (i.e., their timing and configuration) after considering the amount of reduced fishing opportunity as well as the amount of reduced bluefin interactions, and therefore minimize potential disruptions in markets. NMFS designed the Modified Cape Hatteras gear restricted area to provide access opportunities to fishermen that have a proven ability to avoid bluefin, and are compliant with the observer and logbook requirements. As described in the Response to Comment # 47, NMFS specifically modified the Cape Hatteras Gear Restricted Area that was proposed, to reduce disruption to ongoing fishing in an adjacent area and therefore reduce potential economic impacts of the alternative. Evaluation of all alternatives considered both economic and ecological considerations (i.e., the potential reductions in revenue associated with estimated reductions in bluefin interactions).

Comment 21: NMFS should not implement GRAs. NMFS received comments indicating that, due to a variety of reasons, commercial fishermen may be limited to certain fishing locations by the size and configuration of their vessels, insurance requirements, or safety concerns, and that some participants in the fishing fleet have nowhere else to fish (except in the location of the GRA) and they would be "shut out" of the fishery.

Response: The underlying concept of the Modified Cape Hatteras Gear Restricted Area minimizes economic impacts by providing conditional access to the area, based on performance criteria. The majority of the pelagic longline fleet would be allowed to fish in the area upon implementation, and in the future if conditions for access continue to be met. In estimating ecological and socio-economic impacts of the Modified Cape Hatteras Gear Restricted Area, NMFS determined that 14 vessels would not have access to this GRA. Of these 14 vessels, four vessels made over 75 percent of their sets in the Modified Cape Hatteras Gear Restricted Area. Based upon the location of their historical catch, and to ensure that NMFS did not underestimate the potential economic impacts, the analysis assumes that these vessels would not redistribute effort outside of the gear restricted area. Although these four vessels could redirect from fishing grounds off Oregon Inlet, NC to fishing grounds between Cape Fear and Cape Hatteras, such a change in fishing grounds may involve substantial costs (fuel, longer trips, possible transfer and dockage in a new port, etc.). However, NMFS modified the Cape Hatteras Gear Restricted Area in a way that would achieve the reduction in bluefin discards but would also allow fishermen to continue to deploy gear in regions south and west of the GRA and thereby reduce adverse impacts. With respect to the potential negative impacts of the Modified Spring Gulf of Mexico GRA, approximately 61 vessels that fish in the Gulf of Mexico would be affected. Given the consistent pattern of historical catch of large numbers of bluefin tuna in certain times and locations by pelagic longline gear, NMFS determined that a gear restricted area in both the Gulf of Mexico and the Atlantic are necessary in order to achieve reductions in bluefin tuna dead discards, and that the potential economic impacts are warranted in order to achieve such reductions. The potential negative socio-economic impacts were minimized by using an iterative process to design the gear restricted areas. The Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas was designed in order to achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico. The specific boundaries of the area were determined by an iterative process, by selecting areas of historical pelagic longline interactions with bluefin, and comparing both the anticipated reduction in bluefin interactions, and the estimated reduction in revenue, of different configurations. In addition, the time period selected due to its occurrence during the peak bluefin spawning period in the Gulf of Mexico.

The magnitude of the potential economic impacts result from the specific location and duration of the gear restricted area. The size of the Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area was based upon the historical location and number of bluefin interactions, as well as the recent persistent trend in fishing effort shifting to the east of this area, and the known variability in the fishery in general. A smaller geographic area would be unlikely to achieve meaningful reductions in bluefin tuna interactions. The duration of the gear restricted area encompasses the months with the highest number of interactions during the spawning period. An alternate, or shorter time period would coincide with neither the highest number of bluefin interactions, nor the bluefin spawning period peak.

Comment 29: NMFS should not penalize small vessels because of their inability of provide adequate space for observers.

Response: NMFS designed the scoring system for the Pelagic Observer Program Performance metric in the preferred alternative such that valid reasons for not carrying an observer would not be penalized. Observer coverage is integral to the management of the fishery as it contributes important, objective data in support of the management of protected species and provides important information on the pelagic longline fishery utilized in the management of bluefin and other HMS. Due to the importance of having enough observed trips to meet the observer coverage targets required by national and international law, NMFS also evaluated vessels on the number of trips observed. The agency utilizes observer data to develop estimates of protected resources interactions and estimates of discards of other species including bluefin. These data are essential for stock assessments and are critical in meeting international management obligations. Under ATCA and as a contracting party of ICCAT, the United States is required to take part in the collection of biological, catch, and effort statistics for research and management purposes.

Comment 48: NMFS should consider the potential negative economic impact on fishermen in the area who do not have access to other fishing grounds.

Response: The preferred design of the Cape Hatteras GRA was the result of an iterative process. NMFS analyzed multiple time periods and geographic areas in order to take into consideration both the potential reduction in the number of bluefin interactions and the potential reductions in target catch. The analysis considered relevant fisheries data, and also oceanographic trends. In the DEIS, due to current patterns in the Cape Hatteras area, the zone affected by the proposed Cape Hatteras Gear Restricted Area was analyzed beyond the explicit boundaries of the GRA. Analysis of a buffer region was needed because vessels to the south and west of the GRA would be prevented from fishing in these areas because their gear would drift into the GRA (having the effort of creating a larger affected geographic area that the boundary of the GRA). The DEIS analysis of impacts not only considered the reduced fishing effort within the GRA, but also the reduced fishing effort in a buffer region to the south and west of the area. NMFS included sets made in this buffer region into the redistribution analyses. In the FEIS, based on public comment and additional analyses, NMFS now prefers the Modified Cape Hatteras GRA which would minimize the adverse impacts on fishing opportunities while still achieving comparable reductions of bluefin discards and almost identical conservation and management benefits as the original proposal.

Comment 51: A large number of commenters expressed general support for a gear restricted area in the Gulf of Mexico, while others stated that NMFS should not implement a GOM GRA, due to the severe economic impact it would have on the fishery.

Response: Implementation of a Gear Restricted Area in the Gulf of Mexico would support the achievement of the Amendment 7 objectives. A Gear Restricted Area would, in conjunction with the other preferred alternatives, result in the reduction of dead discards of bluefin tuna by the pelagic longline fishery. Although implementation of a GRA would have a negative economic impact on the pelagic longline fishery, the preferred alternative would have less of an impact than some of the other alternatives considered and analyzed. As described in more detail in the responses to comments below, NMFS analyzed a range of alternatives, and took into account the importance of fishery resources to fishing communities by analyzing economic and social data. Because GRAs would result in the reduction and/or redistribution of fishing effort by pelagic longline gear, the preferred alternative represents a balance between anticipated reductions in dead discards of bluefin, and potential negative economic impacts on the pelagic longline fishery. Furthermore, the preferred alternative would support the broader objectives of both stock rebuilding and as well as the continued viability of the commercial and recreational fisheries that depend upon bluefin tuna.

Comment 55: One commenter noted that the size of the fishable area in the Gulf of Mexico is already small, given the constraints on the locations where they can fish, including existing pelagic longline closed areas, as well as the areas that must be avoided for other reasons (e.g., activity range of seismographic vessels, which can operate for up to six months, and oils rigs).

Response: NMFS acknowledges that the preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would further reduce the amount of fishable areas in the Gulf of Mexico available for the use of pelagic longline gear, and that vessels choosing to fish in the Gulf of Mexico with pelagic longline gear must work around other industrial users of Gulf of Mexico resources. NMFS selected the boundaries of the Spring Modified Gulf of Mexico Gear Restricted Areas with careful consideration of the associated benefits and costs. NMFS optimized the size of the preferred GRAs to achieve a meaningful reduction in dead discards, and still leave fishing grounds open for the pelagic longline fleet. The Cumulative Impacts Analysis in this FEIS (Chapter 6) considers the impacts of the preferred alternatives in the broader context of other historical and current activities.

Comment 56: NMFS should consider the impact on the yellowfin tuna and swordfish fisheries, which are active in the Gulf of Mexico and in the areas covered by the GRAs. Specifically, the commenter questioned whether the Gulf of Mexico pelagic longline fleet would be able to remain active.

Response: NMFS carefully considered the impact of the preferred Modified Spring Gulf of Mexico GRAs on yellowfin and swordfish fisheries, both of which are robust and healthy fisheries in the Gulf of Mexico. The estimated reductions in revenue of the preferred GRAs (assuming effort is redistributed) were calculated for the alternatives for both swordfish (ranged from $11,583 to $2,089,885 on average per year) and for yellowfin tuna (ranged from $59,500 to $3,964,682, on average per year) fisheries. The preferred Spring Modified Gulf of Mexico GRAs would achieve a balance between conservation objectives and providing continuing opportunity for the Gulf of Mexico swordfish and yellowfin tuna fisheries. The primary conservation objectives of the gear restricted areas is to reduce bluefin interactions, and reduce bycatch and bycatch mortality to the extent practicable. NMFS compared among the alternatives the amount of 'savings' of bluefin tuna and the reduction in target catch as part of its analysis of the gear restricted areas. Under the Preferred Alternative, the annual reductions in revenue associated with the reduced catches of swordfish and yellowfin tuna are estimated at $ 41,504 and $ 207,110, respectively. The annual reduction in total revenue is estimated at $ 1,793,922. An example of how the data was compared and alternatives evaluated follows: Comparing the Preferred Alternative with the alternative that would restrict the full EEZ for the months of March through May, the reduction in the weight of bluefin catch would be a little more than twice as much under the EEZ GRA (44.2 mt versus 19.2 mt under the Preferred), but the reduction in total revenue associated with the EEZ GRA would be more than six times larger than the reduction in total revenue associated with the Preferred Alternative ($ 1,793,922 versus $ 281,614 under the Preferred). In other words, compared to the Preferred Alternative, the amount of additional costs that would be associated with the EEZ GRA would be disproportionately greater than the additional conservation benefits associated with the EEZ GRA. The Amendment 7 measures are not designed to target a particular amount of reduction in dead discards, but rather reduce dead discards in a meaningful way, provide strong incentives to avoid and reduce bycatch, and take into account the potential impacts on the pelagic longline fishery. The combined effect of the Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area and the Modified Cape Hatteras Pelagic Longline Gear Restricted Area, would reduce the number of bluefin discarded by 40 percent and the number of bluefin kept by 10 percent (fishery-wide).

Comment 64: Some commenters supported the proposed measure to allow vessels fishing with pelagic longline gear that are not authorized conditional access to the Cape Hatteras GRA, to fish under General category rules. Vessel owners wanted to have this type of fishing opportunity as mitigation for the lost opportunity of fishing with pelagic longline gear in the Cape Hatteras GRA, during the months from December through April. Some commenters did not support the proposed opportunity for such vessels to fish under the General category rules for various reasons. Some noted that the activity would be a “dangerous precedent,” because limited access vessels would be allowed to fish under the rules applicable to an open access category, but there would be no reciprocity allowed for the General category vessels (that is, General category vessels would not be allowed to fish as a pelagic longline vessel). Others were concerned about the expansion of a targeted bluefin fishery in the Cape Hatteras GRA, an area that already has large numbers of interactions with bluefin. A commenter found it ironic that vessels not allowed to fish with pelagic longline gear in the Cape Hatteras GRA (proposed in order to reduce bluefin interactions with pelagic longline gear) due to their low performance criteria score would be provided an opportunity to target bluefin tuna. Some noted concern about the potential impacts on the rate of harvest of the General category quota, which is limited, and the indirect impacts on General category vessels. Others noted that the replacement of pelagic longline gear with handgear (targeting bluefin) is not economically viable due to the size of the pelagic longline vessels and the associated trip expenses. A commenter stated that the proposed measure would facilitate trans-shipment of bluefin from Longline category to General category vessels. A commenter suggested that all pelagic longline vessels should be able to fish under the General category rules, and not only those affected by the GRA.

Response: Based upon public comment and further consideration, NMFS no longer prefers the alternative that would have allowed vessels fishing with pelagic longline gear that are not authorized conditional access to the Cape Hatteras GRA to fish under General category rules. Given the uncertainty regarding the economic benefits as well as public concerns, the potential benefits of allowing vessels to fish under the General category rules do not outweigh the potential costs and risks associated with this activity. Further, allowing the pelagic longline vessels with relatively low performance criteria scores that are not allowed access to the Cape Hatteras GRA to fish under the General category rules is perceived as unfair to General category vessels and vessels with higher performance scores.

Comment 65: NMFS received a large number of comments that did not support the proposed limited conditional access to closed areas using pelagic longline gear, for a variety of reasons. Commenters, including the Florida Fish and Wildlife Conservation Commission, were foremost concerned about potential negative biological impacts on swordfish, billfish, and other species, as well as the indirect negative socio-economic impacts on the recreational fishing community if there were negative biological impacts. Specifically, commenters cited the benefits of the DeSoto Canyon and East Florida Coast closed areas contributing to the rebuilding of the swordfish stock, and the stabilization of the blue and white marlin stocks. Commenters stated that the biological analysis of the alternative was inadequate, and one commenter was concerned about the impacts on dusky sharks. Some commenters supported access, noting the importance of such access as a means to provide flexibility to pelagic longline vessels in the context of the IBQ program restrictions, while others suggested modifications to the alternative such as allowing the use of electronic monitoring instead of human observers.

Response: Based upon public comment and further consideration of potential administrative costs, NMFS is no longer preferring this alternative. The potential benefits of allowing pelagic longline vessels limited conditional access to the closed areas would not outweigh the potential costs and risks associated with this activity. The objectives of the proposed measure were to maintain the relevant conservation aspects of the closure, balance the objectives of the closures, provide commercial data from within the closures, and provide additional fishing opportunities for permitted longline vessels (mitigating the potential negative economic impacts of Amendment 7).

The relevant conservation aspects of the closures for which access was proposed are characterized by the objectives of the relevant closed areas (as described when they were implemented. The East Florida Coast, Charleston Bump, and DeSoto Canyon Closed Area were implemented as part of a bycatch reduction strategy, based on three objectives: (1) To maximize the reduction in incidental catch of billfish and of swordfish less than 33 lb dressed weight; (2) to minimize the reduction in the target catch of larger swordfish and other marketable species; and (3) to ensure that the incidental catch of other species (e.g., bluefin, marine mammals, and turtles) either remains unchanged or is reduced. Upon implementation, NMFS recognized that all three objectives might not be met to the maximum extent and that conflicting outcomes would require some balancing of the objectives. Although NMFS proposed limited, conditional access to these closed areas, public comment indicated that the proposed alternative did not achieve a proper balance of the achievement of the objectives of access. Although the swordfish stock is rebuilt, the public clearly believed that access to the closed area would undermine the benefits associated with the closures. In other words, the public believed that the first objective of the alternative (to maintain the relevant conservation aspects of the closure), was not being met. With respect to providing commercial data from within the closures, NMFS may obtain data from within the closures through the use of exempted fishing permits. Furthermore, there would be administrative costs associated with the access program. In summary, the benefits associated with providing additional fishing opportunities (by providing access) would not outweigh the costs in terms of the risk of undermining the conservation benefits of the closed areas.

Comment 69: Commenters supported implementation of the IBQ system in order to hold vessels accountable and provide incentives to reduce discards. Commenters noted that NMFS should provide some flexibility in the IBQ system, particularly in the short-term, to ensure that vessels, particularly small vessels, are able to adapt to the new restrictions and the overall program is successful. Commenters urged NMFS to continue to support the pelagic longline swordfish fishery, which is important for multiple reasons.

Response: Implementation of the IBQ system would increase the responsibility and accountability of individual vessels and the pelagic longline fishery as a whole, for the catch of bluefin tuna. As explained in detail in the responses to more specific comments below, the preferred individual bluefin quota system is designed to provide a reasonable and effective means of reducing dead discards, increasing accountability, and maintaining a viable pelagic longline fishery. The management tools are intended to provide flexibility at the level of the individual vessel, and in the quota system as a whole, so that the fishery can operate under the challenges of a substantially new regulatory structure. Furthermore, the fishery must be able to adapt on a continuing basis to the variability of highly migratory species, and changing ecological conditions.

Individual pelagic longline vessels have the flexibility to change their fishing practices through modification of fishing behavior (including time, location and methods of fishing, and the use of non-longline gear); increasing communication within the fishery to facilitate bluefin avoidance; and leasing of individual bluefin quota. Under the preferred alternative, NMFS may also provide additional flexibility by allocating additional quota to the Longline category.

Comment 76: The Louisiana Department of Natural Resources (Louisiana) commented that Amendment 7 will have large negative socio-economic impacts on the Gulf of Mexico pelagic longline fishery, with greatest impacts in Louisiana, with minimal benefits to the bluefin stock, and attributed the economic impacts mostly to the IBQ program, which it feels is inconsistent with the Louisiana Coastal Resources Program. Louisiana noted that the potential benefits to the stock of bluefin tuna are minimal compared to the potentially large socio-economic impact to the targeted fisheries, and NMFS' consistency determination lacks sufficient data and information.

Response: Pelagic longline vessels may be negatively impacted by the preferred IBQ program, and such impacts would likely be felt in the ports and communities associated with the fishery, including those in Louisiana, which is home to approximately 27 percent of the eligible pelagic longline vessels. Florida, New York, and New Jersey would also be impacted due to the distribution of eligible pelagic longline vessels (31 percent, 16 percent, and 16 percent of the eligible vessels, respectively). Bluefin dead discards in the GOM by pelagic longline vessels have typically ranged from 36 to 86 mt per year. The benefits of the preferred IBQ program include strictly limiting bluefin catch in the pelagic longline fishery, reduction of dead discards and waste, and promotion of economic efficiency, which would contribute to stock growth and a sustainable fishery in the long term. The fact that the GOM is a critically important spawning area for bluefin contributes to the biological importance of having a quota system that effectively limits bluefin catch and provides incentives for pelagic longline vessels to minimize interactions with bluefin.

The IBQ program was analyzed by home port state, and the impacts by state vary, depending upon the specific measurement (i.e., number of vessels with quota share, number of vessels that may need more quota than allocated; amount of quota that each vessel would need; and total amount of quota that each state would need). The states with the highest number of vessels with quota shares would be Florida (43 vessels with quota shares), Louisiana (25 vessels), New Jersey (18 vessels), North Carolina (14 vessels) and New York (11 vessels). Under the regulatory conditions of the Preferred Alternatives, within those home port states, the number of vessels that would need to lease additional quota (above their initial allocation) to continue fishing at their historic rates are as follows: Florida (5 vessels), Louisiana (13 vessels), New Jersey (4 vessels), North Carolina (2 vessels) and New York (3 vessels). Although the proportion of vessels in a particular state that would need to lease additional quota is highest in New Orleans, the average amount of quota that the vessels would need to lease is almost identical similar among vessels from the ports of Louisiana, Florida, and New Jersey. Vessels with the homeport state of New York would need to lease about four times more quota per vessel to continue fishing at their historic rates. The estimate of the total amount of quota that vessels with a home port of New York would need to lease is 13.4 mt (11 vessels), and the total amount of quota that vessels with a home port in Louisiana would need to lease is 17.4 mt (25 vessels).

NMFS has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State of Louisiana objects. The FEIS analysis demonstrates that NMFS utilized many of the factors cited by Louisiana as lacking in NMFS's evaluation. Specifically, NMFS used the best available logbook, dealer, and observer data, conducted vessel-specific analyses for preferred alternatives on gear restricted areas and IBQ measures, and relevant recent scientific information. NMFS also explored the availability of alternative methods of achieving the Amendment 7 objectives, and considered the economic impacts, as well as the long term benefits of the measures. The alternative methods to reduce dead discards of no action or group or regional quotas would have more adverse impacts and be less effective in achieving Amendment 7 objectives to reduce dead discards and maximize fishing opportunity. The design of the IBQ management measures and other aspects of Amendment 7 minimize the significant adverse economic impacts, disruption of social patterns, and adverse cumulative impacts, to the extent practicable, relative to other methods analyzed while also meeting Amendment 7 objectives.

The preferred IBQ program was designed to provide flexibility for vessels to be able to continue to maintain viable businesses, through initial allocations, potential allocation of quota from the Reserve category, quota leasing, elimination of the target species requirement, and, as described above, the flexibility for vessels to fully account for their catch at the end of a trip, after sale of the bluefin.

Comment 78: Commenters were concerned about the ability of new entrants to become active in the fishery, and some suggested that NMFS use an annual system to define eligible vessels, such as a minimum number of sets during the previous year. A commenter noted that businesses which supply new equipment to outfit pelagic longline vessels would be negatively impacted if new entrants were not able to enter the fishery.

Response: The ability for people who are currently not involved in the pelagic longline fishery to become participants in the fishery (new entrants) is an important consideration (and is a required consideration under the MSA). The preferred Amendment 7 IBQ program would add a single additional prerequisite for participation in the pelagic longline fishery to the previously existing two prerequisites and associated monitoring and compliance requirements (e.g., VMS). Previous to this Amendment, the two principal elements for participation in the fishery were a vessel and limited access permit. The preferred IBQ program would implement a requirement for a vessel to have the minimum amount of bluefin quota allocation in order to fish with pelagic longline gear, as well as electronic monitoring requirements associated with preferred IBQ program.

The preferred IBQ program would provide adequate opportunities to new entrants to the fishery because there would be multiple means by which a new entrant may satisfy the quota requirement. The structure of the preferred IBQ program would not create any unreasonable barriers to new entry. A person interested in participating in the fishery may purchase a permitted vessel with IBQ shares, and therefore be allocated quota annually (due to the IBQ share associated with the permit), or a person may purchase a permitted vessel without IBQ shares, but lease quota allocation from another permitted vessel. Under the preferred IBQ program, as in the past, participation in the pelagic longline fishery by new entrants would require substantial capital investment and potential new entrants would face costs which are similar to historical participants.

NMFS considered the merits of setting aside a specified amount of quota for new entrants, but found several negative aspects of such a provision. For example, providing quota to new entrants would essentially create a second quota allocation system, which would complicate the overall preferred IBQ program by creating separate class of vessels, with different allocations. A quota set aside for new entrants would result in less quota available for other participants in the fishery, and rather than the market controlling the quota, there would be many policy decision to be made (e.g., would the amount of set aside vary according to the number of new entrants, or be a fixed amount annually?). Would the quota be divided equally among new entrants, be allocated in the minimum share amounts, or allocated based on fishing history). NMFS believes in simplifying the IBQ program upon implementation where possible, in order to minimize regulatory burden and complexity. A system of rules regarding quota set aside would add additional complications to the IBQ program. Therefore, when considering whether additional restrictions to facilitate new entrants to the fishery are warranted, NMFS determined that given the lack of information with which to base such restrictions, and the uncertainty whether there would be a pressing need for such restrictions, that a quota set aside was not warranted. During the three year review of the IBQ program NMFS will consider information from the fishery after implementation of the IBQ program, and evaluate whether the IBQ program provides adequate opportunities to new entrants.

As suggested by commenters, NMFS considered the concept of making an annual determination of which vessels are eligible to receive quota allocations based on a set of criteria (such as a certain number of longline sets during the previous year). NMFS found that there are negative aspects of such an annual system. If the vessels allocated quota shares varied on an annual basis, the IBQ program would be more complex and difficult to administer; there would be greater uncertainty annually in the fishery; there would be incentives to fish on an annual basis (due to criteria to fish in order to receive quota); and any value associated with a permit that would be derived from the associated IBQ share may be minimized (if the IBQ share is only valid for a year). Although such a system could limit the number of years a vessel without quota share (i.e., a new entrant) must lease quota, the negative aspects of this approach would be substantial. For example, in order to have an IBQ system that includes strong accountability, any quota 'debt' accrued must persist from one fishing year to the next. It would be difficult to implement persistent accountability if the vessels eligible for quota changed on an annual basis.

Comment 82: Many pelagic longline vessel owners expressed strong concerns that the amount of bluefin quota allocated to individual vessels would be inadequate to continue to fish, and that despite efforts to avoid bluefin, vessels would sooner or later encounter bluefin. The proposed allocations would make continuing fishing operations extremely difficult, because they would be forced to stop fishing, and therefore revenue would be cut off, but expenses would continue. Vessel owners stated that they would not be able to remain in business under such circumstances, and some estimated that a large vessel would need about 20 bluefin (instead of between 2 and 13 fish). Some highlighted the difference between the proposed IBQ allocations and the number of bluefin tuna that may be retained by a vessel with a General category commercial permit (up to 5 bluefin a trip), as justification for having larger individual quota allocations.

Response: Under the preferred IBQ program, some vessels would not have enough quota share to continue to account for the same amount of bluefin they caught in the past. The FEIS analysis indicates that at a quota level of 137 mt approximately 25 percent of vessels would need to lease additional bluefin quota in order to land their historical average amount of target species (if they do not change their behavior to reduce their historical rate of bluefin interactions). If no leasing of bluefin allocation were to occur, there could be a reduction in target species landings with an associated reduction in revenue of approximately $ 7,574,590 total, or $ 56,108 per vessel (135 vessels).

The precise impacts of the IBQ program are difficult to predict due to the variability of bluefin distribution as well as the potential range of fishing behaviors (and business strategies) of vessels in response to the new regulations. In order to reduce the likelihood of interactions, vessel operators may have to pursue new strategies including communication with other pelagic longline operators regarding the known locations of bluefin, modifications to fishing time, location, and technique, as well as use of alternative gears. In conjunction with these strategies, leasing additional quota may be necessary. The preferred IBQ program includes the requirement that the relevant vessel have a permit as of August 21, 2013, which reduced the number of eligible vessels, and therefore would slightly increase the amount of quota share per vessel. Due to the difficulty of predicting the precise impacts of the preferred IBQ program, NMFS may, as the fishery adjusts to the new system, need to consider providing additional quota to the Longline category in order to increase the amount of quota available to individual vessels, thereby balancing the need to have an operational fishery with the need to reduce bluefin bycatch in the fishery. The preferred alternative of a three-year formal review of the IBQ system would consider any structural changes to the program necessary.

The pelagic longline fishery is an incidental bluefin fishery unlike the directed General category handgear fishery, and retention limits and other management measures are different. The preferred alternatives in Amendment 7 would implement a regulatory system that would mitigate the effects of the different restrictions among the different permit categories.

Comment 84: Some commenters urged NMFS to allocate equal shares of bluefin quota to all eligible vessels, for multiple reasons. Equal shares would avoid the use of historical logbook data; would reduce potential negative feelings among permit holders with different amounts of allocation; and would provide higher quota allocations for some vessels than under the proposed method. Additionally, a commenter noted that it may not be necessary to consider the amount of target catch in the quota share formula (and provide more quota to vessels catching more target catch) because larger fishing operations are better equipped financially to adapt to new regulations. Another commenter supported basing the allocation on target species landings and fishing effort, because higher effort is likely to result in more bluefin catch.

Response: NMFS carefully considered allocating quota shares on an equal basis, but prefers to implement the method as proposed, which would incorporate two metrics of equal weight: designated species landings and the ratio of bluefin to designated species landings. While an equal share formula has some positive attributes, the overall merits of the preferred method would be greater. It is important to take into consideration the diversity of the pelagic longline fleet, maximize the potential for the success of the IBQ program, and provide incentives for vessels to avoid bluefin tuna.

NMFS analyzed the pelagic longline logbook data on target catch and bluefin interactions, and for most vessels, there is positive correlation between the amount of target catch, and the number of bluefin tuna interactions. In other words, for most vessels, the more swordfish, yellowfin tuna, or other target species a vessel catches, the more bluefin tuna it interacts with. However, a few vessels (those responsible for the largest number of interactions) interact with large numbers of bluefin, out of proportion with the amount of their target catch. Considering this historic pattern, basing one of the allocation formula elements on the amount of designated species landings would increase the likelihood that vessels would be allocated quota in relation to the amount of quota they may need to account for their catch of bluefin.

The second of the two elements (the ratio of bluefin interactions to designated species landings) is useful because it takes into consideration the fact that relatively few vessels (i.e., about fifteen percent of the vessels) are responsible for about 80 percent of the interactions with bluefin tuna. Because the preferred allocation formula would result in a lower allocation for vessels with a higher rate of historic interactions, it would provide a strong incentive for such vessels to make changes in their fishing practices to reduce their number of bluefin interactions. Vessels with historically high catches of target species and a low rate of interactions with bluefin would receive a larger quota share than vessels with either higher rates of bluefin interactions or lower amounts of target species.

Comment 88: Commenters expressed concern about whether vessel owners would be willing to lease quota to other vessels, given the low amounts of quota allocated to vessels, and concern that the cost of leasing would be affordable, especially for owners of small vessels. Other commenters did not support leasing because access to additional quota could enable vessels to target bluefin.

Response: The analysis of the preferred IBQ program in the FEIS indicates that at a quota of 137 mt, 25 percent of vessels would need to lease additional quota in order to land their historical average amount of designated species (if they do not change their behavior to reduce their historical rate of bluefin interactions). Therefore, a majority of vessels may have quota in excess of what is needed to account for their bluefin catch, and may have incentive to lease quota to other vessels. Not-withstanding the analysis, there is uncertainty regarding both the amount and price of quota that may be leased. A well-functioning leasing market, which enables quota to be leased by those who need it at an affordable price, will be a key factor in whether the preferred IBQ program functions as intended.

Comment 92: Comments on NMFS' authority to close the pelagic longline fishery ranged from those who support closing the fishery in conjunction with a Longline category quota allocation of 8.1 percent, to those who said that the fishery should be closed only if there is unusually high catch of bluefin (and not when the quota is reached). Commenters noted the potential impacts of closures early in the year on the pelagic longline fishery, supporting business, consumers of the fish products, and future ICCAT recommendations.

Response: A closure of the pelagic longline fishery may have adverse direct and secondary economic impacts, the severity of which would depend upon how early in the year the closure occurred. Under the preferred IBQ program, in which individual vessels may not fish with pelagic longline gear unless they have quota, it is not likely that NMFS would be required to close the fishery as a whole. However, individual vessels would be prohibited from fishing if they have not accounted for their catch or do not have the required minimum amount of quota allocation to depart on a pelagic longline trip.

If, based on the best available data, NMFS estimates that the total amount of dead discards and landings are projected to reach, reach, or exceed the Longline category quota, NMFS may prohibit fishing with pelagic longline gear. Similarly, if there is high uncertainty regarding the estimated or documented levels of bluefin catch, NMFS may close the fishery to prevent overharvest of the Longline category quota, or prevent further discarding of bluefin.

As described in many of the responses to comments, NMFS has designed Amendment 7 not only reduce dead discards and implement accountability, but also to provide flexibility for pelagic longline vessels fishing under the preferred IBQ program restrictions, and flexibility in the quota system as a whole, to balance the needs of the pelagic longline fishery with the needs of the other quota categories.

Comment 94: NMFS received comments that supported electronic monitoring (i.e., video camera and gear sensors), while other comments either expressed concern or opposed it. Comments supporting electronic monitoring indicated that it is not cost prohibitive, that it would allow NMFS to ground-truth other data, and that it supports accountability and enforcement. Those opposed to electronic monitoring said that it is cost prohibitive, an invasion of privacy, and is redundant with existing information. Some comments expressed concern about the functionality of a system, considering the issues experienced with some VMS functionality, and the ability to identify the difference between bigeye and bluefin tuna using video cameras. Implementation using a pilot scale was suggested, which would allow time to set up a functioning infrastructure. Expansion of electronic monitoring to other categories with dead discards was also suggested.

Response: The preferred measures would establish requirements to monitor dead discards for all commercial user categories to better achieve the ICCAT requirement to account for sources of bluefin tuna fishing mortality and to better monitor the fishery for bluefin accounting purposes domestically. The Purse seine category would be required to report dead discards via VMS, and hand gear fisheries (General, Harpoon, and Charter/headboat categories) would be required to report using an automated catch reporting system via internet or phone. Longline category vessels would be required to install and maintain a video and gear electronic monitoring system that would record all catch and relevant data regarding pelagic longline gear deployment and retrieval. The purpose of video monitoring for the Longline category would be to provide a cost effective and reliable source of information to verify the accuracy of bluefin tuna interactions reported via VMS and logbooks. In many instances, the FEIS analysis found discrepancies in logbook data and observer data (considered to be highly accurate) reported for the same trip. The preferred electronic monitoring measure would support accurate catch data and the preferred bluefin tuna IBQ management measures, by providing a means to verify the accuracy of the counts and identification of bluefin reported by the vessel operator. The per-vessel cost of this gear is expected to be approximately $19,175 for purchase and installation (including maintenance costs and loan interest), or $3,835 per year over the five-year life of the equipment. Variable costs are approximately $225 per trip, including data retrieval, fishing activity interpretation, and catch data interpretation. These costs are lower than the cost of increased observer coverage. The Southeast Fisheries Science Center estimates that observer deployment costs approximately $1,075 per sea day, which equates to approximately $9,675 per average nine day pelagic longline trip.

Video monitoring is currently used in several fisheries, and NMFS has funded over 30 pilot projects to further research on the use and effectiveness of electronic monitoring, including research on the accuracy of finfish identification. These studies provide evidence that properly deployed and maintained video monitoring camera systems would provide effective data for accurately identifying large pelagic species. NMFS white papers on electronic monitoring are available at the following web address: http://www.nmfs.noaa.gov/sfa/reg_svcs/Councils/ccc_2013/K_NMFS_EM_WhitePapers.pdf. NMFS would take into account the time required for owners to outfit their vessels with newly required equipment when establishing the dates of required effectiveness for electronic monitoring.

Comment 99: NMFS received a comment that NMFS should consider the fact that transfers of quota under the measure that would provide more flexibility for General category quota transfers will have the effect of moving quota from the traditional Northeast fishery to the mid-Atlantic and South; Alternative E1c will negatively impact Northeast fishermen. One commenter stated that NMFS should take no action on General category subquotas (Alternative E1a). Another commenter stated that NMFS should establish 12 equal monthly subquotas (Alternative E1b).

Response: NMFS acknowledges the concerns that quota distribution may impact historical geographic distribution and considered these factors in selecting preferred alternatives. Note that current regulations do not preclude General category and HMS Charter/Headboat category vessels from traveling from one area to another. In fact, many vessels travel from the northeast and mid-Atlantic states to participate in the winter fishery that occurs largely off North Carolina. NMFS would continue to consider the regulatory determination criteria regarding inseason quota transfers in an attempt to balance reasonable opportunity to harvest quota with other considerations, including variations in bluefin distribution and availability, among others. The preferred alternative would provide additional fishing opportunities within the General category quota while acknowledging the traditional fishery. Prioritizing transfer from one winter fishery subquota to another would minimize negative impacts of transferring quota that is traditionally used by Northeast fishermen in the summer and fall months. Division of the quota equally by month was not preferred because the potential negative social and economic impacts outweigh the positive impacts. The negative aspects of this alternative include the potential for gear conflicts and a derby fishery, as well as the potential for the historical geographic distribution of the fishery to be dramatically altered. Although this alternative would provide some stability to the fishery by establishing a known amount of quota that would be available at the first of each month, if catch rates are high in the early portion of the month, these quotas could be harvested rapidly and may lead to derby style fisheries on the first of each month. Additionally, if catch rates are high and subquotas are reached quickly, NMFS may need to publish multiple closures notices throughout the year.

Comment 101: NMFS received comments on allocating a portion of the trophy south subquota to the Gulf of Mexico (preferred Alternative E3b), including that NMFS should not reduce the trophy south subquota; the reduction would negatively affect charter captains in the mid-Atlantic and South Atlantic areas; the change in allocation would increase landings of spawning bluefin in the Gulf of Mexico. Other commenters stated that NMFS should change the division of subquota, but not split the subquota equally between the southern area and the Gulf of Mexico; NMFS should allocate 10% or 17% of the trophy south subquota to the Gulf of Mexico. The Mid-Atlantic Fishery Management Council commented that NMFS should take no action on this issue (Alternative E3a) and that Alternative E3b would lead to an unreasonably small recreational bluefin trophy quota for the northern region.

Response: Under the preferred alternative, the trophy subquota would be divided to provide 33% each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. The objective of this alternative is to provide a reasonable fishing opportunity for recreational vessels in the Atlantic and Gulf of Mexico, reduce discards, and account for incidentally caught bluefin. A separate subquota allocation for the Gulf of Mexico would improve the equity of the trophy-sized fish allocation by increasing the likelihood that there would be trophy quota available to account for incidental catch of bluefin in that area (while still providing incentives not to target bluefin). An equal 33% division among the three areas would provide the most equitable trophy subquota allocation. This preferred measure would not affect the amount of Trophy subquota available to the northern area.

8.3 Description and Estimate of the Number of Small Entities to Which the Final Rule Would Apply

Amendment 7 is expected to directly affect commercial and for-hire fishing vessels that possess an Atlantic Tunas permit or Atlantic HMS Charter/Headboat permit. In general, the HMS Charter/Headboat category permit holders can be regarded as small entities for RFA purposes. HMS Angling (Recreational) category permit holders are typically obtained by individuals who are not considered small entities for purposes of the RFA. The Small Business Administration has established size criteria for all major industry sectors in the U.S. including fish harvesters. A business involved in fish harvesting is classified as a "small business" if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts (revenue) not in excess of $20.5 million (NAICS code 114111, finfish fishing) for all its affiliated operations worldwide. NAICS is the North American Industry Classification System, a standard system used by business and government to classify business establishments into industries, according to their economic activity. The United States government developed NAICS to collect, analyze, and publish data about the economy. In addition, the Small Business Administration (SBA) has defined a small charter/party boat entity (NAICS code 487210, for-hire) as one with average annual receipts (revenue) of less than $7.5 million. The SBA recently modified its definitions of small businesses, and therefore the definitions were slightly different between the proposed and final rules (79 FR 33647; June 12, 2014).

The average annual revenue per active pelagic longline vessel is estimated to be $187,000 based on the 170 active vessels between 2006 and 2012 that produced an estimated $31.8 million in revenue annually. The maximum annual revenue for any pelagic longline vessel during that time period was less than $1.4 million, well below the SBA size threshold of $20.5 million in combined annual receipts (revenue). Therefore, NMFS considers all Tuna Longline category permit holders to be small entities. NMFS is unaware of any other Atlantic Tunas category permit holders that potentially could earn more than $20.5 million in revenue annually. Therefore, NMFS considers all Atlantic Tunas permit holders subject to this action to be considered small entities. NMFS is also unaware of any charter/headboat businesses that could exceed the SBA receipt/revenue thresholds for small entities.

The preferred alternatives would apply to the 4,059 Atlantic Tunas permit holders based on an analysis of permit holders in October 2013 (NMFS 2014). Of these permit holders, 252 have Longline category permits, 14 have Harpoon category permits, 7 have Trap category permits, 5 have Purse Seine category participants, and 3,783 have General category permits.

The preferred alternatives would also impact HMS Angling category and HMS Charter/Headboat category permit holders. In 2013, 3,968 vessel owners obtained HMS Charter/Headboat category permits. It is unknown what portion of these permit holders actively participate in Atlantic HMS fishing or fishing services for recreational anglers.

NMFS has determined that the preferred alternatives would not likely directly affect any small government jurisdictions. More information regarding the description of the fisheries affected, and the categories and number of permit holders, can be found in Chapter 3.

8.4 Description of the Projected Reporting, Record-Keeping, and Other Compliance Requirements of the Rule , Including an Estimate of the Classes of Small Entities Which Would Be Subject to the Requirements of the Report or Record

Several of the preferred alternatives in Amendment 7 would result in reporting, record-keeping, and compliance requirements that require a new Paperwork Reduction Act filing and some of the preferred alternatives would modify existing reporting and record-keeping requirements, and add compliance requirements. NMFS estimates that the number small entities that would be subject to these requirements would include the Longline category (252), Charter/Headboat category (3,968), General category (3,783), Harpoon category (14) and Purse Seine category (3), based on the number of permit holders in commercial bluefin tuna fishing categories in 2013.

Area-Based Alternatives

Currently, pelagic longline vessels must have agency approved E-MTU VMS units installed and must use them to hail in and out of port prior to and at the end of a fishing trip. The Area-based preferred alternative that would grant conditional access (i.e., based on performance metric criteria) to the Modified Cape Hatteras Gear Restricted Area (Alternative B 1d) would require that pelagic longline vessels authorized to fish in the area also submit daily reports to NMFS via E-MTU VMS summarizing their fishing effort and bluefin tuna catch and harvest. This is a slightly modified change from the preferred alternative in the DEIS, but it has the same additional reporting burden, which is expected to take five minutes per report/day at a cost of $0.12 per report. This data will allow NMFS to determine whether continued access to the areas is warranted based on bluefin tuna interaction rates, among other things.

Pelagic longline vessels that are not granted conditional access to the Modified Cape Hatteras Gear Restricted Area would be prohibited from fishing in the area with pelagic longline gear, which is an additional compliance burden. They could choose to fish in the area with other authorized gear under General category rules, and would be required to declare their intent to fish in this way, hail in and out of port, and report their daily catch of bluefin tuna via E-MTU VMS. This reporting burden is expected to be approximately 5 minutes per report at a cost of $0.12 per report.

NMFS would calculate performance metrics for each pelagic longline vessel to determine whether they qualify to gain access to closed or gear restricted areas. These metrics would be based on the vessel's historical catch and reporting compliance. Pelagic longline permit holders would be permitted to appeal their performance metrics by submitting a written request, indicating the reason for the appeal, and providing supporting documentation (e.g., copies of landings records, permit ownership, etc.). Each request is expected to take approximately two hours to compile.

Quota Control Alternatives

The preferred alternatives for bluefin tuna quota controls would include several new reporting requirements necessary to implement individual bluefin quotas for pelagic longline vessels.

Some of these new requirements are also addressed under the alternatives in other sections of this document.

The alternatives in this section include options for assigning individual quota shares. Preferred alternative C2j would implement a process for individuals to appeal their quota share. Individuals would be required to submit a written request for an appeal, and include the reason for appeal and supporting documentation. The reporting burden associated with each appeal is expected to be approximately two hours.

Preferred alternative C2c2 would authorize transfer of quota among pelagic longline and purse seine vessels/participants. To support tracking of quota transfers among vessels and establish a tracking system for purchase of bluefin tuna under the IBQ system, preferred alternative C2e1 would require vessel owners to track and execute transfers via an online electronic system supported by NMFS. By the very nature of the reporting system, participants would be required to have access to computers and the Internet. If a participant does not have current access to computers and the Internet, he/she may have to expend approximately $1,500 for computer equipment (one-time cost) and $300 annual cost for Internet access. Participants would need some basic computer and Internet skills to input information for bluefin tuna trade into the IBQ electronic reporting system. The record-keeping and reporting burden for vessel owners is expected to be approximately 15 minutes per trade. The electronic system would also require interaction with federal bluefin tuna dealer permit holders that purchase IBQ bluefin; however, electronic dealer reporting for bluefin tuna purchases was previously analyzed and approved by NMFS in the 2006 Consolidated HMS FMP rulemaking (71 FR 58058, October 2, 2006).

An IBQ system for bluefin demands a high degree of accountability for providing accurate data on catch and harvest. Preferred alternative C2g2 (same as D2b) would require pelagic longline vessels to install an electronic monitoring system, including video cameras and associated recording and monitoring equipment in order to record all longline catch and relevant data regarding pelagic longline gear deployment and retrieval. Data collected during each fishing trip would be required to be provided to NMFS, and stored and available to NMFS for at least 120 days after each trip. This alternative would require both fixed and variable costs over the service life of each camera installed onboard. The cost of an electronic system bought in 2010, over its five year projected lifespan, is about $3,565 a year. This includes 4% of the purchase price for maintenance costs and a 7% interest rate on the loan to buy a system (National Observer Program, 2013). The variable costs for vessel owners include data retrieval ($45/hour; 2 hr per trip; technician travel ($0.5/mile; 100 miles for each trip); fishing activity interpretation ($47/hour; 0.25 hr/trip); and catch data interpretation ($47/hour; 1.5 hr/trip). The estimated total variable costs would be approximately $ 225 per trip and the annual fixed costs would be $ $ 3,835 for the purchase and installation of the equipment, and six services per year; $45/hour; 1 hr six times per year).

Preferred alternative C2g1(same as D1b) would require pelagic longline vessels to use their E-MTU VMS to submit daily reports of bluefin tuna catch and harvest and fishing effort. Purse seine vessels would be required to purchase and install E-MTU VMS units, and submit daily reports of catch, harvest, and effort as well. This alternative would provide more timely data as required by the IBQ system than the current pelagic longline logbook program and dealer reporting requirements. As noted above, the additional reporting burden for the VMS reports is 5 minutes per report/day and $0.12 per report. The cost of installing E-MTU VMS is $3,300 per vessel and daily position reports cost approximately $1.44 per day.

Several alternatives include additional compliance requirements without additional reporting. Preferred alternative C2 l.2b would require mandatory retention of all legal-sized dead bluefin tuna caught on pelagic longline gear. Preferred alternative C4b would allow NMFS to prohibit fishing using pelagic longline gear once the bluefin tuna quota is reached. Conversely, preferred alternative C2 l.1b would decrease compliance by repealing target catch requirements for pelagic longline vessels.

Lastly, one of the preferred alternative would have an additional reporting requirement, anticipated via a future action would be implemented under separate rulemaking. That preferred alternative, which would be implemented via future rulemaking is a cost recovery program for management and enforcement costs associated with the preferred IBQ program (Preferred alternative C 2i). Once this issue is addressed via a subsequent regulatory action, NMFS would update/ modify current record-keeping and compliance requirements that could require new Paperwork Reduction Act filings, but would not do so at this time.

Enhanced Reporting Measures

Several preferred alternatives are identified as measures to enhance reporting for bluefin tuna. Three of these include the VMS requirements (C2g1 and D1b), and electronic monitoring of the Longline category (C2g2 and D2b), discussed above. The last is the preferred alternative to require automated catch reporting for General, Harpoon, and Charter/Headboat permit categories (D3b). This alternative would require individuals with those vessel permits to report their catch (i.e. landings and discards) after each trip using an automated system such as a website or phone recording system. NMFS estimates that each report will take approximately 5 minutes. Based on previous years' landings, NMFS estimates that the total annual reporting burden will be approximately 607 hours and could affect approximately 8,226 permit holders.

Other Measures

The other preferred alternatives which are outlined in Chapter 2 would change quota allocations, timeframes for General category subquota allocations, permit category changes, and Purse seine start date, authorized gear types, and other management measures, but would not increase reporting or compliance requirements.

8.5 Description of the Steps the Agency Has Taken to Minimize the Significant Economic Impact on Small Entities Consistent with the Stated Objectives of Applicable Statutes, Including a Statement of the Factual, Policy, and Legal Reasons for Selecting the Alternative Adopted in the Final Rule and the Reason That Each one of the Other Significant Alternatives to the Rule Considered by the Agency Which Affect Small Entities Was Rejected

One of the requirements of an FRFA is to describe any alternatives to the preferred alternatives which accomplish the stated objectives and which minimize any significant economic impacts. These impacts are discussed below and in Chapters 4 and 5 of this document. Additionally, the Regulatory Flexibility Act (5 U.S.C. § 603 (c) (1)-(4)) lists four general categories of "significant" alternatives that would assist an agency in the development of significant alternatives. These categories of alternatives are:

1. Establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
2. Clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
3. Use of performance rather than design standards; and,
4. Exemptions from coverage of the rule for small entities.

In order to meet the objectives of this Amendment, consistent with all legal requirements, NMFS cannot exempt small entities or change the reporting requirements only for small entities because all the entities affected are considered small entities. Thus, there are no alternatives discussed that fall under the first and fourth categories described above. Under the third category, "use of performance rather than design standards," NMFS considers Alternative B 1c "Cape Hatteras Gear Restricted Area with Access based on Performance", Alternative B 1d "Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance", Alternative C 2 "IBQs Based on Designated Species Landings and the Ratio of Bluefin Catch to Designated Species Landings", and B 3b "Limited Conditional Access to Closed Areas using Pelagic Longline Gear Based on Performance Criteria" to all be alternatives that use performance standards. As described below, NMFS analyzed several different alternatives and provides the rationale for identifying the preferred alternatives to achieve the desired objective.

NMFS considered five different categories of potential bluefin management measures, each with its own range of alternatives that would meet the objectives of the Magnuson-Stevens Act and the 2006 Consolidated HMS FMP. The first category, allocation alternatives, covers four main alternatives that address various quota reallocation strategies. The second category of alternatives, area based alternatives, explores various gear restricted areas, gear measures, and access to closed areas using pelagic longline gear. The third category of alternatives, bluefin tuna quota controls, covers four main alternatives, which include IBQs, regional and group quotas, and closure of the pelagic longline fishery. The fourth category of alternatives, enhanced reporting measures, covers six main alternatives, which include VMS requirements, electronic monitoring of the Longline category, automated catch reporting, deployment of observers, logbook requirements, and expanding the scope of the Large Pelagics Survey. The fifth category of alternatives, other measures, covers seven main alternatives that address other Tunas permit categories besides Longline and other tuna quotas. The expected economic impacts of the different alternatives considered and analyzed are discussed below.

The potential impacts that these alternatives may have on small entities have been analyzed and are discussed in the following sections. The economic impacts that would occur under these preferred alternatives were compared with the other alternatives to determine if economic impacts to small entities could be minimized while still accomplishing the stated objectives of this rule.

8.5.1 Allocation Alternatives

These alternatives would either modify the base allocations (percentages of the U.S. quota designated to particular for bluefin quota categories) and remain the same until and if changed by future amendment, or would set up a regulatory mechanism for modifying the quotas annually or in certain years based on defined criteria.

Alternative A 1 – No Action

The No Action alternative would make no changes to the current percentages that each quota category is allocated (General: 47.1 percent; Harpoon: 3.9 percent; Purse Seine: 18.6 percent; Longline: 8.1 percent; Trap: 0.1 percent; Angling: 19.7 percent; Reserve: 2.5 percent). Dead discards would continue to be accounted for separately from the quota allocations through the annual specification process.

In the short-term, minor to moderate direct adverse economic impacts are likely to be limited to the Longline category due to quota shortages. In 2012, NMFS projected that the Longline category was likely to fully harvest their allocated quota before the end of the fishing year, and closed the southern area on May 29, 2012 (77 FR 31546) and the northern area on June 30, 2012 (77 FR 38011, June 26, 2012). In 2013, the Longline category northern and southern areas were closed on June 25 (78 FR 36685) because the adjusted quota had been reached. In the long-term, there could be additional minor to moderate direct adverse economic impacts if other quota categories are closed early in the fishing year.

Alternative A 2 – Codified Reallocation

The Codified reallocation alternative (Preferred) would reallocate quota and result in increased bluefin quota for the Longline category, and would therefore alleviate some of the current challenges associated with the domestic quota system.

This alternative would codify a quota category increase of 62.5 mt whole weight to the Longline category reflecting the historical 68 mt dead discard allowance and the current allocation percentages. All of the categories, including the Longline category, would contribute to the 68 mt historical allowance, with a net increase of 62.5 to the Longline category after its share of the deduction, (i.e., based on the current 8.1 percent allocation, the Longline category portion of the 68 mt is 5.5 mt; 68 mt – 5.5 mt equals 62.5 mt, hence an increase of 62.5 mt. This alternative results in a net increase of 62.5 mt for the Longline category, which would increase the potential revenue from bluefin for the Longline category by approximately $11,269 per permit holder per year. The General category would face a potential reduction in the maximum revenue from bluefin of approximately $850 per permit holder per year. The Harpoon category would face a potential reduction in the maximum revenue from bluefin of approximately $2,409 per permit holder per year. The Purse Seine category could face a potential reduction in the maximum revenue from bluefin of approximately $107,627 per permit holder per year. Although the magnitude of revenue loss appears to be high for the Purse Seine category, this alternative actually would likely have minor adverse economic impacts on Purse Seine fishermen since landings in this category have recently been very low.

Alternative A 2b (Reallocation Incorporating Recent Catch Data) would revise the quota allocation percentages for all categories, basing the new allocation on both the current codified allocation (50%) and recent catch (50%) as applicable to each quota category. Reallocating the quota based on recent catch data would result in 83.56% increase in the Longline category quota and an increase in Angling category of 47.1%. However, this reallocation alternative would result in a decrease in the quotas of the General, Harpoon, Purse Seine, Trap, and Reserve categories of 10.85%, 15.56%, 49.01%, 55.56%, and 48.05%, respectively. Revising the quota allocations for all categories to reflect recent catch would increase the potential revenue from bluefin for the Longline category by approximately $11,305 per permit holder per year. The General category could face a potential reduction in the maximum revenue from bluefin of approximately $1,254 per permit holder per year. The Harpoon category could face a potential reduction in the maximum revenue from bluefin of approximately $4,996 per permit holder per year. The Purse Seine category could face a potential reduction in the maximum revenue from bluefin of approximately $713,558 per permit holder per year.

Alternative A 2c (Reallocation from Purse Seine to Longline Category) would reallocate two-fifths (40 percent) of the current Purse Seine category quota to the Longline category and would result in 91.84% increase in the Longline category quota and a decrease the Purse Seine quota by 39.99%. The permanent reallocation of two-fifths of the Purse Seine category to the Longline category would increase the potential revenue from bluefin for the Longline category by approximately $12,387 per permit holder per year. The Purse Seine category could face a potential reduction in the maximum revenue from bluefin of an equivalent $582,202 per permit holder per year. The other bluefin quota categories would not be impacted by this alternative.

Alternative A 3 – Annual Reallocation of Bluefin Quota from Purse Seine Category

Annual reallocation Alternatives A 3a and A 3b would reallocate anticipated unused quota from the Purse Seine category to other quota categories or would allocate to the Purse Seine category in proportion to the number of permitted vessels (respectively).

Under alternative A 3a, the preferred alternative, 25 percent of the Purse Seine category bluefin quota would be guaranteed to be available to the five historically permitted fishery participants in that category, but beyond that, the bluefin quota would be based on the previous year’s landings and dead discards. Based on a formula, quota may be reallocated from the Purse Seine category to the Reserve category annually. The allocation formula is designed to allocate a minimum level of quota to fishery participants, as well as enable quota to increase over successive years, in order to avoid being too restrictive. Note that NMFS would still have the regulatory authority to transfer quota inseason to or from any fishing category to or from the Reserve, and could continue to transfer any amount of quota inseason, even if purse seine participants received the minimum amount of quota (25 percent) at the start of the season. In recent years, little of the Purse Seine category quota has been landed. If that continues into the future, under alternative A 3a, the Purse Seine quota could be reduced by a maximum of 75 percent. The 23.8 mt associated with that reduction would reduce the maximum revenue from bluefin that the Purse Seine participant could land by $403,000 annually. However, given the recent bluefin landings history of the purse seine fleet, it is unlikely that future bluefin landings would be constrained substantially by this reduction and allocations would be re-evaluated on an annual basis. Therefore, alternative A 3a would likely only result in minor direct adverse short-term economic impacts to permitted Purse Seine vessels. Other categories would benefit from the potential of increased revenue, and this alternative may provide a better business planning environment for NMFS and fishermen by alleviating the large reservoir of unused Purse Seine quota and distributing it prior to the start of the fishing and management season.

Under alternative A 3b (Annual Purse Seine Allocation Commensurate with the Number of Purse Seine Vessels), NMFS would make Purse Seine category quota available annually to that category based on the number of active Purse Seine vessels and would reallocate the remainder to the Reserve category. An active Purse Seine vessel would be defined as a vessel with a valid Purse Seine category permit, has requested and received an allocation in accordance with the regulations (§ 635.27(a)(4)), and is capable of fishing purse seine gear (defined at § 635.21(e)(vi)) to harvest Atlantic bluefin tuna. The net result would be only those Purse Seine category permit holders with active vessels would receive Purse Seine quota and individually they would be allocated one fifth of the overall Purse Seine base quota, acknowledging the preferred codified allocation alternative (Alternative A 2a) under which the Purse Seine base quota would be 159.1 mt. This alternative would address the fact that the Purse Seine allocation was intended to be an amount for five limited access permitted purse seine vessels, but the amount of fishing activity has been very low, with two of the permits not even being associated with vessels. The total Purse Seine allocation would be prorated downward to reflect the actual size of the active purse seine fishery. The economic impacts of this alternative would be similar to those under alternative A 3a. Alternative A 3b would also likely only result in minor direct adverse short-term economic impacts resulting from the loss of potential revenue if current bluefin fishing levels remain the same.

Alternative A 4 – Modifications to Reserve Category

Under the alternative A 4a, the No Action alternative, there would be no changes to the allocation to the Reserve category or the determination criteria that are considered prior to making any adjustments to/from this category. This alternative would not impact small entities. The Reserve category would be allocated the current 2.5 percent of the U.S. annual quota, and NMFS could allocate any portion of the Reserve category quota for inseason or annual adjustments to any other quota category provided NMFS considered the current determination criteria and other relevant factors first.

Alternative A 4b (Modify Reserve Category), the preferred alternative, would increase the amount of quota that may be put into the Reserve category from several sources and expand the potential uses of Reserve category quota. Specifically, it would potentially increase the Reserve category quota beyond the current baseline allocation of 2.5 percent and broaden the determination criteria to be considered in making adjustments to/from the Reserve category. This could result in moderate beneficial economic impacts if unused quota from a previous year could be reallocated to the Reserve category to potentially offset any overharvests in another category, consistent with ICCAT recommendations on carry-forward of unharvested quota.

8.5.2 Area Based Alternatives

Alternative B1 – Gear Restricted Areas

Under alternative B 1, NMFS considered a range of gear restricted area alternatives from maintaining existing pelagic longline closures (the no action alternative) to a year- round gear restricted area of the entire Gulf of Mexico EEZ (west of 82º longitude) in order to reduce interactions with bluefin tuna.

Alternative B 1a, the No Action Alternative, would result in the status quo regarding gear restricted areas. Although the current pelagic longline closed areas would remain effective, the data indicate that large numbers of interactions of pelagic longline gear with bluefin occur in consistent areas during predictable time periods, which are outside of the current closed areas. The No Action alternative would not reduce dead discards. The magnitude of the discards in the pelagic longline fishery is more likely to stay the same or increase under the No Action alternative, without implementation of a new gear restricted area. This could result in moderate long-term adverse economic impacts when the Longline category exceeds its quota earlier in the fishing year because of dead discards and is required to shut down.

Alternative B 1b would define a modified rectangular area off Cape Hatteras, North Carolina, and prohibit the use of pelagic longline gear annually during the five-month period from December through April. Other gear types authorized for use by pelagic longline vessels, such as buoy gear, green-stick gear, or rod and reel, would be allowed. This region off North Carolina contains seasonally consistent concentrations of bluefin and catches by the pelagic longline fleet. Logbook and observer data indicate that historically there have been relatively high catches and catch rates of bluefin by pelagic longline vessels in this region. The specific time and area of the Cape Hatteras Gear Restricted Area represents a time and area combination likely to result in reduced bluefin interactions based on past patterns of interactions. This alternative is expected to have moderate short and long-term direct adverse economic impacts on 50 vessels that have historically fished in the Cape Hatteras Gear Restricted Area during the months of December through April. The average annual revenue per vessel made in the gear restricted area is approximately $28,000 annually during the restricted months assuming that fishing effort does not move to other areas. However, it is likely that some of the vessels that would be impacted by this gear restricted area would be able to redistribute their effort to other fishing areas. NMFS estimated that if a vessel historically made less than 40% of their sets in the gear restricted area, it would likely redistribute all of its effort. If a vessel made more than 40%, but less than 75% of its sets in the gear restricted area, it would likely redistribute 50% of its effort impacted by the gear restricted area to other areas. Finally, if a vessel made more than 75% of its sets solely within the gear restricted area, NMFS assumed it would not likely shift its effort to other areas. Based on these redistribution assumptions, the net impact of the Cape Hatteras Gear Restricted Area on fishing revenues after redistribution of effort is estimated to be $17,900 per year.

Under Alternative B 1c (Cape Hatteras Pelagic Longline Gear Restricted Area with Access based on Performance), NMFS would annually review pelagic longline vessel performance using three performance metrics, and based on that review, authorize some vessels fishing with pelagic longline gear to have access to the Cape Hatteras Gear Restricted Area. As described in more detail in Chapter 2, the performance metrics are: (1) level of bluefin interactions/avoidance; (2) observer program participation; and (3) logbook submissions. NMFS would notify vessel owners by mail whether or not they are authorized to fish in the area. This alternative would use the same area off Cape Hatteras, North Carolina, as in Alternative B 1b, and would define criteria for access by HMS permitted vessels fishing with pelagic longline gear during the five-month period from December through April. Vessels that are determined by NMFS to have a relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements would be allowed to fish in the area using pelagic longline gear. Vessels that have not demonstrated their ability to avoid bluefin would not be allowed to fish with pelagic longline gear in this area; or if a vessel has demonstrated its ability to avoid bluefin, but has had poor compliance with reporting and monitoring requirements, it would not be allowed to fish with pelagic longline gear in this area from December through April. Individual vessel data would be evaluated annually for the purpose of determining access, and results would be communicated to the individual permit holders via a permit holder letter. This evaluation would be based on the most recent complete information available in order to provide future opportunities and accommodate changes in fishing behavior, both positively and negatively, based on performance.

Based on the proposed performance criteria, NMFS determined that, of 170 active vessels in the entire pelagic longline fleet, 50 vessels fished in the Cape Hatteras Gear Restricted Area or buffer region. Of these 50 active vessels, 16 vessels that fished in the Cape Hatteras Gear Restricted Area or buffer region did not meet the criteria for access based on their inability to avoid bluefin tuna, and/or compliance with POP observer and logbook reporting requirements. The average annual revenue made in the gear restricted area by these 16 vessels is approximately $29,000 per vessel during the restricted months. However, it is likely that some of the vessels that would be impacted by this gear restricted area would be able to redistribute their effort to other fishing areas. The net impact of Alternative B 1c on fishing revenues after redistribution of effort is estimated to be $19,000 per vessel per year for those 16 vessels.

Alternative B 1d (Modified Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance; Preferred),would delineate a gear restricted area off Cape Hatteras, North Carolina and prohibit the use of pelagic longline gear in the area annually during the five-month period from December through April. Access to the gear restricted area would be evaluated annually for each permitted vessel in the pelagic longline fleet using the same performance metrics discussed under Alternative B 1c.

This is a new alternative, which modifies the Cape Hatteras Gear Restricted Area analyzed in the DEIS. Public comment on that proposal reflected that the southeast portion of the proposed Cape Hatteras Gear Restricted Area had few bluefin interactions and is an important fishing area, raising questions about the necessity and efficiency of closing off restricting access to this particular portion of the gear restricted area. In response, NMFS analyzed additional spatial and temporal configurations of the Cape Hatteras Gear Restricted Area and determined that little conservation benefit could be expected from limiting access to this area and that the associated economic costs were not warranted.

Furthermore, commercial fishermen commented that currents in this region are very strong and would push pelagic longline gear set south and west of the Cape Hatteras Gear Restricted Area fish along the seaward edge of the Gulf Stream into the southeastern corner of the originally analyzed Cape Hatteras Gear Restricted Area shortly after deployment. Thus the prevailing currents would have, effectively, closed productive fishing grounds southwest of the Gear Restricted Area in federal waters off the coast of central and southern North Carolina. To avoid this result (i.e., to keep longline gear from floating into the restricted area) fishermen commented that they would have to avoid fishing in adjacent fishing areas, effectively resulting in a much larger-than-intended restricted area. Therefore, commercial fishermen in public comments, asked NMFS to consider modifying the Restricted Area by removing its southeastern corner. As a result of these analyses, and considerations, NMFS has modified the preferred alternative to a gear restricted area during the same months (December through April), but with a slightly different configuration.

NMFS determined that only 14 vessels that fished in the Modified Cape Hatteras Gear Restricted Area would not meet the criteria for access based on their inability to avoid bluefin tuna, and/or compliance with POP observer and logbook reporting requirements. The average annual revenue from fishing sets made in the gear restricted area by these 14 vessels is approximately $22,000 per vessel annually during the restricted months based on past fishing patterns from 2006-2012. However, it is likely that some of the vessels that would be impacted by this alternative's implementation of the gear restricted area would redistribute their effort to other fishing areas. The net impact of Alternative B 1d on fishing revenues after redistribution of effort is estimated to be $15,000 per vessel per year for those 14 vessels.

This alternative is as effective at reducing dead discards as would have similar the originally-proposed Cape Hatteras Gear Restricted Area while minimizing economic impacts to the extent practicable, consistent with the objectives of Amendment 7. The modified alternative thereby strikes a better balance between reducing dead discards of bluefin and continued operation of the pelagic longline fleet in the Atlantic. Therefore, NMFS prefers this modification (i.e., shaving off the southeast corner of the restricted area) to balance environmental, ecological, and economic impacts of the alternative.

Alternative B 1e would allow vessels with an Atlantic Tunas Longline permit to fish under the rules/regulations applicable to the General category as they pertain to targeting bluefin using non pelagic longline-gear (gear authorized under the General category, including rod and reel, handline, harpoon, etc.), in the area defined as the Cape Hatteras Gear Restricted Area, during the time of the restriction (December through April), when the General category fishery is open.

The bluefin landed with authorized handgear would be counted against the General category quota. The amount of bluefin landings allowed under this alternative would be limited by the available General category subquotas for December and for January. Alternative B 1d would result in short-term, direct, minor, beneficial economic impacts for Longline category fishermen that otherwise would not be able to fish for bluefin in the Cape Hatteras Gear Restricted Area. It would result in short-term, direct, minor, adverse economic impacts for General category participants to the extent that any Longline category vessel landings of bluefin under General category rules results in the available subquota being met earlier than it would otherwise. A loss or gain of one fish is approximately $3,500. If a Longline category vessel chooses to fish with General category gear in the Cape Hatteras Gear Restricted Area versus outside the area with pelagic longline gear, the ability to land and sell bigeye, albacore, yellowfin, and skipjack from that area would result in short-term, direct, minor, beneficial economic impacts, although substantially less so than continuing to use longline gear, which accounts for a much larger proportion of catch of bigeye, albacore, and yellowfin tuna than does handgear. If other alternatives, such as annual reallocation from the Purse Seine category (A3a) or provide additional flexibility for General category quota adjustment (E1c) are implemented, adverse economic impacts for General category participants may be reduced.

Alternative B 1f would prohibit the use of pelagic longline gears in the Gulf of Mexico (GOM) for 3 months each year. This alternative is expected to have moderate short and long-term direct adverse economic impacts on 69 vessels that have historically fished in the Gulf of Mexico EEZ during the months of March through May. The average annual revenue from fishing sets made in the gear restricted area is approximately $26,000 per vessel during the closure months. Based on historical fishing patterns of vessels that fish in the Gulf of Mexico, it is unlikely that effort will be redistributed into areas outside of this region.

Alternative B 1g would define a rectangular area in the Gulf of Mexico and prohibit the use of pelagic longline gear during the two-month period from April through May. NMFS tailored the Small Gulf of Mexico Gear Restricted Area to maximize the reductions in bluefin interactions while minimizing the area where pelagic longline gear use is restricted. This alternative is expected to have moderate short and long-term direct adverse economic impacts on 36 vessels that have historically fished in the Small Gulf of Mexico Gear Restricted Area during the months of April and May. The average annual revenue from fishing sets made in the gear restricted area is approximately $7,500 per vessel during the restricted months. However, it is likely that some of the vessels that would be impacted by this gear restricted area would be able to redistribute their effort to other fishing areas within the Gulf of Mexico. The net impact of the Small Gulf of Mexico Gear Restricted Area on fishing revenues after redistribution of effort is estimated to be $2,600 per vessel per year.

Alternative B 1h would prohibit the use of pelagic longlines in the same area as in the Gulf of Mexico EEZ Gear Restricted Area (i.e., anywhere in the Gulf of Mexico), year-round. This alternative is expected to have moderate short and long-term direct adverse economic impacts on 75 vessels that have historically fished in the Gulf of Mexico EEZ. The average annual revenue from fishing in the gear restricted area is approximately $102,000 per vessel.

Alternative B 1i, a preferred alternative, would establish modified gear restricted areas in the central Gulf of Mexico that would prohibit the use of pelagic longlines from April through May. This alternative is based upon public comments on the Small Gulf of Mexico Gear Restricted Area, which was the preferred alternative in the DEIS. The total area of the Modified Spring Gulf of Mexico Gear Restricted Areas is larger than that of the Small Gulf of Mexico Gear Restricted Area. The Spring Gulf of Mexico Gear Restricted Areas are comprised of two separate areas: an area based on the Small Gulf of Mexico Gear Restricted Area preferred in the DEIS, but extended to the east and reduced in size on the western and northern borders, and a second area that is adjacent to the southern border of the Desoto Canyon Closed Area's northwestern 'block.' NMFS will also conduct a three-year review to determine the effectiveness of the Modified Spring Gulf of Mexico Gear Restricted Areas during the review of the Individual Bluefin Quota program and will consider any changes at that time as appropriate. This alternative is expected to have moderate short and long-term direct adverse economic impacts on 49 vessels that have historically fished in the Modified Spring Gulf of Mexico Gear Restricted Areas during the months of April and May. The average annual revenue from fishing sets made in the gear restricted area is approximately $11,000 per vessel during the restricted months. However, it is likely that some of the vessels that would be impacted by these gear restricted areas would be able to redistribute their effort to other fishing areas within the Gulf of Mexico. The net impact of the Modified Spring Gulf of Mexico Gear Restricted Areas on fishing revenues after redistribution of effort is estimated to be $5,700 per vessel per year.

Alternative B 1j, a preferred alternative, would allow HMS vessels that possess bottom or pelagic longline gear on board to transit the closed areas and Gear Restricted Areas if they remove and stow the gangions, hooks, and buoys from the mainline and drum. The hooks would not be allowed to be baited. Allowing pelagic and bottom longline vessels to transit closed and gear restricted areas after removing and stowing gear would result in direct short- and long-term beneficial economic impacts by potentially reducing fuel costs and time at sea for vessels that need to transit the closed or restricted areas. Allowing transit through these areas could also potentially improve safety at sea by allowing more direct transit routes and reducing transit time, particularly during inclement weather.

Alternative B 2 – Gear Measures

Alternative B 2a, the preferred No Action alternative, would not change current authorized gear requirements (with respect to the use of buoy gear and associated restrictions on possession of bigeye, albacore, yellowfin, and skipjack tunas (BAYS) and bluefin) applicable to those vessels with an Atlantic Tunas Longline category permit and either a Swordfish Directed or Swordfish Incidental permit. Currently, vessels with an Atlantic Tunas Longline category permit must also have both a Swordfish Directed or Incidental permit, and a Shark Directed or Incidental permit. There are no economic impacts associated with this "no action" alternative.

Alternative B 2b would authorize vessels with a Swordfish Incidental permit to fish with buoy gear, except vessels fishing in the East Florida Coast Pelagic Longline Closed Area. Under this alternative, vessels would still be limited to 35 buoys. The rationale for this alternative is to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities. This would result in short-and long-term direct beneficial economic impacts by providing greater flexibility in the gear type that can be used and also by reducing the need to acquire a different permit to use buoy gear.

Alternative B 2c would allow vessels with an Atlantic Tunas Longline category permit and the Swordfish Directed or Incidental permit to retain BAYS and bluefin when fishing with buoy gear. The rationale for this alternative is the same as for Alternative B 2b: to provide increased flexibility and encouragement for pelagic longline vessels to utilize gears other than pelagic longline to maintain and enhance fishing opportunities in the context of new restrictions that may be implemented by Amendment 7. This would result in short- and long-term direct beneficial economic impacts by increase the potential revenue opportunities by allowing additional species to be landed when using buoy gear, reducing costs associated with discarding, and reducing the costs associated with the potential need to acquire different permits while fishing with buoy gear. This alternative would have no effect on vessels with a Swordfish Incidental permit, unless Alternative B 2b is adopted. Without Alternative B 2b, this alternative would provide additional flexibility for vessels with a Swordfish Directed permit and an Atlantic Tunas Longline permit.

Alternative B 3 – Access to Closed Areas Using Pelagic Longline Gear

Alternative B 3a, the preferred No Action alternative, would maintain the current regulations that do not allow vessels to enter a closed area with pelagic longline gear during the time of the closure, unless issued an Exempted Fishing Permit. It would not result in any further costs to small entities.

Alternative B 3b would allow restricted and conditional access to the following closed areas: Charleston Bump closed area (February through April), a portion of the East Florida Coast closed area (year-round), the DeSoto Canyon closed area (year-round), and the Northeastern U.S. closed area (June). All trips into any of the eligible pelagic longline closed areas would be required to be observed. Current NMFS Pelagic Observer Program vessel selection procedures would be used to select vessels using the current strata (i.e., the procedures that select vessels to obtain observer coverage each calendar quarter, and deploy in each of various geographic (statistical) areas). If selected, a vessel would be informed of the statistical area for which the vessel was selected, and the vessel would be allowed to fish within the eligible pelagic longline closed area provided it is within that particular statistical area and that an observer is onboard. The scope of the alternative and its effects would depend upon the level of observer coverage. Currently, eight percent of fishing effort is covered and funded wholly by NMFS. Due to the limits on the level of observers, observer coverage would serve as the principal constraint to the amount of access. Participating vessels would be required to “declare into” the area via their VMS unit and report species caught and effort daily via VMS. There would be minor short- and long-term direct beneficial economic and social impacts associated with the added option for vessels to potentially fish in these areas, which could potentially increase landings revenues and decrease fishing costs by providing access to closer and/or more productive fishing areas.

