Report of the 28th Session of the IOTC Scientific Committee

China, 1 – 5 December 2025

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ACRONYMS

ACAP	Agreement on the Conservation of Albatrosses and Petrels
AFAD	Anchored Fish Aggregation Device
ASPIC	A Stock-Production Model Incorporating Covariates
B	Biomass (total)
B_{MSY}	Biomass which produces MSY
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CE	Catch and Effort
CI	Confidence interval
CKMR	Close-Kin-Mark-Recapture
CMM	Conservation and Management Measure (of the IOTC; Resolutions and Recommendations)
CoC	Compliance Committee
CPCs	Contracting Parties and Cooperating Non-Contracting Parties
CPUE	Catch Per Unit Effort
current	Current period/time, i.e. $F_{current}$ means fishing mortality for the current assessment year
EEZ	Exclusive Economic Zone
EM/EMS	Electronic Monitoring/Electronic Monitoring System
ERA	Ecological Risk Assessment
EU	European Union
F	Fishing mortality; F_{2010} is the fishing mortality estimated in the year 2010
FAD	Fish Aggregation device
FAO	Food and Agriculture Organization of the United Nations
FL	Fork Length
F_{MSY}	Fishing mortality at MSY
GLM	Generalised Linear Model
HCR	Harvest Control Rule
HBF	Hooks Between Floats
HS	Harvest Strategy
HSF	Harvest Strategy Framework
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IO	Indian Ocean
IOTC	Indian Ocean Tuna Commission
IOSEA	Indian Ocean - South-East Asian Marine Turtle Memorandum
IPA	International Plan of Action
IPNLF	International Pole and Line Foundation
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unregulated and Unreported (fishing)
LJFL	Lower-jaw fork length
LRP	Limit reference point
LL	Longline
LSTLV	Large-scale Tuna Longline Vessel
M	Natural mortality
MEY	Maximum Economic Yield
MOU	Memorandum of Understanding
MP	Management Procedure
MPA	Marine Protected Area
MSPEA	Maldives Seafood Processors and Exporters Association
MPF	Meeting Participation Fund
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
n.a.	Not Applicable
NGO	Non-Governmental Organization
NPOA	National Plan of Action
OFCF	Overseas Fishery Cooperation Foundation of Japan

OM	Operating Model
OT	Overseas Territory
PS	Purse seine
PSA	Productivity Susceptibility Analysis
q	Catchability
RBC	Recommended Biological Catch
RFMO	Regional Fisheries Management Organisation
ROS	Regional Observer Scheme
RTTP-IO	Regional Tuna Tagging Project of the Indian Ocean
SB	Spawning stock Biomass (sometimes expressed as SSB)
SB_{MSY}	Spawning stock Biomass which produces MSY
SC	Scientific Committee (of the IOTC)
SCAF	Standing Committee on Administration and Finance (of the IOTC)
SE	Standard Error
SWIOFC	South West Indian Ocean Fisheries Commission
SS3	Stock Synthesis III
SSB	Spawning stock biomass
TAC	Total Allowable Catch
TAE	Total Allowable Effort
Taiwan,China	Taiwan, Province of China
TCAC	Technical Committee on Allocation Criteria
TCMP	Technical Committee on Management Procedures
tRFMO	tuna Regional Fisheries Management Organization
TRP	Target Reference Point
TrRP	Trigger Reference Point
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNGA	United Nations General Assembly
VMS	Vessel Monitoring System
WP	Working Party (of the IOTC)
WPB	Working Party on Billfish
WPEB	Working Party on Ecosystems and Bycatch
WPDCS	Working Party on Data Collection and Statistics
WPFC	Working Party on Fishing Capacity
WPM	Working Party on Methods
WPNT	Working Party on Neritic Tunas
WPTmT	Working Party on Temperate Tunas
WPTT	Working Party on Tropical Tunas
WPSE	Working Party on Socio-Economics

STANDARDISATION OF IOTC WORKING PARTY AND SCIENTIFIC COMMITTEE REPORT TERMINOLOGY

SC16.07 (para. 23) The SC **ADOPTED** the reporting terminology contained in Appendix IV and **RECOMMENDED** that the Commission considers adopting the standardised IOTC Report terminology, to further improve the clarity of information sharing from, and among its subsidiary bodies.

How to interpret terminology contained in this report

Level 1: From a subsidiary body of the Commission to the next level in the structure of the Commission:

RECOMMENDED, RECOMMENDATION: Any conclusion or request for an action to be undertaken, from a subsidiary body of the Commission (Committee or Working Party), which is to be formally provided to the next level in the structure of the Commission for its consideration/endorsement (e.g. from a Working Party to the Scientific Committee; from a Committee to the Commission). The intention is that the higher body will consider the recommended action for endorsement under its own mandate if the subsidiary body does not already have the required mandate. Ideally this should be task specific and contain a timeframe for completion.

Level 2: From a subsidiary body of the Commission to a CPC, the Secretariat, or other body (not the Commission) to carry out a specified task:

REQUESTED: This term should only be used by a subsidiary body of the Commission if it does not wish to have the request formally adopted/endorsed by the next level in the structure of the Commission. For example, if a committee wishes to seek additional input from a CPC on a particular topic but does not wish to formalise the request beyond the mandate of the Committee, it may request that a set action be undertaken. Ideally this should be task specific and contain a timeframe for the completion.

Level 3: General terms to be used for consistency:

AGREED: Any point of discussion from a meeting which the IOTC body considers to be an agreed course of action covered by its mandate, which has not already been dealt with under Level 1 or level 2 above; a general point of agreement among delegations/participants of a meeting which does not need to be considered/adopted by the next level in the Commission's structure.

NOTED/NOTING: Any point of discussion from a meeting which the IOTC body considers to be important enough to record in a meeting report for future reference.

Any other term: Any other term may be used in addition to the Level 3 terms to highlight to the readers of IOTC reports the importance of the relevant paragraph. However, other terms used are considered for explanatory/informational purposes only and shall have no higher rating within the reporting terminology hierarchy than Level 3, described above (e.g. **CONSIDERED**; **URGED**; **ACKNOWLEDGED**).

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EXECUTIVE SUMMARY

The 28th Session of the Indian Ocean Tuna Commission (IOTC) Scientific Committee (SC) was held in Shanghai, China and online, between 1 – 5 December 2025. A total of 172 delegates and other participants attended the Session (141 in 2024), comprised of 150 delegates (120 in 2024) from 27 Contracting Parties with no delegates from Cooperating Non-Contracting Parties, and 22 participants from 10 observer organisations (including the invited experts). The meeting was opened by the Chairperson, Dr Toshihide Kitakado (Japan), followed by welcoming remarks by Ms Huiying Zhang, the Bureau of Fisheries, Ministry of Agriculture and Rural Affairs of the People's Republic of China, and Prof Min Jiang, Vice President of Shanghai Ocean University who warmly greeted the participants. The list of participants is provided at Appendix 1.

The following are the recommendations regarding stock status from the 28th Session of the Scientific Committee. The full list of recommendations is provided in Appendix 40.

Tuna – Highly migratory species

SC28.01 (para. 267) The SC **RECOMMENDED** that the Commission note the management advice developed for each tropical and temperate tuna species as provided in the Executive Summary for each species, and the combined Kobe plot for the four species assigned a stock status in 2025 (Fig. 1):
Albacore (*Thunnus alalunga*) – Appendix 8
Bigeye tuna (*Thunnus obesus*) – Appendix 9
Skipjack tuna (*Katsuwonus pelamis*) – Appendix 10
Yellowfin tuna (*Thunnus albacares*) – Appendix 11

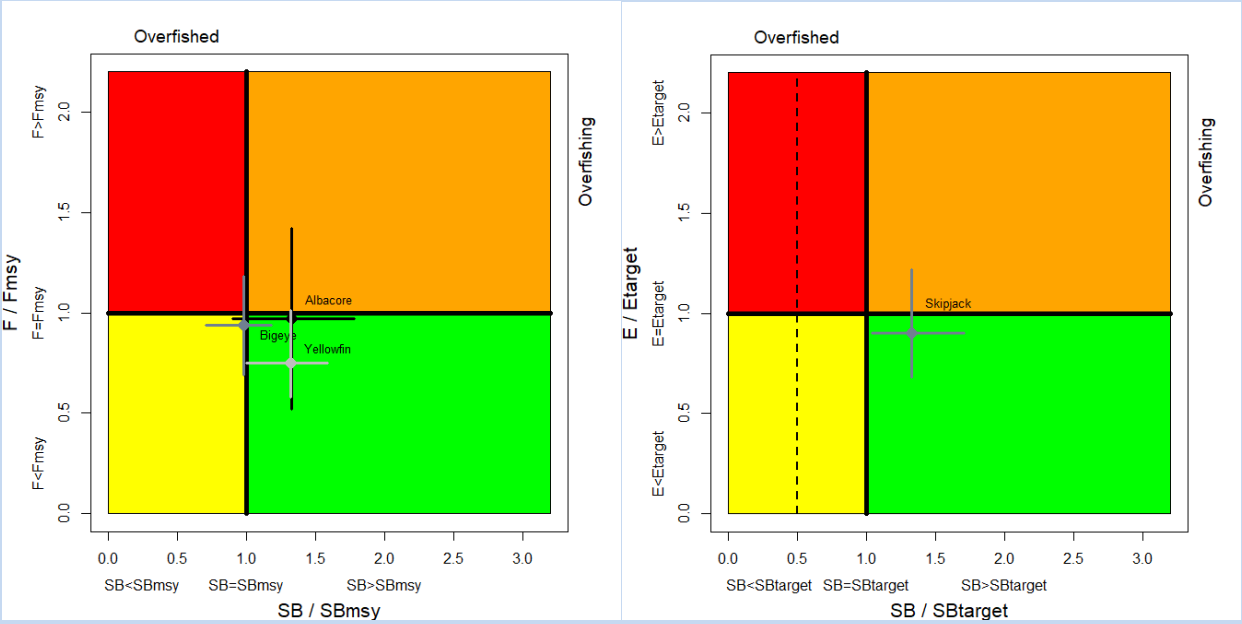

Fig. 1. (Left) Combined Kobe plot for bigeye tuna (black: status in 2024, based on the stock assessment conducted in 2025), and yellowfin tuna (light grey: 2023, with stock assessment conducted in 2024) and albacore (dark grey: 2020 with stock assessment conducted in 2022) showing the estimates of current spawning biomass (SB) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. (Right) Kobe plot for skipjack tuna (2022 with stock assessment conducted in 2023) showing the estimates of the current stock status (The dashed line indicates the limit reference point at 20%SB0 while SBtarget=0.4 SB0). Cross bars illustrate the range of uncertainty from the model runs with an 80% CI (95% CI for albacore).

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Tuna and seerfish – Neritic tuna species

SC28.02 (para. 269) The SC **RECOMMENDED** that the Commission note the management advice developed for each neritic tuna (and seerfish) species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2025 (Fig. 2):
Bullet tuna (*Auxis rochei*) – Appendix 12

Frigate tuna (*Auxis thazard*) – Appendix 13
Kawakawa (*Euthynnus affinis*) – Appendix 14
Longtail tuna (*Thunnus tonggol*) – Appendix 15
Indo-Pacific king mackerel (*Scomberomorus guttatus*) – Appendix 16
Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – Appendix 17

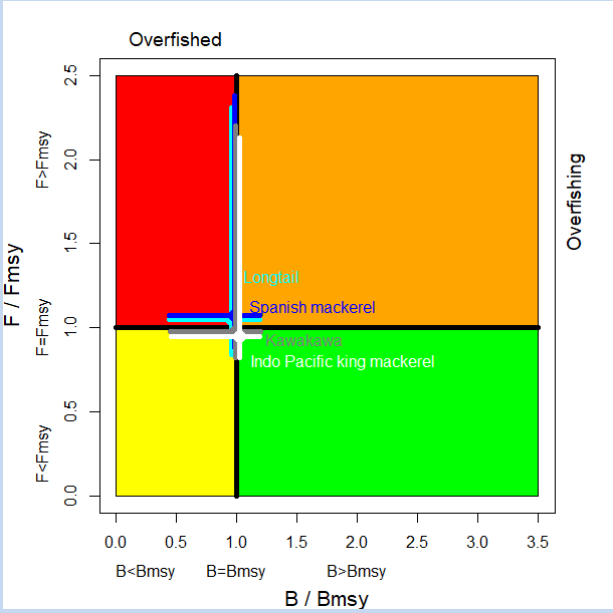

Fig. 2. Combined Kobe plot for longtail tuna (cyan), narrow-barred Spanish mackerel (blue), kawakawa (grey) (all for 2021 with stock assessment carried out in 2023) and Indo-Pacific king mackerel (2022 with stock assessment conducted in 2024 (white)), showing the estimates of stock size (B) and current fishing mortality (F) in relation to optimal biomass and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for bullet tuna, frigate tuna and narrow-barred Spanish mackerel should be interpreted with caution.

Billfish

SC28.03 (para. 270) The SC **RECOMMENDED** that the Commission note the management advice developed for each billfish species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the five species assigned a stock status in 2025 (Fig. 3):
Black marlin (*Istiompax indica*) – Appendix 18
Blue marlin (*Makaira nigricans*) – Appendix 19
Striped marlin (*Kajikia audax*) – Appendix 20
Indo-Pacific sailfish (*Istiophorus platypterus*) – Appendix 21
Swordfish (*Xiphias gladius*) – Appendix 22

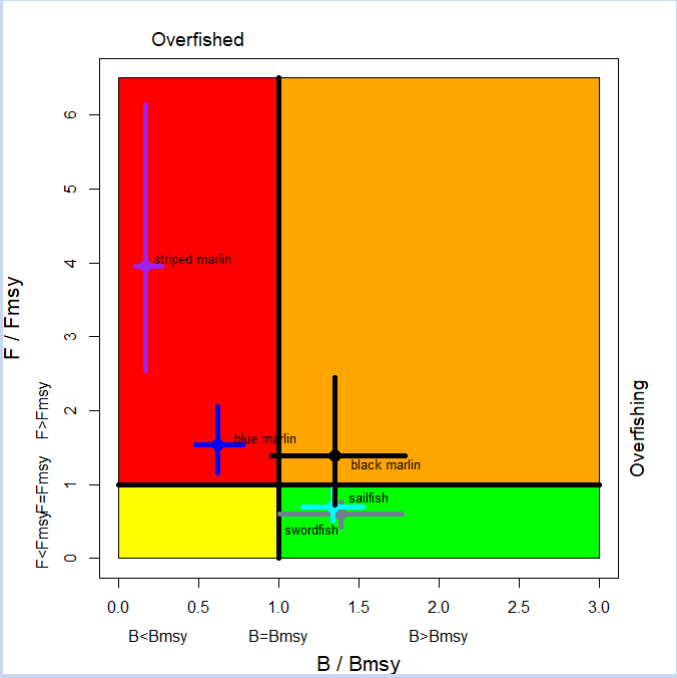

Fig. 3. Combined Kobe plot for swordfish (2021 with stock assessment conducted in 2023, grey), Indo-Pacific sailfish (2023 with stock assessment conducted in 2025, cyan), black marlin (2022 with stock assessment conducted in 2024, black), blue marlin (2023 with stock assessment conducted in 2025, blue) and striped marlin (2022 with stock assessment conducted in 2024, purple) showing the estimates of current stock size (SB or B, species stock assessment dependent) and current fishing mortality (F) in relation to optimal stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for black marlin is uncertain.

Sharks

SC28.04 (para. 271) The SC **RECOMMENDED** that the Commission note the management advice developed for a subset of shark species commonly caught in IOTC fisheries for tuna and tuna-like species:
Blue shark (*Prionace glauca*) – Appendix 23
Oceanic whitetip shark (*Carcharhinus longimanus*) – Appendix 24
Scalloped hammerhead shark (*Sphyrna lewini*) – Appendix 25
Shortfin mako shark (*Isurus oxyrinchus*) – Appendix 26
Silky shark (*Carcharhinus falciformis*) – Appendix 27
Bigeye thresher shark (*Alopias superciliosus*) – Appendix 28
Pelagic thresher shark (*Alopias pelagicus*) – Appendix 29
porbeagle shark (*Lamna nasus*) – Appendix 30

Marine turtles

SC28.05 (para. 272) The SC **RECOMMENDED** that the Commission note the management advice developed for marine turtles, as provided in the Executive Summary encompassing all six species found in the Indian Ocean:
Marine turtles – Appendix 31

Seabirds

SC28.06 (para. 273) The SC **RECOMMENDED** that the Commission note the management advice developed for seabirds, as provided in the Executive Summary encompassing all species commonly interacting with IOTC fisheries for tuna and tuna-like species:
Seabirds – Appendix 32

Marine Mammals

SC28.07 (para. 274) The SC **RECOMMENDED** that the Commission note the management advice developed for cetaceans, as provided in the newly developed Executive Summary encompassing all species commonly interacting with IOTC fisheries for tuna and tuna-like species:

Cetaceans – Appendix 33

Mobulids

SC28.08 (para. 275) SC **RECOMMENDED** that the Commission note the management advice developed for Mobulids, as provided in the newly developed Executive Summary which encompasses all species commonly interacting with IOTC fisheries for tuna and tuna-like species*:*

Mobulids – Appendix 34

GENERAL RECOMMENDATIONS TO THE COMMISSION

NATIONAL REPORTS FROM CPCS

SC28.09 (para. 30) The SC **RECOMMENDED** that the Compliance Committee and Commission note the lack of compliance by 2 Contracting Parties (Members) that did not submit a National Report to the Scientific Committee in 2025, **NOTING** that the Commission agreed that the submission of the annual reports to the Scientific Committee is mandatory**.**

Report of the 15th Session of the Working Party on Neritic Tunas (WPNT15)

SC28.10 (para. 71) **ACKNOWLEDGING** the difficulties associated with deriving geo-referenced size-frequency data at the spatial resolution of 5° grids in most coastal longline and surface fisheries, and the fact that most analyses currently used in the assessments, do not require such fine resolution, the SC **RECOMMENDED** the Commission to align the spatial resolution of size-frequency data with that of geo-referenced catch and effort data. Consequently, the data may be provided using an alternative geographical area if it better represents the fishery concerned. The SC **NOTED** that this recommendation is relevant for many IOTC species and has been reiterated by other WPs.

REPORT OF THE 23RD SESSION OF THE WORKING PARTY ON BILLFISH (WPB23)

SC28.11 (para. 98) The SC **NOTED** that, for several years, joint analyses combining catch and effort data from major longline fleets have been proposed to improve the CPUE index for billfish species, and that the WPEB had previously recommended investigating methods to compare CPUE indices across fleets and to develop joint CPUE indices for bycatch species. The SC also **NOTED** that these joint analyses could harmonize standardization methods, reconcile conflicts between indices developed from different fleets, and potentially produce more robust indices with broader spatial and temporal coverage. The SC further **NOTED** that it is at the discretion of CPCs to determine the feasibility of such collaboration, considering data confidentiality agreements and other logistical arrangements. The SC **AGREED** on the importance of establishing a process to discuss how to move forward. **NOTING** that joint CPUE analysis arrangements already exist for the standardization of tropical and temperate tuna, the SC **RECOMMENDED** that the Commission urge CPCs to explore ways to extend joint analyses to non-targeted species, such as marlins.

SC28.12 (para. 112) The SC **RECOMMENDED** that the Commission to give consideration to how best to financially and logistically support an experimental fishing trial with gillnets to be conducted by CPCs which would:

- Aim to test different setting depths and times of setting/soaking (e.g. day/night), on catch rates and mortality of interacting species
- Collect data on all interacting species including billfish bycatch, target tuna and vulnerable species (e.g. cetaceans, turtles), in order to provide the Commission a quantified understanding of likely effects and possible trade-offs of various subsurface setting options, on each species
- Prioritise accurate species identification.

REPORT OF THE 21TH SESSION OF THE WORKING PARTY ON ECOSYSTEMS AND BYCATCH (WPEB21)

SC28.13 (para. 116) **NOTING** that data for bycatch species in IOTC fisheries are severely lacking, the SC **RECOMMENDED** that the Commission and Compliance Committee **ENCOURAGE** CPCs to provide observer data and work to reach at least the 5% minimum coverage level as required by Resolution 25/06.

SC28.14 (para. 118) **NOTING** that Resolution 15/01 includes a list of species for which reporting catch data is mandatory/optional and that varies by gear and by fishery type (i.e. artisanal vs commercial fisheries), the SC **NOTED** that many species of interest to the WPEB are not mandatory for reporting for all gears or fishery type. The SC **NOTED** concerns from some CPCs that making these species mandatory for reporting for all gears and fleets (including artisanal fleets) could place additional burden on many CPCs. This is particularly the case for many coastal fleets which are not necessarily targeting only tuna but instead target a wide range of species, making data collection complex. The SC therefore **RECOMMENDED** that the Commission review the list of species that are mandatory for reporting to species level while considering the feasibility of such data collection for all CPCs. The SC included the following suggested changes:

- Silky sharks to be added also for gillnets fisheries
- Hammerhead sharks to be reported at species level at least for scalloped, smooth and great
- hammerhead sharks for all gear types (explicitly including purse seine fisheries)
- Mantas and devil rays to be reported at species level differentiating at least between manta ray (giant manta and reef manta) and other devil rays adding them for mandatory reporting at least for purse seine fisheries and for gillnet fisheries instead of optional
- Great white sharks as mandatory for all gear types
- Oceanic whitetip sharks as mandatory for all gear types

SC28.15 (para. 119) The SC **RECOMMENDED** that the Commission speak with CPCs to determine appropriate ways to improve data reporting from artisanal fisheries.

SC28.16 (para. 120) The SC **NOTED** that the WPEB had **REVIEWED** the minimum standards set out in Annex III of Resolution 25/08 and **ADOPTED** the revisions made by members of the group which can be found in Annex XVVII of the WPEB report. The SC **RECOMMENDED** that the Commission consider these standards for adoption in 2026. The SC further **NOTED** that work on best practice handling guidelines is ongoing and frequently evolves. The SC therefore **SUGGESTED** that the Commission consider adopting a master document containing handling guidelines for all taxa, rather than requiring Resolutions containing such guidelines to be updated when new information becomes available. Future Resolutions could then refer back to this master document adopted by the SC. The SC **AGREED** that a small working group will work on compiling these intersessionally for review by the SC.

SC28.17 (para. 121) The SC **NOTED** that in 2024, the WPEB recommended the adoption of a revised set of handling guidelines for mobulids while **NOTING** that work was required to further develop the guidelines for gillnets. The SC **NOTED** that the WPEB worked to further develop these guidelines which were revised and adopted. The SC **RECOMMENDED** that the Commission consider these revised handling guidelines for mobulids for consideration for adoption in 2026. The details of the suggested revisions to the handling procedures can be found in Appendix XVVI of the WPEB report.

SC28.18 (para. 122) The SC **NOTED** that while evidence on post-release survival of whale sharks from purse seine interactions suggests low mortality when best-practices are followed, data on bycatch in other fisheries, particularly gillnets, remains scarce. Therefore, the SC **RECOMMENDED** that the Commission **ENCOURAGE** CPCs to improve data collection and reporting for interactions with whale sharks involving all gear types as well as purse seine.

SC28.19 (para. 123) The SC **ENCOURAGED** efforts to clarify the extent and nature of whale shark interactions with IOTC fisheries, and to assess the current stock status within the IOTC area of competence, **ACKNOWLEDGING** that the extent of the vulnerability of whale sharks to IOTC fisheries is unknown. Based on the available information presented by the WPEB, the SC classified whale sharks in the Indian Ocean as a “taxon of the greatest

biological vulnerability and conservation concern for which there are very few data", as defined in Resolution 25/08 and **RECOMMENDED** that the Commission take appropriate action based on this classification. The SC **NOTED** that this classification supports the consideration of precautionary management measures and prioritization of future research and data collection efforts by the Commission.

STATUS OF DEVELOPMENT AND IMPLEMENTATION OF NATIONAL PLANS OF ACTION FOR SEABIRDS AND SHARKS, AND IMPLEMENTATION OF THE FAO GUIDELINES TO REDUCE MARINE TURTLE MORTALITY IN FISHING OPERATIONS

SC28.20 (para. 125) The SC **RECOMMENDED** that the Commission note the current status of development and implementation of National Plans of Action (NPOAs) for sharks and seabirds, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations, by each CPC as provided in Appendix 6, recalling that the IPOA-Seabirds and IPOA-Sharks were adopted by the FAO in 1999 and 2000, respectively, and recommended the development of NPOAs.

OTHER MATTERS

SC28.21 (para. 145) The SC **RECOMMENDED** that the Commission **ENCOURAGE** ongoing trials with these gears (i.e., loop gears) to better understand their effect on target and bycatch species.

REPORT OF THE 16TH SESSION OF THE WORKING PARTY ON METHODS (WPM16)

Bigeye tuna MP (Resolution 22/03)

SC28.22 (para. 211) The SC **NOTED** that 2024 catch of bigeye tuna (82,874 t) has exceeded the 2024 TAC (80,583 t), which is an exceptional circumstance, and as such, the SC **RECOMMENDED** that the Commission should ensure that the appropriate provisions (e.g., in paragraphs 4, 5 and 8) of 23/04 are implemented to ensure catches remain inside the TAC, conditional on the allowances and requirements of those provisions.

Skipjack tuna MP (Resolution 24/07)

SC28.23 (para. 212) The SC **NOTED** the 2025 running of the SKJ MP **NOTING** that the this generated an unconstrained TAC of 528,130 t, which is >10% lower than the TAC set for 2024–2026. By applying the maximum 10% decrease in the TAC as per Resolution 24/07, the SC **RECOMMENDED** the Commission to adopt the TAC for skipjack tuna of 565,745 t. per year for 2027–2029.

Swordfish tuna MP (Resolution 24/08)

SC28.24 (para. 216) The SC **RECOMMENDED** that the Commission urgently propose and adopt the TAC for swordfish resulting from the MP (Resolution 24/08, now superseded by 25/07) in 2026.

General MSE issues

SC28.25 (para. 222) The SC **NOTED** that there are confidentiality agreements between longline countries and various tuna RFMO Secretariats regarding the use of operational data (such as those in place with the WCPFC and IATTC) and NOTING the provisions to ensure confidentiality of the operational data submitted to the Secretariat in IOTC Resolution 12/02, the SC **RECOMMENDED** that the Commission explore potential arrangements between longline-fleet CPCs and the IOTC Secretariat, under strict confidentiality rules (similar to those outlined in Resolution 12/02), so that the Secretariat can use operational data and participate in, as well as support, the development of the joint longline CPUE index. The SC further **RECOMMENDED** exploring similar arrangements for other fleets.

REPORT OF THE 21TH SESSION OF THE WORKING PARTY ON DATA COLLECTION AND STATISTICS (WPDCS21)

SC28.26 (para. 236) The SC **RECOMMENDED** that the Commission ensures that the transition from the current website to the FAO one does not affect the operations of the Commission and set aside enough resources for this transition.

SUMMARY DISCUSSION OF MATTERS COMMON TO WORKING PARTIES

Observed issues related to IOTC Working Party meetings

SC28.27 (para. 245) The SC **NOTED** the increasing utilisation of the Meeting Participation Fund (MPF) during working parties, observing that this is a positive development which aligns with the Commission's objectives and the original purpose of the MPF. However, the SC **NOTED** a few cases where applicants did not fully meet the MPF requirements, such as failing to submit a complete paper or submitting papers not sufficiently relevant to the meeting's agenda. The SC **NOTED** that there is currently no precedent requiring a recipient to return funds in such situations. Consequently, to ensure the effective use of MPF resources, the SC **RECOMMENDED** that the Commission and SCAF discuss further actions.

Invited Expert(s) at the WP meetings

SC28.28 (para. 260) Given the importance of external independent review for working party meetings, the SC **RECOMMENDED** the Commission continues to allocate sufficient budget for Invited Experts to be regularly invited to scientific working party meetings. The SC **NOTED** that there are generally funds to support 3 or 4 Invited Experts to attend IOTC's working parties.

IOTC species identification guides: Tuna and tuna-like species

SC28.29 (para. 262) The SC reiterated its **RECOMMENDATION** that the Commission allocates budget towards continuing the translation and printing of the IOTC species ID guides so that hard copies of the identification cards can continue to be printed as many CPC scientific observers, both on board and at port need to have hard copies.

Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies

SC28.30 (para. 266) The SC **RECOMMENDED** that the Commission note and endorse the Chairpersons and Vice-Chairpersons for the SC and its subsidiary bodies for the coming years, as provided in Appendix 7.

PROGRAM OF WORK AND SCHEDULE OF WORKING PARTY AND SCIENTIFIC COMMITTEE MEETINGS

Consultants

SC28.31 (para. 293) **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in previous years, the SC **RECOMMENDED** that the engagement of consultants be continued for each coming year based on the Program of Work. Consultants will be hired to supplement the skill set available within the IOTC Secretariat and CPCs.

Data preparatory meetings and Hybrid meetings

SC28.32 (para. 295) **ACKNOWLEDGING** that holding data preparatory meetings prior to stock assessments is considered to be best practice and **NOTING** that since 2019 data preparatory meetings were successfully held for the WPTmT, WPTT and WPEB, the SC **AGREED** to continue the practice of having data preparatory meetings in addition to stock assessment meetings for the main IOTC species. The SC **RECOMMENDED** that data preparatory meetings could continue to be held virtually so as not to increase the travel and costs required for the already full IOTC timetable of meetings.

REVIEW OF THE DRAFT, AND ADOPTION OF THE REPORT OF THE 28TH SESSION OF THE SCIENTIFIC COMMITTEE

SC28.33 (para. 303) The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC25, provided at Appendix 40.

Table 1. Stock status summary for 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 within the EEZ of coastal states.

Stock	Indicators		2021	2022	2023	2024	2025	Advice to the Commission
Albacore *Thunnus alalunga*	Catch (2024) (t) Mean annual catch (2020-2024) (t) MSY (1,000 t) (95% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2023}/ F_{MSY} (80% CI) SB_{2023} / SB_{MSY} (80% CI) SB_{2023} / SB_0 (80% CI)	37,006 40,825 45 (35-55) 44.31 (37.15-51.64) 0.16 (0.15-0.17) 26.75 (22.34-31.29) 0.97(0.52-1.42) 1.33 (0.90-1.78) 0.285 (0.085-0.485)					54%	The stock status for albacore tuna has been assessed for 2025. 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 models used in 2025 are based on the models developed in 2019 and 2022 with a series of revisions that were noted during the 9th WPTmT data preparatory and assessment meetings held in April and July 2025 respectively. There are some noticeable changes compared to the previous data sets used as inputs into the assessment models: the CPUE indices have been estimated using updated methods (described during the 9th WPTmT assessment meeting); the length-frequency data have been updated and include additional data not available for the 2022 assessment. 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 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2024} / F_{MSY} (80% CI) SB_{2024} / SB_{MSY} (80% CI)	82,874 87,721 100 (94 – 106) 0.27 (0.21 – 0.33) 276 (143 – 409) 0.94 (0.69-1.18) 0.98 (0.71 – 1.25)		79%			**15.9%**	A new stock assessment was carried out for bigeye tuna in 2025 using Stock Synthesis to provide scientific advice. The 2025 stock assessment was built on the 2022 assessment model structure and incorporated new growth and natural mortality estimates. The model was fitted to regional joint longline CPUE indices, and the European Union (EU) purse seine index. The reported stock status is based on a grid of 36 model configurations designed to capture the uncertainty on stock recruitment relationship, longline selectivity, natural mortality and catchability dynamics. Overall, the stock assessment results suggest that bigeye biomass has nearly recovered to the target SB_{MSY} level. Considering the characterised uncertainty, the assessment indicates that:

								•there is a 54% probability that SB_{2024} is below SB_{MSY}, with median spawning biomass in 2024 estimated at 0.98 (0.71-1.25) times the level that can support MSY. • there is a 62% probability that F_{2024} is below F_{MSY}, with median fishing mortality (in 2024) estimated at 0.94 (0.69-1.18) times the F_{MSY} level. On the weight-of-evidence available in 2025, the bigeye tuna stock is determined to be **overfished** but **not 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 2024 (t) Average catch 2020-2024 (t) $E_{40\%SB0}$ (80% CI) SB_0 (1,000t) (80% CI) SB_{2022} (1,000t) (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 (1,000 t) (80% CI)	624,609 636,078 0.55 (0.48–0.65) 2 177 (1 869–2 465) 1 142 (842–1 461) 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 (512–686)			**70%**			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.** Skipjack tuna is currently subject to a Total Allowable Catch (TAC) of 628,606 t for 2024–2026. This TAC was determined by applying the skipjack Harvest Control Rule (HCR) as prescribed in Resolution 21/03 in 2023. The application of the skipjack tuna management procedure generated an unconstrained estimated TAC of 528,130 t which is more than 10% lower than the TAC set for 2024–2026. By applying the

								maximum 10% decrease in the TAC as per Resolution 24/03, the SC recommended a TAC of 565,745 t per year for 2027–2029 Click here for full stock status summary: Appendix 10
Yellowfin tuna *Thunnus albacares*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY_{recent} (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY_recent} (1,000 t) (80% CI) F_{2023} / F_{MSY} (80% CI) SB_{2023} / SB_{MSY_recent} (80% CI) SB_{2023} / SB_0 (80% CI)	489,742 440,206 421 (416-430) 0.2 (0.16-0.26) 1,063 (890-1,361) 0.75 (0.58-1.01) 1.32 (1.00-1.59) 0.44 (0.40-0.50)				**89%**		No new stock assessment was conducted in 2025. The stock status for yellowfin tuna was estimated based on the stock assessment carried out in 2024. The 2024 stock assessment was carried out using Stock Synthesis III (SS3), a fully integrated model that is currently used to provide scientific advice for the three tropical tunas stocks in the Indian Ocean. The model grid from this assessment was re-run in 2025 in light of errors identified and subsequent revisions to the standardised CPUE input data. However, none of the figures or tables have been updated, because a full stock assessment with the corrected CPUE has not been conducted. Based on 2024 evidence and a 2025 review, yellowfin tuna is estimated to be **not-overfished** and **not-subject to overfishing**. The review of the 2024 assessment grid in 2025 was deemed sufficient to extend the management advice provided in 2024. As such, the following advice was recommended: • If catches are maintained within the estimated MSY range (416,000-430,000 tons) there is more than a 50% probability that the stock will remain above SBMSY in 2033. • Higher levels of catch are predicted to lead the stock to an overfished state in the long term. • The probability of breaching the biological limit reference point (0.4SBMSY) with recent catches is 0% by 2033. The probability of breaching the F limit reference point (1.4 FMSY) with recent catch is 0% by 2033However, in order to account for the uncertainty of the projections (e.g., relating to whether estimated high recruitment will be maintained) and uncertainty not captured in the assessment grid (e.g. relating to the new CPUE indices), the Commission should set a TAC that does not exceed the median recent MSY estimate. • Results of the K2SM generated from the 2024 assessment is not used as catch advice. Noting these points, it is recommended that the Commission sets a TAC for the period 2026, 2027 and 2028 that does not exceed the median recent MSY estimate (421,000 t). The SC noted the catch level in 2024

								(489,742 t), and urged the Commission to ensure that the recommended TAC is not exceeded. The SC does not consider the need to advance the next yellowfin stock assessment, scheduled for 2027. 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		2021	2022	2023	2024	2025	Advice to the Commission
Bullet tuna *Auxis rochei*	Catch 2024 (t) Average catch 2030–2024 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) $F_{current}/F_{MSY}$ $B_{current}/B_{MSY}$ $B_{current}/B_0$	94,273 54,766 unknown unknown unknown unknown unknown unknown						No new stock assessment was conducted in 2025 for bullet tuna and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods, including C-MSY, LB-SPR, and fishblicc models (based on data up to 2022). 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 size-based assessment methods LB-SPR and FishBlicc using size data from gillnet and purse seine fisheries both estimated the current spawning potential ratio to be below the reference level of SPR40% (a proxy for 40% depletion often considered as the risk averse target in many data-poor fisheries). Due to a lack of fishery data for several fisheries, only preliminary stock status indicators (CPUE and average weight) 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 BMSY and FMSY 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 during early assessments to have been reached between 2009 and 2011 and both FMSY and BMSY were breached thereafter. It is worth noting that the catch in 2024 was estimated to be 94,273 and there has been significant variability in estimated catches of this species in recent years. This variation is perhaps due

								to issue of mis-identification of this species among other reasons. 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 continue to exceed the average catches estimated between 2009 and 2011 (19,580 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 2024 (t) Average catch 2020–2024 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) F_{2019}/F_{MSY} B_{2019}/B_{MSY} B_{2019}/B_0	144,768 108,557 unknown unknown unknown unknown unknown unknown						No new stock assessment was conducted in 2025 for frigate tuna and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods including CMSY, OCOM, LB-SPR and fishblicc models (based on data up to 2022). 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. However, the size-based assessment showed results with considerable uncertainty - LB-SPR estimated a SPR greater than the reference level of SPR40%, (a proxy for 40% depletion often considered as risk averse target in many data-poor fisheries) whereas the fishblicc estimated a SPR below the reference level. 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 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 during early assessments to have been reached between 2009 and 2011 and both FMSY and BMSY were breached thereafter. It is worth noting that the catch in 2024 was estimated to be 144,768t and there has been significant variability in estimated catches of this species in recent years. This variation is perhaps due to issue of mis-identification of this species among other reasons. In the absence of an accepted stock assessment for frigate tuna, a limit to the catches should be considered by the Commission, by ensuring

								that future catches do not continue to exceed the average catches estimated between 2009 and 2011 (75,830 t). The reference period (2009-2011) was chosen based on the most recent assessments of those neritic tuna species in the Indian Ocean for which an assessment is available under the assumption that MSY for frigate tuna was also 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 2024 (t) Mean annual catch 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	155,607 131,862 154 (122– 193) 0.60 (0.48 – 0.74) 258 (185 – 359) 0.98 (0.82–2.20) 0.99 (0.45 – 1.20)			**27%**			No new stock assessment was conducted in 2025 for kawakawa 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. Based on the weight-of-evidence available, the kawakawa stock for the Indian Ocean is classified as **overfished** but **not subject to overfishing**. The available gillnet CPUE of kawakawa showed a somewhat increasing trend although the reliability of the index as abundance indices remains unknown. Indonesia has recently revised its catch estimates for neritic tuna species. The updated catch for kawakawa 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. Click here for a full stock status summary: Appendix 14

Longtail tuna *Thunnus tonggol*	Catch 2024 (t) Mean annual catch (2020-2024) (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	148,681 136,857 133 (108 –165) 0.31 (0.22 – 0.44) 433 (272– 690) 1.05 (0.84 – 2.31) 0.96 (0.44 – 1.19)			**35%**			No new stock assessment was conducted for longtail tuna 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 as 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**. Click here for a full stock status summary: Appendix 15
Indo-Pacific king mackerel *Scomberomorus guttatus*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) F_{MSY} B_{MSY} (1,000 t) $F_{current}/F_{MSY}$ $B_{current}/B_{MSY}$ $B_{current}/B_0$	42,275 36,994 47 (39–56) 0.74 (0.56–0.99) 63 (43 –92) 0.95 (0.82–2.13) 1.02 (0.46–1.19) 0.51 (0.23–0.60)				**27%**		No new stock assessment was conducted for Indo-Pacific king mackerel in 2025 and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods including CMSY and CMSY++ (based on data up to 2022). Analysis using the catch only method CMSY indicates the stock is being exploited at a rate that is below FMSY in recent years and that the stock appears to be above BMSY, although the estimates would be more pessimistic if the stock productivity is assumed to be less resilient. An assessment using CMSY++ was also explored in 2024. The stock estimates with CMSY++ are estimated to be very close to the biomass target even though the stock status is more pessimistic than with CMSY. Despite some of the caveats of the underlying assumptions, 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 **not overfished** and **not subject to overfishing.** Reported catches of Indo-Pacific king mackerel in the Indian Ocean have increased considerably since the late 2000s. Indonesia has recently revised its catch estimates for neritic tunas and seerfish species. The updated catch for Indo-Pacific king mackerel 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. Click here for a full stock status summary: Appendix 16
Narrow-barred Spanish mackerel *Scomberomorus commerson*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t)(80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	157,754 138,169 161 (132– 197) 0.60 (0.48–0.74) 271 (197– 373) 1.07 (0.88 – 2.38) 0.98 (0.44 – 1.19)			**31%**			No new stock assessment was conducted in 2025 for narrow-barred Spanish mackerel 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. Based on the C-MSY assessment, the stock appears to be **overfished and subject to overfishing.** The available gillnet CPUE shows a somewhat increasing trend in recent years although the reliability of the index as an abundance index remains unknown. Indonesia has recently revised its catch estimates for neritic tuna and seerfish species. The updated catch for narrow-barred Spanish mackerel 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. 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		2021	2022	2023	2024	2025	Advice to the Commission
Black marlin *Istiompax indica*	Catch in 2024 (t) Average catch 2020–2024 (t) MSY (1,000 t) (95% CI) F_{MSY} (95% CI) B_{MSY} (1,000 t) (95% CI) F_{2022}/F_{MSY} (95% CI) B_{2022}/B_{MSY} (95% CI) B_{2022}/B_0 (95% CI)	27,266 22,408 13.90 (8.73 – 28.51) 0.21 (0.15 - 0.30) 65.23 (46.43-101.84) 1.39 (0.72 – 2.45) 1.35 (0.96 – 1.79) 0.49 (0.35 – 0.66)				**62.2%**		No new stock assessment was carried out for black marlin in 2025, thus, the stock status estimates are based on the stock assessment in 2024 using JABBA, a Bayesian state-space production model (using data up to 2022). Until 2024, fish stock status was characterised as "uncertain" due to significant uncertainties in past assessments (like those from 2018 and 2021). These uncertainties were attributed to both historical catch reporting from key fishing states and poor assessment diagnostics. However, there has been progress recently with black marlin catch data, particularly from coastal countries in the northern Indian Ocean, and the latest JABBA assessment shows it's now more reliable (with improved model fitting to the abundance indices and acceptable level of retrospective patterns). On the weight-of-evidence available in 2024, the stock status of black marlin is determined to be **not overfished** but **subject to overfishing**. The catch limits (9,932 t) as stipulated in Resolution 18/05 have been exceeded for four consecutive years since 2020, which as per resolution 18/05, requires a review of the resolution. Furthermore, these limits are not based on estimates from the most recent stock assessment. Thus, it is recommended that the Commission urgently revise 18/05 to incorporate limits that reflect the most recent stock assessment and projections and review and where necessary revise the implementation and effectiveness of the measures contained in this Resolution. The stock is now **subject to overfishing**. 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 less than 10,626 t. Click here for full stock status summary: Appendix 18

Blue marlin *Makaira nigricans*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) F_{2023}/F_{MSY} (80% CI) B_{2023}/B_{MSY} (80% CI) B_{2023}/B_0 (80% CI)	10,420 8,673 8.35 (7.52 –9.23) 0.30 (0.21 – 0.38) 27.92 (22.3 – 39.9) 1.54 (1.16 – 2.06) 0.62 (0.48 – 0.78) 0.23 (0.18 – 0.29)					**97.4%**	A new stock assessment was carried out for blue marlin in 2025 using two different models: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2023). Uncertainty in the biological parameters and the parameterisation of the SS3 model is still evident and as such the JABBA model (B2023/BMSY = 0.62, F2023/FMSY = 1.54) was selected as the base case. Both models were consistent with regards to stock status, although the SS3 model was less pessimistic. On the weight-of-evidence available in 2025, the stock is determined to be **overfished** and **subject to overfishing**. The catches of blue marlin (average of 7,262 t in the final 3 years examined in the assessment, 2021-2023) were lower than MSY (8,351 t), however the catch in 2024 was higher than MSY. The stock is currently overfished and subject to overfishing, and according to the KOBE plot (Fig. 3), has been in this state since 2001 (with ~ 80 % CI). According to K2SM calculated at the time of the assessment, a reduction of 20% of catches (5,809 t) compared to the mean of catches from 2021-2023 (7,262 t) would recover the stock to the green quadrant by 2035 with a probability of 64 % and if the catches are reduced by 40 % (4,357 t) the probability would be 86 %. 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 30 % more (3,579 t) than the new MSY estimated by the latest stock assessment in 2025 (8,351 t). Thus, it is recommended that the Commission urgently revise Resolution 18/05 to incorporate limits that reflect the most recent stock assessment and projections and review and strengthen the implementation and effectiveness of the measures contained in this Resolution. Click here for full stock status summary: Appendix 19
Striped marlin *Kajikia audax*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) (JABBA) MSY (1,000 t) (SS3) F_{MSY} (JABBA) F_{MSY} (SS3)	4,334 3,390 4.73 (4.22 – 5.24) 4.89 (4.48-5.30) 0.26 (0.20–0.35)				**100%**		No new stock assessment was carried out for striped marlin 2025, thus, the stock status estimates are based on two different assessment models carried out in 2024: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2022). Both models were generally consistent with regards to stock status and confirmed the results from 2012, 2013, 2015, 2017, 2018, and 2021 assessments. On the weight-of-evidence available in 2024, the stock status of striped marlin is determined to be **overfished** and **subject to overfishing.**

	F_{2022}/F_{MSY} (JABBA) F_{2022}/F_{MSY} (SS3) B_{2022}/B_{MSY} (JABBA) SB_{2022}/SB_{MSY} (SS3) B_{2022}/B_0(JABBA) SB_{2022}/SB_0 (SS3)	0.22 (0.21–0.24) 3.95 (2.54 - 6.14) 9.26 (5.38-13.14) 0.17 (0.11 - 0.27) 0.27 (0.19-0.35) 0.06 (0.04 – 0.10) 0.036 (0.03-0.04)						Current or increasing catches have a very high risk of further decline in the stock status. The 2024 catches (4,334 t) were lower than the estimated MSY (4,730 t) but are above the limit set by Resolution 18/05 (3,260 t) which may be a concern if this trend continues. However, the limit is not based on estimates of the most recent stock assessment. The stock has been overfished for more than a decade and is now in a highly depleted state. Based on the Kobe II strategy matrix run in 2024, a 70% reduction in the average 2020-22 catch of 2,891 t (i.e. to a catch of 867 t) would recover the stock to the green quadrant by 2032 with a probability of 78% and a 60% reduction in recent average catch (i.e. catch of 1,157 t) would achieve this with a probability of 58%. Thus, it is recommended that the Commission urgently revise Resolution 18/05 to incorporate limits that reflect the most recent stock assessment and projections, and review, and where necessary, revise the implementation and effectiveness of the measures contained in this Resolution Click here for full stock status summary: Appendix 20
Indo-Pacific Sailfish *Istiophorus platypterus*	Catch in 2024 (t) Average catch 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) F_{2023}/F_{MSY} (80% CI) B_{2023}/B_{MSY} (80% CI) B_{2023}/B_0 (80% CI)	40,682 36,390 34.3 (28.7 - 42.2) 0.20 (0.17 - 0.23) 174 (145 - 212) 0.69 (0.51 - 0.94) 1.34 (1.15 - 1.53) 0.67 (0.58 - 0.76)					**92.3%**	A new iteration of a Bayesian state-space production model (age-aggregated) JABBA stock assessment was carried out for Indo-Pacific Sailfish in 2025, using data up to 2023. Prior to this, in 2015 and 2019, data poor methods (Catch-MSY) were utilised to provide stock status for Indo-Pacific sailfish. To overcome the lack of standardised CPUE indices or alternative abundance indices for this species, this assessment followed the methods of the previous assessment in 2022 where length-frequency data were used to estimate the annual Spawning Potential Ratio (SPR) using the length-based spawning potential ratio (LBSPR) method. Annual estimates of SPR were then normalised in the JARA (Just Another Red List Assessment) model to provide an index that was assumed to be proportional to spawning biomass. This index was then incorporated as an index of relative abundance in a JABBA model On the weight-of-evidence available in 2025, the stock status of Indo-Pacific sailfish is determined to be **not overfished nor subject to overfishing.** Considerable uncertainty remains in the JABBA assessment conducted in 2025, however the trends in key model outputs align relatively well with the 2022 assessment. For this year, due to the uncertainty in the model outputs, the management advice from 2022 would be carried over for

								one year (1 year) to allow time to complete the simulation studies and provide updated management advice in 2026. It is anticipated that, once the underlying uncertainty in the JABBA assessment is understood and presented at the proposed WPB meeting next year, management advice can be updated. The catch limits as stipulated in Resolution 18/05 have been exceeded since 2020, which as per resolution 18/05, requires a review of the resolution. Furthermore, these limits are not based on estimates of most recent stock assessment. 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. Click here for full stock status summary: Appendix 21
Swordfish *Xiphias gladius*	Catch in 2024 (t) Average catch 2020-2024 (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_{1950} (80% CI)	28,097 27,651 30 (26–33) 0.16 (0.12–0.20) 55 (40–70) 0.60 (0.43–0.77) 1.39 (1.01–1.77) 0.35 (0.32–0.37)			**97%**			No new stock assessment was carried out for swordfish in 2025, thus the stock status is determined on basis of the 2022 assessment. Two models were applied to the swordfish stock (ASPIC and Stock Synthesis (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.** A revised management procedure for Indian Ocean Swordfish was adopted under Resolution 25/07 by the IOTC Commission in April 2025 following revision to correct a small error, and was applied to determine a recommended TAC for Swordfish for 2026, 2027 and 2028 of 30,527 t. A review of evidence for exceptional circumstances was conducted in 2025 following the adopted guideline (IOTC-2021-SC24-R, appendix 6A) as per the requirements of Resolution 25/07. The review did not identify any exceptional circumstances impacting on the application of the MP.

								The TAC recommended from the application of the MP specified in Resolution 25/07 for the period 2026-2028 is 30,527 t, which is around 12% higher than the catch in 2023 (26,836t). Noting that the Commission did not adopt an implementing measure for the TAC in 2025, the SC urgently recommended that the Commission adopt an implementing measure for the TAC in 2026. 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		2021	2022	2023	2024	2025	Advice to the Commission
Blue shark *Prionace glauca*	Reported catch 2024 (t) Estimated catch 2024 (t) Not elsewhere included (nei) sharks1 2024 (t) Average reported catch 2020-2024 (t) Average estimated catch 2020-2024 (t) Avg. not elsewhere included (nei) sharks 2020-2024 (t) MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) F_{2022}/F_{MSY} (80% CI) SB_{2022}/SB_{MSY} (80% CI) SB_{2022}/SB_0 (80% CI)	25,630 27,722 19,346t 15,753 26,690 25,350 t 30.81 (21.79 - 39.84) 0.18 (0.18 - 0.18) 52.87 (37.38 - 68.37) 0.39 (0.21 - 0.57) 2.22 (1.76 - 2.68) 0.73 (0.34 - 1.13)					**100%**	Two stock assessments were carried out for blue shark (BSH) in 2025: one using a Bayesian state-space surplus production model (JABBA) and another using an integrated age-structured model (SS3). Both assessments used data (catch and indices of abundance) from 1950 to 2023, although the model structure was inherently different. The SS3 model included annual length composition data where available. Uncertainty in data inputs and model configuration were explored through sensitivity analyses. All models produced similar results. On the weight-of-evidence available in 2025, the stock status is determined to be **not overfished** and **not subject to overfishing**. The SS3 assessment indicates current catches are near MSY, and significant increases could result in decreasing biomass and the stock becoming subject to overfishing in the future. The stock should be closely monitored, especially with respect to overall catch and discard reporting. 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: Appendix 23
Shortfin mako *Isurus oxyrinchus*	Reported catch 2024 (t) Catches reported to MAK in 2024 (t) Average catches reported to MAK 2020-2024 (t) Catches in 2024 (MAK, SMA, LMA) (t)	1,451 930 474 1,280				50%		In 2024 a stock assessment was carried out for the shortfin mako shark in the IOTC area of competence, using data until 2022. The model applied was a population biomass dynamics model using the platform JABBA. The stock status and projections were based on an ensemble grid of 9 models designed to capture the main uncertainties relating to biology (3 options) and the shape of the production curve used in biomass dynamics models (3 options). Considering the characterised uncertainty, and on the weight-of-

	Average catches 2020-2024 (MAK, SMA, LMA) (t) Not elsewhere included (nei) sharks 2024 (t) Average reported catch 2020-2024 (t) Av. Not elsewhere included (nei) sharks 2020-2024 (t) MSY (1,000 t) (80% CI) FMSY (80% CI) BMSY (1,000 t) (80% CI) F_{2022} /FMSY (80% CI) B_{2022} /BMSY (80% CI) B_{2022} /B0 (80% CI)	16,033 25,873 846 30,813 1.93 (0.99 – 3.31) 0.03 (0.01 – 0.07) 60.0 (35.7 – 103.8) 1.53 (0.65 – 3.71) 0.96 (0.58 – 1.41) 0.45 (0.27- 0.69)						evidence available in 2024, the shortfin mako shark stock is determined to be **overfished** and **subject to overfishing**. The Commission should take a cautious approach by implementing management actions that reduce fishing mortality on shortfin mako sharks, and the stock should be closely monitored. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform future scientific advice. In order to have a lower than 50% probability of exceeding MSY-reference points in 10 years, i.e., to recover the stock to the green quadrant of the Kobe plot with at least 50% probability in 10 years, future catches should not exceed 40% of the average catches between 2020-2022 (i.e., last 3 year of catches used in the model). This corresponds to an annual TAC of 1,217.2 t (representing all fishing mortality including retention, dead discards and post-release mortality), noting that this TAC level should include and account for the SMA, MAK and MSK species codes as reported to IOTC Click below for a full stock status summary: Appendix 26
Oceanic whitetip shark *Carcharhinus longimanus*	Reported catch 2024 (t) Not elsewhere included (nei) sharks 2024 (t)	901 15,55						Click below for a full stock status summary: Oceanic whitetip sharks – Appendix 24

	Average reported catch 2020–2024 (t) Ave. (nei) sharks 2020–2024 (t)	9 541 24,593						Scalloped hammerhead sharks – Appendix 25 Silky sharks– Appendix 27 Bigeye thresher sharks– Appendix 28 Pelagic thresher sharks– Appendix 29 porbeagle sharks– Appendix 30 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.
Scalloped hammerhead shark *Sphyrna lewini*	Reported catch 2024 (t) Not elsewhere included (nei) sharks 2024 (t) Average reported catch 2020–2024 (t) Ave. (nei) sharks 2020–2024 (t)	1,537 15,694 766 24,976						
Silky shark *Carcharhinus falciformis*	Reported catch 2024 (t) Not elsewhere included (nei) sharks 2024 (t) Average reported catch 2020–2024 (t) Ave. (nei) sharks 2020–2024 (t)	1,591 15,559 2,062 24,593						
Bigeye thresher shark *Alopias superciliosus*	Reported catch 2024 (t) Not elsewhere included (nei) sharks2 2024 (t) Thresher sharks nei 2024 (t) Average reported catch 2020-2024 (t) Av. Not elsewhere included (nei) sharks 2020-2024 (t)	< 1 15,559 <1 <1 24,976						

	Av. Thresher sharks nei 2020-2024 (t)	383						
Pelagic thresher shark *Alopias pelagicus*	Reported catch 2024 (t) Not elsewhere included (nei) sharks 2024 (t) Thresher sharks nei 2024 (t) Average reported catch 2020-2024 (t) Av. Not elsewhere included (nei) sharks2 2020-2024 (t) Av. Thresher sharks nei 2020-2024 (t)	145 15,559 <1 149 24,976 383						
Porbeagle shark *Lamna nasus*	Reported catch 2024 (t) Not elsewhere included (nei) sharks1 2024 (t) Average reported catch 2020-24 (t) Avg. not elsewhere included (nei) sharks1 2020-24 (t)	<1 15,559 <1 24,593						

*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		

1. Opening of the meeting

1. The 28th Session of the Indian Ocean Tuna Commission (IOTC) Scientific Committee (SC) was held in Shanghai, China and online, between 1 – 5 December 2025. A total of 172 delegates and other participants attended the Session (141 in 2024), comprised of 150 delegates (120 in 2024) from 27 Contracting Parties with no delegates from Cooperating Non-Contracting Parties, and 22 participants from 10 observer organisations (including the invited experts). The meeting was opened by the Chairperson, Dr Toshihide Kitakado (Japan), followed by welcoming remarks by Ms Huiying Zhang, the Bureau of Fisheries, Ministry of Agriculture and Rural Affairs of the People's Republic of China, and Professor Min Jiang, Vice President of Shanghai Ocean University who warmly greeted the participants. The list of participants is provided at **Appendix 1**.

2. Adoption of the agenda and arrangements for the session

2. The SC **ADOPTED** the Agenda provided at **Appendix 2**. The documents presented to the SC are listed in **Appendix 3**.

3. Admission of observers

3. The SC admitted the following observers, in accordance with Rule XIV of the IOTC Rules of Procedure (2014):

3.1. Non-governmental and Inter-governmental Organisations (NGOs)

- Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- International Pole and Line Foundation (IPNLF)
- International Seafood Sustainability Foundation (ISSF)
- Marine Stewardship Council (MSC)
- Pew Charitable Trusts (PEW)
- Sustainable Fisheries And Communities Trust (SFACT)
- Shark Trust
- SWIOTUNA
- The Ocean Foundation
- Invited Experts

4. Decision of the Commission related to the work of the Scientific Committee

4.1. Outcomes of *the 29th Session of the Commission*

4. The SC **NOTED** paper IOTC–2025–SC28–03 which outlined the decisions and requests made by the Commission at its 29th Session, held in April 2025, that related to the IOTC science processes. The SC **NOTED** that 14 new CMMs were adopted in 2025 by the Commission (consisting of 12 Resolutions and 2 Recommendations).

5. The SC **NOTED** that the current Compendium of Active Conservation and Management Measures for the Indian Ocean Tuna Commission may be downloaded from the IOTC website at the following link:
   English: http://iotc.org/cmms
   French: http://iotc.org/fr/mcgs

6. **NOTING** that the 29th Session of the Commission also made general comments and requests regarding the recommendations made by the Scientific Committee in 2024, the SC **AGREED** that any advice to the Commission would be provided in the relevant sections of this report.

4.2. Previous decisions of the Commission

7. The SC **NOTED** paper IOTC–2025–SC28–04 which outlined the decisions by the Commission, in the form of previous Resolutions that require a response from the SC in 2025 and **AGREED** to develop advice to the Commission in response to each request during the current Session.

8. The SC **NOTED** that there was a need to provide capacity building to facilitate better understanding of climate change issues and **NOTED** that tools should be developed to assist scientists in making progress on this topic.

5. Science related activities of the IOTC Secretariat in 2025

5.1. Report *of the Secretariat – Activities in support of the IOTC science process in 2025*

9. The SC **NOTED** paper IOTC–2025–SC28–05 which provided an overview of the work undertaken by the IOTC Secretariat in 2025 and **CONGRATULATED** the IOTC Secretariat for its contributions to the science processes this year. These contributions included support to the Working Groups, Working Parties and Scientific Committee meetings; the facilitation of the IOTC Meeting Participation Fund; assisting in improvements made in the quality of the data sets being collected and submitted to the IOTC Secretariat; capacity building activities; recruitment and management of consultants; oversight of scientific projects and facilitation of the attendance of the invited scientific experts that support IOTC technical meetings.

10. The SC **THANKED** the Secretariat for the successful organization and completion of the different Working Party meetings in 2025 using a combination of virtual and hybrid meetings. The SC **NOTED** the technical challenges posed by the hybrid meetings (additional cost of equipment, audio issues, internet connections, time zones and duration).

11. The SC **NOTED** that, in line with its agreement in 2022, virtual meetings were still conducted for certain meetings (such as Data preparatory meetings and Working Groups) to reduce the travel expenses imposed on Contracting Parties (Members) and Cooperating Non-Contracting Parties (collectively termed CPCs) as well as on the IOTC MPF.

12. The SC **NOTED** the completion of the recruitment process for the P3 Data Officer position within the Secretariat. The new Data Officer is expected to start in early 2026. The SC also **NOTED** the new Fisheries Officer (Stock Assessment) Officer took up the position in early 2025.

13. The SC **NOTED** that in 2025, Secretariat staff continued to support collaborations and participated in several meetings with other organisations. The SC **ENCOURAGED** these ongoing collaborations.

14. The SC **ACKNOWLEDGED** and **CONGRATULATED** the Data Section of the IOTC Secretariat on their work and for the numerous important activities carried out so far, including capacity building workshops to assist CPCs in formatting and reporting their fisheries data to the Secretariat in accordance with IOTC data reporting requirements.

15. The SC **NOTED** that the Secretariat conducted several data support missions in 2025. These missions took place in Sri Lanka, Kenya, Madagascar, Indonesia, and India to review and improve their data collection and reporting systems, aiming to meet IOTC standards.

16. The SC **NOTED** that the report highlighted several issues with IOTC Working Party meetings in recent years. These include administration with the application of MPF funds, compliance with Working Paper submission deadlines, the handling of Information Papers during meetings, decisions made in Data Preparation meetings regarding data provision for assessments, and the costs associated with hybrid meetings. The SC **RECOGNISED** that these issues have affected the efficiency and functioning of Working Party meetings and require guidance and solutions.

17. The SC **AGREED** that while some of these issues may be relatively straightforward to resolve, others will require further discussion. The SC also **NOTED** broader concerns related to the Rules of Procedure for IOTC meetings, which were discussed at the 2025 Commission meeting through a paper submitted by Japan (IOTC-2025-S29-08). The SC **NOTED** that the Commission is currently reviewing IOTC meeting procedures and has requested the

formation of a small informal working group to conduct a comprehensive review of IOTC meetings (see Para 16 of IOTC-2025-S29-R). The SC further **DISCUSSED** these issues under Agenda Item 7.9.1.

6. National reports from CPCs

6.1. National Reporting to the Scientific Committee: overview

18. The SC **NOTED** that 28 National Reports were submitted to the IOTC Secretariat in 2025 by CPCs (27 by CPs and 1 by a CNCP) (as well as a report by the invited experts, Taiwan,China). The abstracts of CPC reports are provided in Appendix 5.

19. The SC **RECALLED** that the purpose of the National Reports is to provide relevant information to the SC on fishing activities of CPCs operating in the IOTC area of competence. The report should include all fishing activities for species under the IOTC mandate as well as sharks and other byproduct/bycatch species as required by the IOTC Agreement and decisions by the Commission.

20. The SC **RECALLED** that the submission of a National Report is mandatory, irrespective of whether a CPC intends on attending the annual meeting of the SC or not and shall be submitted no later than 15 days prior to the SC meeting. In 2025, of the 28 National Reports submitted, one was submitted shortly after the deadline. Sudan and Yemen did not submit their National Report in 2025. The SC **NOTED** the importance of consistency and standardisation in the format of reporting on fisheries in National Reports and again **REQUESTED** that CPCs follow the reporting template agreed by the Commission. The SC also **NOTED** that Sudan provided credentials for the SC meeting and **ENCOURAGED** Sudan to provide a National Report in the future.

21. The SC **NOTED** that in 2025, all National Reports were submitted using the latest reporting templates through the E-Maris platform. The Secretariat informed the SC that the latest template will continue to be published on the IOTC webpage (https://iotc.org/science), the SC meeting page and distributed through an Official Circular as requested by the SC in 2020.

22. In addition, the SC **NOTED** that the availability for download of the revised National Report templates from the IOTC Website was announced through IOTC Circular 2025/21 sent on the 7th of July 2025 as well as through the IOTC Science Mailing List.

23. The SC **RECALLED** that the National Reports contain different subsections that specifically cover all important reporting components from the various IOTC Resolutions and confirmed that the format of National Reports is frequently updated by the IOTC Secretariat to ensure full accordance with the Resolutions' requirements.

24. The SC **AGREED** that if required, interested CPCs should seek assistance from the IOTC Secretariat in the development of National Reports. Requests should be made as early as possible so that the IOTC Secretariat may be able to better coordinate the resources available.

25. The SC **NOTED** that there was an increase in the submission of National reports by CPCs in 2025 when compared with the 27 reports provided by CPCs in 2024 (25 in 2023, 26 in 2022, 21 in 2021, 25 in 2020, and 23 in 2019; see Table 2).

26. The SC **NOTED** that mandatory scientific and statistical information such as discard levels, observer coverage, fleet statistics etc., which are of relevance for several IOTC Resolutions, is often only reported by CPCs in their National Reports but not made available to the IOTC Secretariat in due time and in accordance with the reporting requirements prescribed in the Resolutions.

27. The SC **RECALLED** that the National Report does not replace the need for submission of data according to the IOTC Mandatory Data Requirements listed in the relevant IOTC Resolutions (and in particular Resolution 15/02).

28. For these reasons, the SC **REQUESTED** all CPCs to ensure that information and data presented in the respective National Reports and the official submissions available to the IOTC are in agreement with each other.

Table 2. CPC submission of National Reports to the SC from 2015 to 2025.

CPC	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Contracting Parties (Members)											
Australia											
Bangladesh											
China											
Comoros											
European Union											
France (OT)											
India											
Indonesia											
Iran, Islamic Rep. of											
Japan											
Kenya											
Korea, Republic of											
Madagascar											
Malaysia											
Maldives, Rep. of											
Mauritius											
Mozambique											
Oman, Sultanate of											
Pakistan											
Philippines											
Seychelles, Rep. of											
Somalia											
Sri Lanka											
South Africa, Rep. of											
Sudan											
Tanzania, United Republic of											
Thailand											
United Kingdom											
Yemen											
Cooperating Non-Contracting Parties											
Liberia											

Green = submitted. Red = not submitted. Orange = Submitted using an outdated template or late n.a. = not applicable (not a CPC in that year). **Note**: the deadline for submission was 16 November 2025.

6.2. Contracting Parties (Members)

29. The SC **NOTED** that in 2025 the Secretariat provided translations of all the submitted National report summaries in both English and French in response to the SC request in 2018.

30. The SC **RECOMMENDED** that the Compliance Committee and Commission note the lack of compliance by 2 Contracting Parties (Members) that did not submit a National Report to the Scientific Committee in 2025, **NOTING** that the Commission agreed that the submission of the annual reports to the Scientific Committee is mandatory.

31. The SC **NOTED** India's request to submit a revised National Report due to some minor corrections being needed.

32. The SC **NOTED** that the number of Indonesian industrial purse seiners reported in their National Report (IOTC-2025-SC29-NR09) has increased in recent years by approximately 30%, while catches have declined by about 3–

5%, and **QUERIED** Indonesia on the reasons for this trend. Indonesia informed the SC that the increase in vessel numbers did not translate into higher actual fishing effort, as fishing trips have become shorter in recent years.

33. The SC **NOTED** that effort maps included in the National Report of Malaysia (IOTC–2025–SC28–NR15) are made of circles that are not positioned at the centre of the 5x5 grid areas but at the intersections of the grid lines, and **REQUESTED** Malysia to correct these maps in the future to align them with standard maps of effort distribution.

34. The SC **NOTED** the comments made by Oman that their National Report (IOTC–2025–SC28–NR19) will be improved and harmonised in the future to fully comply with IOTC standards. The SC **ACKNOWLEDGED** that Oman greatly improved the data submitted to IOTC for the statistical year 2024, using the IOTC reporting form templates, further **NOTING** that Oman will continue working on improving their submissions in the future.

35. The SC **NOTED** that Oman has made good progress with reviewing their data collection and processing system for the management of coastal fisheries data, further **NOTING** that the retrospective analysis enabled to better understand the internal and external factors explaining the substantial increase in catches reported for yellowfin tuna during 2019-2022.

36. The SC **NOTED** that Oman is undertaking a retrospective re-estimation analysis of their reported catches 2014-2024, which affects the IOTC species taken in their coastal fisheries including yellowfin, with the method and preliminary findings having been reported to the WPDCS

37. The SC **NOTED** Oman's comment that the preliminary results of the Omani retrospective analysis indicate that the total catch of yellowfin tuna taken in the handline fishery is likely to have reduced by approximatively 10-15%, with the final results being planned to be presented at the next WPDCS22 that will be held in late 2026.

38. The SC **NOTED** that Somalia has implemented a robust, phased monitoring programme since 2018, culminating in the 2024–2025 cycle with systematic port sampling at six landing sites, 5% observer coverage, and detailed catch, effort, and length-frequency data. This programme has enabled the first reliable baseline for Somalia's tuna fishery, leading to increased reported catches that better reflect the historically underestimated potential of its productive EEZ. Somalia's data now meet IOTC reporting standards under Resolutions 15/01 and 15/02, representing a significant step toward full compliance and improved regional data coverage.

39. The SC **NOTED** the progressive increase in reported catches within Somalia's time series, as presented in document IOTC-2025-SC28-NR23. This trend was attributed by the CPC to the phased implementation of its systematic national monitoring programme since 2018. The increase is considered a methodological correction to establish a reliable baseline for a historically data-poor EEZ, providing the first empirical data series from the Somali pelagic fishery for consideration in stock assessments.

40. The SC **ACKNOWLEDGED** the explanation provided by Somalia (IOTC-2025-SC28-NR23) that the progressive increase in its reported catch time series since 2019 results from the phased implementation of a systematic national monitoring programme. This programme, operationalised through a network of six core landing sites (LS1–LS6) with documented observer coverage and port sampling, represents a methodological correction to establish a reliable empirical baseline for a historically under-reported EEZ, rather than an anomalous increase in fishing activity.

6.3. Cooperating Non-Contracting Parties (CNCPs)

41. The SC **NOTED** that one National Report was submitted to the IOTC Secretariat in 2025 by a Cooperating Non-Contracting Party (CNCP).

6.4. Invited Experts

42. The SC **NOTED** the report provided by the Invited Experts from Taiwan,China which outlined fishing activities in the IOTC Area of Competence. The report from the Invited Experts is available upon request,

7. Report of the 2025 IOTC Working Party Meetings tunas

7.1. Report of the 2nd Session of the IOTC Working Party on Socio-Economics

43. The SC **NOTED** the report of the 2nd Session of the Working Party on Socio-Economics (IOTC–2025–WPSE02–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was held online and attended by 50 participants (cf. 69 in 2024).

44. The SC **THANKED** the chair for the comprehensive and clear presentation summarising the main outcomes of the WPSE meeting.

45. The SC **NOTED** that the consultant provided the WPSE with useful and relevant information on socio-economic data pertinent to tuna fisheries, including a proposed set of socio-economic indicators for monitoring these fisheries, several of which were identified through the scoping study conducted for the Commission in 2019 (IOTC-2024-WPSE01-INF03).

46. The SC **NOTED** the WPSE Chair's summary of socio-economic information available from FAO, including production, employment, fleet, trade and market intelligence, while recognising that many datasets are available only at regional or global scales.

47. The SC **NOTED** the persistent gaps in socio-economic data, largely due to incomplete or under-reported national statistics, especially for employment in support industries and fisheries-related services.

48. The SC **NOTED** the wide variation in socio-economic indicators collected by coastal States, with many reported only at aggregated primary-sector levels and limited fisheries-specific or species-specific information, although some countries report employment by gender and income level.

49. The SC **NOTED** the outcomes from paper IOTC-2025-WPSE02-06 presented at the WPSE on the economics of tuna gillnet fisheries in Pakistan which indicated that these fisheries are profitable, with incomes for crew and captains higher than in other fisheries, but that they incur initial important investments and have high fuel and operating costs. The WPSE further **NOTED** that the need to enhance the collection of fisheries data in Pakistan to better understand the dynamics of the fisheries sector.

50. The SC **NOTED** that the data used in this study were provided by WWF-Pakistan, and that they may not reflect accurately the economic status of the tuna gillnet fisheries of Pakistan. The SC further **NOTED** that some major improvements have been recently made with fisheries data collection and management in Pakistan, including the use of digital solutions, and that some economic data are now available and could be provided to support the work of the WPSE.

51. The SC **NOTED** the statement by the invited expert that firstly, supplementary analyses (not presented to the SC) were conducted to assess the impacts of a wire-leader ban on the large-scale longline fisheries from Taiwan,China, and secondly that the analyses confirmed that the expected strong negative repercussions on the fishery, initially estimated at more than $40 million USD in total losses, as well as major impacts on Donggang processing families and tourism workers.

7.2. Report of the 15th Session of the Working Party on Neritic Tunas (WPNT15)

52. The SC **NOTED** the report of the 15th Session of the Working Party on Neritic Tunas (IOTC–2025–WPNT15–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 40 participants (cf. 47 in 2024). Eight participants received funding through the MPF.

53. The SC **NOTED** the increasing number of participants and papers at WPNT meetings.

54. The SC **NOTED** that this year the WPNT focused on genetic techniques for estimating population structure, highlighting that this topic is more critical for neritic tuna species than for tropical tunas due to their more complex population structures, which can undermine stock assessments conducted on an ocean-wide basis.

55. The SC **NOTED** that understanding stock structure should be the basis for management and assessment of these species, underscoring the need to enhance genetics work and Close-Kin Mark-Recapture (CKMR) studies. The SC therefore **ENCOURAGED** further work in this area, covering sampling regions not yet covered and applying CKMR and other genetic techniques to these species.

56. The SC **NOTED** that the Secretariat will shortly be starting a pilot study to develop a wider sampling programme which can be used to support future genetic research among other studies.

57. The SC **NOTED** that Sri Lanka presented a paper to the WPNT on conducting molecular research on neritic tuna species and encouraged other countries to conduct similar genetic studies.

58. The SC **NOTED** that the stock status of bullet and frigate tuna remain unknown and so highlighted the need to find a way to secure datasets from coastal countries harvesting these species that would allow the WPNT to conduct stock assessments and determine their stock status. The SC therefore **ENCOURAGED** coastal CPCs to work to provide more robust catch and length-frequency data for these species to the Secretariat. The SC **ACKNOWLEDGED** that differentiating between these two species can be difficult, complicating data collection. The SC **NOTED** that species identification tools and an application developed by OFCF have been presented to several working parties and **NOTED** that these should be helpful tools to overcome this challenge of species mis-identification.

59. The SC **NOTED** that the WPNT relies on data-poor, catch-only methods to assess the species under their remit which carry high uncertainty and depend on many assumptions. The SC **NOTED** that improved catch data reporting is essential for these methods to work, and that the high uncertainty in catch statistics for bullet and frigate tuna makes robust stock assessments challenging.

60. The SC **SUPPORTED** a proposed consultancy to review the current data quality scoring system used by the Secretariat.

61. The SC **NOTED** Indonesia's data revision, which showed increasing catches for bullet tuna among the six species under the WPNT's remit, with Indonesia contributing over 50% of the total bullet tuna catches. The SC **NOTED** the concern that, as neritic tuna species are caught together, the opposing trends for bullet tuna (increasing) compared with other neritic tuna species (decreasing) are not logical, and so **ENCOURAGED** Indonesia to further investigate these catch series.

62. The SC **NOTED** that the WPNT is exploring alternative data-poor methods that utilise length-frequency data. The SC **REQUESTED** countries harvesting these species to work to improve their length frequency data, with support from the Secretariat, to make the future assessments feasible and less uncertain.

63. The SC **NOTED** the increasing catches for bullet tuna and the constraints faced by IOTC's Working Parties in standardising effort units for these fisheries. The SC **NOTED** that this issue was discussed by the WPDCS who **NOTED** the need to understand the drivers behind these catch trends.

64. The SC **NOTED** that assessing neritic tuna species is difficult due to complex fisheries, stock structures, species identification, and fishing localities. The SC **NOTED** the repeated cautions about the poor status of some neritic species and **REQUESTED** that the WPNT consider management measures that could be recommended for adoption by the Commission to ensure the long-term sustainability of these valuable resources.

65. **NOTING** the importance of neritic tuna species to many coastal CPCs, the SC **NOTED** suggestions to incorporate socio-economic indicators relating to these fisheries into the work and assessments of the WPNT.

66. **CONSIDERING** the relatively short life of the neritic tuna species, the SC **NOTED** that, to date, the impacts of climate change on their life history characteristics have not been studied in any detail by the WPNT. The SC **NOTED** that many coastal countries' have been increasing their catches of small pelagic species (a key food source for tuna) which could be impacting the populations of neritic tuna species. However, the SC **NOTED** that catches of most neritic tuna species appear to have been increasing annually.

67. The SC **NOTED** that applying integrated stock assessment models such as Stock Synthesis to neritic tuna species is unlikely to succeed given lack of data for neritic tunas, and so **ENCOURAGED** the WPNT to continue to investigate alternative, data-poor methods.

68. The SC **NOTED** a suggestion that, as an IOTC subsidiary of the FAO, contact could be made with FAO experts who are in the process of conducting extensive capacity building activities including work on stock assessments and data improvements, **NOTING** that they may have tools and suggestions for how coastal CPCs and the WPNT can work towards improving the knowledge of the status of these stocks.

69. The SC **NOTED** that the narrow-barred Spanish mackerel is important for Arabian Sea countries and has substantial length-frequency data, unlike Indo-Pacific king mackerel, which has low catches in this area.

70. The SC **NOTED** that significant revisions to the catch time series of several neritic tunas (subsequent to their last assessment) means there is now increased uncertainty pertaining to those species current status and associated management advice due to current estimates of MSY no longer being valid.

71. **ACKNOWLEDGING** the difficulties associated with deriving geo-referenced size-frequency data at the spatial resolution of 5° grids in most coastal longline and surface fisheries, and the fact that most analyses currently used in the assessments, do not require such fine resolution, the SC **RECOMMENDED** the Commission to align the spatial resolution of size-frequency data with that of geo-referenced catch and effort data. Consequently, the data may be provided using an alternative geographical area if it better represents the fishery concerned. The SC **NOTED** that this recommendation is relevant for many IOTC species and has been reiterated by other WPs.

72. The SC **NOTED** that Pakistan and India have improved their participation in the WPNT and other WPs in 2025 compared to previous years and **ENCOURAGED** this to continue.

73. **NOTING** the decline in participation and the reduced number of paper submissions in recent years, which has resulted in shorter meetings, the SC **CONSIDERED** setting the WPNT meeting duration to four days as a standard. However, it also **SUGGESTED** retaining flexibility to extend the meeting when necessary, such as when a training workshop is requested by CPCs for inclusion in the agenda. **NOTING** that in 2026 the WPNT will be carrying out assessments for three species, the SC **SUGGESTED** that it may be beneficial to retain the 5-day meeting period for next year to ensure that there is time to conduct any required capacity building activities in addition to these assessments.

7.3. Report of the 9th Session of the Working Party on Temperate Tunas (WPTmT09)

74. The SC **NOTED** the report of the 9th Session of the Working Party on Temperate Tunas (IOTC–2025–WPTmT09–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 22 participants (cf. 42 in 2022). Four participants received funding through the MPF.

7.3.1. Albacore assessment

75. The SC **NOTED** that the WPTmT meeting in 2025 focused primarily on the Stock Assessment of Albacore tuna (Stock Synthesis), which was conducted by an IOTC consultant, Joel Rice.

76. The SC **NOTED** that there are some noticeable differences in the nominal catches used in the 2025 assessment compared to those used in the 2022 assessment. This difference is primarily due to the revision and re-

estimation of catches by Indonesia. The SC further **NOTED** that Taiwan,China accounted for about 55% of the albacore catches over the period 2019–2023.

77. The SC **NOTED** that the joint CPUE used in the assessment is based on longline data from Japan, Korea, and Taiwan,China. The CPUE was standardised during a workshop in February 2025. However, an error identified at a later stage resulted in a delay in providing the CPUE to the stock assessment.

78. The SC **NOTED** that a decision was made in 2019 that the CPUE in the eastern Indian Ocean (R2 and R4 regions) was unlikely to be reliable due to changes in the targeting practice by the main fleets. Since then, the stovk assessment has excluded the CPUE from the eastern Indian Ocean and focused solely on the indices from the western Indian Ocean (R1 and R3).

79. The SC **NOTED** that the two CPUE indices in the western tropical region show considerably different trends. As a result, two different models were fitted to the R1 and R3 indices separately, in a similar configuration to the previous assessment. The two CPUE indices resulted in different stock estimates. The final estimated stock status is a combination of both models, considering the uncertainty of each. The SC **NOTED** that model weighting was not considered in the final stock status.

80. The SC **NOTED** that while the CPUE was standardised by region, the assessment model consists of a single area model with no regional stratification. As such, it is difficult to accommodate the large differences between the two CPUE indices, which are better captured in separate models as two states of nature rather than combined into one model.

