Food and Agriculture Organization of the United Nations

Indian Ocean Tuna Commission
Commission des Thons de l'Ocean Indien
iotc ctoi

APPENDIX 15
EXECUTIVE SUMMARY: INDO-PACIFIC SAILFISH (2025)

Table 1. Status of Indo-Pacific sailfish (*Istiophorus platypterus*) in the Indian Ocean

Area[1]	Indicators		2025 stock status determination[3,4]
Indian Ocean	Catch 2024 (t)	40,682[2]	92%
	Average catch 2020-2024 (t)	36,390	
	MSY (1,000 t) (80% CI)[4]	34.3 (28.7 - 42.2)	
	F_{MSY} (80% CI)[4]	0.20 (0.17 - 0.23)	
	SB_{MSY} (1,000 t) (80% CI)[4]	174 (145 - 212)	
	F_{2023}/F_{MSY} (80% CI)[4]	0.69 (0.51 - 0.94)	
	SB_{2023}/SB_{MSY} (80% CI)[4]	1.34 (1.15 - 1.53)	
	SB_{2023}/SB_0 (80% CI)[4]	0.67 (0.58 - 0.76)	

[1] Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence
[2] Proportion of 2024 catch estimated or partially estimated by IOTC Secretariat: 24.9 %
[3] 2023 is the final year that data were available for this assessment
[4] These figures are outputs from the 2025 stock assessment and are not endorsed for management advice. Please see the section on management advice for further explanations on these estimates.

Colour key	Stock overfished (B_{year}/B_{MSY}< 1)	Stock not overfished (B_{year}/B_{MSY}≥ 1)
Stock subject to overfishing (F_{2023}/F_{MSY}> 1)	2 %	6 %
Stock not subject to overfishing (F_{2023}/F_{MSY}≤ 1)	0 %	92 %
Not assessed/Uncertain/Unknown		

The percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights accounted for

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. A new iteration of a Bayesian state-space production model (age-aggregated) JABBA stock assessment was carried out for Indo-Pacific Sailfish in 2025, using data up to 2023. Prior to this, in 2015 and 2019, data poor methods (Catch-MSY) were utilised to provide stock status for Indo-Pacific sailfish. These methods rely on catch data only, which is highly uncertain for this species, and resulted in an undefined stock status.

To overcome the lack of standardised CPUE indices or alternative abundance indices for this species, this assessment followed the methods of the previous assessment in 2022 where length-frequency data were used to estimate the annual Spawning Potential Ratio (SPR) using the length-based spawning potential ratio (LBSPR) method. Annual estimates of SPR were then normalised in the JARA (Just Another Red List

Assessment) model to provide an index that was assumed to be proportional to spawning biomass. This index was then incorporated as an index of relative abundance in a JABBA model.

This is a novel technique applied to overcome the paucity of abundance data for Indo-Pacific sailfish and it had not been thoroughly tested with rigorous simulation-evaluation. This method has key assumptions that raised concerns within members of the WPB23. These three equilibrium assumptions that are likely to be violated are: 1) annual recruitment is assumed to be constant over time without directional trends; 2) length-frequency data used to derive the SPR trends is representative of the population; 3) selectivity is non-varying, and follows a logistic form.

The previous iteration of the Indo-Pacific sailfish assessment also noted the same concerns, and it was agreed by the SC in 2022 that the methodology of converting the length data into an index of relative abundance required further review. At the time of the assessment in 2025, there was uncertainty regarding how much the current assessment results are impacted by the violation of the assumptions listed above. It was discussed that it was possible that if assumptions are violated, the index of abundance could be showing trends that are diametrically opposed to the true population trend. It was recommended by the WPB23 that the extent of the potential bias must be evaluated with a simulation study which will inform whether this index is acceptable for use in the Indo-Pacific sailfish stock assessment.

The results of the LBSPR portion of the assessment indicate that there has been a 45.5 % decline in SPR since 1970. The latest (2023) estimate of B/B_{MSY} was 1.34, while the F/F_{MSY} estimate was 0.69. Additionally, concern was raised regarding the high levels of current catches (31,898 t in 2023), that are above the previous MSY estimate of 25,905 t, and close to the current, higher estimate of MSY of 34,300 t.

On the weight-of-evidence available in 2025, the stock status of Indo-Pacific sailfish is determined to be ***not overfished nor subject to overfishing*** (**Table 1**; **Fig. 3**).

Outlook. Catches have exceeded the estimated MSY since 2013 and the current catches (average of 36,390 t in the last 5 years, 2020-2024) are substantially higher than the previous MSY estimate of 25,905 t, and close to the current MSY estimate of 34,300 t. This increase in coastal gillnet and longline catches and fishing effort in recent years is a substantial cause for concern for the Indian Ocean stock, however there is not sufficient information to evaluate the effect this will have on the resource. It is also noted that the 2020-2024 catches exceed the catch limit prescribed in Resolution 18/05 (25,000 t).