In addition to the requirement to carry an observer and declare and report catch via VMS, this alternative would further require that permitted pelagic longline vessels meet various performance criteria to be authorized to fish in a closed area. Vessels that are determined by NMFS to have a relatively low rate of interactions with bluefin based on past performance, and are compliant with reporting and monitoring requirements would be allowed to fish in the area using pelagic longline gear. Those vessels that have not demonstrated their ability to avoid bluefin and/or comply with reporting and monitoring requirements would not be allowed to fish with pelagic longline gear in the area. The rationale underlying this requirement is that the commercial data from within the closed areas may be utilized in the future as part of the information used to evaluate the effectiveness and/or impacts of closed areas as well as for stock assessments or other management measures. Confidence in the data may be enhanced if the vessels allowed to fish in the closed areas have consistently demonstrated compliance with relevant regulations and are among the vessels that have demonstrated the ability to avoid bluefin at the level exhibited by the majority of the fleet. The performance criteria may lead to beneficial economic incentives for fishery participants to better comply with reporting and monitoring requirements and reduce bluefin interaction rates. Potential revenue would be gained if this alternative were implemented. The maximum number of potential observed trips into the closed areas was estimated based on historical rates of observer coverage (per quarter) in various statistical areas, and the fact that observer coverage would be a condition of a trip into a closed area. NMFS estimated the maximum number of trips into the pelagic longline closed areas would be 20 trips into the East Florida Coast closed area at an average revenue of $17,575 per trip, 80 trips into the DeSoto Canyons at an average revenue of $17,692 per trip, 2 trips into the Northeast closure at an average revenue of $40,726 per trip, and 5 trip into the Charleston Bump at an average revenue of $17,575 per trip. It is import to note that these revenue estimates are an overestimate, with a large amount of uncertainty. The estimates are high because it is very unlikely that all observed trips in a particular statistical area would fish in a closed area. The estimates are uncertain because the average revenue per trip data is from locations outside the closed areas, and may not represent the potential revenue from inside the closed areas.

8.5.3 Bluefin Tuna Quota Controls

Alternative C1 – No Action

Under this alternative, there would be no change to the current regulations that restrict pelagic longline vessel retention of bluefin once the Longline category quota has been reached; hence, the total amount of dead discards would not be restricted. There are no short-term economic impacts to vessel owners associated with this alternative, but in the long-term, if dead discards are not curtailed, the pelagic longline fishery could face reduced allocations and earnings.

Alternative C 2 – Individual Bluefin Quotas

This preferred alternative would implement Individual Bluefin Quotas (IBQs) for vessels permitted in the Atlantic tunas Longline category (provided they also hold necessary limited access swordfish and shark permits) that would result in prohibiting the use of pelagic longline gear when the vessel's annual pelagic longline IBQ has been caught. The allocation of an IBQ share to individual vessels/permits as well as a provision for transferability of IBQs would reduce bluefin dead discards by capping the amount of catch (landings and dead discards); provide strong incentives to reduce interactions and flexibility for vessels to continue to operate profitably; accommodate different fishing practices within the pelagic longline fleet; and create new potential for revenue (from a market for transferrable IBQs).

NMFS considered two alternatives for vessel eligibility to receive bluefin quota shares. The first alternative would be to consider any permitted Atlantic Tunas Longline category vessel (subalternative C 2a.1) as being eligible to receive an initial allocation of IBQs. Based on the most recent number of Atlantic Tuna longline limited access permit holders, NMFS estimates that 223 vessels would be eligible to receive IBQs under this alternative. While this alternative might be more inclusive of all members of the fishery, it would reduce the amount of IBQs allocated to each vessel. There would also likely be negative short-term and potentially long-term direct adverse economic impacts associated with reduced initial allocation of IBQs to the most active participants in the fishery. Their initial allocations would likely be insufficient to be able to maintain their current levels of fishing activity and they may not be able to find IBQs to lease or have sufficient capital to lease a sufficient amount of IBQs.

The second alternative, sub-alternative C 2a.2 is the preferred alternative and would be to consider only permitted Atlantic Tunas longline vessels (at the time of the DEIS) and have been deemed “active”. Based on HMS Logbook records from 2006-2012, there were 170 active pelagic longline vessels during that period, with active defined as having reported in the HMS Logbook successfully setting pelagic longline gear at least once between 2006 and 2012, however only 135 held the permit on a vessel. Allocation of quota shares to a smaller number of vessels may reduce the likelihood that a permitted vessel without quota shares would fish and increase the likelihood that available quota would be sufficient for eligible vessels. The drawback to this alternative is that some inactive vessels may have been planning to be active in the future, invested in preparing to become active in the fishery, but either became active after the period of eligibility or had not yet completed preparations for entering the fishery, i.e., permitting their vessel.

In addition to determining who is eligible to receive IBQs, NMFS also considered four alternatives for how IBQs should be initially allocated to those eligible vessel owners. Under Alternative C 2b.1, NMFS would base the initial allocation of IBQs based on an equal share of the quota to eligible vessels. To estimate the potential landings each vessel could make given its initial IBQ under this alternative, NMFS analyzed the ratio of bluefin tuna landings and dead discards to designated species weight. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species landings. Under the 74.8 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 2.1 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 36 percent and result in a reduction in annual revenues of approximately $91,000 per vessel. Under the 137 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 1.5 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 19 percent and result in a reduction in annual revenues of approximately $47,000 per vessel. Under the 216.7 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 0.9 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 10 percent and result in a reduction in annual revenues of approximately $27,000 per vessel.

Under Alternative C 2b.2, NMFS would base the initial allocation of IBQs based on the historical landings of designated species from 2006 through 2012. The designated species include swordfish, yellowfin tuna, bigeye tuna, albacore tuna, skipjack tuna, dolphin, wahoo, blue shark, porbeagle, shortfin mako, and thresher shark. These are the main marketable pelagic species landed by pelagic longline vessels in addition to bluefin. Under the 74.8 mt s Longline category quota scenario, NMFS estimates that there could be a reduction of 2.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 40 percent and result in a reduction in annual revenues of approximately $102,000 per vessel. Under the 137 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 2.0 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 24 percent and result in a reduction in annual revenues of approximately $62,000 per vessel. Under the 216.7 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 1.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 15 percent and result in a reduction in annual revenues of approximately $37,000 per vessel.

Under Alternative C 2b.3, a preferred alternative, NMFS would base the initial allocation of IBQs based on the historical landings of designated species from 2006 through 2012 and the ratio of bluefin catch to designated species landings. Using the ratio of bluefin tuna landings and dead discards to designated species weight, NMFS estimated the potential landings each vessel could make given its initial IBQ. These estimated potential landings were then compared to average annual historical landings to estimate the reduction in designated species. Under the 74.8 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 2.7 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 33 percent and result in a reduction in annual revenues or approximately $84,000 per vessel. Under the 137 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 1.8 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 22 percent and result in a reduction in annual revenues or approximately $56,000 per vessel. Under the 216.7 mt Longline category quota scenario, NMFS estimates that there could be a reduction of 1.2 million pounds of designated species landing per year if an IBQ allocation based on designated species landings is used and no trading of IBQs occurs. This would be a reduction of annual landings of approximately 14 percent and result in a reduction in annual revenues or approximately $36,000 per vessel.

After allocating quota shares based upon the allocation formula, subalternative C 2b.4 would then designate all pelagic longline quota shares and allocations as either “Gulf of Mexico” or “Atlantic” based upon the geographic location of sets (associated with the vessels fishing history used to determine the vessel’s quota share). Gulf of Mexico quota allocation could be used in either the Gulf of Mexico or the Atlantic, but Atlantic quota allocation could only be used in the

Atlantic (and not the Gulf of Mexico). For a vessel to fish in the Gulf of Mexico, the vessel would be required to have the minimum amount of bluefin quota to depart on a trip to fish with pelagic longline gear, but the quota would have to be Gulf of Mexico quota. The minimum IBQ amount required to fish in the Gulf of Mexico would be 0.25 mt based on the larger average size of bluefin in the Gulf of Mexico. The minimum IBQ amount required to fish in the Atlantic would be 0.125 mt based on the smaller average size of bluefin tuna encountered in the Atlantic. The economic impact of creating these two regional designations would primarily be associated with the larger minimum quota required to fish in the Gulf of Mexico and the restriction from transferring or using Atlantic quota in the Gulf of Mexico. This would reduce the number of potential trading partners for IBQs in the Gulf of Mexico region, thus potentially leading to less available IBQs that could be leased and potentially making it more difficult to find potential trading partners and therefore increasing transaction costs for conducting a lease.

In defining the scope of IBQ transfer for alternative C 2c, NMFS considered two subalternatives because only two Tuna permit categories are under limited access systems. Subalternative C 2c.1 would allow transfer of bluefin quota shares or quota allocation among permitted Atlantic Tunas Longline category vessels only, and would not include transferring with other limited access quota categories such as the Atlantic Tunas Purse Seine category. The rationale for this subalternative is to provide flexibility for pelagic longline vessels to obtain or sell quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This subalternative would constrain the amount of bluefin quota available to the Longline category vessels to the Longline category quota, and not make additional quota available. Quota transfers would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel). In other words, the lessee (vessel catching the fish) gets the ‘credit’ for the landings and dead discards, and not the lessor (the vessel that transferred the quota allocation to the catching vessel). NMFS assumed that the total surplus of IBQs would potentially be traded to vessels with IBQ shortfalls. To simulate trading, the total amount of IBQs surplus was divided equally by the number of vessels that needed additional IBQs. This occurred in two rounds of trades. Under the 74.8 mt quota scenario, the estimated reduction in annual revenues goes from $84,000 per vessel under no trading to $18,000 per vessel with trading. Under the 137 mt quota scenario, the estimated reduction in annual revenues goes from $56,000 per vessel under no trading to $19 per vessel with trading. Finally, under the 216.7 mt quota scenario, the estimated reduction in annual revenues goes from $36,000 per vessel under no trading to no change in annual revenues with trading since there would be a sufficient amount of surplus quota to easily cover the vessels that do not receive initial IBQ allocations to cover their historical fishing levels. While this alternative would have short-term direct minor beneficial economic impacts, those beneficial impacts would be lower than those under subalternative C 2c.2.

Subalternative C 2c.2, the preferred alternative, would allow transfer of bluefin quota shares or quota allocation between those in the limited access Atlantic Tunas Longline and Purse Seine categories. This subalternative would provide flexibility for pelagic longline vessels to obtain, lease, or sell quota as necessary, so that allocations may be aligned with catch (i.e., vessels that catch bluefin may be able to obtain quota from those that do not interact with bluefin, or have not used their full allocation of bluefin). This sub-alternative would not constrain the amount of bluefin quota available to pelagic longline vessels (i.e., through the Longline category quota), but would make additional quota available if purse seine participants are willing to lease quota. This alternative would also modify the Purse Seine category regulations which currently restrict the transfer of Purse Seine quota to partisans in the Purse Seine category. Purse Seine quota would be transferable to vessels with an Atlantic tunas Longline category permit. Similarly, Purse Seine vessels would be able to lease quota allocation from pelagic longline vessels. Quota transfer would be allowed among all Longline category vessels with a valid limited access permit, regardless of whether they have been allocated quota under Alternative C 2b. If a vessel catches bluefin using quota that has been leased from another vessel, the fishing history associated with the catch of bluefin tuna would be associated with the vessel that catches the bluefin (the lessee, not the lessor vessel). In other words, the lessee (vessel catching the fish) gets the ‘credit’ for the landings and dead discards, and not the lessor (the vessel that transferred the quota allocation to the catching vessel). This alternative would have short-term direct moderate beneficial economic impacts.

NMFS considered both annual leasing and permanent sale of IBQs under alternative C 2d. Subalternative C 2d.1, a preferred alternative, would allow temporary leasing of bluefin quota among eligible vessels on an annual basis. Temporary quota transfer would give vessels flexibility to lease quota, but as a separate and distinct type of transaction from the permanent sale of quota share. Vessel owners would be able to obtain quota on an annual basis to facilitate their harvest of target species. Sub-leasing of quota would be allowed (i.e., quota leased from vessel A to vessel B, then to vessel C). This subalternative may be combined Subalternative C 2d.2 (permanent sale of quota share), if implemented. IBQ allocation leases of one year duration would coincide with the time period of annual quota allocation for the fishery as a whole. For a particular calendar year, an individual lease transaction would be valid from the time of the lease until December 31. This alternative would have short-term direct moderate beneficial economic impacts to participants in the fishery. However, in the long-term, the annual transaction costs associated with matching lessors and lessees, the costs associated with drafting agreements, and the uncertainty vessel owners would face regarding quota availability would reduce some of the economic benefits associated with leasing.

Subalternative C 2d.2 would allow permanent sale of quota share among eligible vessels. Through this subalternative, vessel owners would be able to purchase (or sell) quota share and permanently increase (or decrease) their quota share percentage. Permanent sale of quota share provides a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year. Vessel owners may be able to save money through a single quota share transaction instead of reoccurring annual quota allocation transactions. This subalternative may be combined with the temporary transfer of quota (i.e., annual leasing of quota, subalternative C 2d.2), but is a separate and distinct type of transaction. (Note, that elsewhere in this document NMFS considers measures for codified quota reallocation alternatives unrelated to an IBQ program; See Alternative A 2). To enable effective accounting and reduce program complexity, permanent quota share transfers would become effective in the subsequent year, and would have to be executed prior to the annual allocation of quota to quota shareholders. Annual allocation of quota needs to occur at one time, based on a fixed pool of quota share owners. Transferable quota shares would be limited to the amount of quota an individual entity could permanently transfer in order to prevent the accumulation of an excessive share of quota. This alternative would have long-term direct moderate beneficial economic impacts to participants in the fishery by allowing the ownership of IBQs to shift to where they provide the best economic benefit in the long-term. However, in the short-term, there could be issues associated with the IBQ market. For example the process of the buyers and sellers arriving at a price for IBQ shares may be difficult or highly variable due to uncertainties such as how to value IBQ shares, information availability, and associated risks. Experiences in other catch share programs have shown that fishermen may not know how to effectively value the IBQs initially and uncertainty in this new market may cause IBQs to be undervalued in the first few years. This could result in both adverse social and economic impacts in the fishing community if participants sell out of the IBQ market in the early years for less than the long-term value of the IBQs.

Subalternative C 2d.3, a preferred alternative, would allow permanent sale of quota shares among eligible vessel owners, in the future, after NMFS and fishery participants have multiple years of experience with the IBQ program. Until NMFS develops and implements a permanent IBQ transfer program, vessel owners would only be able to conduct temporary (annual) leasing of quota allocation, and therefore, vessel owners would not be able to purchase (or sell) quota share in order to permanently increase (or decrease) their quota share percentage. A phased-in approach would reduce risks for vessel owners during the initial stages of the IBQ program, when the market for bluefin quota shares would be new and uncertain. During the first years of the IBQ program, price volatility may be reduced, as well as undesirable outcomes of selling or buying quota shares at the “wrong” time or price. NMFS intends to develop a program to allow the permanent sale of quota share in the future because it would provide a means for vessel owners to plan their business and manage their quota according to a longer time scale than a single year, in a manner that would be informed by several years of the temporary leasing market. NMFS may wait until a formal evaluation of the IBQ program before developing this alternative (see IBQ Program Evaluation Alternatives C 2h.1 and C 2h.2). This subalternative may be combined with the temporary transfer of quota allocation (i.e., annual leasing of quota, Subalternative C 2d.1), but is a separate and distinct type of transaction. While this alternative may result in long-term moderate beneficial economic impacts, the uncertainty regarding the timeline may make business planning for vessel owners and IBQ holders more difficult and result in some minor adverse economic impacts.

Under subalternative C 2e.1, a preferred alternative, quota allocation and/or quota share transfers would be executed by the eligible vessel owners, or their representatives. For example, the two vessel owners involved in a lease of quota or sale of quota share could log into a password protected web-based computer system (i.e., a NMFS database), and execute the quota allocation or quota share transfer. Owner-executed transfers would provide the quickest execution of a transfer because any eligibility criteria would be verified automatically via the user log-in and password, and not involve the submission or review of a paper application for a transfer to/by NMFS. This would result in short- and long-term minor beneficial economic impacts resulting from reduced transactions costs.

Under subalternative C 2e.2, quota and quota share transfers would be executed by NMFS. For example, a paper application for a sale of quota share could be submitted by the two vessel owners involved in the quota share transaction, and NMFS would review and approve the transaction based on eligibility criteria (and enter data into a computer database that would track the transfers of quota). This method would not include the use of a web-based system, but would rely upon mail or facsimile submission of applications by the vessel owners to NMFS. In comparison to subalternative C 2e.1, this alternative may result in some minor adverse economic impacts if delays in NMFS' review of applications results in increased transactions costs and fewer trades.

Under subalternative C 2f.1, the limit on the amount of quota allocation an individual vessel (Longline or Purse Seine) could lease annually would be the combined Longline and Purse Seine category allocations. This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of a market. Because the duration of a temporary lease would be limited to a single year, the impacts on the market for bluefin quota would be limited in duration. Information on this market could be used to develop future additional restrictions if necessary. This alternative would result in short- and long-term minor beneficial economic impacts by accommodating the various needs of vessel owners for IBQ trades.

Under subalternative C 2f.2, the limit set on the total amount of quota that either the Longline or Purse Seine category (in its entirety) could lease annually would be the combined Longline and Purse Seine category allocations . This alternative would provide flexibility for vessels to purchase quota in a manner that could accommodate various levels of unintended catch of bluefin, and enable the development of a market. Because the duration of a temporary lease would be limited to a single year, the impacts on the market for bluefin quota would be limited in duration. Information on this market could be used to develop future additional restrictions (through proposed and final rulemaking) if necessary. This alternative would result in short- and long-term minor beneficial economic impacts by accommodating the various needs of vessel owners for IBQ trades.

Under this subalternative C 2f.3, a preferred alternative, NMFS would consider the development of additional limits on the amount of quota allocation an individual vessel (Longline or Purse Seine), or the Longline or Purse Seine category (in its entirety), could lease annually. Although at the initiation of the IBQ program, NMFS does not believe there is justification for an additional limitations, it is possible that a more refined limit may be deemed necessary in the future to reduce the likelihood of excessive allocation, or other potential problems such as the number of active vessels or the distribution of fishing effort. Such a restriction would be developed through proposed and final rulemaking. This alternative could result in long-term minor adverse economic impacts if the limits cause some vessel owners to not be able to acquire sufficient IBQs for their fishing activity needs.

The measures under alternative C 2g are based on the premise that the success of an IBQ program rests upon the ability to track ownership of quota shares and quota allocation holders; allocate the appropriate amount of annual harvest privileges (quota allocation); reconcile landings and dead discards against those privileges; and then balance the amounts against the total allowable quota. The current pelagic longline reporting requirements and the monitoring program that provide data on pelagic longline bluefin landings and dead discards were not designed to support inseason accounting of dead discards. More timely information on catch would be necessary in order to monitor a pelagic longline IBQ, inclusive of dead discards.

VMS reporting Subalternative C 2g.1, a preferred alternative, is the same management alternative described in Alternative D 1b. This alternative is intended to support the implementation of a pelagic longline IBQ. The economic impacts are detailed in the section below discussing Alternative D 1b.

Electronic monitoring subalternative C 2g.2, a preferred alternative, is the same management alternative described in Alternative D 2b of this document. This alternative is intended to support the implementation of a pelagic longline IBQ. The economic impacts are detailed in the section below discussing Alternative D 2b.

Under subalternative C 2g.3, a preferred alternative, in order to conduct inseason quota monitoring and estimate total bluefin dead discards and landings, NMFS may extrapolate observer-generated data (in-season) regarding bluefin discards (rate, number, location, etc.) by pelagic longline vessels, based on reasonable statistical methods, and available observer data. This alternative would not require a regulatory change, but would inform the public that NMFS would use this management practice if warranted. NMFS would use this observer information in conjunction with, or in place of, vessel-generated estimates of bluefin discards in order to develop inseason estimates of total bluefin landings and dead discards. NMFS may use this method to estimate dead discard rates of bluefin for individual vessels in the context of an IBQ program. This subalternative would address the potential for uncertain dead discard data from the pelagic longline fleet that may result from challenges in the implementation of new regulations, technical problems relating to the reporting and monitoring system, or time lags in the availability of data. This alternative would potentially have short-term minor or neutral indirect beneficial economic impacts by addressing the potential for fishery disruptions if there are issues in the transition to an IBQ monitoring system.

Under subalternative C 2h.1, a preferred alternative, NMFS would formally evaluate the program after three years of operation and provide the HMS Advisory Panel with a publicly-available written document with its findings. NMFS would utilize its standardized economic performance indicators as part of its review. This would result in neutral economic impacts because it is administrative in nature.

Under subalternative C 2h.2, NMFS would conduct a formal evaluation of the IBQ program after five years of operation and provide the HMS Advisory Panel with a written document with its findings. As described above, NMFS would utilize its standardized economic performance indicators (and associated standardized definitions) as part of its review. This alternative would result in neutral economic and social impacts because it is administrative in nature.

Under alternative C 2i, a preferred alternative, NMFS would develop and implement a cost recovery program of up to 3 percent of the ex-vessel value of fish harvested under the program, for costs associated with the costs of management, data collection and analysis, and enforcement activities, could result in direct long-term moderate adverse economic impacts to the industry. The Magnuson-Stevens Act provides NMFS the authority for cost recovery under § 303A(e). A cost recovery program would not be implemented until after the IBQ program evaluation described in Alternative C 2h. Immediate implementation of a cost recovery program without the information obtained from the operation of the fishery under an IBQ program would be very difficult, and increase costs and uncertainty for fishing vessels during a time period when the fishery would be bearing other new costs and sources of uncertainty. This alternative could result in direct long-term moderate adverse economic impacts to the industry.

Alternative C 2j, a preferred alternative, would implement an appeals process for administrative review of NMFS' decisions regarding initial allocation of quota shares for the IBQ program. The appeals process for administrative review of NMFS's decisions regarding initial allocation of quota shares for the IBQ program would result in neutral economic impacts because it would utilize the National Appeals Office procedures and ensure a standardized and centralized appeals process, which would provide procedural certainty to the participants.

If an IBQ program is implemented, preferred alternative C 2k would implement a control date in conjunction with the implementation (effective date) of the IBQ program. The control date would serve as a reference date that may be utilized with future management measures. The implementation of a control date by itself would have no effect, but would provide NMFS with a potential management tool that may be utilized if necessary as part of a future management measure. A control date is typically used to discourage speculative fishing behavior or speculative entry into a fishery and notifies the public that a date may be used in conjunction with future management measures. This alternative would likely have neutral economic impacts and would only result in beneficial short-term economic impacts if it actually discouraged speculative fishing behavior that may have occurred without the control date.

Subalternative C 2l.1, the elimination of target catch requirements is a preferred alternative. Current target catch requirement acts at the level of an individual trip to limit bluefin retention, but does not prevent interactions potentially resulting in discarding bluefin dead (although it is intended to dis-incentivize interactions with bluefin by reducing any financial incentive for such interactions by limiting retention). The target catch requirement therefore contributes to the discarding of bluefin if the amount of target catch species is insufficient to retain the numbers of bluefin caught.

Under this subalternative C 2l.1a, the current target catch requirements would remain in effect. This would have neutral economic impacts since it would not change what is currently in place.

Subalternative C 2l.1b, preferred alternative, would eliminate the current target catch requirements for pelagic longline vessels. This alternative is intended to work in conjunction with an IBQ. The objective of this alternative is to reduce bluefin dead discards and optimize fishing opportunity for target species. If an IBQ program is implemented, elimination of the target catch requirement could reduce dead discards, and enable vessels to fish for target species in a more flexible manner. A vessel that has caught some bluefin but has insufficient target species to meet the target catch requirement would no longer have to choose between discarding bluefin or fishing for more target species; rather, the vessel would use the annual individual bluefin quota (IBQ). Thus, the IBQ would replace the target catch requirement as the means of limiting the amount of bluefin landed and discarded dead per vessel on an annual basis, instead of on a per trip basis. This alternative would likely have direct short- and long-term minor beneficial economic impacts.

Subalternative C 2l.2a would maintain the status quo regarding retention of bluefin by pelagic longline vessels. There would be no requirement to retain commercial legal-sized bluefin that are dead. Vessels would continue to be able to discard bluefin even if they are of commercial legal-size (i.e., 73” or greater) and dead. If the IBQ program is implemented, all dead discards would be accounted for under that program. This alternative would have neutral economic impacts since it does not change what is currently occurring.

Under subalternative C 2l.2b, a preferred alternative, pelagic longline vessels would be required to retain all legal-sized commercial bluefin tuna that are dead at haul-back. Because these fish would be required to be retained, legal discards and the waste of fish would be decreased, and it would be more likely that such fish are accurately accounted for, and result in a positive use (marketed, used for scientific information, etc.). However, given that current behavior may be to discard some fish in order to optimize landings value of bluefin, there could be minor adverse economic impacts associated with this alternative since vessel operators would no longer have the option to discard legal-sized bluefin.

Alternative C 3 – Regional and Group Quotas

Alternative C 3a would implement annual bluefin quotas by region for vessels possessing the Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would result in prohibiting the use of pelagic longline gear when a particular region’s annual bluefin quota has been caught. Both bluefin landings and dead discards would count toward the regional quota. Annual bluefin quotas would be associated with defined geographic regions. While regional quotas may be simpler than an IBQ system and have advantages over a single quota allocated for the entire Longline category, some regions may face chronic shortages of bluefin quota if that region experiences increased fishing effort or bluefin interaction rates. It is difficult to predict the total amount of fishing effort that would occur under regional quotas, and the amount of bluefin quota that would be caught. There is likely to be less fishing effort under the Regional quota control alternative (compared with the No Action alternative) because a few vessels could catch a large number of bluefin, and because the closure of the entire area to the use of pelagic longline gear. The historical data indicate that the majority of bluefin have been caught by relatively few vessels. The amount of target species catch such as swordfish and yellowfin tuna would depend primarily upon the amount of fishing effort and whether the regional quotas or IBQs become constraining. If the regional quotas reduce pelagic longline fishing effort, there may be some minor adverse economic and social impacts on regional fishing communities where effort is reduced.

Alternative C 3b would implement a quota system for vessels possessing the Atlantic Tunas Longline category permit (combined with the required shark and swordfish limited access permits) that would define three bluefin quota groups and assign vessels with a valid permit to one of the three groups. Both bluefin landings and dead discards would count toward the group quotas. Each eligible vessel would be assigned to a quota group based upon the associated permit's historical bluefin interactions to "designated species" landings ratio. Eligible vessels with relatively high numbers of bluefin interactions would be assigned to one quota group, eligible vessels with a moderate level of bluefin interactions would be assigned to a second group, and the eligible vessels with a low level of bluefin interactions would be assigned to a third quota group

. Under the current quota allocation (8.1%) and the 2012 Longline category quota (74.8 mt) to illustrate, the low avoider quota group would be allocated 24.1 mt and the medium and high avoider quota groups would be allocated 25.1 mt. Although the three quota groups have almost the identical number of vessels assigned to them (53, 54, 54, respectively), as well as similar quota, the average amount of bluefin that they caught historically varies from group to group. The number of bluefin tuna interactions from 2006 to 2011 for the low, medium, and high avoiders was 8,050, 1,348, and 95, respectively. Converted to averages, the average number of bluefin interactions would be 1,342, 225, and 16. Utilizing a rough conversion factor of a .125 mt per fish, 225 fish is equivalent to 28 mt. The high and medium avoider groups are likely to have adequate quota, whereas the low avoider group would have inadequate quota if the future interaction rate of the vessels is similar. The average number of interactions associated with the low avoider group equates to approximately 168 mt. It is likely that the group quota associated with vessels with the highest historical rate of bluefin interactions would be attained first. This indicates that there would be potentially significant direct short- and long-term adverse economic impacts to the low avoider group. However, there could be moderate to minor positive economic impacts to the high and medium avoider groups.

Alternative C 4 – NMFS Authority to Close the Pelagic Longline Fishery

Under alternative C 4a, No Action, the current regulatory situation would continue, in which NMFS does not have the authority to prohibit the use of pelagic longline gear when the bluefin quota is attained. When the quota is projected to be reached, pelagic longline vessels may no longer retain bluefin tuna, but may continue to fish for their target species, and must discard any bluefin caught. The economic impacts of this alternative would lead to short- and long-term direct minor economic and social impacts due the loss of revenue from bluefin tuna.

Under alternative C 4b, a preferred alternative, NMFS would close the pelagic longline fishery (i.e., prohibit the use of pelagic longline gear) when the total Longline category bluefin quota is reached; projected to be reached; is exceeded; or, in order to prevent over-harvest of the Longline category bluefin quota and prevent further discarding of bluefin; or when there is high uncertainty regarding the estimated or documented levels of bluefin catch. The economic impacts of this alternative would depend upon when the closure occurred, ranging from January through December. The time the pelagic longline fishery would be closed would depend upon many factors, including the size of the Longline category quota, the type of quota control alternative and other alternatives implemented by Amendment 7, and non-regulatory factors. The range of quotas that would be available to the Longline category would depend upon the combination of alternatives implemented. Table 5.28 shows the number of reported pelagic longline trips by month, and the average number of trips per month. Table 5.29 shows average revenue by month based all the pelagic longline sets made in that month based on logbook reports, weighout slips, and ex-vessel prices from dealer reports.

Based on the Longline category being closed in late spring and early summer over the past few years and the 2013 closure occurring in June, NMFS estimates that a June closure is a plausible example to examine. Table 5.30 lists the potential revenue loss by month of closure. A June closure of the pelagic longline fishery would result in a potential loss of revenue of approximately $21.0 million, or $156,000 per vessel per year. This would result in a major short-term adverse direct economic impact to the pelagic longline fishery and this economic impact would continue into the long-term if landings and dead discard rates continue along the current trend.

8.5.4 Enhanced Reporting Measures

Alternative D 1 – VMS Requirements

Alternative D 1a, the No Action alternative, there would be no requirement under HMS regulations for an Atlantic Tunas Purse Seine category vessel to obtain a VMS unit and there would be no change to the reporting requirements applicable to purse seine vessels. There would also be no additional VMS requirements under HMS regulations for a vessel using pelagic longline gear.

<u>E-MTU VMS installation and operation</u>

Alternative D 1b, a preferred alternative, would require the three vessels with an Atlantic Tunas Purse Seine category permit to have an E-MTU VMS unit installed by a qualified marine electrician in order to remain eligible for the Purse Seine permit. Purse seine vessel owners would be required to provide a hail-out declaration using their E-MTU VMS units, indicating target species and gear possessed onboard the vessel when leaving port on every trip. Purse seine vessel owners would also be required to provide a hail-in declaration, using their E-MTU VMS units, providing information on the timing and location of landing before returning to port. The units would be required to send position information to NMFS every hour on a 24/7 basis, unless the vessel has declared out of the fishery or been granted a power-down exemption from NMFS.

All of the three vessels that are currently authorized to deploy purse seine gear for Atlantic tunas have already installed E-MTU VMS units in compliance with regulations for other Council-managed fisheries, including Northeast Multispecies and/or Atlantic scallop. If vessels have not already had a type-approved E-MTU VMS unit installed, or if permits were transferred to vessels that have not yet installed E-MTU VMS, they may be eligible for reimbursement (up to $3,100) to offset the costs of procuring a type-approved unit subject to availability of funds. This reimbursement would only cover the cost of the E-MTU VMS and could not be applied to offset installation costs by a qualified marine electrician ($400) or monthly communication costs ($44). Initial costs, per vessel, for compliance with E-MTU VMS requirements included in this alternative would be $3,500 if no reimbursement were received and $400 if a reimbursement were received. On a monthly basis, vessels would be required to establish a communication service plan corresponding to the type-approved E-MTU VMS selected. Costs vary based on the E-MTU VMS unit and communication service provider that is selected, however, these costs average $44/month and include hourly transmission reporting and a limited amount of hail in and hail out declarations. Charges vary by communication service provider for additional messaging or transmission of data in excess of what allowed in their individual plan. Furthermore, costs might vary depending on how many trips a vessel makes on a monthly basis as the number of declarations (hail in/hail out) increase proportionately. For this analysis, all communication costs were expected to be covered under baseline monthly plan costs (i.e., $44/month).

If a vessel has already installed a type-approved E-MTU VMS unit, this alternative would have neutral direct and indirect socioeconomic impacts in the short and long-term as the only expense would be monthly communication service fees which they are already paying for participation in a Council-managed fishery. If vessels do not have an E-MTU VMS unit installed or an Atlantic tunas purse seine permit is transferred to another vessel lacking VMS, direct, adverse, short-term socioeconomic impacts are expected as a result of having to pay for the E-MTU VMS unit and a qualified marine electrician to install the unit. In the long-term, direct economic impacts would become minor, because monthly communication service provider costs ($44) would be the only expense. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Pelagic longline vessels are already required to use an E-MTU VMS that has been installed by a qualified marine electrician to provide hourly position reports and hail in/out declarations to provide information on target species, gear possessed, and expected time/location of landing. Therefore, this alternative would result in neutral economic impacts in the short and long term. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Reporting Bluefin tuna interactions using E-MTU VMS

Preferred alternative D 1b would also require vessels fishing for Atlantic tunas with pelagic longline or purse seine gear to report daily the number of bluefin retained, discarded (dead and alive), fish disposition, and fishing effort (number of sets, number of hooks, respectively). This alternative is intended to support the inseason monitoring of the purse seine and pelagic longline fisheries. Although NMFS currently has the authority to require logbook reporting for the purse seine fishery, NMFS has not exercised this authority (see Section 2.3.7). Current information on the catch of the purse seine fishery is limited to dealer data on sold fish, and does not include information of discarded bluefin or other species caught and/or discarded. Inseason information on catch, including dead discards, would enhance NMFS' ability to monitor and manage all quota categories.

Purse Seine

The characteristics of the purse seine fishery are unique. Many bluefin may be caught in a relatively short period of time, and the proportion of discarded to retained fish may be high in some instances. Timely information on discarded bluefin tuna, and more timely information on retained bluefin would improve the current monitoring of bluefin landings and dead discards. This alternative would provide timely information on purse seine fishing effort, and improve NMFS' ability to interpret and utilize the bluefin data in the context of the fishery as a whole.

Recently, there has been limited effort in the Atlantic tunas purse seine fishery for a variety of reasons, including availability and quantity of commercial size bluefin and/or current permit holders are participating in Council-managed fisheries. This alternative would require vessel operators to use their E-MTU VMS to submit electronic reports describing the number and size of bluefin that were landed and discarded dead.

Vessel operators fishing for Atlantic tunas with purse seine gear would already be required to have an E-MTU VMS unit installed and capable of submitting hourly position reports while fishing in addition to hail out/in declarations before and after fishing. This alternative would, however, increase the amount of information that vessel operators provide using their E-MTU VMS units. Typically, fishermen would make a single declaration for each set that details the quantity and size of bluefin retained. This alternative would result in neutral economic impacts in the short and long-term because of the fact that the vessel owners would already be paying, on average, $44 per month to cover the costs of a communication service provider. The number of additional characters transmitted to report bluefin retained and discarded dead are expected to be less than 50 characters per set, and are not expected to exceed the typical monthly allowance for data sent using the E-MTU VMS. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected.

Pelagic Longline

With respect to pelagic longline vessels, this alternative is intended to support the implementation of a pelagic longline IBQ program, whether individual or regional, described under Section 2.3. For example, under an IBQ program, each vessel must not harvest more than is permitted by the total of his/her quota share. The IBQ program would require the ability to track quota shares and quota allocations, reconcile landings against quota allocations, and then balance the amounts against the total allowable quota. Although the current pelagic longline reporting requirements and the monitoring program provide data on pelagic longline discards and landings, and enable inseason monitoring and management based upon landings, the reporting requirements and monitoring program were not designed to support inseason monitoring of dead discards. More timely information on dead discards would be necessary in order to monitor and enforce a pelagic longline IBQ program. Although the current information on bluefin discards from the pelagic longline fishery, which is obtained through logbook data on effort and catches from the observer program, is sufficient to estimate bluefin dead discards on an annual basis, the time lag associated with the current information is not useful for “real-time” in-season monitoring of an IBQ program. Specifically, there is a time lag between the time logbooks are submitted or the field information is recorded by the observer during the fishing trip, the time the data are entered into a database, and the time the data are finalized (after a process of quality control) and available for use. A trip declaration requirement could be necessary in order for NMFS to obtain timely information on pelagic longline fishing effort, and interpret and utilize the bluefin data in the context of the fishery as a whole.

HMS logbook data (2006-2012) indicate that, on average, pelagic longline vessels have 1 (9,660 interactions/10,262 trips = 0.94 interactions/trip) with a bluefin per vessel per trip. This alternative would require all pelagic longline vessel operators to report all interactions (kept, discarded dead, discarded alive) and estimate fish size (> or < than 73” CFL) using their E-MTU

VMS within 12 hours. Furthermore, additional information on fishing effort, including the number of hooks deployed on the set that had a bluefin would also be reported.

This alternative is expected to have neutral to minor adverse economic impacts on pelagic longline vessel operators and owners in the short and long-term. Economic impacts to shore-based businesses, including fish dealers, bait and gear suppliers, and other fishing related industries are not expected. Existing regulations require all pelagic longline vessel operators to provide hail out/in declarations and provide location reports on an hourly basis at all times unless they have declared out of the fishery or been granted a power down exemption by NMFS. In order to comply with these regulations, vessel owners must subscribe to a communication service plan that includes an allowance for sending similar declarations (hail out/in) describing target species, fishing gear possessed, and estimated time/location of landing using their E-MTU VMS. This alternative would require, on average, 1 additional report per trip that describes bluefin interactions and fishing effort. Each report is expected to be comprised of less than 50 characters. Because of the minimal time (approximately 5 minutes) required to submit these short reports and the fact that owners would likely already be enrolled in a communication service plan that would encompass transmission of these additional characters, adverse economic impacts are not expected.

Alternative D 2 – Electronic Monitoring of Longline Category

Under alternative D2a, the No Action alternative, NMFS would maintain the status quo and would not pursue any additional measures that would require permitted pelagic longline vessels to install electronic devices such as cameras in order to support the monitoring or verification of bluefin catch under an IBQ quota system. Currently, pelagic longline vessels are required to use E-MTU VMS units to provide hourly position reports and to provide hail out/in declarations describing target species, fishing gear onboard, and time/location of landing unless they have declared out of the fishery or been granted a power down exemption by NMFS. Under this alternative, these requirements would be maintained, and no additional electronic monitoring requirements would be implemented. This alternative would not result in economic impacts because it would maintain existing requirements.

Alternative D 2b, a preferred alternative, would require the use of electronic monitoring, including video cameras, by all vessels issued an Atlantic Tunas Longline category permit that intend to fish for highly migratory species. Specifically, vessels would be required to install and maintain video cameras and associated data recording and monitoring equipment in order to record all longline catch and relevant data regarding pelagic longline gear retrieval and deployment.

More specifically, this alternative would require the installation of NMFS-approved equipment that may include one to four video cameras, a recording device, video monitor, hydraulic pressure transducer, winch rotation sensor, system control box, or other equipment needed to achieve the objectives. Vessel owner/operators would be required to install, maintain, facilitate inspection of the equipment by NMFS, and obtain NMFS approval of the equipment. The vessel owner/operator would be required to store and make the data available to NMFS for at least 120 days, and facilitate the submission of data to NMFS. The vessel operator would be responsible for ensuring that all catch is handled in a manner than enables the electronic monitoring system to record such fish, and must identify a crew person or employee responsible for ensuring that all handling, retention, and sorting of bluefin occurs in accordance with the regulations.

While the electronic monitoring program is being designed and implemented, NMFS would continue to use logbook, observer, and landings information to assess catch by the pelagic longline fleet. NMFS would communicate in writing with the vessel owners during all phases of the program to provide information to assistant vessel owners, and facilitate the provision of technical assistance.

This alternative would require both fixed and variable costs over the service life of each camera installed onboard. Fixed costs for vessel owners would include purchasing the camera ($3,565) and having it installed on the vessel ($500). Variable costs for vessel owners include data retrieval ($45/hour; $4,500/year); service ($45/hour; $270/year); technician travel ($0.5/mile; $1,680/year); fishing activity interpretation ($47/hour; $1,175 year); and catch data interpretation ($1.5 hours per haul at a labor rate of $47/hour, 1 haul per trip and 100 trips; $7,050/year). The estimated total variable costs would by $14,663 and first year fixed costs would be $4,065 for the purchase and installation of the equipment. First year fixed and variable costs total $18,728/vessel for the first year. After the first year, the annual variable costs of operation are estimated to be $14,663/vessel. The estimate provided here for catch data interpretation is likely an overestimate as the Agency is primarily concerned with verification of bluefin reports and no other species (i.e., yellowfin tuna, swordfish, dolphin, wahoo, etc.) being landed on pelagic longline vessels. After purchasing the camera and having it installed, expenses would be limited to the variable costs listed. This alternative would result in direct and indirect adverse economic impacts to pelagic longline vessel owners in the short and long term.

Alternative D 3 – Automated Catch Reporting

The preferred alternative D 3 would require Atlantic Tunas General, Harpoon and HMS Charter/Headboat permit holders to report their bluefin catch (i.e., landings and discards) using an expanded version of the bluefin recreational automated landings reporting system (ALRS). The automated system includes two reporting options, one that is web-based and an interactive voice response telephone system. The "No Action" alternative is not preferred and would have no social or economic impacts.

The primary impacts of the preferred alternative are the amount of time the new reporting requirement would take, and the reporting costs, respectively.

NMFS estimated the potential annual catch for each permit category based on previous years data and multiplied it by the 5 minutes it takes to complete a report (NMFS 2013) for each fish to estimate a total reporting burden of 607 hours affecting a total of potentially 8,226 permit holders as a result of this alternative. Since the data are collected online or via telephone, there are no monetary costs to fishermen or direct economic impacts to fishermen from this alternative.

Adjustments to both the online and IVR systems of the ALRS to implement catch reporting for General, Harpoon, and HMS Charter/Headboat category permit holders are estimated to cost

NMFS between $15,000 and $35,000 (B. McHale, pers. comm.) Annual maintenance would likely cost approximately $8,700 per year, which is the current cost for maintaining the ALRS and the call-in system for reports of other recreational HMS landings (NMFS 2013).

Alternative D 4 – Deployment of Observers

Under alternative D 4a, the No Action alternative, and the preferred alternative, there would be no changes to the current observer coverage in the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. Therefore, there would be no additional cost to small businesses.

Alternative D 4b would increase the level of NMFS-funded observers on a portion of trips by vessels fishing under the Atlantic Tunas Longline, General, Purse Seine, Harpoon, or HMS Charter/Headboat categories. There might be some minor costs to vessel operators with the increased chance that they will be selected for observer coverage and will have to accommodate an observer.

Alternative D 5 – Logbook Requirement for Atlantic Tunas and HMS Category Permit Holders

Alternative D 5, the No Action alternative, is preferred and would make no changes to the current logbook requirements applicable to any of the permit categories. It would have no economic impact on fishing vessel owners.

Alternative D 5b would require the reporting of catch by Atlantic Tunas General, Harpoon, and HMS Charter/Headboat category vessels targeting bluefin through submission of an HMS logbook to NMFS. The direct social and economic impacts of this non-preferred alternative include the amount of time to complete logbook forms and the cost of submission (i.e., mailing) for all fishermen permitted in the affected permit categories. These impacts would be minor, adverse, and long-term. A high-end proxy for the impacts of this alternative is the current reporting burden and cost for the entire HMS logbook program, which have been estimated for all commercial HMS fisheries (28,614 permits, NMFS 2011a). The annual reporting burden for the entire program is estimated at 36,189 hours and costs are $94,779 for postage. A more refined estimate is 6,735, which is the number of fishermen likely to conduct directed fishing trips for bluefin based on the total number of General, Charter/Headboat, and Harpoon category permit holders in the states from Maine through South Carolina. This is likely also an over-estimate, since many General and Charter/Headboat permit holders in these states fish for yellowfin, or other tunas rather than bluefin, or, for Charter/Headboat permit holders, other HMS. NMFS estimates an annual reporting burden of 16,526 hours and a cost of $8,263.

Alternative D 6 – Expand the Scope of the Large Pelagics Survey

"No Action" is the preferred alternative for the scope of the Large Pelagics Survey, and would have no social or economic impacts. The non-preferred alternative would expand the Large Pelagics Survey to include May, November, and December, and add surveys to the states south of Virginia, including the Gulf of Mexico, in order to increase the amount of information available about the recreational bluefin fishery, and further refine recreational bluefin landings estimates.

The direct economic impact of this non-preferred alternative is the amount of time that fishermen would expend participating in the survey. The impacts would be minor, adverse, and long-term. There are no financial costs to fishermen since the survey is conducted in person and over the phone, and there would be no direct economic impacts to fishermen for this alternative. NMFS estimates that the dockside survey takes 5 minutes on average, the phone survey takes 8 minutes, and collection of supplemental biological information takes about 1 minute. Previously, NMFS estimated that annual implementation of the Large Pelagics Survey throughout Atlantic and Gulf coastal states using the current target sample-size of 7,870 for the dockside survey, 10,780 for the phone survey and 1,500 for the biological survey would result in a reporting burden of 656 hours, 924 hours, and 25 hours respectively, for a total reporting burden of 1,730 hours (NMFS 2011b). This estimate could be used as a high-end proxy for the reporting burden associated with this alternative. Another method for estimating the reporting burden associated with this alternative is to use a ratio comparing the sample frame (i.e., number of permits) used in the coastwide estimate with the sample frame for the alternative (i.e., number of permits in states south of VA). Using this method, the reporting burden estimate is 559 hours. Because of the sampling design, adding the months of May, November, and December is not expected to add any reporting burden or cost (Ron Salz, pers. comm.).

8.5.5 Other Measures

Alternative E 1 – Modify General Category Subquota Allocations

If no action is taken under Alternative E 1a to modify the General category sub-period allocations, economic impacts would be neutral and largely would vary by geographic area, with continued higher potential revenues during the summer months in the northeast and lower amounts to winter fishery participants off the mid- and south Atlantic states. General category participants that fish in the January bluefin fishery may continue to perceive a disadvantage as the available quota for that period is relatively small (5.3% of the General category quota) and that they do not benefit from the rollover of unused quota either inseason, from one time period to the next, nor do they benefit from prior-year underharvest because of the timing of the annual final quota specifications (published in the middle of the year).

Alternative E 1b, establish a 12 equal monthly subquotas, was considered in the 2011 Environmental Assessment for a Rule to Adjust the Atlantic Bluefin Tuna General and Harpoon Category Regulations. It would allow the General category to remain open year-round and would revise subquotas so that they are evenly distributed throughout the year (i.e., the base quota of 435.1 mt would be divided into monthly subquotas of 8.3 percent of the General category base quota, or 36.1 mt). NMFS would continue to carry forward unharvested General category quota from one time period to the next time period. This alternative would result in increased harvest in the earlier portions of the General category bluefin season and decreased harvest in the later portions of the season. For early season (January-March) General category participants, an additional 85.2 mt would be available (i.e., 108.3-23.1 mt). At $9.13/lb, this represents potential increased revenue of approximately $1.7 million overall during this time period, nearly five times the current amount. NMFS does not have General category price/lb information for April or May since there is currently no General category fishing during those months, but using $9.13/lb as an estimate, potential revenues for each of those months would be $726,621. Potential revenues for the current June-August and September periods would decrease by approximately $2.2 million (50%) and $1.7 million (69%), given recent average price ($9.13 and $9.61, respectively). For October-November and for December, potential revenues would increase by approximately $317,000 (28%) and $287,000 (60%) at $9.21/lb and $9.65/lb, respectively. Relative to the No Action alternative, under Alternative E 1b, there would generally be substantially increased revenues for January through May and October through December and substantially decreased revenues for June through September, and total annual revenues would decrease by approximately $100,000 (1%).

Alternative E 1c, a preferred alternative, is similar to Alternative E 1b and could result in a shift in the distribution of quota and thus fishing opportunities to the earlier portion of the year. For example, in 2011 and 2012, June through August General category landings totaled 140.3 mt and 192.2 mt, out of an available (base) quota of 217.6 mt. In 2010, June through August General category landings totaled 125.4 mt of an available (adjusted) quota of 269.4 mt. If quota that is anticipated to be unused in the first part of the summer season is made available to January period General category participants and bluefin are landed against the January period subquota, it would potentially result in improved and fuller use of the General category quota. Also, because bluefin price per lb is often higher in the January period than during the summer, shifting quota to this earlier period would result in beneficial impacts to early season General category participants off the mid- and south Atlantic states. It is possible, however, that an increase of bluefin on the market in the January period could reduce the average price for that time of year. Participants in the summer fishery may perceive such quota transfer to be a shift away from historical participants in the traditional General category bluefin fishing areas off New England and thus adverse. However, because unused quota rolls forward within a calendar year from one period to the next, any unused quota from the adjusted January period would return to the June through August period and onward if not used completely during that period. Overall, short-term, direct impacts depend on the amount and timing of quota transferred inseason and would be expected to be neutral to minor, beneficial for January fishery participants and neutral to minor, adverse impacts for participants in the June through December General category fishery.

Alternative E 2 – NMFS Authority to Adjust Harpoon Category Retention Limits Inseason

Under the No Action alternative, alternative E 2a, Harpoon category participants would continue to have the ability to retain and land up to four large medium fish per vessel per day, as well as unlimited giants. The economic impact of the No Action alternative is expected to be direct and neutral to slightly beneficial and short-term as participants would continue to be able to retain and land a 3rd and 4th large medium bluefin, if available, and would not have to discard these fish if caught while targeting giant bluefin. In 2012, the first year following implementation of the four-fish limit on large mediums, there were only two trips on which three large mediums were landed and two trips on which four large mediums were landed, or 6% total of successful trips. Harpoon quota revenues in 2012 were 24 percent lower than 2011 and 71 percent higher than in 2010.

Under alternative E 2b, a preferred alternative, if NMFS changes the regulations to implement the daily retention limit of large medium bluefin over a range of two to four bluefin, the default large medium limit would be set at two fish. On a per-trip basis, there would be minor short-term direct adverse social and economic impacts that would depend on availability of large mediums to Harpoon category vessels on a per trip basis and the actual retention limit that NMFS sets inseason (or that is in place by default). Looking at successful 2012 trips, NMFS can estimate potential impacts of this change by determining the number of trips on which three or four large mediums were landed in 2012 and assuming that those fish may not be able to be landed under this alternative. Using 2012 successful trip data, if the limit was set at two large mediums, the revenue from up to six large mediums would be foregone for the season, and with a three fish limit, the revenue of up to two large mediums would be foregone. At an average 2012 weight of 296 lbs. and an average price of $9.13/lb for the Harpoon category, a loss of one to six fish would be approximately $2,702 to $16,215 for the Harpoon category as a whole for the year.

Potentially beneficial economic impacts are possible if a lower limit at the beginning of the season results in the Harpoon category quota lasting longer into the season, as the average price/lb is generally higher in July and August than it is in June. NMFS has not needed to close the Harpoon category in recent years (i.e., as a result of the quota being met), but depending on the size of the amount of quota available and the number of Harpoon category participants, this may be a consideration.

Alternative E 3 – Angling Category Subquota Distribution

Under alternative E 3a, the No Action alternative, Angling category participants fishing south of 39°18’ N. lat. (approximately, Great Egg Inlet, NJ) would continue to have their landings of trophy bluefin count toward a shared 66.7% of the Angling category large medium and giant bluefin subquota. The social impact of the No Action alternative is expected to vary by geographic area and be dependent of availability of trophy-sized bluefin on the fishing grounds. If the pattern of high activity off Virginia and North Carolina continues, fishermen in the mid-Atlantic may have greater opportunities to land a bluefin and participants in the Gulf of Mexico may have no opportunity to land a bluefin when the fish are in their area as the southern trophy fishery may already be closed for the year. For Angling and Charter/Headboat fishermen, based on the last two years, there would be direct, beneficial, short-term social impacts in the mid-Atlantic and direct, adverse, short-term impacts for participants south of that area, including the Gulf of Mexico. The issue of economic costs for Angling category participants is not relevant as there is no sale of tunas by Angling category participants. For charter vessels, which sell fishing trips to recreational fishermen, economic impacts are expected to be neutral to beneficial for those in the mid-Atlantic and neutral to adverse for those south of that area, including the Gulf of Mexico, as the perceived opportunity to land a trophy bluefin may be diminished. This should be tempered in the Gulf of Mexico, where there is no directed fishing for bluefin allowed. Given that the current southern trophy bluefin subquota of 2.8 mt represents approximately 17-30 individual fish, impacts are expected to be minor.

Under Alternative E 3b, the preferred alternative, a portion of the trophy south subquota would be allocated specifically for the Gulf of Mexico. Specifically, the trophy subquota would be divided as 33% each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. At the current average trophy fish weight, this would allow annually up to 8 trophy bluefin to be landed in each of the three areas.

There would be minor, short-term, direct, beneficial social impacts to a small number of vessels in the Gulf of Mexico given the small amount of fish that would be allowed to be landed (as well as indirect beneficial economic impacts for charter vessels), but the perception of greater fairness among southern area participants may result in indirect, longer-term, beneficial, social impacts. There would be minor, short-term, direct and indirect adverse social impacts (and economic impacts for charter vessels) for those outside the Gulf of Mexico as the perceived opportunity to land a trophy bluefin may be diminished.

Alternative E 4 – Change Start Date of Purse Seine Category to June 1

Under Alternative E 4a, the No Action alternative, there would be no change to the start date of the Purse Seine category fishery, which is currently set at July 15. Economic impacts would be expected to be direct and neutral to adverse depending on availability of schools of bluefin for purse seine operators to decide to make a set on. That is, currently, if conditions would warrant making a set (e.g., based on information from spotter pilots) before July 15, purse seine operators would not be able to fish and would miss the economic opportunity to land and sell bluefin while the other commercial bluefin fisheries are open. Social impacts would be minor and neutral to adverse for purse seine fishery participants and would be minor and neutral to beneficial for fishermen in other categories due to reduced actual or perceived gear conflict from June 1 through July 14.

Under the preferred alternative, E 4b, beginning fishing on June 1 would allow more flexibility for purse seine operators to choose when to fish, based on availability of schools of appropriate-sized bluefin and market price. Economic impacts would be expected to be direct and neutral to moderate and beneficial depending on availability of schools of bluefin for purse seine operators to decide to make a set on and market conditions. Social impacts would be minor and neutral to beneficial for purse seine fishery participants and would be minor and neutral to adverse for fishermen in other categories due to increased actual or perceived gear conflict from June 1 through July 14. In 2012, the average price per pound was $12.46, although the price likely reflects the relatively small amount of purse seine-caught bluefin on the market that year. In 2009, the last year in which there were Atlantic purse seine bluefin landings, the average price per pound was $5.96.

Alternative E 5 – Rule Regarding Permit Category Changes

Under the No Action alternative, E 5a, there would be no changes made to current regulations regarding the ability of an applicant to make a correction to their open-access HMS permit category. The current regulations prohibit a vessel issued an open-access Atlantic Tunas or an HMS permit from changing the category of the permit after 10 calendar days from the date of issuance. This No Action alternative is administrative in nature, and therefore the social and economic impacts associated with it would be neutral for most applicants. However, for those applicants who discover their permit category may not allow the vessel to fish in a manner as intended, they may experience moderate adverse social and economic impacts at an individual level. For example, if a commercial fishermen obtained an Angling category permit (recreational) versus a General category permit (commercial) and did not discover the error until after the 10 calendar day window, their vessel would not be allowed to fish commercially for Atlantic tunas for the remainder of that year. Likewise, if recreational fishermen obtained a General category permit (commercial) versus an Angling category permit (commercial) and did not discover the error until after the 10 calendar window, their vessel would not be allowed to fish under the recreational rules and regulations for the remainder of the year. These two examples demonstrate the potential in lost fishing opportunities as a result of the No Action alternative.

Under the preferred alternative, E 5b, NMFS would allow category changes to an open-access HMS permit for a time period greater than 10 calendar days (e.g., 30, 45, or 60 days), provided the vessel has not fished as verified via landings data. This alternative would result in neutral social and economic impacts for most applicants as there are approximately 20 requests annually that would fall outside the 10 calendar day window. However, for those applicants who discover their permit category may not allow the vessel to fish in a manner as intended (~20 per year), they would experience moderate beneficial social and economic impacts provided they discover the error in the liberalize window (e.g., 30, 45, or 60 days). Using the two examples illustrated above and assuming no bluefin were caught in either case, each applicant would be allowed to correct their open-access HMS permit category to match their intended fishing practices for the remainder of that year, thereby mitigating the potential of lost fishing opportunities, as well as potential income.

Alternative E 6 – North Atlantic Albacore Tuna Quota

Alternative E 6a, the No Action alternative, maintains the current northern albacore tuna quota. In the last 10 years, U.S. catches reached or exceeded the current U.S. initial quota (527 mt for 2013) in 2004 with 646 mt and in 2007 with 532 mt. However, catches have been less than the adjusted U.S. quotas (currently about 659 mt) for the last several years. Under the No Action alternative, there is no domestic mechanism to limit annual catches of northern albacore beyond the current requirements for Atlantic tunas or HMS vessel permits, authorized gear, observers/logbooks, and time/area closures. Therefore, expected short-term, direct economic impacts and social impacts under the No Action alternative would be neutral. If future overharvests result in the United States being out of compliance with the ICCAT recommendation, the United States would need to put control measures in place and neutral to adverse longer-term direct economic and social impacts could occur if the resulting annual quota needs to be reduced by the amount of the overharvest.

If, under preferred alternative, E 6b, NMFS implements a domestic quota for northern albacore and recent catch levels continue, and the U.S. quota (including the adjusted quota) recommended by ICCAT is maintained at the current amount, economic and social impacts would not be expected. However, if either the U.S. quota is reduced as part of a new TAC recommendation or catches increase above the current adjusted U.S. quota, there could be adverse impacts resulting from reduced future fishing opportunities and ex-vessel revenues. At an average price of $1.29/lb for commercially-landed albacore in 2011, a reduction of one mt would represent approximately $2,800 under a full quota use situation. Actual impacts would largely depend on the availability of northern albacore and the ability of fishery participants to harvest the quota. In addition, any adverse social and economic impacts of exceeding the TAC, which was adopted as part of the overall ICCAT northern albacore rebuilding program, would be reduced and, in the long term, may be beneficial for fishermen as the stock grows. There may be slight differences in the level of economic and social impacts experienced by the specific individuals of the northern albacore fishery, as well as by participants within a particular fishery sector.

8.6 Chapter 8 References

NMFS. 2014. 2013 Stock assessment and fishery evaluation (SAFE) report for Atlantic highly migratory species. NOAA Fisheries, Atlantic Highly Migratory Species Management Division, Silver Spring, MD.

NMFS. 2012. 2012 Stock assessment and fishery evaluation (SAFE) report for Atlantic highly migratory species. NOAA Fisheries, Atlantic Highly Migratory Species Management Division, Silver Spring, MD.

9 APPLICABLE LAW

9.1 Magnuson-Stevens Fishery Conservation and Management Act

9.1.1 Consistency with National Standards

Section 301 of the Magnuson-Stevens Act requires that fishery management plans and their implementing regulations be consistent with the 10 national standards listed below. The following paragraphs summarize how the preferred alternatives are consistent with the national standards. The detailed information in the previous chapters supports these conclusions. Congress also directed NMFS in the Atlantic Tunas Convention Act (ATCA) to manage the bluefin tuna fishery to ensure that NMFS provides U.S. fishing vessels "with a reasonable opportunity to harvest such allocation, quota, or at such fishing mortality level." 16 U.S.C. § 1854(g)(1)(D).

The preferred measures in this FMP Amendment would build upon an extensive regulatory framework for management of the domestic bluefin tuna fishery pursuant to a rebuilding program adopted in the 1999 FMP and continued under the 2006 Consolidated HMS FMP. The preferred measures in the FMP amendment are based on the best available science and on certain scientific assumptions underlying the bluefin tuna rebuilding program. This rebuilding program was reviewed and upheld in Nat'l Audubon Soc'y v. Evans, No. 99-cv-1707(RWR), 2003 WL 23147552, at *5 (D.D.C. July 3, 2003)(holding that the ICCAT Rebuilding Program adopted in the 1999 FMP complied with MSA requirements to prevent overfishing).

The existing rebuilding program and ICCAT TAC take into account uncertainties in the scientific information regarding the status of the bluefin tuna stock. ICCAT's SCRS has analyzed stock status and projection information based on two stock recruitment scenarios (i.e., the "high recruitment" and "low recruitment" scenarios) and indicated there is no strong evidence to choose one scenario over the other. Under the high recruitment scenario, the SCRS has concluded that rebuilding is not likely to occur by 2019, even with no (U.S. or foreign) harvests. However, under this scenario, growth of bluefin tuna stocks is expected if harvests are restricted to the ICCAT-recommended quota during the rebuilding period. In 2012, for example, the SCRS determined that maintaining the western bluefin tuna TAC at 1,800 metric tons would allow stock growth under both recruitment scenarios. The United States supported, and ICCAT adopted, a reduction in the total allowable catch to 1,750 metric tons, as an additional cautionary step given the uncertainty in the scientific advice. That quota level was continued for 2013 (ICCAT Recommendation 13-09). The 2012 SCRS stock assessment remains the best available scientific information with respect to the current stock status and the prospects for future bluefin tuna population growth and rebuilding.

The 2006 Consolidated HMS FMP contains a wide range of management measures, including annual quota and subquota limits, permit requirements for commercial fishers, time and area closures delineating fishing seasons, and daily retention limits for most categories of fishermen, among other things. The preferred conservation and management measures in this FMP amendment were designed to allow fishers to fully harvest, but not exceed, the U.S. bluefin tuna quota by refining the management tools in the 2006 Consolidated HMS FMP. In this FMP amendment, NMFS analyzed a detailed, multi-level approach to resolving challenges in administering and carrying out the quota system, which, if left unaddressed, could result in overharvests of the United States' quota in the future. To avoid this outcome while ensuring that the quota is fairly distributed among user groups, the FMP amendment focuses primarily on ensuring that the Atlantic bluefin tuna fisheries continue to operate within the TAC set by ICCAT consistent with the existing rebuilding plan. The preferred measures would *not* increase or decrease the overall authorized bluefin tuna harvest levels by bluefin tuna fisheries. Rather, the preferred management measures could affect the time, place, and manner in which U.S. fisheries may harvest the U.S. quota and the relative volumes of fish that may be caught by the different domestic fishery categories within that overall TAC.

The preferred alternatives would reduce dead discards of bluefin by restricting pelagic longline gear use in defined areas (gear restricted areas) and by creating an individual quota system in the pelagic longline fishery. They would also improve quota accounting; decrease management uncertainty by increasing accountability; enhance reporting and monitoring to provide more timely and accurate data for science and management purposes; and increase flexibility in the quota system to optimize catch among user groups.

National Standard 1:

Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

The Magnuson-Stevens Act defines "optimum," with respect to the yield from a fishery, as the amount of fish which:

A. will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
B. is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and
C. in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery.

As mentioned previously, the preferred alternatives would *not* increase or decrease the overall authorized bluefin tuna harvest levels by bluefin tuna fisheries. Rather, they could affect the time, place, and manner in which U.S. fisheries may harvest the quota and the relative volumes of fish that may be caught by the different domestic fishery categories within that overall quota.

The preferred alternatives would reduce dead discards of bluefin through gear restricted areas and an individual quota system in the pelagic longline fishery; improve quota accounting; decrease management uncertainty by increasing accountability; enhance reporting and monitoring to provide more timely and accurate data for science and management purposes; and increase flexibility in the quota system to optimize catch among user groups. These preferred alternatives would directly support the goals of ending overfishing, rebuilding the western stock of Atlantic bluefin tuna, and achieving optimum yield by ensuring that the bluefin tuna fishery continues to be managed within the ICCAT-approved TAC and thus are consistent with National Standard 1's requirements.

National Standard 2:

Conservation and management measures shall be based on the best scientific information available.

Amendment 7 is based on the best available fishery-dependent and fishery-independent data, and the most recent stock assessment for western Atlantic bluefin and northern albacore tuna. Most analyses in the FEIS were revised from the DEIS to include the additional year of data that become available in the time between issuance of the DEIS and preparation of the FEIS (2012) when that data was available across all categories and the analyses could be sensitive to changes in annual data. The economic information in this document is based upon logbook reports, weighout slips, and dealer reports. Average revenues are based on all pelagic longline sets made in that month from logbook reports, weighout slips, and ex-vessel prices from dealer reports (January 2006 through December 2012). Bycatch information is based upon vessel logbooks and observer reports. The last full stock assessment of the western Atlantic bluefin stock was conducted in 2012 by ICCAT's SCRS (SCRS 2012) and included information through 2011. ICCAT conducted a bluefin tuna stock assessment update in 2013, although the results were not substantially different than those of the 2012 assessment.

The northern albacore stock was last assessed in 2013 by ICCAT's SCRS (SCRS, 2013), and included information through 2011. The list of references in this FMP amendment reflects a range of sources of scientific information, including the 2013 Stock Assessment and Fishery Evaluation (SAFE) Report. Development of alternatives was informed by public input including hearings, written comments, and the HMS Advisory Panel.

National Standard 3:

To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The preferred alternatives reflect management of the western Atlantic stock of bluefin as a unit, throughout its range in the U.S. EEZ. The importance of specific geographic regions to the life history of bluefin is reflected in the management alternatives, which include management tools applicable to particular geographic regions (i.e., Gulf of Mexico and the Atlantic). Atlantic bluefin tuna are highly migratory pelagic fish that range across most of the North Atlantic and its adjacent seas, particularly the Mediterranean Sea (Atlantic Bluefin Tuna Status Review Team, 2011). The fact that the range of the western Atlantic stock of bluefin extends beyond the U.S. EEZ and is interrelated to the eastern Atlantic stock of bluefin is reflected in the close coordination of management with other nations though ICCAT (as described in Chapter 3). The preferred alternatives provide additional flexibility for the quota management of bluefin tuna to adapt to the evolving understanding of the complex stock structure and dynamics of Atlantic bluefin tuna.

National Standard 4:

Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The preferred management alternatives would not discriminate between residents of different states. They would be applied equally to all permit holders, regardless of homeport. For measures that allocate or assign fishing privileges among fishermen, the preferred alternatives designate allocations that would be fair and equitable to all such fishermen; were reasonably calculated to promote conservation; and will be carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

Residents of Different States

The preferred alternatives would not discriminate between residents of different states. Consistent with the NS4 guidelines, the preferred alternatives would not differentiate among U.S. citizens, nationals, resident aliens, or corporations on the basis of their state of residence nor would they incorporate or rely on a state statute or regulation that discriminates against residents of another state.

The preferred alternatives may, however, have different effects on persons in various geographic locations, as discussed in Chapter 5 of the EIS and in this section. Consistent with the NS4 guidelines, such different effects are permissible if they satisfy the other guidelines under Standard 4. Some of the conservation measures, such as the GRAs, might have the unintended result of disadvantaging fishermen living in the state closest to the area with the preferred alternatives' restrictions because those fishermen may have to travel farther to an open area. These restrictions are justified under National Standard 4, however, as they are conservation measures with no discriminatory intent and are not differentiations based on or related to the fishermen's state of residence. Rather, they were based on the location of bluefin tuna and interactions with pelagic longline gear.

Some of the preferred alternatives would have different social and economic impacts on different fishery participants, depending upon quota category, historical fishing behavior and catch, dependence upon the fishery, future fishing location, and other criteria as described below. The preferred alternatives reflect the fact that the bluefin tuna fisheries (and other HMS fisheries) are widely distributed and highly variable due to the diversity of participants (location, gear types, commercial, recreational), and because bluefin tuna are migrate over thousands of miles, with an annual distribution that is highly variable. Vessels fishing in any geographic area in the Atlantic or Gulf of Mexico are likely to have only limited access to bluefin tuna unless they travel long distances within the bluefin's migratory range The ports and communities that provide the goods and services to support the bluefin fisheries may vary as well, as vessels travel over large distances to pursue their target species.

While the preferred alternatives do not discriminate between residents of different states, different communities and regions may be impacted to different degrees due to their unique circumstances and the degree to which the community's economy depends on commercial fishing. As discussed in Chapter 5, those communities with relatively higher dependence upon commercial fishing include Dulac, LA; Grand Isle, LA; Venice, LA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; Montauk, NY; Gloucester, MA; and New Bedford, MA. The State of Louisiana and the NEFMC submitted public comments expressing concern about the DEIS analysis of any disproportionate impacts on Louisiana and New England fisheries. NMFS adequately considered such potential impacts in its analyses of the IBQ measures by including in the FEIS analyses of the impacts of the individual bluefin quota allocations by home port state. Most of the analyses of the expected impacts of the measures in the FEIS are not analyzed at the level of port or state due to the nature of the bluefin fisheries, which are widely distributed and highly variable. Due to this variability, it is difficult to predict potential revenue and secondary impacts of preferred management measures by port or by state. Therefore, the FEIS analyses are principally at a fishery-wide or permit category level.

For example, one of the reasons for different impacts on vessels and communities is the variable distribution of bluefin. Bluefin are concentrated seasonally in different locations including the Cape Hatteras continental shelf break, and the Gulf of Mexico. Therefore, bluefin are more vulnerable to interactions with fisheries in those areas and seasons than at other times of year when bluefin are more widely dispersed. For example, the preferred alternative designed to reduce discards in an area off North Carolina from December through April would impact pelagic longline vessels fishing in that area at that time. These distributive impacts are difficult to avoid, given the need to reduce dead discards. Again, these restrictions are justified under National Standard 4, however, as they are conservation measures with no discriminatory intent and are not differentiations based on or related to the fishermen’s state of residence.

Amendment 7 preferred alternatives were designed to mitigate distributive and other impacts. The use of performance metrics in association with the Cape Hatteras Gear Restricted Area would provide vessels a means to modify future behavior and avoid potential impacts; the preferred alternative to allow transiting would save time and fuel costs for vessels fishing near a gear restricted area or closed area; and the alternative that would provide additional flexibility for General category quota adjustment would enhance NMFS’ ability to make inseason quota adjustments to respond to regional differences in quota and/or fish availability. Multiple aspects of both the IBQ program and the quota allocation alternatives were designed to optimize flexibility and fishing opportunity. The quota system would be responsive to changes in the fishery and mitigate potential impacts as practicable.

Allocating or assigning fishing privileges

As discussed below, the preferred reallocation and IBQ alternatives that would confer fishing privileges are consistent with the National Standard 4 requirements to be fair and equitable to all such fishermen; are reasonably calculated to promote conservation; and would be carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The reallocation alternatives are fair and equitable to all such fishermen because the amount of quota being deducted from each of the categories (for allocation to the Pelagic Longline category under the "Codified Reallocation Alternative") is proportional to the size of each category's quota and is relatively small (approximately 7 percent). Secondly, the amount of quota that would be deducted from the categories is fixed, therefore, if the U.S. bluefin quota increases as a result of stock growth, the amount deducted from the various categories would not increase Furthermore, the other quota allocation measures in Amendment 7 ("Annual Reallocation" and "Modifications to Reserve Category") provide mechanisms to reallocate quota back to the quota categories, if quota is available. The "Annual Reallocation Alternative" guarantees a minimum amount of quota to the participants in the Purse Seine fishery, and enables increases in quota allocations over time with increasing levels of bluefin catch. Providing an amount of bluefin quota to the pelagic longline fishery that both reduces dead discards, yet also accounts for a reasonable amount of incidental catch that can be anticipated (based on historical catch rates and the effect of Amendment 7 gear restricted areas) would enable the continued generation of revenue associated with the pelagic longline fishery's target catch.

The IBQ alternatives are fair and equitable to all fishermen. Specifically, fishing privileges that would be assigned among U.S. fishermen would take into consideration the requirements of § 303A(5)(c)(5), including for example, current and historical harvests; investments in and dependence upon the fishery; continued participation in the fishery by active vessels; entry into the fishery of new vessels; promotion of the sustained participation of fishing communities that depend on the fisheries; and, ensuring the limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program. Furthermore, based on public comments, the preferred criteria for the assignment of fishing privileges in the FEIS was broadened to enable more recent participants in the fishery to qualify for quota shares (i.e., 2012 participants). Further ensuring consistent fair and equitable treatment of all fishermen, the IBQ program would be evaluated 3 years after implementation to ensure that its objectives are being met, including the required Magnuson-Stevens considerations with respect to assignment of fishing privileges.

