Table 1. Status summary for species of tuna and tuna-like species under the IOTC mandate, as well as other species impacted by IOTC fisheries. (NOTE: the year column indicates the year the stock status was determined, not the terminal year of the assessment model)

Temperate and tropical tuna stocks: main stocks being targeted by industrial, and to a lesser extent, artisanal fisheries throughout the Indian Ocean, both on the high seas and in the EEZ of coastal states.

Stock	Indicators		2018	2019	2020	2021	2022	Advice to the Commission
Albacore *Thunnus alalunga*	Catch (2021) (t) Mean annual catch (2017-2021) (t) MSY (x1,000 t) (95% CI) FMSY (80% CI) SBMSY (x1,000 t) (80% CI) F2020 / FMSY (80% CI) SB2020 / SBMSY (80% CI) SB2020 / SB0 (80% CI)	34,789 39,203 45 (35-55) 0.18 (0.15-0.21) 27 (21-33) 0.68 (0.42-0.94) 1.56 (0.89-2.24) 0.36 (0.26-0.45)					**85%**	A new stock assessment was carried out for albacore in 2022 to update the assessment undertaken in 2019. The stock assessment was carried out using Stock Synthesis III (SS3), a fully integrated model that is currently also used to provide scientific advice for the three tropical tunas stocks in the Indian Ocean. The model used in 2022 is based on the model developed in 2019 with a series of revisions that were noted during the WPTmT data preparatory meeting held in April 2022. There are some noticeable changes compared to the previous assessment data set, mainly related to how the fisheries are structured, and how the CPUE indices and length composition data are treated within the assessment model Changes in stock status since the previous assessment are mainly due to changes in the CPUE. Thus, the stock status in relation to the Commission's interim B_{MSY} and F_{MSY} target reference points indicates that the stock is **not overfished** and is **not subject to overfishing** Click here for full stock status summary: Appendix 8
Bigeye tuna *Thunnus obesus*	Catch in 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) (80% CI) FMSY (80% CI) SBMSY (1,000 t) (80% CI) F2021 / FMSY (80% CI) SB2021 / SBMSY (80% CI) SB2021 / SB0 (80% CI)	94,803 87,488 96 (83 –108) 0.26 (0.18–0.34) 513 (332–694) 1.43 (1.10–1.77) 0.90 (0.75–1.05) 0.25 (0.23–0.27)		**38%**			**79%**	In 2022 a new stock assessment was carried out for bigeye tuna in the IOTC area of competence to update the stock assessment undertaken in 2019. Two models were applied to the bigeye stock (Statistical Catch at Size (SCAS) and Stock Synthesis (SS3)), with the SS3 stock assessment selected to provide scientific advice. The reported stock status is based on a grid of 24 model configurations designed to capture the uncertainty on stock recruitment relationship, longline selectivity, growth and natural mortality.