Management advice. Considerable uncertainty remains in the JABBA assessment conducted in 2025, however the trends in key model outputs align relatively well with the 2022 assessment. For this year, due to the uncertainty in the model outputs, the management advice from 2022 would be carried over for one year (1 year) to allow time to complete the simulation studies and provide updated management advice in 2026. It is anticipated that, once the underlying uncertainty in the JABBA assessment is understood and presented at the proposed WPB meeting next year, management advice can be updated.

The catch limits as stipulated in Resolution 18/05 have been exceeded since 2020, which as per resolution 18/05, requires a review of the resolution. Furthermore, these limits are not based on estimates of most recent stock assessment. It is recommended that the Commission review the implementation and effectiveness of the measures contained in this Resolution and consider the adoption of additional conservation and management measures. The Commission should provide mechanisms to ensure that catch limits are not exceeded by all concerned fisheries. Research emphasis on further developing possible

CPUE indicators from coastal gillnet and longline fisheries, and further exploration of stock assessment approaches for data poor fisheries are warranted. Given the limited data being reported for coastal fisheries, and the importance of sports fisheries for this species, efforts must be made to rectify these information gaps.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY):** estimate for the Indian Ocean stock is 34,300 t. As mentioned in the paragraph above and in the table at the start of the document (**Table 1**), MSY and associated stock assessment outputs are not to be used for management advice. This includes the KOBE plot, and these values (including the KOBE plot) may be updated in 2026 after the simulation study has been completed.
- **Provisional reference points:** although the Commission adopted reference points for swordfish in Resolution 15/10 on target and limit reference points and a decision framework, no such interim reference points have been established for Indo-Pacific sailfish.
- **Main fisheries (mean annual catch 2020-2024):** Indo-pacific sailfish are caught using gillnet (67.5%), followed by line (27.6%) and longline (2%). The remaining catches taken with other gears contributed to 2.9% of the total catches in recent years (**Fig. 1**)**.**
- **Main fleets (mean annual catch 2020-2024)**: the majority of Indo-pacific sailfish catches are attributed to vessels flagged to I.R. Iran (43%) followed by India (19.2%) and Indonesia (12.3%). The 33 other fleets catching Indo-pacific sailfish contributed to 25.5% of the total catch in recent years (**Fig. 2**).

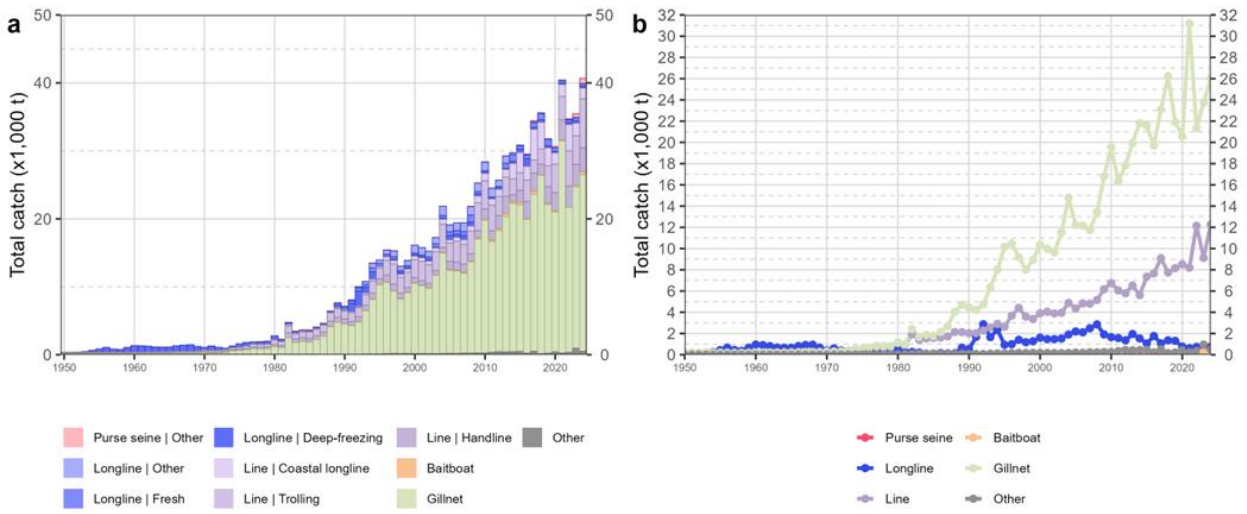

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for Indo-Pacific sailfish during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