The IBQ alternatives would be carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges. Permit holders are prevented from accruing excessive shares by purchasing multiple permits by existing regulations, which limit the consolidation of HMS limited access permits to no more than five percent of vessels. See 50 C.F.R. 645.4(l)(2)(iii). Furthermore, the cost of limited access permits is high (typically in the tens of thousands of dollars) and effectively prevents the accumulation of multiple permits. As explained further in Chapter 2, because the duration of a quota lease would be limited to a single year and there is no rollover provision, the impacts of not having limits on bluefin quota trades (leasing) would be limited in duration to a single year. Individual vessel owners may be able to lease quota during a fishing year for use, but at the end of the year the quota would not be usable for the subsequent year.

In designing the allocation scheme, NMFS considered other factors relevant to the Amendment's objectives, including the economic and social consequences of the scheme, dependence on the fishery by present participants and coastal communities, efficiency of various types of gear used in the fishery, transferability of effort to and impact on other fisheries, opportunity for new participants to enter the fishery, and enhancement of opportunities for recreational fishing.

National Standard 5:

Conservation and management measures shall, where practicable consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

The preferred alternatives, where practicable, consider efficiency in the utilization of fishery resources. No such measures have economic allocation as their sole purpose. For example, the Gulf of Mexico or Cape Hatteras Gear Restricted Areas may reduce a vessel's efficiency if it causes a vessel to fish in a location further from its port of departure, or if the catch per unit effort of a target species is reduced outside of the area. These potential reductions in efficiency are warranted by the important reductions in bluefin discards likely to result from the gear restricted areas, consistent with National Standards 1 and 9. Pelagic longline vessels may gain economic efficiencies from the elimination of the target catch requirements, and the ability to obtain additional IBQ via a lease.

National Standard 6:

Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The preferred alternatives allow for the use of different gear and fishing practices, and accommodate the diversity of the fishery reflected in the various quota categories and vessel sizes. The preferred alternatives were designed to address the Amendment 7 objectives in a manner that considers the unique characteristics of each quota category. The principal determining factors in many alternatives is the unique fishing practices and the specific history of fishing, reporting, and quota accounting of each quota category. For example, the Longline category is unique in its importance as a domestic commercial fishery that targets non-bluefin species, with requirements for logbook reporting and observed trips, a documented history of dead discards, a history of accounting for a portion of such discards, and a unique gear type with diverse bycatch. A second example is the Purse Seine category, which is a unique gear type that played an important historical role in the development of the U.S. bluefin fishery, with recent low levels of fishing activity. The number and complexity of the management alternatives reflects the diversity of the fisheries, and the need to both accommodate that diversity as well as the need for flexible, robust quota system that can adapt to change. For example, under Amendment 7 preferred quota allocation alternatives, the quota system would be more flexible as well as predictable, would be responsive to changes in the fisheries, and would help to address future contingencies in the fisheries that may arise due to the variability and diversity of the fisheries.

National Standard 7:

Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

NMFS considered the costs and benefits of a range of alternatives to achieve the objectives of this Amendment. NMFS considered the costs to the different categories of taking no action as well as alternatives that would be more costly than the preferred alternatives. The preferred alternatives in general would enhance the ability of the categories to continue to operate in the long-term by ensuring the sustainability of the bluefin stock. The preferred alternatives would minimize the costs associated with potential quota reductions and accounting for dead discards by providing additional flexibility to optimize fishing opportunity among quota categories. Although the VMS requirement for the Longline category would duplicate some of the information provided by the current HMS logbook system, the VMS data would be unique in its timeliness and value in monitoring the Longline category IBQ program. Some of the IBQ program reporting requirements would duplicate some of the information required by the VMS program, and required by current dealer requirements, but would enable more timely accounting for catch. The IBQ program would be evaluated 3 years after implementation to ensure that its objectives are being met, including the required Magnuson-Stevens Act considerations with respect to National Standard 7.

National Standard 8:

Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse impacts on such communities.

The preferred alternatives include a range of strategies, which were explicitly developed to consider different methods to achieve Amendment 7 objectives. NMFS has determined that the preferred alternatives would achieve the best balance to satisfy these objectives and minimize adverse impacts to the extent practicable. For example, the "Modified Cape Hatteras Gear Restricted Area with Access based on Performance" alternative would provide important reductions in bluefin dead discards, yet allow continued access to the area by the majority of the pelagic longline vessels. The "Individual Bluefin Quota" and the preferred reallocation alternatives would fundamentally alter the pelagic longline fishery by prohibiting the use of pelagic longline gear when the bluefin quota is reached and establish individual accountability, and but would also provide for additional quota for the Longline category in order to minimize adverse impacts on the Longline category and pelagic longline fishery communities.

The "Reallocation to the Longline Category based on 68 mt Historical Dead Discard Allowance" and the "Annual Reallocation of Bluefin Quota from the Purse Seine Category" alternatives would provide methods of providing additional quota to the Longline category that would also minimize adverse impacts on the other quota categories, supporting those communities through sustained participation. The electronic monitoring requirement would provide an important tool to monitor the IBQ, which NMFS determined to be more feasible in the short term than other potential means of independent verification such as increased observer coverage. The requirement for enhanced reporting for the Atlantic tunas General, Harpoon, and HMS Charter/Headboat categories would improve data, but would represent a low adverse impact.

Chapters 5-8 in this FEIS analyze in detail the social and economic impacts of the alternatives. As reflected therein, the preferred alternatives reflect the fact that the bluefin tuna fisheries (and other HMS fisheries) are widely distributed and highly variable due to the diversity of participants (location, gear types, commercial, recreational), and because bluefin tuna migrate over thousands of miles, with an annual distribution that is highly variable. The ports and communities that provide the goods and services to support the bluefin fisheries may vary as well, as vessels travel over large distances to pursue their target species. Different communities and regions may be impacted to different degrees due to their unique regulatory and economic circumstances. Those communities with relatively higher dependence upon commercial fishing include Dulac, LA; Grand Isle, LA; Venice, LA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; Montauk, NY; Gloucester, MA; and New Bedford, MA. Most of the analyses of the expected impacts of the measures in the FEIS are not analyzed at the level of port or state due to the nature of the bluefin fisheries, which are widely distributed and highly variable. Due to this variability, it is difficult to predict potential revenue and secondary impacts of preferred management measures by port or by state. Therefore, the FEIS analyses are principally at a fishery-wide or permit category level. The FEIS includes analyses of the impacts of the individual bluefin quota allocations by home port state. Vessels fishing in any geographic area in the Atlantic or Gulf of Mexico are likely to have only limited access to bluefin tuna, unless they travel long distances within the bluefin's migratory range.

National Standard 9:

Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The 2006 Consolidated HMS FMP and its amendments minimize bycatch and bycatch mortality to the extent practicable for fish and non-fish species. Although Amendment 7 has multiple objectives, the principal objective that is relevant to most of the preferred alternatives in the amendment is the reduction of dead discards of bluefin and the avoidance and minimization of bluefin bycatch by vessels fishing with pelagic longline gear. Amendment 7 would address the two major weaknesses in the current FMP related to bycatch, as well as implement other measures to avoid and minimize bycatch. The two current weakness in the FMP related to bycatch that would be eliminated are: The pelagic longline fishery is not currently subject to any limit on the amount of bluefin that may be caught, and not all participants in the bluefin fishery (i.e., not all quota categories) are required to report bluefin discards.

Amendment 7 would prioritize avoiding bycatch in a variety of ways, including new restrictions on the amount of bluefin that may be caught by the pelagic longline fishery and incentives to avoid interactions with bluefin tuna. The pelagic longline fishery, which currently is not subject to any limit on the amount of bluefin they are allowed to discard, would be strictly limited in the amount of bluefin they are allowed to catch (limitations for individual vessels and a fishery wide limit). Amendment 7 would enhance reporting in both the incidental and directed fisheries.

More specifically, (as fully discussed in Chapter 4) Amendment 7 measures would avoid bycatch and minimize bycatch through the use of gear restricted areas in the Atlantic and Gulf of Mexico would prohibit or restrict the use of pelagic longline gear in times and areas of high bluefin interactions, and reduce the number of bluefin dead discards by approximately 40 percent. IBQs in the pelagic longline fishery, which would provide strict limits on the catch of bluefin by pelagic longline gear; increase bluefin catch accountability of the Longline category and the accountability of individual vessels; provide incentives for vessels to modify their fishing practices to avoid bluefin; provide incentives to use non-pelagic longline gear (which has lower bycatch of bluefin and protected species); and provide incentives to comply with reporting and monitoring requirements, including reporting of bycatch. These measures, in conjunction with electronic monitoring and VMS reporting requirements would reduce management uncertainty associated with this quota-managed fishery by increasing the likelihood that the bluefin catch by the pelagic longline fishery would not exceed the quota, and reducing uncertainty concerning total fishing-related mortality.

Removal of the target catch requirements (in conjunction with the IBQ program) would reduce regulatory discards. The pelagic longline fishery would be closed when the total Longline category quota is reached/projected to be reached.

The diverse management measures in Amendment 7 would represent a fundamental change to the management of the pelagic longline fishery that would change fishing practices and behavior within the existing overall quota limits, increase management effectiveness, reduce biological and economic waste, provide economic benefits form more productive uses of the resource, and support stock rebuilding.

The non-pelagic longline commercial categories that are not currently required to report discarded bluefin would be required to report such discards. The General, Harpoon, Purse Seine, and Trap categories would be subject to enhanced requirements for inseason reporting and monitoring of bluefin discards. VMS reporting and Electronic monitoring of the pelagic longline fishery would result in more timely data on the location and amount of bycatch and another means of verification of fishery-dependent data. New VMS reporting requirements by Purse Seine vessels would ensure timely information on bluefin bycatch in that fishery.

National Standard 10:

Conservation and management measures shall, to the extent practicable, promote safety of human life at sea.

No impact to safety of life at sea is anticipated with the exception of the alternative that would allow vessels fishing with bottom or pelagic longline gear to transit through applicable closed or gear restricted areas with such gear on board. This alternative would enhance safety at sea by minimizing the distance, and therefore the time required to either return to port after fishing, or steam to the fishing location from port. Minimizing the time at sea may slightly reduce the risks inherent in being at sea. To the extent that IBQs may facilitate vessel operators deciding when and how to fish their quotas independently from one another, and therefore reduce somewhat the potential for 'derby' fishing behavior, IBQs may contribute to safety at sea relative to the other (i.e., regional and group) quota alternatives.

9.1.2 Consideration of Magnuson-Stevens Act Section 304(g) Measures

Section 304(g) of the Magnuson-Stevens Act includes requirements specific to the preparation and implementation of an FMP or FMP amendment for HMS. See 16 U.S.C. 1854(g) for the full text. The summary of the requirements are below. The impacts of the preferred alternatives and how they meet these requirements are described in more detail in Chapters 2, 4, and 5 of this document.

Consult with and consider the view of affected Councils, Commissioners, and advisory groups.

As discussed in detail in Chapter 1, the HMS Advisory Panel discussed bluefin tuna management in many of the years preceding the development of this FEIS, and in 2011 and 2012 began to focus on changes that may be necessary to the 2006 Consolidated HMS FMP. In preparation for the formal scoping process of evaluating potential bluefin fishery management changes, a preliminary version of a Scoping Document ("Preliminary White Paper") was presented by NMFS to the HMS Advisory Panel meeting at its March 2012 meeting (NMFS, March 2012). The HMS Advisory Panel expressed qualified support for further exploring and analyzing the range of measures in the Preliminary White Paper, and suggested several additional measures. Those additional measures were incorporated into a final Scoping Document (NMFS, April 2012). NMFS made the scoping document available to the public, concurrent with the publication of a NOI in the Federal Register (78 FR 24161; April 23, 2012), which announced NMFS' intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a DEIS, and a potential amendment to the 2006 Consolidated HMS FMP.

Pursuant to the publication of the NOI, NMFS conducted the following five scoping hearings in Portland, ME; Gloucester, MA; Toms River, NJ; Manteo, NC; and Belle Chasse, LA; and consulted with the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils (the document was shared with the Gulf of Mexico and Caribbean Fishery Management Councils), as noted in the DEIS. NMFS accepted public comment on the scoping document through July 15, 2012. A summary of the public comments are contained in the Appendix of the DEIS. On September 20, 2012, NMFS presented a Predraft document to the HMS Advisory Panel (NMFS, September 2012). A Predraft, which is a precursor to a DEIS, allows NMFS to obtain additional information and input from Consulting Parties and the public on potential alternatives prior to development of the formal DEIS and proposed rule. As such, NMFS requested comments on the Predraft from the HMS Advisory Panel, and made the document available to the public through the HMS website (http://www.nmfs.noaa.gov/sfa/hms).

In light of the management challenges described, and based on the Predraft and comments from the HMS Advisory Panel, NMFS developed a DEIS (Amendment 7 to the 2006 Consolidated HMS FMP (Amendment 7 DEIS, July, 2013)).

NMFS published a proposed rule in the Federal Register on August 21, 2013 (78 FR, 52032), which proposed the "preferred alternatives" analyzed in the DEIS document and solicited public comments on the measures. On August 22, 2013 (78 FR 52123), NMFS published a Federal Register action, informing the public of the date and locations of public hearings on Amendment 7. From August 2013 to January 2014, NMFS conducted 11 public hearings, and consulted with the New England Fishery Management Council, the Gulf of Mexico Management Council, and the South Atlantic Fishery Management Council. The hearings were held in diverse locations in Atlantic and Gulf of Mexico coastal states (see Chapter 10). On August 30, 2013, the Environmental Protection Agency published a Notice of Availability of the DEIS (78 FR 53754; August 30, 2013).

The HMS Advisory Panel discussed the proposed rule and DEIS during its September 2013 meeting. The August 21, 2013 Amendment 7 proposed rule set the end of the public comment period as October 23, 2013, but given the length and complexity of the rule, and to provide additional time for consideration of public comments in light of the November meeting of ICCAT, the end of the comment period was rescheduled to December 10, 2013 (78 FR 57340; September 18, 2013). Subsequently, due to the government shutdown in October 2013, NMFS again extended the end of the public period until January 10, 2014 to provide additional opportunity for comment (78 FR 75327; December 11, 2013). On December 26, 2013, NMFS published a Federal Register action that announced a public hearing conference call and webinar to provide additional opportunity for the public from all geographic areas to comment (78 FR 78322).

Establish an advisory panel for each FMP.

As part of the 2006 Consolidated HMS FMP, NMFS combined the Atlantic Billfish and HMS Advisory Panels into one panel. The combined HMS Advisory Panel provides representation from the commercial and recreational fishing industry, academia, non-governmental organizations, state representatives, representatives from the Regional Fishery Management Councils, and the Atlantic and Gulf States Marine Fisheries Commissions. This amendment would not change the HMS Advisory Panel, and, as described above and in Chapter 1, the HMS Advisory panel and NMFS discussed the relevant subjects at several meetings, including extensive discussion of the DEIS and proposed rule during its September 2013 meeting.

Evaluate the likely effects, if any, of conservation and management measures on participants in the affected fisheries and minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors.

Chapters 5, 6, 7, and 8 of this document evaluate the quantitative and qualitative economic and social impacts of Amendment 7 management measures on participants in the affected fisheries. Amendment 7 analyses a range of alternatives, including No Action, in order to compare the specific effects of the different measures (alternatives) on participants. With respect to the requirement that NMFS minimize to the extent practicable any disadvantage to U.S. fishermen in relation to foreign competitors, NMFS considered several aspects of the management measures: (1) Impact on the ability of U.S. fishermen to fully harvest (but not exceed) the U.S. bluefin quota; (2) impact on the ability of the U.S. fishermen to harvest swordfish, yellowfin tuna, bigeye tuna, or other target species; (3) impact on the ability of the U.S. fishermen to harvest northern albacore; and (4) impact of a potential change in the commercial minimum size.

The specific amount of the U.S. bluefin quota and swordfish quotas recommended by ICCAT are set through international negotiations, based upon many factors. One factor that may be relevant is whether the United States harvests it full quota. Although "underharvest" of a quota (catching less that the full quota), and 'leaving fish in the water' may, in certain circumstances, have beneficial biological impacts, it may disadvantage the United States in the context of ICCAT. This potential disadvantage is because an underharvest of quota may be used as justification for a reduced amount of future quota. NMFS minimized such potential disadvantage associated with an underharvest of swordfish (by the Longline category) by developing management alternatives that would provide flexibility to optimize fishing opportunity. The preferred alternatives address the Amendment 7 objectives regarding reducing and accounting for bluefin dead discards, and also minimize the reductions in swordfish, yellowfin tuna, and other target catch. The preferred alternative that would implement a northern albacore quota would not disadvantage U.S. fishermen. Other non-U.S. vessels are also subject to such a quota, and in the short-term the U.S. northern albacore quota would not constrain catch.

With respect to bluefin size, the international context is relevant because ICCAT recommends a minimum size as well as sets restrictions for harvest of particular size ranges. Amendment 7 would make no changes to the minimum size restrictions (domestic or international) and would therefore not disadvantage U.S. fishermen.

With respect to HMS for which the United States is authorized to harvest an allocation, quota, or fishing mortality level under a relevant international fishery agreement, provide fishing vessels a reasonable opportunity to harvest such allocation, quota, or at such fishing mortality level.

The United States is under an international agreement regarding the harvest of bluefin tuna, swordfish, and northern albacore, the stocks most directly impacted by Amendment 7. The preferred alternatives address the Amendment 7 objectives regarding reducing and accounting for bluefin dead discards, and also minimize the reductions in swordfish, yellowfin tuna, bigeye tuna, or other target catch. The alternative "Modified Cape Hatteras Gear Restricted Area with Access Based on Performance" allows access for the majority of vessels in order to provide a reasonable opportunity to harvest target species, including those species subject to an international agreement. The alternative on the IBQ program would enable vessels to continue to fish for target species if they are able to avoid bluefin, and would account for bluefin quota caught. The IBQ program alternative would provide a more reasonable opportunity to harvest target species than would the regional or group quota alternatives. The reallocation alternatives provide a reasonable opportunity for the non-Longline categories to harvest bluefin quota, especially in consideration of the new restrictions that would apply to the Longline category.

Review on a continuing basis, and revise as appropriate, the conservation and management measures included in the FMP.

NMFS continues to review the need for any revisions to the existing regulations for Atlantic HMS fisheries. Amendment 7 to the 2006 Consolidated HMS FMP is the culmination of one of those reviews.

Diligently pursue, through international entities, comparable international fishery management measures with respect to HMS.

NMFS continues to work with ICCAT and other international entities such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to implement comparable international fishery management measures. To the extent that some of the management measures in this amendment could enhance fishery management in other countries, NMFS works to provide foreign nations with the techniques and scientific knowledge to implement similar management measures.

Ensure that conservation and management measures under this subsection: Promote international conservation of the affected fishery; Take into consideration traditional patterns of fishing vessels of the United States and the operating requirements of the fisheries; Are fair and equitable in allocating fishing privileges among U.S. fishermen and do not have economic allocation as the sole purpose; and Promote, to the extent practicable, implementation of scientific research programs that include the tagging and release of Atlantic HMS.

The Amendment 7 management objectives and the preferred alternatives designed to achieve those objectives would promote the sustained international conservation of the bluefin and northern albacore fisheries as well as other HMS fisheries. The bluefin measures would result in a more robust quota system, with reduced management uncertainty.

The traditional patterns of fishing vessels have been taken into consideration through the design of the alternatives, which reflect the unique historical and regulatory circumstances and operating requirements affecting each permit category; and by examining the economic impacts on the different categories.

The preferred alternatives that would allocate fishing privileges among U.S. fishermen are fair and equitable, as explained above in this section (National Standard 4), and as explained and analyzed in previous chapters of this document.

NMFS has a number of Atlantic HMS scientific research programs in place including tagging and release projects. The preferred alternatives would not directly implement or establish any new scientific programs, but the alternative “Modification of the Reserve Category” would facilitate the future use of quota to conduct research.

9.2 Atlantic Tunas Convention Act

Atlantic HMS are managed under the dual authority of the Magnuson-Stevens Act and ATCA, ATCA is the domestic implementing legislation for the International Convention for the Conservation of Atlantic Tunas. Congress explained that ATCA was “needed to provide an overall conservation program, agreed to on an international basis, for the conservation of the highly migratory tunas, and to carry out U.S. responsibilities under the Convention”). The Convention established the International Commission for the Conservation of Atlantic Tunas (ICCAT), and ICCAT “on the basis of scientific evidence make[s] recommendations designed to maintain the populations of tuna and tuna-like fishes that may be taken in the Convention area at levels which will permit the maximum sustainable catch." Convention, ART. VIII, § 1(a). To this end, ICCAT establishes a "total allowable catch" (TAC) for western Atlantic bluefin tuna, and a portion of that stock is then allocated to the United States. Under ATCA, which authorizes the Secretary to promulgate regulations as may be necessary and appropriate to carry out ICCAT recommendations, the Secretary may not promulgate any regulations that "may have the effect of increasing or decreasing any allocation or quota of fish or fishing mortality level to the United States agreed to pursuant to a recommendation of [ICCAT]." 16 U.S.C. § 971d(c)(3)(K). Otherwise, any regulations issued under the ATCA "shall, to the extent practicable, be consistent with fishery management plans prepared and implemented under [the Magnuson–Stevens Act]." *Id.* § 971d(c)(1)(C).

The authority to issue regulations under the Magnuson-Stevens Act and ATCA has been delegated from the Secretary to the Assistant Administrator for Fisheries, NMFS. Chapter 3 summarizes some of the recent ICCAT recommendations relevant to bluefin. As explained in the introduction to this chapter, Amendment 7 is consistent with—and makes no change to—the ICCAT rebuilding plan and quotas that are adopted consistent with that plan through the ICCAT process. Amendment 7 is consistent with ATCA and focuses on modifications to domestic management. NMFS is required under the Magnuson-Stevens Act and ATCA to provide U.S. fishing vessels with a reasonable opportunity to harvest ICCAT-recommended quota. As explained under Section 9.1, the preferred alternatives were designed to address the Amendment 7 objectives regarding reducing and accounting for bluefin dead discards, while also minimizing the reductions in swordfish, yellowfin tuna, or other target catch, and providing a reasonable opportunity to harvest ICCAT-recommended quotas. The increased predictability, accountability, and flexibility associated with the Amendment 7 preferred alternatives would contribute toward maintaining fishing opportunities, while achieving the other objectives. Amendment 7 measures also would facilitate compliance ICCAT-recommended quota and provisions regarding accounting for dead discards.

9.3 National Environmental Policy Act

NEPA provides a mechanism for identifying and evaluating the full spectrum of environmental issues associated with federal actions, and for considering a reasonable range of alternatives to avoid or minimize adverse environmental impacts. This document is designed to meet the requirements of both the Magnuson-Stevens Act and NEPA. The Council on Environmental Quality (CEQ) has issued regulations specifying the requirements for NEPA documents. All of the required elements of an EIS are specified in

40 CFR 1508.9(b) and NAO 216-6 Section 5.04b.1, and are addressed in this document as referenced below.

- The need for this action is described in Chapter 1,
- The alternatives that were considered are described in Chapter 2,
- The environmental impacts of the Preferred Alternatives are described in Chapters 4, 5, and 6,
- The agencies and persons consulted on this action are listed in Chapter 10,
- An Executive Summary can be found at the beginning of this document,

- A table of contents can be found in each chapter, as well as at the beginning of this document,
- Background and purpose are described in Chapter 1,
- A brief description of the affected environment is in Chapter 3,
- Cumulative impacts of the alternatives are described in Chapter 6,
- A list of preparers is in Chapter 10, and
- The index is in Chapter 11.

Scoping Summary

NMFS announced its intent to prepare Amendment 7 and an Environmental Impact Statement (EIS) on April 23, 2012. NMFS published a NOI in the Federal Register (78 FR 24161), which announced our intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a (DEIS), and a potential amendment to the 2006 Consolidated HMS FMP. The scoping period extended from that date until July 15, 2012. A summary of the scoping process is in Chapter 1, and a comment summary is in the Appendix of the DEIS.

9.4 E.O. 12866

The purpose of E.O. 12866 is to enhance planning and coordination with respect to new and existing regulations. This E.O. requires the Office of Management and Budget (OMB) to review regulatory programs that are considered to be "significant." E.O. 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant action is any regulatory action that may:

- Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, of the principles set forth in the Executive Order.

The Regulatory Impact Review (RIR) in Chapter 7 fulfills the requirement of E.O. 12866

9.5 Regulatory Flexibility Act

The purpose of the RFA is to reduce the impacts of burdensome regulations and recordkeeping requirements on small businesses. To achieve this goal, the RFA requires Federal agencies to describe and analyze the effects of proposed regulations, and possible alternatives, on small business entities. To this end, the DEIS contained an IRFA, and this document includes a FRFA, found in Chapter 8, which includes an assessment of the effects that the preferred and other alternatives are expected to have on small entities.

9.6 Marine Mammal Protection Act and Endangered Species Act

Endangered Species Act

The fisheries managed under the 2006 Consolidated Atlantic HMS FMP and its amendments have undergone formal and/or informal Section 7 consultation and collectively address the ongoing Atlantic HMS fisheries.

On August 15, 2013, NMFS determined that the proposed measures in Amendment 7 to the 2006 Consolidated HMS FMP would not require reinitiation of formal consultation. The environmental effects of the preferred alternatives in this FEIS are substantially the same as those analyzed in the DEIS, although some different alternatives are now preferred and two of the alternatives have been slightly modified. No additional or substantively different effects on listed species are expected as a result of these changes.

In 2014, however, NMFS determined that it needed to reinitiate consultation for the pelagic longline fishery. That fishery operates consistent with a 2004 BiOp that concluded that the Atlantic pelagic longline fishery was not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley or olive ridley sea turtles but was likely to jeopardize the continued existence of leatherback sea turtles. NMFS implemented the Reasonable and Prudent Alternative and Terms and Conditions specified in that BiOp (e.g., hook type, bait type, mandatory workshops). On March 31, 2014, NMFS requested reinitiation of consultation of the pelagic longline BiOp due to new information on mortality rates and total mortality estimates for leatherback turtles that exceed those specified in the RPA, changes in information about leatherback and loggerhead populations, and new information on sea turtle mortality. While the mortality rate measure needs to be re-evaluated, this does not affect the overall ability of the RPA to avoid jeopardy during the reinitiation.

NMFS will continue to implement these RPAs during the reinitiation of consultation and has previously determined that ongoing operations in compliance with that BiOp comply with requirements under sections 7(a)(2) and 7(d) of the ESA. Section 7(a)(2) prohibits Federal actions that jeopardize the continued existence of listed species or that destroy or adversely modify their critical habitat. Section 7(d) of the ESA prohibits federal agencies and permit applicants from making any "irreversible or irretrievable commitment of resources" that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures during consultation under section 7(a)(2). Implementation of the preferred alternatives in the FEIS will not affect NMFS's ability to comply with the RPAs and RPMs in that BiOp and will not alter the proposed action in a way that triggers additional ESA requirements or considerations pertaining to the pelagic longline fishery and listed sea turtles and other species covered in the 2004 BiOp.

NMFS has determined that other conclusions of the 2004 BiOp and a 2001 BiOp on the Atlantic HMS fisheries are still applicable. Amendment 7 measures (including those that could reduce fishing effort) implemented in conjunction with current measures in the HMS fisheries would not change the determination that ongoing operations are unlikely to jeopardize the continued existence of the right whale, humpback, fin, or sperm whales, or Kemp's ridley, green, loggerhead, hawksbill or leatherback sea turtles. A complete discussion of the effect of the alternatives applicable to the Longline category on quota allocation and fishing effort is located in Section 4.1.6.1.

On July 3, 2014, NMFS published a final rule to list four Distinct Populations Segments (DPS) of scalloped hammerhead sharks (*Sphyrna lewini*): two as threatened (Central and Southwest Atlantic DPS and Indo-West Pacific DPS) and two as endangered (Eastern Atlantic DPS and Eastern Pacific DPS) under the Endangered Species Act (79 FR 38214). The Central and Southwest Atlantic DPS consists primarily of the population found in the Caribbean Sea and off the Atlantic coast of Central and South America (includes all waters of the Caribbean Sea, including the U.S. EEZ off Puerto Rico and the U.S. Virgin Islands). The Central and Southwest Atlantic DPS occurs within the boundary of Atlantic HMS commercial and recreational fisheries.

NMFS will be developing a more detailed analysis regarding any effects to the Central and Southwest DPS of scalloped hammerhead sharks to be used in consultation on the Atlantic HMS fisheries. As a preliminary matter, the Division has determined that ongoing operation of the fisheries consistent with the RPAs and RPMs in existing biological opinions and consistent with ongoing conservation and management measures is not likely to jeopardize the continued existence of the species or result in an irreversible or irretrievable commitment of resources which would foreclose formulation or implementation of any reasonable and prudent alternative measures. None of the measures in Amendment 7 would be expected to have an effect on the threatened Central and Southwest DPS of scalloped hammerhead sharks that would affect this determination.

9.7 Administrative Procedure Act

This amendment was developed in compliance with the requirements of the Administrative Procedure Act, and these requirements will continue to be followed when the final regulation is published. Section 553 of the Administrative Procedure Act establishes procedural requirements applicable to informal rulemaking by Federal agencies. The purpose of these requirements is to ensure public access to the Federal rulemaking process, and to give the public adequate notice and opportunity for comment.

9.8 Paperwork Reduction Act

The purpose of the PRA is to control, and to the extent possible, minimize the paperwork burden for individuals, small businesses, nonprofit institutions, and other persons resulting from the collection of information by or for the Federal Government. The authority to manage information and recordkeeping requirements is vested with the Director of OMB. This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. Amendment 7 contains collection of information requirements subject to the PRA including the following:

- Appeal of vessel performance scores (multiple alternatives)
- Appeal of quota shares
- Vessel Monitoring System (VMS) declaration requirements (multiple alternatives)

- VMS reporting requirements (multiple alternatives)
- E-MTU VMS units for Purse Seine vessels and hail in/out requirements
- Tracking lease of quota shares
- Electronic monitoring of Longline category
- Cost recovery reporting (in the future)
- Catch reporting via automated system for General, Harpoon, and Charter/Headboat categories

9.9 Coastal Zone Management Act

Section 307(c)(1) of the Federal CZMA of 1972 (reauthorized in 1996) requires that all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. NMFS determined that this action is consistent to the maximum extent practicable with the enforceable policies of the approved coastal management programs of coastal states on the Atlantic including the Gulf of Mexico and the Caribbean Sea. Pursuant to 15 CFR 930.41(a), NMFS sent letters to the Coastal Zone Management Program of each coastal state, and provide a 60-day period to review the consistency determination and to advise the Agency of their concurrence. NMFS received responses that the proposed measures were consistent with the relevant coastal management plans from the states of Alabama, Connecticut, Delaware, Florida, Georgia, Mississippi, North Carolina, New Hampshire, New Jersey, Rhode Island, South Carolina, and Virginia. No responses were received the states of Maine, Massachusetts, New York, and Texas, and therefore consistency is being inferred.

The state of Louisiana objected to the consistency determination because it believes that the potential biological benefits of the Amendment are minimal compared to the potentially large socio-economic impacts for pelagic longline vessels, especially those related to the IBQ program.

Louisiana disagreed with the conclusion that the proposed activity is consistent to the maximum extent practicable with the Louisiana Coastal Resources Plan because it claims that the determination lacks information sufficient to support the consistency statement “as required by federal regulations at 15 CFR 930.29(a) and as identified in the enforceable policies of the Louisiana Administrative Code, Title 43, Part I.”

The State of Louisiana states that Amendment 7 is inconsistent with three, and is not fully consistent with six, of the enforceable policies of the Louisiana Administrative Code stating that it lacks comprehensive data and information sufficient to support the consistency statement. The specific factors that the State of Louisiana states that Amendment 7 is not fully consistent with are Section 701 F(5) availability of feasible alternative sites or methods of implementing the use, F(7) economic need for use and extent of impacts of use on economy of locality; F(11) extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited; F(16) proximity to and extent of impacts on public lands or works, or historic, recreational, or cultural resources; F(17) extent of impacts on navigation, fishing, public access, and recreational opportunities; and F(19) extent of long term benefit or adverse impacts.

In accordance with the CZMA regulations at 15 CFR 930.43 (d)(2), NMFS has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State of Louisiana objects.

Regarding factor F(5), there are no alternative sites of implementing the use of pelagic longline fishing within the Gulf of Mexico – pelagic longline fishing already occurs within all available federal and state waters. As noted below, alternative methods of reducing dead discards that were analyzed included group or regional quotas and would have had more adverse impacts than the preferred alternative. Regarding factor F(7), the State of Louisiana correctly states that pelagic longline fishing is an important economic activity contributing to the Louisiana economy. Pelagic longline fishing will continue to be authorized within the Gulf of Mexico, and valuable target species such as swordfish and yellowfin tuna are abundant in the region such that, should pelagic longline vessels continue to offload to Louisiana-based federal dealers, pelagic longline fishing will continue to contribute to the Louisiana economy. Regarding factor F(11), as stated above, pelagic longline fishing will continue to be authorized within the Gulf of Mexico such that existing and traditional uses as well as future uses of area will continue. Regarding factor F(16), productive fishing grounds will still be available for pelagic longline fishing within the Gulf of Mexico even with preferred alternative that would implement the Modified Spring Gulf of Mexico Gear Restricted Areas. As noted in Chapter 4, with redistribution of effort, NMFS anticipates a reduction of approximately $281,000 in ex-vessel value from implementing the preferred alternative, which, while approximately 3 percent of the Gulf of Mexico pelagic longline fleet total ex-vessel value of $9.74 million, means that roughly 97 percent of ex-vessel value within the Gulf of Mexico will continue to contribute to the State of Louisiana economy. Regarding factor F(17), the preferred alternative to implement the Modified Spring Gulf of Mexico Gear Restricted Area would restrict access to two additional areas within the Gulf of Mexico where bluefin bycatch has consistently occurred from 2006-2012 and which comprise approximately 11 percent of the area. In combination with the DeSoto Canyon pelagic longline closed areas, which were closed to reduce bycatch of juvenile swordfish and overfished billfish and coastal sharks, and other applicable HMS pelagic longline closed areas, approximately 25 percent of the Gulf of Mexico is restricted to pelagic longline gear. While these measures impact pelagic longline fishing, other fishing activities, navigation, public access, and recreational opportunities would be unaffected. Regarding factor F(19), implementation of Amendment 7 measures would provide different benefits and adverse impacts for the pelagic longline fleet within the Gulf of Mexico depending on the measure. The preferred Codified and Annual Reallocation alternatives would provide short and long term benefits to the pelagic longline fishery through an increased codified quota of 62 mt in addition to potential for additional quota as a result of the annual reallocation alternative. Implementation of IBQs, as noted above, would provide approximately 75 percent of pelagic longline vessels an allocation sufficient for reported bluefin interactions. A portion of Louisiana homeported vessels would likely need to lease additional bluefin quota or modify fishing behavior to reduce bluefin interactions, although implementation of the Modified Spring Gulf of Mexico Gear Restricted Areas would limit access to areas of high bluefin interactions, thereby likely reducing bluefin interactions without additional changes by fishermen.

The specific factors that the State of Louisiana states that Amendment 7 is inconsistent with are Section 701G (2) adverse economic impacts on the locality of the used and affected governmental bodies; (6) adverse disruption of existing social patterns; and (10) adverse effects of cumulative impacts.

Regarding factors G(2) and (6), the implementation of Amendment 7 measures would provide different benefits and adverse impacts for the pelagic longline fleet within the Gulf of Mexico depending on the measure. While some impacts are expected to be short and long term moderate adverse impacts, NMFS has balanced the overall impacts to the pelagic longline fleet as well as other user groups to achieve Amendment 7 objectives in a fair and appropriate manner, and as described in Chapters 5, 7, and 8, has minimized adverse social and economic impacts to the extent practicable, consistent with NEPA, RFA, and CZMA. Providing additional codified quota as well as the potential of additional quota through annual reallocation, in combination with gear restricted areas where bluefin interactions have been historically high and IBQs that provide 75 percent of the fleet with sufficient quota to continue current fishing practices, balances the need to reduce dead discards with providing fishing opportunities to all user groups. The adverse impacts to 13 Louisiana homeported vessels that would likely need to lease approximately 7 metric tons of bluefin are warranted given the long term benefits to the overall pelagic longline fleet under the combination of all preferred alternatives. Regarding G(10), the Gulf of Mexico pelagic longline fleet is a heavily regulated fishery and has experienced several natural and man-made adverse impacts as well as regulatory changes in recent years. Several regulatory measures have been implemented to reduce bycatch of threatened or endangered species (i.e., circle hooks in 2004) and overfished species such as bluefin (e.g., weak hooks in 2011) or coastal sharks (i.e., sandbar sharks in 2008 and scalloped hammerhead sharks in 2013); these measures often have short term adverse impacts but are ultimately needed for the sustainability of the fishery in the long term. To the extent practicable in each of these actions, NMFS has minimized adverse impacts as much as practicable while still meeting conservation objectives, consistent with applicable law.

Furthermore, this FEIS analysis demonstrates that NMFS utilized many of the factors cited by Louisiana as lacking in NMFS's evaluation. Specifically, NMFS used the best available logbook, dealer, and observer data, conducted vessel-specific analyses for preferred alternatives on gear restricted areas and IBQ measures, and relevant recent scientific information. NMFS also explored the availability of alternative methods of achieving the Amendment 7 objectives, and considered the economic impacts, as well as the long term benefits of the measures. The alternative methods to reduce dead discards of no action or group or regional quotas would have more adverse impacts and be less effective in achieving Amendment 7 objectives to reduce dead discards and maximize fishing opportunity. The design of the IBQ management measures and other aspects of Amendment 7 minimize the significant adverse economic impacts, disruption of social patterns, and adverse cumulative impacts, to the extent practicable, relative to other methods analyzed while also meeting Amendment 7 objectives.

As explained elsewhere in Chapter 5, the FEIS includes limited state specific analyses of the impacts of the preferred codified and IBQ measures. Due to the nature of the bluefin fisheries (widely distributed and highly variable), the FEIS analyses are principally at a fishery-wide, or permit category level. The IBQ analyses show that approximately 75% of the pelagic longline fleet would receive an initial allocation that would be consistent with their historical reported landings such that they would be able to continue to operate without having to acquire additional quota. Under the preferred 137 mt scenario (see Table 5.26), the total additional amount of quota needed to continue fishing at historical levels is estimated to total 51.3 metric tons across all the vessels needing additional quota. Many vessels, however, would not need their full initial IBQ allocation to continue fishing at their historic levels. The total of this surplus quota across all vessels that would likely not fully use their initial IBQ allocation is estimated to be 82.8 mt under the 137 mt scenario. The total surplus of quota exceeds the total amount need under the 137 mt scenario, so the transfer of quota among pelagic longline vessels should reduce potential economic impacts of the IBQ program. The states with the largest amount of additional IBQ needed include Louisiana, New York, and Florida, respectively, while vessels with home ports in Florida, New Jersey, and Louisiana would have the most surplus quota available to trade. Specific to pelagic longline vessels homeported in Louisiana, NMFS estimates that approximately 12 vessels would receive an initial allocation either at or above their historical reported landings and would have approximately 10.4 mt of surplus allocation. Conversely, approximately 13 vessels would need additional quota of 17.4 mt to maintain current fishing practices. Therefore, the total quota need among State of Louisiana homeported vessels would 7 mt. Vessels may change their fishing practices such that the amount of quota they need is reduced or they may be able to lease quota from other vessels with surplus quota. Therefore, the adverse impacts to State of Louisiana homeported vessels would be minimized to the extent practicable while still meeting the objectives of Amendment 7.

9.10 Information Quality Act

Pursuant to NOAA guidelines implementing section 515 of Public Law 106-554 (the Data Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of the information (including statistical information) disseminated by or for Federal agencies. The Amendment 7 FEIS has undergone a Pre-Dissemination Review and that analysis is available upon request.

9.11 Environment Justice

Executive Order 12898 requires agencies to identify and address disproportionately high and adverse environmental effects of its regulations on minority and low-income populations. To determine whether environmental justice concerns exist, the demographics of the affected area should be examined to ascertain whether minority populations and low-income populations are present. If so, a determination must be made as to whether implementation of the alternatives may cause disproportionately high and adverse human health or environmental effects on these populations.

The community profile information found in the 2012 SAFE Report includes updated community profiles and new social impacts assessments for HMS fishing communities along the Atlantic and Gulf of Mexico coasts (NMFS 2011). The communities of Dulac, Louisiana and Fort Pierce, Florida have significant populations of Native Americans and African-Americans, respectively. Data from the 2010 Census indicates that Native Americans made up 42 percent of the Dulac population, and that African-Americans made up approximately 41 percent of the population in Fort Pierce. These two communities also have significant populations of low-income residents according to the 2010 Census. About 37 percent of the Dulac population was living below poverty level and about 31 percent of the entire Fort Pierce population was living below the poverty line. In addition to Dulac and Fort Pierce, there is a dispersed low-income, minority Vietnamese-American population in Louisiana that actively participates in the pelagic longline fishery, and commutes to fishing ports, but does not live in "fishing communities" as defined by the Magnuson-Stevens Act and identified in Chapter 3 of this document. Each of the management alternatives in Chapter 5 includes an assessment of the potential social and economic impacts associated with the preferred alternatives. The preferred alternatives were selected to minimize economic impacts and provide for the sustained participation of fishing communities, while taking the necessary actions to achieve the objectives of Amendment 7 and rebuild overfished fisheries as required by the Magnuson-Stevens Act. Demographic data indicate that coastal counties with fishing communities are variable in terms of social indicators like income, employment, and race and ethnic composition.

Considering all the above socioeconomic impacts of the preferred alternatives, Amendment 7 would likely have minor adverse socioeconomic impacts for most vessels and moderate adverse socioeconomic impacts for a few vessels. These impacts would mostly affect vessels fishing with pelagic longline gear with a history of interacting with many bluefin tuna; and may impact the future level of Purse Seine vessel activity in the short term. Other quota categories (i.e., General, Harpoon, Angling, and Charter/Headboat categories) would have minor adverse socioeconomic impacts due to reallocation alternatives. NMFS does not anticipate that these effects would fall disproportionately on minority or low-income populations in the affected communities discussed above. The preferred alternatives were designed to reduce dead discards and account for dead discards, while concurrently providing flexibility and predictability to the quota system, and maintaining fishing opportunities.

9.12 E.O. 13132

Amendment 7 would not have federalism implications sufficient to warrant preparation of a Federalism Assessment under E.O. 13132.

10 LIST OF PREPARERS

The development of this FEIS/RIR/FRFA involved input from many people within NMFS, NMFS contractors, and input from the public, constituent groups, and the HMS Advisory Panel. Staff and contractors from the HMS Management Division, in alphabetical order, who worked on this document include:

Randy Blankinship, Supervisory Fishery Management Specialist

Karyl Brewster-Geisz, Supervisory Fishery Management Specialist

Michael Clark, Fishery Management Specialist (currently with U.S. Department of State)

Craig Cockrell, Fishery Biologist

Peter Cooper, Fishery Management Specialist

Jennifer Cudney, Fishery Biologist

Katie Davis, Fishery Biologist

Dr. Joseph Desfosse, Fishery Management Specialist

Brad McHale, Supervisory Fishery Management Specialist

Sarah McLaughlin, Fishery Management Specialist

Margo Schulze-Haugen, Division Chief

George Silva, Fishery Economist

Carrie Soltanoff, Program Analyst

Dianne Stephan, Fishery Management Specialist

Thomas Warren, Fishery Management Specialist

The development of this document also involved considerable input from other staff members and Offices throughout NOAA including, but not limited to:

Office of Sustainable Fisheries (Alan Risenhoover, Emily Menashes)

Office of the Assistant Administrator (Samuel Rauch, III)

Office of Science and Technology (Dr. Ronald Salz, Dr. Rebecca Ahrnsbrak)

Southeast Fisheries Science Center (Dr. Guillermo Diaz, Dr. Craig Brown, Dr. Steve Turner, Larry Beerkircher, Ken Keene, Matt Maiello, Sascha Cushner)

Northeast Fisheries Science Center (Amy Van Atten)

Southeast Regional Office (Andy Strelcheck)

Greater Atlantic Regional Fisheries Office (Peter Christopher, Emily Gilbert)

Office of Law Enforcement (Patrick O'Shaughnessy, Bill Semrau)

NOAA General Counsel (Megan Walline, Meggan Engelke-Ross, Frank Sprtel)

NMFS NEPA (Steve Leathery, Cristi Reid)

NOAA Program, Planning, and Integration (Steve Kokkinakis)

10.1 List of Agencies, Organizations, and Persons Consulted and to Whom Copies of the Environmental Impact Statement Will Be Sent

Under section 304(g)(1)(A) of the Magnuson-Stevens Act, NMFS is required to consult and consider the comments and views of affected Fishery Management Councils, ICCAT Commissioners and advisory groups, and advisory panels established under section 302(g) of the Magnuson-Stevens Act regarding amendments to an Atlantic HMS FMP. As described below, NMFS provided documents and/or consulted with the Atlantic, Gulf, and Caribbean Fishery Management Councils, Gulf and Atlantic States Marine Fisheries Commissions, and the HMS Advisory Panel at various stages throughout the process. The electronic version was available on the HMS Management Division website and on regulations.gov, and hard copies and/or CDs of these documents were provided to anyone who requested copies.

NMFS began to formally address some of the bluefin quota accounting issues described in Section 1.1 at the September 2011 meeting of the HMS Advisory Panel by presenting a summary of recent issues and a white paper on bluefin bycatch in the HMS fisheries. Note that many of these issues were also discussed in the 2009 Advanced Notice of Proposed Rulemaking that requested public comment in a wide range of HMS management and permitting issues affecting bluefin and swordfish fisheries (June 1, 2009; 74 FR 26174). In preparation for the formal process of evaluating potential amendments to the fishery management plan, NMFS presented a preliminary version of a scoping document (“Preliminary White Paper”) to the HMS Advisory Panel for consideration at its March 2012 meeting (NMFS, March 2012).

On April 23, 2012, NMFS published a Notice of Intent in the Federal Register (78 FR 24161), which announced our intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a DEIS, and a potential amendment to the 2006 Consolidated HMS FMP. During May and June of 2012, NMFS conducted public meetings to present the scoping document and receive public comments in Toms River, New Jersey; Gloucester, Massachusetts; Belle Chasse, Louisiana; Manteo, North Carolina; and Portland, Maine. During June 2012, NMFS consulted with the Mid-Atlantic Fishery Management Council, the New England Fishery Management Council, and the South Atlantic Fishery Management Council, while the scoping document was shared with the Gulf of Mexico Fishery Management Council and the Caribbean Fishery Management Council.

On September 20, 2012, NMFS presented a Predraft document to the HMS Advisory Panel (NMFS, September 2012). A Predraft, which is a precursor to a DEIS, allows NMFS to obtain additional information and input from Consulting Parties and the public on potential alternatives prior to development of the formal DEIS and proposed rule. As such, NMFS requested comments on the Predraft from the HMS Advisory Panel, and made the document available to the public through the HMS website (http://www.nmfs.noaa.gov/sfa/hms).

Following review of comments received on the Predraft, NMFS released the DEIS for Amendment 7 to the 2006 Consolidated HMS FMP in August 2013. On August 21, 2013, NMFS published the proposed rule for Amendment 7 in the Federal Register (78 FR 52032). The proposed rule set the end of the public comment period as October 23, 2013, but given the length and complexity of the rule, and to provide additional time for consideration of public comments in light of the November meeting of ICCAT, the end of the comment period was rescheduled to December 10, 2013 (78 FR 57340; September 18, 2013). Subsequently, due to the government shutdown in October 2013 and NMFS' inability to respond to constituents during that time frame, and based on requests for an extension due to the complexity and interplay of the measures covered in the DEIS, NMFS again extended the end of the public period until January 10, 2014 to provide additional opportunity for informed comment (78 FR 75327; December 11, 2013). On December 26, 2013, NMFS published a Federal Register notice that announced a public hearing conference call and webinar to provide additional opportunity for the public from all geographic areas to comment (78 FR 78322).

During August 2013 through January 2014, an HMS Advisory Panel meeting, ten public hearings, and one webinar were held to present the proposed rule and DEIS and receive public comments (see Table 10.1). Additionally, NMFS presented the proposed rule and DEIS for Amendment 7 to the New England, South Atlantic, and Gulf of Mexico Regional Fishery Management Councils. NMFS provided hard copies of the DEIS to the Mid-Atlantic and Caribbean Councils and the Atlantic and Gulf States Marine Fisheries Commissions.

After the end of the comment period, NMFS reviewed the public comments (Table 10.2 and Appendix) and made changes to the preferred alternatives and/or the supporting analyses, as warranted, in response to the comments received and/or other concerns that were raised during the comment period. All comments were considered when finalizing this document. NMFS also received comments from the EPA regarding the DEIS. The DEIS received a rating of "LO," which means "lack of objection." Copies of this final document will be sent to the EPA regional offices, the HMS consulting parties (the affected Regional Fishery Management Councils, ICCAT Commissioners, and the HMS Advisory Panel), the Atlantic and Gulf States Marine Fisheries Commissions, and other interested parties. An electronic version will be made available to the public via the HMS Management Division website (http://www.nmfs.noaa.gov/sfa/hms).

Table 10.1 Summary of Public Hearings and Consultations for Amendment 7

Event	Date	Approximate # Attendees	Location
Public Hearing	Aug 28, 2013	8 (7 signed in)	San Antonio, TX
Consultation	Aug 29, 2013	N/A	Gulf of Mexico Fishery Management Council Meeting San Antonio, TX
Public Hearing	Sep 4, 2013	48 (48 signed in)	Gloucester, MA
Public comments taken	Sept 9-11, 2013	N/A	Highly Migratory Species Advisory Panel Meeting Silver Spring, MD
Public Hearing	Sept 18, 2013	40 (38 signed in)	Manteo, NC
Public Hearing	Sept 19, 2013	15 (8 signed in)	Charleston, SC
Consultation	Sept 20, 2013	N/A	South Atlantic Fishery Management Council Meeting Charleston, SC
Public Hearing	Sept 24, 2013	70 (67 signed in)	Belle Chasse, LA
Consultation	Sept 24, 2013	N/A	New England Fishery Management Council Meeting Hyannis, MA
Public Hearing	Sept 26, 2013	10 (10 signed in)	Portland, ME
Public Hearing	Sept 30, 2013	20 (18 signed in)	Panama City, FL
Public Hearing	November 12, 2013	30 (23 signed in)	Fort Pierce, FL
Public Hearing	November 13, 2013	24 (17 signed in)	St. Petersburg, FL
Public Hearing	December 3, 2013	48 (44 signed in)	Toms River, NJ
Webinar Public Hearing	January 8, 2014	(60 “attended”)	Internet / Telephone

Table 10.2 Individuals that submitted written public comments on Draft Amendment 7 to the 2006 Consolidated HMS FMP

Affiliation	Number of Signatures or Mailings
Alelphi University	21
Center for Biological Diversity	36,955
Earthjustice	42,142
Endangered Species Coalition	13,400
Gulf Restoration Network- Chefs and Restauranteurs	15
Gulf Restoration Network	5,502
International Game Fish Association	1,538
Keep America Fishing	324
Marine Conservation Institute	1,846
Ocean River Institute	1,416
Save Our Environment	19,891
The Billfish Foundation	865
The Pew Charitable Trusts	70,736
Tulane Green Club	25
Unknown	4,874
Vietnamese-American Longline Fishermen	10
Wild Oceans	62
U.S. Congressional Members, Massachusetts	10
U.S. Congressional Members, New England	9
Name	**Affiliation**
40 anonymous commenters	Unidentified
Anonymous	Earthjustice
Anonymous	Earthjustice
Anonymous	Keep America Fishing
Anonymous	Sykk Physh SportFishing
A Florida Resident	Unidentified
Bill Anonymous	Unidentified
Jeff Anonymous	Unidentified
John Anonymous	Unidentified
Pete Anonymous	Recreational Fishing Alliance
Robert Anonymous	Unidentified
Taylor Anonymous	Unidentified
Jon Abboud	Unidentified
Kenneth Abeles	Recreational Fishing Alliance
Alex Abrahams	Unidentified
Greg Abrams	Greg Abrams Seafood, Inc.
Julie Acs-Ray	Unidentified
Louis Adams	Unidentified
Paul Adams	Unidentified
Jenifer Adams-Mitchell	Coast Kayak
Richard Adler	Unidentified
Cosme Aguado	Unidentified
Tobias Aguirre	FishWise
Fred and Jim Akers	Unidentified
Scott Albien	Unidentified

Affiliation	Number of Signatures or Mailings
Natalie Alexander	Unidentified
Affan Ali	Unidentified
Yusuf Ali	Unidentified
David Allaire	Unidentified
Eric Allard	Unidentified
Michael Allen	Unidentified
Thomas Allen	Unidentified
Casimer Alseika	Unidentified
Richard Alspaugh	Unidentified
Tyler Alt	Unidentified
John Ambrose	Unidentified
Julie Andersen	Shark Angels
Ken Andersen	NJSaltwater.com
Capt. Al Anderson	Unidentified
Chris Anderson	Unidentified
Don Anderson	Unidentified
Gary Anderson	Unidentified
John Andia	Unidentified
Douglas Andrews	Unidentified
Paul Andrews	Unidentified
Powell Andrews	Unidentified
concerned angler	Unidentified
Carolyn Antman	Duval Audubon Society
Harry Appel	Save a Turtle, Florida Keys
David Arbeitman	Unidentified
Thomas Armbruster	Sandy Hook Sealife Foundation
Robert Arsenault	Unidentified
Paul Arthur	E.O. Wilson Biophilia Center
Miriam Ashbaugh	Unidentified
Laila Atallah	Unidentified
James Athy	Unidentified
John Atwood	Jonathan's Harbor Special Events
Merry Atwood	Sun N Sand Motel
Al Avena	Unidentified
Marc Avila	Unidentified
Sonny Avila	Vessel Bozo, Inc.
Courtland Babcock	Unidentified
James Baehr	Unidentified
Alicia Baella-Godreau	Unidentified
Jason Bahr	Unidentified
Brandon Baker	Green Alternative Store
Norman Baker	Unidentified
Evelyn Ball	Unidentified
Lance Banfield	Unidentified
Jeffrey Barbara	Unidentified
Russell Barber	Unidentified
James, Barbara, and Kimberly Barcliff	Unidentified
Dan Barnes	Unidentified
Duncan Barnes	Unidentified

Affiliation	Number of Signatures or Mailings
Matt Barnhart	Unidentified
Matthew Barrazotto	Unidentified
Dave Barrett	Unidentified
Linn Barrett	Unidentified
Edward Barry	Unidentified
Richard Barta	Unidentified
Kim Bartmann	Barbette Restaurant
Joseph Bartnicki	Unidentified
Anthony Baselice	Unidentified
John Bates	Unidentified
Lou Baxter	Unidentified
Robert Beadell	Unidentified
Scott Beardsley	Unidentified
Claire Beauchamp	Tulane Green Club
Thomas Becker	Mississippi Charter Boat Captains Association
Michael Behot	Unidentified
Terri Beideman	Blue Water Fishermen's Association
Nina Bell	Northwest Environmental Advocates
Capt. Rick Bellavance	R.I. Party and Charter Boat Association
Richard Belmont Jr	Unidentified
Joshua Benton	Unidentified
Louie Berube	Unidentified
Jerold Bessette	Unidentified
Bonnie Bick	Chapman Forest Foundation
Tom Biddison	Unidentified
John Bidwell	Unidentified
Thomas Bielaski	Unidentified
Michael Biesecker	Unidentified
Matt Bingham	Unidentified
J.M. Binns	Southern Relocation Services
Ward Binns	AirTight Design
Vincent Biondo Jr	Unidentified
Christopher Bishop	Unidentified
Peter Bishop	Unidentified
Donald Bispham	Unidentified
Christin and Carl Bjornberg	C. Bjornberg, Inc.
Michael Black	Floribbean Seafood
Mike Blackburn	Unidentified
Greg Blakney	Unidentified
Theodoric Bland	Unidentified
Henry Blasser	TME, LLC.
Barbara Block	Stanford University
John Bockstege	Unidentified
George Boesel	Unidentified
Bill Bolger	Unidentified
Bruce Bornstein	Unidentified
John Borom	Audubon Mobile Bay
Timothy Bosak	Unidentified
Michael Bosley	Unidentified

Affiliation	Number of Signatures or Mailings
Rachelle Boucher	Unidentified
Jules Boudreau	Unidentified
Jim Boushell	Unidentified
Andre Boustany	Duke University
Nancy Boutet	Aquaholics Surf Shop
Peter Bouthillette	Unidentified
William Bowden	Unidentified
William Boyce	Unidentified
James Boyd	Unidentified
Darryl Boyer	Unidentified
Vincent Boyle	Unidentified
Tony Boynton	Unidentified
Karl Brackmann	Unidentified
John Bradley	Unidentified
Brian Bradshaw	Unidentified
Kevin Bradshaw	Unidentified
Douglas Brander	Unidentified
Cameron Brandt	Unidentified
David Brannon	Unidentified
William Braselton	Unidentified
James Bremser	Unidentified
Sara Brenes	Shark Whisperer Org
John Brennan	Unidentified
Shawn Brennan	Unidentified
Frank Brenner	Unidentified
John Bretza	Unidentified
Steven Breunig	Unidentified
Warren Brew	Unidentified
Steve Brewer	Unidentified
Theodore Brien	Unidentified
Richard Briggs	Unidentified
Robert Briggs	Unidentified
John Brittin	Unidentified
Vincent Britton	Unidentified
Wayne Broadbent	Unidentified
Gregory Brown	Unidentified
Mike Brown	Unidentified
Pat Brown	Unidentified
Ryan Brown	Unidentified
Sarah Brown	The Green Alliance
Stevan Brown	Unidentified
Steven Brown	Tilia Minneapolis Restaurant
Vincent Brown	Unidentified
Paul Bruner	Unidentified
Mike Bryant	Unidentified
Diane Buccheri	Unidentified
Sarah Bucci	Environment Virginia
Thomas Bucci	Unidentified
Edward Buccigross	Unidentified

Affiliation	Number of Signatures or Mailings
Jim Budi	NED Fishery Participants
Jared Burhoe	Unidentified
Wes Burk	Unidentified
Patrick Burke	Unidentified
Vincent Burke	Unidentified
Jennifer Burns	Beaches Sea Turtle Patrol, Inc.
Thomas Burrows	Unidentified
Keith Bush	Unidentified
Martha W D Bushnell	Unidentified
Michael Busse	Unidentified
Everett Butcher, Jr.	Unidentified
John Butler	Unidentified
Lisa Butterfield	Unidentified
Keith Cabot	Menu MBK
Michael Caccavale	Unidentified
Larry Cadd	Unidentified
Daniel Cain	Unidentified
Julia Cain	Unidentified
Ed Cake	Gulf Environmental Associates
Daniel Cambria	Unidentified
Gordon Campbell	Unidentified
Jen Campbell	Unidentified
Kevin Campi	Unidentified
Debra Canabal	Epic Diving
James Candia	Forked River Tuna Club
Gary Cannell	Tuna Hunter Fishing
Craig Canning	Unidentified
J Capozzelli	Unidentified
R Capozzelli	Unidentified
Richard Carolan	Unidentified
Craig Carpenter	Unidentified
Dennis Carpenter	Unidentified
Daniel Carr	Unidentified
Edward Carr	Unidentified
Peter Carras	Unidentified
David Carrier	Unidentified
Jim Carroll	Unidentified
Matt Carroll	Unidentified
Winn Carroll	Unidentified
Ted Carski	Unidentified
G Jack Cartier	Unidentified
Jeff Caruso	Unidentified
Jerry Cass	Unidentified
Kevin Cassidy	Unidentified
Rick Castellini	Unidentified
Mike Caudle	Unidentified
Max Cavallaro	Unidentified
Anthony Cavallo	Unidentified
James Cecil	Unidentified

Affiliation	Number of Signatures or Mailings
Devan Chamberlain	Unidentified
James Chambers	Prime Seafood
William Chambless	Unidentified
Ray Chaple	Unidentified
John Chapman	Unidentified
William Chaprales	Unidentified
Yasar Chaudhry	Unidentified
Louis Chemi	Unidentified
Craig Chenosky	Unidentified
Richard Chenoweth	Scranton's Restaurant
John Chia	Unidentified
Kurt Christensen	Unidentified
Rob Christian	Unidentified
Kim Chubbick	Recreational fisherman
Robert Cicchetti	Unidentified
Tom Cimino	Unidentified
Mucho Clams	Undercover Charters
Mark Clapp	Unidentified
Carrie Clark	North Carolina League of Conservation Voters
John G. Clark	Kerley and Clark Attorneys
John Clothier	Unidentified
Ramon Cloud	Unidentified
Carlos Clyburn	Unidentified
Steve Coari	Virginia Audubon Council
Ronald Coddington	Unidentified
Charles Cofka	Unidentified
Mark Cohen	Wit Advertising and Design
William Cole	Unidentified
Al Colle	Video Masters
James Collins	Unidentified
Robert Colucci	Unidentified
Alec Connah	Unidentified
Keper Connell	Unidentified
Greg Connelly	Unidentified
John Connolly	Unidentified
Billfish Foundation Constituents	The Billfish Foundation
Al Conti	Unidentified
Peter Conway	Unidentified
Josh Cook	Unidentified
Stephen Cook	Unidentified
William Coon	Unidentified
Beth Cope	Talking Heads Media
Bob Cope	Unidentified
Frank Coratti	Unidentified
Jared Cornelia	Unidentified
Tom Cornell	Recreational Fishing Alliance
Sean Cosgrove	Conservation Law Foundation
Barry Cost	Unidentified
James Coster	Unidentified

Affiliation	Number of Signatures or Mailings
Philip Cote	Unidentified
Sandra Couch	Unidentified
Andrew Cox	The Billfish Foundation (TBF)
Jason Cox	Unidentified
Luther Cox	Unidentified
Thomas Cox	Unidentified
William Cox	Younges Island Fish Co
Bruce Cranshaw	Unidentified
Jeffrey Criswell	Unidentified
Kenneth Critchlow	Unidentified
David Critelli	Unidentified
John Crocker	Unidentified
Lee Crockett	The Pew Charitable Trusts
Stephen Croft	Unidentified
Kenneth Cronin	Unidentified
David Crook	Unidentified
Michael Cropper	Unidentified
David Crowell	Unidentified
C. M. "Rip" Cunningham	Unidentified
Debra Cunningham	Unidentified
Peter Cunningham	Unidentified
Rip Cunningham	Unidentified
Gary Curtis	Unidentified
Katherine Alexandra Curtis	Unidentified
Thad Curtz	Unidentified
Thomas Cushman	Unidentified
Richard Czop	Unidentified
Stev D	Unidentified
John Daigle	Unidentified
J.P. Dalik	Unidentified
Dave Daly	Unidentified
Donald Dambrosio	Unidentified
Thomas Dammrich	Unidentified
Bill Danbury	Unidentified
Danny Dangerfield	Unidentified
Bruce Daniecki	Unidentified
David Daniels	Unidentified
Tom Daughtrey	Unidentified
Michael Davenport	Unidentified
Scott Davidson	Unidentified
Jason Davies	Unidentified
Roxanne Davis	Unidentified
Scott Davis	Unidentified
Peter Day	West Pasco Audubon Society
Tim Day	Unidentified
Leo De St Aubin	Lockwood & Winant Seafood, LLC
Andrew Dean	Unidentified
Alejandro Dearmas	Unidentified
Vincent DeBari	Unidentified

Affiliation	Number of Signatures or Mailings
Mark DeBlasio	Unidentified
Skip DeBrusk	Unidentified
Christopher DeFoe	Unidentified
Gregory DeFoe	Unidentified
Dean DelleDonne	Unidentified
Michael Deloff	Savi Fisheries and Savi Seafoods
Tom Delotto	Unidentified
Robert Delph	Unidentified
Daniel Demchak	Unidentified
Jay Demirn	Unidentified
Deborah DeMoulpied	Bona Fide Green Goods
Neal Dempsey	Unidentified
Teresa Denton	Unidentified
Thomas DePersia	Unidentified
Joseph DePierro	Unidentified
Benjamin DeRites	Unidentified
Gail DeRitis	Unidentified
Charles Deschenes	Unidentified
Capt Michael Deskin	Unidentified
Stephanie Despreaux	Unidentified
Curt DeWolf	Unidentified
Greg Diamond	Unidentified
Joanna Diamond	Environment Maryland
Mauro DiBacco	Unidentified
Markham Dickson	Salty Dog Charters, LLC
Russell Digiallorenzo	Unidentified
John Dillon	Unidentified
Terrence Dillon	Unidentified
Glenn Dixon	Unidentified
Michael Domeier	Marine Conservation Science Institute
John Domings	Unidentified
Kevin Donaghey	Unidentified
Jim Donofrio	Recreational Fishing Alliance
Nicholas Dorazio	Unidentified
Aaron Dority	Northeast Coastal Communities Sector
Darren Dorris	Unidentified
Patrick Dougherty	Unidentified
Mark Doyle	Unidentified
Eric Draper	Audubon Florida
Paul Dredge	Unidentified
Kyle Dreibelbies	Unidentified
Richard Drevland	Unidentified
Charles Driebe	Blind Ambition Management
Norma Driebe	Exposition and Meeting Concepts
Stephen Driscoll	Unidentified
Brian Droney	Unidentified
Mike Dummer	Unidentified
Taylor Dunaway	Unidentified
Thomas Duncan	Unidentified

Affiliation	Number of Signatures or Mailings
William Dunmyer	Unidentified
Jim Durocher	Space Coast Audubon
Kevin Dwyer	Unidentified
Christopher Dyball	Unidentified
James Dybas	Unidentified
Todd Eadie	Unidentified
Bob Earl	Unidentified
Andrew Eaves	Unidentified
Dr. Karen Eckert	Wider Caribbean Sea Turtle Conservation Network (WIDECAST)
Paul Eidman	Anglers Conservation Network
Ken Eiler	Cape Lookout Flyfishers
William Eldridge	Unidentified
Scott Ellis	Unidentified
John Engel	Unidentified
Tommy English	Unidentified
Captain Derek Erickson	Unidentified
Ernest Erickson	Unidentified
William Erickson	Unidentified
Stephen Etlinger	Unidentified
Dinda Evans	Unidentified
Gary Evans	Unidentified
William Evans	Unidentified
Alan Evelyn	Unidentified
Billy Ewing	Unidentified
Rossier Fabienne	Sharks Mission France
Randy Fairbanks	Unidentified
Cane Faircloth	Unidentified
Craig Falicon	Unidentified
Steven Farkas	Unidentified
Michael Farris	Unidentified
Daniel Faust	Unidentified
Gina Fay	Unidentified
Kirk Fay	Unidentified
Angela Fazzari	Unidentified
Dawn Feber	Unidentified
Scott Feingold	Unidentified
Glen Feldmann	Unidentified
Lisa Ferguson	Unidentified
Efrain Fernandez	Unidentified
Steven Fernandez	Unidentified
Pierre Fidenci	Endangered Species International
Brian Field	Unidentified
Jesse Field	Unidentified
Douglas Fillion	Unidentified
Richard Fink	Unidentified
Ryan Firkser	Unidentified
Vincent Firpo	Unidentified
Gary Fischer	Unidentified

Affiliation	Number of Signatures or Mailings
Eric Fischman	Unidentified
Jonathan Fisher	Urban Angler Ltd
Mark Fisher	Unidentified
David Fisher, OD, MPH	Unidentified
Jessica Fishman	Unidentified
Stephanie Flaniken	Unidentified
Arnold Fleisher	Freeport Tuna Club
Stan Flint	The Consulting Group
Randolph Flood	Randolph Flood and Associates
Vinny Foch	Unidentified
Daniel Folk	Unidentified
John Folse	Louisiana Seafood Marketing Board
Robert Fondren	Unidentified
Jeffrey Fontes	Unidentified
Vander Forbes	American Bluefin Tuna Association
Daniel Fortier	Unidentified
Frank Foster	Unidentified
Pat Foster	Wave Runner Charters
Roger M. Foszcz	American Sportfishing Association
Frank Fox	Sierra Club Southern Maryland
Bill Francois	Unidentified
Dan Fraser	Unidentified
Bob Freeman	Unidentified
Robert Freeman	Unidentified
Aaren Freeman	Adelphi University
Steve Freise	Unidentified
Alex Friedman	Unidentified
Jack Friel	Unidentified
Peter Frost	Unidentified
Jeffrey Fruci	Unidentified
Charles Fry	Unidentified
Ally Fuehrer	Unidentified
Robert Fuehrer	Unidentified
Lindsay Fuller	Unidentified
Manley K. Fuller	Florida Wildlife Federation
Chris G	Unidentified
Joseph Gabriel	Unidentified
Charles Gaddy	Unidentified
Kyle Gagne	Unidentified
Joe Gahrmann	Unidentified
Dennis Galante	Unidentified
Dave Gallagher	Unidentified
James Gallagher	Unidentified
Carl Gammans	Unidentified
Jocelyn Gardner	Unidentified
Matthew Gardner	Unidentified
Robert Gargani	Unidentified
Jennette Gayer	Environment Georgia
Brooks Geer	Sewee Outpost

Affiliation	Number of Signatures or Mailings
Adam Gelber	Unidentified
Michael George	Unidentified
Ken Gerecke	Unidentified
Chris Gerhart	Unidentified
Tim Gestwicki	North Carolina Wildlife Federation
Steven Getto	Unidentified
Mike Giangrosso	Unidentified
John Gibbons	Unidentified
George Gibbs	Unidentified
Barry Gibson	Recreational Fishing Alliance
Mark M Giese	Unidentified
George Gilbert	Unidentified
John Gill	Unidentified
William Gillespie	Unidentified
Shady Glenn	Unidentified
Matthew Glooney	Action Inc.
John Goess	Unidentified
William Gokey Sr	Unidentified
Dean Gold	Dino's Grotto
Marty Goldberg	Unidentified
Alan Goldstein	Unidentified
Gerard Gomber	Unidentified
Joe Gomes	Unidentified
Richard Good	Solar Services Inc.
William Goodwin	Unidentified
Randy Gore	Kayak Nature Tours
Erin Gott	Tidewater Charters
Bryan Goulart	Point to Point Charters
Marie Gould	Louisiana Lost Lands Tours
Michael Goulet	Unidentified
Matt Gove	Big City Fish Share
Karen Grainey	Georgia Sierra Club
David Granitzki	Unidentified
Tyler Grant	Unidentified
Harry Graves	Unidentified
Mike Gravitz	Unidentified
Mark Greathouse	Unidentified
Eva Green	Unidentified
Frank Green	G and G Seafood LLC
Harold Greene	Unidentified
Jeff Greene	Unidentified
Hank Greer	Unidentified
Randall Gregory	North Carolina Division of Marine Fisheries
Matt Grennan	Unidentified
Bob Griest	Unidentified
Mark Griffiths	Unidentified
Eric Griggs	Unidentified
John Groff	Unidentified
Robert Grogan	Unidentified

Affiliation	Number of Signatures or Mailings
William Grose	Unidentified
Erik Grove	Unidentified
John Gruber	Keep America Fishing
Mrs. Cindy Guarnieri	Unidentified
Dave Guerard	Rip Tide Charters
Reed Guice	The Guice Agency
Alan Gulachenski	Unidentified
Cliff Gyotoku	Unidentified
Vic H	Unidentified
Larry Hagerman	Unidentified
Richard Hahn	Unidentified
Mark Haines	Unidentified
Jeffrey Hale	The Billfish Foundation
Jason Hall	Unidentified
Morgan Hall	Unidentified
Timothy Hall	Unidentified
Peter Hallemeier	Unidentified
Bill Hallman	HKH Investments
Scott Hamburg	Unidentified
Christopher Hamilton	Unidentified
Paulette Hammond	Maryland Conservation Council
Albert Handford	Handford Enterprises
Harold Hanevik	Unidentified
Bill Hanko	Unidentified
Jim Hanson	Zeccoa International
Doug Hargrave	Unidentified
Dan Harley	Unidentified
Steve Harper	Unidentified
H. Drexel (Stormy) Harrington	Blue Water Fishermen's Association
Jerry Harrison	Oak Island Fishing Club
Richard Hart	Unidentified
David Hartgrove	Audubon Halifax River
Michael Hartley	Unidentified
Raymond Hartman	Unidentified
Chris Hatley	Unidentified
Captain Henry Hauch	ACME-Ventures-Fishing.com
Randy Hause	Unidentified
Eve Haverfield	Turtle Time, Inc.
Don Haydel	Louisiana Department of Natural Resources
Jocelyn Heaney	Unidentified
Scott Hed	Unidentified
Kerry Heffernan	Unidentified
Brian Hegarty	Unidentified
James Heims	Unidentified
Karl Heine	The New World Tavern
Stephen Heinz	Unidentified
Geoffrey Heldoorn	Unidentified
Otto Henke	Keep America Fishing
Ron Henry	Sierra Club Maryland Chapter

