Food and Agriculture Organization of the United Nations

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REPORT OF THE 27TH SESSION OF IOTC SCIENTIFIC COMMITTEE DECEMBER 2-6, 2024, CAPE TOWN (SOUTH AFRICA)

TOSHIHIDE KITAKADO (JAPAN) & GORKA MERINO (EU)

29TH IOTC COMMISSION MEETING, APRIL 13-17, 2025 @REUNION, FRANCE

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SCIENTIFIC COMMITTEE MEETING IN 2024

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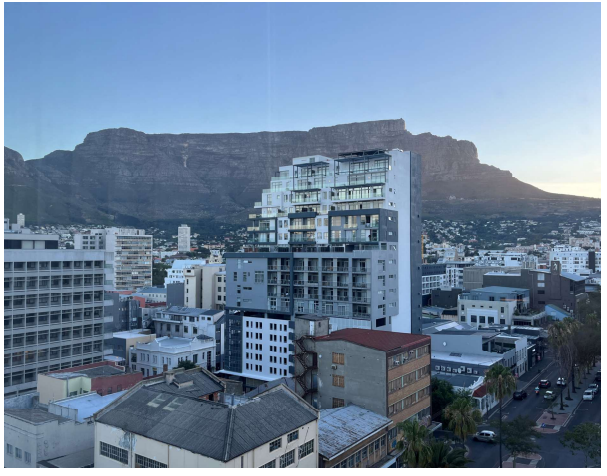
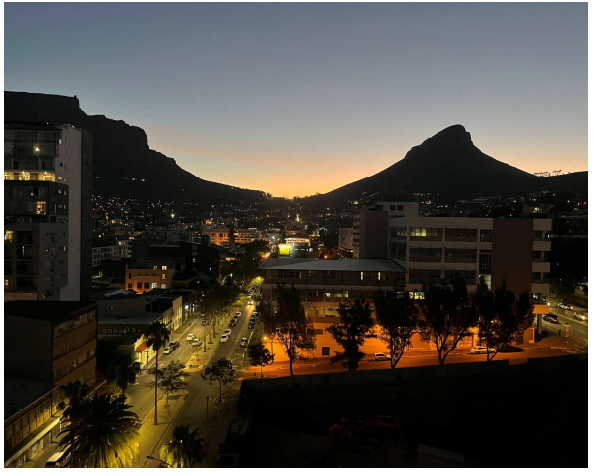
- The SC27 was held from 2-6 December 2024 in Cape Town (South Africa)
- 120 delegates from 24 Contracting Parties
- 21 participants from 15observer organisations (including the invited experts)





CONTENTS OF SC REPORT

- Stock status and management advice for the following species for which a new stock assessment was carried out in 2024
  - Yellowfin (WPTT)
  - Striped marlin & Black marlin (WPB)
  - Shortfin mako shark stock assessment (WPEB)
  - Bullet tuna, frigate tuna & Indo-Pacific king mackerel (WPN)
- Working Party and Working Group discussions other than stock assessment
- General recommendations from SC 2024
- Workplan and draft meeting schedule in 2025-2026

Stock Status and Management Advice

1. Yellowfin (WPTT)
2. Striped marlin & Black marlin (WPB)
3. Shortfin mako shark stock assessment (WPEB)
4. Bullet tuna, frigate tuna & Indo-Pacific king mackerel (WPN)

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STOCK STATUS AND MANAGEMENT ADVICE (1)

YELLOWFIN TUNA

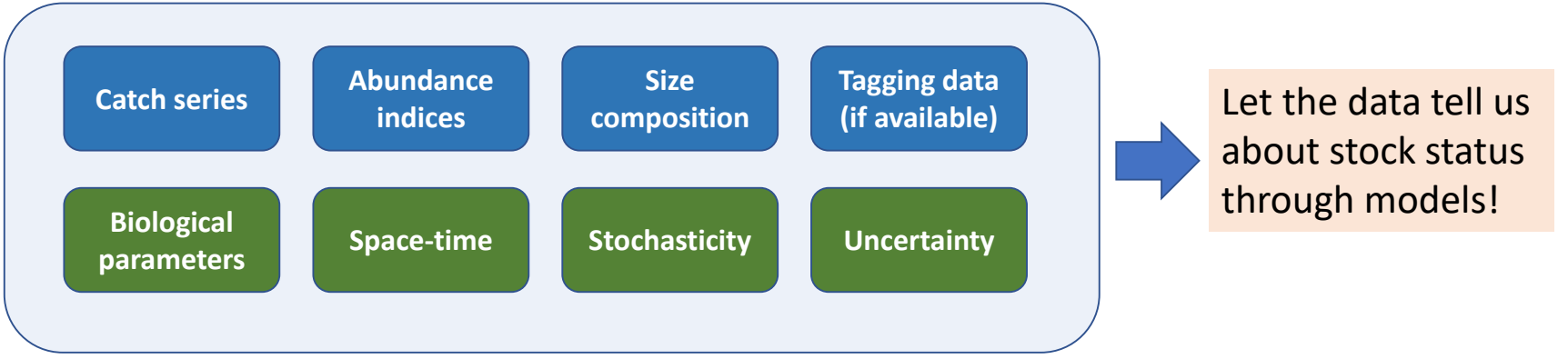
YELLOWFIN STOCK ASSESSMENT IN 2024 (WPTT)

- WPTT Chair: Gorka Merino (EU); Vice-chair: Shiham Adam (IPNLF)
- WPTT26 (DP): June 12-14, 2024 (virtual)
  - ✓ Data preparation
  - ✓ Model specification

- WPTT26 : October 28 – November 2, 2024 (Seychelles, hybrid)
  - ✓ Stock assessment and model diagnostics for YFT
  - ✓ Management advice for tropical tunas

Stock assessment model

- "Stock Synthesis 3" (SS3), an **integrated** stock assessment model
- Simultaneous use of different sources of data on catch, abundance indices, size and tagging
- Age-structured model with spatial and seasonal components
- High flexibility to account for different fisheries, biological assumptions and stochasticity



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DATA (1) CATCH SERIES (BY FISHERIES)

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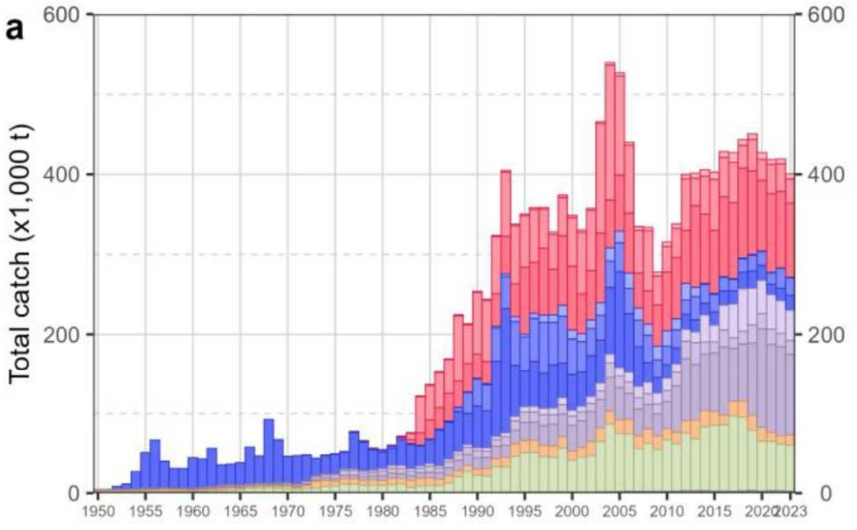
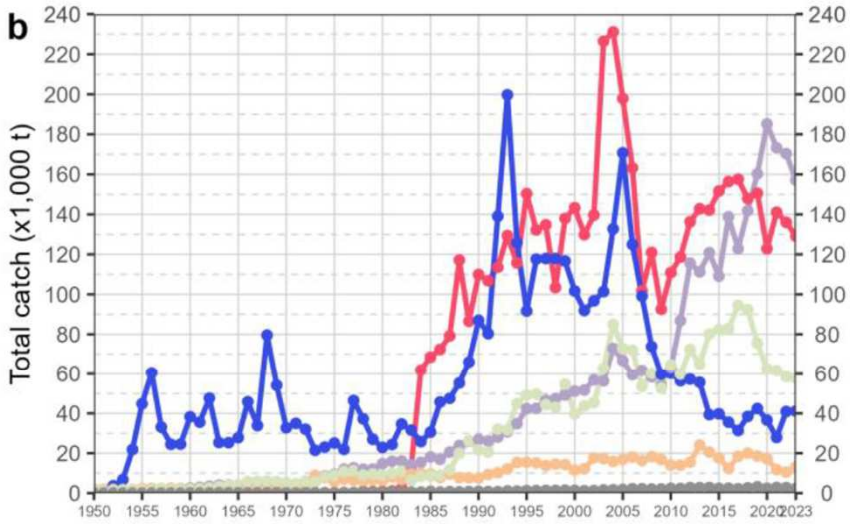
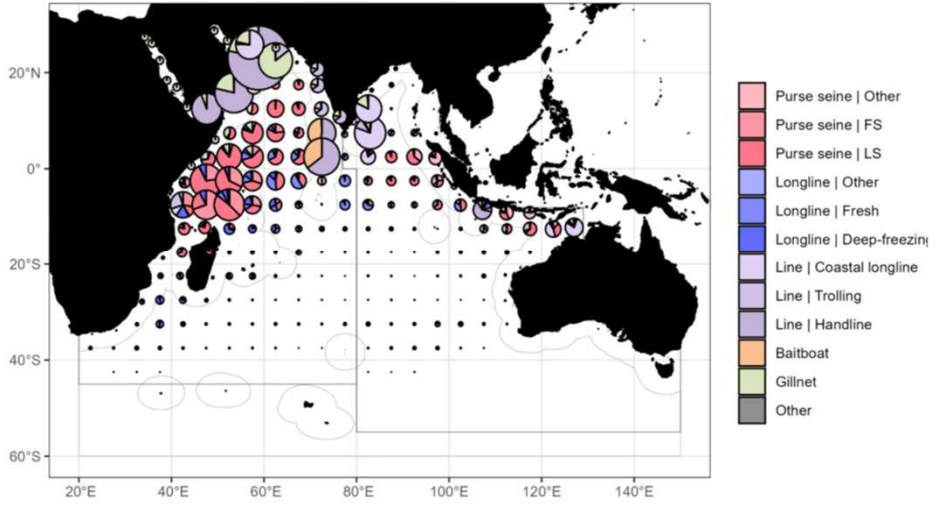
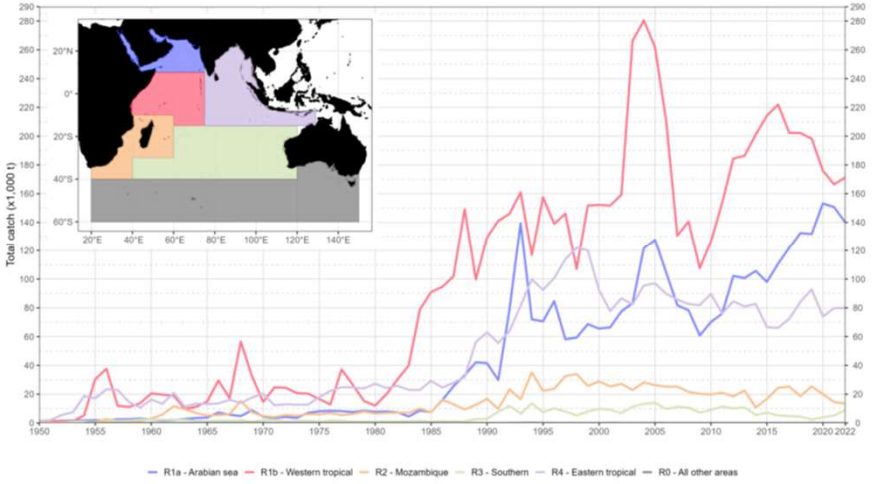




DATA (1) CATCH SERIES (SPATIAL)



Distribution of the raised catches (t) of yellowfin tuna by fishery in 2022

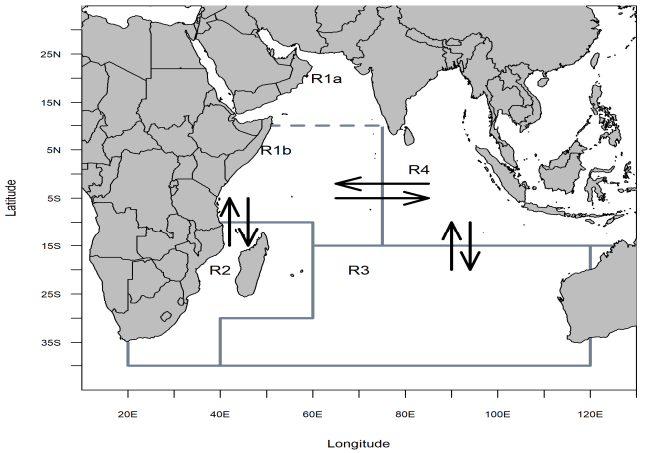


Annual time series of cumulative retained catches (t) of yellowfin tuna by stock assessment area, 1950-2022

DATA (2) ABUNDANCE INDICES (CPUE)

Joint longline CPUE indices (Japan, Korea and Taiwan,China)

- Quarterly time step
- Aggregated data (not operational)
- R1 includes data in Arabian Sea (not used in the past)
- Recent increase in R1, R3 and R4
- Drives abundance trend in SA



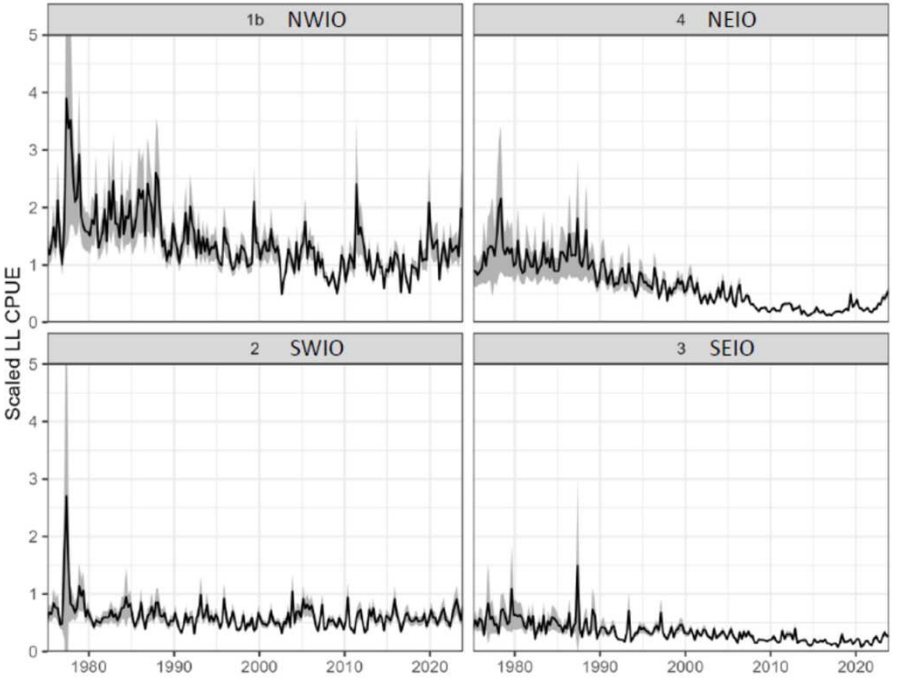
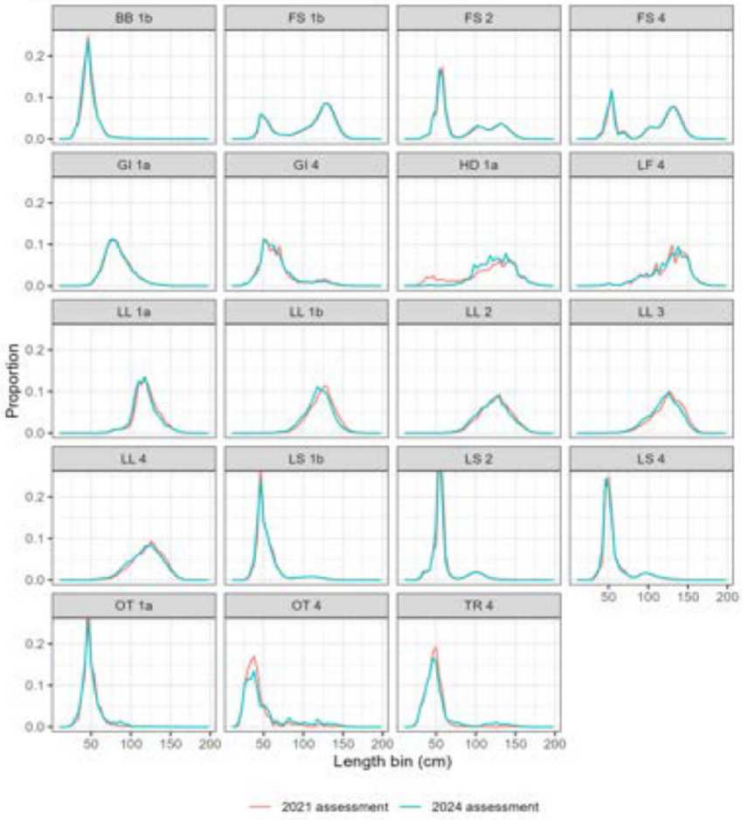


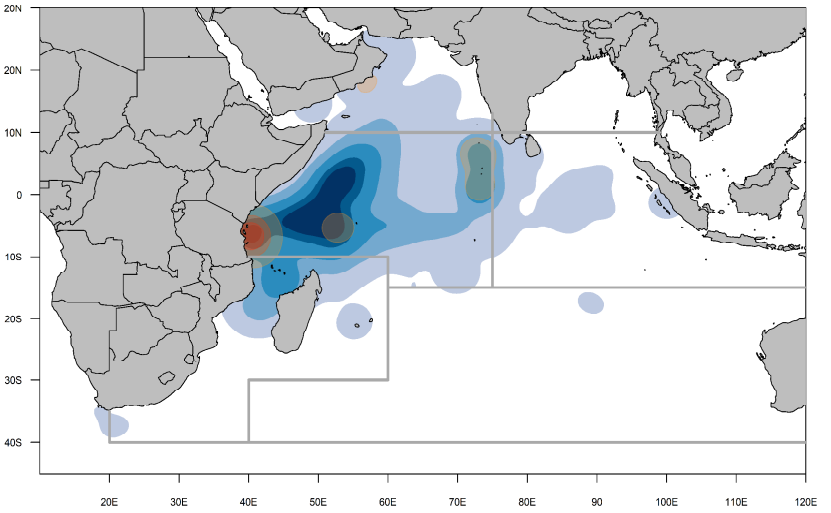
Figure 15: Scaled LL CPUE time serie per region. The shaded area represents the 95% confidence interval.

