The NCMC
MARINE BULLETIN
No. 116 Winter 2007

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Plus:

THE TWO FACES OF ICCAT

BLUEFIN BREAKDOWN OVERSHADOWS PROGRESS ON OTHER SPECIES

Dubrovnik, Croatia. It was Sunday morning, November 26th, the last of 10 days of meetings for delegates from the 42 nations who make up the International Commission for the Conservation of Atlantic Tunas (ICCAT). The hotel's canned music system was piping in the theme from the movie "Titanic." Which was appropriate, since ICCAT was about to adjourn without doing much of anything to save the bluefin tuna fisheries from sinking towards what its own scientists warn could be imminent demise.

Moored outside in the bay was the Greenpeace vessel "Rainbow Warrior," flying a banner that evoked a song from another era - "Where Have All the Tuna Gone?" – bringing to mind the Sixties protest song's mournful refrain, "When will they ever learn?" When indeed.

In 2006, in Croatia, on the Mediterranean coast, the international tuna commission was celebrating its 40th Anniversary. As incoming Chairman Bill Hogarth of the United States noted in his remarks opening the meeting more than a week earlier, ICCAT this year could celebrate its "first-ever successful international rebuilding program" for North Atlantic swordfish. He challenged all members to do the same for all species.

Unfortunately, the majority of the celebrants hadn't learned much in 40 years. Confronted this year with "alarming news" about the impending collapse of bluefin tuna in the eastern Atlantic and Mediterranean Sea and the need to drastically cut back on fishing that Hogarth termed "completely out of control," ICCAT reverted to form and did almost nothing.

NOTHING RECEDES LIKE SUCCESS

The U.S. came to the 2006 meeting with four goals. National Coalition for Marine Conservation President Ken Hinman served as a member of the U.S. delegation and worked with our Commissioners to get the strongest possible Atlantic-wide conservation measures for billfish, swordfish, eastern and western bluefin tuna.

"We achieved three of our objectives - more conservation for blue and white marlin, holding the line on the swordfish recovery in the face of increasing demands for higher catches, and cutbacks in catches of western bluefin - which by ICCAT standards isn't bad at all," reports Hinman.

"But failure to convince our eastern counterparts to protect bluefin on their side of the ocean shows this body is still not capable of making the tough choices," he says. "Dire warnings from ICCAT's scientific panel, unprecedented public scrutiny in Europe and elsewhere, and unusually outspoken criticism from other ICCAT members; all were not enough. It just left you shaking your head."

As journalist Walter Winchell famously noted, nothing recedes like success. In light of the breakdown over bluefin, the successful restoration of swordfish – scientists report the population in 2005 reached the target level needed to support a sustainable fishery - comes across as more of an accident

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Ocean View
Commentary

WALK THE TALK

"To change your language you must change your life." - Derek Wolcott

The recently reauthorized Magnuson Act (see p. 4) contains this new finding: *A number of the Fishery Management Councils have demonstrated significant progress in integrating ecosystem considerations in fisheries management using the existing authorities provided under this Act.* [Section 2(a)(11)]

As a member of the Ecosystem Principles Advisory Panel (EPAP) charged by Congress in 1996 with (among other things) reviewing the extent to which ecosystem principles were being applied, I and my fellow panelists asked the eight Regional Councils to give us their take. Each council submitted long lists of actions as proof they were already taking an ecosystems approach.

And were they? No. For the most part, the councils simply characterized business-as-usual as "ecosystem-based management" - e.g., plans that covered more than one species, measures to assess or control bycatch, or identification of essential fish habitat. Voila!

Has much changed in the last 10 years? Not really. Despite some honest efforts here and there to move beyond a single-species approach, the biggest change is that the word ecosystem is now ubiquitous in the lexicon of government programs and documents. As if we could change the way we manage fisheries by merely changing the way we talk about them.

One council boasts that "Ecosystems" are mentioned in the titles of five sections of its newest plan to conserve prey species (squid, mackerel and butterfish). But while the plan in question does acknowledge the importance of these fish as prey for marine mammals, highly migratory species and other fish, that's all it does. It contains no management measures to address this reality.

PROGRESS REQUIRES TAKING THE FIRST STEP

We take nothing away from what *is* being done, some of which is encouraging. Several Fishery Ecosystem Plans, for instance, are in various stages of development. But so far, all the talk, the documentation, the collection of information, have not resulted in a change in the way fisheries are managed.

The first step, said the EPAP in its 1999 report, is for managers to consider how the harvest of one species impacts other species in the food web. Eight years later, and we've yet to take that first step. It's hard to see how this demonstrates "significant progress."

We recently launched a campaign we call *Forage First!* Protecting predator-prey relationships is the first step toward an ecosystem-based approach to management, and conserving forage fish for their ecological role should be the primary objective of managing these fisheries. Our report, Taking the Bait, lays out our idea of how this might be done.

We don't pretend to have all the answers. But neither should the councils pretend they've gone somewhere they haven't. Progress can only come, says the old proverb, from spurring a willing horse.

-**Ken Hinman**, *President*

NATIONAL COALITION FOR MARINE CONSERVATION

Founded in 1973

The NCMC is a 501(c)(3) non-profit organization dedicated to the following goals:

- preventing overfishing and restoring depleted fish populations to healthy levels
- promoting sustainable use policies that balance commercial, recreational and ecological values
- modifying or eliminating wasteful fishing practices
- improving our understanding of fish and their role in the marine environment
- preserving coastal habitat and water quality.

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THE TWO FACES OF ICCAT *(Continued from page 1)*

than a change of direction. On its 40th Anniversary, with the opportunity to build on its first success and show the world a new face, ICCAT showed us two.

BILLFISH CONSERVATION EXTENDED, STRENGTHENED, BUT MORE CAN BE DONE

The goal of the United States with respect to Atlantic billfish – and a priority of the NCMC's – was to continue the current international conservation program, which seems to be paying off. The latest stock assessment (2006) indicated the first signs of improvement in severely overfished blue and white marlin stocks. Measures put into place in 2000 have begun to increase the number of billfish after decades of steady decline.

So we are happy to report that the existing management program for marlins, featuring strict landings limits and mandatory release of live fish, was extended through 2010. New measures added to address a continuing problem and a new concern were: 1) a call on countries to place observers on 5% of their longline and purse seine vessels; and 2) a cap on catches by artisanal fisheries.

ICCAT's scientists (the Standing Committee on Research and Statistics, or SCRS) told the Commission that the blue marlin population is "possibly stabilizing," while white marlin abundance is "slightly upward." Good news. But these tentatively-worded conclusions are couched in uncertainty. Catch data are incomplete, and catches actually increased toward the end of the management period (2001-2006). In particular, the proportion of fish being released alive is unknown. It is hoped that increased observer coverage will provide more information to assess the effectiveness of the regulation requiring release of live fish.

Much of the recent increase in catch is thought to come from artisanal fisheries in developing countries, typically small-scale fisheries for local markets that do not come under current ICCAT regulations. New controls there will help limit overall fishing mortality. The SCRS also recommended the use of circle hooks and broader application of time-area catch restrictions, two measures employed in the U.S. and a few other countries but not widespread.

BITTERSWEET RECOVERY

The dream of rebuilding swordfish has turned into somewhat of a nightmare for the U.S., which has been unable to land its share of the ICCAT quota for quite a few years. And other countries coveting more quota don't really care why. (see The Swordfish 'Recovery', Marine Bulletin No. 115) With the stock considered "recovered," it seems everyone who didn't have a share before wants one, and everyone who has one wants a bigger one. The 2006 negotiations centered on allocation of the total available catch and, although the SCRS recommended holding to the current level, the quest for quota made an increase – and renewed overfishing of swordfish – a very real possibility.

The U.S. was able to prevent the total catch from rising above sustainable levels to accommodate the demands of developing countries by transferring 2,700 tons of unharvested quota to other nations. We will retain our historical share (~30%) for the next two years, at which time the quota sharing arrangement will be revisited.

In our view, ICCAT increased the total catch (from 10,500 to 14,000 tons) prematurely in 2002, instead of waiting for full recovery. If it had, it could have accommodated newcomers with a portion of the increase. But it didn't. As a result, the U.S. got another 1,000 tons of swordfish; fish we now cannot catch but want to hold on to for an uncertain future. The time to re-structure a fishery is during rebuilding, not after. Then it's too late. That's what's happening with swordfish now. To meet future demands, countries like the U.S. and Spain and Japan will be faced with giving up part of their share in 2009, or allowing a return to overfishing by default.

WESTERN BLUEFIN QUOTA REDUCED

U.S. fishermen are also having trouble filling their quota of bluefin tuna, which partly explains why the U.S. never blinked at lowering the quota for western bluefin by 22%, to 2,100 tons, consistent with the advice of the SCRS. (The other reason was our primary goal of getting countries fishing in the east to follow the scientific advice, too.)

The western Atlantic spawning stock remains seriously overfished (18% of the 1975 population) with little sign of rebuilding despite strict quotas for over 20 years. It could be that the western breeding population, which spawns each spring in the Gulf of Mexico, dropped below critical mass and strict quotas alone won't bring it back. Likely, our fishery has been propped up for years by fish visiting western feeding grounds from the east. If so, the collapse of the eastern stock, which spawns in the Mediterranean, would mean the whole thing – bluefin fisheries on both sides of the Atlantic - could rapidly fall apart under the current management regime.

Mixing between the western and eastern stocks has been documented by tagging studies. On the one hand, this argues for U.S. managers focusing on the fate of fish in the east, some of which are "ours." But it also argues for doing more in the west, since our own breeding stock has been fished away. Every spawner in the Gulf of Mexico is critical now, and reducing the overall catch, without tighter controls specific to fishing on the spawning grounds, isn't enough, as we're seeing. Studies by Dr. Barbara Block of Stanford University's Tuna Research and Conservation Center point to the need for limits on fishing in the central Atlantic - where the two stocks mix - *and* in the Gulf of Mexico, where, she says, large numbers of giant tunas are being killed in

(Continued on page 4)

CONGRESS RENEWS NATIONAL FISHING LAW

Advances Science-Based, Ecosystems Management

President George Bush on January 12, 2007 signed new legislation to regulate the nation's ocean fisheries. The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 was rushed through the lame duck Congress at the 11th hour and passed on the last day of the 2006 session. Conservationists breathed a collective sigh of relief; partly because a process that began in 1999 was finally over, but more so, because most of the good portions of the respective House and Senate bills survived, while some of the most controversial were jettisoned.

The NCMC monitored the multi-year process of amending the Magnuson Act, working to maintain its critical anti-overfishing requirements while moving into a more science-based, ecosystem-based approach to conserving our fisheries. We are pleased that our three main goals for reauthorization were at least partially achieved.

First of all, there was no backsliding on the current law's overfishing and rebuilding provisions, which are responsible for setting many of our depleted fisheries on a course for recovery. The mandated deadlines, however, were deemed too rigid by some fishing interests. Unfortunately, most industry-supported language to provide "flexibility" would've opened large loopholes for managers to avoid the tough action needed to restore overfished stocks.

In fact, an important new provision will now require fishery managers to set annual catch limits for all fisheries no higher than the level recommended by their scientific committees. This is arguably the most far-reaching change in the law and was the NCMC's top priority. As the U.S. Commission on Ocean Policy advised, letting industry-aligned council members decide how many fish may be caught is a recipe for overfishing. Under the new law, fishing limits must be set within the range of scientific recommendations, regardless of economic pressures to keep catches high. "Currently, most fishery managers abide by this principle," says NOAA chief Bill Hogarth, "but it isn't always the case."

Finally, some modest progress was made toward implementing an ecosystem-based approach to managing fish stocks. The bill authorizes research into the role of Atlantic herring as forage for numerous other species; calls for a study by NMFS of scientific information and management techniques needed to implement an ecosystems approach; and asks the Councils to develop regional pilot programs following the recommendations of the Ecosystems Principles Advisory Panel and the results of the NMFS study.

Fishery managers are urged to develop management measures to conserve managed as well as associated species, considering a variety of ecological factors. And the U.S. Commissioners to ICCAT (under the Atlantic Tunas Convention Act) are directed to seek to include ecosystem and habitat considerations in international agreements to conserve tunas, billfish and sharks. □

THE TWO FACES OF ICCAT *(Continued from page 3)*

the midst of spawning. International rules already prohibit targeting bluefin in the gulf, but substantial bycatch in the yellowfin tuna longline fisheries continues to threaten the future of the spawning population, Dr. Block says.

EASTERN BLUEFIN AND THAT SINKING FEELING

The 2006 ICCAT session was dominated by negotiations over new conservation measures for eastern Atlantic bluefin. The SCRS warned that, without drastic reductions in fishing mortality (the 2005 catch under a quota of 32,000 tons was estimated to be as high as 50,000 tons), the stock in the eastern Atlantic and Mediterranean is in danger of collapse. The U.S. proposed setting a new quota at the SCRS-recommended level of 15,000 tons, along with stricter measures to enforce compliance.