Affiliation	Number of Signatures or Mailings
Tom Hensel	Unidentified
Geysson Hernandez	Unidentified
Robert Herrington	Unidentified
Melissa Herron	Longboat Key Turtle Watch
Eric Hesse	Unidentified
Robert Hetzler	Unidentified
Brian Heuer	Unidentified
Michael Hickey	Unidentified
Louis Hickman	Unidentified
Richard Hickman	Unidentified
Carla Higginbotham	Unidentified
Robert Hilly	Unidentified
Thomas Hilton	Unidentified
Tim Himmelberger	Unidentified
Ken Hinman	Wild Oceans
Katherine Hinson	Unidentified
Paul Hipkins	Unidentified
Lance Hitzelberger	Unidentified
William Hoag	Unidentified
Jim Hodges	Unidentified
James Hoffman	Unidentified
Elizabeth Hogan	World Society for the Protection of Animals
T Hogan	Unidentified
William Hoggard	Unidentified
Joe Holl	Unidentified
Stephen Holland	Bon Chovie
Steve Holloway	Unidentified
Capt Claude Holt	Stellwagen Bank Charter Boat Association
Debora Holt	Stellwagen Bank Charter Boat Association
Jacob Homiller	Unidentified
Todd Hooper	Unidentified
Jonathan Hoppe	Unidentified
Derrek Howard	Keep America Fishing
Pierre Howard	Georgia Conservancy
Robert Howard	Unidentified
Alexander Hradkowsky	Unidentified
Jeff Huddle	Unidentified
Rusty Hudson	Directed Sustainable Fisheries, Inc.
Larry Huey	Unidentified
Paul Huffard	Unidentified
Melinda Hughes-Wert	Nature Abounds
Robert Hummel	Highlands County Audubon
Jim Hungerford	Unidentified
Irene Huskisson	Unidentified
Leda Huta	Endangered Species Coalition
James Hutchinson	Unidentified
Sara Hutchinson	Unidentified
David Iannelli	Unidentified
Christopher Iavarone	Unidentified

Affiliation	Number of Signatures or Mailings
Peter Ide	Unidentified
Marc Imlay	Sierra Club Southern Maryland Chapter
Arauinthon Indramohan	Unidentified
Leonard Ingrande	Unidentified
Mike Isaacs	Unidentified
Ed Jackovic	Keep America Fishing
Barbara James	Sea Turtle Volunteer Program of Highland Beach
Richard James	Unidentified
Roy Janney	Unidentified
Jason Jarvis	Unidentified
Bill Jesberger	Unidentified
Charles Jewell	Unidentified
Greg Jewell	Unidentified
Mike Johhansen	Unidentified
Al Johnson	Unidentified
Gary Johnson	Unidentified
Jack Johnson	Unidentified
Keith Johnson	Pensacola Big Game Fishing Club
Kent Johnson	Unidentified
Michael Johnson	Unidentified
Oliver Johnson	Unidentified
Richard Johnson	Unidentified
Raymond Johnson II	Unidentified
James Johnston	Unidentified
Laneta Johnston-Meeker	Unidentified
Hardy Jones	BlueVoice.org
Robert Jones	Unidentified
Ryan Jones	Unidentified
Wayne Jones	Unidentified
Doug Jowett	Charter Service- Maine & Cape Cod
Douglas Jowett	Unidentified
Noel Joynt	Unidentified
Jonathan Justus	Justus Drugstore a restaurant
Christopher Kant	Unidentified
Alan Kape	Unidentified
Guido Karcher	Unidentified
Diane Kastel	Unidentified
James Kastner	Unidentified
Judith Katz	Unidentified
Martha Katz	Scuba Network
Taya Kaufenberg	Wedge Community Coop
Les Kaufman	Boston University
Ryan Kaulfers	Unidentified
Matthew Kaushagen	Unidentified
Dave Kavanah	Unidentified
Gene Kay	Unidentified
Mike Keating	Unidentified
Marcie Keever	Friends of the Earth
Amanda Keledjian	Oceana

Affiliation	Number of Signatures or Mailings
Jim Kelleher III	Unidentified
Mark Keller	Unidentified
Michael Kellett	Unidentified
Dennis Kelly	Unidentified
Michael Kelly	Law Offices of Michael A. Kelly
Jake Kennedy	Unidentified
Alan Kenter	Unidentified
William Keohan	Keller Williams
Bernard Kepshire	Recreational Fishing Alliance
Richard Kernish	Keep America Fishing
George Kidney	Unidentified
Paul Kiefner	Unidentified
Clyde Kiess	Unidentified
Catherine Kilduff	Center for Biological Diversity
Jason Kim	Unidentified
Scott King	Unidentified
Zach King	Unidentified
Dan Kipnis	Unidentified
Edward Kislauskis	Unidentified
Michael Kizer	Unidentified
William Kleimenhagen	Beach Haven Marlin & Tuna Club
Robert Klein	Unidentified
Phil Kline	Greenpeace
Jeff Kneebone	Unidentified
Jason Knight	Unidentified
John Knight	Raleigh Saltwater Sportfishing Club
Brian Knott	Unidentified
Ron Koenig	Unidentified
Barry Kohl	Louisiana Audubon Council
Justin Kohl	Unidentified
Bodhi Kohler	Unidentified
Jacqueline Kolb	Unidentified
Fred Kolkhorst	Unidentified
Emil Kolodi	Unidentified
Chris Kolodziej	Unidentified
Arthur Kopelman	Unidentified
Beth Korn	Cafe Carmo
Richard Kornahrens	Whitewater Seafood Corp
Stanley Koropka	Unidentified
James Korzik	Unidentified
Nancy Kost	Citrus County (Florida) Audubon Society
John Kovaly	Unidentified
V Kramer	Unidentified
Alexander Krause	Unidentified
Scott Krawiec	Bend The Rod, LLC
Kenneth Kremer	Unidentified
Bill Kroeger	Unidentified
Robert Kroeger	Unidentified
Andrew J. Krotje	Unidentified

Affiliation	Number of Signatures or Mailings
Yvonne Kugler	Unidentified
Kenneth Kulakowsky	Unidentified
Jason Kulvinskas	Unidentified
Fred Kunz	Unidentified
Robert Kurz	Unidentified
TJ L	Unidentified
Richard LaBelle	Unidentified
Travis LaBelle	Unidentified
Steven Lacasse	Unidentified
Barbara Lafaver	Unidentified
Marshall Lai	Unidentified
Perry Lai	Unidentified
Susan Lajoie	Unidentified
Jay Lake	Unidentified
Jiun Lam	Unidentified
Jim LaMarche	Unidentified
Gwen Lambert	Unidentified
Mark Lamothe jr	Unidentified
Chris Lancaster	Unidentified
Jeffrey Lang	Unidentified
William Lang	Unidentified
Michel Lange	Unidentified
Roger LaPointe	Unidentified
Don Larr	Unidentified
Jon Larson	Unidentified
Keith Larson	Unidentified
Don LaRuffa, Jr.	Unidentified
Dale Lathrop	Unidentified
Seth Lattrell	Unidentified
John Laubenthal	Unidentified
Erik Laudermilk	Unidentified
Richard Lawrence	Unidentified
Brett Lawson	Unidentified
Diane Lazinsky	U.S. Department of the Interior
Theaux Le Gardeur	Unidentified
John Leary	Unidentified
John Leban	Unidentified
Eddie Lebron	Unidentified
Justin Leeds	Unidentified
Dix Leeson, Jr	Unidentified
Robert Leman	Unidentified
George Lemieux	Unidentified
Carol Leonard	Coastal Wildlife Club
Mike Leonard	American Sportfishing Association
Ed Lestina	Unidentified
Kacey Levesque	Unidentified
Vance Levesque	Sierra Club, New Orleans Group
Andrew Levin	Unidentified
David Levine	Unidentified

Affiliation	Number of Signatures or Mailings
Marie Levine	Shark Research Institute
Lacey Levitt	Unidentified
Jim Lewis	Unidentified
Mike Lewis	Unidentified
Anthony LiCausi	Unidentified
Emil Liebewein	Unidentified
Rob Lindauer	Surf and Adventure
David Linebarger	Unidentified
Maureen Linehan	Unidentified
David Linnev	Unidentified
Nick Lippis	Unidentified
Christopher Lish	Unidentified
Jack Little	Unidentified
Jim Littlefield	Surfers' Environmental Alliance
Ron Littlefield	Unidentified
Dostana Ljusic	Unidentified
Samantha Lo	Unidentified
Richard Lockhart	Unidentified
John LoGioco	Atlantic Tuna Project
Arthur Lohsen	Unidentified
Janet Lomicka	Unidentified
Mark Lomicka	Unidentified
Jim Long	Mattawoman Watershed Society
Daniel Longo	Unidentified
Ina Lopes	Unidentified
Jason Lopes	Unidentified
John Lopez	Lake Pontchartrain Basin Foundation
Dana Lord	Unidentified
Jose M Lorenzo	Unidentified
Tedesco Louis	Unidentified
Harry Lowenburg	Gulf Restoration Network
Trevor Lucas	Unidentified
John Luchka	Unidentified
Tony Lumpkin	Unidentified
Molly Lutcavage	UMass Amherst
David Lynch	Unidentified
Ronald Lynch	Unidentified
Jeff M	Unidentified
Barbara Maas	NABU International
Robert Macallister	Unidentified
Joseph Maccini	Tidewater Kayak Anglers Association
Rick MacConnell	Unidentified
David MacDonald	Unidentified
Capt. Todd MacGregor	MAC-ATAC Sportfishing
Zelda MacGregor	Unidentified
Michael MacKenty	Unidentified
Michelle MacKenzie	Unidentified
Peter MacLean	Unidentified
Putnam Maclean	Bright Eye Fishing Co

Affiliation	Number of Signatures or Mailings
Robert MacLean	Unidentified
Paul MacLearie	Unidentified
Patrick MacNeal	Unidentified
Chris Maddeford	Unidentified
Daniel Madison	Unidentified
Glenn Maerki	Unidentified
Marianne Maetz	Unidentified
Char Magaro	Char's - Tracy Mansion
David Mahassel	Unidentified
Keith Mahon	Unidentified
Kevin Mahoney	Unidentified
Tim Mahoney	Unidentified
David Maib	Unidentified
Chris Maier	Unidentified
Alan Maillet	Unidentified
Salvatore Maiolo	Unidentified
Tim Malley	Unidentified
Barbara Maloit	Unidentified
Theodore Mamunes	Unidentified
Kenneth Mancini	Unidentified
Joe Mangiapanello	Unidentified
Kathleen Mangiapanello	Unidentified
Kristen Mangiapanello	Unidentified
Emre Mangir	Unidentified
Tom Mansfield	Unidentified
William Manthorne	Unidentified
PJ Marinelli	Audubon Society Collier County
Douglas Marotta	Unidentified
Tony Marra	Unidentified
Josh Marryott	Unidentified
Andrew Marshall	Unidentified
Timothy Marshall	Unidentified
Jesse Martello	Unidentified
Ben Martens	Maine Coast Fishermen's Association
Capt. Francis Martin	Keep America Fishing
Haywood R. Martin	Sierra Club, Delta Chapter
Kenneth Martin	Unidentified
Maria Martinez	Unidentified
Mark Martinez	Unidentified
Dan Martom	Pelican Beach Management
John Masiz	Unidentified
Dave Mason	Unidentified
Robert Mathias	Unidentified
Thomas Matlock	Unidentified
Joseph Matola	Unidentified
Steve Matthews	Unidentified
Michael Matulaitis	Unidentified
Ginnie Maurer	National Humane Education Society
Dierdre Mauss	All Together in Dignity

Affiliation	Number of Signatures or Mailings
Curt Maxon	Unidentified
Don Maxwell	Unidentified
Drew May	Unidentified
Michael May	Unidentified
Robert May	Unidentified
Jason Mazzola	Unidentified
Stephen Mc Grath	Unidentified
Bryan McCarthy	Unidentified
Jessica McCawley	Florida Fish and Wildlife Conservation Commission
Patrick McCloskey	Unidentified
Mary McCormick	Stony Brook Group
W. John McCormick	Unidentified
Patrick McDonough	Unidentified
David McGean	Unidentified
Dennis McGillicuddy	Unidentified
Tom McGonigle	Unidentified
Bill McGowan	Unidentified
David McHenry	Unidentified
Mark McHose	Unidentified
Gregory McIntosh	Unidentified
William McIntyre	Blue Water Fishermen's Association
Charles McKenna	Unidentified
Kevin McKinley	Unidentified
Ron McKinnon	Unidentified
E.S. McLarty III	Unidentified
Chris McManus	Unidentified
Steve Mcnally	Unidentified
George McNamara	Unidentified
David McPartland	Unidentified
Michael L. McWeeny	Unidentified
Karen Meadow	Audubon Society Chesapeake Chapter
Shelley Meaney	Unidentified
Dan Mears	Unidentified
Rick Mears	Unidentified
Todd Meekins	Unidentified
Ronald Melanson	Unidentified
Cole Melendy	Unidentified
Steven Mellett	Manasquan River Marlin & Tuna Club Inc.
Vince Mendieta	Unidentified
Victor Mercer	Unidentified
John Meringolo	Unidentified
Michael Mewshaw	Unidentified
Edward Meyer	Unidentified
Diane Miaolo	Diane Marie Fishery, Inc.
Cody Michaelson	Unidentified
James Michaelson	Unidentified
James Tyler Michaelson	Unidentified
Kyle Michaelson	Unidentified
Melissa Michaelson	Unidentified

Affiliation	Number of Signatures or Mailings
Rick Mick	Center for Biological Diversity
Michael Mikhaylov	Unidentified
Chris Mikulicz	Unidentified
Mike Mikulicz	Unidentified
Ron Milau	Unidentified
Bud Miller	Unidentified
Edwin Miller	Unidentified
Heather Miller	Unidentified
Herbert Miller	Unidentified
James Miller	Friends of Gumbo Limbo
Jeff Miller	Unidentified
Jim Miller	Unidentified
Jim Miller	Unidentified
Louie Miller	Sierra Club Mississippi
Mary Kate Miller	Save Our Environment
Peter Miller	Unidentified
Shana Miller	The Ocean Foundation
David Minctons	Unidentified
Peter Missick	Unidentified
Matthew Mitchell	Unidentified
Patti Mitchell	Unidentified
Theo Mitchelson	Unidentified
Madison Mock	Unidentified
Rob Moir	Ocean River Institute
Rob Moir	Unidentified
Sarah Monk	Unidentified
Donald Monsalvatge	Unidentified
David Moon	Unidentified
Bryan Moore	Unidentified
Michael Moore	Unidentified
Richie Moretti	The Turtle Hospital
Brendan Morris	Unidentified
Bruce Morris	Unidentified
Ron Mortali	Unidentified
David Moses	Unidentified
Scott Moulton	Unidentified
Tony Moutinho	Unidentified
Cary Moy	Unidentified
Carl Moyer	Unidentified
Marty Mucha	Unidentified
Pam Mucha	Unidentified
Sarah Mucha	Unidentified
K. Mueller	Unidentified
Brian Mullaney	Unidentified
Matt Mullen	Unidentified
Nancy Mulvihill	Unidentified
William Muniz	Unidentified
James Munizza	Unidentified
Vincent Murino	Unidentified

Affiliation	Number of Signatures or Mailings
Marian Murphy	Unidentified
Paul Murphy	Unidentified
Mark Anthony (Tony) Murray	Big Bend Coastal Conservancy
Paul Murray	Unidentified
Ron Musselman	Unidentified
Amber Myers	Unidentified
Bryan Myers	Unidentified
Kristi Nadler	Unidentified
Karen Naiman	Unidentified
David Natkie	Unidentified
Eliezer Navarsky	Unidentified
Pam Naylor	Unidentified
Kennedy Neill	Unidentified
Robert Nelson	Unidentified
John Neporadny	Unidentified
George Neuberger	Unidentified
Michael Neville	American Bluefin Tuna Association
Bobby Nguyen	Vietnamese-American Longline Fishermen
Olivia Nicholas	Blooming Love Designs
Nichelle Nichols	Unidentified
Randy Niemer	Unidentified
Kim Niemeyer	Unidentified
Ted Niemiec	Unidentified
Kenneth Nishi	Unidentified
Ronnie Nixon	Unidentified
Dave Noble	Unidentified
Terry Norton	Georgia Sea Turtle Center
Harry Novak	Keep America Fishing
William Nunnery	Unidentified
Diana Nymand	Unidentified
James Oakes	Unidentified
Ashley Obin	Unidentified
Capt Craig OBrien	Blue Water Fishermen's Association
Julianne OBrien	Unidentified
Greg O'Brien	Codfish Press
Timothy O'Brien	Unidentified
Eric Odell	Unidentified
Katharine Odell	Unidentified
Jeff Oden	Unidentified
Deanne O'Donnell	Unidentified
DeDe O'Donnell	Unidentified
Ken Ogi	Unidentified
Christopher Ohrenich	Unidentified
Doug Olander	Unidentified
Frederick Olander	Unidentified
Brian OLeary	Unidentified
Joseph Oles	Unidentified
Alex Oliszewski	Unidentified
Joe Oliver	Unidentified

Affiliation	Number of Signatures or Mailings
John O'Nea	Four Winds Chartering
Richard O'Neil	Unidentified
Ryan Oppenheimer	Unidentified
Nikole Ordway	Force E Scuba Centers
Timothy Oreagan	Unidentified
R.A. Ortiz	Tightlines
John Osmers	Unidentified
Steve Ostrander	Unidentified
William Otto	Unidentified
Stephen Ouellette	Diane Marie Fishery, Inc.
Tracy Ouellette	Unidentified
Elizabeth Ouzts	Environment North Carolina
Thomas Over	Unidentified
Derek Owen	Citizens for a Future New Hampshire
Ronald Owens	Unidentified
Steven Paglierani	Unidentified
John Paiva	Unidentified
Glenn Palmer	Unidentified
Mark Palmer	Unidentified
John Panetta	Unidentified
Taki Pantazopoulos	Unidentified
Dennis Panu	Unidentified
John Pappalardo	Cape Cod Commercial Fishermen's Alliance
Ernest Paquette	Unidentified
Erik Parillo	Unidentified
James Parker	Unidentified
Michael Parker	Unidentified
Steve Parker	Unidentified
Robert Parson	Unidentified
Andrew Paskevicz	Unidentified
John Pasqua	Unidentified
Edward Paul	Outdoor Pro Shop
Haertel Paul	Unidentified
Connie Pearson	Unidentified
Robert H. Pearson	Unidentified
Michele Peel	Friends of Gumbo Limbo
David Pelletier	Unidentified
Dominick Peluso	Unidentified
John Pennie	Unidentified
Capt. Kevin Pento	Unidentified
Larry Perfetto	Unidentified
Frank Peritore	Unidentified
Diane Perkins	South Florida Women Divers
John Perry	Unidentified
Aimee Peters	Unidentified
Bruce Peters	Unidentified
Dean Peters	Unidentified
Derek Peters	Unidentified
Domenic Petrarca	Unidentified

Affiliation	Number of Signatures or Mailings
Sarah Petrarca	Unidentified
Thomas Phillips	Unidentified
Donald Picard	Southeast Volusia Audubon Society
Timothy Pickett	Lindgren-Pitman Inc.
David Pierce Jr.	Unidentified
Michael Pierdinock	Unidentified
Christopher Pincetich	Unidentified
David Pincus	Unidentified
James Pinkerman	Unidentified
Shane Pinkston	Unidentified
Christopher Pinzone	Unidentified
Anthony Pirrello	Unidentified
Carlton Pittman	Recreational Fishing Alliance
Richard Pitts	Unidentified
Stephen Pizzuto	Unidentified
Christopher Plein	Unidentified
Zach Plopper	WILDCOAST
Mark Poirier	Unidentified
Anthony Porreca	Unidentified
John Poruchynsky	Unidentified
Nora Pouillon	Restaurant Nora
Richard Pramas	Unidentified
Kamal Prasad	Unidentified
Ralph Pratt	Unidentified
Chris Previdi	Unidentified
Rachael Prokop	Oceana
Kenneth Pruitt	Environmental League of Massachusetts
Roger Pszonowsky	The Sea Turtle Preservation Society
Jean Public	Unidentified
Dominick Pucci	Unidentified
David Pullo	Unidentified
Ed Pupa	Unidentified
Georege Purmont	Pura Vida Inc.
Paul Puskas	Unidentified
Joe Quill	Unidentified
Jack Quinlan	Unidentified
Brian R	Unidentified
William Raab	Unidentified
Alan Raczka	Unidentified
John Rakoci	Unidentified
Robert Rank	Unidentified
Jeffrey Ratliff	Unidentified
Wallace Ratliff	Unidentified
Scott Ratte	Unidentified
Joseph Reap	Unidentified
Dylan Redd	Unidentified
Lewis Regenstein	Interfaith Council for the Protection of Animals and Nature
Duane Reger	Unidentified

Affiliation	Number of Signatures or Mailings
John Regus	Unidentified
James Reibel	Unidentified
Paul Reillo	Rare Species Conservatory Foundation
Carole Reiss	Staten Island Green Charter School
David Renner	Unidentified
Randy Repass	West Marine
Peter Ressler	Unidentified
Henry Reusch	Unidentified
Joe Reustle	Unidentified
Jon Reuter	Unidentified
Jerry Revard	Unidentified
Elijah Reynolds	Unidentified
Gary Reynolds	Unidentified
William Reynolds	Unidentified
John Riccardi	Unidentified
David Richard	Unidentified
John Richard	Unidentified
Brian Richards	Recreational Fishing Alliance
Jeff Richards	Unidentified
Carleton Richardson	Unidentified
John Richardson	Unidentified
Tom Richardson	Unidentified
Frank Richetti	Recreational Fishing Alliance
Charles Richter	Unidentified
Reed Riemer	Unidentified
Jim Ries	One More Generation
Robert Rink	Unidentified
Rick Riordan	Unidentified
Alan Rios	Scuba Sports Club of NY
Javier Rios	Unidentified
Claudio Ripoll	Unidentified
Donald Rist	Unidentified
James Rivera	Unidentified
Jason Roberts	Unidentified
Maureen Robertson	Unidentified
Troy Robertson	Seaduction Charters
Richard Robins	Mid Atlantic Fishery Management Council
Alan Robinson	Unidentified
Jeffrey Robinson	Unidentified
Scott Robson	Unidentified
Eric A. Roderick	Unidentified
Ryan Rodgers	Uptown Angler - Saltwater Flyfishing Specialists
Greg Rogers	Unidentified
Mark Rogers	Unidentified
Clarisa Romero	Unidentified
Alexander Rony	Earthjustice
Richard Ronzio	Unidentified
Chris Roosevelt	Unidentified
Christopher Roosevelt	Unidentified

Affiliation	Number of Signatures or Mailings
William Ross	Unidentified
Carla Rossby	Unidentified
David Rothage	Unidentified
Joseph Rotter	Unidentified
Jeff Rowland	Unidentified
Larry Rowland	Unidentified
Stephen Rozen	Unidentified
Richard Ruais	American Bluefin Tuna Association
Joseph Rule	Unidentified
Lydia Runkle	Unidentified
Greg Russell	Waste Knot Charters, LLC
Stuart Rutland	Unidentified
Aidan Ryan	Unidentified
Edward J Ryan Jr	Unidentified
Bill Rynkowski	Unidentified
Vincent Sabatino	Unidentified
Carl Safina	Blue Ocean Institute
Andrew Salem	Unidentified
Robert Sampson	Unidentified
Naila Sanchez	Unidentified
Warren Sanders	Unidentified
Christopher Santoro	Unidentified
Cynthia Sarthou	Gulf Restoration Network
Nick Savene	No Time Fishing Charters
James Savopoulos	Unidentified
Michael Sawall	Unidentified
Michael Sawyer	Unidentified
Marc Scalise	Unidentified
Tricia Scampi	Unidentified
Andrew Scanlon	Unidentified
Martin Scanlon	Provider II Seafood Inc.
Tommy Scanlon	Unidentified
Stephen Scarborough	Unidentified
Stephen Schad	Unidentified
Robert Schaeffer	Unidentified
David Schalit	Unidentified
Lawrence Scheer	Unidentified
Don Schline	Unidentified
Mike Schoonveld	Unidentified
Jason Schratwieser	International Game Fish Association
Richard Schug	Unidentified
Norman Schultz	Unidentified
Christopher Schulze	Unidentified
Kurt Schwarz	Maryland Ornithological Society
Lee Schwocho	Unidentified
Silas Sconiers	Unidentified
Campbell Scott	Oceans Wide
William Scott	Unidentified
David Secor	University of Maryland

Affiliation	Number of Signatures or Mailings
Michael Seewald	Unidentified
Chris Seibert	Unidentified
James Sensbach Sensbach	Concerned human
Michael Serdynski	Unidentified
Michelle Serdynski	Unidentified
Brian Sesniak	Keep America Fishing
Brad Sewell	Natural Resources Defense Council
Steve Shabet	Unidentified
Jean Shaheen	U.S. Senate
Jason Shank	Recreational Fishing Alliance
Adrian Sharp	Unidentified
John Shary	Unidentified
John C Shattuck	Unidentified
Ryan Shaughnessy	Unidentified
Jim Sheehan	Unidentified
Jack Sheeran	Unidentified
Ronald Sheldon	Unidentified
Jeff Shelton	Unidentified
Stan Shelton	Unidentified
Stanley Shenker	Keep America Fishing
Robert Shepard	Unidentified
Elizabeth Shephard	LifeCity
Orr Shepherd	Unidentified
Carl Sheppard	Unidentified
Thomas Sherry	Tulane University
Ken Shiloff	Unidentified
Melvin Shimizu	Unidentified
Daryl Shin	Unidentified
Laina Shockley	Ethos Vegan Kitchen
Michael Short	Unidentified
John Shostak	Lion's Den
Dominic Siano	Unidentified
Luke Sibley	Unidentified
Donald Siemonsma	Unidentified
Alan Sigle	Unidentified
Margaret Silver	Unidentified
Ron Silver	Unidentified
Michele Simon	Unidentified
Saverio Simone	Unidentified
Daniel Simsay	Unidentified
Roopnarine Singh	Unidentified
Gary Sink	Unidentified
Steven Sirc	Unidentified
Bill Sirotnak	Unidentified
Louis Skrmetta	Ship Island Excursions
William Skrobacz	Unidentified
Daniel Slater	Unidentified
Mark Small	Lead Food Music
Bud Smart	Unidentified

Affiliation	Number of Signatures or Mailings
Bob Smith	Unidentified
Carlos Smith	Unidentified
Chuck Smith	Unidentified
Dwight Smith	D. Smith Creative
Gregg Smith	Unidentified
John Smith	Unidentified
Martin Smith	Unidentified
Michael Smith	Unidentified
R.M. Smith	Unidentified
Randy Smith	POSC
Richard Smith	Unidentified
Robert Smith	Keep America Fishing
Sam Smith	Unidentified
Sherry-Lee Smith	Unidentified
Russell Smith Jr.	Unidentified
Eugene Smolenski	Recreational Fishing Alliance
Ian Smolinski	Unidentified
J Smolinski	Unidentified
Jeff Snear	Unidentified
Caroline Snyder	Citizens for Sludge Free Land
David Snyder	Unidentified
Debbie Sobel	Sea Turtle Conservation League of Singer Island
John Sodrel	Unidentified
Matt Sohm	Unidentified
Michael Sosik	Northeast Charterboat Captains Association
Andy Souter	Unidentified
Paul Spear	Unidentified
Walt Spearman	Unidentified
Pete Speeches	Unidentified
Christopher Spies	Unidentified
Tyler Sponchia	Unidentified
Donald Sproul	Unidentified
Pete Stafford	Unidentified
John Stanley	Unidentified
Scott Stanley	Recreational Fishing Alliance
Charles Starcevich	Unidentified
Capt. Neal Stark	Unidentified
Kevin Staub	Unidentified
Anette Stauske	Unidentified
John Stavrakas	Unidentified
Ricky Stecher	Unidentified
Matt Stedman	Unidentified
DJ Steikunas	Unidentified
David Steward	Unidentified
Dan Stewart	Unidentified
Ken Stewart	Unidentified
Mark Stirrett	Unidentified
Michael Stocker	Ocean Conservation Research
E.F. Terry Stockwell III	New England Fishery Management Council

Affiliation	Number of Signatures or Mailings
George Stojkovic	Unidentified
Edward Stone	The Billfish Foundation
L Stone	Unidentified
Amber Stonik	Reef Relief
Brian Storms	Unidentified
Len Strapponi	Unidentified
Thomas Stratton	Unidentified
Mark Streahle	Unidentified
Gary Strempek	Unidentified
Vernon Stroppel	Unidentified
Richard Strzepek	Unidentified
Joe Stumer	Capeshores Charters
Politics Suck	Unidentified
Captain Joe Sullivan	Recreational Fishing Alliance
Leo Sullivan	Unidentified
Greg Sutter	Unidentified
Brian Sutton	Unidentified
Jerry Sutton	Unidentified
Ted Sutton	Unidentified
Eric Swanson	Unidentified
James Sweeney	Sustainable Plymouth
Bruce Sweet	Unidentified
Richard Swinehart	Unidentified
Wayne Swope	Unidentified
Douglas Sylvia	Unidentified
Raymond Szulczewski	Unidentified
Carlos T	Unidentified
Ryan Taffet	Unidentified
Martin Tait	Unidentified
Gary Tansino	Unidentified
Joseph Taormina	Recreational Fishing Alliance
Arnold Carl Tapp	Unidentified
Rob Tartagila	Unidentified
Luke Tarvin	Unidentified
Dave Taylor	Unidentified
Jared Taylor	Unidentified
Neal Taylor	Norfolk Anglers Club
Steve Taylor	Ayers Creek Adventures
Scott Taylor and Tim Palmer	Unidentified
Daniel Teague	Unidentified
Ray Teel	Unidentified
John Tefankjian	Unidentified
Paul E. Terrile	Unidentified
Dustin Teudhope	Unidentified
William Thiele	Parker Memorial United Methodist Church
Damian Thomas	American Culinary Federation New Orleans Chapter
Preston Thomas	Unidentified
Tamara Thomas	Unidentified
Mark Thomasson	Unidentified

Affiliation	Number of Signatures or Mailings
Daniel J Thompson	Unidentified
Merton Thompson	Unidentified
Robert K Thompson Jr	Unidentified
David Thornes	Lt. Charters
Mike Thron	Maryland Angler's Network
Shawn Tibbetts	Unidentified
James Tibensky	Unidentified
Jeff Tichota	Unidentified
Carlos Tijero	Unidentified
Louis Tinto	Unidentified
Robert Tobeck	Unidentified
Joseph Tobin	Unidentified
Joe "Tuna Tales" Tomaszewski	Unidentified
John Tomlinson	Unidentified
John Toombs	Unidentified
Ken Torres	Unidentified
John Toth	Saltwater Anglers of Bergen County
Jason Toutkoushian	Unidentified
John Toutkoushian III	Recreational Fishing Alliance
William Tower III	Unidentified
Matt TrailSmith	Unidentified
Andrea Treece	Earthjustice
Angelo Trentadue	Unidentified
Frederick Truex	Unidentified
Mr. Truth	Unidentified
Chris Tucker	Unidentified
Jeffrey Tucker	EarthSave Miami
Blue Tuna	Unidentified
Jensen Tuna	Unidentified
Fred Tutman	Patuxet Riverkeeper
Tom Twyford	West Palm Beach Fishing Club
Grace Tyson	Unidentified
David Tysz	Unidentified
Rick Uhls	Unidentified
Robert Ullmann	Unidentified
Paul Unangst	Unidentified
Chad Unger	Unidentified
Jordan Unger	Unidentified
Tyler Unger	Unidentified
The Ungers	Unidentified
William Uzzell	Unidentified
Chris Valaskatgis	Unidentified
Steven Valcorba	Unidentified
Tim Valente	Unidentified
Christopher Van Us	Unidentified
Peter Vanes	Unidentified
Andrew Variano	Unidentified
Mark Vaughan	Unidentified
Paul Vazquez	Unidentified

Affiliation	Number of Signatures or Mailings
Robert Veit	Unidentified
Ted Venker	Coastal Conservation Association
Chris Ventura	Unidentified
Robert Vetromile	Unidentified
Joseph Vieyra	Unidentified
Mike Viggiano	Unidentified
Patti Villani	Patti's Plants LLC
Nancy Vinson	Unidentified
Michael Vitale	Unidentified
Allan Vitkus	Unidentified
Michael Vitucci	Unidentified
Alex Vlahos	Recreational Fishing Alliance
Geoffrey von der Linden	Unidentified
Martin Vongrej	Unidentified
Eric Voss	The Billfish Foundation
Eric Voss	Unidentified
Harry Voss	Unidentified
Milo Vukovich	Unidentified
Christian Vye	Unidentified
Pat Waddleton	Unidentified
Charlie Wade	Unidentified
Arthur Walczak	Unidentified
David Walden	Unidentified
Robin Walder	Unidentified
David Waldrip	Unidentified
B Walker	Unidentified
Barbara Walker	Clearwater Audubon Society
Barbara Walker	Friends of the Anclote River
Johnny Walker	Unidentified
Michael Walker	Unidentified
S Walker	Unidentified
SJ Walker	Unidentified
Joe Walkup	Unidentified
Kevin Wall	Unidentified
Carol Wallace	Keep America Fishing
Bill Walsh	Unidentified
James Walsh	Unidentified
Kenneth Warchal	Unidentified
George Ward	Unidentified
Sharon Wardle	Unidentified
Mark Warzecha	Unidentified
Dave Wassenar	Unidentified
Nicole Weber	Unidentified
Jared Weigel	Unidentified
Brett Weinberg	Unidentified
Chris Weiner	Unidentified
Stephen Weiner	Unidentified
Stephen Weiner	Unidentified
Alan Weiss	Blue Water Fishing Tackle Co.

Affiliation	Number of Signatures or Mailings
Margaret Welke	Unidentified
Hamilton Wells	Unidentified
Phil Wentworth	M3S Computers
Ryan Wentworth	Unidentified
Troy Wentworth	Unidentified
Robert Wenzel	Unidentified
Michael West	Unidentified
Stephen West	Unidentified
Bryan Whaley	Unidentified
Ben Whatley	Unidentified
Rom Whitaker	Unidentified
Brad White	White Cap Charters LLC
Donald White	Unidentified
J Thomas White	Unidentified
Thomas White	Unidentified
Richard WhiteCloud	Sea Turtle Oversight Protection, Inc.
John Whitford	Unidentified
Richard Whitlock	Unidentified
Christopher Whitt	Unidentified
Clair Whitten	Unidentified
Alex Widney	Unidentified
Hardy Wiedemann	Unidentified
Michael Wiedemann	Unidentified
Charles Wightman	Unidentified
Ben Wigren	Unidentified
Tom Wilcox	Wilcox Bait and Tackle
Richard Wildman	Unidentified
Jeff Wiley	Unidentified
Jerry Wilkins	Unidentified
Daniel Willard	Unidentified
David Willems	Unidentified
Cole William	Unidentified
Ralph Williams	Unidentified
Ted Williams	Unidentified
Wayne Williams	Too Salty Charters
Chip Willimon	Unidentified
Allan Willis	Recreational AP member
Scott Willis	Unidentified
Brian Wilson	Unidentified
Tim Wilson	Unidentified
Jane Winn	Berkshire Environmental Action Team
H. Richard Wisneski	Unidentified
Lindsay Withers	Unidentified
Guy Witkiewitz	Unidentified
Robert Woelflein	Unidentified
Harold Wolfe	Unidentified
Thomas Wolfe	Unidentified
Adam Wolff	Surfrider Foundation Virginia Beach Chapter
Francis Wolff	Unidentified

Affiliation	Number of Signatures or Mailings
Stephen Wood	Unidentified
Charity Woods	Fight for ATL
Warren Woodward	Unidentified
Steven Wray	Ocean Pearl Charters
Andy Wurst	Unidentified
Stephen Wurst	Unidentified
Jin Yang	Bamboo Sushi
Fred Yarmolowicz	Unidentified
Leland Yates	Unidentified
Andrew Yberg	Unidentified
Richard Yeats	Unidentified
Matt Yelken	Unidentified
Shane Yellin	Unidentified
Joseph Yocco	Unidentified
Ronald York	Unidentified
Bruce Young	Keep America Fishing
Sharon Young	Humane Society of the United States
Joey Zac	Unidentified
Joshua Zacharias	Outermost Angling Charters
James Zacka	Unidentified
Gerard Zagorski	Unidentified
Elizabeth Zahrn	Seabrook Island Turtle Patrol
Stef Zamorski	Unidentified
Capt. Dan Zawisza	Unidentified
Christopher Zegler	Unidentified
David Zeman	Unidentified
David Zeman	Unidentified
Carmel Zetts	Sunset Beach Turtle Program
Jill Zima	Unidentified
James Zimmerman	Unidentified
Katie Zimmerman	South Carolina Coastal Conservation League
Edward Zindel	Unidentified
Bette Zirkelbach	The Turtle Hospital
Eric Zornberg	Unidentified
C. Zoufaly	The Billfish Foundation
Eric Zsolczai	Unidentified
Paul Zumbo	Unidentified

11 APPENDIX
11.1 Summary of Scoping Comments

Number of Comments Received: Approximately 200

Scoping Hearings:

- Toms River, New Jersey – May 8, 2012 (Tom's River Library)
- Gloucester, Massachusetts – May 16, 2012 (National Marine Fisheries Service)
- Belle Chasse, Louisiana – May 21, 2012 (Plaquemines Parish Government Community Center)
- Manteo, North Carolina – May 23, 2012 (Dare County Administration Building)
- Portland, Maine – June 18, 2012 (Holiday Inn by the Bay)

Regional Fishery Management Council Consultations:

- Mid-Atlantic Fishery Management Council Meeting–June 14, 2012 (Hilton New York, New York, NY)
- New England Fishery Management Council Meeting – June 19, 2012 (Holiday Inn by the Bay, Portland, ME)
- South Atlantic Fishery Management Council Meeting – June 15, 2012 (Renaissance Orlando Airport Hotel, Orlando, FL)
- Scoping document was shared with Gulf of Mexico Fishery Management Council
- Caribbean Fishery Management Council

Common Elements (The following opinions were expressed in the majority of the detailed letters; *or was the opinion of the few letters that addressed the particular issue):

- Promote transition from pelagic longline gear to more selective gear; use oil spill funds
- Close the Gulf of Mexico to the use of pelagic longline gear year-round
- Support catch cap for the Atlantic, with landings and discards limited to 8.1%
- Increased level of observer coverage (industry funded)
- Improve reporting: VMS transmission of information to achieve real time reporting
- Mandatory retention of legal-sized fish
- Eliminate pelagic longline target catch requirements
- Support Atlantic closures for pelagic longline gear
- Don't reduce minimum sizes
- Don't support reallocation
- Don't support limiting catch of angling category
- Don't support use of weak hooks in the Atlantic

Focus of Form Letters from Public

- Prohibit use of PLL in GOM year-round
- Encourage more selective gear

- Bycatch cap in the Atlantic (8.1%)

More unique comments by selected Organizations/Individuals

Center for Biological Diversity

- Protect the 2003 year class

North Carolina Department of Marine Resources

- Allow PLL category to hold general category permits

Coastal Conservation Association

- Closed areas are the only effective means to reduce BFT discards

Tag-A-Giant

- Prohibit use of PLL in GOM from Dec to June, or during peak CPUE periods (March to May or June)

Andre Boustany

- Avoid quota redistribution from fisheries that target mixed BFT stocks (E and W) to fisheries that target primarily western fish (due to poorer status of western stock)

Blue Water Fisherman's Association and Boston SWO and Tuna

- Allocate to the PLL category 28.12%, but not less than 291 mt
- Divide the PLL quota into 2 semi-annual quotas
- Open parts of existing closed areas – offshore edges of Charleston Bump and FEC
- Enhance reporting of discards; focus on top 1 to 3 % ("top producers") of commercial permit holders; e.g., logbook, observers, VMS

The Billfish Foundation

- Create a separate GOM angling category allocation (in addition to N and S)
- Support a landings allocation for each category to account for dead discards

Atlantic Bluefin Tuna Association

- Catch cap is best way to reduce PLL discards
- If individual catch caps, suggests control date of 2003

National Coalition for Marine Conservation

- PLL closure in GOM in HAPC from April to June (or GOM closure year-round)
- GOM catch cap; set closure trigger at 75% of recent 5 year average to provide incentives

11.2 Definitions for Tier I Performance Indicators for Catch Share Programs (Brinson and Thunberg, 2013)

Performance Measure	Indicator	Definition
Catch and Landings		
	Quota allocated to catch share program	Annual quota of combined catch share program species, in terms of weight.
	Aggregate landings	Annual total weight of combined catch share program species gene by vessels that fish quota.
	ACL exceeded (Y/N)*	Was the ACL exceeded for any species/stock within the catch share program? (Y/N)
	% Utilization	Portion of target species TAC that is caught and retained within a f year. Aggregate Landings/Quota allocated to catch share program.
Fishing Effort		
	Entities holding share	Annual total number of entities/individuals/vessel owners/permit h receiving quota share at the beginning of the year.
	Active vessels	Annual number of vessels that fish quota and landing one or more p of any catch share program species
	Season length	Number of days per calendar year or fishing year, as defined above the catch share program fishery is open.
	Trips	Annual total number of trips taken by vessels fishing quota on whic or more pounds of any catch share program species were landed.
	Days at sea	Annual total number of days absent on trips taken by vessels fishin quota on which one or more pounds of any catch share program spe were landed.
Landings Revenue		
	Aggregate revenue from catch share species	Annual total ex-vessel revenue of combined catch share program sp generated by vessels that fish quota.
	Aggregate revenue from non-catch share species	Aggregate revenue from non-catch share species caught on catch sh program trips.
	Average Price	Aggregate ex-vessel revenue from catch share species/aggregate la
	Revenue per active	Aggregate ex-vessel revenue/active vessels

Performance Measure	Indicator	Definition
	vessel	
	Revenue per trip	Aggregate ex-vessel revenue/trip
	Revenue per day at sea	Aggregate ex-vessel revenue/day at sea
Other		
	Cost recovery fee	Amount collected for cost recovery
	Share cap in place (Y/N)	An ownership share and/or allocationcap is any measure consistent the MSA LAPP purpose nad intent whether or not the catch share program is required to have an excessive share cap. Y/N

11.3 Spatial Distribution of Set Revenue in the HMS Pelagic Longline Fishery.

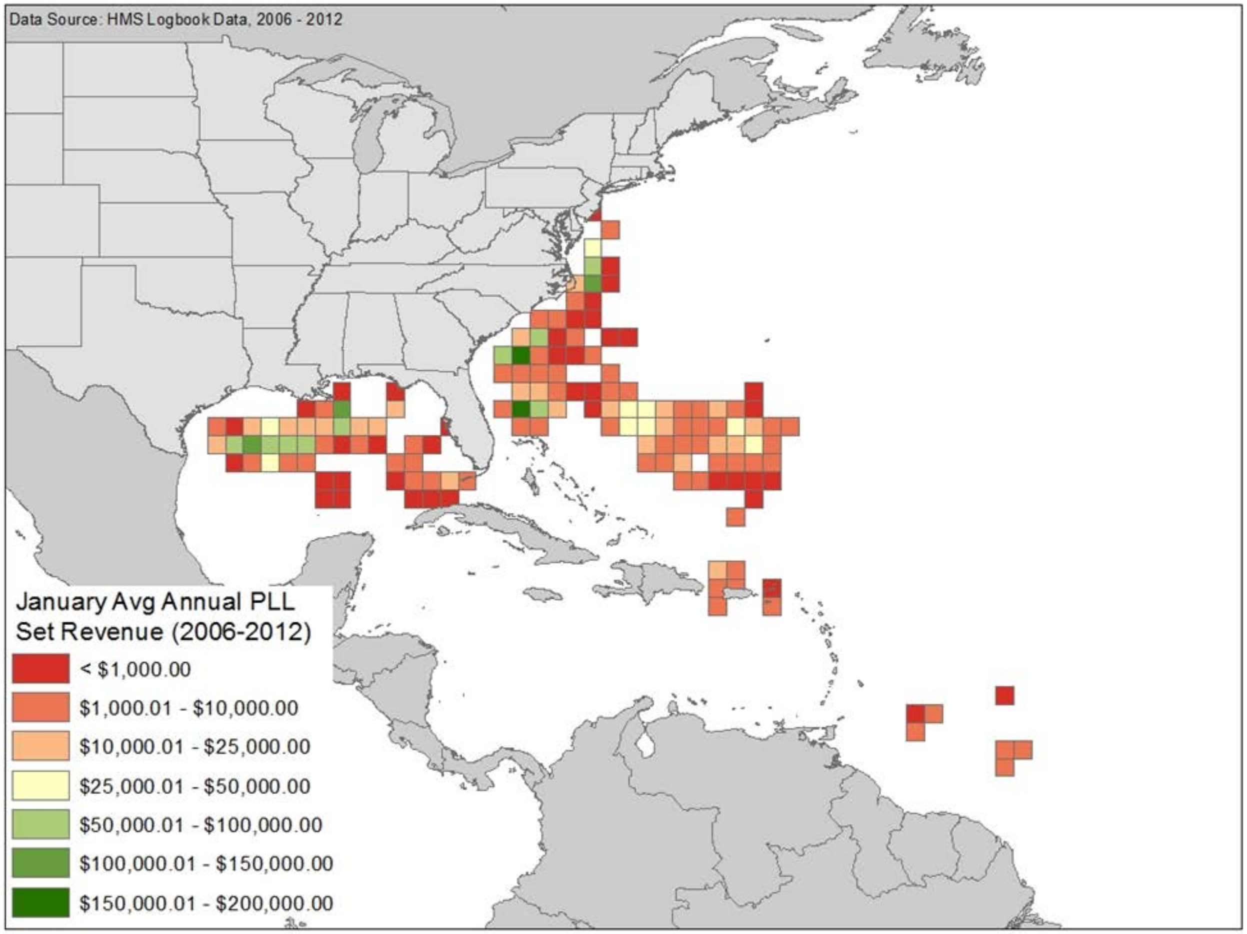


Figure 11.1 Spatial distribution of January (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

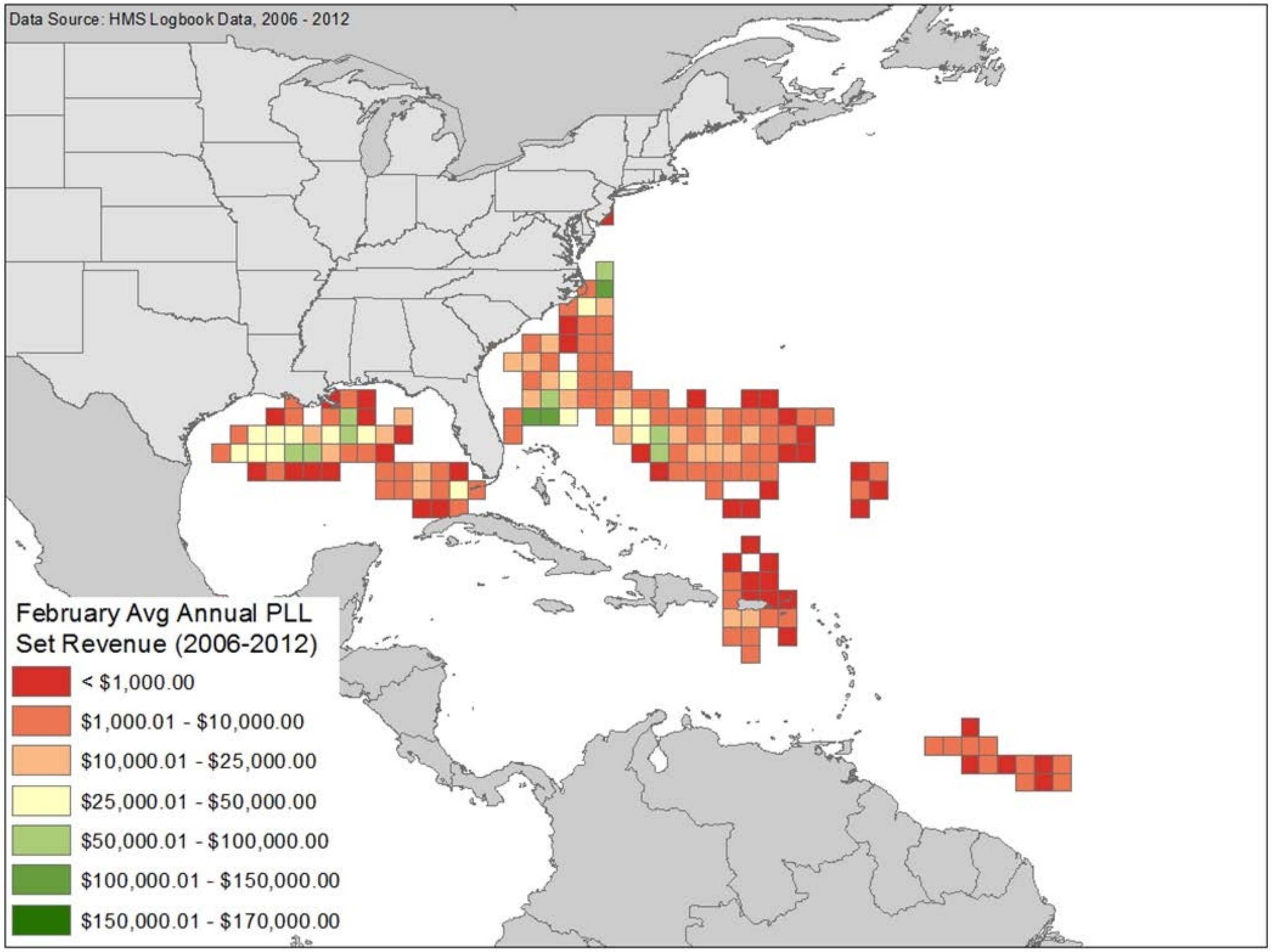


Figure 11.2 Spatial distribution of February (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

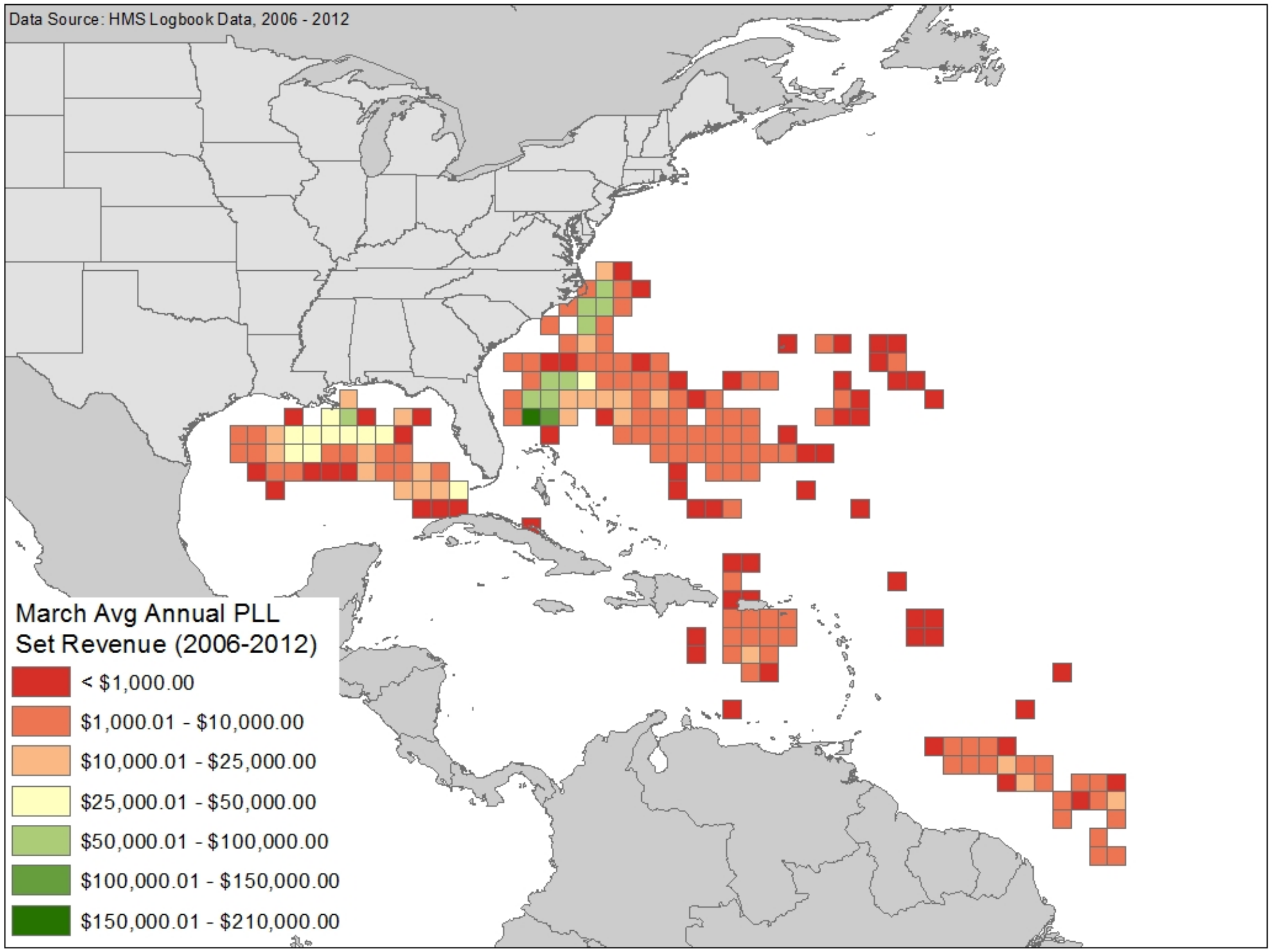


Figure 11.3 Spatial distribution of March (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

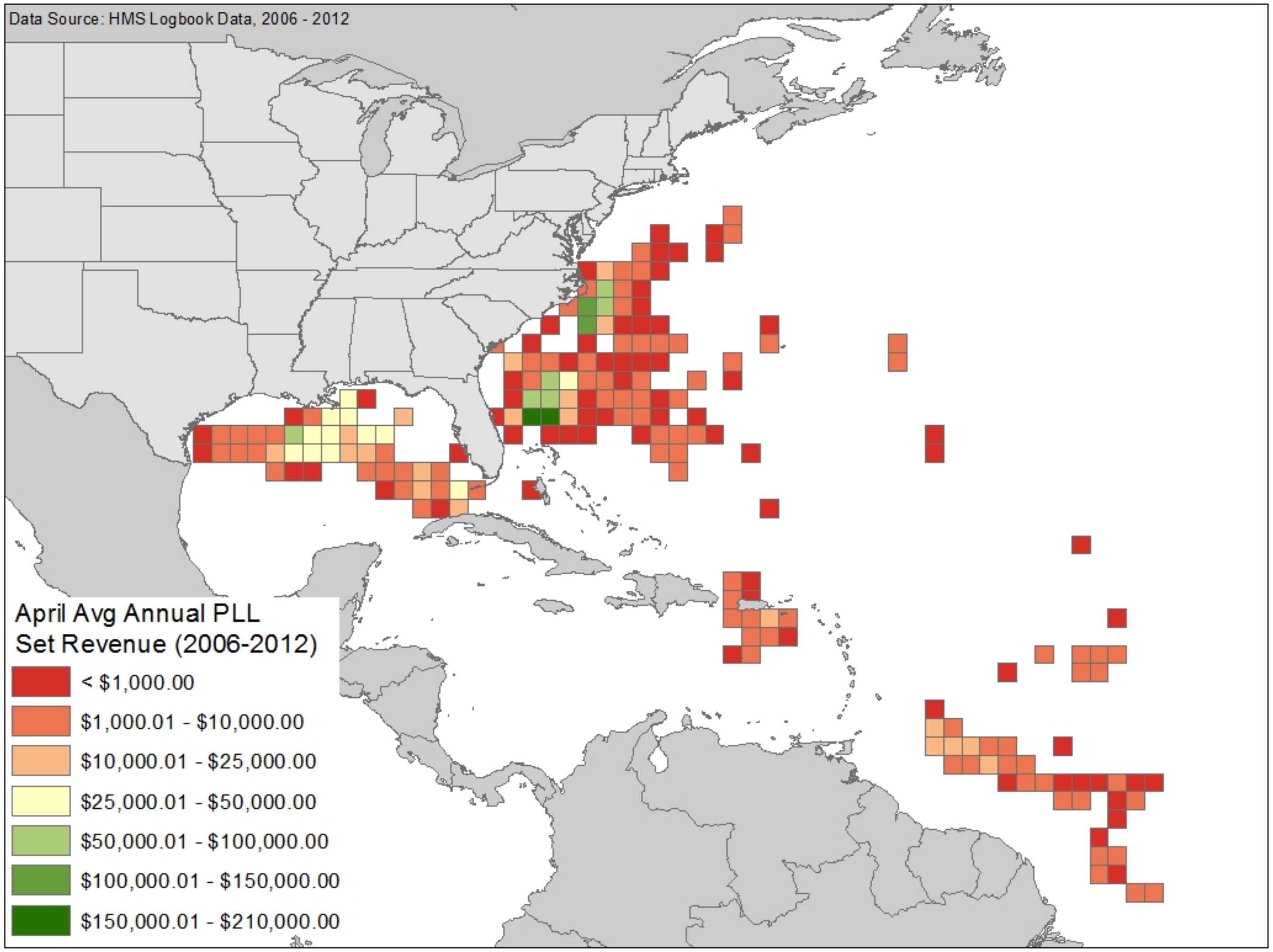


Figure 11.4 Spatial distribution of April (2006 – 2012) set revenue reported by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell

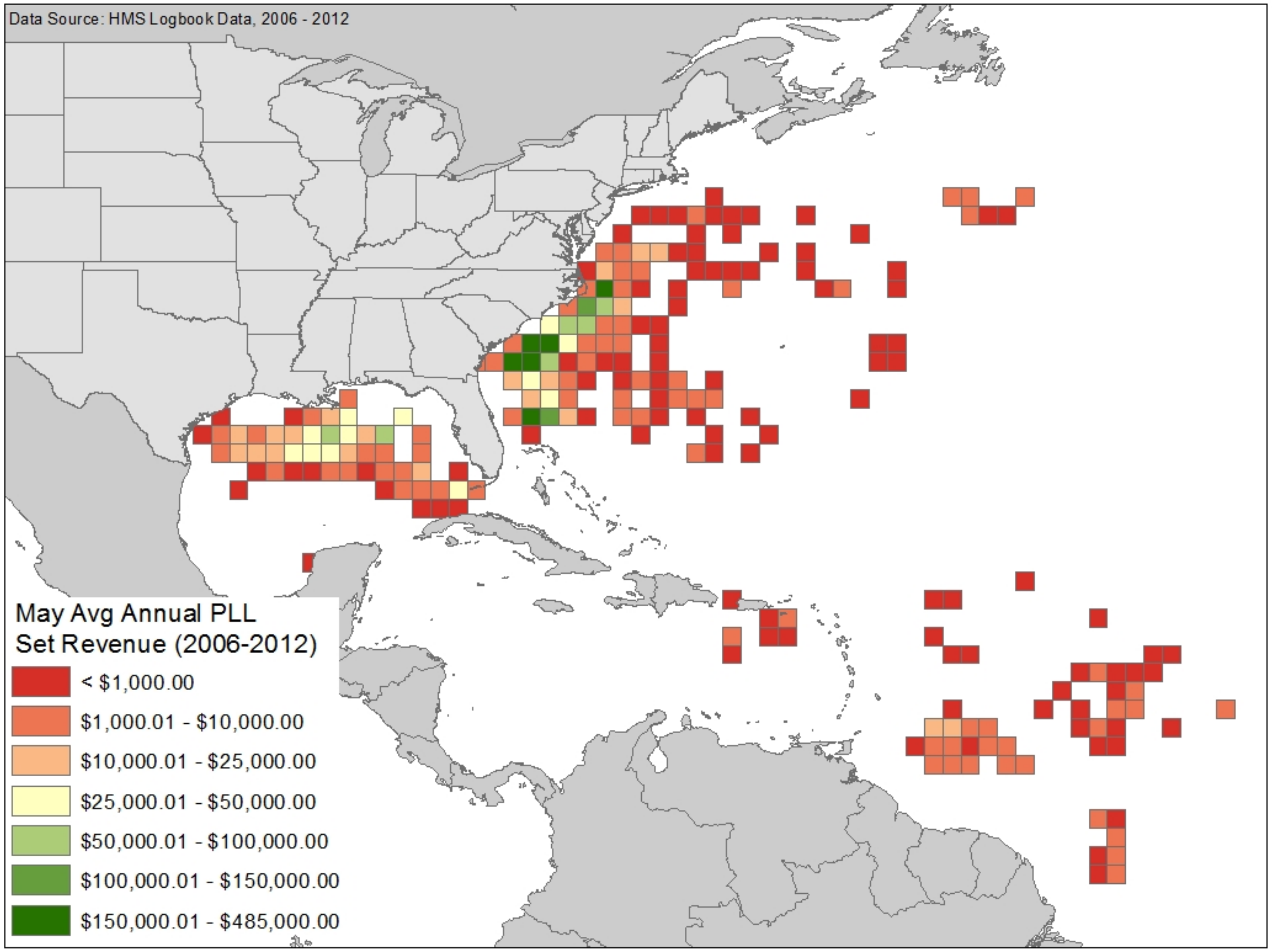


Figure 11.5 Spatial distribution of May (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

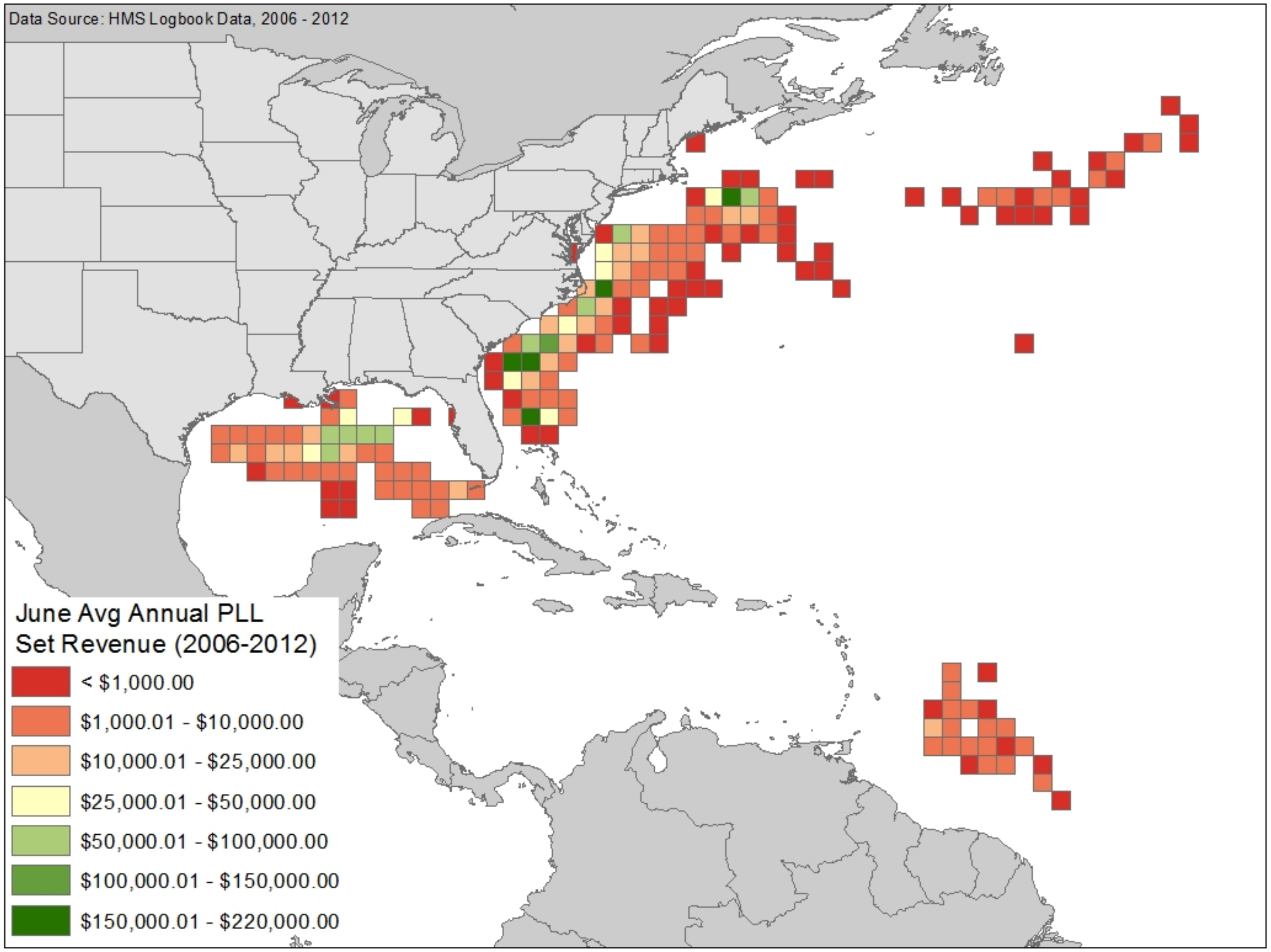


Figure 11.6 Spatial distribution of June (2006 – 2012) set revenue reported by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

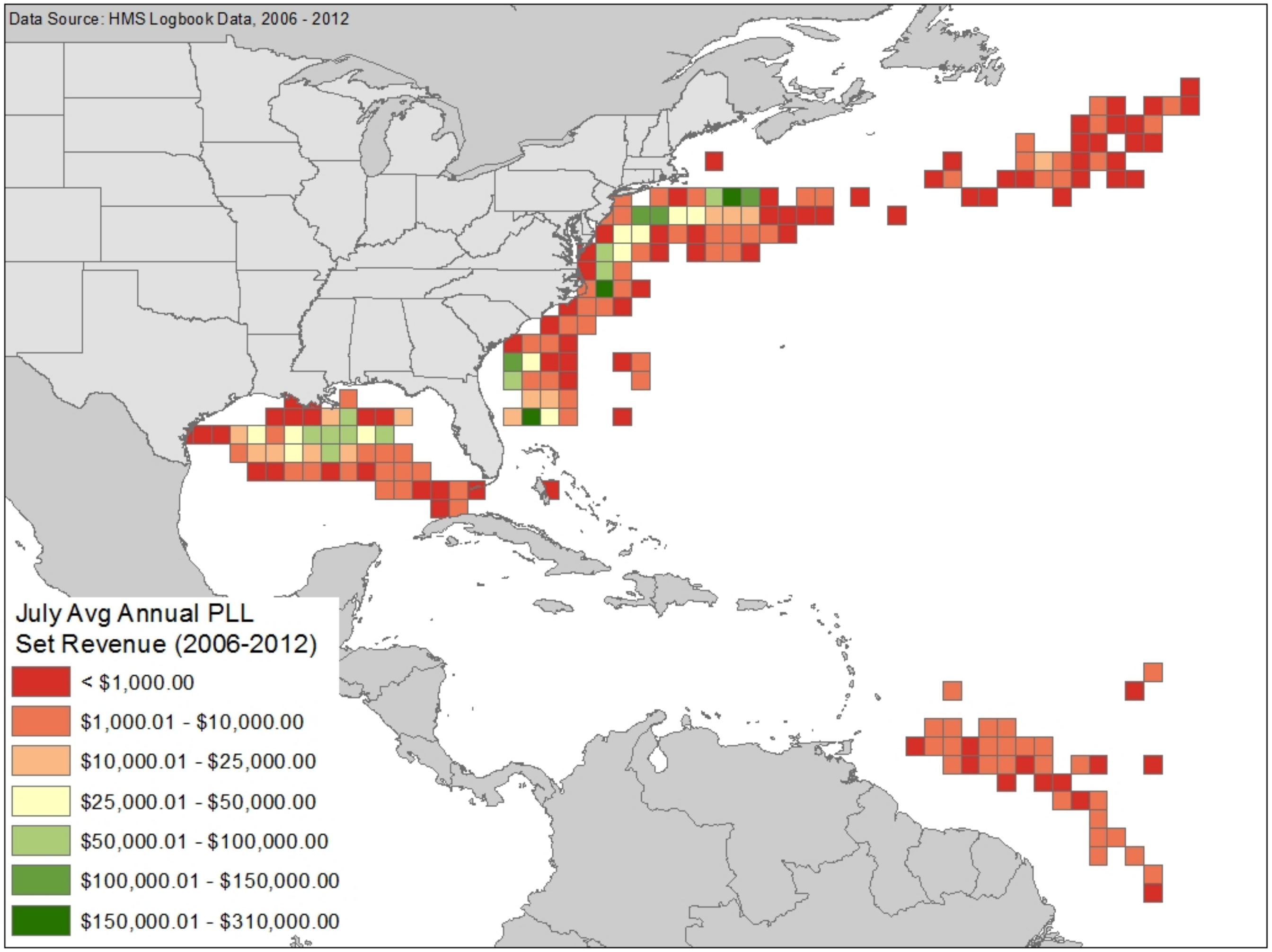


Figure 11.7 Spatial distribution of July (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

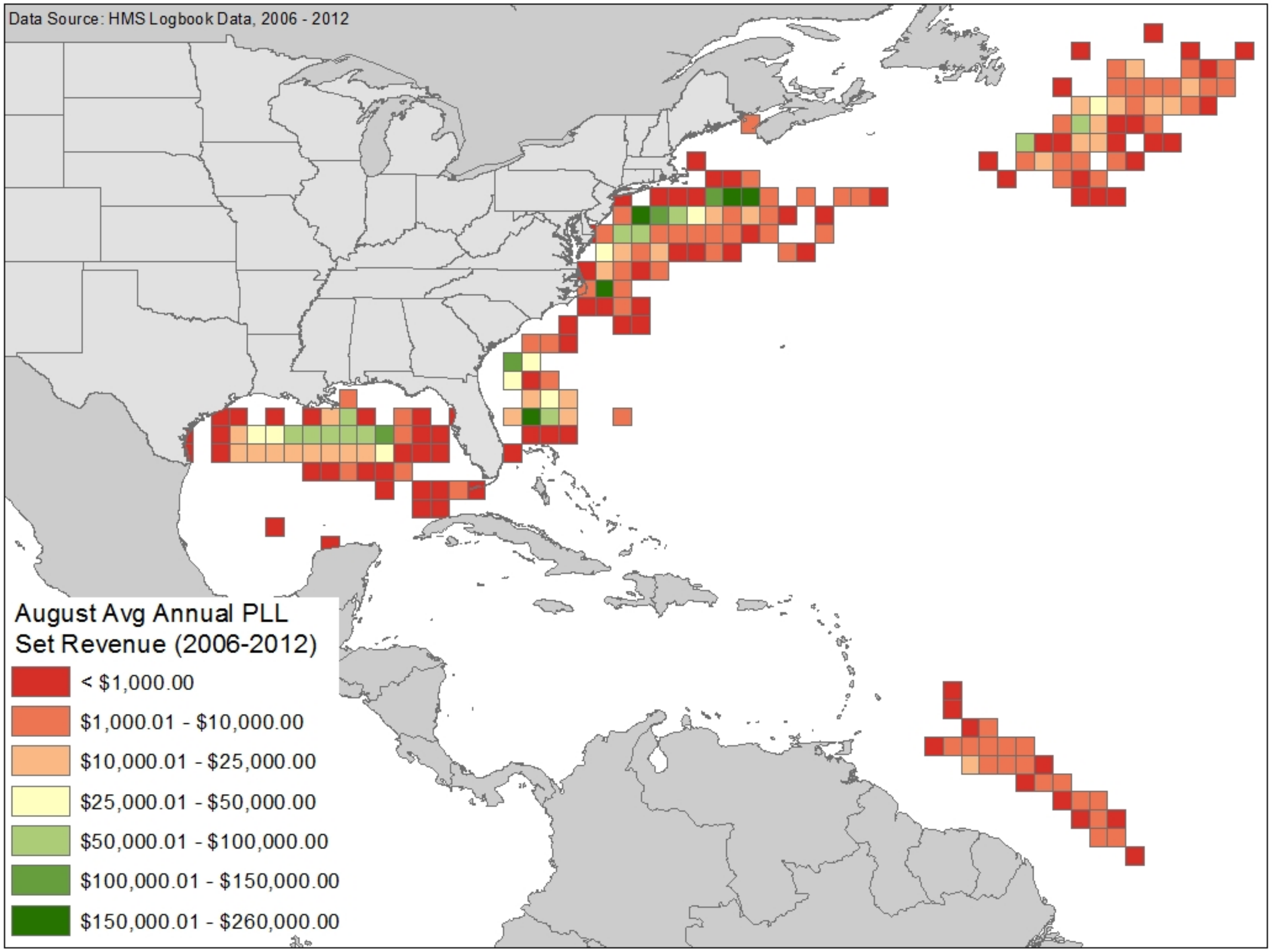


Figure 11.8 Spatial distribution of August (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