DATA (3) SIZE FREQUENCY AND TAG DATA

LENGTH COMPOSITION



TAG DATA

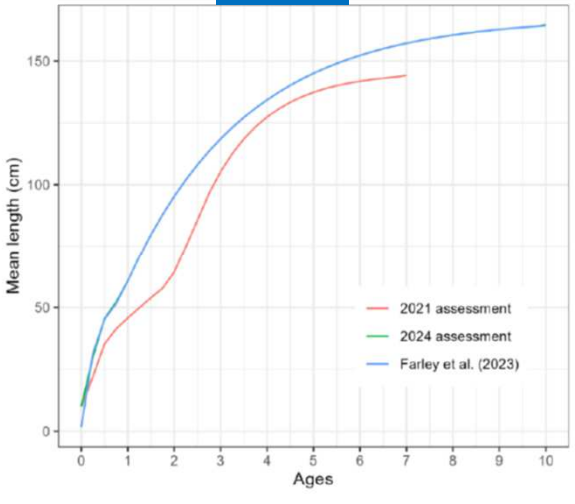


- IOTTP and RTTP-IO
- 54,688 releases 9,916 recoveries.
- Mostly R1 (North West) by PS oin 2006-2008.
- Data processing (Reporting, tag mort & loss).
- Informs model abundance and fishing mortality

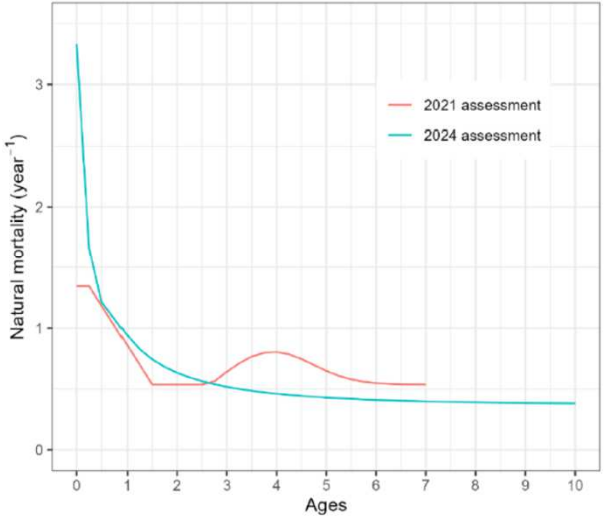
BIOLOGICAL ASSUMPTIONS

- 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.

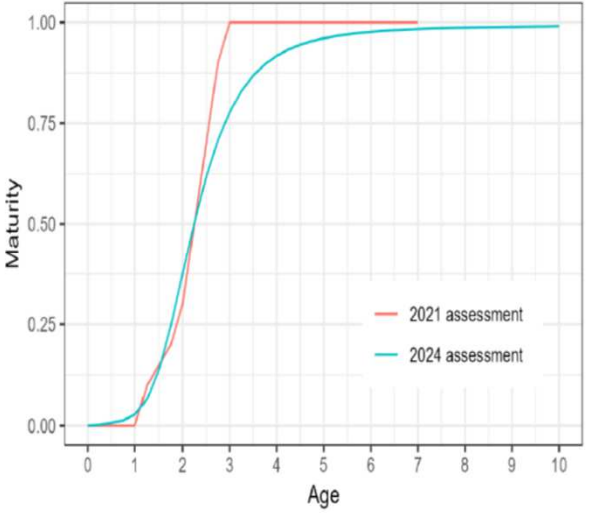
Growth



Natural mortality



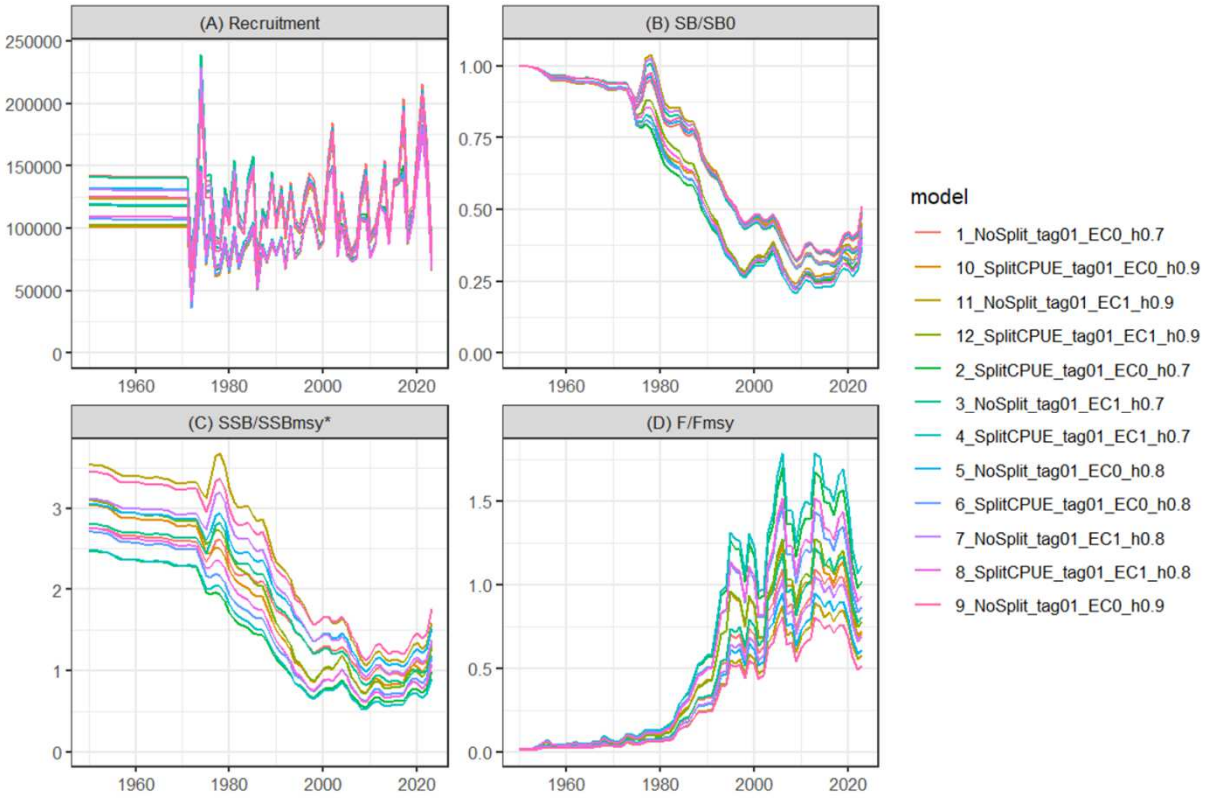
Maturity



CHARACTERIZATION OF UNCERTAINTY (MODEL GRID)

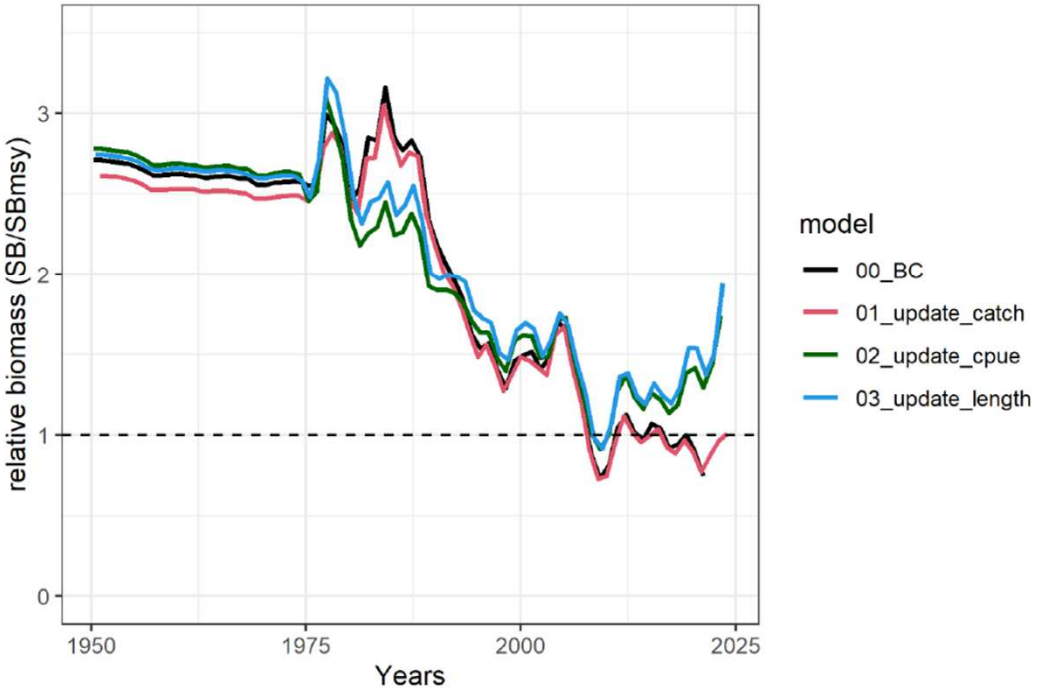
Ensemble of 12 models

- Selectivity (2 options)
  - No Split
  - SplitCPUE
- Effort creep (2 options)
  - 0%
  - 0,5 % per year
- Steepness (3 options)
  - 0.7
  - 0.8
  - 0.9



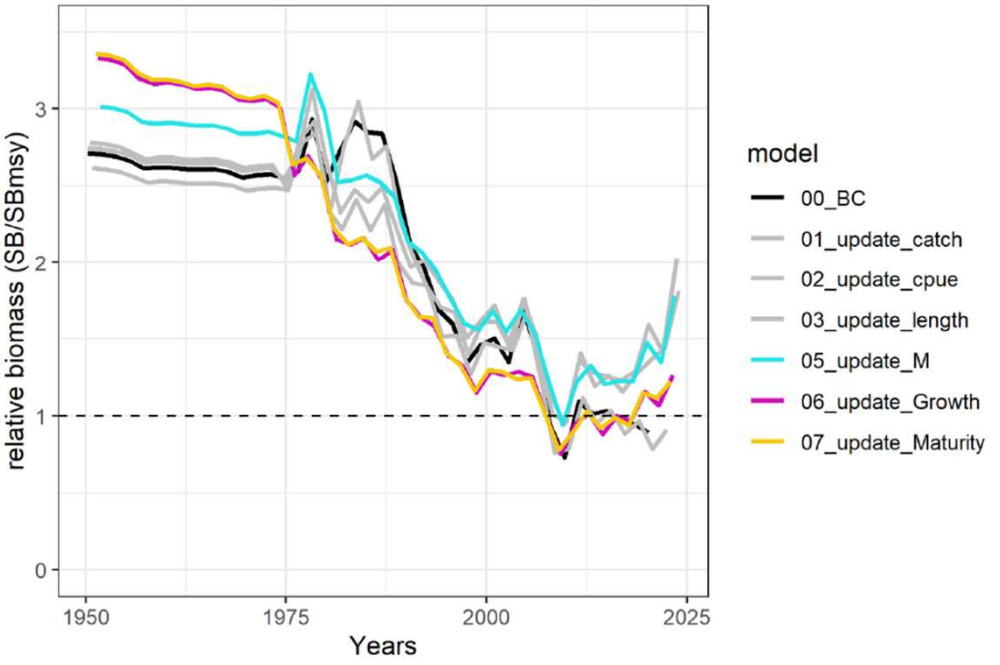
IMPACT OF UPDATED DATA

- Update data
  - Catch (+21%)
  - CPUE (+79%)
  - Length (+11%)



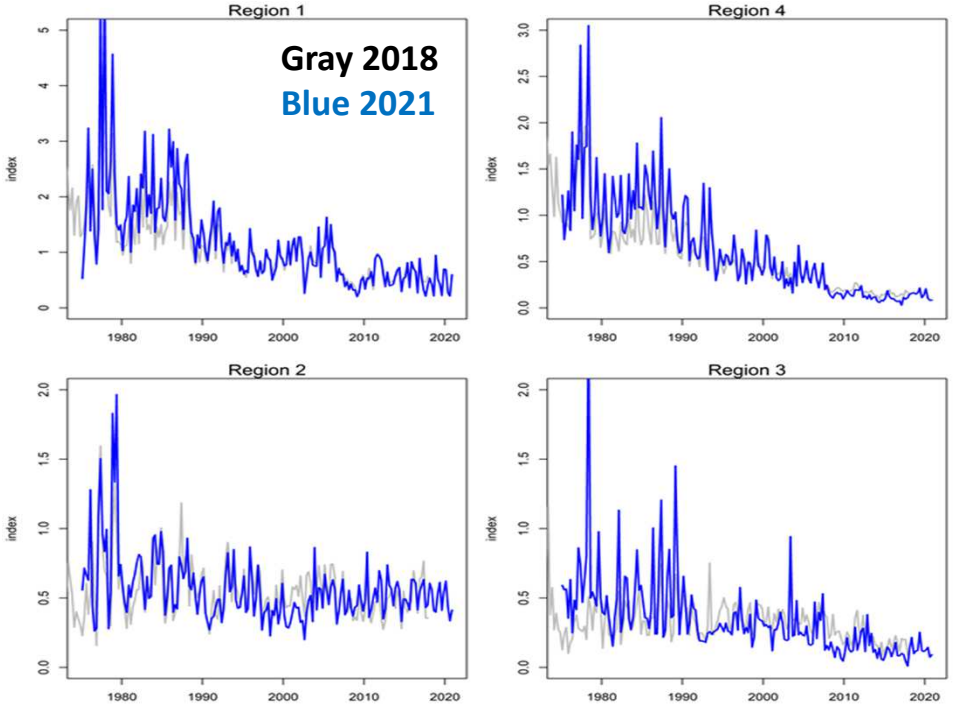
IMPACT OF NEW BIOLOGICAL ASSUMPTIONS

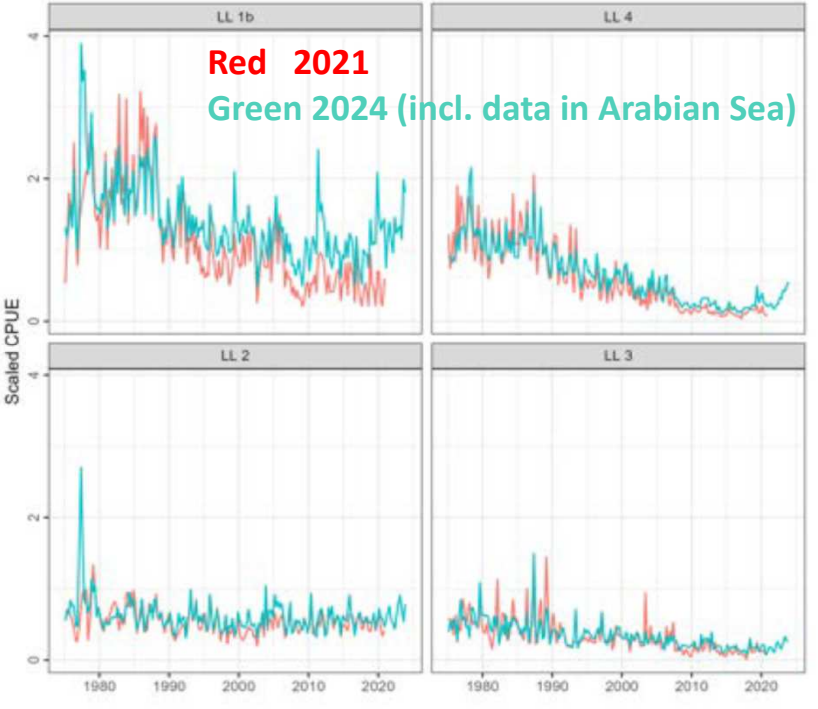
- Update data
- Update biology
  - Growth (-27%)
  - NatM (-14%)
  - Maturity (-9%)



