By-Product assessment report

BP134

BARNA SA

Report code	BP134	Date of issue	December 2025

1. Application details	
Applicant	BARNA SA
Applicant country	Spain
2. Certification Body details	
Name of Certification Body (CB)	LRQA
Contact information for CB	mt-ca@lrqa.com
Assessor name	Sam Peacock
CB internal peer reviewer name	Phoebe Schouten
Internal peer review evaluation	Agree with evaluation
Number of Assessment days	3

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Comments on the assessment	This assessment covers 12 byproduct species, the majority of which originate from multiple stocks and flag states. None of the species listed meet the MT definition of an ETP species. Five of the species are sourced exclusively from Medium Risk flag states, and so were Approved source with caution without a Step 3 assessment. The byproducts from High Risk flag states required 16 Category C assessments, of which 13 were Passed and 3 were Failed. Two of the failures – Atlantic bonito and Atlantic mackerel in FAO 61 – were due to a lack of stock assessment of these species in the region (neither species is thought to be present in the Pacific). The third Category C failure was Atlantic mackerel in FAO 27, which is currently estimated to be below the LRP. All of the Step 3 byproducts were also subjected to traceability assessment. The applicant provided limited traceability information, and so the majority of the byproducts Failed on Pathway 1 and 2 due to lack of information. Several of those which could be assessed also Failed, as the traceability information indicated they were either potentially caught in a High Risk coastal state, or were landed in a High Risk port state. The only byproducts to pass the traceability section were: • Yellowfin in FAO 34, caught by Panama, Ecuador or El Salvador flagged vessels. • Yellowfin in FAO 47, caught by South Africa and Ecuador flagged vessels. • Bigeye in FAO 34, caught by Panama vessels. Therefore material from these sources could be considered Approved source with caution if it can be separated from material from other flag state/FAO Area combinations, which the auditor should confirm at the site visit. If it cannot be separated it should be Not Approved. All other byproducts are Not Approved.

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3. Approval validity	Valid from 12/2025	Valid until 12/2026
4. Assessment cycle	Initial	

5. By-product assessment outcomes			
By-product species name *Common and Latin names*	**Flag country(ies)**	**Fishing Areas** *Only applicable to Step 3 assessed species*	**MarinTrust approval status**
Engraulis encrasicolus - European anchovy	Spain	FAO 27, FAO 34 , FAO 37	Approved source with caution
Gadus morhua - Cod	Norway, France, Spain	FAO 21 & FAO 27	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Ghana, Portugal, Panama, Mauritius, Seychelles	FAO 61, 71 , 27, 34, 51	Not approved
Sarda sarda - Atlantic bonito	China	FAO 61	Not approved
Sardina pilchardus - European pilchard	Spain	FAO 27, 34	Approved source with caution
Scomber japonicus - Pacific chub mackerel/macarela	Spain	FAO 27	Approved source with caution
Scomber scombrus - Mackerel	Spain, China	FAO 27, 61	Not approved
Thunnus alalunga - Albacore tuna	Spain, South Africa, China, Ecuador, El Salvador, Philippines, France, Indonesia, Ireland, Namibia, Ghana,	FAO 21, 34, 27, 31, 41, 47, 51, 57, 61, 71, 77, 87, 67	Not approved

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Thunnus albacares - Yellowfin tuna	Spain, Oman, Seychelles, Ecuador, Indonesia, Mauritius, Panama, Portugal, El Salvador, Philippines, France, Namibia, South Africa, Tanzania	FAO 21, 27, 31, 34 ,41, 47, 51, 57, 61, 71, 77, 87, 67	Not approved
Thunnus obesus - Bigeye tuna	Mautitius, Panama, Portugal, Seychelles, Ecuador, El Salvador, Spain, Philippines, France, Indonesia, Namibia, South Africa, Tanzania	FAO 27, 34, 47, 51, 57, 71	Not approved
Trachurus trachurus - Horse mackerel	Spain	FAO 27	Approved source with caution
Oncorhynchus keta - Salmon keta	Russia, USA	FAO 18, 61, 67	

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

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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.

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Appendix 1 – assessment outcomes

Step 2 Assessment Outcomes

By-product species name *Common and Latin names*	Flag country(ies)	IUCN Red List *Select IUCN red list category from dropdown*	CITES Appendices *Select CITES appendix status from dropdown*	Step 2 risk status *Low risk/ Medium risk/ High risk*	Step 3 required *Yes / No*
Engraulis encrasicolus - European anchovy	Spain	Least Concern	Not listed	Medium Risk	No
Gadus morhua - Cod	Norway, France, Spain	Vulnerable	Not listed	Medium Risk	No
Katsuwonus pelamis - Skipjack tuna	Ghana, Portugal, Panama, Mauritius, Seychelles	Least concern	Not listed	High risk	Yes
Sarda sarda - Atlantic bonito	China	Least concern	Not listed	High risk	Yes
Sardina pilchardus - European pilchard	Spain	Least Concern / Near Threatened (Europe)	Not listed	Medium Risk	No

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Scomber japonicus - Pacific chub mackerel/macarela	Spain	Least concern	Not listed	Medium Risk	No
Scomber scombrus - Mackerel	Spain, China	Least concern	Not listed	High risk	Yes
Thunnus alalunga - Albacore tuna	Spain, South Africa, China, Ecuador, El Salvador, Philippines, France, Indonesia, Ireland, Namibia, Ghana,	Least concern	Not listed	High risk	Yes
Thunnus albacares - Yellowfin tuna	Spain, Oman, Seychelles, Ecuador, Indonesia, Mauritius, Panama, Portugal, El Salvador, Philippines, France, Namibia, South Africa, Tanzania	Least concern	Not listed	High risk	Yes

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Thunnus obesus - Bigeye tuna	Mautitius, Panama, Portugal, Seychelles, Ecuador, El Salvador, Spain, Philippines, France, Indonesia, Namibia, South Africa, Tanzania	Vulnerable	Not listed	High risk	Yes
Trachurus trachurus - Horse mackerel	Spain	Vulnerable	Not listed	Medium Risk	No
Oncorhynchus keta - Salmon keta	Russia, USA	Least concern	Not listed	High risk	Yes

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Step 3 Assessment Outcomes

By-product species name *Common and Latin names*	Flag country(ies)	Fishing Area	Stock name *(If applicable e.g. Eastern Pacific stock)*	Category C Assessment Outcome *Pass/Fail*	Traceability information *Path 1 – Yes OR* *Path 2 – Yes/No OR* *MT Approved Whole Fish*	Step 3 Risk Outcome *Risk downgraded to Medium Risk/ Remains High Risk*
Katsuwonus pelamis - Skipjack tuna	Ghana, Portugal, Panama, Mauritius, Seychelles	FAO 61, 71 , 27, 34, 51	WCPO skipjack; East Atlantic skipjack; Indian Ocean skipjack	Pass	Path 1 & 2 – No	Remains High Risk
Sarda sarda - Atlantic bonito	China	FAO 61	Unknown; not thought to be present in FAO 61	Fail	Path 1 & 2 – No	Remains High Risk
Scomber scombrus - Mackerel	Spain, China	FAO 27, 61	Atlantic mackerel; not thought to be present in FAO 61	Fail in both locations	Path 1 & 2 – No	Remains High Risk

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Thunnus alalunga - Albacore tuna	Spain, South Africa, China, Ecuador, El Salvador, Philippines, France, Indonesia, Ireland, Namibia, Ghana,	FAO 21, 34, 27, 31, 41, 47, 51, 57, 61, 71, 77, 87, 67	North and South Atlantic albacore; North and South Pacific albacore; Indian Ocean albacore	Pass	Path 1 & 2 – No	Remains High Risk
Thunnus albacares - Yellowfin tuna	Spain, Oman, Seychelles, Ecuador, Indonesia, Mauritius, Panama, Portugal, El Salvador, Philippines, France, Namibia, South Africa, Tanzania	FAO 21, 27, 31, 34, 41, 47, 51, 57, 61, 71, 77, 87, 67	Atlantic yellowfin; East and West Pacific yellowfin; Indian Ocean yellowfin	Pass	Path 1 & 2 – No, except Panama, Ecuador and El Salvador in FAO 34 and South Africa and Ecuador in FAO 47	Remains High Risk, with exceptions

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Thunnus obesus - Bigeye tuna	Mautitius, Panama, Portugal, Seychelles, Ecuador, El Salvador, Spain, Philippines, France, Indonesia, Namibia, South Africa, Tanzania	FAO 27, 34, 47, 51, 57, 71	Atlantic bigeye, West Pacific bigeye, Indian Ocean bigeye	Pass	Path 1 & 2 – No, except Panama in FAO 34	Remains High Risk, with exceptions
Oncorhynchus keta - Salmon keta	Russia, USA	FAO 18, 61, 67				

Comments on Step 3 Assessment: Limited traceability information was provided for the Step 3 assessment. Most species/flag state/FAO Area combinations fail Step 3 due to a lack of information. Several more fail because they originate from FAO Area 51, and therefore potentially from a High Risk coastal state; or they are landed in China, which is a High Risk port state. The only byproducts which Passed the Step 3 traceability component are as follows:

- Yellowfin in FAO 34, caught by Panama, Ecuador or El Salvador flagged vessels.
- Yellowfin in FAO 47, caught by South Africa and Ecuador flagged vessels.
- Bigeye in FAO 34, caught by Panama vessels.

Additionally, the applicant indicated that Chum Salmon is sourced from an MSC-certified fishery.

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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%
Portugal	Medium	3	2.44	1.53	1	1	1	1	75.00%
Panama	High	3.75	1.67	1.93	3	3	1	1	55.19%
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%
China	High	4.21	4.33	3.2	1	1	5	1	36.79%
Spain	Medium	3.21	3.39	2.03	1	1	1	1	75.94%

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South Africa	Medium	2.58	2.67	2.3	1	1	1	1	44.34%
Ecuador	High	2.58	2.11	2.43	1	3	1	1	35.38%
El Salvador	High	1.88	2.78	2.77	1	1	5	1	34.91%
Philippines	Medium	2.04	2.06	2.53	1	1	1	1	53.77%
France	Medium	3.17	2.39	1.67	1	1	1	1	85.38%
Indonesia	Medium	3.33	2.56	2.47	1	1	1	1	59.43%
Ireland	Medium	2.08	2.11	1.73	1	1	1	1	95.28%
Namibia	Medium	1.96	2.33	2	1	1	1	1	52.36%
Ghana	High	1.67	2	2.23	1	3	1	1	44.81%
Oman	Medium	1.92	1.6	2.03	1	1	1	1	65.57%
Tanzania	High	1.83	2.78	2.3	2	1	5	1	30.19%
USA	Medium	2.29	3	2.37	1	1	1	1	91.04%
Russia	High	4.33	2.78	2.81	1	1	1	1	13.21%

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Step 3 outcomes

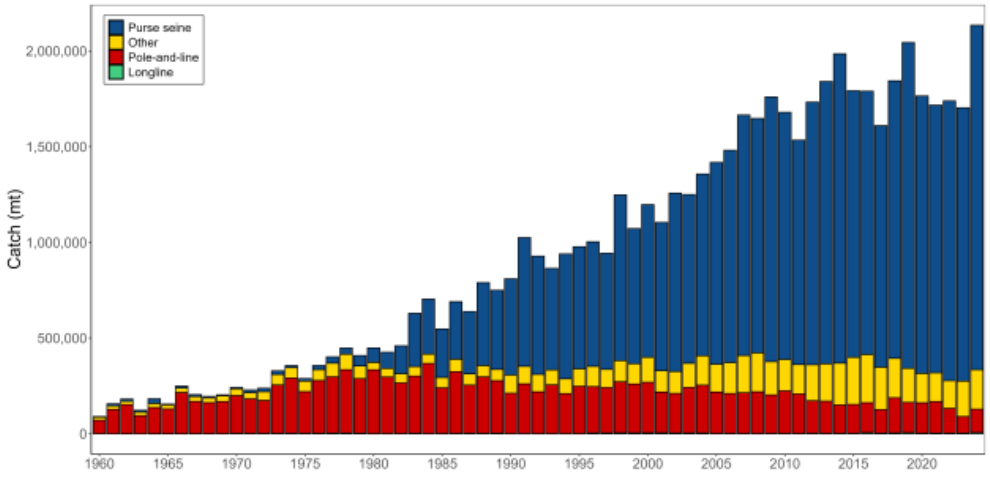
Category C assessment

Species name		***Katsuwonus pelamis* - Skipjack tuna**	
Fishing area and stock		**West Pacific 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

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.

WCPO skipjack tuna is subjected to regular stock assessments by the WCPFC. The most recent of these was carried out in 2025, using data up to the end of 2024. The assessment incorporated catch, effort- and length-frequency estimates, and tag-recapture data (WCPFC 2025). The stock assessment report does not raise major concerns about uncertainties due to lack of data.