81. The SC **NOTED** some of the reasons that may lead to the differences between R1 (NW) and R3 (SW), which may include: (1) different fishing operations, (2) different oceanographic and environmental conditions leading to different productivity and trends, (3) different size structure of the population in the two regions leading to a heterogeneous distribution of adults and juveniles, and (4) a potential stock structure for albacore tuna in the southwestern Indian Ocean. The SC further **NOTED** that the CPUE standardisation did not account for changes in the spatial distribution of the population due to potential movement.

82. The SC **NOTED** that there is ongoing work to better understand the differences between the R1 and R3 indices, as well as how well they represent abundance trends in those regions. The SC also **NOTED** that the delay in the provision of the CPUE index made it impossible to investigate some of the other issues in the assessment during the WPTmT meeting (e.g., some instability of the model caused by changes in the configuration of selectivity parameters).

83. The SC **NOTED** that the WPTmT had discussed the outstanding issues in the updated NW and SW models in detail. In particular, the SW model produced very high biomass estimates with large uncertainty when the selectivity for LL3 and LL4 was unconstrained, while the NW model showed bias in the predicted length composition for the LL1 fishery. Despite several investigative model runs during the meeting, the exact causes of these issues and potential solutions remain unclear. The SC **NOTED** that the WPTmT had agreed that, while the updated assessment model in its current configuration is sufficient for estimating stock status, further scrutiny is needed to improve its reliability and ensure robust management advice. As such, the SC **ENDORSED** the continuation of assessment work next year and **AGREED** to convene another WPTmT assessment meeting in 2026 to review progress, and provide updated management advice to the SC in 2026.

84. The SC **NOTED** ongoing work on the albacore Management Strategy Evaluation (MSE), which has been actively discussed at the WPM and WPTmT. The MSE may offer an alternative solution to address some of the uncertainty in the assessment.

7.4. Report of the 23rd Session of the Working Party on Billfish (WPB23)

85. The SC **NOTED** the report of the 23rd Session of the Working Party on Billfish (IOTC–2025–WPB23–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 36 participants (cf. 47 in 2024). Five participants received funding through the MPF.

86. The SC **THANKED** and **CONGRATULATED** the Chair and the WPB for their efforts and accomplishments during the 23rd Session of the WPB.

87. The SC **NOTED** the presentation from the Chair of the WPB and **THANKED** the WPB for completing a significant amount of work, including two stock assessments – for blue marlin (BUM) and Indo-Pacific sailfish (SFA).

7.4.1. Blue marlin stock assessment

88. The SC **NOTED** that the blue marlin (BUM) stock assessment was run using both JABBA and SS3, with the models providing similar outputs with regards to stock status. The SC **NOTED** that the SS3 model was used as model from which the stock status was taken, although it was **AGREED** by the WPB that the model required further development in the future. The SS3 model was a spatial model, with two areas (east and west), based on fleet dynamics, with both fixed M (instantaneous rate of natural mortality) and h (0.87).

89. The SC **NOTED** some concerns with assessment, including: 1) fixing both M and h essentially fixes the population dynamics of the stock; and 2) there were generally poor fits to abundance indices.

90. The SC **NOTED** the requested sensitivity runs during the WPB, that included several values of M, additional Francis-weighting of the length data, and retrospective analyses using the base case model.

91. The SC **NOTED** the results of the JABBA model where 10 + model runs were presented to the WPB with several data weighting scenarios, including inclusion / exclusion of specific CPUE indices, and the use of different production functions.

92. The SC **NOTED** the development of a sdmTMB model for a CPUE index, although there were concerns around the process error as this is trending upwards.

93. The SC **ACKNOWLEDGED** the KOBE II strategy matrix, including results of projections that suggest that a reduction in catch by 20% would return the stock to the green quadrant in 2035 with a probability of 64%, this percentage increases to 86% if the catch is reduced by 40%.

94. The SC **ACKNOWLEDGED** issues surrounding the CPUE indices in the BUM stock assessment, including changes to fisheries and the overall reduction in spatial coverage of individual fleets. The SC **AGREED** that joint work can produce more robust indices, while **NOTING** that data confidentiality between CPCs is an issue.

95. The SC **DISCUSSED** the possibility of developing BUM CPUE indices that do not include confidential data, **NOTING** that the WPB hopes to develop data inference approaches that can perhaps explore more ways to produce abundance indices.

96. The SC **ACKNOWLEDGED** that although developing a joint CPUE index is common for the WPTT, it is not common among other WPs in the IOTC, and **NOTED** that this process could be lengthy, and requires careful consideration, **NOTING** the greater number of CPCs involved in major billfish fisheries, unlike the fisheries that target tropical tunas. Notwithstanding these issues, the SC **NOTED** that the first steps towards joint CPUE indices would be the harmonisation of CPUE standardisation methods between CPCs involved in billfish fisheries.

97. The SC **AGREED** that the WPB should draft guidelines for longline CPUE standardisation with consistent methods, **NOTING** that the intent is not to prescribe a single model, but to improve reproducibility and transparency among the production of CPUE indices. The SC **SUGGESTED** that the IOTC Secretariat could coordinate this approach, with the work being presented at the WPM next year.

98. The SC **NOTED** that, for several years, joint analyses combining catch and effort data from major longline fleets have been proposed to improve the CPUE index for billfish species, and that the WPEB had previously recommended investigating methods to compare CPUE indices across fleets and to develop joint CPUE indices for bycatch species. The SC also **NOTED** that these joint analyses could harmonize standardization methods, reconcile conflicts between indices developed from different fleets, and potentially produce more robust indices with broader spatial and temporal coverage. The SC further **NOTED** that it is at the discretion of CPCs to determine the feasibility of such collaboration, considering data confidentiality agreements and other logistical

arrangements. The SC **AGREED** on the importance of establishing a process to discuss how to move forward. **NOTING** that joint CPUE analysis arrangements already exist for the standardization of tropical and temperate tuna, the SC **RECOMMENDED** that the Commission urge CPCs to explore ways to extend joint analyses to non-targeted species, such as marlins.

99. The SC **DISCUSSED** the BUM stock status, and that the stock has been classified as overfished, and subject to overfishing, for over 20 years despite relatively stable catches over this time frame. This conflict between the stock status and catch data might suggest that the assessment may be overly pessimistic, or that the stock is extremely resilient. The SC **DISCUSSED** the implications of this conflict between catch data and the stock status, including the significant uncertainties associated with billfish catch data, including the increases in reported catches from gillnet fisheries, while **NOTING** that these catches only represent 22% of the reported BUM catches.

100. The SC also **DISCUSSED** the potential of cryptic biomass in BUM that could be supporting the stock but **AGREED** that it is extremely difficult to collect evidence for the existence of refuges or cryptic biomass.

101. The SC **AGREED** that BUM CPUE indices may not effectively or appropriately reflect changing fishing practices (e.g. changes to gear type or depth of fishing). Noting these issues, the SC **URGED** the development of standardised CPUE indices that account for these changes.

102. The SC **NOTED** that there have been unusually high catches of striped and blue marlin by purse seines in vert recent years. The SC **REQUESTED** the WPB and WPDCS to investigate these data to check if those estimates are realistic.

7.4.2. Indo-Pacific Sailfish stock assessment

103. The SC **NOTED** the stock assessment for Indo-Pacific sailfish, implemented in JABBA using the same methods as in 2022. The method uses length frequency data to estimate annual spawning potential ratios (SPR) which are then normalised in the Just Another Red List Assessment (JARA) model to develop an index of spawning stock biomass. This index of biomass is then used within the JABBA modelling framework as an abundance index alongside catch data.

104. The SC **DISCUSSED** the novel abundance index and **NOTED** that the method has not been fully evaluated, even though it was **AGREED** after the SC in 2022 that the method should be evaluated by the WPM prior to being implemented in 2025. Indeed, during the WPB, the assumptions of the method were questioned, particularly with respect to the fact that the trend in biomass could be the opposite of that estimated by the SPR.

105. The SC **NOTED** that model developers have outlined a simulation approach to test the robustness of the stock assessment methods used in 2022 and 2025. The SC **CONGRATULATED** the developers on making significant progress on this topic since the end of the 23rd WPB and **NOTED** that the results are likely to be ready prior to the 24th WPB.

106. The SC **NOTED** the weight-of-evidence approach used in 2025 to provide the stock status, using the results of the JABBA assessment and **ACKNOWLEDGING** that the status of the stock is consistent with the previous assessment. However, the SC **NOTED** the WPB's concerns regarding the reliability of the method, and that there were concerns regarding consistently high catches that are above the estimated MSY for several years.

107. Considering all this, the SC **AGREED** that the results of the current stock assessment should be revisited at the 24th WPB in 2026, alongside results of the simulation study.

7.4.3. Revision of catch levels of marlins under Resolution 18/05

108. The SC **NOTED** that the WPB received a presentation from Australia scientists on potential management options for billfish, summarising available scientific information, reviewing data and research gaps, and outlining potential management tools, including catch limits, non-retention measures, gear modifications, and improved data collection. The WPB **AGREED** not to recommend specific management tools at this stage, but instead to advise the SC that the Commission should urge CPCs to address critical data gaps and conducted required research.

109. The SC **DISCUSSED** the purpose and cost-effectiveness of the proposed gillnet experimental fishing trials, **ACKNOWLEDGING** that the approach could also generate very important information on target species and TEPS interactions and potential mitigation approaches associated with that gear type.

110. The SC **NOTED** that the broader issues of gillnet catch and effort data, and their implications for multiple WPs.

111. **NOTING** the necessity to gather information to enable the development of advice relating to a range of potential management measures to complement the commonly used CPC based catch advice, the SC **REQUESTED**:
    - That the IOTC Secretariat (or alternately CPCs, where the Secretariat does not hold a CPCs relevant data or information) provide summaries of observer data (or logbook data or other relevant information) to WPB pertaining to the following data types for the following fishery types:
        - **All gear/fishery types** – discarding/retention rates and at-haul mortality (%) for each marlin and sailfish species, by fishery/gear type
        - **Longline** – proportion of each fleet using different hook types and sizes (Japanese tuna, J hook, Circle hook, other)
        - **Gillnet** – estimate of the proportion of the gillnet fleet using subsurface setting, and if possible, preferred depths used in fishery, and whether the fishery predominantly sets/soaks the gear overnight or through the day (or other).
    - CPCs to consider undertaking analyses (e.g., model-based) of at-haul mortality, at a longline fleet level (and if possible for troll/handline), to help identify key factors driving at-haul mortality and subsequently, possibly help identify additional options to reduce at haul mortality
    - CPCs individually or collaboratively conduct gillnet experimental fishing trials that:
        - Aim to test different setting depths and times of setting/soaking (e.g. day/night), on catch rates and mortality of interacting species
        - Collect data on all interacting species including billfish bycatch, target tuna and vulnerable species (e.g. cetaceans, turtles), in order to provide the Commission a quantified understanding of likely effects and possible trade-offs of various subsurface setting options, on each species.
        - Prioritise accurate species identification.

112. The SC **RECOMMENDED** that the Commission to give consideration to how best to financially and logistically support an experimental fishing trial with gillnets to be conducted by CPCs which would:
    - Aim to test different setting depths and times of setting/soaking (e.g. day/night), on catch rates and mortality of interacting species
    - Collect data on all interacting species including billfish bycatch, target tuna and vulnerable species (e.g. cetaceans, turtles), in order to provide the Commission a quantified understanding of likely effects and possible trade-offs of various subsurface setting options, on each species
    - Prioritise accurate species identification.

7.5. Report of the 21st Session of the Working Party on Ecosystems and Bycatch (WPEB21)

113. The SC **NOTED** the report of the 21st Session of the Working Party on Ecosystems and Bycatch (IOTC–2025–WPEB21–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 87 participants (cf. 92 in 2024). Seven participants received funding through the MPF

114. The SC **NOTED** that the 5% minimum required level of observer coverage (as stipulated in Resolution 25/04) refers to the minimum percentage of the total number of sets/operations that should be observed. The SC **NOTED** that some longline fleets are still reporting this in terms of numbers of hooks instead of number of sets so the Secretariat has been required to estimate the coverage using assumptions around the number of hooks in each set.

115. The SC **NOTED** that many CPCs are still struggling to achieve the 5% minimum level of observer coverage. The SC **NOTED** that this is often due to the vessels involved in these fisheries not being suitable to host an observer onboard. The SC **NOTED** that Pakistan has been rolling out a crew-based observer programme which aims to monitor data collection and bycatch to improve data reported from these fisheries which cannot host onboard observers.

116. **NOTING** that data for bycatch species in IOTC fisheries are severely lacking, the SC **RECOMMENDED** that the Commission and Compliance Committee **ENCOURAGE** CPCs to provide observer data and work to reach at least the 5% minimum coverage level as required by Resolution 25/06.
117. The SC **NOTED** a suggestion to run simulation work to assess the most cost-effective way to obtain high quality observer data by comparing the absolute level of observer coverage compared with the percentage of coverage of the total operations.
118. **NOTING** that Resolution 15/01 includes a list of species for which reporting catch data is mandatory/optional and that varies by gear and by fishery type (i.e. artisanal vs commercial fisheries), the SC **NOTED** that many species of interest to the WPEB are not mandatory for reporting for all gears or fishery type. The SC **NOTED** concerns from some CPCs that making these species mandatory for reporting for all gears and fleets (including artisanal fleets) could place additional burden on many CPCs. This is particularly the case for many coastal fleets which are not necessarily targeting only tuna but instead target a wide range of species, making data collection complex. The SC therefore **RECOMMENDED** that the Commission review the list of species that are mandatory for reporting to species level while considering the feasibility of such data collection for all CPCs. The SC included the following suggested changes:
    - Silky sharks to be added also for gillnets fisheries
    - Hammerhead sharks to be reported at species level at least for scalloped, smooth and great hammerhead sharks for all gear types (explicitly including purse seine fisheries)
    - Mantas and devil rays to be reported at species level differentiating at least between manta rays (giant manta and reef manta) and other devil rays adding them for mandatory reporting at least for purse seine fisheries and for gillnet fisheries instead of optional
    - Great white sharks as mandatory for all gear types
    - Oceanic whitetip sharks as mandatory for all gear types.
119. The SC **RECOMMENDED** that the Commission speak with CPCs to determine appropriate ways to improve data reporting from artisanal fisheries.
120. The SC **NOTED** that the WPEB had **REVIEWED** the minimum standards set out in Annex III of Resolution 25/08 and **ADOPTED** the revisions made by members of the group which can be found in Annex XVII of the WPEB report. The SC **RECOMMENDED** that the Commission consider these standards for adoption in 2026. The SC further **NOTED** that work on best practice handling guidelines is ongoing and frequently evolves. The SC therefore **SUGGESTED** that the Commission consider adopting a master document containing handling guidelines for all taxa, rather than requiring Resolutions containing such guidelines to be updated when new information becomes available. Future Resolutions could then refer back to this master document adopted by the SC. The SC **AGREED** that a small working group will work on compiling these intersessionally for review by the SC.
121. The SC **NOTED** that in 2024, the WPEB recommended the adoption of a revised set of handling guidelines for mobulids while **NOTING** that work was required to further develop the guidelines for gillnets. The SC **NOTED** that the WPEB worked to further develop these guidelines which were revised and adopted. The SC **RECOMMENDED** that the Commission consider these revised handling guidelines for mobulids for consideration for adoption in 2026. The details of the suggested revisions to the handling procedures can be found in Appendix XVI of the WPEB report.
122. The SC **NOTED** that while evidence on post-release survival of whale sharks from purse seine interactions suggests low mortality when best-practices are followed, data on bycatch in other fisheries, particularly gillnets, remains scarce. Therefore, the SC **RECOMMENDED** that the Commission **ENCOURAGE** CPCs to improve data collection and reporting for interactions with whale sharks involving all gear types as well as purse seine.
123. The SC **ENCOURAGED** efforts to clarify the extent and nature of whale shark interactions with IOTC fisheries, and to assess the current stock status within the IOTC area of competence, **ACKNOWLEDGING** that the extent of the vulnerability of whale sharks to IOTC fisheries is unknown. Based on the available information presented by the WPEB, the SC classified whale sharks in the Indian Ocean as a "taxon of the greatest biological

vulnerability and conservation concern for which there are very few data", as defined in Resolution 25/08 and **RECOMMENDED** that the Commission take appropriate action based on this classification. The SC **NOTED** that this classification supports the consideration of precautionary management measures and prioritization of future research and data collection efforts by the Commission.

7.5.1. Status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations

124. The SC **NOTED** paper IOTC–2025–SC28–06 which provided the SC with the opportunity to update and comment on the current status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations, by each IOTC CPC.

125. The SC **RECOMMENDED** that the Commission note the current status of development and implementation of National Plans of Action (NPOAs) for sharks and seabirds, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations, by each CPC as provided in Appendix 6, recalling that the IPOA-Seabirds and IPOA-Sharks were adopted by the FAO in 1999 and 2000, respectively, and recommended the development of NPOAs.

126. The SC **RECALLED** the request from WPEB15 in 2019 for the Secretariat to provide links in the NPOA portal on the IOTC website (http://iotc.org/science/status-of-national-plans-of-action-and-fao-guidelines) to the actual plan documents. The SC NOTED that work is being done to collect these documents from CPCs and thanked those who had already submitted them.

127. The SC **REQUESTED** that CPCs submit their NPOA to the Secretariat for upload onto the NPOA portal.

128. The SC **NOTED** that there have been small revisions to the previous update on NPOAs in 2025 including the drafting of revisions of NPOAs by some CPCs and updates on the progress on the development of NPOAs by other CPCs.

129. The SC **NOTED** that India published their NPOA sharks in 2024, but this has not yet been made available to the IOTC. The SC **NOTED** that the IOTC delegates from India have informed India's department of fisheries they need to share the NPOA with the Secretariat and will follow up to ensure that they do this.

130. The SC **NOTED** that India published an action plan for marine turtles in 2021 titled "National Marine Turtle Action Plan" which IOTC was only made aware of in 2024.

131. The SC **NOTED** that I.R. Iran's NPOA for sharks has been developed and is under review. The SC further **NOTED** that an action plan for the conservation of sea turtles has been fully developed and is now awaiting translation into English for submission to the Secretariat.

132. The SC **NOTED** that Pakistan is working with FAO to set up a technical cooperation programme to develop a NPOA for sharks for Pakistan.

133. The SC **NOTED** that Sri Lanka's new NPOA for sharks has been reviewed and updated but is awaiting final approval.

134. The SC **NOTED** that Tanzania's NPOA sharks has been finalized and was expected to be released in September 2025. The SC **NOTED** that this should be provided to the Secretariat shortly.

135. The SC **NOTED** that Thailand's NPOA for seabirds has been finalised and submitted to the Secretariat.

136. The SC **NOTED** that some CPCs have encountered difficulties in recruiting suitable consultants to carry out work on NPOAs and welcomed assistance from the Secretariat on this issue.

7.5.2. Blue shark stock assessment

137. The SC **NOTED** that a stock assessment for blue shark was conducted this year using Stock Synthesis.

138. The SC **NOTED** that reported catches of blue shark in 2023 were significantly higher than in 2022. The SC **NOTED** that this is due to the catches from Indonesia which have not yet been revised for 2023 using the same methodology that has been applied to the catch series for 2018-2022. The SC **ENCOURAGED** Indonesia to review these catch data for 2023 using the same methodology.

139. The SC **NOTED** that Indonesia had submitted a CPUE series for the blue shark assessment but this was not presented until the assessment meeting. The SC **NOTED** that this was not included in the assessment as it had not been fully reviewed by the WPEB during the data preparatory meeting unlike the other CPUE series included in the assessment which had been fully reviewed during that meeting. The SC **ENCOURAGED** Indonesia to develop CPUE series for future assessments and present them during the data preparatory meeting ahead of the assessment so they can be fully reviewed and so would be more likely to be accepted for inclusion in the assessment.

7.5.3. Other matters

140. The SC **NOTED** paper IOTC-2025-SC28-11, which summarises the development of an experimental pilot action by the Spanish surface longline fleet targeting swordfish in the Indian Ocean, employing terminal gear devices known as lazos, with the following abstract provided by the author:

"We present an experimental pilot action plan aimed at monitoring the use of loops (lazos in Spanish language) devices and assessing their effects on bycatch within the Spanish surface longline fishery operating in the Indian Ocean, with particular emphasis on Endangered, Threatened, and Protected (ETP) species. This initiative seeks to evaluate the ecological and operational implications of incorporating loops into fishing practices, providing a scientific basis for determining their potential to enhance swordfish catch efficiency while reducing incidental captures of vulnerable marine fauna."

141. The SC **NOTED** that this gear appears to be very effective for catching billfish, particularly swordfish based on trials conducted in the Mediterranean Sea. The SC **NOTED** that the full process from attracting the animal to hauling it onboard is not well understood and **SUGGESTED** it should be filmed to better understand the method.

142. The SC **NOTED** that hooks are not required in the gear, instead the animals are attracted to the artificial bait (including lighting) and end up entangled in the loops.

143. The SC **NOTED** that there appear to be significant reductions in bycatch when using this gear in the Mediterranean Sea.

144. The SC **NOTED** that it is believed that this gear was initially introduced in the Pacific Ocean by Indonesian crew onboard Japanese and Spanish vessels before it was introduced in fleets in the Atlantic Ocean and the Mediterranean. The SC **NOTED** that the gears are therefore more or less identical between these two fleets but **NOTED** that Spanish fleets have made minor modifications to the gears to make them more cost effective.

145. The SC **RECOMMENDED** that the Commission **ENCOURAGE** ongoing trials with these gears (i.e., loop gears) to better understand their effect on target and bycatch species.

146. The SC **ENDORSED** the recommendation to add a specific code to longline logbook and ROS templates to enable the collection of data on the use of loop devices in longline fisheries. The SC **ACKNOWLEDGED** that the ratio between the number of hooks and loop lines may provide a simple and efficient metric for effort and further **NOTED** that species-specific catch data should be collected for both hook-based and loop-based effort units.

147. The SC **NOTED** paper IOTC-2025-SC28-14, which summarises Japan's consideration on the framework of scientific fishing trial for shark mitigation measure from the operational viewpoint, including the following abstract provided by the authors:

"*Japan is concerned the hastiness in taking decision of introducing wire-trace ban and selecting fishing trial in short time as a single way to suspend its introduction and evaluate its effectiveness. In addition, it concerned seriously to include blue shark, exploitable resources in healthy condition, in target for conservation in Resolution 25/08 and noted when excluding blue sharks, the required scale of experiment could be much broader than possible to conduct with one CPC."*

148. The SC **NOTED** Resolution 25/08 and the request from the Commission to start to begin the MSE process for blue shark, that this species is being managed more as a commercial target species and not intended as a

vulnerable species. The SC **NOTED** that this is supported by the recent assessment for the species which considered the stock to be **not overfished** nor **subject to overfishing**.

149. The SC **NOTED** that the north of 20°S provision in this Resolution was designed to avoid impacting both the main areas of the commercial longline fishery targeting blue shark and the specific longline fishery for oilfish. The SC further **NOTED** that the range of data collection and spatial data considerations requested in the Resolution for SC consideration aim to ensure that the SC can consider and assess whether the specified boundary is appropriate in terms of minimising impacts on blue shark/oilfish fisheries while maximising conservation benefits for vulnerable species.
150. The SC **NOTED** that there are differing views regarding the results of past research on the effectiveness of wire leaders in reducing bycatch of vulnerable species which have been discussed in detail by the WPEB in the past. The SC **NOTED** that many CPCs consider the evidence examined by the WPEB and the outputs from the specific workshop convened on this issue which was referenced in the SC's advice to the Commission is sufficient to provide evidence on the effectiveness of this gear modification. The SC **NOTED** that others considered it important to obtain better information on the level of use of this gear and to examine the effectiveness in reducing shark mortality in species other than blue sharks and the SC **NOTED** that there have been limited studies to date in the Indian Ocean on this topic.
151. In accordance with Paragraph 17 of Resolution 25/08 concerning principles for conducting experimental fishing trials, the SC **AGREED** the criteria specified below, while recognising the operational complexities, time constraint and difficulties associated with field activities.
    - Select the areas and seasons with known high shark abundance (including of vulnerable shark species), based on existing data from Indian Ocean Regional Observer Scheme (ROS), research and surveys.
    - Before the trial, conduct a power analysis (following Watson et al. 2005) informed by historical Indian Ocean bycatch data to determine the number of sets required to detect a true effect (for each vulnerable pelagic shark species, not including blue shark), thereby avoiding a Type II error.
    - Standardise (and record) gear and operational practices during the trials, including, inter alia, setting/hauling times, bait type, hook types, line weighting and branch line/leader lengths and diameter and other gear configurations (e.g. use of lightsticks) to assist the trial in isolating the effect of leader material. Record any variations from standardised gear/practices, if they occur.
    - Use at least one independent observer or scientific researchers who are trained in longline operations and species identification to minimise human error and observational bias. If using observers, the observers should be debriefed post trip to discuss/document any variations from the planned design.
    - Collect data for each branchline at least on size and species of individual catch, their fate (retained/discarded) and condition at haulback, and the occurrence of bite-offs (as much as possible), together with corresponding leader material.
    - Brief the trial vessel skipper, crew(s) and observer(s) on the trial's objectives and design, and the experimental protocols prior to the fishing trial to ensure their understanding and support to the trial.
    - Apply the appropriate statistical analysis, including hierarchical or mixed-effect models to evaluate potential differences in CPUE, bite-off rate, sizes and haulback mortality rate according to different leader materials in use.
152. The SC **AGREED** that trials should employ a "paired comparison" approach, by alternating the control (nylon monofilament) and experimental (wire) leaders. However, there were divergent opinions on the operational designs that would meet this criterion, for example, whether alternating treatments should be implemented at the level of individual branchlines, baskets, or by groups of baskets (i.e., section). The SC **AGREED** that a basket is defined as a section of hooks between floats.

153. The SC further **AGREED** that the above criteria is basic requirement for ensuring a fishing trial to obtain results trustworthy for scientific analyses. The SC also **ADVISED** the Commission to encourage CPCs to continue research on leader materials in use and its impacts on shark bycatch and mortality, as well as alternative gear configurations (for example loop gear) and mitigation measures to reduce shark bycatch mortality in Indian Ocean tuna fisheries.
154. The paragraphs below outline the summary of each of the differing views:

155. Japan: *"Implementation of "paired approach" using the sections, i.e. multiple baskets, as a unit of pair alternating controls, is commonly utilized including many works that were utilized to support an introduction of the wire-trace ban in Resolution 25/08. Frequent switching of gears often causes confusion and errors in particular when operating with commercial vessels and a certain level of flexibility should be allowed in choosing the appropriate unit for a paired approach."*
156. Australia: *"The SCs role is to agree what the best practice criteria are, and to evaluate if there are any implications for interpretation of the results where a given fishing trial does not achieve this entirely. Australia expressed three concerns with Japan's proposal to use treatments comprising 10 baskets of same leader material per alternating treatment. Firstly, wire leaders and nylon monofilament leaders have different weights, impacting fishing depth, particularly when wire leader branch lines are grouped across multiple baskets. Secondly, varying oceanographic conditions along the length of a longline can effect shark interactions differently at different points along the line. And thirdly unexpected operational issues (e.g., vessel slowing down, gear issues) during setting can impact gear performance (e.g., depth of fishing) for different segments of the longline. Alternating leader type by branchline is a best practice approach to standardising out the impacts of these factors and helping isolate/identify leader specific effects."*
157. The SC further **NOTED** the concerns of some that it is not appropriate for the SC to revisit issues that have already been examined thoroughly, through the proper scientific channels, such as the WPEB. The SC **NOTED** that requiring science to be repeatedly re-verified places an unnecessary burden on those proposing conservation measures to the Commission.
158. The SC **NOTED** that it would be beneficial to conduct analyses to determine if the non-retention of thresher and oceanic whitetip sharks are sufficient conservations measures to reduce mortality of these species.
159. The SC **NOTED** that retention bans are only effective (in reducing species specific shark mortality) to the extent that they ensure survival of at least some sharks (of those species) hauled to the vessel, but are highly dependent on the proportion of sharks alive and healthy at haul and their survivability post release, two factors known to vary among species.
160. The SC **NOTED** that there are vulnerable species in addition to threshers and oceanic whitetip sharks which would benefit from strong management measures including shortfin mako shark (which the 2024 assessment indicated is overfished and subject to overfishing) and silky shark (for which the IOTC ERA indicated they are at least as vulnerable to IOTC fishery impacts as species already subject to retention bans).
161. The SC **NOTED** paper IOTC-2025-SC28-INF02 which summarises some preliminary results from a CKMR study on whale sharks in the Indian Ocean.
162. The SC **NOTED** that the study has assessed the population of adult whale sharks across the Indian Ocean to be small and to have been declining in the period 2000-2019. The SC further **NOTED** that the study found that there is a 97% probability of population decline and a 73% probability of the decline being greater than 2% per year.
163. The SC **NOTED** that the full results of this study will be presented to the WPEB in 2026.
164. The SC further **NOTED** that these results demonstrate that ocean-scale CKMR is a viable technique for monitoring shark species. The SC further **NOTED** that research efforts should focus on facilitating tissue sampling and aligned data collection.

7.6. Report of the 27th Session of the Working Party on Tropical Tunas (WPTT27)

165. The SC **NOTED** the report of the 27th Session of the Working Party on Tropical Tunas (IOTC–2025–WPTT27–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 65 participants (cf. 130 in 2024). Eight participants received funding through the MPF. The SC **NOTED** that the lower attendance in 2025 was likely due to no YFT assessment being held in this year.
166. The SC **NOTED** that the update of yellowfin tuna catch limits for 2024 and 2025 following Resolutions 19/01 and 21/01 was provided by the Secretariat (see Section 7.6.2). The SC **NOTED** that catches of tropical tunas have been stable the past three years at around 1.2 million tonnes.
167. The SC **NOTED** that this year, there was one full stock assessment completed by the WPTT (bigeye tuna, BET), and an update to the yellowfin tuna (YFT) joint longline CPUE indices as requested by the SC in 2024. The SC

CONGRATULATED the WPTT for completing these two tasks and providing an update to the 2024 YFT stock assessment, using the revised joint longline CPUE indices.

7.6.1. Bigeye tuna stock assessment

168. The SC **NOTED** that the bigeye tuna (BET) stock assessment wasrun as a continuity from the previous stock assessment, but with new catch and effort data, new CPUE series, and some new biological assumptions. The model contains a revised catch data series from Indonesia resulting in a 12% decrease in catches for BET in 2024, which are more aligned with the allocated catches from the BET Management Procedure.

169. The SC **THANKED** the authors of the assessment, and the WPTT for completing the assessment, under tight timelines, after a new catch dataset was provided during the WPTT meeting.

170. The SC **NOTED** that the reported stock status is based on a grid of 36 model configurations that account for the uncertainty in the stock recruitment relationship, longline selectivity, instantaneous rate of natural mortality, and longline catchability dynamics. Overall, the stock assessment results suggest that BET has nearly recovered to the adopted target reference point ($B_{target} = B_{MSY}$) after the recent reduction in catch.

171. The SC **NOTED** that spawning stock biomass in 2024 is estimated to be 0.98 (0.71-1.25) times the level that can support MSY ($B_{target} = B_{MSY}$). Fishing mortality was estimated at 0.94 (0.69-1.18) times the F_{MSY} level. The assessment indicates that the median SSB_{2024} is below SSB_{MSY} (the probability of SSB being above SSB_{MSY} = 45.6 % which is less than 50 %).

172. The SC **NOTED** that on the weight-of-evidence available in 2025, the BET stock is determined to be **overfished** but **not subject to overfishing.** The SC **NOTED** that the multifactorial probabilities estimated for the four quadrants indicate larger probabilities of red (38.4%) and green (45.6%) status.

173. The SC **DISCUSSED** the results of the current stock assessment, and that the stock status differs from the previous assessment (in 2022, the stock status was **overfished** and **subject to overfishing**, but in 2025, the stock has moved into the middle of the KOBE plot, representing a stock that is recovering).

174. The SC **NOTED** that although there are differences between the stock status when comparing the previous and current assessments, these are not drastic and reflect expected fisheries dynamics when fishing mortality is reduced. The stock status trajectory shown in the KOBE plots (green → orange → red → yellow → green) is consistent with an overfished stock that is responding to lower fishing pressure, and the model is behaving as anticipated, which was welcomed by some CPCs.

175. The SC **AGREED** that communicating the stock status well is extremely important when a stock is estimated to be close to MSY levels. Several CPCs expressed difficulty interpreting how the indicators F/F_{MSY} and SSB/SSB_{MSY} were being combined into the final stock classification, given that the KOBE quadrant with the highest percentage (of 46 %) was the GREEN quadrant, however the stock has been given a stock status in the YELLOW quadrant, based on the median value of SSB/SSB_{MSY} which is < 1.0, and the probability of being < SSB_{MSY} is less than 50%.

176. The SC **NOTED** concerns raised by CPCs regarding the interpretation of probabilities, questioning whether fishing mortality and spawning stock biomass could be treated independently. In particular, the SC **NOTED** that probabilities derived from the ensemble of models reflect the proportion of plausible model structures that lead to a given outcome. They should not be interpreted as statistical uncertainty derived from within-model variance as this was not accounted for in the final KOBE plot. The SC **NOTED** that if **both** within-model statistical uncertainty and between-model structural uncertainty were accounted for, then the probability would represent a fully integrated ensemble probability - e.g., “Given the set of plausible model structures and the uncertainty within each model, the probability that the stock is below Bmsy is X%”.

177. The SC **NOTED** proposals to include probability distributions along the axes of the KOBE plot (as is done in ICCAT) that may reduce confusion in interpreting the results.

178. The SC **NOTED** the concern of some CPCs that combining F/F_{MSY} and SSB/SSB_{MSY} results can confuse interpretation and **SUGGESTED** including information on target reference points (TRPs), **NOTING** that the TRP for BET is SSB >= SSB_{MSY}. Some CPCs supported this, adding that the stock is close to MSY levels and that similar situations may arise as management improves. The SC **NOTED** a proposal to return to the previous approach of expressing the percentage of overfished and overfishing classifications to provide clarity.

179. The SC **DISCUSSSED** the weighting of models within the ensemble, and it was clarified that uncertainty from the individual models ("little dots") was not incorporated due to time constraints, and only grid-level structural uncertainty was included. The SC **RECALLED** the past practice of weighting models differently using diagnostic tables and **SUGGESTED** that the grid may be weighted in future assessments.

180. The SC **NOTED** concerns that using the yellow quadrant from the KOBE plot may cause confusion when communicating the stock status to the Commission, compared to the percentage values for being in each of the four quadrants (e.g. the green quadrant has the highest percentage, but the stock is classified as yellow). The SC also **NOTED** concerns that this approach of using 50% probability leads to a stock status that is on a 'knife-edge', and when the stock is around the TRP (currently SSB_{MSY}), the stock will fluctuate between the four quadrants, even though the stock is performing as expected under the Management Procedure (MP).

181. The SC **RECALLED** that the approach to determine stock status that has been provided by the WPTT aligns with IOTC practice of assessing biomass and fishing mortality separately, and that the stock is at its target. The SC **RECALLED** that the stock assessment of BET serves to monitor the MP.

7.6.2. Yellowfin tuna

182. The SC **NOTED** paper IOTC-2025-SC28-12, which provided Updated joint CPUE indices for yellowfin tuna in the Indian Ocean based on Japanese, Korean, and Taiwanese longline fisheries data up to 2024, with the following abstract provided by the author:

> *"Joint CPUE standardization for the Indian Ocean yellow tuna was conducted using Japanese, Korean and Taiwanese fisheries data up to 2023. This effort aimed to provide the IOTC Scientific Committee with updated abundance indices for its review for stock assessment. The collaboration sought to enhance the spatial and temporal coverage of fishery data, thereby producing combined indices. To account for inter-annual variations in the target species for each fishery, data on hooks between floats or clustering results were incorporated for each region. Conventional delta-lognormal linear regression models were applied to standardize catch-per-unit-effort data, using shared operational data in each region. Overall, the trend in CPUE was broadly consistent with those used in 2018 and 2021 stock assessments except for recent upward trend"*

183. The SC **NOTED** paper IOTC-2025-SC28-13, which provided Preliminary analysis of the 2024 yellowfin assessment model with updated longline CPUE, with the following abstract provided by the author:

> *"In this document, we explore the impacts of the revised standardized longline CPUE index presented by Kitakado et al. (2025b) on the IO yellowfin stock assessment output, stock status, and management advice by running the final grid of the 2024 yellowfin assessment with the revised longline CPUE"*

184. The SC **RECALLED** the request from the 27th Scientific Committee, that the joint longline CPUE indices for YFT be revisited to ensure this was completed accurately as there were substantial differences between the CPUE indices used in the 2021 stock assessment, and the 2024 stock assessment. The SC **NOTED** that a joint longline CPUE group had convened for a workshop early in 2025 for the purpose of working on these indices together.

185. The SC **CONGRATULATED** the authors of the joint longline CPUE index for correcting the error in the 2024 YFT joint longline CPUE indices (with the corrected updated provided in IOTC-2025-SC28-12). The SC **NOTED** however, that these indices were provided late to the WPTT, making detailed scrutiny of the indices more challenging. Despite the short time available, the WPTT was able to analyse the indices, and further **CONGRATULATED** the authors of the YFT stock assessment on providing a preliminary analysis of the stock assessment model grid using the corrected joint longline CPUE indices that was presented to the SC (IOTC-2025-SC28-13).

186. The SC **NOTED** the presentation of the preliminary analysis of the stock assessment for YFT, **NOTING** the impact of the updated CPUE indices on the stock status and relevant reference points.

187. The SC **NOTED** the updated KOBE plots (Figure) provided by the authors that show that the stock is in the green quadrant of the KOBE plot with 76.6 % likelihood (compared to 89.2 % previously).

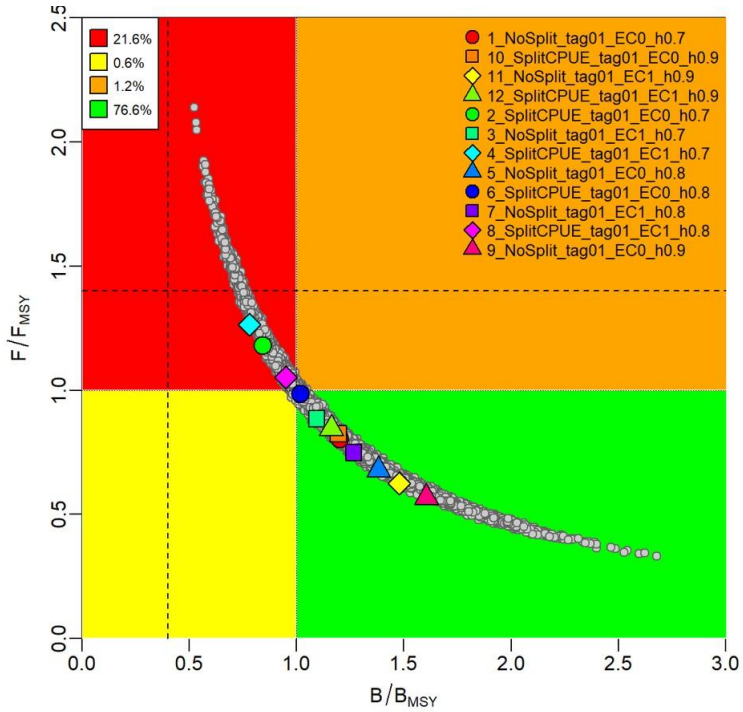

Figure 4: The KOBE plot from the updated 2024 YFT Stock Assessment in SS3 with the updated CPUE indices**.**

188. The SC **NOTED** the trajectory of the stock, with the trajectory of the previous assessment (2021) now align with the stock status in that year (red quadrant of the KOBE plot), which is an improvement on the previous version of the 2024 model (Figure).

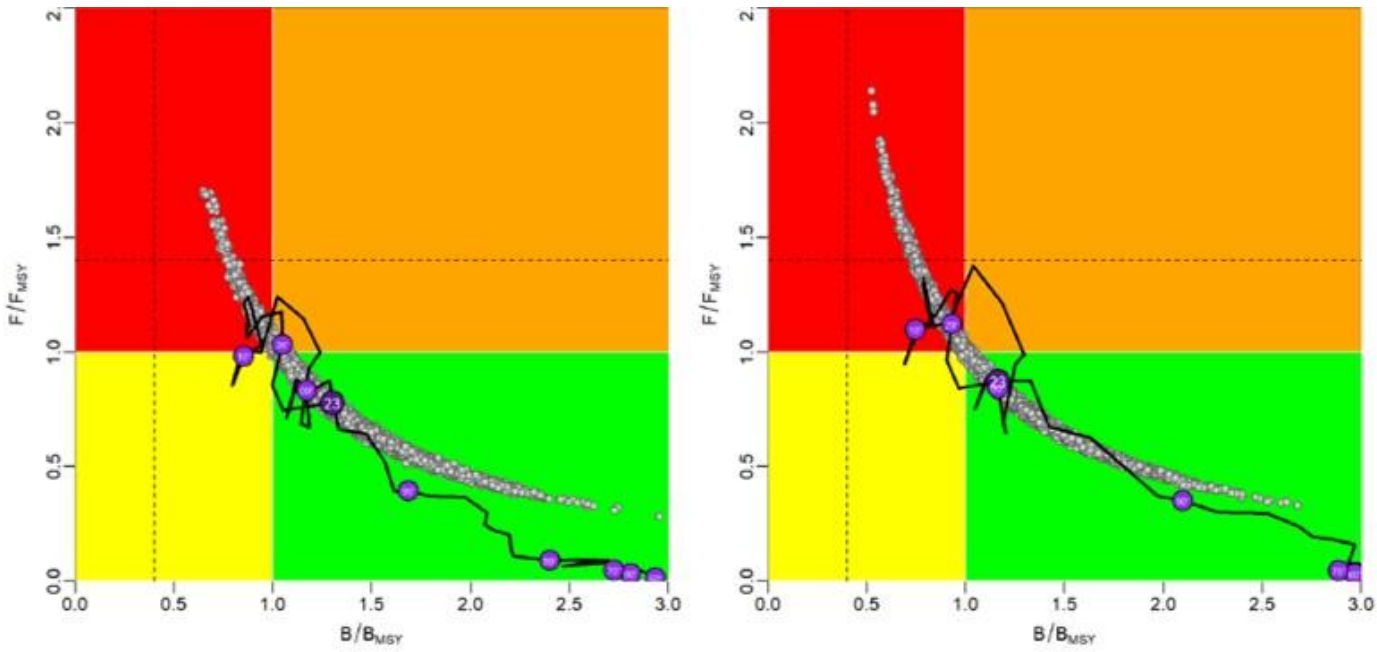

Figure 5: KOBE plots showing the trajectory of the stock from the base model from the earlier version of the 2024 model (LHS) and the updated model (RHS). The previous assessment (purple circle with 23 in the middle) is now in the red quadrant of the KOBE plot (see RHS) which aligns with the previous stock status for YFT (overfished and subject to overfishing) compared to the previous 2024 model, where the trajectory showed the model to be in the orange quadrant of the KOBE plot (see LHS)**.**

189. The SC **NOTED** the annual projected SSB/SSB_{MSY} values from the updated 2024 model with a projected catch of 421,000 t for the 2024 and revised 2025 model (Figure). The SC **NOTED** that these projections showed similar projected values, **NOTING** that the updated model predicts lower values of SSB in future years, however the long-term outlook (2024-2033) projects that the stock will not become **overfished** in the projection period.

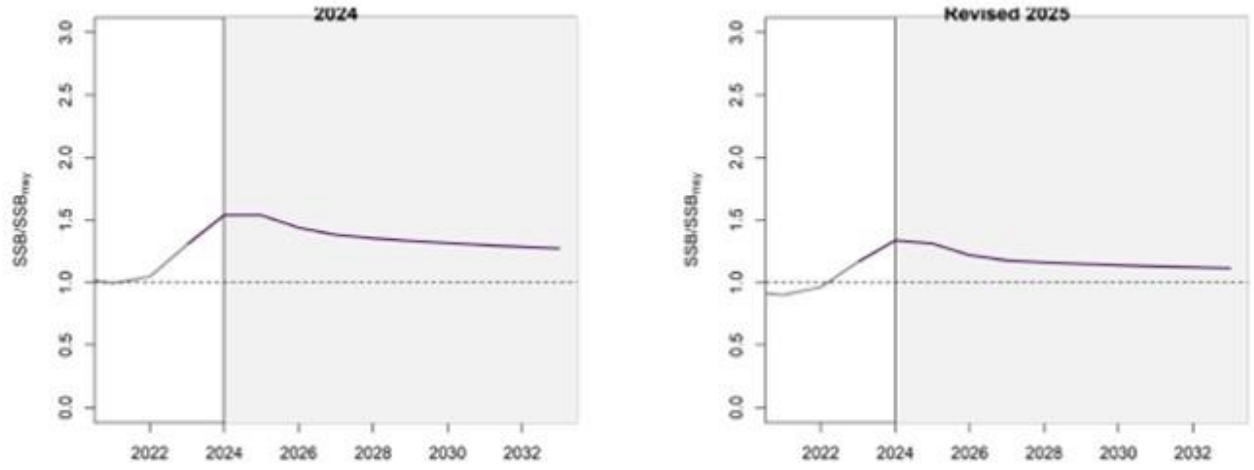

Figure 6: Annual projected SSB/SSB$_{MSY}$ assuming an annual projected catch of 421,000 t for the 2024 (LHS) and updated (RHS) models. The grey line indicates the model period, while the purple line indicates the projection period (2024-2033)**.**

190. The SC **NOTED** concerns regarding significant increases observed in depletion indices (increasing above B_0) in some of the model configurations (particularly in the "no split" models). The SC **DISCUSSED** the implications of these results, **NOTING** that the model appears to handle the updated CPUE series in a way that produces an unrealistic upward trend in the population soon after the start of the fishery. The SC **NOTED** the stock assessor's explanation that these results are likely a result of the observed increase in CPUE following the start of the time series, and that the model responds to this by increasing biomass to account for this increase. The SC also **NOTED** that the fits to the indices are best in the most recent 10-15 years which is more important than the early years of the model, when there is uncertainty whether changes to the CPUE index may not reflect true changes in abundance, orreflect changes to historical data management, particularly as this time period (1975-1979) only includes data from one of the CPCs in the joint index (Japan). The SC **AGREED** that these issues require further investigation when the full assessment is next completed.

191. The SC **DISCUSSED** the timeframe of recruitment periods used in projections, to understand whether they reflect recent or more long-term population dynamics.

192. The SC **NOTED** that when viewing unscaled reference points, that the unscaled SSBMSY values show a higher probability of the stock being above SSBMSY, while the scaled MSY only changes minimally (421,000 t compared to 420,000 t).

193. The SC again **CONGRATULATED** the authors of the assessment for conducting this work under a short time frame and AGREED that the assessment now contained corrected CPUE indices.

194. The SC **AGREED** that the stock assessment for YFT would not need to be re-run in 2026, and a full assessment would take place according to the PoW in 2027.

195. The SC **AGREED** to extend the management advice for 2026 with a total catch of 421,000 t to 2027 and 2028.

196. The SC further **NOTED** that improved data reporting from previously data-poor regions, such as Somalia, contributes to a more complete understanding of catch distribution and stock productivity.

7.6.3. Skipjack tuna

197. The SC **NOTED** that 2025 was not an assessment year for skipjack tuna, but that the Management Procedure was run (IOTC-2025-WPTT27-17), and exceptional circumstances were assessed. The SC **NOTED** that there were no exceptional circumstances in 2025.

7.6.4. Update on the WGFAD07

198. The SC **NOTED** the report of the 7th Working Group meeting on FADs (IOTC-2025-WGFAD07-R). The meeting was attended by 72 participants (90 participants in WGFAD06 respectively in 2024).

199. The SC **NOTED** the recommendations from the WGFAD.

200. **NOTING** that the majority of the structure of most FADs are submerged underwater meaning that reading their unique FAD identifier can be challenging, the SC NOTED the WGFAD's recommendation to consider the following while developing a marking scheme: 1) including redundancy or checkbits in DFAD (and buoy) identifiers to allow errors to be identified; 2) embedding QR codes and Radio Frequency Identifiers (RFIDs) in buoys and potentially DFADs so that they can be easily scanned to avoid errors with manual input of the identifiers; 3) create standards for including the ID marking on DFADs, focusing on putting them as close to the surface as possible to facilitate reading their ID; and 4) assess the feasibility of marking bio-FADs.

201. There was no discussion during the SC regarding this point.

7.6.5. Other Matters

202. The SC **NOTED** that exceptional circumstances of adopted MPs need to be considered at both species WPs and WPM. The SC also **NOTED** that there is benefit in species WPs being held before WPM to allow discussions on issues such as new information on biology before the consideration of potential modelling implications and as such **AGREED** that in the future the WPM be held after the WPTT.

7.7. Report of the 16th Session of the Working Party on Methods (WPM16)

203. The SC NOTED the report of the 16th Session of the Working Party on Methods (IOTC–2025–WPM16–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 47 participants (cf. 46 in 2024). Six participants received funding through the MPF funding.

204. The SC **NOTED** that the WPM has reviewed and discussed a wide range of issues including MSE progress for IOTC species, multi-species MSE, exceptional circumstances considerations for bigeye tuna MSE, joint CPUE standardisations, and close kin mark recapture design study for yellowfin tuna.

205. The SC **NOTED** the informative discussions and input on the technical aspects of MSE and related topics by the Working Party on Methods Management Strategy Evaluation Task Force meeting. The SC **NOTED** that the output of this meeting remains very important to the WPM as it provides an informal forum for the highly technical discussions necessary to advance the MSE process in IOTC for which there is insufficient time during the WPM meeting. The SC **ENDORSED** the inclusion of this meeting in the schedule of meetings for early 2026.

7.7.1. Update on TCMP09

206. The SC **NOTED** document IOTC-2025-TCMP09-R on the Report of the 8th session of the TCMP held in May 2025. The SC **NOTED** that the WPM had taken into consideration the recommendations and discussions held at that meeting.

7.7.2. Management Strategy Evaluation Progress

207. The SC **NOTED** that the albacore assessment in 2025 has a more pessimistic stock status, but the new stock assessment estimates still fall within the range of the OM, however a full evaluation of candidate Management Procedures could not be completed ahead of this meeting, and the SC **NOTED** that these will not be reviewed before the TCMP in January 2026. Therefore, the SC **AGREED** that the TCMP in January 2026 is not required.

7.7.3. Blue shark MP

208. The SC **NOTED** that the work of blue shark (BSH) MSE process has started, and that initial results suggest that both TAC- and length-based Management Procedures should be tested. The SC **ENDORSED** the plan of work for BSH, with results to be presented first to the MSE Taskforce, followed by the TCMP and then presented to the Commission for consideration.

209. The SC **AGREED** that the BSH fishery is a target fishery, and that the MSE and resulting MP should be built on this, and that it was important that the BSH was not confused with a bycatch species where the resulting MP would result in decreasing catches over time

7.7.4. Bigeye tuna MP (Resolution 22/03)

210. The SC **NOTED** the completed review of the BET MSE that highlighted an inconsistency in Resolution 23/03, which indicates that the MP is designed to achieve a 60% SSB>SSBMSY when the MP was tuned to 60%

probability of being in green. The SC **AGREED** that it was not urgent to correct as the issue is clearly noted and documented by the SC and Commission to be changed in future, perhaps in association with the next MP review.

211. The SC **NOTED** that 2024 catch of bigeye tuna (82,874 t) has exceeded the 2024 TAC (80,583 t), which is an exceptional circumstance, and as such, the SC **RECOMMENDED** that the Commission should ensure that the appropriate provisions (e.g., in paragraphs 4, 5 and 8) of 23/04 are implemented to ensure catches remain inside the TAC, conditional on the allowances and requirements of those provisions

7.7.5. Skipjack tuna MP (Resolution 24/07)

212. The SC **NOTED** the 2025 running of the SKJ MP **NOTING** that the this generated an unconstrained TAC of 528,130 t, which is >10% lower than the TAC set for 2024–2026. By applying the maximum 10% decrease in the TAC as per Resolution 24/07, the SC **RECOMMENDED** the Commission to adopt the TAC for skipjack tuna of 565,745 t. per year for 2027–2029.

213. The SC **NOTED** that there are no exceptional circumstances regarding the application of the skipjack tuna Management Procedure (2024 catch < TAC & both CPUEs within 95th percentile of MSE OMs).

214. The SC **AGREED** not to use the target 40% SSB_0 to determine stock status for skipjack tuna, **NOTING** that the SC is still in discussion regarding appropriate ways to define the status of this species.

7.7.6. Swordfish tuna MP (Resolution 24/08)

215. The SC **NOTED** that although there was a new study published on stock structure of swordfish in the Indian Ocean, there is not sufficient evidence currently to conclude a different stock structure, or exceptional circumstance in relation to the swordfish MP TAC advice.

216. The SC **RECOMMENDED** that the Commission urgently propose and adopt the TAC for swordfish resulting from the MP (Resolution 24/08, now superseded by 25/07) in 2026.

7.7.7. General MSE issues

217. The SC **ENDORSED** the inclusion of the MSE Task Force Meetings in the schedule of meetings for 2026, and **ENDORSED** the exclusion of the extra TCMP meeting in January 2026.

218. The SC **DISCUSSED** the funding for the ALB MSE work, **NOTING** that the project is expected to end at the end of 2025, but the process is not complete. The SC **DISCUSSED** ongoing funding, and whether there were plans to continue funding this work in 2026, and the SC **NOTED** the Secretariat would assess the progress of the developer against the ToRs before confirming funding options and future projects relating to this work.

219. The SC **NOTED** that although YFT does not have a Management Procedure, the SC was encouraged by the presentation of work that has started on an MSE process and **ENDORSED** the timeline as follows – that a high level summary will go to the TCMP in May in 2026, followed by a progress report in WPM in 2026 then the MSE Taskforce at the SC (2027) at the TCMP (2027) and at the Commission (2027). The MP may be adopted then, or in 2028.

220. The SC **DISCUSSED** the issue of multi-species MPs, with the implementation of a MP for BET that would impact catches of BSH. The SC **NOTED** that the current PoW and work plans prioritise single species MP, but that this is not realistic in the long term. The SC **NOTED** that this topic used to be included in the PoW for the MSE Taskforce, but that it is no longer included. The SC **SUGGESTED** that this be included in the PoW moving forward.

221. The SC **NOTED** concerns from CPCs regarding the additional pressure that CPUE standardisation teams are facing, with two CPUE indices needing to be developed – for MPs and stock assessments. The SC **NOTED** that there have been difficulties in providing the indices to WP on time and **SUGGESTED** that additional resources are to facilitate the timely provision of indices.

222. The SC **NOTED** that there are confidentiality agreements between longline countries and various tuna RFMO Secretariats regarding the use of operational data (such as those in place with the WCPFC and IATTC) and NOTING the provisions to ensure confidentiality of the operational data submitted to the Secretariat in IOTC Resolution 12/02, the SC **RECOMMENDED** that the Commission explore potential arrangements between longline-fleet CPCs and the IOTC Secretariat, under strict confidentiality rules (similar to those outlined in Resolution 12/02), so that the Secretariat can use operational data and participate in, as well as support, the

development of the joint longline CPUE index. The SC further **RECOMMENDED** exploring similar arrangements for other fleets.

223. The SC **NOTED** that several capacity-building workshops are planned in 2026, including a joint workshop on CPUE indices across tRFMOs that will be led by SPC and will occur late 2026 (October / November). Additionally, the SC **NOTED** that the FAO Common Oceans project will be holding a MSE workshop for tRFMOs led by ICCAT in Rome in January 2026, and **ENCOURAGED** CPCs interested in workshops to contact organisers to access funding.

224. The SC also **NOTED** that the FAO Common Ocean Project launched an e-learning course on MSE and MP, which can be completed by any interested scientists.

7.8. Report of the 21th Session of the Working Party on Data Collection and Statistics (WPDCS21)

225. The SC **THANKED** and **CONGRATULATED** the Chair and the WPDCS for their efforts and accomplishments during the 21st session of the WPDCS.

226. The SC **NOTED** that the report of the 21st Session of the Working Party on Data Collection and Statistics had not yet been finalised as the meeting was held back-to-back with the meeting of the SC. The meeting was attended by 85 participants (cf. 110 in 2024). Six participants received funding through the MPF, three of whom also attended the SC.

227. The SC **NOTED** that while there have been rapid advances with emerging AI algorithms, AI methods are not yet sufficiently mature to produce reliable species-specific catch estimates. The SC **AGREED** that an important contribution from the IOTC will be the collection and annotation of images with verified species identifications to support algorithm training, as initiated under the IOTC-OFCF project.

228. The SC **NOTED** that quality scores estimated by the Secretariat for tropical tuna data have been very high in recent years, with more than 90% of retained catches fully or partially reported in line with IOTC standards. However, the SC also **NOTED** that some critical issues in the catch data were identified during the 2025 WPTT.

229. The SC **RECALLED** that the quality scoring procedure for retained catches is limited to reporting criteria—specifically timeliness and compliance with IOTC standards (i.e., resolutions, formats and code lists)—and that the general lack of ancillary information prevents assessments of the accuracy and precision of the catch data submitted to the IOTC.

230. The SC further **RECALLED** that the provisions of Resolution 15/02 include the routine submission of documentation on sampling design and extrapolation procedures, which could support data quality assessments; however, the Secretariat currently holds limited information on such documentation.

231. The SC **RECALLED** that Data Preparatory meetings for the WPTT take place before the data submission deadline (i.e., 30 June), and therefore the time series of catches used as inputs for tropical tuna stock assessments are updated after these meetings. The SC **NOTED** that the Secretariat will undertake work in the coming years to improve dataset version management, including through the use of Digital Object Identifiers (DOIs), to better track and describe changes in the data over time.

232. **NOTING** that certain catch data were submitted only days before the 2025 WPTT, thereby providing insufficient time for the Secretariat to update the assessment input datasets, the SC **QUERIED** what the most appropriate procedure would be for treating such late submissions.

233. The SC **AGREED** on the need for flexibility in accommodating late submissions, **ACKNOWLEDGING** that the best scientific information available should inform scientific advice. The SC **NOTED** that work will be conducted in 2026 to accelerate and improve the procedure for raising catch data.

234. The SC **NOTED** that some funds have been allocated for the 2026 development of an interactive oceanographic Atlas for the IOTC Area of Competence, intended to support studies on the impacts of climate change on tuna fisheries, and **THANKED** Sri Lanka for proposing to host the oceanographic Atlas server.

235. The SC **ACKNOWLEDGED** that maintaining the oceanographic Atlas over the medium and long term would incur costs, **NOTING** that initial storage of around 300 GB would be required, with further storage needs expected

subsequently. The SC **AGREED** that detailed budget requirements should be evaluated once the oceanographic Atlas is operational.

236. The SC **RECOMMENDED** that the Commission ensures that the transition from the current website to the FAO one does not affect the operations of the Commission and set aside enough resources for this transition.

7.8.1. Update on WGEMS05

237. The SC **NOTED** the report of the 5th ad hoc working group meeting on Electronic Monitoring Standards (IOTC - 2025-WGEMS05-R). The meeting was attended by 43 participants (cf. 80 in 2024).

238. The SC **ACKNOWLEDGED** that the WPDCS conducted a comprehensive review of all ROS data fields for purse seine, longline, and pole-and-line fisheries but did not address the gillnet-specific fields due to the absence of gillnet fishery experts at the meeting.

7.8.2. Other matters

Yellowfin tuna catch limits for 2025 and 2026 (Res. 19/01 and 21/01)

239. The SC **NOTED** that the WPDCS has reviewed and **ENDORSED** the estimates of catch limits of yellowfin tuna for 2025 and 2026 (see document IOTC-2025-WPDCS21-DATA1 for details on computations).

240. The SC **RECALLED** how due to the unavailability of catch data for 2025 (to be provided by the deadline of 30 June 2026) all presented catch limits for 2026 are estimated with the assumption that catches for 2025 will be aligned with the CPC-specific established catch limits for the year.

241. The SC also **RECALLED** that in agreement with the text of Res. 21/01, provided catch limits refer to CPCs, and not distinct fleets, and therefore shall be calculated as such.

242. Considering this, the SC **ENDORSED** the annual catch limits for 2025 (calculated) and 2026 (estimated) as deriving from Res. 19/01 and 21/01 and presented in Appendix 35 as Table 1 and Table 2, respectively.

243. The SC **NOTED** that catch limits for yellowfin tuna for 2025 and 2026 have been computed by the Secretariat in accordance with Resolutions 18/01, 19/01, and 21/01, and presented to the WPDCS for information. The SC **ENCOURAGED** all CPCs to review the estimates included in spreadsheet IOTC-2025-SC28-DATA01 and provide feedback to the Secretariat for formal confirmation, **NOTING** that a Circular containing the final catch estimates will be disseminated by the Secretariat before the end of 2025.

7.9. Summary discussion of matters common to Working Parties (capacity building activities; connecting science and management, etc.)

7.9.1. Observed issues related to IOTC Working Party meetings

MPF

244. The SC **NOTED** that in 2025, the MPF provided funding for 40 participants to attend the various working parties throughout the year.

245. The SC **NOTED** the increasing utilisation of the Meeting Participation Fund (MPF) during working parties, observing that this is a positive development which aligns with the Commission's objectives and the original purpose of the MPF. However, the SC **NOTED** a few cases where applicants did not fully meet the MPF requirements, such as failing to submit a complete paper or submitting papers not sufficiently relevant to the meeting's agenda. The SC **NOTED** that there is currently no precedent requiring a recipient to return funds in such situations. Consequently, to ensure the effective use of MPF resources, the SC **RECOMMENDED** that the Commission and SCAF discuss further actions.

Working Paper submission

246. The SC **NOTED** a growing trend of late working party paper submissions, which creates difficulties for managing meeting agendas and limits the ability for participants to conduct a thorough review of technical documents. The SC **URGED** CPC scientists to make effort to meet the established deadlines. The SC further **NOTED** that if delays are unavoidable, scientists should be encouraged to provide a reason and an indication of when the

paper can be submitted. The SC **SUGGESTED** that papers submitted after the deadline without the Chair's approval should be classed as information papers.

Information Papers

247. Regarding information papers, the SC **NOTED** that while they are not intended for formal presentation, there is an increasing trend of authors requesting to present them. The SC **NOTED** that information papers have different submission requirements, notably the absence of a deadline, and that allowing them to be presented effectively gives the two document types the same level status.

248. The SC **NOTED** that guidance on information papers should be in line with IOTC practice and they should not be presented, however the Chair could decide to permit a short oral summary without a full presentation. Otherwise, documents intended for presentation should be submitted as full working papers. The SC further **NOTED** the need to explore how to handle papers published in scientific journals for working parties, as it would often be valuable to have these papers presented to the working parties.

Hybrid meetings

249. The SC **NOTED** that selecting the appropriate meeting format is important, as Working Party meetings are typically highly technical and involve the analysis of complex datasets requiring lengthy discussions. Ensuring that the Working Party has access to the best available information is essential for achieving good outcomes.

250. The SC **NOTED** the importance of supporting participation through the use of hybrid meeting formats, while also **NOTED** the need to discuss the constraints this presents.

251. The SC **NOTED** that the costs associated with the audio-visual equipment required to hold hybrid meetings are very high, particularly for meetings held in Seychelles, and that this is leading to increasing reluctance among CPCs to host meetings. The SC also **NOTED** issues during meetings where online participants request special arrangements for presentations and may not be following the proceedings closely, leading to repetition of questions and discussions. However, the SC **NOTED** that many CPCs have constraints on their human resources which make it challenging to attend all meetings in person despite the support of the MPF and so highlighted the need of such CPCs to maintain meetings in a hybrid format where possible.

252. The SC further **NOTED** concerns that the Secretariat may be under-resourced and overstretched to manage these arrangements effectively. However, it was **AGREED** that this issue would be more appropriately addressed at the Commission level. The SC **SUGGESTED** that SCAF could be dedicated to discussing matters related to the MPF and resources required for meetings.

Data preparatory meetings

253. The SC **NOTED** that some CPCs have provided CPUE data after the data preparatory meetings have concluded and requested the inclusion of their CPUE indices in the assessments, which is problematic as the data has not been fully discussed and their inclusion may not be justified. The SC **NOTED** that at least the methodology for developing a CPUE series should be explained during the data preparatory meeting with the full CPUE being submitted well ahead of the assessment meeting.

254. The SC also **NOTED** issues arising from CPCs submitting revisions to data after the official deadline, which complicates the compilation of catch datasets for assessments. The SC **AGREED** that while it is important to ensure the most accurate and up-to-date data are included in assessments—and to accommodate revisions where possible—it is also necessary to consider the time constraints of the data compilation process. Therefore, in some cases, a firm cut-off date may be required.

SC Meetings

255. The SC **NOTED** the recent practice of reopening discussions on stock assessments and other technical issues during SC meetings when issues are not fully resolved or decisions cannot be reached at the Working Parties. The SC **NOTED** that it might be more efficient to resolve some of these technical discussions through intersessional meetings of the relevant Working Parties.

256. The SC **NOTED** that there have been some concerns regarding the running of working parties by some CPCs, in particular in relation to the WPEB. The SC **RECALLED** that issues regarding the meeting operations including the structure of the meeting series, the meeting calendar and rules of procedure, was brought to the Commission in 2025 who agreed that a small working group (consisting of working party and SC chairs and other interested

parties) should meet to discuss this issue and make suggestions for streamlining meetings. The SC **NOTED** that one meeting has already been held and another is scheduled for January 2026 and the aim is to provide feedback to the Commission in 2026.

257. The SC **REQUESTED** that working parties to ensure that recommendations are drafted and adopted during the working party meetings as it can be complicated to get these agreed on after a meeting has concluded.

7.9.2. Data collection and capacity building

258. The SC **NOTED** that the ability to determine the success of any management measure adopted by IOTC will depend on the availability of the necessary monitoring information. This relates not only to the types of data being collected, but also their spatio-temporal resolution and the ability of CPCs to report these data in a timely manner.

259. The SC **NOTED** that this year the Secretariat carried out a number of capacity building missions, mostly focus on data to support CPCs in improving their data collection and reporting systems so they are able to meet the IOTC reporting requirements.

7.9.3. Invited Expert(s) at the WP meetings

260. Given the importance of external independent review for working party meetings, the SC **RECOMMENDED** the Commission continues to allocate sufficient budget for Invited Experts to be regularly invited to scientific working party meetings. The SC **NOTED** that there are generally funds to support 3 or 4 Invited Experts to attend IOTC's working parties.

261. The SC **NOTED** that each working party specifies the areas of expertise required for the following year and further **NOTED** that generally the expertise relate to carrying out stock assessments including applying MSE processes and data-poor assessment approaches. However, the working parties may have more specific needs in a certain year – for example, the WPNT focused on genetic studies in 2025 and a scientist with expertise in genetic techniques was invited to the meeting.

7.9.4. IOTC species identification guides: Tuna and tuna-like species

262. The SC reiterated its **RECOMMENDATION** that the Commission allocates budget towards continuing the translation and printing of the IOTC species ID guides so that hard copies of the identification cards can continue to be printed as many CPC scientific observers, both on board and at port need to have hard copies.

263. The SC **NOTED** that OFCF Japan has facilitated the translation and shipment of ID guides in partnership with the IOTC Secretariat, with short-term funding provided by OFCF Japan. The SC expressed its gratitude to OFCF Japan for conducting these important activities.

264. The SC **NOTED** that following the successful workshop in 2024 in Sri Lanka that trained people from 10 CPCs from the Western Indian Ocean on species identification, the Secretariat has organised a second workshop in October 2025 to train further people from 10 CPCs from the Eastern Indian Ocean on species identification. Similar to the previous workshop, the intention of this workshop is to train participants from these CPCs who will then train enumerators in their own countries.

7.9.5. Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies

265. The SC **NOTED** that the Commission, at its 29 Session, **ENDORSED** those officials elected for the SC and its subsidiary (scientific) bodies for the coming years, as listed in Appendix 7 of the 2024 Scientific Committee Report. The SC **RECALLED** that at its the 27th session in 2024 the SC nominated and elected Dr Toshihide Kitakado (Japan) as Chairperson for one more year, and therefore the election for the new SC chair will take place at the next session of the SC in 2025 (see Section 12.1).

266. The SC **RECOMMENDED** that the Commission note and endorse the Chairpersons and Vice-Chairpersons for the SC and its subsidiary bodies for the coming years, as provided in Appendix 7.

8. Status tuna and tuna-like resources in the Indian Ocean

8.1. Tuna – Highly migratory species

267. The SC **RECOMMENDED** that the Commission note the management advice developed for each tropical and temperate tuna species as provided in the Executive Summary for each species, and the combined Kobe plot for the four species assigned a stock status in 2025 (Fig. 1):

Albacore (*Thunnus alalunga*) – Appendix 8

Bigeye tuna (*Thunnus obesus*) – Appendix 9

Skipjack tuna (*Katsuwonus pelamis*) – Appendix 10

Yellowfin tuna (*Thunnus albacares*) – Appendix 11

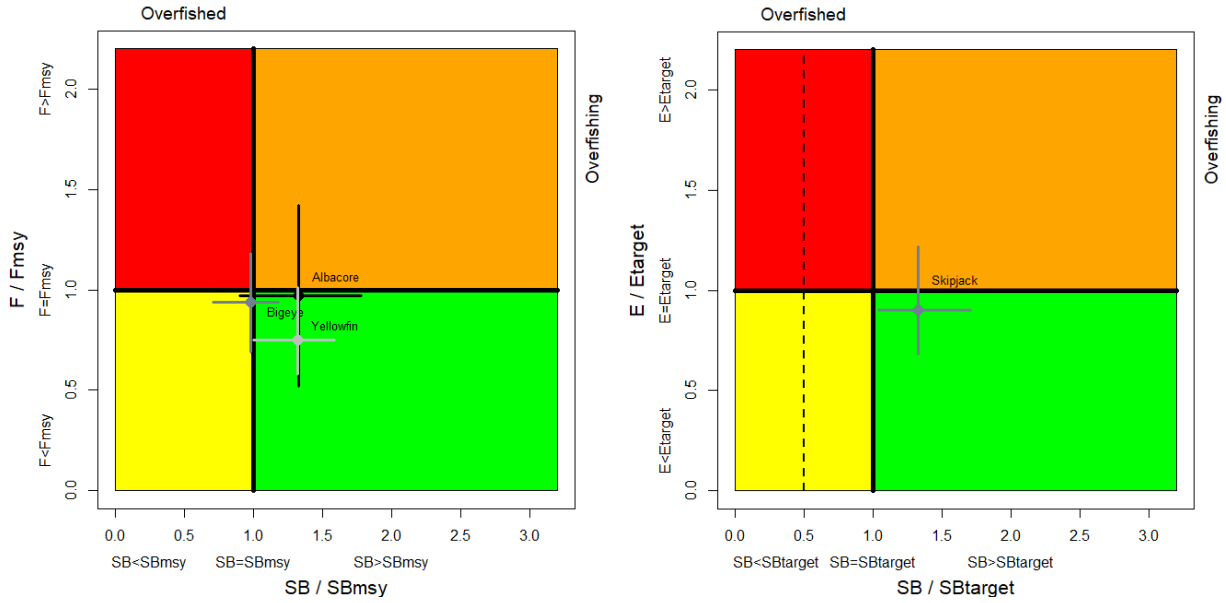

Fig. 1. (Left) Combined Kobe plot for bigeye tuna (black: status in 2024, based on the stock assessment conducted in 2025), and yellowfin tuna (light grey: 2023, with stock assessment conducted in 2024) and albacore (dark grey: 2020 with stock assessment conducted in 2022) showing the estimates of current spawning biomass (SB) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. (Right) Kobe plot for skipjack tuna (2022 with stock assessment conducted in 2023) showing the estimates of the current stock status (The dashed line indicates the limit reference point at 20%SB0 while SBtarget=0.4 SB0). Cross bars illustrate the range of uncertainty from the model runs with an 80% CI (95% CI for albacore).

268. The SC **NOTED** paper IOTC–2025–SC27–ES05 which provided an overview of the biology, stock status and management of southern bluefin tuna (*Thunnus maccoyii*), and thanked CCSBT for its provision.

8.2. Tuna and seerfish – neritic tuna species

269. The SC **RECOMMENDED** that the Commission note the management advice developed for each neritic tuna (and seerfish) species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2025 (Fig. 2):

Bullet tuna (*Auxis rochei*) – Appendix 12

Frigate tuna (*Auxis thazard*) – Appendix 13

Kawakawa (*Euthynnus affinis*) – Appendix 14

Longtail tuna (*Thunnus tonggol*) – Appendix 15

Indo-Pacific king mackerel (*Scomberomorus guttatus*) – Appendix 16

Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – Appendix 17

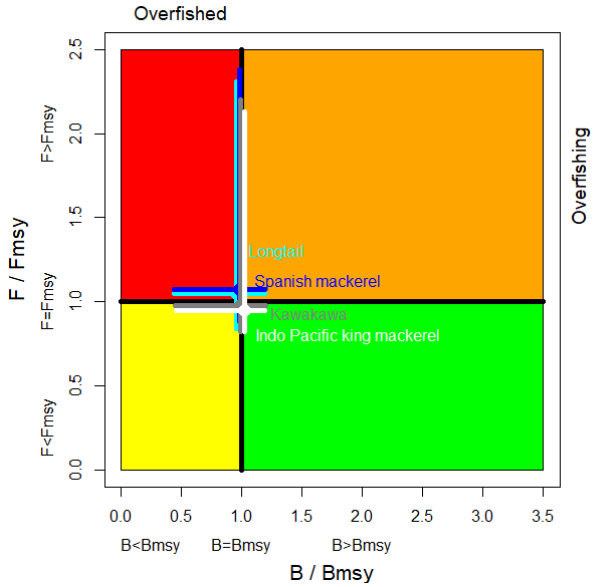

Fig. 2. Combined Kobe plot for longtail tuna (cyan), narrow-barred Spanish mackerel (blue), kawakawa (grey) (all for 2021 with stock assessment carried out in 2023) and Indo-Pacific king mackerel (2022 with stock assessment conducted in 2024 (white)), showing the estimates of stock size (B) and current fishing mortality (F) in relation to optimal biomass and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for bullet tuna, frigate tuna and narrow-barred Spanish mackerel should be interpreted with caution.

8.3. Billfish

270. The SC **RECOMMENDED** that the Commission note the management advice developed for each billfish species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the five species assigned a stock status in 2025 (Fig. 3):

Black marlin (*Istiompax indica*) – Appendix 18

Blue marlin (*Makaira nigricans*) – Appendix 19

Striped marlin (*Kajikia audax*) – Appendix 20

Indo-Pacific sailfish (*Istiophorus platypterus*) – Appendix 21

Swordfish (*Xiphias gladius*) – Appendix 22

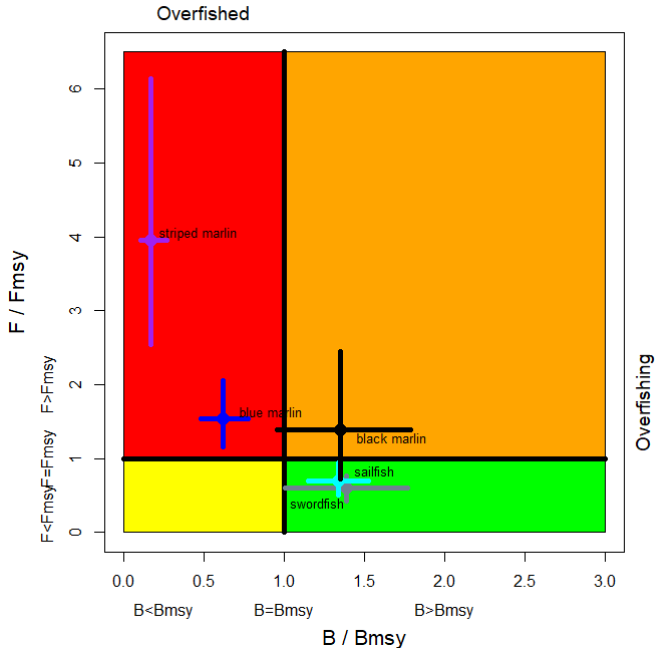

Fig. 3. Combined Kobe plot for swordfish (2021 with stock assessment conducted in 2023, grey), Indo-Pacific sailfish (2023 with stock assessment conducted in 2025, cyan), black marlin (2022 with stock assessment conducted in 2024, black), blue marlin (2023 with stock assessment conducted in 2025, blue) and striped marlin (2022 with stock assessment conducted in 2024, purple) showing the estimates of current stock size (SB or B, species stock assessment dependent) and current fishing mortality (F) in relation to optimal stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for black marlin is uncertain.

9. Status of sharks, marine turtles, seabirds and marine mammals in the Indian Ocean

9.1. Sharks

271. The SC **RECOMMENDED** that the Commission note the management advice developed for a subset of shark species commonly caught in IOTC fisheries for tuna and tuna-like species:

Blue shark (*Prionace glauca*) – Appendix 23

Oceanic whitetip shark (*Carcharhinus longimanus*) – Appendix 24

Scalloped hammerhead shark (*Sphyrna lewini*) – Appendix 25

Shortfin mako shark (*Isurus oxyrinchus*) – Appendix 26

Silky shark (*Carcharhinus falciformis*) – Appendix 27

Bigeye thresher shark (*Alopias superciliosus*) – Appendix 28

Pelagic thresher shark (*Alopias pelagicus*) – Appendix 29

porbeagle shark (*Lamna nasus*) – Appendix 30

9.2. Marine turtles

272. The SC RECOMMENDED that the Commission note the management advice developed for marine turtles, as provided in the Executive Summary which encompasses all six species found in the Indian Ocean:

Marine turtles – Appendix 31

9.3. Seabirds

273. The SC **RECOMMENDED** that the Commission note the management advice developed for seabirds, as provided in the Executive Summary which encompasses all species commonly interacting with IOTC fisheries for tuna and tuna-like species:

Seabirds – Appendix 32

9.4. Marine mammals

274. The SC **RECOMMENDED** that the Commission note the management advice developed for cetaceans, as provided in Executive Summary which encompasses all species commonly interacting with IOTC fisheries for tuna and tuna-like species:

Cetaceans – Appendix 33

9.5. Mobulids

275. The SC **RECOMMENDED** that the Commission note the management advice developed for Mobulids, as provided in the newly developed Executive Summary which encompasses all species commonly interacting with IOTC fisheries for tuna and tuna-like species:

Mobulids – Appendix 34

10. Implementation the Regional Observer Scheme

276. The SC **NOTED** paper IOTC–2025–SC28–07 which provided an update on the status of implementation and reporting to the IOTC Secretariat set out by Resolution 22/04 On a Regional Observer Scheme (ROS) including the coverage estimated for both the longline and purse seine industrial fisheries from concerned CPCs, and how these compare to the expected minimum coverage level.

277. The SC **NOTED** that the ROS reporting forms were updated according to the minimum fields agreed by the SC last year and consolidated as the mandatory format to report observer data. The SC also **NOTED** that the forms are available on the IOTC website providing descriptions for each of the form's sections and fields. The SC **THANKED** and **CONGRATULATED** the Secretariat for the work done and **AGREED** with the proposal of dedicated ROS reporting workshops to be done in 2026 to assist the CPCs in the implementation of the ROS IOTC forms.

278. The SC **NOTED** that the ROS forms include specific fields for reporting bycatch species such as sharks, including information on their fate, and **REITERATED** the importance of collecting and submitting these data to improve knowledge of species that are otherwise not assessed due to the current lack of information.

279. The SC **NOTED** that the supporting documentation for the ROS implementation, including standards, training and reporting materials, were updated and are available on the IOTC website. The SC further **NOTED** that the Secretariat will update the observers manual and develop ROS reporting guidelines, along with a data check system for data validation as the one already available for the mandatory statistical datasets.

280. The SC **NOTED** that the ROS database architecture is under revision to accommodate the requested revision of the minimum data fields and data standards and incorporate the most recent ROS datasets received at the Secretariat. The SC **THANKED** the Secretariat for the compilation of the historical data submitted as trips reports to consolidate the main ROS datasets and support the IOTC work.

281. The SC **NOTED** that half of the longline fleets reporting ROS data shows stable reporting and increasing coverage trends with only four fleets with coverage levels above of the 5% required in the recent years. The SC URGED the missing CPCs to address the provision of observer's data. The SC further **NOTED** that the observer coverage was above the minimum required for the purse seine fleets providing observer data in recent years (2022 to 2024).