But the U.S. recommendation received little support from the European Community (EC), who pushed through their own proposal, which includes tighter enforcement but leaves the quota about twice what the scientists recommend (29,500 tons) in 2007, gradually lowering it to 25,500 tons by 2010. Which means, even if they are able to control overages (and that's a big if), the stock will continue to decline for another four years. It's safe to assume there will be few options left at that time besides closing the fishery entirely. Which, of course, isn't going to happen, unless the stock has already collapsed.

Much of the recent pressure on the eastern stock is coming from the explosive growth of tuna farms in the Mediterranean. A conservative estimate is that at least 20,000 tons of bluefin go into the farms to be raised in pens. That number is expected to increase substantially in the near future, even as the wild fisheries that supply the farms decline. Farming of an already overfished stock never should have been allowed. It could've been predicted, given the historic lack of control of fisheries in the Med, that it would increase catch and effort and that it would be poorly monitored. Indeed, farming is thought to be responsible for mammoth unreported catches and egregious overfishing.

The EC's response to all this is not a "recovery plan," although they call it one. It's just longer term, less Draconian, they say. But in fact, what ICCAT agreed to - over the objections of the U.S., Norway, Japan, Canada, Brazil and several other countries - will not even halt overfishing. On the contrary, it practically ensures conservation will never catch up to the decline.

In his opening statement, Chairman Hogarth warned ICCAT that its credibility was on the line. It's now been reeled in, gaffed and gutted. □

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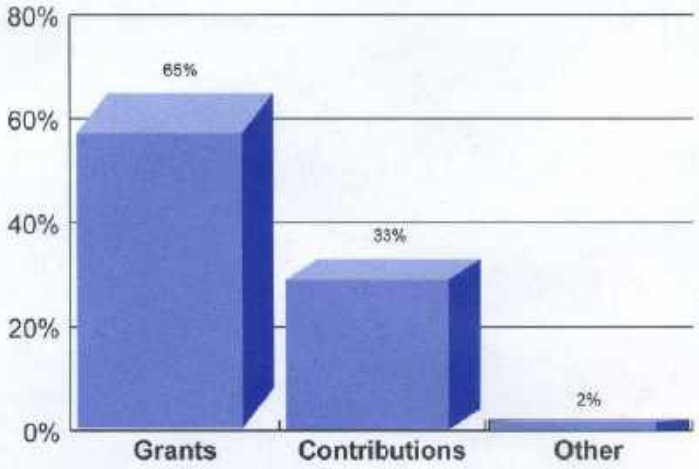
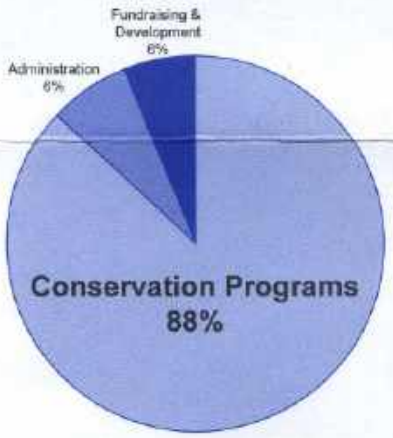


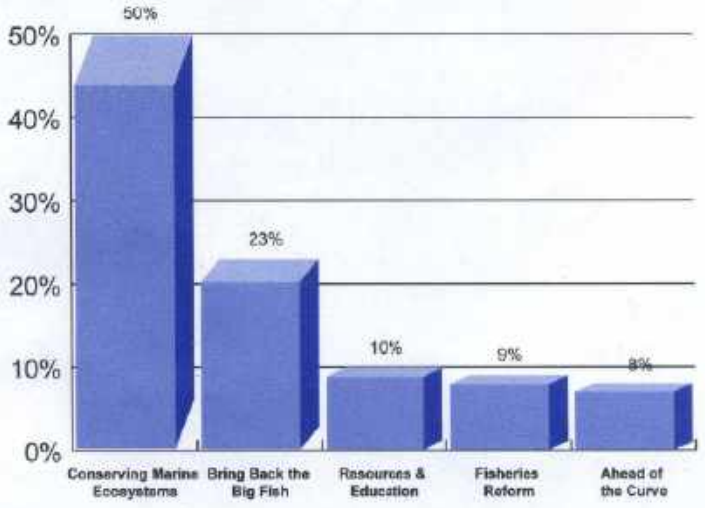
EXPENDITURES BY CATEGORY



We are proud to report that last year, 88% of our operating budget was put directly into our Conservation Programs.

PROGRAM EXPENDITURES BY PERCENTAGE

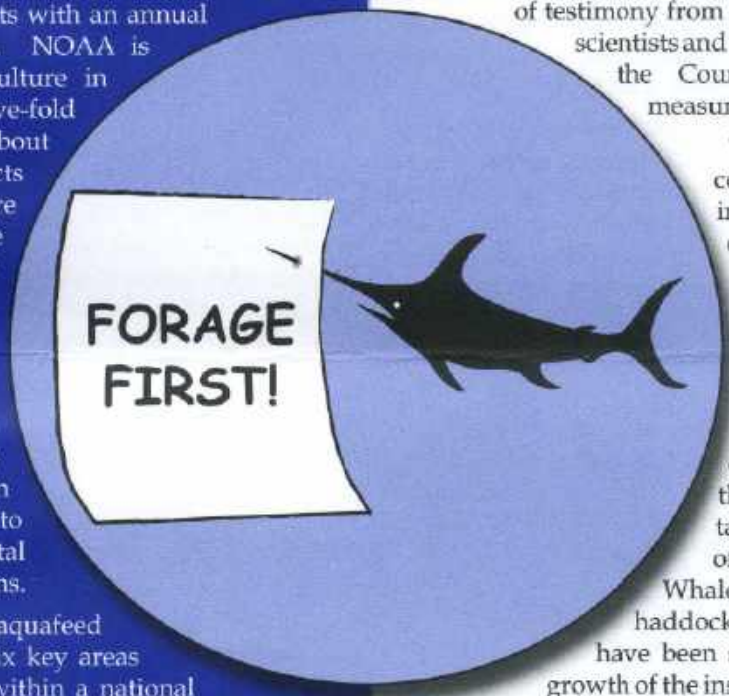
Allocation of expenditures among our five marine conservation programs varies year-to-year, depending on changing needs and events.



REDUCED DEPENDENCY ON FISH-BASED FEED IS KEY TO SUSTAINABLE AQUACULTURE

A new report released by the Marine Aquaculture Task Force is calling for the aquaculture industry to reduce its reliance on aquafeed made from wild-caught forage fish. The report entitled, "Sustainable Marine Aquaculture: Fulfilling The Promise; Managing The Risks," recommends research into alternative, sustainable feed ingredients as well as an ecosystem-based approach to managing fisheries for the key prey species used to make fishmeal and fish oil, the main ingredients in aquaculture diets.

Approximately half of seafood consumed today is produced by fish farms. The United States lags behind the rest of the world in farmed seafood production, importing more seafood than it exports with an annual trade deficit of $8 billion. NOAA is seeking to expand aquaculture in U.S. marine waters five-fold before 2025. Concerned about the potential ecological effects of escalating aquaculture development offshore, the Woods Hole Oceanographic Institute convened the Marine Aquaculture Task Force, an independent panel of experts in science, law, policy, business and conservation, to study current practices in marine aquaculture and to recommend environmental standards for U.S. operations.



Within the report, aquafeed was identified as one of six key areas needing to be addressed within a national aquaculture policy in order to protect marine resources. The Task Force concluded that "forms of aquaculture that consume more fish than they produce cannot assist society in addressing the global problem of wild fisheries depletion." The aquaculture industry is the largest consumer of fishmeal and fish oil, produced by factory reduction of small forage species such as menhaden and sardines. Reducing these fish into feed to rear carnivorous finfish, like tuna and salmon - both highly-prized aquaculture species - results in increased fishing pressure on the forage stocks and a net loss of available protein for consumption.

In addition, the Task Force points out that broader ecosystem impacts of forage fisheries, such as predator-prey relationships, must be considered in order to ensure the ecological sustainability of reduction fisheries and their products. □

ATLANTIC HERRING AMENDMENT APPROVED

Includes Measures to Protect Species as Forage

On December 6, the Secretary of Commerce gave final approval to the New England Fishery Management Council (NEFMC) to implement Amendment 1 to the Atlantic Herring Fishery Management Plan (FMP). The Amendment includes a new objective that explicitly recognizes the importance of herring as prey for predators, and in accordance with the objective, establishes management measures that will serve to protect a herring forage base in the Gulf of Maine. Adoption of the Amendment is the culmination of seven years of scoping meetings, hearings and Council debates. Though the Council's original intent in creating the Amendment was to prevent overcapacity in the herring fishery, an outpouring of testimony from fishermen, environmentalists, scientists and wildlife enthusiasts convinced the Council that the conservation measures were warranted.

The most widely supported conservation measure included in the Amendment is the creation of a time/area closure that prohibits mid-water trawling in an ecologically sensitive area within the Gulf of Maine each year from June through September. By preventing the use of destructive trawl gear during this timeframe, the Council is taking action to protect an array of Gulf of Maine predators. Whales, tunas, seabirds, and haddock are among the predators that have been significantly impacted by the growth of the inshore, mid-water trawl herring fishery over the last decade. The measure is expected to be implemented for the 2007 fishing season.

NCMC has followed Amendment 1 since the beginning, imploring the Council to incorporate language and strategies that would protect the ecological role of herring as forage. While Amendment 1 represents an important step in this direction, there is still a great deal that needs to be done to secure a herring forage base for New England's predators. To provide the Council with a blueprint for moving forward, NCMC conducted a detailed analysis of the Atlantic Herring FMP including Amendment 1, and provided specific recommendations on how the Council can further act to safeguard herring as a keystone prey species. The results of NCMC's study are presented in our publication, *Taking the Bait: Are America's Fisheries Out-Competing Predators for their Prey?*, which can be purchased through our web site, www.savethefish.org. □

PACIFIC COUNCIL PURSUES DRIFTNET AND LONGLINE PERMITS INTO 2007

CONSERVATION AREA MAY OPEN TO DRIFTNETS

During its final meeting of 2006, the Pacific Fishery Management Council (PFMC) decided to extend an Exempted Fishing Permit (EFP) application which would allow drift gillnetters targeting swordfish and thresher sharks to fish in the Pacific Leatherback Conservation Area located in federal waters off California and Oregon. The application to open the closed area was approved by the Council in March 2006 and would have allowed the use of drift gillnets from August - November of last year, but was not approved by NOAA Fisheries in time. Because leatherback sea turtles and a number of whales in the Eastern Pacific are critically endangered, NOAA is bound by the Endangered Species Act and the Marine Mammal Protection Act to thoroughly review the consequences of such an action. NOAA was unable to reach a consensus on the 2006 environmental assessment; therefore, the Council granted the application extension for 2007.

The EFP would authorize 20-40 vessels to fish in the conservation area as long as each vessel maintained 100 percent observer coverage. Limits on the number of sets and caps on the take of protected species are integral components of the permit and are meant to minimize the negative impacts of drift gillnets, though many scientists argue that because their numbers are so endangered, even a few deaths can harm their populations. The permit restrictions also do little to protect a wide range of other species of concern, such as blue sharks, shortfin mako sharks and albacore tuna, which have benefited indirectly from the area closure.

COUNCIL LOOKS TO LONGLINES TO REPLACE DRIFTNETS

Ironically, as the Council chose to expand driftnet use, they also moved forward with a longline permit application, the goal of which is to determine if longlines could replace destructive driftnets in the swordfish fishery. The permit applicant argues that longlines result in less bycatch than driftnets and plans to use his vessel to conduct the experiment. To date, some 70 current drift gillnet permit holders have expressed an interest in making the change to longlines. Because pelagic longlines indiscriminately kill a number of non-targeted species, including sea turtles, marine mammals, seabirds, marlins, tuna and sharks, they are currently prohibited by the Council's Highly Migratory Species Fishery Management Plan. A final decision on the longline application is expected at the April PFMC meeting in Seattle.

NCMC is strongly opposed to both permits, and we will continue to petition NOAA and the Council to keep longlines out of the Pacific and to phase-out indiscriminate gear in favor of more selective fishing methods. The Pacific Fishery Management Council is accepting comments from the public on the EFPs at pfmc.comments@noaa.gov. □

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The NCMC
MARINE BULLETIN
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THE GULF OF MEXICO'S SECRET GARDEN

Inside this issue:

Plus:

- **Gulf of Mexico Whale Shark Sighting Survey: Scientists Need Your Help!**
- **Donate a Raffle Prize to Help NCMC Raise Funds at the Mid-Atlantic $500K Tournament.**

RESEARCH UNCOVERS COMMUNITIES OF JUVENILE FISH GROWING AMONG THE TANGLES OF THE GULF'S SARGASSUM BEDS

At the 2005 meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT), the U.S. submitted an NCMC-drafted resolution directing ICCAT's scientists to assess the ecological status of sargassum as habitat for tuna, billfish and sharks, and asking countries to report on activities that may affect the abundance of sargassum. This resolution, which was adopted by the 35-nation commission, represents the first-ever action taken by ICCAT to address essential fish habitat and ecosystem concerns. Findings from sargassum research, such as those presented by the Gulf Coast Research Laboratory, will be instrumental in securing protection for this critical habitat, off the U.S. Coast and in the open ocean.

