



## By-Product assessment report

BP111

Pioneer Food Cannery Limited  
- The Scoular Company

<b>Report code</b>	<b>BP111</b>	<b>Date of issue</b>	<b>April 2025</b>
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1. Application details			
Applicant		Pioneer Food Cannery Limited - The Scoular Company	
Applicant country		Ghana	
2. Certification Body details			
Name of Certification Body (CB)		NSF / Global Trust Certification Ltd.	
Contact information for CB		nsf-marintrust@nsf.org	
Assessor name		Ana Elisa Almeida Ayres	
CB internal peer reviewer name		Matthew Jew	
Internal peer review evaluation		Agree with evaluation	
Comments on the assessment		<p>None of the byproduct species listed in this assessment meet the MarinTrust definition of an Endangered, Threatened, or Protected (ETP) species; therefore, all are eligible for byproduct assessment. The yellowfin tuna (<i>Thunnus albacares</i>), bigeye tuna (<i>Thunnus obesus</i>) and Skipjack tuna (<i>Katsuwonus pelamis</i>) are caught by vessels flagged under Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain, as Ghana and Bahamas received a High-Risk rating in Step 2, Step 3 was required for these byproducts. Albacore tuna (<i>Thunnus alalunga</i>) is caught by vessels flagged under Namibia, which received a Medium Risk rating, being approved with caution and did not need to be evaluated under Step 3.</p> <p>The client provided information on the fisheries' operational areas and landing ports (coastal and port details) for all the byproducts under the evaluation. Based on the fishing areas provided, 12 stocks were identified: Eastern skipjack tuna, western skipjack tuna, Atlantic yellowfin tuna, Indian ocean yellowfin, Atlantic bigeye tuna, Indian ocean bigeye tuna, eastern Atlantic skipjack, western Atlantic skipjack, South Atlantic albacore and Indian ocean albacore tuna. Based on this data, Step 3 was conducted, concluding that all byproducts from Pioneer Food Cannery Limited - The Scoular Company may be sourced with caution.</p>	
3. Approval validity		Valid from March/2025	Valid until March/2026

4. By-product assessment outcomes		
By-product species name	Flag country(ies)	MarinTrust approval status
Yellowfin tuna ( <i>Thunnus albacares</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Approved source with caution
Bigeye tuna ( <i>Thunnus obesus</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Approved source with caution
Skipjack tuna ( <i>Katsuwonus pelamis</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Approved source with caution
Albacore tuna ( <i>Thunnus alalunga</i> )	Namibia	Approved source with caution

#### **Guidance for on-site auditor**

For the audit, the auditor will check how the facility manages by-products deemed medium risk. Any by-products downrated from high to medium risk will require additional due diligence checks.

It is important that facilities check all raw materials from and verify their suppliers especially if there is a perceived risk of sourcing from known or suspected IUU fishing activity. This requires checking supplier records or procedures in place to understand how the supplier can ensure there is no IUU in the raw material they provide. For raw materials risk rated medium, additional or more frequent checks may be required until the facility is certain that the raw materials are not from IUU fishing activity.

The audit requirements are covered in clause 2.11.3 of the MarinTrust Global Standard for Responsible Supply of Marine Ingredients (the MarinTrust Standard) and associated interpretation guidance.

#### **Approved by-products**

- No further checks are required beyond those included in the MarinTrust Standard.

#### **Additional checks of Approved Source with Caution by-products**

- Review supplier records or procedures in place.

#### **Additional checks of by-products Approved Source with Caution via Step 3 assessment**

- In addition to checks for medium risk Approved Source with Caution by-products, by-products that have had risk downgraded from high to medium at Step 3 (use **Appendix 1** to identify these by-product species), confirm that the relevant traceability information continues to be collected for this by-product. During the audit, a traceability check on any by-products downgraded from high to medium risk shall be included as part of the required traceability checks (Section 4).

#### **Guidance for the applicant/certificate holder**

The applicant/certificate holder is responsible for ensuring the relevant actions are taken to comply with the MarinTrust Standard.

The certificate holder is responsible for communicating any changes to the by-products sourced by submitting a scope extension request through the MarinTrust online Application Portal.

## Appendix 1 – assessment outcomes

By-product species name	Flag country(ies)	IUCN Red List	CITES Appendices	Step 2 risk status	Step 3 required	Step 3 risk Outcome
Yellowfin tuna ( <i>Thunnus albacares</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Bigeye tuna ( <i>Thunnus obesus</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Vulnerable	Not listed	High risk	Yes	Risk downgraded to Medium risk
Skipjack tuna ( <i>Katsuwonus pelamis</i> )	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Albacore tuna ( <i>Thunnus alalunga</i> )	Namibia	Least concern	Not listed	Medium risk	No	Not applicable

## Appendix 2 – detailed assessment outcomes

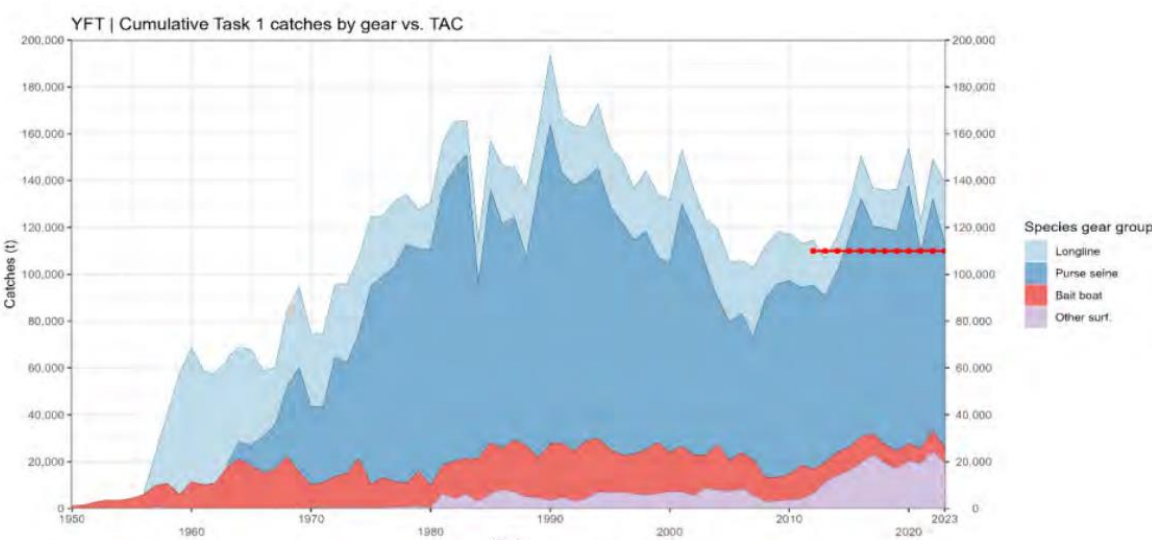
(step 2 and step 3 if applicable)

### Step 2 outcomes

Flag state	Risk rating	Flag score	Port score	General score	Flag State is contracting party or cooperating non-contracting party to all relevant RFMOs	'Carded' under EU Carding system	Flag state party to PSMA	Flag state mandatory vessel tracking for commercial seagoing fleet	WGI Governance rank
Ghana	High	1.67	2	2.23	1	3	1	1	44.81%
Bahamas	High	2.38	2.33	2.04	2	1	1	Not available	47.17%
Lithuania	Medium	2.33	1.89	2.03	1	1	1	1	87.74%
France	Medium	3.17	2.39	1.67	1	1	1	1	85.38%
Italy	Medium	2.54	2.17	1.73	1	1	1	1	68.87%
Mauritius	Medium	2.13	2.72	1.97	1	1	1	1	84.43%
Seychelles	Medium	1.79	2.39	1.57	1	1	1	1	62.26%
Spain	Medium	3.21	3.39	2.03	1	1	1	1	75.94%
Namibia	Medium	1.96	2.33	2	1	1	1	1	52.36%

## Step 3 outcomes

### Category C assessment

Species name		Yellowfin tuna ( <i>Thunnus albacares</i> )	
Fishing area and stock		FAO Areas 34, 41, 47 (Atlantic yellowfin tuna)	
C 1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Pass
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass
Clause outcome:			Pass
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.			
A full stock assessment was conducted for yellowfin tuna in 2024 using an age-structured model framework (Stock Synthesis) applied to the available data through 2022.			
The assessment incorporated all available catch data along with three key abundance indices: a joint-CPC tropical Atlantic longline index; an acoustic echosounder buoy index; and a purse seine free school index (ICCAT 2024a).			
<div><div>YFT   Cumulative Task 1 catches by gear vs. TAC</div></div>			
Figure 1. Yellowfin tuna total catch 1950-2023 by main fishing gear group. The red dotted line represents the TAC (ICCAT 2024a).			

**Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.**

**C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.**

The ICCAT stock assessment report includes an indication of the estimated stock status relative to target reference points. The median estimate of  $SSB_{2022}/SSB_{MSY}$  was 1.37 (80% confidence interval: 0.91 - 2.15), indicating the stock was not overfished in 2022 with 81% probability. The median estimate of  $F_{2022}/F_{MSY}$  was 0.89 (0.40 - 1.46), indicating that overfishing was not occurring in 2022 with 58% probability. The median MSY estimated was 121,661 t with 80% confidence intervals of 107,485 and 188,456 t. The probability of the stock being in each quadrant of the Kobe plot in 2022 is provided in figure below. There was a 58% probability that the stock was in the green quadrant (not overfished nor subject to overfishing) a 23% probability of being in the orange quadrant (subject to overfishing but not being overfished), and a 19% probability in the red quadrant (being both overfished and subject to overfishing)(ICCAT, 2024a). Therefore, the stock is likely that stock biomass was above the target reference point level, and therefore highly likely to be above the limit reference point level.



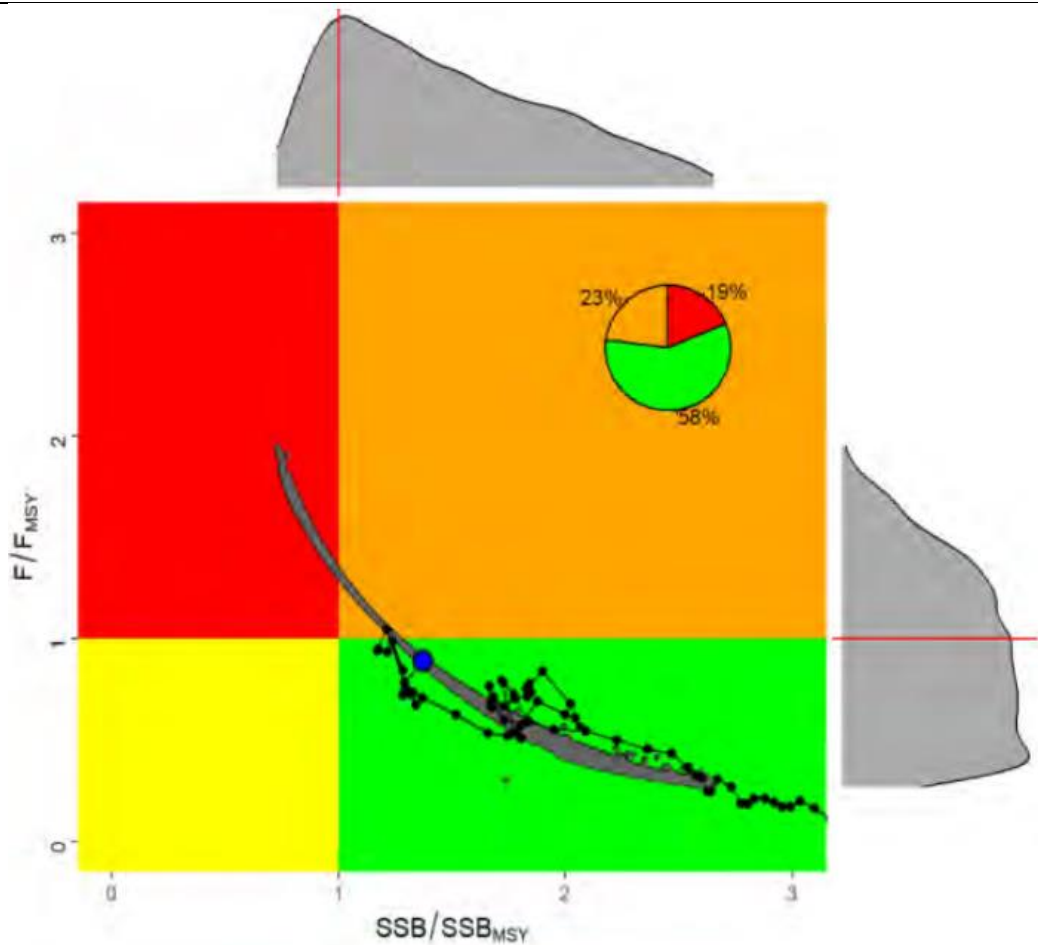


Figure 2. Kobe plot of the stock status of Atlantic yellowfin tuna in 2022. Gray dots are the 4,000-stock synthesis model runs; the blue circle is the median of these runs and marginal histograms represent the distribution of either  $SSB/SSB_{MSY}$  or  $F/F_{MSY}$ . The black line indicates the stock status trajectory starting in 1958. The inserted pie chart indicates the proportion of model iterations within each Kobe colour quadrant, 58% in the green quadrant, 23% in the orange quadrant, and 19% in the red quadrant (ICCAT 2024a).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met

#### References

ICCAT. 2024a. Stock summary, yellowfin tuna.  
[https://www.iccat.int/Documents/SCRS/ExecSum/YFT\\_ENG.pdf](https://www.iccat.int/Documents/SCRS/ExecSum/YFT_ENG.pdf)

Species name		Yellowfin tuna ( <i>Thunnus albacares</i> )	
Fishing area and stock		FAO 51 (Indian Ocean yellowfin)	
C 1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Pass
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass
Clause outcome:			Pass

**C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.**

A new stock assessment was carried out for yellowfin tuna 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 uses four types of data: catch, size frequency, tagging and CPUE indices (IOTC 2024a).

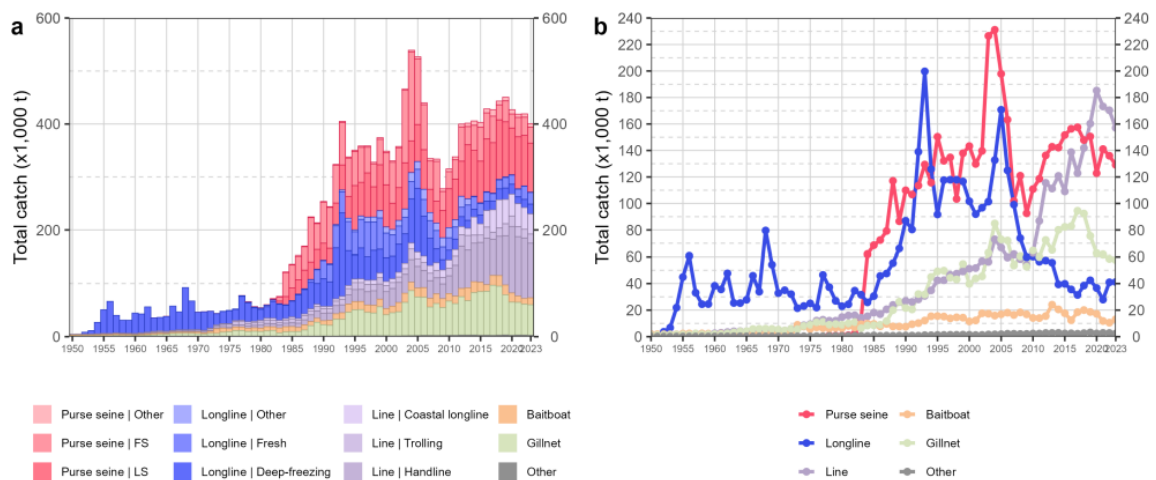


Figure 3. Annual time series of (a) cumulative nominal catches (metric tonnes; t) by fishery and (b) individual nominal catches (metric tonnes; t) by fishery group for yellowfin tuna during 1950-2023. FS = free-swimming school; LS = school associated with drifting floating objects. Purse seine|Other: coastal purse seine, purse seine of unknown association type, ring net; Longline | Other: swordfish and sharks-targeted longlines; Other: all remaining fishing gears (IOTC, 2024a).

**Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.**

**C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.**

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%. On the weight-of-evidence available in 2024, the yellowfin tuna stock is determined to be not-overfished and not-subject to overfishing (IOTC, 2024a).

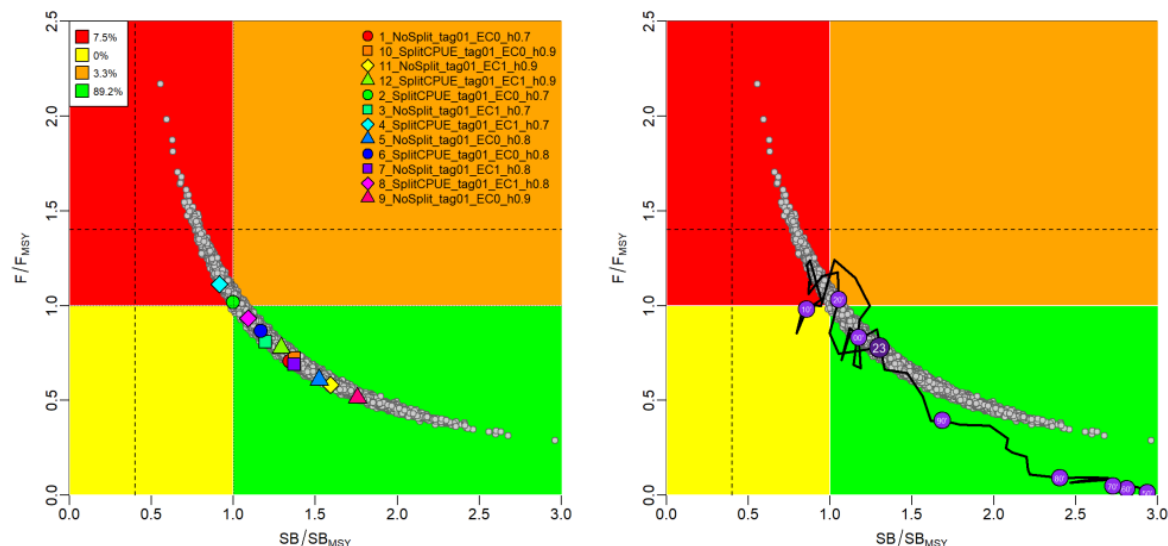


Figure 4. Yellowfin tuna: SS3 Indian Ocean assessment Kobe plot: (left): current (2023) stock status, relative to  $SB_{MSY}$  (x-axis) and  $F_{MSY}$  (y-axis) reference points for the final model options. Coloured symbols represent Maximum posterior density (MPD) estimates from individual models. Grey dots represent the statistical uncertainty from individual models (20,000 replicates from each). The dashed lines represent limit reference points for IO yellowfin tuna ( $SB_{lim} = 0.4 SB_{MSY}$  and  $F_{lim} = 1.4 F_{MSY}$ ); (right) mean stock trajectory from the model grid (IOTC, 2024a).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met

#### References

IOTC 2024a. APPENDIX 4. EXECUTIVE SUMMARY: YELLOWFIN TUNA (2024).  
[https://iotc.org/sites/default/files/content/Stock\\_status/2024/English/IOTC-2024-SC27-ES04\\_YFTE.pdf](https://iotc.org/sites/default/files/content/Stock_status/2024/English/IOTC-2024-SC27-ES04_YFTE.pdf)

Species name		Bigeye tuna ( <i>Thunnus obesus</i> )	
Fishing area and stock		FAO Areas 34, 41, 47 (Atlantic bigeye tuna)	
	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR	Pass

<b>C 1</b>		are considered by scientific authorities to be negligible.	
	<b>C1.2</b>	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass

**Clause outcome:** Pass

**C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.**

A stock assessment for bigeye tuna was conducted by the ICCAT in 2021. That assessment was conducted using similar assessment models to those used in 2018, updating the data until 2019, including catch data.

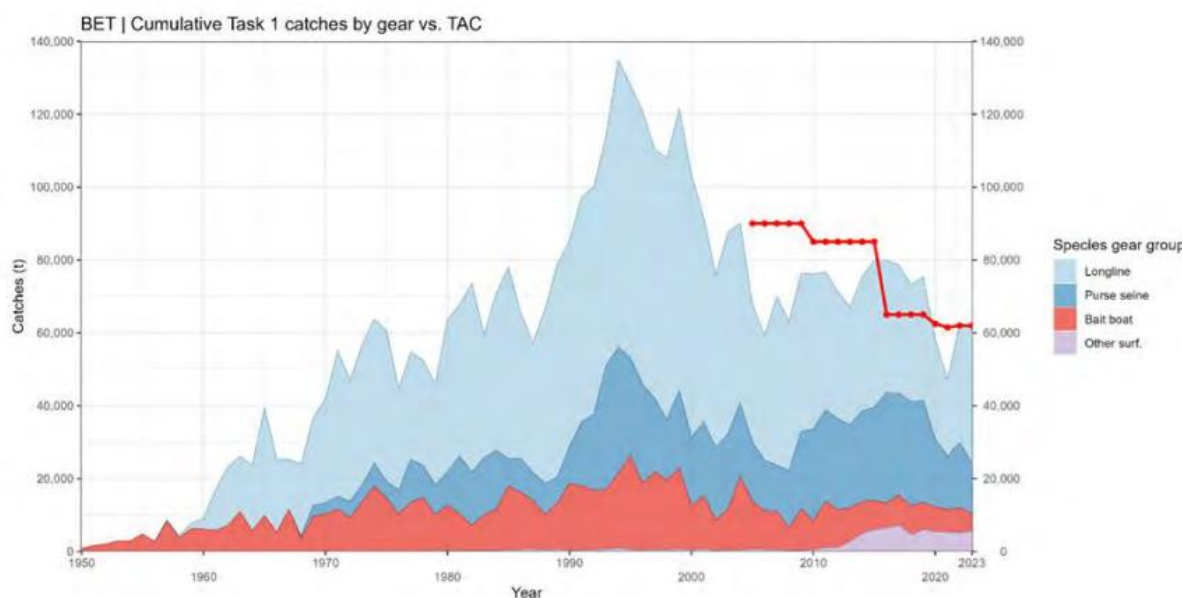


Figure 5.7. Bigeye tuna estimated and reported catches for all the Atlantic stock (t). the red dotted line indicates the TAC (ICCAT, 2025).

**Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.**

**C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.**

The age structured model (SS3) was the primary source of information used to evaluate this stock and shows a substantially more optimistic stock status than estimated in 2018 due to improving longline abundance indices and incorporating new mortality-at-age vectors (Medley & Gascoigne 2024). The results of the assessment, based on the median of the entire uncertainty grid shows that in 2019 the Atlantic bigeye tuna stock was overfished (median SSB2019/SSBMSY = 0.94 and 80% confidence interval (CI) of 0.71 and 1.37) and was not undergoing overfishing (median F2019/FMSY=1.00 and 80% CI of 0.63 and 1.35). The average of MSY was estimated as 86,833 t with

(80% CI of 72,210 t and 106,440 t) from the uncertainty grid deterministic runs (ICCAT 2025). Based on that information it seems that the stock is closed to the target point and therefore over any potential limit point.

