# APPENDIX 9
# EXECUTIVE SUMMARY: LONGTAIL TUNA (2025)

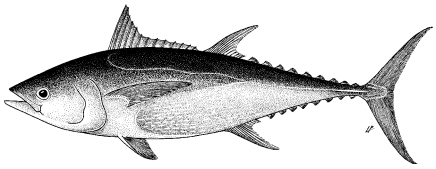

**TABLE 1.** Status of longtail tuna (*Thunnus tonggol*) in the Indian Ocean

| Area[1] | Indicators | | 2023 stock status determination[3] |
|---|---|---|---|
| Indian Ocean | Catch 2024 (t) | 148,681[2] | 35% |
| | Mean annual catch (2020-2024) (t) | 136,857 | |
| | MSY (t) (80% CI) | 133,000 (108000 –165000) | |
| | $F_{MSY}$ (80% CI) | 0.31 (0.22 – 0.44) | |
| | $B_{MSY}$ (t) (80% CI) | 433,000 (272,000 – 690,000) | |
| | $F_{current}/F_{MSY}$ (80% CI) | 1.05 (0.84 – 2.31) | |
| | $B_{current}/B_{MSY}$ (80% CI) | 0.96 (0.44 – 1.19) | |

[1]Stock boundaries defined as the IOTC area of competence;
[2]Proportion of catch fully or partially estimated for 2024: 6.8%;
[3]2021 is the final year that data were available for this assessment

| Colour key | Stock overfished ($SB_{year}/SB_{MSY}< 1$) | Stock not overfished ($SB_{year}/SB_{MSY}\geq 1$) |
|---|---|---|
| Stock subject to overfishing ($F_{year}/F_{MSY}> 1$) | 35% | 25% |
| Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$) | 23% | 17% |
| Not assessed/Uncertain/Unknown | | |

## INDIAN OCEAN STOCK – MANAGEMENT ADVICE

***Stock status.*** No new stock assessment was conducted for longtail in 2025 and so the results are based on the results of the assessment carried out in 2023 which examined a number of data-limited methods including C-MSY, OCOM, and JABBA models (based on data up to 2021). These models produced stock estimates that are not drastically divergent because they shared similar dynamics and assumptions. The C-MSY model has been explored more fully and therefore is used to obtain estimates of stock status. The C-MSY analysis indicates that the stock is being exploited at a rate that exceeded $F_{MSY}$ in recent years and that the stock appears to be below $B_{MSY}$ and above $F_{MSY}$ (35% of plausible models runs) (**Fig. 2**). Catches steadily declined from 2012 to less than 113,000 t in 2019 but have been increasing since 2022 (**Fig. 1**). The $F_{2021}/F_{MSY}$ ratio is lower than previous estimates and the $B_{2021}/B_{MSY}$ ratio was higher than in previous years. The analysis using the OCOM model is more pessimistic and using JABBA incorporating gillnet CPUE indices is more optimistic. The JABBA model, however, is unable to estimate carrying capacity with a fair degree of certainty without additional prior constraints, indicating the fact that the CPUE is either not informative or is conflicting with catch data. While the precise stock structure of longtail tuna remains

unclear, recent research (Feutry et al., 2025[1]) provides strong evidence of population structure of longtail tuna within the IOTC area of competence, with at least 3 genetic populations identified. This increases the uncertainty in the assessment, which currently assumes a single stock of longtail tuna. Based on the C-MSY assessment, the stock is considered to be both **overfished** and **subject to overfishing** (**Table 1**; **Fig. 1**). However, the assessment using catch-only method is subjected to high uncertainty and is highly influenced by several prior assumptions.

***Outlook.*** There remains considerable uncertainty about the total catches of longtail tuna in the Indian Ocean. The increase in annual catches to a peak in 2012 increased the pressure on the longtail tuna Indian Ocean stock. After 2012 there was a major declining trend for several years but since 2019, catches have been increasing. As noted in 2015, the apparent fidelity of longtail tuna to particular areas/regions is a matter for concern as overfishing in these areas can lead to localised depletion. Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions, exploring alternative approaches for estimating abundance (e.g., close-kin mark-recapture), and improving our understanding of life trait history parameters (e.g. estimates of growth, natural mortality, maturity, etc.) and stock structure to complement the information recently published by Feutry et al. (2025).

***Management advice.***

Indonesia has recently revised its catch estimates for neritic tuna species. The updated catch for longtail tuna differs substantially from those previously reported and used in the stock assessment. These changes are expected to have a significant impact on estimates of stock status and associated MSY-based reference quantities, which were primarily based on the earlier catch data. An updated assessment is therefore urgently required to revise stock estimates and management advice that incorporate and reflect the most recent catch information. A precautionary approach to management is recommended.

