NATIONAL MARINE FISHERIES SERVICE (NMFS) REPORT ON 2027-2028 BIENNIAL HARVEST SPECIFICATIONS AND MANAGEMENT MEASURES

In support of the Council's biennial management cycle as described in Chapter 5 of the Highly Migratory Species (HMS) Fishery Management Plan (FMP), this report provides an overview of recent stock assessment results as relevant to status determinations for species in the management unit under the FMP. A list of these assessments is included in this report. Additionally, this report provides estimates of maximum sustainable yield (MSY) reference points for fishing mortality and biomass (i.e., F_{MSY} and B_{MSY}), or proxies for those reference points, for completing stock status determinations based on status determination criteria (SDC) in the HMS FMP. These SDCs include maximum fishing mortality threshold (MFMT), and minimum stock size threshold (MSST). In general, a stock is considered subject to overfishing if the assessed fishing mortality (F) is greater than MFMT, and is considered overfished if its assessed biomass (B) is lower than MSST. Specifically, Chapter 4, Section 4.4.1 defines MFMT as equal to F_{MSY}, and MSST as equal to (1-M)B_{MSY} when natural mortality (M) ≤ 0.5, or equal to 0.5B_{MSY} when M > 0.5.

The HMS FMP states that proxies from internationally-produced assessments may be used for determining stock status relative to the domestic SDCs. The Council, with input from its Scientific and Statistical Committee (SSC), has recommended suitable proxies for HMS stocks based on stock assessments completed through 2022. In this report, NMFS conveys the suitable proxies from recent assessments, and does not recommend any new MSY proxies for Council consideration. NMFS also provides an update on recently-adopted international reference points.

International Scientific Committee (ISC) Assessments

The International Scientific Committee (ISC) assessed albacore in the North Pacific Ocean (NPO) through 2024. The assessment refers to F based on the spawning potential ratio (SPR), and conveys $F\%_{SPR, MSY}$ is 16.3%SPR. The estimate of spawning stock biomass at maximum sustainable yield (SSB_{MSY}) for the stock is 19,360 metric tons (mt).

To evaluate whether fishing mortality exceeded MFMT, NMFS evaluated the ratio of fishing mortality for the assessment years of 2021-2023 ($F\%_{SPR, 2021\text{-}23}$) relative to $F\%_{SPR, MSY}$ (see Table 1). This ratio equals 4.0. It should be noted that higher %SPR values indicate lower fishing intensity levels.Values greater than 1.0 for ratios of $F\%_{SPR}$ to $F\%_{SPR}$-based reference points indicate fishing intensity levels lower than the reference point. Therefore, the ratio of 4.0 indicates that current fishing mortality is lower than the MFMT and the stock is not subject to overfishing.

To evaluate whether current biomass is above MSST, NMFS compared SSB during the most recent assessment year (2024), which was estimated as 84,209 mt, to MSST. The assessment indicates M for females age 3+ is 0.48. Therefore, NMFS estimates that SSB_{2024} relative to MSST equals 8.36, which indicates that the stock is not overfished (see Table 2).

Inter-American Tropical Tuna Commission (IATTC) Assessments Updates
In 2021, the Council adopted proxies for computing MFMT and MSST, given the probabilistic framework for tropical tuna assessments. Thus, it is as follows: if the median of the probability distribution (P) of current fishing mortality (or F_{CUR}) divided by fishing mortality estimated to produce maximum sustainable yield over the long term (F_{MSY}) exceeds 1 (i.e., if $P(F_{CUR}>F_{MSY})$ is more than 50 percent), then overfishing is occurring. Similarly, the SSC recommended (see Agenda Item H.5.a, Supplemental SSC Report 1) and the Council approved calculating an MSST proxy as $S_{CUR}/0.5*S_{MSY}$, where S is a unitless spawning biomass index, whenever the central values of natural mortality rate (M; either a fixed value or the median of a distribution for each individual model) are greater than 0.5 for all models in the ensemble or if only a small minority of the models have M central values below 0.5.

In 2026, the IATTC scientific staff updated the 2024 benchmark assessment for the EPO stock of bigeye tuna with two additional years of data (2024 and 2025). NMFS considers this assessment to be the best scientific information available for determining the status of this stock. The stock assessment results showed fishing mortality decreased significantly in 2022-2023 after the introduction of the individual vessel threshold (IVT) that reduced purse seine catches of juvenile bigeye. This update assessment indicated that fishing mortality continued to decrease in 2024 and 2025 and also suggests that spawning biomass increased in 2025, as confirmed by the longline index of abundance. Based on this assessment, median $F_{2023\text{-}2025}/F_{MSY}$ equals 0.52, which indicates that the stock is not subject to overfishing (see Table 1), and the median $S_{CUR}/0.5*S_{MSY}$ equals 2.9, which indicates that the stock is not overfished (see Table 2).