Travel through the northern Gulf of Mexico, and you may be surprised to encounter gardens of sargassum blanketing the water's surface. In fact, with the exception of the Sargasso Sea in the western North Atlantic, the Gulf boasts more sargassum than any other body of water on the planet. Prevailing currents carry broken fragments of the brown macroalgae from the Atlantic into the warm Gulf waters, where the plants quickly establish and multiply to form floating mats and, where water masses converge, "weedlines."

Fishermen have long recognized the relationship between sargassum and the abundance of important commercial and recreational fish. Until recently, however, sargassum habitat in the Gulf had not been studied in detail. Scientists from the Gulf Coast Research Laboratory (the Laboratory) at the University of Southern Mississippi are completing their final year of data collection for the first long-term study investigating larval and juvenile fish living in the Gulf's floating sargassum beds.

Funded by the National Marine Fisheries Service (NMFS), the Mississippi Department of Marine Resources, and the U.S. Fish and Wildlife Service's Wallop/Breaux Sport Fish Restoration Program, the study is conducted in the spring and summer off the coast of Mississippi and in the north central Gulf of Mexico. Sample sites are selected based upon satellite imagery of surface temperature, aerial surveys, reported

Read Hendon sorts sargassum samples aboard the R/V Tommy Munro.

(Continued on page 3)

Ocean View
Commentary

THE FUTURE OF THE OCEANS: FARMS & PARKS?

Last year, an international group of scientists (Worm et al, *Science* 11/06) grabbed a lot of attention when they warned we could run out of seafood by mid-century if trends in industrial-scale fishing continue. Fishing down so many stocks, they said, risks irreversible damage to marine ecosystems. Government and industry spokesmen, on the other hand, dismissed these concerns as outdated hyperbole, citing much progress toward achieving "sustainable" commercial fisheries.

Now, we're not so good at predicting the future, but we've seen the past. And we should be troubled by the fact that mankind has never succeeded at "harvesting" wild animals for commerce in anything like a sustainable manner for any length of time. On land, market hunting of wildfowl and game was phased out by the beginning of last century. Rising demand, advances in technology and inadequate regulation - sound familiar? - had driven a number of species near or to extinction. With few exceptions (some fur trapping, for instance), the killing of wild animals is limited to carefully managed hunting for personal use, i.e., sport or food.

But the sea is the last frontier where wildlife and commerce still struggle to coexist. Can we do in the ocean what we couldn't do on land? Two of the most highly-hyped answers - one coming from the seafood industry, the other from environmentalists - suggest many believe we cannot. And that suggests a future that scares us no less than the one described by Worm et al.

A FUTURE WORTH FIGHTING FOR

Years ago, when marine reserves were first touted as an answer to the oceans's problems - with proponents pointing to our system of parks as a terrestrial model - we wondered whether we really want to mirror that system. On land we give extraordinary protection to a few pockets of relatively pristine wilderness, but outside those borders, development is generally out of control. Meanwhile, opportunities for the individual to hunt and fish are diminishing, mostly due to lack of access to wildlife habitat.

Food comes almost exclusively from agriculture and animal husbandry. Which is where seafood production seems headed. In 2003, one-third of the fish consumed by humans came from aquaculture. Fish farms are expected to double production over the next decade.

While we worry about the environmental problems associated with aquaculture (see p. 7), we also must ask ourselves: Is this the future we want for our oceans? Preserves surrounded by farms? How will the millions of individual anglers, who simply want to catch a few fish for the home table, or who release their catch because it's the experience they value most, fit into this scenario? Or, for that matter, those conscientious commercial fishermen who fish selectively and with restraint, scaled-down to serve their communities, not corporations?

To secure a future for the fishing public, we will have to find a way to keep the ocean wild in order to preserve our wild fisheries. It won't be easy, it may be unprecedented, but it's worth fighting for.

-**Ken Hinman**, *President*

NATIONAL COALITION FOR MARINE CONSERVATION

Founded in 1973

The NCMC is a 501(c)(3) non-profit organization dedicated to the following goals:

- preventing overfishing and restoring depleted fish populations to healthy levels
- promoting sustainable use policies that balance commercial, recreational and ecological values
- modifying or eliminating wasteful fishing practices
- improving our understanding of fish and their role in the marine environment
- preserving coastal habitat and water quality.

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Marine Bulletin

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THE GULF OF MEXICO'S SECRET GARDEN *(Continued from page 1)*

sightings from anglers and charter boat captains, and chance encounters with sargassum habitat during research cruises. Deploying nets from the Laboratory's research vessel R/V Tommy Munro, investigators have already collected and analyzed over 120 samples from both weedline and mat habitats.

LIFE CYCLES OF 139 SPECIES LINKED TO SARGASSUM

Fish are collected and taken back to the Laboratory for classification. What the researchers have discovered is remarkable. One hundred and thirty-nine species representing 54 families have been recorded so far. Among the collected fish are 32 families and 67 species of fish not previously reported from Gulf sargassum habitat. Numerous recreational and commercial species have been found, with members of the jack, herring, mackerel and tuna, and flyingfish families comprising the majority of the catch. When comparing weedline and mat habitats, the scientists learned that fish abundance and species composition are similar.

TOP TEN SPORT FISH FOUND IN GULF SARGASSUM HABITAT

1. Greater Amberjack
2. Crevalle Jack
3. Dolphin-fish
4. Tripletail
5. Yellowfin Tuna
6. Blackfin Tuna
7. Sailfish
8. Blue Marlin
9. Wahoo
10. Triggerfish

While some of the collected species reside in sargassum throughout their lives (e.g., file fishes, pipefishes and sargassum fish), the investigation is uncovering scores of other fishes utilizing sargassum as nursery habitat, where they receive protection from predators, shade from the sun, and a ready source of food (because of the wealth of crabs, shrimp and other invertebrates living on the sargassum strands). Some of these species, including dolphin-fish and billfish, continue to associate with sargassum habitat through adulthood. Jim Franks, Senior Research Scientist for the Center for Fisheries Research and Development at the Gulf Coast Research Laboratory and one of the project's principal investigators, noted: "Our study is documenting that sargassum provides habitat for a multitude of young fishes, many of which as adults contribute significantly to commercial and recreational fisheries. The findings of this research project represent valuable information that is useful for the development of sustainable resource strategies in the Gulf region."

In 2004, sargassum was declared "essential fish habitat" (EFH) under the U.S. Magnuson-Stevens Fishery Conservation and Management Act, thanks to the actions of the South Atlantic Fishery Management Council (SAFMC), who recognized sargassum's importance to fishes in the Atlantic. The SAFMC enacted a virtual ban on the harvest of sargassum from the Florida Keys northward. The Gulf Council, however, has yet to take similar action to minimize adverse effects on sargassum caused by fishing under their jurisdiction. The research undertaken by the Gulf Coast Research Laboratory provides strong support for protective action in the Gulf. It gives new insight into the complexities of the pelagic sargassum ecosystem. Future studies will help fishery managers more fully understand and protect the role sargassum plays as EFH in supporting and sustaining the feeding requirements, health, survivorship and distribution of the early life stages of fish vital to the economy. For their work, the Laboratory and the Mississippi Department of Marine Resources were jointly awarded the 2003 Sport Fish Restoration Award by the American Fisheries Society.

FINDINGS LEAD INVESTIGATORS TO BLUE MARLIN SPAWNING GROUNDS

Although not among the most abundant fishes collected during the sargassum study, the scientists were intrigued by the occurrence of larval billfishes and tunas and decided to investigate further. In a two-year research initiative supported by NMFS, Franks and his team intend to provide the first comprehensive analysis of Atlantic blue marlin reproduction, spawning and nursery areas in the Gulf. The investigators hypothesize that adult marlin are spawning in convergent zones in the northern Gulf, and their eggs and larvae are then transported by currents into sargassum beds, which serve as nursery areas. Already underway, the multi-faceted study involves looking at the maturation, fecundity and spawning frequency of adults as well as collecting larvae to determine age, development, and transport patterns from spawning grounds to sargassum nurseries.

Bluefin Tuna were one of the 67 species found in Gulf sargassum for the first time. (Dr. Barbara Block of Stanford University has documented that the Northern Gulf of Mexico is an important spawning ground for the western stock of bluefin tuna. See "Protect Bluefin Habitat in the Gulf", p. 6 to learn how we are working to protect this critical area.)

(Continued on page 4)

THE GULF OF MEXICO'S SECRET GARDEN *(Continued from page 3)*

Owing to their pelagic lifestyle and highly migratory nature, few biological data have been collected to date for Atlantic blue marlin, particularly in the Gulf. Their overfished status, combined with their ecological importance as top predators and their value to the sportfishing industry, demands a comprehensive approach to manage marlin throughout their range, with particular emphasis on protecting sensitive habitat such as spawning and nursery grounds. "Data generated from the project will be used to improve the identification of EFH for billfish in the Gulf and will therefore be of significant value to state and federal fisheries management agencies, the recreational fishing industry and the scientific community," said Franks. Additionally, the methods the team develops to determine blue marlin spawning and nursery areas will be applicable to all other billfishes in the region and can be modeled in future studies.

Results from the marlin study will be shared with the public, anglers, and other stakeholders after the research concludes at the close of this year. □

NCMC would like to extend a special thank you to Jim Franks, Eric Hoffmayer and the Gulf Coast Research Laboratory for sharing the details of their work and for providing the photographs for the articles. We also want to recognize the investigative team who contributed to the success of the sargassum and marlin projects:

Jim Franks • Eric Hoffmayer • Bruce Comyns
Read Hendon • Richard Waller
Nancy Brown-Peterson • Don Johnson
Jan McDowell • Mae Blake
Vernon Asper • Nicole Crochet
Samantha Holden • Sarah Turner
James Ballard • Paul Grammer • John Shelley

SCIENTISTS LAUNCH WEB SITE DEDICATED TO WHALE SHARK RESEARCH IN THE GULF OF MEXICO

Anglers, Boaters, Divers Needed to Help with Sighting Survey

Whale sharks were first reported in the Gulf of Mexico (GOM) in 1939, but documented sightings had been rare until the early 2000s. In June 2006, Gulf Coast Research Laboratory biologists Eric Hoffmayer and Jim Franks along with NMFS Fisheries Biologist William Driggers and charter boat captain Sonny Schindler encountered a feeding aggregation of 16 whale sharks near the mouth of the Mississippi River. The sharks were observed for a period of four hours feeding on little tunny eggs floating at the surface. This sighting was the first confirmed observation of a feeding aggregation of whale sharks in the Gulf.

Whale sharks are listed as "vulnerable" by the World Conservation Union, and commercial fishing for them is prohibited in U.S. waters of the GOM and the Atlantic. Because so little is known about whale sharks in the Gulf, Hoffmayer and Franks began a whale shark sighting survey, and since 2002, have enlisted the help of recreational fishermen, charter boat captains and scuba divers. Survey participants record the details of whale sharks encounters, such as date, time, location and size and numbers of whales.

From the surveys, investigators learned that whale sharks are most prevalent in the northern Gulf between June and October. Their occurrence may be timed with increases in food availability that occur during fish spawns or other productivity events, and Hoffmayer and Franks believe the north-central GOM may provide the most consistent seasonal feeding location for whale sharks in the entire region. Several species of fish were commonly found with the whale sharks, including tunas, billfish, cobia and tripletail.

In hopes of better understanding the mechanisms driving the seasonal occurrence and migratory patterns of whale sharks in the northern Gulf, Hoffmayer and Franks plan to attach pop-off satellite tags to whale sharks in the near future. Surveys will continue to play an integral role in compiling the whale shark database. Sightings can be reported by completing the survey form located on the Gulf Coast Research Laboratory whale shark web site:

http://www.usm.edu/gcrl/whaleshark_survey

Look for the web site to be expanded this summer to include videos, photographs, background information on whale sharks, details about the research being conducted, and tracking data from the pop-off tags. □

NCMC OPPOSES FLAWED LONGLINE "RESEARCH" PLAN

Swordfish longliners were shut out of southern coastal waters in 2001 to limit their catch of overfished and prohibited species. The closures work. Catch and dead discards of juvenile swords, billfish and sharks are down 40-75 percent from bycatch levels of the late 1990s. So you'd think the National Marine Fisheries Service (NMFS) would be careful about letting longlining resume in these areas. But it seems the agency is prepared to let the industry decide when they're ready to return and under what conditions; namely now, and for no better reason than to up their take of swordfish from the closed areas.