282. The SC **NOTED** that Resolution 25/06 requires that landings from artisanal fishing vessels be monitored at the landing place by field samplers, with a minimum coverage level at 5% of the total levels of vessel activity. The SC further **NOTED** that there are currently no standards defined for the monitoring of artisanal fisheries as part

of the ROS while the active coastal fishing vessel reporting remains voluntary, impeding the estimation of coverage for artisanal fisheries.

283. The SC **NOTED** that in the absence of effort reported as operations/sets for most longline fleets, coverage estimates continue to be based on the number of hooks observed, while coverage estimates for purse seine fleets are based on observed operations/sets. The SC **RECALLED** the recommendation made in 2022 at the 25th session of the SC for the Commission to endorse the mandatory reporting of geo-referenced effort data as number of sets/operations for longline and surface fisheries to complement the current requirements of Res. 15/02, for the Secretariat to accurately and independently calculate the ROS coverage.

11. Program of work and schedule of Working Party and Scientific Committee meetings

11.1. Progress on previous recommendations from WPs and the SC

284. The SC **NOTED** paper IOTC–2025–SC28–10 which provided the SC with an update on the progress made on its 2024 recommendations (also available in Appendix 36).

285. The SC **THANKED** the Secretariat for the update on progress and **NOTED** that encouraging progress was being made.

11.2. Program of Work (2026–2030) and stock assessment schedule

11.2.1. Program of Work

286. The SC **NOTED** IOTC–2025–SC28–08 which provided the SC with a proposed Program of Work for each of its working parties, including prioritisation of the elements requested by each working party.

287. The SC **NOTED** the proposed Program of Work and priorities for the SC and each of the working parties and **AGREED** to a consolidated Program of Work as outlined in Appendix 36a-g. The Chairpersons and Vice-Chairpersons of each working party will ensure that the efforts of their respective working parties are focused on the core areas contained within the appendix, considering any new research priorities identified by the Commission at its next Session.

288. The SC **RECALLED** the process for developing the consolidated SC Program of Work (IOTC–2014–SC17–R, para. 179):

- Step 1: Working Parties to identify research needs (based on the needs of the Commission), rank them by order of priority, provide cost estimates and list potential funding sources;
- Step 2: The SC and Working Party Chair and Vice-Chair, in liaison with the IOTC Secretariat should develop a consolidated document taking into account the different Working Party research needs and priorities, with the objective of ranking the research needs among all Working Parties;
- Step 3: The Chair of the SC shall present these to the SC, to be discussed and endorsed as the consolidated research priorities for the IOTC Science process;
- Step 4: The IOTC Secretariat, in consultation with the Chair and Vice-Chair of the SC and Chair and Vice-Chair or relevant Working Parties, shall identify funding possibilities to undertake the consolidated research priorities;
- Step 5: Once the funding sources have been committed to a particular research priority, the panel mentioned above in Step 2 shall develop terms of reference of the 'Expression of Interest' (including tasks, timelines and deliverables) and the selection procedure/criteria;
- Step 6: IOTC Secretariat to advertise a call for 'Expression of Interest' among the IOTC Commissioner's and Science contact lists, and via the IOTC website;
- Step 7: The Chair of the SC, Chair(s) and Vice-Chair(s) of the WP(s) concerned, in liaison with the IOTC Secretariat shall determine the most appropriate project proposal, based on the criteria defined in Step 5

and in line with the financial rules of the Commission and FAO. Potential contracted candidate will be contacted by the IOTC Secretariat to confirm availability.

289. The SC **AGREED** on the consolidated table of priorities across all working parties (Table 3), as developed by each working party Chairperson. The SC **REQUESTED** that the IOTC Secretariat, in consultation with the Chairpersons and vice-Chairpersons of the SC and relevant working parties, develop ToRs for the specific projects to be carried out.

290. The SC **NOTED** that the consolidated table of priorities does not replace the full programme of work of each Working Party (Appendix 37a-g) and that adequate attention and focus should still be allocated to those activities where possible. The SC further **NOTED** that Table 3 has been developed by the SC and Working Party Chairs to provide more specific direction to the IOTC Secretariat and the SC Chair as to the priorities of the SC so that, if and when external funding becomes available intersessionally, it is possible to clearly prioritise across all working parties based on the objectives of the SC (as agreed in IOTC–2014–SC17–R, para. 179).

291. The SC **NOTED** that CITES has recently listed several species of concern to the IOTC. The SC also **NOTED** that the WPEB has already incorporated this into its agenda to ensure better alignment with CITES's work.

Table 3. Priority topics for obtaining the information necessary to develop stock status indicators for all Working Parties. Further details can be found in Appendix 37a-g.

Priority	1	2	3
WPTT	**Abundance indices development** Address the additional recommendations made by the WPTT in 2024 regarding the CPUE indices for yellowfin. In view of the coming stock assessments of yellowfin, bigeye, and skipjack develop abundance time series for each tropical tuna stock for the Indian Ocean • Continue to develop CPUE indices from Longline, PS, Pole and line fisheries, and fishery independent indices of abundance such as those derived from echosounder buoys. • Explore and support the development of gillnet CPUE indices for fleets (e.g., Iran, Pakistan and Oman) Evaluate effect of changes of spatial coverage on the longline CPUE through the Joint CPUE workshop and estimate spatial temporal abundance distribution through VAST modelling approach	**Fisheries Independent Monitoring** Use of Close-Kin Mark-Recapture (CKMR) methods which can provide estimates of absolute spawning biomass, mortality, stock structure, and connectivity based on genotyping individuals to a level that can identify close relatives (e.g. parent-offspring or half-siblings). Plan for a staged approach for implementation of a YFT CKMR project **Analysis of tagging and size frequency data** Analyse data from IOTC tagging programs outside stock assessment models and evaluate its utility and impact on stock assessments. Standardization of size frequency data. **Analysis of environmental factors** Evaluate the impact of environmental factors on the dynamics of tropical tuna stocks and the possible role of climate change on changes to selectivity, recruitment deviates and fishing productivity.	**Biological and ecological information (incl. parameters for stock assessment)** Design and develop a plan for a biological sampling program to support research on tropical tuna biology. The plan would consider the need for the sampling program to provide representative coverage of the distribution of the different tropical tuna species within the Indian Ocean and make use of samples and data collected through observer programs, port sampling and/or other research programs. The plan would also consider the types of biological samples that could be collected (e.g. otoliths, spines, gonads, stomachs, muscle and liver tissue, fin clips, etc.), the sample sizes required for estimating biological parameters, and the logistics involved in collecting, transporting and processing biological samples. The specific biological parameters that could be estimated include, but are not limited to, estimates of growth, age at maturity, fecundity, sex ratio, spawning season, spawning fraction and stock structure **Analysis of environmental factors** Evaluate the impact of environmental factors on the dynamics of tropical tuna stocks and the possible role of climate change on changes to selectivity, recruitment deviates and fishing productivity.
WPEB	**Connectivity, movements, habitat use and post release mortality**[1] Electronic tags (PSATs, SPOT, Splash MiniPAT) to assess the efficiency of management resolutions on non-retention species (BSH in LL, marine turtles and rays in GIL and PS, whale sharks) and to determine connectivity,	**Fisheries data collection and development of alternative inputs into stock assessments** 1.1 Catch composition reconstruction (initial focus India and Indonesia) 1.1.1 Historical data mining for the key species and artisanal gillnet and longline coastal fisheries) inclu	**Shark research and management strategy** 2.1 Workshop to update and revise shark research plan with a small working group 2.2 Prioritising shark research based on previous work and including analysing gaps in knowledge to address the requests from the Commission contained within Resolution 25/08

[1] This item is a top priority for the WPEB; however, completing it will require substantial funding, which the WPEB recognizes is unlikely to be provided through the IOTC Scientific budget.

	movement rates, mortality estimates and genetic studies	1.1.2 Historical data mining and development of baseline catch history series for key species, including blue shark and shortfin mako shark, through the collection and integration of information on catch, effort, and spatial distribution of fleets, as well as mining statistics for sharks not reported to species level. 1.1.3 CPUE standardisation and review of additional abundance indicators series for each key shark species and fishery in the Indian Ocean 1.2 Investigation of sampling options to explore different indices of abundance for sharks such as CKMR. Identify CPCs who may be able to collaborate.	2.3 Implementation of work suggested by shark research plan	
WPNT	**Stock structure (connectivity)** Genetic research to determine the connectivity of neritic tunas throughout their distributions (This should build on the stock structure work conducted in other previous studies): 1. Review of stock structure methodologies with genetic expert during WPNT15 in order to determine the best approach to regional stock structure studies. Based on discussions develop and implement regional genetic sampling collection programme: • Sampling of tissue samples • DNA extraction and storage for preservation • Carry out genetic sequencing on extracted DNA	**Stock assessment / Stock indicators** Explore alternative stock assessment approaches and develop improvements where necessary based on the data available to determine stock status for longtail tuna, kawakawa and Spanish mackerel 1. The Weight-of-Evidence approach should be used to determine stock status, by building layers of partial evidence, such as CPUE indices combined with catch data, life-history parameters and yield-per recruit metrics, as well as the use of data poor assessment approaches (e.g. CMSY, OCOM, LB-SPR, Risk based methods). 2. Exploration of priors and how these can be quantifiably and transparently developed. 3. Review size data and their suitability for monitoring stock status. Improve the presentation of management advice from different assessment approaches to better represent the uncertainty and improve communication between scientists and managers in the IOTC.	**Data mining and collation** Improved collation and characterization of operational level data for the main neritic tuna fisheries in the Indian Ocean to investigate their suitability to be used for developing standardised CPUE indices. Improved characterization of fisheries when CPCs present information to WPNT. The following data should be collated and made available for collaborative analysis: 6. catch and effort by species and gear by landing site; 7. operational data: stratify this by vessel, month, and year for the development as an indicator of CPUE over time; and 8. operational data: collate other information on fishing techniques (i.e. area fished, gear specifics, depth, environmental condition (near shore, open ocean, etc.) and vessel size (length/horsepower)). 9. Reconstruction of historical catch by CPCs using recovered or captured information. 10. Re-estimation of historic catches (with consultation and consent of concerned CPCs including India, Pakistan, Bangladesh, Mozambique, Tanzania,	

			Madagascar, Kenya) for assessment purposes (taking into account updated identification of uncertainties and knowledge of the history of the fisheries. 11. Improvements to species identification
WPTmT	**Stock structure (connectivity and diversity)** 1.1 Genetic research to determine the connectivity of albacore throughout its distribution and the effective population size 1.2 Tagging study to understand the migration pattern of albacore in the Indian Ocean	**Biological information (parameters for stock assessment)** 2.1 Biological research (collaborative research to improve understanding of spatio-temporal patterns in age and growth and reproductive parameters by sex) 2.11 Age and growth studies: Uncertainty about the growth curve is a primary source of uncertainty in the stock assessment. A preliminary growth curve was developed in 2019, but there is substantial work to be done to ensure that growth curves include data from smaller size classes, and that spatio-temporal patterns in growth are quantified for use in the stock assessment. Collaborative sampling programs, involving a combination of observer- and port-based sampling, are required to ensure that adequate samples are collected 2.1.2 Quantitative biological studies are necessary for albacore throughout its range to determine spatio-temporal patterns in key reproductive parameters including sex ratio; female length- and age-at-maturity; spawning location, periodicity and frequency; batch fecundity at length and age; spawning fraction and overall reproductive potential, to inform future stock assessments	**CPUE standardisation** 3.1 Continue the development of standardized CPUE series for each albacore fishery for the Indian Ocean, with the aim of developing appropriate CPUE series for stock assessment purposes 3.2 Spatio-temporal structure and target changes need to be considered carefully, as fish density and targeting practices can vary in ways that affect CPUE indices. Developments may include changes to fishery spatial structure, new approaches for area weighting, time-area interactions in the model, and/or indices using spatial temporal model
WPB	**CPUE standardization** Develop and/or revise standardized CPUE series for each billfish species and major fisheries/fleets in the Indian Ocean and develop Joint CPUE series where feasible Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France), Japan, Indonesia, South African	**Population biology** 1.1 Age and growth research 1.1.1 CPCs to provide further research on billfish biology, namely age and growth studies including the use of fish otolith or other hard parts, as well as through genetic methods, either from data collected through observer programs, port sampling or	**Population dynamics** 2.1 Stock structure (connectivity and diversity 2.1.1 Continue work on determining stock structure of Billfish species, using complimentary data sources, including genetic and microchemistry information as well as other relevant sources/studies. 2.1.2 Tagging research (PSAT tags) to determine connectivity, movement rates

	• Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France), Japan, Indonesia, South African • Striped marlin: Priority fleets: Japan, Taiwan,China • Black marlin: Priority fleets: Longline: Taiwan,China; Potential fleets (Gillnet: I.R. Iran, Sri Lanka, Indonesia) • Blue marlin: Priority fleets: Japan, Taiwan,China, Indonesia • I.P. Sailfish: Potential longline fleets: EU(Spain, Portugal, France), Japan, Indonesia; gillnet fleets: I.R. Iran and Sri Lanka;	other research programs. (Priority: all billfishes: swordfish, marlins and sailfish) 1.2 Spawning time and locations 1.2.1 Collect gonad samples from billfish or utilise any other scientific means to confirm the spawning time and location of the spawning areas that are presently hypothesized for each billfish species. This will also provide advice to the Commission on the request for alternative management measures (Res. 18-05, paragraph 6). Partially supported by EU, on-going support and collaboration from CPCs are required. 1.3 Literature review of biological parameters for billfish 1.3.1. Conduct a literature review of biological parameters for billfish through a consultancy and update the supplementary information that companies with species Executive Summaries.	and mortality estimates of billfish (Priority species: swordfish). Similar projects have been partially funded by EU, with a focus on epipelagic species. More tags are needed for swordfish. 2.2 Close-Kin Mark-Recapture 2.2.1 Pilot design study to estimate abundance and papulation parameters including larval surveys
WPDCS	**Coastal fisheries data collection** Data support missions to assist the implementation of data collection and sampling activities for fisheries insufficiently sampled. Recommended actions include designing sampling guidelines for IOTC fisheries. Priority to be given to the following countries / fisheries: • Indonesia • Pakistan • I.R. Iran • Tanzania • Comoros	**Coastal fisheries data collection** Biological sampling workshop, including species identification and genetics sampling	**Monitoring and improving data reporting requirement and performance** Workshops to clarify data reporting requirements and support preparation of annual submissions including ROS data
WPM	**MSE** Continuation of Management Strategy Evaluation for albacore, yellowfin tunas as well as blue shark		

11.2.2. Stock assessment schedule

292. The SC **ADOPTED** a revised stock assessment schedule, ecological risk assessment schedule and other core projects for 2026–30, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key shark species of interest, as outlined in Appendix 38.

11.2.3. Consultants

293. **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in previous years, the SC **RECOMMENDED** that the engagement of consultants be continued for each coming year based on the Program of Work. Consultants will be hired to supplement the skill set available within the IOTC Secretariat and CPCs.

11.3. Schedule of meetings for 2026 and 2027

294. The SC **NOTED** paper IOTC–2025–SC28–09 which outlined the proposed schedule for IOTC Working Parties and SC meetings for 2026 and 2027.

11.3.1. Data preparatory meetings and Hybrid meetings

295. **ACKNOWLEDGING** that holding data preparatory meetings prior to stock assessments is considered to be best practice and **NOTING** that since 2019 data preparatory meetings were successfully held for the WPTmT, WPTT and WPEB, the SC **AGREED** to continue the practice of having data preparatory meetings in addition to stock assessment meetings for the main IOTC species. The SC **RECOMMENDED** that data preparatory meetings could continue to be held virtually so as not to increase the travel and costs required for the already full IOTC timetable of meetings.

11.3.2. Final Meeting schedule

296. The SC **REQUESTED** that the schedule of Working Party and Scientific Committee meetings for 2026 and 2027 provided in Appendix 39 be communicated by the IOTC SC Chairperson to the Commission for its endorsement.

12. Other Business

12.1. Election of a Chair and a Vice-Chair for the next biennium (Chair and Secretariat)

297. The SC **NOTED** that the second term of the current Chairperson, Dr Toshihide Kitakado, expired at the end of the SC meeting in 2023 and as per the IOTC Rules of Procedure (2014), participants were required to elect a new Chairperson. However, no nominations were received at the SC26. The SC **RECALLED** the recommendation outlined in paragraph 157 of IOTC-2023-SC26-R, stating that CPCs proposed and agreed that Dr Kitakado continue as SC chair as an interim measure. The SC at its the 27th session in 2024 agreed that the election for the new SC chair will take place at the next session of the SC in 2025.

298. The SC **CALLED** for nominations for the position of the Chairperson of the IOTC SC, Dr Sylvain Bonhommeau (EU.France) was nominated, seconded and elected as Chairperson of the SC for the next biennium.

299. The SC **NOTED** that Dr Fayakun Satria (Indonesia) was elected as the Vice-Chairperson of the SC at the close of SC meeting in 2024. However, due to personal reasons, Dr Satria could no longer serve in this role. As per the IOTC Rules of Procedure, participants are required to elect a new Vice-Chairperson of the SC for the next biennium.

300. The SC **NOTED** that, according to IOTC tradition, the Vice Chair typically assumes the role of Chair. However, this process has not always worked well for the SC, as several past Vice Chairs were unable to take on the Chair position due to personal reasons. To address this, the SC proposed appointing an additional Vice Chair to increase the SC's capacity and improve the likelihood of a smooth transition. The SC **AGREED** that having an extra Vice Chair would also enhance the diversity of the chairs and provide better representation for both coastal states and DWFNs.

301. **NOTING** the Rules of Procedure (2014), the SC called for nominations for the position of the first Vice Chairperson of the IOTC SC. Dr Jiangfeng Zhu (China) was nominated, seconded and elected as first Vice-Chairperson of the SC for the next biennium.

302. **NOTING** the Rules of Procedure (2014), the SC called for nominations for the position of the second Vice Chairperson of the IOTC SC. Dr Charlene de Silva (South Africa) was nominated, seconded and elected as Second Vice-Chairperson of the SC for the next biennium.

13. Adoption of the Report of the 28th Session of the Scientific Committee

303. The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC28, provided at Appendix 40.

304. The report of the 28th Session of the Scientific Committee (IOTC–2025–SC28–R) was **ADOPTED** by correspondence.

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APPENDIX 2
AGENDA for the 28th Session of the Scientific Committee

Date: 1 - 5 December 2025
Location: Royal Garden Hotel, Shanghai, China/Hybrid
Time: 09:00 – 17:00 daily
Chair: Dr Toshihide Kitakado (Japan)
Vice-Chair: Dr Fayakun Satria (Indonesia)

1. **OPENING OF THE SESSION** (Chairperson)

2. **ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION** (Chairperson)

3. **ADMISSION OF OBSERVERS** (Chairperson)

4. **DECISIONS OF THE COMMISSION RELATED TO THE WORK OF THE SCIENTIFIC COMMITTEE** (IOTC Secretariat)
   - 4.1 Outcomes of the 29th Session of the Commission.
   - 4.2 Previous decisions of the Commission

5. **SCIENCE RELATED ACTIVITES OF THE IOTC SECRETARIAT IN 2025** (IOTC Secretariat)
   - 5.1 Report of the Secretariat – Activities in support of the IOTC science process in 2025

6. **NATIONAL REPORTS FROM CPCs** (CPCs)

7. **REPORTS OF THE 2025 IOTC WORKING PARTY MEETINGS**
   - 7.1 IOTC-2025-WPTmT09-R Report of the 9th Session of the Working Party on Temperate Tunas
     - 7.1.1 Albacore tuna stock assessment
   - 7.2 IOTC-2025-WPNT15-R Report of the 15th Session of the Working Party on Neritic Tunas
   - 7.3 IOTC-2025-WPB23-R Report of the 23nd Session of the Working Party on Billfish
     - 7.3.1 Blue marlin stock assessment
     - 7.3.2 Indo-Pacific sailfish marlin assessment
     - 7.3.3 Revision of catch levels of Marlins under Resolution 18/05
   - 7.4 IOTC-2025-WPEB21-R Report of the 21th Session of the Working Party on Ecosystems and Bycatch
     - 7.4.1 Status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations
     - 7.4.2 Blue shark stock assessment
     - 7.4.3 Other matters
   - 7.5 IOTC-2025-WPTT27-R Report of the 27th Session of the Working Party on Tropical Tunas
     - 7.5.1 Bigeye tuna stock assessment
     - 7.5.2 Update on the WGFAD07
     - 7.5.3 Other matters
   - 7.6 IOTC-2025-WPM16-R Report of the 16th Session of the Working Party on Methods
     - 7.6.1 Update on TCMP09
     - 7.6.2 Management Strategy Evaluation Progress
     - 7.6.3 Bigeye tuna MP (Resolution 22/03)
     - 7.6.4 Skipjack tuna MP (Resolution 24/07)
     - 7.6.5 Swordfish tuna MP (Resolution 24/08)
   - 7.7 IOTC-2025-WPDCS21-R Report of the 21th Session of the Working Party on Data Collection and Statistics
     - 7.7.1 Update on WGEMS05
     - 7.7.2 Other matters

7.8 Summary discussion of matters common to Working Parties (capacity building activities; connecting science and management, etc.)
- 7.8.1 Data collection and capacity building
- 7.8.2 Invited Expert(s) at the WP meetings
- 7.8.3 Meeting participation fund
- 7.8.4 IOTC species identification guides: Tuna and tuna-like species
- 7.8.5 Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies

8. STATUS OF TUNA AND TUNA-LIKE RESOURCES IN THE INDIAN OCEAN (Chairperson)
- 8.1 Tuna – Highly migratory species
- 8.2 Tuna and mackerel – Neritic tuna species
- 8.3 Billfish

9. STATUS OF SHARKS, MARINE TURTLES, SEABIRDS AND MARINE MAMMALS IN THE INDIAN OCEAN (Chairperson)
- 9.1 Sharks
- 9.2 Marine turtles
- 9.3 Seabirds
- 9.4 Marine mammals

10. IMPLEMENTATION OF THE REGIONAL OBSERVER SCHEME (IOTC Secretariat)
- 10.1 Consideration of Resolution 25/06 On a regional observer scheme

11. PROGRAM OF WORK AND SCHEDULE OF WORKING PARTY AND SCIENTIFIC COMMITTEE MEETINGS (IOTC Secretariat and Chairperson**)**
- 11.1 Progress on previous Recommendations from WPs and SC
- 11.2 Program of Work (2026–2030) and assessment schedule
  - 11.2.1 Program of Work
  - 11.2.2 Assessment schedule
  - 11.2.3 Consultants
- 11.3 Schedule of meetings for 2026 and 2027
  - 11.3.1 Data preparatory meetings
  - 11.3.2 Final meeting schedule

12 IOTC SCIENTIFIC STRATEGIC RESEARCH PLAN (Chairperson)

13 OTHER BUSINESS (Chairperson)

13.1 Election of a Chair for the next biennium (Chair and Secretariat)

14 REVIEW OF THE DRAFT, AND ADOPTION OF THE REPORT OF THE 28th SESSION OF THE SCIENTIFIC COMMITTEE (Chairperson)

APPENDIX 3
LIST OF DOCUMENTS

Document	Title
IOTC-2025-SC28-01a	Draft: Agenda of the 28th Session of the Scientific Committee
IOTC-2025-SC28-01b	Draft: Annotated agenda of the 28th Session of the Scientific Committee
IOTC-2025-SC28-02	Draft: List of documents of the 28th Session of the Scientific Committee
IOTC-2025-SC28-03	Outcomes of the 29th Session of the Commission (IOTC Secretariat)
IOTC-2025-SC28-04	Previous decisions of the Commission (IOTC Secretariat)
IOTC-2025-SC28-05	Report of the Secretariat - Activities in support of the IOTC science process in 2025 (IOTC Secretariat)
IOTC-2025-SC28-06	Status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (IOTC Secretariat)
IOTC-2025-SC28-07	Update on the implementation of the regional observer scheme (IOTC Secretariat)
IOTC-2025-SC28-08	Revision of the program of work (2026-2030) for the IOTC science process (IOTC Secretariat)
IOTC-2025-SC28-09	Proposed schedule of Working Party and Scientific Committee meetings for 2026 and 2027 (IOTC Secretariat)
IOTC-2025-SC28-10	Progress on SC27 recommendations (IOTC Secretariat)
IOTC-2025-SC28-11	Development of an experimental pilot action by the Spanish surface longline fleet targeting swordfish in the Indian Ocean, employing terminal gear devices known as lazos (loops) (Báez J et al.)
IOTC-2025-SC28-12	Updated joint CPUE indices for yellowfin tuna in the Indian Ocean based on Japanese, Korean, and Taiwanese longline fisheries data up to 2023 (Kitakado T, Wang S, Lee S, Ijima H, Park H, Lim J, Lee M, Tsuda Y, Nirazuka S Tsai W)
IOTC-2025-SC28-13	Preliminary analysis of the 2024 yellowfin assessment model with updated longline CPUE (Merino G, Correa G, Urtizberea A)
IOTC-2025-SC28-14	Japan's consideration on the framework of scientific fishing trial for shark mitigation measure from the operational viewpoint (Semba Y, Tsuji S, Ochi D)
Executive Summaries	
IOTC-2025-SC28-ES01	Status of the Indian Ocean Albacore (ALB: *Thunnus alalunga*) resource
IOTC-2025-SC28-ES02	Status of the Indian Ocean bigeye tuna (BET: *Thunnus obesus*) resource
IOTC-2025-SC28-ES03	Status of the Indian Ocean skipjack tuna (SKJ: *Katsuwonus pelamis*) resource
IOTC-2025-SC28-ES04	Status of the Indian Ocean yellowfin tuna (YFT: *Thunnus albacares*) resource
IOTC-2025-SC28-ES05	Report on Biology, Stock Status and Management of Southern Bluefin Tuna: 2024 (from CCSBT)
IOTC-2025-SC28-ES06	Status of the Indian Ocean bullet tuna (BLT: *Auxis rochei*) resource
IOTC-2025-SC28-ES07	Status of the Indian Ocean frigate tuna (FRI: *Auxis thazard*) resource
IOTC-2025-SC28-ES08	Status of the Indian Ocean kawakawa (KAW: *Euthynnus affinis*) resource

Document	Title
IOTC-2025-SC28-ES09	Status of the Indian Ocean longtail tuna (LOT: *Thunnus tonggol*) resource
IOTC-2025-SC28-ES10	Status of the Indian Ocean Indo-Pacific king mackerel (GUT: *Scomberomorus guttatus*) resource
IOTC-2025-SC28-ES11	Status of the Indian Ocean narrow-barred Spanish mackerel (COM: *Scomberomorus commerson*) resource
IOTC-2025-SC28-ES12	Status of the Indian Ocean black marlin (BLM: *Makaira indica*) resource
IOTC-2025-SC28-ES13	Status of the Indian Ocean blue marlin (BUM: *Makaira nigricans*) resource
IOTC-2025-SC28-ES14	Status of the Indian Ocean striped marlin (MLS: *Tetrapturus audax*) resource
IOTC-2025-SC28-ES15	Status of the Indian Ocean Indo-Pacific sailfish (SFA: *Istiophorus platypterus*) resource
IOTC-2025-SC28-ES16	Status of the Indian Ocean swordfish (SWO: *Xiphias gladius*) resource
IOTC-2025-SC28-ES17	Status of the Indian Ocean blue shark (BSH: *Prionace glauca*)
IOTC-2025-SC28-ES18	Status of the Indian Ocean oceanic whitetip shark (OCS: *Carcharhinus longimanus*)
IOTC-2025-SC28-ES19	Status of the Indian Ocean scalloped hammerhead shark (SPL: *Sphyrna lewini*)
IOTC-2025-SC28-ES20	Status of the Indian Ocean shortfin mako shark (SMA: *Isurus oxyrinchus*)
IOTC-2025-SC28-ES21	Status of the Indian Ocean silky shark (FAL: *Carcharhinus falciformis*)
IOTC-2025-SC28-ES22	Status of the Indian Ocean bigeye thresher shark (BTH: *Alopias superciliosus*)
IOTC-2025-SC28-ES23	Status of the Indian Ocean pelagic thresher shark (PTH: *Alopias pelagicus*)
IOTC-2025-SC28-ES24	Status of the Indian Ocean Porbeagle Shark (POR: *Lamna nasus*)
IOTC-2025-SC28-ES25	Status of marine turtles in the Indian Ocean
IOTC-2025-SC28-ES26	Status of seabirds in the Indian Ocean
IOTC-2025-SC28-ES27	Status of cetaceans in the Indian Ocean
Other meeting reports	
IOTC-2025-WPSE02-R	Report of the 2nd Session of the IOTC Working Party on Socio-Economics
IOTC-2025-WPNT16-R	Report of the 16th Session of the Working Party on Neritic Tunas
IOTC-2025-WPTmT09-R	Report of the 9th Session of the Working Party on Temperate Tunas
IOTC-2025-WPB23-R	Report of the 23rd Session of the Working Party on Billfish
IOTC-2025-WPEB21-R	Report of the 21st Session of the Working Party on Ecosystems and Bycatch
IOTC-2025-WPM16-R	Report of the 16th Session of the Working Party on Methods
IOTC-2025-WPDCS21-R	Report of the 21st Session of the Working Party on Data collection and Statistics
IOTC-2025-WPTT27-R	Report of the 27th Session of the Working Party on Tropical Tunas
IOTC-2025-TCMP09-R	Report of the 9th Session of the Technical Committee on Management Procedures
IOTC-2025-WGFAD07-R	Report of the 7th meeting of the Working Group on FADs

Document	Title
IOTC-2025-WGEMS05-R	Report of the 5th meeting of the Working Group on Electronic Monitoring Standards
National Reports	
IOTC-2025-SC28-NR01	Australia
IOTC-2025-SC28-NR02	Bangladesh, People's Republic of
IOTC-2025-SC28-NR03	China
IOTC-2025-SC28-NR04	Comoros
IOTC-2025-SC28-NR06	European Union (Including Annexes)
IOTC-2025-SC28-NR07	France (OT)
IOTC-2025-SC28-NR08	India
IOTC-2025-SC28-NR09	Indonesia
IOTC-2025-SC28-NR10	Iran, Islamic Republic of
IOTC-2025-SC28-NR11	Japan
IOTC-2025-SC28-NR12	Kenya
IOTC-2025-SC28-NR13	Korea, Republic of
IOTC-2025-SC28-NR14	Madagascar
IOTC-2025-SC28-NR15	Malaysia
IOTC-2025-SC28-NR16	Maldives, Republic of
IOTC-2025-SC28-NR17	Mauritius
IOTC-2025-SC28-NR18	Mozambique
IOTC-2025-SC28-NR19	Oman
IOTC-2025-SC28-NR20	Pakistan
IOTC-2025-SC28-NR21	Philippines
IOTC-2025-SC28-NR22	Seychelles
IOTC-2025-SC28-NR23	Somali
IOTC-2025-SC28-NR24	South Africa
IOTC-2025-SC28-NR25	Sri Lanka
IOTC-2025-SC28-NR27	Tanzania
IOTC-2025-SC28-NR28	Thailand
IOTC-2025-SC28-NR29	United Kingdom of Great Britain and Northern Ireland
IOTC-2025-SC28-NR31	Liberia
Information Papers	
IOTC-2025-SC28-INF01	Taiwan,China Report 2005 (Available on Request)

Document	Title
IOTC-2025-SC28-INF02	Close-kin mark recapture estimates of whale shark abundance in the Indian Ocean (Patterson T, Pillans T, Hillary R)

APPENDIX 5
NATIONAL REPORT EXECUTIVE SUMMARIES (2025)

Australia (IOTC-2025-SC28-NR01)

Pelagic longline and purse seine are the two main fishing methods used by Australian vessels to target tuna and billfish in the Indian Ocean Tuna Commission (IOTC) area of competence. The number of active longliners and levels of fishing effort are very low relative to the scale of the regional IOTC fishery. In 2024 in the IOTC area of competence, 2 Australian longliners operated exclusively in the Western Tuna and Billfish Fishery, 7 operated exclusively in the Eastern Tuna and Billfish Fishery, and 2 operated in both fisheries. They caught 7.3 t of albacore (*Thunnus alalunga*), 32.9 t of bigeye tuna (*Thunnus obesus*), 33.7 t of yellowfin tuna (*Thunnus albacares*), 121.1 t of swordfish (*Xiphius gladius*) and 0.9 t of striped marlin (*Kajikia audax*). In addition, in 2024 the review rate for electronic monitoring (e-monitoring) footage of longline hook deployed in the IOTC area of competence was 10.8%. The actual catch of southern bluefin tuna (*Thunnus maccoyii*) in the purse-seine fishery targeting this species was 4,393.5 t in 2024. There was no skipjack tuna (*Katsuwonus pelamis*) caught by purse-seine fishing

Bangladesh (IOTC-2025-SC28-NR02)

Following the settlement of maritime boundaries, Bangladesh has entered a new phase in managing its marine fisheries across 118,813 km² of the Bay of Bengal. The Government is prioritising the sustainable management of tuna and tuna-like fisheries within its Exclusive Economic Zone (EEZ) and adjacent waters, guided by science-based management and alignment with IOTC conservation and management measures. Although industrial tuna fishing has not yet commenced, the Department of Fisheries (DoF) is advancing research, pilot operations, and capacity building to support future pelagic development.

During 2023-24, total marine production reached 628,623 tonnes, with 114,804 tonnes from 237 industrial trawlers and 513,819 tonnes from about 28,600 artisanal vessels. Tunas and tuna-like species contributed approximately 6,200 tonnes from industrial and 8,300 tonnes from artisanal catches. The main species include longtail, kawakawa, skipjack, frigate, and bullet tunas, along with mackerels and billfish. To reduce pressure on demersal resources, several bottom trawlers have been converted to mid-water trawlers targeting pelagic species.

Bangladesh has modernised its monitoring, control, and surveillance (MCS) framework under the Marine Fisheries Act 2020 and Marine Fisheries Rules 2023, introducing vessel registration, digital licensing, voyage-based logbooks, and observer programmes. Over 8,200 artisanal vessels are now equipped with GSM tracking systems. Coordination among the DoF, Bangladesh Navy, and Coast Guard ensures effective enforcement and surveillance. The annual 58-day fishing closure (15 April-11 June) continues to protect spawning stocks and support stock recovery.

To combat Illegal, Unreported, and Unregulated (IUU) fishing, Bangladesh is implementing its National Plan of Action to Prevent, Deter and Eliminate IUU Fishing (NPOA-IUU), developed in line with the FAO IPOA-IUU. The country has ratified the FAO Port State Measures Agreement (PSMA) and is strengthening port inspection and monitoring procedures to prevent landings of IUU-caught fish in accordance with FAO and IOTC guidelines. These combined initiatives, along with improved vessel monitoring and data verification, are enhancing transparency, compliance, and governance across the marine sector.

Ecosystem protection and bycatch management remain priorities. Bangladesh continues to strengthen measures to safeguard sharks, rays, turtles, and other vulnerable species in line with FAO and IOTC guidelines. The use of Turtle Excluder Devices (TEDs) on shrimp trawlers is compulsory, and discarding of bycatch at sea is prohibited, supporting the protection of marine turtles and compliance with IOTC guidelines. Scientific research and collaboration continue to expand. The R.V. Meen Sandhani has conducted 56 surveys since 2016, while the *R.V. Dr Fridtjof Nansen* completed its second ecosystem survey in 2025, providing updated data on fish stocks, oceanographic conditions, and ecosystem dynamics. These findings are guiding ongoing policy reform and long-term planning for future offshore and pelagic fisheries.

Through continuous legal reform, improved data systems, and strengthened IUU control, Bangladesh is establishing a credible, transparent, and sustainable management framework for its tuna and tuna-like resources, contributing to responsible utilisation and regional cooperation under the IOTC.

China (IOTC-2025-SC28-NR03)

The Longline (LL) is the only fishing gear used by Chinese fleets to catch tuna and tuna-like species in the Indian Ocean Tuna Commission (IOTC) Area of Competence. In 2024, there were 74 Chinese LL fleets operating in this area, remain the same as 2023. The tropical tuna catch (Bigeye and Yellowfin tuna) of Chinese LL fleets in 2024 was at 8764MT, which was 1735 MT lower than that in 2023 (10500MT). The temperate tuna catch (Albacore) of Chinese LL fleets in 2024 was 6381 MT, which was 2522MT higher than that in 2023 (3859MT). Both the logbook and observer programs are being implemented for the Chinese LL fleets. In 2024, seven scientific observers were deployed on board LL fleets to collect data for both target and bycatch species as required.

Comoros (IOTC-2025-SC28-NR04)

Fishing in the Union of the Comoros is exclusively artisanal, carried out on open wooden and fiberglass boats, both motorized and non-motorized, ranging in length from 2 m to 9 m. It mainly targets pelagic species (Thunnus albacares, Katsuwonus pelamis, Thunnus alalunga, Istiophorus platypterus, Thunnus obesus, Euthynnus affinis) and also benthic species. It contributes not only to the country's socio-economy (55% of total employment in the agricultural sector, or around 7,000 fishermen) and is a source of food and nutritional security, but also constitutes an important source of livelihood, well-being, and cultural diversity for those directly or indirectly involved in this activity. The fishing techniques used are mainly trolling, handline fishing, light handline fishing, and a small amount of netting for small pelagic species. The fishing season lasts from one day to seven days. The commercial circuit for catches is generally very simple (fishermen-seller-consumer), and fishery products are intended solely for the domestic market (local consumers and self-consumption). Since February 2011, the Comoros has implemented a system for collecting data on landing sites in collaboration with the IOTC. Following an in-depth analysis by the FAO of the data collected (2011-2014), the sampling plan was revised and implemented in 2015. Since 2017, data collection has been carried out entirely on smartphones. Annual production based on the 2024 survey is estimated at 20,962 tons from a total of 5,078 vessels.

European Union (IOTC-2025-SC28-NR06)

The fishing capacity of the EU fleet authorised to deploy a fishing activity for large pelagic species in the IOTC Convention Area is managed by provisions on capacity limits set out in the IOTC Resolution and by European Union legislation. Furthermore, the conditions of access to certain fishing areas in waters under the jurisdiction of coastal states of the South West Indian Ocean are subject to specific provisions defined in public agreements engaging the European Union and named Sustainable Fisheries Partnership Agreements (SFPA). In accordance with IOTC Resolution 15/02, flag EU Member States (France, Italy, Portugal and Spain) have undertaken scientific data characterising the activity of the EU fleet fishing in 2024 in the IOTC area of competence and enabling the IOTC Scientific Committee to conduct its work. Detailed national reports for each EU Member States are available as annexes of this report.

France-territories (IOTC-2025-SC28-NR07)

Since Mayotte became a territory under Community rule on January 1, 2014, France's tropical overseas territories in the Indian Ocean now consist solely of the Scattered Islands, which are administered by the French Southern and Antarctic Lands (TAAF). The Glorieuses Marine Nature Park was created on February 22, 2012 (Decree No. 2012-245), and became a National Nature Reserve in 2021 (Decree No. 2021-734), which is part of the Scattered Islands and covers the entire EEZ of the Glorieuses.

The Scattered Islands (France Territories) do not have any tuna fleets registered for this territory. Nevertheless, the TAAF administration issues fishing licenses to French and foreign longliners and seiners wishing to fish in waters administered by France Territories, and an on-board observer program accompanies the granting of these licenses. Observations at sea on French longliners based in Réunion are made by onboard observers or via self-sampling (data

collection by captains). These observations are led by the IRD with European funding as part of the Data Collection Framework (DCF) project.

Data from EU-French flagged longliners were presented in the EU-FR report. France's current research program (mainly IRD and Ifremer) on large pelagic species covers the monitoring of fishing activities, landings, and biometrics of target species and discards, the study of the migratory behavior of large pelagic species, studies on fish concentration devices, the collection of observer data from electronic monitoring, genetic and microchemical studies to delimit stocks, the development of measures to mitigate bycatch and depredation, mortality after discard by European purse seine and longline fisheries targeting sharks, and the development of an innovation to facilitate the rapid release of marine megafauna caught on longlines and improve the survival of individuals. Most projects are funded through international, European, or national calls for proposals. This report lists the various projects that continued or began in 2024. It also includes projects directly involving the IOTC, even if these projects are still in the process of being launched.

France has actively participated in all working groups organized by the IOTC and presented 15 scientific contributions in 2024.

India (IOTC-2025-SC28-NR08)

In 2024, total landings of tuna and tuna-like species along the Indian coast were estimated at 2,21,665 tonnes, an 8% increase over the 2,05,189 tonnes recorded in 2023. Gillnets continued to be the primary gear used, accounting for 29.78% of the catch. Longlines (21.94%) and small purse seines (19.21%) followed, with gillnet-cum-longline combinations and trawl nets also making significant contributions. Pole-and-line fishing, practised exclusively in the Lakshadweep archipelago added 3.71% to the total, while other gears such as troll lines and handlines contributed smaller quantities.

The fishery showed clear regional variation. The west coast of India (FAO Area 51) produced the majority of the catch (60.33%), while the east coast (FAO Area 57) accounted for the remaining 39.67%. Landings in 2024 included eight tuna species, with five neritic tuna species making up 56.39% of the total and three oceanic species contributing 43.61%. The most abundant species in Indian tuna fishery were kawakawa (Euthynnus affinis, 29.98%) and skipjack tuna (Katsuwonus pelamis, 22.29%), followed by yellowfin tuna (Thunnus albacares, 20.99%).

Importantly, there were no reported interactions between the Indian tuna fishery and seabirds during the year, nor were there any recorded mortalities of sea turtles, marine mammals, or whale sharks - species protected under Schedule I of India’s Wildlife (Protection) Act, 1972.

Data for these assessments are collected and compiled through a collaborative effort by the Fishery Survey of India (FSI) under the Department of Fisheries of the Government of India, ICAR–Central Marine Fisheries Research Institute (ICAR–CMFRI), and the fisheries departments of coastal States and Union Territories.

Indonesia (IOTC-2025-SC28-NR09)

For fisheries management, Indonesian waters are divided into eleven Fisheries Management Areas (FMAs). Three of these located within the IOTC area of competence: FMA 572 (Western Sumatra and the Sunda Strait), FMA 573 (south of Java to East Nusa Tenggara, the Sawu Sea, and the western part of the Timor Sea), and FMA 571 (the Malacca Strait and the Andaman Sea). Indonesian fishers use various fishing gear, including longlines, purse seines, handlines, and gillnets, to catch large pelagic fish like tuna, skipjack, and billfish. Longlines are the primary fishing gear targeting tuna in these FMAs. The total catch of key tuna species in 2023 was estimated at around 274,601 tons, consisting of yellowfin tuna (62,861 tons), bigeye tuna (22,512 tons), skipjack tuna (182,819 tons), and albacore (6,410 tons). Both artisanal and industrial landing ports are regularly monitored through port-based monitoring and observer programs managed by the Directorate General of Capture Fisheries (DGCF).

Iran (Islamic Republic of) (IOTC-2025-SC28-NR10)

Tuna and tuna-like species constitute a significant portion of Iran's large pelagic fisheries. This sector is pivotal to the nation's marine economy, operating primarily in the Persian Gulf, Oman Sea, and the high seas. In 2024, Iran's total fish production around 1.5 million metric tonnes. Of this, 751 thousand tonnes (50%) originated from the Persian Gulf, Sea of Oman, and high seas. The Caspian Sea contributed 38 thousand tonnes (3%), while aquaculture accounted for 709 thousand tonnes (47%).

The total catch of large pelagic species, including by-catch, was approximately 302 thousand metric tonnes about 40% of Iran's total marine catch in 2024. Of this, around 292 thousand metric tonnes were tuna and tuna-like species caught in the Indian Ocean area competency. The composition of this catch included tropical tuna (114 thousand tonnes, 37.7%), neritic tuna (149 thousand tonnes, 49.4%), billfish species (28 thousand tonnes, 9.5%), various shark species (1309 tonnes, 0.4%), and other non-target species (9 thousand tonnes, 3%).

Iran's marine fisheries continue to demonstrate a strong reliance on large pelagic resources, particularly tuna and tuna-like species, which account for nearly half of the national marine catch. This dependence highlights both the economic significance of pelagic fisheries and the biological vulnerability of these resources to overexploitation. Overall, the data suggest that while Iran's pelagic fisheries remain productive and economically important, sustainability challenges persist. Effective management will require a balanced approach between economic utilization and ecological conservation, supported by science-based policy, seasonal regulation, and regional collaboration under the IOTC framework.

Japan (IOTC-2025-SC28-NR11)

This Japanese national report describes the following eight relevant topics stipulated in the 2025 national report guideline mainly in recent five years (2020-2024) (2024 is provisional) , i.e. (1) Fishery information (longline and purse seine fishery), (2) fleet information, (3) catch and effort by species and fishery, (4) ecosystem and bycatch (sharks, seabirds, marine turtles), (5) national data collection and processing systems including "logbook data collection and verification", "observer scheme", "port sampling programs", "monitoring billfish catch", and "sampling plans for mobulid rays", (6) national research programs, (7) Implementation of Scientific Committee recommendations and resolutions of the IOTC relevant to the Scientific Committee", and (8) "Literature cited". Highlights from the eight topics are described as follows: Japan is currently operating longline and purse seine fisheries in the Indian Ocean. Catch and effort data are collected mainly through logbooks. Bigeye, yellowfin, albacore, southern bluefin tuna are main components of the catch by longliners, while three species (skipjack, yellowfin and bigeye tuna) are exploited by purse seiners. In recent years, catch and effort by longliners are in a low level mainly because of piracy activities off Somalia. Purse seiners have not operated in the Indian Ocean since 2021. Japan has been dispatching scientific observers in accordance with the Resolution 11/04 (superseded by 22/04 and 24/04), whose coverage for longline fishery has been more than the 5% compliance level in recent years except for 2020-2022 due to COVID-19 pandemic. Observer coverage for purse seine fishery is highly variable. A number of information including bycatch and biological data has been collected through the observer program. Japan has been conducting several research activity.

Kenya (IOTC-2025-SC28-NR12)

The Kenyan tuna and tuna-like fishing fleets comprise of the artisanal, semi-industrial, industrial and recreational fisheries which have an impact on IOTC's priority species. The commercial artisanal fishing fleet is composed of a multi-gear and multi-species fleet operating in the territorial waters. The artisanal boats are broadly categorized as outrigger boats or dhows which come with variants depending on the construction designs. It is estimated that 850 artisanal vessels are engaged in the fishing for tuna and tuna like species in 2024 within the coastal waters. The main gears used are artisanal long line hooks, gillnets, monofilament nets and artisanal trolling lines. In 2024, six (6) Kenya pelagic longline vessels and two purse seiners operated in the IOTC area of competence. The IOTC species landed during the year included swordfish (254.1 tons), yellowfin tuna (3,226.1 tons) Bigeye tuna (296.8 tons), Sharks (46 tons), Marli while other species combined (7.6 tons). The main target species from the recreational fisheries are marlins and sailfish (Istiophiridae), swordfish (Xiiphidae) and tuna (Scombridae). Other species caught include small pelagic species such as barracuda, Spanish mackerel, Wahoo and sharks. The artisanal fisheries and recreational fishing fleets have

interactions with sharks where sharks are caught and the carcass is retained and fully utilised in artisanal fisheries and recreational trolling line fisheries have a voluntary shark release policy.

Republic of Korea (IOTC-2025-SC28-NR13)

In 2024, there were four active vessels in the longline fishery and three in the purse seine fishery. With this fishing capacity, the Korean tuna longline fishery caught 1,686 tonnes in 2024, representing a 130.6% increase compared to 2023. The average fishing effort over the past five years (2020–2024) was 2,452 thousand hooks, with operations conducted throughout the Indian Ocean between 0°S and 15°S, mainly in the western Indian Ocean (20–50°E) between 20°S and 40°S. In 2023, fishing activities were mainly concentrated in the eastern Indian Ocean (60–100°E), whereas in 2024, operations were focused around 40°E between 15°S and 30°S. Korean longline vessels targeting southern bluefin tuna have recently divided their operations between the Indian and Atlantic Oceans. In 2024, only one vessel operated in the eastern Indian Ocean to catch southern bluefin tuna. The Korean tuna purse seine fishery in the Indian Ocean recorded a total catch of 11,700 tonnes in 2024. Three Korean purse seine vessels operated mainly in the western and central tropical areas around 10°N–20°S, with 533 sets made in 2024, primarily distributed between 40°E and 70°E. In 2024, observer coverage was 5.6%, showing a slight decrease from 8.1% in 2023. This decline is likely to be associated with the operational pattern of longline observer programs, which are typically implemented after southern bluefin tuna fishing activities are completed. In recent years, Korean longline vessels have tended to move to the Atlantic Ocean rather than remain in the Indian Ocean after southern bluefin tuna operations, which may have contributed to the reduced observer coverage in the Indian Ocean. Regarding the purse seine fishery, regional scientific observers were dispatched onboard.

Madagascar (IOTC-2025-SC28-NR14)

In Madagascar, industrial tuna fishing is carried out by longliners less than 24 meters long (between 14 and 17 meters) operating on the east coast. No national longliners obtained a fishing license during 2022, and they only obtained one in the last quarter of 2023. Since 2010, techniques and methods have remained the same. In general, vessels deploy between 800 and 1,300 hooks per line and make relatively short trips lasting 4 to 7 days in order to keep catches fresh when they arrive at the landing port of Toamasina. The program for collecting fishing records and sampling at the landing port, implemented since 2014, provides us with data on the size distribution of the species caught. Annual catches by longliners from 2019 to 2023 vary between 66 tons and 193 tons, except for 2022, when catches are zero. As for 2024, total catches are 244,080 tons. This variation is slightly proportional to that of fishing effort (expressed in number of hooks deployed). Following the decrease in the number of vessels in operation since 2018, the average annual catch of longliners is 161 tons. It consists of 60.36% tuna, 17.68% swordfish, 13.61% sharks, and 8.35% other species. The tuna catch consists mainly of bigeye tuna, albacore tuna, and yellowfin tuna. The gear used in coastal fishing is mainly gillnets, lines, spearguns (harpoons), and longlines.

Malaysia (IOTC2025-SC28-NR15)

Total catch of marine fish from Malaysian waters in 2024 were 1.392 million mt, a slight increased of 8.8% compared to 1.270 million in 2023. The total landing in 2024 were attributed to the catch from 43,012 registered vessels with trawlers, purse seines, drift nets contributed large percentage of the catches. In 2024, marine fish production from the west coast of Peninsular Malaysia (Malacca Straits) contributed 772,447 mt (55.6%) out of the total catch.

Tuna neritic fisheries contributes 64,452 mt (4.6%) of Malaysia's marine fish landings in 2024. Purse seiners are the main fishing gears in neritic tuna fisheries, especially the 40-69.9 GRT (Zone C) and >70 GRT (Zone C2) vessel size, with longtail tuna dominated the landings followed by kawakawa and frigate tuna. In 2024, neritic tuna landings in west coast Peninsular Malaysia amounted to 18,326 mt; increasing by 46.4% compared to 12,517 mt in 2023. Meanwhile landings of neritic tuna in the whole Malaysia ranged from 56,736 mt to 74,489 mt (2016-2024) where 64,452 mt neritic tuna catch recorded in 2024. The highest catch was recorded in 2017 with 74,489 mt. Landings of neritic tuna in Malaysia appear to have stabilized from 2016 to 2024.

The catch of oceanic tuna & billfishes from the Indian Ocean increased 19.3% from 3,187.70 mt in 2023 to 3,948.44 mt in 2024. Albacore landings increased from 1,970.65 mt in 2023 to 2,234.02 mt in 2024. Albacore tuna formed nearly 57% of the total catches in the form of whole frozen tuna meanwhile, Yellowfin contributed 17% and Bigeye

13% of total catches in frozen and gutted forms. Billfishes (Marlins, Swordfish, Sailfish, Spearfish) contributes 5% of the total catches and mix bony fish contributes 8% of the total catches in 2024.

Malaysia have updated the national logbook to include all the species as requested in Resolution 19/04. Monitoring of tuna landing and inspection by Port Inspector is ongoing. DOFM monitored and tracked the deep-sea and tuna vessels using National VMS. DOFM have installed CCTV on tuna vessels as a tool for EMS.

Maldives (IOTC-2025-SC28-NR16)

Tuna fishery is a significant source of employment and income for a substantial proportion of the whole population of Maldives. The two primary gears used in the fishery are pole-and-line and handline, with the main target species being skipjack (Katsuwonas pelamis) and yellowfin (Thunnus albacares), respectively. The total tuna landings (skipjack, yellowfin, bigeye, frigate and kawakawa) in 2024 were 107,157 t while skipjack and yellowfin tuna contributed to 75% and 25% to this total catch, respectively. The tuna fleet in 2024 consisted of 573 vessels, the most of which are in the 12.5 to 32.5 m length range. Since 1970, Maldives has been collecting species-level data with vessel-specific catch and effort data has become available from 1995. Logbooks were introduced to the Maldivian fishery in 2010 by the Ministry of Fishery and a web-enabled fishery information system, “Keyolhu” is now fully functional. Fishery and catch data are also collected through other tools such as Vessel Monitoring System (VMS) and Electronic Monitoring Systems (EMS).

Mauritius (IOTC-2025-SC28-NR17)

In 2024, Mauritius had 3 purse seiners, 1 supply vessel and 16 industrial longliners operating in the tuna fishery. The three purse seiners are large freezer vessels measuring 71.28 meters, 71.95 meters, and 82.06 meters in overall length, respectively. The longliners are all industrial boats of more than 24 meters in length.

All the longliners operated both inside and outside the EEZ of Mauritius undertaking a total of 49 fishing trips that spanned 3513 fishing days. A total of 10,994,070 hooks were deployed. The majority of the catch consisted of bigeye (39.8%) followed by yellowfin (35.3%) and albacore (10.1%). The total catch amounted to 6450.94 tons with a Catch Per Unit Effort of 0.6kg/hook. Most of the main catch including yellowfin, albacore, bigeye and swordfish were transshipped at sea with the remaining catch unloaded at Port Louis for distribution on the local market.

The Mauritian purse seiners operated between latitudes 17oN to 21oS and longitudes 40o to 69oE. The total catch of the three purse seiners amounted to 27172.7 tons representing only 1.2% on the total catch (all species) made by all the member states in the IOTC Area of Competence. The purse seine catch comprised 27.6% yellowfin, 62.5% skipjack and 8.4% bigeye tuna for 725 positive sets out of a total of 845 sets.

The total amount of fish sampled in 2024 amounted to 23 279 (7459 from the longliners and 15 820 from the purse seiners). In the artisanal fishery, 307 fishes were sampled for length frequency.

Mozambique (IOTC-2025-SC28-NR18)

In 2024, Mozambique’s fisheries performance reflected both structural challenges and emerging opportunities across all sectors interacting with IOTC-managed species. Artisanal fisheries representing 96% of national marine catches continued to supply most of the country’s fish production, though they contribute minimally to tuna and tuna-like catches. Industrial tuna longline operations remained suspended due to high operational costs and declining catch rates, but foreign longline and purse-seine vessels resumed activity under public-private partnerships, resulting in increased tuna catches in 2023 and 2024.

Recreational and sport fisheries expanded steadily following the lifting of COVID-19 restrictions, with updated regulations reducing bag limits and strengthening conservation measures for IOTC species. Semi-industrial fisheries showed limited interactions with tuna species, mainly landing narrow-barred Spanish mackerel.

Mozambique continued to reinforce its legislative framework, integrating key IOTC conservation measures into national regulations. All marine turtles, marine mammals, mobulid rays, and several shark species are fully protected, with strict minimum-size limits and a national ban on shark finning. The forthcoming National Plan of

Action for Sharks and Rays (2025–2029) consolidates multi-sectoral efforts to improve shark management and reporting.

Observer coverage remains active in semi-industrial and industrial fleets, though limited by the absence of national longline operations. No turtle or seabird interactions were recorded in 2024. Data collection systems across artisanal, semi-industrial, industrial, and recreational fisheries are operational, with strengthened logbook verification and cross-checking for foreign fleets. Ongoing national research programs support ecosystem-based management and improved compliance with IOTC scientific requirements.

Oman (IOTC-2025-SC28-NR19)

The total production of the Omani fishery sector amounted to around 900 thousand tons in 2024, with an increase of 13.3% compared to 2023, with a total value amounting to about 580 million Omani riyals in 2024. Artisanal fishing contributed a percentage 76.9% of this production amounted to approximately 692 thousand tons with a value of 418 million Omani riyals, while the quantities of commercial fishing production amounted to 68,470 tons, forming a contribution rate of 7.6% of the total production, and the coastal fishing contributed by 14.8%, with catch quantities estimated at approximately 133 thousand tons. Tuna species considered as highly valuable products for Omani consumers, have experienced significant increases in the total annual production over years.

The regulatory measures and decisions presented below are derived from the Ministerial Decree on the Implementation of the Resolutions of the Indian Ocean Tuna Commission (IOTC)."

Pakistan (IOTC-2025-SC28-NR20)

Tuna and tuna like fishes are one of the components of pelagic resources. In Pakistan, mainly neritic and oceanic species are caught in the tuna fishery. Tuna fishing fleet comprises of about 709 gillnet boats. The total production of tunas and tuna-like fishes, including neritic and oceanic tunas, billfishes and seerfishes during the year 2024 was 51,165 m. tonnes.

There are no reported instances of sea bird interaction in any of the tuna fishing boat. sea turtles, marine mammals and whale sharks are protected in Pakistan under various national and provincial fisheries and wildlife legislations. Data on tuna production is collected by provincial fisheries departments of maritime provinces of Sindh and Balochistan and compiled by Marine Fisheries Department, Government of Pakistan, Ministry Maritime Affairs.

Tuna and allied resources called as large pelagic resources. Major share of the landing was by tunas (63.35%) followed by seerfishes (0.07%), dolphinfish (9.17%) and billfish (26.77%). Among the tunas, yellowfin was dominating with 25.19%, followed by frigate (33.37%), Tuna Nei (18.38%), longtail (18.25 %), kawakawa (0.06%) and skipjack (0.03%). There were some landings of bullet tuna and striped bonito as well.

In addition, there was extremely high sea surface temperature during August to October (possibly oceanic heat wave) in major part of the Arabian sea resulted in poor catches of tuna, therefore, only a few tuna boats remained operated during this period. Unprecedented jellyfish bloom of Crambionella orsini during September and December (and even onward in 2021) forced fishermen to stop fishing operations during this period because of excessive entanglement and choking of fishing net.

Philippines (IOTC-2025-SC28-NR21)

Between October 7 and December 19, 2017, the Philippines operated a single active vessel in the Indian Ocean Tuna Commission (IOTC) Convention Area (10°S to 5°N, 75°E to 90°E). The FV Marilou 888, a purse seiner with a gross tonnage (GT) of 349, conducted fishing operations during this period.
The vessel's total catch included:

- 25,551 kg of bigeye tuna (Thunnus obesus),
- 72,680 kg of yellowfin tuna (Thunnus albacares), and
- 144,566 kg of skipjack tuna (Katsuwonus pelamis).

All catches were landed at the General Santos City Fish Port in the Philippines. Bycatch records included 34 silky sharks (Carcharhinus falciformis), of which 12 were released alive and 22 were released dead. Additionally, an olive ridley turtle (Lepidochelys olivacea) was released alive, while one smooth mobula ray (Mobula thurstoni) was released dead. No sharks or other bycatch species were retained on board.
The FV Marilou 888 had 100% observer coverage for the duration of its trip and was equipped with a Vessel Monitoring System (VMS). As with previous Philippine fishing operations, all conservation and management measures mandated for sharks and other species were strictly observed during the vessel's activities.

While the Philippines has been inactive in the IOTC Convention Area since 2018, the country remains a committed Contracting Member of the IOTC. It upholds its dedication to the effective management, conservation, and sustainable use of highly migratory fish stocks within the IOTC Area of Competence.

Seychelles (IOTC-2025-SC28-NR22)

In 2024, Seychelles' tuna fisheries recorded mixed trends across fleets. The Seychelles purse seine fleet reported an estimated catch of 117,709 MT, a 3% decrease from 121,200 MT in 2023. Fishing effort remained stable, with 3,630 fishing days in 2024 compared to 3,727 in the previous year resulting in a slight decrease in catch rate from 32.52 MT/ fishing day in 2023 to 31.71 MT/ fishing day in 2024. Catches of yellowfin tuna increased by 10% whilst bigeye and skipjack tuna catches decreased by 53% and 4% respectively compared to previous year.

The Industrial longline fleet decreased by 21% to 27 vessels licensed in 2024. Despite this significant reduction, the Seychelles fleet reported 21% increase in catches to an estimated 11,606 MT despite a slight decrease of 2% in fishing effort. This was achieved from a fishing effort of 19.6 million hooks, and a mean catch rate of 0.59 MT/1000 hooks.

The semi-industrial longline fleet remained same as previous year. The fleet reported a total catch of 2,102 MT, representing a 17% decline from the 2,536 MT recorded in 2023. This was achieved from a 6% increase in fishing effort, with approximately 6.8 million hooks in 2024 compared to 6.4 million hooks in 2023. In term of species composition, yellowfin tuna accounted for 88% of the total catch followed by bigeye tuna, accounting for 6% of the total catch.

Consistent with previous years, SFA continued to strengthen its data collection and management systems. In 2024, new modules were integrated into the OBSERVE software to facilitate comprehensive management of purse seine, industrial longline, and small-scale longline fisheries data. Furthermore, data validation tools were upgraded to ensure full compatibility with the OBSERVE platform.

Efforts to mitigate the ecological impacts of drifting Fish Aggregating Devices (dFADs) continued through the FADWATCH Project, implemented in collaboration with SFA, AGAC, and SIOTI. The programme monitored the movement of drifting FADs across Seychelles waters and facilitated the recovery of over 150 dFADs and more than 170 instrumented buoys since 2022. Key findings from these operations were presented to the IOTC Working Party on Ecosystems and Bycatch in 2025.

In parallel, Seychelles progressed with the revision of its National Plans of Action (NPOAs) for sharks and drifting FAD management, while also initiating the development of new NPOAs for seabirds and marine turtles.
The Seychelles Fisheries Authority Act 2024 strengthened SFA's legal mandate, while preparations continued for modernization of the Fisheries Act with the new Fisheries and Aquaculture Bill with expected enactment scheduled for 2025. In addition, Seychelles maintained full "Compliant" status under the Fisheries Transparency Initiative (FiTI), demonstrating continued progress in public transparency, data disclosure, and accountability.
Overall, 2024 was a year marked by consolidation of data management and monitoring systems, improvements in transparency, and strong alignment with IOTC scientific and compliance requirements, further reinforcing Seychelles' commitment to sustainable tuna fisheries management.

Somalia (IOTC-2025-SC28-NR23)

This report details Somalia's fisheries activities in the IOTC area of competence for July 2024- June 2025, highlighting significant advancements in national data collection and compliance. The establishment of a robust monitoring programme across six core landing sites (LS1-LS6) has enabled systematic, high-resolution data collection, achieved 5% observer coverage, and documented 2,418 trips, over 72,000 fish identifications, and more than 17,531 length measurements.

A notable 30% increase in total national annual catch to 76,026 mt was recorded in 2024, driven primarily by yellowfin tuna (18,635 mt). This reflects both improved monitoring and potential shifts in fishing effort and oceanographic conditions. The fleet continues to be dominated by artisanal and semi-industrial vessels, with a clear trend toward motorization and a strategic shift from gillnets to handlines for higher-quality tuna.

Somalia has made substantial progress in implementing IOTC Conservation and Management Measures. Key achievements include the operationalization of a land-based observer scheme aligned with Resolution 24/04, the integration of bycatch mitigation protocols for sharks, marine turtles, and mobulid rays, and the systematic fulfillment of data reporting obligations under Resolutions 15/01 and 15/02.

Continued challenges include finalizing the National Plan of Action for Sharks (NPOA-Sharks) and developing electronic monitoring capabilities. Somalia remains committed to sustainable fisheries management through ongoing capacity building, targeted research, and transparent annual reporting to the Scientific Committee.

South Africa (IOTC-2025-SC28-NR24)

South Africa has two commercial fishing sectors that target tuna: the Large Pelagic Longline sector and the Tuna Pole-line (baitboat) sector. The Tuna Pole-line sector primarily targets albacore (Thunnus alalunga) and, to a lesser extent, yellowfin tuna (Thunnus albacares). This sector rarely operates in the IOTC Area of Competence.

The Large Pelagic Longline sector consists of two fleets with distinct histories. The first comprises South African-flagged Large Pelagic Longline vessels that traditionally used swordfish (Xiphias gladius) targeting methods. The second includes Japanese-flagged vessels operating under joint ventures, fishing for South African right holders. In recent years, the South African-flagged longline fleet has caught a combination of tropical and temperate tunas alongside swordfish.

In 2024, 20 longline vessels were active in the IOTC Area of Competence. Effort (hooks set) decreased by 3% from 2023 (1,326,564 hooks) to 2024 (1,286,034 hooks), Only one Japanese-flagged vessel operated under joint venture in South African waters in 2021. Since then, fishing effort by South African-flagged vessels has increased steadily over the past few years.

Since a large portion of the fleet operates on the south-west and west coasts, the effort within the IOTC Area of Competence is influenced by vessels' decisions to fish further south or operate out of Durban/Richards Bay, crossing the 20°E boundary that separates the IOTC and ICCAT management areas. The minimal 3% decrease in effort from 2023 to 2024 does not align with the substantial decreases in catches for many target species, which ranged from 18% to 53% reduction.

A total of 126,333 hooks were observed in the IOTC area of competence during 2024, which equates to 9.82% observer coverage. One (1) Tuna Pole-line vessel crossed the 20°E longitude boundary for one fishing day in search of yellowfin tuna.

Sri Lanka (IOTC-2025-SC28-NR25)

Sri Lanka’s tuna and tuna-like fisheries represent a vital component of its marine fisheries sector, contributing significantly to both national food security and export earnings. The country has made notable progress in aligning its tuna fisheries management with regional and international conservation and compliance frameworks, particularly those set by the Indian Ocean Tuna Commission (IOTC). In 2024, Sri Lanka recorded a total production of 112,494

metric tonnes (t) of tuna and tuna-like species, with approximately 71% of the catch derived from the country's Exclusive Economic Zone (EEZ)

The fishery was primarily composed of three dominant tuna species: Skipjack tuna (Katsuwonus pelamis) accounted for 44% of the total catch, followed by Yellowfin tuna (Thunnus albacares) at 30%, and Bigeye tuna (Thunnus obesus) at 4.8%. In addition to tunas, billfish species constituted 10.5% of the total catch, with swordfish (Xiphias gladius) representing the majority within this category. Furthermore, the total shark catch was estimated at 1,175.5 t, and continued regulatory attention is being applied to manage and monitor elasmobranch bycatch. Management efforts targeting the sustainability of tuna stocks have been actively implemented. Catch reductions for Yellowfin tuna adhered to IOTC Resolution 21/01, reflecting national compliance with regional conservation measures. The use of large-scale gillnets is being systematically reviewed and reduced, in both number and operational length, in accordance with IOTC Resolution 17/07.

Sri Lanka has concurrently encouraged a transition toward more selective and environmentally responsible fishing gears, aligning with best practices for mitigating bycatch and improving species selectivity. The large pelagic fishing fleet consisted of approximately 5,250 vessels, operating within both the high seas and EEZ. Of these, 1,803 vessels were formally authorized to fish in areas beyond national jurisdiction. The fleet structure is heavily skewed toward small-scale operations, with most vessels measuring under 15 meters in length, and only four vessels exceeding 24 meters.

Vessel marking and gear identification are legally mandated under domestic regulation, while Vessel Monitoring Systems (VMS) are compulsory for all vessels operating on the high seas, thereby ensuring traceability and real-time monitoring of fishing activities. Fishing operations primarily employed longlines and gillnets, with 28% of vessels exclusively using longlines and 20.7% operating with gillnets, both targeting large pelagic species. However, national authorities are actively discouraging the use of gillnets due to their non-selective nature and are promoting the adoption of more sustainable alternatives. Measures to monitor and mitigate bycatch have been implemented in line with international resolutions. Human observer coverage is mandatory for all vessels over 24 meters in length, and a pilot project on Electronic Monitoring Systems (EMS) is currently in progress.

Sri Lanka maintains a pool of ten trained and IOTC-registered observers and is taking action to achieve a minimum 5% observer coverage at port level, as part of its monitoring, control, and surveillance (MCS) strategy. In terms of compliance and port-based control, Sri Lanka continues to implement Port State Measures (PSM) exclusively through the electronic PSM (e-PSM) application, ensuring digital traceability and enforcement against illegal, unreported, and unregulated (IUU) fishing. The Global Information Exchange System (GIES) has also been updated in alignment with international obligations. To strengthen fisheries data collection, the country has introduced systematic coastal sampling techniques, aimed at improving the quality and representativeness of biological data particularly length frequency data in accordance with regional stock assessment requirements. These collective efforts reflect Sri Lanka's ongoing commitment

Sudan (No National Report Submitted)

Tanzania (IOTC-2025-SC28-NR27)

The 2025 National Report details Tanzania's fisheries performance and management efforts during the most recent reporting year, 2024. The sector is a cornerstone of the national economy, contributing 1.7% of Mainland Tanzania's GDP and 5.8% of Zanzibar's GDP in 2024. Tanzania provided final scientific data for non-longline fleets and provisional data for the longline fleet for the 2024 calendar year by 30 June, 2025.

In 2024, the national fishing fleet was characterised by a dominant artisanal sector comprising 17,161 vessels, operating alongside a limited industrial fleet of three authorised vessels (two longliners and one purse seine). Key artisanal catches reported for 2024 included Bigeye (1,592.57 Tons), Skipjack (1,045.62 T), Yellowfin (1,009.56 T), and Kanadi Kingfish (1,011.81 T). Industrial purse seine catches were primarily Skipjack (8,971 T) and Yellowfin (2,901 T).

Tanzania reinforced its commitment to sustainable management through enhanced oversight, including maintaining a dedicated observer team and planning the pilot implementation of electronic monitoring systems (EMS). Significant

progress was made in conservation planning with the launch of the National Action Plan for the Conservation of Marine Turtles (2024–2029) and the finalisation of the National Plan of Action for Sharks (NPOA-Sharks). Furthermore, the industrial fleet reported no incidents of seabird interaction south of 25°S and no bycatch of cetaceans, mobulid rays, or whale sharks in 2024. Targeted research on sharks identified five critically endangered species, highlighting the potential importance of areas near Unguja and Pemba as nursery and pupping grounds.

Thailand (IOTC-2025-SC28-NR28)

In 2024, Thailand's tuna and tuna-like species fisheries were conducted mainly within Thailand's Exclusive Economic Zone (EEZ) in the Andaman Sea, primarily by purse seine vessels operating under the IOTC area of competence. A total of 216 purse seine vessels and one handline vessel operated during the year. The total catch of IOTC species was 37,831.13 tons, comprising primarily bullet tuna (40.99%), skipjack tuna (15.94%), longtail tuna (15.58%), kawakawa (15.10%), and frigate tuna (10.70%). All purse seine catches from the Thai EEZ were landed at Thai ports. The high seas handline operation took place in the Saya de Malha Bank, an area overlapping between the IOTC area of competence and the SIOFA agreement area.

Thailand continues to implement national measures to ensure sustainable fisheries management in accordance with the IOTC Conservation and Management Measures (CMMs). Monitoring, control, and surveillance (MCS) activities were conducted through fishing logbook verification, port sampling, and, for the high-seas fishery, onboard observer programs. In 2024, 100% observer coverage was achieved for the single authorized high-seas vessel, while 5.14% of purse seine trips were covered by port sampling, during which 11,672 individual fish were measured for length data.

Thailand's first National Plan of Action for Sharks (2020–2024) concluded in 2024 with positive outcomes. A new NPOA–Sharks (2025–2029) is being prepared to continue research and strengthen management. Thailand also implemented the National Plan of Action for Seabirds (2024) and maintains strict legal protections for marine turtles and other ecologically related species, including whale sharks and mobulid rays.

Thailand has not implemented an Electronic Monitoring System (EMS) for vessels operated in the Thai EEZ under IOTC Resolution 22/04; therefore, a nil report is submitted for this section.

Overall, Thailand remains committed to responsible fisheries management, data collection, and full compliance with IOTC CMMs to support the sustainable utilization of tuna and tuna-like species in the Indian Ocean.

United Kingdom of Great Britain and Northern Ireland (IOTC-2025-SC28-NR29)

BIOT waters are a no-take Marine Protected Area (MPA) to commercial fishing. Diego Garcia and its territorial waters are excluded from the MPA and include a recreational fishery. UK (BIOT) does not operate a flag registry and has no commercial tuna fleet or fishing port. The UK National Report summarises fishing in the BIOT/Chagos Archipelago recreational fishery in 2024 and provides details of research activities undertaken to date within the MPA.

The recreational fishery landed 6.7 tonnes of tuna and tuna like species on Diego Garcia in 2024. Principle target tuna species of the industrial fisheries (yellowfin and skipjack tunas) contributed to 17.1% of the total catch of tuna and tuna like species of the recreational fishery. Recognising that yellowfin tuna are currently overfished and subject to overfishing in the Indian Ocean and that Resolution 21/01 seeks to address this, UK(BIOT) have been taking action to reduce the number of yellowfin tuna caught in the BIOT recreational fishery and encouraging their live release. Length frequency data were recorded for all tuna and tuna-like species in the recreational fishery. A total of 173 yellowfin tuna from this fishery and the mean length was 76.8 cm. Sharks caught in the recreational fishery are released alive.

IUU fishing remains one of the greatest threats to the BIOT ecosystem but a range of other threats exist including invasive and pest species, climate change, coastal change, disease and pollution, including discarded fishing gear such as Fish Aggregating Devices (FADs). During 2024 the BIOT/Chagos Archipelago Environment Officer continued to take forward the current conservation priorities. Recommendations of the Scientific Committee and those translated into Resolutions of the Commission have been implemented as appropriate by the BIOT Authorities.

Yemen (No National Report Submitted)

Liberia (IOTC-2025-SC28-NR31)

In line with its status as a cooperating non-contracting party (CNCP) of the Indian Ocean Tuna Commission, this report provide information on various aspects of Liberia's fisheries research and other scientific activities of Liberia in the IOTC Convention Area for the reporting period.

The report is essentially a nil report because Liberia does not have catch or fishing vessels in the Convention Area of the Indian Ocean Tuna Commission. Also, it is a nil reporting because Liberia did not perform any research activities in the IOTC Convention Area for the reporting period. Instead, Liberia has supply and carrier vessels authorized to conduct transhipment activities in the IOTC Convention.

The report also provides information on the existing legal and regulatory framework Liberia has for the management and conservation of different kinds of fisheries and other ecologically related species.
The report provides a broad background and context of the fisheries of Liberia. It also states the structure of its fleet and other vital information.

Furthermore, the report states that Liberia has within a regulations and laws, measures for the data collection and process and the basis for MSC activities which including mandatory provisions for the installation of VMS and others. But because Liberia does not have fishing or catch vessels in the IOTC Convention area, those information are not relevant for the report

APPENDIX 6

Status of Development and Implementation of National Plans of Action (NPOA) for Seabirds and Sharks and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (2025)

CPC	Sharks	Date of Implementation	Seabirds	Date of implementation	Marine turtles	Date of implementation	Comments
MEMBERS							
Australia		1st: April 2004 2nd: July 2012 3rd: 2021 4th: August 2024		1st: 1998 2nd: 2006 3rd: 2014 NPOA in 2018.		2003	**Sharks:** 3rd NPOA-Sharks (Shark-plan 3) was released in 2021 replacing the previous Shark-plan 2. Australia produced a revised NPOA for the conservation and management of sharks (Revised Shark-plan 2) in 2024. **Seabirds:** Has implemented a Threat Abatement Plan [TAP] for the Incidental Catch (or Bycatch) of Seabirds During Oceanic Longline Fishing Operations since 1998. The present TAP took effect from 2014 and largely fulfilled the role of an NPOA in terms of longline fisheries. http://www.antarctica.gov.au/__data/assets/pdf_file/0017/21509/Threat-Abatement-Plan-2014.pdf. In 2018 Australia finalised an NPOA to address the potential risk posed to seabirds by other fishing methods, including longline fishing in state and territory waters, which are not covered by the current threat abatement plan. **Marine turtles:** Australia's current marine turtle bycatch management and mitigation measures fulfil Australia's obligations under the FAO-Sea turtles Guidelines.
Bangladesh			n.a.				**Sharks:** Bangladesh has finalised a NPOA for shark and rays which will be in place for 2023-2027. The Wildlife Conservation and Security Act introduced in 2012 lays out rules on requirements for hunting wild animals. It includes provisions for the protection of sharks and rays including the species for which there are active IOTC CMMs (hammerhead, blue, mako, silky, oceanic whitetip, thresher and whale sharks, and mobulid rays). **Seabirds:** Bangladesh currently does not have a NPOA for seabirds. The Wildlife Conservation and Security Act introduced in 2012 lays out rules on permits required to hunt wild animals and includes provisions for the protection of seabirds. Bangladesh does not have any flagged purse seine or longline vessels so do not consider there to be any problems with seabird interactions in their fisheries. **Marine turtles:** Bangladesh currently have no information on their implementation of FAO guidelines on sea turtles. The Wildlife Conservation and Security Act introduced in 2012 lays out rules on requirements for hunting wild animals and includes provisions for the protection of marine turtles. A Marine Fisheries Rules act

							was finalised in 2023 which requires the use of turtle excluder devices onboard shrimp trawlers. The act also requires live release of marine turtles for all gear and the mandatory use of circle hooks for hook and line fishing.
China		–		–			**Sharks:** China is currently considering developing an NPOA for sharks. Regulations relating to the conservation of sharks managed by RFMOs have been updated. Targeted distant water fisheries for sharks and rays are prohibited and vessels must avoid or reduce catching of sharks. Sharks (species not under a retention ban) caught as bycatch shall be fully utilised and finning is prohibited. Longliners are prohibited from using shark lines and wire tracers. **Seabirds:** China is currently considering developing an NPOA for seabirds. Regulations relating to the conservation of seabirds managed by RFMOs have been updated. Vessels operating in the area south of 25ºS shall use two mitigation measures from: tori lines, night setting and weighted branch lines. They may also use hook-shielding devices to replace the above three measures. **Marine turtles:** Regulations relating to the conservation of turtles managed by RFMOs has been updated. All longlines shall use circle hooks whenever possible. Longline vessels are encouraged to use finfish as bait, not squid.
–Taiwan,China		1st: May 2006 2nd: May 2012		1st: May 2006 2nd: Jul 2014			**Sharks:** No revision currently planned. **Seabirds:** No revision currently planned. **Marine turtles:** Wildlife Protection Act introduced in 2013, Protected Wildlife shall not be disturbed, abused, hunted, killed, traded, exhibited, displayed, owned, imported, exported, raised or bred, unless under special circumstances recognized in this or related legislation. *Cheloniidae spp*., *Caretta Caretta*, *Chelonia mydas*, *Eretmochelys imbricata, Lepidochelys olivacea* and *Dermochelys coriacea* are listed into List of Protected Species. Domestic Fisheries Management Regulation on Far Sea Fisheries request all fishing vessels must carry line cutters, de-hookers and hauling nets in order to facilitate the appropriate handling and prompt release of marine turtles caught or entangled.
Comoros		–		–			**Sharks:** No NPOA has been developed. Shark fishing is prohibited but measures are difficult to enforce due to the artisanal nature of the fisheries. A campaign to raise awareness of measures is being implemented to improve compliance. Shark catches and size frequency data are submitted to IOTC **Seabirds:** No NPOA has been developed. There is no fleet in operation south of 25 degrees south and no long-line fleet. The main fishery is artisanal operating within 24 miles of the coast where there is low risk of interactions with seabirds. **Marine turtles:** According to the Comoros Fisheries Code Article 78, fishing, capture, possession and marketing of turtle and marine mammals or of protected aquatic organisms is strictly forbidden in accordance with national legislation in force and International Conventions applicable to the Comoros.
European Union		5 Feb 2009		16-Nov-2012		2007	Regulation n°2021-47 of 9th of July 2021 legislating tuna and tuna-like species fisheries includes marine species protection measures, especially in its Annex 2, aiming to reduce the impact on marine turtles, sea birds and sharks. **Sharks:** Approved on 05-Feb-2009 and it is currently being implemented.