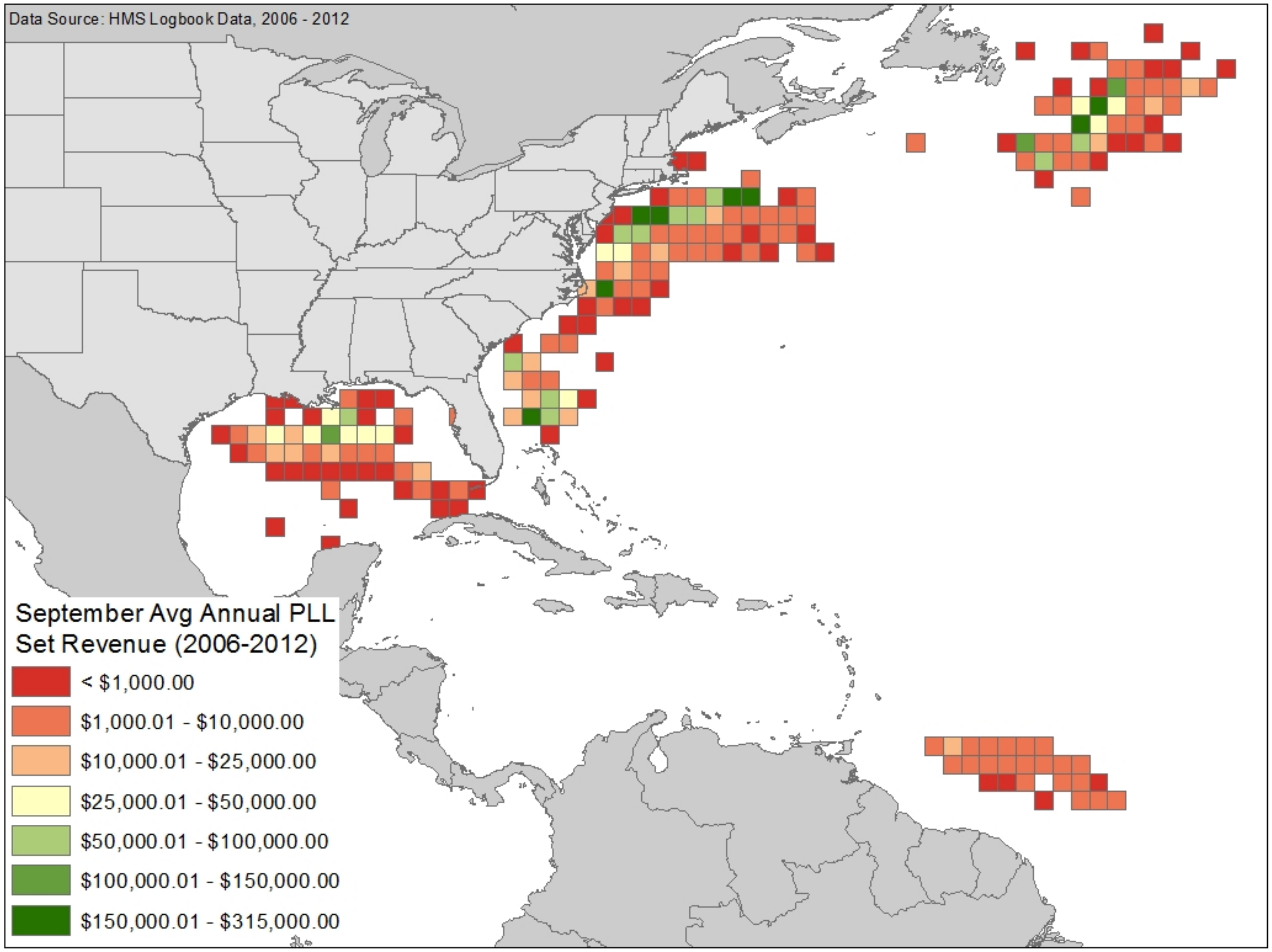


Figure 11.9 Spatial distribution of September (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

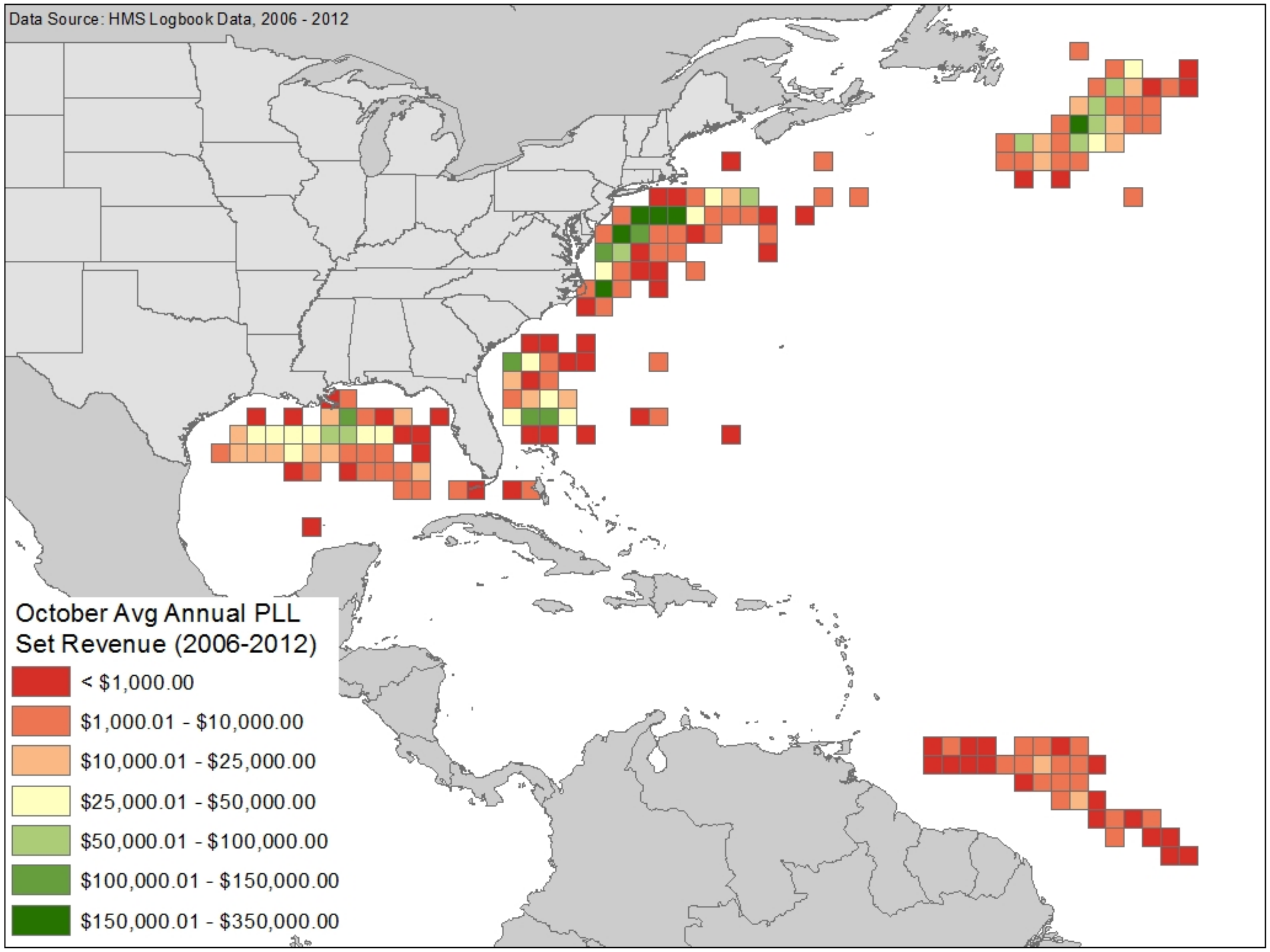


Figure 11.10 Spatial distribution of October (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

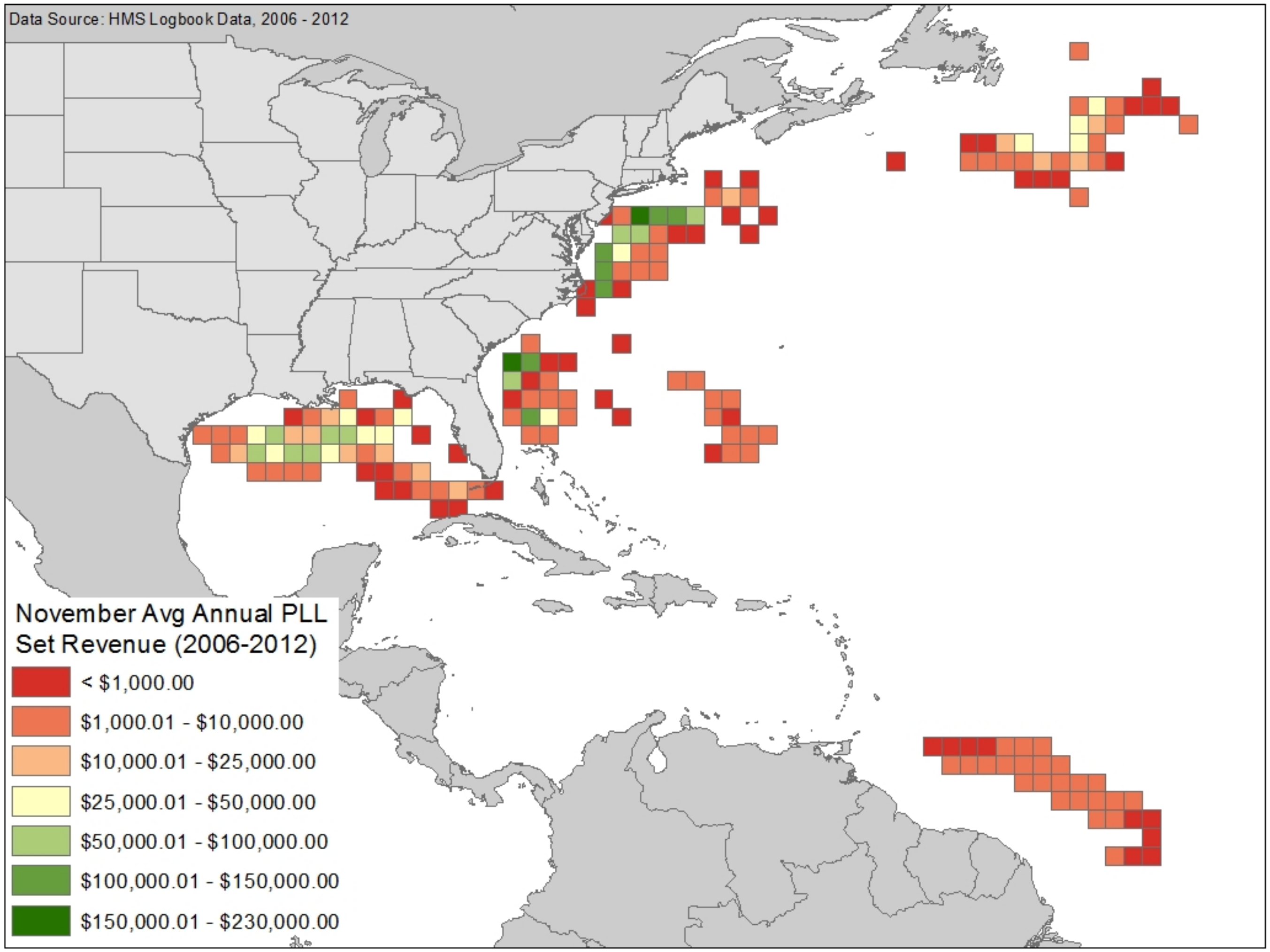


Figure 11.11 Spatial distribution of November (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

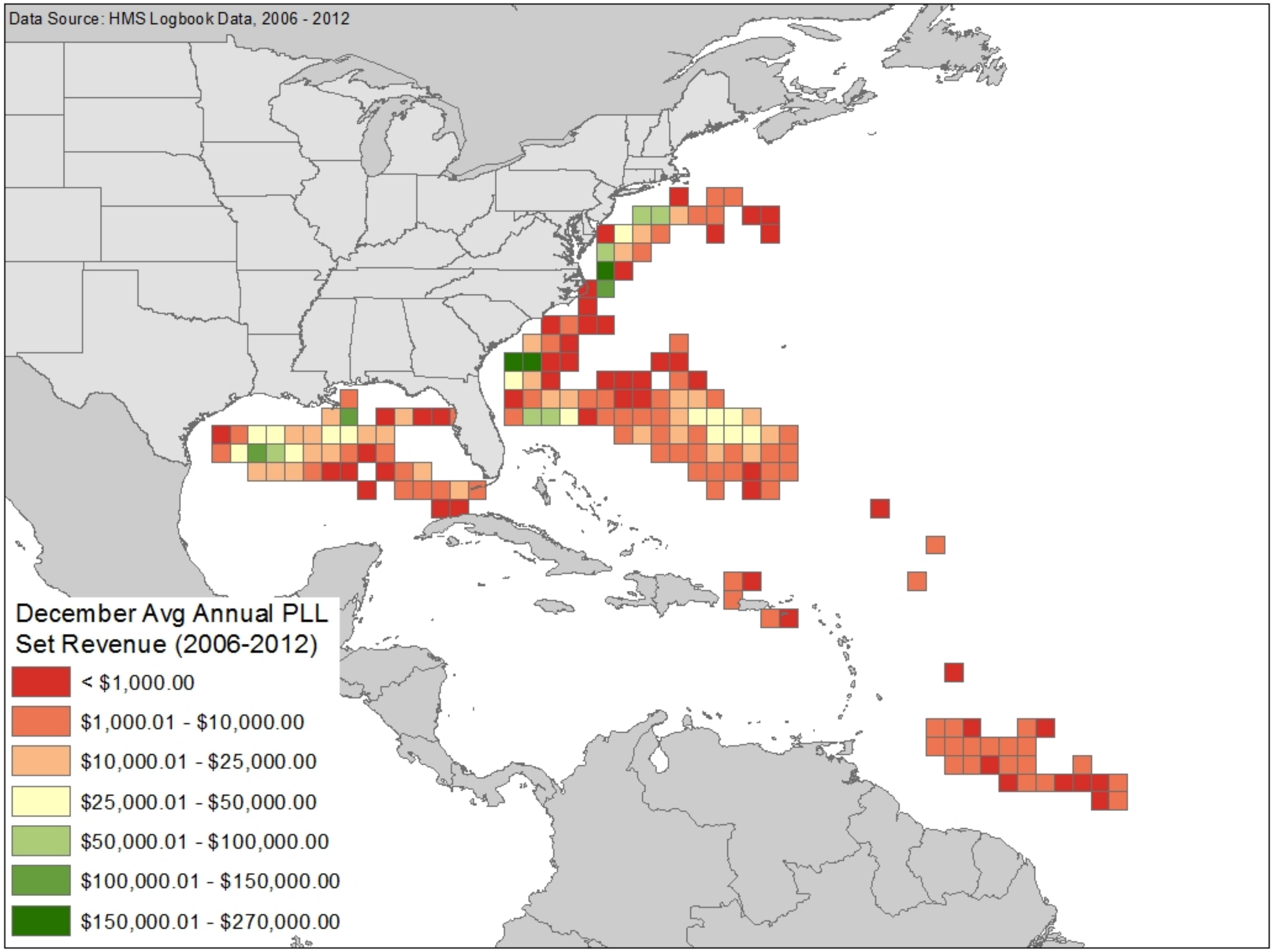


Figure 11.12 Spatial distribution of December (2006 – 2012) set revenue by the pelagic longline fishery based on HMS logbook reports, weighout slips, and dealer reports. Grid cell values reflect the average set revenue of all sets that fall within a particular 1º x 1º grid cell.

11.4 Bluefin Length Data for Landings (LL) and Dead Discards (LLD)

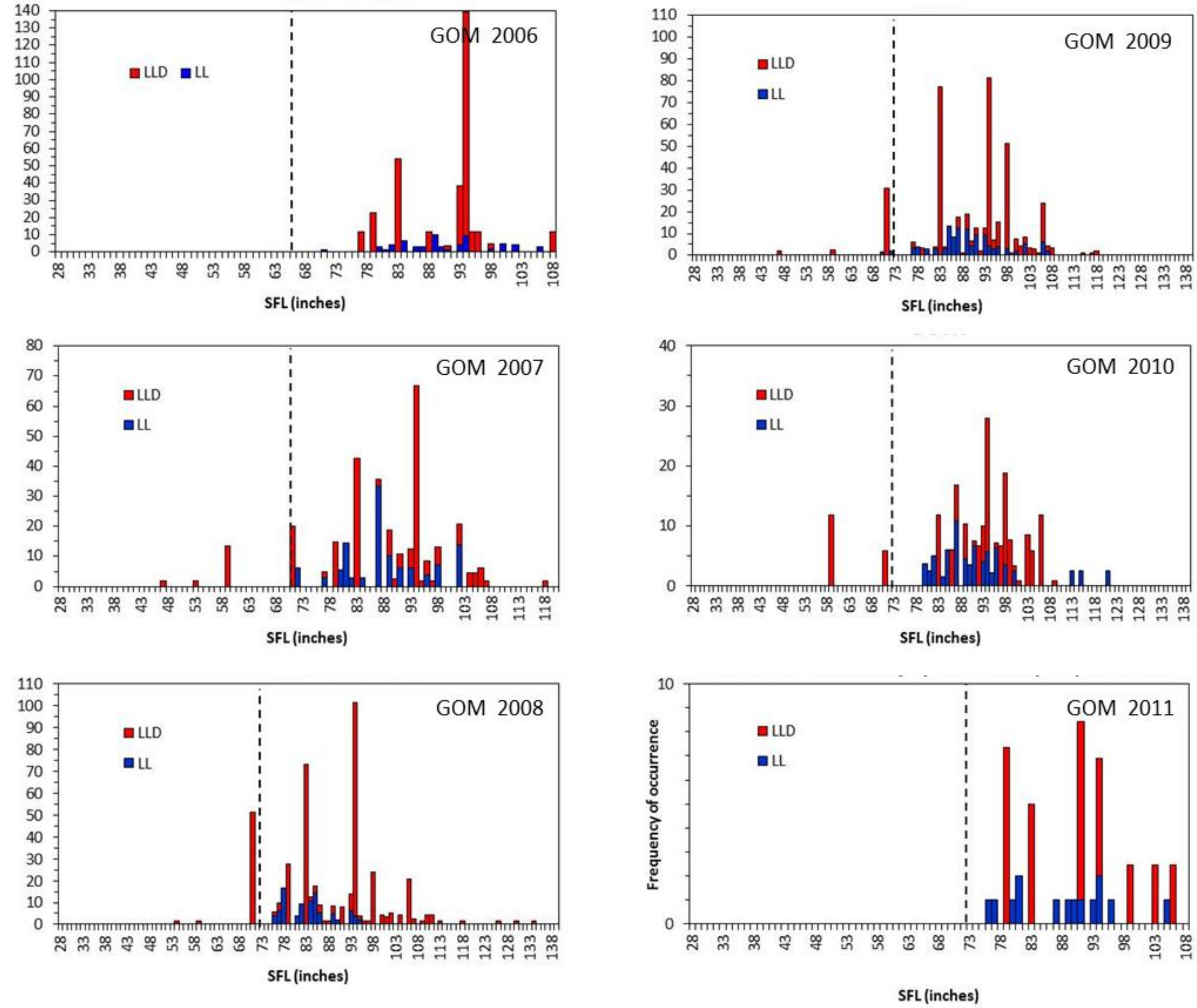


Figure 11.13 Live (LL) and Dead Discards (LLD) of Bluefin tuna by Pelagic Longline Gear from 2006 to 2011 in the Gulf of Mexico.

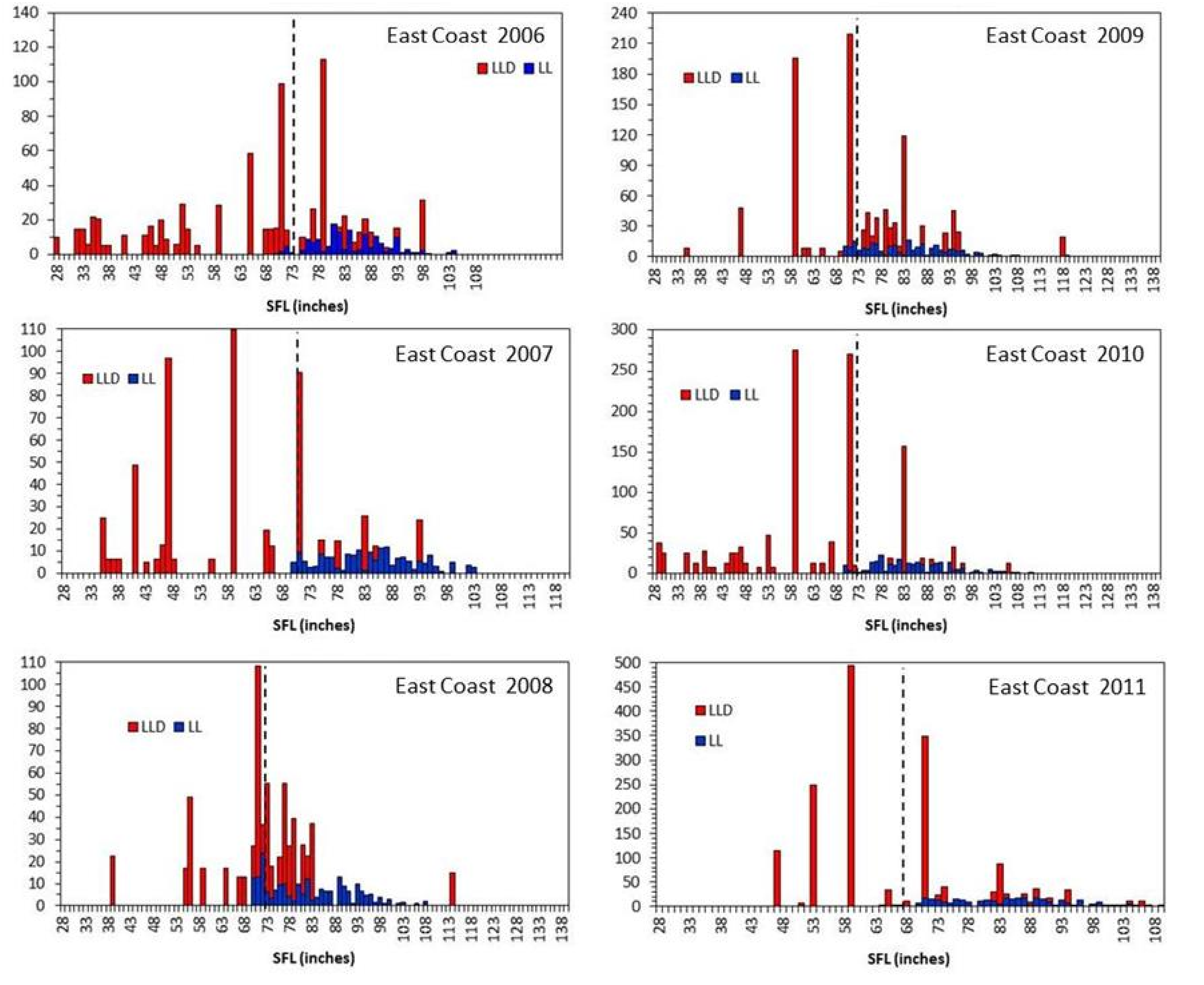


Figure 11.14 Live (LL) and Dead Discards (LLD) of Bluefin tuna by Pelagic Longline Gear from 2006 to 2011 off the East Coast of the U.S (all Atlantic reporting regions except for the NED).

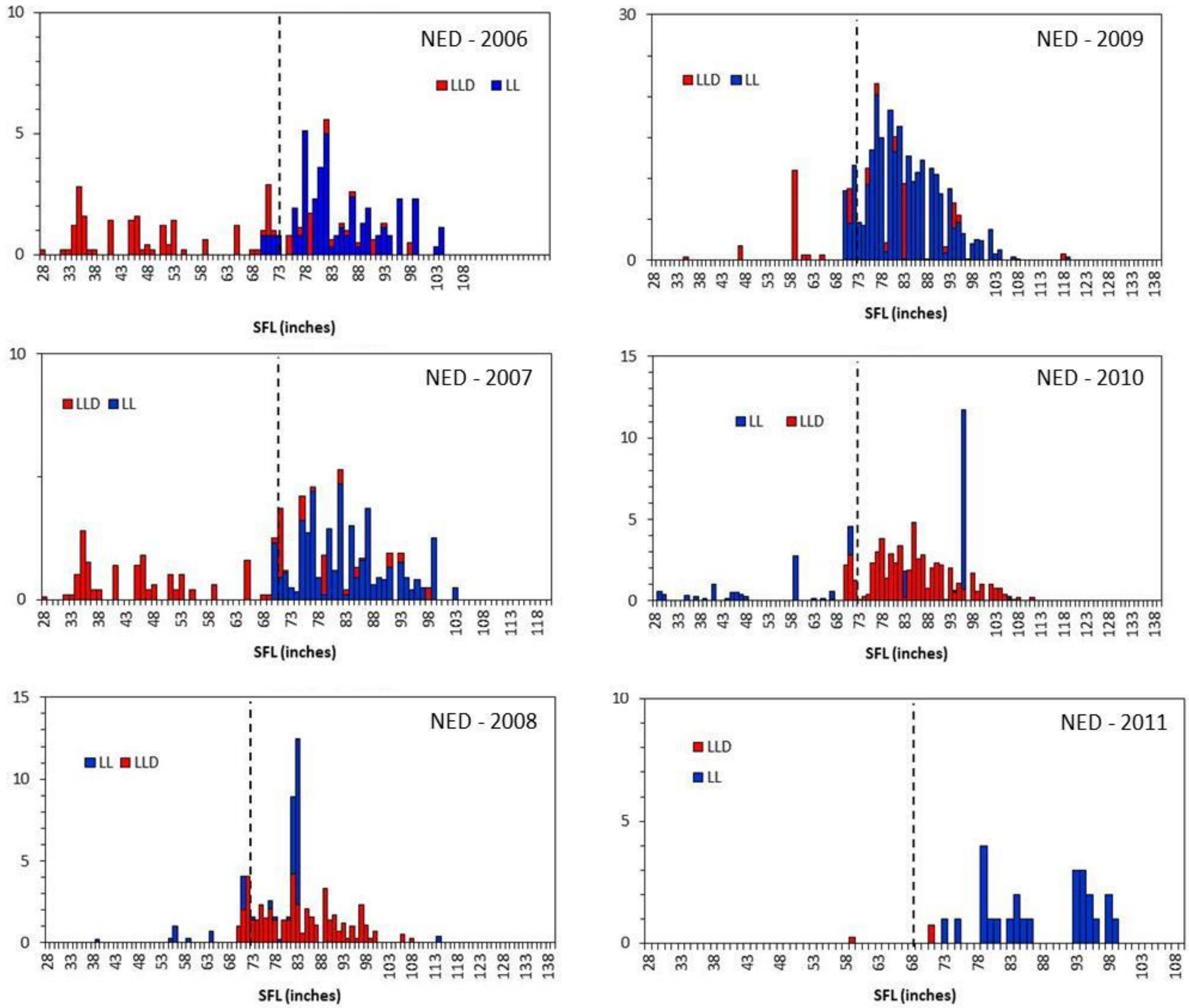


Figure 11.15 Live (LL) and Dead Discards (LLD) of Bluefin tuna by Pelagic Longline Gear from 2006 to 2011 in the NED reporting region.

11.5 Data Accuracy Performance Metric

In Chapter 2, NMFS considered a performance metric that would address the issue of data accuracy, and indicate how closely the vessel's HMS logbook information reflects observer information. NMFS decided not to include this metric among the criteria for access in order to simplify the overall criteria, and due to the variability in the number of observed trips in the fleet. NMFS is providing this information here for informational purposes.

Specifically, NMFS compared pelagic longline observer reports with HMS logbook reports that were submitted on the same trips to assess the accuracy of logbook reporting. Reports were matched up over a six year period (2006 – 2011) and analyzed to identify the overall amount of over and under reporting by species (swordfish, BAYS, bluefin, dolphin, wahoo, shortfin mako, marlins, sailfish, and turtles) and disposition (kept, discarded alive, or discarded dead) per vessel. For each species-disposition code (per vessel), NMFS estimated the percentage difference between logbook and observer reports. The percentage difference was assigned a score based on the following:

Table 11.1 Accuracy Performance Scores for Over and Under Reporting based on the Percent Difference between Logbook and Observer Reports.

Lower %	Upper %	Performance Score
-5000	-75.01	1
-75	-50.01	2
-50	-25.01	3
-25	-10.01	4
-10	-0.01	5
0	9.99	5
10	24.99	4
25	49.99	3
50	74.99	2
75	5000	1

Vessels reporting catch in HMS logbooks that was within 10 percent of the observer reported catch were assigned a high score (5); vessels that reported catch which was greater than ± 75 percent of the observer reported catch were assigned a low score (1). Overall, reporting accuracy performance scores decreased between 2006 and 2009, but improved in 2010 and 2011. The lowest average annual reporting accuracy performance score, 3.88, occurred in 2009.

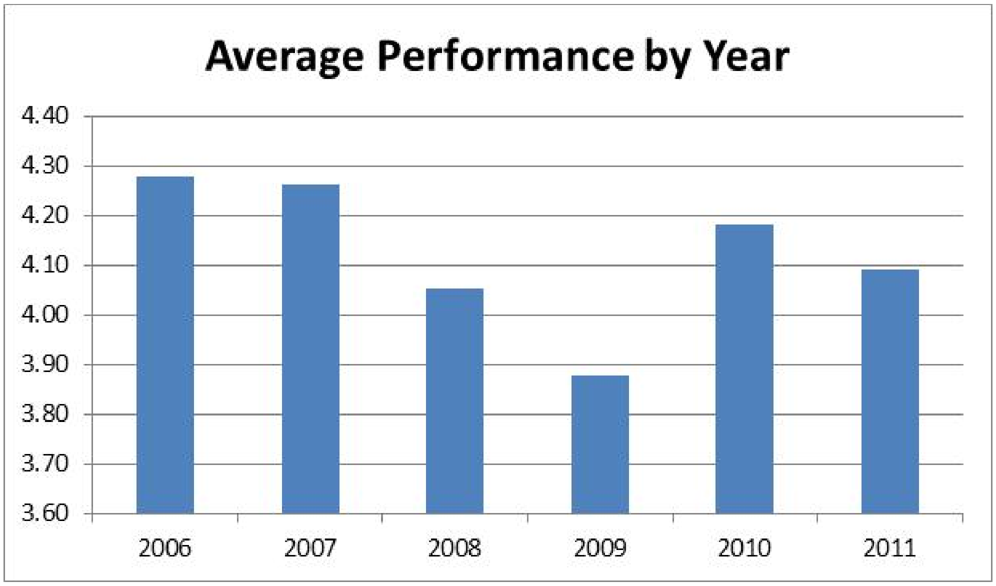


Figure 11.16 Reporting accuracy performance score averaged across all vessels (n = 129) by year.

NMFS estimated the reporting accuracy performance score by vessel for bluefin and for other target species. Once the scores were calculated, NMFS estimated threshold percentiles to identify the scores representing the most accurate (> 90th percentile) and least accurate (< 10th percentile) vessels with respect to bluefin tuna reporting (Table 11.3) and other target species reporting (Table 11.4).

Table 11.2 Bluefin Tuna Reporting Accuracy Score Percentiles

Percentiles	Value	# Vessels/bin	Cumulative # Vessels
10%	2.33	18	18
25%	3.33	17	35
50%	4.33	31	66
75%	5.00	63	129
90%	5.00	0	129

Table 11.3 Target Species Accuracy Reporting Score Percentiles

Percentile	Value	# Vessels	Cumulative # Vessels
10%	2.92	13	13
25%	3.29	20	33
50%	3.65	32	65
75%	4.03	32	97
90%	4.39	19	116

11.6 Calculation of Net Quota Available (from Section 4.1.6)

Each of the following tables (Table 11.5- Table 11.8) represents a different reallocation alternative, combined with the different quota control and annual reallocation alternatives. Combination "A" illustrates the scenario where this is a regional quota, and therefore no trading of IBQs, and there is no annual reallocation of quota from the Purse Seine category. Therefore, the Purse Seine quota remains at 18.6 % (171.8 mt based on a quota of 923.7 mt), and the Longline quota remains at 8.1 % (74.8 mt based on a quota of 923.7 mt). Combination "B" illustrates the scenario where this is a regional quota, and therefore no trading of IBQs, but there is annual reallocation of 50% of the quota from the Purse Seine category to the Longline category. Under the Annual Quota Reallocation Alternative, 50% of the Purse Seine quota is the maximum amount of quota that could be reallocated from the Purse Seine to another category. The quota may be reallocated to other quota categories, but "B" illustrates the maximum amount possible. Therefore, the Purse Seine quota would be reduced to 85.9 mt, and the Longline quota would increase by 85.9 mt. The net amount of quota available for use by the Longline category under "B" would be 160.7 mt. Combination "C" illustrates the scenario where this is a regional quota, and therefore no trading of IBQs, but there is annual reallocation of 4% of the quota from the Purse Seine category to the Longline category. The 4% is derived from the same amount of unused Purse Seine quota (50% of the quota), but in this case 4% represents the Longline category share of the unused Purse Seine quota when split among all the quota categories (except Purse Seine) (8.1% of 50% of the Purse Seine quota is equivalent to 4% of the total Purse Seine quota)). Therefore, the Purse Seine quota would be the same amount as under "B" (85.9 mt), and the Longline quota would increase by 6.9 mt as a result of the annual reallocation. The net amount of quota available for use by the Longline category under "C" would be 81.7 mt. The two scenarios "D" and "E" have identical results and demonstrate that additional quota from the Purse Seine category has the same potential net result in amount of quota available to the Longline category (and under either of the Annual Reallocation Alternatives, A 3).

Table 11.4 Calculation of Net Quota Available for Use by the Longline Category; No Action (Permanent Reallocation)

	A	B	C	D	E	F
Base Longline Allocation	74.8 mt	74.8 mt	74.8 mt	74.8 mt	74.8 mt	74.8 mt
	Regional Quota			**IBQ**		
	Annual Reallocation Options					
	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% (of Purse Seine quota) to Longline category	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% (of Purse Seine quota) to Longline category
Available from ITQ trading from Purse Seine Category Δ	N/A	N/A	N/A	171.8	85.9	85.9
Available from annual quota reallocation	0	85.9	6.9	0	85.9	6.9*
Net quota available for use by Longline category	**74.8**	**160.7**	**81.7**	**246.6**	**246.6**	**167.6**
Purse Seine Quota	171.8	85.9	85.9*	171.8	85.9	85.9*

Δ Assumes all Purse Seine quota is traded to the Longline category.

* The amount of quota available for trading from the Purse Seine category takes into consideration the revised Purse Seine and Longline quota allocations. The Longline category allocated 4% and other categories allocated according to their percentages

Table 11.5 Calculation of Net Quota Available for Use by the Longline Category; Reallocation Based on 68 mt

	A	**B**	**C**	**D**	**E**	**F**
Base Allocation	137 mt	137 mt	137 mt	137 mt	137 mt	137 mt
	Regional Quota			**IBQ**		
	Annual Reallocation Options					
	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category
Available from ITQ trading from Purse Seine Category Δ	N/A	N/A	N/A	159	79.5	79.5
Available from annual quota reallocation	0	79.5	6.4	0	79.5	6.4*
Net quota available for use by Longline category	**137**	**216.5**	**143.4**	**296**	**296**	**222.9**
Purse Seine Quota	159	79.5	79.5*	159	79.5	79.5*

Δ Assumes all Purse Seine quota is traded to the Longline category.

* The amount of quota available for trading from the Purse Seine category takes into consideration the revised Purse Seine and Longline quota allocations. The Longline category allocated 4% and other categories allocated according to their percentages

Table 11.6 Calculation of Net Quota Available for Use by the Longline Category; Reallocation based on Recent Catch and Current Allocation (50:50 weighting)

	A	B	C	D	E	F
Base Allocation	137 mt	137 mt	137 mt	137 mt	137 mt	137 mt
	Regional Quota			**IBQ**		
	Annual Reallocation Options					
	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category
Available from ITQ trading from Purse Seine Category Δ	N/A	N/A	N/A	87	43.5	43.5
Available from annual quota reallocation	0	43.5	3.5	0	43.5	3.5*
Net quota available for use by Longline category	137	180.5	140.5	224	224	184
Purse Seine Quota	87	43.5	43.5*	87	43.5	43.5*

Δ Assumes all Purse Seine quota is traded to the Longline category.

* The amount of quota available for trading from the Purse Seine category takes into consideration the revised Purse Seine and Longline quota allocations. The Longline category allocated 4% and other categories allocated according to their percentages

Table 11.7 Calculation of Net Quota Available for Use by the Longline Category; Reallocation based on Allocation from Purse Seine Category

	A	B	C	D	E	F
Base Allocation	143.5 mt	143.5 mt	143.5 mt	143.5 mt	143.5 mt	143.5 mt
	Regional Quota			**IBQ**		
	Annual Reallocation Options					
	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category	No annual reallocation	Annual reallocation of 50% (of Purse Seine quota) to Longline category	Annual reallocation of 4% of Purse Seine quota) to Longline category
Available from ITQ trading from Purse Seine Category Δ	N/A	N/A	N/A	103	51.5	51.5
Available from annual quota reallocation	0	51.5	25.8	0	51.5	25.8*
Net quota available for use by Longline category	**143.5**	**195**	**147.6**	**246.5**	**246.5**	**199.1**
Purse Seine Quota	103	51.5	51.5*	103	51.5	51.5*

Δ Assumes all Purse Seine quota is traded to the Longline category.

* The amount of quota available for trading from the Purse Seine category takes into consideration the revised Purse Seine and Longline quota allocations. The Longline category allocated 4% and other categories allocated according to their percentages

11.7 Application of Performance Metrics to Determine Vessel Access to the Cape Hatteras Gear Restricted Area and Specified Closures.

NMFS is considering two alternatives, Preferred Alternative B 1c (Cape Hatteras Pelagic Longline Gear Restricted Area with Access Based on Performance) and Alternative B 3b (Limited Conditional Access to Closed Areas), which would allow vessels to fish in a new gear restricted area and in certain, previously-established time area closures (Charleston Bump, part of the East Florida Coast, DeSoto Canyon, and Northeastern U.S.). Access to the Cape Hatteras

Gear Restricted Area and the current closed areas is based on performance (bluefin avoidance) and compliance (POP compliance and logbook reporting). NMFS also considered the use of reporting accuracy when determining a vessel's overall score (Appendix A.5), but this was not used by NMFS at this time. Current NMFS POP vessel selection procedures would be used to select vessels using the current strata (i.e., the procedures that select vessels to obtain observer coverage each calendar quarter, and deploy in each of the various geographic statistical areas). Continued access to the current pelagic longline closures is contingent upon the availability of an observer, the vessel's participation in the POP, and compliance with current regulations. Individual vessel data would be evaluated annually for the purpose of determining access to the Cape Hatteras Gear Restricted Area and current pelagic longline closures, and results would be communicated to the individual permit holders via a permit holder letter. This evaluation would be based on the most recent information available in order to provide future opportunities and accommodate changes in fishing behavior and compliance with observers and logbooks.

A brief overview of each performance criteria is outlined below, along with a description of how an overall score is generated. Under each section, NMFS has also provided an example with 4 hypothetical vessels to demonstrate how the scores are calculated.

Bluefin interactions performance metric

Vessels that are determined by NMFS to have relatively low rate of interactions with bluefin based on past performance, and that are compliant with reporting and monitoring requirements would be allowed to fish in the Cape Hatteras Gear Restricted Area and current pelagic longline closed areas (with an observer) using pelagic longline gear. NMFS defined a numeric system that would reflect a vessel's bluefin avoidance history, which would contribute toward the vessel's overall performance/compliance score. The initial bluefin avoidance history would be based upon a vessel's rate of interactions during 2006 through 2011, and future scores would be based upon an average score of interaction rates from the most recent three-year period. The score is linked directly to the ratio of the number of bluefin interactions (number of fish; landings, dead discards, and live discards) to the weight of designated species landings (in pounds) (Table 11.8). The ratio is the number of bluefin interactions per 10,000 lbs of designated species landed between the years of 2006 through 2011. Designated species include swordfish, bigeye tuna, albacore tuna, yellowfin tuna, skipjack tuna, dolphin, wahoo, shortfin mako, porbeagle, and thresher sharks.

NMFS developed a hypothetical scenario with 4 vessels to exemplify the application of the performance metrics. The calculation of bluefin avoidance scores for each vessel, based on different levels of catch and high and low interaction scenarios, are presented in Table 11.9.

Table 11.8 Bluefin Tuna Avoidance Scores assigned to vessels based on the ratio of bluefin interactions to designated species catch (in lb).

Ratio of Bluefin Interactions to Designated Species Landings (× 10,000)					
Data Range	0	>0 to <1	≥1 to <2	≥2 to <3	≥3
Score	5	4	3	2	1

Table 11.9 Scenarios for the generation of a bluefin avoidance score.

Vessel #	Scenario	Designated Species (lbs) Landings 2006-2011	Total # BFT Interactions	BFT: Designated Species Ratio = #BFT/ (Pelagic Indicator /10,000)	BFT Avoidance Score	Decision Yes; No; NMI (Need More Information, see Table 5)
Vessel 1	Very High	500,000	300	6.0	1	No
	Target: High BFT		30	0.6	4	NMI
Vessel 2	Mod. High	250,000	60	2.4	2	NMI
	Target: Low BFT		30	1.2	3	NMI
Vessel 3	Low	50,000	25	5.0	1	No
	Target: High BFT		5	1.0	3	NMI
Vessel 4	Very Low	10,000	5	5.0	1	No
	Target: Low BFT		0	0.0	5	NMI

"Designated species" refers to the total landings of species targeted by the pelagic longline fleet, and includes the BAYS tunas, dolphin, wahoo, swordfish, porbeagle shark, thresher shark, and shortfin mako. The bluefin to designated species ratio is scaled to represent the number of bluefin caught per 10,000 pounds of target species landed in order to have simple, meaningful ratios. Bluefin avoidance score is assigned by comparing the bluefin to designated species ratio to the scoring range presented in Table 11.9.

Vessel #1 landed approximately 500,000 pounds (~227 mt) between 2006 and 2011; this averages out to approximately 83,000 lbs (~38 mt) per year. If this vessel had interacted with 300 total bluefin between 2006 and 2011 (50 bluefin per year on average), then this vessel would have had a bluefin to designated species ratio equal to 6 using the following formula:

(300 bluefin / 500,000 lb landings) × 10,000 lb designated target species = 6 bluefin per 10,000 lb of designated target species.

Any ratio greater than a 3 would be assigned a bluefin avoidance score of 1. This vessel would automatically not be allowed access to the Cape Hatteras Gear Restricted Area or specified closures. However, if this vessel only interacted with 30 bluefin (5 per year, on average), then the vessel's bluefin avoidance score would be a 4; the vessel may be allowed into the Cape Hatteras Gear Restricted Area or specified closures. NMFS would need more information from

POP and Observer compliance scores to determine if the vessel was eligible for access.

Vessel #2 landed approximately 250,000 pounds (~113 mt) between 2006 and 2011; this averages out to approximately 41,666 (~19 mt) per year of designated species. If this vessel had interacted with 60 total bluefin between 2006 and 2011 (~10 per year on average), then this vessel would have had a bluefin to designated species ratio equal to 2.4, resulting in a bluefin avoidance score of 2. However, if this vessel had interacted with only 30 bluefin (approximately 5 per year), then the vessel would have a bluefin to designated species ratio of 1.2 and a bluefin avoidance score of 3. Under either scenario, NMFS would need more information from POP and Observer compliance scores to determine if the vessel was eligible for access.

Vessel #3 landed approximately 50,000 pounds (~23 mt) between 2006 and 2011; this averages out to approximately 8,333 (~4 mt) per year of designated species. If this vessel had interacted with 25 total bluefin between 2006 and 2011 (~4 per year on average), then this vessel would have had a bluefin to designated species ratio equal to 5, resulting in a bluefin avoidance score of 1. Therefore this vessel would automatically not be allowed into the restricted or closed areas. However, if this vessel had interacted with only 5 bluefin, then the vessel would have a bluefin to designated species ratio of 1 and a bluefin avoidance score of 3. NMFS would need more information from POP and Observer compliance scores to determine if the vessel was eligible for access.

Vessel #4 landed approximately 10,000 pounds (~4.5 mt) between 2006 and 2011; this averages out to approximately 1,667 (~0.75 mt) per year of designated species. If this vessel had interacted with 5 total bluefin between 2006 and 201, then this vessel would have had a bluefin to designated species ratio equal to 5, resulting in a bluefin avoidance score of 1. Therefore this vessel would automatically not be allowed into the restricted or closed areas. However, if this vessel had interacted with no bluefin, then the vessel would have a bluefin to designated species ratio of 0 and a bluefin avoidance score of 5. NMFS would need more information from POP and Observer compliance scores to determine if the vessel was eligible for access.

Pelagic Observer Program Compliance Performance Metric

Vessels that have a high enough Bluefin avoidance score would then be evaluated based on compliance with the Pelagic Observer Program (POP). NMFS consulted the POP while developing this metric in order to address common operational and compliance issues encountered by the POP program in meeting observer coverage goals. NMFS defined a two-part scoring system, with the primary element relating to compliance with POP requirements. Compliance is linked to the following factors; communications, and timing of those communications, with POP; presence/absence of a USCG safety decal; life raft capacity, bunk space, vessel selection, and observer deployment. The scoring system is also designed to weigh the communication elements/requirements more heavily than the safety aspects, as well as consider evidence of fishing activity. A vessel with valid reasons for not carrying an observer (e.g., no observer available, or not fishing with pelagic longline gear) would not be penalized under this scoring system. Vessels must be at least 80 percent compliant in order to receive a score that is high enough to allow access to the Cape Hatteras Gear Restricted Area or specified closures.

The second part of the scoring system is based on whether vessels actually undertook observed trips. Due to the importance of having enough observed trips occur to meet the observer coverage targets required by national law and international treaty, NMFS is also evaluating vessels on the percentage of trips that were observed. Observed trips provide critical data that are necessary for in-season management activities, establishing quota specifications, ensuring compliance with the Endangered Species Act and Marine Mammal Protection Act (and continued authorization of the fishery), and the collection of data to be used in stock assessments. The percentage of trips observed would determine whether a vessel received a score of a 3, 4, or 5. A vessel would automatically have access to the closed areas and gear restricted areas under any of these scores; the difference in score is based on the percent of observed trips undertaken by the vessel (e.g., a vessel with a score of 3 would have had between 33 and 60 percent of its trips observed; a vessel with a score of 5 would have had at least 90 percent of its trips observed). However, if a vessel is determined to have a POP compliance score of 2 or less, then NMFS would need to consider the logbook compliance score to determine if a vessel could be granted access to the Cape Hatteras Gear Restricted Area or specified closures.

Table 11.10 POP Scoring Reference Table.

The composite POP score is based on the vessel's compliance in communication with the POP program (first row) and whether the vessel refused to take an observer (and the reasons for the refusal) (Second Row). Vessels need at least a final score of 2 in order to have access to the Cape Hatteras Gear Restricted Area or specified closures.

Percent Compliant	**100%**	**80 - <100%**	**80 - <100%**	**<80%**	**N/A**
Percent Observed	90-100%	60-<100%	>33-60%	>0-33%	0
Initial Score	5	4	3	2	1
Final Scores	Equal to initial score unless evidence of fishing activity after either refusing to take an observer or non-communication with Pelagic Observer Program, which reduced the initial score by one. Vessels with a composite score less than 1 receive a final score of 1.				

Vessels were analyzed based on a number of variables (Table 11.12):

- Number of Times Selected (A)
- Number of Times Observed (B)
- Number of Times Compliant But Not Observed (C) – e.g., an observer may not have been available, or the vessel was not actively fishing
- Number of Times the Vessel was Non-Compliant (D) – e.g, the vessel refused to take an observer, the vessel did not have proper safety equipment, there was inadequate space for an observer
- Number of Times the Vessel was Non-Compliant, and Fished (E) – The vessel either refused an observer or did not communicate with the POP program, but there are indications that the vessel fished anyways for a selected trip. This automatically reduces the overall score by 1 point.
- Percent Compliance [(B+C)/A] – calculates a score based on the number of compliant trips or compliant contacts with the POP
- Percent Observed (B/A) - percentage of observed trips out of the number of times the vessel was selected

POP compliance information for the 4 hypothetical vessels is presented in Table 11.11. As indicated in Table 3, the final score is a composite score that reflects both the rate of compliance and the rate of observer coverage for a particular vessel. At this point, additional decisions can be made regarding access to restricted or closed areas based on POP compliance (Table 11.12). However, NMFS may need to refer to the vessel's logbook compliance score to determine a final decision regarding access for the 8 vessel scenarios (Table 11.14).

Table 11.11 POP compliance score calculation of hypothetical vessels. The final score is generated by comparing the percent compliance and percent observed to the score ranges in Table 11.10.

	Times Selected (A)	Times Observed (B)	Compliant But Not Observed (C)	Non-Compliant (D)	Non-Compliant With Fishing* (E)	Percent Compliant (B+C) / A	Percent Observed (B/A)	Final Score*
Vessel 1	10	5	5	0	0	100%	50%	3
Vessel 2	10	3	4	3	3	70%	30%	1*
Vessel 3	5	5	0	0	0	100%	100%	5
Vessel 4	1	0	0	1	0	0%	0%	1

* Vessel 2 was non-compliant with fishing. A percent compliance score of 70% and a percent observed score of 30% would normally result in a POP compliance score of 2, which may be high enough to allow access if the logbook compliance score is high enough. However, the non-compliance with fishing reduces the score by 1 point and automatically makes this vessel ineligible due to a POP compliance score of 1.

Table 11.12 Hypothetical decisions regarding vessel access based on Bluefin Avoidance Scores and POP Compliance Scores (see Table 2.6 and Table 2.7).

Vessel #	Scenario	Pelagic Indicator (lbs) Landings 2006-2011	BFT Avoidance Score	POP Score	Decision for Access - Yes; No; or NMI (Need More Information, see Table 7)
Vessel 1	Very High	500,000	1	3	No
	Target: High BFT		4		Yes
Vessel 2	Mod. High	250,000	2	1	NMI
	Target: Low BFT		3		NMI
Vessel 3	Low	50,000	1	5	No
	Target: High BFT		3		Yes
Vessel 4	Very Low	10,000	1	1	No
	Target: Low BFT		5		NMI

Vessel 1 was selected 10 times for observer coverage between 2006 and 2011. This vessel was observed 5 times, and was found to be compliant but not observed 5 times because it was not fishing at the time it was selected due to local weather events that damaged the vessel (the vessel communicated with the observer program upon selection each time). This vessel was compliant 100 percent of the time, and was observed 50 percent of the time. Its composite score was 3 because, although the vessel was compliant and had valid reasons for not taking observers half of the time, the vessel was unable to meet its full obligation to the POP program for this particular fishery. This vessel, under a low bluefin avoidance score scenario (score of 1), would not be permitted access regardless of the POP score. However, under the high bluefin avoidance score scenario (score of 4), the vessel would be permitted access.

Vessel 2 was also selected 10 times for observer coverage between 2006 and 2011. This vessel was observed 3 times, and was found to be compliant but not observed 4 times. However, this vessel also was non-compliant with the POP observer program 3 times; each time, there was an indication that an HMS fishing activity occurred (weigh out slips and logbooks were submitted). If vessels are non-compliant (D) and there is evidence of fishing activity for those trips (E), then the composite score is reduced by 1 point. Under the low bluefin avoidance scenario (score of 2) and the moderate bluefin avoidance scenario (score of 3), the vessel might be permitted access depending on whether logbooks were submitted on time.

Vessel 3 was selected 5 times for observer coverage between 2006 and 2011. This vessel was observed 5 times, and therefore was compliant and observed 100 percent of the time, respectively. This vessel, under the low bluefin avoidance scenario (score of 1) would not be allowed access to the area despite high observer compliance. Under the moderate bluefin avoidance scenario (score of 3), the vessel's access would be guaranteed by high POP compliance (score of 5).

Vessel 4 was selected 1 time. This vessel was not observed because the vessel captain informed the POP office that adequate safety gear was unavailable for the observer. Therefore the vessel was non-compliant with observer regulations and was not observed (0 percent), and the POP compliance score was 1. Under the low bluefin avoidance scenario (score of 1), the vessel would not be permitted access to the restricted or closed areas. However, under the high bluefin avoidance scenario (score of 5), NMFS would need more information to determine whether the vessel would be permitted access.

Logbook Compliance Performance Metric

Vessels that have a high bluefin avoidance score and a low POP compliance score would then be evaluated for compliance with logbook reporting requirements to determine whether they would have access to the Cape Hatteras Gear Restricted Area or to closed areas. NMFS consulted with the logbook program to determine how this metric can address compliance issues in logbook reporting processes. The most common issue is delayed reporting (sometimes by as much as a year) of logbooks, which can be highly problematic for data accuracy and quota-monitored fisheries such as HMS. Vessels with an Atlantic Tunas longline permit are required to submit logbooks, including a separate form for each longline set. Logbooks must be submitted within seven days of offloading the catch, and, if no fishing occurred during a month, a no-fishing form must be submitted with a postmark no later than 7 days after the end of the month.

NMFS therefore defined a numeric scoring system based on compliance with logbook reporting requirements (Table 11.13).

Table 11.13 Logbook compliance score for individual vessels based on reporting.

	Logbook Compliance				
Data Type	Days Between Offload and Mail Opening				
Data Range	< 7	> 7 to < 30	> 30 to < 60	> 60 to < 90	> 90
Score	5	4	3	2	1

The 4 hypothetical vessels varied in the amount of time that was taken to report logbooks to NMFS (Table 11.15). Vessel 1 and Vessel 3 were fairly compliant, submitting their logbooks within 30 days to the Agency and receiving scores of 4 and 5, respectively. Vessel 2 took 45 days to submit logbooks to NMFS. Delayed reporting by a month and a half could affect bluefin quota monitoring. Vessel 4 reported all of their logbooks on December 31 of the fishing year, 300 days after the most recent trip was made. A delay in reporting of this magnitude could, depending on the available quota and the number of late reports, result in a fishery closure or reductions in quota in future fishing years. This vessel therefore received a logbook compliance score of 1.

Table 11.14 Number of days between offload and mail opening and concurrent logbook compliance score for 4 hypothetical vessels.

	Days Between Offload and Mail Opening	Logbook Compliance Score
Vessel 1	20	4
Vessel 2	45	3
Vessel 3	7	5
Vessel 4	300	1

Combining Scoring Elements into a Single Performance Score

Using the bluefin interactions performance metric, the POP compliance metric, and the logbook compliance performance metric, an overarching performance formula was developed in order to derive a "yes" or "no" answer with respect to whether a vessel is granted access to the proposed Gear Restricted Area, as well as being a component of granting access to areas currently closed to longline gear. There are some rules that apply to whether the vessel should be granted access to a closed area (Table 11.15; Figure 11.1).

Table 11.15 Rules for annual evaluation of performance criteria.

Score	Access
If Bluefin Avoidance Score = 1	No
If Bluefin Avoidance Score is >1 but Observer Compliance is 1	No, unless Logbook Compliance Score is 4 or 5
If Bluefin Tuna Avoidance Score > 1 and Observer Compliance Score > 2	Yes

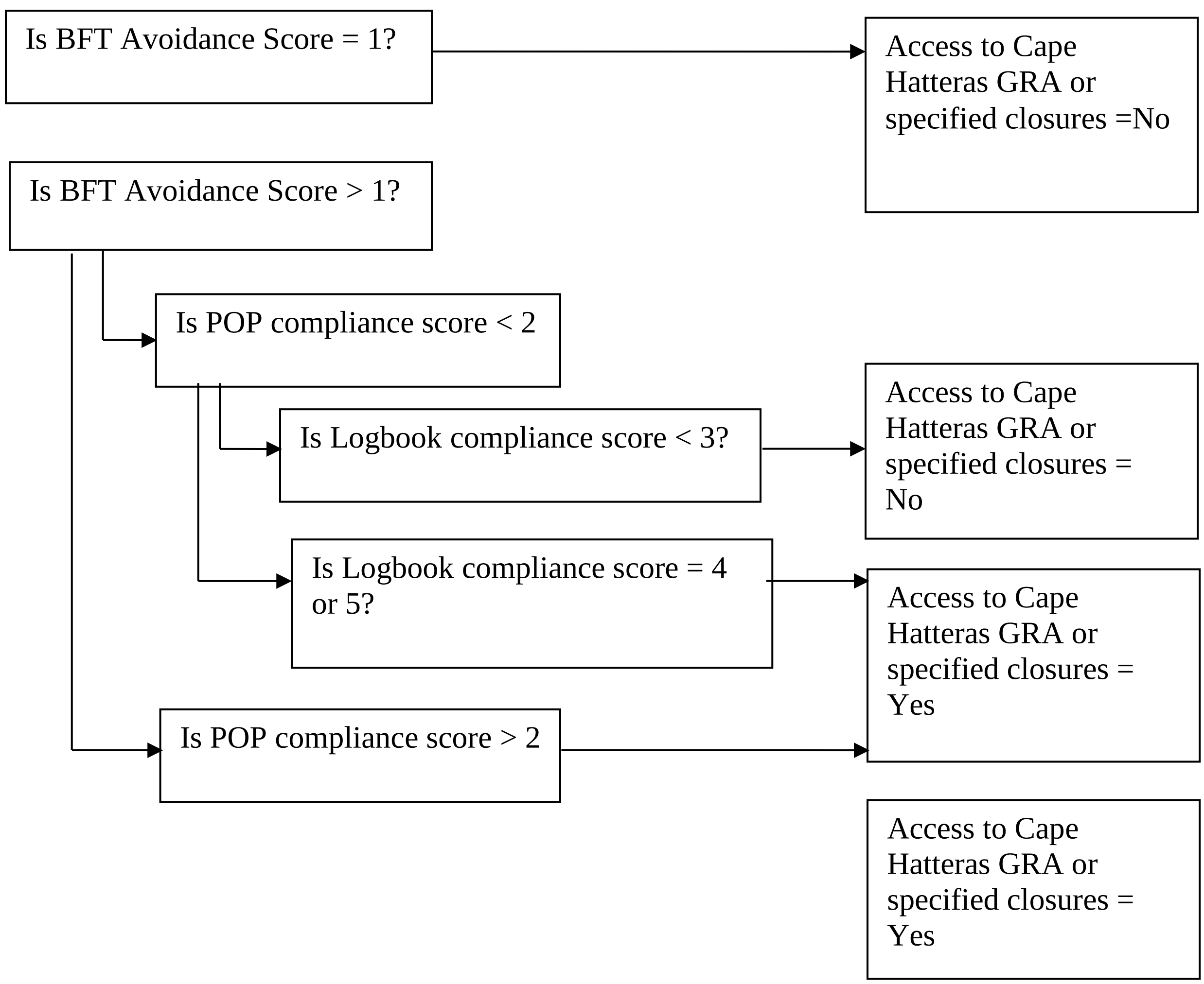


Figure 11.17 Flow chart depicting how bluefin avoidance scores, POP compliance scores, and logbook compliance scores are used to determine access to the Cape Hatteras Gear Restricted Area or specified closures.

The final composite scores for 4 hypothetical vessels are presented in Table 11.17.

Vessel 1 would, under the low bluefin avoidance scenario (score of 1) would not be granted access to restricted or closed areas despite having reasonable POP and logbook compliance. Under this scenario, the vessel has not demonstrated an ability to avoid bluefin tuna. Under the high bluefin avoidance scenario (score of 5), the vessel would be granted access due to a clear ability to avoid bluefin, and reasonable compliance with the POP and logbook reporting requirements.

Vessel 2 would not be granted access to Cape Hatteras Gear Restricted Area or current pelagic longline closed areas under either bluefin avoidance scenario (score of 2 and 3) because the POP and logbook compliance scores are not high enough to qualify for entrance.

Vessel 3 would not be granted access to gear restricted areas or closed areas under the low bluefin avoidance scenario (score of 1). Vessel 3 would be granted access to gear restricted areas or closed areas under the moderate bluefin avoidance scenario (score of 3), because the vessel had a high rate of compliance with the POP (score of 5) and the logbook reporting requirements (score of 5).

Vessel 4 would not be granted access under either the low or high bluefin avoidance scenario. Under the low bluefin avoidance scenario, the bluefin avoidance score is too low to permit access to the restricted area or the closed areas (score of 1). Under the high bluefin avoidance scenario, the vessel demonstrates a good job at avoiding bluefin tuna (score of 5); however the vessel was non-compliant in the only trip selected under the observer program, and the logbooks were batch reported at the end of the year.

Table 11.16 Composite scores and final decisions for 4 hypothetical pelagic longline vessels

Vessel #	Scenario	Pelagic Indicator (lb) Landings 2006-2011	BFT Avoidance Score	POP Score	Logbook Compliance Score	Decision for Access - Yes; No
Vessel 1	Very High Target: High BFT	500,000	1	3	4	No
			4			Yes
Vessel 2	Mod. High Target: Low BFT	250,000	2	1	3	No
			3			No
Vessel 3	Low Target: High BFT	50,000	1	5	5	No
			3			Yes
Vessel 4	Very Low Target: Low BFT	10,000	1	1	1	No
			5			No

11.8 Redistribution of Effort Analyses – Methods and Examples.

The redistribution of effort analyses methods are explained in Chapter 4 (starting on section 4.1.2.1), and provide an overview of how NMFS determined which vessels would likely redistribute effort from gear restricted areas. In this section, NMFS provides specific examples of scenarios for redistribution of effort, where effort was redistributed and how NMFS determined which vessels would be capable of fishing outside of gear restricted areas.

There are 2 gear restricted areas where NMFS determined that it was appropriate to redistribute effort to open waters outside of the restricted areas. Vessels that fish in the Small Gulf of Mexico Gear Restricted Area (Alternative B 1f) are assumed to be capable of redistributing effort into the open areas of the Gulf of Mexico. Affected vessels under both alternatives for the Cape Hatteras Gear Restricted Area, (Alternative B 1b) and (Alternative B 1c), were assumed to be able to redistribute their effort into the open areas of the Atlantic. Performance criteria are outlined in Chapter 4 and in Appendix 7, and are not discussed within this Appendix. NMFS analyzed all trips departing from the Gulf of Mexico between 2006 and 2011 and concluded that less than 1 percent of those trips left the Gulf. Based on the Gulf of Mexico port of departure analysis, NMFS assumed that no redistribution would occur under the large Gulf of Mexico Gear Restricted Area alternatives Alternative B 1e (March-May) and Alternative B 1g (year round).

Step 1: Identify the affected vessels. Where do they fish?

NMFS used GIS to identify all of the vessels that fished in each closed area. In the example provided within this Appendix, NMFS identified 3 hypothetical vessels that fished within the Cape Hatteras Gear Restricted Area. The three vessels used for this analysis fished in the Mid-Atlantic Bight (MAB) and the South-Atlantic Bight (SAB) pelagic longline statistical areas.

Step 2: Develop summary statistics for the data. How much effort did the vessels make in Gear Restricted Areas?

NMFS considered each vessel's efforts (numbers of hooks) inside of the gear restricted areas. NMFS tabulated effort by month (Rows A- L on the data summary tables under each alternative in Chapter 4) and derived a sum of gear restricted area effort per vessel.

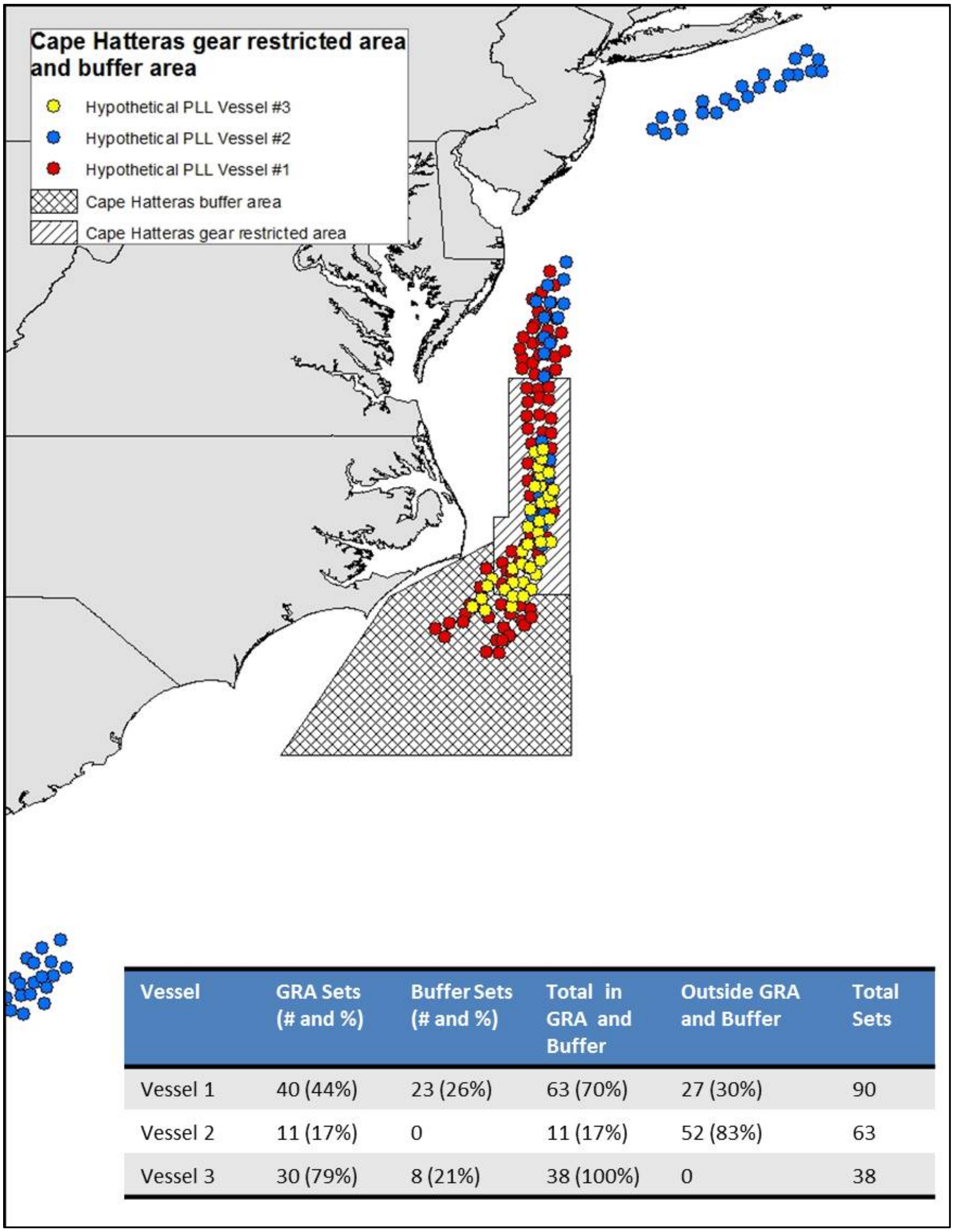
According to an analysis of logbook and observer data, the pelagic longline fishery tends to deploy, on average, between 500 and 750 hooks off the coast of North Carolina (Chapter 3, Figure 3.3). For the redistribution analysis NMFS used the sum of reported hooks per set for each vessel when calculating effort redistribution. Using the actual number of hooks set per vessel in the open areas derived vessel specific CPUE calculations, specific to the fishing characteristics of each vessel.

Individual vessel effort data is summarized in Figure 11.18.

Vessel #1 made 63 sets in the Cape Hatteras Gear Restricted Area and Buffer. This vessel deployed 67,545 hooks inside the Cape Hatteras Gear Restricted Area and Buffer.

Vessel #2 made 11 sets in the Cape Hatteras Gear Restricted Area and Buffer. This vessel deployed 3,350 hooks inside the Cape Hatteras Gear Restricted Area and Buffer.

Vessel #3 made 38 sets in the Cape Hatteras Gear Restricted Area and Buffer. This vessel deployed 9,150 hooks inside the Cape Hatteras Gear Restricted Area and.



Vessel	GRA Sets (# and %)	Buffer Sets (# and %)	Total in GRA and Buffer	Outside GRA and Buffer	Total Sets
Vessel 1	40 (44%)	23 (26%)	63 (70%)	27 (30%)	90
Vessel 2	11 (17%)	0	11 (17%)	52 (83%)	63
Vessel 3	30 (79%)	8 (21%)	38 (100%)	0	38

Figure 11.18 Distribution of sets made by three hypothetical vessels.

Step 3: Determine where each vessel will be redistributing effort, and calculate the proportion of effort in each area fished by the vessel. How much time and effort did each vessel fish in the open portions of each statistical area?

NMFS determined that the three vessels primarily fish in the Mid-Atlantic Bight. However, the Cape Hatteras Gear Restricted Area is situated near the boundary between the Mid-Atlantic Bight and the South-Atlantic Bight. Fishing activity often straddles the two regions, depending on the availability of fish and the environmental conditions. The distribution of fishing activity in the open portions of the pelagic longline statistical areas for the three vessels is identified in Table 11.17.

Vessel 1 reported 20 sets in the open portions of Mid-Atlantic Bight and 7 sets in the South-Atlantic Bight. Therefore, 74 percent of the vessel's effort occurs in the Mid-Atlantic Bight, and 26 percent of the vessel's effort occurs in the South-Atlantic Bight.

Vessel 2 reported 37 sets in the open portions of Mid-Atlantic Bight and 15 sets in the South-Atlantic Bight. Therefore, 71 percent of the vessel's effort occurs in the Mid-Atlantic Bight, and 29 percent of the vessel's effort occurs in the South-Atlantic Bight.

Vessel 3 reported 0 sets in the open portions of Mid-Atlantic Bight and 0 sets in the South-Atlantic Bight. Since no sets were made outside of the Cape Hatteras Gear Restricted Area or Buffer Area, effort from this vessel is assumed to not redistribute to open portions of the ocean.

The percentage of effort is equivalent to the proportion of effort in each area (e.g., 27% = 0.27).

Table 11.17 Distribution of sets for three hypothetical vessels in open regions of each statistical reporting area

	Number of Sets		Proportion of Effort	
Vessel ID	Mid Atlantic Bight	South Atlantic Bight	Mid Atlantic Bight	South Atlantic Bight
Vessel 1	20	7	0.74	0.26
Vessel 2	37	15	0.71	0.29
Vessel 3	0	0	0	0

Step 4: Determine the redistribution rate of the vessels. How much effort can vessels really redistribute outside of a preferred fishing area?

NMFS developed guidelines based on the probability that vessels would be able to redistribute effort outside of a gear restricted area. Redistribution rates were determined by the natural breaks formed when plotting the percentages of sets occurring inside and outside the gear restricted areas. Vessels that had less than or equal 40 percent of their sets inside a gear restricted area had 100 percent of their effort redistributed to outside the gear restricted area (vessel 2). This is equivalent to a **redistribution rate** of 1.0. Vessels that had between 40 and

75 percent of their sets inside a gear restricted area had 50 percent of their effort redistributed to outside the gear restricted area (vessel 1). This is equivalent to a **redistribution rate** of 0.5. Vessels that made greater than 75 percent of their sets inside a gear restricted area had none of their effort redistributed and were captured in the no redistributions calculations (vessel 3). This is equivalent to a **redistribution rate** of 0.

As an example, set locations for three hypothetical fishing vessels are shown in Figure 11.18 relative to the Cape Hatteras Gear Restricted Area and adjacent buffer zone.

Vessel #1 (red dots) made 90 sets along the continental shelf between Cape Lookout and Delaware Bay. Seventy percent of the sets were located in either the Cape Hatteras Gear Restricted Area or its adjacent buffer. 30 percent of the sets were located just north of the Cape Hatteras Gear Restricted Area along the continental shelf. In terms of redistribution calculations, NMFS would assume vessel 1 would have half of the effort occurring in the Gear Restricted Area and adjacent buffer redistributed outside to adjacent open regions previously fished in by vessel 1 (redistribution rate of 0.5).