Catches are presented in the figure below:



Annual catches of skipjack by gear type in the WCPO area covered by the stock assessment (WCPFC 2025a)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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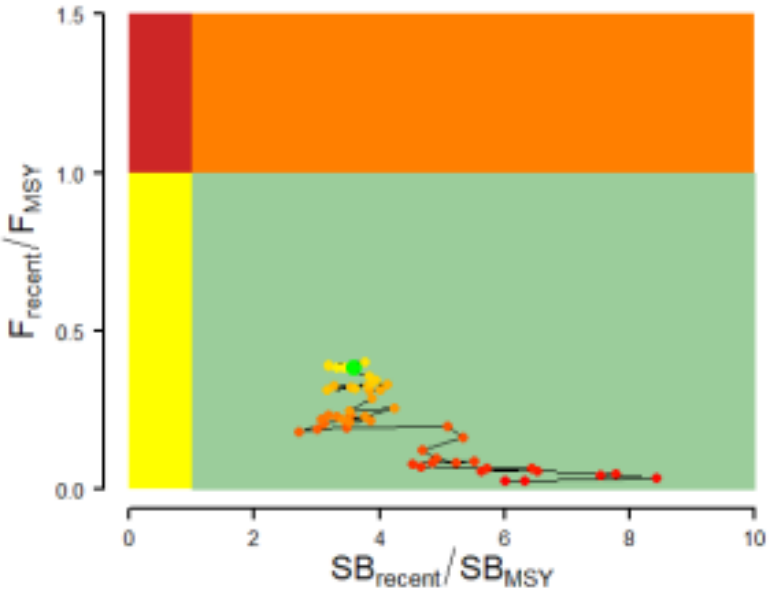
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

The 2025 stock assessment for WCPO skipjack concluded that "Overall, the outcomes of this assessment suggest that the skipjack stock in the WCPO is not overfished nor undergoing overfishing" (WCPFC 2025). SB_{RECENT}/SB_{MSY} was estimated to be 3.90, with an 80% CI of 2.95 – 5.61, suggesting biomass is highly likely to be above the MSY level.



Kobe plot summarising the results for the dynamic MSY analysis of WCPO skipjack by the 2025 stock assessment. Dot colours go from red to green over time, with the green dot being the most recent SB estimate (WCPFC 2025)

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

WCPFC (2025). WCPO skipjack tuna stock assessment 2025. https://meetings.wcpfc.int/node/26679

WCPFC (2025a). Overview of tuna fisheries in the Western and Central Pacific Ocean, including economic conditions – 2024. https://meetings.wcpfc.int/node/26697

Species name	***Katsuwonus pelamis* - Skipjack tuna**
Fishing area and stock	**East Atlantic skipjack**
	Category C Stock Status - Minimum Requirements

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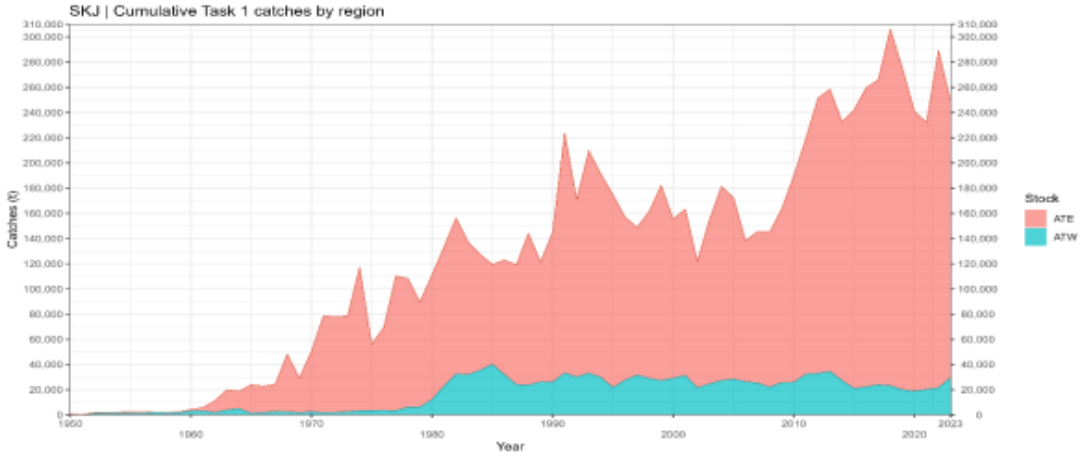
C1	**C1.1**	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference 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.

The most recent stock assessment conducted for Eastern Atlantic skipjack tuna was carried out in 2022. The stock assessment applied non-equilibrium and Bayesian state-space production models to integrated statistical assessment models using the available catch data up to and including 2020 (ICCAT 2022). Multiple models were used to represent potential population dynamic scenarios, and to account for uncertainty in outputs. The ICCAT stock assessment group decided to combine the results of several models to capture all major uncertainties. Despite this, there was a high degree of uncertainty in the resultant estimates of stock biomass; however, the group were able to produce management advice and have made several recommendations for the improvement of future stock assessments.



Atlantic skipjack catches by stock (Pink = East, Blue = West) (ICCAT 2022)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 2022 stock assessment of Eastern Atlantic skipjack tuna concluded that there was a 78% probability that the stock is neither overfished nor subject to overfishing (ICCAT 2022). Relative

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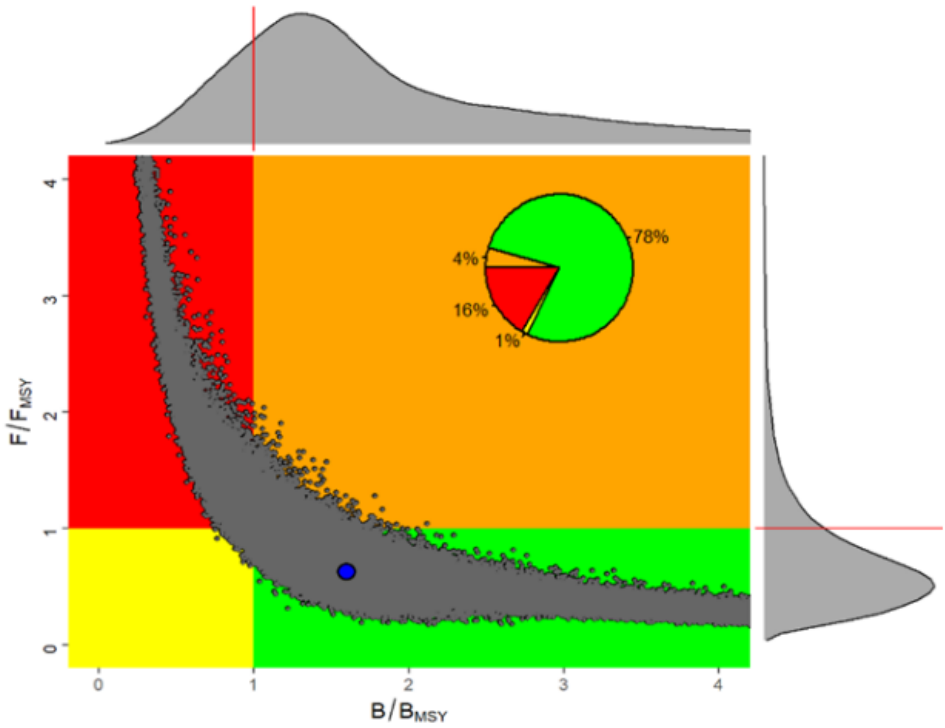
biomass (B_{2020}/B_{MSY}) was estimated to be 1.60, although the assessment produced a wide 95% confidence interval (0.50 – 5.79). However, as the biomass is likely to be above the target reference point, it is highly likely to be above any potential limit reference point.



Combined Kobe phase plot for the various models performed for Eastern Atlantic skipjack tuna in 2022. 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 (ICCAT 2022)

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

ICCAT (2022). Species executive summary, skipjack tuna. https://www.iccat.int/Documents/SCRS/ExecSum/SKJ_ENG.pdf

Species name		***Katsuwonus pelamis* - Skipjack tuna**	
Fishing area and stock		**Indian Ocean 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	PASS

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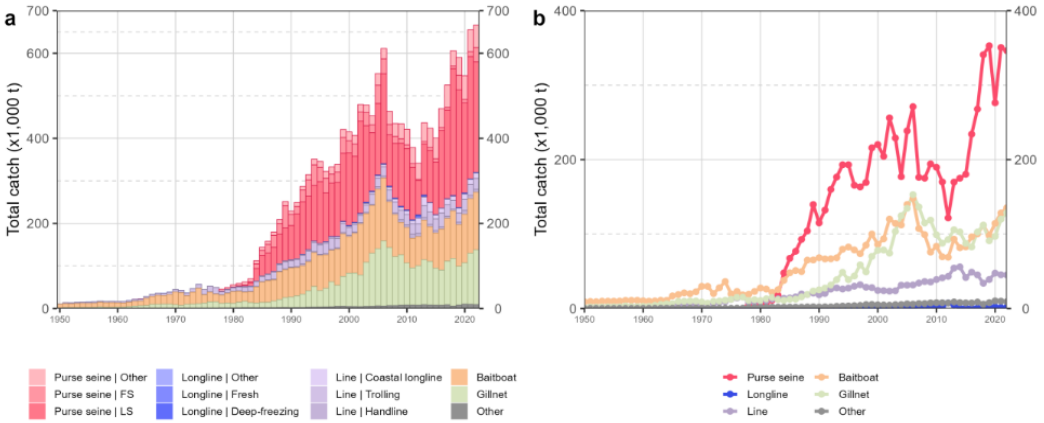
		are considered by scientific authorities to be negligible.	
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	PASS
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

The stock assessment conducted by the Indian Ocean Tuna Commission (IOTC) takes all fishery removals into account. The most recent assessment was conducted in 2023. Landings in recent years were reported as a total catch in 2022 of 666,408t, and an average catch 2018-2022 of 613,061t (IOTC 2024). Full catch datasets, including catch and effort by month, species, gear, and vessels flag, and size-frequency datasets, are made available on the IOTC website (IOTC 2025).



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 Indian Ocean skipjack tuna during 1950-2022 (IOTC 2024)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 most recent stock assessment was carried out in 2023, as reported in a 2023 stock status report published by the IOTC (IOTC 2024). The stock assessment conclusion states that "The outcome of the 2023 stock assessment model is more optimistic than the previous assessment (2020) despite the high catches recorded in the period 2021-2022, which exceeded the catch limits established in 2020 for this period" (IOTC 2024).

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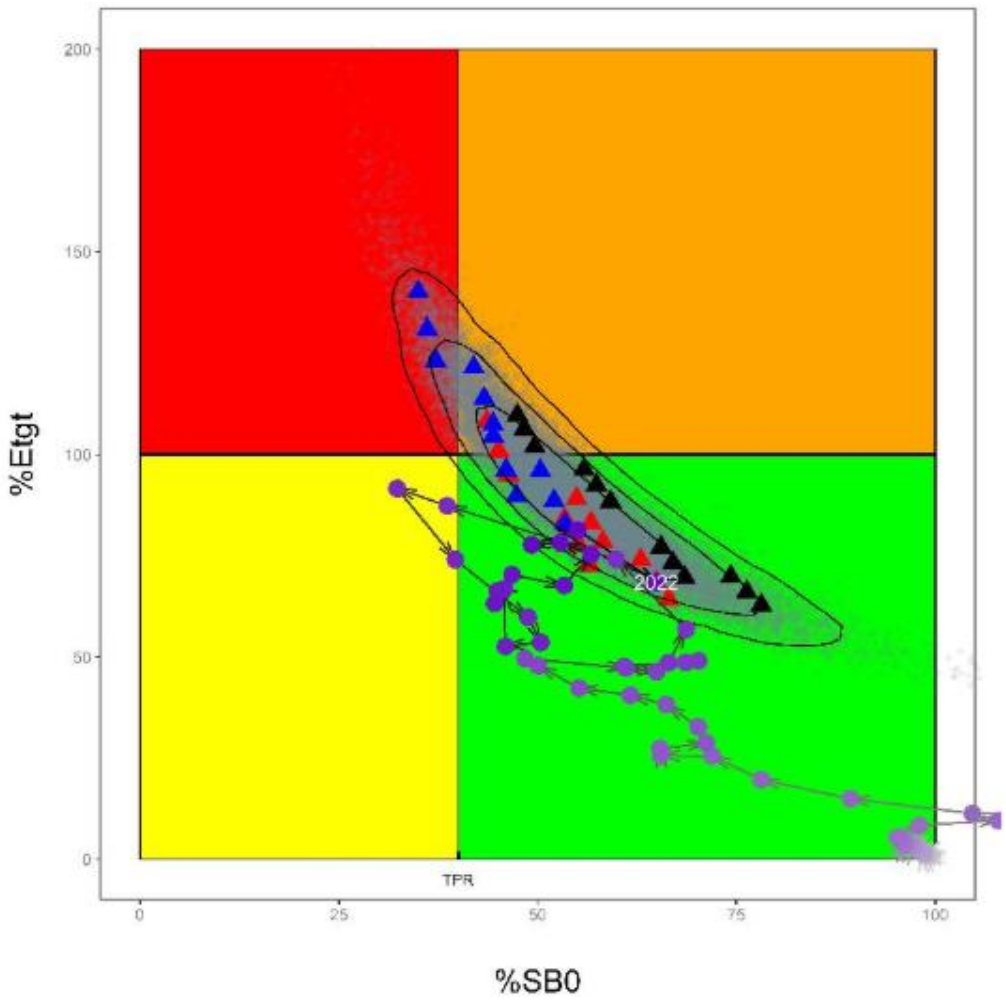
Biomass was estimated to be around 53% of the unfished level, which is above SB_{MSY}. The IOTC also notes that "Over the history of the fishery, biomass has been well above the adopted limit reference point ($20\%SB_0$)" (IOTC 2024).