								On the weight-of-evidence available in 2022, the bigeye tuna stock is determined to be **overfished** and **subject to overfishing.** As IOTC agreed on a bigeye Management Procedure (Res. 22/03) it should be noted that the stock assessment is not used to provide a recommendation on the TAC. Click here for full stock status summary: Appendix 9
Skipjack tuna *Katsuwonus pelamis*	Catch in 2021 (t) Average catch 2017-2021 (t) C40%SB0 (t) (80% CI) C2019 / C40%SB0 (80% CI) E40%SB0 (80% CI) E2019 / E40%SB0 (80% CI) SB0 (t) (80% CI) SB2019 (t) (80% CI) SB40%SB0 (t) (80% CI) SB20%SB0 (t) (80% CI) SB2019 / SB0 (80% CI) SB2019 / SB40%SB0 (80% CI) SB2019 / SBMSY (80% CI) MSY (t) (80% CI) E2019 / EMSY (80% CI)	650,331 580,408 535,964 (461,995–674,536) 1.02 (0.81–1.18) 0.59 (0.53–0.66) 0.92 (0.67-1.21) 1,992,089 (1,691,710–2,547,087) 870,461 (660,411–1,253,181) 794,310 (672,825–1,019,056) 397,155 (336,412–509,528) 0.45 (0.38-0.5) 1.11 (0.95-1.29) 1.99 (1.47-2.63) 601,088 (500,131–767,012) 0.48 (0.35-0.81)			**60%**			No new stock assessment was conducted in 2022 and so the advice is based on the 2020 assessment using Stock Synthesis with data up to 2019. On the weight-of-evidence available in 2020, the skipjack tuna stock is determined to be: (i) above the adopted biomass target reference point; (ii) **not overfished** (SB_{2019}>$SB_{40\%SB0}$); (iii) with fishing mortality below the adopted target fishing mortality, and; (iv) **not subject to overfishing** (E_{2019}<$E_{40\%SB0}$). The catch limit calculated applying the HCR specified in Resolution 16/02 is 513,572 t for the period 2021 -2023. The SC noted that this catch limit is higher than for the previous period notwithstanding regular overshooting of the previous established catch limit. This is attributed to the new stock assessment which estimates a higher productivity of the stock and a higher stock level relative to the target reference point, possibly due to skipjack life history characteristics and favourable environmental conditions. Thus, it is likely that the recent catches that have exceeded the limits established for the period 2018-2020 have been sustained by favourable environmental conditions. The catch in 2021 (650,331t) exceeded the 2020 level by 17% and exceeded the HCR recommended catch limit (for 2021-2023) by 27%, providing a need for the Commission to ensure that catches of skipjack tuna do not exceed the agreed limit and ensuring that the impact on associated tuna stocks (bigeye and yellowfin tuna) is reduced. Click here for full stock status summary: Appendix 10
Yellowfin tuna	Catch in 2021 (t) Average catch 2017-2021 (t)	416,235 435,225	**94%**			**68%**		No new stock assessment was carried out for yellowfin tuna in 2022 and so the advice is based on the 2021 assessment. On the weight-of-evidence available since 2018, the yellowfin

Thunnus albacares	MSY (1,000 t) (80% CI) FMSY (80% CI) SBMSY (1,000 t) (80% CI) F2020 / FMSY (80% CI) SB2020 / SBMSY (80% CI) SB2020 / SB0 (80% CI)	349 (286-412) 0.18 (0.15-0.21) 1,333 (1,018-1,648) 1.32 (0.68-1.95) 0.87 (0.63-1.10) 0.31 (0.24-0.38)						tuna stock is determined to remain **overfished** and **subject to overfishing** It is noted that the estimated productivity of the stock (MSY) was very low for some of the scenarios of the reference grid. Their plausibility and reasons for this low productivity are yet to be fully investigated. It is noted that there is also considerable uncertainty in the reported catches by some fisheries. In particular, several artisanal fisheries have increased their catches substantially in recent years, the implication of which should be further investigated. There was a lack of information to explain this sharp increase in catch. A number of additional uncertainties were identified that require further exploration, including those related to growth, natural mortality and longline catchability. Inconsistencies in the biomass trend by region also remain unresolved and this deserves further investigation. According to the K2SM, • if catches are reduced to 60% of 2020 levels[1] there is >50% probability of being above Bmsy levels by 2023. • if catches are reduced to < 80% of 2020 levels there is a >50% probability of being above BMSY in 2030. • if catches are reduced to less than 80% of 2020 levels there would be a >50% probability of ending overfishing (F<Fmsy) by 2023 and also by 2030. • The probability of breaching the biological limit reference point (0.4Bmsy) with 2020 catches is 7% by 2023 and 64% by 2030. The probability of breaching the F limit reference point (1.4 Fmsy) with 2020 catch is 52% by 2023 and 78% by 2030. The Commission has an interim plan for the rebuilding the yellowfin stock, with catch limitations based on 2014/2015 levels (Resolution 21/01 which superseded 19/01, 18/01 and 17/01). Some of the fisheries subject to catch reductions have achieved a decrease in catches in 2020 in accordance with the levels of reductions specified in the Resolution; however, these reductions were offset by increases in the catches from

[1] 2020 catch levels indicate the nominal catch available to the WPTT at its session in October 2021 (WPTT23).