							Seabirds: The EU adopted on Friday 16 November 2012 an Action Plan to address the problem of incidental catches of seabirds in fishing gears. A specific national plan of action has been published for Albatrosses which runs from 2018-2027. **Marine turtles**: European Union Council Regulation (EC) No 520/2007 of 7 May 2007 lay down technical measures for the conservation of marine turtles including articles and provisions to reduce marine turtle bycatch. The regulation urges Member States to do their utmost to reduce the impact of fishing on sea turtles, in particular by applying the measures provided for in paragraphs 2, 3 and 4 of the resolution.
France (territories)		2009		2009, 2011		2015	**Sharks:** NPOA for sharks was approved on 05-Feb-2009. **Seabirds:** NPOA for seabirds was implemented in 2009 and 2011. 2009 for Barrau's petrel and 2019 for Amsterdam albatross which will be in force from 2018-2027. **Marine turtles:** Implemented in 2015 for the five species of marine turtles that are present in the southwest Indian Ocean for the period 2015-2020. This is still being applied and currently being revised and will be published in 2025.
India							**Sharks:** India published their NPOA sharks in 2024 but this has not yet been made available to the IOTC. **Seabirds:** India has determined that seabird interactions are not a problem for their fleets. However, a formal evaluation has not yet taken place which the WPEB and SC require. **Marine turtles:** India published an action plan for marine turtles in 2021 titled "National Marine Turtle Action Plan".
Indonesia		–		–			**Sharks:** Indonesia first drafted a NPOA in 2010 then later developed a revised NPOA for sharks and rays for the period 2016-2020. Indonesia has also established a national plan of action for whale sharks from 2021-2025 through Ministerial Decree No. 16 of 2021. Indonesia plans to review the NPOA for sharks in 2025. **Seabirds:** An NPOA for seabirds was finalized in 2016 **Marine turtles:** Indonesia has established an NPOA for Marine Turtles in 2022 and this will be reviewed in 2025. Indonesia has also been implementing Ministerial Regulations 12/2012 and 30/2012 regarding capture fishing business on high seas to reduce turtle bycatch. Indonesia is also cooperating with Coral Triangle countries including Malaysia, the Philippines, the Solomon Islands, Papua New Guinea, and Timor Leste through Coral Triangle Initiatives on Coral Reefs, Fish, and Food Security (CTI CFF) platform to protect threatened migratory species, including marine turtles. The CTI CFF is now developing a regional plan of action (RPOA) 2020-2030 and areas of critical habitats, such as migratory corridors, nesting beaches, and Inter-nesting and feeding areas, have been identified.
Iran, Islamic Republic of		–		–		–	**Sharks:** A NPOA for sharks and rays has been developed and is currently under review. Iran has implemented a nationwide ban on the targeted fishing and retention of sharks which has been formally communicated to all fishing operations, fishermen and fishing cooperatives. **Seabirds:** I.R. Iran determined that seabird interactions are not a problem for their fleet as they consist of gillnet vessels only. i.e. no longline vessels. The nets are set

							1m below the surface of the water and no bycatch of oceanic seabirds has been reported to date. **Marine turtles:** An Action Plan for the conservation of sea turtles has been fully developed and is now awaiting translation into English for submission to the Secretariat.
Japan		2012 2016, 2023		2012, 2016			**Sharks:** NPOA–Shark assessment implementation report submitted to COFI in July 2012 has since been revised in 2016 and again in 2023. **Seabirds:** NPOA–Seabird implementation report submitted to COFI in July 2012 (Revised in 2016). **Marine turtles:** All Japanese fleets fully implement Resolution 12/04.
Kenya			n.a.	–			**Sharks:** A National Plan of Action for sharks has been finalised and is awaiting cabinet approval. This document shall put in place a framework to ensure the conservation and management of sharks and their long-term sustainable use in Kenya. **Seabirds:** Kenya does not have any flagged longline vessels on its registry. There is no evidence of any gear seabird interaction with the current fishing fleet. Kenya has prepared a NPOA for seabirds which is in the process of being reviewed by relevant stakeholders. **Marine turtles:** The Kenyan fisheries law prohibits retention and landing of turtles caught incidentally in fishing operations. Public awareness efforts are conducted for artisanal gillnet and artisanal longline fishing fleets on the mitigations measures that enhance marine turtle conservation. Kenya has prepared a NPOA for marine turtles which is in the process of being reviewed by relevant stakeholders.
Korea, Republic of		08-Aug-11		2019		–	**Sharks:** NPOA sharks is currently being implemented. **Seabirds:** NPOA seabirds was submitted to FAO in 2019. **Marine turtles:** All Rep. of Korea vessels fully implement Res 12/04.
Madagascar		–		–			**Sharks:** Madagascar has developed a NPOA for sharks which is awaiting final ministerial approval. **Seabirds:** Development on a NPOA for seabirds has not begun. Note: A fisheries monitoring system is in place in order to ensure compliance by vessels with the IOTC's shark and seabird conservation and management measures. **Marine turtles:** There is zero capture of marine turtle recorded in logbooks. All longliners use circle hooks. This has been confirmed by onboard observers and port samplers.
Malaysia		2008 2014		–		2008	**Sharks:** A revised NPOA-sharks was published in 2014. **Seabirds:** A NPOA for seabirds is yet to be developed **Marine turtles:** A NPOA For Conservation and Management of Sea Turtles had been published in 2008. A revision will be published in 2017.
Maldives, Republic of		Apr 2015	n.a.	–			**Sharks:** NPOA Sharks was finalised in 2015 with the assistance of Bay of Bengal Large Marine Ecosystem (BoBLME) Project. On 14th July 2019 the Government of Maldives officially announced the cessation of the Maldives long line fishery in Maldives EEZ and High Seas so consider the NPOA for sharks to now be unnecessary.

							Seabirds: Maldives is in the final stages of developing an action plan on seabird nesting sites. Article 12 of IPOA states that if a 'problem exists' CPCs adopt an NPOA. IOTC Resolution 05/09 suggests CPCs to report on seabirds to the IOTC Scientific Committee if the issue is appropriate'. Maldives considers that seabird entanglement and bycatch is not an issue in Maldives fisheries especially with the cessation of the Maldives long line fishery in 2019. **Marine turtles:** Standards of code and conduct for managing sea turtles have been developed by the Environmental Protection Agency in the drafted national sea turtle management plan under the protected species regulation. Longline regulation has provisions to reduce marine turtle bycatch. The regulation urges longline vessels to have dehookers for removal of hook and a line cutter on board, to release the caught marine turtles as prescribed in Resolution 12/04.
Mauritius		2016					**Sharks:** The NPOA-sharks has been finalised; it focuses on actions needed to exercise influence on foreign fishing through the IOTC process and licence conditions, as well as improving the national legislation and the skills and data handling systems available for managing sharks. **Seabirds:** Mauritius does not have national vessels operating beyond 25^{o}S. However, fishing companies have been requested to implement all mitigation measures as provided in the IOTC Resolutions. There are currently no plans to develop a NPOA for seabirds. **Marine turtles:** Marine turtles are protected by the national law. Fishing companies have been **requested** to carry line cutters and de-hookers in order to facilitate the appropriate handling and prompt release of marine turtles caught or entangled. There are currently no plans to develop a NPOA for marine turtles.
Mozambique		–		–			**Sharks**: Drafting of the NPOA-Shark started in 2016. At this stage, a baseline assessment has been performed and the relevant information of coastal, pelagic and demersal shark species along the Mozambican coast has beengathered. **Seabirds**: Mozambique is regularly briefing the Masters of their fishing vessels on the mandatory requirement to report any seabird interaction with longliner fleet. **Marine turtles**: see above.
Oman, Sultanate of							**Sharks:** The drafting of an NPOA-sharks started in 2017 but has not yet been finalised. **Seabirds:** Not yet initiated. **Marine turtles:** The law does not allow the catch of sea turtles, and the fishermen are requested to release any hooked or entangled turtle. The longline fleet are required to carry out the line cutters and de-hookers.
Pakistan							**Sharks:** A stakeholder consultation workshop was conducted in 2016 to review the actions of the draft NPOA - Sharks. The final version of the NPOA - Sharks has been submitted to the provincial fisheries departments for endorsement but has not yet been finalised. Meanwhile, the provincial fisheries departments have passed notification on catch, trade and/or retention of sharks including Thresher sharks, hammerheads, oceanic whitetip, whale sharks, guitarfishes, sawfishes, wedgefishes and mobulids. Sharks are landed with the fins attached and each and every part of the body of sharks are utilised.

							Seabirds: Pakistan considers that seabird interactions are not a problem for the Pakistani fishing fleet as the tuna fishing operations do not include longline vessels. **Marine turtles:** Pakistan has already framed Regulations regarding the prohibition of catching and retaining marine turtles. As regards to the reduction of marine turtle bycatch by gillnetters; presently Marine Fisheries Department (MFD) in collaboration with International Union for Conservation of Nature (IUCN) Pakistan, is undertaking an assessment. Stakeholder Coordination Committee Meeting was conducted on 10th September 2014. The "Turtle Assessment Report (TAR)" will be finalized by February 2015 and necessary guidelines / action plan will be finalized by June 2015. As per clause-5 (c) of Pakistan Fish Inspection & Quality Control Act, 1997, "Aquatic turtles, tortoises, snakes, mammals including dugongs, dolphins, porpoises and whales etc" are totally forbidden for export and domestic consumption. Pakistan is also in the process of drafting a NPOA for cetaceans.
Philippines		Sept. 2009		–			**Sharks:** A NPOA sharks was published in 2009 and this document is under periodic review. **Seabirds:** Development of a NPOA for seabirds has not begun. **Marine turtles:** No information received by the Secretariat.
Seychelles, Republic of		Apr-2007 2016		–			**Sharks:** Seychelles developed and is implementing a NPOA for Sharks for years 2016-2020 which was extended for 2025. Seychelles are working to review the previous NPOA for sharks which should be complete by early 2026. **Seabirds:** SFA is collaborating with Birdlife South Africa to develop an NPOA for seabirds. Phase one, which addressed the biology, ecology, and population of seabirds potentially impacted by the Seychelles longline fleet, has been completed. Phase two will assess the potential impacts of the fleet on vulnerable seabirds and recommend mitigation measures is expected to be completed in early 2026. The NPOA is expected to be completed in early 2026. **Marine turtles:** The development of a NPOA for turtles is planned to start in 2025 and it should be completed in early 2026.
Somalia							**Sharks:** Somalia is currently revising its fisheries legislation (current one being from 1985) and has completed the necessary steps for required for the consultative process to begin in order to develop these NPOAs. **Seabirds:** See above. **Marine turtles:** The Somali national fisheries law and legislation was reviewed and approved in 2014. This includes Articles on the protection of marine turtles. Further review of the National Law is underway to harmonize this with IOTC Resolutions and is expected to be presented to the new parliament for endorsement in 2017.
South Africa, Republic of		2013 2022		2008			**Sharks**: The NPOA-sharks was first approved and published in 2013. A revised version of the document was finalised in 2022 following extensive review including input from the research community and affected stakeholders. **Seabirds**: The NPOA seabirds was published in August 2008 and fully implemented. An updated NPOA has been drafted and is now awaiting approval. **Marine turtles**: All FAO guidelines to reduce marine turtle mortality have been inserted into permit conditions. A report from 2019 on the implementation of FAO guidelines to reduce marine turtle mortality has been provided to the IOTC. Bycatch

							in South African fisheries is considered to be very low. The South African permit conditions for the large pelagic longline fishery prohibits landing of turtles. All interactions with turtles are recorded, by species, within logbooks and in observer reports, including data on release condition. Vessels are required to carry a de-hooker on board and instructions on turtle handling and release in line with the FAO guidelines are included in the South African Large Pelagic permit conditions. All turtle interactions in respective areas of competence are reported to the respective RFMOs. Recent South African led studies on impact of marine debris on turtles have been published in the scientific literature (Ryan et al. 2016). Marine turtle nesting sites in South Africa are protected by coastal MPAs since 1963.
Sri Lanka		2013 2018					**Sharks:** The first NPOA-sharks was finalized in 2013 then revised in 2018 which was valid until 2022. This version has now been reviewed but is awaiting final approval. Shark data collection is done through logbooks and a large pelagic data collection programme. NARA has started to collect fisheries and biological data on blue, silky and scalloped hammerhead sharks. **Seabirds:** Sri Lanka has determined that seabird interactions are not a problem for their fleets. However, a formal review has not yet been provided to the WPEB and SC for approval. **Marine turtles:** Implementation of the FAO Guideline to Reduce Sea Turtle Mortality in Fishing Operation in 2015 was submitted to IOTC in January 2016. Marine turtles are legally protected in Sri Lanka. Longliner vessels are required to have dehookers for removal of hooks and a line cutter on board, to release the caught marine turtles. Gillnets longer than 2.5 km are now prohibited in domestic legislation. Reporting of bycatch has made legally mandatory and facilitated via logbooks.
Sudan							**Sharks:** No information received by the Secretariat. **Seabirds:** No information received by the Secretariat. **Marine turtles:** No information received by the Secretariat.
Tanzania, United Republic of		–		–			**Sharks:** A NPOA has been drafted and shared with the Secretariat and is expected to be released in September 2025. **Seabirds:** Initial discussions have commenced. Note: Terms and conditions related to protected sharks and seabirds contained within fishing licenses. **Marine turtles:** Sea turtles are protected by law. However, as there is a national turtle and Dugong conservation committee that oversee all issues related to sea turtles and dugongs. There is no information so far with regards to interaction between sea turtles and long line fishery.
Thailand		2020		–			**Sharks:** An updated NPOA Sharks has been developed for the years 2020-2024 and has been submitted to the Secretariat and FAO. **Seabirds:** The NPOA for seabirds has been finalised and submitted to the Secretariat. Thailand has the Notification of the Department of Fisheries on Requirement and Regulations of Fishing Vessels Operating Outside Thai Water in IOTC Area of Competence (IOTC) B.E. 2565 (2022), Clause 18 and 21 include requirements for line-cutters and dehookers to be carried for releasing marine

							animals and for any fishing vessel operating south of 25°S to follow the measures for mitigating capture of seabirds. **Marine turtles:** Thailand reports on progress of the implementation of FAO guidelines on turtles in their National Report to IOTC. Regulations on Fishing Vessels operating outside Thai waters in the IOTC area of competence contains clauses relating to the conservation of marine turtles including: Clause 14 prohibiting purse seines from setting around cetaceans, marine turtles or whale sharks; Clause 18 requiring the release and recording of incidental bycatch of sensitive species including marine turtles; Clause 19 requiring that any bycaught marine turtles that are not healthy should be cared for until it is ready to be released.
United Kingdom	n.a.	–	n.a.	–		–	British Indian Ocean Territory (Chagos Archipelago) waters are a Marine Protected Area closed to fishing except recreational fishing in the 3nm territorial waters around Diego Garcia. Separate NPOAs have not been developed within this context. **Sharks/Seabirds:** For sharks, UK is the 24th signatory to the Convention on Migratory Species 'Memorandum of Understanding on the Conservation of Migratory Sharks' which extends the agreement to UK Overseas Territories including the British Indian Ocean Territory; Section 7 (10) (e) of the *Fisheries (Conservation and Management) Ordinance* refers to recreational fishing and requires sharks to be released alive. No seabirds are caught in the recreational fishery. **Marine turtles:** No marine turtles are captured in the recreational fishery. A monitoring programme is taking place to assess the marine turtle population in UK (OT). In August 2022 the UK Government published the Bycatch Mitigation Initiative which applies to metropolitan UK waters but includes commitments to work with the international community to contribute to the understanding, reduction and elimination of bycatch globally, including by advocating for effective measures through RFMOs.
Yemen							**Sharks:** No information received by the Secretariat. **Seabirds:** No information received by the Secretariat. **Marine turtles:** No information received by the Secretariat.

COOPERATING NON-CONTRACTING PARTIES							
Liberia							**Sharks:** Liberia does not currently have a NPOA for sharks **Seabirds:** No information received by the Secretariat. **Marine turtles:** No information received by the Secretariat.

Colour key	
Completed	
Drafting being finalised	
Drafting commenced	
Not begun	

APPENDIX 7

LIST OF CHAIRS, VICE-CHAIRS AND THEIR RESPECTIVE TERMS FOR THE IOTC SCIENTIFIC COMMITTEE AND ITS SUBSIDIARY BODIES

Group	Chair/Vice-Chair	Chair	CPC/Affiliation	1st Term commencement date	Term expiration date (End date is until replacement is elected)	Comments
SC	Chair	Dr Sylvain Bonhommeau	EU,France	6-Dec-2025	End of SC in 2027	1st term
	1st Vice-Chair	Dr Jiangfeng Zhu	China	6-Dec-2025	End of SC in 2027	1st term
	2nd Vice-Chair	Dr Charlene da Silva	South Africa	6-Dec-2025	End of SC in 2027	1st term
WPB	Chair	Dr Jie Cao	China	08-Sep-23	End of WPB in 2027	2nd term
	Vice-Chair	Dr Sylvain Bonhommeau	EU,France	08-Sep-23	End of WPB in 2027	2nd term
WPTmT	Chair	Dr Toshihide Kitakado	Japan	29-Jul-22	End of WPTmT in 2028	1st term
	Vice-Chair	Dr Jiangfeng Zhu	China	29-Jul-22	End of WPTmT in 2028	1st term
WPTT	Chair	Dr David Kaplan	EU, France	26-Oct-25	End of WPTT in 2027	1st term
	Vice-Chair	Mr Mohamed Shimal	Maldives	26-Oct-25	End of WPTT in 2027	1st term
WPEB	Chair	Dr Charlene da Silva	South Africa	14-Sept-25	End of WPEB in 2027	1st term
	1st Vice-Chair	Dr Philippe Sabarros	EU,France	14-Sept-25	End of WPEB in 2027	1st term
	2nd Vice-Chair	Dr Yanan Li	China	14-Sept-25	End of WPEB in 2027	1st term
WPNT	Chair	Dr Farhad Kaymaram	I.R. Iran	7-Jul-23	End of WPNT in 2027	2nd term
	Vice-Chair	Mr Bram Setyadji	Indonesia	7-Jul-23	End of WPNT in 2027	2nd term
WPDCS	Chair	Mr Nuwan Gunawardane	Sri Lanka	30-Nov-25	End of WPDCS in 2027	1st term
	Vice-Chair	Dr Yang Wang	China	30-Nov-25	End of WPDCS in 2027	1st term
WPM	Chair	Dr Ann Preece	Australia	29-Oct-25	End of WPM in 2027	1st term
	Vice-Chair	Dr Giancarlo Correa	EU,Spain	29-Oct-25	End of WPM in 2027	1st term
WPSE	Chair	Dr Umi Muawanah	Indonesian	25-Oct-24	End of WPSE in 2026	1st term
	Vice-Chair	Ms Sheriffa Morel	Seychelles	25-Oct-24	End of WPSE in 2026	1st term
WGFAD	Chair	Dr Gorka Merino	EU,Spain	06-Oct-21	End of WGFAD in 2027	Ext2nd term
WGEMS	Chair	Dr Don Bromhead	Australia	6-May-25	End of WGEMS in 2027	1st term
	Vice-Chair	Dr Hilario Murua	ISSF	6-May-25	End of WGEMS in 2027	1st term

APPENDIX 8
EXECUTIVE SUMMARY: ALBACORE (2025)

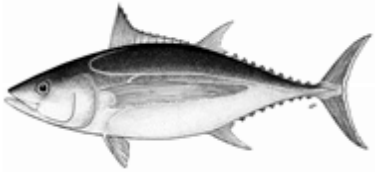

Table 1. Status of albacore (*Thunnus alalunga*) in the Indian Ocean

Area	Indicators – 2025 assessment		2025 stock status determination[3]
Indian Ocean[1]	Catch (2024) (t)	36,458[2]	54.1%
	Mean annual catch (2020-2024) (t)	40,715	
	MSY (x1,000 t) (95% CI)	44.31 (37.15-51.64)	
	F_{MSY} (95% CI)	0.16 (0.15-0.17)	
	SB_{MSY} (x1,000 t) (95% CI)	26.75 (22.34-31.29)	
	F_{2023} / F_{MSY} (95% CI)	0.97(0.52-1.42)	
	SB_{2023} / SB_{MSY} (95% CI)	1.33 (0.90-1.78)	
	SB_{2023} / SB_0 (95% CI)	0.285 (0.085-0.485)	

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%
[3]2023 is the final year that data were available for this assessment

Table 2: Probability of stock status with respect to each of four quadrants of the Kobe plot. Percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account

	Stock overfished (SB_{2020} / SB_{MSY}<1)	Stock not overfished (SB_{2020} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2020} / F_{MSY}≥ 1)	15.1 %	29.0 %
Stock not subject to overfishing (F_{2020} / F_{MSY}≤ 1)	1.76 %	54.1 %
Not assessed/Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. The stock status for albacore tuna has been assessed for 2025. 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 models used in 2025 are based on the models developed in 2019 and 2022 with a series of revisions that were noted during the 9th WPTmT data preparatory and assessment meetings held in April and July 2025 respectively. There are some noticeable changes compared to the previous data sets used as inputs into the assessment models: the CPUE indices have been estimated using updated methods (described during the 9th WPTmT assessment meeting); the length-frequency data have been updated and include additional data not available for the 2022 assessment.

A series of new joint CPUE indices from JPN, TWN,China, and KOR were only made available at the start of the assessment meeting. These indices are used as the main abundance indices within the assessment models. The methodology for the standardisation of the CPUE is again different from that used in the 2019, and 2022 assessments. In this iteration of the CPUE standardisation, similar methods were followed (as in 2022), to identify suitable sets from which to standardise the CPUE indices. The main difference between the 2022 and 2025 CPUE indices is the omission of positive spatio-temporal interactions and use of operational data instead of aggregated data in the 2025 analyses. This was tested, but results suggested omitting this aspect was a better update for the indices.

The 2025 CPUE series follow similar trends to the indices in 2019 and 2022, noting that there is a significant increase in CPUE in the final years in all quarters in the southwest (R3), compared to the last iteration.

The two sets of indices from the northwest and southwest Indian Ocean monitor different components of the albacore stock. The CPUE in the western area (LL1+3) may best represent the abundance of albacore at this time. The western area also represents a significant proportion of the albacore biomass in the Indian Ocean. The eastern indices are affected by changes in targeting and are not used in the assessment of the stock.

Trends in the northwest CPUE (R1) series suggest that the biomass vulnerable to longline fishing has declined significantly compared to levels observed in 1980-82, whereas a much smaller decline was observed in the southwest CPUE series for the same period (R3). Prior to 1980 there were 20 years of moderate fishing, after which total catches of albacore tuna in the Indian Ocean have more than doubled (**Fig. 1**). Catches have also increased substantially since 2007 for some fleets (e.g., Taiwan,China longline fisheries), although there is substantial uncertainty regarding the reliability of the catch estimates.

The final set of assessment model options included alternative models using the northwest and southwest CPUE indices. Both northwestern (NW) and southwestern (SW) models show similar trends in biomass estimates as the 2022 assessment models, however there are some outstanding issues with the updated NW and SW models in 2025.

In particular, the SW model produced very high biomass estimates with large uncertainty when the selectivity for LL3 and LL4 was unconstrained (allowed to be domed-shaped), while the NW model showed bias in the predicted length composition for the LL1 fishery. Despite several investigative model runs during the meeting, the exact causes of these issues and potential solutions remains unclear.

Although there were changes to the input data and the CPUE indices were available later than expected, the updated assessment models in their current configuration are considered sufficient to estimate stock status. However, further scrutiny is needed to improve their reliability and ensure robust management advice into the future. As such, continued refinement of the assessment is required.

Based on outputs from the combined stock assessment models, catches in 2024 (36, 458 t) were marginally below the MSY level estimated by the SS3 model in 2025 (44,310 t). Fishing mortality represented as F_{2023}/F_{MSY} is 0.97 (0.52-1.42). Biomass is estimated to be above the SB_{MSY} level (1.33 (0.90-1.78), **Table 1**, **Fig. 3**). 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** (**Table 1**).

Outlook. The impacts of piracy in the western Indian Ocean resulted in the displacement of a substantial portion of longline fishing effort into the traditional albacore fishing areas in the southern and eastern Indian Ocean. However, in recent years the effort distribution in the Indian Ocean has been dynamic. Based on the previous advice current catch appears to be sustainable in the short term although the advice is based on model assumptions that may be associated with high levels of uncertainty (see management advice below for more detail).

Management advice. Considerable uncertainty remains in the SS3 assessment conducted in 2025, however the trends in key model outputs align relatively well with the 2022 assessment. For this year, due to the uncertainty in the model outputs, the management advice from 2022 would be carried over for one year (1 year) to allow time to update the SS3 assessment to provide updated management advice in 2026. It is anticipated that, once the assessment is improved and accepted at the proposed WPTmT meeting next year, management advice can be updated using the new assessment.

Therefore, based on the 2022 management advice, the K2SM indicates that there is low risk of violating the target and limit reference points with current and moderate increases in catch in the short term. Current catches (36,458 t for the statistical year 2024; **Table 1**) are below the estimated level of MSY.

It should be noted that as in 2022, neither CPUE series or other model assumptions account for any change in catchability/effort creep over the time series.

The following should be noted:

- The primary sources of data that drive the assessment, total catches, CPUE and length data, are uncertain and should be developed further as a priority;
- The catch estimates for 2024 (36,458 t) are below the current estimated MSY levels (**Table 1**);
- Provisional reference points: noting that the Commission in 2015 adopted Resolution 15/10 *On interim target and limit reference points and a decision framework*, the following should be noted:
  - **Fishing mortality**: the fishing mortality at the time of the assessment was considered to be below the interim target reference point of F_{MSY}, and therefore below the interim limit reference point of $1.4*F_{MSY}$ (**Fig. 3**)
  - **Biomass**: the spawning biomass at the time of the assessment was considered to be above the target reference point of SB_{MSY}, and therefore above the limit reference point of $0.4*SB_{MSY}$ (**Fig. 3**)
- **Main fisheries (mean annual retained catch 2020-2024)**: albacore are caught using longline (82.3%), followed by line (15%) and gillnet (1.1%). The remaining catches taken with other gears contributed to 1.6% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual retained catch 2020-2024)**: the majority of albacore catches are attributed to vessels flagged to Taiwan,China (50.9%) followed by Indonesia (24.1%) and China (11%). The 24 other fleets catching albacore contributed to 13.8% of the total catch in recent years (**Fig. 2**).
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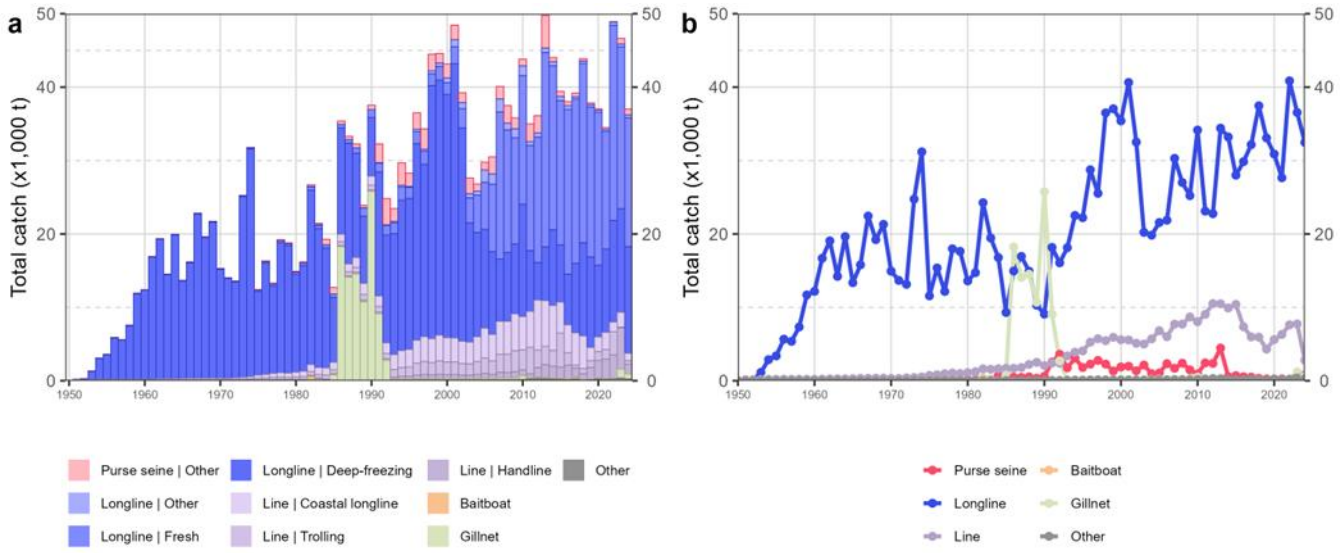

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for albacore during 1950-2024. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

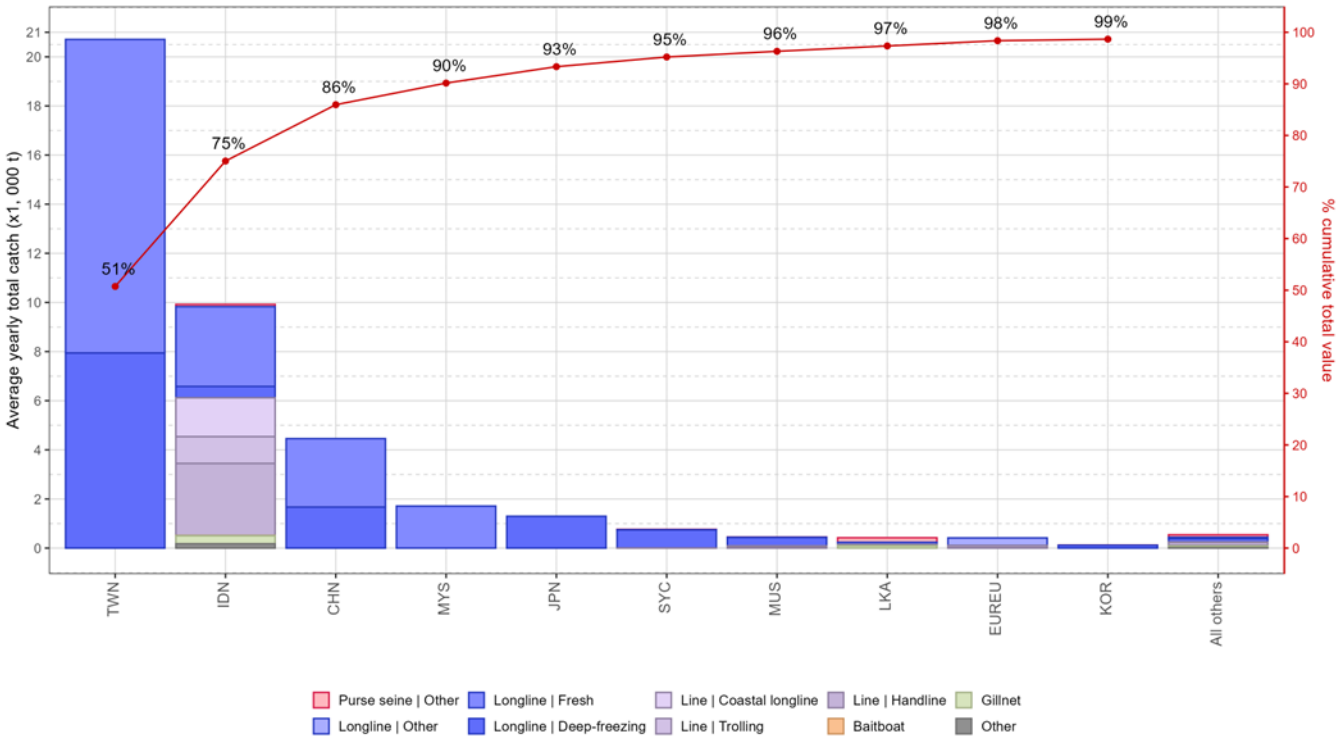

Fig. 2. Mean annual catches (metric tonnes; t) of albacore by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

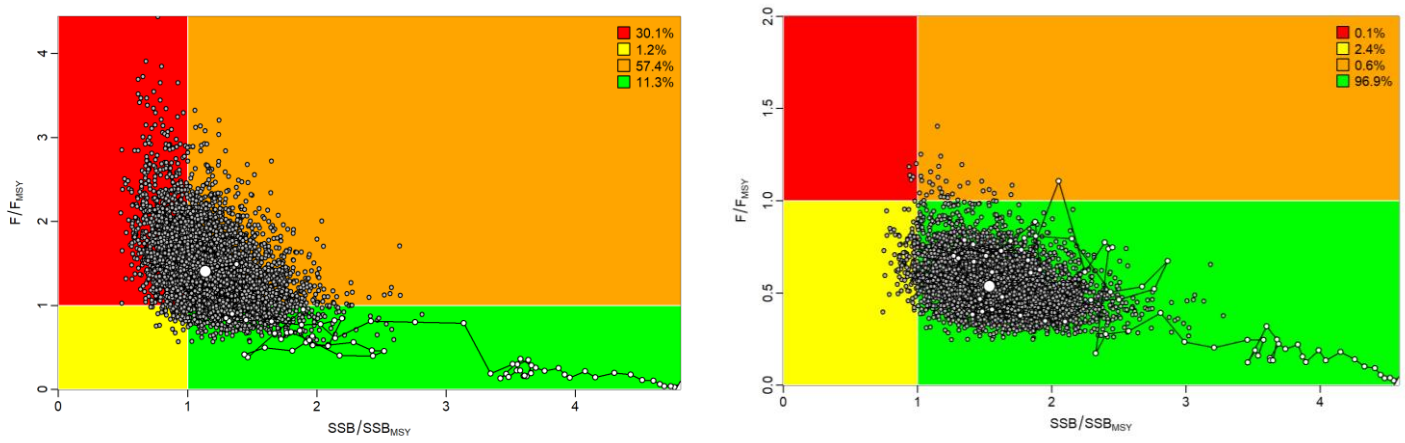

Fig. 3. Albacore: SS3 Indian Ocean assessment Kobe plot for the two model options considered: (i) Model fitted to the North-western CPUE; (ii) Model fitted to the South-western CPUE. White circles indicate the trajectory of the point estimates for the spawning biomass (SB) ratio and fishing mortality (F) ratio for each year 1950–2023 (the grey lines represent the 95 percentiles of the 2023 estimate). Target (F_{target} and SB_{target}) and limit (F_{lim} and SB_{lim}) reference points are shown

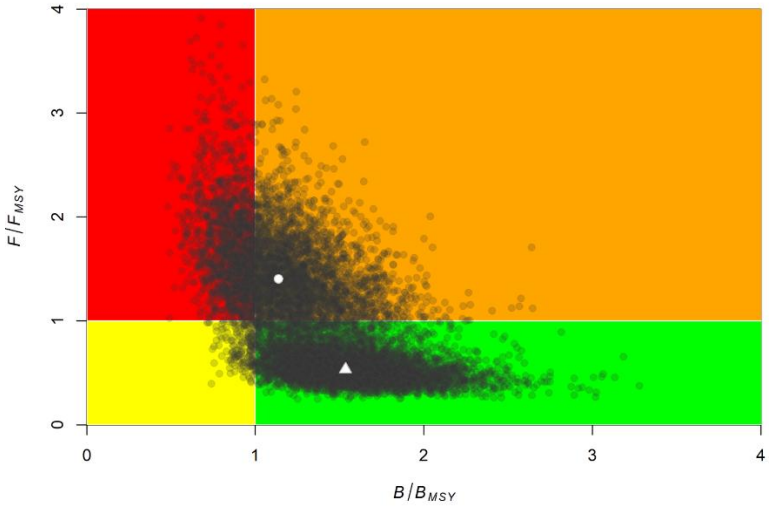

Fig. 4. Albacore: SS3 Indian Ocean assessment Kobe plot for the two model options considered plotted on the same figure. Black circles indicate the trajectory of the point estimates for the spawning biomass (SB) ratio and fishing mortality (F) ratio for each year 1950–2023. Target (F_{target} and SB_{target}) and limit (F_{lim} and SB_{lim}) reference points are shown (white triangle is southwest; white circle is northwest).

Table 2. Albacore: SS3 aggregated Indian Ocean assessment Kobe II Strategy Matrix based on the 2022 Assessment model options (i) Model 1 and (ii) Model 2. Probability (percentage) of violating the MSY-based target (top) and limit (bottom) reference points for constant catch projections (2020 catch level, ± 10%, ± 20%, ± 30% ± 40%) projected for 3 and 10 years

Reference point and projection timeframe	**Alternative catch projections (relative to the catch level for 2020) and probability (%) of violating MSY-based target reference points (SB_{targ} = SB_{MSY}; F_{targ} = F_{MSY})**								
	60%	70%	80%	90%	100%	110%	120%	130%	140%
	(24,644)	(28,751)	(32,858)	(36,966)	(41,073)	(45,180)	(49,288)	(53,395)	(57,502)
$SB_{2023} < SB_{MSY}$	0.006	0.016	0.022	0.036	0.045	0.069	0.097	0.123	0.154
$F_{2023} > F_{MSY}$	0	0	0.003	0.029	0.1	0.204	0.326	0.434	0.529
$SB_{2030} < SB_{MSY}$	0.03	0.047	0.087	0.135	0.19	0.28	0.395	0.505	0.603
$F_{2030} > F_{MSY}$	0	0	0.001	0.037	0.141	0.3	0.453	0.565	0.618
Reference point and projection timeframe	**Alternative catch projections (relative to the catch level for 2020) and probability (%) of violating MSY-based target reference points (SB_{Lim} = 0.4*SB_{MSY}; F_{Lim} = 1.4*F_{MSY})**								
	60%	70%	80%	90%	100%	110%	120%	130%	140%
	(24,644)	(28,751)	(32,858)	(36,966)	(41,073)	(45,180)	(49,288)	(53,395)	(57,502)
$SB_{2023} < SB_{Lim}$	0	0	0	0	0.001	0.002	0.005	0.006	0.012
$F_{2023} > F_{Lim}$	0	0	0	0	0.001	0.011	0.056	0.117	0.213
$SB_{2030} < SB_{Lim}$	0.004	0.009	0.022	0.042	0.074	0.118	0.169	0.243	0.344
$F_{2030} > F_{Lim}$	0	0	0	0	0.008	0.073	0.21	0.374	0.496

APPENDIX 9
EXECUTIVE SUMMARY: BIGEYE TUNA (2025)

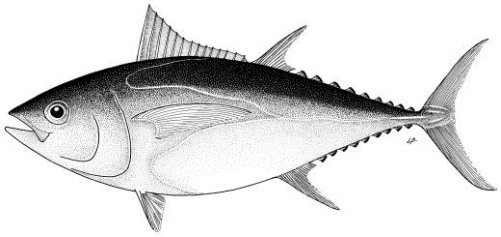

Table 1. Status of bigeye tuna (*Thunnus obesus*) in the Indian Ocean

Area[1]	**Indicators**		**2025 stock status determination**[3]
Indian Ocean	Catch 2024 (t)	87,040[2]	**15.9%*** **OVERFISHED (54%) BUT NOT SUBJECT TO OVERFISHING (62%)**
	Mean annual catch 2020-2024 (t)	88,555	
	MSY (1,000 t) (80% CI)	100 (94 – 106)	
	F_{MSY} (80% CI)	0.27 (0.21 – 0.33)	
	SB_{MSY} (1,000 t) (80% CI)	276 (143 – 409)	
	F_{2024}/F_{MSY} (80% CI)	0.94 (0.69-1.18)	
	SB_{2024}/SB_{MSY} (80% CI)	0.98 (0.71 – 1.25)	

[1]Boundaries for the Indian Ocean stock assessment are defined as the IOTC Area of Competence

[2]Proportion of 2024 catch fully or partially estimated by IOTC Secretariat: 0.2%

[3]2024 is the final year that data were available for this assessment

*Estimated probability that the stock is in the respective quadrant of the Kobe Plot (Table 2), derived from the confidence intervals associated with the current stock status. Yellow (overfished and not subject to overfishing) also corresponds to two marginal probabilities ($p(SB<SB_{MSY}) = 54\% > 50\%$, thus overfished) and ($p(F<F_{MSY})=62\% > 50\%$, thus not subject to overfishing)

Table 2. Probability of stock status with respect to each of four quadrants of the Kobe plot. Percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account

	Stock overfished (SB_{2024} / SB_{MSY}<1)	Stock not overfished (SB_{2024} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2024} / F_{MSY}≥ 1)	38 %	0 %
Stock not subject to overfishing (F_{2024} / F_{MSY}≤ 1)	16 %	46 %
Not assessed / Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. A new stock assessment was carried out for bigeye tuna in 2025 using SS3 to provide scientific advice. The 2025 stock assessment was built on the 2022 assessment model structure and incorporated new growth and natural mortality estimates. The model was fitted to regional joint longline CPUE indices, and the European Union (EU) purse seine index. The reported stock status is based on a grid of 36 model configurations designed to capture the uncertainty on stock recruitment relationship, longline selectivity, natural mortality and catchability dynamics.

Overall, the stock assessment results suggest that bigeye biomass has nearly recovered to the target SBMSY level. Considering the characterized uncertainty, the assessment indicates that:

- there is a 54% probability that SB_{2024} is below SBMSY, with median spawning biomass in 2024 estimated at 0.98 (0.71-1.25) times the level that can support MSY.

- there is a 62% probability that F_{2024} is below F_{MSY}, with median fishing mortality (in 2024) estimated at 0.94 (0.69-1.18) times the F_{MSY} level.

On the weight-of-evidence available in 2025, the bigeye tuna stock is determined to be overfished and not subject to overfishing.

As IOTC adopted on a bigeye Management Procedure (Res. 22/03), it should be noted that the stock assessment is used to provide current stock status advice and to monitor the performance of the MP, but is not used to provide a recommendation on the TAC.

Management Procedure. A management procedure for Indian Ocean bigeye tuna was adopted under Resolution 22/03 by the IOTC Commission in May 2022 and was applied to determine a recommended TAC for bigeye tuna of 80,583 t for 2024 and 2025 (adopted in Resolution 23/04). The MP was run in early 2025 to determine a TAC of 92,670 t per year for the period 2026-2028, which was adopted by the Commission in 2025 (Resolution 25-04). A review of evidence for exceptional circumstances, was also conducted following the adopted guideline (IOTC-2021-SC24-R Appendix 6A) as per the requirements of Resolution 22/03. The review covered information pertaining to i) new knowledge about the stock, population dynamics or biology, ii) changes in fisheries or fisheries operations, iii) changes to input data or missing data, and iv) inconsistent implementation of the MP advice. The 2024 catch (87,040 t) exceeded the 2024 TAC (80,583 t), which is considered an exceptional circumstance and, therefore, the Commission should ensure that the appropriate provisions of 23/04 are implemented to ensure catches remain below the TAC, conditional on the allowances and requirements of those provisions.

Outlook. Catch in 2021 (90,844 t), 2022 (90,832 t), 2023 (94,598 t) and 2024 (87,040) of bigeye tuna were above the recommended TAC for 2024, 2025 from the application of the bigeye tuna MP. Achieving the objectives of the Commission for this stock will require effective implementation of the MP TAC advice by the Commission going forward, a requirement further emphasised by the current status of the stock estimated from the stock assessment to be overfished but not subject to overfishing.

Management advice. The TAC adopted by the Commission for 2024 and 2025 is 80,583 t per year (Resolution 23/04) and the TAC for 2026-2028 is 92,670 t per year (Resolution 25/04).

The following key points should also be noted:

- **Main fisheries (mean annual catch 2020-2024)**: bigeye tuna are caught using purse seine (41.3%), followed by longline (37.3%) and line (14.6%). The remaining catches taken with other gears contributed to 6.8% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of bigeye tuna catches are attributed to vessels flagged to Indonesia (19.4%) followed by Seychelles (15.7%) and EU (Spain) (15.4%). The 30 other fleets catching bigeye tuna contributed to 49.5% of the total catch in recent years (**Fig. 2**).

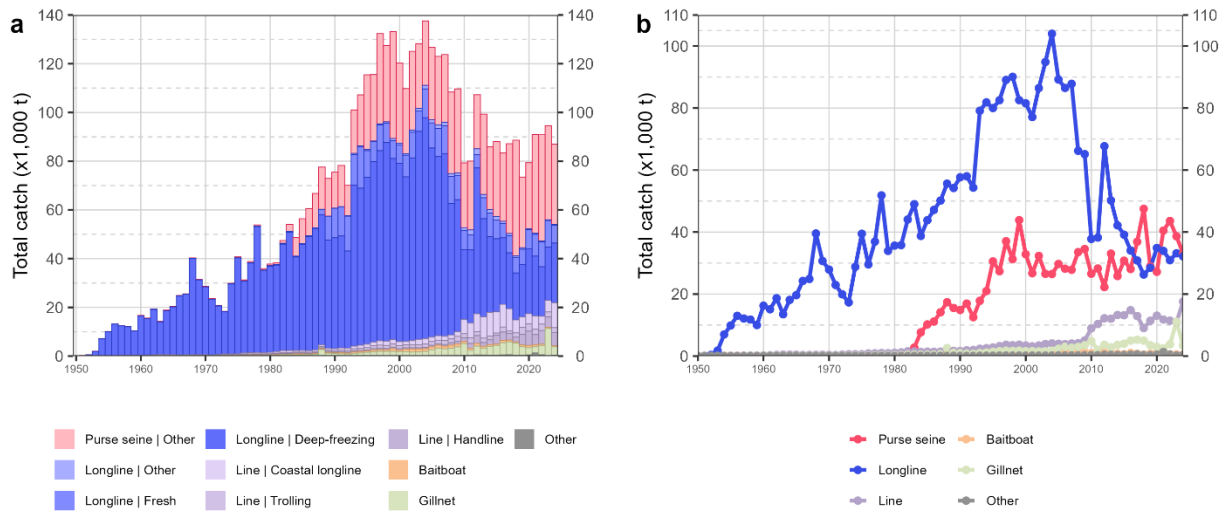

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for bigeye tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

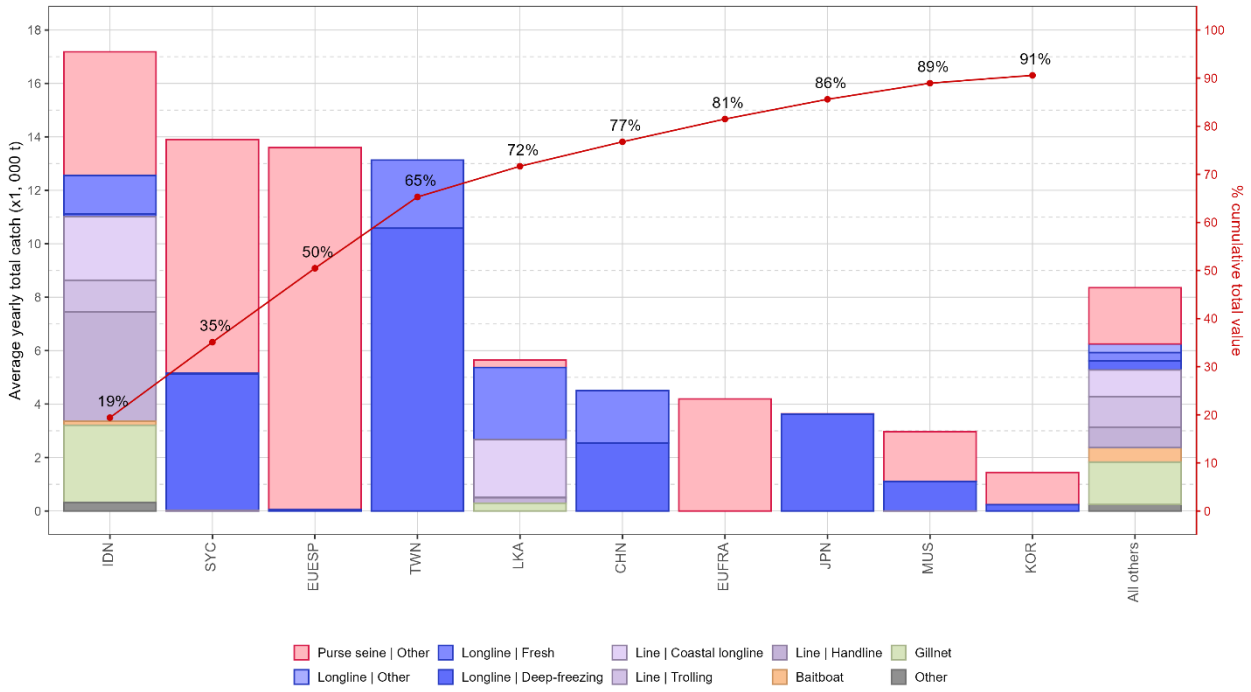

Fig. 2. Mean annual retained catches (metric tonnes; t) of bigeye tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

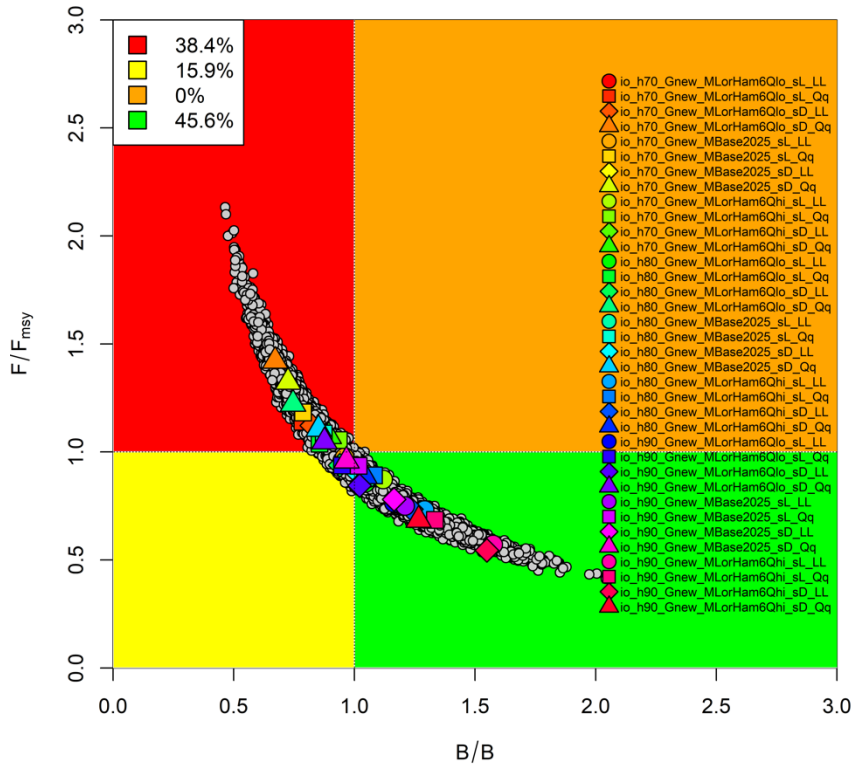

Fig. 3. Bigeye tuna: SS3 Aggregated Indian Ocean assessment Kobe plot. The coloured points represent stock status estimates from the 36 model options. Coloured symbols represent Maximum Posterior Density (MPD) estimates from individual models which varied in terms of steepness (h), natural mortality (M), selectivity on the LL2+LL3 fleets (sL *vs* sD), and gear creep applied to the LL CPUE indices (LL *vs* Qq, where Qq represents 0.5% of effort creep ajustment on the indices).

APPENDIX 10
EXECUTIVE SUMMARY: SKIPJACK TUNA (2025)

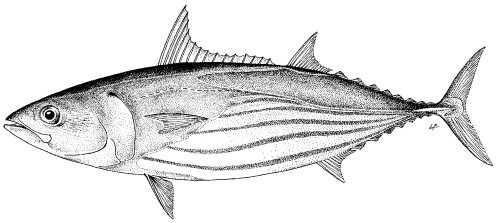

Table 1. Status of skipjack tuna (*Katsuwonus pelamis*) in the Indian Ocean

Area[1]	Indicators		2023 stock status determination[3]
Indian Ocean	Catch 2024 (t)	624,609[2]	**70%***
	Mean annual catch 2020-2024 (t)	636,078	
	$E_{40\%SB0}$ [4] (80% CI)	0.55 (0.48–0.65)	
	SB_0 (t) (80% CI)	2 177 144 (1,869,035–2,465,671)	
	SB_{2022} (t) (80% CI)	1 142 919 (842,723–1,461,772)	
	SB_{2022} / SB_0 80% CI)	0.53 (0.42–0.68)	
	SB_{2022} / $SB_{40\%SB0}$ (80% CI)	1.33 (1.04–1.71)	
	SB_{2022} / $SB_{20\%SB0}$ (80% CI)	2.67 (2.08–3.42)	
	SB_{2022} / SB_{MSY} (80% CI)	2.30 (1.57–3.40)	
	F_{2022} / F_{MSY} (80% CI)	0.49 (0.32–0.75)	
	F_{2022} / $F_{40\%SSB0}$ (80% CI)	0.90 (0.68–1.22)	
	MSY (t) (80% CI)	584,774 (512,228–686,071)	

[1]Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

[2] Proportion of 2024 catch fully or partially estimated by IOTC Secretariat: 4.1 %

[3]2022 is the final year that data were available for this assessment

[4] $E_{40\%SB0}$ is the equilibrium annual exploitation rate (E_{targ}) associated with the stock at B_{targ}, and is a key control parameter in the skipjack harvest control rule as stipulated in Resolution 21/03. Note that Resolution 23/03 did not specify the exploitation rate associated with the stock at B_{lim}

*Estimated probability that the stock is in the respective quadrant of the Kobe plot (defined in resolution 21/03 and shown below), derived from the confidence intervals associated with the current stock status

Table 2. Probability of stock status with respect to each of four quadrants of the Kobe plot. Percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights taken into account, as defined in resolution 21/03

	Stock overfished (SB_{2022} / $SB_{40\%SB0}$<1)	Stock not overfished (SB_{2022} / $SB_{40\%SB0}$≥ 1)
Stock subject to overfishing (F_{2022} / $F_{40\%SB0}$≥ 1)	8%	21%
Stock not subject to overfishing (F_{2022} / $F_{40\%SB0}$≤ 1)	1%	70%
Not assessed / Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was carried out for skipjack tuna in 2025 and so the advice is based on the 2023 assessment 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:

i) 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%.
ii) The spawning biomass remains above SB_{MSY} and the fishing mortality remains below F_{MSY} with a probability of 98.4 %
iii) 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**.

Outlook. There has been a substantial increase of fishery dependent abundance index in recent years: the CPUE from the pole-and-line (PL) fishery increased by 75% from 2019 to 2022, and the floating object associated purse seine fishery (PSLS) also increased by over 30% between 2019 and 2021. Total catches in 2022 were 30% larger than the resulting catch limit from the skipjack HCR for the period 2021-2023 (513,572 t). In 2024, catch was within the recommended levels (624,609 t). The increase in abundance despite catches exceeding the recommended limits was primarily driven by an increase in recent recruitment which was estimated to be well above the long-term average. Environmental conditions (such as sea surface productivity (chlorophyll)) are believed to significantly influence recruitment of skipjack tuna and can produce high variability in recruitment levels between years. The high recruitment anomaly estimated in 2022 appears to be supported by the strong increasingly positive phase of sea surface productivity which began from a below average level in 2015. Climate model predictions suggest that the positive productivity phase will end by the start of 2024 resulting in a period of lower productivity. There is also considerable uncertainty in the stock assessment models due to the potential caveats of using PL and PSLS CPUE as index of basin-level abundance and uncertainty in stock productivity parameters of skipjack tuna (e.g., steepness and growth, natural mortality). The model runs analyzed illustrate a wide range of stock status (SB_{2022} / SB_0) to be between 35% and 78%.

Management Procedure. Skipjack tuna is currently subject to a Total Allowable Catch (TAC) of 628,606 t for 2024–2026. This TAC was determined by applying the skipjack Harvest Control Rule (HCR) as prescribed in Resolution 21/03 in 2023. The current TAC has been distributed to CPCs that account for highest skipjack catches according to the rules specified in Resolution 25/03. In May 2024, the Commission adopted a management procedure (MP) for Indian Ocean skipjack tuna under Resolution 24/07, replacing the previous HCR. This MP was applied in 2025 to determine the recommended TAC for skipjack for 2027–2029. As required by Resolution 24/07, a review of evidence for exceptional

circumstances was conducted following the adopted guidelines (IOTC-2021-SC24-R Appendix 6A). The evaluation concluded that there were no exceptional circumstances requiring further research or management action regarding the TAC calculated by the MP.

Management advice. The application of the skipjack tuna management procedure generated an unconstrained estimated TAC of 528,130 t which is more than 10% lower than the TAC set for 2024–2026. By applying the maximum 10% decrease in the TAC as per Resolution 24/03, the SC recommended a TAC of 565,745 t per year for 2027–2029. The 2023 stock assessment estimated 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 favorable environmental conditions. As environmental conditions along with ocean productivity can vary substantially inter-annually, and that skipjack recruitment responds quickly to such variability, it is important that the Commission ensures that catches of skipjack do not exceed the agreed limit. In addition, the SC recognizes the potential impact on other associated stocks (bigeye and yellowfin) of exceeding the catch limits of skipjack tuna.

The following key points should also be noted:

- **Reference points**: Commission in 2016 agreed to Resolution 16/02 on *harvest control rules for skipjack tuna in the IOTC area of competence (superseded by Resolution 21/03)*.
- **Biomass**: Current spawning biomass was considered to be above the target reference point of 40% of SB_0, and above the limit reference point of $0.2*SB_0$ as per Resolution 16/02 (**Fig. 3**).
- **Main fisheries (mean annual catch 2020-2024):** skipjack tuna are caught using purse seine (52.6%), followed by baitboat (18.9%) and gillnet (17.4%). The remaining catches taken with other gears contributed to 11.1% of the total catches in recent years (**Fig. 1**).
  Main fleets (mean annual catch 2020-2024): the majority of skipjack tuna catches are attributed to vessels flagged to Indonesia (22%) followed by Maldives (17.6%) and EU (Spain) (13%). The 33 other fleets catching skipjack tuna contributed to 47.4% of the total catch in recent years (**Fig. 2**).

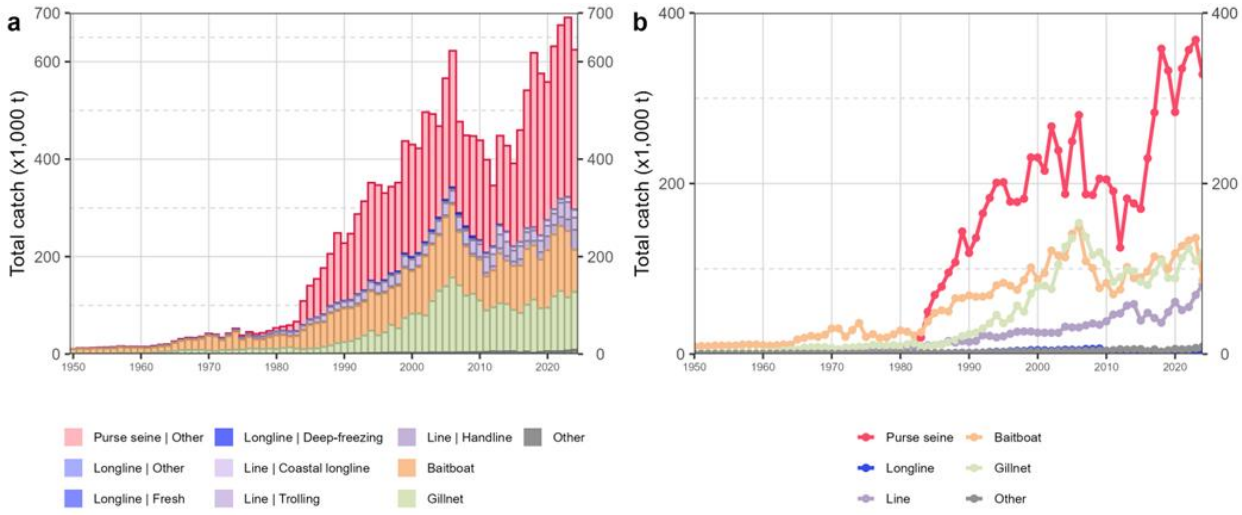

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for skipjack tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

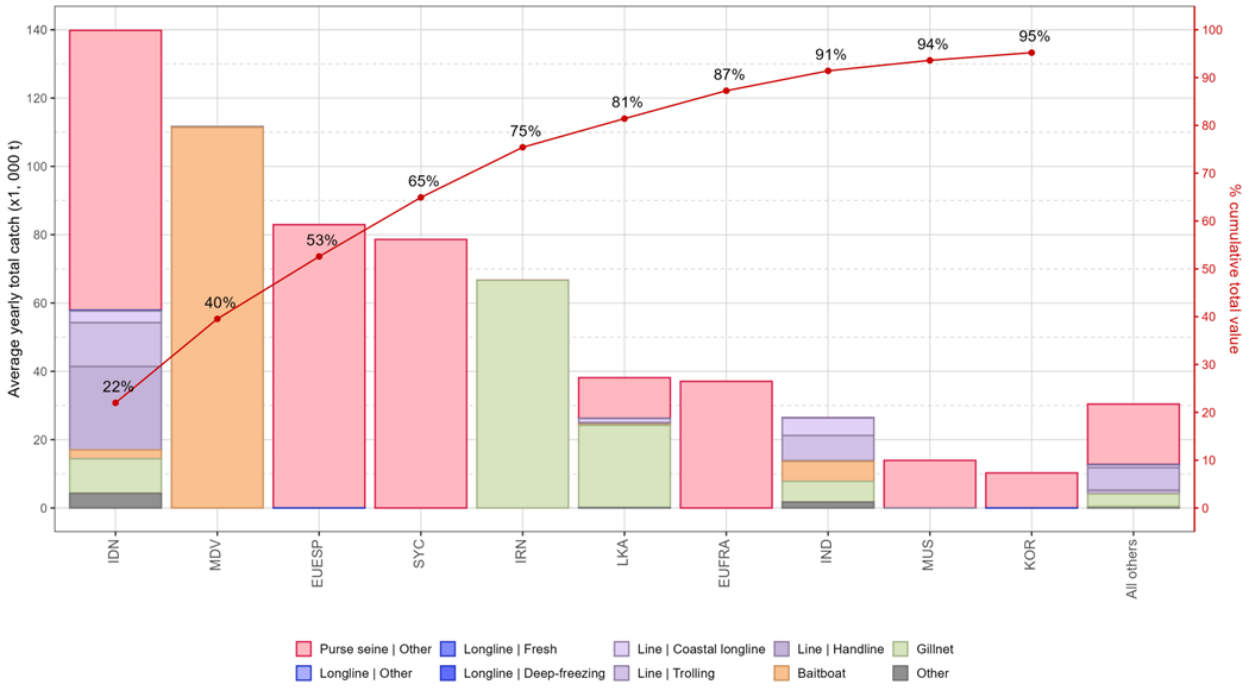

Fig. 2. Mean annual retained catches (metric tonnes; t) of skipjack tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

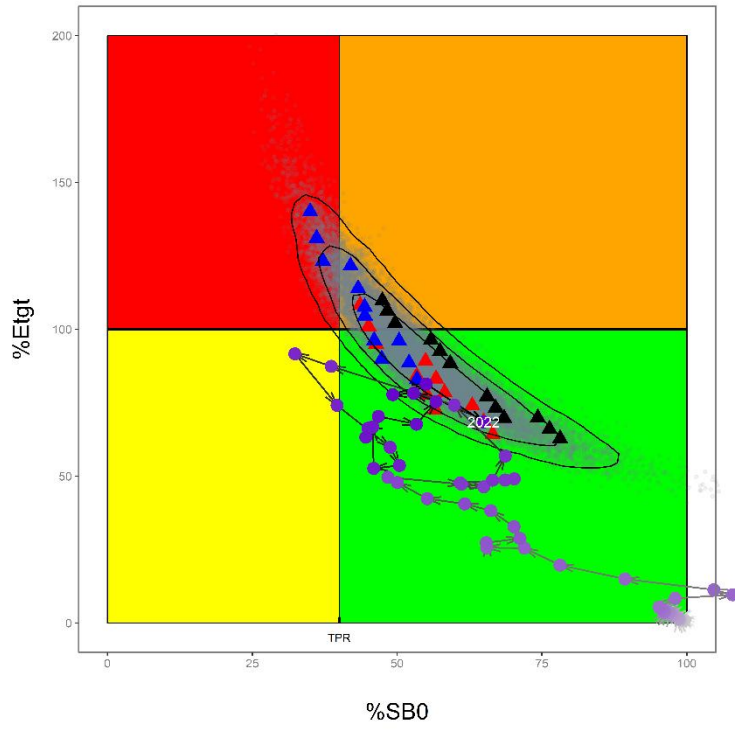

Fig. 3. Skipjack tuna: SS3 Aggregated Indian Ocean assessment Kobe plot of the 2023 uncertainty grid: current stock status, relative to SB0 and F (x-axis) and $F_{40\%B0}$ (y-axis) reference points for the final model grid. The middle vertical line indicates 40% B_0; The middle horizontal line indicates the 100% of the target fishing mortality. Triangles represent Maximum Posterior Density estimates from individual models (black, models based on pole-and-line (PL) index; red, models based on floating object associated purse seine fishery (PSLS) index; blue, models based on and both PSLS and ABBI index). Grey dots represent uncertainty from individual models. The arrowed line represents time series of historical stock trajectory for model PSLS. Contours represent 50, 80, and 90% confidence region.

APPENDIX 11
EXECUTIVE SUMMARY: YELLOWFIN TUNA (2025)

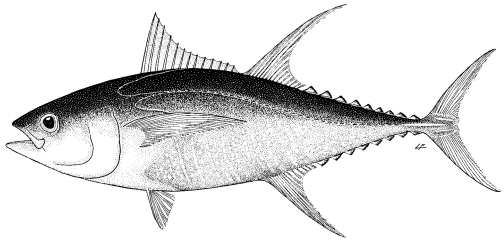

Table 1. Status of yellowfin tuna (*Thunnus albacares*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2024 (t)	489,742[2]	**89%***
	Mean annual catch 2020-2024 (t)	440,206	
	MSY_{recent}[4] (1,000 t) (80% CI)	421 (416-430)	
	F_{MSY} (80% CI)	0.2 (0.16-0.26)	
	SB_{MSY_recent}[4] (1,000 t) (80% CI)	1,063 (890-1,361)	
	F_{2023} / F_{MSY} (80% CI)	0.75 (0.58-1.01)	
	SB_{2023} / SB_{MSY_recent} (80% CI)	1.32 (1.00-1.59)	
	SB_{2023} / SB_0 (80% CI)	0.44 (0.40-0.50)	

[1]Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

[2]Proportion of 2024 catch fully or partially estimated by IOTC Secretariat: 13.9%

[3]2023 is the final year that data were available for this assessment

[4] Recent refers to the most recent 20 years (2003-2022)

Colour key	Stock overfished (SB_{2023} / SB_{MSY}<1)	Stock not overfished (SB_{2023} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2023} / F_{MSY}≥ 1)	7.9%	3.3%
Stock not subject to overfishing (F_{2023} / F_{MSY}≤ 1)	0%	88.8%
Not assessed / Uncertain / Unknown		

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Stock status. No new stock assessment was conducted in 2025. The stock status for yellowfin tuna was estimated based on the stock assessment carried out in 2024. The 2024 stock assessment was carried out using Stock Synthesis III (SS3), a fully integrated model that is currently used to provide scientific advice for the three tropical tunas stocks in the Indian Ocean. The model grid from this assessment was re-run in 2025 in light of errors identified and subsequent revisions to the standardised CPUE input data. However, none of the figures or tables have been updated, because a full stock assessment with the corrected CPUE has not been conducted.

The model used in 2024 is based on the model developed in 2021 with a series of revisions that were discussed during the WPTT in 2024. The new model represents a marked improvement over the previous model available in 2021, as demonstrated using a number of statistical diagnostic analyses. These revisions addressed many of the recommendations of the independent review of the yellowfin stock assessment carried out in 2023. The model uses four types of data: catch, size frequency, tagging and CPUE indices. The proposed final assessment model options correspond to a combination of model configurations, including alternative assumptions about the selectivity of longline fisheries (2 options on size frequency data prior and post 2000), longline catchability (effort creep (0% and 0.5% per year)) and steepness values (0.7, 0.8, and 0.9). The model ensemble (a total of 12 models) encompasses a range of plausible hypotheses about stock and fisheries dynamics.

A number of sensitivity runs were conducted to understand additional uncertainties not captured in the model grid, including two alternative natural mortalities (based on maximum age of 18 years and the natural mortality used in 2021), the CPUE used in 2021, a model that started in 1975, the influence of the tagging data and the revised catch information for Indonesia. In general, the sensitivity runs did not suggest that other parameters should be included in the reference grid and the group decided not to include any additional axes of uncertainty.

The model estimates of current stock status are predominantly informed by the new abundance index derived from the Joint CPUE estimated for longline fleets. It was noted that the new index was significantly different to the index used in 2021 (**Fig. 6**), especially for the Northwestern region of the Indian Ocean for the periods 2005-2015 and 2019-2020 (this is further discussed, below). In addition, the new index suggests a marked increase of abundance for yellowfin in the last three years (2021-2023).

With regards to the differences in the modelling choices, the new SS3 model includes a new growth model, natural mortality and maturity. All these have been updated from recent biological studies, as agreed by the WPTT in the 2024 data preparatory meeting.

For the 2024 model, a new approach was applied to the derivation of the MSY and associated biomass-based reference point (SB_{MSY}) based on the magnitude of recruitment estimated for the recent 20-year period (see Para 89–100 of IOTC-2024-WPTT26-R for details). The derivation of MSY is in line with the recommendations of the 2023 review. MSY was estimated to be 421,000 t. Catch in 2024 is estimated to be well above the MSY-range (489,742 t). Differences in the estimates of MSY and B_{MSY} using recent and long-term recruitment levels introduce additional uncertainty in the estimates of stock status relative to B_{MSY}. This is highlighted in Tables 2 and 3 which indicate, for example, that while SB/SB_{MSY} is estimated to be higher (1.47) under long-term recruitment assumption, MSY is estimated to be lower (374,000 t). However, fishing mortality-based estimates of stock status are insensitive to those assumptions.

Table 2. Reference points for yellowfin tuna (*Thunnus albacares*) in the Indian Ocean based on long term and 20-year conditions

Long term MSY (t)	Recent 20 yr MSY (t)	Long term SB_{MSY} (t)	Recent 20 yr SB_{MSY} (t)
374,421	420,623	986,599	1,094,844

Table 3. Status of yellowfin tuna (*Thunnus albacares*) in the Indian Ocean using equivalent (i.e. long-term) recruitment trends

Indicators	
Catch 2023 (t)	400,950
Mean annual catch 2019-2023 (t)	423,142
MSY_{eq} (1,000 t) (80% CI)	374 (350-411)
SB_{MSY_eq} (1,000 t) (80% CI)	987 (791-1,247)
SB_{2023} / SB_{MSY_eq} (80% CI)	1.47 (1.21-1.65)

The recent 20-year period was selected for the estimation of recent benchmarks (SB_{MSY} and MSY) on the basis that the period encompassed the most reliable series of catch and size composition data and, as such, provided the best available information regarding the prevailing productivity of the stock.

According to the information available to the 2024 assessment, the total catch has remained within the estimated recent (20-year average) MSY since 2007 (i.e., between 402,000 t and 427,000 t), with the exception of, 2018 (443,252 t) and 2019 catch (450,586 t).

Overall stock biomass declined substantially during the 1980s and 1990s. The stock is estimated to have been in an overfished state from 2007 to 2019 (**Fig. 4**). Spawning biomass increased considerably after 2021 following recent strong recruitment (informed by the recent increase in LL CPUE). Correspondingly, overfishing was occurring from 2003 until 2020. Fishing mortality was estimated to be below the F_{MSY} level in 2021-2023. The recent strong recruitments also contribute to a continued increase in projected biomass in the forthcoming years. The magnitude of the recent annual recruitments (2020-2022) is unprecedented in the time series.

Overall stock status estimates differ substantially from the previous assessment. Spawning biomass in 2023 was estimated to be on average 44% of the initial (1950) levels (**Table 1**). Spawning biomass in 2023 was estimated to be 32% higher than the level that supports the maximum sustainable yield (SB_{2023}/SB_{MSY} = 1.32). Current fishing mortality is estimated to be 25% lower than F_{MSY} (F_{2023}/F_{MSY} = 0.75). The probability of the stock being in the green Kobe quadrant in 2023 is estimated to be 89%.

It is noted that the uncertainties identified in relation to the CPUE standardisation in 2024 were addressed in 2025. The methodology used to standardise the 2024 index underwent review, during which an error was discovered and corrected through a number of methodological adjustments, following feedback from SC and WPTT, to ensure greater consistency with the previously agreed standardisation approach. During WPTT27, the revised CPUE was used to rerun the 2024 stock assessment model grid to assess the likely impact on key management quantities. The estimated median biomass and fishing mortality relative to MSY were SB_{2023}=1.18 $SB_{MSY,recent}$ and F_{2023}=0.83 F_{MSY} respectively; and the probability for being in the green quadrant of the Kobe plot was estimated to be at 76.6%. Therefore, the updated results did not change the 2024 status qualitatively. The median estimated stock depletion level was 0.37. The estimated median MSY (420,000 t) was nearly identical to the value estimated in 2024 (421,000 t). As the revision carried out did not represent a new full stock assessment and that it only aimed at corroborating the advice provided in 2024, the SC considered not to change the summary table (**Table 1**) with the revised values. Based on 2024 evidence and a 2025 review, yellowfin tuna is estimated to be **not-overfished and not-subject to overfishing** (**Table 1** and **Fig. 5**).

During the review of the revised model grid outputs, a number of uncertainties were considered by the SC, including a) CPUE index data in the late 1970s and the impact of these on the model's ability to derive plausible population dynamics over time; and b) uncertainty related to whether estimated higher recent recruitment will be maintained.

Further consideration of these issues to resolve associated uncertainties should be undertaken as part of the next assessment

It is noted that there is also considerable uncertainty in the reported catches by some fisheries. In particular, catch estimates for several artisanal fisheries have increased substantially in recent years, the implication of which should also be further investigated.

Outlook. Assumptions on recent productivity were used to make 10-year projections and evaluate the impact of alternative catch levels. The results of these projections are shown in **Fig. 7** and summarized in the K2SM (**Table 3**). For each catch scenario, the probability of the biomass being below the SB_{MSY} level and the probability of fishing mortality being above F_{MSY} were determined over the projection horizon using the delta-MVLN estimator (Walter & Winker 2020), based on the variance-covariance derived from estimates of SB/SB_{MSY} and F/F_{MSY} across the model grid.

The revised model was projected with the advice provided in 2024 (421,000 t) and it was estimated that with that level of catch, the stock would be above SB_{MSY_recent} with 89.7% of probability by 2026 and 83% probability by 2033.

Management advice

The review of the 2024 assessment grid in 2025 was deemed sufficient to extend the management advice provided in 2024. As such, the following advice was recommended:

- If catches are maintained within the estimated MSY range (416,000-430,000 tons) there is more than a 50% probability that the stock will remain above SB_{MSY} in 2033.
- Higher levels of catch are predicted to lead the stock to an overfished state in the long term.
- The probability of breaching the biological limit reference point ($0.4SB_{MSY}$) with recent catches is 0% by 2033. The probability of breaching the F limit reference point ($1.4\ F_{MSY}$) with recent catch is 0% by 2033However, in order to account for the uncertainty of the projections (e.g., relating to whether estimated high recruitment will be maintained) and uncertainty not captured in the assessment grid (e.g. relating to the new CPUE indices), the Commission should set a TAC that does not exceed the median recent MSY estimate.
- Results of the K2SM generated from the 2024 assessment (**Table 3**) is not used as catch advice

Noting these points, it is recommended that the Commission sets a TAC for the period 2026, 2027 and 2028 that does not exceed the median recent MSY estimate (421,000 t). The SC noted the catch level in 2024 (489,742 t), and urged the Commission to ensure that the recommended TAC is not exceeded.

The SC does not consider the need to advance the next yellowfin stock assessment, scheduled for 2027.

The following key points should also be noted:

- Maximum Sustainable Yield (MSY): estimate for the Indian Ocean stock is 421,000 t with a range between 416,000 and 430,000 t (**Table 1**). The catch in in 2024 (489,742 t) was above the estimated MSY level.
- **Interim reference points**: Noting that the Commission in 2015 adopted Resolution 15/10 on target and limit reference points and a decision framework, the following should be noted:
- **Fishing mortality**: 2023 fishing mortality is considered to be 25% below the interim target reference point of F_{MSY}, and below the interim limit reference point of $1.4*F_{MSY}$ (**Fig. 4**).
- **Biomass**: 2023 spawning biomass is considered to be 32% above the interim target reference point of SB_{MSY} and above the interim limit reference point of $0.4*SB_{MSY}$ (**Fig. 4**).
- **Catch data uncertainty:** the overall quality of the nominal catches of yellowfin tuna shows some large variability between 1950 and 2024. In some years, a large portion of the nominal catches of yellowfin tuna had to be estimated, and catches reported using species or gear aggregates had to be further broken down. The data quality was particularly poor between 1994 and 2002 when less than 70% of the nominal catches were fully or partially reported, with most reporting issues coming from coastal fisheries. The reporting rate has generally improved over the last decade however detailed information on data collection procedures, which determines the quality of fishery statistics, is still lacking**.**

- **Main fisheries (mean annual catch 2020-2024)**: yellowfin tuna are caught using line (43.2%), followed by purse seine (29.5%) and gillnet (14.9%). The remaining catches taken with other gears contributed to 12.5% of the total catches in recent years (**Fig. 1**). The fishery impact plot is shown in **Fig. 8**.
- **Main fleets (mean annual catch 2020-2024)**: the majority of yellowfin tuna catches are attributed to vessels flagged to Sultanate of Oman (17.3%) followed by Indonesia (11.4%) and I. R. Iran (9.6%). The 35 other fleets catching yellowfin tuna contributed to 61.7% of the total catch in recent years (**Fig. 2**).