Indian Ocean skipjack tuna, Kobe plot of the 2023 stock assessment. Triangles represent outputs from individual models, grey dots represent uncertainty from individual models (IOTC 2024)

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

IOTC (2024). Indian Ocean Skipjack Tuna Stock Status: Executive Summary. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES03_SKJE.pdf

IOTC (2025). Available datasets. https://www.iotc.org/data/datasets

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Species name		***Sarda sarda* – Atlantic bonito**	
Fishing area and stock		**FAO 61**	
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.	FAIL
	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.	FAIL
		Clause outcome:	FAIL
Atlantic bonito is not thought to be present in FAO 61, and therefore there is no evidence of any current or historical stock assessment for the species in this region.			
References			

Species name		***Scomber scombrus* – Atlantic mackerel**	
Fishing area and stock		**FAO 61**	
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.	FAIL
	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.	FAIL
		Clause outcome:	FAIL
Atlantic mackerel is not thought to be present in FAO 61, and therefore there is no evidence of any current or historical stock assessment for the species in this region.			
References			

Species name	***Scomber scombrus* – Atlantic mackerel**	
Fishing area and stock	**FAO 27, Mackerel in the Northeast Atlantic and adjacent waters**	
	Category C Stock Status - Minimum Requirements	

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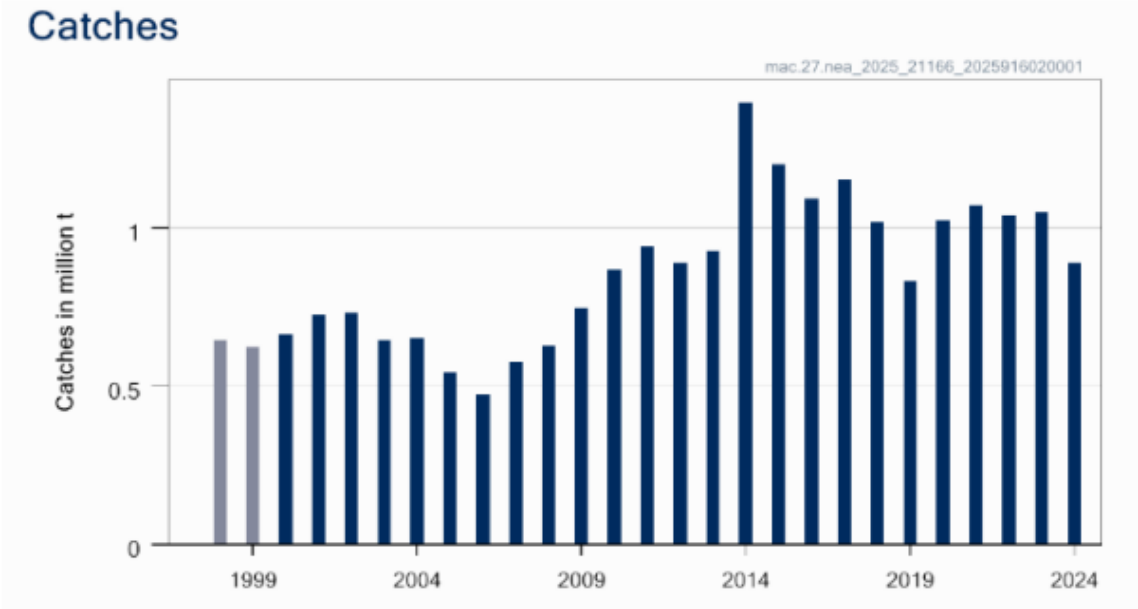
C1	**C1.1**	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	FAIL
		Clause outcome:	FAIL

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.

Mackerel in the Northeast Atlantic is subject to regular stock assessment by the ICES Working Group on Widely Distributed Stocks (WGWIDE). The most recent stock assessment was conducted in 2025 using an age-based analytical model which incorporated catch data, steel tagging data, and three survey indices. Discarding is assumed negligible (ICES 2025).



Mackerel in the Northeast Atlantic, total international catch by year (ICES 2025)

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 2025 stock assessment included an indication of the status of the Northeast Atlantic mackerel stock relative to reference points which were revised during the stock assessment process. The target reference points MSY $B_{trigger}$ and B_{PA} are set at 4,119,337t; the limit reference point B_{lim} is set at 3,067,017t. The stock assessment produced a biomass forecast at spawning time in 2025 of 2,740,823t, below the LRP level. The catch advice states, "spawning-stock size is below MSY $B_{trigger}$, $B_{PA,}$ and B_{lim}" (ICES 2025). As stock biomass is below the LRP, C1.2 is not met.

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References

ICES (2025). Mackerel (*Scomber scombrus*) in subareas 1-8 and 14 and in divisions 9.a, 12.a, and 12.b (Northeast Atlantic and adjacent waters). ICES Advice: Recurrent Advice. Report. https://doi.org/10.17895/ices.advice.27202689.v2

Species name		***Thunnus alalunga* - Albacore tuna**	
Fishing area and stock		**North Atlantic albacore**	
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.

Stock assessments are carried out on behalf of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The most recent stock assessment for North Atlantic albacore was conducted in 2023 (ICCAT 2025). The stock assessment utilised catch and effort data up to 2018 and 2021 respectively, and no concerns were raised relating to the completeness of the data.

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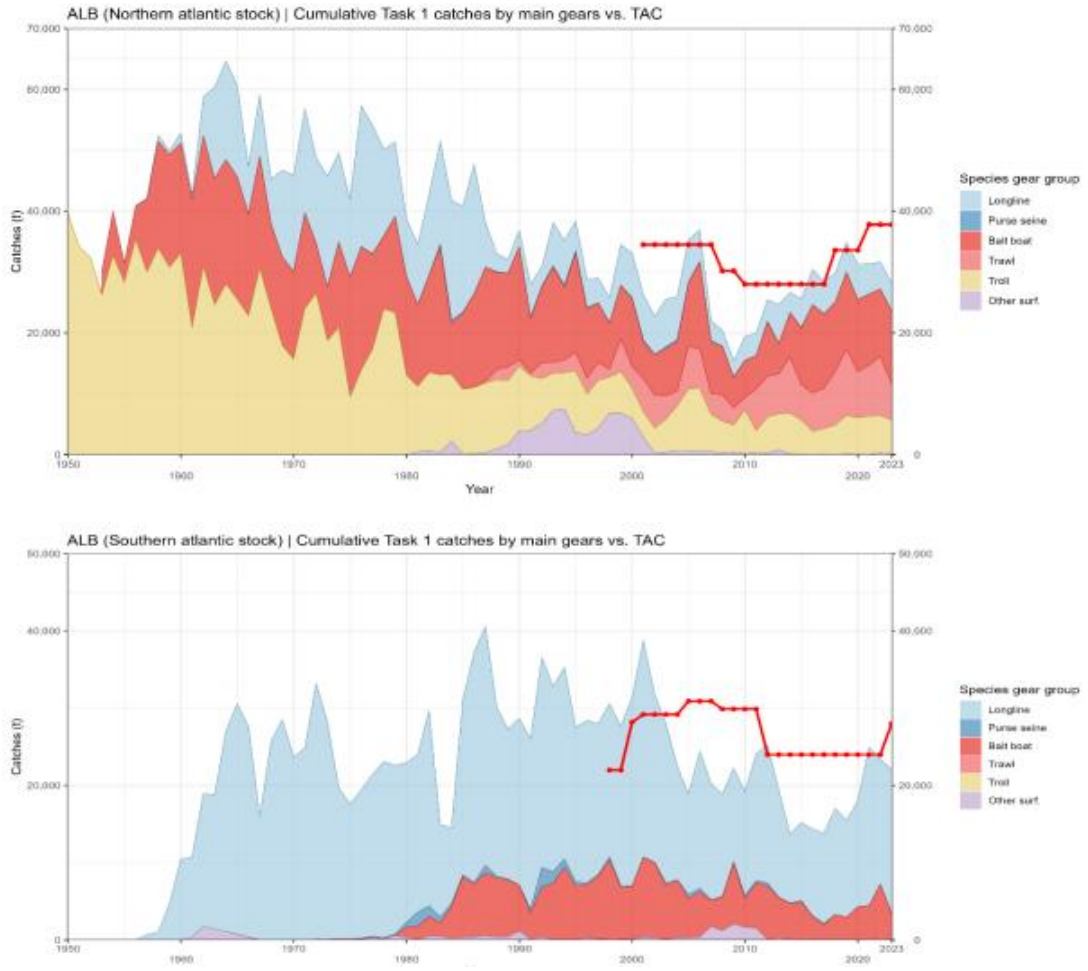

Total albacore catches for the North (top) and South (bottom) Atlantic albacore stocks by gear type. Red dotted line shows the TAC (ICCAT 2025)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 most recent stock assessment for North Atlantic albacore, conducted in 2023, concluded that "the probability of the stock currently being in the green area of the Kobe plot (not overfished and not undergoing overfishing, $F<F_{MSY}$ and $B>B_{MSY}$) is 99.6%" (ICCAT 2025). The probability of being in the red area was estimated to be 0%. Taken together these outcomes provide strong evidence that the stock is above the target reference point, and therefore above any possible limit reference point. Overall, this is clear evidence that the stock is above any potential limit reference point.

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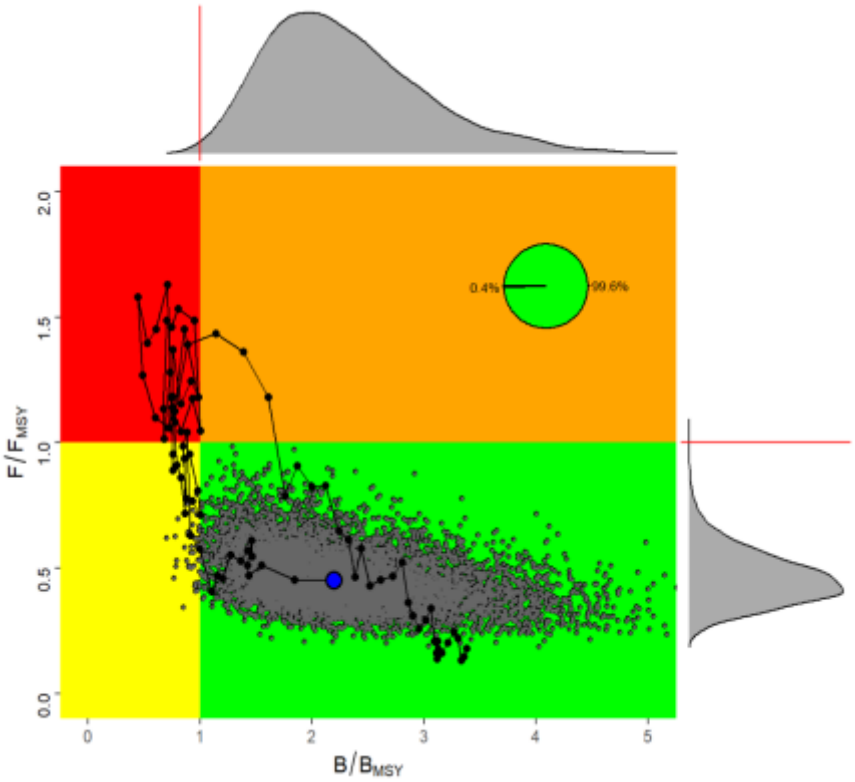

North Atlantic albacore (Kobe plot). Stock status trajectories of B/B_{MSY} and F/F_{MSY} over time (1930-2021), as well as uncertainty (grey dots) around the current (F_{2021}/F_{MSY}, B_{2021}/B_{MSY}) estimate (blue point) based on Stock Synthesis model with probability of being overfished and overfishing (red, 0%), of being neither overfished nor overfishing (green, 99.6%), and of being overfished (yellow, 0.4%) (ICCAT 2025).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

