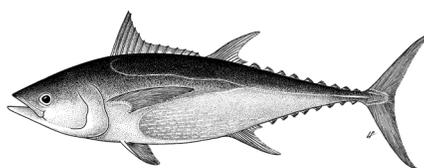


## EXECUTIVE SUMMARY: LONGTAIL TUNA

Status of the Indian Ocean longtail tuna (LOT: *Thunnus tonggol*) resourceTABLE 1. Longtail tuna: Status of longtail tuna (*Thunnus tonggol*) in the Indian Ocean.

Area <sup>1</sup>	Indicators	2016 stock status determination
Indian Ocean	Catch 2015 <sup>2</sup> : 135,920 t	<b>51%</b>
	Average catch 2011–2015: 157,313 t	
MSY (1,000 t) (*): 143 (106–194)		
F <sub>MSY</sub> (*): 0.39 (0.29–0.54)		
B <sub>MSY</sub> (1,000 t) (*): 298 (197–545)		
F <sub>2014</sub> /F <sub>MSY</sub> (*): 1.03 (0.88–1.26)		
B <sub>2014</sub> /B <sub>MSY</sub> (*): 0.99 (0.78–1.19)		
B <sub>2014</sub> /B <sub>0</sub> (*): 0.50 (0.39–0.60)		

<sup>1</sup>Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence.

<sup>2</sup>Proportion of catch estimated or partially estimated by IOTC Secretariat in 2015: 32%

Nominal catches represent those estimated by the IOTC Secretariat. If these data are not reported by CPCs, the IOTC Secretariat estimates total catch from a range of sources including: partial catch and effort data; data in the FAO FishStat database; catches estimated by the IOTC from data collected through port sampling; data published through web pages or other means; data reported by other parties on the activity of vessels; and data collected through sampling at the landing place or at sea by scientific observers.

Colour key	Stock overfished (SB <sub>year</sub> /SB <sub>MSY</sub> < 1)	Stock not overfished (SB <sub>year</sub> /SB <sub>MSY</sub> ≥ 1)
Stock subject to overfishing (F <sub>year</sub> /F <sub>MSY</sub> > 1)		
Stock not subject to overfishing (F <sub>year</sub> /F <sub>MSY</sub> ≤ 1)		
Not assessed/Uncertain		

## INDIAN OCEAN STOCK – MANAGEMENT ADVICE

**Stock status.** Analysis using the Optimised Catch-Only Method (OCOM) indicates that the stock is being exploited at a rate that exceeded F<sub>MSY</sub> in recent years, and the stock appears to be below B<sub>MSY</sub> (51% of plausible models runs) (Fig. 2). Catches decreased between 2012 and 2015 from 175 459 to 135 920 t (Fig. 1). Catches have remained above MSY since 2011, except in 2015. The F<sub>2014</sub>/F<sub>MSY</sub> ratio is slightly lower than previous estimates, reflecting the drop in catches reported in the last few years. Nevertheless, the estimate of the B<sub>2014</sub>/B<sub>MSY</sub> ratio (0.99) was also slightly lower than in previous years. An assessment using Catch-MSY was also undertaken in 2016 and results were consistent with OCOM in terms of status. Therefore, based on the weight-of-evidence currently available, the stock is considered to be both **overfished** and **subject to overfishing** (Table 1; Fig. 2).

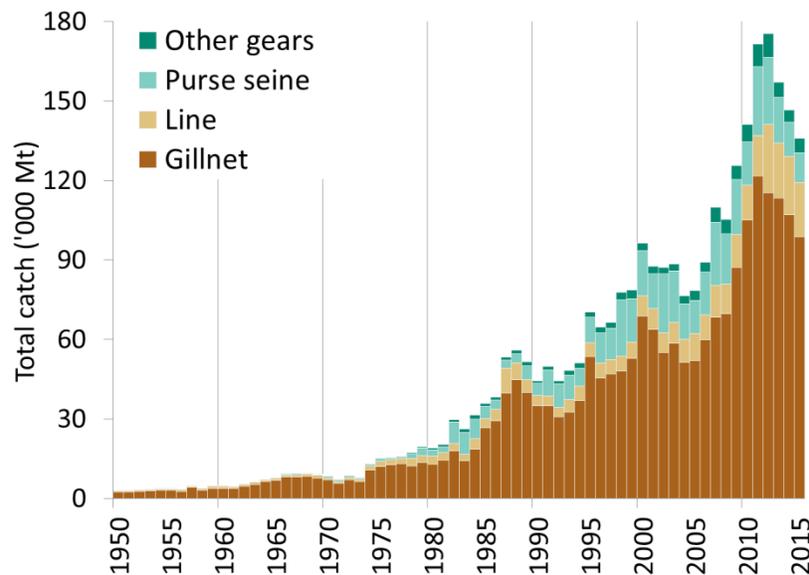
**Outlook.** There remains considerable uncertainty about stock structure and the total catches in the Indian Ocean. The increase of annual catches for longtail tuna to a peak in 2012 increased the pressure on the Indian Ocean stock as a whole, though that trend has reversed since then. As noted in 2015, 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 on improving indicators and exploration of stock structure and stock assessment approaches for more traditional models for fisheries management are warranted. There is a continued high risk of exceeding MSY-based reference points by 2017 if catches are maintained at current (2014) levels (69% risk that B<sub>2017</sub> < B<sub>MSY</sub>, and 81% risk that F<sub>2017</sub> > F<sub>MSY</sub>). (Table 2).