The National Coalition for Marine Conservation opposes issuance of exempted fishing permits (EFPs) for 13 pelagic longline vessels to fish in the Florida East Coast and Charleston Bump closed areas. At an April 3rd meeting with NMFS chief Bill Hogarth, held at the request of NCMC, we told NMFS we are against the permits because the "scientific experiment" they propose to perform (evaluating bycatch reduction alternatives to the closures) is seriously flawed and features no criteria for judging success. As a result, it amounts to little more than a foot-in-the-door attempt by industry to re-enter the closed areas to longline for swordfish, tuna, dolphin (mahi-mahi) and sharks.

"Because the research proposal was initiated by the longline industry and developed without input from the scientific community and members of the public," says NCMC president Ken Hinman, "the EFPs, if approved, could undermine the current and future conservation benefits of the closed areas. We are urging NMFS to withdraw the proposal and start over. To issue this EFP at this time, based on a false urgency to catch more swordfish and fill our quota, would be both a misuse of the EFP process and a missed opportunity to conduct *bona fide* bycatch reduction research."

CIRCLE HOOKS ALONE ARE NOT BYCATCH REDUCTION RESEARCH

The EFP application, submitted by Blue Water Fisherman's Association, is based on the notion that the use of circle hooks by the pelagic longline fleet can replace closures as a means to limit bycatch. There is a wide range of species that would be taken by longlines in the Charleston Bump/Florida East Coast areas, including juvenile swordfish, white marlin, blue marlin, sailfish, dolphin-fish, large coastal and pelagic sharks. Although circle hooks have been shown effective in reducing bycatch of some species, especially on rod-and-reel, there is no evidence of reductions in bycatch *mortality* for fish caught on longlines that remain on the hook for up to 12 hours and more. Nor is there evidence indicating a reduction in post-release mortality for fish released after being on the hook for so many hours.

NCMC is insisting that any real research into the use of circle hooks on longlines must study the effect of various shortened soak times. In fact, one study indicates that, even using circle hooks, mortality of bycatch species increases significantly with each hour after hook-up. Berkeley and Edwards (1998) used hook-timers in the Gulf of Mexico yellowfin tuna longline fishery to compare mortality with the time the fish spent on the hook. The tuna longliners used circle hooks almost exclusively (over 90 percent). The mortality rate for billfish surpassed 50 percent - that is, more than half the fish brought up dead - after they'd been on the hook for about 8 hours. Swordfish (including juveniles that cannot be landed) surpassed the 50 percent mortality mark less than 2 hours after hook-up.

To meaningfully measure reductions in bycatch mortality attributable to circle hooks, the experiment must test different soak time lengths (e.g., three hours, six hours, nine hours) and compare survival rates. In addition, released fish should be tagged with pop-off archival tags to assess post-release mortality of fish caught on circle hooks at varying set-lengths. Because the mortality rate for fish taken on circle hooks increases in the hours after hook-up, it is also likely that fish released alive have been stressed enough that post-release mortality may be significant.

WITHOUT STRICT PERFORMANCE CRITERIA, "SUCCESS" COULD MEAN A NET LOSS OF CONSERVATION

Blue Water says the "circle hook performance data" will allow comparison with longline logbook data from 1997-99, prior to implementation of the closures. These data, they say, could then be used to consider "re-opening selected traditional swordfish fishing grounds."

But the ultimate measure of bycatch reduction success is the effectiveness of the current closed areas with no longlining. Any lesser standard would mean a decrease in conservation benefit for a number of species that are severely overfished and the object of long-range rebuilding efforts (white marlin, blue marlin, numerous large coastal sharks), as well as juvenile swordfish, whose survival and growth is still critical to the long-term recovery of swordfish.

In the three years following full implementation of the time-area closures (2001-03), the following bycatch reduction rates were achieved as compared with the pre-closure period 1997-99:

Juvenile swordfish	**-39.5%**
White marlin	**-47.5%**
Blue marlin	**-50.3%**
Sailfish	**-74.6%**
Dolphin	**-47.2%**
Large Coastal Sharks	**-27.9%**
Pelagic Sharks	**-55.9%**

These bycatch reduction rates are the standard against which the performance of gear modifications, as a possible

(Continued on page 6)

PROTECT BLUEFIN HABITAT IN THE GULF

The western bluefin's breeding ground in the Gulf of Mexico qualifies as a rare and unique habitat for these magnificent but grossly depleted tunas and deserves special protection under the Essential Fish Habitat provisions of federal law. In a joint letter dated March 30th, the NCMC and the Tag-a-Giant Foundation (a science and policy initiative at Stanford University committed to reversing the decline of bluefin) requested that the National Marine Fisheries Service designate a 125,000-square-mile area in the northern Gulf a Habitat Area of Particular Concern (HAPC).

According to federal regulations, HAPCs are those areas judged to be particularly important to the long-term productivity of a managed species and/or particularly vulnerable to degradation. The Gulf spawning ground satisfies at least two of the criteria that must be met for an area to qualify as an HAPC: the area is of *utmost ecological importance* given that it is the only known spawning area for western bluefin, which thereby also makes it a *rare habitat type*.

In our request to NMFS, NCMC and Tag-a-Giant wrote:

- We believe the bluefin's Gulf of Mexico spawning grounds are critical to the long-term productivity of the western Atlantic bluefin tuna population and are particularly vulnerable to human-induced degradation, including through certain types of fishing.
- HAPC designation helps provide additional focus for conservation efforts and, in the case of HAPCs vulnerable to fishing impacts, carries management implications. We believe establishing the bluefin's Gulf of Mexico spawning grounds as an HAPC is necessary to identify this area as critically important to a species which is in need of additional levels of protection from adverse impacts.
- The EFH regulations state that certain activities should not be located in areas identified as habitat areas of particular concern due to the risk to the habitat. Habitats that are at greater risk to impacts, either individual or cumulative, *including impacts from fishing*, may be appropriate for this classification. Habitats that are limited in nature or those that provide *critical refugia* may also be appropriate.

Recent tagging studies by Dr. Barbara Block of Stanford show that protecting western bluefin tuna on their Gulf spawning ground, where giant breeders are still taken on longlines set mainly for yellowfin tuna, is the most effective way to save what's left of the dwindling spawning population. □

NCMC OPPOSES FLAWED LONGLINE "RESEARCH" PLAN *(Continued from page 5)*

substitute for the closed areas, must be measured. The longline industry suggests only the most minimal standard, that is, comparison to bycatch rates before the closures.

"Within the context of a proposal whose ultimate goal is to 'allow the U.S. pelagic longline fleet to catch more of the U.S. quota' of swordfish," says Hinman, "the public can have no confidence in management decisions made based on this research unless the criteria for assessing the results are clearly spelled out. Because the closed areas are benefiting a wide range of species, the goal of any bycatch reduction program that might be considered as a substitute for closed areas must be to achieve *at least* the same level of conservation. Otherwise, we – and the fish – will lose." □

HELP US RAISE FUNDS AT THE MID-ATLANTIC $500K TOURNAMENT

NCMC is asking its members to donate a prize to our fundraising raffle in August! We're again participating in the Mid-Atlantic $500,000 Tournament (marlin and tuna) in Cape May, NJ to be held this year August 19-24. NCMC partners with IGFA and the Recreational Fishing Alliance to run the tournament's prize raffle. Tickets are sold during the event to win anything in our raffle including over $65,000 worth of trips, artwork, fishing tackle, gift certificates, books, and clothing, all of which is donated.

If you'd like to send something new or have a unique fishing collectible, we'd like to hear from you! We also appreciate items that are not fishing-related, i.e. a gift certificate to a store or restaurant. Donor benefits include promotion of your company at the event (1,000+ participants) and on our web site, and a tax-deduction letter. To donate or for more info, contact Christine at NCMC: christine@savethefish.org, or 703-777-0037.

NCMC'S FORAGE FIRST! CAMPAIGN

SETTING CATCH LIMITS IN AN ECOSYSTEMS CONTEXT

NCMC Testifies on National Guidelines

NMFS is preparing new rules for setting catch limits in marine fisheries, based on changes made to the recently reauthorized Magnuson-Stevens Fishery Conservation and Management Act. The rules will be part of revised guidelines for Magnuson's National Standard 1, which requires fishery managers to prevent overfishing while achieving the optimum yield (OY) from each fishery. The OY is defined as the maximum sustainable catch level as *reduced* by social, economic or ecological factors.

NCMC president Ken Hinman testified at a March 9th scoping hearing at NMFS headquarters. He urged NMFS to take this opportunity to provide the regional fishery management councils with long-needed guidance on setting the allowable catch within an ecosystems context, with particular emphasis on new precautionary standards for federally-managed forage fish (herring, squid, mackerel, sardine, etc.) to protect their pivotal role in the ocean food web.

"The law gives the councils the authority to set the OY, in other words to set catch limits, for ecological reasons," NCMC pointed out. "But as we found in our study and concluded in the resulting report, ***Taking the Bait: Are America's Fisheries Out-Competing Predators for Their Prey?***, in most cases forage fish are managed using single-species parameters, for both target population levels and overfishing thresholds. Catch limits are set without explicitly accounting for predator-prey relationships, not just because the councils are waiting for new science, or new funding. They're waiting for guidance. From NMFS. And the NS1 guidelines are the appropriate place to provide it."

NCMC subsequently submitted written comments suggesting a number of options fishery managers should consider when setting catch limits for forage fish. NCMC is also co-hosting (with the Marine Fish Conservation Network) a workshop in late May, where invited scientists and policy-makers will meet to discuss and suggest new criteria and standards for conserving forage fish and managing these fisheries with an ecosystems approach. □

NEW OFFSHORE AQUACULTURE BILL INTRODUCED IN CONGRESS

Environmental Requirement Section Included, but Weak

As a courtesy to the Bush Administration, on April 24, Natural Resources Committee Chairman Nick Rahall (D-W.Va.) introduced the National Offshore Aquaculture Act of 2007 in the House of Representatives. Rahall says he does not endorse the legislation.

The original Offshore Aquaculture Act was introduced by Senators Stevens (R-AK) and Inouye (D-HI) in 2005, also as a courtesy, but the bill never made it to the floor for a vote. Catering to industry, the 2005 bill would have established a streamlined regulatory framework for expediting aquaculture development in federal waters, from three to 200 miles off the coast. The bill stalled because of its lack of environmental safeguards, for which it was widely criticized by environmental groups and recreational and commercial fishermen alike.

In crafting the new bill, NOAA had hoped that the inclusion of an environmental requirements section would be enough to appease its critics. However, requests for the agency to conduct an assessment of the economic, social and ecological impacts of industrial-scale open ocean aquaculture and to incorporate adequate safeguards into statutory criteria went unheeded. Rather, the bill mandates that environmental standards for issuing permits be created through rulemaking, and a list of items to be "addressed" in the rulemaking is provided. Because impacts from offshore aquaculture have the potential to significantly harm the environment and fishery resources, permit requirements should be explicit and should be included in legislation. Furthermore, "addressing" risks and impacts on natural resources does not provide direction to eliminate or minimize these threats.

A poorly designed and regulated offshore aquaculture program can increase pressure on wild fish and devastate the marine ecosystems on which they depend through escapements of farmed fish, disease transmission, pollution, destruction of essential habitat and by relying heavily on wild forage fish for aquaculture feed.

NCMC recently joined with 30 other like-minded organizations in sending letters to the members of the House Resources Subcommittee on Fisheries, Wildlife and Oceans asking them to oppose the legislation. □

DELAY OF CIRCLE HOOK RULE COULD BE COSTLY

The National Marine Fisheries Service announced March 12th that it may suspend for a year the requirement that participants in Atlantic billfish tournaments use non-offset circle hooks when fishing with natural baits or a combination of natural and artificial baits. The new rule, which became effective January 1, 2007 as part of the Final Consolidated Highly Migratory Species Plan, received almost universal support from the angling community. It is meant to reduce post-release mortality of marlin and other species anglers might interact with while fishing billfish tournaments.

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The National Coalition for Marine Conservation supports the rule and weighed in against delaying it. So did the NMFS Highly Migratory Species Advisory Panel (made up of sport and commercial fishermen, scientists and conservationists, including NCMC), which unanimously agreed at its March 13-15 meeting that NMFS should go ahead and implement the rule now, in 2007, as originally intended.

The use of non-offset circle hooks in billfish tournaments, instead of J-hooks, is expected to reduce post-release mortality of white marlin by as much as 66 percent, which could translate into an increase in the number of white marlin that survive the catch and release experience by up to 500 fish a year! Given the dire condition of the white marlin population – NMFS is currently conducting a status review under the Endangered Species Act - we believe it would be irresponsible to postpone the possible saving of hundreds of marlin this year.