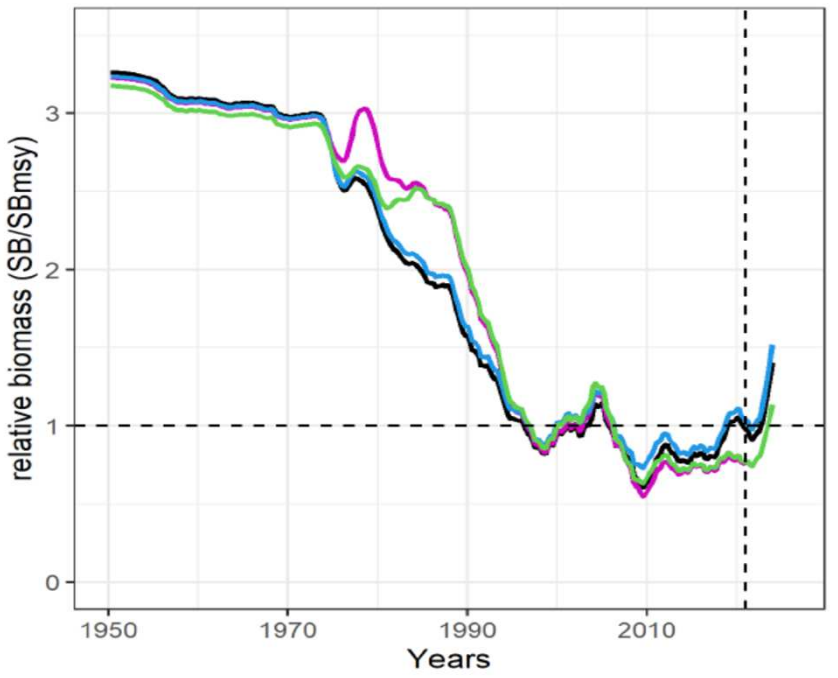
DATA (2) ABUNDANCE INDICES (CPUE)

Joint longline CPUE indices (Japan, Korea and Taiwan,China)



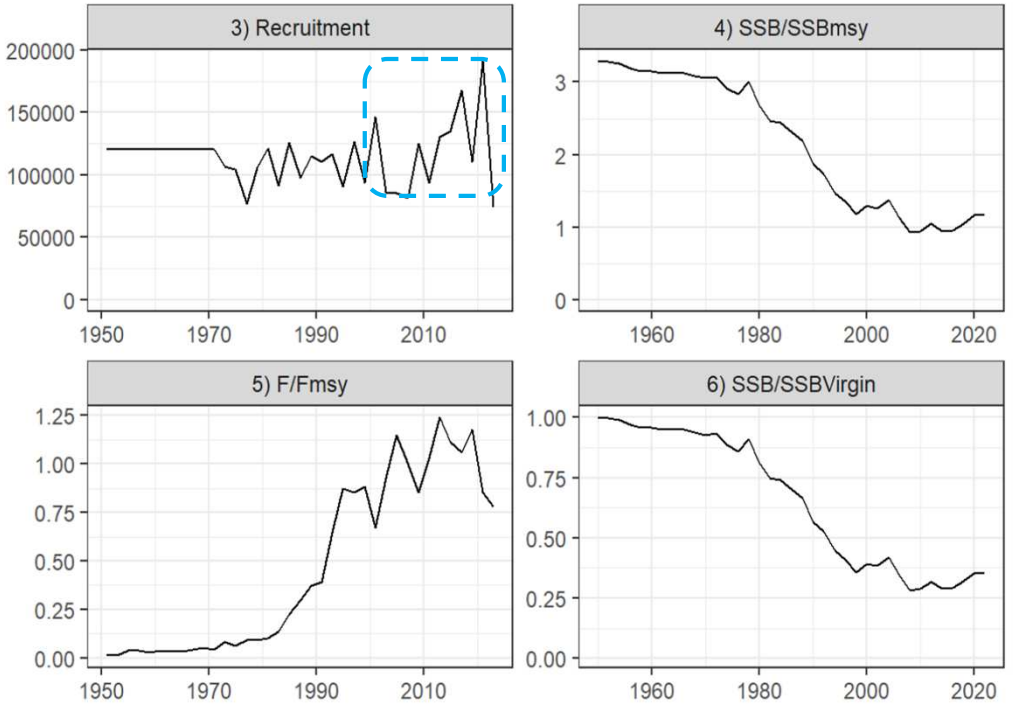


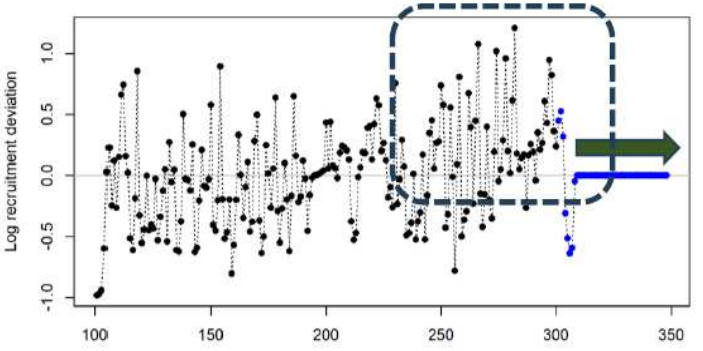
TRIAL WITH 2021 CPUE (QUARTERLY BUT WITH AGGREGATED DATA)



- Even using 2021 CPUE (see **green**) for example), the biomass level increased in the recent period) without using CPUE data in 2021-2023.
- Catch and length data (up to 2023) also drove biomass levels

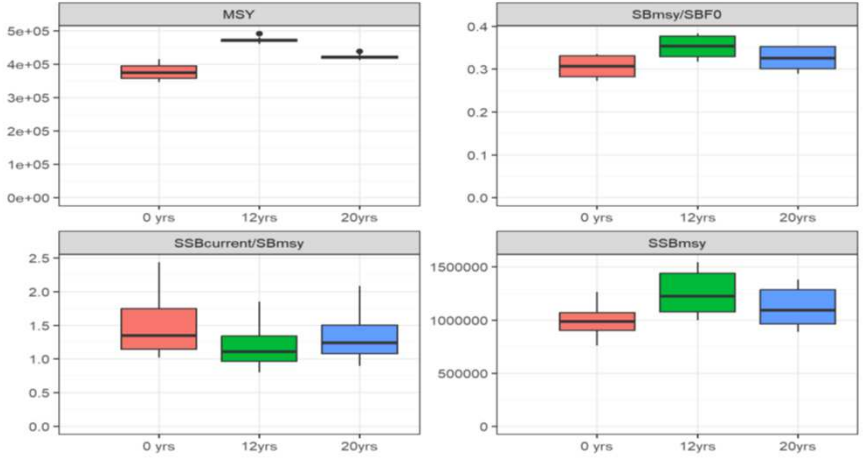
RECRUITMENT PHASES AND REFERENCE POINTS

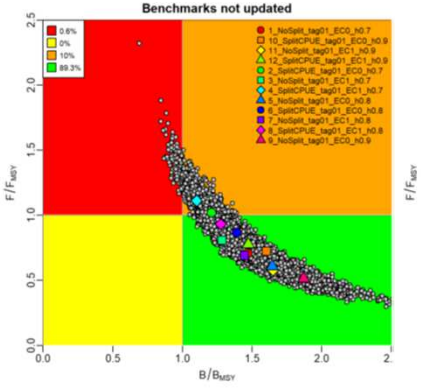


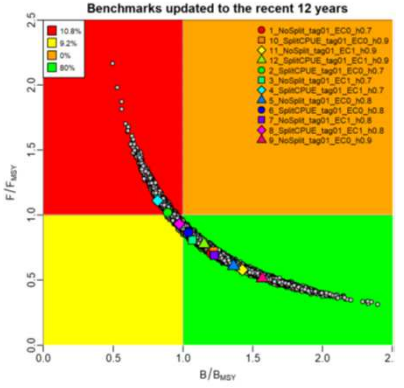


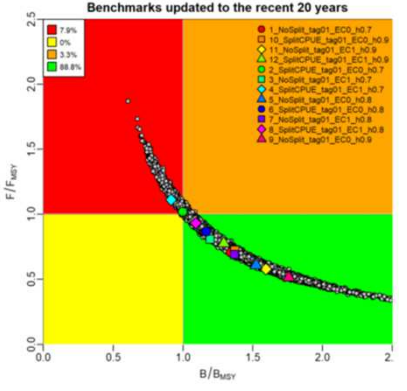
- In the projection period, recent catch is not realistic unless rec deviations (or average of them) are assumed.
- Proposed using recent rec devs to scale the SR relationship but…
- Benchmark RPs would need to be updated as well (BMSY, FMSY, B(F=0)).

SELECTION OF MANAGEMENT BENCHMARK









*Following the projection results were examined, the WPTT **AGREED** to set the reference period to the **recent 20 years (2002-2021).** This 20-year period was selected 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.*

Long term MSY (t)	Recent 20 yr MSY (t)	Long term SSBmsy (t)	Recent 20 yr SSBMSY (t)
374,421	420,623	986,599	1094,844

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SUMMARY OF STOCK ASSESSMENT 2024

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- Overall stock status estimates differ substantially from the previous assessment
- Spawning biomass in 2023 was estimated to be 32% higher than the level that supports the maximum sustainable yield
- Current fishing mortality is estimated to be 25% lower than FMSY

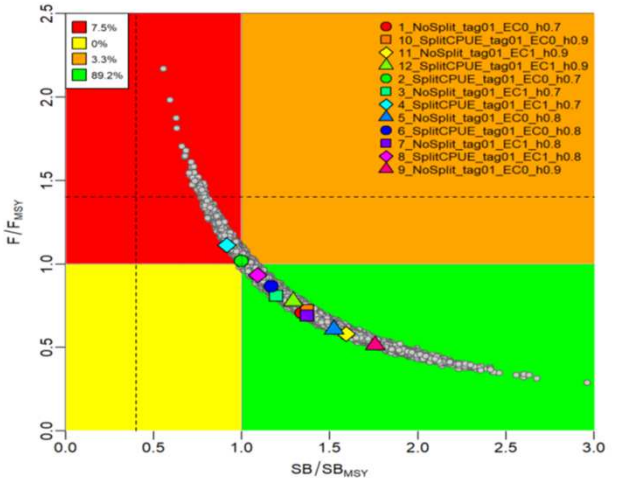
Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2023[2] (t)	400,950	89%*
	Mean annual catch 2019-2023 (t)	423,142	
	MSY_{recent}[4] (1,000 t) (80% CI)	421 (416-430)	
	F_{MSY} (80% CI)	0.2 (0.16-0.26)	
	SB_{MSY_recent}[4] (1,000 t) (80% CI)	1,063 (890-1,361)	
	F_{2023} / F_{MSY} (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 2023 catch fully or partially estimated by IOTC Secretariat: 33.4%

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

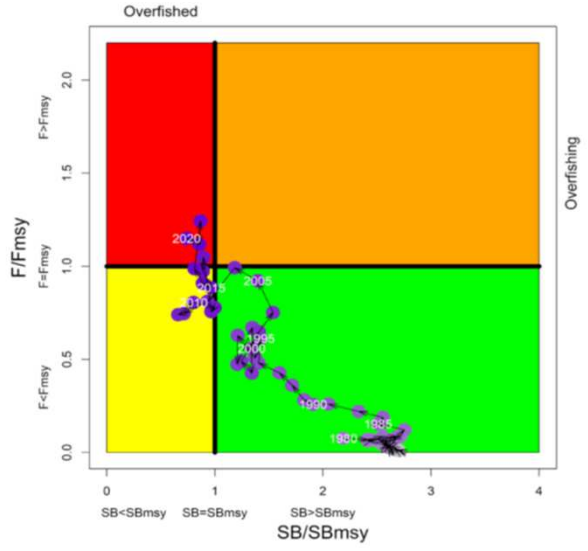
[4] Recent refers to the most recent 20 years (2003-2022)



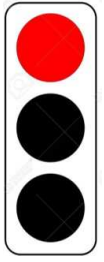
- **The probability of the stock being in the green Kobe quadrant in 2023 is estimated to be 89%.**
- **On the weight-of-evidence available in 2024, the yellowfin tuna stock is determined to be not-overfished and not-subject to overfishing.**

COMPARISON OF RESULTS BETWEEN 2021 AND 2024

- Overall stock status estimates differ substantially from the previous assessment



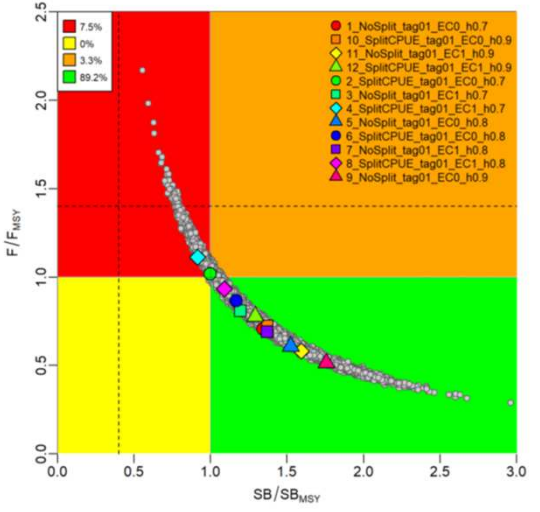
2021



SB_{2020}=0.87 B_{MSY}
F_{2020}=1.32 F_{MSY}

2024

SB_{2023}=1.32 $B_{MSY, Rcent}$
F_{2023}=0.75 F_{MSY}

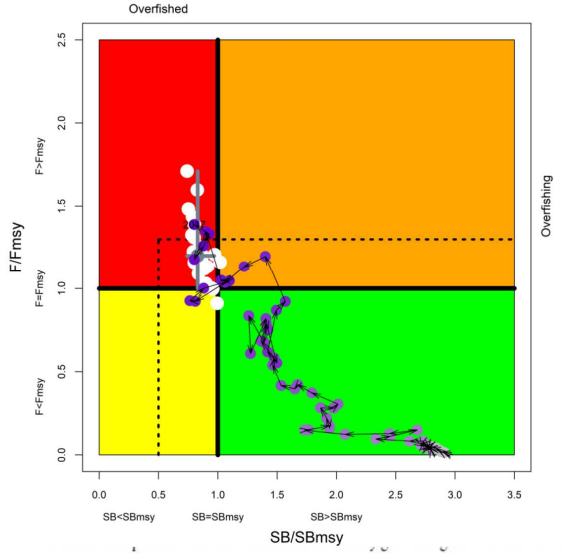


Colour key	Stock overfished (SB_{2020} / SB_{MSY}<1)	Stock not overfished (SB_{2020} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2020} / F_{MSY}≥ 1)	67%	<1%
Stock not subject to overfishing (F_{2020} / F_{MSY}≤ 1)	23%	10%
Not assessed / Uncertain		

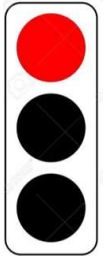
Colour key	Stock overfished (SB_{2023}/SB_{MSY}<1)	Stock not overfished (SB_{2023}/SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2023} / F_{MSY}≥ 1)	7.9%	3.3%
Stock not subject to overfishing (F_{2023} / F_{MSY}≤ 1)	0%	88.8%
Not assessed / Uncertain / Unknown		

COMPARISON OF RESULTS BETWEEN 2018 AND 2021

- Overall stock status estimates do not differ substantially from the previous assessment.