Like for the EPO bigeye tuna stock, the Council and its advisory bodies reviewed and made recommendations on suitable proxies and approaches to determining stock status given that the IATTC scientific staff also use a probabilistic framework for assessing the EPO yellowfin tuna stock (see, March 2021 Decision Document). NMFS used the results of the 2025 EPO yellowfin benchmark assessment as the best scientific information available for determining stock status to compare to MFMT and MSST. NMFS computed median $F_{2021\text{-}2023}/F_{MSY}$ as equal to 0.40, and determined that the stock is not subject to overfishing (Table 1). NMFS also computed median $S_{2024}/ 0.5*S_{MSY}$ equals 3.13, and determined that the stock is not overfished (Table 2).

Secretariat of the Pacific Community (SPC) Assessments
In 2025, the SPC completed assessments of Southwest Pacific Ocean stocks of swordfish, and striped marlin, and the Western and Central Pacific Ocean (WCPO) stock of skipjack tuna. We include references to these assessments below; however, we do not report on the relevance of reference points from these assessments to SDCs in the HMS FMP given the distance in the boundaries for these stocks and the U.S. West Coast EEZ. In 2026, SPC staff also assessed the WCPO stocks of bigeye and yellowfin tuna stocks. However, at the time of writing of this report, the WCPFC Scientific Committee (SC) has not yet accepted these assessments as BSIA and provided important feedback to SPC. The SC will continue to review these assessments, with potential changes, at a followup SC meeting later this year. Therefore, we do not include these assessments in this report.

Recently-adopted International Reference and Control Points
At the 104th meeting of the IATTC in September, 2026, the IATTC adopted Resolution C-26-01

(*Interim Pacific Bluefin Tuna Management Procedure*). This interim management procedure includes a target reference point of $F_{27.5\%SPR}$, which is the fishing intensity (F) level that results in the stock producing 27.5% of SPR, which is more conservative than the MFMT of 20%SPR (see Table 1). The Management Procedure (MP) also established two control points: the 1st Control Point ($SSB_{threshold}$), which is 20% of the dynamic unfished SSBor $20\%SSB_{F=0}$; and 2nd Control Point: which is 7.7% of the dynamic unfished SSB or $7.7\%SSB_{F=0}$.

The Total Allowable Catch (TAC) for Pacific bluefin tuna will be calculated every two years using information on stock health and the parameters in the MP. If $SSB_{current}/SSB_{F=0}$ is above or equal to the 1st control point, fishing intensity shall be maintained at the Target Reference Point of $F_{27.5\%SPR}$, using the TACs defined in the MP. If $SSB_{F=0}$ were to decrease to 20% or below (i.e., the first control point), catch limits would similarly decrease using a formula specified in the MP to bring F to a level that would allow the stock to rebound above the first control point. The HMS FMP defines "overfished" as B < MSST and defines MSST as $(1\text{-}M)*B_{MSY}$. The proxy for B_{MSY} for this stock is defined as $20\%\ SSB_{F=0}$, and M for age 2+ fish is 0.25 y^{-1} in the MP, so international management action would be triggered by the 1st control point of $20\%SSB_{F=0}$ before the stock would be considered "overfished" under the HMS FMP at $15\%SSB_{F=0}$ ((1-.25)*20%SSB). In the rare chance that the stock reached the 2nd control point (i.e., $7.7\%SSB_{F=0}$), F would be set at the F_{min} level of $F_{70\%\ SPR}$.