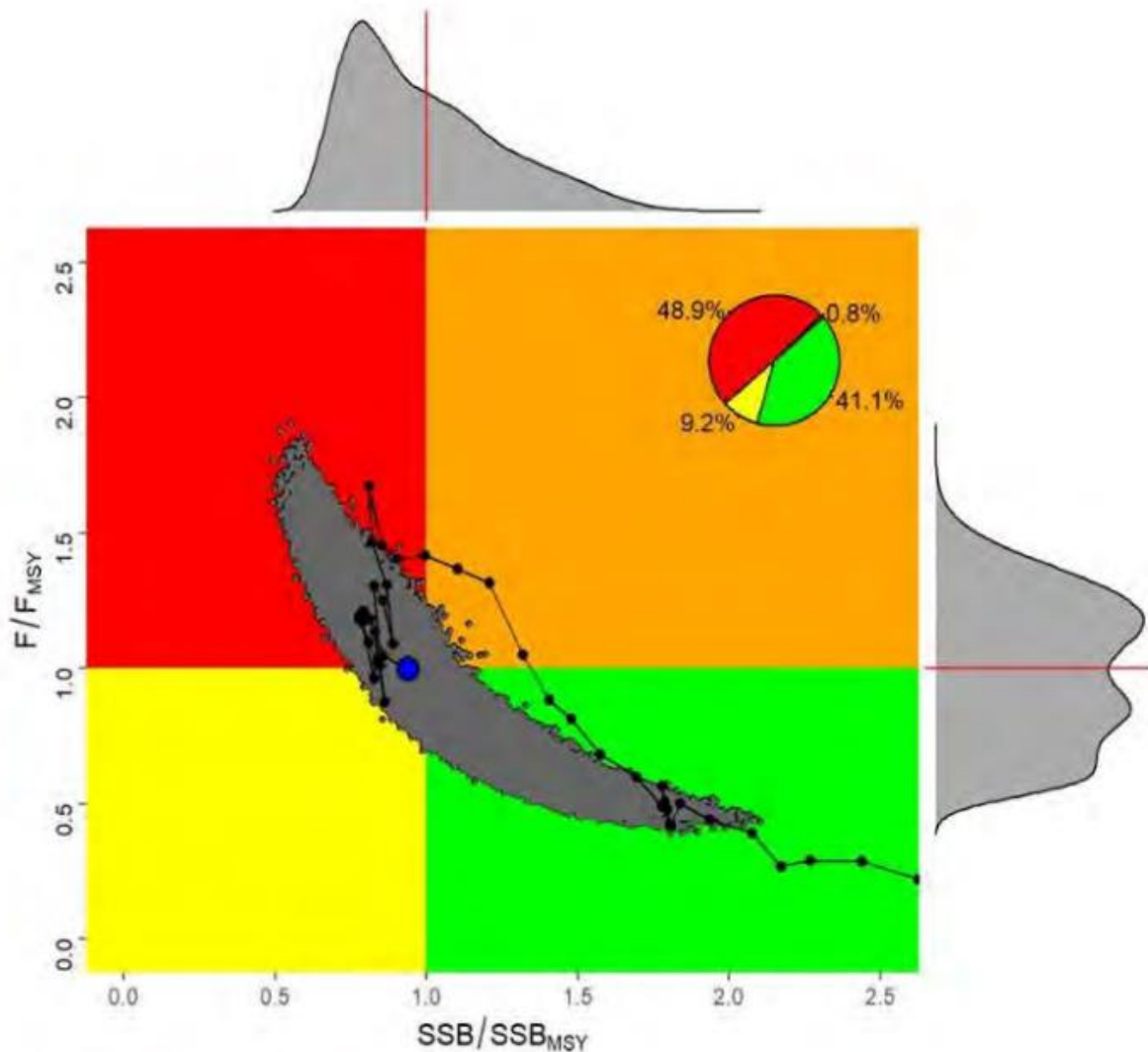


Figure 6. Stock synthesis: Kobe plot of  $SSB/SSB_{MSY}$  and  $F/F_{MSY}$  for stock status of Atlantic bigeye tuna in 2019 based on the log multivariate normal approximation across the 27 uncertainty grid model runs of stock synthesis with an insert pie chart showing the probability of being in the red quadrant (48.9%), green quadrant (41.1 %), orange (0.8%) and in yellow (9.2 %). Blue circle is the median and marginal histograms represent distribution of either  $SSB/SSB_{MSY}$  OR  $F/F_{MSY}$  (ICCAT, 2025).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met.

#### References

ICCAT. 2025. BIGEYE TUNA. EXECUTIVE SUMMARY. Available at: <https://www.iccat.int/en/assess.html>

Medley, P.A.H. & Gascoigne, J. (2024). An Evaluation of the Sustainability of Global Tuna Stocks Relative to Marine Stewardship Council Criteria (Version 11). ISSF Technical Report 2024-06. International Seafood Sustainability Foundation, Pittsburgh, PA, USA.

Species name		Bigeye tuna ( <i>Thunnus obesus</i> )	
Fishing area and stock		FAO 51 (Indian Ocean bigeye tuna)	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Pass
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass
Clause outcome:			Pass
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.			
Bigeye tuna in the Indian Ocean is subject to regular stock assessment by the Indian Ocean Tuna Commission (IOTC). The most recent stock assessment was carried out in 2022. Two models were applied to the bigeye stock (Statistical Catch at Size (SCAS) and Stock Synthesis (SS3)), with the SS3 stock assessment selected to provide scientific advice. The reported stock status is based on a grid of 24 model configurations designed to capture the uncertainty on stock recruitment relationship, longline selectivity, growth and natural mortality. The assessment incorporated catch data from several fisheries working in the Indian Ocean (IOTC 2024b).			



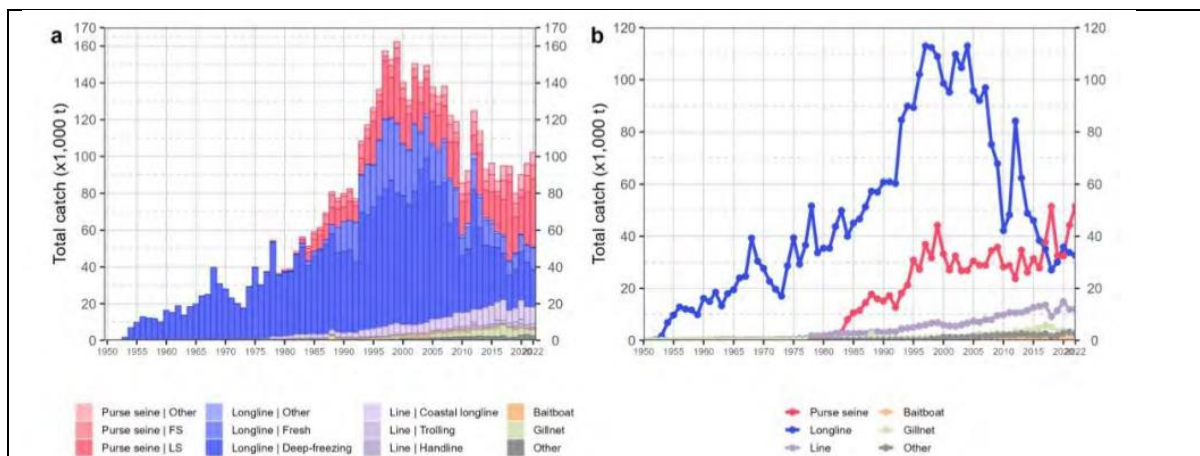


Figure 7. Annual time series of (a) cumulative nominal catches (metric tonnes; t) by fishery and (b) individual nominal catches (metric tonnes; t) by fishery group for bigeye tuna during 1950-2022 (IOTC 2024b).

Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.

**C1.2** The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

No new stock assessment was carried out for bigeye tuna in 2024 and so the advice is based on the 2022 assessment. Spawning biomass in 2021 was estimated to be 25% (80% CI: 23-27%) of the unfished levels and 90% (75- 105%) of the level that can support MSY. Fishing mortality was estimated at 1.43 (1.1-1.77) times the FMSY level. Considering the characterized uncertainty, the assessment indicates that SB2021 is below SBMSY and that F2021 is above FMSY (79%). On the weight-of-evidence available in 2022, the bigeye tuna stock is determined to be overfished and subject to overfishing. However, the limit reference point for the stock is defined as  $LRP = 0.5 \times SBMSY$ ; i.e. the level at which stock biomass is half the level which can support MSY. The LRP is indicated in dashed lines on Figure 8 and it is possible to see that in none of the outcomes of the 24 models the biomass crossed to the left of the dashed line, thus it has always been above the LRP. Moreover, the stock is currently estimated to be at 90% of the level which can support MSY (IOTC, 2024b).

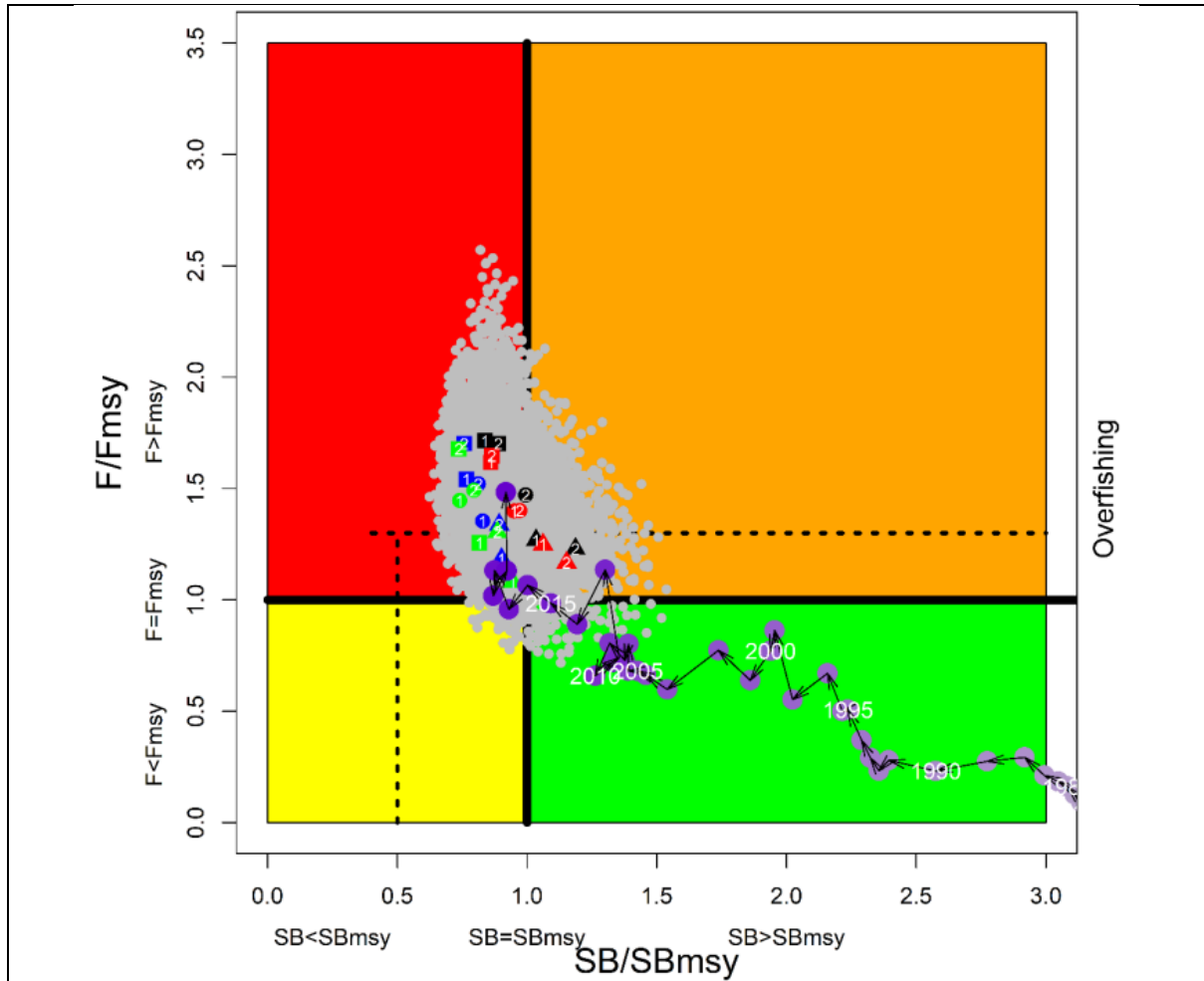


Figure 8. Bigeye tuna: SS3 Aggregated Indian Ocean assessment Kobe plot. The coloured points represent stock status estimates from the 24 model options. Coloured symbols represent Maximum posterior density (MPD) estimates from individual models: square, circle, and Triangles represents alternative steepness options; black, red, blue, and green represents alternative growth and natural mortality option combination; 1,2, represents alternative selectivity options. The purple dot and arrowed line represent estimates of the reference model (the last purple dot represents the terminal year of 2021). Grey dots represent uncertainty from individual models. The dashed lines represent limit reference points for IO bigeye tuna ( $SB_{lim} = 0.5 SB_{MSY}$  and  $F_{lim} = 1.4 F_{MSY}$ ) (IOTC, 2024b).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met.

#### References

IOTC. 2024b. APPENDIX 2. EXECUTIVE SUMMARY: BIGEYE TUNA.  
[https://iotc.org/sites/default/files/content/Stock\\_status/2024/English/IOTC-2024-SC27-ES02\\_BETE.pdf](https://iotc.org/sites/default/files/content/Stock_status/2024/English/IOTC-2024-SC27-ES02_BETE.pdf)

#### Species name

Skipjack tuna (*Katsuwonus pelamis*)



Fishing area and stock		FAO 34,41,47 (Eastern and Western Atlantic skipjack)	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Pass
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass
Clause outcome:			Pass

There are two skipjack stocks in the Atlantic (eastern and western stock). Both are considered in the sections below.

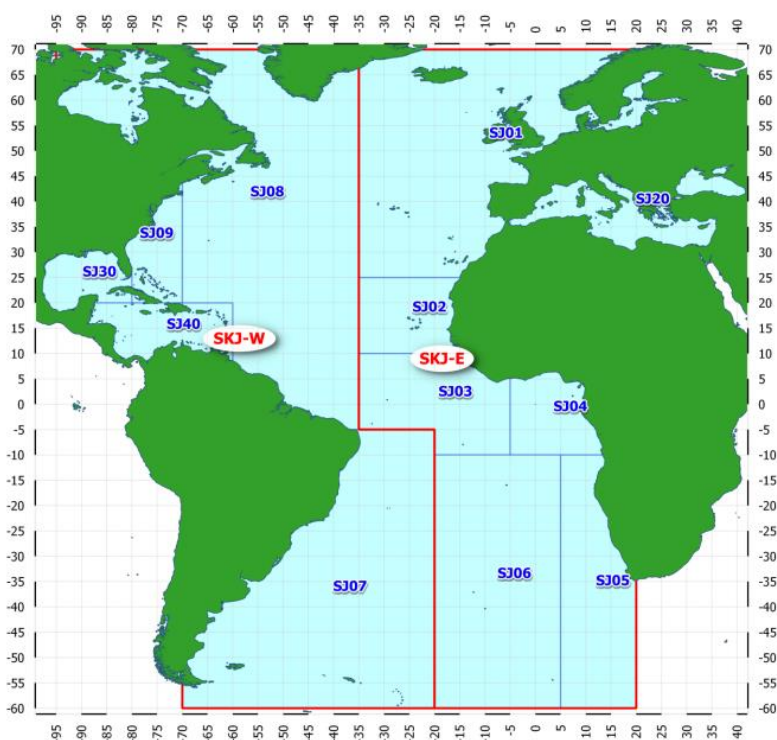


Figure 9. ICCAT Convention Area for the Atlantic eastern (SKJ-E) and western (SKJ-W) skipjack stock (ICCAT, 2016).