References

Walter, J., Winker, H., 2020. Projections to create Kobe 2 Strategy Matrices using the multivariate log-normal approximation for Atlantic yellowfin tuna. Collect. Vol. Sci. Pap. ICCAT, 76(6): 725-739

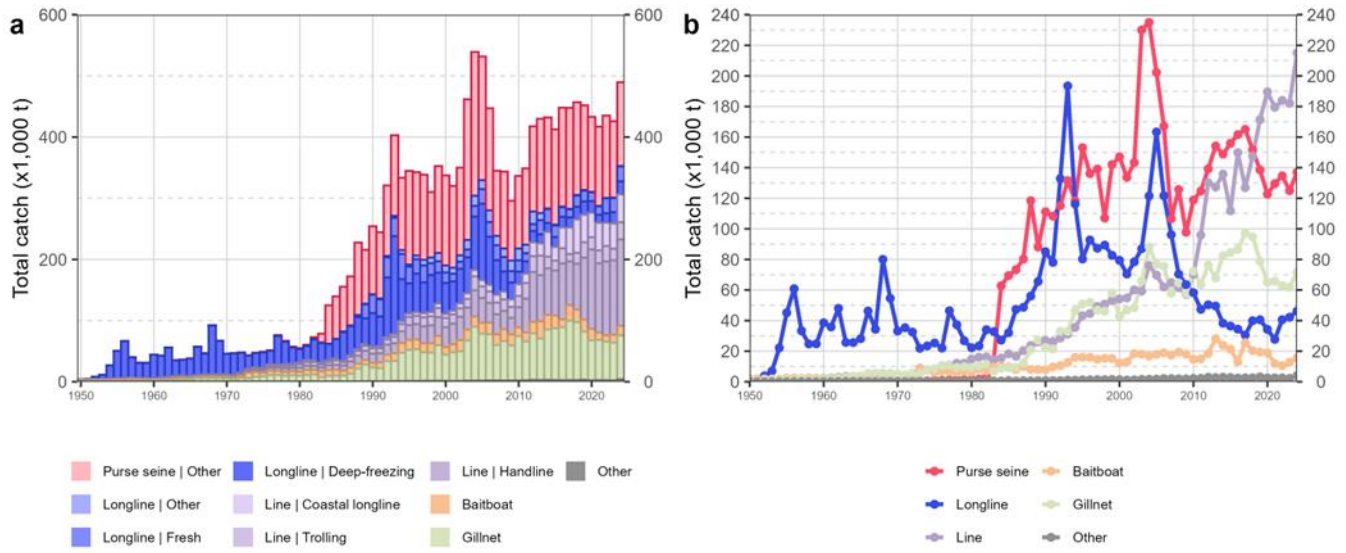

Fig. 3. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for yellowfin tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

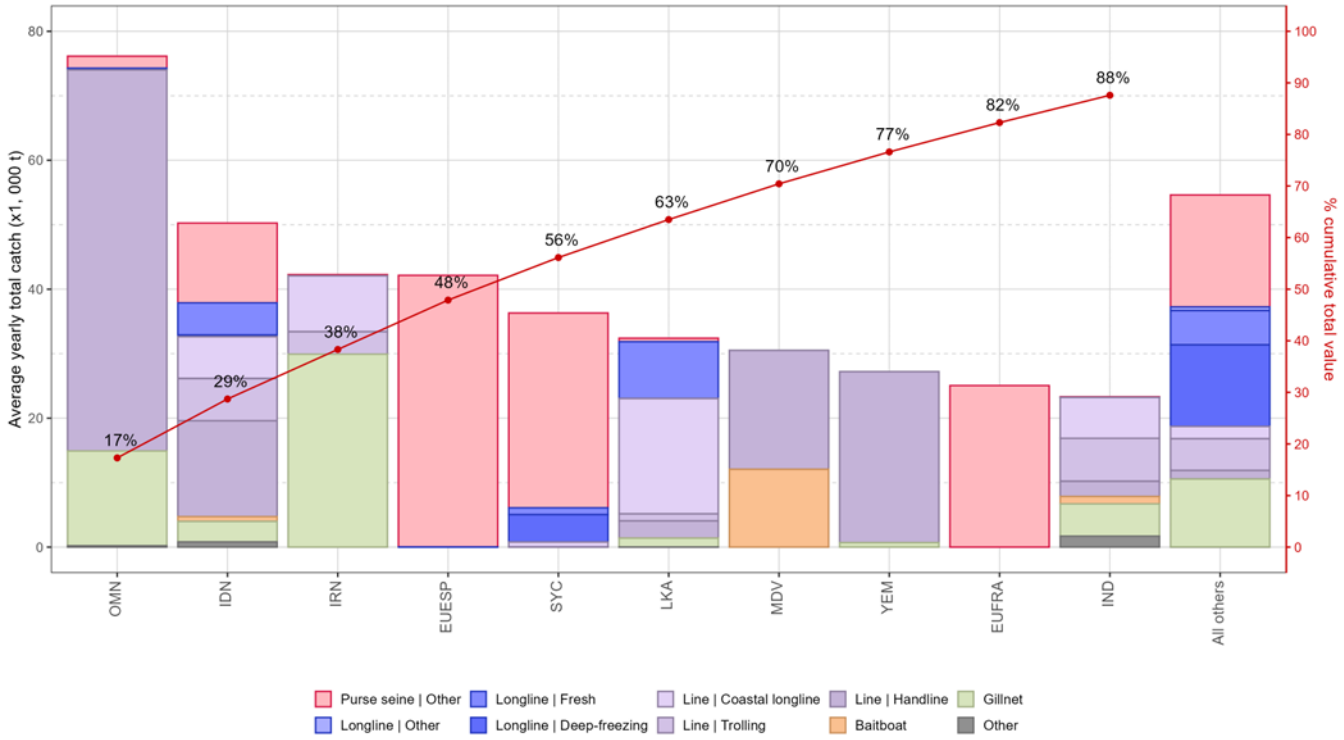

Fig. 4. Mean annual catches (metric tonnes; t) of yellowfin tuna by fleet and fishery between 2019 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

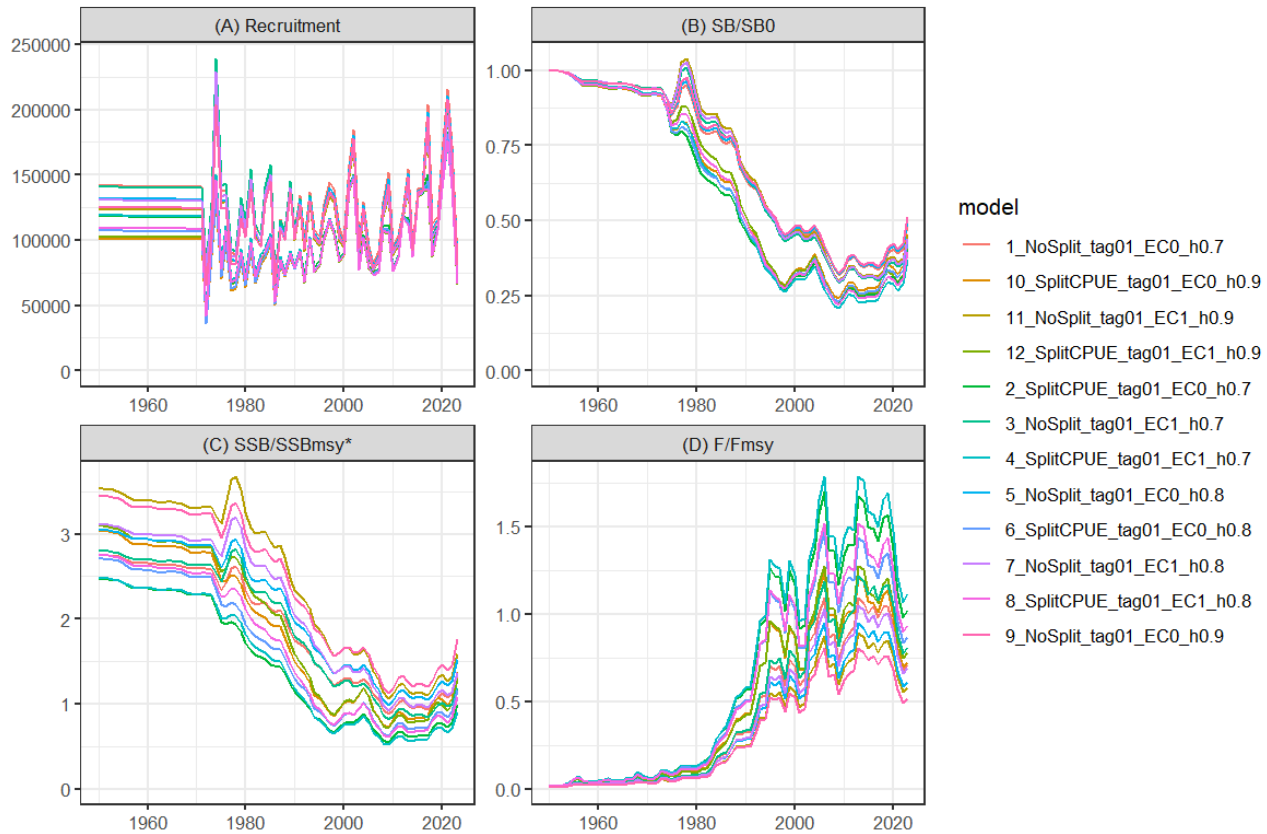

Fig 3. Estimated time series (1950-2023) of recruitment, spawning stock biomass relative to virgin biomass and to spawning stock biomass at MSY and fishing mortality relative to fishing mortality at MSY of yellowfin tuna from the reference models of the 2024 assessment

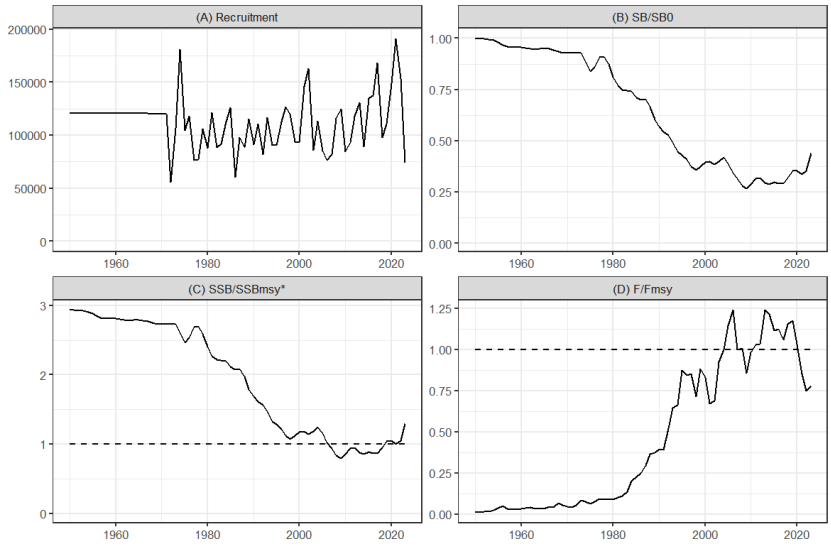

Fig 4. Estimated time series (1950-2023) of recruitment, spawning stock biomass and fishing mortality of yellowfin tuna from the reference model of the 2024 assessment.

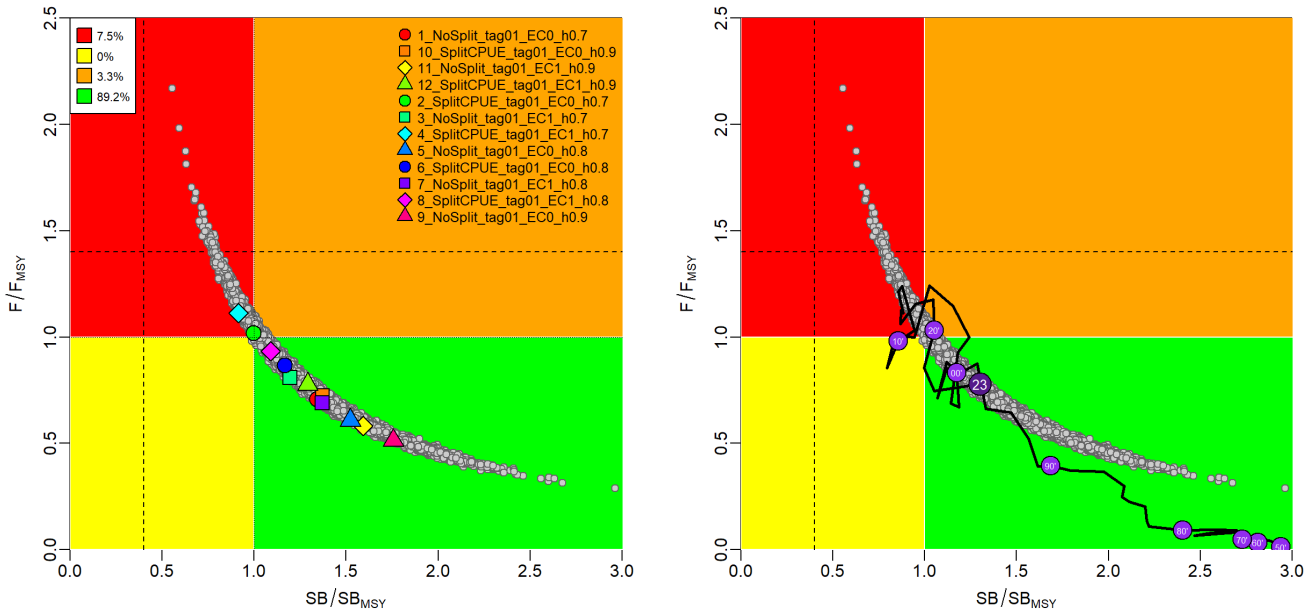

Fig. 5. Yellowfin tuna: SS3 Indian Ocean assessment Kobe plot: (left): current (2023) stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) reference points for the final model options. Coloured symbols represent Maximum posterior density (MPD) estimates from individual models. Grey dots represent the statistical uncertainty from individual models (20,000 replicates from each). The dashed lines represent limit reference points for IO yellowfin tuna (SBlim = 0.4 SB_{MSY} and Flim = 1.4 F_{MSY}); (right) mean stock trajectory from the model grid

Fig 6. Standardised Catch Per Unit Effort (CPUE) indices used in the final assessment models: Joint longline CPUE indices by region 1975-2023 (the red lines are indices used in 2021 assessment 1975 – 2020)

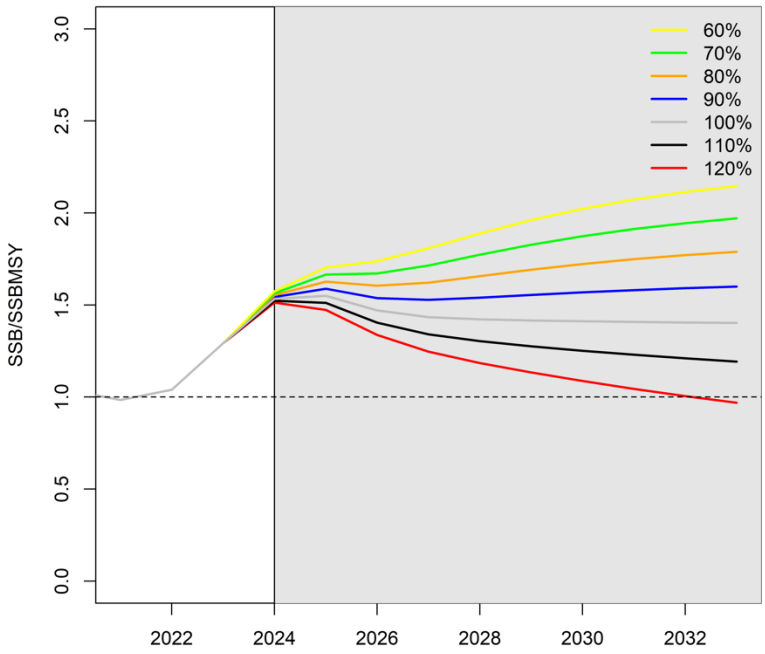

Fig 7. Trajectory showing the impact of alternative catch levels on spawning stock biomass (SSB or SB) relative to spawning stock biomass at MSY relative to the catch level from 2023

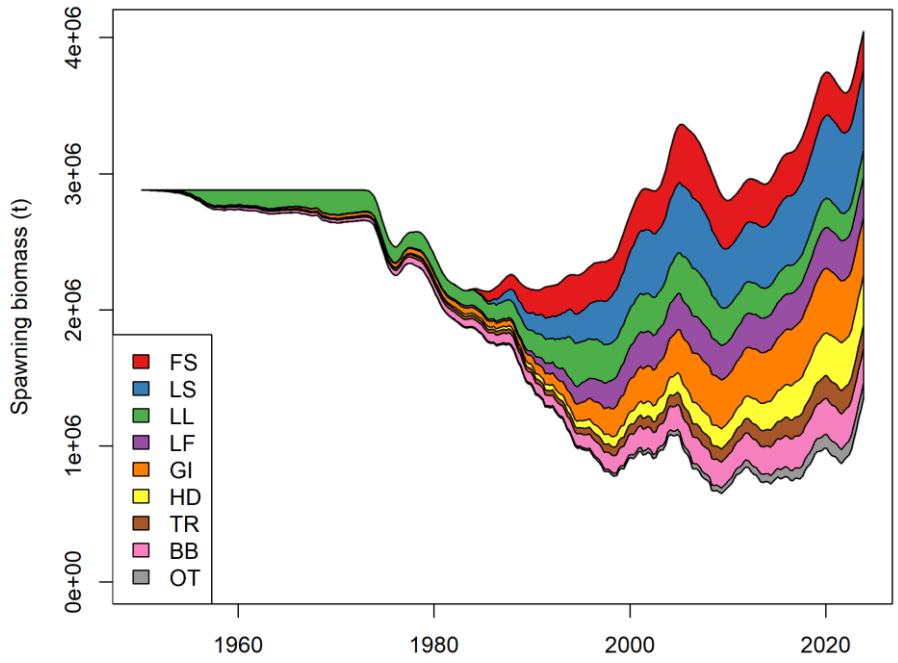

Fig 8. Fishery Impact Plot: Estimates of reduction in spawning biomass due to fishing over all regions attributed to various fishery groups for the assessment model. Fishery group definition: FS, Purse seine free school; LS, Purse seine associated school; LL, longline; LF, fresh tuna longline; GI, gillnet; HD, handline; TR, trolling; BB, Bait boat; OT, others.

TABLE 4. Yellowfin tuna: Stock synthesis assessment Kobe II Strategy Matrix. Probability of violating the MSY-based target (top) and limit (bottom) reference points for constant catch projections (relative to the catch level from 2023 -40%, - 30%, -20%, -10%, 0%, +10%, +20%) projected for 3 and 10 years

Alternative catch projections (relative to the catch level from 2023) and probability of violating MSY-based target reference points (SB_{targ} = SB_{MSY}; F_{targ} = F_{MSY})							
Reference point and projection timeframe	60%	70%	80%	90%	100%	110%	120%
SB_{2026} < SB_{MSY}	0	0	0.1	0.1	0.6	1.3	4
F_{2026} > F_{MSY}	0	0	0	0	2.5	11.2	30.9
SB_{2033} < SB_{MSY}	0	0	0	0	0.1	13.1	66.7
F_{2033} > F_{MSY}	0	0	0	0	1.3	31.6	84.9
Alternative catch projections (relative to the catch level from 2023) and probability of violating MSY-based limit reference points (SB_{lim} = 0.4 SB_{MSY}; F_{Lim} = 1.4 F_{MSY})							
Reference point and projection timeframe	60%	70%	80%	90%	100%	110%	120%
SB_{2026} < SB_{Lim}	0	0	0	0	0	0	0
F_{2026} > F_{Lim}	0	0	0	0	0	0.1	0.9
SB_{2033} < SB_{Lim}	0	0	0	0	0	0	0
F_{2033} > F_{Lim}	0	0	0	0	0	0.3	24.1

APPENDIX 12
EXECUTIVE SUMMARY: BULLET TUNA (2025)

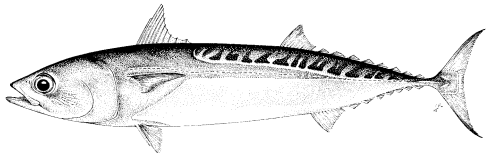

TABLE 1. Status of bullet tuna (*Auxis rochei*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2024 (t)	94,273[2]	**Unknown**
	Mean annual catch (2020-2024) (t)	54,766	
	MSY (1,000 t) (80% CI)	Unknown	
	F_{MSY} (80% CI)		
	B_{MSY} (1,000 t) (80% CI)		
	$F_{current}/F_{MSY}$ (80% CI)		
	$B_{current}/B_{MSY}$ (80% CI)		
	$B_{current}/B_0$ (80% CI)		

[1]Stock boundaries defined as the IOTC area of competence;

[2]Proportion of catch fully or partially estimated for 2024: 19.3%;

[3]2022 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 ($F_{year}/F_{MSY}> 1$)		
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)		
Not assessed/Uncertain /Unknown		

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Stock status. No new stock assessment was conducted in 2025 for bullet tuna and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods include C-MSY, LB-SPR, and fishblicc models (based on data up to 2022). 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 size-based assessment methods LB-SPR and FishBlicc using size data from gillnet and purse seine fisheries both estimated the current spawning potential ratio to be below the reference level of SPR40% (a proxy for 40% depletion often considered as the risk averse target in many data-poor fisheries). Due to a lack of fishery data for several fisheries, only preliminary stock status indicators (CPUE and average weight) 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 (**Table 1**).

Outlook. Annual catches of bullet tuna have increased steadily, reaching a peak of over 40,000 t in 2020. Although catches in 2020 and 2021 remained close to 30,000 t, a sharp increase has taken place again in recent years, exceeding 80,000 t in 2023-2024 (**Fig. 1**). . The increased catches is thought to be due to issues with the revision of catch data from Indonesia. There is considerable uncertainty around bullet tuna catches and insufficient information to evaluate the effect that these catch levels may have on the resource. Research emphasis should be focused on improving the data collection and reporting systems in place and collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.).

Management advice. For assessed species of neritic tunas and seerfish in the Indian Ocean (longtail tuna, kawakawa and narrow-barred Spanish mackerel), the MSY was estimated during early assessments to have been reached between 2009 and 2011 and both F_{MSY} and B_{MSY} were breached thereafter. It is worth noting that the catch in 2024 was estimated to be 94,273 and there has been significant variability in estimated catches of this species in recent years. This variation is perhaps due to issue of mis-identification of this species among other reasons. 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 continue to exceed the average catches estimated between 2009 and 2011 (19,580 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.

The following should be also noted:

- The Maximum Sustainable Yield estimate for the Indian Ocean stock is unknown;
- 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;
- Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g. estimates of growth, natural mortality, maturity, etc.).
- Species identification, data collection and reporting urgently need to be improved;
- 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), 50.3% of the total catches was 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.

Fisheries overview.

- **Main fisheries (mean annual catch 2020-2024)**: bullet tuna are caught using purse seine (63.9%), followed by line (14.5%) and gillnet (11.7%). The remaining catches taken with other gears contributed to 9.9% of the total catches in recent years (**Fig. 1**);

- **Main fleets (mean annual catch 2020-2024)**: the majority of bullet tuna catches are attributed to vessels flagged to Indonesia (63.2%) followed by India (15.2%) and Thailand (12.4%). The 17 other fleets catching bullet tuna contributed to 9.1% of the total catch in recent years (**Fig. 2**).

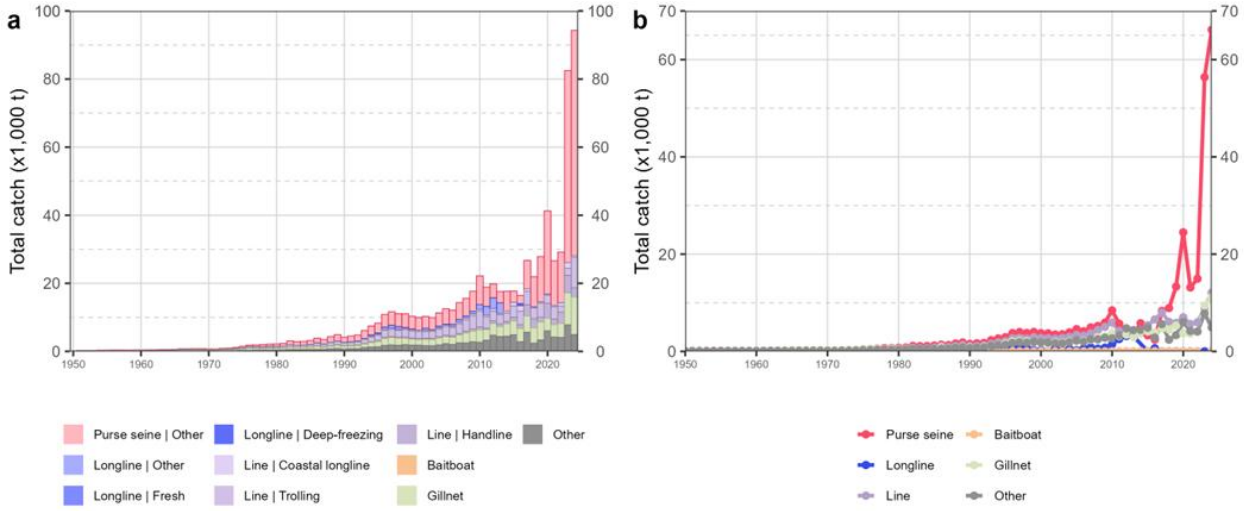

Fig. 1. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for bullet tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

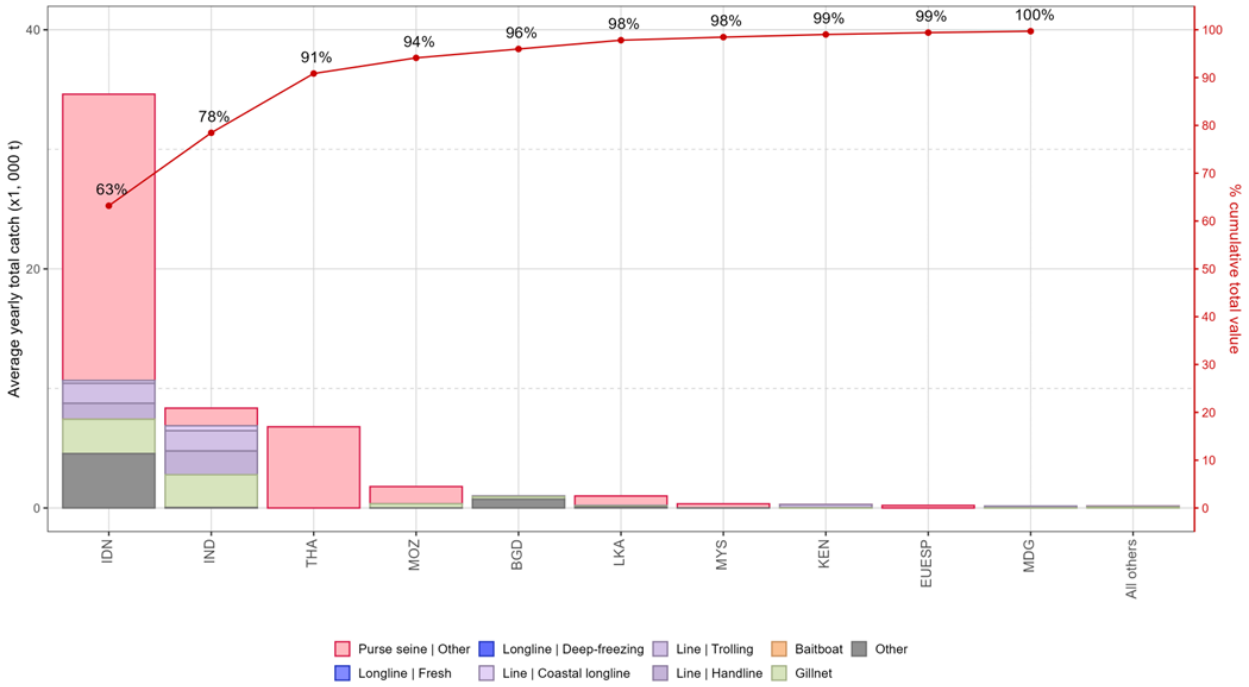

Fig. 2. Mean annual retained catches (t) of bullet tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

APPENDIX 13
EXECUTIVE SUMMARY: FRIGATE TUNA (2025)

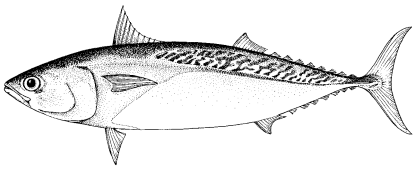

TABLE 1. Status of frigate tuna (*Auxis thazard*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch (2024) (t)	144,768[2]	Unknown
	Mean annual catch (2020-2024) (t)	108,557	
	MSY (1,000 t) (80% CI)	Unknown	
	F_{MSY} (80% CI)		
	B_{MSY} (1,000 t) (80% CI)		
	$F_{current}/F_{MSY}$ (80% CI)		
	$B_{current}/B_{MSY}$ (80% CI)		
	$B_{current}/B_0$ (80% CI)		

[1]Stock boundaries defined as the IOTC area of competence;

[2]Proportion of catch fully or partially estimated for 2023: 13.2 %; [3]2022 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 ($F_{year}/F_{MSY}> 1$)		
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)		
Not assessed/Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was conducted in 2025 for frigate tuna and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods include CMSY, OCOM, LB-SPR and fishblicc models (based on data up to 2022). 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. However, the size-based assessment showed results with considerable uncertainty - LB-SPR estimated a SPR greater than the reference level of SPR40%, (a proxy for 40% depletion often considered as risk averse target in many data-poor fisheries) whereas the fishblicc estimated a SPR below the reference level. 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** (**Table 1**).

Outlook. Estimated catches have increased steadily since the late-1970s, reaching around 30,000 t in the mid-1990s, t, and steadily increasing to over 90,000 t in the following ten years. In recent years catches have increased to over 140,000 t, rising to the highest levels recorded There is insufficient information to evaluate the effect that this level of

catch or a further increase in catches may have on the resource. Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.).

Management advice. For assessed species of neritic tunas in Indian Ocean (longtail tuna, kawakawa and narrow-barred Spanish mackerel), the MSY was estimated during early assessments to have been reached between 2009 and 2011 and both F_{MSY} and B_{MSY} were breached thereafter. It is worth noting that the catch in 2024 was estimated to be 144,768t and there has been significant variability in estimated catches of this species in recent years. This variation is perhaps due to issue of mis-identification of this species among other reasons. In the absence of an accepted stock assessment for frigate tuna, a limit to the catches should be considered by the Commission, by ensuring that future catches do not continue to exceed the average catches estimated between 2009 and 2011 (75,830 t). The reference period (2009-2011) was chosen based on the most recent assessments of those neritic tuna species in the Indian Ocean for which an assessment is available under the assumption that MSY for frigate tuna was also 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.

The following should be also noted:

- The Maximum Sustainable Yield estimate for the Indian Ocean stock is unknown;
- 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;
- Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.)
- Species identification, data collection and reporting urgently need to be improved;
- 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), 80% of the total catches 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.

Fisheries overview.

- **Main fisheries (mean annual catch 2020-2024)**: frigate tuna are caught using gillnet (46.4%), followed by purse seine (24.6%) and line (15.1%). The remaining catches taken with other gears contributed to 13.9% of the total catches in recent years (**Fig. 1**);
- **Main fleets (mean annual catch 2020-2024)**: the majority of frigate tuna catches are attributed to vessels flagged to Indonesia (49%) followed by India (11.8%) and Pakistan (9%). The 24 other fleets catching frigate tuna contributed to 30.2% of the total catch in recent years (**Fig. 2**).

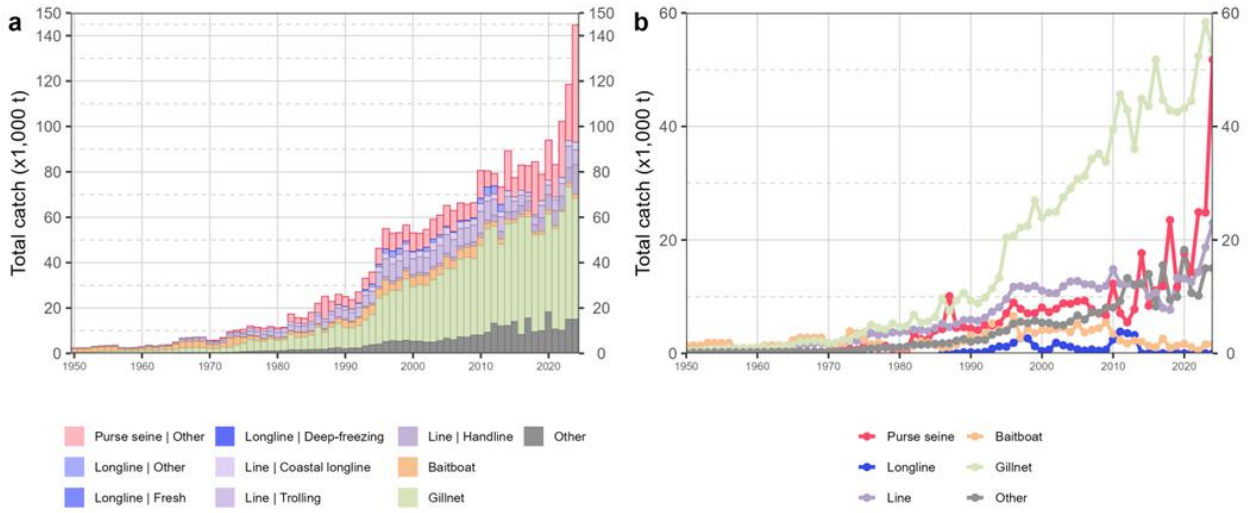

Fig. 1. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for frigate tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

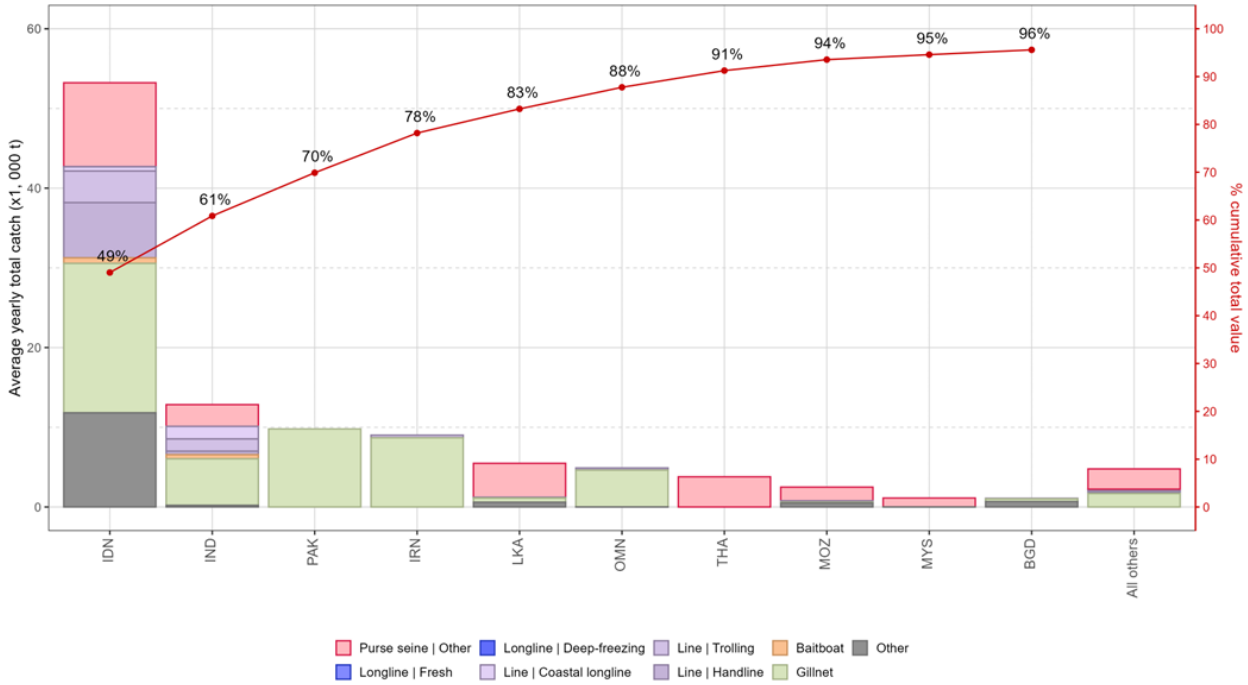

Fig. 2. Mean annual catches (t) of frigate tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

APPENDIX 14
EXECUTIVE SUMMARY: KAWAKAWA (2025)

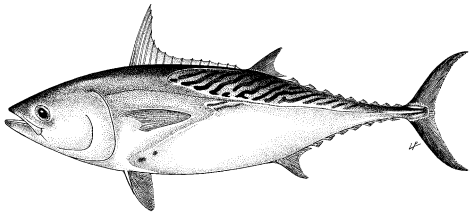

TABLE 1. Status of kawakawa (*Euthynnus affinis*) in the Indian Ocean

Area[1]	Indicators		2023 stock status determination[3]
Indian Ocean	Catch 2024 (t) Mean annual catch 2020-2024 (t)	160,272[2] 132,795	**27%**
	MSY (t) (80% CI) F_{MSY} (80% CI) B_{MSY} (t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI)	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)	

[1]Stock boundaries defined as the IOTC area of competence;
[2]Proportion of catch fully or partially estimated for 2024: 28.4 %;
[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 ($F_{year}/F_{MSY}> 1$)	25%	23%
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)	27%	25%
Not assessed/Uncertain / Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was conducted in 2025 for kawakawa and so the results are based on the results of the assessment carried out in 2023 which examined a number of data-limited methods include 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 model indicated that the fishing mortality F was very close to F_{MSY} (F/F_{MSY}=0.98) and the current biomass B was also very close to B_{MSY} (B/B_{MSY}=0.99). The estimated probability of the stock currently being in yellow quadrant of the Kobe plot is about 27%. The analysis using OCOM model is more pessimistic and using JABBA incorporating gillnet CPUE indices is more optimistic. There has been a large increase in kawakawa catches over the last decade (**Fig. 1**). While the precise stock structure of kawakawa remains unclear, recent research provides strong evidence of population structure of kawakawa within the IOTC area of competence, with at least 4 genetic populations identified (Feutry et al., 2025[2]). This increases the uncertainty in the assessment, which currently assumes a single stock of kawakawa. Based on the weight-of-evidence available, the kawakawa stock for the Indian Ocean is classified as **overfished** but **not subject to overfishing** (**Table 1**, **Fig. 1**).

[2] 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

However, the assessment using catch-only method is subjected to high uncertainty and is highly influenced by several prior assumptions.

Outlook. There is considerable uncertainty about stock structure and the estimate of total catches. Due to the uncertainty associated with catch data (e.g., 28.4% of catches partially or fully estimated by the IOTC Secretariat for 2024) and the limited number of CPUE series available for fleets representing a small proportion of total catches, only data poor assessment approaches can currently be used. Aspects of the fisheries for this species, combined with the lack of data on which to base a more complex assessment (e.g., integrated models) are a cause for considerable concern. In the interim, until more traditional approaches are developed, data-poor approaches will be used to assess stock status. Continued increase in the annual catches for kawakawa is also likely to further increase the pressure on the Indian Ocean stock. Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.).

Management Advice. The available gillnet CPUE of kawakawa showed a somewhat increasing trend although the reliability of the index as abundance indices remains unknown. Indonesia has recently revised its catch estimates for neritic tuna species. The updated catch for kawakawa 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:

- 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 for 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;
- Improvement in data collection and reporting is required if the stock is to be assessed using integrated stock assessment models;
- Limit reference points: the Commission has not adopted limit reference points for any of the neritic tunas under its mandate;
- Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.);
- Given the limited information submitted by CPCs on total catches, catch and effort and size data for neritic tunas, despite their mandatory reporting status, the IOTC Secretariat was required to estimate 60.1% of the catches of kawakawa (in 2022), 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.

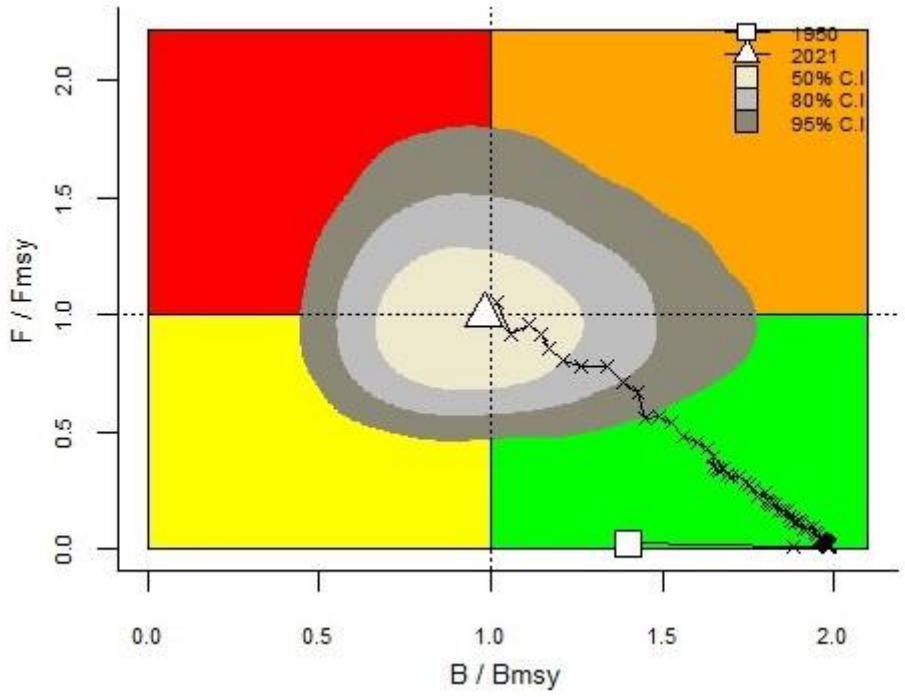

Fig. 1. C-MSY Indian Ocean assessment Kobe plot for kawakawa. The Kobe plot presents the trajectories (median) for the range of plausible model trajectories included in the formulation of the final management advice. The shaded contour lines represent 50%, 80%, and 95% confidence intervals of estimated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

Fisheries overview.

- **Main fisheries (mean annual catch 2020-2024)**: kawakawa are caught using gillnet (57.8%), followed by purse seine (23.5%) and line (14.2%). The remaining catches taken with other gears contributed to 4.6% of the total catches in recent years (**Fig. 2**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of kawakawa catches are attributed to vessels flagged to India (28.8%) followed by I. R. Iran (26.9%) and Indonesia (16.8%). The 35 other fleets catching kawakawa contributed to 27.4% of the total catch in recent years (**Fig. 3**).

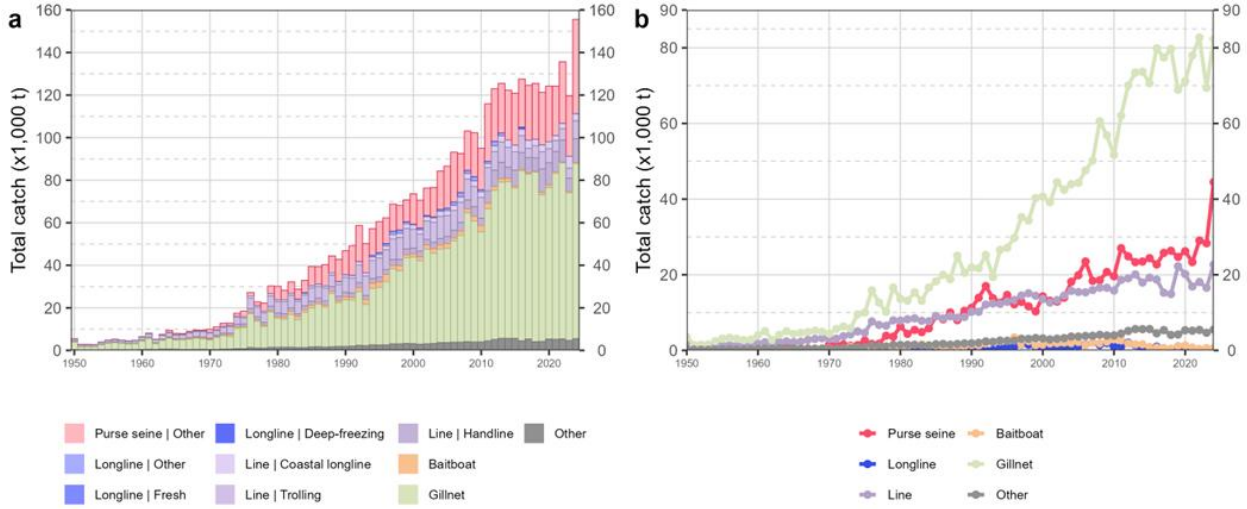

Fig. 2. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for kawakawa during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines;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

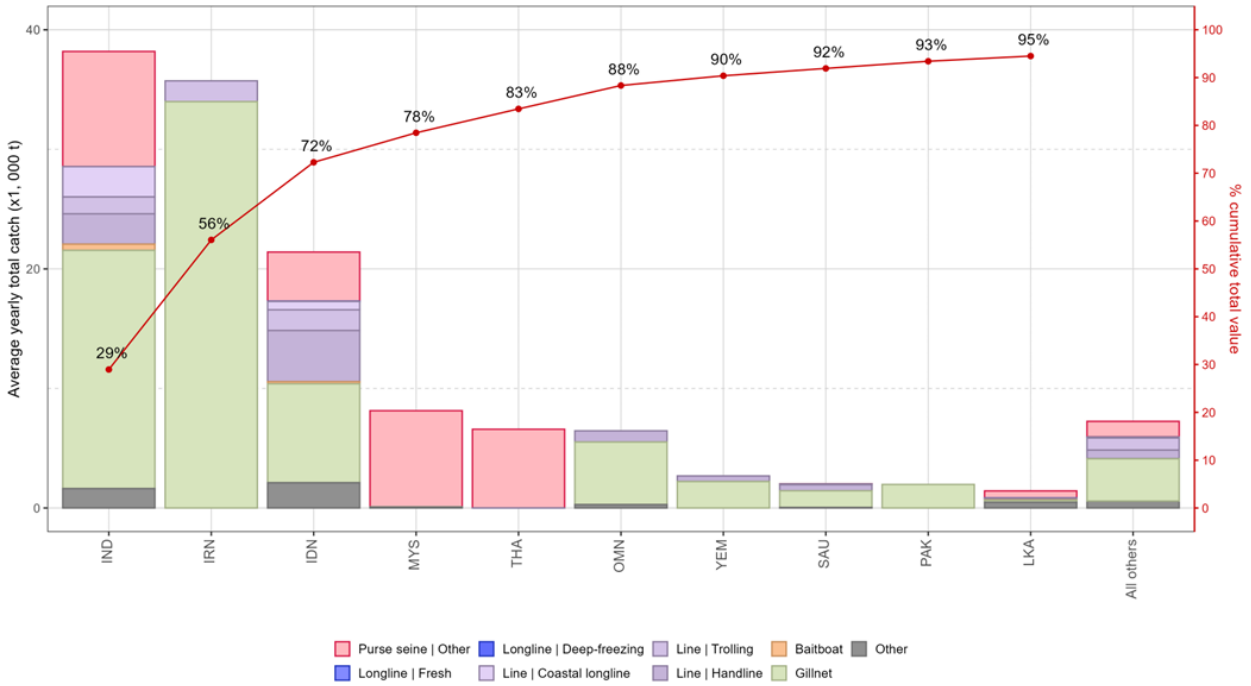

Fig 3. Mean annual retained catches (t) of kawakawa by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

APPENDIX 15
EXECUTIVE SUMMARY: LONGTAIL TUNA (2025)

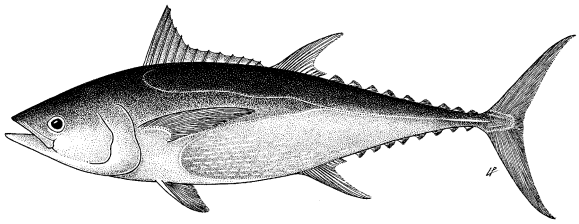

TABLE 1. Status of longtail tuna (*Thunnus tonggol*) in the Indian Ocean

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}≥ 1)
Stock subject to overfishing (F_{year}/F_{MSY}> 1)	35%	25%
Stock not subject to overfishing (F_{year}/F_{MSY}≤ 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[3]) 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.);
- 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.

[3] 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

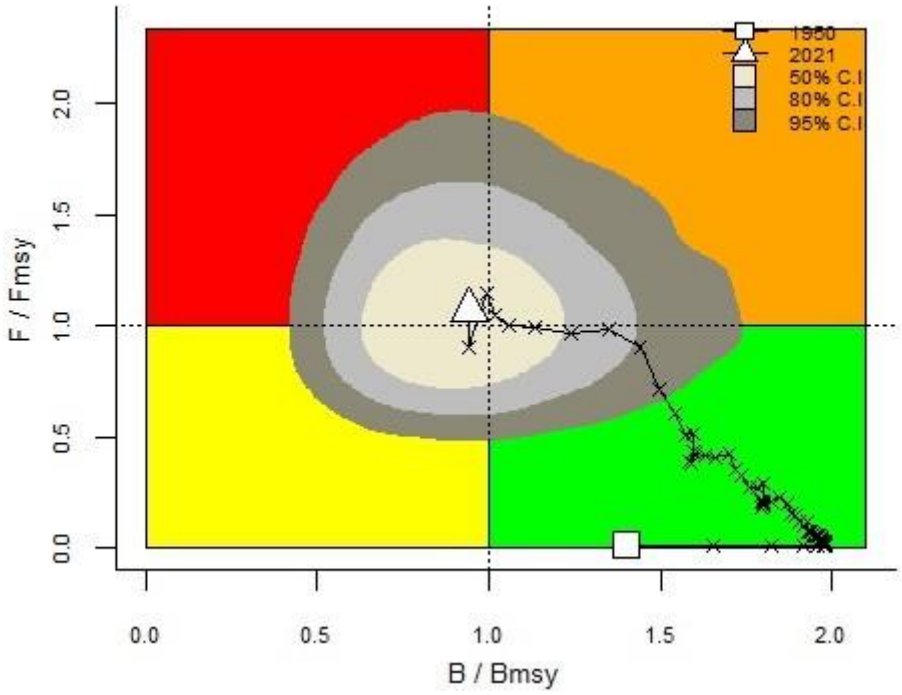

Fig. 1. Longtail tuna C-MSY Indian Ocean assessment Kobe plot. The Kobe plot presents the trajectories (median) for the range of plausible model trajectories included in the formulation of the final management advice. The shaded contour lines represent 50%, 80%, and 95% confidence intervals of estimated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

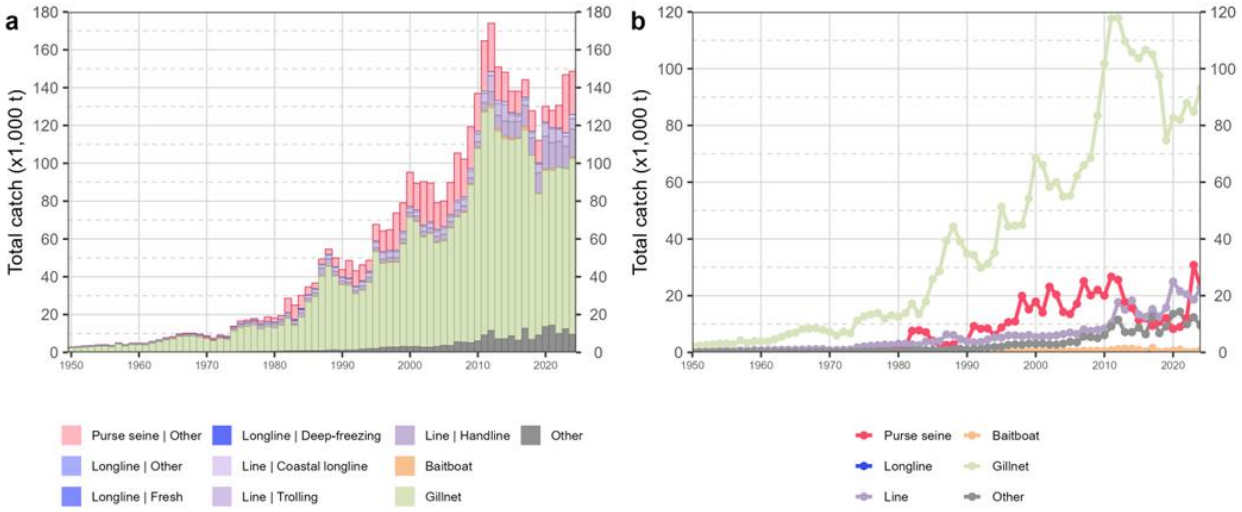

Fig. 2. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for longtail tuna during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines;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

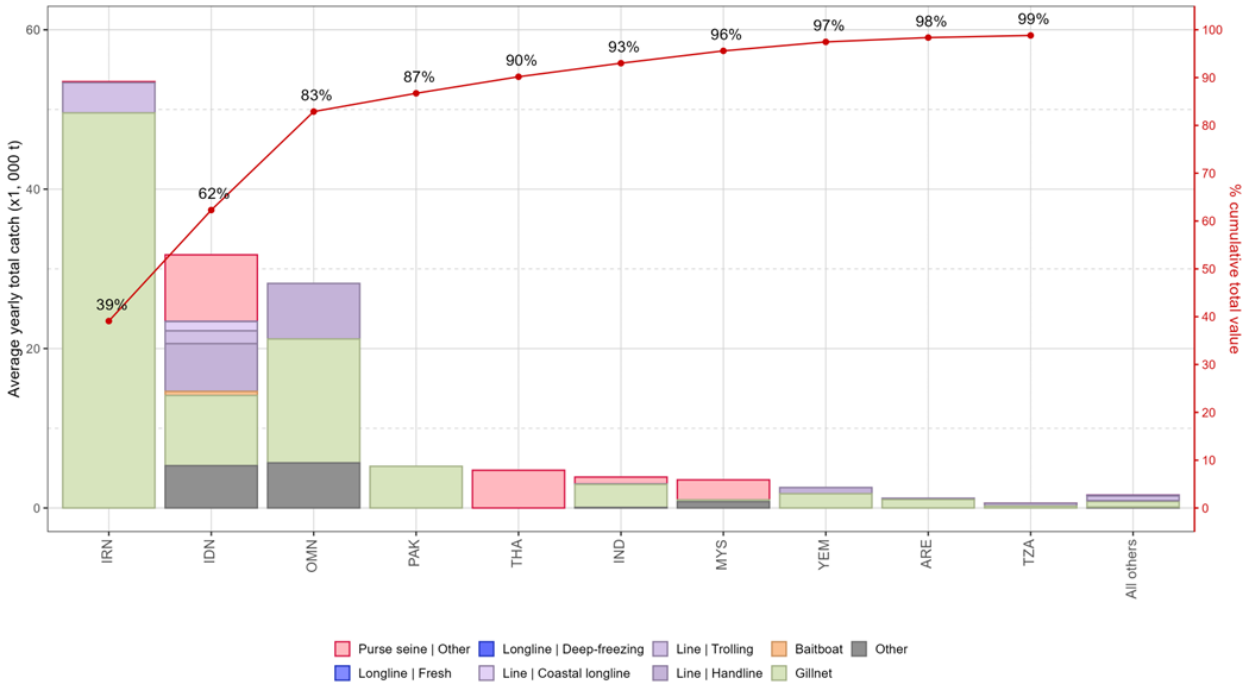

Fig. 3. Mean annual catches (t) of longtail tuna by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Other: all remaining fishing gears

APPENDIX 16
EXECUTIVE SUMMARY: INDO-PACIFIC KING MACKEREL (2025)

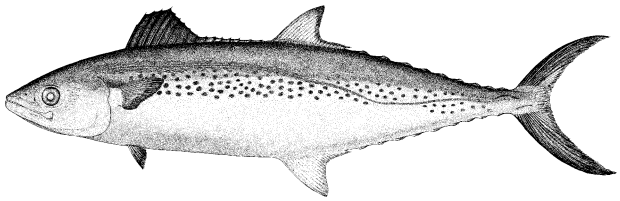

TABLE 1. Status of Indo-Pacific king mackerel (*Scomberomorus guttatus*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch (2024) (t)	42,275[2]	**27%**
	Mean annual catch (2020-2024) (t)	36,994	
	MSY (1,000 t)	47 (39–56)	
	F_{MSY}	0.74 (0.56–0.99)	
	B_{MSY} (1,000 t)	63.1 (43.1–92.4)	
	$F_{current}/F_{MSY}$	0.95 (0.82–2.13)	
	$B_{current}/B_{MSY}$	1.02 (0.46–1.19)	
	$B_{current}/B_0$	0.51 (0.23–0.60)	

[1]Stock boundaries defined as the IOTC area of competence;

[2]Proportion of catch fully or partially estimated for 2024: 45.4 %;

[3]2022 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 ($F_{year}/F_{MSY}> 1$)	24%	24%
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)	25%	27%
Not assessed/Uncertain/Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was conducted for Indo-Pacific king mackerel in 2025 and so the results are based on the results of the assessment carried out in 2024 which examined a number of data-limited methods including CMSY and CMSY++ (based on data up to 2022). Analysis using the catch only method CMSY 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. An assessment using CMSY++ was also explored in 2024. The stock estimates with CMSY++ are estimated to be very close to the biomass target even though the stock status is more pessimistic than with CMSY. Despite some of the caveats of the underlying assumptions, 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** (**Table 1; Fig. 1**).

Outlook. Total annual catches for Indo-Pacific king mackerel have increased steadily over time, reaching a peak of approximatively 43,000 t in 2009 and have since fluctuated between around 30,000 t and 42,275 t. There is considerable uncertainty about stock structure and total catches. Aspects of the fisheries for this species, combined with the limited data on which to base a more complex assessment (e.g., integrated models), are a cause for concern. Although data-poor methods are used to provide stock status advice, further refinements to the catch-only methods and application of additional data-poor approaches may improve confidence in the results. Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g., estimates of growth, natural mortality, maturity, etc.).

Management advice. Reported catches of Indo-Pacific king mackerel in the Indian Ocean have increased considerably since the late 2000s.

Indonesia has recently revised its catch estimates for neritic tuna and seerfish species. The updated catch for Indo-Pacific king mackerel 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 or seerfish under its mandate;
- Research emphasis should be focused on collating catch per unit effort (CPUE) time series for the main fleets, size compositions and life trait history parameters (e.g. estimates of growth, natural mortality, maturity, etc.).
- 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;
- Data collection and reporting urgently needed to be improved, given the 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 74.8% of the total catches of Indo-Pacific king mackerel was 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.

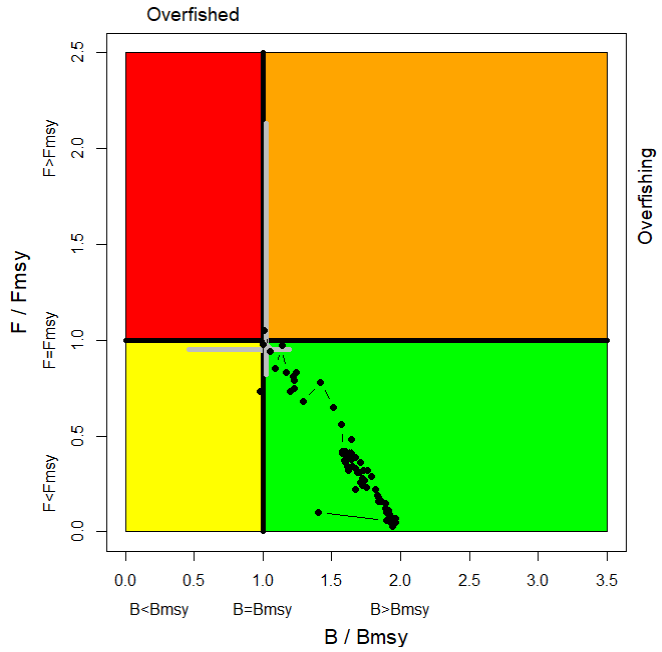

Fig. 1 Kobe plot of the CMSY assessment for the Indo-Pacific king mackerel. The Kobe plot shows the trajectories (geometric mean) of the range of plausible model options included in the formulation of the final management advice. The grey cross represents the estimated stock status in 2022 (median and 80% confidence interval).

Fisheries overview.

- **Main fisheries (mean annual catch 2020-2024)**: Indo-pacific king mackerel are caught using gillnet (62.1%), followed by other (22.7%) and line (12.2%). The remaining catches taken with other gears contributed to 2.9% of the total catches in recent years (**Fig. 2**).
- **Main fleets (mean annual catch 2020-2024:** the majority of Indo-pacific king mackerel catches are attributed to vessels flagged to India (34.2%) followed by I. R. Iran (28.9%) and Indonesia (13.9%). The 15 other fleets catching Indo-pacific king mackerel contributed to 23% of the total catch in recent years (**Fig. 3**).

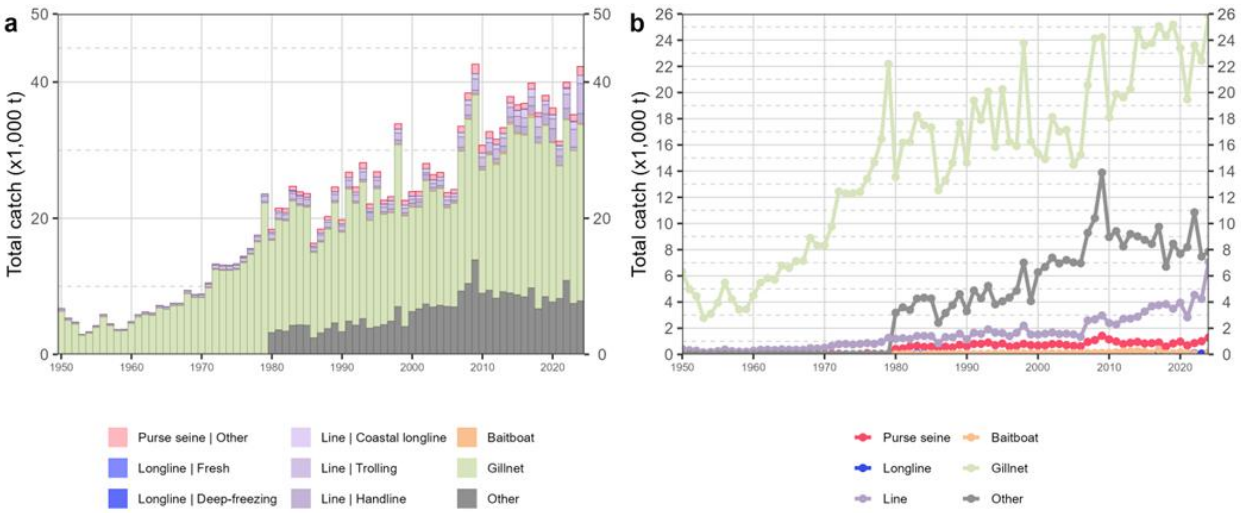

Fig. 2. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for Indo-Pacific king mackerel during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted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

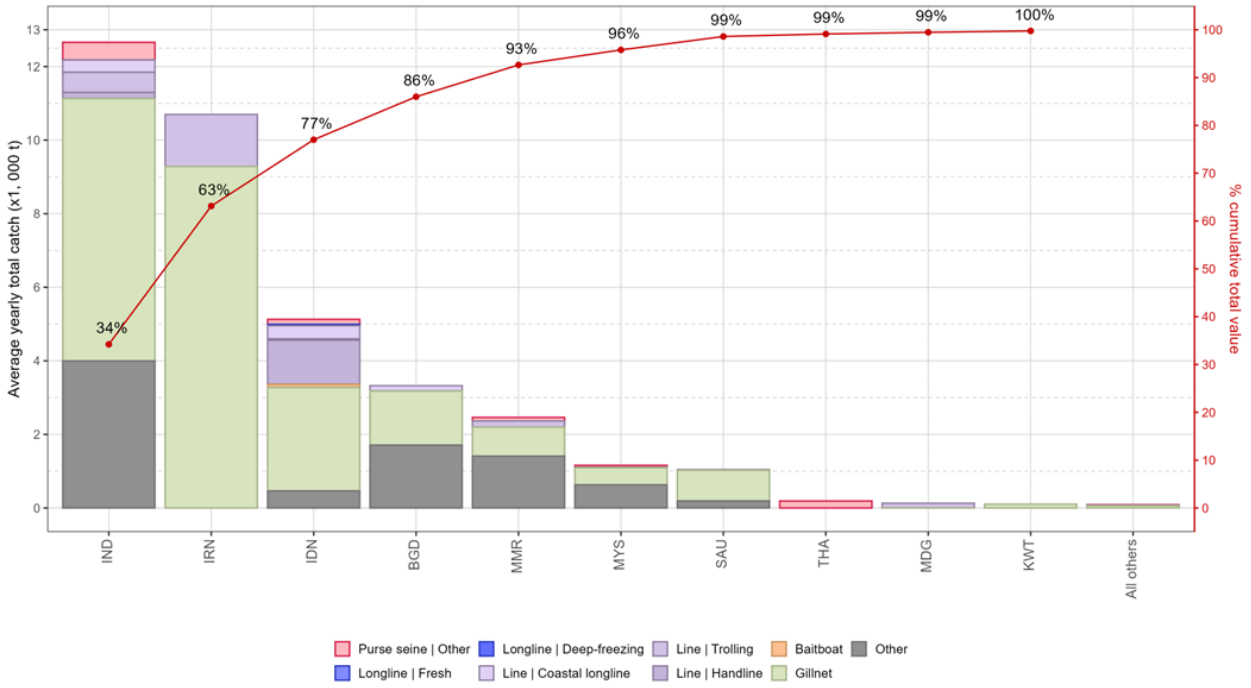

Fig. 3. Mean annual retained catches (t) of Indo-Pacific king mackerel by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

APPENDIX 17

EXECUTIVE SUMMARY: NARROW-BARRED SPANISH MACKEREL (2025)

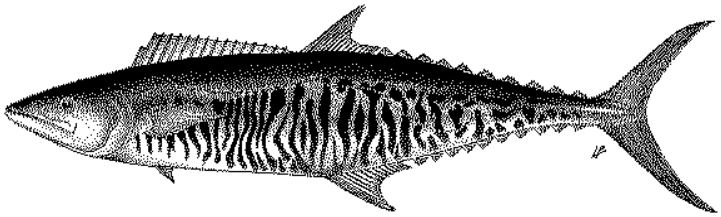

TABLE 1. Status of narrow-barred Spanish mackerel (*Scomberomorus commerson*) in the Indian Ocean

Area[1]	Indicators		2023 stock status determination[3]
Indian Ocean	Catch (2024) (t)	157,754[2]	31%
	Mean annual catch (2020-2024) (t)	138,169	
	MSY (t) (80% CI)	161,000 (132,000 – 197,000)	
	F_{MSY} (80% CI)	0.60 (0.48–0.74)	
	B_{MSY} (t) (80% CI)	271,000 (197,000 – 373,000)	
	$F_{current}/F_{MSY}$ (80% CI)	1.07 (0.88 – 2.38)	
	$B_{current}/B_{MSY}$ (80% CI)	0.98 (0.44 – 1.19)	

[1]Stock boundaries defined as the IOTC area of competence;

[2]Proportion of catch fully or partially estimated for 2024: 28.4 %;

[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}≥ 1)
Stock subject to overfishing (F_{year}/F_{MSY}> 1)	31%	29%
Stock not subject to overfishing (F_{year}/F_{MSY}≤ 1)	21%	19%
Not assessed/Uncertain/Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was conducted in 2025 for narrow-barred Spanish mackerel 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} (31% of plausible models runs). The analysis using 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 that the CPUE is either not informative or is conflicting with catch data. An analysis undertaken in 2013 in the Northwest Indian Ocean (Gulf of

Oman) indicated that overfishing is occurring in this area and that localised depletion may also be occurring[4]. While the precise stock structure of Spanish mackerel remains unclear, recent research provides strong evidence of population structure of Spanish mackerel within the IOTC area of competence, with at least 4 genetic populations identified (Feutry et al., 2025[5]). This increases the uncertainty in the assessment, which currently assumes a single stock of Spanish mackerel. Based on the C-MSY assessment, the stock appears to be **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 is considerable uncertainty about the estimate of total catches. The continued increase in annual catches in recent years has further increased the pressure on the Indian Ocean narrow-barred Spanish mackerel stock. The apparent fidelity of narrow-barred Spanish mackerel to particular areas/regions is a matter for concern as overfishing in these areas can lead to localised depletion.

Management advice. The available gillnet CPUE shows a somewhat increasing trend in recent years although the reliability of the index as an abundance index remains unknown.

Indonesia has recently revised its catch estimates for neritic tuna and seerfish species. The updated catch for narrow-barred Spanish mackerel 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 also be noted:

- Limit reference points: the Commission has not adopted limit reference points for any of the neritic tuna or seerfish species 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;
- Improvement in data collection and reporting is required if the stock is to be assessed using integrated stock assessment models;
- Given the increase in narrow-barred Spanish mackerel catch in the last decade, measures need to be taken to reduce catches in the Indian Ocean;
- 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 gaining a better understanding of stock structure and life trait history parameters (e.g. estimates of growth, natural mortality, maturity, etc.);
- There is a lack of 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 2024 catches, 28.4% of the total catches of narrow-barred Spanish mackerel 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.

[4] IOTC-2013-WPNT03-27

[5] 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

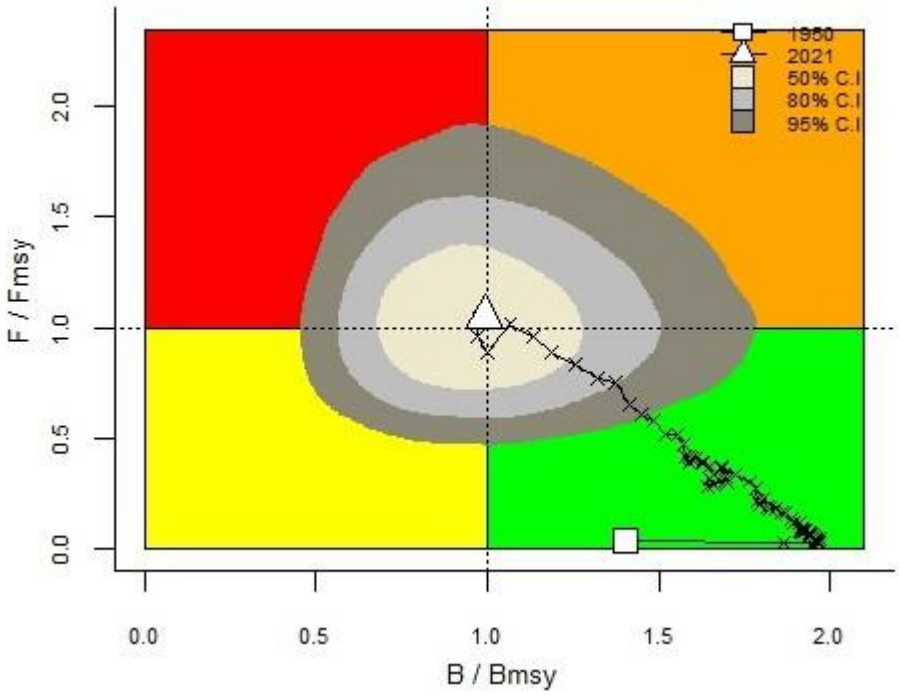

Fig. 1. Narrow-barred Spanish Mackerel OCOM Indian Ocean assessment Kobe plot. The Kobe plot presents the trajectories (median) for the range of plausible model trajectories included in the formulation of the final management advice. The shaded contour lines represent 50%, 80%, and 95% confidence intervals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

Fisheries overview.

- **Main fisheries (mean annual catch 2020-2024)**: narrow-barred Spanish mackerel are caught using gillnet (61.6%), followed by line (20.1%) and other (14.9%). The remaining catches taken with other gears contributed to 3.2% of the total catches in recent years (**Fig. 2**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of narrow-barred Spanish mackerel catches are attributed to vessels flagged to I. R. Iran (20.7%) followed by India (19.7%) and Indonesia (16.8%). The 29 other fleets catching narrow-barred Spanish mackerel contributed to 42.6% of the total catch in recent years (**Fig. 3**).

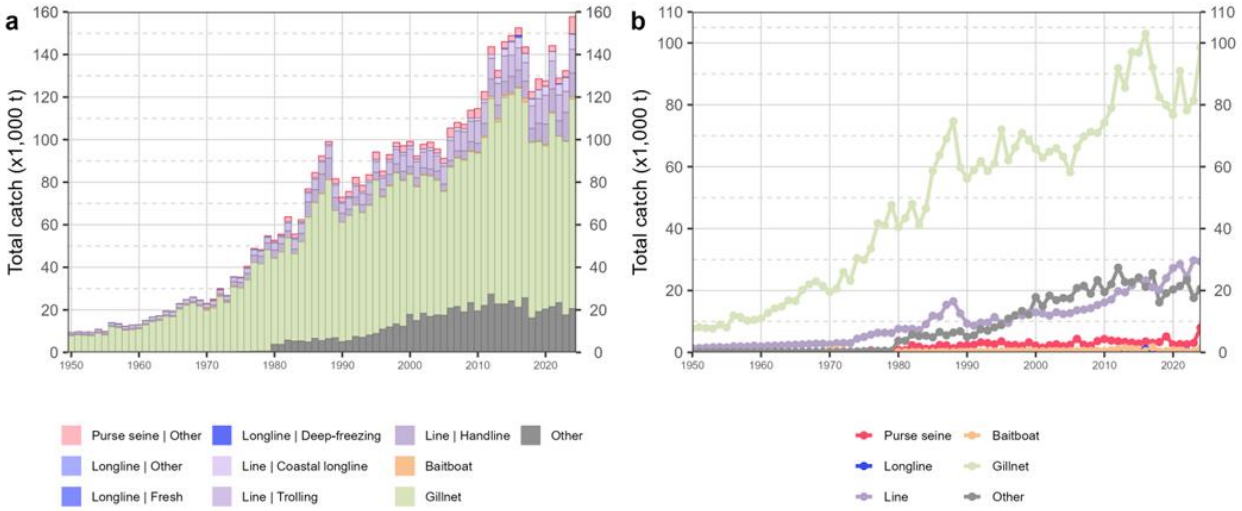

Fig. 2. Annual time series of (a) cumulative retained catches (t) by fishery and (b) individual retained catches (t) by fishery group for narrow-barred Spanish mackerel during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted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

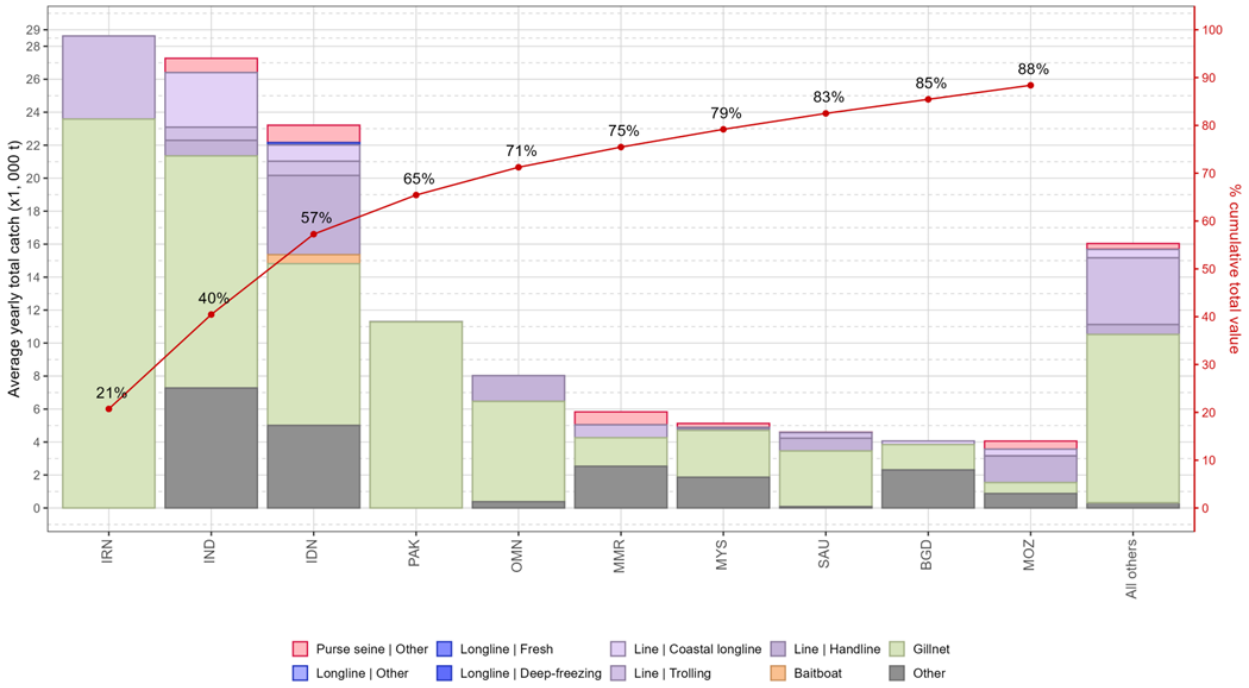

Fig. 3. Mean annual retained catches (t) of narrow-barred Spanish mackerel by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

APPENDIX 18
EXECUTIVE SUMMARY: BLACK MARLIN (2025)

TABLE 1. Status of black marlin (*Istiompax indica*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2024 (t) Average catch 2020–2024 (t)	27,266[2] 22,408	62.2%
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) F_{2022}/F_{MSY} (80% CI) B_{2022}/B_{MSY} (80% CI) B_{2022}/B_0 (80% CI)	13.90 (8.73 – 28.51) 0.21 (0.15 - 0.30) 65.23 (46.43-101.84) 1.39 (0.72 – 2.45) 1.35 (0.96 – 1.79) 0.49 (0.35 – 0.66)	

[1] Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

[2] Proportion of 2024 catch fully or partially estimated by the IOTC Secretariat: 35.5%

[3] 2022 is the final year that data were available for this assessment

Colour key	Stock overfished (B_{2022}/B_{MSY}< 1)	Stock not overfished (B_{2022}/B_{MSY}≥ 1)
Stock subject to overfishing (F_{2022}/F_{MSY}> 1)	12.5%	**62.2%**
Stock not subject to overfishing (F_{2022}/F_{MSY}≤ 1)	0	25.3%
Not assessed/Uncertain/Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was carried out for black marlin in 2025, thus, the stock status estimates are based on the stock assessment in 2024 using JABBA, a Bayesian state-space production model (using data up to 2022). The relative point estimates for this assessment are F/F_{MSY}=1.39 (0.72-2.45) and B/B_{MSY}=1.35 (0.96 -1.79). The Kobe plot indicated that the stock is currently not overfished but is subject overfishing (Table 1; **Fig. 3**). In 2022, the catch of black marlin surged to 26,320 t. Until 2024, fish stock status was characterised as "uncertain" due to significant uncertainties in past assessments (like those from 2018 and 2021). These uncertainties were attributed to both historical catch reporting from key fishing state and poor assessment diagnostics. However, there's been progress recently with black marlin catch data, particularly from coastal countries in the northern Indian Ocean, and the latest JABBA assessment shows it's now more reliable (with improved model fitting to the abundance indices and acceptable level of retrospective patterns). The assessment relied on CPUE indices from longline fisheries in which the black marlin is a bycatch species. On the weight-of-evidence available in 2024, the stock status of black marlin is determined to be not overfished but subject to overfishing (**Table 1**; **Fig. 3**).

Outlook. While the recent high catches seem to be mainly due to developing coastal fisheries operating in the core habitat of the species (mainly IR. Iran, India and Sri Lanka), the CPUE indicators are from industrial fleets with lower

catches of black marlin operating mostly offshore. There has been a substantial increase of catches of black marlin from coastal countries. The outlook is likely to remain uncertain in the absence of CPUE indices from gillnet and coastal longline fleets to inform stock assessment models. Moreover, catches remain substantially higher than the limits stipulated in Res 18/05 and are a cause for concern as this will likely continue to drive the population towards overfished status.

Management advice. The catch limits (9,932 t) as stipulated in Resolution 18/05 have been exceeded for four consecutive years since 2020, which as per resolution 18/05, requires a review of the resolution. Furthermore, these limits are not based on estimates of most recent stock assessment. Thus, it is recommended that the Commission urgently revise 18/05 to incorporate limits that reflect the most recent stock assessment and projections and review and where necessary revise the implementation and effectiveness of the measures contained in this Resolution. The stock is now subject to overfishing. 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 less than 10,626 t (**Table 3**).

