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THE OCEAN FOUNDATION
International Fisheries Conservation Program



CSP
Center for Sportfishing Policy



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Kelly Kryc, Ph.D
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Sarah Malloy, Regional Administrator (Acting)
NOAA Fisheries Pacific Islands Regional Office
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RE: Western and Central Northern Pacific Ocean Striped Marlin

Dear Dr. Kryc and Ms. Malloy,

As leading local, national, and international recreational fishing, small boat and ocean conservation organizations, we are asking you to prioritize development and adoption of a conservation and management measure for Western and Central North Pacific Ocean (WCNPO) striped marlin this year. The Pacific’s largest predatory fish have been drastically impacted by industrial fishing. WCNPO striped marlin are no exception; their numbers hover at historically low levels, and their average size continues to decline.¹

¹ International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) Stock Assessment Report for Striped Marlin (*Kajikia audax*) in the Western and Central North Pacific Ocean through 2017, available at: <https://www.wcpfc.int/node/42926>

In 2019, the Western and Central Pacific Fisheries Commission (WCPFC) adopted an interim rebuilding plan for WCNPO striped marlin with a goal of rebuilding the stock by 2034.² However, striped marlin are unlikely to recover without further intervention from WCPFC, including the adoption of conservation and management measures. Replenishing the spawning stock will help restore a healthy open-ocean ecosystem and opportunities for small-boat fishermen and recreational fishermen in Hawaii and the eastern Pacific.³

We support the adoption of practical boat-side measures for longline vessels that can reduce the industrial catch of striped marlin, improve post-release survivorship and help achieve the 2034 rebuilding target. Many conservation measures have little to no impact on the longline catch-rate of the target bigeye tuna or swordfish, but have positive consequences for marlin, other non-target species and protected species. Please consider the following options when developing a conservation and management plan for WCNPO striped marlin:

- **Expanding the use of circle hooks.** The U.S. adopted the use of circle hooks as a sea turtle bycatch reduction measure in the longline fleet, but this gear modification yields conservation gains for marlins, sharks and sea birds. Large circle hooks (18/0) have demonstrated conservation benefits and have been shown to reduce the catch rate of WCNPO striped marlin by more than 40% when compared with tuna hooks and J hooks.⁴ Circle hooks also increase the post-release survivorship of marlins⁵ and survivorship may exceed 90%.⁶ We support the ocean-wide mandated use of large circle hooks on all longline vessels to reduce striped marlin catch and maximize post-release survivability.
- **Modifying longline gear to remove hooks adjacent to floats or increase hook depth.** Epipelagic species such as marlins prefer the upper zone of the ocean to approximately 100 meters deep. Consequently, the shallowest hooks adjacent to the longline floats have substantially higher billfish catch than any deeper hooks. Removing the upper hooks (above 100 meters) in deep-set longline sets can significantly reduce *Istiophorid* catch without

² Interim Rebuilding Plan for North Pacific Striped Marlin, available at: <https://www.wcpfc.int/node/44984>

³ The boundary of the WCNPO striped marlin and Eastern North Pacific striped marlin stock is defined as the waters of the Pacific Ocean west of 150°W and north of the equator. However, studies indicate that striped marlin caught in southern California are genetically linked to the WCNPO striped marlin stock representative in Hawaii, Japan, and Taiwan. Therefore, supporting a rebuilding plan for WCNPO striped marlin may improve the availability of striped marlin to southern California recreational fishermen.

⁴ Bigelow, K and Mourato, B, Evaluation of Longline Mitigation to Reduce Catches of North Pacific Striped Marlin in the Hawaii-Based Tuna Fishery, Western and Central Pacific Fisheries Commission, WCPFC-SC6-2010/EB-WP-03 (2012).

⁵ Diaz, G, The Effect of Circle Hooks vs J Hooks on the At-Haulback Survival in the U.S. Atlantic Pelagic Longline Fleet, Collect. Vol. Sci. Pap. ICCAT, 77(4): 127-136 (2020)

⁶ Musyl, M., Moyes, C., Brill, R., Mourato, B., West, A., McNaughton, L., Chiang, W., and Sun, C. Postrelease Mortality in *Istiophorid* Billfish, Canadian Journal of Fisheries and Aquatic Sciences. 72 (2015) 1-19.

reducing target bigeye tuna catch.^{7,8} This modification may also benefit certain sea turtles and sharks, including the threatened oceanic whitetip shark.⁹ We support adoption of a conservation and management measure that requires modification of all deep-set longline gear to remove the hooks above 100 meters.