Vessel #2 (blue dots) targeted specific fishing grounds between Long Island and South Carolina. This vessel made 17 percent of its sets within the Cape Hatteras Gear Restricted Area or in the adjacent buffer. The majority of its sets (83 percent) were made outside of the Cape Hatteras Gear Restricted Area and adjacent buffer; therefore, NMFS assumes that this vessel would be capable of redistributing all of its fishing effort inside the gear restricted are to open areas previously fished in by vessel 2 (redistribution rate of 1.0).

Vessel #3 (yellow dots) fished exclusively off the coast of North Carolina. Most of its sets were made in the Cape Hatteras Gear Restricted Area, but a few were made just south in the buffer zone. Since this vessel made 100 percent of its fishing effort in the gear restricted area or buffer zone, NMFS assumed that this vessel would not be capable of redistributing fishing effort into adjacent open areas (redistribution rate of 0).

Step 5: Estimate the number of displaced hooks that will be redistributed out to pelagic longline statistical areas previously fished by vessels.

For each vessel, the **total number of hooks** fished within a gear restricted area was multiplied by the **proportion of effort by area** and the **redistribution rate** to determine the total number of **displaced hooks**.

Vessel #1 set 67,545 hooks in the Cape Hatteras Gear Restricted Area and Buffer. The proportion of effort in the Mid-Atlantic Bight and South Atlantic Bight is 0.74 and 0.26, respectively. The redistribution rate of this vessel is 0.5. Therefore, this vessel is expected to redistribute the following number of hooks:

- Mid Atlantic Bight: 67,545 hooks (in Cape Hatteras Gear Restricted Area) x 0.74 (proportion of effort by area) x 0.5 (redistribution rate) = **24,992 hooks**
- South Atlantic Bight: 67,545 hooks (in Cape Hatteras Gear Restricted Area) x 0.26 (proportion of effort by area) x 0.5 (redistribution rate) = **8,781 hooks**

Vessel #2 set 3,350 hooks in the Cape Hatteras Gear Restricted Area and Buffer. The proportion of effort in the Mid-Atlantic Bight and South Atlantic Bight is 0.71 and 0.29, respectively. The redistribution rate of this vessel is 1.0. Therefore, this vessel is expected to redistribute the following number of hooks:

- Mid Atlantic Bight: 3,350 hooks (in Cape Hatteras Gear Restricted Area) x 0.71 (proportion of effort by area) x 1.0 (redistribution rate) = **2,379 hooks**
- South Atlantic Bight: 3,350 hooks (in Cape Hatteras Gear Restricted Area) x 0.29 (proportion of effort by area) x 1.0 (redistribution rate) = **971 hooks**

Vessel #3 set 9,150 hooks in the Cape Hatteras Gear Restricted Area and Buffer. The proportion of effort in the Mid-Atlantic Bight and South Atlantic Bight is 0 and 0, respectively. The redistribution rate of this vessel is 0. Therefore, this vessel is expected to redistribute the following number of hooks:

- Mid Atlantic Bight: 9,150 hooks (in Cape Hatteras Gear Restricted Area) x 0 (proportion of effort by area) x 0 (redistribution rate) = **0 hooks**
- South Atlantic Bight: 9,150 hooks (in Cape Hatteras Gear Restricted Area) x 0 (proportion of effort by area) x 0 (redistribution rate) = **0 hooks**

Step 6: Determine the Catch Per Unit Effort (CPUE) of vessels in each statistical reporting area outside of the Gear Restricted Area.

Table 11.18 Hypothetical CPUEs of target and bycatch species in open areas of the Mid-Atlantic Bight (MAB) and South Atlantic Bight (SAB)

Hypothetical CPUE	Swordfish Kept CPUE	Dolphin Kept CPUE	Yellowfin Tuna Kept CPUE	Bluefin Tuna Discarded CPUE
		Vessel 1		
MAB	0.0064	0.0000	0.0017	0.0000
SAB	0.0094	0.0005	0.0029	0.00005
		Vessel 2		
MAB	0.0000	0.0000	0.0000	0.0000
SAB	0.0038	0.0002	0.0083	0.0004
		Vessel 3		
MAB	0.0000	0.0000	0.0000	0.0000
SAB	0.0000	0.0000	0.00000	0.0000

Hypothetical catch per unit effort (CPUEs) are presented in Table 11.19. These CPUEs are derived from summing the total number of animals kept or discarded outside of the gear restricted area, and dividing that sum by the total number of hooks deployed outside of the gear restricted area.

Vessel 3 did not fish outside of the Gear Restricted Area; therefore, the CPUE is 0.

Step 7: Determine the number of animals that each vessel would catch from displacing effort from the Cape Hatteras Gear Restricted Area and Buffer to open portions of statistical areas.

Table 11.20 describes the redistribution of effort calculations for the three hypothetical vessels. The total number of hooks displaced into each area is multiplied by the CPUE (Table 11.19) to derive the estimated number of interactions for each species.

For example, Vessel #1 would, with the redistribution of 67,545 displaced hooks from the Cape Hatteras Gear Restricted Area, catch an additional 45 swordfish in the Mid-Atlantic Bight and 253 swordfish in the South Atlantic Bight.

Vessel #2 is displacing a much smaller number of hooks than Vessel #1. Therefore, the estimated number of fish kept and discarded would be much smaller.

Vessel #3 was unable to redistribute effort outside of the gear restricted area. Therefore, this vessel had no interactions per 100 hooks in the open areas outside of the gear restricted area.

Once the number of animals caught due to redistribution was calculated for each vessel in each pelagic longline statistical area, a total for all areas was derived. This total was summed with the no redistribution numbers derived from the total interactions of all species of all 3 hypothetical vessels in the gear restricted area. The total from the redistributed interactions and the no redistribution reduction in catch derived the net reduction in catch if redistribution occurs. Table 11.20 shows how the net reduction in catch was calculated for the 3 hypothetical vessels for the hooks and species used in Table 11.20.

Table 11.19 Redistribution of effort calculations

	Hooks Displaced		**Swordfish Kept**		**Dolphin Kept**		**Yellowfin Tuna Kept**		**Bluefin Tuna Discarded**	
# Hooks Displaced x Hypothetical CPUE = interactions per 100 hooks										
	MAB	SAB	MAB	SAB	MAB	SAB	MAB	SAB	MAB	SAB
Vessel #1	11,655	4,095	751.74	0.004	2727.27	0.049	684.84	0.01	35.31	0.000055
Vessel #2	3,095	1,595	0.014	0.005	0.073	0.056	0.014	0.033	0.00029	0.000058
Vessel #3	0	0	0	0	0	0	0	0	0	0
Total (rounded)	14,750	5,690	752	0	2,727	0	685	0	35	0
Total for all areas		20,440		752		2,727		685		35

Table 11.20 Redistribution of effort calculations based on three hypothetical vessels

2006-2011 Average Annual Interactions	Hooks	Swordfish Kept	Dolphin Kept	Yellowfin Tuna Kept	Bluefin Tuna Discarded
January	13,458	150	1,099	1,619	344
February	10,558	79	8,254	599	525
March	9,732	238	5,884	469	802
April	5,311	497	10,066	736	147
December	12,007	227	255	2,209	389
Dec-Apr Reduction of Catch/Hooks with no redistribution	-51,066	-1,191	-25,558	-5,632	-2,207
Dec-Apr change in catch during closure with redistribution	20,440	752	2,727	685	35
Net Change with redistribution	-30,626	-439	-22,831	-4,947	-2,172

11.9 National Appeals Office Rules of Procedure

In Chapter 2, Alternative C 2j describes a two-step application and appeals process for administrative review of the Secretary's decisions regarding initial allocation of quota shares for the IBQ program. At the appeal step, any appeal under this program will be processed by the NMFS National Appeals Office. Appeals will be governed by the regulations and policy of the National Appeals Office. The National Appeals Office regulations can be found at 15 CFR part 906 (www.ecfr.gov).

11.9.1 15 CFR Part 906 National Appeals Office Rules of Procedure

§906.1 Purpose and scope.

(a) This part sets forth the procedures governing administrative adjudications before the National Appeals Office (NAO).

(b) NAO will adjudicate appeals of initial administrative determinations in limited access privilege programs developed under section 303A of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and approved after the effective date of these regulations. Those appeals are informal proceedings.

(c) The procedures in this part may be incorporated by reference in regulations other than those promulgated pursuant to section 303A of the MSA.

(d) The Secretary of Commerce may request that NAO adjudicate appeals in any matter in controversy that requires findings of fact and conclusions of law, and other quasi-judicial matters that the Secretary deems appropriate, consistent with existing regulations. The Secretary will provide notice to potential appellants and to any affected party in these other matters through regulations or actual notice.

(e) The procedures in this part may not be used to seek review of the validity of statutes or regulations.

§906.2 Definitions.

As used in this part:

Agency record means all material and information, including electronic, the office that issued the initial administrative determination relied on or considered in reaching its initial administrative determination, or which otherwise is related to the initial administrative determination.

Appeal means an appellant's petition to appeal an initial administrative determination and all administrative processes of the National Appeals Office related thereto.

Appellant means a person who is the named recipient of an initial administrative determination and appeals it to the National Appeals Office.

Appellate officer means an individual designated by the Chief of the National Appeals Office to adjudicate the appeal. The term may include the Chief of the National Appeals Office.

Day means calendar day unless otherwise specified by the Chief of the National Appeals Office. When computing any time period specified under these rules, count every day, including intermediate Saturdays, Sundays, and legal holidays. If the date that ordinarily would be the last day for filing with NAO falls on a Saturday, Sunday, or Federal holiday, or a day NAO is closed, the filing period will include the first NAO workday after that date.

Department or *DOC* means the Department of Commerce.

Initial Administrative Determination or *IAD* means a determination made by an official of the National Marine Fisheries Service that directly and adversely affects a person's ability to hold, acquire, use, or be issued a limited access privilege. The term also includes determinations issued pursuant to other federal law, for which review has been assigned to the National Appeals Office by the Secretary.

NAO means the National Appeals Office, an adjudicatory body within the Office of Management and Budget, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce. The term generally means all NAO personnel, including appellate officers.

NAO case record means the agency record and all additional documents and other materials related to an appeal and maintained by NAO in a case file.

NMFS means the National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce.

National Oceanic and Atmospheric Administration or *NOAA* means the National Oceanic and Atmospheric Administration, Department of Commerce.

Party means a person who files a petition for appeal with NAO and an office that issued the IAD if that office participates in the NAO appeal.

Regional Administrator means the administrator of one of five regions of NMFS: Northeast, Southeast, West Coast, Alaska, or Pacific Islands. The term also includes an official with similar authority within the DOC, such as the Director of NMFS Office of Sustainable Fisheries.

Representative means an individual properly authorized by an appellant in writing to act for the appellant in conjunction with an appeal pending in NAO. The representative does not need to be a licensed attorney.

§906.3 Requesting an appeal and agency record.

(a) *Who may file.* Any person who is the named recipient of an initial administrative determination.

(b) *Petition to appeal.* (1) To request an appeal, a person shall submit a written petition of appeal to NAO.

(2) The petition shall include a copy of the initial administrative determination the person wishes to appeal.

(3) In the petition, the person shall state how the initial administrative determination directly and adversely affects him or her, why he or she believes the initial administrative determination is inconsistent with the law and regulations governing the initial administrative determination, and whether he or she requests a hearing or prefers that an appellate officer make a decision based on the NAO case record and without a hearing.

(i) Arguments not raised by the person in his or her petition to appeal will be deemed waived unless NAO permits amendments to the petition based on good cause for not raising the arguments in the original petition.

(ii) The petition may include additional documentation in support of the appeal.

(4) If a person requests a hearing, the written request must include a concise statement raising genuine and substantial issues of a material fact or law that cannot be resolved based on the documentary evidence.

(5) In the petition, a person shall state whether the person has a representative, and if so, the name, address, and telephone number for the representative.

(c) *Address of record.* In the petition, the person shall identify the address of record. Documents directed to the appellant will be mailed to the address of record, unless the appellant provides NAO and other parties with any changes to his or her address in writing.

(1) The address of record may include a representative's address.

(2) NAO bears no responsibility if the appellant or his or her representative does not receive documents because appellant or his or her representative changed his or her address and did not notify NAO.

(3) NAO bears no responsibility if the appellant or his or her representative fails to retrieve documents upon notification from the United States Postal Service or commercial carrier.

(4) NAO will presume that documents addressed to an address of record and properly mailed or given to a commercial carrier for delivery are received.

(d) *Place of filing.* The petition must be transmitted via facsimile. The facsimile number is: 301-713-2384. If the person filing the petition does not have access to a fax machine, he or she may file the petition by mail or commercial carrier addressed to Chief, National Appeals Office, 1315 East-West Hwy., Silver Spring, MD 20910.

(e) *Time limitations.* (1) A petition must be filed within 45 days after the date the initial administrative determination is issued unless a shorter or longer filing timeframe is explicitly specified in the regulations governing the initial administrative determination.

(2) A person may not request an extension of time to file a petition to appeal.

(f) *Agency record.* (1) Within 20 days of receipt of the copy of the petition to appeal, the office that issued the initial administrative determination that is the subject of the appeal shall transmit the agency record to NAO.

(2) The office that issued the initial administrative determination shall organize the documents of the agency record in chronological order. Pages attached to a primary submission shall remain with the primary submission.

(g) *Agency participation in appeal.* Within 20 days of receipt of the copy of the petition to appeal, the office that issued the initial administrative determination that is the subject of the appeal may provide written notice to NAO that it will be a party to the appeal. An office issuing the initial administrative determination is not required to be a party.

§906.4 General filing requirements.

(a) *Date of filing.* Filing refers to providing documents to NAO.

(1) Except for the agency record required under §906.3(f), all documents filed on behalf of an appellant or related to an appeal shall be submitted to NAO via facsimile. The facsimile number is: 301-713-2384. If the person filing does not have access to a fax machine, he or she may file by regular mail or commercial carrier addressed to Chief, National Appeals Office, 1315 East-West Hwy., Silver Spring, MD 20910.

(2) A document transmitted to NAO is considered filed upon receipt of the entire submission by 5 p.m. Eastern Time at NAO.

(b) *Copies.* At the time of filing a submission to NAO, the filing party shall serve a copy thereof on every other party, unless otherwise provided for in these rules.

(c) *Retention.* All submissions to NAO become part of a NAO case record.

(d) *Extension of time.* When a submission is required to be filed at NAO by a deadline, a party may request, in writing, an extension of time to file the submission, citing the specific reason(s) for the need for an extension. NAO may grant one extension of up to 30 days if an appellate officer determines the party has established good cause for an extension of time, taking into account whether the party timely requested the extension or the extent to which the party missed the deadline.

§906.5 Service.

(a) Service refers to providing documents to parties to an appeal.

(1) Service of documents may be made by first class mail (postage prepaid), facsimile, or commercial carrier, or by personal delivery to a party's address of record.

(2) Service of documents will be considered effective upon the date of postmark (or as otherwise shown for government-franked mail), facsimile transmission, delivery to a commercial carrier, or upon personal delivery.

(b) A party shall serve a copy of all documents to all other parties and shall file a copy of all documents with NAO the same business day.

(c) NAO may serve documents by electronic mail.

§906.6 Ex parte communications.

(a) *Ex parte communication* means any oral or written communication about the merits of a pending appeal between one party and the NAO with respect to which reasonable prior notice to all parties is not given. However, ex parte communication does not include inquiries regarding procedures, scheduling, and status.

(b) Ex parte communication is not permissible unless all parties have been given reasonable notice and an opportunity to participate in the communication.

(c) If NAO receives an ex parte communication, NAO shall document the communication and any responses thereto in the NAO case record. If the ex parte communication was in writing, NAO shall include a copy of the communication in the NAO case record. If the ex parte communication was oral, NAO shall prepare a memorandum stating the substance of the oral communication, and include the memorandum in the NAO case record. NAO will provide copies of any such materials included in the NAO case record under this paragraph to the parties.

(d) NAO may require a party to show cause why such party's claim or interest in the appeal should not be dismissed, denied, disregarded, or otherwise adversely affected because of an ex parte communication.

(e) NAO may suspend this section during an alternative dispute resolution process established by regulation or agency policy.

(f) Communication with NAO, including appellate officers, concerning procedures, scheduling, and status is permissible.

§906.7 Disqualification of appellate officer.

(a) An appellate officer shall disqualify himself or herself if the appellate officer has a perceived or actual conflict of interest, a perceived or actual prejudice or bias, for other ethical reasons, or based on principles found in the American Bar Association Model Code of Judicial Conduct for Administrative Law Judges.

(b) Any party may request an appellate officer, at any time before the filing of the appellate officer's decision, to withdraw on the ground of personal bias or disqualification, by filing a written motion with the appellate officer setting forth in detail the matters alleged to constitute grounds for disqualification.

(c) The appellate officer, orally or in writing, shall grant or deny the motion based on the American Bar Association Model Code of Judicial Conduct for Federal Administrative Law Judges and other applicable law or policy. If the motion is granted, the appellate officer will disqualify himself or herself and withdraw from the proceeding. If the motion is denied, the appellate officer will state the grounds for his or her ruling and proceed with his or her review.

§906.8 Scheduling and pre-hearing conferences.

(a) NAO may convene a scheduling and/or pre-hearing conference if, for example, an appellate officer in his or her discretion finds a conference will materially advance the proceeding.

(b) NAO shall notify the parties in writing 10 days prior to a conference unless the Chief of NAO orders a shorter period of time for providing notice of conducting a conference. A party may request one change in the scheduled pre-hearing date. In determining whether to grant the request, NAO will consider whether the requesting party has shown good cause for the change in date.

(c) In exercising his or her discretion whether to hold a scheduling and/or pre-hearing conference, an appellate officer may consider:

(1) Settlement, if authorized under applicable law;

(2) Clarifying the issues under review;

(3) Stipulations;

(4) Hearing(s) date, time, and location;

(5) Identifying witnesses for the hearing(s);

(6) Development of the NAO case record, and;

(7) Other matters that may aid in the disposition of the proceedings.

(d) *Recording.* NAO may record the conference.

(e) *Format.* At the discretion of the appellate officer, conferences may be conducted by telephone, in person, or by teleconference or similar electronic means.

(f) NAO may issue a written order showing the matters disposed of in the conference and may include in the order other matters related to the appeal.

§906.9 Exhibits.

(a) The parties shall mark all exhibits in consecutive order in whole Arabic numbers and with a designation identifying the party submitting the exhibit(s).

(b) Parties shall exchange all exhibits that will be offered at the hearing at least 10 days before the hearing.

(c) Parties shall provide all exhibit(s) to NAO at least 5 days before the hearing.

(d) NAO may modify the timeframe for exchanging or submitting exhibits if an appellate officer determines good cause exists.

(e) NAO may deny the admission into evidence of exhibits that are not marked and exchanged pursuant to this rule.

(f) Each exhibit offered in evidence or marked for identification shall be filed and retained in the NAO case record.

§906.10 Evidence.

(a) The Federal Rules of Evidence do not apply to NAO proceedings.

(b) An appellate officer will decide whether to admit evidence into the NAO case record.

(1) An appellate officer may exclude unduly repetitious, irrelevant, and immaterial evidence. An appellate officer may also exclude evidence to avoid undue prejudice, confusion of the issues, undue delay, waste of time, or needless presentation of cumulative evidence.

(2) An appellate officer may consider hearsay evidence.

(c) Copies of documents may be offered as evidence, provided they are of equal legibility and quality as the originals, and such copies shall have the same force and effect as if they were originals. If an appellate officer so directs, a party shall submit original documents to the appellate officer.

(d) An appellate officer may take official notice of Federal or State public records and of any matter of which courts may take judicial notice.

(e) An appellate officer may request, and the program office that issued the initial administrative determination in the case before the appellate officer will provide, the interpretation(s) of the law made by the program office and applied to the facts in the case.

§906.11 Hearing.

(a) *Procedures.* (1) An appellate officer in his or her discretion may order a hearing taking into account the information provided by an appellant pursuant to §906.3(b)(3) and whether an appellate officer considers that a hearing will materially advance his or her evaluation of the issues under appeal. In exercising his or her discretion, an appellate officer may consider whether oral testimony is required to resolve a material issue of fact, whether oral presentation is needed to probe a party's position on a material issue of law, and whether a hearing was held previously for the same appeal. If an appellate officer determines that a hearing is not necessary, then the appellate officer will base his or her decision on the NAO case record. In the absence of a hearing an appellate officer may, at his or her discretion, permit the parties to submit additional materials for consideration.

(2) If an appellate officer convenes a hearing, the hearing will be conducted in the manner determined by NAO most likely to obtain the facts relevant to the matter or matters at issue.

(3) NAO shall schedule the date, time and place for the hearing. NAO will notify the parties in writing of the hearing date, time and place at least 10 days prior to the hearing unless the Chief of NAO orders a shorter period for providing notice or conducting the hearing. A party can request one change in the scheduled hearing date. In determining whether to grant the request, NAO will consider whether the requesting party has shown good cause for the change in date.

(4) At the hearing, all testimony will be under oath or affirmation administered by an appellate officer. In the event a party or a witness refuses to be sworn or refuses to answer a question, an appellate officer may state for the record any inference drawn from such refusal.

(5) An appellate officer may question the parties and the witnesses.

(6) An appellate officer will allow time for parties to present argument, question witnesses and other parties, and introduce evidence consistent with §906.10.

(7) Parties may not compel discovery or the testimony of any witness.

(b) *Recording.* An appellate officer will record the hearing unless the appellant consents to proceed without a recording.

(c) *Format.* At the discretion of NAO, hearings may be conducted by telephone, in person, or by teleconference or similar electronic means.

§906.12 Closing the evidentiary portion of the NAO case record.

(a) At the conclusion of the NAO proceedings, an appellate officer will establish the date upon which the evidentiary portion of the NAO case record will close. Once an appellate officer closes the evidentiary portion of the NAO case record, with or without a hearing, no further submissions or argument will be accepted into the NAO case record.

(b) NAO in its discretion may reopen the evidentiary portion of the NAO case record or request additional information from the parties at any time prior to final agency action.

§906.13 Failure to appear.

If any party fails to appear at a pre-hearing conference or hearing after proper notice, an appellate officer may:

(a) Dismiss the case, or;

(b) Deem the failure of a party to appear after proper notice a waiver of any right to a hearing and consent to the making of a decision based on the NAO case record.

§906.14 Burden of proof.

On issues of fact, the appellant bears the burden of proving he or she should prevail by a preponderance of the evidence. Preponderance of the evidence is the relevant evidence in the NAO case record, considered as a whole, that shows that a contested fact is more likely to be true than not true. Appellant has the obligation to obtain and present evidence to support the claims in his or her petition.

§906.15 Decisions.

(a) After an appellate officer closes the evidentiary portion of the NAO case record, NAO will issue a written decision that is based on the NAO case record. In making a decision, NAO shall determine whether the appellant has shown by a preponderance of the evidence that the initial administrative determination is inconsistent with the law and regulations governing the initial administrative determination. In making a decision, NAO shall give deference to the reasonable interpretation(s) of applicable ambiguous laws and regulations made by the office issuing the initial administrative determination.

(b) NAO shall serve a copy of its decision upon the appellant and the Regional Administrator. NAO will not provide the case record to the Regional Administrator when issuing its decision.

§906.16 Reconsideration.

(a) Any party may file a motion for reconsideration of an NAO decision issued under §906.15. The request must be filed with NAO within 10 days after service of NAO's decision. A party shall not file more than one motion for reconsideration of an NAO decision.

(b) The motion must be in writing and contain a detailed statement of an error of fact or law material to the decision. The process of reconsideration is not a forum for reiterating the appellant's objections to the initial administrative determination.

(c) Arguments not raised by a party in his or her motion for reconsideration of a decision will be deemed waived.

(d) In response to a motion for reconsideration, NAO will either:

(1) Reject the motion because it does not meet the criteria of paragraph (a) or (b) of this section; or

(2) Issue a revised decision and serve a copy of its revised decision upon the appellant and the Regional Administrator.

(e) At any time prior to notifying the Regional Administrator pursuant to §906.17(a), the NAO may issue a revised decision to make corrections and serve a copy of its revised decision upon the appellant and the Regional Administrator.

§906.17 Review by the Regional Administrator.

(a) If NAO does not receive a timely motion for reconsideration pursuant to §906.16(a), receives a timely motion and rejects it pursuant to §906.16(d)(1), or issues a revised decision pursuant to §906.16(d)(2) or (e), NAO will notify the Regional Administrator and the appellant, and provide a copy of the case record for its decision or revised decision to the Regional Administrator.

(b) In reviewing NAO's findings of fact, the Regional Administrator may only consider the evidentiary record including arguments, claims, evidence of record and other documents of record that were before NAO when it rendered its decision or revised decision.

(c) The Regional Administrator may take the following action within 30 days of service of NAO's notification and receipt of the case record under paragraph (a) of this section:

(1) Issue a written decision adopting, remanding, reversing, or modifying NAO's decision or revised decision.

(2) Issue a stay for no more than 90 days to prevent NAO's decision or revised decision from taking effect.

(d) The Regional Administrator must provide a written decision explaining why an NAO decision or revised decision has been remanded, reversed, or modified. Consistent with §906.18(b), the Regional Administrator may, but does not need to, issue a written decision to adopt an NAO decision or revised decision.

(e) The Regional Administrator will serve a copy of any written decision or stay on NAO and the appellant.

§906.18 Final decision of the Department.

(a) The Regional Administrator's written decision to adopt, reverse, or modify an NAO decision or revised decision pursuant to §906.17(c) is the final decision of the Department for the purposes of judicial review.

(b) If the Regional Administrator does not take action pursuant to §906.17(c)(1), NAO's decision issued pursuant to §906.15(a) or revised decision issued pursuant to §906.16(d)(2) or (e) becomes the final decision of the Department for the purposes of judicial review 30 days after service of NAO's notification under §906.17(a), or upon expiration of any stay issued by the Regional Administrator pursuant to §906.17(c)(2).

(c) The office that issued the initial administrative determination shall implement the final decision of the Department within 30 days of service of the final decision issued pursuant to §906.18(a), or within 30 days of the decision becoming final pursuant to §906.18(b), to the extent practicable.

11.10 Southeast Fisheries Science Center Power Analysis

Effect of a reduction in fishing effort on the U.S. pelagic longline index of abundance for bluefin tuna in the Gulf of Mexico

National Marine Fisheries Service
Southeast Fisheries Science Center

Introduction

The U.S. National Marine Fisheries Service (NMFS) estimates an annual bluefin tuna (BFT) catch-per-unit-effort (CPUE) for the pelagic longline fleet operating in the Gulf of Mexico using data collected through the mandatory Pelagic Logbook Program (Calay and Walter 2013, Walter 2014). Such CPUE series have been used for stock assessment purposes by the Standing Committee on Research and Statistics (SCRS) of the International Commission for the Conservation of Atlantic Tunas (ICCAT) as an index of abundance of Western bluefin tuna spawners. Any estimated index of abundance has two desirable properties, one that it is accurate and truly represents the relative abundance of the stock and two that it is precise,(i.e. that the error is low). One of the most common ways to express the precision of an index of abundance is by estimating the coefficient of variation, or CV. The CV is calculated for each year as the ratio of the standard deviation (SD) divided by the mean (μ) of the estimated index:

$$CV = SD/\mu$$

Higher CVs indicate a lower precision of the estimated value. Although there are no definitive guidelines of what constitute a 'good' CV against a CV that is 'too high', scientists and statisticians agree that estimation and standardization procedures should, as one of their goals, obtain estimates with relatively low CV. One of the means to achieve this is by increasing the sample size. In other words, increasing the sample size (number of observations) usually results in a decrease in the CV (increases the precision of the estimate), while the opposite is also true.

The CV of the current index of abundance estimated by NMFS for BFT in the Gulf of Mexico has ranged from 0.29 to 0.50. The average CV for the period 2009-2013 was 0.37. Although this CV might not be optimum, the SCRS have been using this index of abundance in the Western BFT stock assessments.

While it is difficult to know the 'true' value of the estimate, decreasing the sample size can also affect the accuracy of the estimated index. If we assume that the true value for a given year is the estimate obtained from the full dataset, then we can evaluate the impact of reducing the number of trips on the estimated mean. Ideally, reductions in sample size should only reduce precision of the estimate but due to the clustered nature of sampling longline trips, reductions in effort can bias estimates as well, making them inaccurate.

One of the goals of Amendment 7 is to reduce bluefin tuna bycatch by the pelagic longline fleet while targeting other species. NMFS considered a range of alternatives, from maintaining existing pelagic longline closures to a year-round gear restricted area of the entire Gulf of Mexico EEZ. The alternative that closes the Gulf of Mexico to U.S. pelagic longline fishing to reduce the incidental capture of Western bluefin tuna during the Gulf of Mexico spawning season has a secondary consequence of interrupting the CPUE series of Western bluefin tuna spawners that is currently used in stock assessments. This could have a negative effect on the stock assessment as this is the only index of abundance for Western bluefin tuna spawners estimated for the U.S. pelagic longline fleet and it could further increase the uncertainty in assessment results. However, reducing the fishing effort in the Gulf of Mexico can reduce the precision of the index and may also affect the estimated values reducing its accuracy.

Through the present analysis, NMFS assessed the effect of different levels of reduction of fishing effort on the accuracy (determined by whether the estimates reflect the overall mean) and on the precision (as determined by the CV) of the estimated BFT index of abundance.

Methods

To test the effect of an effort reduction, we used data from the 2012 and 2013 fishing seasons. In this analysis, reductions in fishing effort were achieved by reducing the overall number of trips used to estimate the CPUE, rather than reducing the numbers of sets in each trip.

This analysis randomly chooses fishing trips from 2012 and 2013 according to ten levels of proportional effort reduction ranging from 0-90%. For example, if the total number of trips in the data set for a particular year were 200, then we would randomly choose 180 trips to analyze the effect of a 10% effort reduction. Then, a new random drawing of 160 trips would be made to analyze the effect of a 20% effort reduction and so on. All the randomly chosen trips were used in CPUE the calculation of the index of abundance. For each level of fishing effort analyzed, the random choosing of trips is done 100 separate times (100 replicates). Each dataset is used to estimate one value of the index of abundance and its CV and average CVs and an average index of abundance is then calculated from the 100 estimated values.

The CPUE standardization model is the same as in the most recent stock assessments (Cass-Calay & Walter, 2013 & Walter, 2014). The model uses a repeated measures approach where the variance in catch rates, by vessel, was modeled. Two separate models were developed; one for the proportion of sets that caught, kept or discarded at least one bluefin tuna, and one for the CPUE of the positive sets. The index was then obtained as the product of the predictions from each of the models, shown below:

PROPORTION POSITIVE SETS = YEAR + ZONE + MONTH + ZONE*MONTH + YEAR*MONTH + YEAR*ZONE

LOG(CPUE) = YEAR + MONTH + ZONE

+ the effect of the repeated measure VESSEL_ID with the covariance structure VESSEL_ID(YEAR)

Parameterization of each model was accomplished using a GLM procedure in SAS. For the lognormal models, the response variable, log(CPUE), was calculated as: log(CPUE) = log(Number of bluefin tuna caught / 1000 Hooks)]

Note that the ‘number of bluefin tuna caught’ used in the model above corresponds to the number of bluefin tuna landed, discarded dead, and released alive. We evaluated the estimated index of abundance and the average coefficient of variation (CV) of the index in 2012 and 2013 over the 100 replicate samples as a function of the level of subsampling.

Results and discussion

Using the most recent data (2013) a reduction in fishing effort of 50% will result in CVs around 45% (Table 2) with the greatest increase in CV occurring at effort reductions between 80% and 90% (Figure 1 and Table 2). The CVs for 2012 and 2013 are 0.29 and 0.38, respectively (Table 3). The effect of reducing sample size on the model-estimated CVs is not substantial for most levels of effort reductions up to 50%. One of the main reasons for this is that the model benefits from many years of data that allow for the estimation of the parameters. If an effort reduction became a permanent feature, then the model would become increasingly more poorly determined in the future, likely resulting in higher CVs in the future. Hence the model-estimated CVs likely represent an underestimation of the longer-term impacts of a reduction in effort.

More important than the effect of sample size on the CVs (precision) is its effect on the estimated value of the index of abundance (accuracy). Most critically, at a 50% reduction in effort, the index values are no longer centered around the true value (red line) and display a bias, indicating that any particular combination of trips at low sample coverage would be unlikely to return the true index (Figure 2). At larger effort reductions this bias becomes greater and the range of estimates widen; a 60% effort reduction resulting in a range between 0.175-0.63 and a 70% effort reduction producing a range between 0.228-0.81. In other words, if we assume that the 'true' value is the estimate using the entire dataset, the most likely value of the index is not equal to the true value and any particular combination of trips can give an index value very far from the true estimate.

The 2011 data used by Walter (2014) to develop the BFT index of abundance had only 46 fishing trips which corresponded to a 70% reduction with respect to the number of trips for 2013. Table 3 shows that the CV for the index estimated by Walter (2014) for 2011 was 50%. Therefore, this corroborates the results of the present analysis which predicts that a 70% reduction in effort with respect to the 2013 level would result in an increase in the CV to about 50% (Table 2).

The results of the present analysis should be taken with caution as this analysis cannot predict how the fleet will operate if confronted with a mandatory reduction in fishing effort. For example, if reductions in fishing effort change the behavior of the fleet in a way that some months and areas will have very little fishing compared to other areas, then that could result in further increases in the CVs and further reductions in the accuracy of the index. In addition, this analysis was made by reducing the number of trips and, therefore, it cannot exactly predict how much the CV will increase and/or the estimated index will be affected if reductions in fishing effort are achieved by reducing the number or fleet composition operating vessels. We emphasize that the most important result of the present analyses is not how much the CVs might increase at different levels of fishing effort, but how much the estimated index might be affected by reducing fishing effort. The results presented here clearly show that the accuracy of the estimated index decreases significantly even with moderated reductions in fishing effort.

Literature cited

Cass-Calay, S.L. and Walter, J. 2013. Standardized catch rates of large bluefin tuna (Thunnus thynnus) from the U.S. pelagic longline fishery in the Gulf of Mexico during 1987-2010. Collect. Vol. Sci. Pap. ICCAT, 69(2): 992-1004.

Walter, J. 2014. Standardized catch rates of large bluefin tuna (Thunnus thynnus) from the U.S. pelagic longline fishery in the Gulf of Mexico 1987-2013 with correction for weak hook effects. ICCAT. SCRS-2014-058.

Table 1 **Years, number of trips, and number of sets in the U.S. pelagic longline logbook dataset used to construct the bluefin tuna (BFT) index of abundance (Walter 2014) and estimated index with the corresponding CV.**

Year	Trips	Sets	Estimated index	CV
1987	1499	1499	3.39	0.30
1988	1796	1796	1.63	0.32
1989	1802	1802	2.53	0.31
1990	1455	1455	1.98	0.32
1991	1300	1300	3.31	0.30
1992	1750	1750	0.80	0.35
1993	1106	1162	0.45	0.37
1994	1062	1081	0.33	0.39
1995	1177	1214	0.31	0.40
1996	320	1472	0.18	0.40
1997	268	1407	0.33	0.37
1998	249	1287	0.36	0.37
1999	315	1825	0.61	0.33
2000	301	1715	0.89	0.33
2001	237	1418	0.51	0.38
2002	248	1557	0.48	0.39
2003	283	1881	0.86	0.32
2004	338	2149	0.78	0.33
2005	299	2127	0.59	0.34
2006	166	1070	0.41	0.39
2007	222	1447	0.55	0.38
2008	152	1072	1.26	0.34
2009	149	1152	1.05	0.36
2010	146	1169	0.89	0.34
2011	46	296	0.73	0.50
2012	165	1337	1.34	0.29
2013	149	1136	0.43	0.38

Table 2. **CV in 2012 and 2013 as a function of the percentage reduction in fishing effort. The minimum (Min. index) and maximum (Max. index) values of the 100 estimates of the index for each level of fishing effort are also provided.**

		Percent of Effort Reduction									
		90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
2012	CV	51%	42%	39%	37%	36%	35%	35%	34%	34%	33%
2012	Min. index	0.278	0.495	0.631	0.742	0.845	0.849	0.924	1.033	1.115	1.339
2012	Max. index	2.658	1.956	1.602	1.716	1.652	1.601	1.558	1.511	1.435	1.339

2013	CV	72%	55%	50%	47%	45%	43%	42%	41%	41%	40%
	Min. index	0.042	0.162	0.228	0.175	0.267	0.280	0.259	0.335	0.336	0.433
	Max. index	0.881	1.016	0.814	0.632	0.585	0.584	0.535	0.519	0.492	0.433

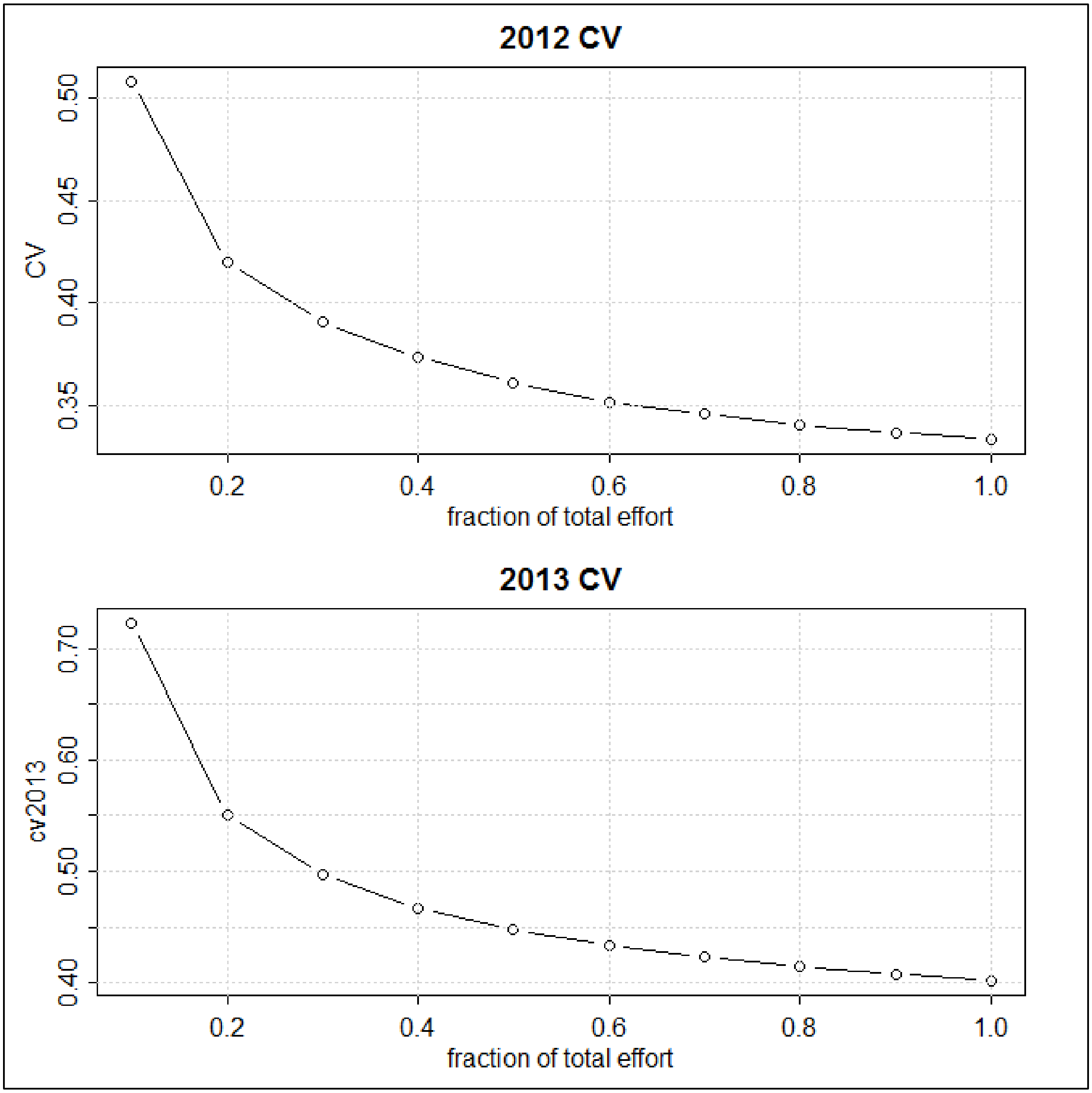


Figure 1. Average CV for index values in 2012 and 2013 as function of the percentage reduction in fishing effort

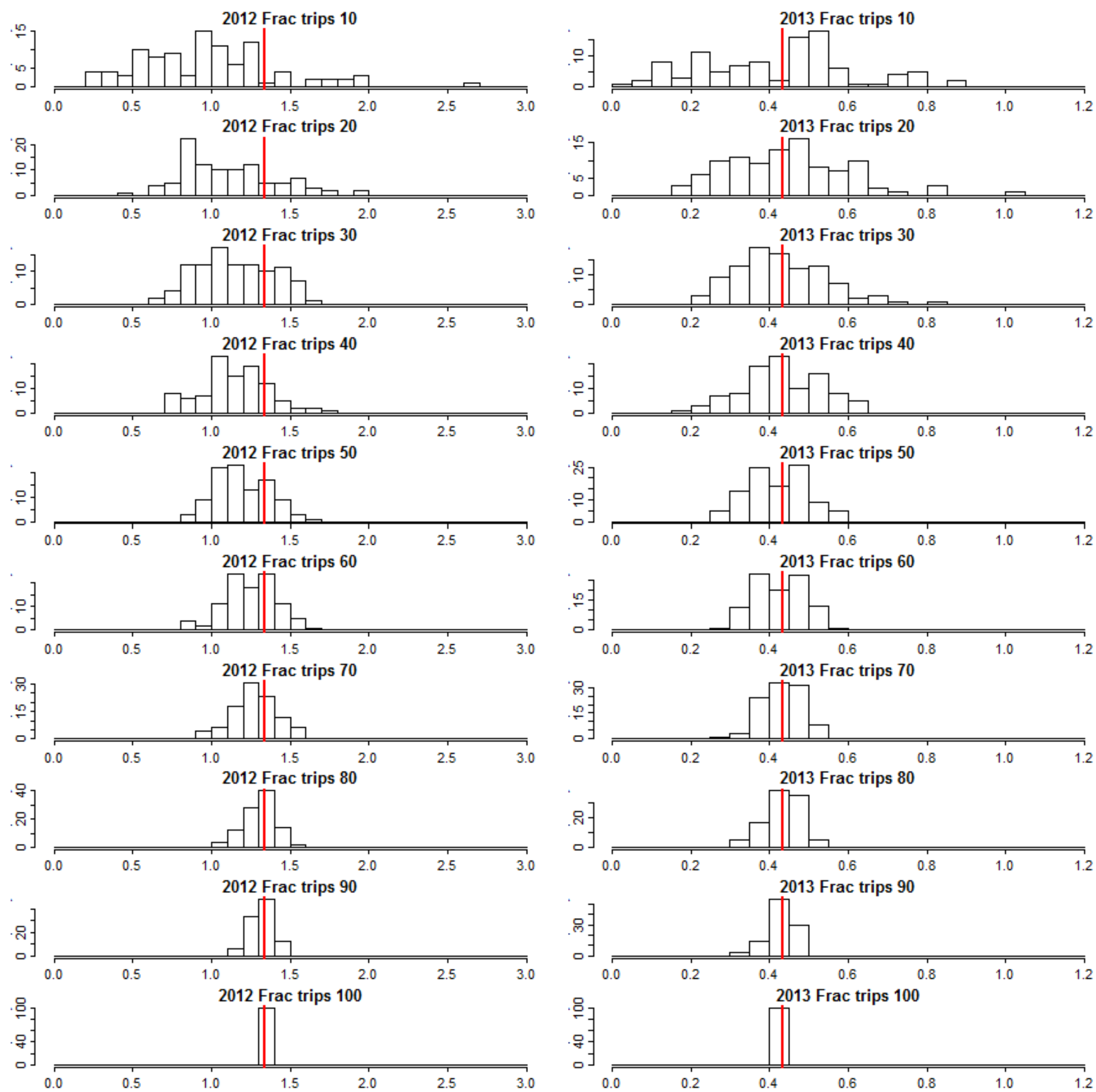


Figure 2. Histograms of estimated mean CPUE and estimated CPUE from each 100 replicates in 2012 and 2013 as a function of the fraction of trips (bottom histograms had 100% of trips, top histograms have 10% of the trips).

11.11 Responses to Comments

NMFS received over 188,000 written comments from fishermen, states, environmental groups, academia and scientists, and other interested parties. Comments included submissions of large numbers of identical or similar comments by organizations (or facilitated by organizations), as well as oral statements made at public hearings. In addition to reading the comments, NMFS utilized computer software to analyze electronically submitted comments that were identical or similar (using a similarity threshold of 75 percent), and determined that there were 2,394 distinct comment letters. All written comments can be found at http://www.regulations.gov/. The comments received resulted in changes, as described in Chapters 2, 4, 5, and 6. Significant comments are summarized below by major topic together with NMFS' responses. There are 29 major issues:

(A) general support for proposed measures (Comment 1),
(B) general concerns (Comments 2-7),
(C) codified reallocation (Comments 8-13),
(D) annual reallocation (Comments 14-17),
(E) modification to Reserve category (Comments 18-19),
(F) general comments about gear restricted areas (Comments 20-43),
(G) Cape Hatteras Gear Restricted Area (Comments 44-50),
(H) Gulf of Mexico Gear Restricted Area (Comments 51-63),
(I) pelagic longline vessels fishing under General category rules (Comment 64),
(J) pelagic longline limited conditional access to closed areas (Comment 65),
(K) pelagic and bottom longline transiting closed areas (Comment 66),
(L) gear based measures (Comments 67-68),
(M) general comments about individual bluefin quotas (Comments 69-76),
(N) IBQ Eligibility (Comments 77-86),
(O) IBQ leasing (Comments 87-89),
(P) measures associated with the IBQ program (Comments 90-91),
(Q) closure of the pelagic longline fishery (Comment 92),
(R) VMS requirements (Comment 93),
(S) electronic monitoring requirements (Comment 94),
(T) automated catch reporting (Comment 95),
(U) expand the scope of the Large Pelagics Survey (Comment 96),
(V) deployment of observers (Comment 97),
(W) General category subquota management (Comments 98-99),
(X) Harpoon category retention limit (Comment 100),
(Y) Angling category trophy sub-quota (Comments 101-102),
(Z) Purse Seine start date (Comments 103-104),
(AA) permit category changes (Comment 105),
(AB) North Atlantic albacore quota (Comment 106), and
(AC) other concerns (Comment 107).

A. General Support for Proposed Measures

Comment 1: NMFS received a wide range of comments expressing general support for the proposed conservation and management measures. Commenters stated that the proposed measures are a step in the correct direction for the future management of bluefin tuna, many noting support for Amendment 7 due to the inclusion of "strong" management measures, and others supporting the measures generally but urging NMFS to adopt stronger management measures than those proposed. Commenters' support was based upon their concerns about the current status of the bluefin stock and the desire to ensure long-term sustainability of bluefin for future generations of people. Some commenters urged NMFS to implement the preferred alternatives to "Save the Bluefin," based on their perception that bluefin tuna are at imminent risk of going extinct. Commenters expressed concerns about the impacts of pelagic longline gear on bluefin tuna, noting the waste associated with discarding bluefin, especially in the Gulf of Mexico (GOM), and supported changes to the management of the pelagic longline fishery in order to reduce dead discards of bluefin tuna, as well as other highly migratory species, marine mammals, sea turtles, and other species. Commenters noted that many coastal communities depend upon healthy stocks of fish to contribute to their economic well-being and to that of individuals supported by commercial and recreational fisheries.

Response: The need for management action and the specific objectives of Amendment 7 are described in detail in Chapter 1 of the FEIS. The preferred alternatives would implement a suite of management measures that will achieve the Amendment 7 objectives in a balanced manner. Amendment 7 enhances long-term sustainability of bluefin tuna through reduced dead discards; improved monitoring; increased flexibility in the quota system to both account for dead discards and optimize allocation of quota among the diverse bluefin fisheries; and increased accountability in the pelagic longline fishery.

Based upon the advice of ICCAT's Standing Committee on Research and Statistics, continued management with catch levels that comport with ICCAT recommendations should support further stock growth of the Western Atlantic stock of bluefin and is consistent with the ICCAT rebuilding plan given the current state of the science regarding the stock status. The MSA requires consideration both the biological and economic impacts of conservation and management measures, and NMFS has determined that the preferred alternatives would achieve a balance that will support the broader objectives of both stock rebuilding and continued viability of the commercial and recreational fisheries that depend upon bluefin tuna.

The GOM has an important function in the ecology of the Western Atlantic stock of bluefin. The responses to comments 51 through 63 address measures specific to the GOM. NMFS acknowledges that pelagic longline gear affects other species in addition to bluefin tuna and therefore, the preferred measures may indirectly affect other species. As described in the FEIS analyses, the cumulative impacts on other species are likely to be neutral or positive.

B. General concerns

Comment 2: Many commenters, particularly those with small businesses involved in the pelagic longline fishery expressed concern regarding the potential for negative economic impacts of Amendment 7 on jobs, families, and communities, and noted the importance of pelagic longline-caught fish in supplying high quality seafood to the nation. These commenters were concerned about the potential for the Amendment 7 measures to put people out of business, and "destroy the pelagic longline fishery." Commenters stated that vessels that are currently only marginally economically viable would be at particular risk of going out of business, but were also concerned about any secondary impacts on related businesses such seafood dealers, gear manufacturers, etc. They urged NMFS to use a balanced regulatory approach to address the Amendment 7 objectives, and stated that Amendment 7 measures would increase uncertainty in the pelagic longline fishery.

Response: The seafood supplied to the Nation by the pelagic longline fleet is valuable as both a source of food, and for the generation of income supporting local jobs, communities, and the broader economy. NMFS designed management measures to minimize economic impacts by relying on the combined effects of multiple management tools and incorporating flexibility into the system. The preferred measures would affect all permit/quota categories and reflect the balance of addressing the issues confronting the bluefin tuna stock and management of the fishery while maintaining the viability of the pelagic longline and other fisheries dependent upon bluefin tuna. For example, reductions in dead discards would be achieved through the use of multiple measures, including gear restricted areas, the IBQ system, and quota allocation measures. The preferred measures would modify the quota system to increase management flexibility in order to allocate quota among categories to maximize opportunities to catch available quota, account for dead discards, and respond to changing conditions in the fishery. As the pelagic longline fleet is adjusting to the suite of new measures, NMFS would have the flexibility to allocate a limited amount of additional quota to the pelagic longline vessels if necessary to prevent a fishery closure, and still, as a result of the gear restricted areas, and IBQ system, reduce the net amount of bluefin catch from the levels recently caught. The management measures work together to reduce dead discards and otherwise reduce bycatch to the extent practicable, increase accountability, enhance reporting and monitoring, and optimize quota allocation, in a predictable but flexible manner. The potential economic impacts of the measures affecting the pelagic longline fleet are analyzed in Chapters 5 and 7, and the economic rationale is summarized in the Final Regulatory Flexibility Analysis. Public comments that address specific measures are addressed below in the responses to more specific comments.

Comment 3: Commenters stated that when determining whether the pelagic longline fleet should be subject to additional restrictions, NMFS should consider the current and past regulatory environment and other factors as context. Commenters stated the pelagic longline fishery is already heavily regulated to minimize its environmental impacts, especially in the Gulf of Mexico (e.g., closures, weak hook requirement, observer deployment, bait requirements), and that progress is being made. Furthermore, increases in fuel costs strain fishers' ability to make a living, and events such as the 2010 oil spill in the GOM continue to be relevant. Commenters noted that bluefin tuna is managed at the international level and believe that the United States manages its citizens in a more effective and responsible way than other countries, and that NMFS should not further regulate bluefin tuna and increase the management disparity between the United States and other countries.

Response: The context in which vessels operate, including current regulations and other factors was a relevant factor NMFS considered in determining whether new regulations were needed. NMFS took into consideration many factors in selecting preferred measures which address the diverse objectives of Amendment 7 in a balanced manner. Chapter 6 contains a cumulative impacts analysis which is broad in scope and takes into consideration past, present, and reasonably foreseeable factors. In addition, Chapter 2 contains a description of measures and the rationale for the preferred measures. The Final Regulatory Flexibility Analysis includes a description of the steps taken to minimize the economic impacts on small entities, and the reasons for the preferred measures.

The United States manages its exclusive economic zone in accordance with applicable U.S. laws and in response to the unique characteristics of its fisheries, and therefore the U.S. regulations regarding bluefin tuna are different from the rules affecting citizens of other countries, which operate under different laws and circumstances. Where U.S. regulations are more restrictive than those abroad, NMFS believes that the corresponding ecological and socio-economic benefits that result from such restrictions are also likely to be greater than those abroad.

Comment 4: Commenters stated that the Amendment 7 DEIS contained too much information, was too complex, and was difficult to understand. Others were concerned that the

DEIS was developed too quickly, leaving out too many details such as those associated with implementation of measures.

Response: The proposed rule clearly described the proposed management measures, and NMFS facilitated communication with the public via the internet and its website. The amount and complexity of information in the DEIS reflects primarily the scope of the objectives of Amendment 7 and the number of alternatives analyzed. The complexity of the DEIS also is due to the diversity of the bluefin tuna fisheries, and the number of applicable laws and processes (both national and international). The DEIS contains an Executive Summary which provides a condensed version of the relevant information including tables of important information. NMFS conducted public hearings (including a language interpreter for one hearing) that were designed to inform the public of the proposed measures in a readily understandable format, as well as provide opportunities for the public to comment and ask questions.

Significant time and opportunity for public comment have gone into what has been a very thorough rulemaking process for this Amendment. The formal development of Amendment 7 began with the publication of the Notice of Intent (April 23, 2012; 78 FR 24161), which announced NMFS' intent to hold public scoping meetings to determine the scope and significance of issues to be analyzed in a DEIS and a potential amendment to the 2006 Consolidated HMS FMP. However, the informal development began several years previously. On June 1, 2009, NMFS published an Advanced Notice of Proposed Rulemaking (ANPR; 74 FR 26174) requesting specific comments on regulatory changes that would potentially increase opportunities for U.S. bluefin tuna and swordfish fisheries to fully harvest the U.S. quotas recommended by ICCAT while balancing continuing efforts to end BFT overfishing by 2010 and rebuild the stock by 2019 as set out in the 2006 Consolidated HMS FMP, consistent with the ICCAT rebuilding plan. The ANPR was in response to various public suggestions about bluefin tuna management during the previous two years, precipitated by declines in the total volume of bluefin tuna landings, which were well below the available U.S. quota, and a reduction in the overall allowable western Atlantic bluefin TAC recommended by ICCAT. In the ANPR, NMFS also requested public comment regarding the potential implementation of catch shares, limited access privilege programs (LAPPs), and individual bycatch caps (IBCs) in highly migratory species fisheries. In response, NMFS received a wide range of suggestions for changes to the management of the U.S. bluefin tuna fisheries.

While the DEIS and proposed regulations contained sufficient detail for the public to understand the measures and their potential impacts, including implementation, the FEIS provides s additional detail to clarify certain aspects of implementation. These are not new measures but clarification of measures within the scope of the impacts analyzed by the DEIS. The regulatory process of proposed and final rulemaking allows for such flexibility in order to respond to public comments and implement regulations that address the regulatory objectives.

Comment 5: Some commenters asked why the focus of Amendment 7 is the pelagic longline fishery, perceived the Amendment as an "unfair attack" on this fishery, and asked why no additional restrictions were proposed for the General, Harpoon, or Angling categories. Other commenters did not want one user group in the fishery to bear the regulatory burden, but believed that all should sacrifice for the good of the fishery as a whole.

Response: The focus of Amendment 7 is the list of stated objectives, including reducing and accounting for dead discards, optimizing quota allocations, and enhancing reporting and monitoring. Although many of the preferred measures would apply to vessels fishing with pelagic longline gear, all user groups would be subject to new regulations as appropriate and necessary, to contribute to the sustainability of the bluefin fisheries. Amendment 7 would fundamentally alter the pelagic longline bluefin tuna management structure in order to decrease dead discards and increase accountability , yet would also implement new restrictions for vessels fishing under the other permit categories. Although the components of the regulated bluefin fisheries are very different and therefore have been subject to different restrictions in the past , NMFS developed this FEIS based upon a common set of objectives.

Comment 6: NMFS should exempt pelagic longline fishery participants that have never interacted with bluefin tuna from the programs proposed in Amendment 7.

Response: Amendment 7 enhances long-term sustainability of bluefin tuna through reduced dead discards, improved monitoring, increased flexibility in the quota system to both account for dead discards and optimize allocation of quota among the diverse bluefin fisheries, and increase accountability in the pelagic longline fishery. NMFS acknowledges that some pelagic longline vessels may not encounter bluefin tuna as a function of where and how those individuals fish. However, the effective implementation of the preferred management alternatives requires consistent treatment and participation of all of the participating vessels. NMFS cannot exclude individual HMS pelagic longline fishermen from the provisions of Amendment 7 given the mobility of the pelagic longline fleet and uncertainty about bluefin interactions by individual vessels in the future. Through this Amendment, NMFS would redesign the operational aspects of the entire pelagic longline fleet. Exclusion of a small pool of individuals would create an inequitable management environment across the fleet. The preferred measures do, however, include specific provisions that are based on the data that indicate that some participants have few or no interactions with bluefin. For example, under the Individual Bluefin Quota program, eligible permitted vessels would receive a percentage share of the overall pelagic longline bluefin quota. The amount of quota share, either “high”, “medium”, or “low” would depend in part upon the vessel’s historical rate of bluefin interactions. Vessels with a relatively low rate of bluefin interactions would qualify for a higher share of the total bluefin quota than vessels with a higher rate of interactions, and have access to the Cape Hatteras Pelagic Longline Gear Restricted Area.

Comment 7: Several commenters stated that the solution to the challenge of how to account for all catch (landings and dead discards) in the context of a limited quota is to increase the amount of quota allocated to the United States through ICCAT (instead of the measures proposed under Amendment 7).

Response: Although a larger U.S. quota would facilitate easier quota accounting (i.e., ensure that the total bluefin landings and dead discards do not exceed the total bluefin quota), a larger quota, without concurrent changes to the 2006 Consolidated HMS FMP is a short-term solution and would not achieve the broader objectives of Amendment 7 or the 2006 Consolidated HMS FMP. For example, a larger quota would neither reduce the relative amount of dead discards of bluefin by the pelagic longline fishery, increase accountability for the pelagic longline fishery, optimize and provide additional flexibility to the quota system, nor enhance reporting and monitoring. Furthermore, the United States does not independently set the quota at ICCAT and any quota established must be based on the best available scientific information ICCAT members (including U.S. delegates) vote to recommend an appropriate bluefin quota, based on the recommendation of the ICCAT scientists (which include U.S. scientists).

C. Codified Reallocation

Comment 8: Many commenters did not support reallocation of additional quota to the Longline category as a means to achieve the Amendment 7 objectives. They stated that shifting quota would not reduce interactions with bluefin or dead discards and that providing additional quota would undercut the benefits of a "catch cap" (i.e., setting a strict maximum/cap on the amount of bluefin that could be caught, including dead discards and landings), would discourage the use of alternative gears, and would reward a "destructive fishery" by moving quota from quota categories that fish with more selective gear to the Longline category, which fishes with less selective gear with more bycatch.

Many commenters supported the codified reallocation for the reasons MMFS stated in the proposed rule, as well as other reasons including the statement that the Longline category may have a smaller 'carbon footprint' than the other quota categories; the other categories are frequently under-harvested; the Longline category provides the U.S consumer access to important food sources; the General category exports much of the bluefin tuna it catches; and all user groups should bear the regulatory burden.

Response: The preferred alternatives in Amendment 7 would implement systematic management and operational changes to reduce bluefin bycatch and maintain the pelagic longline directed fishery and the other bluefin tuna fisheries. The combined preferred measures, which include modified quota allocations, gear restricted areas, and individual bluefin quotas, will reduce bluefin catch and provide incentives to utilize alternative, more selective gear types. To achieve the Amendment 7 objectives of reducing dead discards while minimizing associated reductions in target catch, NMFS would allocate bluefin quota to the Longline category in amounts that exceed its current allocation of 8.1 percent, but would reduce levels of incidental bluefin catch by the Longline category. NMFS anticipates that the catch of bluefin by pelagic longline gear will be reduced by between 17 and 42 percent, depending upon the amount of quota allocated and leased, and fishery conditions. Some flexibility in the amount of quota allocated to the Longline and other quota categories is needed to accommodate the highly variable bluefin fisheries, as well as to mitigate some of the uncertainty and negative impacts associated with a brief transitional period in the pelagic longline fishery as it adjusts to the preferred Amendment measures.

As explained in the FEIS, there are several reasons why additional quota should be provided to the Longline category, as one element of a more comprehensive strategy to resolve the challenge of accounting for bluefin catch and reducing dead discards. The pelagic longline fishery interacts with bluefin tuna when it targets swordfish, yellowfin tuna, bigeye tuna, and other species, because the occurrence of those species overlap as a result of their similar biology and ecology. The Longline category is required to account for dead discards and landings, yet the historical basis for the relative size of the Longline category's quota allocation (8.1 percent) was only landings, and did not consider the amount of quota that could be necessary to account for dead discards in addition to those landings within the total allowable catch

Based on the best available information, an allocation of 8.1 percent has been inadequate to account for both landings and dead discards since ICCAT adopted a requirement to account for dead discards within the existing quota. In recent years, NMFS has accounted for pelagic longline bluefin dead discards by relying in part upon under harvest of quota by other quota categories. The merits of allocating additional quota to the Longline category must be considered in the context of all of the other preferred management measures. Because the preferred measures would provide quota accountability on an individual vessel and category-wide basis for the Longline category, the amount of quota allocated to the category is of critical importance. Specifically, when the quota allocated to an individual vessel has been caught, the use of pelagic longline gear by that vessel would be prohibited. If the category-wide quota has been caught NMFS may prohibit all vessels in the fleet from fishing with pelagic longline gear. Based on current information regarding the range of bluefin tuna interactions that can be expected, continuing to limit the Longline category to a quota of 8.1 percent of the available quota would result in a shut-down in the fishery relatively early in the year. Notwithstanding the other preferred measures, which would result in reductions in dead discards by vessels fishing with pelagic longline gear, a quota allocation of 8.1 percent quota would result in a severely diminished or eliminated fishery, contrary to the objective of optimizing fishing opportunities. .

Comment 9: Commenters suggested that the amount of bluefin quota allocated to the Longline category should be reduced, or set at zero.

Response: As discussed in the response to Comment 8, there are several reasons why the Longline category quota should be increased. Reduction of the Longline category quota would not be consistent with the Amendment 7 objectives and would result in severe economic impacts that can be avoided through the use of other management tools. NMFS designed the quota allocation alternatives to minimize the economic impacts on the non-longline categories. The amount of quota being deducted from each of the categories (for allocation to the Pelagic Longline category under the "Codified Reallocation Alternative") is proportional to the size of each category's quota and is relatively small (approximately 7 percent). Secondly, the amount of quota that would be deducted from the categories is fixed, therefore, if the U.S. bluefin quota increases as a result of stock growth, the amount deducted from the various categories would not increase, but the total quota allocated to each category would increase. Furthermore, the other quota allocation measures in Amendment 7 ("Annual Reallocation" and "Modifications to Reserve Category") provide mechanisms to reallocate quota back to these categories, if quota is available. The "Annual Reallocation Alternative" guarantees a minimum amount of quota to the participants in the Purse Seine fishery, and enables increases in quota allocations over time with increasing levels of bluefin catch. Providing an amount of bluefin quota to the pelagic longline fishery that both reduces dead discards, yet also accounts for a reasonable amount of incidental catch that can be anticipated (based on historical catch rates and the effect of Amendment 7 gear restricted areas) would enable the continued generation of revenue associated with the pelagic longline fishery's target catch.

Comment 10: One commenter stated that providing 68 mt of "additional quota" to the Longline category is not appropriate, and that the amount should be larger, because the discard estimation methodology that the amount was based on is no longer in use. Another commenter stated that the amount of additional quota should be smaller than 68 mt because the size of the U.S. quota has been reduced since the time the 68 mt set-aside was established.

Response: Although the codified reallocation measure is intended to facilitate accounting for dead discards by the Longline category, the specific amount (68 mt) is not intended to serve as an estimate of current dead discards, or establish a proportion of discards to landings. NMFS prefers 68 mt as the amount of quota to be contributed from all categories, resulting in augmenting the Longline category by 62.5 mt, because the amount of additional quota achieves an appropriate balance of costs and benefits in the fishery, and due to its historical relevance as a set-aside for dead discards, the inclusion of which was a critical factor in first establishing the formula under which all categories received their current allocations. No adjustment to those allocations was made when ICCAT first eliminated the dead discard allowance, and such an adjustment clearly is warranted given the resulting management challenges in accounting for both landings and dead discards within the available quota. Furthermore, providing a fixed amount of additional quota to the Longline category effectively limits the amount of reallocation into the future. In contrast, altering the base allocation percentages associated with each quota category would have had the potential effect of increasing the amount reallocation to the longline category if the total U.S. quota increases. Although increasing the amount of quota reallocated to the Pelagic Longline category in association with increases in total quota would facilitate accounting for incidental catch of bluefin and achieve one of the objectives of this Amendment, it would not effectively limit bycatch and reduce dead discards, which are also key objectives of Amendment 7.

Comment 11: Commentors suggested that NMFS should, instead of the "Codified Reallocation" of quota from all quota categories, reallocate quota from only the Purse Seine category; impose greater restrictions on the pelagic longline fishery to reduce their discards; or implement more restrictive gear restricted areas in the Gulf of Mexico and off Cape Hatteras in order to further reduce incidental bluefin tuna catch.

Response: NMFS prefers that all quota categories contribute to addressing the challenge of accounting for dead discards, which, as explained in the response to Comment 7 is a problem which has multiple root causes, and is integrally related to the operation and management of the fishery as a whole. The preferred measures in the FEIS would address the issue of the recurring under-harvest associated with the Purse Seine fishery through the preferred "Annual Reallocation" measure, which provides a predictable method to optimize the use of Purse Seine quota that might otherwise remain unharvested. The preferred alternatives would implement new conservation and management measures s applicable only to the Longline category, which will limit bycatch, reduce dead discards, increase incentives to avoid bluefin, and increase accountability. NMFS disagrees that greater restrictions on the Longline category--instead of reallocating a limited amount of quota-- would achieve the Amendment 7 objectives in a manner that minimizes economic impacts to the extent practicable. As explained in the response to Comment# 9 above, NMFS designed the quota allocation alternatives to minimize the economic impacts on the non-longline categories. The alternatives take into consideration the relative size of each category quota (in the case of the "Codified Reallocation Alternative", or the level of activity of vessels ("Annual Reallocation Alternative"), and are designed to consider changing levels of quota or landings, respectively, in ways that reduce economic impacts.

Comment 12: Many commenters strongly opposed reallocating quota to the Longline category because of concerns about the economic impacts on a particular geographic region (e.g., New England or mid-Atlantic), or quota category (e.g., the General category or the Angling category). Some commenters urged NMFS to respect the historical allocation percentages, and noted that reallocation would have the effect of pitting the different categories against each other. Some commenters suggested that NMFS consider other regulatory and economic circumstances facing vessels that may be impacted by a reduced quota.

For example, Congressional representatives from Massachusetts, and the New England Fishery Management Council (Council) stated that the proposed reallocation would disadvantage the New England Fishery, the traditional Massachusetts fleet, and shore-side infrastructure, and would allow fleets from other regions to use a disproportionate amount of quota. They were concerned about the commercial fleet that is experiencing economic damage due to the decline in key stocks in the groundfish fishery. The Council suggested that NMFS assess the port-specific impacts of reallocation. A commenter was concerned that recreational vessels in the mid-

Atlantic region would be disproportionately affected by quota reallocation because the quota may not last until the time the bluefin are off the mid-Atlantic coast.

Response: A reduction in quota may impact the revenue associated with a particular quota category or geographic region, or result in secondary economic impacts on a community. The FEIS analysis estimates that reallocation of quota to the Longline category could reduce revenue for individual vessels with a General category permit by $850 and result in total reduction in maximum revenue of $542,000 for all General category vessels. Although thirty percent of the General category permits are associated with the State of Massachusetts (1,150 permits as of October 2013), the total number of active vessels is substantially lower. Of the total number of General category permits issued throughout the Atlantic coast (3,783), the average number of General category vessels landing at least one bluefin between 2006 and 2012 was 474 vessels (total). Thus, the number of active vessels in Massachusetts can be presumed to be substantial fewer than 1,150.

When considering the social and economic impacts of actions, different communities and regions may be impacted to different degrees due to their unique regulatory and economic circumstances. The FEIS contains an analysis of the community impacts from the 2010 Deepwater Horizon/BP Oil Spill, and a 2013 analysis that presents social indicators of vulnerability and resistance for 25 communities selected for having a greater than average number of HMS permits associated with them. Those communities with relatively higher dependence upon commercial fishing included Dulac, LA; Grand Isle, LA; Venice, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; and Montauk, NY. The analyses are principally at a fishery-wide, or permit category level. The bluefin tuna fisheries (and other HMS fisheries) are widely distributed and highly variable due to the diversity of participants (location, gear types, commercial, recreational), and because bluefin tuna are highly migratory over thousands of miles, with an annual distribution that is highly variable. The specific ports and communities [within those 25 communities?] that provide the goods and services to support the fishery may vary as well, as vessels travel over large distances to pursue their target species. Due to this variability, it is difficult to predict potential revenue and secondary impacts of preferred management measures by port or by state. Vessels fishing in any geographic area in the Atlantic or Gulf of Mexico are likely to have only limited access to bluefin tuna, unless they travel long distances within the bluefin's migratory range.

It is important to note that the actual economic impacts of reallocation of quota would depend upon the total amount of quota allocated to (and harvested from) each of the quota categories, as a result of the combined effect of all of the measures that affect quota. For example, in addition to the amount of quota available as a result of the percentage allocations, and deductions for the 68 mt Annual Reallocation, there may be quota available for redistribution to various quota categories. Specifically, pursuant to the preferred "Annual Reallocation" measure, as described in Chapter 2 of this FEIS, if the Purse Seine category has not caught 70 percent of its quota during the previous year, quota may be moved to the Reserve category and subsequently reallocated across multiple user groups. Furthermore, in recent years, many categories have not fully harvested their amount of quota available to them. Thus, the actual impacts of reallocation may be minor or may be mitigated by future reallocation when available.

Reallocation of quota may result in frustration or negative attitudes among fishery participants of different quota categories, due to the changes to an historically accepted quota allocation system, or perceptions of unfairness. However, the modifications to the quota system are warranted for the reasons described in the response to comments 8 through 11 and fair due to the fact that all quota categories are affected in proportion to their quota percentage.

As explained in the response to Comment# 9 above, NMFS designed the quota allocation alternatives to minimize the economic impacts on the non-longline categories. The alternatives take into consideration the relative size of each category quota (in the case of the "Codified Reallocation Alternative", or the level of activity of vessels ("Annual Reallocation Alternative"), and are designed to consider changing levels of quota or landings, respectively, in ways that reduce economic impacts.

Comment 13: Many recreational anglers wanted to insulate the Angling category from any potential effect of quota reallocation to the Longline category, citing the economic impacts and high value of the recreational bluefin fishery to the economy, as well as the economic investments of the participants and the current regulatory burden such vessels face. Vessel owners with General category commercial permits expressed concern about the potential impacts to the General category. Commenters requested additional quantitative analyses comparing the different quota categories, including primary and secondary impacts.

Response: As stated above in the response to the previous comment, a reduction in quota may impact the revenue associated with a particular quota category or result in secondary economic impacts on a community. The objective of the preferred allocation measures is not to reallocate quota based on economic optimization, but to: account for bluefin dead discards within the Longline category; reduce uncertainty in annual quota allocation and accounting; optimize fishing opportunity by increasing flexibility in the current bluefin quota allocation system; and ensure that the various quota categories are regulated fairly in relative to one another.

The preferred reallocation measures would minimize adverse economic impacts to the extent practicable because the relative amount of quota reallocated is small and proportional to the size of the category quota, and the overall quota system would be more flexible and predictable and able to offset some or all of the negative economic impacts. This approach was developed consistent with our obligation under National Standard 6 (Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches) and National Standard 8 (Conservation and management measures shall, consistent with the conservation requirements of this chapter (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.)

Although the FEIS includes estimates of the value of bluefin tuna quota by quota category for comparative purposes, the preferred codified reallocation was not based on a specific economic analysis, but the achievement of the stated objectives.