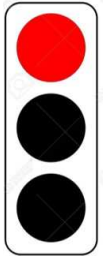


2018

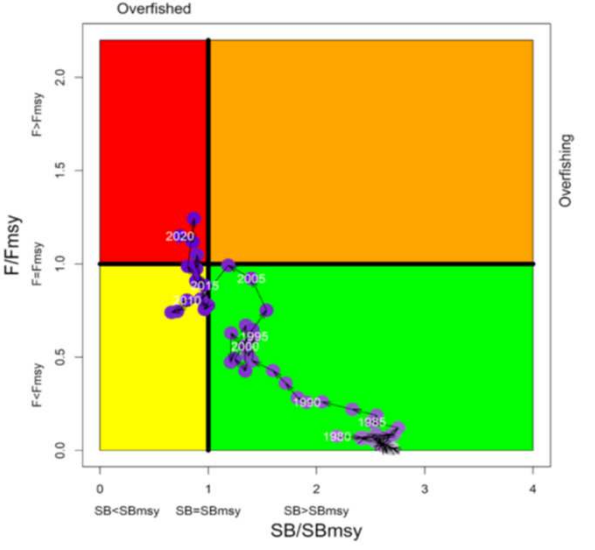


SB_{2017}=0.83 SB_{MSY}
F_{2017}=1.20 F_{MSY}

2021



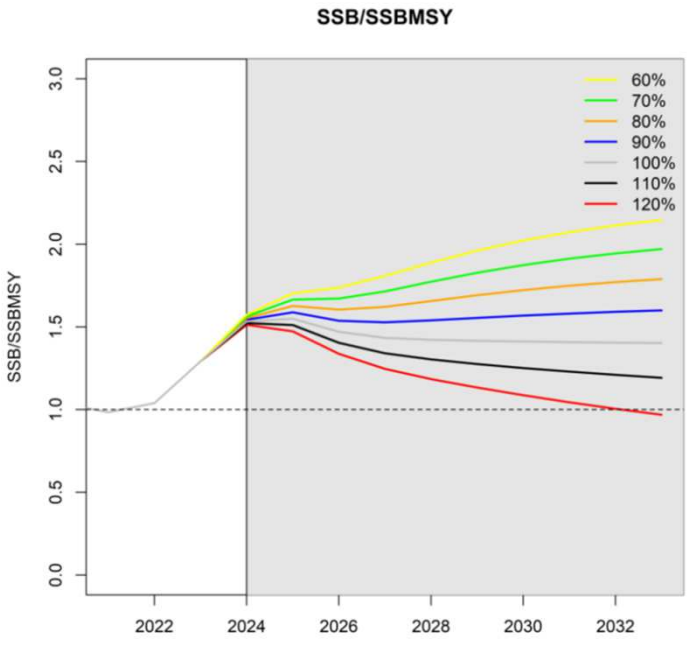
SB_{2020}=0.87 F_{MSY}
F_{2020}=1.32 F_{MSY}



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)	94	2
Stock not subject to overfishing (F_{year}/F_{MSY}≤ 1)	4	0
Not assessed/Uncertain		

Colour key	Stock overfished (SB_{2020} / SB_{MSY}<1)	Stock not overfished (SB_{2020} / SB_{MSY}≥ 1)
Stock subject to overfishing (F_{2020} / F_{MSY}≥ 1)	67%	<1%
Stock not subject to overfishing (F_{2020} / F_{MSY}≤ 1)	23%	10%
Not assessed / Uncertain		

FUTURE PROJECTION AND K2SM



Trajectory showing the impact of alternative catch spawning stock biomass relative to spawning stock at MSY relative to the catch level from 2023

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

MANAGEMENT ADVICE

(from executive summary)

However, 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 an initial one year (2026) TAC that does not exceed the median recent MSY estimate (421,000t);**
- **task the SC to investigate and resolve CPUE uncertainty in 2025 and advise the 2026 Commission on future catch levels.**

CPUE WORKLOAD

- **2024 CPUE**
  - Included data of Region 1a, Arabian sea (not included in the previous CPUE works)
  - Used cluster results for accounting for target in tropical areas (HBF was used previously)
  - Used aggregated data (as was done in 2021) for quarterly CPUE
  - Used operational data for annual CPUE (trend was different from quarterly CPUE with aggregated data)

- the SC **REQUESTED** that the joint CPUE working group revise and update the yellowfin tuna CPUE in 2025 in time to be reviewed by WPTT27 assessment meeting, in accordance with the "Recommended action points related to Joint CPUE standardizations" in Appendix IX of the WPTT26 report.

- The SC **NOTED** that this will enable the WPTT and SC to review the CPUE standardisation and to provide clear advice to the 2026 Commission meeting on the need, if any, to update the yellowfin tuna stock assessment in 2026 to include the revised CPUE.

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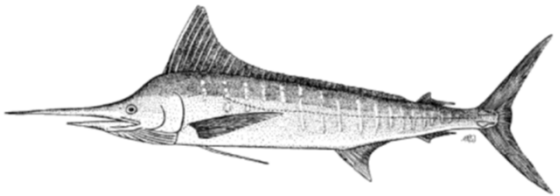
STOCK STATUS AND MANAGEMENT ADVICE (2)

BILLFISHES

Meeting

- Chair: Dr Jie Cao (China), Vice-chair Dr Sylvain Bonhommeau (EU, France)
- WPB: 4-7 September 2024
  - ✓ Stock assessment for striped marlin
  - ✓ Stock assessment for black marlin



Stock assessment used for the management advice

- SS3: Age-structured and spatially aggregated
  - 3 fleets were defined
  - 3 standardized CPUEs (Taiwan,China 2005-2022; Japan 1979-2022, 1994-2022)
- An update of the JABBA model was also conducted

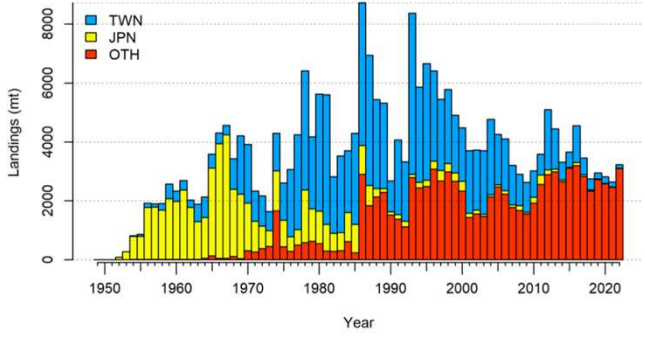


Fig. 1. Annual catches of striped marlin in the Indian Ocean.

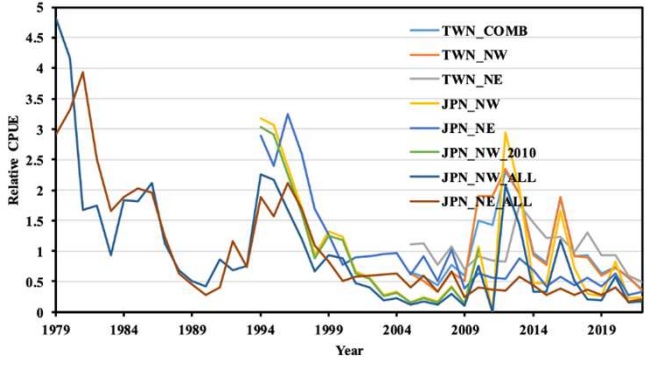


Fig. 2. Standardized CPUE series of striped marlin caught by Taiwanese and Japanese fleets in the Indian Ocean.

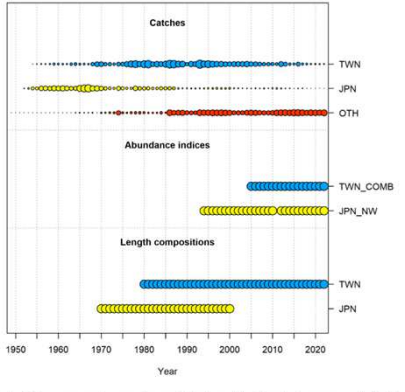
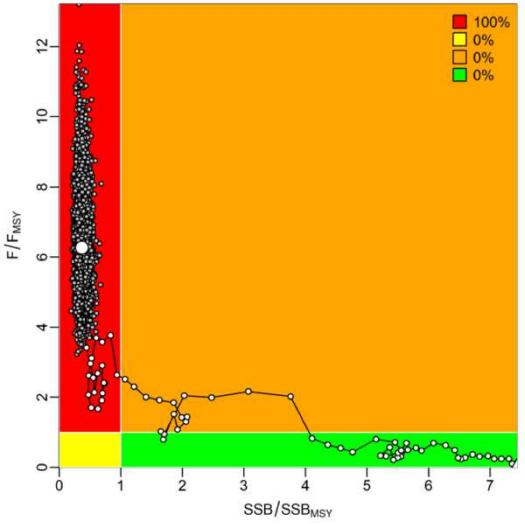


Fig. 4. Data presence by year for each fleet used in the stock assessment of striped marlin in the Indian Ocean.

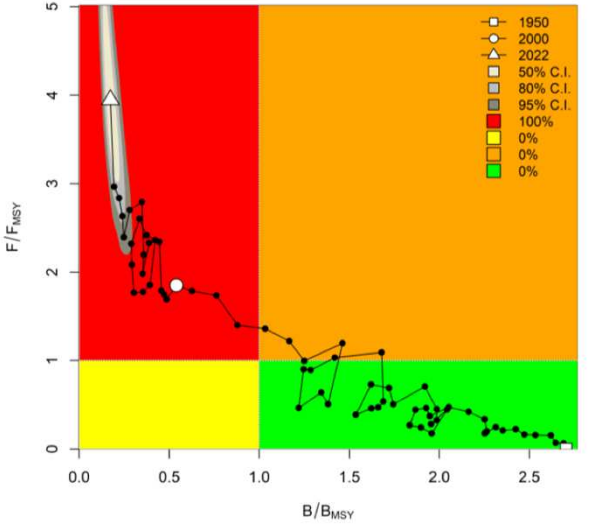
STOCK STATUS FOR STRIPED MARLIN

Both models (JABBA and SS3) clearly indicated that the stock is ***overfished*** and ***subject to overfishing***.

SS3: $SSB_{2022} / SSB_{MSY} = 0.27$
$F_{2022} / F_{MSY} = 9.26$



JABBA: $B_{2022} / B_{MSY} = 0.17$
$F_{2022} / F_{MSY} = 3.95$



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STOCK STATUS FOR STRIPED MARLIN

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Area[1]	Indicators		2024 stock status determination[5]
Indian Ocean	Catch 2022[2] (t)	3,225	100%*
	Average catch 2018-2022 (t)	2,856	
	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 2022 catch estimated or partially estimated by IOTC Secretariat: 15.4%
[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

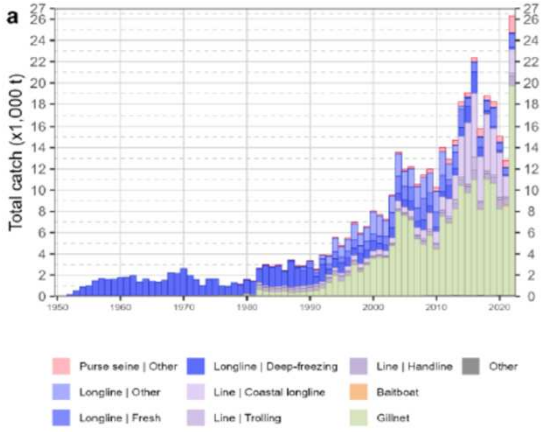
Colour key	Stock overfished ($B_{year}/B_{MSY}< 1$)	Stock not overfished ($B_{year}/B_{MSY}\geq 1$)
Stock subject to overfishing ($F_{year}/F_{MSY}> 1$)	100%	0.0%
Stock not subject to overfishing ($F_{year}/F_{MSY}\leq 1$)	0.0%	0.0%
Not assessed/Uncertain/Unknown		

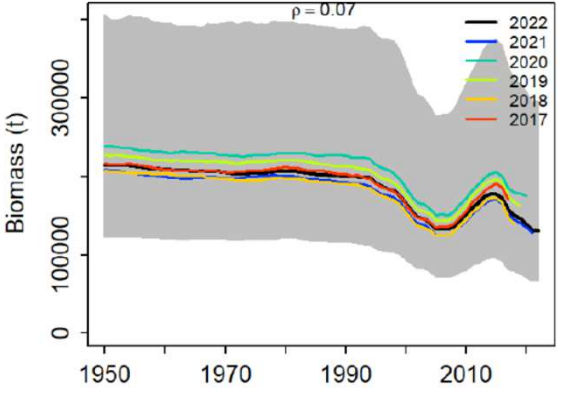
- Current or increasing catches have a very high risk of further decline in the stock status.
- The 2023 catches (3,553 t) were lower than the estimated MSY (4,730 t) but are above the limit set by Resolution 18/05 (3,260 t) which may be a concern if this trend continues. However, that limit is not based on estimates of the most recent stock assessment.
- 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.

STOCK ASSESSMENT FOR BLACK MARLIN

Stock assessment used for the management advice

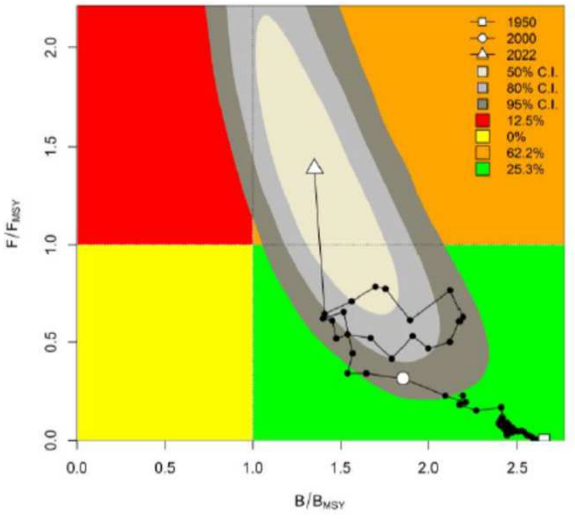
- JABBA: Age-aggregated, Bayesian state-space model
- Longline CPUE time series from Taiwan,China, Japan and Indonesia
- There's been progress recently with black marlin catch data, particularly from coastal countries in the northern Indian Ocean, and the latest JABBA assessment shows it's now more reliable (with improved model fitting to the abundance indices and acceptable level of retrospective patterns).





STOCK STATUS & MANAGEMENT ADVICE FOR BLACK MARLIN

- The relative point estimates for this assessment are F/FMSY=1.39 and B/BMSY=1.35.
- The Kobe plot indicated that the stock is currently not overfished but is subject overfishing.
- On the weight-of-evidence available in 2024, the stock status of black marlin is determined to be not overfished but subject to overfishing



Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2022 (t)[2]	26,320	62.2%
	Average catch 2018–2022 (t)	18,235	
	MSY (1,000 t) (80% CI)	13.90 (8.73 – 28.51)	
	F_{MSY} (80% CI)	0.21 (0.15 - 0.30)	
	B_{MSY} (1,000 t) (80% CI)	65.23 (46.43-101.84)	
	F_{2022}/F_{MSY} (80% CI)	1.39 (0.72 – 2.45)	
	B_{2022}/B_{MSY} (80% CI)	1.35 (0.96 – 1.79)	
	B_{2022}/B_0 (80% CI)	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 2022 catch fully or partially estimated by the IOTC Secretariat: 21.7%
[3] 2020 is the final year that data were available for this assessment

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

DISCUSSION IN LIGHT OF RESOLUTION 18/05

2. CPCs shall endeavour to ensure that the overall catches, of the Indian Ocean Striped Marlin, Black Marlin, Blue Marlin and Indo Pacific Sailfish in any given year do not exceed either the MSY level or, in its absence, the lower limit of the MSY range of central values as estimated by the Scientific Committee.

