U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
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June 4, 2020

Archie Taotasi Soliai
Chair
Western Pacific Fishery Management Council
1164 Bishop St., Ste. 1400
Honolulu, HI 96813

Dear Mr. Soliai:

On June 4, 2020, the NOAA Assistant Administrator for Fisheries determined that, based on the best scientific information available, the Western and Central North Pacific Ocean (WCNPO) stock of striped marlin (*Kajikia audax*) continues to be **subject to overfishing** and **continues to be overfished**. The Western Pacific Fishery Management Council (WP Council) must make recommendations within the next year to address the status of this stock as required by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Background

Striped marlin is a management unit species in both the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific Region (Pelagic FEP) developed by the WP Council and the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP) developed by the Pacific Fishery Management Council (Pacific Council). In addition to domestic management measures under the Pelagic FEP and HMS FMP, U.S. fisheries for striped marlin are subject to international management by the Western and Central Pacific Fisheries Commission (WCPFC) and Inter-American Tropical Tuna Commission (IATTC). To date, neither the WCPFC nor the IATTC has adopted criteria for determining when striped marlin are subject to overfishing or overfished. Therefore, in accordance with Section 304(e) of the Magnuson-Stevens Act, NMFS relies on the status determination criteria (SDC) in the FEPs for recommending stock status.

The Pelagic FEP and the HMS FMP specify one Pacific-wide stock of striped marlin and do not identify separate stocks. Genetic studies suggest there are at least three distinct striped marlin populations in the Pacific Ocean: one population in the North Pacific Ocean (NPO) that includes Japan, Hawaii, and California; a second population in the Eastern Pacific Ocean (EPO) that includes the equator and Peru; and a third population in the Southwest Pacific Ocean (SWPO) around Australia and New Zealand. Other studies suggest a fourth genetically distinct group, which separates adults around Hawaii into a different group than juveniles. Tagging studies also indicate there is mixing between the NPO, EPO, and SWPO. While noting that there is uncertainty in the stock structure for Pacific striped marlin, the 2019 stock assessment for WCNPO striped marlin is based on boundaries of the convention area of the WCPFC, which consists of waters of the NPO bounded on the south by the equator and on the east by 150°W.

Currently, only striped marlin in the WCNPO have been assessed; other stocks remain unassessed.

Criteria for Stock Status Determination

National Standard 1 of the Magnuson-Stevens Act defines maximum sustainable yield (MSY) as the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological, environmental conditions and fishery technological characteristics (e.g., gear selectivity), and the distribution of catch among fleets. The MSY fishing mortality rate (F_{MSY}) is the fishing mortality rate that, if applied over the long term, would result in MSY. Stock biomass at MSY (B_{MSY}) means the long-term average size of the stock or stock complex that would result from fishing at F_{MSY}. Size of the stock can be measured in terms of spawning biomass (SB) or other appropriate measure of the stock's reproductive potential.

Consistent with National Standard 1, the FEPs contain overfishing and overfished SDC based on MSY for pelagic management unit species, including the striped marlin. Under these SDC, a stock is overfished if stock biomass (B) falls below the minimum stock size threshold (MSST). The MSST = cB_{MSY} where c is the difference of 1 minus the natural mortality rate (M) or 0.5, whichever is greater. Expressed as a ratio, a stock is overfished when $B_{year}/B_{MSY} < 1\text{-M}$ or 0.5, whichever is greater. A stock is subject to overfishing if the fishing mortality rate (F) exceeds the maximum fishing mortality threshold (MFMT) for a period of one year or more. The value of MFMT changes depending on whether the stock is overfished or not. If a stock is not overfished, then MFMT = F_{MSY}. If a stock is overfished, then the MFMT declines from F_{MSY} in proportion to B/MSST.

Basis for Stock Status Determination

In 2019, the Billfish Working Group of the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) completed a benchmark stock assessment for the WCNPO striped marlin. The 2019 assessment included up-to-date catch, catch-per-unit-effort, and composition data from 1975–2017 provided by individual ISC countries, the WCPFC, and the IATTC. This assessment was discussed, reviewed, and approved by the ISC Plenary in July, 2019. It was subsequently presented, reviewed, and approved by the Scientific Committee of the WCPFC in August, 2019, and by the WCPFC in December, 2019. All of the above meetings included participation by NMFS scientists and staff. Based on this review, on April 9, 2020, the Pacific Islands Fisheries Science Center and Southwest Fisheries Science Center concluded that this stock assessment is the best scientific information available and is applicable for judging the status of the striped marlin stock in the WCNPO and for use in management of this stock.

Although the WCPFC has not adopted SDC for determining stock status, the stock assessment considered the stock to be overfished and experiencing overfishing. This assessment also supports a domestic determination that the stock is subject to overfishing because $F_{2015\text{-}2017}$ (0.64) is greater than the MFMT (0.6) and overfished because the ratio of SB_{2017} (981 t) compared to SB_{MSY} (2,604 t) = 0.38, which is less than all possible estimates of MSST (based on M for all age groups).

Table 1. Estimates of fishing mortality, biomass, and other reference points for the WCNPO striped marlin. Threshold stock status determination criteria are in italics, and metrics that exceed thresholds are in boldface.