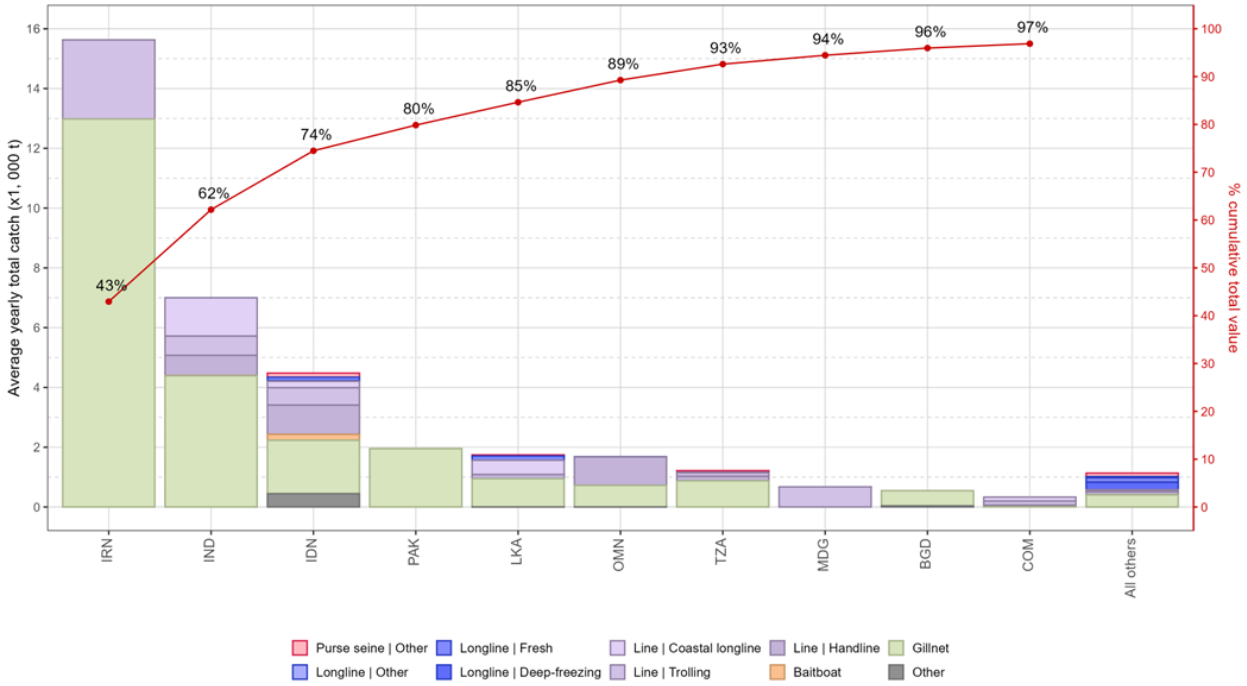

Fig. 2. Mean annual retained catches (metric tonnes; t) of Indo-Pacific sailfish by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

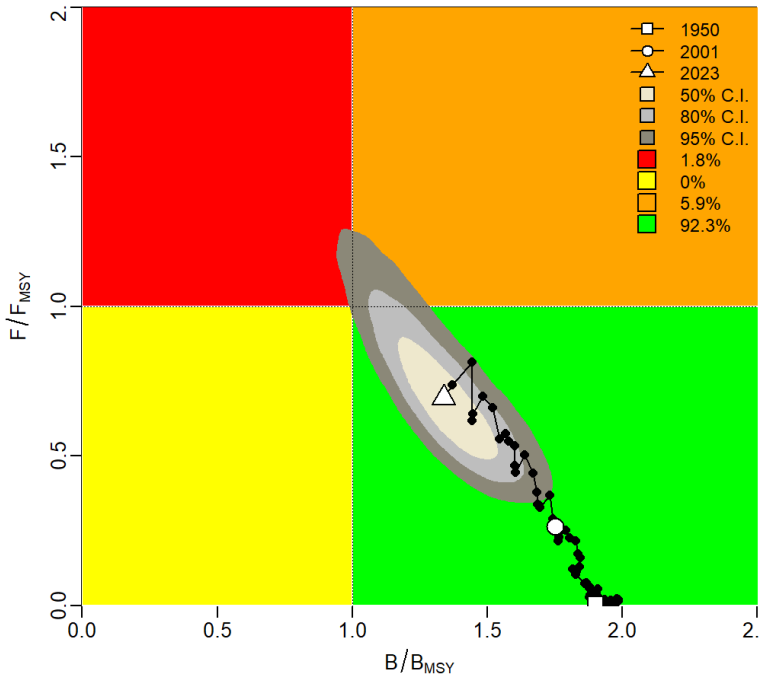

Fig.3: Kobe plot showing estimated trajectories (1950-2023) of B/B_{MSY} and F/F_{MSY} for JABBA model of Indian Ocean Indo-Pacific sailfish. Different grey shaded areas denote the 50%, 80%, and 95% credibility interval for the terminal assessment year. The probability of terminal year points falling within each quadrant is indicated in the figure legend