**C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.**

#### a) Eastern Skipjack Tuna

The last stock assessment of the eastern skipjack stock was performed in 2022 and concluded the stock was in a healthy condition. The stock assessment applied non-equilibrium and Bayesian state-space production models to integrated statistical assessment models using the available catch data from 1950 up to and including 2020 (ICCAT, 2022a).

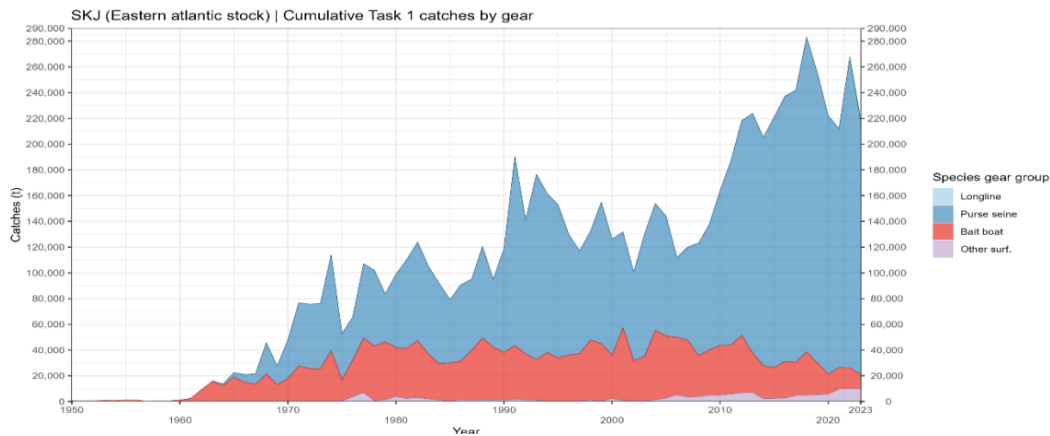


Figure 10. Skipjack catches in the eastern Atlantic, by gear (1950-2023). The values for 2023 are preliminary (ICCAT, 2022a).

#### a) Western skipjack Tuna

The last stock assessment of the eastern skipjack stock was performed in 2022 and concluded the stock was in a healthy condition. The stock assessment applied non-equilibrium and Bayesian state-space production models to integrated statistical assessment models using the available catch data from 1952 up to and including 2020 (ICCAT, 2022a).

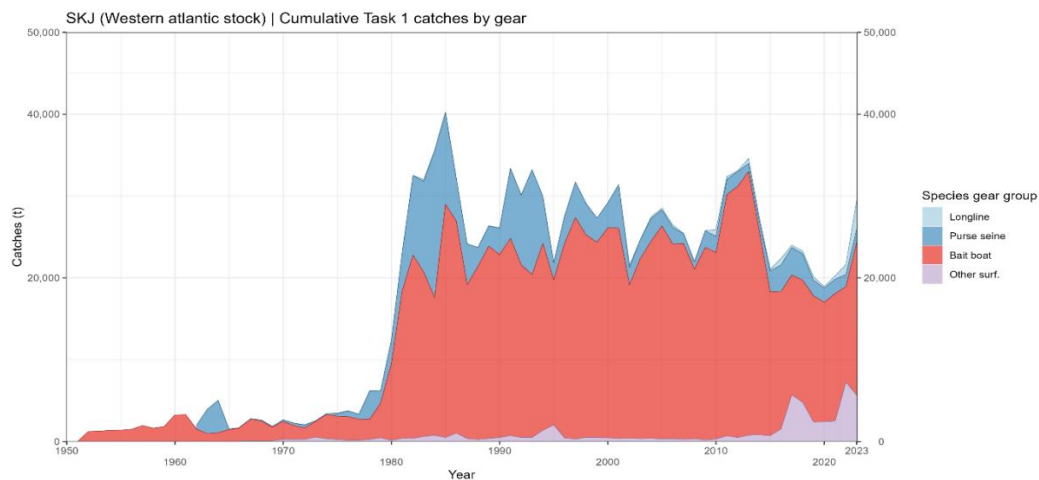


Figure 11. Skipjack catches in the western Atlantic, by gear (1950-2023). The values for 2023 are preliminary (ICCAT, 2022a).

**Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.**

**C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.**

#### a) Eastern Skipjack Tuna

The stock was last assessed in 2022, using data up to 2020 and two different model platforms. The combined results of both assessment models, based on the median of an uncertainty grid with 18 scenarios in each model, show that:

1. The ratio of  $F_{current}/F_{MSY}$  is estimated to be 0.63 (95% C.I.: 0.18-2.35), indicating that overfishing is not occurring.
2. The ratio of spawning biomass  $SSB_{current}/SSB_{MSY}$  is estimated to be 1.60 (95% C.I.: 0.50-5.79), indicating that the stock is not in an overfished state.
3. The estimate of MSY is 216,617 t (95% C.I.: 172,735-284,658 t).