F_{MSY}	F_{2017}	SB_{MSY} (t)	Mortality	*MSST (t)**	SB_{2017} (t)
0.6	**0.64**	2,604	Differed by age	*1,302*	**981**

*MSST shown is the minimum possible MSST under the Pelagic FEP, where c = 0.5.

Other management considerations

Conservation and Management Measure 2010-01, adopted by the WCPFC in 2010, requires participating member countries to reduce total catch of striped marlin in the Western and Central Pacific Ocean (WCPO) to 80 percent of the maximum levels taken between 2000 and 2003. Since 2010, total U.S. catch of striped marlin in the WCPO has remained below the recommended level of 457 t. Reported catches of WCNPO striped marlin in 2017 by all fishing nations totaled 2,487 t (Table 2). Vessels in the Hawaii-based longline fishery account for nearly all of the U.S. domestic landings of WCNPO striped marlin, and approximately 13 percent of the total WCNPO landings in 2017. On average from 2011 through 2017, U.S. catch was 15 percent of total WCPFC catch. To date, the IATTC has not adopted any management measures applicable to striped marlin.

Table 2. Reported catch of WCNPO striped marlin since 2011. NA = not available.

Year	Total catch (t)	Catch from U.S. Longline (t)	U.S. Longline percent of total (t)	Catch from U.S. Tropical Troll	U.S. Troll percent of total	Total U.S. (t)	U.S. percent of total
2011	2,690	331	12.3	16	0.6	347	12.9
2012	2,757	263	9.5	11	0.4	274	9.9
2013	2,534	328	12.9	8	0.3	336	13.3
2014	1,879	357	19.0	12	0.6	369	19.6
2015	2,072	414	20.0	11	0.5	425	20.5
2016	1,892	327	17.3	12	0.6	339	17.9
2017	2,487	330	13.3	6	0.2	336	13.5
2018	NA	375	-	11	-	386	-
Avg. 2011 – 2017	2,330	336	14.9	11	0.5	347	15.4

Sources: Total catch is from the 2019 stock assessment (ISC 2019). Catch for U.S. fisheries is from annual reports to the WCPFC (2011-2013, USA 2016; 2014-2018, USA 2019).

At its 16th Regular Session in 2019, the WCPFC adopted a rebuilding plan for WCNPO striped marlin, with an interim target of rebuilding spawning biomass to 20 percent of the unfished level by 2034, with at least a 60 percent probability of rebuilding. This objective will be subject to further consideration and decision at the 17th WCPFC, to be held in December 2020.

Because the 2019 WCNPO striped marlin stock assessment supports a determination that the stock is overfished and subject to overfishing despite conservation and management measures adopted by the WCPFC, NMFS has determined the stock is overfished and experiencing overfishing due to excessive international fishing pressure and that the international management measures are not effective to end overfishing.

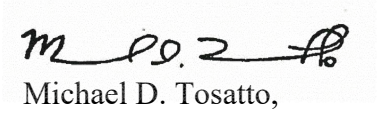
Council Obligations

Per Section 304(i) of the Magnuson-Stevens Act, the Council is obligated to respond to this determination because the overfishing of the striped marlin in the WCNPO is due largely to excessive international fishing pressure, and because it has not been determined that management measures adopted by the WCPFC will end overfishing and rebuild the stock. Consistent with Magnuson-Stevens Act section 304(i), the Council is required to:

1. Within one year, develop and submit recommendations to the Secretary of Commerce for domestic regulations to address the relative impact of fishing vessels of the United States on the WCNPO striped marlin stock, and
2. Develop and submit recommendations to the Secretary of State and to Congress for international actions that will end overfishing and rebuild the WCNPO striped marlin stock, taking into account the relative impact of vessels of other nations and vessels of the United States on the stock.

I encourage the Council to work cooperatively with the Pacific Council to develop management recommendations for this purpose. My staff in the Sustainable Fisheries Division are ready to work with the Council in its efforts to make recommendations regarding the status of the striped marlin. If you have any questions, please contact Dr. Brett Schumacher at 808-725-5185 or *brett.schumacher@noaa.gov*.

Sincerely,



Michael D. Tosatto,
Regional Administrator

cc: Kitty Simonds, Executive Director, Western Pacific Fishery Management Council
Chuck Tracy, Executive Director, Pacific Fishery Management Council
Barry Thom, Regional Administrator, NMFS West Coast Regional Office
Michael Seki, Director, NMFS Pacific Islands Fisheries Science Center
Frederick Tucher, Section Chief, NOAA General Counsel, Pacific Islands Section
Jenni Wallace, Acting Director, NMFS Office of Sustainable Fisheries

References

ISC (International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean). 2019. Stock Assessment Report for Striped Marlin (*Kajikia audax*) in the Western and Central North Pacific Ocean through 2017 (WCPFC-SC15-2019/SA-WP-09). Report to the 15th Regular Session of the Science Committee of the Western and Central Pacific Fisheries Commission. 92 p.

USA (United States of America). 2019. Annual Report to the Commission Part 1: Information on Fisheries, Research and Statistics (WCPFC-SC15-AR/CCM-27). Report to the 15th Regular Session of the Science Committee of the Western and Central Pacific Fisheries Commission. 40 p.

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