3. The limits referred to in paragraph 2 correspond to the following:

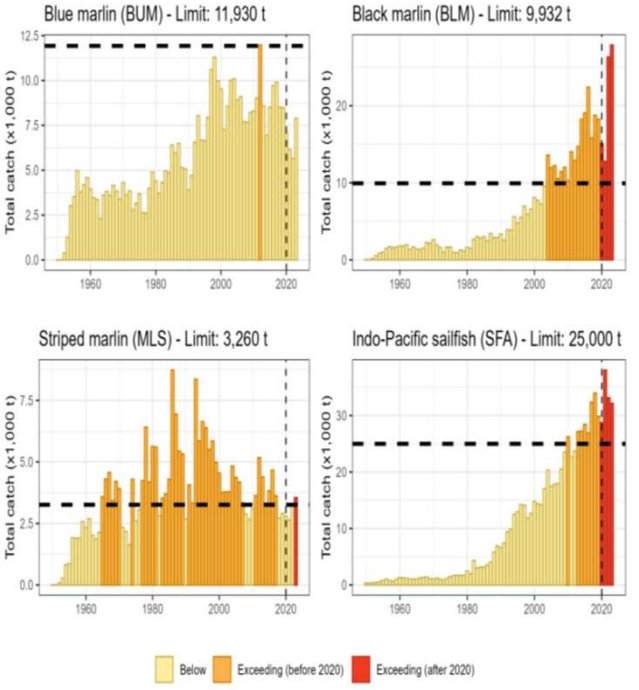
   a. Striped Marlin: 3,260 t

   b. Black Marlin: 9,932 t

   c. Blue Marlin: 11,930 t

   d. Indo Pacific Sailfish: 25,000 t

- The SC **NOTED** that the catch levels of black marlin and Indo-Pacific sailfish have exceeded the catch limits established under Resolution 18/05, while the catches of blue marlin have remained well below the limit in recent years



DISCUSSION IN LIGHT OF RESOLUTION 18/05

14. For each of the four species covered by this Resolution, the Scientific Committee shall provide advice:

a. Options to reduce fishing mortality with a view to recover and/or maintain the stocks in the Green zone of the Kobe Plot with levels of probability ranging from 60 to 90% by 2026 at latest. The advice shall be provided on the basis of the current exploitation pattern as well as of its likely change to take into account the advice under point c. below;

b. Options for candidate reference points for their conservation and management in the IOTC Area of Competence;

c. Species specific minimum conservation sizes by taking into account the size at maturity and the recruitment size to the fishery by gear as well as its practicability. Where adequate, due to considerations on technical interaction of fisheries, advice shall provide also a minimum conservation size common to the four species.

PROJECTION AND MANAGEMENT ADVICE FOR STRIPED MARLIN

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% (1157 t)	50% (1446 t)	60% (1735 t)	70% (2024 t)	80% (2313 t)	100% (2891 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
1157 (40%)	0	0	0	0	0	4	13	28	45	58
1446 (50%)	0	0	0	0	0	1	5	13	25	36
1735 (60%)	0	0	0	0	0	0	2	5	11	17
2024 (70%)	0	0	0	0	0	0	1	2	4	7
2313 (80%)	0	0	0	0	0	0	0	0	1	2
2891 (100%)	0	0	0	0	0	0	0	0	0	0

- The stock has been overfished for more than a decade and is now in a highly depleted state.
- A 70% reduction in the recent average 2020-22 catch of 2,891 t (i.e. catch of 867 t) would recover the stock to the green quadrant by 2032 with a probability of 78%
- A 60% reduction in recent average catch (i.e. catch of 1,157 t) would achieve this with a probability of 58%.

PROJECTION AND MANAGEMENT ADVICE FOR BLACK MARLIN

Reference point and projection timeframe	Alternative catch projections (relative to the average catch level of 2020–2022 of 17710 t) and probability (%) of violating MSY-based target reference points (Btarg = B_{MSY}; Ftarg = F_{MSY})						
	40% (7084 t)	60% (10626 t)	80% (14168 t)	100% (17710 t)	120% (21252 t)	140% (24794 t)	160% (28336 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
7084 (40%)	65	72	77	81	85	87	89	90	91	92
10626 (60%)	63	66	68	70	71	72	73	74	74	75
14168 (80%)	55	54	53	53	52	52	51	50	50	50
17710(100%)	42	39	37	35	33	32	31	30	29	29
21252 (120%)	30	27	24	22	21	19	18	17	17	16
24794 (140%)	22	19	16	14	13	12	11	10	9	9
28336 (160%)	16	13	11	9	8	7	7	6	6	5

- 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
- The catch limits (9932 t) as stipulated in Resolution 18/05 have been exceeded for three consecutive years since 2020, which as per resolution 18/05, requires a review of the resolution

DISCUSSION IN LIGHT OF RESOLUTION 18/05

- The SC **RECALLED** that the Resolution 18/05 catch limits were based on previous stock assessments and emphasized the need for their revision and update in light of the most recent data and stock status information.

- 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.

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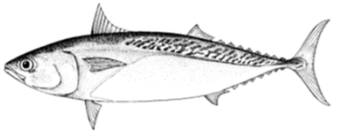
STOCK STATUS AND MANAGEMENT ADVICE (3)

NERITIC TUNAS

Indo-Pacific king mackerel, frigate tuna and bullet tuna



Meeting

- Chair : Farhad Kaymaram (I.R. Iran); Bram Setyadji (Indonesia)
- WPNT: 8-12 July 2024 (Seychelles)
- New assessments were conducted for three species

  Indo-Pacific king mackerel, frigate tuna and bullet tuna

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INDO-PACIFIC KING MACKEREL

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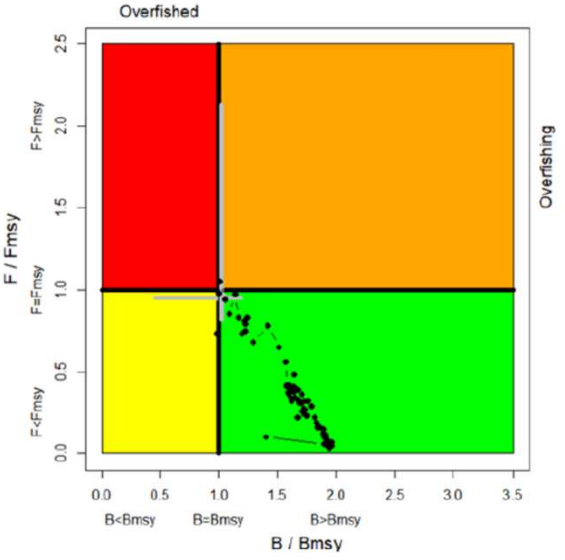
Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch (2022) (t)[2]	45, 769	27%
	Mean annual catch (2018-2022) (t)	43, 416	
	MSY (1,000 t)	47 (39–56)	
	F_{MSY}	0.74 (0.56–0.99)	
	B_{MSY} (1,000 t)	63.1 (43.1–92.4)	
	$F_{current}/F_{MSY}$	0.95 (0.82–2.13)	
	$B_{current}/B_{MSY}$	1.02 (0.46–1.19)	
	$B_{current}/B_0$	0.51 (0.23–0.60)	



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		

- A 27% probability of the stock being in the green, and the based on the weight-of-evidence available in 2024, the stock status is considered to be "**not overfished and not subject to overfishing**".

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INDO-PACIFIC KING MACKEREL

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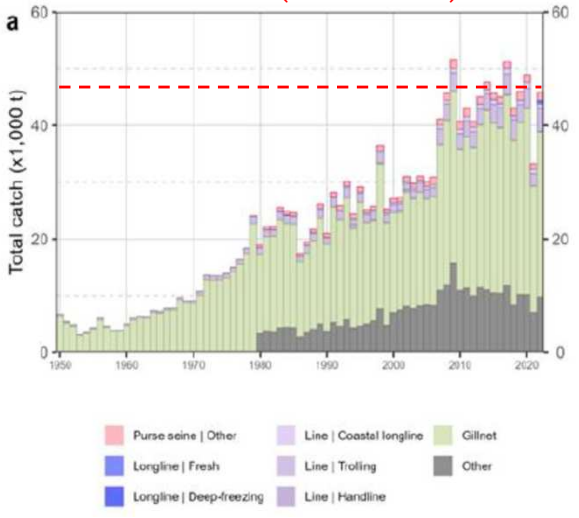
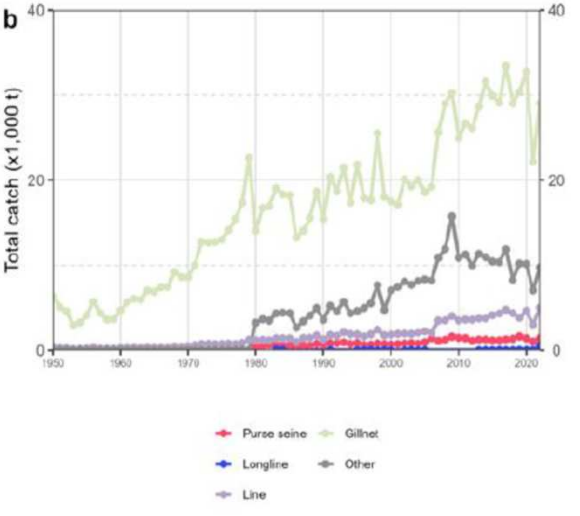
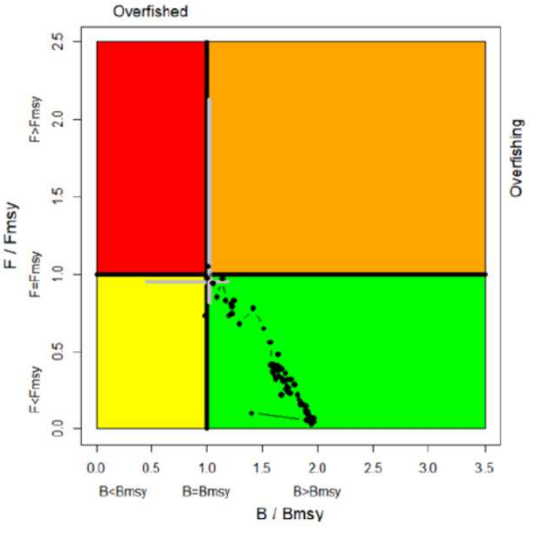
MSY=47 (1000 tons)







- **Management advice:** Reported catches of Indo-Pacific king mackerel in the Indian Ocean has increased considerably since the late 2000s with recent catches fluctuating around estimated MSY, although the catch in 2021 and 2022 was below the estimated MSY. This suggests that the stock is close to being fished at MSY levels and that higher catches may not be sustained despite the substantial uncertainty associated with the assessment, a precautionary approach to management is recommended.

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STOCK ASSESSMENTS AND MANAGEMENT ADVICE FOR NT

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	Indo-Pacific King Mackerel	Frigate tuna	Bullet tuna
Catch 2022	45,769	141,279	20,794
MSY	47 (39–56)		Unknown
Stock status and probability	**27**	Unknown	Unknown
% of catches estimated by the Secretariat	74.8%	61.1%	39.6%
Assessment methods	**CMSY** and CMSY++	CMSY,OCOM, LB-SPR and fishblicc	CMSY,LB-SPR, and fishblicc
Management advice	Higher catches may not be sustained despite the substantial uncertainty associated with the assessment, a precautionary approach to management is recommended.	Future catches do not exceed the average catches estimated between 2009 and 2011 (101,260 t)	Future catches do not exceed the average catches estimated between 2009 and 2011 (8,590 t)

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STOCK STATUS AND MANAGEMENT ADVICE (4)

WPEB

Shortfin mako shark

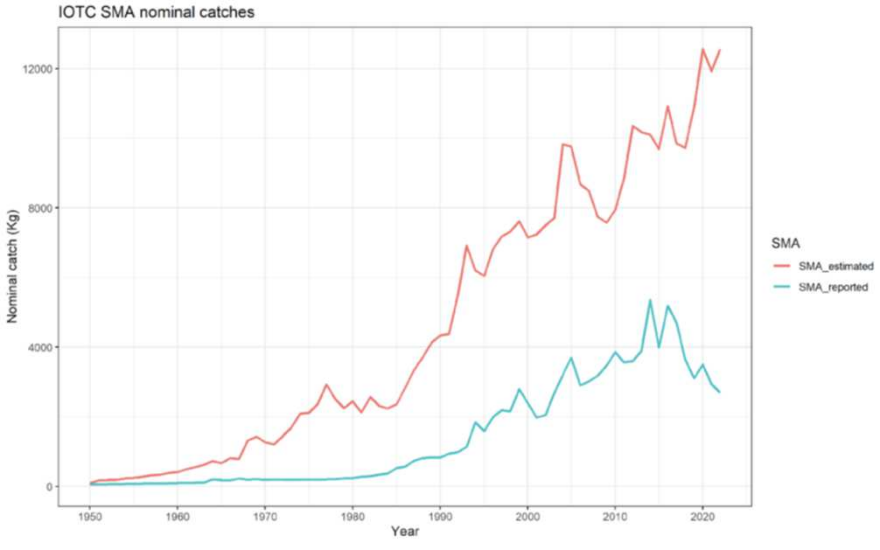
WORKING PARTY ON ECOSYSTEM AND BYCATCH (WPEB)

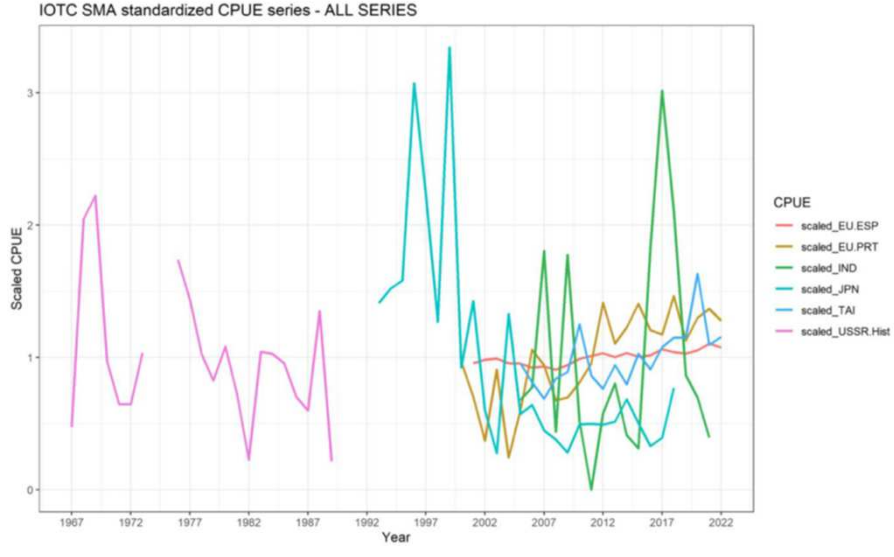
Chair: Mariana Tolotti (EU)

Vice-chair: Mohammed Koya (India), Charlene de Silva (South Africa)

- WPEB20(DP): 22-26 April 2024 (virtual)
- WPEB20: 09-12 September 2024 (Seychelles)
  - ✓ Assessment for shortfin mako shark
  - ✓ Guideline
  - ✓ National Plans of Action
  - ✓ LL bycatch mitigation measure workshop

TIME SERIES OF CATCH AND ABUNDANCE INDICES





STOCK ASSESSMENT

Stock assessment for shortfin mako shark

→ Modelling approach

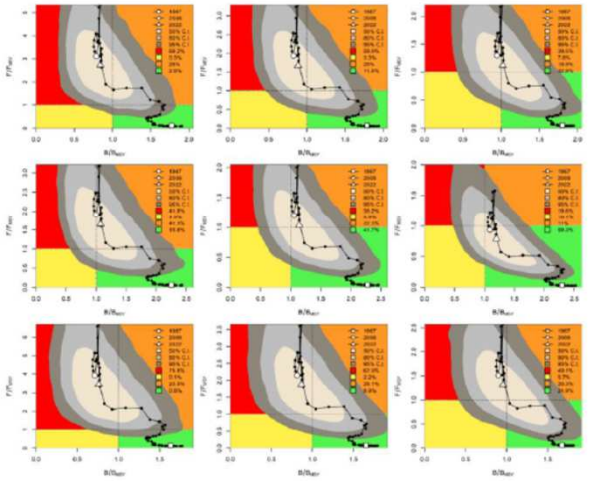
Population biomass dynamics model using JABBA, and Leslie a matrix model to derive values for the intrinsic growth rate (r) from biological parameters.

The base-case assessment consisted of a grid of 9 equally-weighted 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).