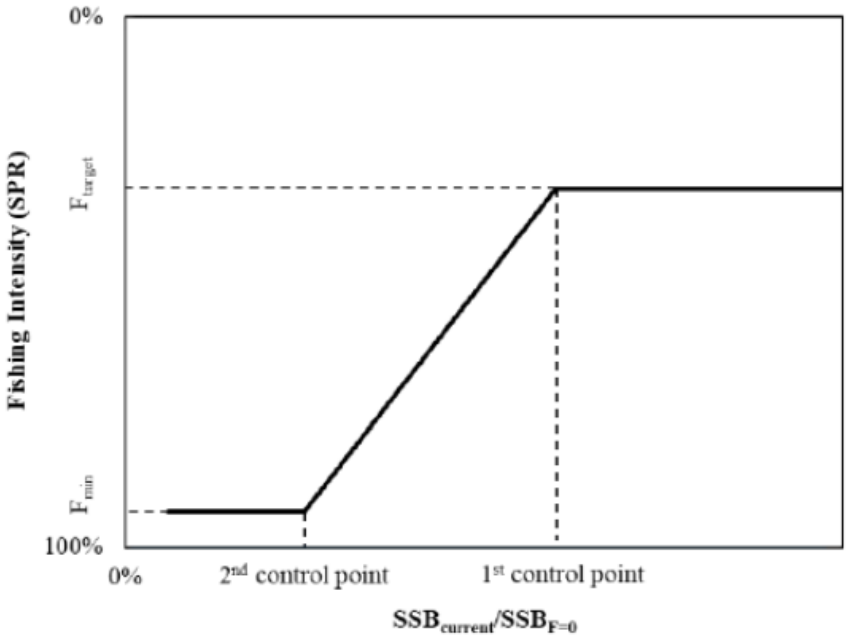


Figure 1: Illustration of the harvest control rule with target reference point (F_{target}), 1st control point and 2nd control point, and the minimum allowed fishing intensity (F_{min}).

The MP also gradually shifts the impact of western Pacific fisheries versus eastern Pacific fisheries from 80:20 in 2027 to 78:22 in 2031-2032, which will likely result in higher catches for the eastern Pacific over time. Finally, the MP establishes biennial management for both sides of the Pacific, and allows for 17% carryover from one biennium to the next and a maximum of 62.5% of the biennial limit to be caught in a single year.

List of 2025-2026 HMS Stock Assessments

- Stock Assessment of Albacore Tuna in the North Pacific Ocean in 2026 (ISC, 2026)
- Stock Assessment of Bigeye Tuna in the Eastern Pacific Ocean (IATTC, 2026)
- Stock Assessment of Yellowfin Tuna in the Eastern Pacific Ocean (IATTC, 2025)
- Stock Assessment of Western Central Pacific Ocean Skipjack Tuna (SPC, 2025)
- Stock Assessment of Southwest Pacific Swordfish (SPC, 2025)
- Stock Assessment of Striped Marlin in the Southwest Pacific Ocean (SPC, 2025)

Table 1. Stock assessment information for determining whether HMS FMP stocks are subject to overfishing.

Stock	Assessment Year	Assessment Lead	MFMT (F_{MSY} or Proxy)	Current F_{MSY} or proxy estimate	Current F quantity estimate	RFMO reference point	F/F_{MSY} ratio	Subject to Overfishing?
Assessments Conducted in 2025 and 2026								
Yellowfin tuna in the EPO	2025	IATTC	F_{MSY}	N/A	N/A	F_{MSY}* (target)	median of EPO single stock$F_{2021-23}/F_{MSY}$ = 0.40	No
NPO Albacore	2026	ISC	$F_{\%SPR, MSY}$	16.4 %SPR	$F_{\%SPR,2021-23}$ = 65.6 %SPR	$F_{45\%SPR}$** (target)	4.0†	No
Biegeye tuna in the EPO	2026	IATTC	F_{MSY}	N/A	N/A	F_{MSY}* (target)	median of $F_{2023-25}/F_{MSY}$ = 0.52	No
Most Recent Assessment from Previous Years								
NPO Albacore	2023	ISC	$F_{\%SPR, MSY}$*	16.4 %SPR	$F_{\%SPR2018-20}$ = 59.0 %SPR	$F_{45\%SPR}$**	3.6†	No
NPO Pacific bluefin tuna	2024	ISC	1-20%SPR	0.8	1-$SPR_{2020-22}$= 0.76	N/A	0.88	No
EPO Bigeye tuna	2024	IATTC	F_{MSY}	N/A	N/A	F_{MSY}* (target)	0.79	No
Yellowfin tuna in the EPO	2020	IATTC	F_{MSY}	N/A	N/A	F_{MSY}* (target)	median of $F_{2017-19}/F_{MSY}$ = 0.65	No
EPO Skipjack tuna	2024	IATTC	F_{MSY} proxy = 0.3B0	N/A	N/A	N/A	0.42	No
WCNPO Striped marlin††	2023	ISC	F_{MSY}	0.63	0.68	N/A	1.08	Yes
NPO Swordfish	2023	ISC	F_{MSY}	0.18	0.09	N/A	0.5	No (Pending)
NPO Shortfin mako shark	2024	ISC	U_{MSY}	0.055	$U_{2018-2021}$ = 0.018	N/A	0.34	No
Blue shark in the NPO	2022	ISC	F_{MSY}	0.76	$F_{2017-19}$ = 0.33	N/A	0.45	No
Common thresher shark	2018	NMFS	1-SPR_{MSY}	0.45	1-$SPR_{2012-14}$= 0.097	N/A	0.21	No
EPO striped marlin	2010	IATTC	F	N/A	N/A	N/A	0.16	No
Dorado								Unknown

† Note that for SPR-based reference points, higher ratios indicate lower fishing mortality. Values greater than 1.0 indicate fishing mortality lower than MFMT.
†† Not managed under the HMS FMP.
*See Appendix A, Agenda Item I.3.a, Supplemental NMFS Report

**See Update on the Adoption of NPO Harvest Strategy (IATTC Resolution C-22-04), Agenda Item I.4.a, Supplemental NMFS Report 1

Table 2. Stock assessment information for determining whether HMS FMP stocks are overfished.