								CPCs exempt from and some CPCs subject to limitations on their catches of yellowfin tuna. Click here for full stock status summary: Appendix 11

Billfish: The billfish stocks are exploited by industrial and artisanal fisheries throughout the Indian Ocean, both on the high seas and in the EEZ of coastal states. While marlins and sailfish are not usually targeted by most fleets, they are caught and retained as bycatch by the main industrial fisheries, and are also important for localised small-scale and artisanal fisheries or as targets in sports and recreational fisheries.

Stock	Indicators		2018	2019	2020	2021	2022	Advice to the Commission
Swordfish *Xiphias gladius*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) (80% CI) FMSY (80% CI) SBMSY (1,000 t) (80% CI) F2018/FMSY (80% CI) SB2018/SBMSY (80% CI) SB2018/SB1950 (80% CI)	23,917 31,157 33 (27–40) 0.23 (0.15–0.31) 59 (41–77) 0.60 (0.40–0.83) 1.75 (1.28–2.35) 0.42 (0.36–0.47)			**98%**			An assessment was undertaken in 2020 using stock synthesis with fisheries data up to 2018. On the weight-of-evidence available in 2020, the stock is determined to be **not overfished** and **not subject to overfishing**. The 2019 catches (33,590 t at the time of the assessment) were close to the MSY level (33,000 t). Under those levels of catches, the spawning biomass was projected to remain relatively stable, with a high probability of maintaining at or above the SBMSY for the longer term. It is noted that 2021 catches (23,917 t) are significantly lower than MSY. Nevertheless, the Commission should consider limiting the catches so as not to exceed the 2018 catch level (31,018 t) to ensure that the probability of exceeding the SBMSY target reference points in the long term remains minimal (2%). Projections indicate that an increase of 40% or more from 2018 catch levels will likely result in the biomass dropping below the SBMSY level for the longer term (>75% probability). Taking into account the updated information regarding swordfish stock structure (IOTC-2020-WPB18-09), as well as the differential CPUE and biomass trends between regions, the WPB should continue to discuss the swordfish stock assessment model specifications and consider the feasibility of including a multi-stock assessment in 2023. Recognising that there is recurring evidence for localised depletion in the southern regions (particularly the South West) the WPB expresses concern and suggests this should be further monitored.

								Click here for full stock status summary: Appendix 12
Black marlin *Istiompax indica*	Catch 2021 (t) Average catch 2017–2021 (t) MSY (1,000 t) (95% CI) FMSY (95% CI) BMSY (1,000 t) (95% CI) F2019/FMSY (95% CI) B2019/BMSY (95% CI) B2019/B0 (95% CI)	14,115 16,864 17.30 (11.00 – 35.02) 0.20 (0.12 - 0.34) 87.39 (53.82-167.70) 0.53 (0.22 – 1.05) 1.98 (1.42 – 2.57) 0.73 (0.53 – 0.95)						A stock assessment based on JABBA, a Bayesian state-space production model (age-aggregated), was conducted in 2021 for black marlin (using data up to 2019). **Since 2018, there has been no discernable improvement in the data available for black marlin and the subsequent assessment outputs remain uncertain and should be interpreted with caution. As such, there is no reasonable justification to change the stock status from "Not assessed/Uncertain"**. The catch limits as stipulated in Resolution 18/05 have been exceeded for two consecutive years since 2020. Thus, 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. Click here for full stock status summary: Appendix 13
Blue marlin *Makaira nigricans*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) (80% CI) FMSY (80% CI) BMSY (1,000 t) (80% CI) F2020/FMSY (80% CI) B2020/BMSY (80% CI) B2020/B0 (80% CI)	5,772 7,964 8.74 (7.14 –10.72) 0.24 (0.14 – 0.39) 35.8 (22.9 – 60.3) 1.13 (0.75 – 1.69) 0.73 (0.51 – 0.99) 0.36 (0.26 – 0.50)		**87%**			**72%**	In 2022 a stock assessment was conducted based on two different models: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2020). Both models were consistent with regards to stock status. On the weight-of-evidence available in 2022, the stock is determined to be **overfished** and **subject to overfishing**. The current catches of blue marlin (average of 7,964 t in the last 5 years, 2017-2021) are lower than MSY (8,740 t). In order to achieve the Commission objectives of being in the green zone of the Kobe Plot by 2027 (F2027 < FMSY and B2027 > BMSY) with at least a 60% chance, the catches of blue marlin would have to be reduced by 20% compared to 2020 catch (7,126 t), to a maximum value of approximately 5,700 t. Click here for full stock status summary: Appendix 14