An elaborate quantitative analysis that compares the economic value of the Angling, Longline, and General category fisheries was not conducted due to the different characteristics of the Angling, Longline and General category fisheries, the variable amount of data associated with these fisheries, and the large number of factors and assumptions that contribute to estimating the value of a fishery. For example, under the preferred IBQ system, bluefin tuna quota may be a limiting factor for a pelagic longline vessel, and therefore the lack of adequate bluefin quota, by even a small amount, could result in a vessel being prohibited from fishing with pelagic longline gear. In that circumstance, the value of the bluefin quota to the vessel owner may be very high, and related to the value of the target catch (e.g., swordfish or yellowfin tuna). On the other hand, the value of a bluefin tuna to a recreational angler or to the recreational fishery at- large may include the value of the recreational experience to the angler, as well as the associated goods and service supporting the fishing trip. The FEIS indicates that the Angling category would potentially face unquantified reductions in economic and social activity associated with the 7.36 percent reduction in available quota.

In contrast, for a vessel fishing commercially in the General category, a high quality bluefin tuna sold to Japan may be extremely valuable and other catch is far less important.

D. Annual Reallocation

Comment 14: Some commenters supported the annual reallocation measure as proposed, based on the underlying concept of tying the Purse Seine category annual allocation to the level of fishing activity by Purse Seine vessels (i.e., “use or lose”), and the strategy of making unused quota available for use by other quota categories.

Response: The preferred annual reallocation measure would represent an improvement to the quota system by implementing a predictable means to utilize quota that may otherwise remain unused. Because the reallocation of quota from the Purse Seine category to the Reserve would occur prior to the beginning of the calendar year and prior to the start of the Purse Seine fishery, there would be increased predictability in the quota system. In contrast, in the past, there was uncertainty that resulted from the fact that the amount of unharvested quota associated with the Purse Seine category which would be available for quota accounting was unknown until the end of the calendar year (and because of that timing, the ability for other users to catch any unharvested quota was markedly diminished).

Comment 15: Commenters suggested various modifications to the proposed annual reallocation measure. One commenter suggested that the concept be applied to the individual vessel instead of at the scale of the whole Purse Seine category in order to prevent the situation where an individual vessel may be disadvantaged. One commenter suggested that only 25 percent of the Purse Seine quota should be available for reallocation, instead of 75 percent. A commenter suggested that more than one year of catch should be the basis of the allocation, instead of a single year. One commenter suggested that the annual reallocation alternative be combined with an alternative that was not proposed, which would have allocated 40 percent of the Purse Seine category to the Longline category.

Response: Regarding the comment that the preferred measure should be implemented at the level of the individual vessel in order to prevent a situation where a vessel fishes its full allocation but, due to inactivity by other vessels, is only allocated a portion of its base allocation for the subsequent year, NMFS has modified the preferred alternative to be at a vessel level in the FEIS. Under the modified alternative, annual reallocation would be based on the previous year’s individual purse seine vessel catch rather than category-wide catch. The modified alternative would tie quota allocation more closely to individual vessel catch and create incentive for fishery participants to remain active in the fishery. Thus, the individual allocation could either increase or decrease. Without this modification to the alternative, individual allocations would be tied to the catch of the other vessels in the fishery, which could have unfair results if catch were to vary greatly among the vessels. For example, in a year where overall category landings were low, an individual purse seine vessel could be allocated a relatively low amount of

quota, even if it landed a substantial portion of its allocation the previous year. As such, the alternative would not tie the allocation to catch and thus would not encourage full use of the category quota, which would be inconsistent with the intent of this alternative.
Regarding the comment that only 25 percent of the Purse Seine allocation be available for reallocation (instead of 75 percent), if only a relatively small percentage of the quota were available for reallocation (and a relatively large percentage of the quota guaranteed for the Purse Seine allocation), there would be the possibility that the Purse Seine vessels are inactive, yet only a relative small percentage of the quota is transferred to the Reserve category. Such a scenario, which increases the likelihood that the Purse Seine quota may not be utilized by any category, would be inefficient and would not optimize the quota system. Making up to 75 percent of the quota available to the Reserve category would maximize the amount of quota that may be reallocated, and would provide a reasonable minimum amount for the Purse Seine vessels. The preferred measure would guarantee vessels 25 percent of their base allocation, but would make up to 75 percent available for reallocation to the Reserve category and would not preclude Purse Seine vessels from increasing their catches over time (multiple years).

Regarding the comment that more than one year of catch should be used as the basis of the Purse Seine allocation, a time scale of two years would reduce the relative importance of a single year's catch in determining subsequent quota allocations, but may also decrease the availability of quota. Our preferred method of annual reallocation based on one year would provide a better balance between providing a fair allocation to the Purse Seine category and providing a predictable system for utilizing quota among all categories that may otherwise be unused, and would be consistent with the annual time scale applicable to quota related management measures (i.e., the relevant time scale for most aspects of the quota system is annual).

Regarding the comment that the annual reallocation alternative should be combined with an annual allocation of 40 percent of the Purse Seine category to the Longline category, NMFS prefers the annual reallocation measure to better meet the objectives of reducing uncertainty in annual quota allocation and accounting; optimizing fishing opportunity by increasing flexibility in the current bluefin quota allocation system; and ensuring that the various quota categories are regulated fairly in relative to one another. Under the Preferred Alternative the amount of quota allocated to Purse Seine vessels and the Reserve category is responsive to the level of activity of Purse Seine vessels, but would not reduce the size of the Purse Seine category percentage (18.6 percent), which is the foundation upon which the allocations to Purse Seine vessels are based. In contrast, combining the Preferred Alternative with an annual allocation of 40 percent of the Purse Seine category to the Longline category would substantially reduce the size of the Purse Seine allocation regardless of the level of activity by Purse Seine vessels. Such a reduction is not consistent with the objective of the alternative. The objective of the alternative is not to reduce the size of the Purse Seine allocation, but to make Purse Seine quota available for use by other categories in a predictable manner (reflecting a Purse Seine vessel's previous year level of activity), as well as allow levels of fishing activity of Purse Seine vessels to increase within the scope of the category's allocation.

Comment 16: One commenter supported annual reallocation, but stated that the implementation of the annual reallocation measure should be linked to a Purse Seine fishery start date of June 1, as well as elimination of the regulation that limits the relative amount of 73 to 81 inch bluefin Purse Seine vessels may retain. One commenter did not support annual reallocation due to the different retention rules applicable to the Longline and Purse Seine categories. One commenter did not support annual reallocation because the perception that the Purse Seine category has not had the same fishing opportunities as the other categories because of low availability of giant (greater than 81 inch) bluefin, and the restriction on retention of large medium bluefin.

Response: NMFS agrees that the Annual Reallocation alternative should be evaluated in the context of other regulations applicable to the Purse Seine category and Longline category. Modification of the start date of the Purse Seine category to June 1 is one of the Preferred Alternatives. NMFS considered but did not further analyze an alternative that would modify or relieve the tolerance limit for large-medium fish in the purse seine category. Such an alternative was not further considered for reasons explained in Chapter 2 including because recent data was not available about fishery operations that reflected to what extent the purse seine fishery experienced regulatory dead discards as a result of the tolerance limit. In furtherance of gathering such data and in the interest of examining bycatch in the fishery, NMFS on August 1, 2014, issued an exempted fishing permit that will exempt a Purse Seine vessel from the annual incidental purse seine retention limit on the harvest of large medium Atlantic bluefin tuna, in order to investigate and gather such data. NMFS could consider changes to the Purse Seine category size restrictions in a future rulemaking after further data-gathering and consideration. The Annual Reallocation preferred alternative would not result in a negative ecological impact due to the different size restrictions applicable to the Purse Seine category and the Longline category as explained in Chapter 4 (the potential change in the amount of bluefin caught of different size categories is relatively small compared with the overall stock size).

Comment 17: Commenters did not support annual reallocation for a variety of reasons. One stated that the Purse Seine category should not have a fluctuating quota; one was concerned that the Longline category will take the entire Purse Seine quota in the future, and one was concerned that reallocation to the Longline category would increase discards.

Response: NMFS acknowledges that the Purse Seine quota may fluctuate under the preferred annual reallocation measure, and that a fluctuating quota may have some negative implications for the Purse Seine fishery, such as challenges to long-term business planning, and fluctuating levels of revenue from the Purse Seine fishery. However, in the context of the fishery as a whole, the benefits of the preferred annual reallocation measure would outweigh the negative aspects, and the amount of quota fluctuation may be reduced by a consistent level of Purse Seine catches. Under the preferred measure, Purse Seine vessels would have similar fishing opportunities as the other commercial categories that direct on bluefin tuna, but if substantial portions of the quota remain unused, there would be a fair system to relocate quota in a predictable and efficient way. The preferred annual reallocation system would also be responsive to any future increased levels of catch by Purse Seine vessels. If a Purse Seine vessel is allocated the minimum amount of quota (25 percent of its base quota), with increasing catch over time, the individual vessel could be allocated 100 percent of their base quota three years after being allocated the minimum amount. For example if during the first year of fishing the vessel caught 22 percent of its baseline quota, for year two it would be allocated 50 percent. During year two if the vessel caught 46 percent of its baseline quota, for year three it would be allocated 75 percent of its baseline quota. If during year three it caught 71 percent of its baseline quota for year four it would be allocated 100 percent of its baseline quota.

Under the preferred annual reallocation measure, quota would be reallocated to the Reserve category, and potentially then to any or all quota categories. Transfers of quota from the Reserve category may include transfers to the Longline category, but NMFS would consider and balance the needs of the fishery as a whole. Quota could also be allocated to the other fishery categories as appropriate, considering the relevant factors in that year. Specifically, NMFS would base such decisions on the criteria described under the "Modifications to the Reserve Category" measure, as well as other applicable regulations and laws (e.g., the MSA National Standards (NS) such as the NS 9 requirement to minimize bycatch and bycatch mortality to the extent practicable).

E. Alternatives for Reserve Category

Comment 18: Several commenters supported the modifications to the Reserve category regulations which would increase the amount of quota that may be put into the Reserve category and increase the potential uses of Reserve category quota. One commenter stated that NMFS should be authorized to allocate from the Reserve category at any time. A commenter suggested splitting the Reserve category into quota derived from underharvest, and quota transferred from the Purse Seine category to increase transparency. One commenter suggested redistribution of unused Reserve quota to active Longline category vessels during the last quarter of the year. A commenter stated that NMFS should make up to 50 percent of the Reserve quota available to the Longline category during the first three years of the IBQ program.

Response: The preferred alternative for the Reserve category would provide additional management flexibility in the quota system and enable consideration of various quota strategies such as those suggested by the commenters. Although NMFS has the authority to allocate bluefin quota from the Reserve category at any time, the preferred alternative would enable NMFS to add underharvest from the previous year and any reallocated quota from the Purse Seine category to the Reserve category base allocation of 2.5 percent. Secondly, the preferred measure would add new criteria to broaden and clarify the potential uses of the Reserve quota. It is not possible to evaluate the merits of the commenters' specific quota suggestions without any context. There are many potential uses of Reserve quota, including transfer to the Longline category in order to facilitate the transition to IBQs, or transfer to the General, Harpoon, Purse Seine, Angling, or Trap categories if warranted in order to increase fishing opportunity (while still preventing catch from exceeding the overall U.S. quota, and abiding by the other ICCAT restrictions). In order to facilitate transparency and full understanding of the quota system, NMFS will communicate clearly about how quota transfers are distributed among all quota categories, including descriptions of specific amount of quota derived from various sources.

Comment 19: A commenter did not support the addition of new criteria to the existing criteria regarding in-season transfer of quota among categories because the criteria are long-standing and provide adequate flexibility. Commenters did not want to allow the Reserve category to be "padded" to cover Longline category dead discards, and did not want most of the Reserve quota to go to the Longline category.

Response: The preferred addition of the new criteria would not change the overall scope of NMFS authority to transfer quota among categories, but would include specific criteria that have the effect of clarifying potential uses of quota. NMFS agrees that an excessive amount of quota from the Reserve category should not be used to account for Longline category dead discards and has structured the alternatives to give management flexibility to move available quota to other categories as warranted. As stated in the response to Comment 7, under the preferred alternative, NMFS could allocate quota to the Longline category in amounts that exceed its current allocation of 8.1 percent of the current annual quota, but would not allow historic levels of bluefin catch by the Longline category catch. In evaluating the amount of quota to reallocate to any category (including the Longline category), NMFS would consider the regulatory criteria for quota transfer, which include broad biological and economic considerations (e.g., "effects of the adjustment on accomplishing the objectives of the fishery management plan"). For example, with respect to transfers of quota to the Longline category, some important considerations may include the amount of dead discards by pelagic longline gear relative to the size of the Longline category quota, the overall trend in the amount of dead discards and landings in the Longline category, the effectiveness of gear restricted areas, the status of the bluefin stock, trends in relevant data reporting, the amount of uncertainty regarding dead discard information, the level of accountability for bluefin dead discards by vessels in other quota categories, and the economic benefits of quota transfers. For transfers to other categories, important considerations may include effects of catch rates in one area precluding vessels in another area from having a reasonable opportunity to harvest a portion of the category's quota; the projected ability of the vessels fishing under the particular category quota to harvest the additional amount of BFT before the end of the fishing year; the estimated amounts by which quotas for other gear categories of the fishery might be exceeded; effects of the adjustment on bluefin rebuilding and overfishing; effects of the adjustment on accomplishing the objectives of the FMP; etc.

F. General comments about gear restricted areas

Comment 20: NMFS should avoid closures to the pelagic longline fishery. Any closure would disrupt markets.

Response: NMFS acknowledges that gear restricted areas designed to reduce bluefin tuna interactions and regulatory discards and to thus decrease bycatch have costs associated with them, and may have disruptive effects on local markets. NMFS designed the gear restricted areas (i.e., their timing and configuration) after considering the amount of reduced fishing opportunity as well as the amount of reduced bluefin interactions, and therefore minimize potential disruptions in markets. NMFS designed the Modified Cape Hatteras gear restricted area to provide access opportunities to fishermen that have a proven ability to avoid bluefin, and are compliant with the observer and logbook requirements. As described in the Response to Comment # 47, NMFS specifically modified the Cape Hatteras Gear Restricted Area that was preferred in the DEIS, to reduce disruption to ongoing fishing in an adjacent area and therefore reduce potential economic impacts of the alternative. Evaluation of all alternatives considered both economic and ecological considerations (i.e., the potential reductions in revenue associated with estimated reductions in bluefin interactions).

Comment 21: NMFS should not implement GRAs. NMFS received comments indicating that, due to a variety of reasons, commercial fishermen may be limited to certain fishing locations by the size and configuration of their vessels, insurance requirements, or safety concerns, and that some participants in the fishing fleet have nowhere else to fish (except in the location of the GRA) and they would be "shut out" of the fishery.

Response: The underlying concept of the Modified Cape Hatteras Gear Restricted Area minimizes economic impacts by providing conditional access to the area, based on performance criteria. The majority of the pelagic longline fleet would be allowed to fish in the area upon implementation, and in the future if conditions for access continue to be met. In estimating ecological and socio-economic impacts of the Modified Cape Hatteras Gear Restricted Area, NMFS determined that 14 vessels would not have access to this GRA. Of these 14 vessels, four vessels made over 75 percent of their sets in the Modified Cape Hatteras Gear Restricted Area. Based upon the location of their historical catch, and to ensure that NMFS did not underestimate the potential economic impacts, the analysis assumes that these vessels would not redistribute effort outside of the gear restricted area. Although these four vessels could redirect from fishing grounds off Oregon Inlet, NC to fishing grounds between Cape Fear and Cape Hatteras, such a change in fishing grounds may involve substantial costs (fuel, longer trips, possible transfer and dockage in a new port, etc.). However, NMFS modified the Cape Hatteras Gear Restricted Area in a way that would achieve the reduction in bluefin discards but would also allow fishermen to continue to deploy gear in regions south and west of the GRA and thereby reduce adverse impacts. With respect to the potential negative impacts of the Modified Spring Gulf of Mexico GRA, approximately 61 vessels that fish in the Gulf of Mexico would be affected. Given the consistent pattern of historical catch of large numbers of bluefin tuna in certain times and locations by pelagic longline gear, NMFS determined that a gear restricted area in both the Gulf of Mexico and the Atlantic are necessary in order to achieve reductions in bluefin tuna dead discards, and that the potential economic impacts are unavoidable in order to achieve the necessary reductions. The potential negative socio-economic impacts were minimized by using an iterative process to design the gear restricted areas. The Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Areas was designed in order to achieve a balance between a reduction in bluefin dead discards, protection of the Gulf of Mexico spawning stock, and continued operation of the pelagic longline fleet in the Gulf of Mexico. The specific boundaries of the area were determined by an iterative process that included consideration of public comment and input, by selecting areas of historical pelagic longline interactions with bluefin, and comparing both the anticipated reduction in bluefin interactions, and the estimated reduction in revenue, of different configurations. In addition, the time period was selected due to its occurrence during the peak bluefin spawning period in the Gulf of Mexico.

The magnitude of the potential economic impacts result from the specific location and duration of the gear restricted area. The size of the Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area was based upon the historical location and number of bluefin interactions, as well as the recent persistent trend in fishing effort shifting to the east of this area, and the known variability in the fishery in general. A smaller geographic area would be unlikely to achieve meaningful reductions in bluefin tuna interactions. The duration of the gear restricted area encompasses the months with the highest number of interactions during the spawning period. An alternate or shorter time period would coincide with neither the highest number of bluefin interactions, nor the bluefin spawning period peak.

Comment 22: NMFS should evaluate the preferred alternatives for the Cape Hatteras GRA in light of the difficulties in implementing the Pelagic Longline Take Reduction Plan (a plan designed to reduce the incidental interactions of pelagic longline gear with marine mammals in order to reduce serious injury and mortality of long-finned and short-finned pilot whales and Risso's dolphins in the Atlantic).

Response: Several comments received suggested options similar to those currently employed implemented under the Pelagic Longline Take Reduction Plan (described below). One comment noted the importance of developing a communication protocol similar to what is encouraged by the Pelagic Longline Take Reduction Plan for marine mammals. NMFS also encourages captains to communicate the location of bluefin to each other to aid fleet-wide avoidance practices. However, NMFS believes that this approach is best employed on a voluntary basis, as is done for marine mammals, given potential confidentiality concerns.

Mandatory aspects of the Pelagic Longline Take Reduction Plan include a requirement to post the marine mammal safe handling and release placard in the wheelhouse and on the working deck, a restriction of mainline length to no more than 20 nm when fishing within the Mid-Atlantic Bight, and special observer and research participation requirements for vessels operating in the Cape Hatteras Special Research Area (CHSRA). Unlike the requirements for operating in the CHSRA, Amendment 7 would not require fishermen fishing in the Modified Cape Hatteras Gear Restricted Areas to notify the agency between 48 to 96 hours prior to making a trip in order to arrange for observer coverage or research participation, in part because notifications of intent to fish are a standard requirement through VMS. Additionally, Amendment 7 does not require fishermen to retain or post any new placards, nor does it change the requirements regarding mainline length restrictions. It is important to note that the provisions of Amendment 7 *do not* replace the provisions of CHSRA or the Pelagic Longline Take Reduction Plan; pelagic longline fishermen are still expected to fully comply with the requirements outlined in the Pelagic Longline Take Reduction Plan while fishing with pelagic longline gear in any part of the CHSRA that may overlap with the Cape Hatteras Gear Restricted Area.

Comment 23: A commenter stated that NOAA and ICCAT do not have sufficient scientific information to be able to predict where and when the distribution of bluefin may overlap with the pelagic longline fleet target species, and thus fishermen are also highly unlikely to be able to predictably avoid BFT while targeting other HMS (swordfish, bigeye and yellowfin) except for certain times of year and in limited locations. Any rigid management framework that cannot adapt management to real-time distributions and availability of targeted and non-targeted HMS will be unlikely to optimize yield, support economic viability, and eliminate discards.

Response: Bluefin tuna distribution is highly variable; however, the scientific literature as well as the data in this FEIS (Chapters 3 and 4) support the conclusion that there is sufficient consistency in the patterns of distribution to make gear restricted areas an effective management tool on a long-term basis. If warranted by changes in the characteristics of the fishery (e.g, long-term shifts in the distribution of bluefin tuna and target species), NMFS can re-evaluate whether GRAs continue to be an effective management tool that appropriately balances the associated costs and benefits.

Comment 24: NMFS received suggestions to consider dynamic time-area closures because the distribution of bluefin is highly variable.

Response: In the Predraft of Amendment 7, NMFS considered a real-time monitoring system that would periodically close "hot spots" of bluefin interactions with the pelagic longline fleet. However, the Agency chose to not further analyze this alternative in the DEIS and the FEIS because a reporting and monitoring system to support this measure does not currently exist. Furthermore, the development and administration of such a system would be highly complex, and would require substantial resources to be able to fully monitor the entire region across which the pelagic longline fleet fishes, publish a rule quickly enough to respond to changing oceanic conditions, and provide adequate notice to the pelagic longline fleet. Instead of the dynamic measures supported by the commenter, which would respond to short-term aggregations of bluefin, the Preferred Alternatives in the FEIS rely on a different strategy of reducing bluefin bycatch, based upon the long-term, consistent special and temporal patterns of bluefin distribution.

Comment 25: NMFS received comments asserting that the Agency lacks sufficient data to make a reliable determination regarding true interaction rates of any given vessel. Some commenters felt that NMFS should prohibit fishing in areas of concern until more reliable data collection methods are in place, whereas others felt that NMFS should not prohibit fishing until more reliable data collection methods are in place. Several commenters cited weaknesses in logbook data and asserted that logbook data are not sufficient to verify vessel behavior, count interactions, or monitor bycatch.

Response: As indicated in the Response to Comment # 83, NMFS recognizes that some vessel operators may have under-reported in their logbooks the amount of bluefin tuna they have caught. NMFS conducted an analysis that compared logbook data to observer data to get an indication of how vessel-reported logbook data compares with observer data, because observer data can serve as a useful validation tool. Compared to the observer data, the logbook data showed both over-reporting and under-reporting of bluefin tuna, with the average amount of under-reporting of bluefin discards of 28 percent at the aggregate level for all vessels. Individual vessel data varied substantially from being more than 90 percent accurate with observer data for that trip to more than 75 percent inaccurate compared to observer data for that trip. These data indicate a wide range in reporting accuracy at a vessel level. Specific information on this analysis is in the Appendix. Notwithstanding potential under-reporting by some vessels, logbook data are the most complete source of available data regarding vessel level interactions with bluefin tuna because 100 percent of pelagic longline vessels are required to submit logbook reports for every set.

NMFS also analyzed observer data in order to verify the spatial and temporal patterns of bluefin interactions that were noted in the logbook data (Chapter 3). Although the observer data could not be compared directly to the logbook data because it is collected with lower frequency and at a different scale, the observer data indicated similar patterns of bluefin interactions as the logbook data. The logbook data represents the best available source of fine-scale information on bluefin interactions at this time. Amendment 7 would also implement enhanced monitoring and reporting requirements that would improve information on bluefin interactions in the pelagic longline fishery (i.e., VMS and electronic monitoring).

Comment 26: NMFS received multiple comments regarding access to the GRAs based on performance. Comments 27 - 43 relate to specific performance criteria. A commenter stated that NMFS should include 2012 data in the IBQ Allocation calculations and GRA area access calculations.

Response: NMFS agrees that 2012 data should be included in these data calculations in order to reflect the characteristics of the fishery in the recent past. The 2012 data set represents the most recent calendar year for which complete data was available at the time the FIES analysis was begun. Therefore, in the FEIS NMFS included sets made in 2012 in the pool of data used to calculate the bluefin-to-designated target species ratios for allocation and GRA access analyses. NMFS also included 2012 data from the Pelagic Observer Program and the Logbook program to calculate the Observer and Logbook Compliance scores. NMFS has also adjusted the historical qualification period from 2006 to 2011, to 2006 to 2012, in order to better reflect the variability in the fishery and account for recent trends.

Comment 27: Commenters expressed concern about access to the GRAs based on performance criteria based on logbook data, validity of which the commenter stated was questionable, given the possible incentives to misreport bluefin interactions through the logbook.

Response: As explained in Response to Comments # 25 and # 83, NMFS acknowledges that there are issues with logbook data, however, it offers the most comprehensive data on the fishery and provides a means to analyze individual vessel behavior. HMS logbook data represents a census of the fishery.

Comment 28: One commenter stated that there was no regulation that vessels must avoid bluefin tuna in the past, and vessels should not be singled out now for catching more bluefin by chance.

Response: Directed fishing on bluefin tuna with pelagic gear is not permitted. Any interactions with PLL are incidental to other directed fishing and regulations have been designed to discourage any such interactions and to minimize bycatch to the extent practicable. NMFS has managed the pelagic longline fishery as an incidental category for bluefin for many years and has implemented a number of regulations to limit the bluefin that can be retained and to discourage interactions with bluefin (e.g., limiting the number of bluefin that can be landed based on the weight of target species, implementing a time-area closure for bluefin in June in the northeast, requiring weak hooks in the Gulf of Mexico). The pelagic longline category as a whole has traditionally been allocated 8.1 percent of the total U.S. quota to cover incidental catch during directed fishing operations for other species, but those catches (including dead discards) have been significantly over that subquota in recent years.

Through analysis of logbook data between 2006 and 2012, NMFS noted that a small number of vessels were responsible for the majority of reported bluefin interactions. In this and previous rulemakings, members of the pelagic longline fleet have repeatedly asked for increased individual accountability in the fishery. NMFS is preferring an alternative that would respond to this situation, and would hold individuals accountable for their bluefin interactions.

Comment 29: NMFS should not penalize small vessels because of their inability of provide adequate space for observers.

Response: NMFS designed the scoring system for the Pelagic Observer Program Performance metric in the preferred alternative such that valid reasons for not carrying an observer would not be penalized. Observer coverage is integral to the management of the fishery as it contributes important, objective data in support of the management of protected species and provides important information on the pelagic longline fishery utilized in the management of bluefin and other HMS. Due to the importance of having enough observed trips to meet the observer coverage targets required by national and international law, NMFS also evaluated vessels on the number of trips observed. The agency utilizes observer data to develop estimates of protected resources interactions and estimates of discards of other species including bluefin. These data are essential for stock assessments and are critical in meeting international management obligations. Under ATCA and as a contracting party of ICCAT, the United States is required to take part in the collection of biological, catch, and effort statistics for research and management purposes.

Comment 30: NMFS received comments on the data used to calculate scores for performance metrics and IBQ allocations. NMFS received comments indicating that dolphinfish and wahoo from the HMS logbook needed to be included in the performance metric scoring. Several commenters requested the Agency include landings of designated target species (primarily dolphinfish and wahoo) reported in the coastal fisheries logbook in calculations used to assess IBQ and performance. Other commenters suggested that NMFS should use all pelagic longline logbooks in determining the Bluefin Avoidance Score.

Response: Dolphinfish and wahoo reported in the HMS logbook were used to develop scores for performance metrics. However, landings of these species reported in the Coastal Fisheries Logbook were not used in the performance metrics for several reasons: (1) The Coastal Fisheries Logbook would not contain landings of the primary target species of the HMS pelagic longline fishery (swordfish and BAYS tunas), and would not provide for the reporting of bluefin tuna interactions. Therefore, the actual ratio of landings of designated target species to bluefin interactions cannot be accurately calculated for sets reported in the Coastal Fisheries Logbook. (2) Fishermen in the southeast Atlantic that report in the Coastal Fisheries Logbook could have an advantage over fishermen in the Gulf of Mexico or New England that do not have the same type of reporting requirements and the same mechanism to report retention of dolphinfish. (3) The HMS logbook and the Coastal Fisheries Logbook require different types of data to be reported which creates a mismatch in how the data can be combined and collectively analyzed, which could result in inconsistencies between the two data sets. (4) Specific geographic data (i.e., latitude and longitude for each set) that would were reported in the HMS logbook and used to identify and evaluate the ecological and economic effects of gear restricted areas are unavailable through the Coastal Fisheries Logbook. Rather, fishermen report location where the majority of all catches of each species were made through reference to a 1º latitude x 1º longitude grid cell. If NMFS were to incorporate data at the finest scale available (1º latitude x 1º longitude), NMFS would have to disregard the overwhelming number of requests for management (and visualization/depiction of data) at a finer scale. (5) The Coastal Fisheries Logbook requires landings *per trip* to be reported by weight whereas the HMS Logbook requires all interactions *per set* to be reported by number. Fishermen reporting in the Coastal Fisheries Logbook may report gutted or whole weight. (6) A percentage (20%) of fishermen reporting through the Coastal Fisheries Logbook are selected to report discarded fish through a Supplemental Discard and Gear Trip Report form at the trip level whereas all fishermen reporting in the HMS Logbook must provide this information for every set, which also creates a mismatch in how data can be combined and collectively analyzed.

Comment 31: NMFS should not base performance metrics on the Northeast Distant (NED) Area.

Response: NMFS incorporated all data reported through the HMS logbook in the calculation of performance metrics, regardless of where vessels fished. Exclusion of the sets made in the NED area could result in certain vessels that had a lot of fishing effort in this region receiving a competitive advantage or a disadvantage in terms of performance metric scores. Further, vessels that fish in the NED are not exempt from observer (if selected) or logbook reporting requirements.

Comment 32: NMFS should consider that, by allowing access based on the performance of a vessel, the new owner of a vessel may be evaluated based on prior poor vessel performance under a different owner.

Response: As explained below, NMFS determined that the relevant historical activity should be that associated with the vessel (and not the permit), and therefore, the preferred IBQ program would evaluate vessels based on all activity attributed to that vessel through the qualification time period (2006 - 2012. In general, the use of historical data as part of an individual quota share (or a performance criteria) can be complex due to historical transfers of the limited access permit from one vessel to another or changes in vessel ownership. The preferred quota share formula is based upon historical data associated with a permitted vessel. NMFS determined that the historical ‘platform’ upon which to base the quota share should be the vessel history instead of the permit history for the following reasons: 1) Vessel history reflects current and historical participation in the fishery; 2) The regulations regarding the transfer of Atlantic Tunas Longline category permits do not address fishing history (i.e., do not specify whether when an Atlantic Tunas Longline category permit is transferred from one vessel to another, whether the fishing history also transfers; and 3) the structure of the databases in which the logbook data resides uses the vessel as a key organizing feature, and therefore the compilation of data associated with a particular vessel is simpler and less prone to error (i.e., it is more complex to compile data based on an individual permit history). However, once the initial allocations are established, bluefin quota shares would be associated with the permit for future vessel transactions. For example, if a permitted vessel has quota shares, and the owner of the permitted vessel decided to sell the permit but keep the vessel, the seller of the permit would no longer have any privileges with respect to the IBQ program (they would only have fishing both without a permit). In contrast, the buyer of the permit would have the eligibility for the IBQ associated with that permit (although the permit buyer would need to put that permit on a vessel in order to receive quota allocation).

Comment 33: One commenter asked whether the public will know the identity of vessels excluded from the GRA.

Response: NMFS does not intend to publicly release the identity of vessels without access to the GRA.

Comment 34: NMFS received several suggestions concerning changes to the logbook performance metric, logbook reporting requirements, and requests for faster logbook submission methods. Some commenters felt that NMFS should not include a logbook performance metric. Commenters noted that logbook reports are usually late because it takes time to collect the required economic information, and sometimes fishermen are out for extended periods of time. Dealers sometime take 2 or more weeks to get a return done, which results in delays in submitting data to the Logbook Program. For offshore/distant water fishermen, it sometimes takes more than a week for the receipt of information from dealers, especially if the catch is offloaded in Canada. The commenters felt that if NMFS wants to retain this performance metric, the agency should require that dealer tally sheets be submitted separately from the logbooks. NMFS received suggestions to transition the logbook performance metric from the date of opening the letter to the date of receipt by the agency to allow for contingencies such as a government shutdown (or other factors that may delay Agency officials from opening letters). A commenter felt that NMFS should establish a tolerance for the mailing of logbook reports from different parts of the country to Miami FL, because fishermen in Florida have an advantage over fishermen based in more distant locations (e.g., Maine) due to the length of time it takes to deliver mail. NMFS was asked to establish a process whereby fishermen can submit logbooks by fax or online to minimize delays due to the distance a letter has to travel.

Response: NMFS requires fishermen to submit logbooks within 7 days of offloading. Logbook reports must include weighout slips showing the dealer to whom fish were transferred, the date of transferal, and the carcass weight of fish for which individual weights are recorded. Timely logbook reporting is a critical component of quota monitoring, particularly for species like HMS that have small annual or seasonal quotas. Many pelagic longline fishermen are able to comply with the requirement to submit logbooks within seven days. There are members of the fleet, however, that take months to a full year to submit logbook reports. These late reports make quota management of HMS very difficult, especially if quotas are small. Amendment 7 would require daily catch reporting via VMS units to ensure timely report of bluefin catches. NMFS may pursue faster mechanisms to report logbooks in the future, such electronic logbooks.

Comment 35: NMFS should have solicited feedback on performance criteria from the industry. The commenter felt that NMFS developed the performance criteria in a "black box" and did not provide ample notification that the agency would be evaluating individuals on these metrics.

Response: Significant time and opportunity for public comment have gone into what has been a very thorough rulemaking process for this Amendment. NMFS repeated solicited public feedback and Advisory Panel input on the alternatives in Amendment 7, including the development of the performance criteria. NMFS has discussed the management of bluefin discards with the public and with the Advisory Panel since a 2009 Advanced Notice of Proposed Rulemaking. NMFS indicated in both the Predraft and the DEIS that a small number of individuals were responsible for the majority of bluefin interactions. NMFS received numerous public comments in Amendment 5 to the Consolidated HMS FMP indicating that the pelagic longline fleet desired individual accountability measures, instead of holding the entire fleet responsible for high interactions of a few vessels with dusky sharks. NMFS developed the performance criteria as a means to evaluate fishermen and hold them individually accountable for reduction of bluefin discards and compliance with the reporting and monitoring regulations. These performance criteria offer an alternative to fleet-wide time/area closures. Furthermore, the multiple criteria offer individuals who have moderate levels of bluefin interactions to still access Gear Restricted Areas provided that they are compliant with the reporting and monitoring requirements.

Reporting and observer requirements have been in place for several years, and NMFS regularly communicates with constituents concerning the rules pertaining to these programs. NMFS notifies individuals selected for reporting annually with letters that detail reporting requirements. Furthermore, NMFS produces outreach materials, compliance guides, and a website that clearly state reporting requirements. With respect to the observer program, NMFS also clearly notifies individuals of vessel selection for observer coverage. The Pelagic Observer Program regularly communicates with the points of contact (captains and vessel owners) regarding the organization and scheduling of observed trips. Commercial fishermen are therefore provided ample notification of the regulations concerning observer and logbook reporting.

Comment 36: NMFS should not deny access to individuals who are good bluefin avoiders. The intent of the rule is to reduce bluefin discards, not to penalize fishermen for being out of compliance with observer or reporting requirements. NMFS Office of Law Enforcement should be solely responsible for penalizing fishermen that are out of compliance.

Response: NMFS regulations that require fishermen to submit logbooks or to carry observers are designed to collect information that NMFS uses to manage HMS fisheries. When fishermen do not comply with such regulations, they jeopardize NMFS' ability to develop sound management strategies, conduct stock assessments with the best scientific information available, estimate bycatch interactions and bluefin discards, and comply with international treaty requirements. As such, in Amendment 7 NMFS plans to consider a fisherman's compliance with current logbook and observer requirements when evaluating whether or not NMFS will grant that fisherman access to the Cape Hatteras Gear Restricted Area- an area where interactions with bluefin tuna are likely. NMFS wants to ensure that fishermen allowed access to the Cape

Hatteras Gear Restricted Area will abide by all relevant regulations to facilitate monitoring of fishing activities in these areas.

Comment 38: NMFS should consider vessels that have no history or are new to the fishery as qualified to access the closed areas ("innocent until proven guilty"). Vessels should have a "clean slate" at the start of each year and access to the GRA. If they interact with too many BFT, then they should be closed out.

Response: The GRAs are selected as locations with relatively high numbers of historical bluefin interactions. The Bluefin Avoidance Score was designed to evaluate a vessel's ability to avoid bluefin tuna, relative to its landings. New entrants to the fishery would have performance metrics associated with the permit that the entrant would have purchased. All vessels would have a new performance score at the start of each year, based upon the three most recent years of available data, and therefore performance scores may improve over time.

Comment 39: Some commenters were concerned about the incentives that a conditional access program may provide.

Response: The concept of providing conditional access to a GRA (i.e., the Modified Cape Hatteras Pelagic Longline Gear Restricted Area) is based on the historical data, which indicate that a relatively small number of vessels are responsible for a large portion of the bluefin tuna interactions. Because conditional access would be based upon the rate of bluefin tuna interactions (as well as reporting metrics), the program rules would provide incentives to all pelagic longline vessels with respect to bluefin tuna interactions. Specifically, vessels with historically high bluefin tuna interactions that are not allowed access would have an incentive reduce their rate of bluefin interactions if they desire to fish in the GRA. Conversely, vessels with a relatively low rate of bluefin interactions that are allowed to fish in the GRA would have an incentive to continue to avoid bluefin in order to maintain a low rate of bluefin interactions. In contrast, if all vessels were precluded from the Modified Cape Hatteras GRA, regardless of the amount of a vessel's interactions with bluefin, there would be no incentives with respect to the catch of bluefin tuna (and the scale of potential economic impacts would be disproportionate to the estimated amount of reduction in bluefin tuna interactions). No access to the Gulf of Mexico GRAs was proposed because the interactions with bluefin in the Gulf of Mexico are more evenly distributed among all of the vessels fishing there (and not concentrated among a few vessels as in the area off Cape Hatteras).

Comment 40: NMFS should not count bluefin interactions from sets made while participating in NMFS programs (e.g., shark research fishery) towards the calculation of bluefin to designated target species ratios because fishermen fish differently on those trips.

Response: NMFS did not exclude such trips because of the relatively few vessels that might be affected; participation in research programs could have affected vessels in either a positive or negative manner; and in most instances, minor differences in the amounts of catch of either target species or bluefin would not likely affect a vessel's allocation due to the three tiered allocation system (i.e., a range of catch values is designated to each of the three tiers), and the performance metric scoring system (based on a range of values). Fishermen that believe they have been disadvantaged through participation in research may appeal access and IBQ decisions through the two-stage appeal process.

Comment 41: NMFS should calculate performance metrics only on the most recent data available. NMFS needs to revisit criteria for inclusion - some vessels have hardly fished over the last few years.

Response: NMFS agrees that the inclusion of newer data is important. In the Predraft and the DEIS, NMFS analyzed and developed alternatives based on pelagic longline data from 2006 to 2011. NMFS included an additional year of logbook data (2012) in the FEIS analyses for each time-area alternative. In the FEIS, the 2006-2012 time period was chosen because the last significant bluefin fishery management action was the 2006 Consolidated HMS FMP, and therefore fishing behavior from prior to 2006 would have been based on previous management measures and may not be representative of the current fishery. The 2006 to 2012 time period is long enough to minimize the influence of one-time events such as natural or man-made disasters. NMFS intentionally designed the GRAs to be flexible and allow fishing vessels that have been affected by short-term events to participate in the pelagic longline fishery.

The Agency would distribute letters indicating the final performance metrics and what members of the fishery could expect by the start of the fishing year. Initial performance metrics would be calculated on the entire historical time period considered for determining IBQ allocations. However, in subsequent years, the performance metrics would be calculated on the previous three years of available data.

Comment 42: NMFS should not base access on history. High bluefin interactions in one year do not necessarily mean that there will be high bluefin interactions the following year.

Response: As noted in the response to Comment # 45 NMFS acknowledges that past performance may not be a perfect indicator of future performance. However, one of the objectives of the use of Performance Metrics is to provide incentives for future fishing behavior that will result in reduced rates of interactions between pelagic longline gear and bluefin. Although there is variability in fish distribution and activity from one year to the next, there are certain vessels that consistently report high interactions with bluefin tuna through logbooks. As explained in Response to Comment # 39, conditional access based on past performance would provide continuing incentives to avoid bluefin tuna (and comply with relevant reporting and monitoring requirements).

Comment 43: NMFS should evaluate vessels on the number of interactions with protected resources (e.g., pilot whales) as part of the criteria for accessing the Cape Hatteras GRA.

Response: Although Amendment 7 is consistent with the relevant laws and regulations regarding protected species, it did not include any specific objective regarding protected species, and did not include any specific management measures regarding protected species. Therefore the commenter’s suggestion to incorporate criteria relating to protected resources is outside of the scope of the Amendment 7. The impacts of the Amendment 7 measures on protected species are analyzed in this FEIS.

G. Cape Hatteras Gear Restricted Area

Comment 44: NMFS received a large number of comments supporting the five-month Cape Hatteras Pelagic Longline GRA as proposed (DEIS preferred Alternative). NMFS also received comments suggesting modifications to the scope and duration of the area, and commented on whether or not conditional access to the area is appropriate.

Response: The Cape Hatteras area has consistently been a location where a high number of bluefin interactions with the pelagic longline fleet have occurred, and was initially identified in the Predraft to Amendment 7 as a geographic area where a gear restricted area may be warranted. Responses to the specific suggestions regarding the Cape Hatteras Gear Restricted

Area are below (see responses to comments 44 – 50). As described in comment 47, NMFS modified the preferred alternative in the FEIS (the “Modified Cape Hatteras Pelagic Longline GRA”).

Comment 45: Some commenters supported the proposed GRA because access would be granted to some vessels, while other commenters stated that NMFS should implement GRAs without conditional access. Commenters noted that the Agency would be penalizing fishermen for bluefin interactions (specifically, discards) when there was not previously a regulation that required bluefin avoidance. Some commenters felt that the implementation of performance metrics is too severe a management measure, and fishermen that were excluded from fishing in the Cape Hatteras Gear Restricted Area noted that the proposed measures would have severe economic implications for their businesses. Some commenters only supported the Cape Hatteras GRA if pelagic longline vessels are allowed to fish under General category rules in the area.

Response: Analysis of logbook data from 2006 through 2012 indicated that a relatively low number of vessels were responsible for the majority of bluefin interactions in the Atlantic. NMFS developed the concept of conditional access to the GRA in light of this pattern, in order to incentivize individual fishermen to avoid bluefin tuna, and reduce economic impacts to the extent practicable.

A system of conditional access would hold fishermen individually accountable for their interactions, as opposed to holding the entire fleet responsible for high interactions by a small number of fishermen. Because conditional access would be based upon the rate of bluefin tuna interactions (as well as reporting metrics), the program rules would provide incentives to all pelagic longline vessels with respect to bluefin tuna interactions. Specifically, vessels with historically high bluefin tuna interactions that are not allowed access would have an incentive reduce their rate of bluefin interactions if they desire to fish in the GRA. Conversely, vessels with a relatively low rate of bluefin interactions that are allowed to fish in the GRA would have an incentive to continue to avoid bluefin in order to maintain a low rate of bluefin interactions. In contrast, if all vessels were precluded from the Modified Cape Hatteras GRA, regardless of the amount of a vessel’s interactions with bluefin, there would be no incentives with respect to the catch of bluefin tuna (and the scale of potential economic impacts would be disproportionate to the estimated amount of reduction in bluefin tuna interactions). No access to the Gulf of Mexico GRAs was proposed because the interactions with bluefin in the Gulf of Mexico are more evenly distributed among all of the vessels fishing there (and not concentrated among a few vessels as in the area off Cape Hatteras).

Regarding the comment that it is unfair to use past interactions with bluefin as part of the allocation formula because in the past it was lawful to interact with bluefin tuna: Pelagic longline regulations were designed to limit or reduce retention of bluefin tuna (e.g., target catch requirements, weak hook requirements). Therefore, it is appropriate that the preferred IBQ program accrue some benefit in the form of IBQ allocation for vessels who may have fished in a manner that reduced interactions with, or avoided bluefin tuna, consistent with the regulations.

NMFS acknowledges that past performance may not be a perfect indicator of future performance. One of the objectives of the preferred bluefin Modified Cape Hatteras Pelagic Longline Gear Restricted Access measure would be to provide incentives for future fishing behavior that will result in reduced rates of interactions between pelagic longline gear and bluefin. As explained in response to comment # 64, NMFS no longer preferred allowing pelagic longline vessels to fish under the General category rules.

NMFS acknowledges that some vessels could experience economic hardship due to not having access to the Modified Cape Hatteras GRA, however the data indicate that there would also be substantial reductions in the number of bluefin tuna interactions associated with the changes in fishing behavior (i.e., 34 percent reduction in bluefin discarded, and 6 percent reduction in bluefin kept, fishery-wide). The performance metric system is designed to incentivize fishermen to avoid bluefin tuna and to comply with observer and reporting requirements. A total of 14 vessels would not have access to the Modified Cape Hatteras GRA based upon the FEIS analysis. NMFS determined that, after redistribution of effort, there was not a sizable difference in the number of bluefin kept and discarded between implementation of the Cape Hatteras GRA without access for any vessels (-389 fish per year), and implementation of the Cape Hatteras GRA with Access Based on Performance (-401 fish per year). The Modified Cape Hatteras Gear Restricted Area with Access Based on Performance would reduce the number of bluefin interactions by 404 fish per year, after redistribution of effort. The total economic losses as a result of implementing the Cape Hatteras GRA for all vessels, the Cape Hatteras GRA with Access Based on Performance, and the Modified Cape Hatteras Gear Restricted Area with Access Based on Performance after redistribution of effort are -$893,562; -$301,651; and -$210,956, respectively. NMFS therefore does not prefer the GRA without access because the alternative would result in a comparable reduction in bluefin interactions, at nearly quadruple the cost in estimated economic losses for the pelagic longline fleet. The additional incentives that the performance metrics regarding compliance with logbook and observer requirements were also determined to be important to support the Amendment 7 objective regarding enhanced reporting and monitoring.

Comment 46: Commenters suggested that NMFS should modify the proposed Cape Hatteras Gear Restricted Area to include the areas north and east, as well as southwest of the proposed Cape Hatteras Gear Restricted Area, to address possible redistribution of fishing effort and other areas of moderate to high bluefin interactions. A commenter requested consideration of a specific extension of the GRA northward to cover a region with moderate bluefin interaction in order to prevent increased fishing effort in the area as a result of redistribution by fishermen whose performance scores are not high enough to fish in the Cape Hatteras GRA. The commenter stated that the area could further act as a buffer to protect migrating bluefin tuna that aggregate there. NMFS also received a comment suggesting a gear restricted area along the continental shelf between the Delmarva Peninsula and Georges Banks for the time periods of June through July, and November through December to complement the preferred alternatives.

Response: NMFS analyzed the impact of the suggested gear restricted area to the North (assuming redistribution of fishing effort). The suggested extension to the north would result in a reduction of only 3 bluefin tuna, after redistribution of effort. Reductions in other species would be minor. While the suggested gear restricted area would be small in both time and space, it is not anticipated to contribute much to the goal of reducing bluefin discards. For these reasons, NMFS considered but did not further analyze or otherwise include this suggested modification as an alternative in the FEIS.

NMFS analyzed a gear restricted area along the continental shelf between the Delmarva Peninsula and Georges Banks for the time periods of June through July and November through December and determined that the reduction in effort with redistribution would result in notable reduction in bluefin interactions (-48 fish/year kept; -310 fish/year discarded). However, the reductions in target catch would be substantial (bigeye tuna kept (-977 fish/year); yellowfin tuna kept (-1,206 fish/year); and the numbers of swordfish kept (-1,118/year). That configuration, in combination with the Cape Hatteras GRA, would close the majority of the continental shelf to fishermen that do not meet performance objectives. These suggested modifications did not achieve as much reduction in bluefin interactions compared with the reduction in target catch. Therefore, NMFS but did not include the suggested GRAs as an alternatives in the FEIS.

Comment 47: The North Carolina Department of Environment and Natural Resources and pelagic longline fishermen commented that NMFS should omit the southeast corner of the proposed GRA (preferred alternative in the DEIS) due to the prevailing direction of currents in this area, and the fact that gear set south or southwest of the Cape Hatteras GRA would drift into the GRA.

Response: NMFS analyzed additional spatial and temporal configurations of the Cape Hatteras Gear Restricted Area and determined that little conservation benefit could be expected from limiting access to this area and that the associated economic costs were not warranted. NMFS agrees that the prevailing currents would have, effectively closed productive fishing grounds southwest of the Gear Restricted Area in federal waters off the coast of central and southern North Carolina. As a result of these analyses, and considerations, NMFS has modified the preferred alternative to a gear restricted area during the same months (December through April), but with a slightly different configuration.

Comment 48: NMFS should consider the potential negative economic impact on fishermen in the area who do not have access to other fishing grounds.

Response: The preferred design of the Cape Hatteras GRA was the result of an iterative process. NMFS analyzed multiple time periods and geographic areas in order to take into consideration both the potential reduction in the number of bluefin interactions and the potential reductions in target catch. The analysis considered relevant fisheries data, and also oceanographic trends. In the DEIS, due to current patterns in the Cape Hatteras area, the zone affected by the proposed Cape Hatteras Gear Restricted Area was analyzed beyond the explicit boundaries of the GRA. Analysis of a buffer region was needed because vessels to the south and west of the GRA would be prevented from fishing in these areas because their gear would drift into the GRA (having the effort of creating a larger affected geographic area that the boundary of the GRA). The DEIS analysis of impacts not only considered the reduced fishing effort within the GRA, but also the reduced fishing effort in a buffer region to the south and west of the area. NMFS included sets made in this buffer region into the redistribution analyses. In the FEIS, based on public comment and additional analyses, NMFS now prefers the Modified Cape Hatteras GRA which would minimize the adverse impacts on fishing opportunities while still achieving comparable reductions of bluefin discards and almost identical conservation and management benefits as the original proposal.

Comment 49: NMFS should implement a GRA and have various requirements including mandatory observer coverage, electronic monitoring, or the use of weak hooks in order to fish the area. Several commenters suggested that NMFS implement the GRA and only allow access with 100 percent observer coverage.

Response: Observer coverage is an important tool in monitoring the pelagic longline fishery. Vessels with access to the Cape Hatteras GRA would be subject to the same level of observer coverage as the rest of the pelagic longline fleet. Electronic monitoring is an important aspect of the new IBQ program, which includes the Gear Restricted Areas. Under Amendment 7, any vessel fishing with pelagic longline gear would be required to have an operational electronic monitoring system onboard. NMFS did not consider an alternative that would implement new weak hook requirements for the Atlantic, because we did not have recent data indicating that such measures would be effective in meeting the objectives of Amendment 7, given size differentials between fish in the Gulf of Mexico and the Atlantic and the current state of research on the subject.

Comment 50: NMFS should establish communication protocols designed to help fishermen minimize interactions for the regions of concern instead of implementing gear restricted areas. One commenter suggested the establishment of communication protocols, similar to those designed for the Pelagic Longline Take Reduction Plan, be required within the boundaries of the Cape Hatteras Gear Restricted Area.

Response: Communication protocols can be valuable and could be of assistance to pelagic longline vessels in avoiding bluefin tuna. Captains are already required to follow a communication protocol for pilot whales in this area. NMFS believes such a system would work best for bluefin avoidance if it were voluntary, and had the full support of those involved. However, in the interest of avoiding bluefin and minimizing the risk of shutting down the pelagic longline fishery, NMFS strongly encourages vessel captains to communicate the location of bluefin tuna with each other.

H. Gulf of Mexico Gear Restricted Area

Comment 51: A large number of commenters expressed general support for a gear restricted area in the Gulf of Mexico, while others stated that NMFS should not implement a GOM GRA, due to the severe economic impact it would have on the fishery.

Response: Implementation of a Gear Restricted Area in the Gulf of Mexico would support the achievement of the Amendment 7 objectives. A Gear Restricted Area would, in conjunction with the other preferred alternatives, result in the reduction of dead discards of bluefin tuna by the pelagic longline fishery. Although implementation of a GRA would have a negative economic impact on the pelagic longline fishery, the preferred alternative would have less of an impact than some of the other alternatives considered and analyzed. As described in more detail in the responses to comments below, NMFS analyzed a range of alternatives, and took into account the importance of fishery resources to fishing communities by analyzing economic and social data. Because GRAs would result in the reduction and/or redistribution of fishing effort by pelagic longline gear, the preferred alternative represents a balance between anticipated reductions in dead discards of bluefin, and potential negative economic impacts on the pelagic longline fishery. Furthermore, the preferred alternative would support the broader objectives of both stock rebuilding and as well as the continued viability of the commercial and recreational fisheries that depend upon bluefin tuna.

Comment 52: Some commenters supported the Amendment 7 alternative that would prohibit the use of pelagic longline gear throughout the Exclusive Economic Zone (EEZ), year-round, in order to protect spawning bluefin, and aggregations of bluefin. Some commenters noted the potential for a gulf-wide closure to reduce injuries and deaths of protected species such as sea turtles.

Response: NMFS analyzed the biological and socio-economic impacts of this Alternative, and although prohibition of pelagic longline gear would eliminate interactions between pelagic longline gear and bluefin in the Gulf of Mexico, such a prohibition would not minimize the reductions in target catch in the incidental fishery (pelagic longline) consistent with Amendment objectives. The prohibition of pelagic longline gear in the Gulf of Mexico EEZ (year round) is expected to only result in a 14 percent decrease in the numbers of bluefin tuna discarded, yet would reduce revenue from pelagic longline gear by approximately $ 7.63 million per year, and affect up to 75 vessels. Furthermore, such a prohibition would not promote the optimum yield of the swordfish and yellowfin tuna fisheries in the Gulf of Mexico.

NMFS also analyzed the possible effects of the gear restricted area alternatives on multiple species, including sea turtles. The FEIS contains the results of the analyses that evaluated the gear restricted area alternatives using redistribution analyses to ensure that the GRAs would not substantially increase interactions with sea turtles by forcing fishermen into open waters of the Atlantic Ocean. The preferred alternatives of Amendment 7 would have a neutral or minor beneficial impact on protected species as a result of potential impacts on fishing effort, especially associated with pelagic longline gear.

The fisheries managed under the 2006 Consolidated Atlantic HMS FMP and its amendments have undergone formal and/or informal Section 7 consultation and collectively address the ongoing Atlantic HMS fisheries. On August 15, 2013, NMFS determined that the proposed measures in Amendment 7 to the 2006 Consolidated HMS FMP would not require reinitiation of formal consultation. The environmental effects of the preferred alternatives in this FEIS are substantially the same as those analyzed in the DEIS, although some different alternatives are now preferred and two of the alternatives have been slightly modified. No additional or substantively different effects on listed species are expected as a result of these changes.

In 2014, however, NMFS determined that it needed to reinitiate consultation for the pelagic longline fishery. That fishery operates consistent with a 2004 BiOp that concluded that the Atlantic pelagic longline fishery was not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley or olive ridley sea turtles but was likely to jeopardize the continued existence of leatherback sea turtles. NMFS implemented the Reasonable and Prudent Alternative and Terms and Conditions specified in that BiOp (e.g., hook type, bait type, mandatory workshops). On March 31, 2014, NMFS requested reinitiation of consultation of the pelagic longline BiOp due to new information on mortality rates and total mortality estimates for leatherback turtles that exceed those specified in the RPA, changes in information about leatherback and loggerhead populations, and new information on sea turtle mortality. While the mortality rate measure needs to be re-evaluated, this does not affect the overall ability of the RPA to avoid jeopardy during the reinitiation.

NMFS will continue to implement these RPAs during the reinitiation of consultation and has previously determined that ongoing operations in compliance with that BiOp comply with requirements under sections 7(a)(2) and 7(d) of the ESA. Section 7(a)(2) prohibits Federal actions that jeopardize the continued existence of listed species or that destroy or adversely modify their critical habitat. Section 7(d) of the ESA prohibits federal agencies and permit applicants from making any "irreversible or irretrievable commitment of resources" that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures during consultation under section 7(a)(2). Implementation of the preferred alternatives in the FEIS will not affect NMFS's ability to comply with the RPAs and RPMs in that BiOp and will not alter the proposed action in a way that triggers additional ESA requirements or considerations pertaining to the pelagic longline fishery and listed sea turtles and other species covered in the 2004 BiOp.

NMFS has determined that other conclusions of the 2004 BiOp and a 2001 BiOp on the Atlantic HMS fisheries are still applicable. Amendment 7 measures (including those that could reduce fishing effort) implemented in conjunction with current measures in the HMS fisheries would not change the determination that ongoing operations are unlikely to jeopardize the continued existence of the right whale, humpback, fin, or sperm whales, or Kemp's ridley, green, loggerhead, hawksbill or leatherback sea turtles. A complete discussion of the effect of the alternatives applicable to the Longline category on quota allocation and fishing effort is located in Section 4.1.6.1.

On July 3, 2014, NMFS published a final rule to list four Distinct Populations Segments (DPS) of scalloped hammerhead sharks (*Sphyrna lewini*): two as threatened (Central and Southwest Atlantic DPS and Indo-West Pacific DPS) and two as endangered (Eastern Atlantic DPS and Eastern Pacific DPS) under the Endangered Species Act (79 FR 38214). The Central and Southwest Atlantic DPS consists primarily of the population found in the Caribbean Sea and off the Atlantic coast of Central and South America (includes all waters of the Caribbean Sea, including the U.S. EEZ off Puerto Rico and the U.S. Virgin Islands). The Central and Southwest Atlantic DPS occurs within the boundary of Atlantic HMS commercial and recreational fisheries. NMFS will be developing a more detailed analysis regarding any effects to the Central and Southwest DPS of scalloped hammerhead sharks to be used in consultation on the Atlantic HMS fisheries. As a preliminary matter, the Division has determined that ongoing operation of the fisheries consistent with the RPAs and RPMs in existing biological opinions and consistent with ongoing conservation and management measures is not likely to jeopardize the continued existence of the species or result in an irreversible or irretrievable commitment of resources which would foreclose formulation or implementation of any reasonable and prudent alternative measures. None of the measures in Amendment 7 would be expected to have an effect on the threatened Central and Southwest DPS of scalloped hammerhead sharks that would affect this determination.

Comment 53: Some commenters supported the Gulf of Mexico EEZ GRA, which would prohibit the use of pelagic longline gear from March through May, while others supported expanding the duration of the Gulf of Mexico EEZ GRA for additional months to include all the months during which bluefin tuna may be present in the Gulf of Mexico, or suggested specific ranges of months (e.g., December through June, March through May, March through August). A large number of commenters felt that a GRA that encompassed the entire Gulf of Mexico EEZ would better account for variability in bluefin distribution and areas of spawning activity and changing fishing patterns within the fleet. Many commenters believed that a larger GRA should be implemented instead of any changes to quota allocations, or felt that the implementation of such a GRA would eliminate the need for Individual Bluefin Quotas (IBQs).

Response: In selecting a preferred alternative, NMFS analyzed the time and areas in which the highest number of interactions have occurred, in order to achieve meaningful reductions in bluefin catch by pelagic longline gear, but also minimize the reductions in target catch. A Gulf of Mexico EEZ GRA, encompassing the entire Gulf of Mexico EEZ for the suggested range of months was not justified, given the fact that there exists an historical pattern of relatively high number of interactions occurring in particular locations and months. A GRA encompassing the whole of the Gulf of Mexico EEZ would have included locations where there have been relatively few interactions. Inclusion of locations with relatively few historical interactions in the GRA would still preclude fishing with pelagic longline gear in such locations, increasing the likelihood of additional lost revenue, with relatively little reduction in bluefin interactions.

Inclusion of months during which there have been relatively few interactions would preclude fishing opportunity, with relatively little reduction in bluefin interactions. In Chapter 3 of the FEIS, Table 3.29 presents a breakdown of all bluefin tuna interactions reported in the HMS Logbook, by month, in the Gulf of Mexico EEZ. Although bluefin tuna were noted year round in the Gulf of Mexico, the data indicated distinct spatial and temporal patterns. For example, between 2006 and 2012, there were 13, 2, 13, 16, and 13 total bluefin tuna interactions reported in July, August, September, October, and November, respectively. In comparison, the months that some comments suggested for a gear restricted area (March through May) had 266, 498, and 496 total bluefin interactions in March, April, and May, respectively. NMFS does not believe that a gear restricted area is warranted during the late summer or early fall based on the reported numbers of bluefin tuna that occurred in this area at this time. There is variability in bluefin distribution and fishing patterns may change over time. Due to this variability, any specific GRA that does not cover the whole EEZ year-round may be less effective, or more effective at reducing dead discards than the historical data would indicate. Notwithstanding this variability, a specific GRA designed using historic information, and encompassing only a portion of the Gulf of Mexico for specific months is likely to reduce dead discards over a multi-year time scale. In other words over time there are consistent patterns in bluefin distribution that may not be exhibited to the same extent each year, therefore a gear restricted area is not likely to achieve the same level of effectiveness each year, but over time is expected to achieve reductions in dead discards similar to that indicated by NMFS' analysis.

In analyzing the Gulf of Mexico closure alternatives in the FEIS, NMFS also considered the need to gather scientific data from the Gulf of Mexico longline fishery data for the development of effective conservation and management measures. A larger GRA for the Gulf of Mexico EEZ would severely reduce the collection of important data from the pelagic longline fishery and would increase uncertainty in the western Atlantic bluefin stock assessment. Gulf of Mexico pelagic longline data are critical to the development of catch per unit effort (CPUE) information, used as the index of abundance for spawning bluefin tuna, an important element of the stock assessment for western Atlantic bluefin tuna. Such uncertainty would make it more difficult to assess the status of stocks, to set the appropriate optimum yield and define overfishing levels, and to ensure that optimum yield is attained and overfishing levels are not exceeded.

NMFS conducted a "power analysis" to determine the number of pelagic longline sets that would be required to maintain the current level of precision for the CPUE and found that approximately 60 percent of the recent number of pelagic longline sets in the Gulf of Mexico would be required. Although NMFS could transition from using this fishery dependent data to another data source (i.e., fishery independent data), it would require several years before a new fishery independent data source could be used for stock assessment purposes and an abrupt cessation of the current CPUE data would mean a break in the time series and increase uncertainty in stock assessment results. NMFS will continue to explore alternative methods for the collection of independent data. In contrast to a GRA applicable to the full EEZ, a GRA in the Gulf of Mexico with a smaller area and short duration would still be effective in reducing bycatch to the extent practicable and protecting spawning-sized bluefin while permitting allowable fishing and the collection of data needed for index of abundance. The Preferred Alternative is neither the size nor duration that would preclude the collection of the necessary data in support of the stock assessments, and would reduce bycatch during the spawning season, as well as augment the IBQ program in ensuring that catch does not exceed the quota.

With respect to the relationship between the size of a GRA and other Amendment 7 alternatives (i.e., IBQs and quota allocation) , the use of multiple management tools would reduce negative economic impacts on the pelagic longline fishery, as well as achieve the diverse Amendment 7 objectives in a balanced manner.

Comment 54: Several commenters expressed support for the proposed Small Gulf of Mexico GRA in the DEIS, which is no longer preferred in the FEIS. A number of comments indicated the Small Gulf of Mexico GRA was the minimum acceptable size for a GRA in the Gulf of Mexico, while other commenters did not support the preferred Small Gulf of Mexico GRA alternative in the DEIS, feeling that NMFS ought to do more to protect bluefin in the Gulf of Mexico. A large number of commenters requested that the agency re-evaluate the GRA and identify other alternatives. One commenter felt the DEIS lacked compelling justification for choosing an alternative that does not protect all spawners and increases fishing pressure in critical areas of the Gulf of Mexico. Other commenters felt that the boundaries encompassed by the Small Gulf of Mexico GRA did not reflect the best scientific knowledge available. Specific suggestions included modification of the duration (change, shorten, lengthen, or include specific months) to cover peak spawning periods or provide a buffer due to variability in the timing and area of bluefin spawning activity and longline fishing patterns from year to year. Some commenters believed the months of the GRA should cover the full bluefin spawning period. Other commenters suggested that the GRA be extended to the east or north to encompassed additional known spawning areas, or extended south to cover areas where large numbers of interactions have occurred.

Response: As stated in the response to comment numbers 51 and 53NMFS analyzed a range of GRA alternatives that encompass a range of biological and socio-economic impacts, and would achieve various amounts of reductions in bluefin interactions and result in different reductions in revenue. As explained above in the response to comment # 53, a complete Gulf of Mexico EEZ closure for a full year or portion of the year is not warranted because a smaller GRA is sufficient to achieve the Amendment 7 objectives and to minimize bycatch and bycatch mortality to the extent practicable. Based on public comment, NMFS analyzed the impacts of additional areas and times in the Gulf of Mexico, not analyzed in the DEIS, and included 2012 data. As a result of these additional analysis, and careful consideration of both the biological and socio-economic impacts, NMFS prefers the Spring Modified Gulf of Mexico Pelagic Longline GRAs.

The preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would include most of the geographic area of the preferred alternative in the DEIS, but would be larger, extend further to the east, and be slightly reduced in size on the western and northern borders. Additionally, the preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would include a second area that is adjacent to the southern border of the Desoto Canyon Closed Area's northwestern 'block.'

The Spring Modified Gulf of Mexico Pelagic Longline GRAs would encompasses additional areas of historic bluefin interaction in the eastern-central Gulf of Mexico, and addresses a recent shift in pelagic longline fishing activity eastward. Between 2009 and 2012, there was a 10 to 20 percent shift from the Mid-Gulf Louisiana region to the eastern Gulf of Mexico region. The area defined by the preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would include a larger portion of the spawning areas documented in the peer-reviewed literature at this time, but would not include all of the known bluefin spawning areas in the GOM for reasons previously explained. The preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would be during the months of April and May, the same time period as proposed for the original Small Gulf of Mexico GRA.

NMFS previously protected large portions of the eastern Gulf of Mexico through implementation of the DeSoto Canyon closed area, Madison-Swanson and Steamboat Lumps Sites, and the Edges closure. The pelagic longline fleet fishes the continental shelf along the west coast of Florida between the southern DeSoto Canyon box and the Florida Keys. However, bluefin interactions in this area are relatively few compared to the areas evaluated in the FEIS.

Comment 55: One commenter noted that the size of the fishable area in the Gulf of Mexico is already small, given the constraints on the locations where they can fish, including existing pelagic longline closed areas, as well as the areas that must be avoided for other reasons (e.g., activity range of seismographic vessels, which can operate for up to six months, and oils rigs).

Response: NMFS acknowledges that the preferred Spring Modified Gulf of Mexico Pelagic Longline GRAs would further reduce the amount of fishable areas in the Gulf of Mexico available for the use of pelagic longline gear, and that vessels choosing to fish in the Gulf of Mexico with pelagic longline gear must work around other industrial users of Gulf of Mexico resources. NMFS selected the boundaries of the Spring Modified Gulf of Mexico Gear Restricted Areas with careful consideration of the associated benefits and costs. NMFS optimized the size of the preferred GRAs to achieve a meaningful reduction in dead discards, and still leave fishing grounds open for the pelagic longline fleet. The Cumulative Impacts Analysis in this FEIS (Chapter 6) considers the impacts of the preferred alternatives in the broader context of other historical and current activities.

Comment 56: NMFS should consider the impact on the yellowfin tuna and swordfish fisheries, which are active in the Gulf of Mexico and in the areas covered by the GRAs. Specifically, the commenter questioned whether the Gulf of Mexico pelagic longline fleet would be able to remain active.

Response: NMFS carefully considered the impact of the preferred Modified Spring Gulf of Mexico GRAs on yellowfin and swordfish fisheries, both of which are robust and healthy fisheries in the Gulf of Mexico. The preferred Spring Modified Gulf of Mexico GRAs would achieve a balance between conservation objectives and providing continuing opportunity for the Gulf of Mexico swordfish and yellowfin tuna fisheries. The primary conservation objective of the gear restricted areas is to reduce bluefin interactions, and reduce bycatch and bycatch mortality to the extent practicable. NMFS compared among the alternatives the amount of 'savings' of bluefin tuna and the reduction in target catch as part of its analysis of the gear restricted areas. Under the Preferred Alternative, the annual reductions in revenue associated with the reduced catches of swordfish and yellowfin tuna are estimated at $ 41,504 and $ 207,110, respectively. The annual reduction in total revenue is estimated at $ 1,793,922. An example of how the data was compared and alternatives evaluated follows: Comparing the Preferred Alternative with the alternative that would restrict the full EEZ for the months of March through May, the reduction in the weight of bluefin catch would be a little more than twice as much under the EEZ GRA (44.2 mt versus 19.2 mt under the Preferred), but the reduction in total revenue associated with the EEZ GRA would be more than six times larger than the reduction in total revenue associated with the Preferred Alternative ($ 1,793,922 versus $ 281,614 under the Preferred). In other words, compared to the Preferred Alternative, the amount of additional costs that would be associated with the EEZ GRA would be disproportionately greater than the additional conservation benefits associated with the EEZ GRA. The Amendment 7 measures are not designed to target a particular amount of reduction in dead discards, but rather reduce dead discards in a meaningful way, provide strong incentives to avoid and reduce bycatch, and take into account the potential impacts on the pelagic longline fishery. The combined effect of the Modified Spring Gulf of Mexico Pelagic Longline Gear Restricted Area and the Modified Cape Hatteras Pelagic Longline Gear Restricted Area, would reduce the number of bluefin discarded by 40 percent and the number of bluefin kept by 10 percent (fishery-wide).

Comment 57: One commenter asked why NMFS did not propose conditional access to the Gulf of Mexico GRAs, based on performance metrics, in contrast to the Cape Hatteras GRA, for which access was proposed. The commenter suggested that performance metrics should be applied to all GRAs.

Response: NMFS did not propose and does not prefer in the FEIS to include performance metrics Gulf of Mexico Gear Restricted Areas in part because they would not be as effective in reducing discards of bluefin tuna in the Gulf of Mexico as they would be in the Atlantic. The fact that a relatively small number of vessels are responsible for the majority of bluefin interactions in the Atlantic makes access to the Modified Cape Hatteras GRA based on performance metrics effective, in order to both reduce dead discards, provide incentives for modifying fishing behavior, and acknowledging past performance. In contrast, the pattern of interactions with bluefin tuna in the Gulf of Mexico is different from that in the Atlantic, with the interactions more evenly distributed among all vessels (i.e., more vessels responsible for the interactions). NMFS evaluated the Spring Modified Gulf of Mexico Gear Restricted Areas using performance metrics and only three vessels out of the 61 that fished in the Spring Modified Gulf of Mexico GRAs would not have had access to the GRAs. Therefore, the savings from implementing the performance metrics would have been very small, and the resulting ecological impacts would have been similar to not implementing a GRA at all.

Comment 58: Some commenters felt that NMFS should delineate a GRA using the same boundaries as the bluefin Habitat Area of Particular Concern (HAPC).

Response: NMFS determined that the reductions in bluefin tuna interactions resulting from a Gulf of Mexico GRA that encompasses the boundaries of the bluefin HAPC would be very similar to the savings incurred from a GRA drawn encompassing the boundaries of the Gulf of Mexico EEZ. NMFS therefore did not further evaluate a GRA that was designed to encompass the boundaries of the HAPC or develop an alternative around this proposed boundary.

Comment 59: A commenter indicated that he could support a Gulf of Mexico GRA alternative if the pelagic longline fleet is provided flexibility through some of the alternatives proposed such as access to current closed areas, and ability to fish under General Category rules.

Response: The preferred alternatives in the FEIS provide flexibility and balance the Amendment 7 objectives to reduce dead discards, yet also provide fishing opportunity. As described under the Response to Comments # 65, and # 64, these alternatives are not preferred in this FEIS.

Comment 60: The Gulf of Mexico Fishery Management Council commented that NMFS should consider potential impacts on vessels using bottom longline gear. They were concerned about the synergistic effects of the pelagic longline and bottom longline regulations on vessels.

Response: The Modified Spring Gulf of Mexico Gear Restricted Areas are designed for the pelagic longline fishery only. Vessels that exclusively use bottom longline gear would not be affected by the GRAs. Vessels that use both bottom longline gear and pelagic longline gear during the year would be impacted, and would likely modify their fishing behavior or business plan. Bottom longline gear is currently subject to regulations including time and area restrictions, and is not likely to capture bluefin tuna due its deployment near the bottom of the ocean.

Comment 61: NMFS should compensate vessels for the time period the Gulf of Mexico GRA is in place.

Response: NMFS, cannot compensate vessels for the time period a gear restricted area is in effect in the Gulf of Mexico, unless there is a situation that meets the definition of a fishery disaster.

Comment 62: NMFS should not distinguish between bluefin tuna in the Gulf of Mexico and Atlantic as they are from the same breeding stock.

Response: For the purposes of Amendment 7, NMFS differentiates between bluefin tuna in the Gulf of Mexico and bluefin tuna in the Atlantic for the implementation of certain management measures for a number of reasons. As noted above, the distribution of interactions across vessels is different between the Gulf of Mexico and the Atlantic. Gulf of Mexico bluefin tuna that interact with pelagic longline gear are often heavier and older than tuna that interact with pelagic longline gear in the Atlantic, and are found in spawning condition during certain months of the year. The pattern of discarding in the Gulf of Mexico is also very different from the discard pattern documented in the Atlantic (i.e., larger fish discarded in the Gulf of Mexico). NMFS does not make such a distinction between Gulf of Mexico and Atlantic bluefin in the assessment of the bluefin stock Although Gulf of Mexico bluefin often migrate up the east coast to feeding grounds in the northwest Atlantic Ocean, data suggest that some proportion of fish in the Atlantic are individuals from the eastern Atlantic and Mediterranean stock whereas bluefin in the Gulf of Mexico are predominantly from the western Atlantic stock.