A small group of tournament directors in North Carolina is behind the push to postpone the rule. They say J-hooks are more popular with anglers in their area who use heavier tackle to catch blue marlin. They want either more time to djust, or an exemption. NMFS claims the delay may have some short-term costs but it will improve compliance in the long run. But if the rule is implemented this year, conservation benefits will be realized immediately, and improved compliance in 2008 and beyond will only add to those benefits. Meanwhile, the blue marlin tournaments in North Carolina can either use circle hooks or, if they choose, use J-hooks with artificial lures. □

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NATIONAL COALITION FOR MARINE CONSERVATION

The NCMC
MARINE BULLETIN

No. 118 Summer 2007

Inside this issue:

Plus:

- Holiday cards from Sport Fishing Magazine are on sale! Proceeds help support NCMC.

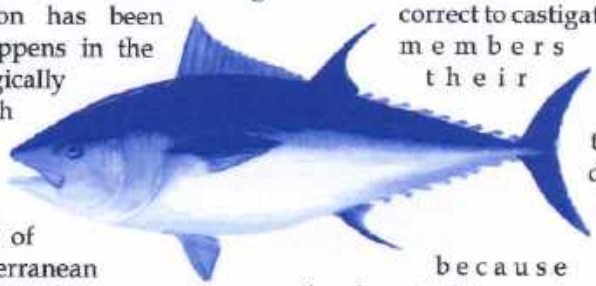
HELPLESS GIANTS

The frontiers are not east or west, north or south, but wherever a man fronts a fact. -

Henry David Thoreau

TRADING STOCKS

Ever since 1996, when questions about the rate of mixing between the two stocks of giant Atlantic bluefin tuna moved center stage at the International Commission for the Conservation of Atlantic Tunas (ICCAT), the fate of the west's long-depleted population has been linked to what happens in the east. If not biologically - the latest research affirms the existence of separate spawning stocks in the Gulf of Mexico and Mediterranean Sea - then politically. The position of the United States (which shares the western bluefin quota with Canada and Japan) is that the only thing that will improve fishing on our side is a halt to overfishing on the other side, thereby saving precious western fish that stray east and letting more fish from the larger eastern stock migrate to feeding grounds over here. For their part, the Europeans deflect criticism by pointing to the sad state of our fisheries and advising us to stay home and get our own house in order.



SHIFTING RESPONSIBILITY

Catches of eastern bluefin tuna in recent years were estimated to be as high as 50,000 metric tons. ICCAT's science panel last year recommended measures to cut fishing to 15,000 tons. The Commission settled on a quota of 29,500 tons, or twice the level needed to head off a stock collapse, without the closures in the Mediterranean and reductions in fleet capacity necessary to enforce even that. Still, that doesn't change the fact that the western spawning population is only 18 percent of the 1975 level, which was an already heavily-fished stock, and that it's hovered around that low level since the 1980s. The U.S. is absolutely correct to castigate its fellow ICCAT members for leaving their fishery virtually unregulated in the face of a steep decline. But we are wrong to presume that, because our catch is and has been tightly restricted for many years, we can't and shouldn't do more.

BREEDING INACTION

If new regulations in the eastern Atlantic are chasing a decline, then the west is spinning its wheels. Catch limits for western tuna, first set in 1981, have held fairly constant over the last 25 years, despite their obvious ineffectiveness in rebuilding the depleted breeding population. In this case, ICCAT's is a record of chances missed, science disregarded, and catches kept as high as possible – under the circumstances. (see chart on page 3) It all began with 10 years of what was euphemistically known as a "scientific monitoring quota" of 2,660

(Continued on page 3.)

Ocean View
Commentary

PAYBACK

Life in Chesapeake Bay isn't getting any easier. Despite clean-up efforts that began in earnest 25 years ago and the expenditure of billions of federal and state tax dollars, the Chesapeake Bay Program reports that submerged grasses and the crabs, fish and other organisms that live among them are still suffocating. Nitrogen leaking into the bay from farm and urban run-off and inadequate waste-water treatment fuels the growth of algae into choking "blooms" that deny bay life the light and oxygen it needs to thrive.

The most important outcome of the 5-year cap (2006-10) on the industrial harvest of Atlantic menhaden in the Chesapeake is the research program set in motion to enable a new "ecological" stock assessment. Determining the status of menhaden as prey in the bay is the critical element, but quantifying the role of menhaden in filtering the water column is also essential.

With the native oyster population all but gone, menhaden are by far the most important if not the only major filter feeder left. The normally plentiful little fish, swimming mouths agape in vast schools and consuming phytoplankton and decaying plant matter, are a natural filtration system; free pollution control, you might say. But with numbers of menhaden at an all-time low and the harvest of menhaden – a coastwide species – concentrated in the bay, that service is diminished - at a price higher than most people think.

THE PRICE WE PAY

The 10 vessels in the Virginia reduction fleet pay a maximum of $996 each for a permit to catch, process and sell up to 109,000 tons of bay menhaden that don't belong to them alone.

Ocean resources belong to all the people. Federal and state governments hold them in trust, to preserve the full range of their benefits for present and future generations. A study by the Virginia Institute of Marine Science is now underway to determine the economic value and importance of menhaden to the bay area to inform present and future management decisions. A key component will be the value of the recreational and commercial fisheries for striped bass and other predatory fish that rely on menhaden as their primary forage.

Although nitrogen is the worst pollutant in the bay, putting a dollar value on nitrogen removal by an algae-eating fish isn't easy. But it's not that much different from putting a price on pollution by assessing the cost of cleaning it up. Only in this case, we're talking about an industry not polluting but reducing clean-up capacity by removing over 700 million menhaden from the bay every year. A quantity of fish that, by one estimate, has the capacity to filter-out several million pounds of nitrogen.

We can calculate the price we pay by figuring the cost of preventing a comparable amount of nitrogen from entering the bay. Depending on the source and the solution, that can be a few dollars or hundreds of dollars per pound. It seems to us the menhaden industry should be paying a lot more than they are to fish in the bay, because it's costing us millions. Why not impose a per-pound fee on the industry to recoup the cost of replacing the filter-feeding capacity of the lost menhaden?

Ken Hinman, *President*

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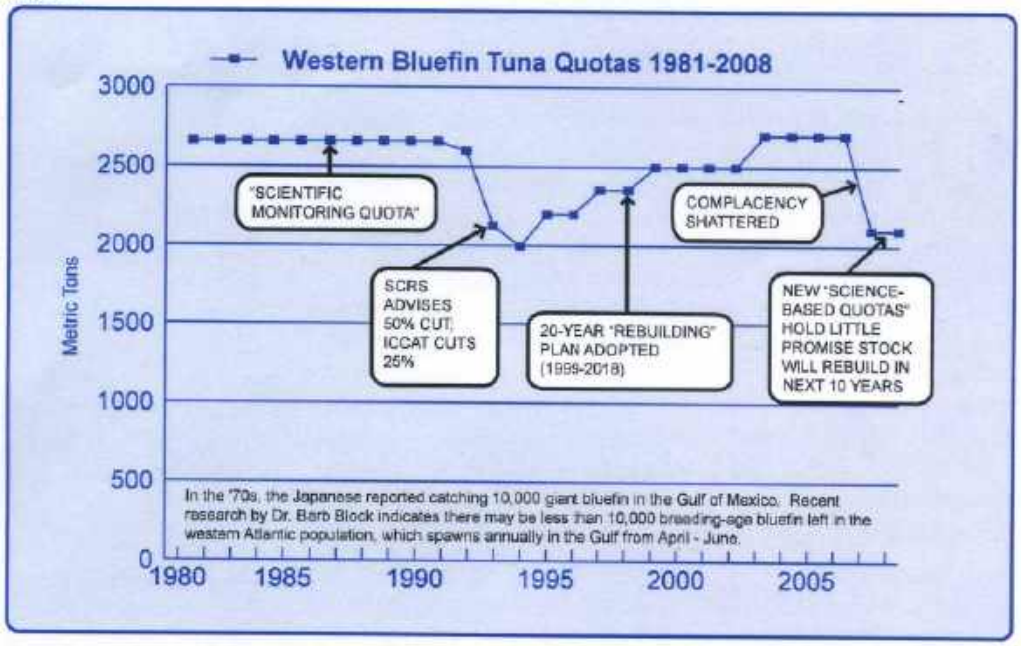
HELPLESS GIANTS *(Continued from page 1)*

tons, following 1981 advice to close the fishery. ICCAT then "bit the bullet" in 1993 when its scientists warned of continued decline and recommended a 50 percent cut in catch. The Commission responded with a 25 percent reduction. But then, a combination of greed and complacency – quotas were easily filled despite the purported condition of the stock and fishermen wanted more – along with challenges to the two-stock assumption, allowed quotas to gradually slip back up to the high levels of the 1980s. Everyone could feel good about it, though, because in 1998 ICCAT transformed its management program into a 20-year Rebuilding Plan. Alas, all the while the number of western breeders bounced around near the bottom of the chart and showed no signs of improvement.



COLLAPSING A FISHERY

The complacency was shattered a few years ago when New England fishermen, accustomed to battling each other for a shot at the big and valuable tunas, suddenly (it seemed) could barely find any. With the final numbers now in for 2006, all U.S. fishermen combined caught a scant 260 tons, 10 percent of their ICCAT quota. It was the third disastrous fishing season in a row, prompting a U.S. scientist who works closely with the industry to remark that she is "witnessing the collapse of the New England (bluefin) fishery." While some blame the disappearance on a lack of herring in the Gulf of Maine, most fishermen point their fingers at the overfishing in the east. Which begs the question: If fish migrating over from the eastern Atlantic have been propping up the western fishery – and that's quite possibly the case – doesn't that mean the western population is now too small to support a viable fishery on its own?

BRIDGING THE GULF

Tagging studies by Dr. Barbara Block of Stanford University, first published in *Science* in 2005 but ongoing, confirm high rates of mixing between eastern and western stocks, especially in the Central Atlantic. But her work shows two separate and discrete breeding grounds – in the Gulf of Mexico and Mediterranean Sea – and spawning site fidelity, that is, fish originating in the Gulf return there and only there to spawn at maturity. The median age at sexual maturity, according to Block, is 12 years. The existing ICCAT stock assessment assumes that fish age 8+ are spawners. This higher age is significant because it means the number of western breeders is much smaller than previously thought, i.e., around 10,000 fish.

The implications for management are that the one place that we can be assured of protecting the west's remnant population of giant bluefin is in the northern Gulf of Mexico, where they go to spawn every spring. Mixed-stock fisheries on the bluefin's migration routes in the open sea or in coastal waters catch tuna that are part of different stocks. The effect of catch limits in these fisheries on discrete spawning stocks, therefore, is difficult to measure without knowing precise mixing rates on the fishing grounds. In the Gulf, however, in the spring (roughly April – June), every fish we catch is a rare western breeder.

FACING THE FACTS

If quotas in the west continue to fluctuate around the 2,000+ ton level, as they have since 1981, and quotas in the east aren't going to be substantially reduced anytime soon, then continuing to adjust the western quota is unlikely to have any appreciable impact at all on the dwindling spawning stock. What's needed are tighter controls specific to fishing on the spawning grounds. Indeed, ICCAT long ago recommended the Gulf be a sanctuary from fishing targeted at bluefin. Unfortunately, a large fleet of U.S. longliners is there chasing yellowfin tuna and swordfish and hooking bluefin. Dr. Block's research onboard longline vessels found at least one bluefin hooked per trip with an extremely high rate of mortality because of the high water temperatures.

Closing the Gulf to all longlining where and when the bluefin spawn – information documented in a petition submitted to NMFS two years ago by Oceana, NCMC and several other groups – would do more than anything else to protect what's left of the western bluefin spawning stock and preserve a U.S. fishery for the future. At the same time, we should support lower overall quotas to protect pre-spawning fish swimming off our east coast, and strict limits on effort in the Central Atlantic, where east meets west. □

(Original bluefin tuna image courtesy of NOAA)

NCMC JOINS NEW HERRING ALLIANCE

On June 20th, a date chosen to coincide with a meeting of the New England Fishery Management Council to discuss the absence of observers on at-sea herring processors, the Herring Alliance was launched. This new coalition of environmental groups will work in partnership with the fishermen-founded CHOIR Coalition in calling for herring to be managed in an ecologically-responsible way that protects its importance as a keystone prey species. The Alliance includes the Pew Charitable Trusts, Conservation Law Foundation, Earthjustice, Oceana, Greenpeace, National Environmental Trust, Natural Resources Defense Council, U.S. PIRG, and the National Coalition for Marine Conservation.

Atlantic herring is a vital source of food for commercially and recreationally important fish stocks such as tuna, haddock, cod, striped bass, whiting, and dogfish, as well as for many seabirds and marine mammals. Despite the importance of herring as a prey species, NCMC revealed last year in its ***Taking the Bait*** report that the New England Fishery Management Council continues to use single-species instead of ecosystem-based methods to manage the herring fishery. Single-species management cannot account for and provide an adequate herring forage base for New England's predators.