ICCAT (2025). Atlantic albacore tuna, stock assessment summary. https://www.iccat.int/Documents/SCRS/ExecSum/ALB_ENG.pdf

Species name		***Thunnus alalunga* - Albacore tuna**	
Fishing area and stock		**South Atlantic albacore**	
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	PASS

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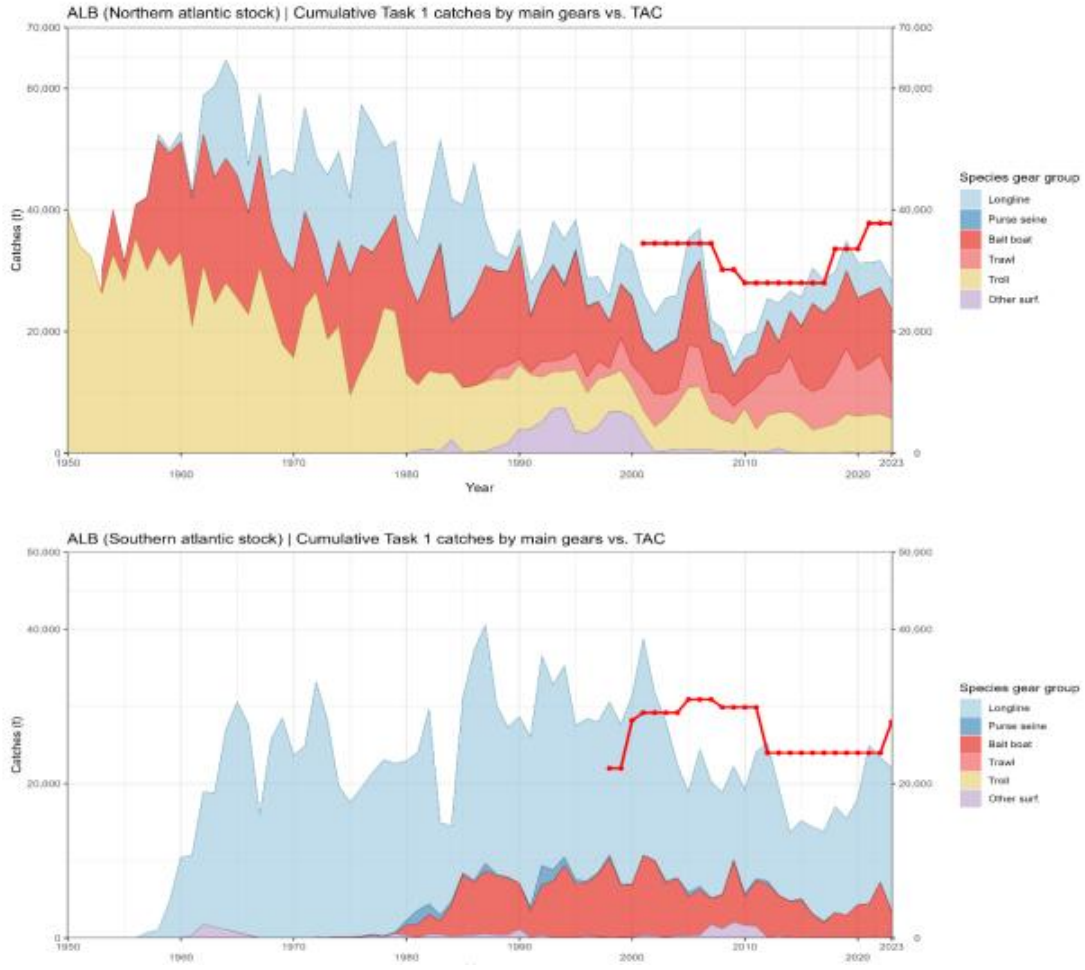
		removals by the fishery under assessment are considered by scientific authorities to be negligible.	
			Clause outcome: PASS

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.

Stock assessments are carried out on behalf of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The most recent stock assessment for South Atlantic albacore was conducted in 2020 (ICCAT 2025). The stock assessment utilised catch and effort data up to 2018 and 2021 respectively, and no concerns were raised relating to the completeness of the data.



Total albacore catches for the North (top) and South (bottom) Atlantic albacore stocks by gear type. Red dotted line shows the TAC (ICCAT 2025)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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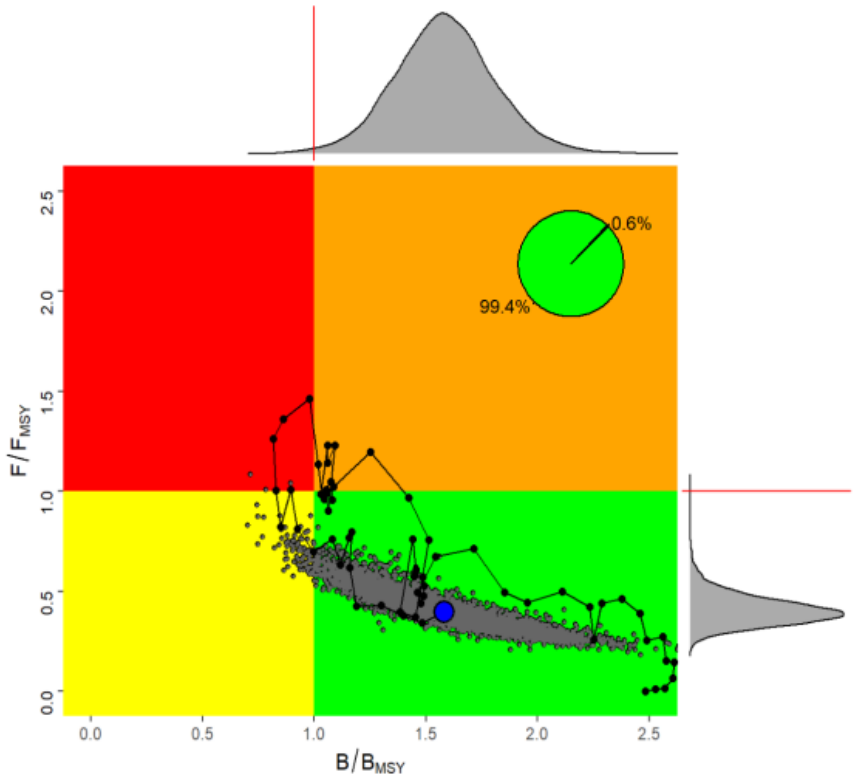
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

The most recent stock assessment for South Atlantic albacore, conducted in 2020, concluded that there was "a 99.4% probability that the South Atlantic albacore stock is neither overfished nor subject to overfishing" (ICCAT 2025). The median estimated MSY value was 27,264t, and the median estimate of B_{2018}/B_{MSY} was 1.58. Taken together these outcomes provide strong evidence that the stock is above the target reference point, and therefore above any possible limit reference point. The projected biomass for the stock was also expected to remain above 27,000t up to the projection horizon of 2033, with a probability of 90%. Overall, this is clear evidence that the stock is above any potential limit reference point.



South Atlantic albacore tuna, Kobe plot. Stock status trajectories of B/BMSY and F/FMSY over time (1956-2018), as well as uncertainty (grey dots) around the current (2018) estimate (blue point) based on Bayesian surplus production model with probability of being overfished and overfishing (red, 0%), of being neither overfished nor overfishing (green, 99.4%), and of being overfished (yellow, 0.6%) (ICCAT 2025).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

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ICCAT (2025). Atlantic albacore tuna, stock assessment summary. https://www.iccat.int/Documents/SCRS/ExecSum/ALB_ENG.pdf

Species name		***Thunnus alalunga* - Albacore tuna**	
Fishing area and stock		**Indian Ocean albacore**	
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.

Albacore in the Indian Ocean is subject to regular stock assessment by the ITOC. The most recent was conducted in 2022 using Stock Synthesis III, and utilised international catch and CPUE data. There are several CPUE indices available – including those for the North-Western and South-Western fisheries, and several eastern indices – which indicate trends in separate components of the Indian Ocean albacore stock. The stock assessment summary concludes that the western indices "may best represent the abundance of albacore at this time", and that "the eastern indices are affected by changes in targeting" (IOTC 2024).

Catches are presented in the figure below:

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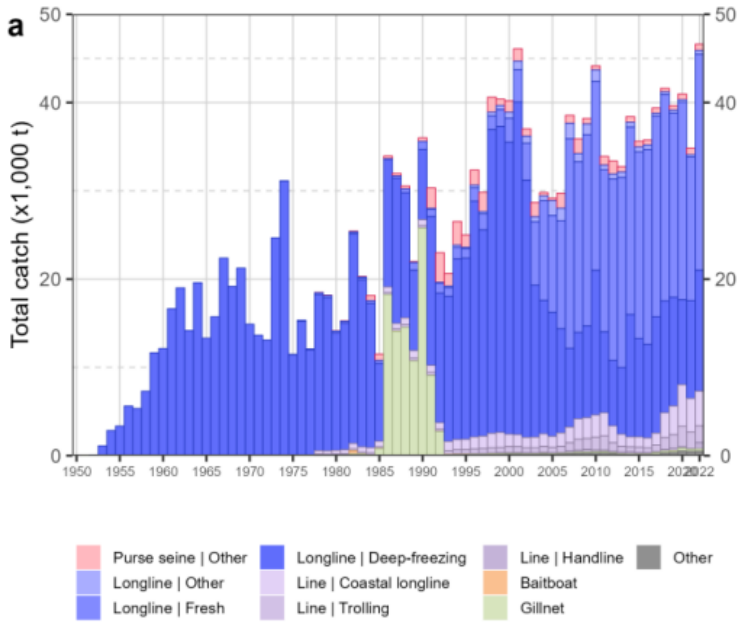

Albacore tuna in the Indian Ocean: Cumulative nominal catches by gear type (IOTC 2024)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 2022 stock assessment concluded that in relation to the IOTC's interim target reference points, the stock is "not overfished and is not subject to overfishing" (IOTC 2024). The biomass target reference point is set at $0.4*SB_{MSY}$ (i.e. 40% of the target reference point SB_{MSY}), and therefore the stock assessment also concluded that "current spawning biomass is considered to be…above the limit reference point" (IOTC 2024).

Kobe charts showing the current fishery status are shown below.

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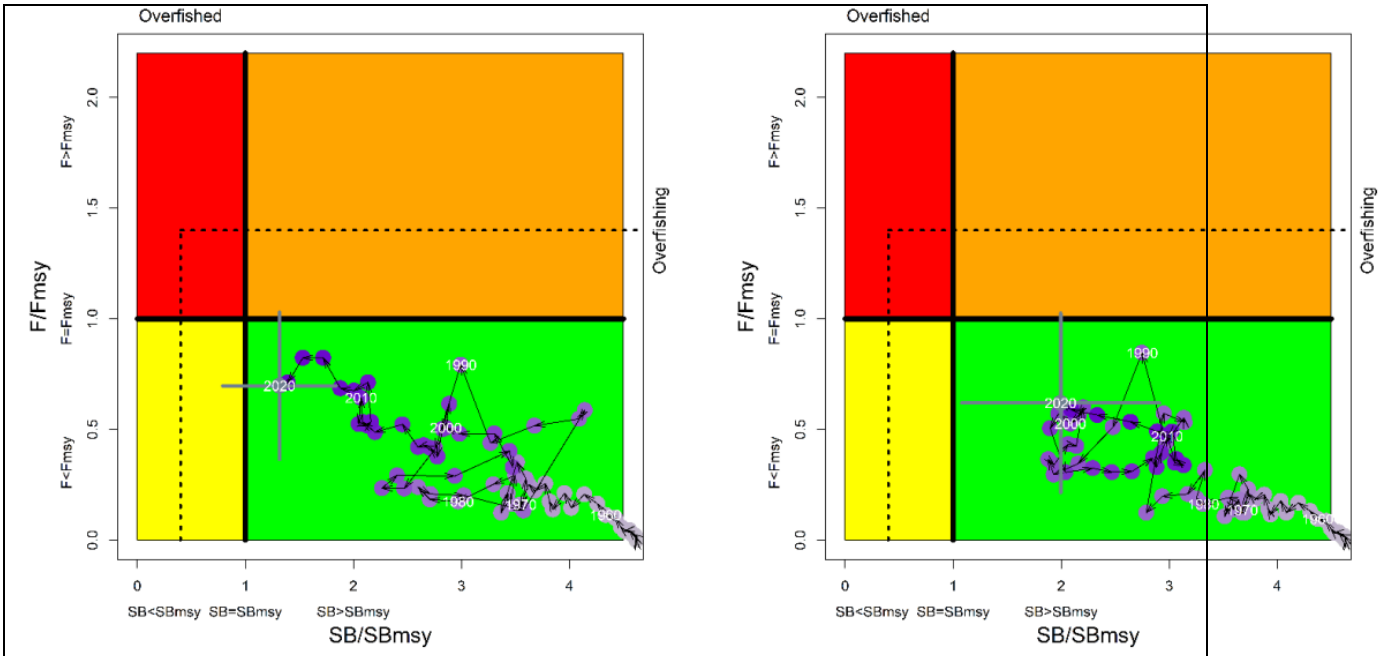