Stock	Assessment Year	Assessment Lead	B_{MSY} or proxy	Current B_{MSY} or proxy estimate	Current B quantity estimate	MSST (1-M*B_{MSY} or 0.5B_{MSY})	Current B/MSST	RFMO reference point	Overfished ?
Assessments Conducted in 2025 and 2026									
Yellowfin tuna in the EPO	2025	IATTC	S_{MSY} (S=unitless spawning biomass index)	N/A	S=unitless spawning biomass index	0.5S_{MSY}	median of EPO single stock $S_{CUR}/0.5S_{MSY}$ = 4.76	B_{MSY}* (interim target) 7.7%$SSB_{F=0}$* (interim limit)	No
NPO Albacore†	2026	ISC	SSB_{MSY} (14%$SSB_{F=0}$)	19,360 mt	SSB_{2024} = 84,209 mt	(1-M)*SSB_{MSY}= 10,067 mt†	8.36	30%$SSB_{F=0}$** (threshold) 14%$SSB_{F=0}$** (limit)	No
Biegeye tuna in the EPO	2026	IATTC	S_{MSY}	N/A	S=unitless spawning biomass index	0.5S_{MSY}	median $S_{CUR}/0.5S_{MSY}$ = 2.86	B_{MSY}* (interim target) 7.7%$SSB_{F=0}$* (interim limit)	No
Most Recent Assessment from Previous Years									
NPO Albacore †	2023	ISC	SSB_{MSY} (14%$SSB_{F=0}$)	23,154 mt	SSB_{2021} = 70,229 mt	(1-M)*SSB_{MSY}= 12,040 mt†	5.83	30%$SSB_{F=0}$** (threshold) 14%$SSB_{F=0}$** (limit)*	No
NPO Pacific bluefin tuna	2024	ISC	20%$SSB_{F=0}$	124,451 mt	SSB_{2022} =144,483 mt, or 23.2%SSBF=0	93,338 mt	1.55	N/A	No
EPO Bigeye tuna	2024	IATTC	B_{MSY}	N/A	N/A	0.5B_{MSY}	median B/0.5B_{MSY} = 2.1	B_{MSY}	No
Yellowfin tuna in the EPO	2020	IATTC	S_{MSY}	N/A	S=unitless spawning biomass index	0.5S_{MSY}	3.16	B_{MSY}* (interim target) 7.7%$SSB_{F=0}$* (interim limit)	No
EPO Skipjack tuna	2024	IATTC	30%$SSB_{F=0}$	11,367 mt	17,809 mt	5,684 mt	median B/0.5B_{MSY} = 3.13	B_{MSY} proxy = 0.3$B_{F=0}$	No
WCNPO Striped marlin††	2023	ISC	SSB_{MSY}	2,920 mt	SSB_{2020} = 1,696 mt	1,460 mt	1.16	N/A	No
NPO Swordfish	2023	ISC	SSB_{MSY}	16,388 mt	SSB_{2021} = 35,778 mt	0.5*SSB_{MSY} =8,194 mt	4.37	N/A	No (Pending)
NPO Shortfin mako shark	2024	ISC	D_{MSY}	0.51	$D_{2019\text{-}2022}$ = 0.60	(1- 0.147) * D_{MSY} =0.435	1.38	N/A	No
Blue shark in the NPO	2022	ISC	♀SSB_{MSY}	83,545	SSB_{2020} = 92,954	63,494-71,013	1.3-1.46	N/A	No

Common thresher shark	2018	NMFS	SSB_{MSY}	101,500 mature females	SSB = 136,800 mature females	97,500 mature females	1.4	N/A	No
Dorado									Unknown

† Natural female mortality for North Pacific albacore is estimated at 0.48

†† Not managed under the HMS FMP

*See Appendix A of Agenda Item I.3.a, Supplemental NMFS Report

**See Update on the Adoption of NPO Harvest Strategy (IATTC Resolution C-22-04), Agenda Item I.4.a, Supplemental NMFS Report 1

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