APPENDIX 15
EXECUTIVE SUMMARY: INDO-PACIFIC SAILFISH (2021)

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

Area[1]	Indicators		2021 stock status determination
Indian Ocean	Catch 2019[2] (t)	29,635	
	Average catch 2015-2019 (t)	30,263	
	MSY (1,000 t) (80% CI)	23.9 (16.1 – 35.4)	
	F_{MSY} (80% CI)	0.19 (0.14 - 0.24)	
	B_{MSY} (1,000 t) (80% CI)	129 (81–206)	
	F_{2017}/F_{MSY} (80% CI)	1.22 (1 – 2.22)	
	B_{2017}/B_{MSY} (80% CI)	1.14 (0.63 – 1.39)	
	B_{2017}/B_0 (80% CI)	0.57 (0.31 – 0.70)	

[1] Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence
[2] Proportion of 2019 catch estimated or partially estimated by IOTC Secretariat: 42.4%

Colour key	Stock overfished (B_{year}/B_{MSY}< 1)	Stock not overfished (B_{year}/B_{MSY}≥ 1)
Stock subject to overfishing (F_{year}/F_{MSY}> 1)	17%	60%
Stock not subject to overfishing (F_{year}/F_{MSY}≤ 1)	5%	16%
Not assessed/Uncertain		

The percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account

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Stock status. No new stock assessment for Indo-Pacific sailfish was carried out in 2021, thus, the stock status is determined on the basis of the 2019 assessment using the C-MSY model. The data poor stock assessment techniques indicated that F was above F_{MSY} (F/F_{MSY}=1.22) and B is above B_{MSY} (B/B_{MSY}=1.14). Another alternative model using the Stock Reduction Analysis (SRA) techniques produced similar results. The stock appears to show a continued increase in catches which is a cause of concern (**Fig. 1**), indicating that fishing mortality levels may be becoming too high (**Fig. 2**). However, both assessment models rely on catch data only, and the catch series is highly uncertain. In addition, aspects of the biology, productivity and fisheries for this species, combined with the data poor status on which to base a more formal assessment, are also a cause for concern. On the weight-of-evidence available in 2019, the stock status cannot be assessed and is determined to be uncertain.

Outlook. Catches in 2010 and since 2013 have exceeded the estimated MSY, and have also increased by 62% between 2007 and 2019. This increase in coastal gillnet 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 2019 catches (29,635 t) exceed the catch limit prescribed in Resolution 18/05 (25,000 t).

Management advice. The catch limits as stipulated in Resolution 18/05 have been exceeded. 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 gillnet fisheries, and further exploration of stock assessment approaches for data poor fisheries are warranted. Given the limited data being reported for coastal gillnet fisheries, and the importance of sports fisheries for this species, efforts must be made to rectify these information gaps. The lack of catch records in the Persian Gulf should also be examined to evaluate the degree of localised depletion in Indian Ocean coastal areas.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY):** estimate for the Indian Ocean stock is 23,900 t.
- **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 fishing gear (average catches 2015-19)**: gillnets account for around 70% of total catches in the Indian Ocean, followed by lines (coastal longline, troll and hand lines) (24%), with remaining catches recorded under longlines and other gears (**Fig. 1**).
- **Main fleets (average catches 2015-19):** if we exclude the Republic of Tanzania (whose catch data have been repeated in recent years by the Secretariat, due to the lack of explicit reporting from the country), then three quarters of the total catches of Indo-Pacific sailfish are accounted for by four countries situated in the Arabian Sea: I.R. Iran (gillnets): 34%; India (gillnets and coastal longline): 26%; Pakistan (gillnets): 8%; and Sri Lanka (gillnets and longlines): 8%.