Albacore tuna in the Indian Ocean: Kobe plots for two model options. On the left, the model fitted to the North-Western CPUE; on the right, the model fitted to the South-Western CPUE. Purple circles indicate the estimates of SB ratio and fishing mortality ratio for each year 1950-2020. Grey lines indicate 95% CI for the 2020 estimate. Dashed lines indicate biomass and fishing mortality limit reference points (IOTC 2023).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

IOTC (2024). Albacore tuna stock status and advice, executive summary, 2024. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES01_ALBE.pdf

Species name		***Thunnus albacares* -Yellowfin Tuna**	
Fishing area and stock		**Atlantic yellowfin**	
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

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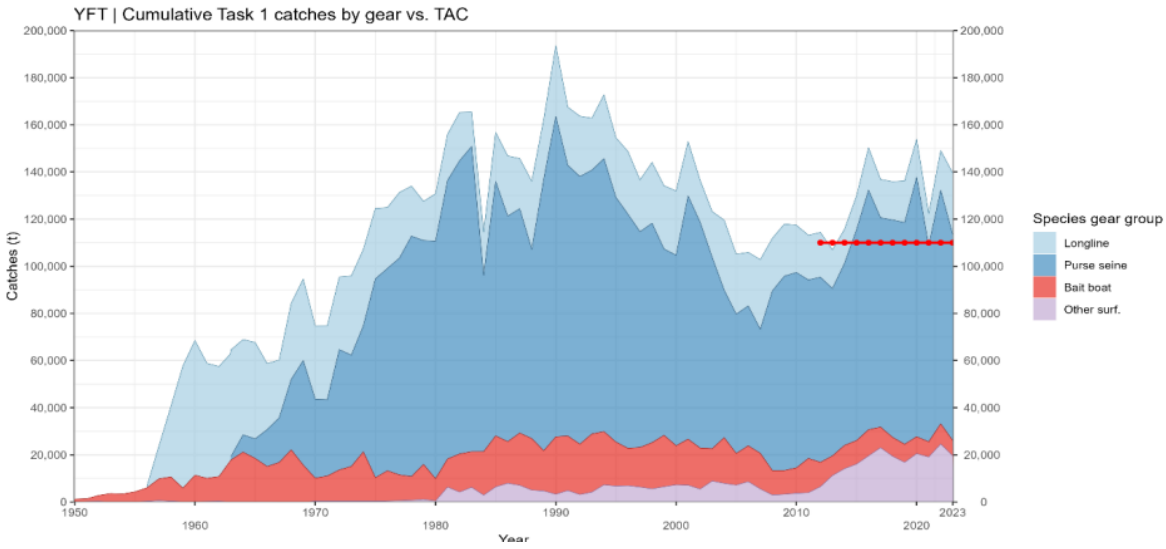
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.

Management of this yellowfin tuna stock is coordinated by the International Commission for the Conservation of Atlantic Tunas (ICCAT). The most recent stock assessment was conducted in 2024, using data up to and including 2022, and utilised an age-structured model framework (Stock Synthesis). The assessment incorporated all available catch data, along with three indices of abundance; the joint-CPC tropical Atlantic longline index, the acoustic echosounder buoy index, and the purse seine free school index (ICCAT 2024).



Yellowfin tuna in the Atlantic Ocean, total catch 1950-2023 by main fishing gear group. The red dotted line represents the TAC (ICCAT 2024).

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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. B_{2022}/B_{MSY} was estimated to be 1.37, with an 80% confidence interval of 0.91 – 2.15, meaning that it is likely that stock biomass was above the target reference point level, and therefore highly likely to be above the limit reference point level.

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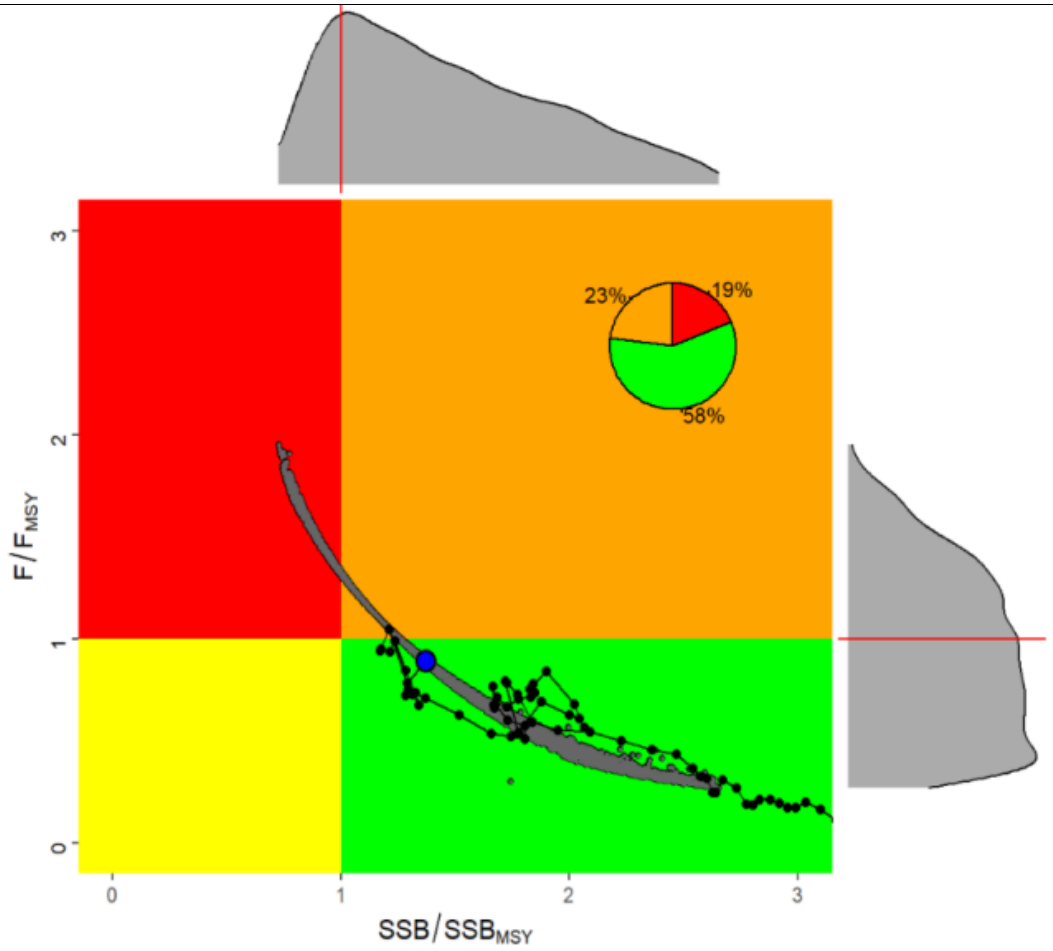

Kobe plot of the status of Atlantic yellowfin tuna in 2022 (based on the outcomes of the assessment conducted in 2024). Blue circle is the median of the stock synthesis model runs, which are marked in grey. The inserted pie chart indicates the proportion of model iterations within each Kobe colour quadrant, 58% in the green quadrant, 23% in the orange quadrant, and 19% in the red quadrant (ICCAT 2024).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

ICCAT (2024). Stock summary, yellowfin tuna. https://www.iccat.int/Documents/SCRS/ExecSum/YFT_ENG.pdf

Species name	***Thunnus albacares* -Yellowfin Tuna**
Fishing area and stock	**East Pacific yellowfin**
	Category C Stock Status - Minimum Requirements

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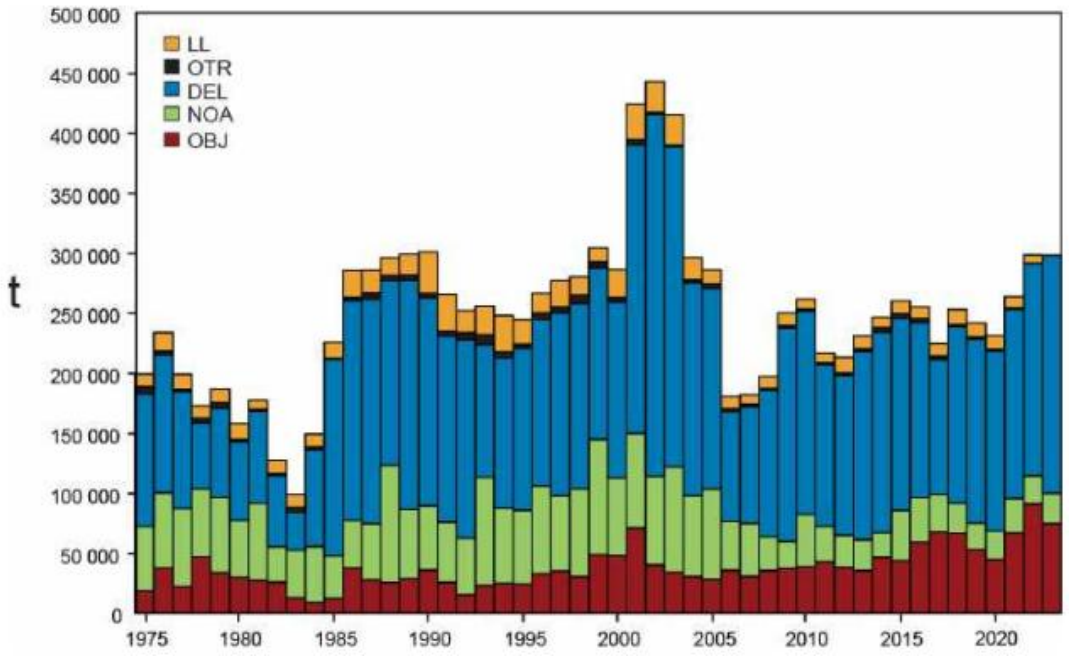
C1	**C1.1**	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference 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.

The Eastern Pacific Ocean (EPO) yellowfin tuna stock is managed and assessed by the Inter-American Tropical Tunas Commission (IATTC). A new risk-based approach was introduced to the management of the stock in 2022, with Stock Status Indicators (SSIs) developed using catch and other data collected from the EPO as a whole. This approach continued in 2023 (IATTC 2024). SSIs are considered to be important alternatives to formal stock assessments, particularly where those stock assessments may be too unreliable to form the basis for management advice (IATTC 2022). Fishery removals are a key component of the modelling used to generate SSI's, and their development and use is evidence that managers have sought out alternative mechanisms where stock assessment uncertainty is high. The most recent full stock assessment was conducted in 2020.



Total catches of yellowfin tuna in the EPO by set type (IATTC 2024)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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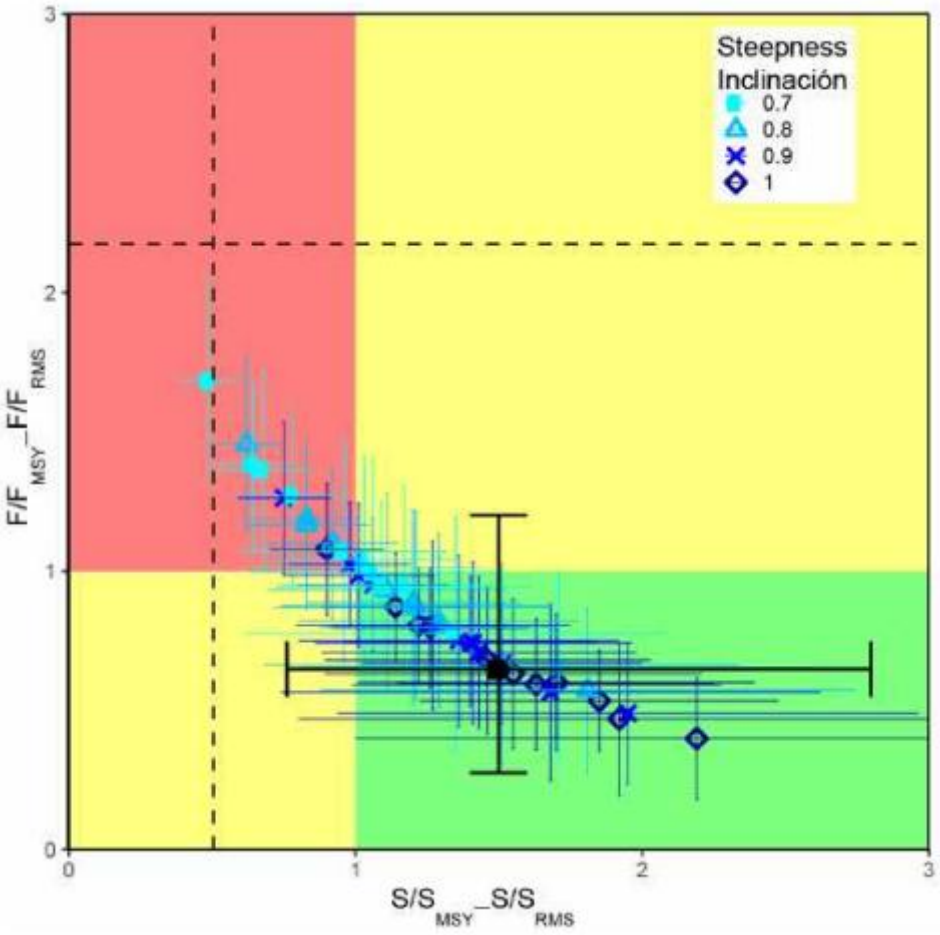
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

In the full stock assessments for this stock, multiple reference models are utilised to create a risk-based understanding of stock status. The most recent results, from 2020, indicated that "the probability of the spawning biomass being below S_{MSY_d} [i.e. the target reference point] is low (12%)" (IATTC 2024), and that the probability of the biomass being below the limit reference point S_{LIMIT} is zero. There was therefore a low probability that biomass is currently below the target reference point and almost no possibility it was below the limit reference point.



