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		2019	2020	2021	2022	2023	Advice to the Commission
Albacore *Thunnus alalunga*	Catch (2022) (t) Mean annual catch (2018-2022) (t) MSY (x1,000 t) (95% CI) F_{MSY} (80% CI) SB_{MSY} (x1,000 t) (80% CI) F_{2020} / F_{MSY} (80% CI) SB_{2020} / SB_{MSY} (80% CI) SB_{2020} / SB_0 (80% CI)	46,625 40,740 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%**		No new stock assessment was carried out for albacore in 2023, thus the stock status is determined on basis of the 2022 assessment. 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 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2021} / F_{MSY} (80% CI) SB_{2021} / SB_{MSY} (80% CI) SB_{2021} / SB_0 (80% CI)	102,266 92,687 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%**		No new stock assessment was carried out for bigeye tuna in 2023 and so the advice is based on the 2022 assessment. 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 2022 (t) Average catch 2018-2022 (t) $E_{40\%SB0}$ (80% CI) SB_0 (t) (80% CI) SB_{2022} (t) (80% CI) SB_{2022} / SB_0 80% CI) SB_{2022} / $SB_{40\%SB0}$ (80% CI) SB_{2022} / $SB_{20\%SB0}$ (80% CI) SB_{2022} / SB_{MSY} (80% CI) F_{2022} / F_{MSY} (80% CI) F_{2022} / $F_{40\%SSB0}$ (80% CI) MSY (t) (80% CI)	666,408 613,061 0.55 (0.48–0.65) 2 177 144 (1 869 035–2 465 671) 1 142 919 (842 723–1 461 772) 0.53 (0.42–0.68) 1.33 (1.04–1.71) 2.67 (2.08–3.42) 2.30 (1.57–3.40) 0.49 (0.32–0.75) 0.90 (0.68–1.22) 584 774 (512 228–686 071)		**60%**			**70%**	A new stock assessment was carried out for skipjack tuna in 2023 using Stock Synthesis with data up to 2022. The outcome of the 2023 stock assessment model is more optimistic than the previous assessment (2020) despite the high catches recorded in the period 2021-2022, which exceeded the catch limits established in 2020 for this period. The final assessment indicates that: The stock is above the adopted target for this stock ($40\%SB_0$) and the current exploitation rate is below the target exploitation rate with the probability of 70%. Current spawning biomass relative to unexploited levels is estimated at 53%. The spawning biomass remains above SB_{MSY} and the fishing mortality remains below F_{MSY} with a probability of 98.4 % Over the history of the fishery, biomass has been well above the adopted limit reference point ($20\%SB_0$). Subsequently, based on the weight-of-evidence available in 2023, the skipjack tuna stock is determined to be **not overfished** and **not subject to overfishing.** The catch limit calculated applying the HCR specified in Resolution 21/03 is [628, 606 t] for the period 2024-2026. The SC noted that this catch limit is higher than for the previous period. This is attributed to the new stock assessment which estimates a higher productivity of the stock in recent years and a higher stock level relative to the target reference point, possibly due to skipjack life history characteristics and favourable environmental conditions. Noting that the environmental conditions are predicted to enter a less

								favourable period, it is important that the Commission ensures that catches of skipjack tuna during this period do not exceed the agreed limit, as occurred in recent years. In addition, the SC recognizes the potential impact on other associated stocks (bigeye and yellowfin) of exceeding the catch limits of skipjack tuna. Click here for full stock status summary: Appendix 10
Yellowfin tuna *Thunnus albacares*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2020} / F_{MSY} (80% CI) SB_{2020} / SB_{MSY} (80% CI) SB_{2020} / SB_0 (80% CI)	410,332 429,421 349 (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)			**68%**			No new stock assessment was carried out for yellowfin tuna in 2023 and so the advice is based on the 2021 assessment. On the weight-of-evidence available since 2018, the yellowfin 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. Inconsistencies in the biomass trend by region also remain unresolved and this also deserves further investigation. According to the K2SM, if catches are reduced to < 80% of 2020 levels there is a >50% probability of being above SB_{MSY} in 2030. if catches are reduced to less than 80% of 2020 levels there would be a >50% probability of ending overfishing ($F<F_{MSY}$) by 2030. The probability of breaching the biological limit reference point ($0.4SB_{MSY}$) with 2020 catches is 64% by 2030. The probability of breaching the F limit reference point ($1.4\ F_{MSY}$) with 2020 catch is 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 2021 in accordance with the

								levels of reductions specified in the Resolution; however, these reductions were offset by increases in the catches from CPCs exempt from and some CPCs subject to limitations on their catches of yellowfin tuna. Click here for full stock status summary: Appendix 11