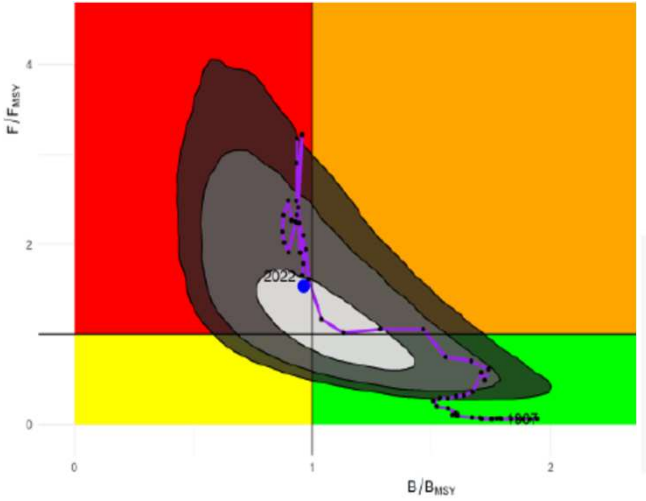
Variable	Grid options		
Catches	Reported		
CPUES	USSR, Japan, Spain		
Prod function	Pella (Bmsy/K=0.40)	Schaefer	Pella (Bmsy/K=0.55)
Productivity (r prior)	Lower (0.031)	Medium (0.055)	Higher (0.085)

Stock assessment for shortfin mako shark

→ Overfished • B/Bmsy = 0.96 (0.58-1.41) • and undergoing overfishing • F/Fmsy = 1.53 (0.65-3.71)



Kobe plots with trajectories and stock status on the terminal year from the 9 base-case grid models.



Parameter	Median (80% Cis)
MSY (1,000 t) (80% CI)	1.930 (0.985 – 3.313)
F_{MSY} (80% CI)	0.03 (0.01 – 0.07)
B_{MSY} (1,000 t) (80% CI)	60.0 (35.7 – 103.8)
$F_{current}/F_{MSY}$ (80% CI)	**1.53** (0.65 – 3.71)
$B_{current}/B_{MSY}$ (80% CI)	**0.96** (0.58 – 1.41)
$B_{current}/B_0$ (80% CI)	0.45 (0.27- 0.69)

2024 stock status, relative to BMSY (x-axis) and FMSY (y-axis) for the final model. 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.

STOCK ASSESSMENT

Indicators		2020 stock status determination
Reported catch 2022 (t)[3]	666	Unknown
Catches reported to MAK in 2022 (t)	1,947	
Average catches reported to MAK 2018-2022 (t)	2,057	
Catches in 2022 (MAK, SMA, LMA) (t)	2,627	
Average catches 2018-2022 (MAK, SMA, LMA) (t)	3,081	
Not elsewhere included (nei) sharks[2] 2022 (t)	34,248	
Average reported catch 2018-22 (t)	1,013	
Av. Not elsewhere included (nei) sharks[2] 2018-22 (t)	33,072	
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)		

or the Indian Ocean = IOTC area of competence

Area[1]	Indicators		2024 stock status determination
Indian Ocean	Reported catch 2023 (t)[3]	831	49.7%
	Catches reported to MAK in 2023 (t)[4]	2,021	
	Average catches reported to MAK 2019-2023 (t)	2,068	
	Catches in 2023 (MAK, SMA, LMA) (t)	2,870	
	Average catches 2019-2023 (MAK, SMA, LMA) (t)	2,928	
	Not elsewhere included (nei) sharks[2] 2023 (t)	30,358	
	Average reported catch 2019-23 (t)	846	
	Av. Not elsewhere included (nei) sharks[2] 2019-23 (t)	30,813	
	MSY (1,000 t) (80% CI)	1.930 (0.985 – 3.313)	
	F_{MSY} (80% CI)	0.03 (0.01 – 0.07)	
	B_{MSY} (1,000 t) (80% CI)	60.0 (35.7 – 103.8)	
	$F_{current}/F_{MSY}$ (80% CI)	1.53 (0.65 – 3.71)	
	$B_{current}/B_{MSY}$ (80% CI)	0.96 (0.58 – 1.41)	
	$B_{current}/B_0$ (80% CI)	0.45 (0.27- 0.69)	

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		

KOBE II STRATEGY MATRIX (K2SM)

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

- 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 zone 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.

ISSUES OTHER THAN ASSESSMENT

Meetings

- Chair: Hilario Murua (ISSF); Vice-Chair: Ann Preece (AUS)
- WPM(MSE): 10-13 April 2024 (Hobart, Australia)
  - ✓ Technical discussion on MSE (priority for skipjack and swordfish)
- WPM15: 24-26 October 2024 (Seychelles)
  - ✓ MSE, joint CPUE, etc.
  - ✓ The WPM and WPM MSE taskforce took into consideration the recommendations and discussions in TCMP08
  - ✓ Running of Bigeye MP (I will explain in report of SC's special session)
  - ✓ Proposed amendment of swordfish MP

  (Details were discussed in TCMP09 yesterday, and some more information will be reported in Commission Agenda Item 11)

Food and Agriculture Organization of the United Nations

Indian Ocean Tuna Commission
Commission des Thons de l'Ocean Indien
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RESOLUTION 24/08
ON A MANAGEMENT PROCEDURE FOR SWORDFISH IN THE IOTC AREA OF COMPETENCE.

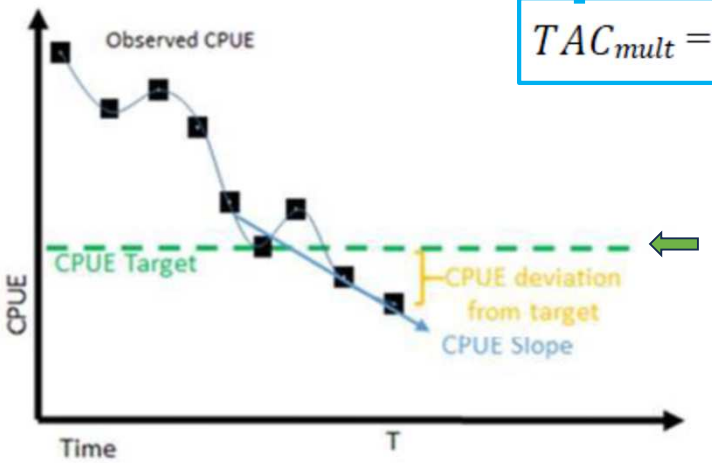
New TAC = TAC_{mutl} * (previous TAC)

$$TAC_{mult} = 1 + k_a Sl + k_b D$$

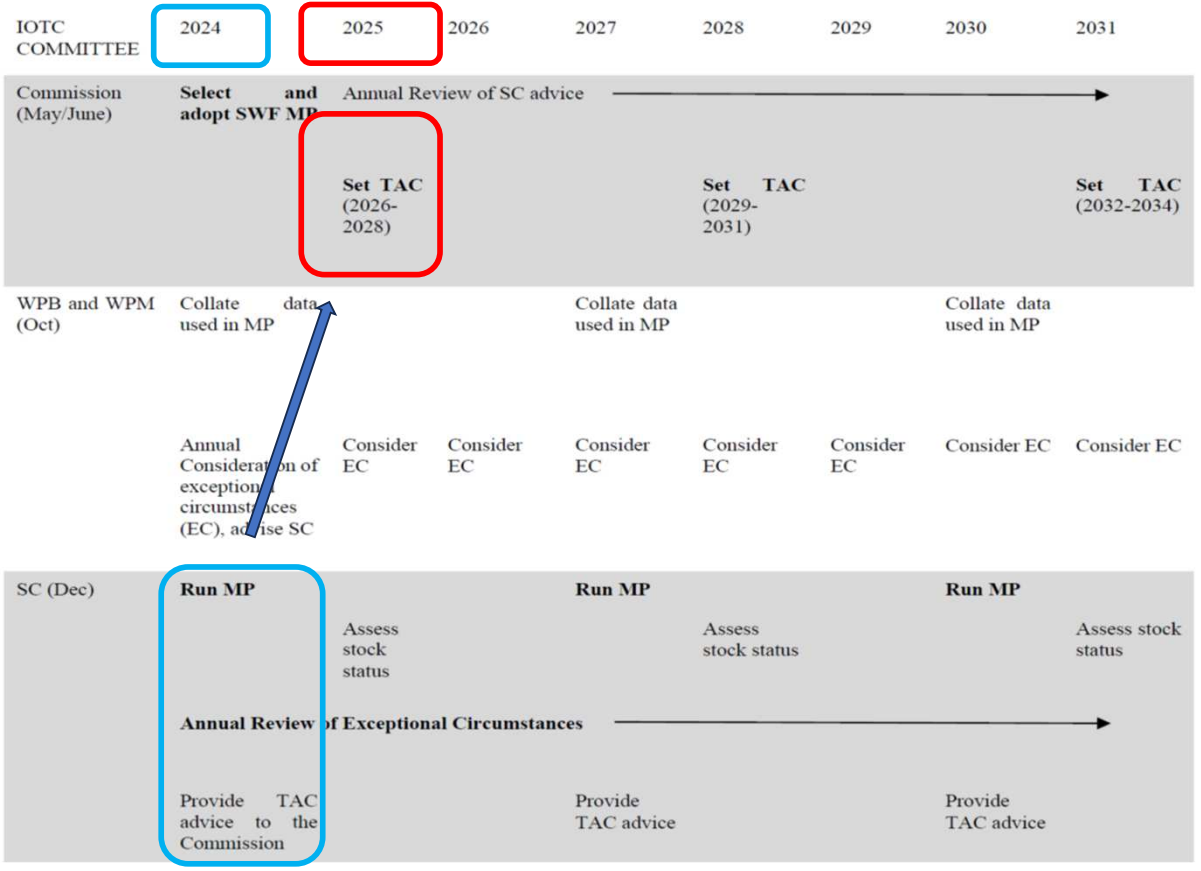
$k_a = 2.1$

$k_b = 1.2$

Target CPUE = 0.7125



IMPLEMENTATION SCHEDULE



EXCEPTIONAL CIRCUMSTANCES

- The WPM **AGREED** that there were no exceptional circumstances for the swordfish MP relating to stock status, population dynamics or biology, fishery or fishing operations, catch data inputs or CPUE data inputs

The MP in Res24/08 used simulated CPUE in 2020-2022 instead of actual CPUEs in that period

- The WPM NOTED, however, an issue identified by the developers which WPM AGREED represents an exceptional circumstance. Specifically, a discrepancy in the treatment of the CPUE index in the first year of the simulations, resulted in the MP not reaching the management objective of achieving at least 60% probability of being in the Kobe green zone during 2034-2038 period.
- The WPM NOTED that correcting this issue results in an MP that does not reach the objective (i.e. achieves only 54% probability of being in the Kobe green zone). The WPM SUGGESTED to produce an MP that corrects the CPUE issue as well as it is retuned to achieve the management objective stipulated in Resolution 24/08.

RECOMMENDATIONS FROM THE SC 2024

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 Kobe green zone and higher TAC variability, but otherwise similar performance statistics (Table 1 of IOTC–204–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.

SC27.22 (para. 125) 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.

The matter is covered in Prop U (AUS), for which TCMP 09 recommending the Commission's adoption.

WGFAD06: 10-11 June 2024 (virtual)

- Co-chairs: Gorka **Merino** (EU) and Avelino **Munwane** (Mozambique)

- 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.

WPDCS 20

- Chair: Julien **Barde** (EU, France)
- Vice-Chair: Nuwan Gunawardane (Sri Lanka)

- WPDCS20: Nov 26-30, 2024 (Cape Town, South Africa)
  - ✓ Data overview and quality by species groups
  - ✓ Data reporting:
  - ✓ Estimated yellowfin catch limits for 2025
  - ✓ Outcomes of the WGEMS04

137. The SC **CONGRATULATED** Indonesia for its efforts to address the requests made at the 26th session of the SC, resulting in a revised catch time series covering the period 1950-2022. The SC NOTED that the WPDCS has ENDORSED the methodology and results used to re-estimate Indonesia's historical catches for the period 1950–2022 and **AGREED** to endorse them as well.

140. The SC **NOTED** the project initiated by France-OT to develop an online digital ocean atlas covering the IOTC Area of Competence, which was also presented at the 2024 sessions of the WPEB and WPTT. The atlas aims to support the objectives of Resolution 24/01 by serving as a tool to assess the impacts of climate change on IOTC fisheries. The SC **AGREED** on the significant value of this digital atlas in supporting the Commission's work and **ACKNOWLEDGED** that the project will be developed over six months by an expert team. The SC **THANKED** Sri Lanka for its commitment to hosting the web portal and ensuring the long-term operation and maintenance of the atlas.

141. 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.

Food and Agriculture Organization of the United Nations

STATUS OF YELLOWFIN TUNA CATCH LIMITS FOR 2024 AND 2025 PURSUANT TO RESOLUTIONS 19/01 AND 21/01

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The SC **ENDORSED** the annual catch limits for 2024 (calculated) and 2025 (estimated) for all CPCs bound by Resolution 21/01

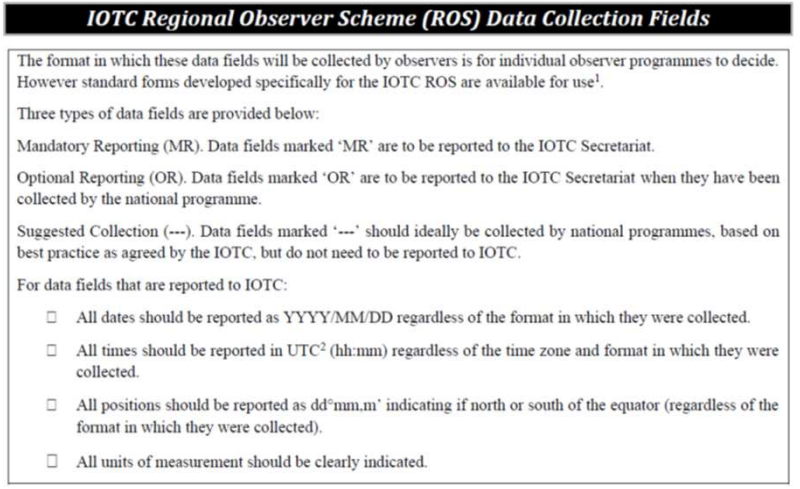
CPC	Base annual limit	Catch limits	
		2024	2025
AUS - Australia	2,000	2,000	2,000
BGD - Bangladesh	2,000	2,000	2,000
CHN - China	10,557	1,419	6,341
COM - Comoros	5,279	5,279	5,279
EU - European Union	73,078	73,078	73,078
FRA - France OT	500	500	500
GBR - United Kingdom	500	500	500
JPN - Japan	4,003	4,003	4,003
KEN - Kenya	3,654	3,654	3,654
KOR - Korea	9,056	9,056	9,056
LKA - Sri Lanka	33,245	33,245	33,245
MDV - Maldives	47,195	47,195	47,195
MOZ - Mozambique	2,000	2,000	2,000
MUS - Mauritius	10,490	10,140	10,490
MYS - Malaysia	2,000	2,000	2,000
PAK - Pakistan	14,468	14,468	14,468
PHL - Philippines	700	700	700
SDN - Sudan	2,000	2,000	2,000
SYC - Seychelles	39,577	39,577	39,577
THA - Thailand	2,000	2,000	2,000
TZA - Tanzania	3,905	3,905	3,905
YEM - Yemen	26,262	26,262	26,262
ZAF - South Africa	2,000	2,000	2,000

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.

CPC	Fishery	Base annual limit	Catch limits					
			2020	2021	2022	2023	2024	2025
IDN - Indonesia	PS	12,395	12,395	12,395	11,173	9,557	7,231	4,394
	LL	-	-	-	-	-	-	-
IND - India	LL	-	-	-	-	-	-	-
IRN - I.R. Iran	GN	16,948	16,948	- 12,490	- 398	- 16,978	- 20,495	- 12,515
	PS	-	-	-	-	-	-	-
MDG - Madagascar	LL	-	-	-	-	-	-	-
OMN - Oman	PS	-	-	-	-	-	-	-
	LL	-	-	-	-	-	-	-

WGEMS 04: 5-7 June 2024 (Online)

- Chair: Hilario **Murua** (ISSF)
- Vice-chair: Don **Bromhead** (Australia)
  - ➢ Ensure the work and progress of the WGEMS
  - ➢ Focus on finalizing the EM Minimum Standards adopted by the 2023 IOTC SC (VMS and EMS capabilities to collect **ROS data minimum fields**) for IOTC Commission consideration



IOTC Regional Observer Scheme (ROS) Data Collection Fields

The format in which these data fields will be collected by observers is for individual observer programmes to decide. However standard forms developed specifically for the IOTC ROS are available for use[1].