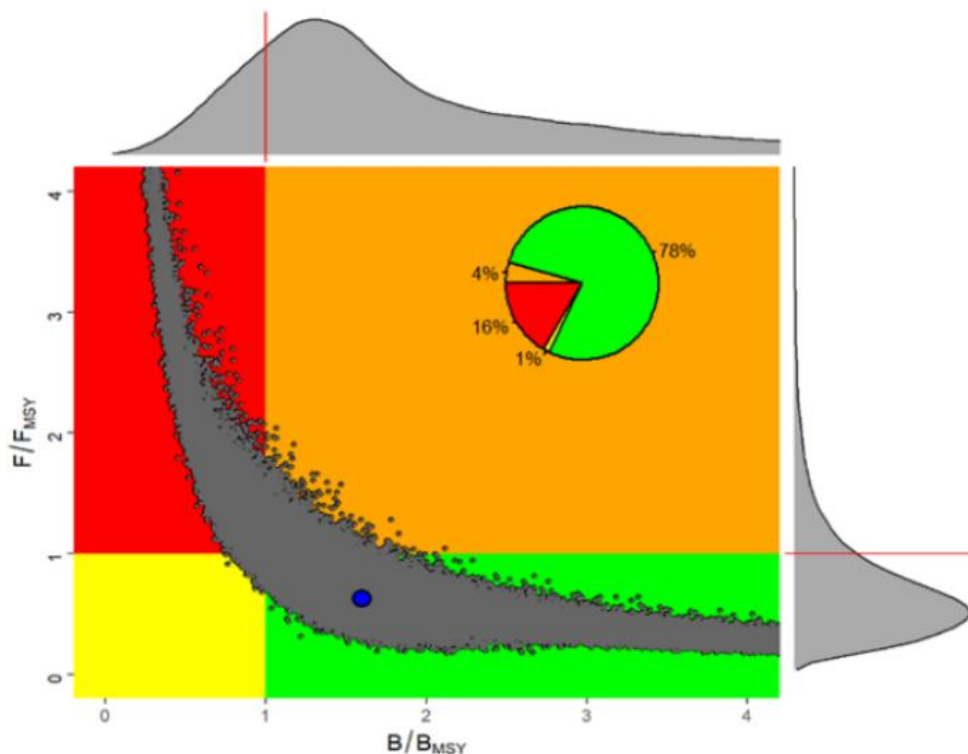


Figure 12. Joint Kobe phase plot for the 18 Stock Synthesis uncertainty grid runs and 18 JABBA uncertainty grid runs for the eastern Atlantic skipjack stock. For each run the benchmarks are calculated from the year-specific selectivity and fleet allocations, and based on 90,000 MVLN iterations for Stock Synthesis and 90,000 MCMC iterations for JABBA. The blue point shows the median of 180,000 iterations for  $SSB_{2020}/SSB_{MSY}$  or  $B_{2020}/B_{MSY}$  and  $F_{2020}/F_{MSY}$  for the entire set of runs in the grid. Grey points represent the 2020 estimates of relative fishing mortality and relative spawning stock biomass for 2020 for each of the 180,000 iterations. The upper graph represents the smoothed frequency distribution of  $SSB_{2020}/SSB_{MSY}$  or  $B_{2020}/B_{MSY}$  estimates for 2020. The right graph represents the smoothed frequency distribution of  $F_{2020}/F_{MSY}$  estimates for 2020. The inserted pie graph represents the percentage of each 2020 estimate that fall in each quadrant of the Kobe plot. All SSB for Stock Synthesis showed the values at the end of years (ICCAT, 2022a).

#### b) Western Skipjack Tuna

The stock was assessed by SCRS in 2022, using data up to 2020. Stock status was estimated by combining the results of the 9 scenarios in the uncertainty grid. The SCRS concluded that:

1. The ratio of  $F_{current}/F_{MSY}$  is around 0.41 (95% C.I.: 0.19-0.89), indicating that overfishing is not occurring.
2. The ratio of spawning biomass  $SSB_{current}/SSB_{MSY}$  is 1.60 (95% C.I.: 0.90-2.87), indicating that the stock is not overfished.
3. The value of MSY is estimated as 35,277 tonnes (95% C.I.: 28,444-46,340 t).

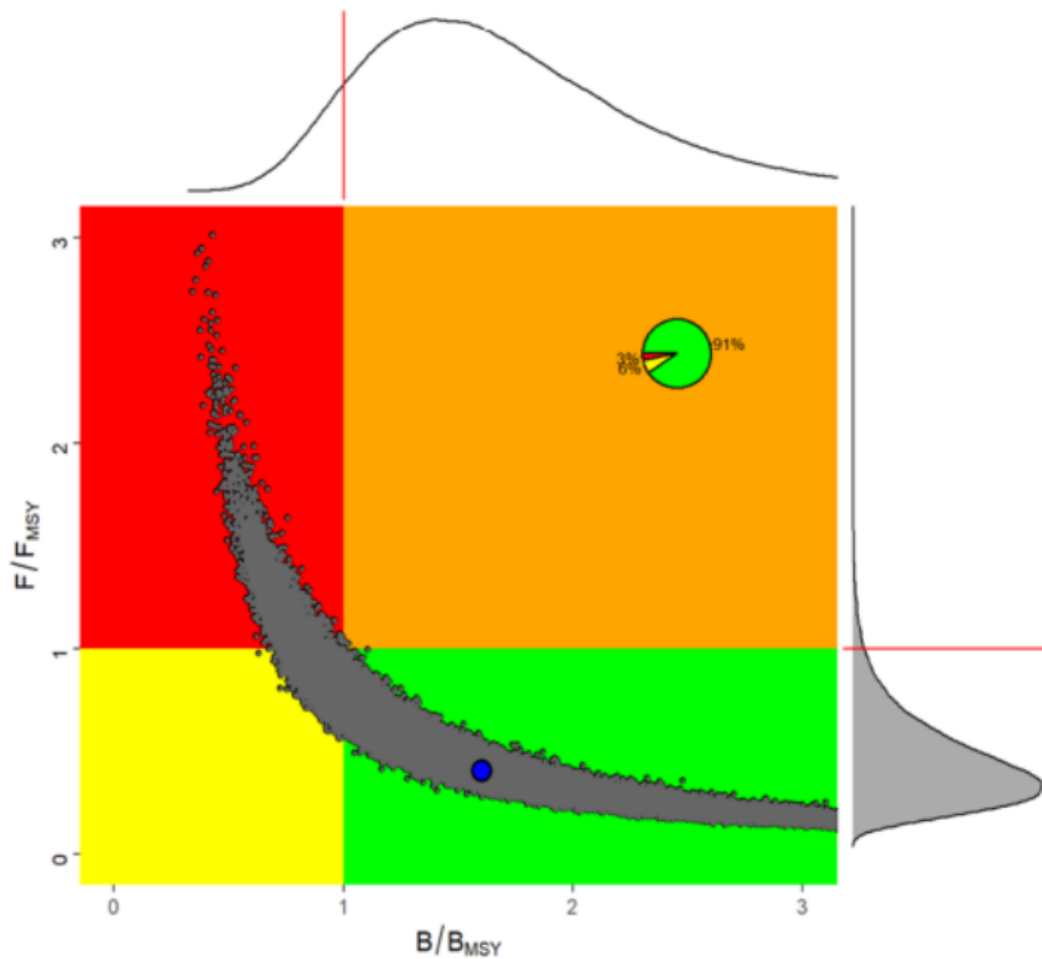


Figure 13. Kobe phase plot for the 9 Stock Synthesis uncertainty grid runs for the western Atlantic skipjack stock. For each run the benchmarks are calculated from the year-specific selectivity and fleet allocations and based on 200,000 MVLN iterations. The blue point shows the median of 200,000 iterations for  $SSB_{2020}/SSB_{MSY}$  and  $F_{2020}/F_{MSY}$  for the entire set of runs in the grid. Black line with black symbols represents the historical evolution of the median of all runs. Grey points represent the 2020 estimates of relative fishing mortality and relative spawning stock biomass for 2020 for each of the 200,000 iterations. The upper graph represents the smoothed frequency distribution of  $SSB/SSB_{MSY}$  estimates for 2020. The right graph represents the smoothed frequency distribution of  $F/F_{MSY}$  estimates for 2020. The inserted pie graph represents the percentage of each 2020 estimate that fall in each quadrant of the Kobe plot. All SSB showed the values at the end of years (ICCA, 2022a).

**The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met**

## References

Marine Ingredients Certifications Ltd (09357209) | TEM-003 (previously FISH1) - Issued July 2024 – Version 3.0

| Approved by MarinTrust Fisheries Manager

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ICCAT. 2016. ICCAT geographical definitions. [https://www.iccat.int/Data/ICCAT\\_maps.pdf](https://www.iccat.int/Data/ICCAT_maps.pdf)

ICCAT. 2022a. EXECUTIVE SUMMARY. 9.3 SKJ – Skipjack.

[https://www.iccat.int/Documents/SCRS/ExecSum/SKJ\\_ENG.pdf](https://www.iccat.int/Documents/SCRS/ExecSum/SKJ_ENG.pdf)

Species name		Skipjack tuna ( <i>Katsuwonus pelamis</i> )	
Fishing area and stock		FAO 51 (Indian Ocean bigeye tuna)	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Pass
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Pass
Clause outcome:			Pass
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.			
No new stock assessment was carried out for skipjack tuna in 2024 and so the advice is based on the 2023 assessment using Stock Synthesis with data up to 2022. The stock assessment conducted by IOTC takes all fishery removals into account. The catch limit calculated by applying the HCR specified in Resolution 21/03 is [628,606t] for the period 2024-2026. The catch limit calculated applying the HCR specified in Resolution 21/03 is [628,606t] for the period 2024-2026. The SC noted that this catch limit is higher than for the previous period as the new stock assessment estimates a higher productivity of the stock in recent years and a higher stock level relative to the target reference point, possibly due to skipjack life history characteristics and favourable environmental conditions. In 2024, the Commission adopted Resolution 24/07 on a management procedure for skipjack. The MP is scheduled to be implemented in 2025 to provide TAC advice for 2027-2029 (IOTC, 2024c).			