Kobe plot for yellowfin tuna in the EPO of estimates of spawning stock size (S) and fishing mortality (F). Coloured panels are separated by the target reference points S_{MSY} and F_{MSY}. Limit reference points are approximately indicated by the dashed lines, although these vary between models. The solid black circle represents all models combined (IATTC 2024).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

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References

IATTC (2022). Stock Status Indicators (SSIs) for tropical tunas in the Eastern Pacific Ocean. 13th Meeting of the IATTC Scientific Advisory Committee, Document SAC-13-06 Corr. https://www.iattc.org/GetAttachment/22511b5b-ba2b-4126-9ba2-0bffee89f4d5/SAC-13-06%20-%20Stock%20status%20indicators%20(SSIs)%20for%20tropical%20tunas%20in%20the%20EPO

IATTC (2024). The tuna fishery in the Eastern Pacific Ocean in 2023. https://www.iattc.org/GetAttachment/1ed36788-07ce-4bf4-80e4-10c6c3b2b14d/No-22-2024_Tunas,-stocks-and-ecosystem-in-the-eastern-Pacific-Ocean-in-2023.pdf

Species name		***Thunnus albacares* -Yellowfin Tuna**	
Fishing area and stock		**Western and Central Pacific yellowfin**	
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.

Western and Central Pacific Ocean (WCPO) yellowfin tuna is subject to regular stock assessments by the Western and Central Pacific Fisheries Commission (WCPFC). The most recent stock assessment was conducted in 2023 and utilised all available catch data, as summarised in the graph below. 54 models were used to provide a range of potential outcomes based on different key variables, a process which reduces the inherent level of uncertainty.

Catches are presented in the figure below:

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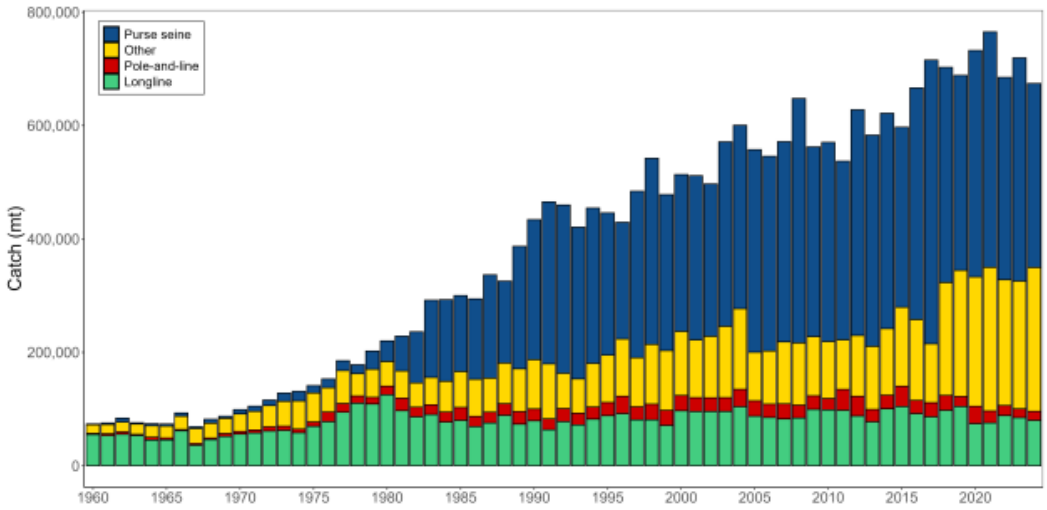

WCPO yellowfin catch by gear (WCPFC 2025)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 2023 stock assessment produced a series of estimates of the current status of the stock relative to the target reference point BMSY. Biomass in 2021 was estimated to be between 1.91 and 3.11 times larger than BMSY with an 80% certainty; none of the model results indicated that biomass was below BMSY. Biomass is estimated by the most recent stock assessment to be above the target reference point with a high degree of certainty, and therefore also above any potential limit reference point (WCPFC 2023).

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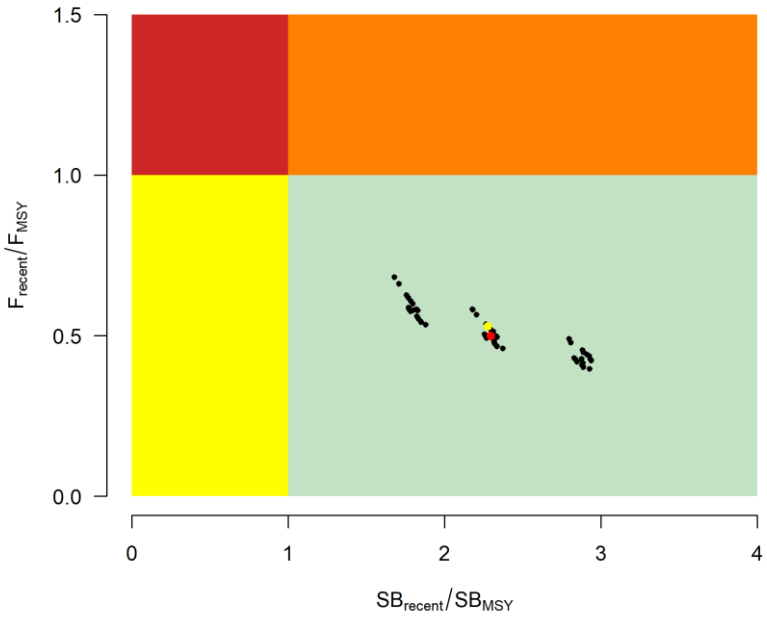

Figure 1. WCPO yellowfin tuna, Kobe plot summarising the results of each of the stock assessment models. The yellow dot is the 2023 diagnostic model and the red dot is the median (WCPFC 2023).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

WCPFC (2023). WCPO Yellowfin Tuna, Stock Status and Management Advice. https://www.wcpfc.int/file/1008665/download?token=wFUhc7q7tern

WCPFC (2025). Overview of tuna fisheries in the Western and Central Pacific Ocean, including economic conditions – 2024. https://meetings.wcpfc.int/node/26697

Species name		***Thunnus albacares* -Yellowfin Tuna**	
Fishing area and stock		**Indian Ocean yellowfin**	
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

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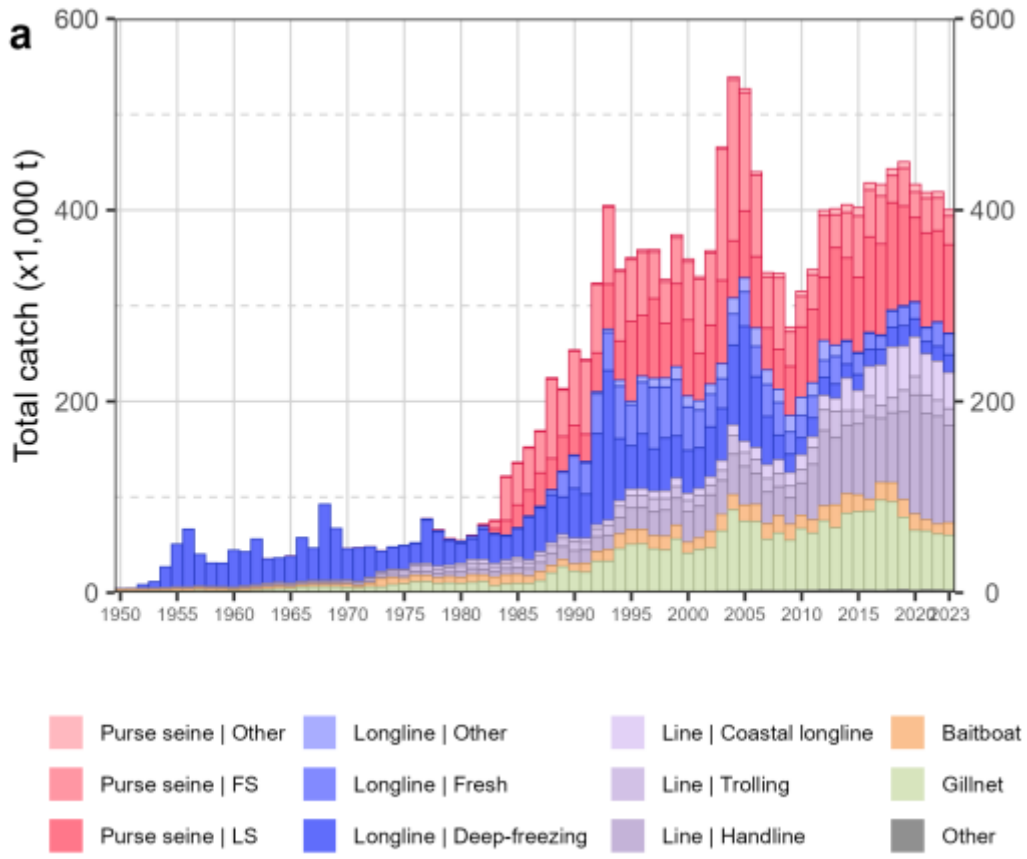
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.

The stock assessment conducted by the Indian Ocean Tuna Commission (IOTC) takes all fishery removals into account. The most recent assessment was conducted in 2024. Landings in recent years were reported as a total catch in 2023 of 400,950t, and an average catch 2019-2023 of 423,142t (IOTC 2024). Full catch datasets, including catch and effort by month, species, gear, and vessels flag, and size-frequency datasets, are made available on the IOTC website (IOTC 2025).



Catches of yellowfin tuna in the Pacific Ocean by gear type, 1950 – 2023 (IOTC 2024)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 most recent stock assessment was carried out in 2024 using data from 1975-2023, as reported in a 2024 stock status report published by the IOTC (IOTC 2024). The stock assessment conclusion

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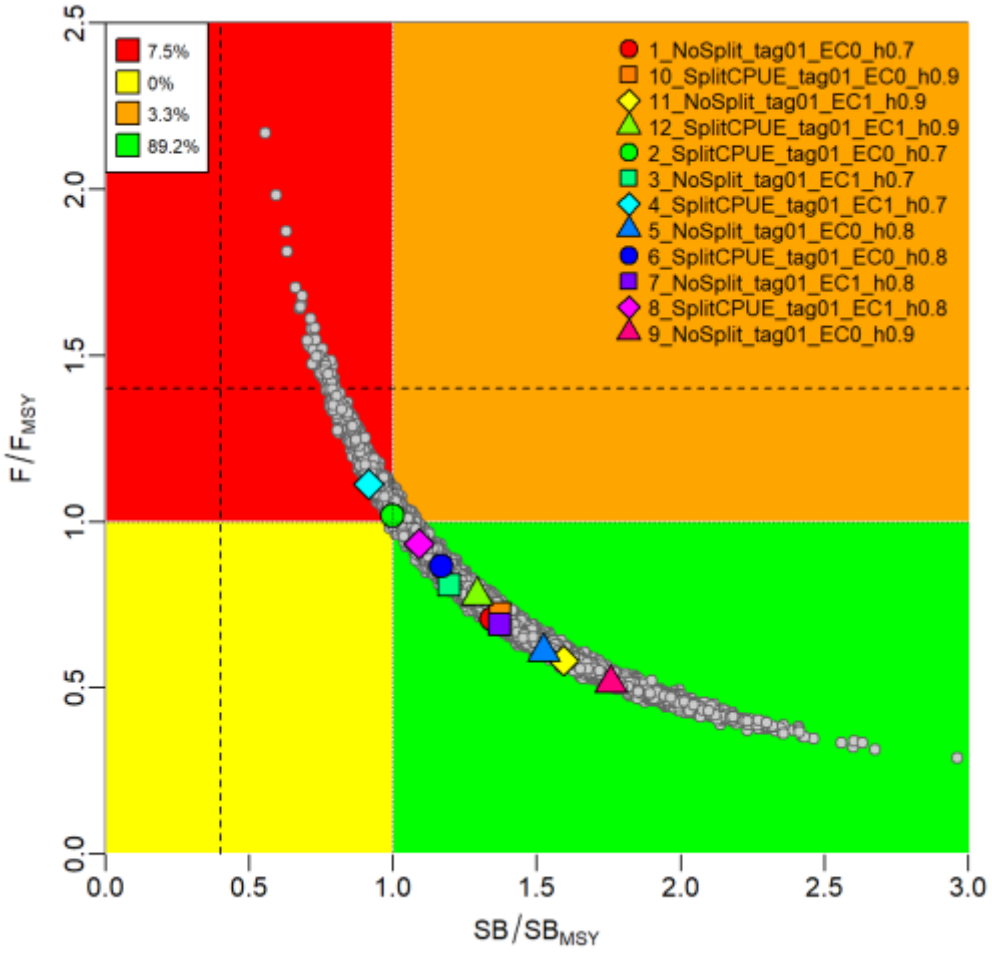
states that “overall stock status estimates do not differ substantially from the previous assessment”. Spawning biomass in 2023 was estimated to be around 44% of the unfished level and 32% higher than B_{MSY}. The biomass is therefore estimated to be above the target reference point, and therefore the stock is considered to have a biomass above the limit reference point in its most recent stock assessment (IOTC 2024).