Striped marlin *Kajikia audax*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) (JABBA) MSY (1,000 t) (SS3) FMSY (JABBA) FMSY (SS3) F2019/FMSY (JABBA) F2019/FMSY (SS3) B2019/BMSY (JABBA) SB2019/SBMSY (SS3) B2019/B0(JABBA) SB2019/SB0 (SS3)	2,696 2,946 4.60 (4.12 - 5.08)3 4.82 (4.48 - 5.16) 0.26 (0.20–0.33) 0.23 (0.23 - 0.23) 2.04 (1.35 - 2.93) 3.93 (2.30 - 5.31) 0.32 (0.22 - 0.51) 0.47 (0.35 - 0.63) 0.12 (0.10 – 0.19) 0.06 (0.05 - 0.08)	**99%**			100%		In 2021 a stock assessment was conducted based on two different models: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2019). Both models were generally consistent with regards to stock status and confirmed the results from 2012, 2013, 2015, 2017 and 2018 assessments. On the weight-of-evidence available in 2021, the stock status of striped marlin is determined to be **overfished** and **subject to overfishing.** Current or increasing catches have a very high risk of further decline in the stock status. The current 2020 catches (2,587 t) are lower than MSY (4,601 t) but the stock has been overfished for more than a decade and is now in a highly depleted state. If the Commission wishes to recover the stock to the green quadrant of the Kobe plot with a probability ranging from 60% to 90% by 2026 as per Resolution 18/05, it needs to provide mechanisms to ensure the maximum annual catches remain between 900 t – 1,500 t. Click here for full stock status summary: Appendix 15
Indo-Pacific Sailfish *Istiophorus platypterus*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) (80% CI) FMSY (80% CI) BMSY (1,000 t) (80% CI) F2019/FMSY (80% CI) B2019/BMSY (80% CI) B2019/B0 (80% CI)	37,310 32,178 25.9 (20.8 – 34.2) 0.19 (0.15 - 0.24) 138 (108–186) 0.98 (0.65 – 1.42) 1.17 (0.94 – 1.42) 0.58 (0.47 – 0.71)					54%	In 2022 a new stock assessment was conducted based on JABBA, a Bayesian state-space production model (using data up to 2019). Data poor methods (C-MSY and SRA) applied to SFA in 2019 relied on catch data only, which is highly uncertain for this species, and resulted in the stock status determined to be uncertain. To overcome the lack of abundance indices for this species, this assessment incorporated length-frequency data to estimate annual Spawning Potential Ratio (SPR). Normalised annual estimates of SPR were assumed to be proportional to biomass and incorporated as an index of relative abundance in the JABBA model (assuming no trends in annual recruitment in the long term). This is a novel technique applied to overcome the paucity of abundance data for SFA. On the weight-of-evidence available in 2022, the stock status of Indo-Pacific sailfish is determined to be **not overfished nor subject to overfishing.** The catch limits as stipulated in Resolution 18/05 have been exceeded for two consecutive years since 2020. In spite of the Kobe green status of the stock, 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 lack of catch records in the Persian Gulf should also be examined to evaluate the degree of localised depletion in Indian Ocean coastal areas. Click here for full stock status summary: Appendix 16

Neritic tunas and mackerel: These six species have become as important or more important as the three tropical tuna species (bigeye tuna, skipjack tuna and yellowfin tuna) to most IOTC coastal states. Neritic tunas and mackerels are caught primarily by coastal fisheries, including small-scale industrial and artisanal fisheries, and are almost always caught within the EEZs of coastal states. Historically, catches were often reported as aggregates of various species, making it difficult to obtain appropriate data for stock assessment analyses.