Most of the herring caught in New England, particularly in the Gulf of Maine, is captured by midwater trawlers. These vessels are 100-feet long and can hold up to one million pounds of fish, which are caught by dragging small-mesh nets, wider than a football field and several stories tall, at high speeds through the water column. The fishery is loosely managed with minimal observer coverage on the capture vessels and no required coverage on the at-sea processors, which collect up to one-fifth of the herring catch directly from the trawl nets. Because herring predators feed on the same schools of herring the trawl fleet targets, bycatch of predator species can be substantial, yet the vessels are allowed access to areas closed for groundfish recovery.

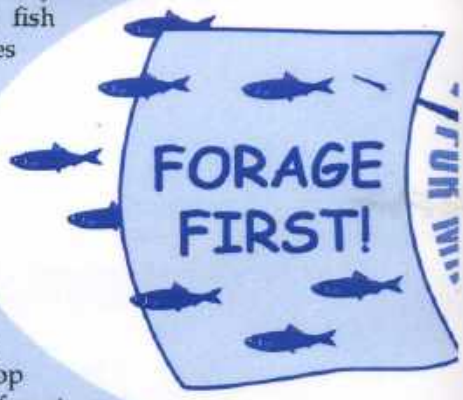
NCMC is proud to be a founding member of the Herring Alliance whose mission is three-fold:

- To establish ecosystem-based catch limits which leave sufficient herring in the ecosystem as forage for other marine predators.
- To spatially and temporally apportion herring trawling using buffer zones and time and area closures which both minimize bycatch and avoid localized depletion to ensure sufficient herring is present when and where it is most needed by other predators.
- To fully monitor and minimize bycatch of commercially and recreationally important fish stocks – including juvenile or spawning Atlantic herring and depleted river herring and groundfish – as well as whales, seals, dolphins and porpoises. □

NETWORK HOSTS WORKSHOP ON SETTING FORAGE FISH CATCH LIMITS

In May, NCMC President Ken Hinman moderated and participated in a two-day workshop convened by the Marine Fish Conservation Network (Network) to kick-start its effort to elevate the importance of forage fish to marine ecosystems. The Network is a coalition of over 190 environmental organizations, commercial and recreational fishing groups, aquariums, and marine science centers dedicated to conserving marine fish and to promoting their long-term sustainability.

The workshop brought together scientists and policymakers from around the country to articulate a set of science-based principles by which forage fish should be managed. Their findings were not surprising: forage fish play a critical and unique ecological role; there is uncertainty involved in assessing the impacts of fishing on ecosystem function; and forage fish management requires more conservative standards and a more precautionary approach than what is now in practice.



Using these principles as a foundation, and based on the workshop discussions of different ways to apply these principles in the current management system, the Network is promoting specific changes to federal regulations that will ensure managers account for the vital role of forage fish in the ocean food web.

Important provisions in last year's reauthorization of our national fishing law, the Magnuson-Stevens Fishery Conservation and Management Act, require the National Marine Fisheries Service (NMFS) to create new rules for setting annual catch limits, a process that is already underway. The Network is using this opportunity to ask for specific forage fish catch limit guidelines designed to preserve adequate supplies of prey for ocean predators.

Because little information is known on how to set catch limits in a multi-species context that takes into account predator needs, the Network is advocating that conservative single-species methods be employed as a first step. It is calling for forage populations to be maintained at 75% of an unfished population. Current law allows forage stocks to be fished down to less than 40% of their natural stock size. □

NCMC PRESENTS *TAKING THE BAIT* RECOMMENDATIONS TO MID-ATLANTIC COUNCIL

At the Mid-Atlantic Fishery Management Council (MAFMC) meeting held in June in Hampton, VA, NCMC gave a presentation to the Council's Ecosystem Committee and offered specific recommendations for amending the Atlantic Mackerel, Squid and Butterfish Fishery Management Plan (MSB FMP) in order to protect a forage base for recovering predator stocks also managed by the Council. NCMC urged the Council to explicitly recognize and protect predator-prey interactions in management decisions. If left unaccounted for, predators can suffer from direct competition with forage fisheries.

NCMC pointed to a study conducted by University of Massachusetts scientist Michelle Staudinger, whose findings were published in the journal Fishery Bulletin last fall.[1] Staudinger examined the diets of four major Atlantic squid predators - bluefish, goosefish , silver hake and summer flounder - and found that predation intensifies in summer and winter, the same seasons during which most commercial squid landings occur. Squid was particularly important prey for juvenile bluefish, silver hake and summer flounder, having important implications for flounder and hake rebuilding efforts, which are focused on expanding these same young age classes.

NCMC offered three specific suggestions for MSB FMP amendments already underway:

1. Revising plan objectives to recognize the importance of these species as forage;
2. Developing ecological reference points and indices for Atlantic mackerel *before* proceeding with plans to expand this fishery;
3. Explicitly setting aside a portion of the current allowable catch of squid as an allocation for predators.

MAFMC Executive Director Daniel Furlong thanked NCMC for the presentation, acknowledging that protecting predator-prey relationships could be a logical first step toward an ecosystem-based approach, but said the Council wants guidance from NMFS before proceeding. □

1 Staudinger, M. D. 2006. Seasonal and size-based predation on tow species of squid by four fish predators on the Northwest Atlantic continental shelf. Fishery Bulletin 104(4): 605-615.

DICK RUSSELL, AUTHOR & FISHERMAN, TESTIFIES AT AQUACULTURE HEARING

"If menhaden and herring are pumped into the feeding base for American offshore aquaculture, will we see continuing declines of striped bass, bluefish, and weakfish in the Chesapeake - and no doubt elsewhere - due to starvation?" Dick Russell posed this question to the House Subcommittee on Fisheries, Wildlife and Oceans during the July 12th hearing on the Offshore Aquaculture Act of 2007. The bill was introduced by Rep. Rahall (D-WV) in April by request of the White House, and was referred to the Subcommittee for review.

Russell was one of four experts invited to testify on behalf of stakeholders. NOAA, the agency that authored the bill, was represented by its highest ranking official, Navy Vice Adm. Conrad Lautenbacher, Undersecretary of Commerce for Oceans and Atmosphere.

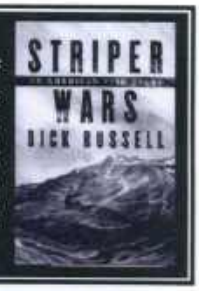
No stranger to DC politics, Russell testified before Congressional committees in the 1980s in the campaign to bring back striped bass from the brink of extinction. When diseased bass began showing up in the late '90s, Russell resumed the fight, joining NCMC and other groups in the battle to protect the stripers' food source - Atlantic menhaden - from overfishing by the reduction industry. Omega Protein, the only remaining menhaden reduction company in the eastern U.S., is the nation's largest manufacturer of fish oil, a key ingredient in aquaculture feed.

"At a time when forage species such as menhaden and herring are already being fished to their limits for various purposes, still greater numbers will be needed as feed for the offshore raising of carnivorous finfish such as salmon and cod," Russell said. In his testimony, Russell opposed the Administration's bill, calling for strong environmental protections to be built into legislation, including requirements to use sustainable, plant-based feeds in lieu of forage fish-based feed, which results in a net loss rather than a gain of fish resources, and places greater pressure on wild stocks.

The biggest surprise of the hearing came from Lautenbacher, who agreed to work with the Subcommittee to incorporate environmental standards into the bill. NOAA denied similar requests in the past fearing explicit standards would deter potential investors. Russell and fellow panelist Tim Eichenberg of the Ocean Conservancy offered to assist with the development of standards should the Subcommittee move to mark up the bill. □

NCMC Recommends...

Striper Wars...the inspiring account of the people and events responsible for the preservation of one of America's favorite fish and what has happened since...up to the current battle to stop the overfishing of menhaden that is destroying the stripers' forage base and devastating the health of the Chesapeake Bay.



THE BLAME GAME

We Don't Need To Sacrifice the Closed Areas In Order To Have A Sustainable Swordfish Fishery

United States fishermen landed less than half their year's allotment of Atlantic swordfish in 2006. It's the tenth year in a row we've failed to catch our ICCAT quota, and the gap between what we're given and what we take is widening. Because the International Commission for the Conservation of Atlantic Tunas considers the once-overfished North Atlantic population of swordfish fully-rebuilt, this under-harvest is the cause of much consternation. And great debate. Here in the U.S., we want to know why we aren't catching swordfish and what we can do about it. Developing countries want whatever we're not using and, as increasingly powerful members of ICCAT, they're prepared to take it.

Longline fishermen have singled out the southern waters closed to them in 2001 – successfully reducing bycatch and dead discards of marlin, sailfish, sharks and undersize swords - as the chief impediment to the U.S. catching its historical share of swordfish. They want back in, and they've applied for a permit to conduct an experimental fishery in the closed areas, currently pending before the National Marine Fisheries Service.

It would be wrong to use the failure of the U.S. to land its ICCAT allocation to justify a poorly-thought-out plan to renew fishing in the closed areas (*Marine Bulletin* No 117, Spring 2007). There are many reasons why the U.S. isn't filling its quota of swordfish (see Top 10 Reasons, p. 7), and why re-opening the closed areas isn't the answer to our problems – only a way to create new ones. The recreational fisheries in the southeast, including a resurgent fishery for broadbill, are thriving because of the closures. Overfished populations of billfish and sharks are getting much-needed relief from indiscriminate longlines.

NMFS director Bill Hogarth has made it clear he wants to help the longliners catch more swordfish. But it would be a mistake to do it in a way that ignores the big picture. ICCAT will decide as early as next year how to re-allocate swordfish, and it seems inevitable that the U.S. will have to yield something. It's not clear to us why the U.S. shouldn't give up a portion of its share - and in doing so, get something back. We can have a sustainable swordfish fishery in the U.S., harvesting 3,000 tons a year instead of 4,000 (out of an Atlantic-wide catch of about 14,000 tons, shared by 20 countries), without sacrificing the significant conservation gains we've made because of the area closures. □

Steve Berkeley 1947-2007

FAREWELL, FRIEND

It makes you really appreciate little things, like taking your dog for a walk. – Steve Berkeley, September 2006

I knew Steve Berkeley, who died June 27th in Scotts Valley, CA, for a long time - about 25 years, I think - but not, I feel now, nearly long enough. We first met when I was in Savannah starting out with NCMC and Steve was up the coast in Savannah's sister city Charleston, working as a biologist for the South Atlantic Council. We got to know each other laboring over the billfish and swordfish plans and I quickly recognized a kindred spirit. Even after he'd moved on to other places, other coasts, other fish, I still looked to him for advice, and vice versa. As a friend and colleague – even a long distance one – he was about as good as you'll ever get. And I'm glad I had the chance to tell him that.

When Steve died, from a nasty cancer that numbered his days but couldn't curb his zeal for living (kayaking, skiing, fishing, anything outdoors), we were working together on a number of projects; some his ideas, some mine, one I'll finish alone – for him. When it happened I had my guard down, I guess, because he was always so upbeat; submitting research proposals, taking on new responsibilities, making plans up to a month before the end.

You can Google him if you want a list of his many contributions to marine ecology and conservation. What I'd like to add is that Steve was the scientist I respected more than any other. He understood the connection between his job and the problems we are all trying to solve, so he was not only practical but unafraid to follow what he knew to be true - even if it was controversial or upset conventional notions about how we manage fisheries. Trust me, that's a rare quality in this contentious arena.

Everyone who knew Steve is going to miss him, especially his smile and his infectious laugh. But we'll always remember him, too. As George Bernard Shaw once said, you can lose a man like that by your own death, but not by his.

Ken Hinman

10 TOP TEN REASONS
WHY THE U.S. CAN'T LAND ITS SWORDFISH QUOTA

The longline area closures are only one of many reasons the U.S. is having trouble catching swordfish. In order to show why re-opening the closed areas is not the answer, we suggest ten reasons why the U.S. can't land its swordfish quota:

10 ACTUALLY, IT NEVER HAS.

A U.S. quota was first instituted by ICCAT in 1991. Our fleet was unable to fill it until 1995, when ICCAT required that dead discards (526 tons that year) be counted. We reached our quota the next year, too, when 589 tons of discards were added to landings of 3,457 tons. But in 1997, after the discard rule was lifted, we again came up short, and haven't reached the quota since. The area closures didn't take effect until the fall of 2000.

9 THE QUOTA'S TOO HIGH.

The U.S. catch (landings plus discards) averaged about 2,600 tons a year from 2000-2005. That's 88 percent of the baseline quota we fished under until 2003, when ICCAT declared swordfish recovered, upped the total allowable catch, and gave the U.S. an additional 1,000 tons we didn't ask for. Ever since, what was once a modest gap between catch and quota has ballooned into massive annual underages.

8 SO ARE FUEL COSTS; MARKET PRICES STAY LOW.

The rising cost of fuel since the late 1990s has limited the length of offshore fishing trips, forcing vessels to return to port sooner to get the better prices a fresher product brings; or, target higher-priced fish like yellowfin tuna.