The following key points should be noted:

- **Maximum Sustainable Yield (MSY)**: estimate for the whole Indian Ocean is 13,900 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 nor harvest control rules have been established for black marlin.
- **Main fisheries** (mean annual catch 2020-2024): black marlin are caught using gillnet (68.3%), followed by line (24.4%) and longline (4.8%). The remaining catches taken with other gears contributed to 2.4% of the total catches in recent years (**Fig. 1**).
- **Main fleets** (mean annual catch 2020-2024): the majority of black marlin catches are attributed to vessels flagged to I. R. Iran (43.1%) followed by India (21.2%) and Indonesia (15%). The 28 other fleets catching black marlin contributed to 20.7% of the total catch in recent years (**Fig. 2**)

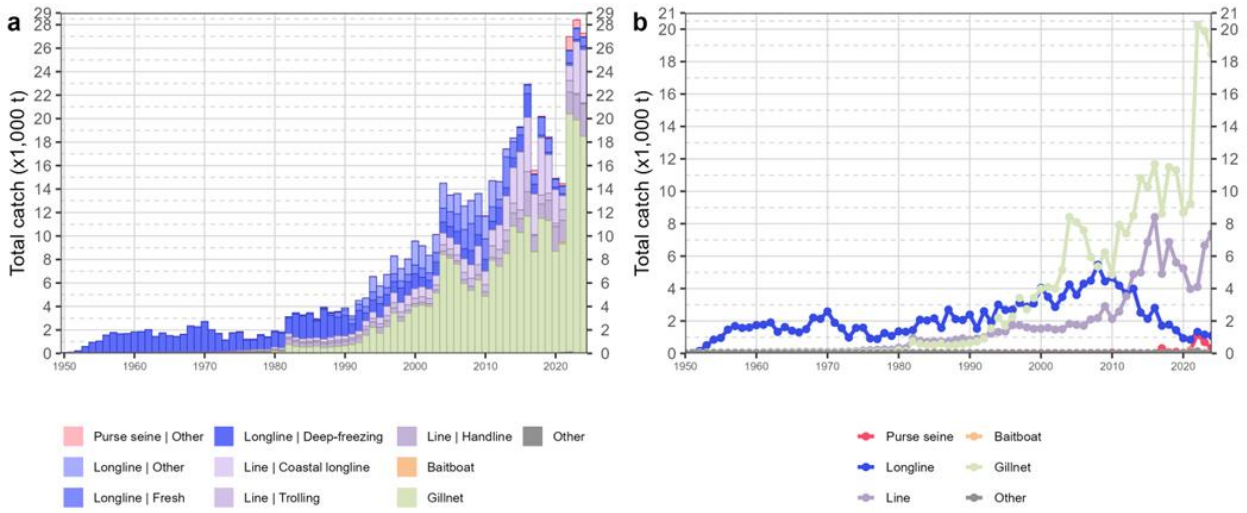

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for black marlin during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

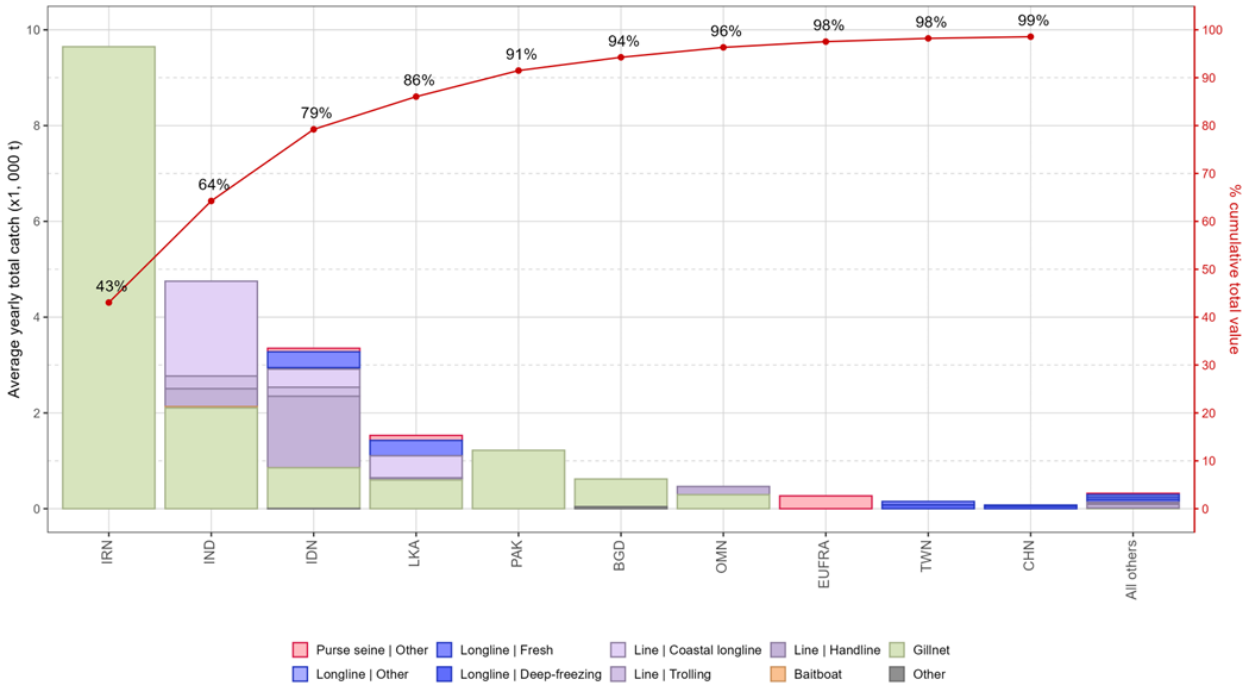

Fig. 2. Mean annual retained catches (metric tonnes; t) of black marlin by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

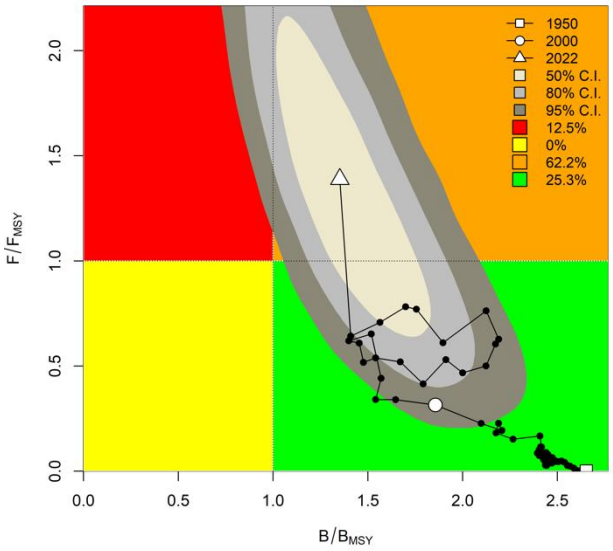

Fig. 3. JABBA Indian Ocean assessment Kobe plots for black marlin (contours are the 50, 80 and 95 percentiles of the 2022 estimate). Black line indicates the trajectory of the point estimates for the total biomass ratio (B/B_{MSY}) and fishing mortality ratio (F/F_{MSY}) for each year 1950–2022.

Table 2. Black marlin: JABBA Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based target reference points for nine constant catch projections relative to the average catch level of 2020 – 2022 (17,710 t) * ± 20%, ± 40%,± 60%) projected for 3 and 10 years

Reference point and projection timeframe	**Alternative catch projections (relative to the average catch level of 2020–2022 of 17,710 t) and probability (%) of violating MSY-based target reference points (Btarg = B_{MSY}; Ftarg = F_{MSY})**						
	40% (7,084 t)	**60%** (10,626 t)	**80%** (14,168 t)	**100%** (17,710 t)	**120%** (21,252 t)	**140%** (24,794 t)	**160%** (28,336 t)
$B_{2025} < B_{MSY}$	23	31	40	49	57	64	70
$F_{2025} > F_{MSY}$	6	23	45	63	76	84	89
$B_{2032} < B_{MSY}$	8	25	48	67	80	88	92
$F_{2032} > F_{MSY}$	4	21	49	71	84	91	95

Table 3. Black marlin: Probability (percentage) of achieving the KOBE green quadrat from 2023-2032 for a range of constant catch projections (JABBA).

Catch (t)| Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
7,084 (40%)	65	72	77	81	85	87	89	90	91	92
10,626 (60%)	63	66	68	70	71	72	73	74	74	75
14,168 (80%)	55	54	53	53	52	52	51	50	50	50
17,710(100%)	42	39	37	35	33	32	31	30	29	29
21,252 (120%)	30	27	24	22	21	19	18	17	17	16
24,794 (140%)	22	19	16	14	13	12	11	10	9	9
28,336 (160%)	16	13	11	9	8	7	7	6	6	5

APPENDIX 19
EXECUTIVE SUMMARY: BLUE MARLIN (2025)

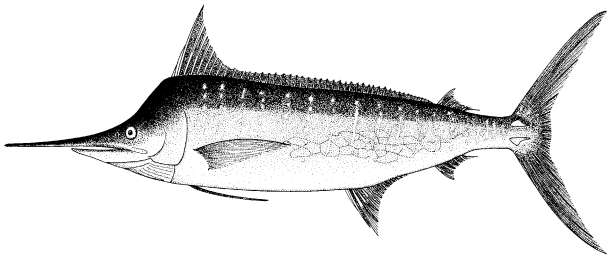

Table 1. Status of blue marlin (*Makaira nigricans*) in the Indian Ocean

Area[1]	Indicators		2025 stock status determination[3]
Indian Ocean	Catch 2024 (t)	10,420[2]	97.4%
	Average catch 2020-2024 (t)	8,673	
	Average catch 2021-2023 (t)	8,134	
	MSY (1,000 t) (80% CI)	8.35 (7.52 –9.23)	
	F_{MSY} (80% CI)	0.30 (0.21 – 0.38)	
	B_{MSY} (1,000 t) (80% CI)	27.92 (22.3 – 39.9)	
	F_{2023}/F_{MSY} (80% CI)	1.54 (1.16 – 2.06)	
	B_{2023}/B_{MSY} (80% CI)	0.62 (0.48 – 0.78)	
	B_{2023}/B_0 (80% CI)	0.23 (0.18 – 0.29)	

[1] Boundaries for the Indian Ocean are defined as the IOTC area of competence

[2] Proportion of 2024 catch estimated or partially estimated by IOTC Secretariat: 36.5 %

[3] 2023 is the final year that data were available for this assessment

* 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 (B_{2023}/B_{MSY}< 1)	Stock not overfished (B_{2023}/B_{MSY}≥ 1)
Stock subject to overfishing (F_{2023}/F_{MSY}> 1)	**97.4%**	**0.2%**
Stock not subject to overfishing (F_{2023}/F_{MSY}≤ 1)	**2.1%**	**0.3%**
Not assessed/Uncertain/Unknown		

The percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights accounted for

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. A new stock assessment was carried out for blue marlin in 2025 using two different models: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2023). Uncertainty in the biological parameters and the parameterisation of the SS3 model is still evident and as such the JABBA model (B_{2023}/B_{MSY} = 0.62, F_{2023}/F_{MSY} = 1.54) was selected as the base case. Both models were consistent with regards to stock status, although the SS3 model was less pessimistic. On the weight-of-evidence available in 2025, the stock is determined to be ***overfished*** and ***subject to overfishing*** (**Table 1** and **Fig. 3**).

Outlook. The B/B_{MSY} trajectory declined from the mid-1980s to 2007. A short-term increase in B/B_{MSY} occurred from 2007 to 2012, which is thought to be linked to the Northwestern Indian Ocean piracy period. Thereafter, the B/B_{MSY} trajectory again declines to the current estimate **of 0.62**. F/F_{MSY} increased since the mid-1980s and despite a recent

decline, F/F_{MSY} remains above 1. The majority of CPUE indices have shown a declining trend since 2015, noting a recent increasing trend in CPUE indices in 2023.

Management advice. The catches of blue marlin (average of 7,262 t in the final 3 years examined in the assessment, 2021-2023) were lower than MSY (8,351 t), however the catch in 2024 was higher than MSY. The stock is currently **overfished** and **subject to overfishing**, and according to the KOBE plot (**Fig. 3**), has been in this state since 2001 (with ~ 80 % CI). According to K2SM calculated at the time of the assessment (**Table 2**), a reduction of 20% of catches (5,809 t) compared to the mean of catches from 2021-2023 (7,262 t) would recover the stock to the green quadrant by 2035 with a probability of 64 % and if the catches are reduced by 40 % (4,357 t) the probability would be 86 %. 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 30 % more (3,579 t) than the new MSY estimated by the latest stock assessment in 2025 (8,351 t). Thus, it is recommended that the Commission urgently revise Resolution 18/05 to incorporate limits that reflect the most recent stock assessment and projections and review and strengthen the implementation and effectiveness of the measures contained in this Resolution.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: estimate for the Indian Ocean blue marlin stock in 2025 is 8,351 t (estimated range (80% C.I.) 7,516–9,232 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, nor harvest control rules have been established for blue marlin.
- **Main fisheries (mean annual catch 2020-2024)**: blue marlin are caught using line (46%), followed by longline (30.6%) and gillnet (18.2%). The remaining catches taken with other gears contributed to 5.3% of the total catches in recent years (**Fig. 1**). The last 2 years in the data series are significantly higher than previous years which could be due to the revision of catches from Indonesia and increased catches from India, and these may be subject to examination. The recent increase in catch by lines also requires further examination.
- **Main fleets (mean annual catch 2020-2024)**: the majority of blue marlin catches are attributed to vessels flagged to Indonesia (25%) followed by India (23.5%) and Sri Lanka (15.5%). The 29 other fleets catching blue marlin contributed to 35.9% of the total catch in recent years (Fig. 2).

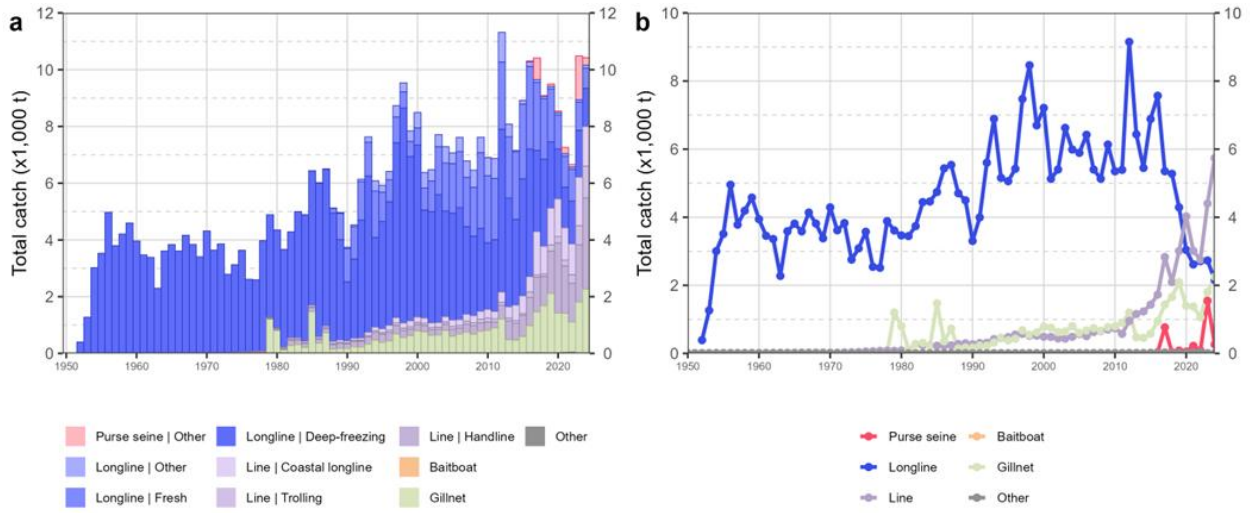

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for blue marlin during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

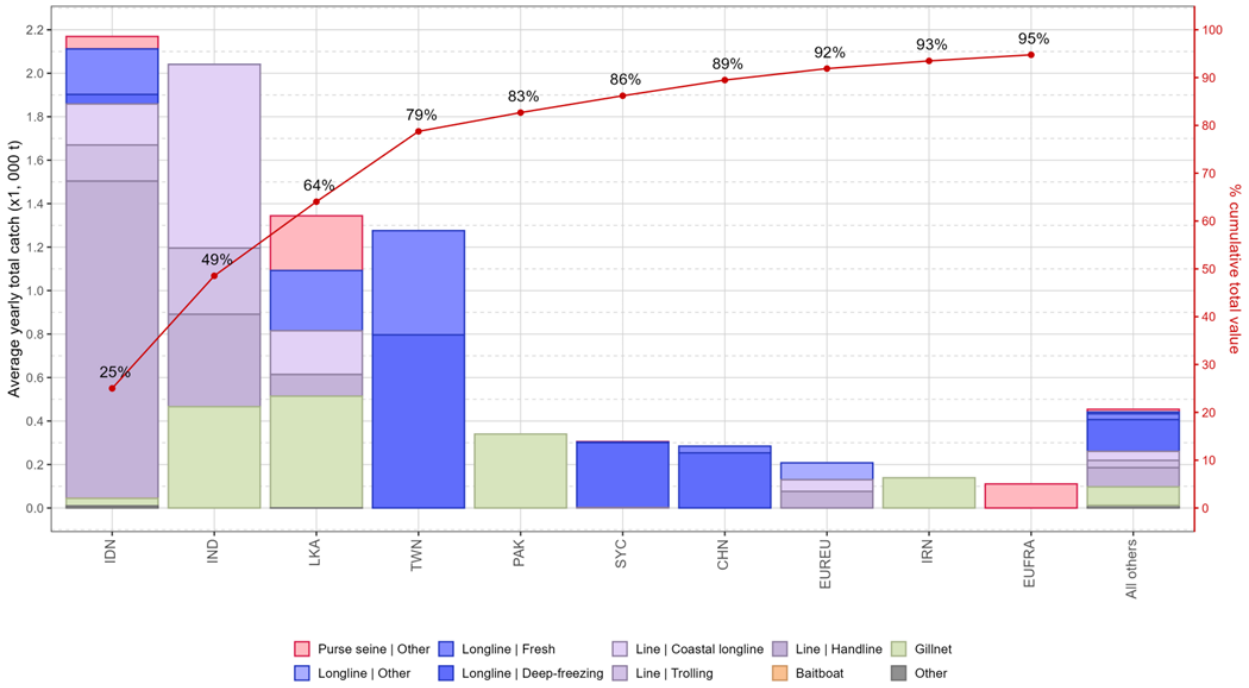

Fig. 2. Mean annual retained catches (metric tonnes; t) of blue marlin by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

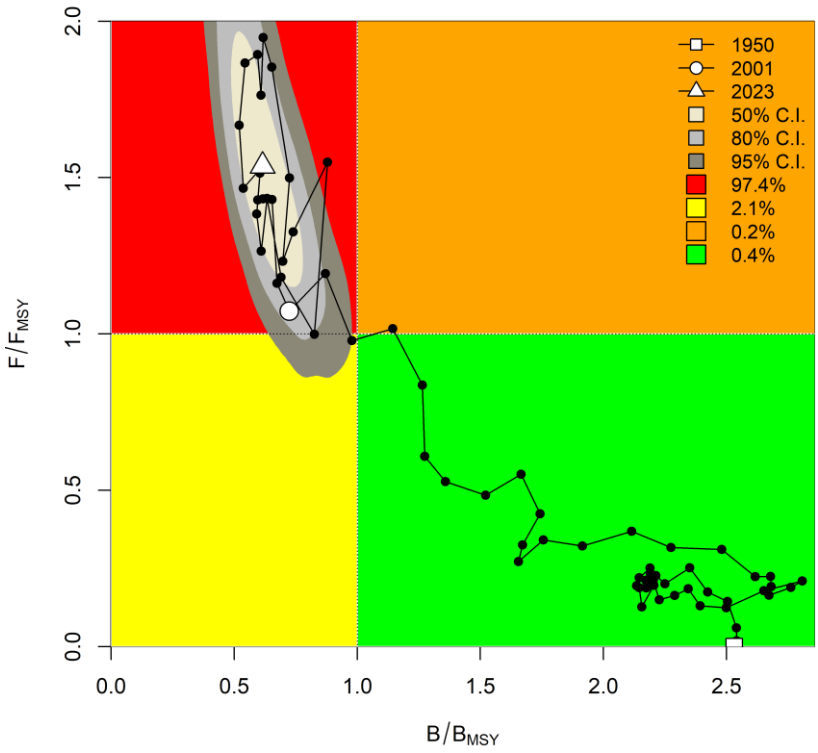

Fig. 3. JABBA Indian Ocean assessment Kobe plots for blue marlin (contours are the 50, 80 and 95 percentiles of the 2023 estimate). Black line indicates the trajectory of the point estimates for the total biomass ratio (B/B_{MSY}) and fishing mortality ratio (F/FMSY) for each year 1950–2023

Table 2. Blue Marlin: Indian Ocean JABBA Kobe II Strategy Matrix. Probability (percentage) of achieving the green quadrant of the KOBE plot, for a range of constant catch projections (JABBA). Catch in 2024 and 2025 are fixed at 7,262 t

Catch (t)	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
4,357 (60%)	10	22	35	48	59	67	74	80	83	86
5,083 (70%)	10	20	31	41	50	58	64	69	73	77
5,809 (80%)	10	18	26	34	41	47	53	57	61	64
6,536 (90%)	10	16	22	27	33	37	41	44	47	50
7,262 (100%)	10	14	18	22	25	27	30	32	34	35
7,988 (110%)	10	12	15	16	18	19	20	21	22	22
8,714 (120%)	8	9	11	11	12	12	12	13	12	12
9,440 (130%)	6	6	6	7	6	6	6	6	6	6
10,167 (140%)	4	4	4	4	3	3	3	3	3	2

Table 3. Blue marlin: JABBA Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based target reference points for nine constant catch projections relative to the average catch level from 2021 to 2023 (7,262 t)*, ± 10%, ± 20%, ± 30% ± 40%) projected for 3 and 10 years

Reference point and projection timeframe	**Alternative catch projections (relative to the average catch level from 2021 to 2023 of 7,262 t) and probability (%) of violating MSY-based target reference points (Btarg = B_{MSY}; Ftarg = F_{MSY})**								
	60% (4,357)	70% (5,083)	80% (5,809)	90% (6,536)	100% (7,262)	110% (7,988)	120% (8,714)	130% (9,440)	140% (10,167)
$B_{2028} < B_{MSY}$	65	69	74	78	82	85	88	90	92
$F_{2028} > F_{MSY}$	19	31	45	60	72	81	88	93	96
$B_{2035} < B_{MSY}$	14	23	36	50	64	77	87	93	97
$F_{2035} > F_{MSY}$	5	12	23	40	58	75	87	94	98

APPENDIX 20
EXECUTIVE SUMMARY: STRIPED MARLIN (2025)

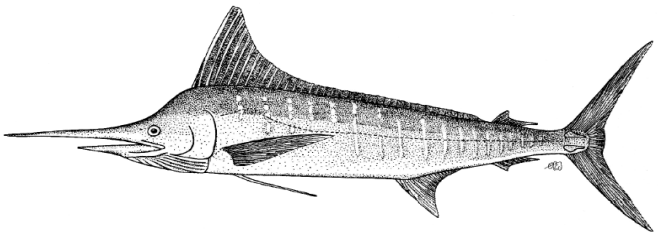

Table 1. Status of striped marlin (*Kajikia audax*) in the Indian Ocean

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2024 (t)	4,334[2]	100%
	Average catch 2020-2024 (t)	3,390	
	MSY (1,000 t) (JABBA)	4.73 (4.22 – 5.24)[3]	
	MSY (1,000 t) (SS3)	4.89 (4.48-5.30)	
	F_{MSY} (JABBA)	0.26 (0.20–0.35)	
	F_{MSY} (SS3)	0.22 (0.21–0.24)	
	F_{2022}/F_{MSY} (JABBA)	3.95 (2.54 - 6.14)	
	F_{2022}/F_{MSY} (SS3)	9.26 (5.38-13.14)	
	B_{2022}/B_{msy} (JABBA)	0.17 (0.11 - 0.27)	
	SB_{2022}/SB_{MSY} (SS3)[4]	0.27 (0.19-0.35)	
	B_{2022}/B_0(JABBA)	0.06 (0.04 – 0.10)	
	SB_{2022}/SB_0 (SS3)	0.036 (0.03-0.04)	

[1] Boundaries for the Indian Ocean are defined as IOTC area of competence

[2] Proportion of 2024 catch estimated or partially estimated by IOTC Secretariat: 3.2%

[3] Range estimates in the table are 80% confidence interval

[4] SS3 is the only model that used SB/SB_{MSY}, all others used B/B_{MSY}

[5]2022 is the final year that data were available for this assessment

* 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 (B_{2022}/B_{MSY}< 1)	Stock not overfished (B_{2022}/B_{MSY}≥ 1)
Stock subject to overfishing (F_{2022}/F_{MSY}> 1)	**100%**	**0.0%**
Stock not subject to overfishing (F_{2022}/F_{MSY}≤ 1)	**0.0%**	**0.0%**
Not assessed/Uncertain/Unknown		

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

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was carried out for striped marlin 2025, thus, the stock status estimates are based on two different assessment models carried out in 2024: JABBA, a Bayesian state-space production model (age-aggregated); and SS3, an integrated model (age-structured) (using data up to 2022). Both models were generally consistent with regards to stock status and confirmed the results from 2012, 2013, 2015, 2017, 2018, and 2021 assessments, indicating that the stock is subject to overfishing ($F>F_{MSY}$) and is overfished, with the biomass being below the level which would produce MSY ($B<B_{MSY}$) for over a decade. Both SS3 and JABBA assessments rely on CPUE indices from the longline fisheries in which the striped marlin are not the main target species. On the weight-of-evidence available in 2024, the stock status of striped marlin is determined to be ***overfished*** and ***subject to overfishing*** (**Table 1**; **Fig. 3**).

Outlook. Biomass estimates of the Indian Ocean striped marlin stock have likely been below BMSY since the late 90's – the stock has been severely depleted (B/B_0 = 0.06; JABBA model). The level of depletion has increased since the previous assessment and is currently the worst among IOTC species. There has been a substantial increase of catches of stripe marlin from coastal fleets in recent years. The outlook is very pessimistic, and a substantial decrease in fishing mortality is required to ensure a reasonable chance of stock recovery in the foreseeable future (**Table 2**). It should be noted that point estimates from SS3 indicate that F_{curr}/F_{MSY} are much higher than those estimated by JABBA.

Management advice. Current or increasing catches have a very high risk of further decline in the stock status. The 2024 catches (4,334 t) were lower than the estimated MSY (4,730 t) but are above the limit set by Resolution 18/05 (3,260 t) which may be a concern if this trend continues. However, the limit is not based on estimates of the most recent stock assessment.

The stock has been overfished for more than a decade and is now in a highly depleted state. Based on the Kobe II strategy matrix run in 2024, a 70% reduction in the average 2020-22 catch of 2,891 t (i.e. to a catch of 867 t) would recover the stock to the green quadrant by 2032 with a probability of 78% and a 60% reduction in recent average catch (i.e. catch of 1,157 t) would achieve this with a probability of 58%. Thus, it is recommended that the Commission urgently revise Resolution 18/05 to incorporate limits that reflect the most recent stock assessment and projections, and review, and where necessary, revise the implementation and effectiveness of the measures contained in this Resolution.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: estimates for the Indian Ocean stock are uncertain and estimates range between 4,220 - 5,240 t. However, the current biomass is well below the B_{MSY} reference point and fishing mortality is in excess of F_{MSY} at recent catch levels.
- **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 striped marlin.
- **Main fisheries (mean annual catch 2020-2024)**: striped marlin are caught using gillnet (71.8%), followed by longline (12.3%) and purse seine (11.4%). The remaining catches taken with other gears contributed to 4.5% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of striped marlin catches are attributed to vessels flagged to I. R. Iran (32.3%) followed by Indonesia (24.9%) and Pakistan (24%). The 24 other fleets catching striped marlin contributed to 18.5% of the total catch in recent years (**Fig. 2**).

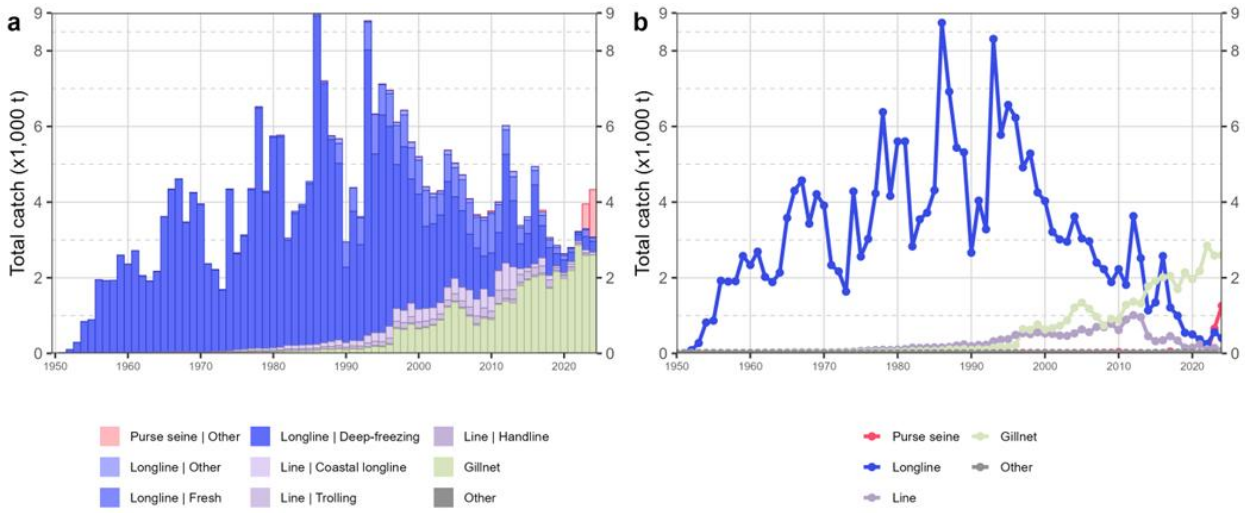

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for striped marlin during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

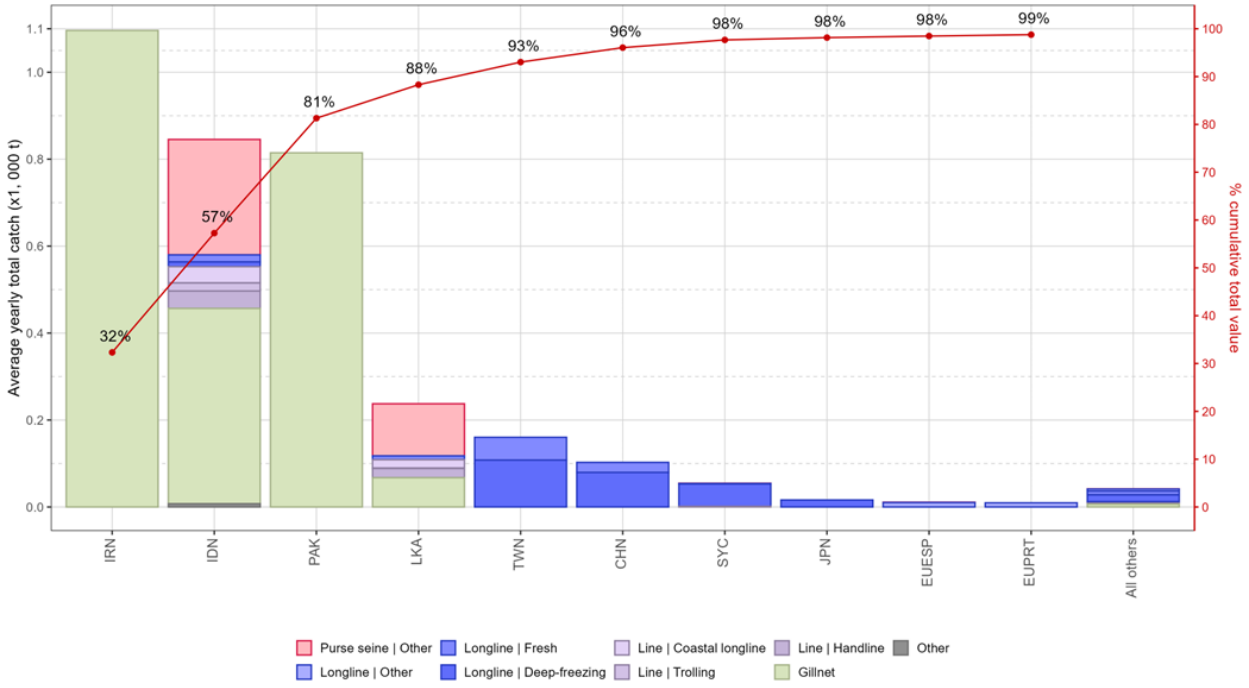

Fig. 2. Mean annual retained catches (metric tonnes; t) of striped marlin by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

(a) (b)

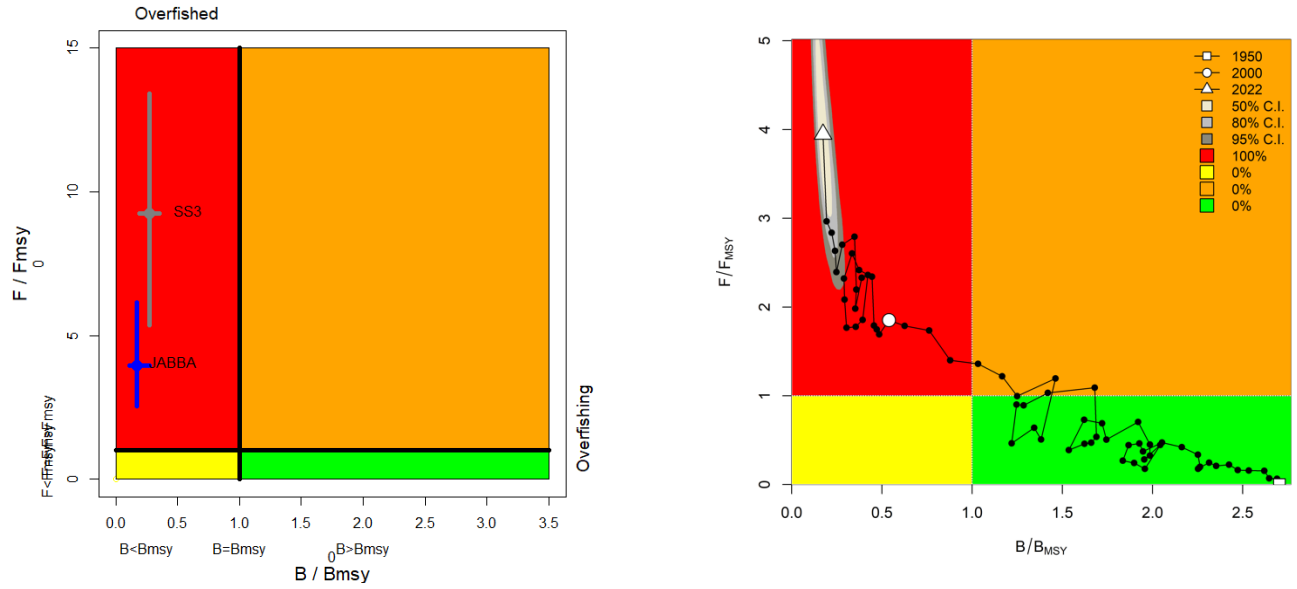

Fig. 3. (a) Striped marlin: Stock status from the Indian Ocean assessment JABBA (Bayesian State Space Surplus Production Model) and SS3 models with the confidence intervals (left); (b) Trajectories (1950-2022) of *B/B_{MSY} and F/F_{MSY}* from the JABBA model. NB: SS3 refers to SB/SB_{MSY} while the JABBA model's output refers to B/B_{MSY}

Table 2. Striped marlin: JABBA Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based target reference points for nine constant catch projections relative to the average catch level of 2020–2022 (2,891 t) (100%, 80%, then 70%–10% in decrement of 10%) projected for 3 and 10 years

Reference point and projection timeframe	**Alternative catch projections (relative to the 2020-2022 catch of 3,001 t) and probability (%) of violating MSY-based target reference points (Btarg = B_{MSY}; Ftarg = F_{MSY})**								
	10% (289 t)	**20%** (578 t)	**30%** (867 t)	**40%** (1,157 t)	**50%** (1,446 t)	**60%** (1,735 t)	**70%** (2,024 t)	**80%** (2,313 t)	**100%** (2,891 t)
$B_{2025} < B_{MSY}$	100	100	100	100	100	100	100	100	100
$F_{2025} > F_{MSY}$	3	12	35	66	88	97	99	100	100
$B_{2032} < B_{MSY}$	3	9	22	42	64	83	93	98	100
$F_{2032} > F_{MSY}$	0	4	8	18	35	57	78	91	99

Table 3. Striped marlin: Probability (percentage) of achieving the KOBE green quadrant from 2023-2032 for a range of constant catch projections (JABBA).

Catch (t)| Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
289 (10%)	0	0	0	0	7	31	63	84	94	97
578 (20%)	0	0	0	0	3	17	44	68	84	91
867 (30%)	0	0	0	0	1	8	26	48	66	78
1,157 (40%)	0	0	0	0	0	4	13	28	45	58
1,446 (50%)	0	0	0	0	0	1	5	13	25	36
1,735 (60%)	0	0	0	0	0	0	2	5	11	17
2,024 (70%)	0	0	0	0	0	0	1	2	4	7
2,313 (80%)	0	0	0	0	0	0	0	0	1	2
2,891 (100%)	0	0	0	0	0	0	0	0	0	0

APPENDIX 21
EXECUTIVE SUMMARY: INDO-PACIFIC SAILFISH (2025)

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

Area[1]	Indicators		2025 stock status determination[3,4]
Indian Ocean	Catch 2024 (t)	40,682[2]	92%
	Average catch 2020-2024 (t)	36,390	
	MSY (1,000 t) (80% CI)[4]	34.3 (28.7 - 42.2)	
	F_{MSY} (80% CI)[4]	0.20 (0.17 - 0.23)	
	SB_{MSY} (1,000 t) (80% CI)[4]	174 (145 - 212)	
	F_{2023}/F_{MSY} (80% CI)[4]	0.69 (0.51 - 0.94)	
	SB_{2023}/SB_{MSY} (80% CI)[4]	1.34 (1.15 - 1.53)	
	SB_{2023}/SB_0 (80% CI)[4]	0.67 (0.58 - 0.76)	

[1] Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

[2] Proportion of 2024 catch estimated or partially estimated by IOTC Secretariat: 24.9 %

[3] 2023 is the final year that data were available for this assessment

[4] These figures are outputs from the 2025 stock assessment and are not endorsed for management advice. Please see the section on management advice for further explanations on these estimates.

Colour key	Stock overfished ($B_{year}/B_{MSY} < 1$)	Stock not overfished ($B_{year}/B_{MSY} \geq 1$)
Stock subject to overfishing ($F_{2023}/F_{MSY} > 1$)	2 %	6 %
Stock not subject to overfishing ($F_{2023}/F_{MSY} \leq 1$)	0 %	92 %
Not assessed/Uncertain/Unknown		

The percentages are calculated as the proportion of model terminal values that fall within each quadrant with model weights accounted for

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. A new iteration of a Bayesian state-space production model (age-aggregated) JABBA stock assessment was carried out for Indo-Pacific Sailfish in 2025, using data up to 2023. Prior to this, in 2015 and 2019, data poor methods (Catch-MSY) were utilised to provide stock status for Indo-Pacific sailfish. These methods rely on catch data only, which is highly uncertain for this species, and resulted in an undefined stock status.

To overcome the lack of standardised CPUE indices or alternative abundance indices for this species, this assessment followed the methods of the previous assessment in 2022 where length-frequency data were used to estimate the annual Spawning Potential Ratio (SPR) using the length-based spawning potential ratio (LBSPR) method. Annual estimates of SPR were then normalised in the JARA (Just Another Red List Assessment) model to provide an index that was assumed to be proportional to spawning biomass. This index was then incorporated as an index of relative abundance in a JABBA model.

This is a novel technique applied to overcome the paucity of abundance data for Indo-Pacific sailfish and it had not been thoroughly tested with rigorous simulation-evaluation. This method has key assumptions that raised concerns within members of the WPB23. These three equilibrium assumptions that are likely to be violated are: 1) annual recruitment is assumed to be constant over time without directional trends; 2) length-frequency data used to derive the SPR trends is representative of the population; 3) selectivity is non-varying, and follows a logistic form.

The previous iteration of the Indo-Pacific sailfish assessment also noted the same concerns, and it was agreed by the SC in 2022 that the methodology of converting the length data into an index of relative abundance required further review. At the time of the assessment in 2025, there was uncertainty regarding how much the current assessment results are impacted by the violation of the assumptions listed above. It was discussed that it was possible that if assumptions are violated, the index of abundance could be showing trends that are diametrically opposed to the true population trend. It was recommended by the WPB23 that the extent of the potential bias must be evaluated with a simulation study which will inform whether this index is acceptable for use in the Indo-Pacific sailfish stock assessment.

The results of the LBSPR portion of the assessment indicate that there has been a 45.5 % decline in SPR since 1970. The latest (2023) estimate of B/B_{MSY} was 1.34, while the F/F_{MSY} estimate was 0.69. Additionally, concern was raised regarding the high levels of current catches (31,898 t in 2023), that are above the previous MSY estimate of 25,905 t, and close to the current, higher estimate of MSY of 34,300 t.

On the weight-of-evidence available in 2025, the stock status of Indo-Pacific sailfish is determined to be ***not overfished nor subject to overfishing*** (**Table 1**; **Fig. 3**).

Outlook. Catches have exceeded the estimated MSY since 2013 and the current catches (average of 36,390 t in the last 5 years, 2020-2024) are substantially higher than the previous MSY estimate of 25,905 t, and close to the current MSY estimate of 34,300 t. This increase in coastal gillnet and longline 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 the 2020-2024 catches exceed the catch limit prescribed in Resolution 18/05 (25,000 t).

Management advice. Considerable uncertainty remains in the JABBA assessment conducted in 2025, however the trends in key model outputs align relatively well with the 2022 assessment. For this year, due to the uncertainty in the model outputs, the management advice from 2022 would be carried over for one year (1 year) to allow time to complete the simulation studies and provide updated management advice in 2026. It is anticipated that, once the underlying uncertainty in the JABBA assessment is understood and presented at the proposed WPB meeting next year, management advice can be updated.

The catch limits as stipulated in Resolution 18/05 have been exceeded since 2020, which as per resolution 18/05, requires a review of the resolution. Furthermore, these limits are not based on estimates of most recent stock assessment. 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 following key points should also be noted:

- **Maximum Sustainable Yield (MSY):** estimate for the Indian Ocean stock is 34,300 t. As mentioned in the paragraph above and in the table at the start of the document (**Table 1**), MSY and associated stock assessment outputs are not to be used for management advice. This includes the KOBE plot, and these values (including the KOBE plot) may be updated in 2026 after the simulation study has been completed.
- **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 fisheries (mean annual catch 2020-2024):** Indo-pacific sailfish are caught using gillnet (67.5%), followed by line (27.6%) and longline (2%). The remaining catches taken with other gears contributed to 2.9% of the total catches in recent years (**Fig. 1**)**.**
- **Main fleets (mean annual catch 2020-2024)**: the majority of Indo-pacific sailfish catches are attributed to vessels flagged to I.R. Iran (43%) followed by India (19.2%) and Indonesia (12.3%). The 33 other fleets catching Indo-pacific sailfish contributed to 25.5% of the total catch in recent years (**Fig. 2**).

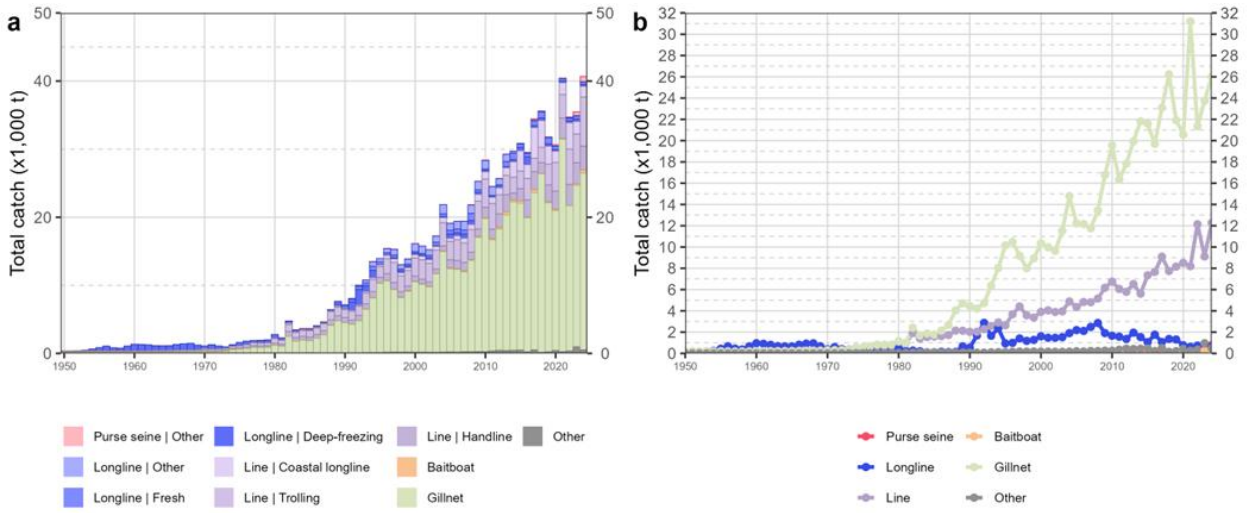

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for Indo-Pacific sailfish during 1950-2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

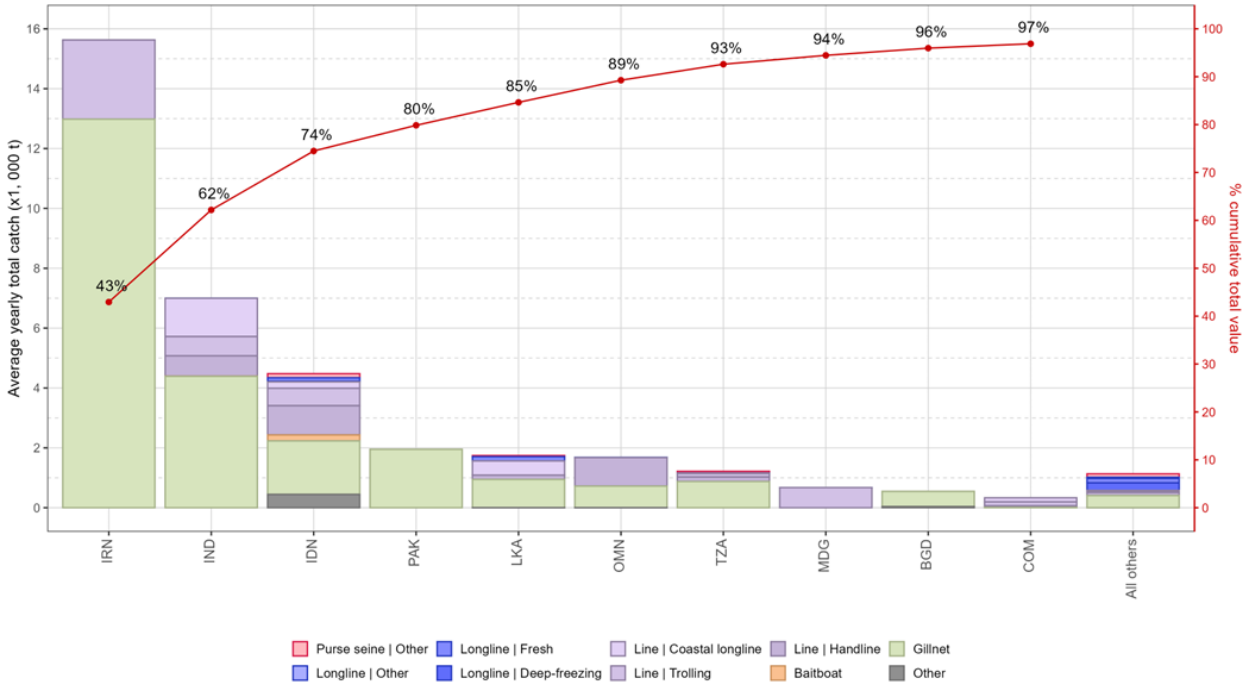

Fig. 2. Mean annual retained catches (metric tonnes; t) of Indo-Pacific sailfish by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

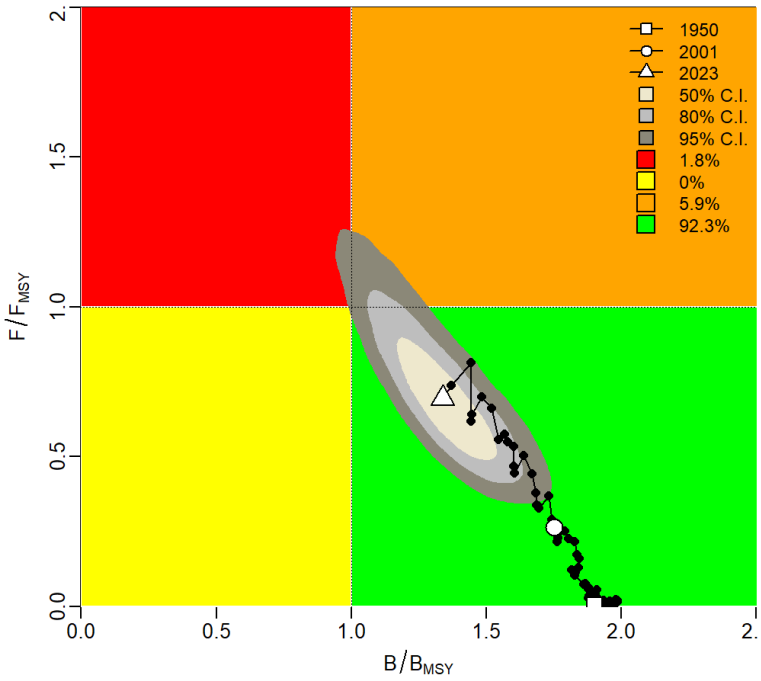

Fig.3: Kobe plot showing estimated trajectories (1950-2023) of B/B_{MSY} and F/F_{MSY} for JABBA model of Indian Ocean Indo-Pacific sailfish. Different grey shaded areas denote the 50%, 80%, and 95% credibility interval for the terminal assessment year. The probability of terminal year points falling within each quadrant is indicated in the figure legend

APPENDIX 22
EXECUTIVE SUMMARY: SWORDFISH (2025)

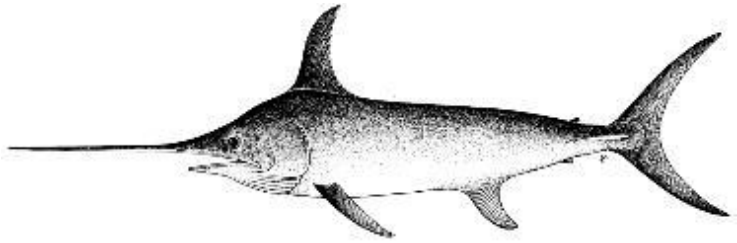

TABLE 1. Status of swordfish (*Xiphias gladius*) in the Indian Ocean

Area[1]	Indicators		2023 stock status determination[3]
Indian Ocean	Catch 2024 (t)	28,097[2]	97%
	Average catch 2020-2024 (t)	26, 836	
	MSY (1,000 t) (80% CI)	30 (26–33)	
	F_{MSY} (80% CI)	0.16 (0.12–0.20)	
	SB_{MSY} (1,000 t) (80% CI)	55 (40–70)	
	F_{2021}/F_{MSY} (80% CI)	0.60 (0.43–0.77)	
	SB_{2021}/SB_{MSY} (80% CI)	1.39 (1.01–1.77)	
	SB_{2021}/SB_{1950} (80% CI)	0.35 (0.32–0.37)	

[1] Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

[2] Proportion of 2024 catch estimated or partially estimated by IOTC Secretariat: 6%

[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}≥ 1)
Stock subject to overfishing (F_{year}/F_{MSY}> 1)	0.2%	0
Stock not subject to overfishing (F_{year}/F_{MSY}≤ 1)	2.8%	97%
Not assessed/Uncertain/Unknown		

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No new stock assessment was carried out for swordfish in 2025, thus the stock status is determined on basis of the 2023 assessment. Two models were applied to the swordfish stock (ASPIC and Stock Synthesis (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. The reported SS3 stock status is based on a grid of 48 model configurations designed to capture the uncertainty relating to steepness of the stock recruitment relationship (0.7, 0.8, and 0.9), recruitment variability (two levels), CPUE series (2 options), growth (2 options) and weighting of length composition data (two options). A number of the options included in the final grid were selected from a range of additional sensitivity runs that were conducted to explore uncertainties. In considering the assessment results, the WPB has expressed concern over whether the Japanese longline CPUE index accurately represents the change in abundance in

the north-western region, which may require further investigation. Further, the south-western region, which is one of the sub-regions used in the model, exhibits a declining biomass trend which indicates higher depletion in this region, compared to other regions. Overall, median spawning biomass in 2021 was estimated to be 35% (80% CI: 32-37%) of the unfished levels (**Table 1**) and 1.39 times (80% CI: 1.01-1.77) the level required to support MSY. Median fishing mortality in 2021 was estimated to be 60% (80% CI 43%-77%) of the FMSY level, and catch in 2021 (23,237 t) was well below the estimated MSY level of 29,856 t (80% CI: 26,319-33,393t). 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*** (**Table 1**, **Fig. 3**). Noting that the IOTC has now agreed on a swordfish Management Procedure (Res. 24/08) to provide TAC recommendations, the stock assessment is no longer to be used to inform TACs.

Management Procedure.

A revised management procedure for Indian Ocean Swordfish was adopted under Resolution 25/07 by the IOTC Commission in May 2025 following revision to correct a small error, and was applied to determine a recommended TAC for Swordfish for 2026, 2027 and 2028 of 30,527 t. A review of evidence for exceptional circumstances was conducted in 2025 following the adopted guideline (IOTC-2021-SC24-R, appendix 6A) as per the requirements of Resolution 25/07. The review did not identify any exceptional circumstances impacting on the application of the MP.

Outlook. The significant decrease in recent longline catch and effort from 2019 to 2022 (a 33% reduction from 35,256t to 23,597t) substantially lowered the fishing pressure on the Indian Ocean stock as a whole, prior to an increase in 2023 and 2024. The recent average catch of swordfish of 27,651t (for 2020-2024) is below the MP recommended TAC of 30,527 t for 2026-2028. Achieving the objectives of the Commission for this stock will require effective implementation of the MP TAC advice by the Commission going forward.

***Management advice*.**

The TAC recommended from the application of the MP specified in Resolution 25/07 for the period 2026-2028 is 30,527t, which is around 12% higher than the catch in 2023 (26,836t). Noting that the Commission did not adopt an implementing measure for the TAC in 2025, the SC urgently recommended that the Commission adopt an implementing measure for the TAC in 2026.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: estimate for the Indian Ocean is 29,856 t.
- **Provisional reference points**: noting that the Commission in 2015 agreed to Resolution 15/10 *on target and limit reference points and a decision framework*, the following should be noted:
    a. **Fishing mortality**: current fishing mortality is considered to be below the provisional target reference point of F_{MSY} and below the provisional limit reference point of $1.4*F_{MSY}$ (**Fig. 2**).
    b. **Biomass**: current spawning biomass is considered to be above the target reference point of SB_{MSY}, and therefore above the limit reference point of $0.4*SB_{MSY}$ (**Fig. 2**).
- **Main fisheries (mean annual catch 2020-2024)**: swordfish are caught using longline (54.1%), followed by line (29.5%) and gillnet (15.9%). The remaining catches taken with other gears contributed to 0.5% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual catch 2020-2024)**: the majority of swordfish catches are attributed to vessels flagged to Sri Lanka (24.4%) followed by Taiwan,China (14%) and Indonesia (9.7%). The 28 other fleets catching swordfish contributed to 51.7% of the total catch in recent years (**Fig. 2**).

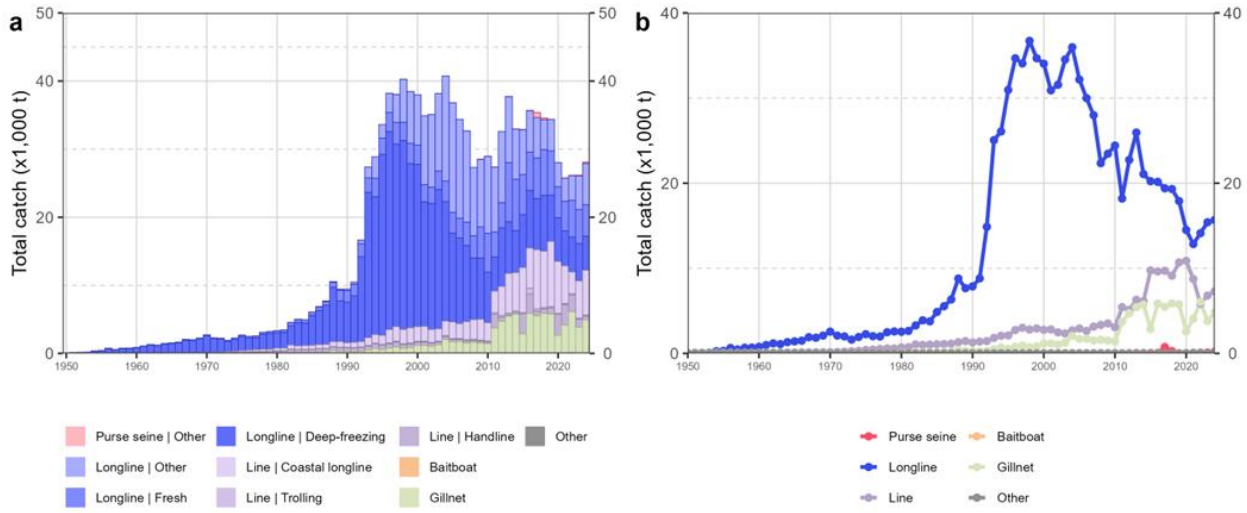

Fig. 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained a catches (metric tonnes; t) by fishery group for swordfish during 1950–2024. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline|Other: swordfish and sharks-targeting longlines; Other: all remaining fishing gears

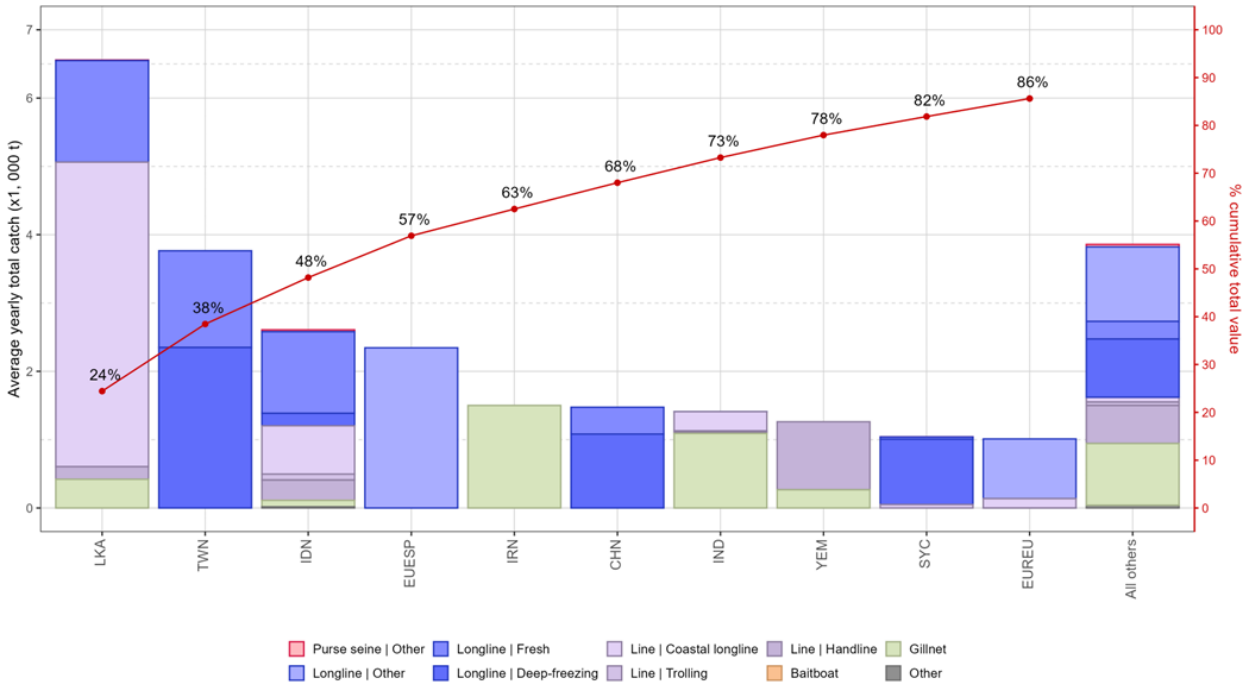

Fig. 2. Mean annual retained catches (metric tonnes; t) of swordfish by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. Purse seine | Other: coastal purse seine, large-scale purse seine, and ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

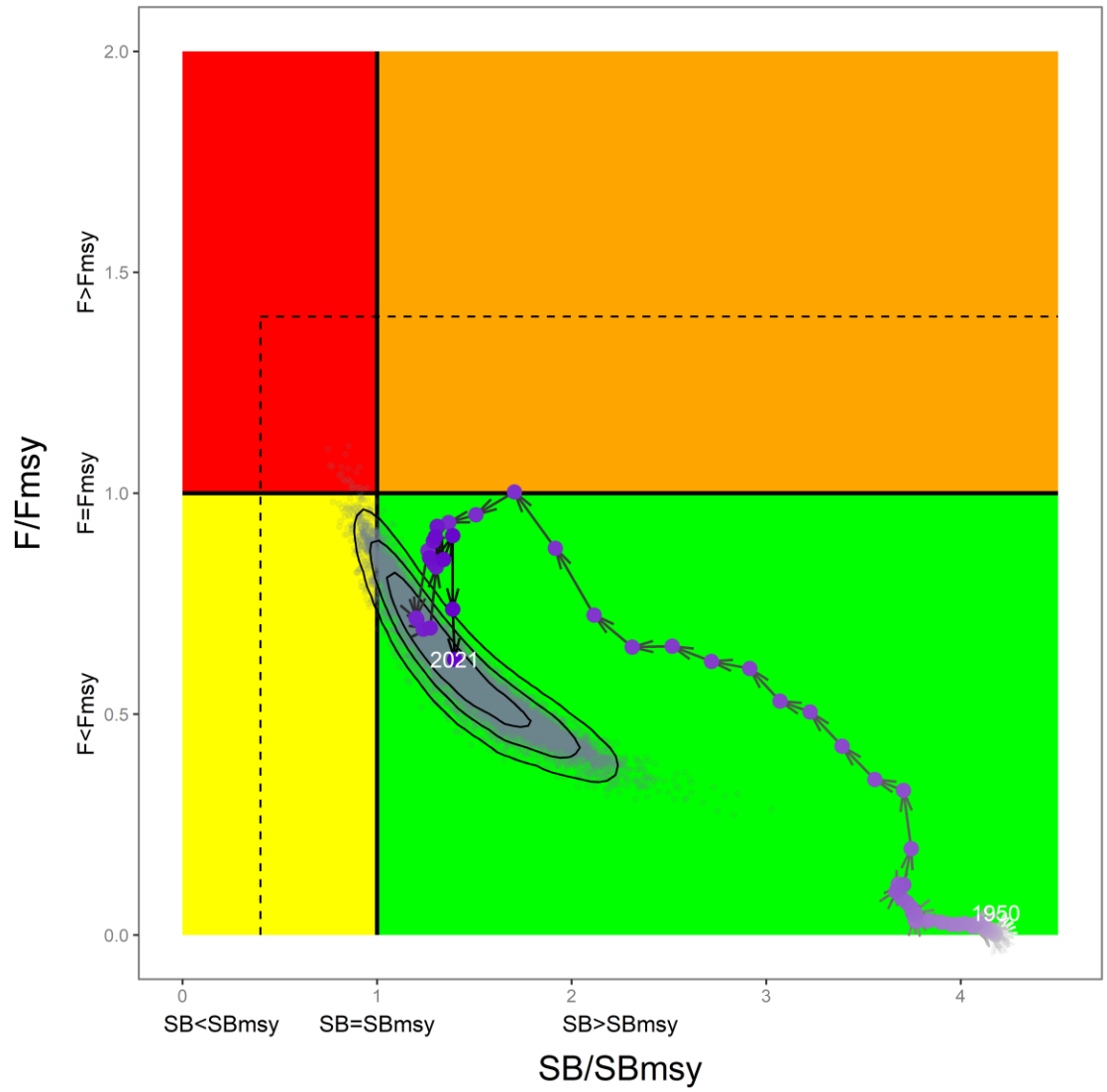

Fig. 3. Swordfish: 2021 stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) reference points for the final model grid. Grey dots represent uncertainty from individual models with 50%, 80% and 95% contours lines. The arrowed line represents the time series of stock trajectory from the reference model. The dashed lines represent limit reference points for Indian Ocean swordfish (SB_{lim} = 0.4 SB_{MSY} and F_{lim} = 1.4*F_{MSY})

APPENDIX 23
EXECUTIVE SUMMARY: BLUE SHARK (2025)

CITES APPENDIX II species

Table 2. Status of blue shark (*Prionace glauca*) in the Indian Ocean

Area	Indicators		2025 stock status determination
Indian Ocean	Catch (2024) (t)	9,562[2]	100%
	Catch of NEI sharks (2024) (t)	15,742[3]	
	Mean annual catch (2020-2024) (t)	9,463	
	Mean annual catch of NEI sharks (2020-2024) (t)	24,929[3]	
	MSY (1,000 MT) (95% CI)[4]	30.81 (21.79 - 39.84)	
	F_{MSY} (95% CI) [4]	0.18 (0.18 - 0.18)	
	SB_{MSY} (1,000 MT) (95% CI) [4,5]	52.87 (37.38 - 68.37)	
	F_{2023}/F_{MSY} (95% CI) [4]	0.39 (0.21 - 0.57)	
	SB_{2023}/SB_{MSY} (95% CI)[4]	2.22 (1.76 - 2.68)	
	SB_{2023}/SB_0 (95% CI) [4]	0.73 (0.34 - 1.13)	

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., AG38: Blue shark, shortfin mako, oceanic whitetip shark; RSK: Requiem sharks nei; SKH: Various sharks nei

[4]Estimates refer to the base case model using estimated catches

[5] Refers to fecund stock biomass

Colour key	Stock overfished ($SB_{2023}/SB_{MSY}< 1$)	Stock not overfished ($SB_{2023}/SB_{MSY}\geq 1$)
Stock subject to overfishing($F_{2023}/F_{MSY}> 1$)	0%	0.0%
Stock not subject to overfishing ($F_{2023}/F_{MSY}\leq 1$)	0%	100%
Not assessed/Uncertain		

Table 3. Blue shark: IUCN threat status of blue shark (*Prionace glauca*) in the Indian Ocean (Sources: Stevens 2009, Rigby et al., 2019).

Common name	Scientific name	IUCN threat status[6]		
		Global status	WIO	EIO
Blue shark	*Prionace glauca*	Near Threatened	–	–

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[6]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purposes only

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status.

Two stock assessments were carried out for blue shark (BSH) in 2025: one using a Bayesian state-space surplus production model (JABBA) and another using an integrated age-structured model (SS3). Both assessments used data (catch and indices of abundance) from 1950 to 2023, although the model structure was inherently different. The SS3 model included annual length composition data where available. Uncertainty in data inputs and model configuration were explored through sensitivity analyses. All models produced similar results, suggesting the stock is currently **not overfished** and **not subject to overfishing** (**Figure 3**) with respect to MSY related reference points (although the IOTC has not adopted reference points for this species).

A base case model, using SS3, was selected to provide management advice based on the best available Indian Ocean biological data, parameter estimates, consistency of standardised CPUE relative abundance series, model fits/diagnostics and the spatial extent of the data (**Fig. A** 1, **Table A 1**).

The major sources of uncertainty identified in the current model are based on the estimated and reported catches. Nominal reported catches were considered unrealistic, and several alternative catch series were developed for this assessment. Recent revisions of reported catch related to large portions of the historical catch have resulted in a wide range of estimates, it is expected that these revisions will continue soon. The WP suggests further research regarding the estimation of non-reported and under reported catch.

All of the CPUE indices of abundance accepted for consideration in the assessment are largely consistent except for the CPUEs from South Africa and Portugal which show a declining trend in recent years, compared to more stable trends from the other CPCs.

The base case models used the GAM-based catch history estimates (lower estimates for catch – “D1 GAM LOW”) and CPUE series from EU-Spain, Taiwan,China and Japan, and a starting year of 1950. Model assumptions regarding the parameterization of steepness, natural mortality and the estimated selectivity were considered with respect to their sensitivity to the major axes of uncertainty identified.

The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery by combining the biological productivity of the species and its susceptibility to each fishing gear type. Blue sharks received a medium vulnerability ranking (No. 10) in the ERA rank for longline gear because it was estimated as the most productive shark species, but was also characterized by the second highest susceptibility to longline gear. Blue shark was estimated as not being susceptible thus not vulnerable to purse seine gear.

The current IUCN threat status of ‘Near Threatened’ applies to blue sharks globally (**Table 3**). Information available on this species has been improving in recent years. Blue sharks are commonly taken by a range of fisheries in the Indian Ocean and in some areas they are fished in their nursery grounds. Due to their life history characteristics – they live until at least 25 years, mature at 4–6 years, and have 25–50 pups every year – they are considered to be the most productive of the pelagic sharks. On the weight-of-evidence available in 2025, the stock status is determined to be **not overfished** and **not subject to overfishing** (**Table 2**).

Outlook. Increasing effort could result in declines in biomass. The Kobe II Strategy Matrix (**Table 4**) provides the probability of exceeding reference levels in the short (3 years) and long term (10 years) given a range of percentage changes in catch.

Management advice. The SS3 assessment indicates current catches are near MSY, and significant increases could result in decreasing biomass and the stock becoming subject to overfishing in the future (**Table 4**). The stock should be closely monitored, especially with respect to overall catch and discard reporting. 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.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: The MSY estimate for the Indian Ocean blue shark stock is approximately, 31,000t (95% CI is 21.79 - 39.84 thousand tonnes).
    - The current stock assessment suggests that catch amounts near the estimated MSY values are likely supportable in the near future. However, noting that firstly, the current MSY catch estimates from the assessment model are based on nominal reported catch (which are currently under revision and likely under-reported based on sharks not reported to species) and secondly, key uncertainties in other model inputs and parameters, it is recommended that there is no increase in fishing pressure until such uncertainties are resolved.
    - It is expected that as the nominal reported catch is revised, estimates of MSY and other parameters will change.
    - The upcoming blue shark MSE process will address the uncertainties in the stock assessment.
- **Reference points**: The Commission has not adopted reference points or harvest control rules for any shark species.

- **Main fisheries (mean annual retained catch 2020-2024)**: blue shark are caught using longline (81.4%), followed by line (13.9%) and purse seine (3.5%). The remaining catches taken with other gears contributed to 1.2% of the total catches in recent years (**Fig. 1**).
- **Main fleets (mean annual retained catch 2020-2024)**: the majority of blue shark catches are attributed to vessels flagged to Taiwan,China (29.8%) followed by EU (Spain) (29.5%) and Indonesia (17.8%). The 15 other fleets catching blue shark contributed to 22.9% of the total catch in recent years (**Fig 2**).

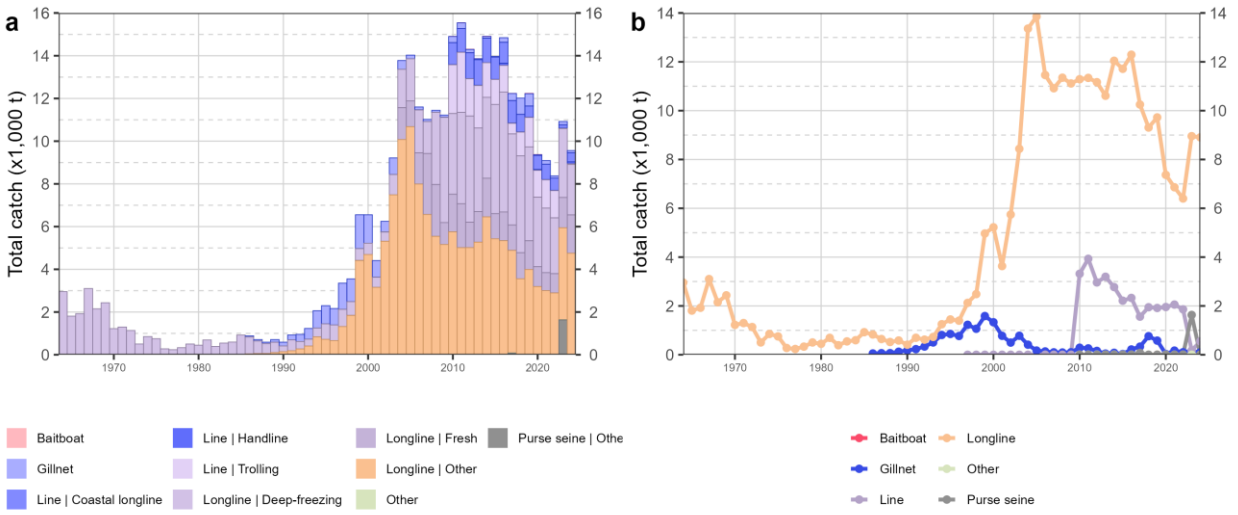

Figure 1 Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for blue shark during 1950-2024. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

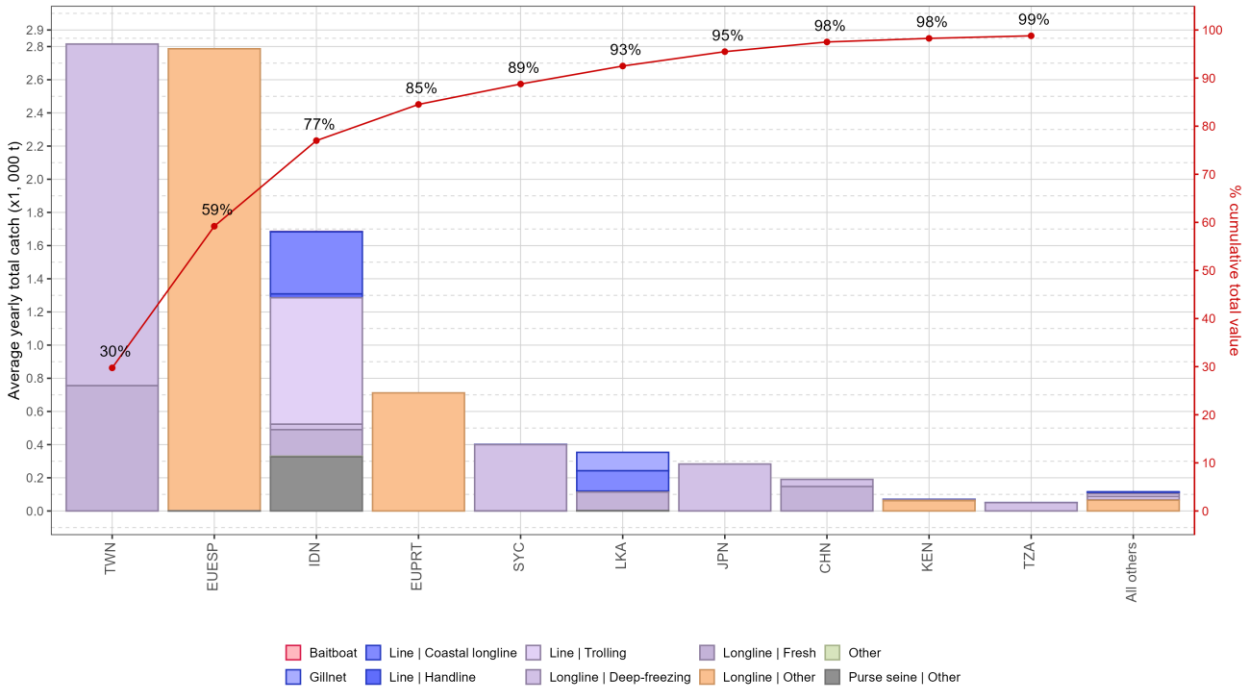

Figure 2: Mean annual retained catches (metric tonnes; t) of blue shark by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

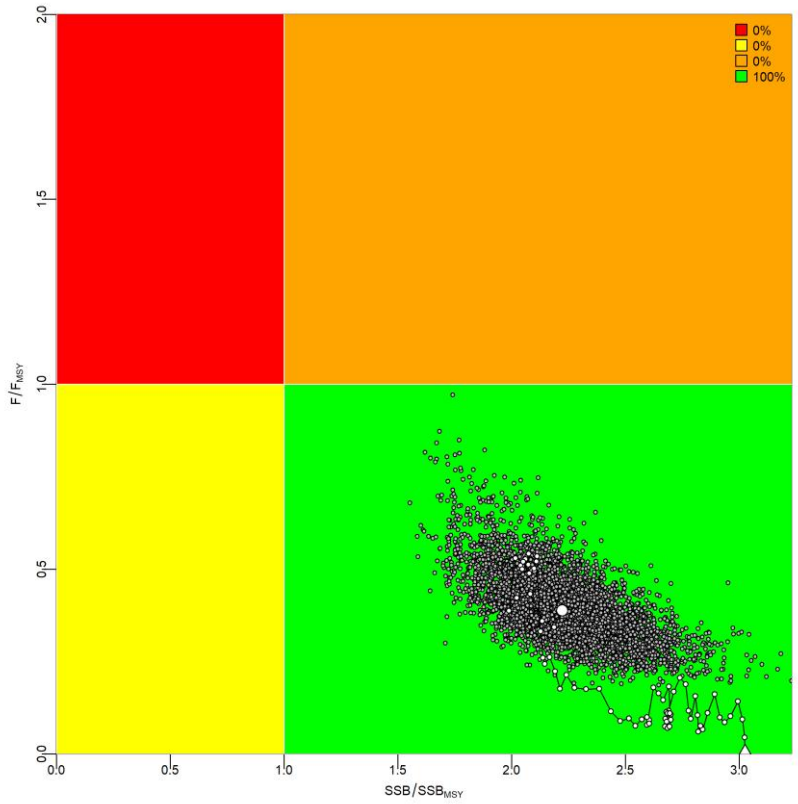

Fig. 3. Blue shark: Aggregated Indian Ocean stock assessment Kobe plot (based on SS3) for the estimate based on 2025 assessment base case model. (base case model with trajectory and uncertainty in the terminal year).

Table 4. Blue shark: Aggregated Indian Ocean assessment Kobe II Strategy Matrix. Probability (percentage) of violating the MSY-based reference points for nine constant catch projections using the base case model (average catch level from 2021-2023)* (25,877MT), ± 10%, ± 20%, ± 30% and ± 40%) projected for 3 and 10 years

Kobe II Strategy Matrix: Probability (%) of violating MSY-based reference points

	Alternative TAC projections								
Reference point and projection timeframe	**60% (15,526 t)**	**70% (18,113 t)**	**80% (20,701 t)**	**90% (23289 t)**	**100% (25877 t)**	**110% (28464 t)**	**120% (31052 t)**	**130% (33640 t)**	**140% (36227 t)**
B2028<BMSY	0	0	0	0	0	0	0	0	0
F2028>FMSY	0	0	0	0	0	0	0	0	1
B2035<BMSY	0	0	0	0	0	0	0	0	1
F2035>FMSY	0	0	0	0	0	0	2	5	12

*Average catch level and respective % changes refer to the estimated catch series used in the final base case model (IOTC-2025-WPEB21(AS)-30)

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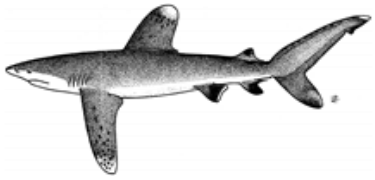
APPENDIX 24
EXECUTIVE SUMMARY: OCEANIC WHITETIP SHARK (2025)



CITES APPENDIX I species

Table A 1. Status of oceanic whitetip shark (*Carcharhinus longimanus*) in the Indian Ocean.

Area[1]	Indicators		2018 stock status determination
Indian Ocean	Catch (2024) (t)	901[2]	
	Catch of NEI sharks (2024) (t)	15,742[3]	
	Mean annual catch (2020-2024) (t)	541	
	Mean annual catch of NEI sharks (2020-2024) (t)	24,929[3]	
	MSY (1,000 t) (80% CI)	unknown	
	F_{MSY} (80% CI)		
	SB_{MSY} (1,000 t) (80% CI)		
	$F_{current}/F_{MSY}$ (80% CI)		
	$SB_{current}/SB_{MSY}$ (80% CI)		
	$SB_{current}/SB_0$ (80% CI)		

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., AG38: Blue shark, shortfin mako, oceanic whitetip shark; RSK: Requiem sharks nei; SKH: Various sharks nei

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		

Table A 2. Oceanic whitetip shark: IUCN threat status of oceanic whitetip shark (*Carcharhinus longimanus*) in the Indian Ocean.

Common name	**Scientific name**	**IUCN threat status[4]**		
		Global status	**WIO**	**EIO**
Oceanic whitetip shark	*Carcharhinus longimanus*	Critically Endangered	–	–

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: Rigby et al 2019

CITES - In March 2013, CITES agreed to include oceanic whitetip shark to Appendix II to provide further protections prohibiting the international trade; which will become effective on September 14, 2014.