Three types of data fields are provided below:

Mandatory Reporting (MR). Data fields marked 'MR' are to be reported to the IOTC Secretariat.

Optional Reporting (OR). Data fields marked 'OR' are to be reported to the IOTC Secretariat when they have been collected by the national programme.

Suggested Collection (---). Data fields marked '---' should ideally be collected by national programmes, based on best practice as agreed by the IOTC, but do not need to be reported to IOTC.

For data fields that are reported to IOTC:

- All dates should be reported as YYYY/MM/DD regardless of the format in which they were collected.
- All times should be reported in UTC[2] (hh:mm) regardless of the time zone and format in which they were collected.
- All positions should be reported as dd°mm,m' indicating if north or south of the equator (regardless of the format in which they were collected).
- All units of measurement should be clearly indicated.

(para 144) … That the SC **ENDORSE** the following revised lists of ROS minimum data fields (including their stated collection and reporting requirement) for purse seine, longline and pole and line (include associated "general" fields) provided in IOTC-2024-SC27-DATA01.

RESOLUTION 23/08 (ON EM STANDARDS FOR IOTC FISHERIES)

Electronic Monitoring Standards

2. The Commission shall:

   a) implement a Regional Electronic Monitoring Program (REMP) as per the objectives, purpose and roles and responsibilities described in the IOTC EM Program Standard (Annex 1) by [1 July 2024].

   b) upon the advice of the Scientific Committee and Compliance Committee, review the REMP, the EM Program Standard (Annex 1) and the EM System and Data Standards (Annex 2) after a period of 1 year from REMP implementation.

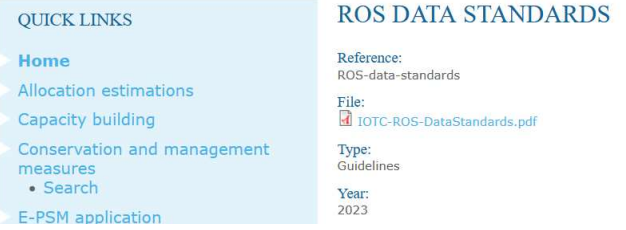
3. CPCs, who fish for species under the competence of the IOTC, and who choose to implement EMS in the IOTC area of competence to partially or fully meet the minimum ROS data requirements under Resolution 22/04 (or any subsequent revision), shall:

   ...

   d) submit to the IOTC Secretariat by 1 July each year, a fleet level ROS data collection table, clearly specifying for each ROS minimum required data field as specified [here[1]]:

https://iotc.org/documents/ROS/DataStandards

It is currently stated that "an old version from 2023 is available on the IOTC website" because it is referenced in the Resolution.



WPSE (SOCIO-ECONOMICS)

RESOLUTION 23/10
TERMS OF REFERENCE FOR A WORKING PARTY ON SOCIO-ECONOMICS

The Working Party on Socio-Economics (WPSE) shall inform the Commission on the socio-economic status and dynamics of fisheries for tuna and tuna-like species in the IOTC area of competence and to assess and advise on potential impacts to CPCs arising from the Conservation and Management Measures, allocation of quotas and catch limits, and recommendations of the IOTC Scientific Committee.

WPSE 01: 25 October 2025 @Bangkok

Chair: Dr Umi Muawanah (Indonesia); Vice-chair: Sheriffa Morel (Seychelles)

- The SC **NOTED** that the WPSE was REQUESTED by the TCAC to provide guidance on matters related to socio-economic indicators and inputs into the allocation regime.
- The SC **NOTED** that the WPSE conducted a preliminary review of the information on socio-economic data and indicators for IOTC CPCs and fisheries, building on the scoping study undertaken in 2019 in accordance with Resolution 18/09.
- The SC **AGREED** to hold the next WPSE meeting online in 2025 during a two-day session, at least one month prior to the 14th session of the TCAC.

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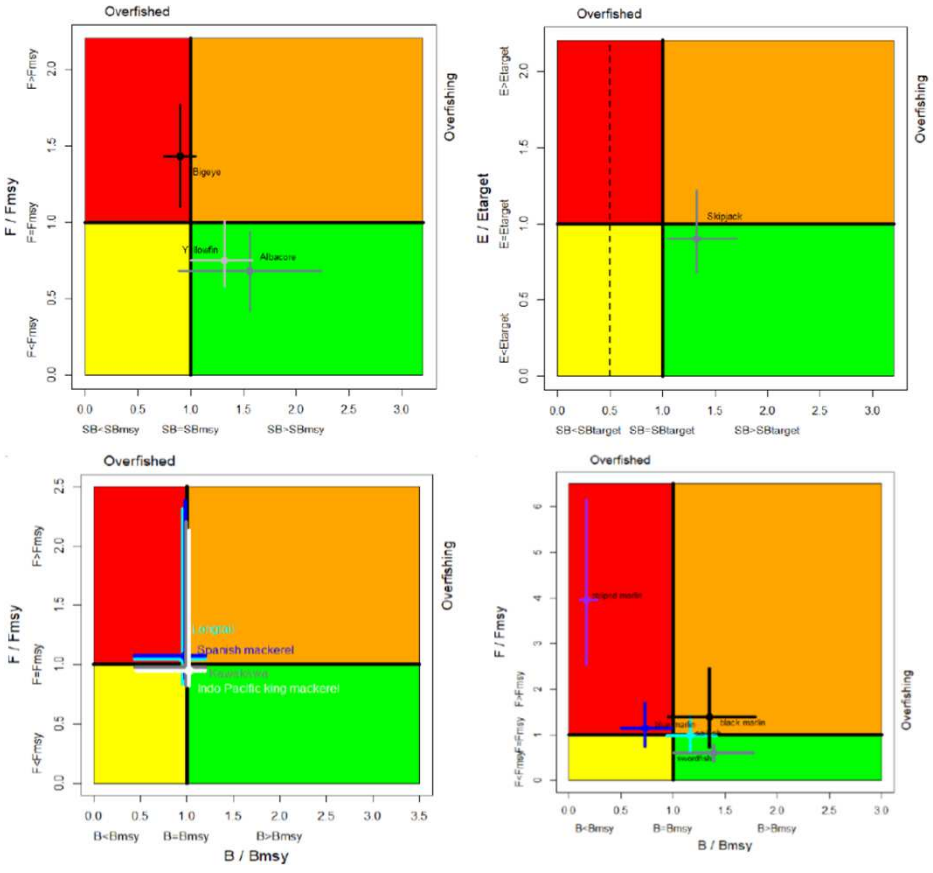
RECOMMENDATIONS TO THE COMMISSION

(A TOTAL OF 34 RECOMMENDATIONS)

RECOMMENDATIONS TO THE COMMISSION (1-3): STATUS

SC27.01 – SC27.03

The SC **RECOMMENDED** that the Commission note the management advice developed for each species under the IOTC mandate (tropical, temperate, billfish, neritic tuna and mackerel), as provided in the Executive Summary for each species, and combined Kobe plots.



RECOMMENDATIONS TO THE COMMISSION (4-7): STATUS

SC27.04 – SC27.07

The SC **RECOMMENDED** that the Commission note the management advice developed for

- Sharks
- Marine turtles
- Seabirds
- Marine mammals

Sharks

SC27.04 (para. 179) 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

SC27.05 (para. 180) 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

SC27.06 (para. 181) 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

SC27.07 (para. 182) 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

RECOMMENDATIONS TO THE COMMISSION (8): NATIONAL REPORT

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.

CPC	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Contracting Parties (Members)											
Australia											
Bangladesh	n.a.										
China											
Comoros											
European Union											
France (OT)											
India										2 Dec	
Indonesia											
Iran, Islamic Rep. of											
Japan											
Kenya											
Korea, Republic of											
Madagascar											
Malaysia											
Maldives, Rep. of											
Mauritius											
Mozambique											
Oman, Sultanate of											
Pakistan										2 Dec	30 Nov
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	n.a.										

RECOMMENDATIONS TO THE COMMISSION (9): WPNT

Report of the 14th Session of the Working Party on Neritic Tunas (WPNT14)

SC27.09 (para. 44) **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.

EXECUTIVE SUMMARY: FRIGATE TUNA (2024)

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

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch (2023) (t)[2]	130,815	Unknown
	Mean annual catch (2019-2023) (t)	123,151	
	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)		

EXECUTIVE SUMMARY: BULLET TUNA (2024)

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

Area[1]	Indicators		2024 stock status determination[3]
Indian Ocean	Catch 2023[2] (t)	28,429	Unknown
	Mean annual catch (2019-2023) (t)	21,996	
	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)		

RECOMMENDATIONS TO THE COMMISSION (10-11): WPB

REPORT OF THE 22ST SESSION OF THE WORKING PARTY ON BILLFISH (WPB22)

SC27.10 (para. 58) **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 analysis combining catch effort data from key fleets for major billfish species where feasible.

Revision of catch levels of marlins under Resolution 18/05

SC27.11 (para. 62) 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.

RECOMMENDATIONS TO THE COMMISSION (12, 14): WPEB

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

SC27.12 (para. 70) 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

SC27.14 (para. 87) 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.

RECOMMENDATIONS TO THE COMMISSION (13): WPEB

LONGLINE BYCATCH MITIGATION MEASURES WORKSHOP

SC27.13 (para. 83) 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 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.

RECOMMENDATIONS TO THE COMMISSION (15-16): WPTT

REPORT OF THE 26TH SESSION OF THE WORKING PARTY ON TROPICAL TUNAS (WPTT26)

Yellowfin tuna stock assessment

SC27.15 (para. 104) 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 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.

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.

RECOMMENDATIONS TO THE COMMISSION (17-19): WGFADS, WPTT, WPM

Update on the WGFAD05

SC27.17 (para. 116) 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.

Other Matters

SC27.18 (para. 117) 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.

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.

RECOMMENDATIONS TO THE COMMISSION (20): WPM

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.

RECOMMENDATIONS TO THE COMMISSION (21-23): WPM

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 Kobe green zone and higher TAC variability, but otherwise similar performance statistics (Table 1 of IOTC–204–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.

SC27.22 (para. 125) 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

SC27.23 (para. 127) 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.

RECOMMENDATIONS TO THE COMMISSION (24-27): WPDCS, GENERAL

REPORT OF THE 19TH SESSION OF THE WORKING PARTY ON DATA COLLECTION AND STATISTICS (WPDCS19)

SC27.24 (para. 141) 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.

SUMMARY DISCUSSION OF MATTERS COMMON TO WORKING PARTIES

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.

IOTC species identification guides: Tuna and tuna-like species

SC27.26 (para. 165) 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

SC27.27 (para. 170) 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.

ELECTION OF CHAIR/VICE-CHAIR

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

209. 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** that taking into account the recommendation outlined in paragraph 157 of IOTC-2023-SC26-R, CPCs proposed and agreed that Dr Kitakado continue as SC chair as an interim measure.

210. The SC **NOTED** that at the 28th Session of the Commission, some CPCs expressed a preference for an SC chair from a developing coastal nation. The Commission **AGREED** that the selection of the Scientific Committee chair should remain the decision of the SC itself. The Commission also **AGREED** that an election for the SC chair should take place at the next session of the SC in 2024.

211. Noting the Rules of Procedure (2014), the SC **CALLED** for nominations for the position of the Chairperson of the IOTC SC. Dr Toshihide Kitakado (Japan) was nominated, seconded and elected as Chairperson of the SC for one more year.

212. The SC **NOTED** that Dr Gorka Merino (Spain) was elected as the Vice-Chairperson of the SC at the close of the SC meeting in 2023. However, due to personal reasons, Dr. Merino 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.

213. Noting the Rules of Procedure (2014), the SC called for nominations for the position of the Vice Chairperson of the IOTC SC. Dr Fayakun Satria (Indonesia) was nominated, seconded and elected as Vice-Chairperson of the SC for the next biennium.

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LIST OF CHAIRS AND VICE-CHAIRS

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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 Toshihide Kitakado	Japan	10–Dec–19	End of SC in 2025	Ext 2nd term
	Vice-Chair	Dr Fayakun Satria	Indonesia	8–Dec–24	End of SC in 2026	1st term
WPB	Chair	Dr Jie Cao	China	08–Sep–23	End of WPB in 2025	1st term
	Vice-Chair	Dr Sylvain Bonhommeau	EU,France	08–Sep–23	End of WPB in 2025	1st term
WPTmT	Chair	Dr Toshihide Kitakado	Japan	29–July–22	End of WPTmT in 2028	1st term
	Vice-Chair	Dr Jiangfeng Zhu	China	29–July–22	End of WPTmT in 2028	1st term
WPTT	Chair	Dr Gorka Merino	EU,Spain	03–Nov–23	End of WPTT in 2025	Ext 2nd term
	Vice-Chair	Dr Shiham Adam	IPNLF	03–Nov–23	End of WPTT in 2025	Ext 2nd term
WPEB	Chair	Dr Mariana Tolotti	EU,France	15–Sept–21	End of WPEB in 2025	2nd term
	1st Vice-Chair	Dr Mohamed Koya	India	15–Sept–21	End of WPEB in 2025	2nd term
	2nd Vice-Chair	Dr Charlene da Silva	South Africa	15–Sept–21	End of WPEB in 2025	2nd term
WPNT	Chair	Dr Farhad Kaymaram	I.R. Iran	7–July–23	End of WPNT in 2025	1st term
	Vice-Chair	Mr Bram Setyadji	Indonesia	7–July–23	End of WPNT in 2025	1st term
WPDCS	Chair	Dr Julien Barde	EU,France	3–Dec–21	End of WPDCS in 2025	2nd term
	Vice-Chair	Mr Nuwan Gunawardane	Sri Lanka	3–Dec–21	End of WPDCS in 2025	2nd term
WPM	Chair	Dr Hilario Murua	ISSF	28–Oct–23	End of WPM in 2025	Ext term
	Vice-Chair	Dr Ann Preece	Australia	28-Oct-23	End of WPM in 2025	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	Co-Chair	Dr Gorka Merino	EU,Spain	06-Oct-21	End of WGFAD in 2025	2nd term
	Co-Chair	Mr Avelino Munwane	Mozambique	03-Oct-22	End of WGFAD in 2026	2nd term
WGEMS	Chair	Dr Hilario Murua	ISSF	17-Nov-21	End of WGEMS in 2025	2nd term
	Vice-Chair	Dr Don Bromhead	Australia	17-Nov-21	End of WGEMS in 2025	2nd term

RECOMMENDATIONS TO THE COMMISSION (28-29): GENERAL

Other matters

SC27.28 (para. 174) 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.

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

Consultants

SC27.29 (para. 199) **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.

RECOMMENDATIONS TO THE COMMISSION (30-31): GENERAL

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.

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.

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ASSESSMENT SCHEDULE IN 2025-2029: TROPICAL TUNAS

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Working Party on Tropical Tunas					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Bigeye tuna	**Data preparatory meeting** **Full assessment**	Indicators	**Data Prep and MP to be run**	**Data preparatory meeting** **Full assessment**	Indicators **MP to be run**
Skipjack tuna	Indicators **Data Prep for SKJ MP**	**Data preparatory meeting** **Full assessment**	Indicators	**Data Prep for MP and MP to be run**	**Data preparatory meeting** **Full assessment**
Yellowfin tuna	Indicators	Indicators	**Data preparatory meeting** **Full assessment**	Indicators	Indicators

ASSESSMENT SCHEDULE IN 2025-2029: WPB AND WPTmT

Working Party on Billfish					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Black marlin			**Full assessment**		
Blue marlin	**Full assessment**			**Full assessment**	
Striped marlin			**Full assessment**		
Swordfish		**Full assessment**	**Data Prep for MP**		**Full assessment**
Indo-Pacific sailfish	**Full assessment**			**Full assessment**	

Working Party on Temperate Tunas					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Albacore	Data preparatory Meeting (4 days) Stock assessment meeting (5 days) (July/August)	–	–	**TBC**	–

ASSESSMENT SCHEDULE IN 2025-2029: NERITIC TUNAS

Working Party on Neritic Tunas					
Species	**2025****	**2026***	**2027***	**2028**	**2029***
Bullet tuna	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation
Frigate tuna	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation
Indo-Pacific king mackerel	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation
Kawakawa	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Longtail tuna	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**
Narrow-barred Spanish mackerel	Data preparation	**Assessment**	Data preparation	Data preparation	**Assessment**

* Including data-limited stock assessment methods.

** Including species-specific catches, CPUE, biological information and size distribution as well as identification of data gaps and discussion of improvements to the assessments (stock structure); one day may be reserved for capacity building activities.