Stock	Indicators		2018	2019	2020	2021	2022	Advice to the Commission
Bullet tuna *Auxis rochei*	Catch 2021(t) Average catch 2017–2021 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) F_{2019}/F_{MSY} B_{2019}/B_{MSY} B_{2019}/B_0	14,072 22,562 unknown unknown unknown unknown unknown unknown						No new stock assessment was conducted in 2022 and so the results are based on the results of the assessment carried out in 2021 using the data-limited techniques (CMSY and LB-SPR), however the catch data for bullet tuna are very uncertain given the high percentage of the catches that had to be estimated due to a range of reporting issues. The lack of data on which to base an assessment of the stock are a cause for concern. Stock status in relation to the Commission's BMSY and FMSY reference points remains **unknown** For assessed species of neritic tunas in Indian Ocean (longtail tuna, kawakawa and narrow barred Spanish mackerel), the MSY was estimated to have been reached between 2009 and 2011 and both FMSY and BMSY were breached thereafter. Therefore, in the absence of a stock assessment of bullet tuna a limit to

								the catches should be considered by the Commission, by ensuring that future catches do not exceed the average catches estimated between 2009 and 2011 (8,870 t). The reference period (2009-2011) was chosen based on the most recent assessments of those neritic species in the Indian Ocean for which an assessment is available under the assumption that also for bullet tuna MSY was reached between 2009 and 2011. This catch advice should be maintained until an assessment of bullet tuna is available. Considering that MSY-based reference points for assessed species can change over time, the stock should be closely monitored. Mechanisms need to be developed by the Commission to improve current statistics by encouraging CPCs to comply with their recording and reporting requirements, so as to better inform scientific advice Click here for a full stock status summary: Appendix 17
Frigate tuna *Auxis thazard*	Catch 2021 (t) Average catch 2017–2021 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) F_{2019}/F_{MSY} B_{2019}/B_{MSY} B_{2019}/B_0	107,065 104,697 unknown unknown unknown unknown unknown unknown						No new assessment was conducted in 2022 therefore the results are based on the assessment conducted in 2021 using the data-limited techniques (CMSY and LB-SPR), however the catch data for frigate tuna are very uncertain given the high percentage of the catches that had to be estimated due to a range of reporting issues. The lack of data on which to base an assessment of the stock are a cause for considerable concern. Stock status in relation to the Commission's BMSY and FMSY reference points remains **unknown.** For assessed species of neritic tunas in Indian Ocean (longtail tuna, kawakawa and narrow barred Spanish mackerel), the MSY was estimated to have been reached between 2009 and 2011 and both FMSY and BMSY were breached thereafter. Therefore, in the absence of a stock assessment of frigate tuna a limit to the catches should be considered by the Commission, by ensuring that future catches do not exceed the average catches estimated between 2009 and 2011 (94,921 t). The reference period (2009-2011) was chosen based on the most recent assessments of those neritic species in the Indian Ocean for which an assessment is available under the assumption that also for bullet tuna MSY was

								reached between 2009 and 2011. This catch advice should be maintained until an assessment of frigate tuna is available. Considering that MSY-based reference points for assessed species can change over time, the stock should be closely monitored. Mechanisms need to be developed by the Commission to improve current statistics by encouraging CPCs to comply with their recording and reporting requirements, so as to better inform scientific advice. Click here for a full stock status summary: Appendix 18
Kawakawa *Euthynnus affinis*	Catch 2021 (t) Mean annual catch 2017-2021 (t) MSY (t) (80% CI) FMSY (80% CI) BMSY (t) (80% CI) F_{2018}/FMSY (80% CI) B_{2018}/BMSY (80% CI)	147,228 153,645 148,825 (124,114 – 222,505) 0.44 (0.21–0.82) 355,670 (192,080 – 764,530) 0.98 (0.85–1.11) 1.13 (0.75–1.58)			**50%**			No new stock assessment was conducted for kawakawa in 2022 and so the results are based on the assessment carried out in 2020 using data-limited assessment techniques (based on data up to 2018). Based on the weight-of-evidence available, the kawakawa stock for the Indian Ocean is classified as **not overfished** and **not subject to overfishing.** The assessment models rely on catch data, which are considered to be highly uncertain. The catch in 2021 was just below the estimated MSY. The available gillnet CPUE of kawakawa showed a somewhat increasing trend although the reliability of the index as abundance indices remains unknown. Despite the substantial uncertainties, the stock is probably very close to being fished at MSY levels and that higher catches may not be sustained in the longer term. A precautionary approach to management is recommended. Click here for a full stock status summary: Appendix 19
Longtail tuna *Thunnus tonggol*	Catch 20212 (t) Mean annual catch (2017-2021) (t) MSY (80% CI) F_{MSY} (80% CI) B_{MSY} (80% CI) F_{2018}/F_{MSY} (80% CI) B_{2018}/B_{MSY} (80% CI)	135,962 133,499 128,750 (99,902 – 151,357) 0.32 (0.15 – 0.66) 395,460 (129,240 – 751,316) 1.52 (0.751 – 2.87) 0.69 (0.45 – 1.21)			**76%**			No new assessment was conducted for longtail tuna in 2022 and so the results are based on the assessment carried out in 2020 using the Optimised Catch-Only Method (OCOM) (based on data up to 2018). Stock structure for this species remains unclear with recent research indicating strong evidence of population structure, increasing uncertainty in the assessment, which assumes a single stock.