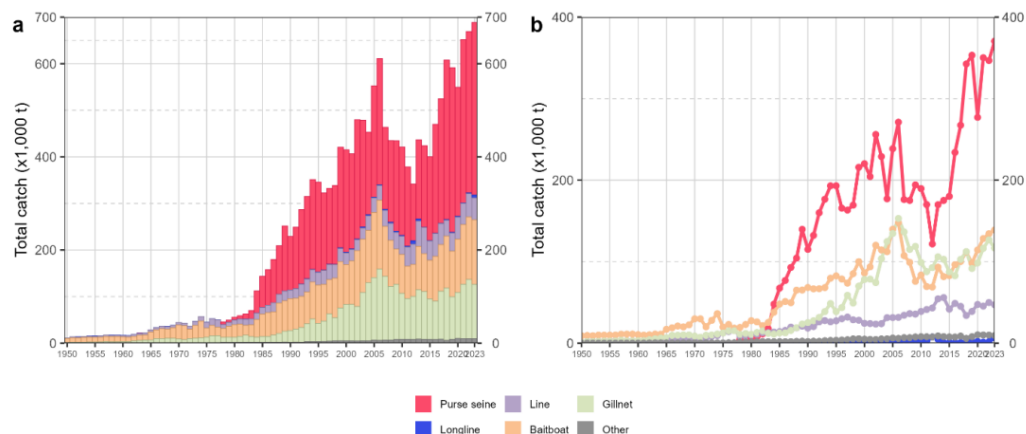


Figure 14. Annual time series of (a) cumulative nominal catches (metric tonnes; t) by fishery group and (b) individual nominal catches (metric tonnes; t) by fishery group for skipjack tuna during 1950-2023 (IOTC, 2024c).

Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.

**C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.**

Current spawning biomass was considered to be above the target reference point of 40% of SB<sub>0</sub>, and above the limit reference point of 0.2\*SB<sub>0</sub> as per Resolution 16/02. Current spawning biomass relative to unexploited levels is estimated at 53%. Over the history of the fishery, biomass has been well above the adopted limit reference point. Current exploitation rate is below the target exploitation rate with the probability of 70% and the fishing mortality remains below FMSY with a probability of 98.4 % (IOTC, 2024c).



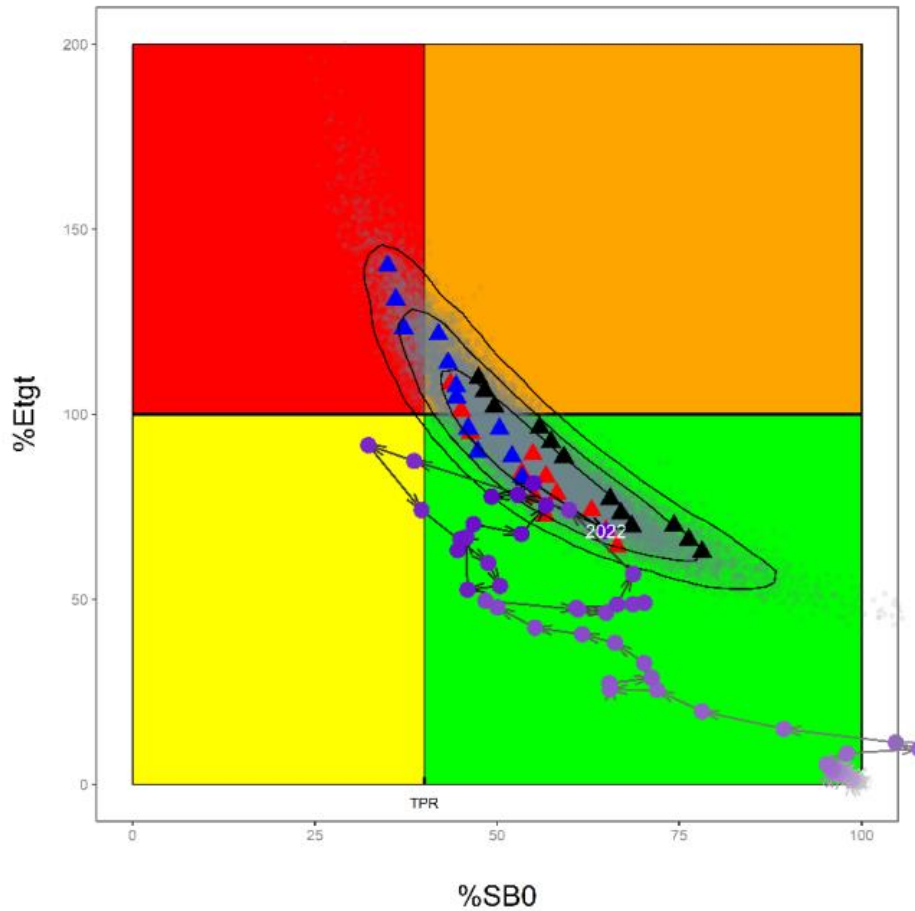


Figure 15. Skipjack tuna: SS3 Aggregated Indian Ocean assessment Kobe plot of the 2023 uncertainty grid. Left - current stock status, relative to SB0 and F (x-axis) and F40%B0 (y-axis) reference points for the final model grid.. TPR indicates 40% B0; Triangles represent MPD estimates from individual models (black, models based on PL index; red, models based on 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 represents 50, 80, and 90% confidence region (IOTC, 2024c).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference points (or proxy), C1.2 is met.

#### References

IOTC. 2024c. APPENDIX 3. EXECUTIVE SUMMARY: SKIPJACK TUNA.  
[https://iotc.org/sites/default/files/content/Stock\\_status/2024/English/IOTC-2024-SC27-ES03\\_SKJE.pdf](https://iotc.org/sites/default/files/content/Stock_status/2024/English/IOTC-2024-SC27-ES03_SKJE.pdf)

## Traceability information

Information provided for Step 3 Path 1 or Path 2

<b>Species name</b>		Yellowfin tuna – <i>Thunnus albacares</i>		
<b>Path 1</b>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
<b>Path 2</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>Path 2 outcome</b>	<b>Flag country</b>	<b>Coastal score</b>	<b>Port score</b>	<b>Risk outcome</b>
	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Ghana, Spain, France, Mauritius, Belize, Seychelles, Kenya, Italy  MEDIUM RISK	Ghana, Senegal, Abidjan, and Seychelles  MEDIUM RISK	Downgraded to medium risk

<b>Species name</b>		Bigeye tuna – <i>Thunnus obesus</i>		
<b>Path 1</b>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
<b>Path 2</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>Path 2 outcome</b>	<b>Flag country</b>	<b>Coastal score</b>	<b>Port score</b>	<b>Risk outcome</b>
	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Ghana, Spain, France, Mauritius, Belize, Seychelles, Kenya, Italy  MEDIUM RISK	Ghana, Senegal, Abidjan, and Seychelles  MEDIUM RISK	Downgraded to medium risk



<b>Species name</b>		Skipjack tuna – <i>Katsuwonus pelamis</i>		
<b>Path 1</b>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
<b>Path 2</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
<b>Path 2 outcome</b>	<b>Flag country</b>	<b>Coastal score</b>	<b>Port score</b>	<b>Risk outcome</b>
	Ghana, Bahamas, Lithuania, France, Italy, Mauritius, Seychelles, Spain	Ghana, Spain, France, Mauritius, Belize, Seychelles, Kenya, Italy  MEDIUM RISK	Ghana, Senegal, Abidjan, and Seychelles MEDIUM RISK	Downgraded to medium risk