Yellowfin tuna in the Pacific Ocean: Kobe chart estimating current stock status. Coloured symbols represent estimates from individual models. Grey dots represent statistical uncertainty from individual models. Dashed lines represent limit reference points (IOTC 2024)

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

IOTC (2025). Available datasets. https://www.iotc.org/data/datasets

IOTC (2024). Indian Ocean Yellowfin Tuna Stock Status: Executive Summary. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES04_YFTE.pdf

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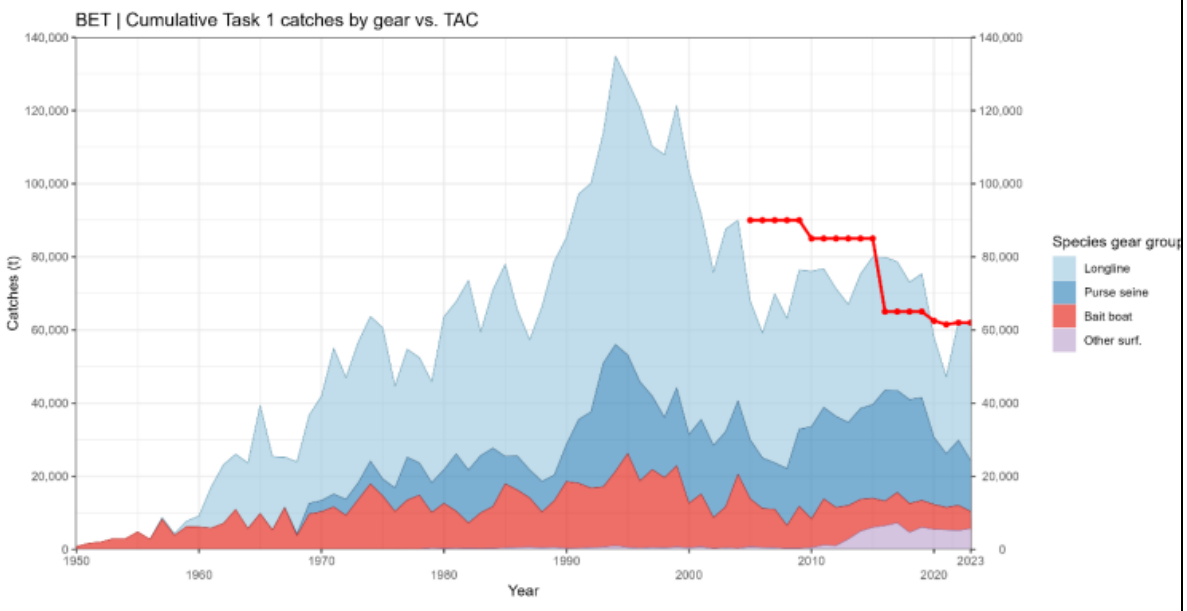
Species name		***Thunnus obesus* - Bigeye tuna**	
Fishing area and stock		**Atlantic bigeye**	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities 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.

The most recent stock assessment for Atlantic bigeye was conducted by the International Commission for the Conservation of Atlantic Tunas (ICCAT) in 2021 using all available catch data and several modelling approaches (ICCAT 2024). Different model formulations were used to test different potential representations of stock dynamics and characteristics to reduce uncertainties in the outcomes. Catch data are available by area, gear, and vessel flag, and were incorporated into the assessment.



Atlantic bigeye tuna, estimated and reported catches by gear type. Red line indicates TAC (ICCAT 2024)

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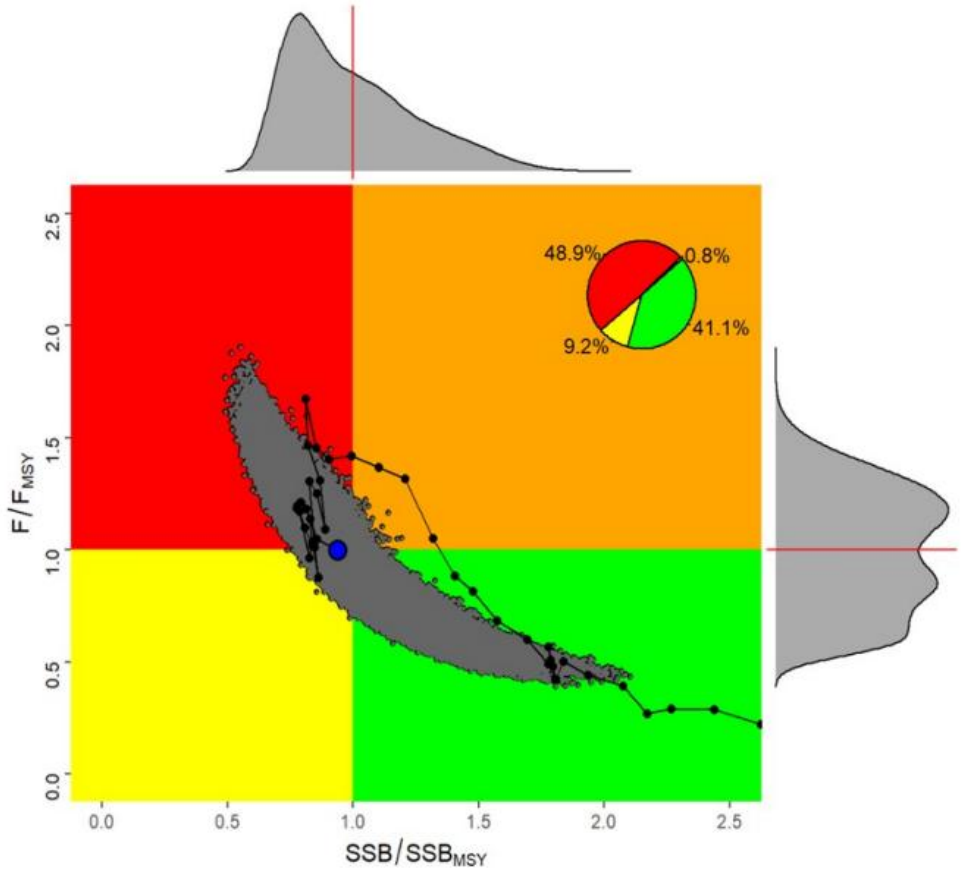
Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 2021 stock assessment produced estimates of stock status in 2019. Relative spawning biomass (SSB_{2019}/SSB_{MSY}) was estimated to be 0.94, with a 96% confidence interval of 0.71 – 1.37. This places the stock into the Overfished section of the Kobe chart, and indicates that biomass is likely to be below the target reference point. The stock assessment also concluded that as of 2019 the stock was not subject to overfishing.

No limit reference point is defined for the stock. Where this is the case, the MT byproduct assessment guidance directs assessors to assume a limit reference point of $½B_{MSY.}$ The 95% confidence interval described above indicates that there is a very high probability the stock biomass is at least 0.71 B_{MSY}, and therefore is very likely to be above the default limit reference point.



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Kobe plot of SSB/SSB_{MSY} and F/F_{MSY} for stock status of Atlantic bigeye tuna in 2019. Insert pie chart shows the probability that 2019 status is 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 2024).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

ICCAT (2024). Stock assessment executive summary, bigeye tuna. https://www.iccat.int/Documents/SCRS/ExecSum/BET_ENG.pdf

Species name		***Thunnus obesus* - Bigeye tuna**	
Fishing area and stock		**Western and Central Pacific bigeye**	
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 Western and Central Pacific Ocean is subject to regular stock assessment by the Western and Central Pacific Fisheries Commission. The most recent stock assessment was conducted in 2023, using data up to 2021. The assessment utilised all international catch data. 54 models were applied to take into account the main sources of uncertainty, and the results are presented alongside the likely confidence intervals (WCPFC 2021). All available catch data are incorporated into the assessment.

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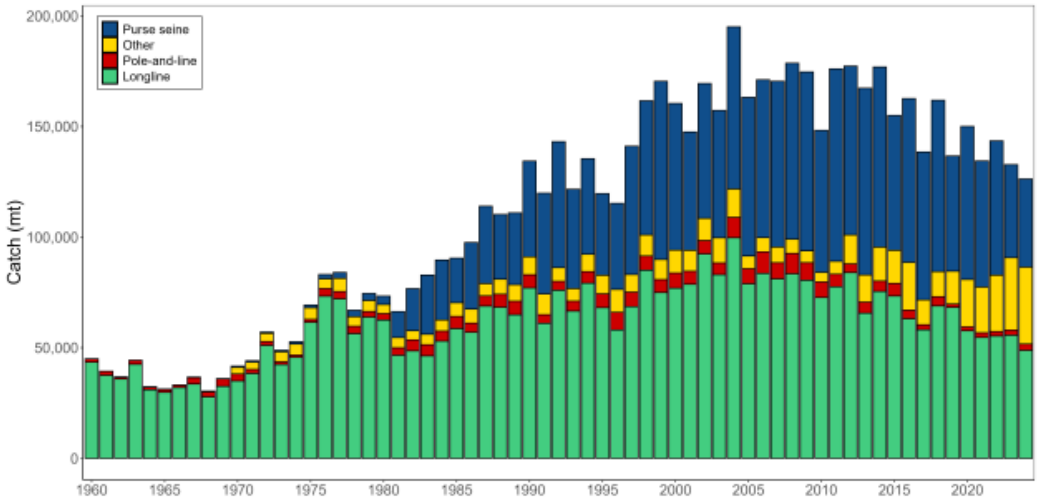

Western and Central Pacific bigeye catch (mt) by gear (WCPFC 2025)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 results of the most recent stock assessment produced an estimate of the current status of the stock relative to target reference point SB_{MSY}. The assessment concluded across all 54 models that the mean value of SB_{latest}/SB_{MSY} was 1.76, with an 80% certainty that it was between 1.28 and 2.31 (WCPFC 2024). This translates to a very high probability that stock biomass is above the target reference point SB_{MSY}, and therefore also above any potential limit reference point. The most recent stock assessment summary also states that "For all models in the grid $SB_{recent}/SB_{F=0}$ was above the biomass limit reference point" (WCPFC 2024).