								Based on the weight-of-evidence currently available, the stock is considered to be both **overfished** and **subject to overfishing**. The catch in 2021 was above the estimated MSY and the exploitation rate has been increasing over the last few years, as a result of the declining abundance. Despite the substantial uncertainties, this suggests that the stock is being fished above MSY levels and that higher catches may not be sustained. A precautionary approach to management is recommended. Click here for a full stock status summary: Appendix 20
Indo-Pacific king mackerel *Scomberomorus guttatus*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) F_{2019}/F_{MSY} B_{2019}/B_{MSY} B_{2019}/B_0	33,491 43,764 46.9 (37.7–58.4) 0.74 (0.56–0.99) 63.2 (42–94) 0.90 (0.78–2.01) 1.03 (0.46–1.19) 0.51 (0.23–0.60)				**35%**		No new assessment was conducted in 2022 so results are based on the assessment conducted in 2021 using the data-limited techniques (CMSY and LB-SPR) (using data up to 2019). The catch-only model has provided a more defensible approach in addressing the uncertainty of key parameters and the currently available catch data for the Indo-Pacific king mackerel appear to be of sufficiently improved quality for conducting an assessment albeit still with some uncertainty. Based on the weight-of-evidence currently available, the stock is considered to be **not overfished** and **not subject to overfishing.** Reported catches of Indo-Pacific king mackerel in the Indian Ocean has increased considerably since the late 2000s with recent catches fluctuating around estimated MSY, although the catch in 2021 was below the estimated MSY. This suggests that the stock is close to being fished at MSY levels and that higher catches may not be sustained despite the substantial uncertainty associated with the assessment, a precautionary approach to management is recommended. Click here for a full stock status summary: Appendix 21
Narrow-barred Spanish mackerel *Scomberomorus commerson*	Catch 2021 (t) Average catch 2017-2021 (t) MSY (80% CI) F_{MSY} (80% CI) B_{MSY} (80% CI)	172,887 160,966 157,760 (132,140–187,190) 0.49 (0.25–0.87)			**73%**			No new assessment was conducted for narrow-barred Spanish mackerel in 2022 and so the results are based on the assessment carried out in 2020 using the Optimised Catch-Only Method (OCOM) (based on data up to 2018). Stock structure for this species remains unclear with recent research indicating strong evidence

	F_{2018}/F_{MSY} (80% CI) B_{2018}/B_{MSY} (80% CI)	323,500 (196,260–592,530) 1.24 (0.65–2.13) 0.80 (0.54–1.27)						of population structure, increasing uncertainty in the assessment, which assumes a single stock. Based on the weight-of-evidence available, the stock appears to be **overfished** and **subject to overfishing.** The catch in 2021 was above the estimated MSY and the available gillnet CPUE shows a somewhat increasing trend in recent years although the reliability of the index as an abundance index remains unknown. Despite the substantial uncertainties, the stock is being fished above MSY levels and higher catches may not be sustained. Click here for a full stock status summary: Appendix 22

Sharks: Although sharks are not part of the 16 species directly under the IOTC mandate, sharks are frequently caught in association with fisheries targeting IOTC species. Some fleets are known to actively target both sharks and IOTC species simultaneously. As such, IOTC Contracting Parties and Cooperating Non-Contracting Parties are required to report information at the same level of detail as for the 16 IOTC species. The following are the main species caught in IOTC fisheries, although the list is not exhaustive.