The following should be also noted:

- Limit reference points: the Commission has not adopted limit reference points for any of the neritic tunas under its mandate;
- Accurate and consistent catch series data constitute a critical prerequisite for the robust execution of stock assessments. Additional efforts may be beneficial to enhance the reliability of the catch series data being submitted to IOTC;
- Further work is needed to improve the reliability of the catch series from some fisheries wherever necessary. Reported catches should be verified or estimated where needed, based on expert knowledge of the history of the various fisheries or through statistical extrapolation methods;
- Improvements in data collection and reporting are required if the stock is to be assessed using integrated stock assessment models;
- Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets (I.R. Iran, Indonesia, Pakistan, Sultanate of Oman and India), size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.);

[1] Feutry et al., 2025. Genome scans reveal extensive population structure in three neritic tuna and tuna-like species in the Indian Ocean, *ICES Journal of Marine Science*, Volume 82, Issue 2, February 2025, fsae162, https://doi.org/10.1093/icesjms/fsae162

- There is limited information submitted by CPCs on total catches, catch and effort and size data for neritic tunas, despite their mandatory reporting status. In the case of 2022 catches (reference year 2021) 27.2% of the total catches of longtail tuna were either fully or partially estimated by the IOTC Secretariat, which increases the uncertainty of the stock assessments using these data. Therefore, the management advice to the Commission includes the need for CPCs to comply with IOTC data requirements per Resolution 15/01 and 15/02.

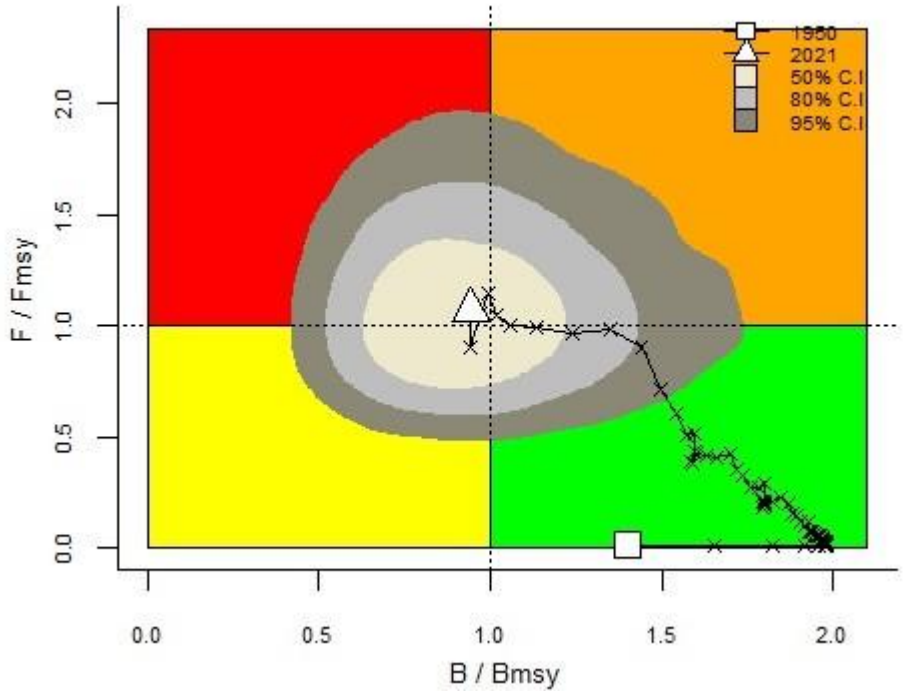


**Fig. 1**. Longtail tuna C-MSY Indian Ocean assessment Kobe plot. The Kobe plot presents the trajectories (median) for the range of plausible model trajectories included in the formulation of the final management advice. The shaded contour lines represent 50%, 80%, and 95% confidence intervals of estimated stock status in 2021

***Fisheries overview***.

- **Main fisheries (mean annual catch 2020-2024)**: longtail tuna are caught using gillnet (62.9%), followed by line (15.8%) and purse seine (12.1%). The remaining catches taken with other gears contributed to 9.1% of the total catches in recent years (**Fig. 2**).

- **Main fleets (mean annual catch 2020-2024)**: the majority of longtail tuna catches are attributed to vessels flagged to I. R. Iran (39.1%) followed by Indonesia (23.2%) and Sultanate of Oman (20.6%). The 21 other fleets catching longtail tuna contributed to 17% of the total catch in recent years (**Fig. 3**).