7 DECLINING EFFORT.

The number of vessels in the U.S. longline fleet peaked in the mid-1990s, but has been steadily declining ever since. Because the drop-out began long before the area closures took effect - although there's no question they were the final straw for smaller, nearshore longliners in Florida - it's likely the economics of swordfishing, more than anything else, caused the fleet to contract.

6 THE SWITCH TO CIRCLE HOOKS.

Despite the shrinking fleet size, the total number of hooks fished by the longline fleet has remained stable since 1998. But the hooks themselves changed in 2005, with a requirement to use circle hooks to reduce mortality of endangered sea turtles. Longliners, even as they've offered circle hooks as the answer to many bycatch problems and reason to allow them back into closed areas, say they've substantially reduced their target catch of swordfish.

5 LACK OF INCENTIVES FOR HAND-GEAR FISHERMEN.

A recent rulemaking by NMFS, supposedly part of an effort to "revitalize" the U.S. swordfish fishery, maintained numerous restrictions on the non-longline, hand-gear fisheries. Counter to the agency's goal of substantially increasing swordfish landings, the agency instead sought to "...prevent a large increase in additional [non-longline] directed fishing effort on swordfish..." provide only "a modest increase in the opportunity to land a swordfish...", and expressed "...concerns about potentially excessive recreational landings..."

4 AREA CLOSURES.

In the mid-1990s, when the U.S. last landed its ICCAT quota, the location and density of longline fishing – fully 85 percent of total effort - was outside the areas now closed to longlining. The South Atlantic Bight, the region the longliners want to return to in their experimental fishery, accounted for just 10 percent of our swordfish catch in 1995-96, and a significant portion (37 percent) of that was dead discards of juvenile fish. The Florida East Coast, also now off limits to longlining, accounted for only 12 percent of total catch, with nearly half of those fish being undersized and discarded. With so little to be gained in swordfish landings, could it be the longliners are really out to increase their economic viability based on access to other, more profitable species, such as yellowfin tuna and dolphin?

3 GLOBAL WARMING.

Fishermen on both coasts are witnessing a northward shift of fish stocks that may be related to global climate change. This could explain why New England fishermen can't catch swordfish or bluefin tuna in the numbers they used to, but Canada is seeing an abundance of both in its coastal waters. U.S. scientists have flagged such distribution shifts as needing more study.

2 INADEQUATE FORAGE BASE.

Concerns about the lack of prey in New England waters have been raised by commercial tuna fishermen, but swordfish may also be altering their migrations due to prey availability. Squid, herring, mackerel and butterfish are all prime swordfish prey and the object of commercial fisheries in the northwestern Atlantic. Prey distribution may also be affected by environmental changes.

1 RECOVERY? WHAT RECOVERY?

Failure to catch our quota from a so-called "fully recovered stock" could suggest that it isn't really recovered at all. Consider. In the 1950s and early '60s, when there was an abundance of swordfish of all ages – as opposed to the "MSY biomass" of today made up of mostly young fish – U.S. and Canadian harpooners regularly landed 4-5,000 tons (roughly equal to our combined 2007 quotas) in a period of months!

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NCMC is honored to have been selected again this year to receive proceeds from Sport Fishing magazine's holiday card sales! Uniquely crafted to share your love of fish and fishing, the 2007 collection features 11 different designs from which to choose. Cards come 25 to a box, with matching envelopes and 2 free gifts -- a sheet of holiday seals and a set of return-address labels! **This offer is open to everyone, so please spread the word. Each order will benefit NCMC's conservation programs!**

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The NCMC
MARINE BULLETIN
No. 119 Fall 2007

Inside this issue:

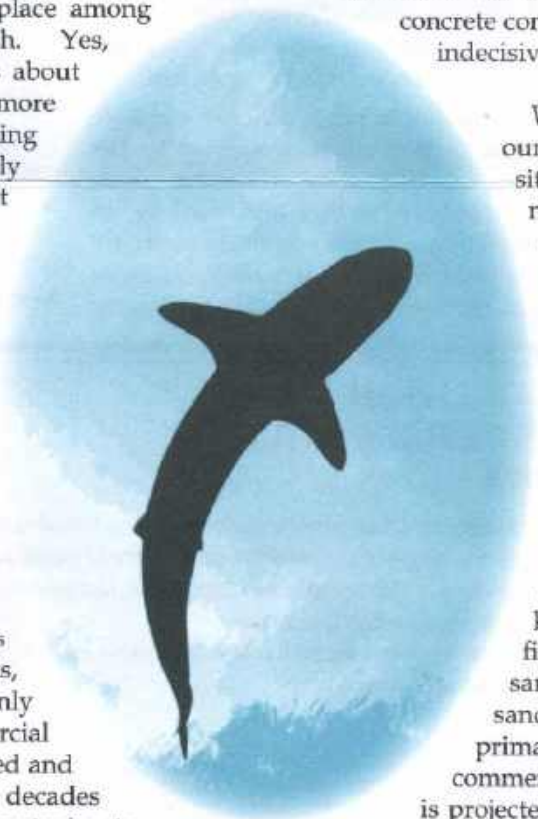
Plus:

- Join the Atlantic HMS Newslist to get the latest updates from NMFS on sharks, billfish, swordfish and tuna.
- It's not too late to buy your holiday cards from Sport Fishing Magazine and support NCMC!

FUTURE SHARK

New Limits Test the Survival of Sharks, Fisheries

The shark holds a unique but uncomfortable place among the ocean's fish. Yes, it is a fish, no bones about it. But the shark is more susceptible to overfishing than its bony, scaly cousins, because it matures late in a long life and produces not millions of eggs but just a fin-full of live "pups." Unfortunately, a biology that makes it highly unsuitable for exploitation hasn't warned off shark fishermen and those supposedly in charge of restraining them. Many species of large coastal sharks, the most commonly targeted in commercial fisheries, are overfished and for sharks, that means decades and in some cases centuries to rebuild them.



Although the majority of ocean fishermen consider the shark a nuisance, or worse, and want nothing to do with it, the lucrative trade in fins has made it a prized catch for many others, and they want to keep fishing. For its part, the public has a conflicted fascination with the shark; part wonder, part fear, fueled by "shark-and-awe" programming by the Discovery Channel and others. Perhaps because of these mixed emotions, the fate of the shark – as measured in terms of concrete conservation – has been indecisive, at best.

Which brings us to our present, untenable situation. Based on new stock assessments (2006) for Atlantic sandbar, dusky and porbeagle sharks, the National Marine Fisheries Service (NMFS) has proposed draconian new measures that severely challenge our ability to save these sharks and keep the shark fisheries alive at the same time. The sandbar, which is the primary target of many commercial shark fishermen, is projected to take 70 years to rebuild even after cutting current catches by 80 percent. Recovery for porbeagle is estimated at 100 years with zero catch. And the dusky could take from 100-400 years to get off the overfished list. Dusky sharks, made a prohibited species in 2000, are still taken as bycatch, mostly in fishing for sandbar.

(Continued on page 3)

Ocean View

Commentary

CATCH ALL YOU WANT, WE'LL MAKE MORE

Americans ate an average of 16½ -pounds of seafood per person in 2006, according to the U.S. Department of Commerce. What would seem to be good news for the fishing industry is tempered by the fact that 83 percent of the fresh, frozen or canned fish and shellfish we consume are imported from overseas. Forty percent of that comes from fish farms.

The Administration is using these figures to bolster support for legislation to promote a big-time U.S. offshore aquaculture industry to close the trade deficit by making the country more seafood self-sufficient.

The National Marine Fisheries Service, a branch of the Commerce Department, claims aquaculture will take pressure off wild stocks as seafood demand in the U.S. is expected to exceed supply - stocks are already strained beyond capacity - by 4 million metric tons by 2025.

But will farming take the pressure off? Can we really get more fish out of the ocean without taking more fish?

Only two of the five largest capture fisheries produce seafood directly for our dinner table, according to the Woods Hole Oceanographic Institution. The other three "reduce" fish such as menhaden, sardine and mackerel to fish meal and oil for agriculture and aquaculture feeds. So the 16 lbs per person is deceiving. It's actually a lot more than that—up to 4 times, by one estimate—when you factor in the animals nourished on fish feed—chickens, pigs and, yes, farmed fish.

WILD STOCKS AT RISK

With the exploding global growth of marine aquaculture, including penning or ranching carnivorous fish like salmon and tuna, we're likely to see a sizeable increase in the amount of fish removed from the ocean to feed them.

Diverting fish to the table through farming is an inefficient way to use protein from the sea. More than 3 pounds of forage fish are needed to raise a pound of salmon. For a pound of tuna, it takes 20 pounds. Stocks of key forage fish are not well managed around the world and cannot handle the increased fishing pressure. Even in the U.S., target populations are set to sustain the fisheries, not predators.

As for whether aquaculture will take pressure off the stocks of the fish being farmed, that hasn't happened with salmon, because wild-caught fish are more valuable. And in the Mediterranean, where farming bluefin tuna is big business, the result has been vastly increased captures of wild tuna to "grow" in the pens, without a commensurate drop-off in the established market fisheries. Farming adds an estimated 25,000 tons a year to what's already being taken from the Med. Annual catches are now over 50,000 tons, in a fishery that scientists say shouldn't take more than 15,000.

This is not to say there isn't room for aquaculture in the sea. But the way it's being done in many parts of the world is not sustainable and comes with high environmental costs. The U.S. must proceed slowly and carefully to protect our wild fisheries, commercial and recreational, and the food base they depend on.

Ken Hinman, *President*

NATIONAL COALITION FOR MARINE CONSERVATION

Founded in 1973

The NCMC is a 501(c)(3) non-profit organization dedicated to the following goals:

- preventing overfishing and restoring depleted fish populations to healthy levels
- promoting sustainable use policies that balance commercial, recreational and ecological values
- modifying or eliminating wasteful fishing practices
- improving our understanding of fish and their role in the marine environment
- preserving coastal habitat and water quality.

For information or comment, contact:
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FUTURE SHARK *(Continued from page 1)*

NMFS PROPOSES STRICT NEW REGULATIONS FOR 2008

The NMFS Highly Migratory Species Advisory Panel (NCMC president Ken Hinman is a member) met October 2-4 to discuss a suite of possible conservation measures (Amendment 2 to the Atlantic Highly Migratory Species Fishery Management Plan) out for public comment until November. The options range from *status quo* (no action) to the agency's preferred alternative:

- Reduce sandbar annual quota to 116.6 metric tons (dressed weight), an 80 percent decrease from the current allowable catch.
- Limit sandbar landings to 5-10 vessels participating in a research program, with 100 percent observer coverage.
- Allow a combined total of only 514.2 tons of all non-prohibited large coastal sharks (blacktip, bull, silky, spinner, nurse, tiger, lemon and hammerheads) to be landed by commercial fishermen.
- Prohibit retention of porbeagle sharks in all fisheries.
- Close all directed fisheries for large coastal sharks when 80 percent of either the sandbar or non-sandbar quotas are met.
- Require that all sharks be landed with fins attached.
- Close eight areas recommended by the South Atlantic Fishery Management Council to conserve reef fish to commercial shark fishing, in addition to the existing time-area closure off North Carolina.
- Limit recreational anglers to possessing the following species: bonnethead, nurse, tiger, lemon, hammerheads, sharpnose, shortfin mako, common thresher, oceanic whitetip and blue sharks.

The National Coalition for Marine Conservation (NCMC) supports the NMFS preferred alternative, outlined above, with one qualification and one reservation. First off, we laud the agency for requiring that all sharks be landed with fins attached. This measure will help enforce the long-standing ban on shark finning. Current rules permit fins to be removed from the carcass before landing, where they must fit a ratio of fins-to-carcasses that is imprecise and open to abuse. The fins-on measure will also aid in identification of sharks at the dock and dealer, improving data collection and stock assessments.

Limiting sandbar landings to vessels participating in a totally-monitored research fishery will serve the dual function of carefully controlling the catch of sandbar and keeping tabs on bycatch and discards of dusky sharks, which are primarily caught on bottom longlines set for sandbar. The new list of authorized species for recreational fishermen would exclude blacktip, bull and spinner sharks because, NMFS claims, they can be confused with sandbar and dusky sharks, which are in need of special protection. But shark scientists and fishermen testified at the October Advisory Panel meeting that these three species – all non-ridgeback sharks – can be readily distinguished from the ridgeback sandbar and dusky. Therefore, NCMC supports allowing anglers to land them under existing size and bag limits (one shark of any authorized species per trip at least 54 inches fork length).

REALITY CHECK

Our one reservation is a significant one. Regulation of the shark fishery, the commercial fishery in particular, is becoming increasingly complex: now, we're down to an extremely minimal catch allowance for sandbar, which when met will close all commercial large coastal fisheries; sandbar fishing limited to a "research fishery" of just a few vessels (out of 139 vessels actively using their federal permits), with observers onboard at all times; extensive closed areas in the Mid- and South Atlantic regions; and, despite all this, inevitable bycatch of the most seriously endangered species, dusky.