Stock	Indicators		2018	2019	2020	2021	2022	Advice to the Commission
Blue shark *Prionace glauca*	Reported catch 2021 (t) Estimated catch 2019 (t) Not elsewhere included (nei) sharks1 2021 (t) Average reported catch 2017-21 (t) Average estimated catch 2015-19 (t) Avg. not elsewhere included (nei) sharks 2017-21 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2019}/F_{MSY} (80% CI) SB_{2019}/SB_{MSY} (80% CI) SB_{2019}/SB_0 (80% CI)	24,418 43,240 29,845 26,694 48,781 32,523 36.0 (33.5 - 38.6) 0.31 (0.306 - 0.31) 42.0 (38.9 - 45.1) 0.64 (0.53 - 0.75) 1.39 (1.27 - 1.49) 0.46 (0.42 - 0.49)				**99.9%**		No new stock assessment was carried out for blue sharks in 2022 and so the results are based on the assessment carried out in 2021 using an integrated age-structured model (SS3) (using data up to 2019). On the weight-of-evidence available in 2021, the stock status is determined to be **not overfished** and **not subject to overfishing**. Target and limit reference points have not yet been specified for pelagic sharks in the Indian Ocean. The 2021 assessment indicates that Indian Ocean blue shark are not overfished nor subject to overfishing. If the catches are increased by over 20%, the probability of maintaining spawning biomass above MSY reference levels (SB>SBMSY) over the next 10 years will be decreased. The stock should be closely monitored. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 16/06), these need to be further implemented by the Commission, so as to better inform scientific advice in the future. Click below for a full stock status summary: Blue sharks – Appendix 23
Oceanic whitetip shark *Carcharhinus longimanus*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t) Average reported catch 2017–2021 (t) Ave. (nei) sharks 2017–21 (t)	32 29,845 35 32,523						

Scalloped hammerhead shark *Sphyrna lewini*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t) Average reported catch 2017–2021 (t) Ave. (nei) sharks 2017–21 (t)	232 28,770 97 31,281						
Shortfin mako *Isurus oxyrinchus*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t) Average reported catch 2017-21 (t) Av. (nei) sharks 2017-21 (t)	792 31,499 1,326 34,369						There is a paucity of information available for these species and this situation is not expected to improve in the short to medium term. There is no quantitative stock assessment and limited basic fishery indicators currently available. Therefore, the stock status is highly uncertain. The available evidence indicates considerable risk to the stock status at current effort levels. The primary source of data that drive the assessment (total catches) is highly uncertain and should be investigated further as a priority. Click below for a full stock status summary: Oceanic whitetip sharks – Appendix 24 Scalloped hammerhead sharks – Appendix 25 Shortfin mako sharks – Appendix 26 Silky sharks– Appendix 27 Bigeye thresher sharks– Appendix 28 Pelagic thresher sharks– Appendix 29
Silky shark *Carcharhinus falciformis*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t) Average reported catch 2017–2021 (t) Ave. (nei) sharks 2017–21 (t)	1,423 21,879 1,702 25,732						
Bigeye thresher shark *Alopias superciliosus*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t) Average reported catch 2017–2021 (t) Ave. (nei) sharks 2017–21 (t)	< 1 26,965 < 1 30,323						
Pelagic thresher shark *Alopias pelagicus*	Reported catch 2021 (t) Not elsewhere included (nei) sharks 2021 (t)	76 26,965 270						

	Average reported catch 2017–2021 (t) Ave. (nei) sharks 2017–21 (t)	30,323						

*Estimated probability that the stock is in the respective quadrant of the Kobe plot (shown below), derived from the confidence intervals associated with the current stock status.

Colour key	Stock overfished ($SB_{year}/SB_{MSY}< 1$)	Stock not overfished ($SB_{year}/SB_{MSY}\geq 1$)
Stock subject to overfishing ($F_{year}/F_{MSY}> 1$)		
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)		
Not assessed/Uncertain		