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. There remains considerable uncertainty about the relationship between abundance, standardised CPUE series and total catches over the past decade (**Table A 1**). The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and its susceptibility to each fishing gear type (Murua *et al.* 2018). Oceanic whitetip shark received a medium vulnerability ranking (No. 9) in the ERA rank for longline gear because it was estimated as one of the least productive shark species but was only characterised by a medium susceptibility to longline gear. Oceanic whitetip shark was estimated as being the 11th most vulnerable shark species to purse seine gear, as it was characterised as having a relatively low productive rate, and medium susceptibility to the gear. The current IUCN threat status of 'Critically Endangered' applies to oceanic whitetip sharks globally and the species is now listed on Appendix I of CITES (**Table A 2**). There is a paucity of information available on this species in the Indian Ocean and this situation is not expected to improve in the short to medium term. Oceanic whitetip sharks are commonly taken by a range of fisheries in the Indian Ocean. Because of their life history characteristics – they are relatively long lived, mature at 4–5 years, and have relatively few offspring (<20 pups every two years), the oceanic whitetip shark is likely vulnerable to overfishing. Despite the limited amount of data, recent studies (Tolotti et al., 2016) suggest that oceanic whitetip shark abundance has declined in recent years (2000-2015) compared with historic years (1986-1999). Available pelagic longline standardised CPUE indices from Japan and EU,Spain indicate conflicting trends as discussed in the IOTC Supporting Information for oceanic whitetip sharks. There is no quantitative stock assessment and limited basic fishery indicators currently available for oceanic whitetip sharks in the Indian Ocean therefore the stock status is **unknown** (**Table A**).

Outlook. Maintaining or increasing effort with associated fishing mortality can result in declines in biomass, productivity and CPUE. Piracy in the western Indian Ocean resulted in the displacement and subsequent concentration of a substantial portion of longline fishing effort into certain areas in the southern and eastern Indian Ocean. Some longline vessels have returned to their traditional fishing areas in the northwest Indian Ocean, due to the increased security onboard vessels, with the exception of the Japanese fleet which has still not returned to the levels seen before the start of the piracy threat. It is therefore unlikely that catch and effort on oceanic whitetip sharks declined in the southern and eastern areas and may have resulted in localised depletion there.

Management advice. A cautious approach to the management of oceanic whitetip shark should be considered by the Commission, noting that recent studies suggest that longline mortality at haulback is high (50%) in the Indian Ocean (IOTC-2016-WPEB12-26), while mortality rates for interactions with other gear types such as purse seines and gillnets may be higher.

Mitigation measures should be taken to reduce at-vessel and post release mortality, including consideration of potential gear modifications in longline fleets targeting tuna and swordfish. Noting that a recent study (Bigelow et al. 2021) concluded in WCPFC that banning both shark lines and wire leaders has the potential to reduce fishing mortality by 40.5% for oceanic whitetip shark.

While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 13/06 *on a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries*, prohibits retention onboard, transhipping, landing or storing any part or whole carcass of oceanic whitetip sharks. Given that some CPCs are still reporting oceanic whitetip shark as landed catch, there is a need to strengthen mechanisms to ensure CPCs comply with Resolution 13/06.

The following key points should be also noted:

- **Maximum Sustainable Yield (MSY)**: Not applicable. Retention prohibited.
- **Reference points**: Not applicable.

- **Main fisheries (mean annual retained catch 2020-2024):** oceanic whitetip shark are caught using purse seine (60.4%), followed by line (33.5%) and gillnet (5.7%). The remaining catches taken with other gears contributed to 0.4% of the total catches in recent years (Fig. 1).
- **Main fleets (mean annual retained catch 2020-2024):** the majority of oceanic whitetip shark catches are attributed to vessels flagged to Indonesia (61.7%) followed by Mozambique (26.8%) and Madagascar (5.2%). The 5 other fleets catching oceanic whitetip shark contributed to 6.3% of the total catch in recent years (Fig. 2).

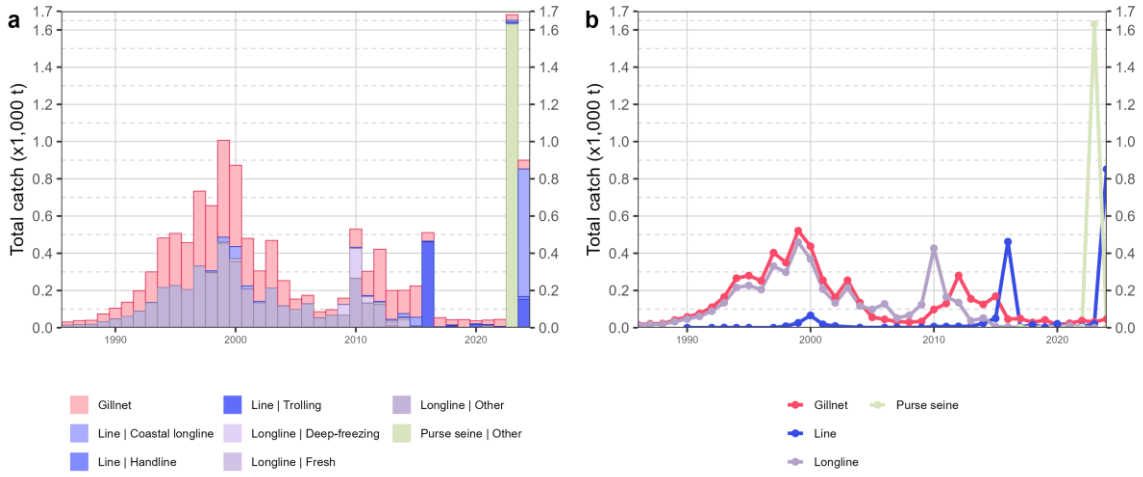


Figure 1 . Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for oceanic whitetip shark during 1950-2024. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

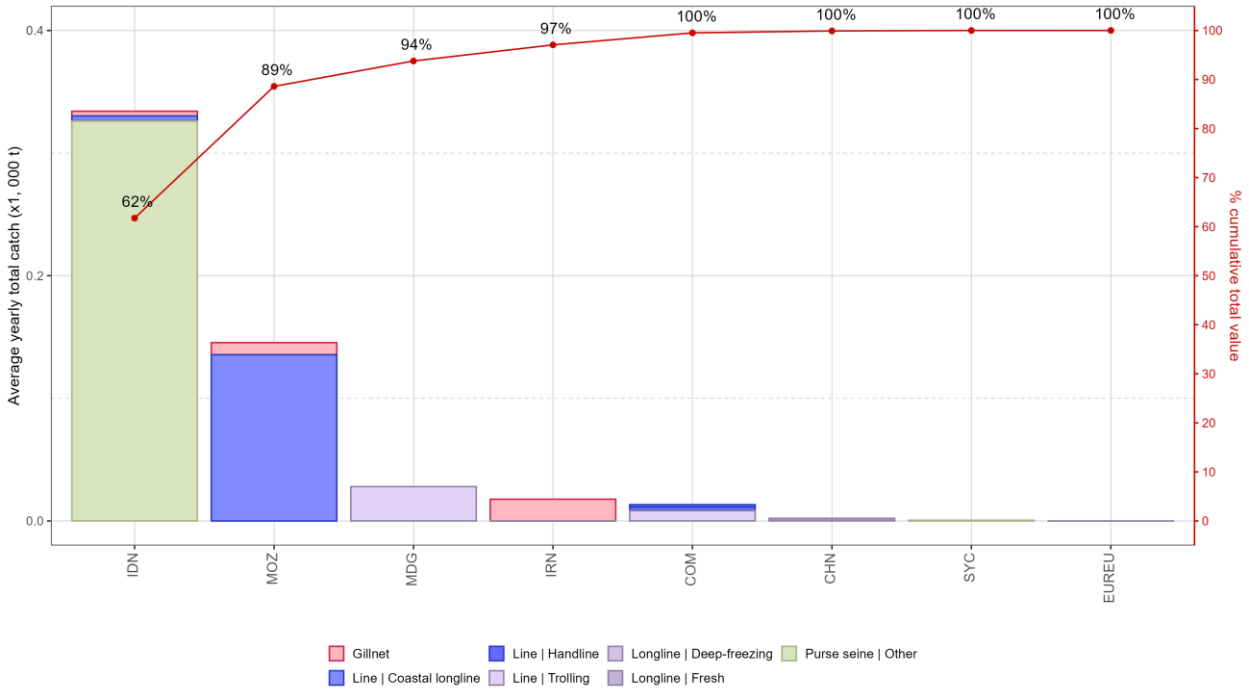


Figure 2. Mean annual retained catches (metric tonnes; t) of oceanic whitetip shark by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

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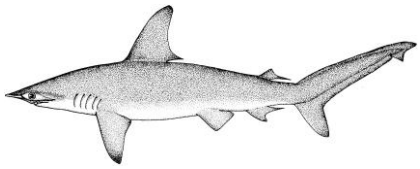
APPENDIX 25
EXECUTIVE SUMMARY: SCALLOPED HAMMERHEAD SHARK (2025)



CITES APPENDIX II species

Table A 1. Status of scalloped hammerhead shark (*Sphyrna lewini*) in the Indian Ocean.

Area[1]	Indicators		2018 stock status determination
Indian Ocean	Reported catch 2024 (t)[3]	1,537	
	Not elsewhere included (nei) sharks[2] 2024 (t)	15,694	
	Average reported catch 2020-24 (t)	766	
	Av. not elsewhere included 2020-2024 (nei) sharks[2] (t)	24,976	
	MSY (1,000 t) (80% CI)	unknown	
	F_{MSY} (80% CI)		
	SB_{MSY} (1,000 t) (80% CI)		
	$F_{current}/F_{MSY}$ (80% CI)		
	$SB_{current}/SB_{MSY}$ (80% CI)		
	$SB_{current}/SB_0$ (80% CI)		

[1]Boundaries for the Indian Ocean = IOTC area of competence

[2]Includes all other shark catches reported to the IOTC Secretariat, which may contain this species (i.e., SKH: Various sharks nei; SPN: Hammerhead sharks nei).

[3]Proportion of catch fully or partially estimated for 2023: 0% All catches within the database were reported by CPCs.

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		

Table A 1. IUCN threat status of scalloped hammerhead shark (*Sphyrna lewini*) in the Indian Ocean.

Common name	Scientific name	IUCN threat status[4]		
		Global status	WIO	EIO
Scalloped hammerhead shark	*Sphyrna lewini*	Critically Endangered	Critically Endangered	–

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: Rigby et al 2019

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. The current IUCN threat status of 'Critically Endangered' applies to scalloped hammerhead sharks globally but specifically for the western Indian Ocean the status is 'Critically Endangered' (**Table A** 1). The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and its susceptibility to each fishing gear type (Murua *et al.* 2018). Scalloped hammerhead shark received a low vulnerability ranking (No. 17) in the ERA rank for longline gear because it was estimated to be one of the least productive shark species but was also characterised by a lower susceptibility to longline gear. Scalloped hammerhead shark was estimated as the twelfth most vulnerable shark species in the ERA ranking for purse seine gear, but with lower levels of vulnerability compared to longline gear, because the susceptibility was lower for purse seine gear. There is a paucity of information available on this species and this situation is not expected to improve in the short to medium term. Scalloped hammerhead sharks are commonly taken by a range of fisheries in the Indian Ocean. They are extremely vulnerable to gillnet and prawn trawl fisheries, especially when these occur in and around nursery areas. Scalloped hammerheads are commonly landed in coastal fisheries in the Western Indian Ocean, and have often been recorded among the species with the highest catches numerically. While species-level catch data are limited for the region, there are several sources of published and unpublished data on catches of this species. Furthermore, pups occupy shallow coastal nursery grounds, often heavily exploited by inshore fisheries. Because of their life history characteristics – they are relatively long lived (over 30 years) and have relativity few offspring (<31 pups each year), the scalloped hammerhead shark is vulnerable to overfishing. The stock status is **unknown** due to a lack of data available for quantitative stock assessment or basic fishery indicators (**Table A**).

Outlook. The marked increase in catches over the previous year (200 t) is due to the breakdown by species reporting this year by Kenya and Tanzania, which previously reported sharks aggregated. Piracy in the western Indian Ocean has resulted in the displacement and subsequent concentration of a substantial portion of longline fishing effort into certain areas in the southern and eastern Indian Ocean. Some longline vessels have returned to their traditional fishing areas in the northwest Indian Ocean, due to the increased security onboard vessels, with the exception of the Japanese fleet which has still not returned to the levels seen before the start of the piracy threat. It is therefore unlikely that catch and effort from longline fleets on scalloped hammerhead shark declined in the southern and eastern areas during this time period and may have resulted in localised depletion there. Mortality from coastal fisheries remain high and unmonitored.

Management advice. Despite the absence of stock assessment information, the Commission should consider taking a cautious approach by implementing some management actions for scalloped hammerhead sharks. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice.

The following key points should be noted:

- **Maximum Sustainable Yield (MSY)**: Unknown.
- **Reference points**: Not applicable.
- **Main fisheries (mean annual retained catch 2020-2024):** scalloped hammerhead are caught using gillnet (53.5%), followed by line (29.8%) and other (16.3%). The remaining catches taken with other gears contributed to 0.4% of the total catches in recent years (Fig.1).
- **Main fleets (mean annual retained catch 2020-2024):** the majority of scalloped hammerhead catches are attributed to vessels flagged to Mozambique (73.9%) followed by Kenya (16.1%) and Sri Lanka (6.7%). The 5 other fleets catching scalloped hammerhead contributed to 3.4% of the total catch in recent years (Fig. 2).

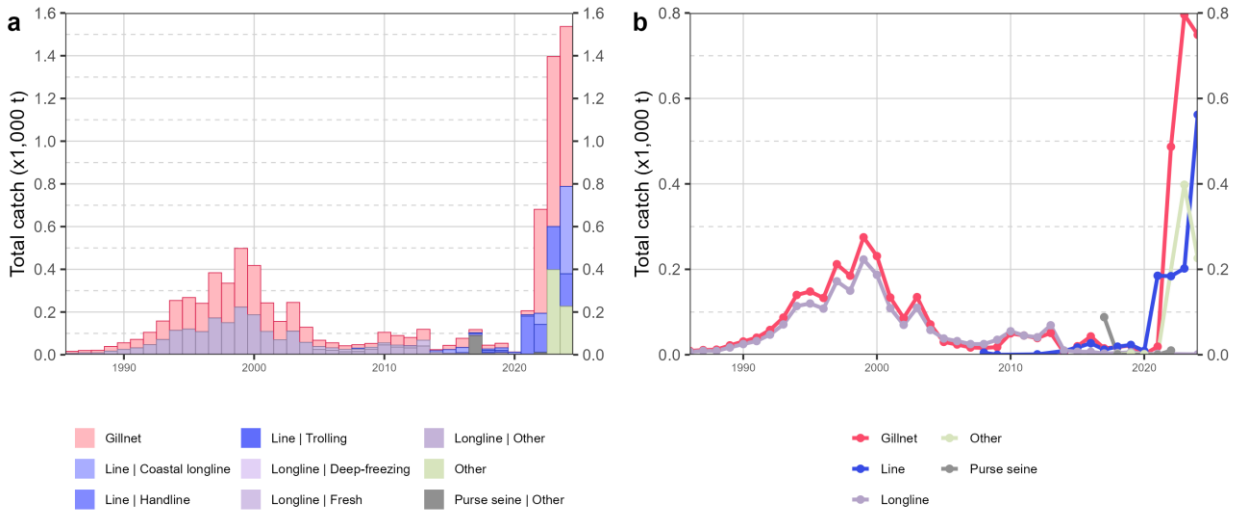


Figure 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for scalloped hammerhead during 1950-2024. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

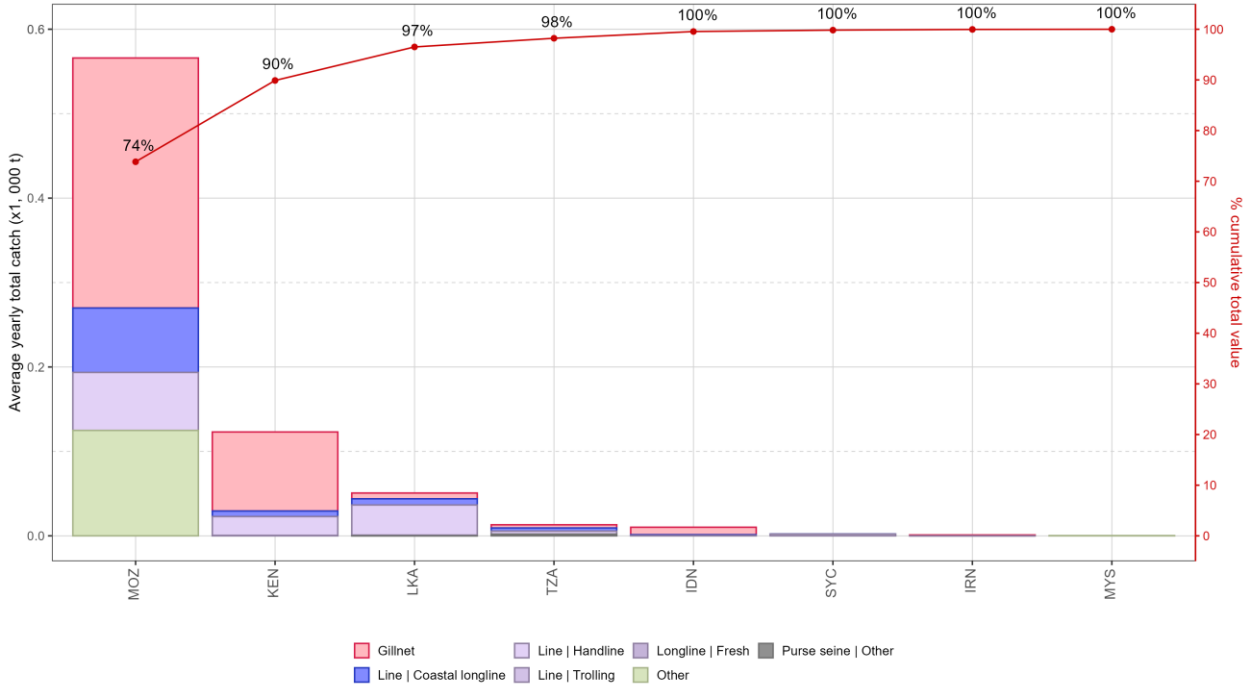


Figure 2. Mean annual retained catches (metric tonnes; t) of scalloped hammerhead by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

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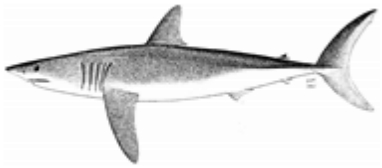
APPENDIX 26
EXECUTIVE SUMMARY: SHORTFIN MAKO SHARK (2025)



CITES APPENDIX II species

Table A 1. Status of shortfin mako shark (*Isurus oxyrinchus*) in the Indian Ocean.

Area[1]	Indicators		2024 stock status determination
Indian Ocean	Catch (2024) (t) Catch of NEI sharks (2024) (t) Mean annual catch (2020-2024) (t) Average catches (SMA, MAK, MSK) 2020-2024 Mean annual catch of NEI sharks (2020-2024) (t)	1,451[2] 16,033[3] 930 25,873[3]	49.7%
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) B_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $B_{current}/B_{MSY}$ (80% CI) $B_{current}/B_0$ (80% CI)	1.93 (0.99 – 3.31) 0.03 (0.01 – 0.07) 60.0 (35.7 – 103.8) 1.53 (0.65 – 3.71) 0.96 (0.58 – 1.41) 0.45 (0.27- 0.69)	

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., AG38: Blue shark, shortfin mako, oceanic whitetip shark; MAK: Mako sharks; MSK: Mackerel sharks,porbeagles nei; SKH: Various sharks nei

Colour key	Stock overfished ($SB_{year}/SB_{MSY} < 1$)	Stock not overfished ($SB_{year}/SB_{MSY} \geq 1$)
Stock subject to overfishing ($F_{year}/F_{MSY} > 1$)	49.7	24.0
Stock not subject to overfishing ($F_{year}/F_{MSY} \leq 1$)	4.1	22.2
Not assessed/Uncertain		

Table A 2. Shortfin mako shark: IUCN threat status of shortfin mako shark (*Isurus oxyrinchus*) in the Indian Ocean.

Common name	Scientific name	IUCN threat status[4]		
		Global status	WIO	EIO
Shortfin mako shark	*Isurus oxyrinchus*	Endangered	–	–

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: Rigby et al 2019

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. In 2024 a stock assessment was carried out for the shortfin mako shark in the IOTC area of competence, using data until 2022. The WPEB carried out a data-preparatory meeting earlier in the year followed by the stock assessment meeting. The model applied was a population biomass dynamics model using the platform JABBA. The stock status and projections were based on an ensemble grid of 9 models designed to capture the main uncertainties relating to biology (3 options) and the shape of the production curve used in biomass dynamics models (3 options). A number of additional options and model configurations were explored as sensitivity runs. The MSY for the stock is estimated at 1,930 t (80% CI: 985 – 3,313 t). The median biomass in 2022 was estimated to be at 45% (80% CI: 27-69%) of the unfished levels and below the levels that support MSY (B/BMSY in 2022 = 0.96, 80% CI: 0.58-1.48) (**Table 1**). The median fishing mortality in 2022 was estimated to be higher than the level that supports MSY (F/FMSY in 2022 = 1.53, 80% CI: 0.65-3.71) (**Table 1**). While in recent years there were a number of CPUE indices to compare, the assessment relied on the Japanese CPUE index which showed a large depletion through the late 1990s and there is no alternative abundance index to compare the extent of this decline during that period. Additionally, although the reported catches of shortfin mako are generally considered to be reliable because this species used to be retained by several fleets, there is still significant uncertainty about the accuracy of reports from earlier years. This uncertainty also applies to more recent years (post-2018) due to discarding or non-retention.

A semi-quantitative ecological risk assessment (ERA) was conducted for the Indian Ocean by the WPEB and SC in 2018 to evaluate the resilience of shark species to the impact of pelagic fisheries (Murua *et al.* 2018). Shortfin mako sharks received the highest vulnerability ranking in the ERA for longline gear (No. 1) because of their low productivity and high susceptibility to longline gear, and were ranked the fourth most vulnerable shark species for purse seine gear. Considering the characterized uncertainty, and on the weight-of-evidence available in 2024, the shortfin mako shark stock is determined to be **overfished** and subject to **overfishing** (**Table 1, Fig 3**).

Outlook. Catches increased mostly from the mid-1980s up to 2016 followed by a decrease until 2022 as it has been under domestic landing restrictions by a number of fleets, and as a result of it having been listed in CITES Appendix II. The CPUE series for several key fleets which have been available since the early 2000s are generally stable or are increasing.

Management advice The Commission should take a cautious approach by implementing management actions that reduce fishing mortality on shortfin mako sharks, and the stock should be closely monitored. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform future scientific advice. The Kobe II Strategy Matrix (Table 3) provides the probability of exceeding reference levels over 3-, 10-, 20- and 30-year periods, over a range of TAC options established as a percentage of current catches. Catches at the terminal year of the model (2022) were higher than MSY, and the shortfin mako is currently overfished (B/Bmsy < 1) and undergoing overfishing (F/Fmsy > 1). Under those levels of catches, the biomass will continue to decline, and fishing mortality will continue to increase over time. In order to have a lower than 50% probability of exceeding MSY-reference points in 10 years, i.e., to recover the stock to the green quadrant of the Kobe plot with at least 50% probability in 10 years, future catches should not exceed 40% of the average catches between 2020-2022 (i.e., last 3 year of catches used in the model). This corresponds to an annual TAC of 1,217.2 t (representing all fishing mortality including retention, dead discards and post-release mortality), noting that this TAC level should include and account for the SMA, MAK and MSK species codes as reported to IOTC.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: estimate for the Indian Ocean is approximately 1,930 t
- **Reference points**: The Commission has not adopted reference points or harvest control rules for any shark species.
- **Main fisheries (mean annual retained catch 2020-2024):** shortfin mako are caught using longline (62%), followed by gillnet (27.4%) and other (7.2%). The remaining catches taken with other gears contributed to 3.3% of the total catches in recent years (Fig. 1).

- **Main fleets (mean annual retained catch 2020-2024):** the majority of shortfin mako catches are attributed to vessels flagged to EU (Spain) (38.9%) followed by Pakistan (24.3%) and EU (Portugal) (11.6%). The 13 other fleets catching shortfin mako contributed to 25.2% of the total catch in recent years (Fig. 2).

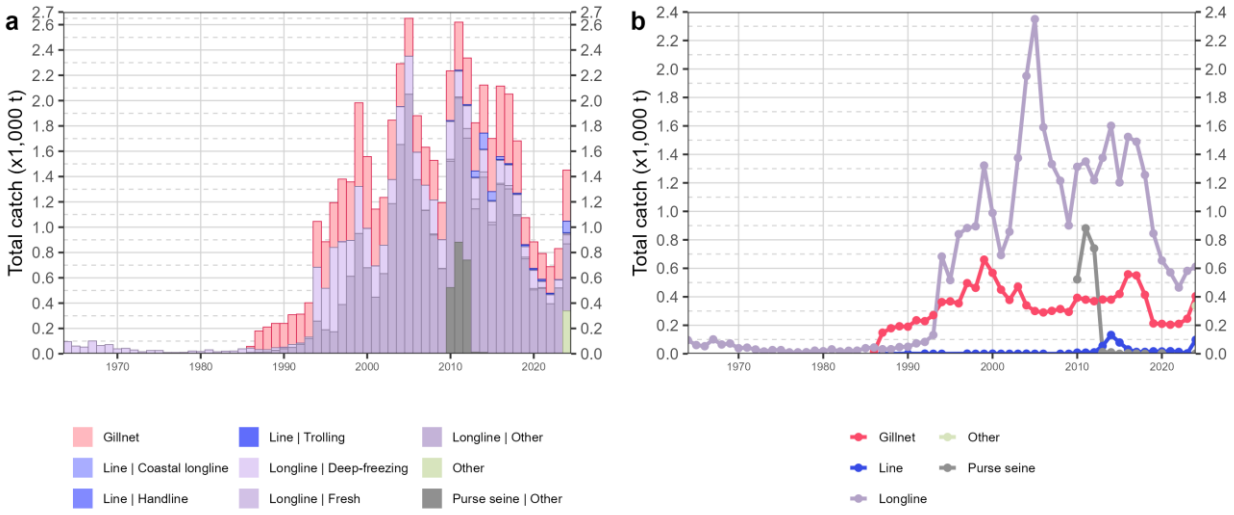


Figure 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for shortfin mako during 1950-2024. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears

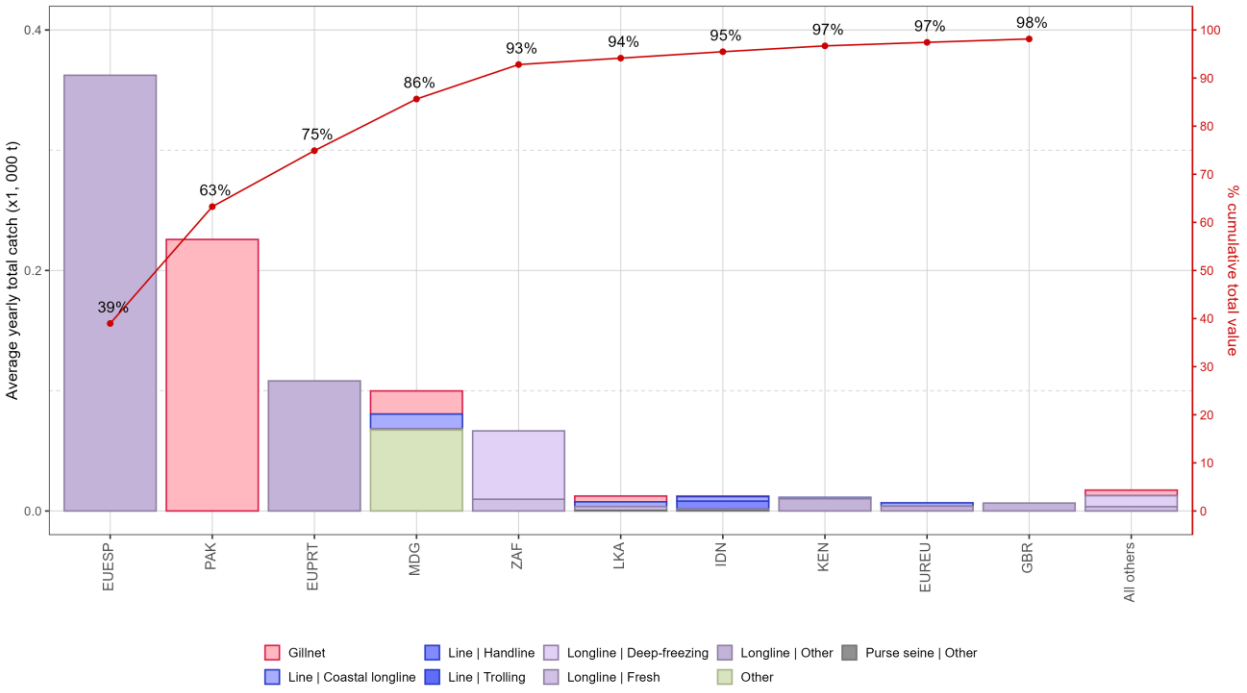


Figure 2. Mean annual retained catches (metric tonnes; t) of shortfin mako by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gear

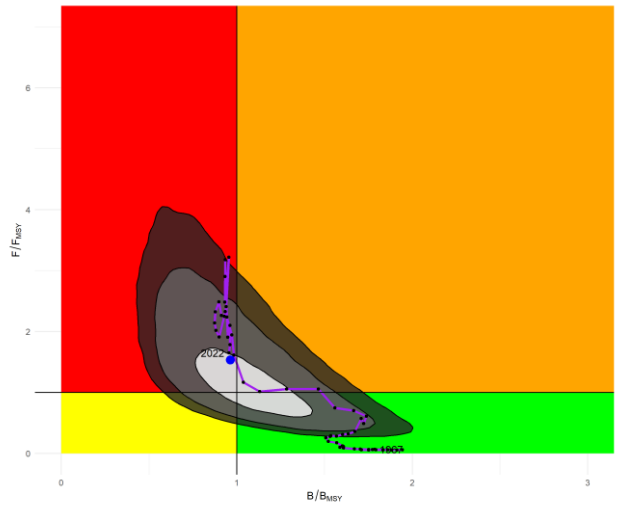


Fig 3: **Shortfin mako**: 2024 stock status, relative to BMSY (x-axis) and FMSY (y-axis) for the final model (terminal year of the model is 2022). The point represents the median of the 9 final models used in the ensemble grid and the shaded areas are the 50%, 80% and 90% contours of the uncertainties in the terminal year. The line represents the time series of the median stock trajectory from the ensemble grid of models.

Table 3. **Shortfin mako**: Final model ensemble aggregated Indian Ocean Kobe II Strategy Matrix. The values represent the probabilities (percentage) of exceeding the MSY-based target reference points, for constant catch projections between 0%-100% (10% intervals) relative to last years of catches used in the model (i.e., average of last 3 years, 2020-2022), and projected for periods of 3, 10, 20 and 30 years.

Reference point and projection time	**Catch projections (relative to the 2020-2022 catches) and probability (%) of exceeding MSY-based reference points**										
Catch relative to 2020-2022 (%)	**0%**	**10%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**100%**
TAC (t)	**0.0**	**304.3**	**608.6**	**912.9**	**1217.2**	**1521.5**	**1825.7**	**2130.0**	**2434.3**	**2738.6**	**3042.9**
3 year projection											
B2025 < BMSY	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7
F2025 > FMSY	0.0	1.5	9.6	21.7	34.1	45.3	55.1	63.2	70.0	75.7	80.2
10 year projection											
B2032 < BMSY	39.2	41.8	44.5	47.1	49.8	52.5	55.2	57.9	60.6	63.2	65.8
F2032 > FMSY	0.0	2.0	10.0	21.2	32.8	43.8	53.6	62.2	69.5	75.6	80.6
20 year projection											
B2042 < BMSY	26.1	30.0	34.4	39.1	44.0	49.0	54.1	59.1	64.0	68.6	72.9
F2042 > FMSY	0.0	2.4	10.2	20.6	31.9	42.8	52.9	62.0	69.9	76.5	81.8
30 year projection											
B2052 < BMSY	19.3	23.9	29.0	34.9	41.2	47.7	54.3	60.7	66.7	72.3	77.3
F2052 > FMSY	0.0	2.6	10.2	20.4	31.6	42.6	53.1	62.4	70.6	77.5	83.0

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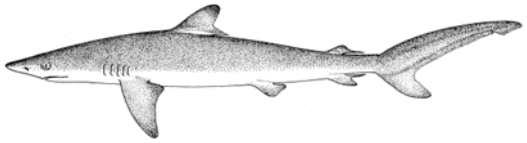
Rigby, C.L., Barreto, R., Carlson, J., Fernando, D., Fordham, S., Francis, M.P., Jabado, R.W., Liu, K.M., Marshall, A., Pacoureau, N., Romanov, E., Sherley, R.B. & Winker, H. 2019. Isurus oxyrinchus. The IUCN Red List of Threatened Species 2019: e.T39341A2903170. https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T39341A2903170.en. Accessed on 06 December 2023.

APPENDIX 27
EXECUTIVE SUMMARY: SILKY SHARK (2025)



CITES APPENDIX II species

Table A 1. Status of silky shark (*Carcharhinus falciformis*) in the Indian Ocean.

Area[1]	Indicators		2018 stock status determination
Indian Ocean	Catch (2024) (t) Catch of NEI sharks (2024) (t) Mean annual catch (2020-2024) (t) Mean annual catch of NEI sharks (2020-2024) (t)	1,591[2] 15,742[3] 2,062 24,929[3]	
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $SB_{current}/SB_{MSY}$ (80% CI) $SB_{current}/SB_0$ (80% CI)	unknown	

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., RSK: Requiem sharks nei; SKH: Various sharks nei

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		

Table A 2. Silky shark: IUCN threat status of silky shark (*Carcharhinus falciformis*) in the Indian Ocean.

Common name	**Scientific name**	**IUCN threat status[4]**		
		Global status	**WIO**	**EIO**
Silky shark	*Carcharhinus falciformis*	Vulnerable	-	-

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources Rigby 2021

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. There remains considerable uncertainty about the relationship between abundance and the nominal CPUE series from the main longline fleets, and about the total catches over the past decade (**Table** A **A1**). The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and its susceptibility to each fishing gear type (Murua *et al.* 2018). Silky shark received a high vulnerability ranking (No. 2) in the ERA rank for longline gear because it was estimated to be one of the least productive shark species, and with a high susceptibility to longline gear. Silky shark was estimated to be the fifth most vulnerable shark species in the ERA ranking for purse seine gear, due to its low productivity and high susceptibility to purse seine gear. The current IUCN threat status of this species globally is 'Vulnerable' (**Table** A **A2**). There is a paucity of information available on this species, but several studies have been carried out for this species in the recent years. CPUE derived from longline fishery observations indicated a decrease from 2009 to 2011 with a stable pattern onward. A preliminary stock assessment was run in 2018 but could not be updated in 2019. This assessment is extremely uncertain, however, and so the population status of silky sharks in the Indian Ocean is considered uncertain. Silky sharks are commonly taken by a range of fisheries in the Indian Ocean. Because of their life history characteristics – they are relatively long lived (over 20 years), mature relatively late (at 6–12 years), and have relativity few offspring (<20 pups every two years), the silky shark can be vulnerable to overfishing. Despite the lack of data, there is some anecdotal information suggesting that silky shark abundance has declined over recent decades, including from Indian longline research surveys, which are described in the IOTC Supporting Information for silky shark sharks. There is no quantitative stock assessment or basic fishery indicators currently available for silky shark in the Indian Ocean therefore the stock status is **unknown**.

Outlook. The impact of piracy in the western Indian Ocean has resulted in the displacement and subsequent concentration of a substantial portion of longline fishing effort into certain areas in the southern and eastern Indian Ocean. Some longline vessels have returned to their traditional fishing areas in the northwest Indian Ocean, due to the increased security onboard vessels, with the exception of the Japanese fleet which has still not returned to the levels seen before the start of the piracy threat. It is therefore unlikely that catch and effort on silky shark has declined in the southern and eastern areas and may have resulted in localised depletion there.

Management advice. Despite the absence of stock assessment information, the Commission should consider taking a cautious approach by implementing some management actions for silky sharks. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice.

Mitigation measures should be taken to reduce at-vessel and post release mortality, including consideration of potential gear modifications in longline fleets targeting tuna and swordfish. Noting that a recent study (Bigelow et al. 2021) concluded in WCPFC that banning both shark lines and wire leaders has the potential to reduce fishing mortality by 30.8% for silky shark.

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: Unknown.
- **Reference points**: Not applicable.
- **Main fisheries (mean annual retained catch 2020-2024)**: silky shark are caught using gillnet (32.7%), followed by line (29%) and longline (21%). The remaining catches taken with other gears contributed to 17.3% of the total catches in recent years (Fig. 1).
- **Main fleets (mean annual retained catch 2020-2024):** the majority of silky shark catches are attributed to vessels flagged to Indonesia (26.4%) followed by Sri Lanka (20.2%) and Taiwan,China (14.6%). The 9 other fleets catching silky shark contributed to 38.7% of the total catch in recent years (Fig. 2).

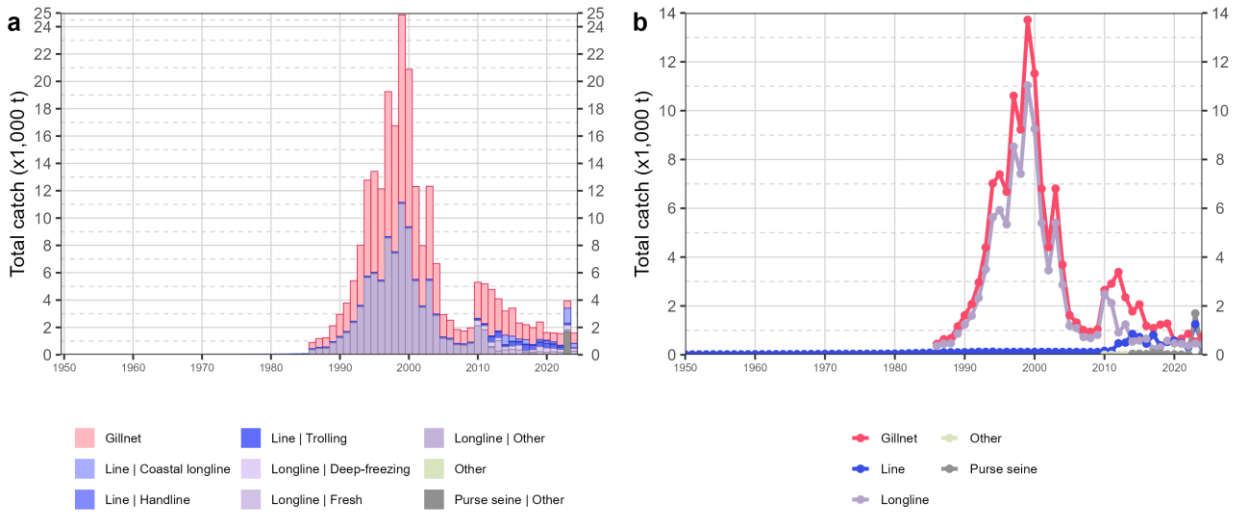


Figure 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for silky shark during 1950-2024. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

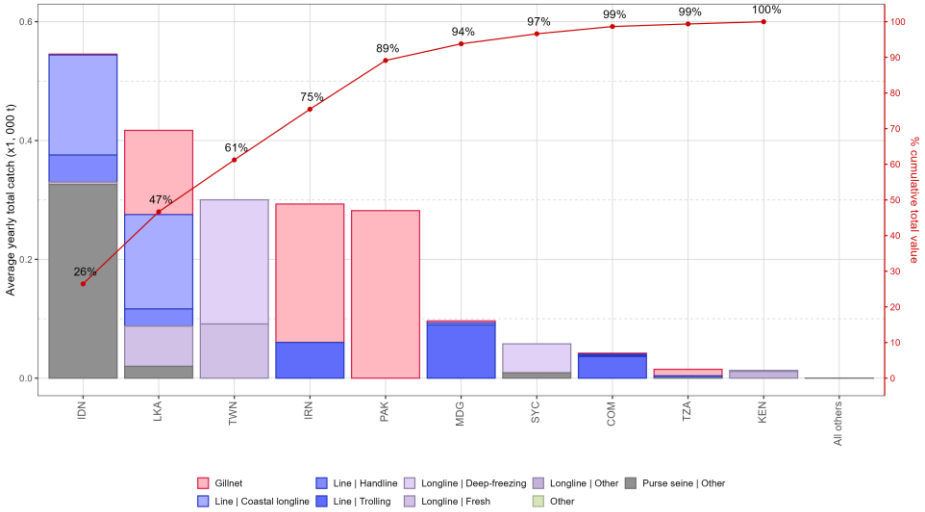


Figure 2. Mean annual retained catches (metric tonnes; t) of silky shark by fleet and fishery between 2020 and 2024, with indication of cumulative catches by fleet. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine | Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears.

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APPENDIX 28
EXECUTIVE SUMMARY: BIGEYE THRESHER SHARK (2025)

Table 1. Status bigeye thresher shark (*Alopias superciliosus*) in the Indian Ocean.

Area[1]	Indicators		2018 stock status determination
Indian Ocean	Reported catch 2023 (t) Not elsewhere included (nei) sharks[2] 2023 (t) Thresher sharks nei 2023 (t) Average reported catch 2019-23 (t) Av. Not elsewhere included (nei) sharks[2] 2019-23 (t) Av. Thresher sharks nei 2019-23 (t)	< 1 33,200 4,863 < 1 33,848 5,108	
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $SB_{current}/SB_{MSY}$ (80% CI) $SB_{current}/SB_0$ (80% CI)	unknown	

[1]Boundaries for the Indian Ocean = IOTC area of competence

[2]Includes all other shark catches reported to the IOTC Secretariat, which may contain this species (i.e., SKH: Various sharks nei;THR: Thresher sharks nei; MSK: Mackerel sharks,porbeagles nei).

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		

Table 2. Bigeye thresher shark: IUCN threat status of bigeye thresher shark (*Alopias superciliosus*) in the Indian Ocean.

Common name	**Scientific name**	**IUCN threat status[3]**		
		Global status	**WIO**	**EIO**
Bigeye thresher shark	*Alopias superciliosus*	Vulnerable	-	-

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[3]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: IUCN Red List 2020, Rigby et al 2019

INDIAN OCEAN STOCK - MANAGEMENT ADVICE

Stock status. There remains considerable uncertainty in the stock status due to lack of information necessary for assessment or for the development of other indicators of the stock (**Table 1**). The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and its susceptibility to each fishing gear type (Murua *et al.* 2018). Bigeye thresher shark received a high vulnerability ranking (No. 4) in the ERA rank for longline gear because it was characterised as one of the least productive shark species, and highly susceptible to longline gear. Despite its low productivity, bigeye thresher shark has a low vulnerability ranking to purse seine gear due to its low susceptibility to this particular gear. The current IUCN threat status of 'Vulnerable' applies to bigeye thresher shark globally (**Table 2**). There is a paucity of information available on this species and this situation is not expected to improve in the short to medium term. Bigeye thresher sharks are commonly taken by a range of fisheries in the Indian Ocean. Because of their life history characteristics - they are relatively long lived (+20 years), mature at 3-9 years, and have few offspring (2-4 pups every year), the bigeye thresher shark is vulnerable to overfishing. There has been no quantitative stock assessment and limited basic fishery indicators are available for bigeye thresher shark in the Indian Ocean. Therefore, the stock status is **unknown**.

Outlook. Current longline fishing effort is directed at other species, however, bigeye thresher sharks are commonly taken as bycatch in these fisheries. Hooking mortality is apparently very high, therefore IOTC Resolution 12/09 prohibiting retaining of any part of thresher sharks onboard and promoting live release of thresher shark may be largely ineffective for species conservation. Maintaining or increasing effort can result in declines in biomass, productivity and CPUE. However, there are few data to estimate CPUE trends and a reluctance of fishing fleets to report information on discards/non-retained catch. Piracy in the western Indian Ocean resulted in the displacement and subsequent concentration of a substantial portion of longline fishing effort into other areas in the southern and eastern Indian Ocean. Some longline vessels have returned to their traditional fishing areas in the northwest Indian Ocean, due to the increased security onboard vessels, with the exception of the Japanese fleet which has still not returned to the levels seen before the start of the piracy threat. It is therefore unlikely that catch and effort on bigeye thresher shark declined in the southern and eastern areas over that time period, potentially resulting in localised depletion.

Management advice. The prohibition on retention of bigeye thresher shark should be maintained. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 12/09 *On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of competence*, prohibits retention onboard, transhipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family *Alopiidae*[6].The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: Not applicable. Retention prohibited.
- **Reference points**: Not applicable.
- **Main fishing gear** (2018-22): No report after 2012. (reported as discard from longline - records from submissions by CHN, IDN, ZAF, Eu FRA, KEN and KOR).
- **Main reporting fleets** (2018-22): India; (reported as discarded/released alive by United Kingdom, South Africa, Indonesia, Korea, EU,France).

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[6] Scientific observers shall be allowed to collect biological samples from thresher sharks that are dead at haulback, provided that the samples are part of the research project approved by the Scientific Committee (or the Working Party on Ecosystems and Bycatch).

Rigby CL, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Herman K, Jabado RW, Liu KM, Marshall, A., Pacoureau, N., Romanov, E., Sherley, R.B. & Winker, H. 2019. Alopias superciliosus. The IUCN Red List of Threatened Species 2019: e.T161696A894216. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T161696A894216.en. Accessed on 06 December 2023.

APPENDIX 29
EXECUTIVE SUMMARY: PELAGIC THRESHER SHARK (2025)

CITES APPENDIX II species

Table A 1. Status pelagic thresher shark (*Alopias pelagicus*) in the Indian Ocean.

Area[1]	Indicators		2018 stock status determination
Indian Ocean	Catch (2024) (t) Catch of NEI sharks (2024) (t) Mean annual catch (2020-2024) (t) Mean annual catch of NEI sharks (2020-2024) (t)	145[2] 15,559[3] 149 24,976[3]	
	MSY (1,000 t) (80% CI) F_{MSY} (80% CI) SB_{MSY} (1,000 t) (80% CI) $F_{current}/F_{MSY}$ (80% CI) $SB_{current}/SB_{MSY}$ (80% CI) $SB_{current}/SB_0$ (80% CI)	unknown	

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., MSK: Mackerel sharks,porbeagles nei; SKH: Various sharks nei; THR: Thresher sharks nei

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		

Table A 2. Pelagic thresher shark: IUCN threat status of pelagic thresher shark (*Alopias pelagicus*) in the Indian Ocean.

Common name	**Scientific name**	**IUCN threat status[4]**		
		Global status	**WIO**	**EIO**
Pelagic thresher shark	*Alopias pelagicus*	Endangered	–	–

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: Rigby et al 2019

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. There remains considerable uncertainty in the stock status due to lack of information necessary for assessment or for the development of other indicators (**Table** A 1**1**). The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and susceptibility to each fishing gear type (Murua *et al.* 2018). Pelagic thresher shark received a medium vulnerability

ranking (No. 12) in the ERA for longline gear because it was characterised as one of the least productive shark species, and with a medium susceptibility to longline gear. Due to its low productivity, pelagic thresher shark has a high vulnerability ranking (No. 2) to purse seine gear due to its high availability for this particular gear. The current IUCN threat status of 'Endangered' applies to pelagic thresher shark globally (**Table** A **2**). There is a paucity of information available on this species and this situation is not expected to improve in the short to medium term. Pelagic thresher sharks are commonly taken by a range of fisheries in the Indian Ocean. Because of their life history characteristics – they are relatively long lived (+ 20 years), mature at 8–9 years, and have few offspring (2 pups every year–) - the pelagic thresher shark is vulnerable to overfishing. There is no quantitative stock assessment and limited basic fishery indicators are currently available for pelagic thresher shark in the Indian Ocean. Therefore, the stock status is **unknown.**

Outlook. Current longline fishing effort is directed at other species, however, pelagic thresher sharks are commonly taken as bycatch in these fisheries. Hooking mortality is apparently very high, therefore IOTC Resolution 12/09 prohibiting retaining of any part of thresher sharks onboard and promoting life release of thresher shark may be largely ineffective for species conservation. Maintaining or increasing effort can result in declines in biomass, productivity and CPUE. However, there are few data to estimate CPUE trends, and a reluctance of fishing fleets to report information on discards/non-retained catch. Piracy in the western Indian Ocean resulted in the displacement and subsequent concentration of a substantial portion of longline fishing effort into other areas in the southern and eastern Indian Ocean. Some longline vessels have returned to their traditional fishing areas in the northwest Indian Ocean, due to the increased security onboard vessels, with the exception of the Japanese fleet which has still not returned to the levels seen before the start of the piracy threat. It is therefore unlikely that catch and effort on pelagic thresher shark declined in the southern and eastern areas over that time period, potentially resulting in localised depletion there.

Management advice. The prohibition on the retention of pelagic thresher shark should be maintained. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 12/09 *On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of competence*, prohibits retention onboard, transhipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family *Alopiidae*[7].The following key points should also be noted:

- **Maximum Sustainable Yield (MSY):** Not applicable. Retention prohibited.
- **Reference points**: Not applicable.
- **Main fisheries (mean annual retained catch 2020-2024):** pelagic thresher are caught using gillnet (100%) in recent years(Fig. 1).
- **Main fleets (mean annual retained catch 2020-2024):** Allpelagic thresher catches are attributed to vessels flagged to Pakistan (100%)

[7]Scientific observers shall be allowed to collect biological samples from thresher sharks that are dead at haulback, provided that the samples are part of the research project approved by the Scientific Committee (or the Working Party on Ecosystems and Bycatch).

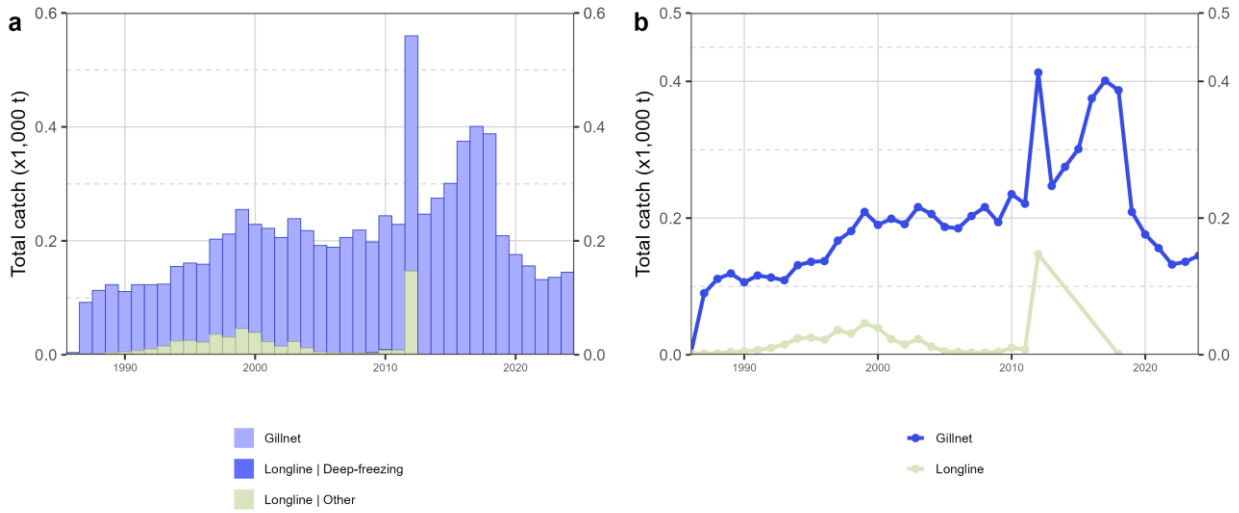

Figure 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for pelagic thresher during 1950-2024. Longline | Other: swordfish and sharks-targeted longlines

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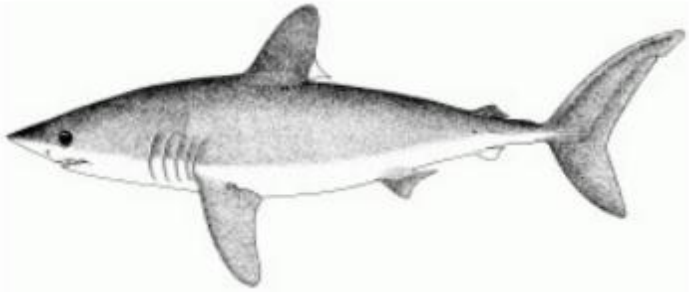
APPENDIX 30
EXECUTIVE SUMMARY: PORBEAGLE SHARK (2025)



CITES APPENDIX II species

Table 3. Status of porbeagle shark (*Lamna nasus*) in the Indian Ocean

Area	Indicators		2024 stock status determination
Indian Ocean	Catch (2024) (t) Catch of NEI sharks (2024) (t) Mean annual catch (2020-2024) (t) Mean annual catch of NEI sharks (2020-2024) (t)	<1 15,559t [2] <1t 24,593t [2]	Unknown
	MSY (1,000 t) (80% CI)[2] F_{MSY} (80% CI) [2] SB_{MSY} (1,000 t) (80% CI) [2,3] F_{2019}/F_{MSY} (80% CI) [2] SB_{2019}/SB_{MSY} (80% CI) [2,3] SB_{2019}/SB_0 (80% CI) [2,3]		

[1]Stock boundaries defined as the IOTC area of competence; [2]Proportion of catch fully or partially estimated for 2024: 0%; [3]NEI includes all other shark catches reported to the IOTC Secretariat, which may contain this species, i.e., MSK: Mackerel sharks,porbeagles nei; SKH: Various sharks nei; THR: Thresher sharks nei

Colour key	Stock overfished (SB_{2019}/SB_{MSY}< 1)	Stock not overfished (SB_{2019}/SB_{MSY}≥ 1)
Stock subject to overfishing(F/F_{MSY}> 1)		
Stock not subject to overfishing (F/F_{MSY}≤ 1)		
Not assessed/Uncertain		

Table 4. Porbeagle shark: IUCN threat status of porbeagle shark (*Lamna nasus*) in the Indian Ocean.

Common name	Scientific name	IUCN threat status[4]
		Global status
Porbeagle shark	*Lamna nasus*	Vulnerable

IUCN = International Union for Conservation of Nature; WIO = Western Indian Ocean; EIO = Eastern Indian Ocean

[4]The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

Sources: Rigby et al., 2019

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No stock assessment was carried out for porbeagle sharks in 2024. There remains considerable uncertainty in the stock status due to lack of information necessary for assessment or for the development of other indicators of the stock. The ecological risk assessment (ERA) conducted for the Indian Ocean by the WPEB and SC in 2018 consisted of a semi-quantitative risk assessment analysis to evaluate the resilience of shark species to the impact of a given fishery, by combining the biological productivity of the species and its susceptibility to each fishing gear type (Murua *et al.* 2018). Porbeagle shark received a high vulnerability ranking (No. 3) in the ERA rank for longline gear because it was characterised as one of the least productive shark species, and highly susceptible to longline gear. Despite its low productivity, porbeagle shark has a low vulnerability ranking to purse seine gear due to its low susceptibility to this particular gear. The current IUCN threat status of 'Vulnerable' applies to porbeagle shark globally. There is a paucity of information available on this species and this situation is not expected to improve in the short to medium term. Porbeagle sharks are commonly taken by a range of fisheries in the Indian Ocean. Because of their life history characteristics – they are relatively long lived (+30 years), mature at around 15 years, and have few offspring (around 4 pups every one or two years), the porbeagle shark is vulnerable to overfishing. There has been no quantitative stock assessment and limited basic fishery indicators are available for porbeagle shark in the Indian Ocean. Therefore, the stock status is **unknown**.

Outlook. Current longline fishing effort is directed at other species, however, porbeagle sharks are taken as bycatch in these fisheries but it may be released by some fleets. Maintaining or increasing effort can result in declines in biomass, productivity and CPUE. However, there are few data to estimate CPUE trends and a reluctance of fishing fleets to report information on discards/non-retained catch. Preliminary analysis of IOTC catch and effort data from the Japanese and Korean fleets found catchability to have declined from 2009 through 2018 (IOTC-2023-WPEB19-20). The Japanese fleet releases porbeagle sharks caught by longline vessels which may be a reason for the decline in catches of this species.

Management advice.

While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice. This is considered to be a vulnerable species

The following key points should also be noted:

- **Maximum Sustainable Yield (MSY)**: Unknown
- **Reference points**: The Commission has not adopted reference points or harvest control rules for any shark species.
- **Main fishing gear**: Catches not reported since 2019, previous reports from Longline (deep-freezing) and coastal longline. (Fig 1)
- **Main fleets** : Seychelles and Taiwan, China

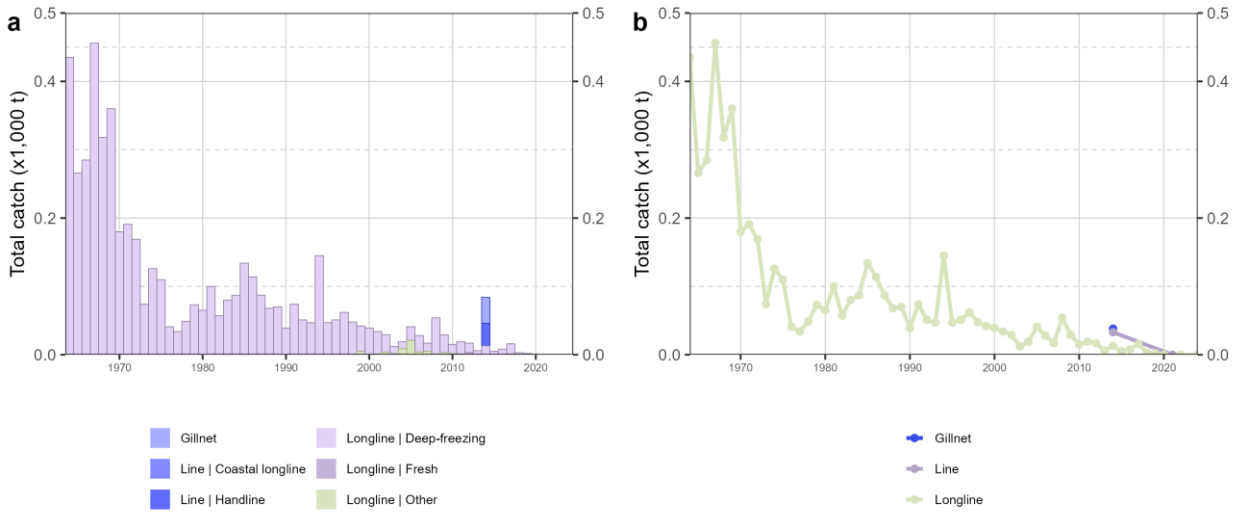


Figure 1. Annual time series of (a) cumulative retained catches (metric tonnes; t) by fishery and (b) individual retained catches (metric tonnes; t) by fishery group for porbeagle shark during 1950-2024. Longline | Other: swordfish and sharks-targeted longlines

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APPENDIX 31
EXECUTIVE SUMMARY: MARINE TURTLES (2025)

Table A 1. Marine turtles: IUCN threat status for all marine turtle species reported as caught in fisheries within the IOTC area of competence.

Common name	Scientific name	IUCN threat status[8]
Flatback turtle	*Natator depressus*	Data deficient
Green turtle	*Chelonia mydas*	Endangered
Hawksbill turtle	*Eretmochelys imbricata*	Critically Endangered
Leatherback turtle	*Dermochelys coriacea*	Vulnerable (Globally)
	(N. East Indian Ocean subpopulation)	Data deficient
	(S. West Indian Ocean subpopulation)	Critically Endangered
Loggerhead turtle	*Caretta caretta*	Vulnerable (Globally)
	(N. West Indian Ocean subpopulation)	Critically Endangered
	(S. East Indian Ocean subpopulation)	Near Threatened
Olive Ridley turtle	*Lepidochelys olivacea*	Vulnerable

Sources: Marine Turtle Specialist Group 1996, Red List Standards & Petitions Subcommittee 1996, Sarti Martinez (Marine Turtle Specialist Group) 2000, Seminoff 2004, Abreu-Grobois & Plotkin 2008, Mortimer et al. 2008, IUCN 2020, The IUCN Red List of Threatened species. <www.iucnredlist.org>. Downloaded on 16 September 2020

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No assessment has been undertaken by the IOTC WPEB for marine turtles due to the lack of data being submitted by CPCs. However, the current International Union for Conservation of Nature (IUCN) threat status for each of the marine turtle species reported as caught in IOTC fisheries to date is provided in **Table** A **1**. It is important to note that a number of international global environmental accords (e.g., Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD), as well as numerous fisheries agreements obligate States to provide protection for these species. In particular, there are now 35 Signatories to the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA MoU). Of the 35 Signatories to the IOSEA MoU, 25 are also members of the IOTC. While the status of marine turtles is affected by a range of factors such as degradation of marine turtle natural habitats and targeted harvesting of eggs and turtles, the level of mortality of marine turtles due to capture by gillnets is likely to be substantial as shown by the Ecological Risk Assessment (ERA) presented in 2018 (Williams et al., 2018). Stock assessments of all species of marine turtles in the Indian Ocean are limited due to data insufficiencies as well as limited data quality (Wallace et al., 2011). Bycatch and mortality from gillnet fisheries have greater population-level impacts on marine turtles relative to other gear types, such as longline, purse seine and trawl fisheries in the Indian Ocean (Wallace et al., 2013). Population levels of impacts of leatherback turtles caught in longline gear in the Southwest Indian Ocean were also identified as a conservation priority.

Outlook. Resolution 12/04 *On the conservation of marine turtles* includes an annual evaluation requirement (para. 17) by the Scientific Committee (SC). However, given the lack of reporting of marine turtle interactions by CPCs to date, such an evaluation cannot be undertaken. Unless IOTC CPCs become compliant with the data collection and reporting requirements for marine turtles, the WPEB and the SC will continue to be unable to address this issue. So far, reporting

[8] IUCN, 2020. The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

of sea turtle interactions are not described at the species level. It is recommended that CPCs now declare interactions indicating the sea turtle species. Guides for species identification are available at http://iotc.org/science/species-identification-cards. Notwithstanding this, it is acknowledged that the impact on marine turtle populations from fishing for tuna and tuna-like species will increase as fishing pressure increases, and that the status of the marine turtle populations will continue to worsen due to other factors such as an increase in fishing pressure from other fisheries or anthropological or climatic impacts.

The following should also be noted:

1. The available evidence indicates considerable risk to marine turtles in the Indian Ocean.
2. Given the high mortality rates associated with marine turtle interactions with gillnet fisheries and the increasing use of gillnets in the Indian Ocean (Aranda, 2017) there is a need to both assess and mitigate impacts on threatened and endangered marine turtle populations.
3. The primary sources of data that drive the ability of the WPEB to determine a status for the Indian Ocean, total interactions by fishing vessels or in net fisheries, are highly uncertain and should be addressed as a matter of priority.
4. Current reported interactions are known to be a severe underestimate.
5. The Ecological Risk Assessment (Nel et al., 2013) estimated that ~3,500 and ~250 marine turtles are caught by longline and purse seine vessels, respectively, per annum, with an estimated 75% of turtles released alive[7]. The ERA set out two separate approaches to estimate gillnet impacts on marine turtles, based on very limited data. The first calculated that 52,425 marine turtles p.a. and the second that 11,400–47,500 turtles p.a. are caught in gillnets (with a mean of the two methods being 29,488 marine turtles p.a.). Anecdotal/published studies reported values of >5000–16,000 marine turtles p.a. for each of India, Sri Lanka and Madagascar. Of these reports, green turtles are under the greatest pressure from gillnet fishing, constituting 50–88% of catches for Madagascar. Loggerhead, hawksbill, leatherback and olive Ridley turtles are caught in varying proportions depending on the region, season and type of fishing gear.
6. Maintaining or increasing fishing effort in the Indian Ocean without appropriate mitigation measures in place, will likely result in further declines in marine turtle populations.
7. Efforts should be undertaken to encourage CPCs to investigate means to reduce marine turtle bycatch and at-vessel and post-release mortality in IOTC fisheries and improve data collection and reporting for marine turtles. This may include alternative data collection mechanisms such as skipper-based reporting, port sampling and cost-effective electronic monitoring systems.

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APPENDIX 32
EXECUTIVE SUMMARY: SEABIRDS (2025)

Table A 1. IUCN threat status for all seabird species reported as caught in fisheries within the IOTC area of competence.

Common name	Scientific name	IUCN threat status[9]
Albatross		
Atlantic Yellow-nosed Albatross	*Thalassarche chlororhynchos*	Endangered
Black-browed albatross	*Thalassarche melanophris*	Least Concern
Indian yellow-nosed albatross	*Thalassarche carteri*	Endangered
Shy albatross	*Thalassarche cauta*	Near Threatened
Sooty albatross	*Phoebetria fusca*	Endangered
Light-mantled albatross	*Phoebetria palpebrata*	Near Threatened
Amsterdam albatross	*Diomedea amsterdamensis*	Endangered
Tristan albatross	*Diomedea dabbenena*	Critically Endangered
Wandering albatross	*Diomedea exulans*	Vulnerable
White-capped albatross	*Thalassarche steadi*	Near Threatened
Grey-headed albatross	*Thalassarche chrysostoma*	Endangered
Petrels		
Cape/Pintado petrel	*Daption capense*	Least Concern
Great-winged petrel	*Pterodroma macroptera*	Least Concern
Grey petrel	*Procellaria cinerea*	Near Threatened
Southern giant petrel	*Macronectes giganteus*	Least Concern
Northern giant-petrel	*Macronectes halli*	Least Concern
White-chinned petrel	*Procellaria aequinoctialis*	Vulnerable
Others		
Cape gannet	*Morus capensis*	Endangered
Flesh-footed	*Shearwater Puffinus carneipes*	Near Threatened

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. Following a data call in 2016, the IOTC Secretariat received seabird bycatch data from 6 CPCs, out of the 15 with reported or expected longline effort South of 25ºS (IOTC-2016-SC19-INF02). Due to the lack of data submissions from other CPCs, and the limited information provided on the use of seabird bycatch mitigations, it has not yet been possible to undertake an assessment for seabirds. The current International Union for Conservation of Nature (IUCN) threat status for each of the seabird species reported as caught in IOTC fisheries to date is provided in **Table** A **1**. A number of international global environmental accords (e.g., Convention on Migratory Species (CMS), the Agreement on the Conservation of Albatrosses and Petrels (ACAP), Convention on Biological Diversity (CBD)), as well as numerous fisheries agreements obligate States to provide protection for these species. While the status of seabirds is affected by a range of factors such as degradation of nesting habitats and targeted harvesting of eggs, for albatrosses

[9] The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

and large petrels, fisheries bycatch is generally considered to be the primary threat. The level of mortality of seabirds due to fishing gear in the Indian Ocean is poorly known, although where there has been rigorous assessment of impacts in areas south of 25 degrees (e.g., in South Africa), very high seabird incidental catches rates have been recorded in the absence of a suite of proven incidental catches mitigation measures.

Outlook. The level of compliance with Resolution 23/07 (*On Reducing the Incidental Bycatch of Seabirds in Longline Fisheries)* and the frequency of use of each of the 4 measures (because vessels can choose two out of three possible options) are still poorly known. Observer reports and logbook data should be analysed to support assessments of the effectiveness of mitigation measures used and relative impacts on seabird mortality rates. Information regarding seabird interactions reported in National Reports should be stratified by season, broad area, and in the form of catch per unit effort. Following the data call in 2016 it was possible to carry out a preliminary and qualitative analysis. The information provided suggests higher sea bird catch rates at higher latitudes, even within the area south of 25°S, and higher catch rates in the coastal areas in the eastern and western parts of the southern Indian Ocean. In terms of mitigation measures, the preliminary information available suggests that those currently in use (Resolution 12/06) may be proving effective in some cases, but there are also some conflicting aspects that need to be explored further. Unless IOTC CPCs become compliant with the data collection, Regional Observer Scheme and reporting requirements for seabirds, the WPEB will continue to be unable to fully address this issue.

The following should also be noted:

- The available evidence indicates considerable risk from longline fishing to the status of seabirds in the Indian Ocean, where the best practice seabird incidental catches mitigation measures outlined in Resolution 23/07 are not implemented.
- CPCs that have not fully implemented the provisions of the IOTC Regional Observer Scheme outlined in paragraph 3 of Resolution 22/04 shall report seabird incidental catches through logbooks, including details of species, if possible.
- Appropriate mechanisms should be developed by the Compliance Committee to assess levels of compliance by CPCs with the Regional Observer Scheme requirements and the mandatory measures described in Res 23/07.

APPENDIX 33
EXECUTIVE SUMMARY: CETACEANS (2025)

Table A 1. Cetaceans: IUCN Red List status and records of interaction (including entanglements and, for purse seines, encirclements) with tuna fishery gear types for all cetacean species that occur within the IOTC area of competence.

Family	Common name	Species	IUCN Red List status*	Interactions by Gear Type**
Balaenidae	Southern right whale	*Eubalaena australis*	LC	GN
Neobalaenidae	Pygmy right whale	*Caperea marginata*	LC	-
Balaenopteridae	Common minke whale	*Balaenoptera acutorostrata*	LC	-
	Antarctic minke whale	*Balaenoptera bonaerensis*	NT	-
	Sei whale	*Balaenoptera borealis*	EN	PS
	Bryde's whale	*Balaenoptera edeni*	LC	-
	Blue whale	*Balaenoptera musculus*	EN	-
	Fin whale	*Balaenoptera physalus*	VU	-
	Omura's whale	*Balaenoptera omurai*	DD	-
	Humpback whale	*Megaptera novaeangliae*	LC***	GN, LL
Physeteridae	Sperm whale	*Physeter macrocephalus*	VU	GN
Kogiidae	Pygmy sperm whale	*Kogia breviceps*	LC	GN
	Dwarf sperm whale	*Kogia sima*	LC	GN
Ziphiidae	Arnoux's beaked whale	*Berardius arnuxii*	LC	-
	Southern bottlenose whale	*Hyperoodon planifrons*	LC	-
	Longman's beaked whale	*Indopacetus pacificus*	LC	GN
	Andrew's beaked whale	*Mesoplodon bowdoini*	DD	-
	Blainville's beaked whale	*Mesoplodon densirostris*	LC	-
	Ramari’s beaked whale	*Mesoplodon eueu*	DD	-
	Gray's beaked whale	*Mesoplodon grayi*	LC	-
	Hector's beaked whale	*Mesoplodon hectori*	DD	-
	Deraniyagala's beaked whale	*Mesoplodon hotaula*	DD	-
	Strap-toothed whale	*Mesoplodon layardii*	LC	-
	Spade-toothed whale	*Mesoplodon traversii*	DD	-
	Shepherd's beaked Whale	*Tasmacetus shepherdi*	DD	-
	Cuvier's beaked whale	*Ziphius cavirostris*	LC	GN

Delphinidae	Common dolphin	*Delphinus delphis*	LC	GN
	Pygmy killer whale	*Feresa attenuata*	LC	GN
	Short-finned pilot whale	*Globicephala macrorhynchus*	LC	LL, GN
	Long-finned pilot whale	*Globicephala melas*	LC	-
	Risso's dolphin	*Grampus griseus*	LC	LL, GN
	Fraser's dolphin	*Lagenodelphis hosei*	LC	-
	Irrawaddy dolphin	*Orcaella brevirostris*	EN	GN
	Australian snubfin dolphin	*Orcaella heinsohni*	VU	GN
	Killer whale	*Orcinus orca*	DD	LL, GN
	Melon-headed whale	*Peponocephala electra*	LC	LL, GN
	False killer whale	*Pseudorca crassidens*	NT	LL, GN
	Indo-Pacific humpback dolphin	*Sousa chinensis*	VU	GN
	Indian Ocean humpback dolphin	*Sousa plumbea*	EN	GN
	Australian humpback dolphin	*Sousa sahulensis*	VU	GN
	Pantropical spotted dolphin	*Stenella attenuata*	LC	PS, GN, LL
	Striped dolphin	*Stenella coeruleoalba*	LC	-
	Spinner dolphin	*Stenella longirostris*	LC	GN
	Rough-toothed dolphin	*Steno bredanensis*	LC	GN
	Indo-Pacific bottlenose dolphin	*Tursiops aduncus*	NT	GN
	Bottlenose dolphin	*Tursiops truncatus*	LC	LL, GN
Phocoenidae	Indo-Pacific finless porpoise	*Neophocaena phocaenoides*	VU	GN

* The assessment of the status level in IUCN is independent of IOTC processes

** Published bycatch records only (reference at the end of the document)

*** Arabian Sea population: EN

The IUCN Red List of Threatened species. <www.iucnredlist.org>.

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Stock status. The current[10] International Union for Conservation of Nature (IUCN) Red List status for each of the cetacean species reported in the IOTC Area of Competence is provided in Table **A** 1. Information on their interactions with IOTC fisheries is also provided. It is important to note that a number of international global environmental accords (e.g., Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD), International Whaling

[10] September 2023

Commission (IWC)), as well as numerous fisheries agreements obligate States to provide protection for these species. The status of cetaceans is affected by a range of factors such as direct harvesting and habitat degradation, but the level of cetacean mortality due to capture in tuna drift gillnets is likely to be substantial and is also a major cause for concern (Anderson *et al.* 2020, Kiszka *et al.* 2021). Several reports (e.g., Sabarros et al., 2013) also suggest some level of cetacean mortality for species involved in depredation of pelagic longlines, and these interactions need to be further documented throughout the IOTC Area of Competence. Recently published information suggests that the incidental capture of cetaceans in purse seines is low (e.g., Escalle et al., 2015), but should be further monitored.

Outlook. Resolution 23/06 *On the conservation of cetaceans* highlights the concerns of the IOTC regarding the lack of accurate and complete data collection and reporting to the IOTC Secretariat of interactions and mortalities of cetaceans in association with tuna fisheries in the IOTC Area of Competence. In this resolution, the IOTC have agreed that CPCs shall prohibit their flagged vessels from intentionally setting a purse seine net around a cetacean if the animal is sighted prior to the commencement of the set. The IOTC also agreed that CPCs using other gear types targeting tuna and tuna-like species found in association with cetaceans shall report all interactions with cetaceans to the relevant authority of the flag State and that these will be reported to the IOTC Secretariat by 30 June of the following year. It is acknowledged that the impact on cetacean populations from fishing for tuna and tuna-like species may increase if fishing pressure increases (which is already clear for tuna gillnet fisheries from IOTC data) or if the status of cetacean populations worsens due to other factors such as an increase in external fishing pressure or other anthropogenic or climatic impacts.

The following should be noted:

- The number of fisheries interactions involving cetaceans is highly uncertain and should be addressed as a matter of priority as it is a prerequisite for the WPEB to determine a status for any Indian Ocean cetacean species.
- Available evidence indicates considerable risk to cetaceans in the Indian Ocean, particularly from tuna drift gillnets.
- Current reported interactions and mortalities are scattered but are most likely severely underestimated (Anderson *et al*., 2020, Kiszka *et al*., 2021).
- Maintaining or increasing fishing effort in the Indian Ocean without appropriate mitigation measures in place will likely result in further declines in a number of cetacean species. An increasing effort by tuna drift gillnet fisheries has been reported to the IOTC, which is a major cause of concern for a number of species, particularly in the northern Indian Ocean.
- Efforts should be undertaken to encourage CPCs to investigate means to reduce cetacean bycatch and at-vessel and post-release mortality in IOTC fisheries and improve data collection and reporting for cetaceans. This may include alternative data collection mechanisms such as skipper-based reporting, port sampling and cost-effective electronic monitoring systems.

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APPENDIX 34
EXECUTIVE SUMMARY: MOBULIDS (2025)

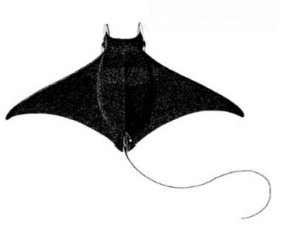

Table A 1. Mobulids: IUCN Red List status for mobulid ray species that occur within the IOTC area of competence.

Family	Common name	Species	IUCN Red List status*	Interactions by Gear Type**
Mobulidae	Oceanic Manta Ray	*Mobula birostris*	EN	GN, PS, LL
	Reef Manta Ray	*Mobula alfredi*	VU	GN, LL***
	Sicklefin Devilray	*Mobula tarapacana*	CR	GN, PS, LL
	Spinetail Devil Ray	*Mobula mobular*	CR	GN, PS, LL
	Bentfin Devil Ray	*Mobula thurstoni*	CR	GN, PS, LL
	Longhorned Pygmy Devil Ray	*Mobula eregoodoo*	EN	GN, LL**
	Shorthorned Pygmy Devil Ray	*Mobula kuhlii*	EN	GN, LL**

* The assessment of the status level in IUCN is independent of IOTC processes

** Gear types: Gill nets (GN), Purse seines (PS), Longlines (LL)

The IUCN Red List of Threatened species. <www.iucnredlist.org>.

Downloaded on 14 July 2025:

Marshall et al., 2022a, b.

Jabado et al., 2025a, b, c.

Rigby et al., 2022a, b.

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Stock status. The current International Union for Conservation of Nature (IUCN) Red List status for each of the mobulid ray species reported in the IOTC Area of Competence is provided in Table **A** 1. All mobulid species have been listed on Appendix I of CITES. Information on their known interactions with IOTC fisheries is also provided. It is important to note that a number of international global environmental accords (e.g., Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD)), as well as numerous fisheries agreements obligate States to provide protection for these species.

The status of mobulids is affected by a range of factors such as direct harvesting, bycatch, and habitat degradation. The level of mobulid mortality due to capture in tuna fisheries is likely to be substantial and is a major cause for concern. Mobulids are primarily caught as bycatch in gillnet fisheries and, to a lesser extent, purse seine and longline fisheries (Croll et al., 2016, Shahid et al., 2018, White et al., 2006, Ardill et al., 2011, Moazamm, 2018; Ruiz et al., 2017; Murua et al., 2021; Acevedo-Iglesias et al., 2025; Laglbauer et al. 2025). Information on catches of these species is poor and often aggregated rather than reported to species level. It is also uncertain as there are difficulties in classifying them at species level, even by scientific observers (Cronin et al., 2024). A recent study comparing mobulid catch across ocean basins shows that globally, an estimated 39,473 mobulids are caught annually in large vessel fisheries (>15 m) (Laglbauer et al. 2025 [In review]). Purse seines accounted for 18.6% of catch and 19.7% of mortality, and together with drift gillnets had the highest rates of dead discards (57.3% and 50% respectively), while longlines had lower at-vessel mortality (6.7%). Gear reporting is often incomplete, but retention and mortality rates vary widely by fleet and country.

The Indian Ocean dominates reported mobulid global catches (72%, n = 191,528) and estimated global mortality (73%, n = 191,010) (Laglbauer et al. 2025 [In review]). However, no holistic evaluation of the vulnerability status of these species exists (Griffiths and Lezama-Ochoa, 2021). These interactions need to be better documented throughout the IOTC Area of Competence. However, information submitted to the WPEB has highlighted declines in the catches of mobulids in the Indian Ocean, which may suggest a decline in the populations (Shahid et al., 2018, Moazzam, 2018, Fernando 2018, Venables et al., 2024, Fernando and Stewart, 2021). Additional catch declines have been reported in coastal India based on landings and effort data where available (Raje and Zacharia 2009; Chopra et al.,2025 [In review]; Thomas et al. 2022); in Indonesia based on landings data (Lewis et al., 2015; FAO 2024); in Kenya based on IOTC publicly available data (IOTC, 2025); and possible local declines have been indicated in Madagascar of *M. alfredi* since 2015 based on citizen science observations (Diamant et al 2025).

Outlook. Resolution 19/03 *On the conservation of mobulid rays caught in association with the IOTC area of competence* highlights the lack of accurate and complete data collection and reporting to the IOTC Secretariat of interactions and mortalities of mobulids in association with tuna fisheries in the IOTC Area of Competence.

This resolution prohibits CPCs flagged vessels from intentionally setting any gear type for targeted fishing of mobulid rays, if an animal is sighted prior to the commencement of the set. CPCs shall also prohibit vessels from retaining any part or whole carcass of mobulid rays. However, these two provisions do not apply to vessels carrying out subsistence fisheries[11] (which should not be selling any part or whole carcass of the rays). CPCs are required to require their vessels to promptly release mobulids as soon as they are seen in the gear following adopted safe handling and release practices. The CPCs shall also report information and data collected on interactions (the number of discards and releases) with mobulids by vessels through logbooks and/or through observer programmes and this data should be provided to the IOTC Secretariat by 30 June of the following year.