As we editorialized in the fall of 2006, following the latest stock assessments ("Exit Strategy," Issue No. 115), "(t)he notion of doing stock assessments, holding meetings, and forever adjusting fishing regulations—all to keep a relative few fishermen in business— for the next 100 years or so, as we have for the past 20, is, quite frankly, insane. So is asking the public to pay for it." The definition of insanity is to keep doing the same thing over and over again and expecting a different result. Sharks can handle only the most limited fishing. Commercial shark fisheries are simply not sustainable, and that fact isn't going to change during the next century.

NMFS does not consider a buy-out in this amendment. And it's probably a good thing, since what they and the industry are thinking of is buying out latent or unused capacity. That's just more expense with little benefit to the rest of us – or the sharks. What we're talking about is calling the whole thing off. □

Want to get the latest fishery news about sharks and other highly migratory species in the Atlantic?

Sign up to receive the Atlantic HMS News!

The National Marine Fisheries Service (NMFS) has created an electronic newslist that will keep you informed of current events and actions relating to tunas, swordfish, billfish and sharks. To sign up, visit:

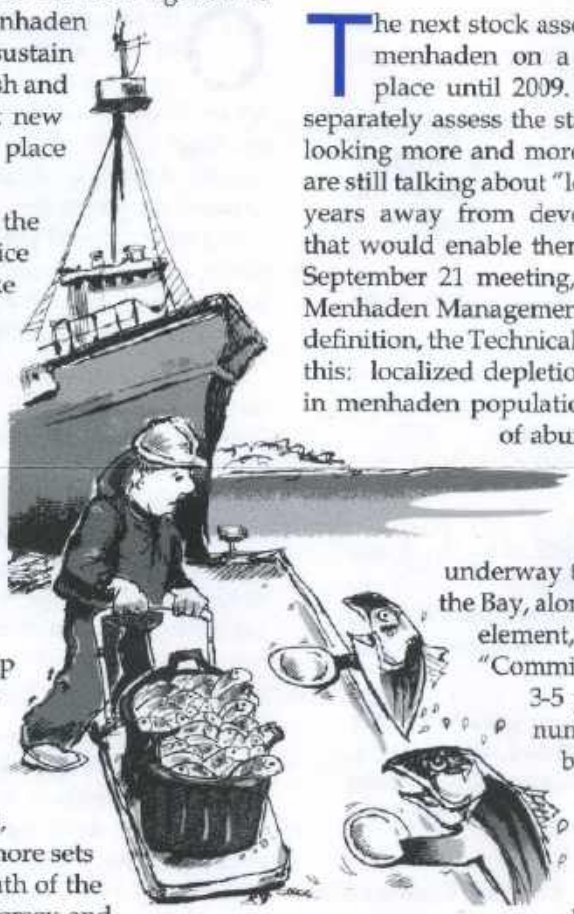
http://www.nmfs.noaa.gov/sfa/hms/newslist/

MENHADEN UPDATE

Research is Slow, Bay Catch Is Low

The Atlantic States Marine Fisheries Commission's Menhaden Technical Committee met September 21st in Raleigh, NC to evaluate progress on research into the status of the Chesapeake Bay population of menhaden as prey for striped bass and other key predators. NCMC's Ken Hinman, a member of the ASMFC's Menhaden Advisory Panel, participated in the session.

Fishing for menhaden in the Bay is kept in check by a 5-year cap put in place in 2006. At the same time, the Commission laid out a scientific research agenda to determine whether the number of menhaden in the Chesapeake is enough to sustain healthy stocks of striped bass, bluefish and weakfish (among others) and what new measures, if any, should be put in place when the cap is lifted in 2010.



In a review of the 2007 fishery, the National Marine Fisheries Service (NMFS) reported that the Chesapeake Bay take will be under the cap for the second straight year. After many years of concentrating harvest within the Bay, beginning in the early 1990s, the reduction fishery has now shifted offshore. As one committee member noted, such a shift would indicate changes in biology, ecology or economics. But economics would not appear to be the reason for the shift, since the industry's lone plant is based deep inside the Bay, in Reedville, VA, and Omega Protein's spotter planes, which search out schools for the fleet of ten net-boats, try to find concentrations close to home. Indeed, NMFS data do show the fleet made more sets within the Bay than outside the mouth of the Bay off Virginia, up north off New Jersey and south off North Carolina. They just were less successful.

WHERE HAVE ALL THE BAY'S MENHADEN GONE?

Reports from Bay anglers this summer concur with the commercial fleet's low catch rates – menhaden have been few and far between, they say. Chesapeake landings from 2001-2005 averaged about 109,000 tons a year, which is where the fishery is capped. Throughout the 1990s, the Bay catch averaged around 150,000 tons a year. In 2006 the menhaden industry caught only 65,000 tons in the Bay, and 2007 may not be much better.

"The steady decline in catch from the Bay over the past 15 years or more, along with poor recruitment over the same period, means either menhaden have been overfished or environmental conditions are deteriorating," NCMC's Ken Hinman points out. "Or, most likely, both."

Warming coastal waters is a possible explanation for a northward shift in a number of fish stocks in recent years, from lobster to tuna. The Technical Committee heard reports of an abundance of menhaden in its northern range, off New England, where they haven't been seen in such numbers in years. While recruitment has been very poor in the Mid-Atlantic region, which historically has produced two-thirds of the coast's juveniles, it seems to be improving up north. But that's not helping the Bay population or the many predators that depend on them there.

A NEW CAP NEEDED

The next stock assessment, which traditionally studies menhaden on a coastwide basis only, won't take place until 2009. Whether or not it will be able to separately assess the state of the Chesapeake population is looking more and more doubtful. The ASMFC's scientists are still talking about "localized depletion" in general terms, years away from developing biological reference points that would enable them to detect and measure it. At the September 21 meeting, in response to a request from the Menhaden Management Board to provide managers with a definition, the Technical Committee could only come up with this: localized depletion in Chesapeake Bay is a reduction in menhaden population size and density below the level of abundance that is sufficient to maintain its basic ecological, economic and social functions.

"A review of the research underway to estimate menhaden abundance in the Bay, along with predator demand, the critical element, was discouraging," says Hinman. "Committee members agreed it could be 3-5 years before we get the results of a number of studies, each a 'promising but limited' piece of a puzzle that must be put together to form a complete picture. Then, when we get that picture, we have to apply new, ecosystem-based criteria to know what it means and what to do about it."

The National Coalition for Marine Conservation (NCMC) believes the ASMFC will have to act, sooner rather than later, to put more precautionary measures into place as the cap expires and research continues. In the absence of better information, catch limits - in the Bay and coastwide - will need to be set much more conservatively than under the present single-species regime. We will be presenting our recommendations at future commission meetings, based on new standards we have been developing with the assistance of independent scientists and policymakers. Chief among these is that populations of important forage fish like menhaden be maintained at 75 percent of their unfished level. □

GULF COUNCIL AQUACULTURE PLAN MOVES FULL STEAM AHEAD

With its Bill Stalled in Congress, the NOAA Aquaculture Program Shifts its Focus to Regional Councils

At a NOAA-sponsored Magnuson-Stevens Reauthorization Workshop held September 25-26 in Washington, DC, participants in a special offshore aquaculture working session were asked if the Gulf of Mexico Fishery Management Council's (GMFMC) draft aquaculture amendment was a useful model for other regional councils.

Unbeknownst to many outside of the Gulf region, the GMFMC has been working closely with NOAA staff to establish a regulatory system for industrial-scale ocean fish farming in the Gulf. Working off a legal opinion from NOAA General Council that "aquaculture" can be defined as "fishing" because the fish are landed, NOAA is pursuing offshore aquaculture through the Magnuson-Stevens Act, the law that governs our nation's fishing activities.

The National Offshore Aquaculture Act of 2007, which was drafted by NOAA, was submitted to Congress earlier this year and has stalled in both houses, largely due to criticism that the bill did not include environmental standards. As the Senate works on a competing bill and the House discusses markups to NOAA's Bill, NOAA is sidestepping the legislative process and working instead through regional fishery management councils, who regulate "fishing."

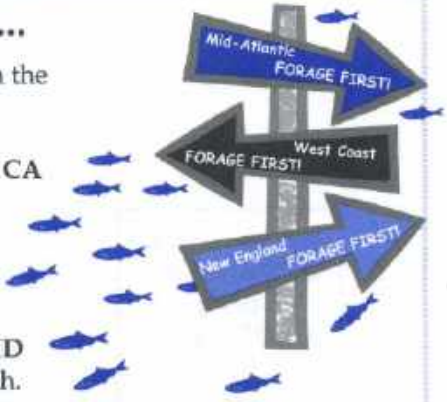
Supported by a generous grant from NOAA, the Gulf Council has nearly completed its aquaculture amendment, which could be adopted by the Council as early as their next meeting set for January 28-February 1 in St. Petersburg, FL.

NCMC has reviewed the Gulf aquaculture amendment, modeled after the weak NOAA bill. Unsurprisingly, the proposed measures fall far short of protecting wild fish stocks and their habitat. In fact, flexibility for the industry is given priority over environmental safeguards. Our chief concerns are that the preferred alternatives in the plan do not:

- **Present a comprehensive definition of "aquaculture" that would prohibit fish ranching, the practice of holding wild fish in pens to grow them out to marketable size.** The plan calls for NMFS to allow for the "aquaculture" of tuna and other highly migratory species. Tuna ranches, which corral thousands of juvenile bluefin in the Mediterranean, are a major contributing factor to the decline of the Atlantic population. Exacerbating the problem, forage fish are rounded up as feed for the penned fish, depleting the prey base for tuna and other predators.
- **Require aquaculture operations to minimize the use of wild-caught forage fish in aquaculture feed.** Fish farming operations in the Gulf would logically look to source feed from locally-caught Gulf menhaden. Menhaden are already under intense fishing pressure from the reduction fishery, which reduces 5 billion fish each year into fish oil and fishmeal for livestock and fish feed.
- **Protect essential fish habitat and traditional fishing grounds by explicitly prohibiting aquaculture operations in these areas.**
- **Prohibit the development of aquaculture farms on decommissioned oil rigs.** Violent weather patterns that are characteristic of the Gulf can tear apart platforms, causing massive escapes of captive fish.
- **Prohibit the farming of protected species.** Wild populations of at-risk species are more vulnerable to disease and genetic alterations that could be brought about by escaped farmed versions of these same animals.

NCMC urged the Gulf Council to postpone adoption of the amendment. The Council has an opportunity to fulfill the expectations inherent in creating a national model for sustainable ocean aquaculture. But this can only happen if the Council looks beyond NOAA's agenda, gathering information from a broad array of sources and input from a diverse body of stakeholders. □

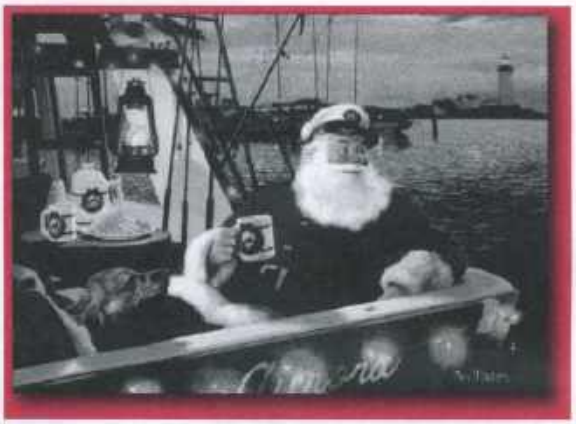
FORAGE FISH! ON THE ROAD...



- This fall, NCMC is cosponsoring a series of regional forage fish workshops with the Marine Fish Conservation Network (www.conservefish.org):
  Gulf of Mexico Workshop - November 14th, New Orleans, LA
  West Coast/California Current Workshop - December 10th, San Francisco, CA
  Mid-Atlantic Workshop - To Be Determined
- On **September 3rd**, at the American Fisheries Society Annual Conference in **San Francisco**, Fisheries Project Director Pam Gromen presented NCMC's recommendations for managing forage fish.
- Ken Hinman met with NMFS officials at their headquarters in **Silver Spring, MD** on **July 20th** and **September 12th** to discuss new national standards for forage fish.
- Pam Gromen participated in ecosystem-based fishery management and offshore aquaculture working groups during the Magnuson-Stevens Reauthorization Workshop held **September 25-26 in Washington, DC.**

SEND YOUR LOVED ONES A UNIQUE HOLIDAY GREETING FROM SPORT FISHING MAGAZINE!

NCMC is honored to have been selected again this year to receive proceeds from Sport Fishing magazine's holiday card sales! Uniquely crafted to share your love of fish and fishing, the 2007 collection features 11 different designs from which to choose. Cards come 25 to a box, with matching envelopes and 2 free gifts -- a sheet of holiday seals and a set of return-address labels! **This offer is open to everyone, so please spread the word. Each order will benefit NCMC's conservation programs!**



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