Neritic tunas and seerfish: 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		2019	2020	2021	2022	2023	Advice to the Commission
Bullet tuna *Auxis rochei*	Catch 2022 (t) Average catch 2018–2022 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) $F_{current}/F_{MSY}$ $B_{current}/B_{MSY}$ $B_{current}/B_0$	23,447 24,258 unknown unknown unknown unknown unknown unknown						No new stock assessment was conducted in 2023 and so the results are based on the results of the assessment carried out in 2021 using the data-limited techniques (C-MSY 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. Due to a lack of fishery data for several gears, only preliminary stock status indicators can be used. Aspects of the fisheries for bullet tuna combined with 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 B_{MSY} and F_{MSY} reference points remains **unknown.** For assessed species of neritic tunas and seerfish in the Indian Ocean (longtail tuna, kawakawa and narrow-barred Spanish mackerel), the MSY was estimated to have been reached between 2009 and 2011 and both F_{MSY} and B_{MSY} 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 (8,590 t). 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 12
Frigate tuna *Auxis thazard*	Catch in 2022 (t) Average catch 2018–2022 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) F_{2019}/F_{MSY} B_{2019}/B_{MSY} B_{2019}/B_0	153,996 115,170 unknown unknown unknown unknown unknown unknown						No new assessment was conducted in 2023 therefore the results are based on the assessment conducted in 2021 using the data-limited techniques (C-MSY 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. Due to a lack of fishery data for several gears, only preliminary stock status indicators can be used. Aspects of the fisheries for frigate tuna combined with 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 B_{MSY} and F_{MSY} 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 (101,260 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 frigate 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 13
Kawakawa *Euthynnus affinis*	Catch in 2022 (t) Mean annual catch 2018-2022 (t) MSY (t) (80% CI) FMSY (80% CI) BMSY (t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	157,423 155,982 154,000 (122,000 – 193,000) 0.60 (0.48 – 0.74) 258,000 (185 – 359) 0.98 (0.82–2.20) 0.99 (0.45 – 1.20)		**50%**			**27%**	A new assessment was conducted for kawakawa 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. Based on the weight-of-evidence available, the kawakawa stock for the Indian Ocean is classified as **overfished but not subject to overfishing.** The assessment models rely on catch data, which are considered to be highly uncertain. The catch in 2022 was just above 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 14
Longtail tuna *Thunnus tonggol*	Catch 2022 (t) Mean annual catch (2018-2022) (t)	136,271 131,320		**76%**			**35%**	A new assessment was conducted for longtail tuna in 2023 which examined a number of data-limited methods including C-MSY, OCOM, and JABBA models (based on

	MSY (80% CI) F_{MSY} (80% CI) B_{MSY} (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	133,000 (108 –165) 0.31 (0.22 – 0.44) 433,000 (272,000 – 690,000) 1.05 (0.84 – 2.31) 0.96 (0.44 – 1.19)						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. Based on the weight-of-evidence currently available, the stock is considered to be both **overfished** and **subject to overfishing**. The catch in 2022 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 15
Indo-Pacific king mackerel *Scomberomorus guttatus*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) $F_{current}/F_{MSY}$ $B_{current}/B_{MSY}$ $B_{current}/B_0$	45,594 43,224 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 2023 so results are based on the assessment conducted in 2021 using the data-limited techniques (C-MSY and LB-SPR) (using data up to 2019). Analysis using the catch only method C-MSY indicates the stock is being exploited at a rate that is below F_{MSY} in recent years and that the stock appears to be above B_{MSY}, although the estimates would be more pessimistic if the stock productivity is assumed to be less resilient. The analysis using the length-based approach (LB-SPR) was also undertaken in 2021 and the results are not conflicting with CMSY in terms of status. 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 sufficient quality. 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 16
Narrow-barred Spanish mackerel *Scomberomorus commerson*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (80% CI) F_{MSY} (80% CI) B_{MSY} (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	178,403 161,269 161,000 (132,000 – 197,000) 0.60 (0.48–0.74) 271,000 (197,000 – 373,000) 1.07 (0.88 – 2.38) 0.98 (0.44 – 1.19)		**73%**			**31%**	A new assessment was conducted for narrow-barred Spanish mackerel 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. Based on the C-MSY assessment, the stock appears to be **overfished and subject to overfishing.** The catch in 2022 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 17