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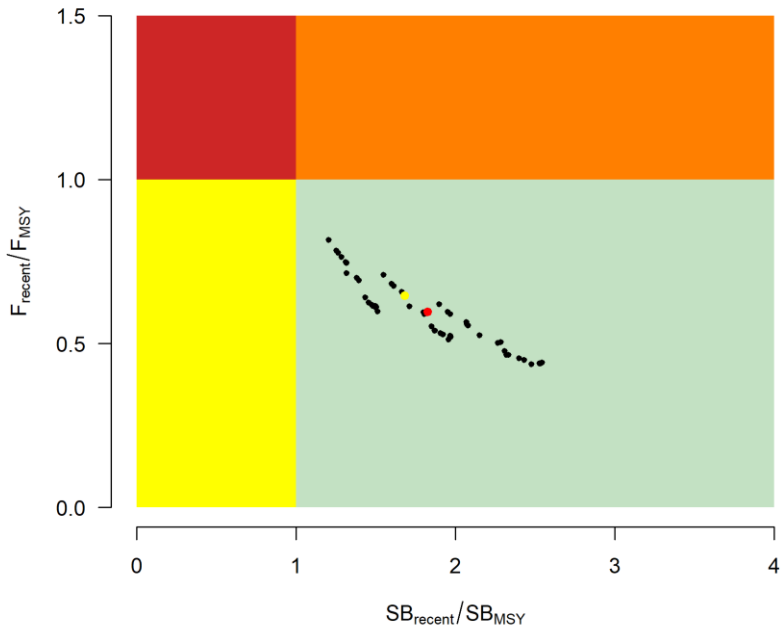

Western and Central Pacific bigeye tuna, Kobe plot for recent spawning potential (2018-2021) summarising the results for each of the models in the structural uncertainty grid. Median value is shown in red (WCPFC 2024)

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

WCPFC (2024). WCPO bigeye tuna stock status and management advice. https://www.wcpfc.int/doc/01/bigeye-tuna

WCPFC (2025). Overview of tuna fisheries in the Western and Central Pacific Ocean, including economic conditions – 2024. https://meetings.wcpfc.int/node/26697

Species name		***Thunnus obesus* - Bigeye tuna**	
Fishing area and stock		**Indian Ocean bigeye**	
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

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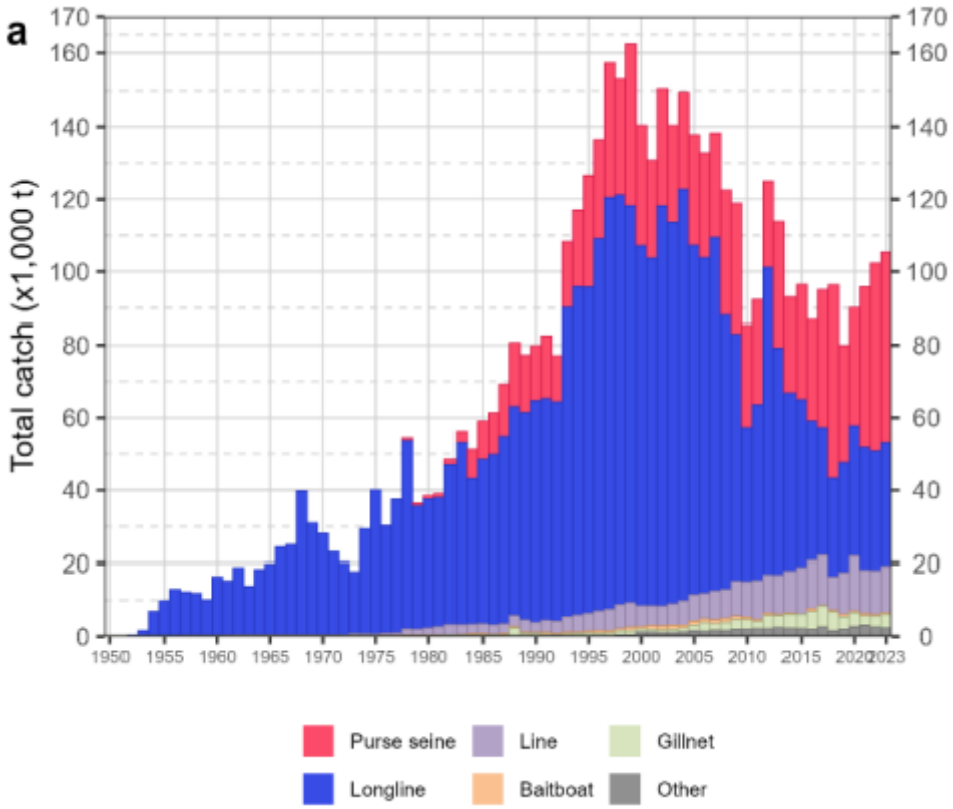
C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.

Bigeye tuna in the Indian Ocean (IO bigeye) is subject to regular stock assessment by the IOTC. The most recent stock assessment was carried out in 2022 using a Stock Synthesis model with 24 model configurations. The assessment incorporated international catch data, and the range of models used was intended to capture uncertainty on stock recruitment relationship, longline selectivity, growth, and natural mortality (IOTC 2024).



Indian Ocean bigeye tuna, catches (IOTC 2024)

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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 2022 stock assessment concluded that spawning biomass levels in 2021 were 25% of the unfished level, and 90% of the level which can support MSY. Taking into account the uncertainty in the assessment process, the IOTC documentation concludes that the stock is "overfished and subject to overfishing" (IOTC 2023). This conclusion indicates that the stock is likely below the target

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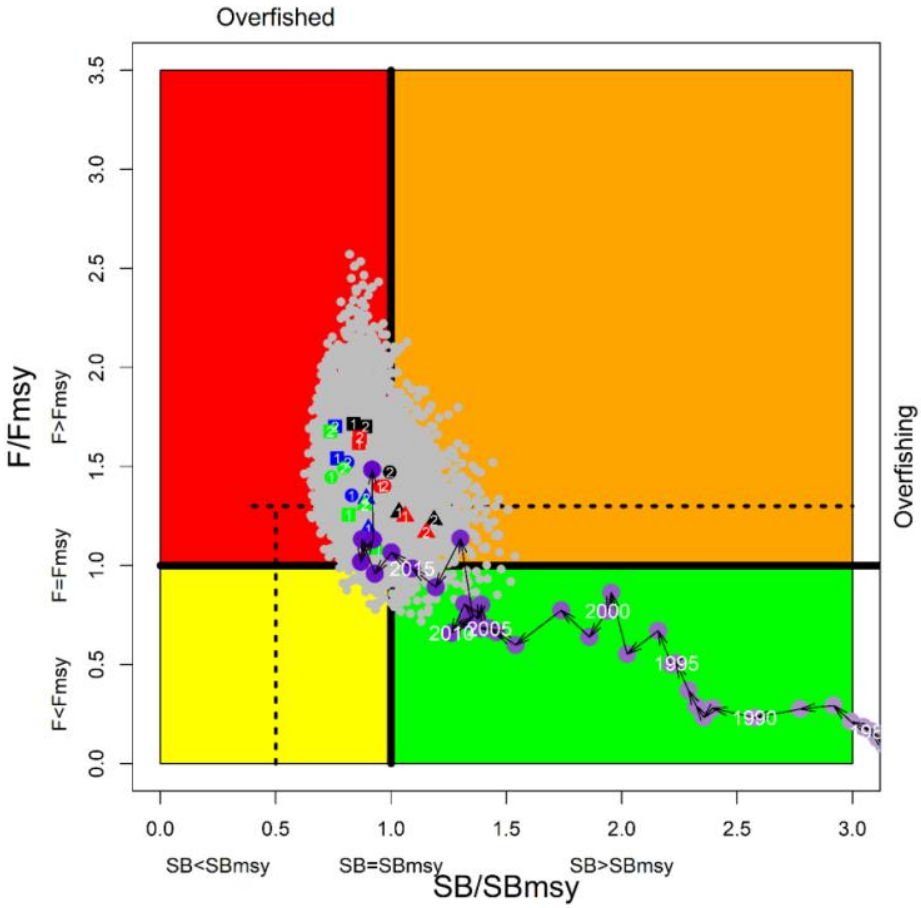
reference point. However, the limit reference point for the stock is defined as 0.5*SB_{MSY}; i.e. the level at which stock biomass is half the level which can support MSY. As the stock is currently estimated to be at 90% of this level, it is likely above the limit reference point. Additionally, none of the outcomes of the 24 models indicated that biomass was below the LRP.

A Kobe chart showing the status of the fishery as estimated by the 2022 stock assessment is shown below.



Aggregated Indian Ocean stock assessment Kobe plot for bigeye tuna. Coloured points represent stock status estimates from each of the 24 models. Purple dots represent the time series of stock status estimates. Grey dots represent uncertainty from individual models. Dashed lines indicate IO bigeye tuna limit reference points (IOTC 2024).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and it PASSES clause C1.2.

References

IOTC (2024). Indian Ocean bigeye tuna stock status and advice, executive summary. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES02_BETE.pdf

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Traceability information

Path 1 information was not provided for any byproducts. The applicant provided Path 2 traceability information for some byproducts, as follows:

Flag States	Species	FAO Area	Coastal state	Port state
Ghana	Skipjack	34, 41, 47	FAO 34, 41, 47	China
		61, 71	Unknown	
	Albacore	34		
		71		
Panama	Skipjack	27, 34	Unknown	
		51	Panama	Unknown
	Yellowfin	71	Unknown	
		27		
		34	FAO 34	Spain
		47	Unknown	
		51		
		67, 77		
		87		
	Bigeye	27	Unknown	
		34	FAO 34	Spain, Senegal
		51	FAO 51	Senegal
China	Atlantic bonito	61	Unknown	
	Atlantic mackerel	61		
	Albacore	27		
		34		
		47		
		67		
		77		
		71	FAO 71	China
		87	FAO 87	Spain, China
		51, 57	FAO 51 & 57	China
Ecuador	Albacore	27	Unknown	
		34		
		47		
		51		
		57		
		71		
		77, 87	FAO 87	Unknown
	Yellowfin	27	Unknown	
		34, 47	FAO 34-47	Ecuador
		51, 57	Unknown	
		71, 77		
		87		
	Bigeye	34, 47		

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		51, 57		
		71		
El Salvador	Albacore	27	Unknown	
		34		
		47		
		51		
		57		
		71		
		77, 87		
	Yellowfin	34, 47	FAO 34	Senegal, Spain
		51, 57	FAO 51	Senegal
		71	Unknown	
	Bigeye	34, 47		
		51, 57		
		71		
Oman	Yellowfin	51	FAO 51	Seychelles
South Africa	Yellowfin	47	FAO 47	Spain
Spain	Albacore	81, 87	Unknown	
Ireland	Albacore	27		

Additionally, the applicant indicated that salmon byproducts caught by Russia-flagged vessels originates from an MSC-certified fishery.

Species name	Skipjack in FAO 34, 41, 47			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	Ghana	Multiple states, highest risk Medium	High Risk (China)	Remains high risk

Species name	Skipjack in FAO 51
Path 1	Yes ☐ No ☒
Confirm all KDEs are provided	Yes ☐ No ☐
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*

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Path 2 outcome *Countries may be different for Coastal State and Port State.*	Flag country	Coastal score	Port score	Risk outcome
	Panama	Low Risk (Panama)	Unknown	Remains high risk

Species name	Yellowfin in FAO 34			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	Panama	Multiple states, highest risk Medium	Medium Risk (Spain)	Downgraded to medium risk
	Ecuador	Multiple states, highest risk Medium	Medium Risk (Ecuador)	Downgraded to medium risk
	El Salvador	Multiple states, highest risk Medium	Medium Risk (Senegal, Spain)	Downgraded to medium risk

Species name	Yellowfin in FAO 51			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	El Salvador, Oman	Multiple states, highest risk High	Medium Risk (Senegal, Spain, Seychelles)	Remains high risk

Species name	Yellowfin in FAO 47			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**

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Countries may be different for Coastal State and Port State.	**South Africa**	Multiple states, highest risk Medium	Medium Risk (Spain)	Downgraded to medium risk
	Ecuador	Multiple states, highest risk Medium	Medium Risk (Ecuador)	Downgraded to medium risk

Species name	Bigeye in FAO 34			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	Panama	Multiple states, highest risk Medium	Medium Risk (Spain, Senegal)	Downgraded to medium risk
				Choose an item.

Species name	Bigeye in FAO 51			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	Panama	Multiple states, highest risk High	Medium Risk (Senegal)	Remains high risk
				Choose an item.

Species name	Albacore in FAO 51, 57			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	China	Multiple states, highest risk High	High Risk (China)	Remains high risk

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Species name	Albacore in FAO 71, 87			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	China	Multiple states, highest risk Medium	High Risk (China)	Remains high risk

Species name	Albacore in 77, 87			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐ *If yes for Path 2, complete the next section*			
Path 2 outcome *Countries may be different for Coastal State and Port State.*	**Flag country**	**Coastal score**	**Port score**	**Risk outcome**
	Ecuador	Multiple states, highest risk Medium	Unknown	Remains high risk

Guidance for Applicants/Certificate holders on improved traceability

When by-product origin cannot be made more granular than major FAO Areas, or when the source fishery is taking place in the High Seas (i.e. outside of EEZs of all relevant nations), an assessor must evaluate the Coastal and Port scores for each nation that straddles that FAO Area. This may lead to higher risk outcomes for an applicant. To mitigate that risk, better practice involves securing KDEs from the source fishery of the by-products, thereby meeting Path 1 instead of Path 2.

What does better practices look like?
Comprehensive data collection and sharing: Collect detailed information using Key Data Elements (KDEs) including vessel identification and authorisation, species, catch areas, fishing method and dates. These are defined in the MarinTrust Standard clauses 2.11.2.2 and 3.2.5.

Supply chain transparency: Maintain detailed records at each step of the supply chain, from capture to final sale, to ensure traceability.

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Interoperable systems and technologies to support the collection and transfer of this information.

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