The following should be noted:

- The number of mobulid interactions in various fisheries is highly uncertain and most likely underestimated, thus, this information should be collected/reported as a matter of priority for the WPEB to determine a status for any Indian Ocean mobulid species.
- Available evidence indicates considerable risk to mobulids in the Indian Ocean, particularly from tuna drift gillnet fisheries, followed by purse seiners and longline to a lesser extent.
- Maintaining or increasing fishing effort in the Indian Ocean without appropriate mitigation measures in place will likely result in further declines in a number of mobulid species. An increasing effort by tuna drift

[11] A subsistence fishery is a fishery in which the fish caught are consumed directly by the families of the fishers rather than being bought by middle-(wo)men and sold at the next larger market, per the FAO Guidelines for the routine collection of capture fishery data. FAO Fisheries Technical Paper. No. 382. Rome, FAO. 1999. 113p.

gillnet fisheries has been reported to the IOTC, which is a major cause of concern for a number of species, particularly in the northern Indian Ocean.

- The adoption of updated safe handling and release best practices, especially for gillnet and purse seine gears, would improve post-release mortality and reduce fisheries impacts on mobulid populations in the Indian Ocean.
- Efforts should be undertaken to encourage CPCs to investigate means to reduce mobulid bycatch and at-vessel and post-release mortality in IOTC fisheries and improve data collection and reporting for mobulids. This may include alternative data collection mechanisms such as skipper-based reporting, port sampling and cost-effective electronic monitoring systems.

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APPENDIX 35
STATUS OF YELLOWFIN TUNA CATCH LIMITS FOR 2025 AND 2026 PURSUANT TO RESOLUTIONS 19/01 AND 21/01

Table 1: Annual catch limits (metric tonnes) of yellowfin tuna calculated for 2020-2024 and estimated for 2025 for longline and surface fisheries of the CPCs bound by Resolution 19/01, excluding Somalia, which only has coastal fisheries. PS = purse seines; LL = longlines; GN = gillnets

CPC	Fishery category	Base annual limit	Catch limits					
			2020	2021	2022	2023	2024	2025
IDN - Indonesia	PS	4,833	4,833	- 1,464	1,356	- 4,021	- 8,160	N/A
	LL	-	-	-	-	-	-	-
	ART	-	-	-	-	-	-	-
IND - India	LL	-	-	-	-	-	-	-
	ART	-	-	-	-	-	-	-
IRN - I.R. Iran	GN	-	-	-	-	-	-	-
	ART	-	-	-	-	-	-	-
MAD - Madagascar	LL	-	-	-	-	-	-	-
	ART	-	-	-	-	-	-	-
OMN - Sultanate of Oman	PS	-	-	-	-	-	-	-
	LL	-	-	-	-	-	-	-
	ART	-	-	-	-	-	-	-
SOM - Somalia	ART	-	-	-	-	-	-	-

Table 2: Annual catch limits (metric tonnes) of yellowfin tuna calculated for 2025 and estimated for 2026 for all CPCs bound by Resolution 21/01

CPC	Base-allocation catch limit	Allocated catch limits (t)	
		2025	2026
AUS - Australia	2,000	2,000	2,000
BGD - Bangladesh	2,000	2,000	2,000
CHN - China	10,557	-2,423	3,083
COM - Comoros	5,279	5,279	5,279
EUR - European Union	73,078	73,078	73,078
FRAT - France OT	500	500	500
GBR - United Kingdom	500	500	500
IND - India	N/A	N/A	N/A
IRN - I.R. Iran	N/A	N/A	N/A
IDN - Indonesia	45,426	45,426	45,426
JPN - Japan	4,003	4,003	4,003
KEN - Kenya	3,654	3,654	3,654
KOR - Korea	9,056	9,056	9,056
LKA - Sri Lanka	33,245	32,958	33,123
MDG - Madagascar	N/A	N/A	N/A
MDV - Maldives	47,195	47,195	47,195
MOZ - Mozambique	2,000	2,000	2,000
MUS - Mauritius	10,490	10,490	10,490
MYS - Malaysia	2,000	2,000	2,000
OMN - Oman	N/A	N/A	N/A
PAK - Pakistan	14,468	14,468	14,468
PHL - Philippines	700	700	700
SDN - Sudan	2,000	2,000	2,000
SOM - Somalia	0	0	0
SYC - Seychelles	39,577	39,577	39,577
THA - Thailand	2,000	2,000	2,000
TZA - Tanzania	3,905	3,872	3,872
YEM - Yemen	26,262	10,685	16,474
ZAF - South Africa	2,000	2,000	2,000
Totals	**341,896**	**313,019**	**324,479**

APPENDIX 36

PROGRESS MADE ON THE RECOMMENDATIONS OF SC27

SC27 Report	SC recommendations	Update/Progress
SC27.08 (para 34)	***National Reports from CPCs*** The SC **RECOMMENDED** that the Compliance Committee and Commission note the lack of compliance by 3 Contracting Parties (Members) that did not submit a National Report to the Scientific Committee in 2024, **NOTING** that the Commission agreed that the submission of the annual reports to the Scientific Committee is mandatory**.**	**Update:** Ongoing. (IOTC-2025-S29-R, Para 19) The Commission NOTED that 27 National Reports were submitted to the IOTC Secretariat in 2024 by CPCs and that this was an increase when compared with the 25 reports provided by CPCs in 2023.
SC27.09 (para 44)	***Report of the 14th Session of the Working Party on Neritic Tunas (WPNT14)*** **NOTING** that there has been considerable recent advancement and emphasis on the length-based approach, which can estimate stock status and serve as a valuable monitoring tool for various fisheries, the SC thus **ENCOURAGED** the continued exploration and utilization of both methods. The SC **RECOMMENDED** that the Commission urge CPCs to collect more representative length composition data for the effective assessment of these species, with a particular focus on frigate and bullet tuna for which the stock status is still unknown. The SC further **RECOMMENDED** that the Commission urge CPCs to summarize the size data from their sampling programs for the next WPNT meeting	**Update:** Ongoing. The Commission has endorsed the recommendation. Several CPCs has presented a summary of their sampling program at the WPNT meeting in 2025.
SC27.10 (para 58)	***Report of the 22th Session of the Working Party on Billfish (WPB22)*** **NOTING** that a joint analysis of fleet specific CPUE based on a consistent statistical framework which accounts for differences in catchability between fleets could be useful for assessing species under the mandate of WPB, the SC **RECOMMENDED** that the Commission urge the CPCs to dedicate effort to harmonising the standardised methods for different fleets and to develop a joint	**Update:** Ongoing. The Commission has endorsed the recommendation. A Joint tRFMO workshop on longline CPUE is planned to be held in 2026 which provided a forum to discuss the harmonization of the CPUE standardisation for different fleets and the method to develop Joint index.

SC27.11 (para 62)	analysis combining catch effort data from key fleets for major billfish species where feasible. ***Revision of catch levels of marlins under Resolution 18/05*** The SC **RECOMMENDED** that the Commission reassess the effectiveness of the current measures within this resolution and to revise Resolution 18/05 to update the catch limits based on the latest stock assessments and projections for the billfish species	**Update:** Ongoing. No Revision to Resolution 18/05 has taken place and no new management measures for billfish species have been adopted. Scientists from one CPC have summited a research paper to discuss potential management options for billfish at the WPB meeting in 2025.
SC27.12 (para 70)	***Report of the 20th Session of the Working Party on Ecosystems and Bycatch (WPEB20)*** ***Status of development and implementation of national plans of action for seabirds and sharks, and implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations*** The SC **RECOMMENDED** that the Commission note the current status of development and implementation of National Plans of Action (NPOAs) for sharks and seabirds, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations, by each CPC as provided in Appendix 6, recalling that the IPOA-Seabirds and IPOA-Sharks were adopted by the FAO in 1999 and 2000, respectively, and recommended the development of NPOAs..	**Update:** Completed. (IOTC-2025-S29-R, Para 28) The Commission ENDORSED the Scientific Committee's 2024 list of recommendations as its own.
SC27.13 (para 83)	***Longline bycatch mitigation measures workshop*** The SC **NOTED** that the WPEB conducted a comprehensive research review pertaining to different potential shark mitigation options and produced a summary table listing the strengths and weaknesses of possible mitigation measures focused on longline gear, including limiting the use of wire trace as branch lines or leaders and shark lines (in Appendix VI of WPEB(DP) Report). The SC **ACKNOWLEDGED** that most of the existing research on this topic comes from the Pacific and Atlantic Oceans and that the information is currently scarce in the Indian Ocean. The SC **REQUESTED** that the WPEB and WPSE evaluate the potential impacts of limiting wire leader and shark lines on fleet operation and the potential social and economic impacts in the Indian Ocean. In addition, the SC **ENCOURAGED** CPCs to conduct region specific analyses on these mitigation methods. The SC **RECOMMENDED** that the Commission consider the research	**Update:** Completed. The Commission adopted Resolution 25/08.

SC27.14 (para 87)	from the summary tables (Appendix VI of WPEB(DP) Report) should they wish to consider additional mitigation measures to strengthen the conservation of vulnerable sharks. The WPEB literature review highlighted that a prohibition on the use of wire leaders and shark lines by longline and other fisheries operating in the IOTC would likely result in a reduction in both the observed catch and the fishing mortality of shark species, particularly in situations where the use of wire leaders and shark lines are common. The SC also considered that further investigation on mitigation measures should be continued. ***Other matters*** The SC **NOTED** the revised handling and release guidelines for mobulids endorsed by the WPEB, and **RECOMMENDED** that the Commission consider revising the live release handling procedures provided in Annex 1 of Resolution 19/03. The SC **NOTED** that further development of the guidelines for gillnets is required and that this will be done intersessionally with the aim of reporting to the WPEB21. The details of the suggested revisions to the handling procedures can be found in IOTC-2024-WPEB20(AS)-R.	**Update:** Ongoing. The Commission did not adopt a new Conservation and Management Measure to revise the live release handling procedures provided in Annex 1 of Resolution 19/03. The Secretariat then worked intersessionally with the Manta Trust to further develop these guidelines which were reviewed by the WPEB. After these had been reviewed, the WPEB meeting in 2025 adopted the revised handling guidelines for mobulids and recommended that the SC endorse these handling guidelines for consideration by the Commission in 2026. The details of the suggested revisions to the handling procedures can be found in Appendix XVVI of IOTC-2025-WPEB21(AS)-R.
SC27.15 (para 104)	***Report of the 26th Session of the Working Party on Tropical Tunas (WPTT26)*** ***Yellowfin tuna stock assessment*** The SC **NOTED** that the Joint CPUE workshop had limited participation and was conducted over a short time period. However, it was noted that the workshop format and standardisation methods have remained the same for a long time. The SC NOTED the importance of the Joint Longline CPUE Index as a primary input for the stock assessments of several key IOTC species, including yellowfin, bigeye and albacore tunas, and **AGREED** on the need to ensure a transparent, inclusive, and replicable process in the development of the Joint CPUE Index using operational data. The SC therefore, **RECOMMENDED** that the Commission investigate options	**Update**: Completed. The Joint CPUE workshop, which took place February 6–12, 2025, invited the Secretariat and an external expert to participate virtually for several sessions

	to allow independent scientists or Secretariat stock assessment experts to provide inputs and advice through attending meetings of the Joint Longline CPUE standardisation group. The SC **RECALLED** that during the 2015–2019 period analysis was conducted by a consultant by participating in the meetings.	to provide suggestions and feedback. The Secretariat was also invited to a second workshop (online) that was held in April.
SC27.16 (para 108)	Given the uncertainty associated with the new CPUE, the SC **RECOMMENDED** that the Commission set a TAC for 2026 only, of no more than the estimated median MSY, which is comparable to the average catch of the last five years, as a precautionary measure to allow time for further investigation (i.e. resolving of uncertainty associated with the new CPUE) and development of advice for 2027 onwards	**Update**: A proposal (IOTC-2025-S29-PropJ) to update the *interim plan for rebuilding the Indian ocean yellowfin tuna* was deferred at the S29, as some CPCs believe that the adoption of a Resolution for yellowfin in 2025 would be premature, given the review that will be undertaken on the yellowfin tuna stock assessment and the joint CPUE series that is driving the assessment. Those CPCs expressed their opinion that the findings of the SC's review should be incorporated into any updated management measure.
SC27.17 (para 116)	***Update on the WGFAD07*** The SC **NOTED** that after the recent resolutions on FAD were adopted, CPCs seem less inclined to submit papers to WGFAD. This led to the shortening of WGFAD06 to a single day and the cancellation of WGFAD07 this year due to a shortage of papers. Therefore, the SC **RECOMMENDED** that the Commission schedule only one WGFAD meeting in 2025. The SC also suggests that this meeting should take place before the WPEB, as FAD issues are relevant to WPEB, to allow the findings to be reported to both WPEB and WPTT.	**Update**: Completed. Only one WGFAD meeting took place in 2025 and was scheduled before the WPEB.
SC27.18 (para 117)	Other Matters The SC **NOTED** that exceptional circumstances of adopted MPs need to be considered at both species WPs and WPM. The SC also **NOTED** that there is benefit in species WPs being held before WPM to allow discussions on issues such as new information on biology before the consideration of potential modelling implications and as such **RECOMMENDED** that in the future the WPM be held after the WPTT	**Update:** Completed. The WPM was scheduled after the WPTT in 2025. Until the Commission decides otherwise, this arrangement will remain in place. .

	Report of the 15th Session of the Working Party on Methods (WPM15)	
	Management Strategy Evaluation Progress	
SC27.19 (para 121)	The SC NOTED that the work of albacore is not mature enough that would require a TCMP in February and, therefore, **RECOMMENDED** that an extra TCMP meeting in February 2025 is not organized.	**Update**: Completed. Only one TCMP meeting was organized in 2025.
	Bigeye tuna MP (Resolution 22/03)	
SC27.20 (para 122)	The SC **NOTED** that a standardised CPUE index based on the agreed methodology (as per Resolution 22/03) was not yet available to run the Bigeye Tuna MP, but needs to be available in time for the Scientific Committee to review (as required by Resolution 22/03). However, a member of the joint CPUE group responsible for producing the index indicated that logistically (due to the need to have a physical workshop to share the data) it would not be possible to provide the CPUE index in time for SC, but that it might be possible to provide following a meeting of the group in February 2025. The SC DISCUSSED options for ensuring that the WPM is able to review and participate in the running of the MP. Following this discussion, the SC **RECOMMENDED** that: • the joint CPUE working group produce a BET CPUE index, as per the requirements/specifications of Williams et al (2022), at its meeting in early February 2025, and provide this for the WPM(MSE)Taskforce. • the WPM(MSE) Taskforce meet online on 24-25 February 2025 with one day to review and run the BET MP and one day to consider progress on the Albacore Tuna MSE. • the Scientific Committee convene a special session, online (for two hours) on 26 February 2025, to review and if appropriate endorse the BET MP run and its associated BET TAC outcomes.	**Update**: Completed. The BET CPUE index was produced by the Joint CPUE workshop, which was held from February 6–12, 2025. the WPM(MSE) Taskforce convened virtually 24-25 February 2025 and used the CPUE index as input to run the BET MP. The BET MP run, and the TAC results were examined and approved by the SC during its special online session on February 26, 2025.
	Swordfish tuna MP (Resolution 24/08)	
SC27.21 (para 124)	The SC **RECOMMENDED** that the Commission implement a TAC for 2026-2028 for swordfish based on the amended and retuned MP1 if the Commission wishes to ensure that it achieves the current objective in Res 24/08 to be in the Kobe green zone with at least 60% probability during 2034-2038 period. This would require a minor amendment to the Target CPUE value in Annex I of Res 24/08 from 0.7125 to 0.75. The SC **NOTED** that should the Commission continue to implement the current MP1, without retuning, it has a lower probability (54%) of being in the	**Update**: Completed. The Commission ENDORSED the Scientific Committee's 2024 list of recommendations as its own.

SC27.22 (para 125) SC27.23 (para 127)	Kobe green zone and higher TAC variability, but otherwise similar performance statistics (Table 1 of IOTC–2024–WPM15–R). The TAC derived from running SWO MP1 with or without retuning is 30527 t (i.e. the same and therefore not a severe impact) because the max TAC change constrain is reached in both MPs. Irrespective of the MP chosen by the Commission, the SC **RECOMMENDED** that the Commission endorse the resultant TAC of 30,527 t for swordfish for 2026-2028. ***General MSE issues*** The SC **ENDORSED** the WPM's **RECOMMENDATION** that the Commission ensure that the IOTC Secretariat is provided with the necessary resources to manage the curation of relevant documents and code to enable users to re-run assessments and other analyses, **NOTING** that the most important information to be curated would be the input file, executables and control files.	**Update**: Completed. The Commission ENDORSED the Scientific Committee's 2024 list of recommendations as its own. **Update**: Ongoing. The Secretariat has been endeavoring to curate and store input files for major assessments conducted by various working parties or facilitating with modelers in making the input files available upon request.
SC27.24 (para 141)	***Report of the 20th Session of the Working Party on Data Collection and Statistics (WPDCS20)*** The SC **NOTED** that the WPDCS had discussed and reviewed the summary on best practice guidelines for safe handling and release of small cetaceans and the SC **RECOMMENDED** the Commission to consider these guidelines when developing conservation measures for cetaceans.	**Update**: Ongoing. The Commission did not adopt a new Conservation and Management Measure for cetaceans.
	Invited Expert(s) at the WP meetings	

SC27.25 (para 159)	Given the importance of external independent review for working party meetings, the SC **RECOMMENDED** the Commission continues to allocate sufficient budget for invited scientific experts to be regularly invited to scientific working party meetings.	**Update**: Ongoing. The Commission has provided budget for invited experts for 2025.
SC27.26 (para 165)	***IOTC species identification guides: Tuna and tuna-like species*** The SC reiterated its **RECOMMENDATION** that the Commission allocates budget towards continuing the translation and printing of the IOTC species ID guides so that hard copies of the identification cards can continue to be printed as many CPC scientific observers, both on board and at port need to have hard copies.	**Update**: Ongoing. Budget has been made available through the IOTC main budget and the OFCF project to continue the translation of ID cards and this has continued in 2025 and will do again in 2026.
SC27.27 (para 170)	***General - Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies*** The SC **RECOMMENDED** that the Commission note and endorse the Chairpersons and Vice-Chairpersons for the SC and its subsidiary bodies for the coming years, as provided in Appendix 7.	Update: Completed. (IOTC-2025-S29-R, Para 40) The Commission ENDORSED those officials elected for the SC and its subsidiary (scientific) bodies for the coming years, as listed in Appendix 7 of the 2024 Scientific Committee Report.
SC27.28 (para 174)	***Other matters*** The SC **NOTED** the occasional need of technical workshops, corresponding to a request by the SC or Commission. The SC **RECOMMENDED** that: • Technical workshops are not to be nested within Working Party meetings • The terms of reference for such technical workshops should be established ahead of time to clarify their role and decision-making process, including whether they can make direct recommendations to the SC.	**Update**: Completed. The Commission ENDORSED the Scientific Committee's 2024 list of recommendations as its own.
SC27.29 (para 199)	***General - Consultants*** **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in previous years, the SC **RECOMMENDED** that the engagement of consultants be continued for each coming year based on the Program of Work. Consultants will be hired to supplement the skill set available within the IOTC Secretariat and CPCs.	**Update:** Ongoing. Several consultants were contracted in 2025.

	Data preparatory meetings and Hybrid meetings	
SC27.30 (para 201)	**ACKNOWLEDGING** that holding data preparatory meetings prior to stock assessments is considered to be best practice (as identified by the yellowfin stock assessment external reviewer, the WPTT and the WPDCS) and noting that since 2019 data preparatory meetings were successfully held for the WPTmT, WPTT and WPEB, the SC **AGREED** to continue the practice of having data preparatory meetings in addition to stock assessment meetings for the major IOTC species. The SC **RECOMMENDED** that data preparatory meetings could continue to be held virtually so as not to increase the travel and costs required for the already full IOTC timetable of meetings.	**Update:** Completed. All data preparatory meetings as well as working group meetings were held virtually in 2025.
SC27.31 (para 202)	The SC **NOTED** that there had been a few teething problems holding meetings in a hybrid format in 2023 and 2024, especially related to the costs associated with the audio-visual equipment required, as well as the issues associated with ensuring the equipment was suitable to ensure full participation of both those in person as well as those connecting virtually. However, the SC **AGREED** on the utility of facilitating both in-person and virtual participation at future meetings to ensure increased participation and reduce the logistical costs for many CPCs and observers. As such, the SC **RECOMMENDED** that future Scientific Committee meetings continue to be held in a hybrid format, as well as working parties if possible. The SC further **RECOMMENDED** that all presentations at these meetings be made in person to ensure the aforementioned issues did not adversely affect the quality of the advice being provided.	**Update:** Completed. All working party meetings as well as the Scientific Committee meeting were held in a hybrid format in 2025.
SC27.32 (para 203)	The SC **NOTED** all IOTC working party meetings this year (except the WPDCS and WPSE) were held in Seychelles, as there were no offers to host them. The SC meeting was originally planned in Seychelles but this was not possible due to unavailability of the venue. There has been an increasing reluctance for CPCs to offer to host IOTC scientific working party and SC meetings. This reluctance may be due to budget constraints, as well as the logistical burdens of Hybrid meetings. The SC **NOTED** that there has been a number of issues when hosting meetings in Seychelles (e.g., high cost). The SC **RECOMMENDED** this issue be discussed at the Commission in order to find a way forward.	
	IOTC Scientific Strategic Research Plan	**Update:** Completed. The draft updated IOTC Strategic Science Plan 2025–2029 was distributed to Heads of Delegation for comment during early 2025 via the IOTC circular 2025-01. The revised draft was presented to the Commission at its 29th Session in April. The Commission adopted the IOTC Strategic Science Plan 2025–2029.
	The SC **AGREED** that the draft updated IOTC Strategic Science Plan 2025–2029 will be distributed to Heads of Delegation from each CPC for comment during early	

SC27.33 (para 208)	2025. Thereafter comments will be collated and consolidated and another version sent to CPCs for final review. Pending agreement of CPCs, and noting that the IOTC Strategic Science Plan would be a dynamic document that would change over time, the SC **RECOMMENDED** that the revised draft of the IOTC Strategic Science Plan 2025–2029 be tabled at the Commission meeting in 2025.	
SC27.34 (para 214)	***Review of the Draft, and Adoption of the Report of the 25th Session of the Scientific Committee*** The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC25, provided at Appendix 39.	**Update**: Completed. The Commission ENDORSED the Scientific Committee's 2024 list of recommendations as its own.

APPENDIX 37A
WORKING PARTY ON NERITIC TUNAS PROGRAM OF WORK (2026 - 2030)

Table 1: Priority topics for obtaining the information necessary to develop stock status indicators for neritic tunas in the Indian Ocean;

Topic in order of priority	Sub-topic and project	Timing				
		2026	2027	2028	2029	2030
1. Stock structure (connectivity)	Genetic research to determine the connectivity of neritic tunas throughout their distributions (This should build on the stock structure work conducted in other previous studies): 2. Review of stock structure methodologies with genetic expert during WPNT15 in order to determine the best approach to regional stock structure studies. Based on discussions develop and implement regional genetic sampling collection programme: • Sampling of tissue samples • DNA extraction and storage for preservation • Carry out genetic sequencing on extracted DNA					
2. Stock assessment / Stock indicators	Explore alternative assessment approaches and develop improvements where necessary based on the data available to determine stock status for longtail tuna, kawakawa and Spanish mackerel					
	1. The Weight-of-Evidence approach should be used to determine stock status, by building layers of partial evidence, such as CPUE indices combined with catch data, life-history parameters and yield-per recruit metrics, as well as the use of data poor assessment approaches (e.g. CMSY, OCOM, LB-SPR, Risk based methods).					

	2. Exploration of priors and how these can be quantifiably and transparently developed. 3. Review size data and their suitability for monitoring stock status. Improve the presentation of management advice from different assessment approaches to better represent the uncertainty and improve communication between scientists and managers in the IOTC.					
3. Data mining and collation	Improved collation and characterization of operational level data for the main neritic tuna fisheries in the Indian Ocean to investigate their suitability to be used for developing standardised CPUE indices. Improved characterisation of fisheries when CPCs present information to WPNT. The following data should be collated and made available for collaborative analysis: 1. catch and effort by species and gear by landing site; 2. operational data: stratify this by vessel, month, and year for the development as an indicator of CPUE over time; and 3. operational data: collate other information on fishing techniques (i.e. area fished, gear specifics, depth, environmental condition (near shore, open ocean, etc.) and vessel size (length/horsepower)). 4. Reconstruction of historical catch by CPCs using recovered or captured information. 5. Re-estimation of historic catches (with consultation and consent of concerned CPCs including India, Pakistan, Bangladesh, Mozambique, Tanzania, Madagascar, Kenya) for assessment purposes (taking into account updated identification of uncertainties and knowledge of the history of the fisheries. 6. Improvements to species identification					

Other Future Research Requirements		**2026**	**2027**	**2028**	**2029**	**2030**
4. Biological information (parameters for stock assessment)	1. Review and summarise information on key biological parameters for neritic tuna species. 2. Review of studies for all neritic tunas throughout their range to determine key biological parameters including age-at-maturity, and fecundity-at-age/length relationships, age-length keys, age and growth, longevity which will be fed into future stock assessments. 3. Increase ecological traditional knowledge of all neritic tunas throughout their range. 4. Exploring the development of tools and other methods which can be used to improve species identification.					

	5. Exploring improved methods for ageing of neritic tuna species including exploration of epigenetic techniques.					
5. Social economic study	1. Undertake quantitative studies on socio-economic aspects (including traditional knowledge) to determine and explore other sources of data, such as but not limited to trade data from individual countries, nominal catch or other catch data on neritic tuna, information on important and significance of neritic for food security (animal protein), nutrition, contribution to national GDP. (priority countries, Indonesia, Iran, India, Malaysia, Thailand, Pakistan) 2. Identify and utilise other sources of information, by engaging with other bodies such as SEAFDEC, SEAFO, RECOFI, BOBLME, SWIOFC, IOC, among others. 3. Integrate or evaluate market support and recognition for neritic tuna (sub-regional markets) with a focus on data acquisition. 4. Explore alternate sources of data collection, including the rapid use of citizen science-based approaches which are reliable and verified by the SC. 5. Assess/scope/explore the significance and importance of neritic tuna species for food security, nutrition and contribution to national GDP. 6. Strengthen the data collection of catches and species complexes and develop socio-economic indicators of neritic tuna species, related to the national and regional livelihoods and economics of coastal CPCs. 7. Collate information and address data gaps and challenges by taking advantage of regional programmes or joint collaboration with NGOs/CPCs in order to support and facilitate data collection for neritic tuna species.					

APPENDIX 37B

WORKING PARTY ON TEMPERATE TUNAS PROGRAM OF WORK (2026 - 2030)

Table 1. Priority topics for obtaining the information necessary to develop stock status indicators for albacore in the Indian Ocean (2026-2030). No WPTmT meeting was held in 2023 to update this plan.

Topic		Sub-topic and project	Priority	Timing				
				2026	2027	2028	2029	2030
1	Stock structure (connectivity and diversity)	1.1 Genetic research to determine the connectivity of albacore throughout its distribution and the effective population size.	high (1)					
		1.2 Tagging study to understand the migration pattern of albacore in the Indian Ocean	Low (6)					
2	Biological information (parameters for stock assessment)	2.1 Biological research (collaborative research to improve understanding of spatio-temporal patterns in age and growth and reproductive parameters by sex)	High (2)					
		2.1.1 Age and growth studies: Uncertainty about the growth curve is a primary source of uncertainty in the stock assessment. A preliminary growth curve was developed in 2019, but there is substantial work to be done to ensure that growth curves include data from smaller size classes, and that spatio-temporal patterns in growth are quantified for use in the stock assessment. Collaborative sampling programs, involving a combination of observer- and port-based sampling, are required to ensure that adequate samples are collected.						

		2..1.2 Quantitative biological studies are necessary for albacore throughout its range to determine spatio-temporal patterns in key reproductive parameters including sex ratio; female length- and age-at-maturity; spawning location, periodicity and frequency; batch fecundity at length and age; spawning fraction and overall reproductive potential, to inform future stock assessments.						
3	CPUE standardisation	3.1 Continue the development of standardized CPUE series for each albacore fishery for the Indian Ocean, with the aim of developing appropriate CPUE series for stock assessment purposes.	low (5)					
		3.1.1 Spatio-temporal structure and target changes need to be considered carefully, as fish density and targeting practices can vary in ways that affect CPUE indices. Developments may include changes to fishery spatial structure, new approaches for area weighting, time-area interactions in the model, and/or indices using spatial temporal model.						
4	Size frequency data	4.1 Further investigate the size information provided by CPCs in order to better understand the stock dynamics and inputs into the assessment models. This is particularly necessary for the purse seine data.	low (4)					
5	Management strategy evaluation	5.1 Continue to collaborate with the WPM on input to the Management Strategy Evaluation (MSE) process.	High (3)					

APPENDIX 37C

WORKING PARTY ON BILLFISH PROGRAM OF WORK (2026 - 2030)

Table 1. Priority topics for obtaining the information necessary to develop stock status indicators for billfish in the Indian Ocean

Topic in order of priority	Sub-topic and project	Timing				
		2026	2027	2028	2029	2030
CPUE standardization	Develop and/or revise standardized CPUE series for each billfish species and major fisheries/fleets in the Indian Ocean and develop Joint CPUE series where feasible • Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France), Japan, Indonesia, South African • Striped marlin: Priority fleets: Japan, Taiwan,China • Black marlin: Priority fleets: Longline: Taiwan,China; Potential fleets (Gillnet: I.R. Iran, Sri Lanka, Indonesia) • Blue marlin: Priority fleets: Japan, Taiwan,China, Indonesia • I.P. Sailfish: Potential longline fleets: EU(Spain, Portugal, France), Japan, Indonesia; gillnet fleets: I.R. Iran and Sri Lanka;					
1. Population biology	1.1 Age and growth research 1.1.1 CPCs to provide further research on billfish biology, namely age and growth studies including the use of fish otolith or other hard parts, as well as through genetic methods, either from data collected through observer programs, port sampling or other research programs. (Priority: all billfishes: swordfish, marlins and sailfish)					
	1.2 Spawning time and locations 1.2.1 Collect gonad samples from billfish or utilise any other scientific means to confirm the spawning time and location of the spawning areas that are presently hypothesized for each billfish species. This will also provide advice to the Commission on the request for alternative management measures (Res. 18-05, paragraph 6). Partially supported by EU, on-going support and collaboration from CPCs are required. 1.3 Literature review of biological parameters for billfish					

	1.3.1. Conduct a literature review of biological parameters for billfish through a consultancy and update the supplementary information that companies with species Executive Summaries.					
2 Population dynamics	2.1 Stock structure (connectivity and diversity) 2.1.1 Continue work on determining stock structure of Billfish species, using complimentary data sources, including genetic and microchemistry information as well as other relevant sources/studies. 2.1.2 Tagging research (PSAT tags) to determine connectivity, movement rates and mortality estimates of billfish (Priority species: swordfish). Similar projects have been partially funded by EU, with a focus on epipelagic species. More tags are needed for swordfish. 2.2 CKMR 2.2.1 Pilot design study to estimate abundance and papulation parameters including larval surveys					
3 Billfish bycatch mitigation and management	WPB and CPCs scientists to firstly, review and summarise existing information on billfish bycatch mitigation, including also factors influencing at-haul and post-release mortality of billfish, and secondly to undertake further research to inform gaps in understanding on potential effective mitigation approaches, to provide options for the Commission to reduce fishing mortality for species where that is required (e.g. Black Marlin, Striped Marlin and Sailfish) focusing on gillnet and longline fisheries but also including recreational and sport fishing activities . For example, implementing tagging data to better understand the issues of post release mortality of marlins How to provide scientific advice to management on billfish caught as bycatch					
Other Future Research Requirements (not in order of priority)						
4 Data mining and processing - (Development of subsequent CPUE indices)	Data on gillnet fisheries are available in Pakistan (and potentially other CPCs) and the recovery of this information and the development of gillnet CPUE indices as well as provision of length frequency data would improve species assessments, particularly for: • Black marlin • Sailfish					
5 Historical data review	5.1 Changes in fleet dynamics					

	5.1.1 Continue the work with coastal countries to address recent changes and/or increases of marlins catches especially in some coastal fleets. The historical review should include as much explanatory information as possible regarding changes in fishing areas, species targeting, gear changes and other fleet characteristics to assist the WPB understand the current fluctuations observed in the data and very high increases in some species (e.g., black marlin mainly due to very high catches reported by India in recent years). The possibility of producing alternative catch histories should also be explored. Priority countries: India, Pakistan, Iran, I.R., Indonesia.					
	5.2 Species identification					
	5.2.1 The quality of the data available at the IOTC Secretariat on marlins (by species) is likely to be compromised by species miss-identification. Thus, CPCs should review their historical data in order to identify, report and correct (if possible) potential identification problems that are detrimental to any analysis of the status of the stocks. Consider the application of DNA-Barcoding technology for billfish species identification.					
6. Climate change	Investigate impact and interaction of climate change on billfish fisheries					

APPENDIX 37D

WORKING PARTY ON ECOSYSTEMS AND BYCATCH PROGRAM OF WORK (2026 - 2030)

Table 1. Priority topics for obtaining the information necessary to develop stock status indicators for bycatch species in the Indian Ocean

Topic in order of priority	**Sub-topic and project**	Timing				
		2026	2027	2028	2029	2030
1. Connectivity, movements, habitat use and post release mortality*	Electronic tags (PSATs, SPOT, Splash MiniPAT) to assess the efficiency of management resolutions on non-retention species (BSH in LL, marine turtles and rays in GIL and PS, whale sharks) and to determine connectivity, movement rates, mortality estimates and genetic studies					
2. Fisheries data collection and development of alternative inputs into assessments	2.1 Catch composition reconstruction (initial focus Sri Lanka, Pakistan, India and Indonesia)					
	2.1.1 Historical data mining for the key species and IOTC fleets (e.g., as artisanal gillnet and longline coastal fisheries) including workshops.					
	2.1.2 Historical data mining and development of baseline catch history series for key species, including blue shark and shortfin mako shark, through the collection and integration of information on catch, effort, and spatial distribution of fleets, as well as mining statistics for sharks not reported to species level.					

	2.1.3 CPUE standardisation and review of additional abundance indicators series for each key shark species and fishery in the Indian Ocean 2.2 Investigation of sampling options to explore different indices of abundance for sharks such as CKMR. Identify CPCs who may be able to collaborate.					
3. Shark research and management strategy	3.1 Workshop to update and revise shark research plan with a small working group					
	3.2 Prioritising shark research based on previous work and including analysing gaps in knowledge to address the requests from the Commission contained within Resolution 25/08.					
	3.3 Implementation of work suggested by shark research plan					
4. Studies and training focused on gillnet bycatch mitigation	4.1 Focused GN bycatch mitigation workshop - training, monitoring, determine study design 4.2 Studies trialling gillnet mitigation measures such as: LED lights, sub-surface setting …					

Other Future Research Requirements (not in order of priority)

Topic	Sub-topic and project	2026	2027	2028	2029	2030
1. Review and improve data collection for mobulid rays	1.1 Mobulid ID guide revision and translation. ID guides to be updated with help of CPC scientists					
2. Bycatch mitigation measures	2.1 Gears 2.1.1 Undertake a series of gear specific workshops focusing on multi-taxa bycatch issues					
	2.1.2 Develop studies on bycatch mitigation measures for the main gears using in the IOTC area (operational, technological aspects and best practices)					
	2.2 Sharks a) Harmonise and finalise guidelines and protocols for safe handling and release of sharks and rays caught in IOTC fisheries					
	2.3 Sea turtles 2.3.1 Res. 12/04 (para. 11) Part I. The IOTC Scientific Committee shall request the IOTC Working Party on Ecosystems and Bycatch to:					
	a) Develop recommendations on appropriate mitigation measures for gillnet, longline and purse seine fisheries in the IOTC area; [mostly completed for LL and PS]					
	b) Develop regional standards covering data collection, data exchange and training					
	2.3.2 Res. 12/04 (para. 17) The IOTC Scientific Committee shall annually review the information reported by CPCs pursuant to this measure and, as necessary, provide recommendations to the Commission on ways to strengthen efforts to reduce marine turtle interactions with IOTC fisheries.					

	2.3.3 Regional workshop to review the effectiveness of marine turtle mitigation measures					
	2.3.4 Harmonise and finalise guidelines and protocols for safe handling and release of sea turtles caught in IOTC fisheries					
	2.3 Seabirds 2.3.1 Bycatch assessment for seabirds taking into account the information from the various ongoing initiatives in the IO and adjacent oceans					
	2.3.2 Study on cryptic mortality of seabirds in tuna LL fisheries.					
	2.3.3 Study post release survival rates for seabirds and harmonise and finalise guidelines and protocols for safe handling and release of seabirds caught in IOTC fisheries					
	2.4 Cetaceans 2.4.1 Testing mitigation methods for cetacean bycatch in tuna drift gillnet fisheries					
	2.4.2 Harmonise and finalise guidelines and protocols for safe handling and release of cetaceans caught in IOTC fisheries					

	2.4.3. Intersessional meeting to discuss cetacean guidelines, ERA, Data gaps.					
3. CPUE standardisation / Stock Assessment / Other indicators	3.1 Develop standardised CPUE series for each key shark species and fishery in the Indian Ocean:					
	3.1.1 Development of CPUE guidelines for standardisation of CPC data.					
	3.1.2 Blue shark: Priority fleets: TWN,CHN LL, EU,Spain LL, Japan LL; Indonesia LL; EU,Portugal LL					
	3.1.3 Shortfin mako shark: Priority fleets: Longline and Gillnet fleets					
	3.1.4 Oceanic whitetip shark: Priority fleets: Longline fleets; purse seine fleets					
	3.1.5 Silky shark: Priority fleets: Purse seine fleets					
	3.2 Joint CPUE standardization across the main LL fleets for silky shark, using detailed operational data					
	3.3 Stock assessment and other indicators					
4. Ecosystems	4.1 Develop a plan for Ecosystem Approach to Fisheries (EAF) approaches in the IOTC, in conjunction with the Common Oceans Tuna Project.					
	4.1.2 Workshop for CPCs on continuing efforts to the development of an EAF including delineation of candidate eco regions within IOTC.					
	4.1.3 Practical Implementation of EBFM with the development and testing of ecosystem report cards.					

	4.1.4 Evaluation of EBFM plan in IOTC area of competence by the WPEB to review its elements components and make any corrective measures.					
	4.2 Assessing the impacts of climate change and socio- economic factors on IOTC fisheries					
	4.3 Evaluate alternative approaches to ERAs to assess ecological risk					
	4.4 Progress on Climate webpage on IOTC website and liaise with WPDCS for technical implementation					
Ecoregions development	Support for the development and refinement of ecoregions in the Indian Ocean: Development of a pilot study (focused on two ecoregions: one coastal, the Somali Current ecoregion and one oceanic, the Indian Ocean Gyre ecoregion)					
Development of Indian Ocean Digital Atlas	Facilitate the discussions with WPDCS to consolidate the Indian Ocean Digital Atlas project with stakeholders					

APPENDIX 37E
WORKING PARTY ON TROPICAL TUNAS PROGRAM OF WORK (2026 - 2030)

Table 1. Priority topics for obtaining the information necessary to develop stock status indicators for bycatch species in the Indian Ocean.

Topic in order of priority	Sub-topic and project	TIMING				
		2026	2027	2028	2029	2030
Abundance indices development	Address the additional recommendations made by the WPTT in 2024 regarding the CPUE indices for yellowfin. In view of the coming assessments of yellowfin, bigeye, and skipjack develop abundance time series for each tropical tuna stock for the Indian Ocean • Continue to develop CPUE indices from Longline, purse seine, Pole and line fisheries, and fishery independent indices of abundance such as those derived from echosounder buoys. • Explore and support the development of gillnet CPUE indices for fleets (e.g., Iran, Pakistan and Oman) • Evaluate effect of changes of spatial coverage on the longline CPUE through the Joint CPUE workshop and estimate spatial temporal abundance distribution through VAST modelling approach					
Fisheries Independent Monitoring	Use of Close Kin Mark Recapture (CKMR) methods which can provide estimates of absolute spawning biomass, mortality, stock structure, and connectivity based on genotyping individuals to a level that can identify close relatives (e.g. parent-offspring or half-siblings). Plan for a staged approach for implementation of a YFT CKMR project					
Biological and ecological information (incl. parameters for stock assessment)	Biological sampling 1. Design and develop a plan for a biological sampling program to support research on tropical tuna biology. The plan would consider the need for the sampling program to provide representative coverage of the distribution of the different tropical tuna species within the Indian Ocean and make use of samples and data collected through observer programs, port sampling and/or other research programs. The plan would also consider the types of biological samples that could be collected (e.g. otoliths, spines, gonads, stomachs, muscle and liver tissue, fin clips, etc.), the sample sizes required for estimating biological parameters, and the logistics involved in collecting, transporting and processing biological samples. The specific biological parameters that could be estimated include, but are not limited to, estimates of growth, age at maturity, fecundity, sex ratio, spawning season, spawning fraction and stock structure.	.				

	2. Collect gonad samples from tropical tunas to confirm the spawning periods and location of the spawning area that are presently hypothesized for each tropical tuna species.					
Analysis of environmental factors	Evaluate the impact of environmental factors on the dynamics of tropical tuna stocks and the possible role of climate change on changes to selectivity, recruitment deviates and fishing productivity.					

Other Future Research Requirements (not in order of priority)						
		2026	**2027**	**2028**	**2029**	**2030**
1 Stock structure (connectivity and diversity)	1.1 Genetic research to determine the connectivity of tropical tuna species throughout their distribution (including in adjacent Pacific Ocean waters as appropriate) and the effective population size.					
	1.2 Population genetic analyses to decipher intraspecific connectivity, levels of gene flow, genetic divergence and effective population sizes based on genome-wide distributed Single Nucleotide Polymorphisms (SNPs).					
	1.3 Connectivity, movements, and habitat use, including identification of hotspots and investigate associated environmental conditions affecting the tropical tuna species distribution, making use of conventional and electronic tagging (P-SAT). 1.4 Investigation into the degree of local or open population in main fishing areas (e.g., the Maldives and Indonesia - archipelagic and open ocean) by using techniques such flux in FAD arrays or used of morphological features such as shape of otoliths.					
2 Stock assessment priorities	2.1 Address the outstanding issues identified as priorities by the yellowfin tuna peer review panel (February 2023). Address any recommendations made by the WPTT or SC in 2025.					
3 Historical data review	3.1 Changes in fleet dynamics need to be documented by fleet					
	3.1.1 Provide an evaluation of fleet-specific fishery impacts on the stock of bigeye tuna, skipjack tuna and yellowfin tuna. Project potential impact of realizing fleet development plans on the status of tropical tunas based upon most recent stock assessments.					
4 Alternative indices	4.1 That methods be developed for standardising purse seine catch species composition using operational data, so as to provide alternative indices of relative abundance (see Terms of Reference, Appendix IXb IOTC-2017-WPTT19-R).					

		4.2 Investigate the potential to use the Indian longline survey as a fishery-independent index of abundance for tropical tunas.					
5	Stock assessment stock indicators	5.1 Develop and compare multiple assessment approaches to determine stock status for tropical tunas 5.2 Scoping of ongoing age composition data collection for stock assessment 5.3 Develop a high resolution age structured operating model that can be used to test the spatial assumptions including potential effects of limited tags mixing on stock assessment outcomes (see Terms of Reference, Appendix IXa IOTC-2017-WPTT19-R).					
6	Fishery monitoring	6.1 Develop fishery independent estimates of stock abundance to validate the abundance estimates of CPUE series. All of the tropical tuna stock assessments are highly dependent on relative abundance estimates derived from commercial fishery catch rates, and these could be substantially biased despite efforts to standardise for operational variability (e.g. spatio-temporal variability in operations, improved efficiency from new technology, changes in species targeting). Accordingly, the IOTC should continue to explore fisheries independent monitoring options which may be viable through new technologies. There are various options, among which some are already under test. Not all of these options are rated with the same priority, and those currently under development need to be promoted, as proposed below: Acoustic FAD monitoring, with the objective of deriving abundance indices based on the biomass estimates provided by echo-sounder buoys attached to FADs 6.2 Longline-based surveys (expanding on the Indian model) or “sentinel surveys” in which a small number of commercial sets follow a standardised scientific protocol 6.3 Aerial surveys, potentially using remotely operated or autonomous drones 6.4 Studies (research) on flux of tuna around anchored FAD arrays to understand standing stock and independent estimates of the stock abundance. 6.5 Investigate the possibility of conducting ongoing ad hoc, low level tagging in the region					
7	Target and Limit reference points	7.1 To advise the Commission, on Target Reference Points (TRPs) and Limit Reference Points (LRPs). Used when assessing tropical tuna stock status and when establishing the Kobe plot and Kobe matrices					
8	Fisheries Indicators	8.1 Examination of additional fisheries indicators and their discussion at WP meetings. Perhaps a section in report to accommodate these. See how this is being addressed in other RFMOs.					

APPENDIX 37F
Working Party on Data Collection and Statistics Program of Work (2026-2030)

Table 1. Priority topics for obtaining the information necessary to deliver the necessary advice to the Commission. * indicates activities with high priority for funding

	Topic		Sub-topic and project	2026	2027	2028	2029	2030
1	**Coastal fisheries data collection**	**1.1***	Data support missions to assist the implementation of data collection and sampling activities for fisheries insufficiently sampled. Recommended actions include designing sampling guidelines for IOTC fisheries. Priority to be given to the following countries / fisheries: • Indonesia • Pakistan • I.R. Iran • Tanzania • Comoros					
		1.2 *	Biological sampling workshop, including species identification and genetics sampling					
2	**Data access and dissemination**	**2.1**	Ocean-climate information: develop an online digital ocean atlas for the IOTC area of competence, linked by the IOTC website; develop indicators on ocean-climate status to be linked to the atlas portal, along with educational resources					
		2.2	Biological information: collaborate with CPCs to collect, Review, analyse, and manage of biological data and information.					
		2.3	Improve accessibility of IOTC scientific products and digital assets through standard metadata and DOI (e.g., remote workshops)					

		2.4	Secretariat To establish a photo and imagery tool library and archive and develop associated reporting guidelines					
3	**Monitoring and improving data reporting requirement and performance**	**3.1**	Drafting of indicators to assess performance of IOTC CPCs against IOTC Data Requirements; evaluation of performance of IOTC CPCs with those Requirements; development of plans of action to address the issues identified, including timeframe of implementation and follow-up activities required. Priority given to CPCs with low data compliance assessment scores and/or upon requests by the CPCs.					
		3.2 *	Workshops to clarify data reporting requirements[1] and support preparation of annual submissions including ROS data					
		3.3	Support the documentation of sampling protocols and processing[2]					
				2026	**2027**	**2028**	**2029**	**2030**

APPENDIX 37G
WORKING PARTY ON METHODS PROGRAM OF WORK (2026 - 2030)

Table 1. Priority topics for obtaining the information necessary to deliver the necessary advice to the Commission. Resolution 15/10 elements have been incorporated as required by the Commission.

Topic	Sub-topic and project	Timing				
		2026	2027	2028	2029	2030
1. Management Strategy Evaluation	Continuation of Management Strategy Evaluation for Albacore, Yellowfin, and Blue shark					
MP Implementation	Monitoring the implementation of SKJ, BET and SWO Management Procedures					
	Peer review of SKJ/SWO MSE/MPs as required by MP resolutions					
Future Research Requirements (not in order of priority)						
Management Strategy Evaluation	1.1 Albacore					

1.1.2 Implementation of candidate MP simulation runs and presentation of results at the TCMP					
1.1.3 Revision and evaluation of new set of Management Procedures after presentation of MP runs to TCMP and Commission (as needed)					
1.2 Skipjack tuna					
1.2.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice					
1.2.2 Presentation of MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of the TAC					
1.2.3 Stock assessment to provide information on stock status					
1.2.4 External peer review (2026-2028)					
1.3 Bigeye tuna					
1.3.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice					

1.3.2 MP performance review (preceded by the development of TORs),					
1.3.3 Presentation of MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of the TAC					
1.3.4 Stock assessment to provide information on stock status					
1.4 Yellowfin tuna					
1.4.1 Update OM & present preliminary MP results to TCMP, WPTT/WPM review of new OM					
1.4.2 Present revised MP results to TCMP; iteratively update development if required)					
1.4.3 additional iterations if required					
1.5 Swordfish					
1.5.1 Run MP using the catch and CPUE standardisation input data, consider exceptional circumstances*, and provide the TAC advice					
1.5.2 Presentation of MP application and exceptional circumstances* and resulting TAC to the TCMP and Commission meeting for adoption of					

the TAC						
1.5.3 Stock assessment to provide information on stock status Stock assessment to provide information on stock status						
1.5.4 External peer review of the MSE/MP						
Stock status guidance and reference points.	Review IOTC stock status characterization against reference points and the framework for the provision of management advice (Resolution 15/10) to address the TORs of ad hoc reference point WG.					
CPUE Standardisation	Continue the development of CPUE series for IOTC Species to be used in stock assessment and MSE/MP. Develop mechanism to ensure that CPUE standardization for the MP follows the MP specifications. Consider alternative CPUE (and catch data) to explore alternative plausible time series to address potential uncertainties associated with productivity to be included in OM conditioning					

Stock assessment	Exploration and development of next-generation integrated fisheries stock assessment models (e.g., age-structured state-space assessment models) and their application to tuna stocks.					
CKMR pilot project	Implementation of a CKMR pilot project for Indian Ocean yellowfin tuna to evaluate the logistics and feasibility of sampling, and levels of cross contamination of DNA.					
Capacity Building	Ongoing development of tools, materials and courses to continue Capacity Building for increasing participation in the MSE process and develop improved MSE communication to fishery managers.					

Table 2. Schedule of work for the development of management procedures for key species in the IOTC Area

Year	Albacore	Skipjack	Yellowfin	Bigeye	Swordfish	Blueshark
2026	**TCMP**: Provide advice to Commission on elements of OMs and, if possible, candidate MPs, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP**: Provide advice to the Commission on SKJ TAC for 2027-2029	**TCMP**: Provide advice to Commission on elements of OMs and, if possible, candidate MPs, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.	**TCMP**: Consider outcomes of BET MSE review and provide advice Commission.	**TCMP**:	**TCMP**: Provide advice to Commission on elements of OMs and, if possible, candidate reference points and MPs, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.
	Commission: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.	**Commission:** Adopt the TAC for 2027-2029	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE.	**Commission**: Consider outcomes of BET MSE review	**Commission**:	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE.
	WPs/SC: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	**WPs/SC**: Stock Assessment to monitor MP implementation Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Stock Assessment to monitor MP implementation Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.

2027	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.		**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.		**TCMP**:	**TCMP**: Provide advice to Commission on elements of candidate MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.
	Commission: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.	**Commission:**	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.		**Commission**:	**Commission**: Consider work and advice from subsidiary bodies and provide direction to the WPs/SC on the need to undertake further MSE of candidate or alternative MPs.
	WPs/SC: Consider recommendations from the Commission	**WPs/SC**: Stock Assessment to monitor MP implementation Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.	**WPs/SC**: Run BET MP and Review Exceptional Circumstances and agree in any corrective action, if needed. Provide TAC advice to the TCMP and Commission for 2029-2032.	**WPs/SC**: Run SWO MP and Review Exceptional Circumstances and agree in any corrective action, if needed. Provide TAC advice to the TCMP and Commission for 2029-2032.	**WPs/SC**: Consider recommendations from the Commission and undertake MSE to provide advice on the performance of candidate MPs.
2028	**TCMP**:	**TCMP**:	**TCMP**: Provide advice to Commission on elements of candidate	**TCMP**: Provide advice to the Commission on BET TAC for 2029-2032.	**TCMP**: Provide advice to the Commission on SWO TAC for 2029-2032.	**TCMP**: Provide advice to Commission on elements of candidate

			MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.			MPs, and any proposed Resolutions for an MP, that require a decision by the Commission, including the performance of candidate MPs against Commission objectives.
	Commission:	**Commission:**	**Commission**: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.	**Commission**: Adopt the TAC for 2029-2032.	**Commission**: Adopt the TAC for 2029-2032.	**Commission**: Consider work and advice from subsidiary bodies. Decision and adoption of an MP.
	WPs/SC: Review Exceptional Circumstances	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission	**WPs/SC**: Review Exceptional Circumstances.	**WPs/SC**: Review Exceptional Circumstances	**WPs/SC**: Consider recommendations from the Commission

APPENDIX 38

SCHEDULE OF STOCK ASSESSMENTS FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2026-2030, AND FOR OTHER WORKING PARTY PRIORITIES

Working Party on Neritic Tunas					
Species	**2026***	**2027***	**2028**	**2029***	**2030**
Bullet tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Frigate tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Indo-Pacific king mackerel	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Kawakawa	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation
Longtail tuna	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation
Narrow-barred Spanish mackerel	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation

Working Party on Billfish					
Species	**2026**	**2027**	**2028**	**2029**	**2030**
Black marlin		Full assessment			Full assessment
Blue marlin			Full assessment		
Striped marlin		Full assessment			Full assessment
Swordfish	Full assessment	Run MP		Full assessment	Run MP
Indo-Pacific sailfish			Full assessment		

Working Party on Tropical Tunas					
Species	**2026**	**2027**	**2028**	**2029**	**2030**
Bigeye tuna	Indicators	**Data Prep for MP**	Data preparatory meeting **Full assessment**	Indicators	**Data Prep for MP**
Skipjack tuna	Data preparatory meeting **Full assessment**	Indicators	**Data Prep for MP**	Data preparatory meeting **Full assessment**	Indicators
Yellowfin tuna	Indicators	Data preparatory meeting **Full assessment**	Indicators	Indicators	Data preparatory meeting **Full assessment**

Working Party on Ecosystems and Bycatch					
Species	**2026**	**2027**	**2028**	**2029**	**2030**
	Data preparatory meeting	-	-	Data preparatory meeting	Data preparatory meeting
Blue shark	-	–	–	–	Full assessment
Oceanic whitetip shark	Indicator analysis*	-	–		Indicator analysis*
Scalloped hammerhead shark	Indicator analysis*	–	–	–	–
Shortfin mako shark	-			Full assessment	
Silky shark	Indicator analysis*	-	Indicator analysis*	-	–
Bigeye thresher shark	-	Indicator analysis*	-	–	–
Pelagic thresher shark	-	Indicator analysis*	-	–	–
Porbeagle shark	-	Indicator analysis*		–	–

Mobulid Rays	-	Interactions/ Indicators	-	Interactions/ Indicators	–
Marine turtles	-	–	Indicators	–	Indicators
Seabirds		Review of mitigation	–	Development of draft workplan	
Marine Mammals	-	–	–	Review of mitigation measures Review of handling guidelines	
Ecosystem Approach to Fisheries Management (EAFM)	Pilot ecosystem fisheries overviews for selected				
Series of multi-taxa bycatch mitigation workshops	Focus: tbd	Focus: tbd	Focus: tbd	Focus: gillnets	Focus: tbd

*Including data poor stock assessment methods; Note: the assessment schedule may be changed dependent on the annual review of fishery indicators, or SC and Commission requests.

Working Party on Temperate Tunas					
Species	**2026**	**2027**	**2028**	**2029**	**2030**
Albacore	Stock assessment meeting (3days) (July)	–	A combined data and assessment meeting (5 days July)		–

APPENDIX 39
SCHEDULE OF IOTC WORKING PARTY AND SCIENTIFIC COMMITTEE MEETINGS (2026 AND 2027)

	2026			2027		
Meeting	**No.**	**Date**	***Location**	**No.**	**Date**	***Location**
Management Strategy Evaluation Task Force of the Working Party on Methods (WPM)	17th	23 – 25 March	Virtual	18th	March	Virtual
Working Party on Social-Economics (WPSE)	3rd	1-2 April (2d)	Virtual	4th	April	Virtual
Ad hoc Working Group on Electronic Monitoring Systems (WGEMS)	6th	13-14 April (2d)	Virtual	7th	April	Virtual
Working Party on Ecosystems and Bycatch (Data Preparatory meeting) (WPEB-DP)	22nd	15-17 April (2d)	Virtual			
Working Group on FADs (WGFAD)	8th	8-9 June (2d)	Virtual	9th	June	Virtual
Working Party on Tropical Tunas (Data Preparatory meeting) (WPTT-DP)	28th	10-12 June (3d)	Virtual	29th	June	Virtual
Working Party on Neritic Tunas (WPNT)	16th	6-9 July (4d)	TBC	17th	July (3d)	TBC
Working Party on Temperate Tunas (WPTmT)	10th	20-22 July	Virtual			
Working Party on Billfish (WPB)	24th	9-12 September (4d) (with WPEB)	Reunion	25th	September (4d) (with WPEB)	TBC
Working Party on Ecosystems and Bycatch (WPEB)	22nd	14-18 September (5d) (with WPB)	Reunion	23rd	September (5d) (with WPB)	TBC
Working Party on Tropical Tunas (Assessment meeting) (WPTT-AS)	28th	20 October – 24 October (5d) (with WPM)	Spain	29th	October (5d) (with WPM)	TBC
Working Party on Methods (WPM)	17th	26-27 October (2d) (with WPTT)	Spain	18th	October (2d) (with WPTT)	TBC
Working Party on Data Collection and Statistics (WPDCS)	22nd	24 – 28 November (5d) (with SC)	Spain	23rd	November (5d)	TBC

Scientific Committee (SC)	29th	30 November - 4 December (5d)	Spain	30th	December (5d)	TBC

* In accordance with the SC Recommendations, Data Preparatory and Working Group meetings will remain virtual. The Secretariat will endeavour to ensure all remaining meetings are held in a hybrid format.

APPENDIX 40

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 28TH SESSION OF THE SCIENTIFIC COMMITTEE (1 - 5 DECEMBER 2025) TO THE COMMISSION

Tuna – Highly migratory species

SC28.01 (para. 267) The SC **RECOMMENDED** that the Commission note the management advice developed for each tropical and temperate tuna species as provided in the Executive Summary for each species, and the combined Kobe plot for the four species assigned a stock status in 2025 (Fig. 1):
Albacore (*Thunnus alalunga*) – Appendix 8
Bigeye tuna (*Thunnus obesus*) – Appendix 9
Skipjack tuna (*Katsuwonus pelamis*) – Appendix 10
Yellowfin tuna (*Thunnus albacares*) – Appendix 11

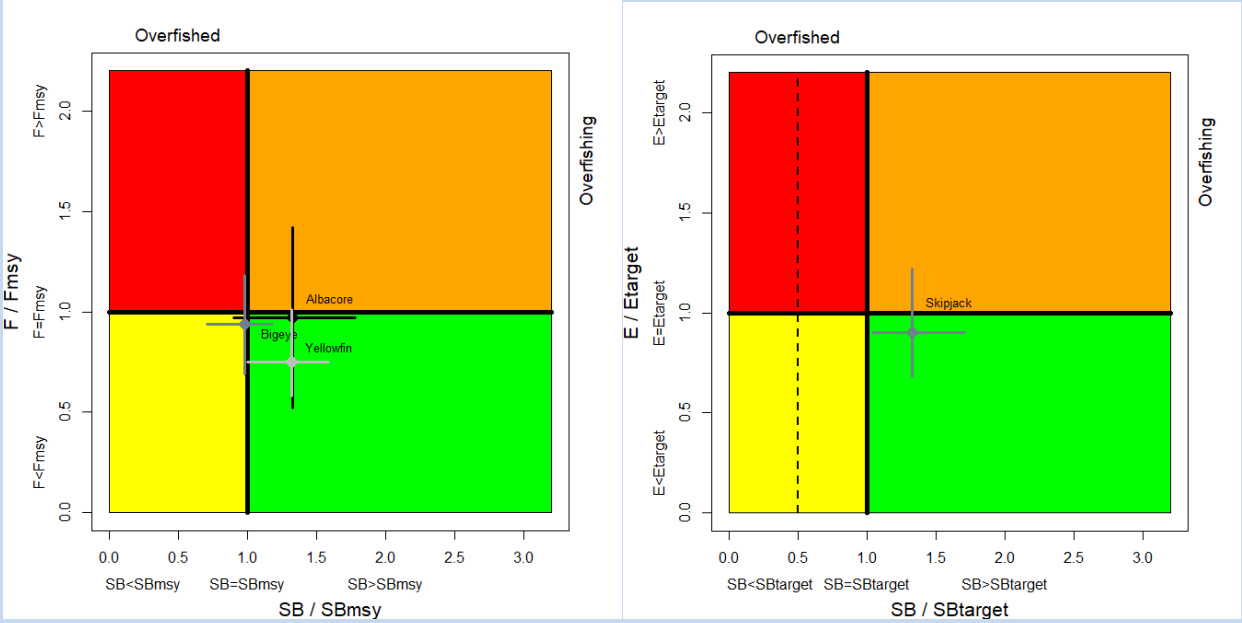

Fig. 1. (Left) Combined Kobe plot for bigeye tuna (black: status in 2024, based on the stock assessment conducted in 2025), and yellowfin tuna (light grey: 2023, with stock assessment conducted in 2024) and albacore (dark grey: 2020 with stock assessment conducted in 2022) showing the estimates of current spawning biomass (SB) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. (Right) Kobe plot for skipjack tuna (2022 with stock assessment conducted in 2023) showing the estimates of the current stock status (The dashed line indicates the limit reference point at 20%SB0 while SBtarget=0.4 SB0). Cross bars illustrate the range of uncertainty from the model runs with an 80% CI (95% CI for albacore).

Tuna and seerfish – Neritic tuna species

SC28.02 (para. 269) The SC **RECOMMENDED** that the Commission note the management advice developed for each neritic tuna (and seerfish) species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2025 (Fig. 2):
Bullet tuna (*Auxis rochei*) – Appendix 12
Frigate tuna (*Auxis thazard*) – Appendix 13
Kawakawa (*Euthynnus affinis*) – Appendix 14
Longtail tuna (*Thunnus tonggol*) – Appendix 15
Indo-Pacific king mackerel (*Scomberomorus guttatus*) – Appendix 16
Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – Appendix 17

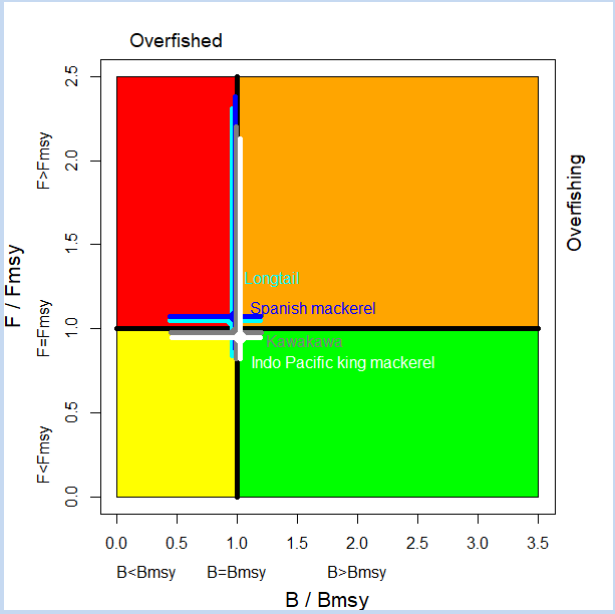

Fig. 2. Combined Kobe plot for longtail tuna (cyan), narrow-barred Spanish mackerel (blue), kawakawa (grey) (all for 2021 with stock assessment carried out in 2023) and Indo-Pacific king mackerel (2022 with stock assessment conducted in 2024 (white)), showing the estimates of stock size (B) and current fishing mortality (F) in relation to optimal biomass and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for bullet tuna, frigate tuna and narrow-barred Spanish mackerel should be interpreted with caution**.**

Billfish

SC28.03 (para. 270) The SC **RECOMMENDED** that the Commission note the management advice developed for each billfish species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the five species assigned a stock status in 2025 (Fig. 3):
Black marlin (*Istiompax indica*) – Appendix 18
Blue marlin (*Makaira nigricans*) – Appendix 19
Striped marlin (*Kajikia audax*) – Appendix 20
Indo-Pacific sailfish (*Istiophorus platypterus*) – Appendix 21
Swordfish (*Xiphias gladius*) – Appendix 22

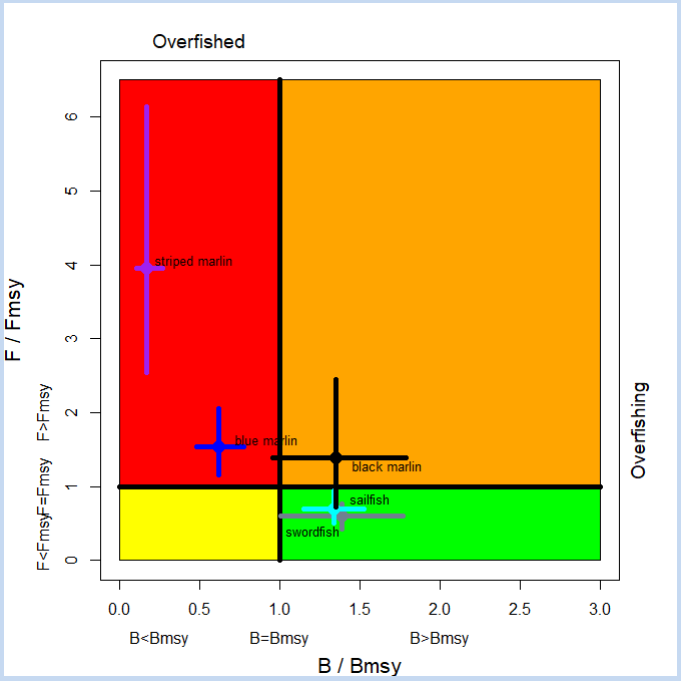

Fig. 3. Combined Kobe plot for swordfish (2021 with stock assessment conducted in 2023, grey), Indo-Pacific sailfish (2023 with stock assessment conducted in 2025, cyan), black marlin (2022 with stock assessment

conducted in 2024, black), blue marlin (2023 with stock assessment conducted in 2025, blue) and striped marlin (2022 with stock assessment conducted in 2024, purple) showing the estimates of current stock size (SB or B, species stock assessment dependent) and current fishing mortality (F) in relation to optimal stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the stock assessment, status for black marlin is uncertain.

Sharks

SC28.04 (para. 271) The SC **RECOMMENDED** that the Commission note the management advice developed for a subset of shark species commonly caught in IOTC fisheries for tuna and tuna-like species:
Blue shark (*Prionace glauca*) - Appendix 23
Oceanic whitetip shark (*Carcharhinus longimanus*) - Appendix 24
Scalloped hammerhead shark (*Sphyrna lewini*) - Appendix 25
Shortfin mako shark (*Isurus oxyrinchus*) - Appendix 26
Silky shark (*Carcharhinus falciformis*) - Appendix 27
Bigeye thresher shark (*Alopias superciliosus*) - Appendix 28
Pelagic thresher shark (*Alopias pelagicus*) - Appendix 29
porbeagle shark (*Lamna nasus*) - Appendix 30

Marine turtles

SC28.05 (para. 272) The SC **RECOMMENDED** that the Commission note the management advice developed for marine turtles, as provided in the Executive Summary encompassing all six species found in the Indian Ocean:
Marine turtles - Appendix 31

Seabirds

SC28.06 (para. 273) The SC **RECOMMENDED** that the Commission note the management advice developed for seabirds, as provided in the Executive Summary encompassing all species commonly interacting with IOTC fisheries for tuna and tuna-like species:
Seabirds - Appendix 32

Marine Mammals

SC28.07 (para. 274) The SC **RECOMMENDED** that the Commission note the management advice developed for cetaceans, as provided in the newly developed Executive Summary encompassing all species commonly interacting with IOTC fisheries for tuna and tuna-like species:
Cetaceans - Appendix 33

Mobulids

SC28.08 (para. 275) SC **RECOMMENDED** that the Commission note the management advice developed for Mobulids, as provided in the newly developed Executive Summary which encompasses all species commonly interacting with IOTC fisheries for tuna and tuna-like species*:*

Mobulids – Appendix 34

GENERAL RECOMMENDATIONS TO THE COMMISSION

NATIONAL REPORTS FROM CPCS

SC28.09 (para. 30) The SC **RECOMMENDED** that the Compliance Committee and Commission note the lack of compliance by 2 Contracting Parties (Members) that did not submit a National Report to the Scientific Committee in 2025, **NOTING** that the Commission agreed that the submission of the annual reports to the Scientific Committee is mandatory**.**

Report of the 15th Session of the Working Party on Neritic Tunas (WPNT15)

SC28.10 (para. 71) **ACKNOWLEDGING** the difficulties associated with deriving geo-referenced size-frequency data at the spatial resolution of 5° grids in most coastal longline and surface fisheries, and the fact that most analyses currently used in the assessments, do not require such fine resolution, the SC **RECOMMENDED** the Commission to align the spatial resolution of size-frequency data with that of geo-referenced catch and effort data. Consequently, the data may be provided using an alternative geographical area if it better represents the fishery concerned. The SC **NOTED** that this recommendation is relevant for many IOTC species and has been reiterated by other WPs.

REPORT OF THE 23RD SESSION OF THE WORKING PARTY ON BILLFISH (WPB23)

SC28.11 (para. 98) The SC **NOTED** that, for several years, joint analyses combining catch and effort data from major longline fleets have been proposed to improve the CPUE index for billfish species, and that the WPEB had previously recommended investigating methods to compare CPUE indices across fleets and to develop joint CPUE indices for bycatch species. The SC also **NOTED** that these joint analyses could harmonize standardization methods, reconcile conflicts between indices developed from different fleets, and potentially produce more robust indices with broader spatial and temporal coverage. The SC further **NOTED** that it is at the discretion of CPCs to determine the feasibility of such collaboration, considering data confidentiality agreements and other logistical arrangements. The SC **AGREED** on the importance of establishing a process to discuss how to move forward. **NOTING** that joint CPUE analysis arrangements already exist for the standardization of tropical and temperate tuna, the SC **RECOMMENDED** that the Commission urge CPCs to explore ways to extend joint analyses to non-targeted species, such as marlins.

SC28.12 (para. 112) The SC **RECOMMENDED** that the Commission to give consideration to how best to financially and logistically support an experimental fishing trial with gillnets to be conducted by CPCs which would:

- Aim to test different setting depths and times of setting/soaking (e.g. day/night), on catch rates and mortality of interacting species
- Collect data on all interacting species including billfish bycatch, target tuna and vulnerable species (e.g. cetaceans, turtles), in order to provide the Commission a quantified understanding of likely effects and possible trade-offs of various subsurface setting options, on each species
- Prioritise accurate species identification.

REPORT OF THE 21TH SESSION OF THE WORKING PARTY ON ECOSYSTEMS AND BYCATCH (WPEB21)

SC28.13 (para. 116) **NOTING** that data for bycatch species in IOTC fisheries are severely lacking, the SC **RECOMMENDED** that the Commission and Compliance Committee **ENCOURAGE** CPCs to provide observer data and work to reach at least the 5% minimum coverage level as required by Resolution 25/06.

SC28.14 (para. 118) **NOTING** that Resolution 15/01 includes a list of species for which reporting catch data is mandatory/optional and that varies by gear and by fishery type (i.e. artisanal vs commercial fisheries), the SC **NOTED** that many species of interest to the WPEB are not mandatory for reporting for all gears or fishery type. The SC **NOTED** concerns from some CPCs that making these species mandatory for reporting for all gears and fleets (including artisanal fleets) could place additional burden on many CPCs. This is particularly the case for many coastal fleets which are not necessarily targeting only tuna but instead target a wide range of species, making data collection complex. The SC therefore **RECOMMENDED** that the Commission review the list of species that are mandatory for reporting to species level while considering the feasibility of such data collection for all CPCs. The SC included the following suggested changes:

- Silky sharks to be added also for gillnets fisheries
- Hammerhead sharks to be reported at species level at least for scalloped, smooth and great
- hammerhead sharks for all gear types (explicitly including purse seine fisheries)
- Mantas and devil rays to be reported at species level differentiating at least between manta ray (giant manta and reef manta) and other devil rays adding them for mandatory reporting at least for purse seine fisheries and for gillnet fisheries instead of optional

- Great white sharks as mandatory for all gear types
- Oceanic whitetip sharks as mandatory for all gear types

SC28.15 (para. 119) The SC **RECOMMENDED** that the Commission speak with CPCs to determine appropriate ways to improve data reporting from artisanal fisheries.

SC28.16 (para. 120) The SC **NOTED** that the WPEB had **REVIEWED** the minimum standards set out in Annex III of Resolution 25/08 and **ADOPTED** the revisions made by members of the group which can be found in Annex XVVII of the WPEB report. The SC **RECOMMENDED** that the Commission consider these standards for adoption in 2026. The SC further **NOTED** that work on best practice handling guidelines is ongoing and frequently evolves. The SC therefore **SUGGESTED** that the Commission consider adopting a master document containing handling guidelines for all taxa, rather than requiring Resolutions containing such guidelines to be updated when new information becomes available. Future Resolutions could then refer back to this master document adopted by the SC. The SC **AGREED** that a small working group will work on compiling these intersessionally for review by the SC.

SC28.17 (para. 121) The SC **NOTED** that in 2024, the WPEB recommended the adoption of a revised set of handling guidelines for mobulids while **NOTING** that work was required to further develop the guidelines for gillnets. The SC **NOTED** that the WPEB worked to further develop these guidelines which were revised and adopted. The SC **RECOMMENDED** that the Commission consider these revised handling guidelines for mobulids for consideration for adoption in 2026. The details of the suggested revisions to the handling procedures can be found in Appendix XVVI of the WPEB report.

SC28.18 (para. 122) The SC **NOTED** that while evidence on post-release survival of whale sharks from purse seine interactions suggests low mortality when best-practices are followed, data on bycatch in other fisheries, particularly gillnets, remains scarce. Therefore, the SC **RECOMMENDED** that the Commission **ENCOURAGE** CPCs to improve data collection and reporting for interactions with whale sharks involving all gear types as well as purse seine.

SC28.19 (para. 123) The SC **ENCOURAGED** efforts to clarify the extent and nature of whale shark interactions with IOTC fisheries, and to assess the current stock status within the IOTC area of competence, **ACKNOWLEDGING** that the extent of the vulnerability of whale sharks to IOTC fisheries is unknown. Based on the available information presented by the WPEB, the SC classified whale sharks in the Indian Ocean as a "taxon of the greatest biological vulnerability and conservation concern for which there are very few data", as defined in Resolution 25/08 and **RECOMMENDED** that the Commission take appropriate action based on this classification. The SC **NOTED** that this classification supports the consideration of precautionary management measures and prioritization of future research and data collection efforts by the Commission.

STATUS OF DEVELOPMENT AND IMPLEMENTATION OF NATIONAL PLANS OF ACTION FOR SEABIRDS AND SHARKS, AND IMPLEMENTATION OF THE FAO GUIDELINES TO REDUCE MARINE TURTLE MORTALITY IN FISHING OPERATIONS

SC28.20 (para. 125) The SC **RECOMMENDED** that the Commission note the current status of development and implementation of National Plans of Action (NPOAs) for sharks and seabirds, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations, by each CPC as provided in Appendix 6, recalling that the IPOA-Seabirds and IPOA-Sharks were adopted by the FAO in 1999 and 2000, respectively, and recommended the development of NPOAs.

OTHER MATTERS

SC28.21 (para. 145) The SC **RECOMMENDED** that the Commission **ENCOURAGE** ongoing trials with these gears (i.e., loop gears) to better understand their effect on target and bycatch species.

REPORT OF THE 16TH SESSION OF THE WORKING PARTY ON METHODS (WPM16)

Bigeye tuna MP (Resolution 22/03)

SC28.22 (para. 211) The SC **NOTED** that 2024 catch of bigeye tuna (82,874 t) has exceeded the 2024 TAC (80,583 t), which is an exceptional circumstance, and as such, the SC **RECOMMENDED** that the Commission should ensure that the appropriate provisions (e.g., in paragraphs 4, 5 and 8) of 23/04 are implemented to ensure catches remain inside the TAC, conditional on the allowances and requirements of those provisions.

Skipjack tuna MP (Resolution 24/07)

SC28.23 (para. 212) The SC **NOTED** the 2025 running of the SKJ MP **NOTING** that the this generated an unconstrained TAC of 528,130 t, which is >10% lower than the TAC set for 2024–2026. By applying the maximum 10% decrease in the TAC as per Resolution 24/07, the SC **RECOMMENDED** the Commission to adopt the TAC for skipjack tuna of 565,745 t. per year for 2027–2029.

Swordfish tuna MP (Resolution 24/08)

SC28.24 (para. 216) The SC **RECOMMENDED** that the Commission urgently propose and adopt the TAC for swordfish resulting from the MP (Resolution 24/08, now superseded by 25/07) in 2026.

General MSE issues

SC28.25 (para. 222) The SC **NOTED** that there are confidentiality agreements between longline countries and various tuna RFMO Secretariats regarding the use of operational data (such as those in place with the WCPFC and IATTC) and NOTING the provisions to ensure confidentiality of the operational data submitted to the Secretariat in IOTC Resolution 12/02, the SC **RECOMMENDED** that the Commission explore potential arrangements between longline-fleet CPCs and the IOTC Secretariat, under strict confidentiality rules (similar to those outlined in Resolution 12/02), so that the Secretariat can use operational data and participate in, as well as support, the development of the joint longline CPUE index. The SC further **RECOMMENDED** exploring similar arrangements for other fleets.

REPORT OF THE 21TH SESSION OF THE WORKING PARTY ON DATA COLLECTION AND STATISTICS (WPDCS21)

SC28.26 (para. 236) The SC **RECOMMENDED** that the Commission ensures that the transition from the current website to the FAO one does not affect the operations of the Commission and set aside enough resources for this transition.

SUMMARY DISCUSSION OF MATTERS COMMON TO WORKING PARTIES

Observed issues related to IOTC Working Party meetings

SC28.27 (para. 245) The SC **NOTED** the increasing utilisation of the Meeting Participation Fund (MPF) during working parties, observing that this is a positive development which aligns with the Commission's objectives and the original purpose of the MPF. However, the SC **NOTED** a few cases where applicants did not fully meet the MPF requirements, such as failing to submit a complete paper or submitting papers not sufficiently relevant to the meeting's agenda. The SC **NOTED** that there is currently no precedent requiring a recipient to return funds in such situations. Consequently, to ensure the effective use of MPF resources, the SC **RECOMMENDED** that the Commission and SCAF discuss further actions.

Invited Expert(s) at the WP meetings

SC28.28 (para. 260) Given the importance of external independent review for working party meetings, the SC **RECOMMENDED** the Commission continues to allocate sufficient budget for Invited Experts to be regularly invited to scientific working party meetings. The SC **NOTED** that there are generally funds to support 3 or 4 Invited Experts to attend IOTC's working parties.

IOTC species identification guides: Tuna and tuna-like species

SC28.29 (para. 262) The SC reiterated its **RECOMMENDATION** that the Commission allocates budget towards continuing the translation and printing of the IOTC species ID guides so that hard copies of the identification cards can continue to be printed as many CPC scientific observers, both on board and at port need to have hard copies.

Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies

SC28.30 (para. 266) The SC **RECOMMENDED** that the Commission note and endorse the Chairpersons and Vice-Chairpersons for the SC and its subsidiary bodies for the coming years, as provided in Appendix 7.

PROGRAM OF WORK AND SCHEDULE OF WORKING PARTY AND SCIENTIFIC COMMITTEE MEETINGS

Consultants

SC28.31 (para. 293) **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in previous years, the SC **RECOMMENDED** that the engagement of consultants be continued for each coming year based on the Program of Work. Consultants will be hired to supplement the skill set available within the IOTC Secretariat and CPCs.

Data preparatory meetings and Hybrid meetings

SC28.32 (para. 295) **ACKNOWLEDGING** that holding data preparatory meetings prior to stock assessments is considered to be best practice and **NOTING** that since 2019 data preparatory meetings were successfully held for the WPTmT, WPTT and WPEB, the SC **AGREED** to continue the practice of having data preparatory meetings in addition to stock assessment meetings for the main IOTC species. The SC **RECOMMENDED** that data preparatory meetings could continue to be held virtually so as not to increase the travel and costs required for the already full IOTC timetable of meetings.

REVIEW OF THE DRAFT, AND ADOPTION OF THE REPORT OF THE 28TH SESSION OF THE SCIENTIFIC COMMITTEE

SC28.33 (para. 303) The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC25, provided at Appendix 40.