Comment 63: NMFS should examine observer data in addition to logbook data to estimate bluefin tuna savings; the estimate of savings in 2010 and 2011 is low because fishing effort was low in those years.

Response: NMFS acknowledges that estimates of savings might be low in 2010 and 2011 as a result of depressed effort due to the effects of the Deepwater Horizon oil spill. However, estimated savings are presented as an average from a 7-year period. Interannual variability is therefore incorporated into the estimation of ecological impacts of different GRA alternatives. NMFS developed GRA alternatives from HMS Logbook data because every fisherman must submit logbooks detailing activity and interactions with all fish kept, discarded alive, and discarded dead. While extremely useful in estimating dead discards, the observer program is not a complete census survey of the fishery, and the extent of observer coverage is not necessarily useful in assessing ecological or economic effects of Gear Restricted Areas. Furthermore, there is a percentage of vessels that have not been observed and NMFS determined that some of these vessels contributed sizable numbers of bluefin interactions in the Cape Hatteras GRA. NMFS, therefore, prefers to base the estimation of impacts on HMS logbook data.

I. Pelagic Longline Vessels Fishing under General Category Rules

Comment 64: Some commenters supported the proposed measure to allow vessels fishing with pelagic longline gear that are not authorized conditional access to the Cape Hatteras GRA, to fish under General category rules. Vessel owners wanted to have this type of fishing opportunity as mitigation for the lost opportunity of fishing with pelagic longline gear in the Cape Hatteras GRA, during the months from December through April. Some commenters did not support the proposed opportunity for such vessels to fish under the General category rules for various reasons. Some noted that the activity would be a "dangerous precedent," because limited access vessels would be allowed to fish under the rules applicable to an open access category, but there would be no reciprocity allowed for the General category vessels (that is, General category vessels would not be allowed to fish as a pelagic longline vessel). Others were concerned about the expansion of a targeted bluefin fishery in the Cape Hatteras GRA, an area that already has large numbers of interactions with bluefin. A commenter found it ironic that vessels not allowed to fish with pelagic longline gear in the Cape Hatteras GRA (proposed in order to reduce bluefin interactions with pelagic longline gear) due to their low performance criteria score would be provided an opportunity to target bluefin tuna. Some noted concern about the potential impacts on the rate of harvest of the General category quota, which is limited, and the indirect impacts on General category vessels. Others noted that the replacement of pelagic longline gear with handgear (targeting bluefin) is not economically viable due to the size of the pelagic longline vessels and the associated trip expenses. A commenter stated that the proposed measure would facilitate trans-shipment of bluefin from Longline category to General category vessels. A commenter suggested that all pelagic longline vessels should be able to fish under the General category rules, and not only those affected by the GRA.

Response: Based upon public comment and further consideration, NMFS no longer prefers the alternative that would have allowed vessels fishing with pelagic longline gear that are not authorized conditional access to the Cape Hatteras GRA to fish under General category rules. Given the uncertainty regarding the economic benefits as well as public concerns, the potential benefits of allowing vessels to fish under the General category rules do not outweigh the potential costs and risks associated with this activity. Further, allowing the pelagic longline vessels with relatively low performance criteria scores that are not allowed access to the Cape Hatteras GRA to fish under the General category rules is perceived as unfair to General category vessels and vessels with higher performance scores.

J. Pelagic Longline Limited Conditional Access to Closed Areas

Comment 65: NMFS received a large number of comments that did not support the proposed limited conditional access to closed areas using pelagic longline gear, for a variety of reasons. Commenters, including the Florida Fish and Wildlife Conservation Commission, were foremost concerned about potential negative biological impacts on swordfish, billfish, and other species, as well as the indirect negative socio-economic impacts on the recreational fishing community if there were negative biological impacts. Specifically, commenters cited the benefits of the DeSoto Canyon and East Florida Coast closed areas contributing to the rebuilding of the swordfish stock, and the stabilization of the blue and white marlin stocks. Commenters stated that the biological analysis of the alternative was inadequate, and one commenter was concerned about the impacts on dusky sharks. Some commenters supported access, noting the importance of such access as a means to provide flexibility to pelagic longline vessels in the context of the IBQ program restrictions, while others suggested modifications to the alternative such as allowing the use of electronic monitoring instead of human observers.

Response: Based upon public comment and further consideration of potential administrative costs, NMFS is no longer preferring this alternative. The potential benefits of allowing pelagic longline vessels limited conditional access to the closed areas would not outweigh the potential costs and risks associated with this activity. The objectives of the proposed measure were to maintain the relevant conservation aspects of the closure, balance the objectives of the closures, provide commercial data from within the closures, and provide additional fishing opportunities for permitted longline vessels (mitigating the potential negative economic impacts of Amendment 7). The relevant conservation aspects of the closures for which access was proposed are characterized by the objectives of the relevant closed areas (as described when they were implemented. The East Florida Coast, Charleston Bump, and DeSoto Canyon Closed Area were implemented as part of a bycatch reduction strategy, based on three objectives: (1) To maximize the reduction in incidental catch of billfish and of swordfish less than 33 lb dressed weight; (2) to minimize the reduction in the target catch of larger swordfish and other marketable species; and (3) to ensure that the incidental catch of other species (e.g., bluefin, marine mammals, and turtles) either remains unchanged or is reduced. Upon implementation, NMFS recognized that all three objectives might not be met to the maximum extent and that conflicting outcomes would require some balancing of the objectives.

Although NMFS proposed limited, conditional access to these closed areas, public comment indicated that the proposed alternative did not achieve a proper balance of the achievement of the objectives of access. Although the swordfish stock is rebuilt, the public clearly believed that access to the closed area would undermine the benefits associated with the closures. In other words, the public believed that the first objective of the alternative (to maintain the relevant conservation aspects of the closure), was not being met. With respect to providing commercial data from within the closures, NMFS may obtain data from within the closures through the use of exempted fishing permits. Furthermore, there would be administrative costs associated with the access program. In summary, the benefits associated with providing additional fishing opportunities (by providing access) would not outweigh the costs in terms of the risk of undermining the conservation benefits of the closed areas.

K. Pelagic and Bottom Longline Transiting Closed Areas

Comment 66: The North Carolina Department of Environment and Natural Resources supported the preferred alternative (Alternative E8) to allow transiting of closed areas by vessels possessing bottom or pelagic longline gear.

Response: Allowing HMS vessels that possess bottom or pelagic longline gear on board to transit closed areas provided they remove and stow the gangions, hooks (unbaited), and buoys from the mainline and drum would reduce potential economic costs associated with indirect routes of travel (more time at sea and more fuel, etc.) as well as reduce potential safety-at-sea issues.

L. Gear Based Measures

Comment 67: Authorizing buoy gear to be used by Swordfish Incidental permit holders to catch swordfish (Alternative B2b) and authorizing the harvest of BAYS tunas with buoy gear by Swordfish Directed and Incidental permit holders (Alternative B2c) would reduce dead discards in a direct manner and should be supported.

Response: Buoy gear used in and near the Florida Straits has been shown to be efficient at catching swordfish with a relatively low bycatch rate. However, due to a lack of data, it is unknown what the catch and bycatch of buoy gear would be when used to target swordfish at night in other areas of the Atlantic, Gulf of Mexico, U.S. Caribbean, and high seas or to target

BAYS tunas in these areas during daylight hours. This lack of information makes assessing an expansion in the use of buoy gear for swordfish or tunas difficult, especially considering the potential to interact with adult bluefin tuna in the Gulf of Mexico, other HMS such as billfishes, or protected species in areas such as off the Outer Banks of North Carolina (as an example). At this time, NMFS does not prefer alternatives B2b or B2c because of the lack of available information needed to assess the ecological impacts of expanded buoy gear use when used to target swordfish or BAYS tunas. NMFS will continue to assess additional information as it becomes available and may re-evaluate buoy gear fishery regulations in the future.

Comment 68: Pelagic longline fishermen should use more selective fishing gears such as greenstick gear and buoy gear and part of the *Deepwater Horizon* oil spill restoration funds should be used to help pelagic longline fishermen in the Gulf of Mexico make this transition. No financial hardship for fishing gear transition conducted as part of oil spill restoration efforts should fall upon affected fishers.

Response: In Amendment 7, there are no alternatives that would require vessels to transition from pelagic longline to greenstick gear or buoy gear. Under specific fishing permits, greenstick gear is currently authorized to fish for Atlantic tunas and buoy gear is authorized to fish for swordfish. Fishermen may utilize any legal fishing gear as authorized under the valid permits that are on their vessel and when used in accordance with applicable regulations. Fishermen may change fishing gears in accordance with applicable regulations. “Prohibition of the Use of Pelagic Longline Gear in the HMS Fishery” is an alternative in the FEIS characterized as “Considered but Not Analyzed Further” because it would not provide a balanced approach to achieving the Amendment 7 objectives or be consistent with the provisions of the MSA. Amendment 7 would provide incentives for vessels for transition from Pelagic longline gear to greenstick or buoy gear, but would not mandate such a transition.

The Oil Pollution Act of 1990 authorizes certain federal agencies, states, and Native American tribes, collectively known as the Natural Resource Trustees (trustees), to evaluate the impacts of oil spills on natural resources and recreation, and to plan restoration projects to fully offset those impacts. In the case of the *Deepwater Horizon* oil spill, NOAA is one of the nine trustees responsible for jointly conducting this process, which is known as a Natural Resource Damage Assessment (NRDA). Throughout the Deepwater Horizon oil spill NRDA process, the trustees have conducted multiple public comment periods and dozens of public meetings throughout the Gulf Coast states intended to gather input on the public’s preferred approaches to natural resource restoration. The most recent public comment period related to the Deepwater Horizon oil spill restoration planning concluded on February 19, 2014. Throughout the NRDA process, the trustees have invited comments on broad types of restoration projects, as well as specific projects. In addition to accepting verbal comments at public meetings, the trustees have accepted comments and ideas by U.S. Mail, email to nrda.projects@noaa.gov, and via the Internet via www.gulfspillrestoration.noaa.gov. As part of their ongoing commitment to maximum transparency, the NRDA trustees have posted input gathered during these public comment periods online at http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/view-submitted-projects/. The NRDA trustees also continue to accept project ideas from the public by mail and via http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/suggest-a-restoration-project/. During the NRDA process, the trustees have received suggestions that restoration project funds help pelagic longline fishermen transition to greenstick and buoy gear. [Could wrap this up by saying agency will continue to explore options based on available funding, etc.]

M. Individual Bluefin Quotas – General Comments

Comment 69: Commenters supported implementation of the IBQ system in order to hold vessels accountable and provide incentives to reduce discards. Commenters noted that NMFS should provide some flexibility in the IBQ system, particularly in the short-term, to ensure that vessels, particularly small vessels, are able to adapt to the new restrictions and the overall program is successful. Commenters urged NMFS to continue to support the pelagic longline swordfish fishery, which is important for multiple reasons.

Response: Implementation of the IBQ system would increase the responsibility and accountability of individual vessels and the pelagic longline fishery as a whole, for the catch of bluefin tuna. As explained in detail in the responses to more specific comments below, the preferred individual bluefin quota system is designed to provide a reasonable and effective means of reducing dead discards, increasing accountability, and maintaining a viable pelagic longline fishery. The management tools are intended to provide flexibility at the level of the individual vessel, and in the quota system as a whole, so that the fishery can operate under the challenges of a substantially new regulatory structure. Furthermore, the fishery must be able to adapt on a continuing basis to the variability of highly migratory species, and changing ecological conditions.

Individual pelagic longline vessels have the flexibility to change their fishing practices through modification of fishing behavior (including time, location and methods of fishing, and the use of non-longline gear); increasing communication within the fishery to facilitate bluefin avoidance; and leasing of individual bluefin quota. Under the preferred alternative, NMFS may also provide additional flexibility by allocating additional quota to the Longline category, as described in the response to Comment 18.

Comment 70: Some commenters stated that NMFS should consider some of the broad questions such as what will happen when the bluefin stock grows, which may lead to more dead discards; what about unintended consequences of the IBQ system such as creating a directed fishery; and what will happen to a vessel if they have an atypically large BFT catch event (also known as a “disaster set”)?

Response: As the bluefin stock size continues to grow, the total number of interactions between the pelagic longline fleet and bluefin tuna may increase. However, the relative number of dead discards by pelagic longline may be a better way to evaluate a trend in the amount of dead discards rather than the total number. A second important metric of success of the IBQ program will be whether the catch of bluefin by the Longline category exceeds the Longline category quota. The preferred measures are expected to reduce the percentage of bluefin catch that is comprised of discards (which from 2006 to 2012, ranged from 61 to 75 percent of the Longline bluefin catch), and prevent the catch of bluefin by pelagic longline vessels from exceeding the Longline category quota.

The preferred IBQ program would not create a directed fishery for bluefin by the pelagic longline fleet. Although pelagic longline vessels would be allocated bluefin quota and be able to derive revenue from the sale of legal-sized bluefin tuna, the quota share of bluefin tuna for each vessel is a relatively small percentage of the Longline category quota. Based on the size of recent Longline category quotas, individual vessels would be allocated between 2 and 6 bluefin tuna per year (depending upon the specific quota share percentage and whether the bluefin is a Gulf of Mexico or Atlantic bluefin). Due to the relatively small quota allocation per vessel, the requirement to utilize quota to account for both dead discards and landings, the requirement to have a minimum amount of quota to depart on a fishing trip using pelagic longline gear, and the cost associated with leasing additional quota, there would be strong economic disincentives to target bluefin.

If a vessel catches an atypically large number of bluefin tuna (i.e., a "disaster set"), the preferred alternative would allow the vessel to retain and sell all legal-sized bluefin, but prohibit the vessel from departing on a subsequent trip using pelagic longline gear until all the bluefin had been accounted for by leasing additional quota from another permitted vessel owner with quota allocation. The vessel would not be allowed to fish with pelagic longline gear until it accounts for the bluefin. This restriction would create a strong economic incentive to avoid bluefin tuna in order to not exceed one's individual bluefin quota. Furthermore, if the vessel in such circumstances holds quota share and at the end of the year would otherwise be eligible to receive quota share for the subsequent fishing year, the quota debt would be settled by deducting quota from the subsequent year's quota allocation. The quota debt would persist from one year until the next until settled.

Under the preferred alternative, NMFS may also consider transferring quota from the Reserve category to the Longline category, to make quota available for the fishery as a whole. With the exception of quota in support of research (e.g., an Exempted Fishing Permit), NMFS does not anticipate allocating additional quota to individual vessels for the purpose of accounting for bluefin catch. The preferred alternative of reviewing the IBQ program after 3 years of operation would include evaluation of the question of whether the IBQ system adequately addresses large catch events.

Comment 71: Some commenters had concerns about the legality of the IBQ program and that that NMFS should consider the legality of "diminishing a vessel's opportunity to catch its quota." Commenters stated that NMFS should not give a public resource to individuals for their financial benefit, and that the pelagic longline fishery should not profit from bluefin, but proceeds should be used for other programs and research.

Response: Allocation of fishery resources to individual entities under a catch share program is legal under the Magnuson-Stevens Act. The preferred IBQ program would be an allocated privilege of catching a specified portion of the total annual bluefin quota in the form of quota shares. IBQ quota shares would not be considered property, but a privilege to an amount of fish in a given year that can be renewed or revoked. Although pelagic longline vessel owners/operators would derive revenue from the sale of bluefin, bluefin would not become a large proportion of their total revenue due to the low amount of bluefin quota and the other elements of the IBQ program. Measures throughout the Amendment were specifically implemented to ensure that the PLL BFT catch remains an incidental fishery, not a directed fishery. Although the preferred alternative would not require a portion of the revenue from the sale of bluefin by Longline category vessels to fund research, NMFS may utilize bluefin quota from the Reserve category in support of relevant research.

Comment 72: A commenter stated that, in the Gulf of Mexico, NMFS should limit catch using gear restrictions and the use of alternative gears instead of IBQs. Some commenters noted that NMFS should separate Gulf of Mexico quota from Atlantic quota.

Response: A discussion of alternative gears is provided in the response to Comments 67 and 68. Alternative gears alone are unlikely to provide the same benefits of the preferred IBQ program, which would limit total catch and provide accountability at the level of individual vessels. The preferred IBQ program includes a provision that designates quota share as either

Gulf of Mexico of Atlantic, and prohibits the use of Atlantic quota in the Gulf of Mexico to prevent potential increases in the relative amount of bluefin caught in the Gulf of Mexico.

Comment 73: Several commenters had concerns or made suggestions regarding some of the specific aspects of the design of the IBQ program that are not among the principal design elements. These comments were as follows: NMFS should implement strict enforcement and fines associated with the IBQ system; The annual distribution of quota should take place in time for the January 1 start of the fishing year; NMFS should not allow carryforward to quota from year to year; NMFS should not allow vessels to land and sell bluefin without sufficient quota; Money from the sale of bluefin should be put in escrow until quota is purchased to account for all catch; and NMFS should not implement the IBQ system because it is too complex.

Response: Enforcement is an important aspect of ensuring the effectiveness of any regulatory program. New management tools such as the preferred electronic monitoring would augment NMFS' ability to effectively enforce the regulations.

On an annual basis, quota would be allocated to vessels in time for vessels to begin fishing on January 1. Adjustments to the quota could occur due to ICCAT recommendations, late data, or overharvest of quota allocations.

Under the preferred alternative, if a vessel that has been allocated quota does not fully utilize that quota (i.e., account for bluefin caught, or lease the quota) during the year, and has a balance of quota at the end of the year, the quota would not carry forward into the subsequent year as individual bluefin quota in association with a particular permit. However, based on the unused quota associated with individual vessels, NMFS would calculate the total amount of unused bluefin quota for the Longline category as a whole, and carry forward that quota (or a portion of that quota) as allowed under ICCAT into the subsequent fishing year. The preferred alternative would not modify the regulations regarding how bluefin quota is carried forward at the level of the fishery as a whole. Quota that is carried forward from one year to the next may remain in the Reserve category or be reallocated to any/all quota categories.

Under the preferred alternative, pelagic longline vessel operators would be able to land and sell any legal-sized retained bluefin in order to maintain full accountability, retain flexibility to accommodate variable bluefin catches, and a provide incentives to retain rather than discard fish. Although a vessel operator may land and sell bluefin in excess of their quota, they may not depart on a subsequent trip using pelagic longline gear until the fish have been fully accounted for with quota allocation. The revenue derived from the sale of the bluefin would facilitate the ability of a vessel owner to lease additional quota. If, at the end of the year, they have not paid the 'quota debt' with additional quota (obtained through leasing), the balance of quota owed would be 'paid' for from the subsequent year's allocation or the vessel would be prohibited from fishing with pelagic longline gear. The vessel owner is fully accountable.

In contrast, a system in which a vessel operator must place the revenue from the sale of a bluefin in escrow until they account for the fish with quota (as suggested by a commenter) is a more complex system that would provide a stronger incentive to discard bluefin, impose additional administrative burdens, and would not provide the flexibility a vessel operator may need. If the vessel operator caught more bluefin than they had quota, while still at sea, there would be more incentive to discard the fish because the vessel owner would face the uncertainty of whether they would be able to lease quota (and at what price) and the operator would be uncertain whether or not any revenue could be derived from the sale of the bluefin. If the revenue were to be placed in escrow, the vessel operator may have insufficient revenue to lease additional quota allocation, and therefore the system itself would be an impediment to the operation of a leasing market. Additionally, there would be questions associated with an escrow requirement such as: If the vessel operator were unable to lease additional quota, and forfeited the revenue, would the vessel still be responsible for accounting for the bluefin, (i.e., would the 'quota debt' remain with the vessel into the following year), even though the vessel owner never obtained any revenue from the fish?

Although the preferred IBQ program would result in a more complex management system, NMFS has minimized complexity in the design of the preferred management measures (including the IBQ program), and has noted examples in the Response to Comments. The scope and complexity of the Amendment 7 IBQ program is within the scope of the many successful catch share programs currently in operation in the United States. NMFS would educate the public regarding the program, and provide the public with ongoing access to the information to facilitate the smooth operation of the preferred IBQ program and enhance transparency.

Comment 74: Commenters noted that NMFS did not provide adequate details in the proposed rule regarding the relationship of the Northeast Distant Area (NED) to the IBQ program and suggested that the current bluefin possession limit be maintained in the NED, but when the limit is reached, the vessel should fish under their IBQ.

Response: Under current ICCAT recommendations, the NED is a distinctly managed geographic area managed under a separate quota than the rest of the fishery. Therefore, the quota associated with the NED (25 mt) would not be part of the preferred quota allocation measures, or managed under the preferred IBQ program. Vessels fishing with pelagic longline gear would be able to fish in the NED without retention limits for bluefin, and prior to the attainment of the NED quota, the dead discards and retained bluefin would count toward the NED quota, but vessels would not be required to utilize IBQ to account for such fish. When the NED quota has been caught, vessels may continue to fish with pelagic longline gear in the NED, but at that time, a vessel would need to have the minimum quota allocation to depart on a fishing trip, and the vessel would be fully accountable for dead discards and retained fish, consistent with the preferred IBQ accounting rules applicable to the non-NED fishery.

Comment 75: Several commenters made suggestions that the IBQ program be split apart from the other major elements of Amendment 7, and implemented sequentially through separate regulatory actions (amendments). One commenter requested that the first amendment focus on the Longline category management measures (individual bluefin quotas and gear restricted areas), and that any quota reallocation among quota categories or enhanced reporting for non-Longline categories only be considered after additional information is obtained from the pelagic longline fishery operating under the IBQ system. The North Caroline Department of Natural Resources suggested that the GRAs and allocation measures should be implemented first, followed by the IBQs, and the Mid-Atlantic Fishery Management Council suggested that the IBQs should follow in a separate action (with additional analyses and alternatives).

Response: The preferred alternatives would implement a wide range of regulatory measures through a single action, because comprehensive modifications to many aspects of the bluefin tuna fisheries are needed, and the preferred measures are highly inter-related. Amendment 7 would utilize a holistic approach to address the complex problems effectively, and minimize potential negative economic impacts. For example, to first focus on management of the Longline category in isolation and delay consideration of other measures such as reallocation and enhanced reporting for non-Longline category vessels would ignore the current differences in reporting requirements among quota categories, continue a high level of uncertainty in the quota system, and would fail to minimize adverse economic impacts for the Longline category.

Accountability for bluefin catch by the Longline category is a high priority, and the preferred IBQ program would provide such accountability, ensure that the fishery operates within the allowable quota established by ICCAT consistent with the rebuilding program, and minimize bycatch to the extent practicable, and in a manner that would have less adverse economic impacts than the other alternatives analyzed (Regional or Group Quota Controls). NMFS considered and analyzed multiple alternatives for all elements of the IBQ program in the DEIS and FEIS, and would fully evaluate the IBQ program after three years of operation.

Comment 76: The Louisiana Department of Natural Resources (Louisiana) commented that Amendment 7 will have large negative socio-economic impacts on the Gulf of Mexico pelagic longline fishery, with greatest impacts in Louisiana, with minimal benefits to the bluefin stock, and attributed the economic impacts mostly to the IBQ program, which it feels is inconsistent with the Louisiana Coastal Resources Program. Louisiana noted that the potential benefits to the stock of bluefin tuna are minimal compared to the potentially large socio-economic impact to the targeted fisheries, and NMFS' consistency determination lacks sufficient data and information.

Response: Pelagic longline vessels may be negatively impacted by the preferred IBQ program, and such impacts would likely be felt in the ports and communities associated with the fishery, including those in Louisiana, which is home to approximately 27 percent of the eligible pelagic longline vessels. Florida, New York, and New Jersey would also be impacted due to the distribution of eligible pelagic longline vessels (31 percent, 16 percent, and 16 percent of the eligible vessels, respectively). Bluefin dead discards in the GOM by pelagic longline vessels have typically ranged from 36 to 86 mt per year. The benefits of the preferred IBQ program include strictly limiting bluefin catch in the pelagic longline fishery, reduction of dead discards and waste, and promotion of economic efficiency, which would contribute to stock growth and a sustainable fishery in the long term. The fact that the GOM is a critically important spawning area for bluefin contributes to the biological importance of having a quota system that effectively limits bluefin catch and provides incentives for pelagic longline vessels to minimize interactions with bluefin.

The IBQ program was analyzed by home port state, and the impacts by state vary, depending upon the specific measurement (i.e., number of vessels with quota share, number of vessels that may need more quota than allocated; amount of quota that each vessel would need; and total amount of quota that each state would need). The states with the highest number of vessels with quota shares would be Florida (43 vessels with quota shares), Louisiana (25 vessels), New Jersey (18 vessels), North Carolina (14 vessels) and New York (11 vessels). Under the regulatory conditions of the Preferred Alternatives, within those home port states, the number of vessels that would need to lease additional quota (above their initial allocation) to continue fishing at their historic rates are as follows: Florida (5 vessels), Louisiana (13 vessels), New Jersey (4 vessels), North Carolina (2 vessels) and New York (3 vessels). Although the proportion of vessels in a particular state that would need to lease additional quota is highest in New Orleans, the average amount of quota that the vessels would need to lease is almost identical similar among vessels from the ports of Louisiana, Florida, and New Jersey. Vessels with the homeport state of New York would need to lease about four times more quota per vessel to continue fishing at their historic rates. The estimate of the total amount of quota that vessels with a home port of New York would need to lease is 13.4 mt (11 vessels), and the total amount of quota that vessels with a home port in Louisiana would need to lease is 17.4 mt (25 vessels).

NMFS has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State of Louisiana objects. The FEIS analysis demonstrates that NMFS utilized many of the factors cited by Louisiana as lacking in NMFS's evaluation. Specifically, NMFS used the best available logbook, dealer, and observer data, conducted vessel-specific analyses for preferred alternatives on gear restricted areas and IBQ measures, and relevant recent scientific information. NMFS also explored the availability of alternative methods of achieving the Amendment 7 objectives, and considered the economic impacts, as well as the long term benefits of the measures. The alternative methods to reduce dead discards of no action or group or regional quotas would have more adverse impacts and be less effective in achieving Amendment 7 objectives to reduce dead discards and maximize fishing opportunity. The design of the IBQ management measures and other aspects of Amendment 7 minimize the significant adverse economic impacts, disruption of social patterns, and adverse cumulative impacts, to the extent practicable, relative to other methods analyzed while also meeting Amendment 7 objectives.

The preferred IBQ program was designed to provide flexibility for vessels to be able to continue to maintain viable businesses, through initial allocations, potential allocation of quota from the Reserve category, quota leasing, elimination of the target species requirement, and, as described above, the flexibility for vessels to fully account for their catch at the end of a trip, after sale of the bluefin.

N. IBQs – Vessels Eligible to Receive Bluefin Quota Shares and Quota Share Formulas

Comment 77: Commenters suggested modifications to the proposed method of defining which vessels are eligible to receive quota share (i.e., "active" vessels, defined as those vessels that made at least one set using pelagic longline gear between 2006 and 2011, based on logbook data). Some stated that the criteria is too restrictive, and that the criteria should instead be any vessel with a valid permit, while others believed the criteria too lenient (resulting in an excessive number of vessels eligible to receive quota share). Some commenters suggested specific alternative criteria such as 50 sets within the previous 3 years.

Response: The definition of a set of vessels that are eligible to receive bluefin quota share is a very important aspect of the design of the IBQ program because the definition would set the boundary of which entities would be eligible for the privilege of being granted quota shares, and the number of eligible entities would have a large influence on the amount of quota share each entity would receive. Regarding the comment that the criteria should be any vessel with a valid permit, the preferred bluefin quota allocation is intended to limit the catch of, and provide accountability and incentives for pelagic longline vessels that are fishing and interacting with, bluefin tuna, and therefore only vessels that are likely to go fishing should be eligible for quota share. Additionally, if vessels that have a Longline category permit that do not typically fish were eligible to receive quota share, they could utilize the quota solely for economic gain by leasing the quota or influencing the leasing market. Further, the set of eligible vessels would be substantially larger (and each eligible vessel would receive substantially smaller proportion of the Longline category quota), and result in such small bluefin allocations that the preferred IBQ program would not function well. Relatively small quota shares would make it likely that most vessels would have insufficient bluefin allocation and be dependent upon leased quota to account for bluefin caught.

Regarding the comment that the definition of "active", which did not include 2012 data, was too restrictive, the FEIS preferred definition of active would be based upon the years 2006 through 2012, instead of through 2011.

Regarding the comment that the proposed definition of "active" is too lenient, the objectives of the preferred IBQ program do not support further restricting the scope of eligible vessel to an arbitrary number of sets, and excluding vessels with a low level of fishing activity. Even vessels with low levels of fishing activity may need bluefin quota shares to account for bluefin catch. Instead, the objectives of the preferred IBQ program would be achieved using more flexible management tools, including incentives for vessels for avoid bluefin tuna, and fish with alternative gears.

Because the intent of the program would be to specify a pool of eligible vessels that excludes inactive vessels, the preferred IBQ program utilizes a secondary criteria that the vessel would be required to have a permit as of August 6, 2013. A vessel would be required to meet the definition of "active", and also have been issued a valid Longline category permit as of August 6, 2013. This second criteria addresses the situation in which a vessel met the criteria of having made at least one pelagic longline set during the years from 2006 through 2012, however, subsequent to the time of the qualifying set(s), the vessel became inactive, as evidenced by a lapsed (non-renewed) Longline category permit (which must be renewed on an annual basis), or as evidenced by a vessel that has been removed from association with a particular vessel.

Comment 78: Commenters were concerned about the ability of new entrants to become active in the fishery, and some suggested that NMFS use an annual system to define eligible vessels, such as a minimum number of sets during the previous year. A commenter noted that businesses which supply new equipment to outfit pelagic longline vessels would be negatively impacted if new entrants were not able to enter the fishery.

Response: The ability for people who are currently not involved in the pelagic longline fishery to become participants in the fishery (new entrants) is an important consideration (and is a required consideration under the MSA). The preferred Amendment 7 IBQ program would add a single additional prerequisite for participation in the pelagic longline fishery to the previously existing two prerequisites and associated monitoring and compliance requirements (e.g., VMS). Previous to this Amendment, the two principal elements for participation in the fishery were a vessel and limited access permit. The preferred IBQ program would implement a requirement for a vessel to have the minimum amount of bluefin quota allocation in order to fish with pelagic longline gear, as well as electronic monitoring requirements associated with preferred IBQ program.

The preferred IBQ program would provide adequate opportunities to new entrants to the fishery because there would be multiple means by which a new entrant may satisfy the quota requirement. The structure of the preferred IBQ program would not create any unreasonable barriers to new entry. A person interested in participating in the fishery may purchase a permitted vessel with IBQ shares, and therefore be allocated quota annually (due to the IBQ share associated with the permit), or a person may purchase a permitted vessel without IBQ shares, but lease quota allocation from another permitted vessel. Under the preferred IBQ program, as in the past, participation in the pelagic longline fishery by new entrants would require substantial capital investment and potential new entrants would face costs which are similar to historical participants.

NMFS considered the merits of setting aside a specified amount of quota for new entrants, but found several negative aspects of such a provision. For example, providing quota to new entrants would essentially create a second quota allocation system, which would complicate the overall preferred IBQ program by creating separate class of vessels, with different allocations. A quota set aside for new entrants would result in less quota available for other participants in the fishery, and rather than the market controlling the quota, there would be many policy decision to be made (e.g., would the amount of set aside vary according to the number of new entrants, or be a fixed amount annually? Would the quota be divided equally among new entrants, be allocated in the minimum share amounts, or allocated based on fishing history). NMFS believes in simplifying the IBQ program upon implementation where possible, in order to minimize regulatory burden and complexity. A system of rules regarding quota set aside would add additional complications to the IBQ program. Therefore, when considering whether additional restrictions to facilitate new entrants to the fishery are warranted, NMFS determined that given the lack of information with which to base such restrictions, and the uncertainty whether there would be a pressing need for such restrictions, that a quota set aside was not warranted. During the three year review of the IBQ program NMFS will consider information from the fishery after implementation of the IBQ program, and evaluate whether the IBQ program provides adequate opportunities to new entrants.

As suggested by commenters, NMFS considered the concept of making an annual determination of which vessels are eligible to receive quota allocations based on a set of criteria (such as a certain number of longline sets during the previous year). NMFS found that there are negative aspects of such an annual system. If the vessels allocated quota shares varied on an annual basis, the IBQ program would be more complex and difficult to administer; there would be greater uncertainty annually in the fishery; there would be incentives to fish on an annual basis (due to criteria to fish in order to receive quota); and any value associated with a permit that would be derived from the associated IBQ share may be minimized (if the IBQ share is only valid for a year). Although such a system could limit the number of years a vessel without quota share (i.e., a new entrant) must lease quota, the negative aspects of this approach would be substantial. For example, in order to have an IBQ system that includes strong accountability, any quota ‘debt’ accrued must persist from one fishing year to the next. It would be difficult to implement persistent accountability if the vessels eligible for quota changed on an annual basis.

Comment 79: A commenter suggested that NMFS should address latent permits by eliminating the ability to reactivate such permits.

Response: Neither Amendment 7 overall, nor the preferred IBQ objectives would include the reduction of latent effort. The likelihood of a meaningful increase in fishing effort is low because the number of vessels fishing has been fairly constant, and as stated in the response to comment number #, although there are avenues for new entrants to the fishery, participation in the pelagic longline fishery by new entrants would require substantial capital investment. Although the number of Atlantic tunas Longline category permits has averaged approximately 239 vessels (2006 – 2012), under Amendment 7 preferred alternatives, only 135 vessels would be eligible for bluefin quota shares. Furthermore, the risk associated with an increase in fishing effort (for either bluefin or the target stock of swordfish) would be low, given the fact that the preferred alternatives would implement strict bluefin catch limits, one of the principal target stocks (swordfish) is rebuilt and another target stock (yellowfin tuna) is not overfished and overfishing is not occurring, and there has been unharvested swordfish quota on a regular basis.

Comment 80: A commenter suggested that NMFS use criteria such as dependence upon commercial fishing for determining which vessels are eligible to receive quota shares.

Response: Dependence upon commercial fishing would be difficult and costly to quantify in a uniform and fair manner due to many issues relating to data availability and confidentiality and, therefore, does not represents practical method of determining the pool of vessels eligible to receive bluefin quota.

Comment 81: Commenters stated that NMFS should associate IBQ with a permit and not a vessel.

Response: As explained in the FEIS, the use of historical data to evaluate whether a vessel meets certain criteria as part of the implementation of a limited access or catch share program (or a performance criterion) can be complex due to historical transfers of a limited access permit from one vessel to another, or changes in vessel owners. Over time, a single permit may be issued to multiple vessels, or a single vessel may have multiple owners. The preferred IBQ program used the historical 'platform' upon which to base the quota share as the vessel history instead of the permit history for the following reasons: 1) Vessel history reflects current and historical participation in the fishery; 2) The regulations regarding the transfer of Atlantic Tunas Longline category permits do not address fishing history (i.e., do not specify , when an Atlantic Tunas Longline category permit is transferred from one vessel to another, whether the fishing history also transfers; and 3) The structure of the databases in which the logbook data reside uses the vessel as a key organizing feature, and therefore the compilation of data associated with a particular vessel is simpler and less prone to error (i.e., it is more complex to compile data based on an individual permit history).

Although, as noted above, the basis for the quota shares is the fishing history associated with a vessel, the preferred IBQ program would associate the share with a permit. In other words, for the purpose of vessel, permit, and quota transactions, quota shares under the preferred IBQ program would be associated with the Atlantic Tunas Longline category permit (even though the initial eligibility for the quota share was determined on the basis of a particular vessel history).

Comment 82: Many pelagic longline vessel owners expressed strong concerns that the amount of bluefin quota allocated to individual vessels would be inadequate to continue to fish, and that despite efforts to avoid bluefin, vessels would sooner or later encounter bluefin. The proposed allocations would make continuing fishing operations extremely difficult, because they would be forced to stop fishing, and therefore revenue would be cut off, but expenses would continue. Vessel owners stated that they would not be able to remain in business under such circumstances, and some estimated that a large vessel would need about 20 bluefin (instead of between 2 and 13 fish). Some highlighted the difference between the proposed IBQ allocations and the number of bluefin tuna that may be retained by a vessel with a General category commercial permit (up to 5 bluefin a trip), as justification for having larger individual quota allocations.

Response: Under the preferred IBQ program, some vessels would not have enough quota share to continue to account for the same amount of bluefin they caught in the past. The FEIS analysis indicates that at a quota level of 137 mt approximately 25 percent of vessels would need to lease additional bluefin quota in order to land their historical average amount of target species (if they do not change their behavior to reduce their historical rate of bluefin interactions). If no leasing of bluefin allocation were to occur, there could be a reduction in target species landings with an associated reduction in revenue of approximately \$ 7,574,590 total, or \$ 56,108 per vessel (135 vessels).

The precise impacts of the IBQ program are difficult to predict due to the variability of bluefin distribution as well as the potential range of fishing behaviors (and business strategies) of vessels in response to the new regulations. In order to reduce the likelihood of interactions, vessel operators may have to pursue new strategies including communication with other pelagic longline operators regarding the known locations of bluefin, modifications to fishing time, location, and technique, as well as use of alternative gears. In conjunction with these strategies, leasing additional quota may be necessary. The preferred IBQ program includes the requirement that the relevant vessel have a permit as of August 21, 2013, which reduced the number of eligible vessels, and therefore would slightly increase the amount of quota share per vessel. Due to the difficulty of predicting the precise impacts of the preferred IBQ program, NMFS may, as the fishery adjusts to the new system, need to consider providing additional quota to the Longline category in order to increase the amount of quota available to individual vessels, thereby balancing the need to have an operational fishery with the need to reduce bluefin bycatch in the fishery. The preferred alternative of a three-year formal review of the IBQ system would consider any structural changes to the program necessary.

The pelagic longline fishery is an incidental bluefin fishery unlike the directed General category handgear fishery, and retention limits and other management measures are different. The preferred alternatives in Amendment 7 would implement a regulatory system that would mitigate the effects of the different restrictions among the different permit categories.

Comment 83: Some commenters did not want the bluefin quota share formula to include a criterion that relies upon logbook data on bluefin catch, due to the concern that such data may be inaccurate. The proposed quota share formula includes a metric that results in a higher score (and contributing in the formula to a higher allocation) for vessels that had fewer interactions with bluefin (relative to the “designated species”; i.e., target catch). The commenters’ specific concern was that if some vessels under-reported the amount of bluefin they caught in their logbook, such vessels may receive a higher score (and larger allocation) than vessels that had accurately reported higher numbers of bluefin catch. In other words, accurate reporters would be penalized relative to inaccurate reporters. Commenters noted that it is unfair to emphasize past bluefin catch in the quota allocation formula because in the past interactions with bluefin tuna were legal. Another commenter noted that past performance may not be a predictor of future performance.

Response: NMFS recognizes that some vessel operators may have under-reported the amount of bluefin tuna caught in their logbooks. NMFS conducted an analysis that compared logbook data to observer data to get an indication of how vessel reported logbook data compares with observer data, because observer data can serve as a useful validation tool. Compared to the observer data, the logbook data showed both over-reporting and under-reporting of bluefin tuna, with the average amount of under-reporting of bluefin discards of 28 percent at the aggregate level for all vessels. Individual vessel data varied substantially from being more than 90 percent accurate with observer data for that trip to more than 75 percent inaccurate compared to observer data for that trip. These data indicate a wide range in reporting accuracy at a vessel level. For additional information, see Appendix section 11.5

Notwithstanding potential under-reporting by some vessels, logbook data are the most complete source of available data regarding vessel level interactions with bluefin tuna because 100 percent of pelagic longline vessels are required to submit logbook reports for every set. It is important to note that the relative number of bluefin interactions is only one component of the bluefin allocation formula, which also considers the amount of target catch, resulting in a higher score (and contributing to more allocation) for vessels with larger amounts of target catch ("designated species catch"). This preferred alternative would include a requirement for pelagic longline vessels to have operational electronic monitoring systems, which would enhance the accuracy of vessel-reported information.

Regarding the comment that it is unfair to use past interactions with bluefin as part of the allocation formula because in the past it was lawful to interact with bluefin tuna, pelagic longline regulations were designed to limit or reduce retention of bluefin tuna (e.g., target catch requirements, weak hook requirements). Therefore, it is appropriate that the preferred IBQ program accrue some benefit in the form of IBQ allocation for vessels who may have fished in a manner that reduced interactions with, or avoided bluefin tuna, consistent with the regulations.

NMFS acknowledges that past performance may not be an indicator of future performance. One of the objectives of the preferred bluefin IBQ program would be to provide incentives for future fishing behavior that will result in reduced rates of interactions between pelagic longline gear and bluefin. The principal incentive of the IBQ program would result from the fact that vessels would be required to account for all bluefin tuna dead discards and landings (with IBQ quota), and the prohibition of the use of pelagic longline gear if a vessel does not have any (or sufficient) IBQ quota. The future fishing behaviors may include avoiding or minimizing setting pelagic longline gear in areas or during time periods where there are known interactions with bluefin tuna; increasing communication with other vessels fishing with pelagic longline gear; incorporating the use of alternative gears into a vessel's fishing strategy and business plan; 'test sets' to determine whether bluefin are present in an area; and pelagic longline gear modifications. In determining how to allocate bluefin quota, NMFS considered historical catches of both target species and bluefin tuna to consider both past performance and potential future needs.

Comment 84: Some commenters urged NMFS to allocate equal shares of bluefin quota to all eligible vessels, for multiple reasons. Equal shares would avoid the use of historical logbook data; would reduce potential negative feelings among permit holders with different amounts of allocation; and would provide higher quota allocations for some vessels than under the proposed method. Additionally, a commenter noted that it may not be necessary to consider the amount of target catch in the quota share formula (and provide more quota to vessels catching more target catch) because larger fishing operations are better equipped financially to adapt to new regulations. Another commenter supported basing the allocation on target species landings and fishing effort, because higher effort is likely to result in more bluefin catch.

Response: NMFS carefully considered allocating quota shares on an equal basis, but prefers to implement the method as proposed, which would incorporate two metrics of equal weight: designated species landings and the ratio of bluefin to designated species landings. While an equal share formula has some positive attributes, the overall merits of the preferred method would be greater. It is important to take into consideration the diversity of the pelagic longline fleet, maximize the potential for the success of the IBQ program, and provide incentives for vessels to avoid bluefin tuna.

NMFS analyzed the pelagic longline logbook data on target catch and bluefin interactions, and for most vessels, there is positive correlation between the amount of target catch, and the number of bluefin tuna interactions. In other words, for most vessels, the more swordfish, yellowfin tuna, or other target species a vessel catches the more bluefin tuna it interacts with. However, a few vessels (those responsible for the largest number of interactions) interact with large numbers of bluefin, out of proportion with the amount of their target catch.

Considering this historic pattern, basing one of the allocation formula elements on the amount of designated species landings would increase the likelihood that vessels would be allocated quota in relation to the amount of quota they may need to account for their catch of bluefin.

The second of the two elements (the ratio of bluefin interactions to designated species landings) is useful because it takes into consideration the fact that relatively few vessels (i.e., about fifteen percent of the vessels) are responsible for about 80 percent of the interactions with bluefin tuna. Because the preferred allocation formula would result in a lower allocation for vessels with a higher rate of historic interactions, it would provide a strong incentive for such vessels to make changes in their fishing practices to reduce their number of bluefin interactions. Vessels with historically high catches of target species and a low rate of interactions with bluefin would receive a larger quota share than vessels with either higher rates of bluefin interactions or lower amounts of target species.

Comment 85: Some commenters were concerned that either hurricanes, the 2010 oil spill in the Gulf of Mexico, or specific regulations (such as a closed area) may have lowered the amount of catch a vessel had (during the 2006 through 2012 time period on which the IBQ share is based), and the resultant influence on the vessel's bluefin quota share.

Response: There are many factors that may determine the amount of a particular vessel's catch, including regulatory and environmental factors and factors unique to the vessel. As noted in the response to comment # 41, the preferred quota share formula would be based upon a seven-year time period (2006 through 2012), which is long enough to reduce the influence of one-time events or short term environmental or regulatory conditions. The preferred quota share formula would include an additional year of data (2012), a longer duration than originally proposed.

Comment 86: Commenters suggested other methods for allocating quota shares such as auctioning the quota, or basing quota shares in relation to the number of hooks, or the number of longline sets in the previous year.

Response: Auctioning the quota would likely be more expensive for the agency, increase uncertainty in the fishery, and result in a distribution of quota allocation that may not reflect recent or historical participation in the fishery. Although an auction may have some economic efficiency associated with it, the Magnuson-Stevens Act criteria for catch share programs require other considerations. Basing the quota share formula on the number of hooks would reflect fishing effort, but would not consider historic patterns in bluefin interactions. Basing the quota share formula on the number of longline sets in the previous year would result in an overly complex system that would increase uncertainty in the fishery.

O. Individual Bluefin Quotas – Leasing

Comment 87: Some commenters supported the provision that would allow pelagic longline vessels to lease quota allocation to and from one another, but prohibit permanent sale of quota shares. A commenter said that NMFS should only allow leasing to active vessels with intent to fish, and a commenter suggested that NMFS should ensure that a fully functioning quota trading infrastructure is in place before implementing the IBQ system.

Response: Quota leasing is an essential component of the preferred IBQ program because the amount of quota share a vessel has many not be aligned with the amount of quota they need, based on bluefin catch. Quota leasing would provide the flexibility vessels may need to account for bluefin if they have insufficient quota, or obtain additional revenue if they are able to avoid bluefin and have quota they do not need. Only vessels that meet the eligibility criteria would be allocated quota shares; however, any vessel with a valid Atlantic Tunas Longline category permit may lease quota. Allowing quota to be leased to any permitted vessel enables vessels that are not allocated quota to become active in the fishery (i.e., new entrants), but would not provide a lasting opportunity because leased quota would expire at the end of a year (and may not be carried over to the following year by an individual vessel). No sale of quota shares (in contrast to leasing of quota allocation) would be allowed at this time. These quota restrictions provide a balanced approach to the types of transactions allowed, in order to provide flexibility to account for bluefin caught and enable participation of new entrants, but limit the potential for permanent shifts in ownership of quota shares and speculative activity by entities not active in the fishery. NMFS would conduct a full review of the IBQ program after three years of operation, and may at that time consider allowing the permanent sale of quota shares or other modifications to the leasing program as warranted.

NMFS acknowledges that a functioning infrastructure is a required to support a quota leasing system, and is implementing the system necessary to enable the leasing of IBQ shares and accounting of bluefin quota shares and allocations.

Comment 88: Commenters expressed concern about whether vessel owners would be willing to lease quota to other vessels, given the low amounts of quota allocated to vessels, and concern that the cost of leasing would be affordable, especially for owners of small vessels. Other commenters did not support leasing because access to additional quota could enable vessels to target bluefin.

Response: The analysis of the preferred IBQ program in the FEIS indicates that at a quota of 137 mt, 25 percent of vessels would need to lease additional quota in order to land their historical average amount of designated species (if they do not change their behavior to reduce their historical rate of bluefin interactions). Therefore, a majority of vessels may have quota in excess of what is needed to account for their bluefin catch, and may have incentive to lease quota to other vessels. Not-withstanding the analysis, there is uncertainty regarding both the amount and price of quota that may be leased. A well-functioning leasing market, which enables quota to be leased by those who need it at an affordable price, will be a key factor in whether the preferred IBQ program functions as intended.

Comment 89: Some commenters did not support allowing pelagic longline vessels to lease quota from Purse Seine vessels. A commenter was concerned that the leasing program may disadvantage the Purse Seine vessels, and a commenter was concerned that Purse Seine businesses could consolidate or control quota. A commenter suggested that NMFS should set aside quota and lease it to pelagic longline vessels rather than allowing Purse Seine vessels to lease, and a commenter thought that the Purse Seine category should be allowed to lease to all other permit categories.

Response: Leasing quota must be confined to permit categories that are limited access due to the different characteristics of limited access and open access fisheries, and the complexities of a leasing program. Therefore, NMFS considered quota leasing only for the Longline and Purse Seine permit categories. The preferred alternative that would provide ability for Longline category vessels to lease quota from Purse Seine category vessels would provide an additional opportunity for pelagic longline vessels to lease quota that may not otherwise be present, and would increase the chances that there will be a well-functioning leasing market. As previously stated, a well-functioning leasing market, which enables quota to be leased by those who need it at an affordable price, will be a key factor in whether the preferred IBQ program functions as intended.

The preferred Annual Reallocation measure would have the effect of reducing the amount of quota that is available to the Purse Seine category if such vessels do not catch the majority of their quota during the previous year. The net effect of the preferred Annual Reallocation alternative on the quota leasing program would be to reduce the amount of quota available for leasing to the Longline category, or leaving less quota available with which to consolidate or otherwise influence the leasing market (by holding rather than leasing quota). However, the preferred leasing alternative would not disadvantage Purse Seine vessels due to its interaction with the preferred Annual Reallocation alternative. The amount of quota allocated to the Purse Seine category would depend upon the level of bluefin landings and dead discards during the previous year, but would not take into consideration whether or not unused Purse Seine quota (that is not used to account for catch) is leased or not.

Regarding the comment that NMFS should be directly involved in the quota leasing market, NMFS did not analyze an alternative that would give a central role in the leasing market to NMFS. Although NMFS could indirectly influence the quota leasing market through quota adjustments, direct involvement in the quota leasing system would create many administrative concerns and is not preferred at this time. For example, if NMFS were a broker of quota leases, the leasing market would be more complicated, might function more slowly, and would add additional burden and costs to NMFS's support and oversight of the IBQ system.

P. Measures Associated with the IBQ Program

Comment 90: Commenters supported elimination of the target catch requirements and mandatory retention of legal-sized bluefin that are dead at haul-back. Some commenters suggested that NMFS require retention of all dead bluefin regardless of size in order to address the problem of undersized juvenile bluefin discards.

Response: Elimination of the target catch requirement and mandatory retention of legal-size bluefin would reduce bluefin dead discards. The target catch requirement (a strict bluefin retention limit based on the amount of target catch retained) would no longer be needed to restrict bluefin retention because catch would be limited by the preferred IBQ program. Dead discards are an important consideration with respect to the evaluation of minimum size restrictions, but are not the only consideration. The current bluefin size restriction for pelagic longline vessels reflects ICCAT recommendations, as well as consideration of other factors, including dead discards. In general, size restrictions have been instituted to protect the overall health and breeding viability of the species, as well as to distribute fishing opportunities among both recreational and commercial fishermen, year-round.

Retention of all bluefin, regardless of size, would conflict with ICCAT recommendations in effect. The current ICCAT recommendation prohibits the harvest of Western bluefin measuring less than 115 cm (the equivalent of 27 inches). It also limits the amount of BFT measuring 27 to less than 47 inches, to 10 percent of the total U.S. quota.

Reduction in minimum size to 47 or 59 inches for commercial categories was an alternative that was considered, but not analyzed in the FEIS. In the Atlantic region, reduction of the minimum size to 47 inches would increase the complexity of the regulations and reduce enforcement capabilities by eliminating the ability to distinguish commercial and recreational bluefin. In the Gulf of Mexico, there is substantially less regulatory discarding of undersized bluefin, and therefore little justification for reduction of the minimum size in that region. An underlying biological concern that is a consideration with respect to minimum size restrictions is that increased landings of smaller bluefin could reduce projected spawning stock biomass and slow the rate of stock rebuilding. As new information from the fishery becomes available in the future, or if new scientific information or ICCAT recommendations warrant, NMFS may consider modifications to the bluefin size restrictions in the future.

Comment 91: A commenter stated that NMFS should not require retention of bluefin in the Gulf of Mexico because the bluefin are too big to bring on board.

Response: Most vessels that fish with pelagic longline gear target large pelagic species and are capable of boarding very large fish. Approximately 82 percent of the vessels participating in the pelagic longline fishery are greater than 40 feet in length and either can already handle large fish, or should be able to modify their equipment to be able to handle large fish.

Q. Closure of the Pelagic Longline Fishery

Comment 92: Comments on NMFS' authority to close the pelagic longline fishery ranged from those who support closing the fishery in conjunction with a Longline category quota allocation of 8.1 percent, to those who said that the fishery should be closed only if there is unusually high catch of bluefin (and not when the quota is reached). Commenters noted the potential impacts of closures early in the year on the pelagic longline fishery, supporting business, consumers of the fish products, and future ICCAT recommendations.

Response: A closure of the pelagic longline fishery may have adverse direct and secondary economic impacts, the severity of which would depend upon how early in the year the closure occurred. Under the preferred IBQ program, in which individual vessels may not fish with pelagic longline gear unless they have quota, it is not likely that NMFS would be required to close the fishery as a whole. However, individual vessels would be prohibited from fishing if they have not accounted for their catch or do not have the required minimum amount of quota allocation to depart on a pelagic longline trip.

If, based on the best available data, NMFS estimates that the total amount of dead discards and landings are projected to reach, reach, or exceed the Longline category quota, NMFS may prohibit fishing with pelagic longline gear. Similarly, if there is high uncertainty regarding the estimated or documented levels of bluefin catch, NMFS may close the fishery to prevent overharvest of the Longline category quota, or prevent further discarding of bluefin.

As described in many of the responses to comments, NMFS has designed Amendment 7 not only reduce dead discards and implement accountability, but also to provide flexibility for pelagic longline vessels fishing under the preferred IBQ program restrictions, and flexibility in the quota system as a whole, to balance the needs of the pelagic longline fishery with the needs of the other quota categories.

R. Vessel Monitoring System Requirements

Comment 93: NMFS received comments on proposed VMS requirements for the Purse Seine and Longline categories (preferred Alternative D1b), expressing both support and opposition. Several commenters were concerned about the functionality of certain VMS models, particularly those used in the mid-Atlantic.

Response: As part of a separate rulemaking, NMFS is working to specify requirements for type-approval of VMS units to ensure vendors and associated mobile communications providers are meeting fishing industry needs (. The rule would codify VMS type-approval requirements and revise latency standards for NMFS' receipt of VMS position reports. The rule would also establish initial type-approval, renewal, revocation, and appeals processes. By codifying requirements and processes, NMFS will be better able to ensure vendor compliance with the VMS type-approval requirements.

S. Electronic Monitoring Requirements

Comment 94: NMFS received comments that supported electronic monitoring (i.e., video camera and gear sensors), while other comments either expressed concern or opposed it. Comments supporting electronic monitoring indicated that it is not cost prohibitive, that it would allow NMFS to ground-truth other data, and that it supports accountability and enforcement. Those opposed to electronic monitoring said that it is cost prohibitive, an invasion of privacy, and is redundant with existing information. Some comments expressed concern about the functionality of a system, considering the issues experienced with some VMS functionality, and the ability to identify the difference between bigeye and bluefin tuna using video cameras. Implementation using a pilot scale was suggested, which would allow time to set up a functioning infrastructure. Expansion of electronic monitoring to other categories with dead discards was also suggested.

Response: The preferred measures would establish requirements to monitor dead discards for all commercial user categories to better achieve the ICCAT requirement to account for sources of bluefin tuna fishing mortality and to better monitor the fishery for bluefin accounting purposes domestically. The Purse seine category would be required to report dead discards via VMS, and hand gear fisheries (General, Harpoon, and Charter/headboat categories) would be required to report using an automated catch reporting system via internet or phone. Longline category vessels would be required to install and maintain a video and gear electronic monitoring system that would record all catch and relevant data regarding pelagic longline gear deployment and retrieval. The purpose of video monitoring for the Longline category would be to provide a cost effective and reliable source of information to verify the accuracy of bluefin tuna interactions reported via VMS and logbooks. In many instances, the FEIS analysis found discrepancies in logbook data and observer data (considered to be highly accurate) reported for the same trip. The preferred electronic monitoring measure would support accurate catch data and the preferred bluefin tuna IBQ management measures, by providing a means to verify the accuracy of the counts and identification of bluefin reported by the vessel operator. The per-vessel cost of this gear is expected to be approximately $19,175 for purchase and installation (including maintenance costs and loan interest), or $3,835 per year over the five-year life of the equipment. Variable costs are approximately $225 per trip, including data retrieval, fishing activity interpretation, and catch data interpretation. These costs are lower than the cost of increased observer coverage. The Southeast Fisheries Science Center estimates that observer deployment costs approximately $1,075 per sea day, which equates to approximately $9,675 per average nine day pelagic longline trip.

Video monitoring is currently used in several fisheries, and NMFS has funded over 30 pilot projects to further research on the use and effectiveness of electronic monitoring, including research on the accuracy of finfish identification. These studies provide evidence that properly deployed and maintained video monitoring camera systems would provide effective data for accurately identifying large pelagic species. NMFS white papers on electronic monitoring are available at the following web address: http://www.nmfs.noaa.gov/sfa/reg_svcs/Councils/ccc_2013/K_NMFS_EM_WhitePapers.pdf. NMFS would take into account the time required for owners to outfit their vessels with newly required equipment when establishing the dates of required effectiveness for electronic monitoring.

T. Automated Catch Reporting

Comment 95: Several commenters supported automated catch reporting for the General, Harpoon, and Charter/headboat categories, and one commenter suggested that automated catch reporting be required for all categories. Two commenters questioned the effectiveness of this reporting methodology. One suggested that a catch card system be used, and another requested additional technical information on the reporting methodology including the data to be collected and techniques for verification.

Response: The preferred measures would implement mandatory dead discard reporting for General, Harpoon, and Charter/Headboat category vessels. The reporting system would be an extension of the web and phone-based automated landings reporting system which must currently be used by fishermen in the Angling category to submit mandatory bluefin tuna landings reports. Although catch card systems have been shown to provide a more accurate accounting for landings in some geographic areas (i.e., Maryland and North Carolina), they are more costly to employ and are difficult to implement in regions with a large number of private docks. Further, catch cards may not be as effective in accounting for discarded fish that are not landed. The data fields NMFS would collect include the trip start and end date, departure and end time, port and state of departure and landing, fishing technique, bait type, hook type, approximate time hooked, approximate fight time, species, fish size, vessel name, registration number, permit holder's name, Atlantic HMS permit number, type of trip, and tournament name (if applicable).

U. Expand the Scope of the Large Pelagics Survey

Comment 96: One commenter opposed taking no action on the Large Pelagics Survey (preferred Alternative D6a), stating that a change is needed from the status quo.

Response: NMFS analyzed expanding the Large Pelagics Survey temporally to include the months of May, November, and December, and geographically to include the states south of Virginia, as a means to collect more data about the recreational bluefin tuna fishery, and further refine recreational bluefin tuna landings estimates. Although the expansion of the survey would likely provide some landings estimates in time periods and geographic regions that are currently not covered by the survey, the likelihood of the survey intercepting activity in what is considered to be a "rare event" fishery at the edges of its geographic and temporal range is low, and the resultant catch estimates would likely be imprecise. NMFS estimated the economic cost of these data is to be approximately $165,000 per year. Thus, the benefits of the data may not outweigh the cost. The NMFS Office of Science and Technology may consider future studies to enhance recreational bluefin tuna landings estimates under the Marine Recreational Information Program (https://www.st.nmfs.noaa.gov/recreational-fisheries/index).

V. Deployment of Observers

Comment 97: Several commenters supported the expansion of observer coverage for the Longline category, suggesting increases in coverage up to 100%. Another commenter suggested implementing industry-funded observer coverage. A commenter thought that NMFS should use observer data to monitor Longline category catch limits. Another commenter was concerned that observers might not be available to cover pelagic longline vessel trips into closed areas.

Response: The preferred measure would make no changes to current observer coverage requirements for commercial Atlantic tunas vessels. Catch data collected by observers is considered to be highly accurate, but the high cost of observer coverage can be prohibitive (see response to comment # 94). Thus, NMFS does not prefer requiring industry to fund observers or requiring an increase in observer coverage at this time. Under the preferred measures, NMFS would require Longline category vessels to install and use electronic monitoring systems (i.e., video cameras and gear sensors) that will provide data to corroborate logbook reports and serve as a source of high quality data for use in monitoring Longline category catch. NMFS does not prefer allowing access to previously closed areas, or requiring observer coverage for access to the Cape Hatteras Gear Restricted Area at this time.

W. General Category Subquotas

Comment 98: NMFS received a variety of comments on the proposed measure to allow transfer of General category quota from one or more the time periods that follow the January time-period to the January or other preceding sub-quota time periods. The comments included that NMFS should allow more flexibility in the General category; NMFS should provide more quota to the January subquota period; NMFS should provide half the subquota to the first half of the year and half the subquota to the second half of the year; NMFS should give a share of the subquota to North Carolina to fish from January to June, as the current 5.5 percent of quota in January to June is caught in less than 14 days. The North Carolina Department of Environment and Natural Resources commented that NMFS should shift subquota for December to the January subquota period.

Response: Under the quota regulations, the General category quota is divided into subquotas for each time period versus specific geographic areas. Under the preferred alternative, NMFS can transfer quota from one subquota period to another, earlier in the calendar year. For example, subquota could be transferred from the December subquota to the January subquota for that same calendar year. Although NMFS could transfer quota from one subquota period to any other subquota period, NMFS would prioritize transfer from the winter fishery that occurs in December to the winter fishery that occurs in January within a fishing year (e.g., prioritize transfer of quota from December in Year A to January of Year A).

Comment 99: NMFS received a comment that NMFS should consider the fact that transfers will have the effect of moving quota from the traditional Northeast fishery to the mid-Atlantic and South; Alternative E1c will negatively impact Northeast fishermen. One commenter stated that NMFS should take no action on General category subquotas (Alternative E1a). Another commenter stated that NMFS should establish 12 equal monthly subquotas (Alternative E1b).

Response: NMFS acknowledges the concerns that quota distribution may impact historical geographic distribution and considered these factors in selecting preferred alternatives. Note that current regulations do not preclude General category and HMS Charter/Headboat category vessels from traveling from one area to another. In fact, many vessels travel from the northeast and mid-Atlantic states to participate in the winter fishery that occurs largely off North Carolina. NMFS would continue to consider the regulatory determination criteria regarding inseason quota transfers in an attempt to balance reasonable opportunity to harvest quota with other considerations, including variations in bluefin distribution and availability, among others. The preferred alternative would provide additional fishing opportunities within the General category quota while acknowledging the traditional fishery. Prioritizing transfer from one winter fishery subquota to another would minimize negative impacts of transferring quota that is traditionally used by Northeast fishermen in the summer and fall months. Division of the quota equally by month was not preferred because the potential negative social and economic impacts outweigh the positive impacts. The negative aspects of this alternative include the potential for gear conflicts and a derby fishery, as well as the potential for the historical geographic distribution of the fishery to be dramatically altered. Although this alternative would provide some stability to the fishery by establishing a known amount of quota that would be available at the first of each month, if catch rates are high in the early portion of the month, these quotas could be harvested rapidly and may lead to derby style fisheries on the first of each month. Additionally, if catch rates are high and subquotas are reached quickly, NMFS may need to publish multiple closures notices throughout the year.

X. Harpoon Category Retention Limits

Comment 100: NMFS received a comment supporting increased flexibility for the Harpoon category.

Response: In 2011, NMFS increased the incidental retention limit of large medium bluefin after considering requests from Harpoon category participants to eliminate certain regulations perceived as unnecessarily restrictive (76 FR 74003, November 30, 2011). Since then, NMFS has received requests from Harpoon category participants to instead manage the large medium size class retention limit over a *range*, similar to how NMFS manages the daily General category retention limit, for increased flexibility in setting the limit based on consideration of applicable factors (i.e., the regulatory determination criteria applicable to retention limit adjustments). Under the preferred alternative, NMFS would have the ability to increase or decrease the daily retention limit of large medium bluefin within a range of two to four fish, based on the former and current daily retention limits. This alternative would enhance NMFS' ability to more precisely manage the landing rate of large medium bluefin by the Harpoon category, thereby optimizing opportunities while preventing landings from exceeding the subquota.

Y. Angling Category Trophy Subquota Distribution

Comment 101: NMFS received comments on allocating a portion of the trophy south subquota to the Gulf of Mexico (preferred Alternative E3b), including that NMFS should not reduce the trophy south subquota; the reduction would negatively affect charter captains in the mid-Atlantic and South Atlantic areas; the change in allocation would increase landings of spawning bluefin in the Gulf of Mexico. Other commenters stated that NMFS should change the division of subquota, but not split the subquota equally between the southern area and the Gulf of Mexico; NMFS should allocate 10% or 17% of the trophy south subquota to the Gulf of Mexico. The Mid-Atlantic Fishery Management Council commented that NMFS should take no action on this issue (Alternative E3a) and that Alternative E3b would lead to an unreasonably small recreational bluefin trophy quota for the northern region.

Response: Under the preferred alternative, the trophy subquota would be divided to provide 33% each to the northern area, the southern area outside the Gulf of Mexico, and the Gulf of Mexico. The objective of this alternative is to provide a reasonable fishing opportunity for recreational vessels in the Atlantic and Gulf of Mexico, reduce discards, and account for incidentally caught bluefin. A separate subquota allocation for the Gulf of Mexico would improve the equity of the trophy-sized fish allocation by increasing the likelihood that there would be trophy quota available to account for incidental catch of bluefin in that area (while still providing incentives not to target bluefin). An equal 33% division among the three areas would provide the most equitable trophy subquota allocation. This preferred measure would not affect the amount of Trophy subquota available to the northern area.

Comment 102: One commenter stated that NMFS should eliminate the trophy category because it is not possible to monitor the catch.

Response: Currently, NMFS monitors trophy bluefin along with all other sizes of recreationally-caught bluefin through the Large Pelagics Survey, the Automated Catch Reporting System, and state catch card programs (for landings in Maryland and North Carolina). NMFS considers the combined methods of monitoring trophy bluefin catch to be adequate such that closure of the trophy bluefin fishery is not warranted at this time.

Z. Purse Seine Category Start Date

Comment 103: NMFS received comments on changing the start date of the Purse Seine category to June 1 (preferred Alternative E4b), including that NMFS should change the Purse Seine category start date to June 1 as fish have tended to be available on the fishing grounds earlier than July 15 in recent years; NMFS should give the Purse Seine category the same start date as other commercial categories; NMFS should give the Purse Seine category a start date of June 15 if there is a need to compromise with other categories.

Response: Changing the start date of the Purse Seine category fishery from July 15 to June 1, with the ability to delay the season start date from June 1 to no later than August 15 would help optimize fishing opportunity for Purse Seine category vessels, given the other measures affecting the Purse Seine category in this Amendment. The June 1 start date is consistent with the start dates for the Harpoon and General categories.

Comment 104: One commenter stated that NMFS should not change the start date; the average value of bluefin is lower in June.

Response: NMFS has received comment over recent years from commercial bluefin fishery participants and dealers that fish quality tends to be lower earlier in the year, with lower associated price per pound. However, providing purse seine operators the ability to start fishing on June 1 would provide additional flexibility for deciding when to make sets. These decisions are based largely on the availability of bluefin and the size composition of schools. To the extent that this flexibility could allow the harvest of the Purse Seine category quota while minimizing dead discards, the preferred alternative meets the Amendment 7 objectives.

AA. Rules Regarding Permit Category Changes

Comment 105: One commenter did not support modifying the rules regarding permit category changes (preferred Alternative E5b); stating that the 10-day restriction is sufficient and changing the restriction would give people the chance to abuse the rules and fish in multiple categories.

Response: Based on feedback NMFS has received over a number of years from vessel owners affected by the 10-day restriction, NMFS believes that limiting the time period during which a vessel may change permit categories to 10 calendar days is overly restrictive, and may not allow the flexibility to resolve the problems of a permit issued by mistake. This measure, which would allow permit category changes within 45 days of permit issuance, provided the vessel has not fished (as verified via landings data), would achieve a better balance of allowing flexibility for vessel owners, while still preventing fishing in more than one permit category during a fishing year.

AB. North Atlantic Albacore Tuna Quota

Comment 106: NMFS received a comment on implementing a U.S. North Atlantic albacore tuna quota (preferred Alternative E6b), stating that NMFS should be cautious with carrying forward multiple years of underharvest given the status of the northern albacore stock.

Response: NMFS acknowledges the concern about carrying forward large amounts of unused quota (often referred to as "stockpiling"). The ICCAT Contracting Parties have discussed that issue in recent years, particularly regarding the potentially large adjusted quotas for the major harvesters of northern albacore (specifically the European Union, with 77 percent of the northern albacore quota). The current ICCAT northern albacore recommendation (Recommendation 13-05; Supplemental Recommendation by ICCAT Concerning the North Atlantic Albacore Rebuilding Program) allows for 25% of a country's quota to be carried forward, if unused, and to be used within the two years following the subject year of catch. Because the U.S. quota represents less than 2 percent of the northern albacore TAC, and the most the adjusted quota could be under the current recommendation is 658.75 mt (125% of the 527-mt quota), there is little risk of stock harm. Regarding stock status, based on the 2013 northern albacore stock assessment and the domestic thresholds for minimum stock size (i.e., the MSST) and maximum fishing mortality (i.e., the MFMT), the stock is not overfished (i.e., rebuilding), with overfishing not occurring. Carry-forward of unused quota would be limited to 25 percent of the initial quota, consistent with the current ICCAT recommendation.

AC. Other Concerns

Comment 107: Commenters expressed concerns and made suggestions about a variety of topics related to the management of bluefin tuna or associated HMS fisheries, but not specific to one of the proposed management measures or alternatives analyzed. The underlying science was a concern, and commenters suggested that NMFS should reevaluate the methods and timing of stock assessments; should revise the method of dead discard estimates; should increase overall research; and should increase communication between scientists and managers. Other commenters questioned why some permit categories are open access and some are limited access; suggested that NMFS open the Florida East Closure or the DeSoto Canyon Closure; should modify the weak hook regulations; suggested that NMFS ban longlines; NMFS only cares about the commercial interests; the management of bluefin is unfair because the U.S. regulations are more restrictive than in other countries; and observers should be required in all commercial categories; Commenters stated that greenstick gear and rod and reel cannot replace pelagic longline in regard to the amount of fish landed by the gears; concern was expressed that pelagic longline vessels in the Gulf of Mexico are generally too large to effectively fish with greenstick gear; concern was expressed that tuna landed with greenstick gear are low in quality, bring a lower price than longline-caught tuna, and greenstick-caught tuna are not as acceptable in domestic or international markets. Commenters stated that other fishing practices should be used to reduce discards of fish including the use of shorter longlines, thinner monofilament on mainlines or gangions, increased floatation on mainlines; using mackerel for bait, and/or reducing soak time. A commentor stated that dehooking devices should be used to promote post-release survival of organisms.

Response: Although the comments are directly or indirectly related to the management of bluefin tuna, Amendment 7 considered (i.e., analyzed and proposed) a discrete range of management measures In adopting any final measures, NMFS is restricted in scope to management measures closely related to those proposed, and within the range of impacts analyzed in the DEIS. Therefore, many of the management measures or ideas suggested by the public, regardless of potential merits, may not be included in the FEIS, but would have to be considered in the context of a future management action. In addition to the formal regulatory process of proposed and final rulemaking, NMFS considers issues, discusses management ideas, and obtains public input in the context of the HMS Advisory Panel, which typically convenes twice a year at meetings that are open to the public. Possession and use of dehooking devices are currently required onboard pelagic longline vessels. Comment 108: Commenters requested that NMFS modify the Purse Seine landings tolerance regulations that restrict the amount of large medium bluefin tuna relative to the amount of giant bluefin that can be landed. Specifically, they recommended that the tolerance be increased or eliminated in order to reduce dead discards. The current tolerance is no more than 15 percent of the total amount of giant bluefin (81 inches or greater) per year, by weight. However, as the total number of future trips, and catch, is unknown, the vessel owner/operators have been self-imposing this regulation on a trip level basis to ensure compliance at the end of the year. Response: Although there has been past interest in altering this limit, e.g., the issue was raised in the comments on the 2006 Consolidated HMS FMP, this alternative was not considered further in the DEIS because there was very little data available to determine whether such as change might be warranted and the impacts of such a change given recent low catch/landings from the Purse Seine category. Data are now available on dead discards by size relative to retained catch for the Purse Seine category from the 2013 fishing year. NMFS believes that additional analysis about the potential benefits of altering the limit, both by reducing dead discards and improving the Purse Seine category's opportunity to harvest its quota, is be warranted and beneficial to the stock and the fishery. Additional data are needed to conduct such analyses and to make fishery management decisions. NMFS may take future action in a subsequent rulemaking, if warranted but such changes are not supportable at this time in this Amendment.

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