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ASSESSMENT SCHEDULE IN 2025-2029: WPEB

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Working Party on Ecosystems and Bycatch					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Blue shark	Data preparatory meeting Full assessment	-	–	–	–
Oceanic whitetip shark	Indicator analysis	-	Data preparation	–	Data preparation
Scalloped hammerhead shark	–	Data preparatory meeting Assessment*	–	–	–
Shortfin mako shark	–	-	Data preparatory meeting Full assessment		-
Silky shark	–	Assessment*	-	Assessment*	-
Bigeye thresher shark	–	Assessment*	–	-	–
Pelagic thresher shark	–	Assessment*	–	-	–
Porbeagle shark	–	-	– Assessment*		–
Mobulid Rays	–	-	Interactions/ Indicators	-	Interactions/ Indicators

Working Party on Ecosystems and Bycatch					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Marine turtles	Indicators	-	–	Indicators	–
Seabirds	Development of draft workplan	Review of mitigation measures in Res. 23/07	–	–	Development of draft workplan
Marine Mammals		-	–	–	
Ecosystem Approach to Fisheries Management (EAFM) approaches	Ecoregions pilot study ongoing				
Series of multi-taxa bycatch mitigation workshops	Focus: tbd	Focus: tbd	Focus: tbd	Focus: tbd	Focus: tbd
Shark research plan update		Shark research plan update workshop			

*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.

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SCHEDULE OF MEETINGS IN 2025

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Working Party on Social-Economics (WPSE)	2nd	24-25 April (2d)	Virtual
Working Party on Ecosystems and Bycatch (Data Preparatory meeting) (WPEB)	21st	28 – 30 April (3d)	Virtual
Ad hoc Working Group on Electronic Monitoring Systems (WGEMS)	5th	5-6 May (2d)	Virtual
Working Group on FADs (WGFAD)	7th	9 -10 June (2d)	Virtual
Working Party on Tropical Tunas (Data Preparatory meeting) (WPTT)	27th	11-13 June (3d)	Virtual
Working Party on Neritic Tunas (WPNT)	15th	7-11 July (5d)	TBC
Working Party on Temperate Tunas (Assessment meeting) (WPTmT-AS)	9th	21-25 July (5d)	TBC
Working Party on Ecosystems and Bycatch (WPEB)	21st	9-13 September (5d) (with WPB)	France
Working Party on Billfish (WPB)	23rd	15-18 September (4d) (with WPEB)	France
Working Party on Tropical Tunas (Assessment meeting) (WPTT-AS)	27th	21 October – 25 October (5d) (with WPM)	TBC
Working Party on Methods (WPM)	16th	27-28 October (2d) (with WPTT)	TBC
Working Party on Data Collection and Statistics (WPDCS)	21st	25 – 29 November (5d)	China
Scientific Committee (SC)	28th	1 - 5 December (5d)	China

WPEB (Data prep. for blue shark etc.)

WPTT (Data prep. for bigeye + yellowfin CPUE?)

WPNT in Seychelles (Data preparation etc.)

WPTmT in Seychelles (albacore assessment)

WPEB (blue shark assessment, several indicators)

WPB (blue marline, Indo-Pacific sailfish)

WPTT in Seychelles (bigeye assessment)
WPM in Seychelles (albacore MP)

RECOMMENDATIONS TO THE COMMISSION (32): GENERAL

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 STRATEGIC SCIENCE PLAN (IOTC-2025-S29-07)

- **Recommendation 12/15** called for the drafting of a strategic plan for the IOTC SC, to guide the work of the SC, in assisting the Commission to effectively achieve its mandate.
- The first draft of the IOTC Strategic Science Plan 2020 - 2024 was developed in 2018 and reviewed by the SC and adopted by the Commission, at its 23rd session.
- In 2024, a proposal was developed to update the plan for the next five years.
- Following a similar review process, an update of the Strategic Science Plan was presented to the SC in 2024. The SC **agreed** that the plan should be distributed to IOTC Members for final comments during early 2025.
- The plan was disseminated to the Commission via Circular 2025-01 in January with comments due by 28 February. The comments received from Members have been addressed in the final draft.
- The updated Strategic Science Plan has
  - Incorporated requests made to the SC from recent resolutions.
  - Reflected emerging research activities within the IOTC scientific community.
  - Included a proposed timetable for meetings from 2025 to 2029, and schedules for running stock assessments and the adopted MPs.
- It is recommended that the commission consider adopting the the Strategic Science Plan 2025-2029

RECOMMENDATIONS TO THE COMMISSION (33-34)

IOTC Scientific Strategic Research Plan

SC27.33 (para. 208) 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 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.

REVIEW OF THE DRAFT, AND ADOPTION OF THE REPORT OF THE 25TH SESSION OF THE SCIENTIFIC COMMITTEE

SC27.34 (para. 214) The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC25, provided at Appendix 39.

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REPORT OF THE SPECIAL SESSION OF IOTC SCIENTIFIC COMMITTEE FEBRUARY 26, 2025, ONLINE

TOSHIHIDE KITAKADO & FAYAKUN SATRIA

29TH IOTC COMMISSION MEETING, APRIL 13-17, 2025 @REUNION, FRANCE

RESOLUTION 22/03

ON A MANAGEMENT PROCEDURE FOR BIGEYE TUNA IN THE IOTC AREA OF COMPETENCE.

Management procedure

2. The adopted management procedure for bigeye tuna known as MP1 Harvest is described in Annex I (MP).

3. Consistent with the adopted management objectives of the Commission, the management procedure is designed to achieve:

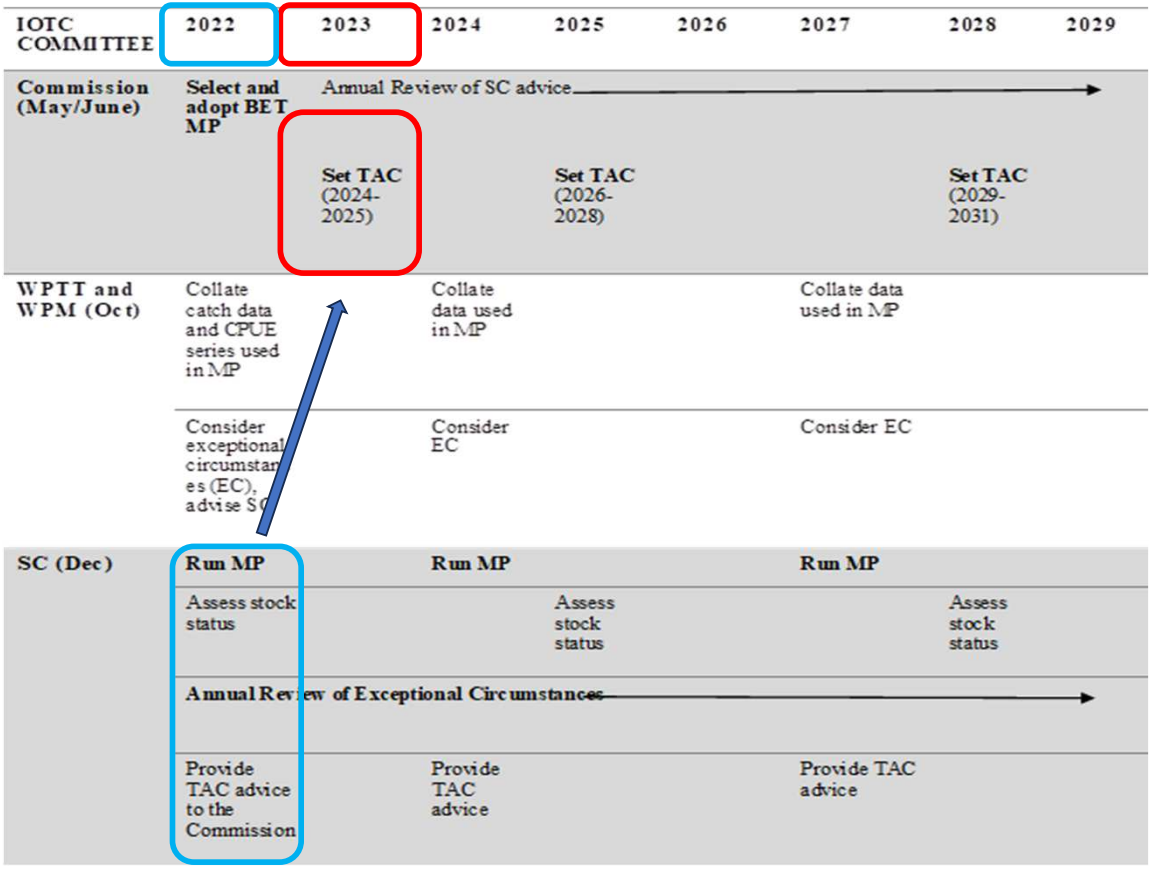
   a) a 60% probability that the bigeye tuna spawning stock biomass achieves the target reference point of SB_{MSY}[1] by 2034-2038;

   b) the bigeye tuna spawning stock biomass avoids breaching the interim limit reference point specified in Resolution 15/10 with a high probability;

   and operates with the following constraint:

   c) the maximum increase or decrease in the TAC shall be 15% relative to the previous TAC.

IMPLEMENTATION SCHEDULE FOR BET (22/03)



IMPLEMENTATION SCHEDULE FOR BET (22/03)

IOTC COMMITTEE	2022	2023	2024	2025	2026	2027	2028	2029
Commission (May/June)	**Select and adopt BET MP**	Annual Review of SC advice →						
		Set TAC (2024-2025)		**Set TAC** (2026-2028)			**Set TAC** (2029-2031)	
WPTT and WPM (Oct)	Collate catch data and CPUE series used in MP		Collate data used in MP			Collate data used in MP		
	Consider exceptional circumstances (EC), advise SC		Consider EC			Consider EC		
SC (Dec)	**Run MP**		**Run MP**			**Run MP**		
	Assess stock status			Assess stock status			Assess stock status	
	Annual Review of Exceptional Circumstances →							
	Provide TAC advice to the Commission		Provide TAC advice			Provide TAC advice		

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RUNNING THE BIGEYE TUNA MP IN 2025

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- MP was scheduled to be applied again in 2024 to set TAC for 2026-2028
- CPUE index required to run MP was not available in 2024 as per Res 22/03 requirements (annual CPUEs were submitted instead of quarterly CPUEs)

1. Joint CPUE team reconvened in Feb 2025 to produce the required CPUE index
2. Australian scientists ran the MP using the data set
3. WPM(MSE) Taskforce met online on 24 February 2025 to review the CPUE, run MP based on the new CPUE, review again Exceptional Circumstances, and provide catch **RECOMMENDATION to the SC**
4. **The special session of the SC held on 26 Feb endorsed the outcome (**IOTC-2025-SSC01-R)

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RUNNING THE BIGEYE TUNA MP IN 2025

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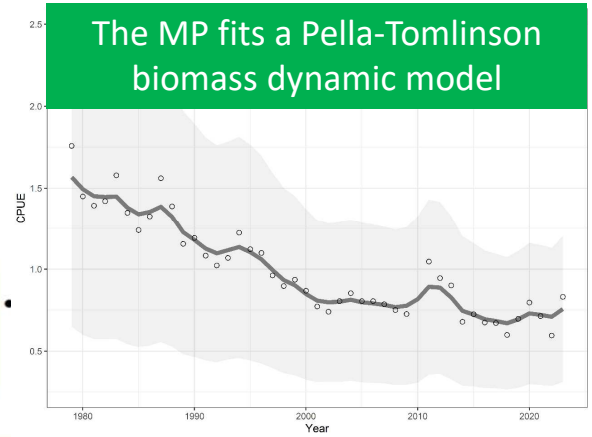
Input data

- Total catch
- Standardised longline CPUE

Estimation model

- The MP fits a Pella-Tomlinson biomass dynamic model



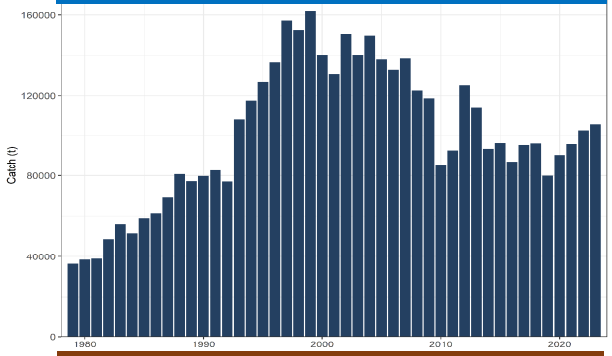
Harvest Control Rule

- Hockey stick shaped

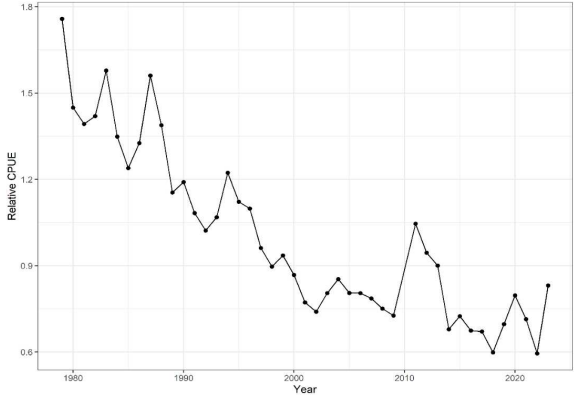
TAC Calculation

- 15% r chang

Catch series



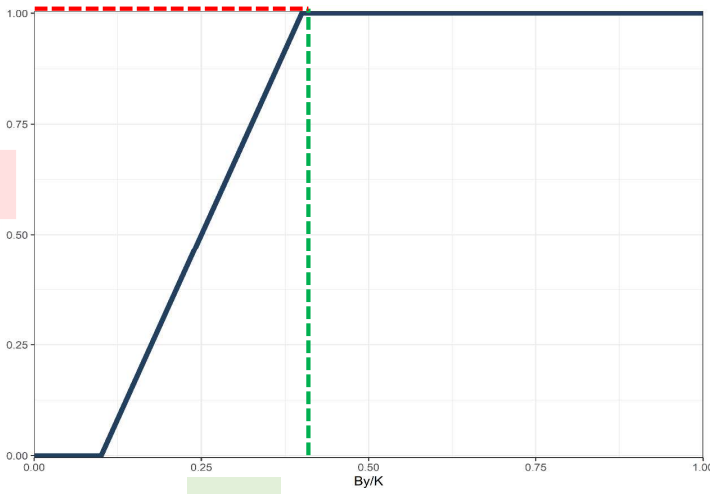
Joint longline std-CPUE



RUNNING THE BIGEYE TUNA MP IN 2025

- Hockey-stick shaped Harvest Control Rule (HCR)

$$TAC_{new} = B_y(1 - exp(-F_{mult} \times HCR_{mult} \times F_{MSY}\ ratio))$$



HCR_{mult}

B/K

- Maximum TAC change constraint of **15%**

Annual TAC calculated for 2026-28

(fixed tuning para) F_{mult} = 3.178

(from estimation model)

B_y = 750,170 (t)

B_y /K = 0.414

F_{MSY} *ratio* = 0.071447

(from HCR) HCR_{mult} = 1

TAC_{new} = 175,005 t

(>15% high than 2024-25 TAC of 80,583 t)

Recommended TAC (endorsed by SC) = **92,670 t** (15% above current TAC)

RECOMMENDATIONS FROM THE 1ST SPECIAL SESSION OF SC

BIGEYE TUNA MP (RESOLUTION 22/03)

SSC.01 (para. 15) The SC **NOTED** that the application of the bigeye management procedure generated an unconstrained estimated TAC of 175,005 t which is more than 15% higher than the TAC set for 2024 and 2025. The SC **NOTED** that by applying the maximum 15% change in the TAC as per Resolution 22/03, the MP recommended a TAC of 92,670 t. per year for 2026-2028. Therefore, the SC **RECOMMENDED** that the Commission adopt the TAC advice for Bigeye tuna of 92,670 t resulting from the MP.

SSC.02 (para. 21) **NOTING** that the CPUE standardisation conducted by the joint CPUE working group differs slightly from the specified methods in the MP (Williams et al., 2022), the SC **RECOMMENDED** that a fixed set of CPUE standardization code is developed for each MP to ensure that it is developed following the specifications of the MP.

This was endorsed by TCMP 09 yesterday.

ACKNOWLEDGEMENTS

- All the participants of WPs and SC for dedicated and productive discussion
- CPCs that hosted the WPs and SC
- Chairs, Vice-chairs of WPs and WGs
- Out-going vice-Chair of SC (Dr. Merino)
- IOTC secretariat team

THANK YOU SO MUCH FOR KIND ATTENTION