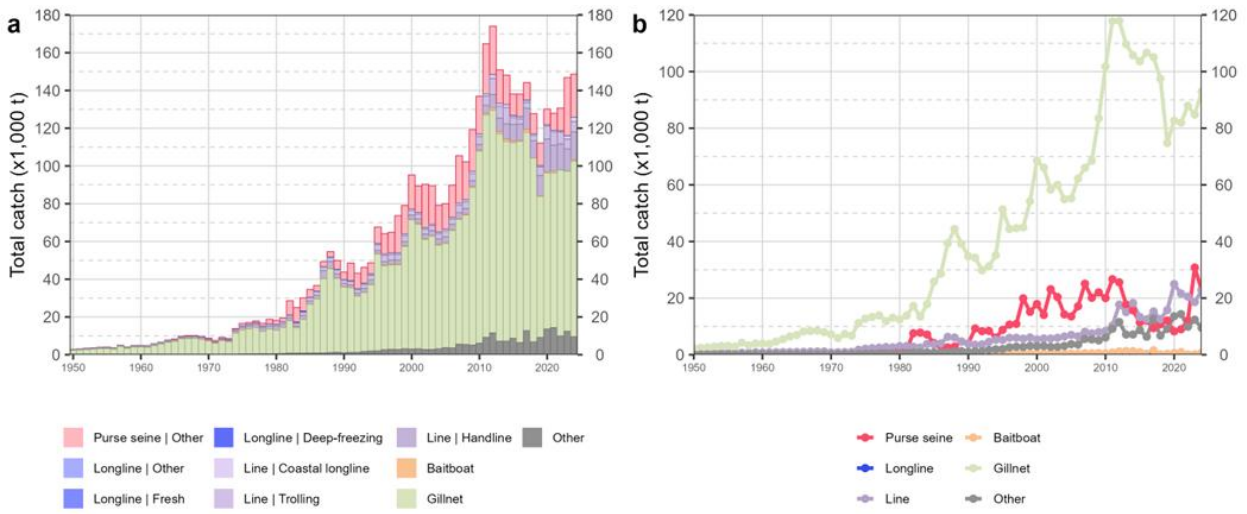


**Fig. 2**. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for longtail tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

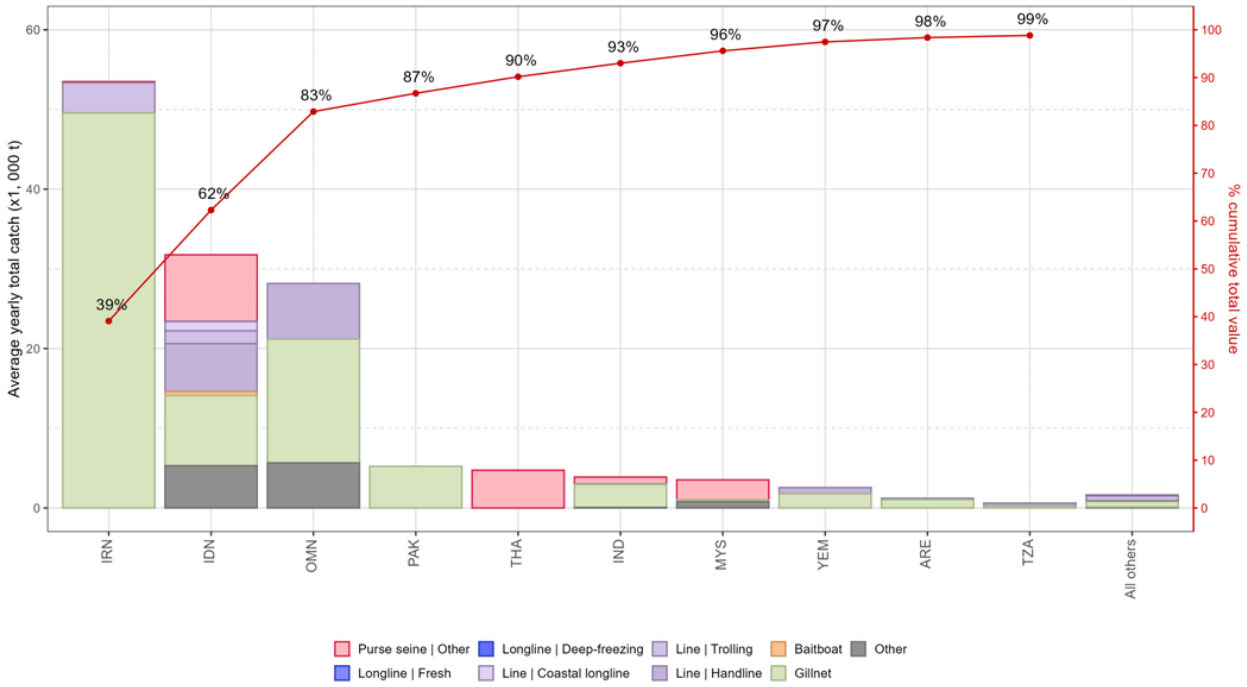


**Fig. 3.** Mean annual catches (t) of longtail tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Other: all remaining fishing gears