**Management advice.** There is a continued high risk of exceeding MSY-based reference points by 2017 if catches are maintained at current (2014) levels (69% risk that B<sub>2017</sub> < B<sub>MSY</sub>, and 81% risk that F<sub>2017</sub> > F<sub>MSY</sub>). If catches are reduced by 10% this risk is lowered to 27% probability B<sub>2017</sub> < B<sub>MSY</sub> and 39% probability F<sub>2017</sub> > F<sub>MSY</sub>. If the Commission wishes to recover the stock to levels above the MSY reference points, the Scientific Committee recommends catches

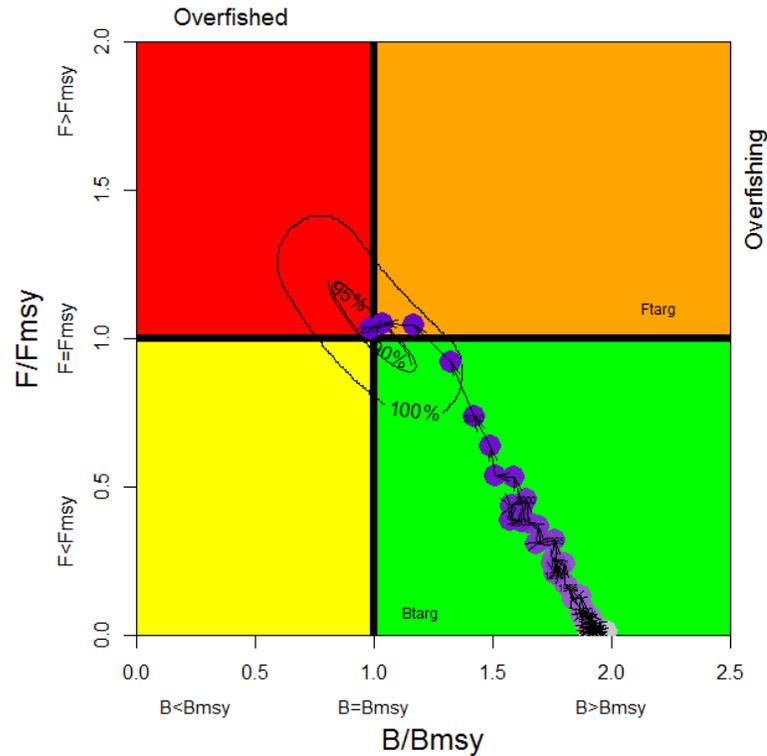
should be reduced by approximately 10% of 2014 levels which corresponds to catches somewhat below MSY in order to recover the status of the stock in line with the decision framework described in Resolution 15/10.

The following should be noted:

- The Maximum Sustainable Yield estimate of around 143,000 t was exceeded since 2011 in spite of recent declines in catches, but not in 2015. Given that the stock is overfished according to the point estimate, reductions in catch are warranted to maintain the stock at  $B_{MSY}$  level.
- Reconstruction of the catch history needs to occur, as do annual catches submitted to the IOTC Secretariat.
- Improvement in data collection and reporting is required to assess the stock using more traditional stock assessment techniques.
- Improvement in data collection and reporting is required to assess the stock status, primarily abundance index series from I.R. Iran, Oman, India and Indonesia.
- Limit reference points: The Commission has not adopted limit reference points for any of the neritic tunas under its mandate.



**Fig. 1.** Longtail tuna: Annual catches by gear recorded in the IOTC Database (1950–2015) (data as of October 2016).



**Fig. 2.** Longtail tuna. Longtail OCOM Indian Ocean assessment Kobe plot (all plausible model runs shown around 2014 estimate). Blue circles indicate the trajectory of the point estimates for the SB ratio and F ratio for each year 1950–2014. Target reference points are shown as  $B_{MSY}$  and  $F_{MSY}$ .

**TABLE 2.** Longtail tuna OCOM aggregated Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based target for nine constant catch projections (2014 +20%,+10%, -10%, - 20%, -30% projected for 3 and 10 years).

Reference point and projection timeframe	Alternative catch projections (relative to 2014) and weighted probability (%) scenarios that violate reference points					
	70% (102,726 t)	80% (117,401 t)	90% (132,076 t)	100% (146,751 t)	110% (161,426 t)	120% (176,101 t)
$B_{2017}^1 < B_{MSY}$	1	7	27	69	95	100
$F_{2017} > F_{MSY}$	1	12	39	81	98	100
$B_{2024} < B_{MSY}$	0	0	2	85	100	100
$F_{2024} > F_{MSY}$	0	0	2	90	100	100

<sup>1</sup> Fishable biomass