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	2019	2020	2021	2022	2023	Advice to the Commission

Black marlin *Istiompax indica*	Catch in 2022 (t) Average catch 2018–2022 (t) MSY (1,000 t) (95% CI) F_{MSY} (95% CI) B_{MSY} (1,000 t) (95% CI) F_{2019}/F_{MSY} (95% CI) B_{2019}/B_{MSY} (95% CI) B_{2019}/B_0 (95% CI)	25,521 17,962 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)						No new stock assessment was carried out for black marlin in 2023, thus the stock status is determined on the basis of the 2021 assessment based on JABBA, a Bayesian state-space production model (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 three 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 18
Blue marlin *Makaira nigricans*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) F_{2020}/F_{MSY} (80% CI) B_{2020}/B_{MSY} (80% CI) B_{2020}/B_0 (80% CI)	5,067 7,045 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%**		No new stock assessment was carried out for blue marlin in 2023, thus the stock status is determined on basis of the 2022 assessment which was 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 7,045 t in the last 5 years, 2018-2022) are lower than MSY (8,740 t). The stock is currently overfished and subject to overfishing. According to K2SM calculated (Table 2), a reduction of 20% of catches (5,700 t) compared to 2020 catches (7,126 t) would recover the stock to the green quadrant by 2030 with a probability of 79% and if the catches are reduced by 10% (6,413 t) the probability would be 67%. The Commission should note that the current catch limit for blue marlin in Resolution 18/05 (11,930 t, which was established as the MSY value estimated in 2016 stock assessment) is 36% higher than the new MSY estimated by the latest stock assessment

								in 2022 (8,740 t). Click here for full stock status summary: Appendix 19
Striped marlin *Kajikia audax*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (JABBA) MSY (1,000 t) (SS3) F_{MSY} (JABBA) F_{MSY} (SS3) F_{2019}/F_{MSY} (JABBA) F_{2019}/F_{MSY} (SS3) B_{2019}/B_{MSY} (JABBA) SB_{2019}/SB_{MSY} (SS3) B_{2019}/B_0(JABBA) SB_{2019}/SB_0 (SS3)	3,431 2,898 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)			**100%**			No new stock assessment was carried out for striped marlin in 2023, thus the stock status is determined on the basis of the 2021 assessment 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 2022 catches (3,431 t) are lower than MSY (4,601 t) but are slightly above the limit set by Resolution 18/05 for that year which may be a concern if this trend continues. 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 20

Indo-Pacific Sailfish *Istiophorus platypterus*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) F_{2019}/F_{MSY} (80% CI) B_{2019}/B_{MSY} (80% CI) B_{2019}/B_0 (80% CI)	31,873 32,386 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%**		No new stock assessment was carried out for Indo-Pacific Sailfish in 2023, thus the stock status is determined on basis of the 2022 stock assessment based on JABBA (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 three 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 21
Swordfish *Xiphias gladius*	Catch in 2022 (t) Average catch 2018-2022 (t) MSY (1,000 t) (80% CI)	23,597 28,994 30 (26–33) 0.16 (0.12–0.20)		**98%**			**97%**	In 2023 a new stock assessment was carried out for Swordfish in the IOTC area of competence to update the stock assessment undertaken in 2020. Two models were applied to the swordfish stock (ASPIC and Stock Synthesis