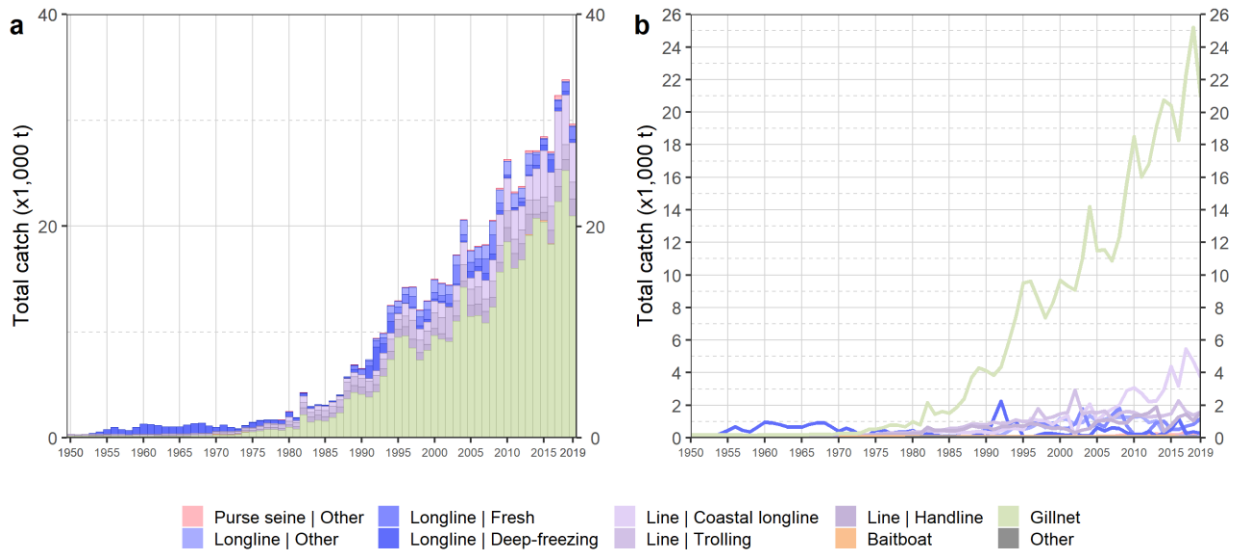

Fig. 1. Annual time series of (a) cumulative and (b) individual nominal catches (t) by fishery for Indo-Pacific sailfish during 1950–2019. Longline: deep-freezing and fresh longlines, swordfish and sharks-targeted longlines; Line: coastal longline, handline, troll line; Gillnet: coastal and offshore gillnets, driftnet; Other: all remaining gears

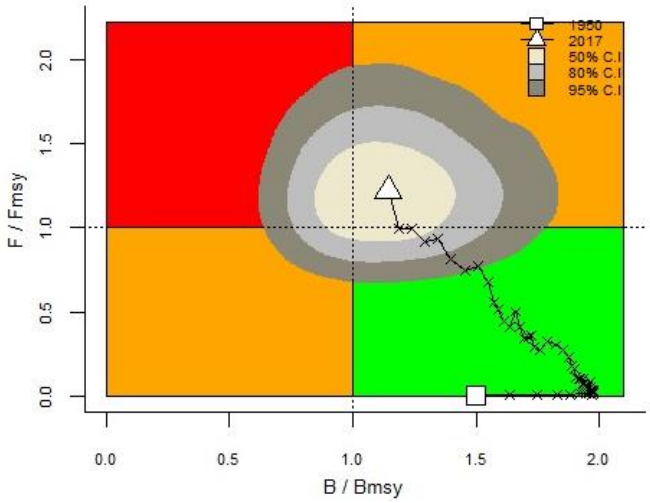

Fig. 2. Indo-Pacific sailfish: Kobe plot derived from the stock reduction analysis (C-MSY Method) (contours are the 50, 65 and 90 percentiles of the 2017 estimate). Black lines indicate the trajectory of the point estimates (black crosses) for the biomass ratio (B/B_{msy}) and fishing mortality ratio (F/F_{msy}) for each year 1950–2017