- **Requiring release of all live striped marlin or non-retention of all striped marlin.** While minimizing WCNPO striped marlin catch-per-unit effort is a preferred method to achieve rebuilding, mandatory release of live marlin at haul back can reduce fishing mortality and has been adopted elsewhere to help rebuild billfish stocks.¹⁰ According to the Western Pacific Fishery Management Council, 48% of striped marlin caught on U.S. longlines are alive at haul back. In addition, billfish have high survivability when released from longline gear.¹¹ Requiring release of all live WCNPO striped marlin would catapult us towards achieving our rebuilding goal.
- **Establishing a minimum size limit.** The average size of WCNPO striped marlin caught by Pacific longline vessels continues to decline.¹² The “spawn-at-least-once” principle suggests that sustainability is secured if fish are protected from commercial fishing until after they have spawned. Minimum size limits have been adopted for north Atlantic swordfish and require that fish below a minimum size be released regardless of their status (dead or alive).¹³ We support adoption of a minimum size limit for striped marlin in all longline fisheries in order to allow juvenile striped marlin to mature and to spawn at least once.
- **Protecting striped marlin spawning and nursery grounds.** Spatial management measures, such as time-area closures, are widely advocated for managing bycatch in fisheries and the impact on vulnerable life-history stages, particularly juvenile habitat, migratory corridors and spawning aggregations. Juveniles can be protected by closing nursery areas or migratory corridors. In 2000, the National Marine Fisheries Service adopted the Florida Swordfish Management Area to protect juvenile swordfish and by doing so, implicitly acknowledged that

⁷ Beverly, S., Curran, D., Musyl, M., and Molony, B. (2009) Effects of eliminating shallow hooks from tuna longline sets on target and non-target species in the Hawaii-based pelagic tuna fishery. *Fisheries Research* 96 (2009) 281-288.

⁸ Bigelow and Mourato, *supra* note 4.

⁹ *Id.*

¹⁰ The International Commission for the Conservation of Atlantic Tunas (ICCAT) recently adopted C-19-05, requiring the release of blue marlin and white marlin to help rebuild the species. ICCAT C-19-05, available at <https://www.iccat.int/Documents/Recs/compendiopf-e/2019-05-e.pdf>

¹¹ Musyl, M., Moyes, C., Brill, R., Mourato, B., West, A., McNaughton, L., Chiang, W., and Sun, C. Postrelease Mortality in Istiophorid Billfish, *Canadian Journal of Fisheries and Aquatic Sciences*. 72 (2015) 1-19.

¹² International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) Stock Assessment Report for Striped Marlin (*Kajikia audax*) in the Western and Central North Pacific Ocean through 2017, available at: <https://www.wcpfc.int/node/42926>

¹³ Recommendation by ICCAT to Establish a Rebuilding Program for North Atlantic Swordfish. ICCAT 99-02, available at <https://www.iccat.int/Documents/Recs/compendiopf-e/1999-02-e.pdf>

a juvenile fishery is unsustainable. Catching and killing spawning striped marlin harms the population by removing vital, reproductive adults, and preventing those fish from replenishing the stock. Spawning grounds of striped marlin are confirmed in Hawaiian waters,¹⁴ and the Kona Gyre and Cross Seamounts have historically been regarded as spawning grounds and nursery habitat for striped marlin. We support identifying key nurseries and spawning habitat for striped marlin and designating time-area longline fishing closures in these areas.

- **Mandatory reporting of live and dead discarded striped marlin.** The overall effectiveness of any measures taken to protect WCNPO striped marlin and juveniles will not be measurable unless more complete catch statistics (especially lengths) are collected and transmitted to WCPFC. In this respect, the Commission should encourage observer programs, and insist that countries fishing with longline vessels fulfill their obligation to collect data and report them to WCPFC. The absence of data on live and dead discards largely precludes stock assessments from determining depletion rates and abundance of the stock.

Managers often turn to annual commercial limits¹⁵ as a first step towards rebuilding a stock. However, catch limits alone cannot shield WCNPO striped marlin from excess fishing mortality. Once the limit is reached, longline vessels will continue their pursuit of target species, and catch, kill and discard striped marlin. Accordingly, we support adoption of a long-term, pre-agreed harvest strategy for striped marlin with annual limits supported by robust complementary, ocean-wide conservation and management measures to ensure fishing mortality is reduced on paper and on the water. Some of these measures, such as mandated use of large circle hooks, have broader ecosystem benefits to other vulnerable species.

Over the past 10 years, the United States longline fleet has landed more than 16% of the total WCNPO striped marlin,¹⁶ making it imperative that we offer the international community real solutions for reducing catch and mortality of striped marlin and protecting the spawning and nursery grounds to ensure the long-term viability of WCNPO striped marlin. We expect that concerted ocean-wide international action taken to protect and rebuild striped marlin will result in robust recreational, small boat and subsistence fishing and economies whose success depend on healthy population levels. We ask for your continued leadership in supporting precautionary management necessary to rebuild WCNPO striped marlin, accounting for and valuing this apex predator's role in the open-ocean ecosystem.

¹⁴ Hyde, J. R., Humphreys, R., Musyl, M., Lynn, E., and Vetter, R. (2006). A central north Pacific spawning ground for striped marlin, *Tetrapterus audax*. *Bulletin of Marine Science* 79, 683–690.

¹⁵ In order to reach the WCNPO striped marlin rebuilding target of 20% SSB by 2034, mortality must be reduced to 1,358 mt annually, about 50% of recent catch, according to the most recent stock assessment report for striped marlin in the western and central north Pacific Ocean through 2017, prepared by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Under a phased rebuilding plan proffered by the Western Pacific Fishery Management Council, mortality must be reduced by 10%, followed by a subsequent reduction in 2024.

¹⁶ International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) Stock Assessment Report for Striped Marlin (*Kajikia audax*) in the Western and Central North Pacific Ocean through 2017, available at: <https://www.wcpfc.int/node/42926>

Sincerely,

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