	F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2021}/F_{MSY} (80% CI) SB_{2021}/SB_{MSY} (80% CI) SB_{2021}/SB_{1950} (80% CI)	55 (40–70) 0.60 (0.43–0.77) 1.39 (1.01–1.77) 0.35 (0.32–0.37)						(SS3)), with the SS3 stock assessment selected to provide scientific advice (as done previously). An update of the JABBA model was also conducted during the WPB meeting. Taking into account the characterized uncertainty, and on the weight-of-evidence available in 2023, the swordfish stock is determined to **be not overfished and not subject to overfishing.** The 2021 catches (23,237 t at the time of the assessment) were significantly lower than the estimated MSY level (29,856 t). Under those levels of catches, the spawning biomass was projected to likely increase, with a high probability of maintaining at or above the SB_{MSY} for the longer term. There is a very low risk of exceeding MSY-based reference points by 2031 if catches are maintained at 2021 levels (<1% risk that $SB_{2031} < SB_{MSY}$, and <1% risk that $F_{2021} > F_{MSY}$). The projections indicate that an increase of 40% or more from 2021 catch levels will not likely result in the biomass dropping below the SBMSY level for the longer term (with a 15% probability). Catches in 2022 (23,597 t) were still lower than the estimated MSY. Nevertheless, the Commission should consider monitoring the catches to ensure that the probability of exceeding the SB_{MSY} target reference points in the long term remains minimal. Taking into account the differential CPUE and biomass trends between regions, the WPB noted that there is recurring evidence for localised depletion in the South Western region (which appears to be more depleted than other regions) and suggests this should be further monitored. Click here for 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		2019	2020	2021	2022	2023	Advice to the Commission
Blue shark *Prionace glauca*	Reported catch 2022 (t) Estimated catch 2019 (t) Not elsewhere included (nei) sharks1 2022 (t) Average reported catch 2018-2022 (t) Average estimated catch 2015-19 (t) Avg. not elsewhere included (nei) sharks 2018-2022 (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)	24,424 43,240 32,558 25,275 48,781 31,303 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 2023 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 is not overfished nor subject to overfishing. If the catches are increased by over 20%, the probability of maintaining spawning biomass above MSY reference levels ($SB>SB_{MSY}$) 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 2022 (t) Not elsewhere included (nei) sharks 2022 (t) Average reported catch 2018–2022 (t) Ave. (nei) sharks 2012–2022 (t)	41 32,558 35 31,303						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

Scalloped hammerhead shark *Sphyrna lewini*	Reported catch 2022 (t) Not elsewhere included (nei) sharks 2022 (t) Average reported catch 2018–2022 (t) Ave. (nei) sharks 2018–2022 (t)	607 33,949 198 33,612						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
Shortfin mako *Isurus oxyrinchus*	Reported catch 2022 (t) Catches reported to MAK in 2022 (t) Average catches reported to MAK 2018-2022 (t) Catches in 2022 (MAK, SMA, LMA) (t) Average catches 2018-2022 (MAK, SMA, LMA) (t) Not elsewhere included (nei) sharks2 2022 (t) Average reported catch 2018-22 (t) Av. Not elsewhere included (nei) sharks2 2018-22 (t)	666 1,947 2,057 2,627 3,081 34,248 1,013 33,072						
Silky shark *Carcharhinus falciformis*	Reported catch 2022 (t) Not elsewhere included (nei) sharks 2022 (t) Average reported catch 2018–2022 (t) Ave. (nei) sharks 2018–2022 (t)	1,426 32,558 1,755 31,3032						
Bigeye thresher shark *Alopias superciliosus*	Reported catch 2022 (t) Not elsewhere included (nei) sharks2	< 1 37,497						

	2022 (t) Thresher sharks nei 2022 (t) Average reported catch 2018-22 (t) Av. Not elsewhere included (nei) sharks2 2018-22 (t) Av. Thresher sharks nei 2018-22 (t)	5,209 < 1 35,865 4,859						
Pelagic thresher shark *Alopias pelagicus*	Reported catch 2022 (t) Not elsewhere included (nei) sharks2 2022 (t) Thresher sharks nei 2022 (t) Average reported catch 2018-22 (t) Av. Not elsewhere included (nei) sharks2 2018-22 (t) Av. Thresher sharks nei 2018-22 (t)	156 37,497 5,209 217 35,865 4,859						

*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/Unknown		