By-Product assessment report

BP063

TC Union Agrotech Co. Ltd

Report code	BP063	Date of issue	August 2025

1. Application details		
Applicant	TC Union Agrotech Co. Ltd	
Applicant country	Thailand	
2. Certification Body details		
Name of Certification Body (CB)	NSF / Global Trust Certification Ltd	
Contact information for CB	fisheries@nsf.org	
Assessor name	Sam Peacock	
CB internal peer reviewer name	Matthew Jew	
Internal peer review evaluation	Agree with evaluation	
Number of Assessment days	1.5	
Comments on the assessment	This byproduct assessment covers 25 stocks sourced from 26 flag states. Five byproducts are sourced exclusively from Low and Medium Risk flag states, and were Approved source with caution without the need for a Step 3 assessment. The remainder were assessed under Step 3, as a result of which 12 were downgraded to Medium Risk and similarly Approved source with caution. The remaining High Risk byproducts were not downgraded to Medium risk because there was no stock assessment available and so no Category C assessment could be conducted. These byproducts were Not Approved.	
3. Approval validity	Valid from 08/25	Valid until 08/26
4. Assessment cycle	Initial	

5. By-product assessment outcomes			
By-product species name	**Flag country(ies)**	**Fishing Areas**	**MarinTrust approval status**
Katsuwonus pelamis - Skipjack tuna	Japan, Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Philippines, Papua New Guinea, Vanuatu, China, Spain, Republic of Korea (South), Maldives, Fiji, Solomon Islands	FAO 61, 71	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Maldives, Indonesia, France, Seychelles	FAO 51, 57	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Papua New Guinea, Republic of Korea (South), Maldives, Fiji, China, Solomon Islands	FAO 77	Approved source with caution
Thunnus alalunga - Albacore tuna	Indonesia, Fiji, Australia	FAO 61, 71	Approved source with caution
Thunnus alalunga - Albacore tuna	Malaysia, Taiwan, Indonesia, Maldives	FAO 51, 57	Approved source with caution
Thunnus alalunga - Albacore tuna	New Zealand, Japan, Australia, China	FAO 77, 81, 87	Approved source with caution
Thunnus albacares - Yellowfin tuna	Maldives, Indonesia, France	FAO 51, 57	Approved source with caution

By-product species name	Flag country(ies)	Fishing Areas	MarinTrust approval status
Thunnus albacares - Yellowfin tuna	Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Republic of Korea (South), Spain, Solomon Islands	FAO 61, 71	Approved source with caution
Thunnus albacares - Yellowfin tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Republic of Korea (South), Papua New Guinea, Solomon Islands	FAO 77, 87	Approved source with caution
Thunnus obesus - Bigeye tuna	Maldives, Indonesia, France, Japan	FAO 51, 57	Approved source with caution
Thunnus obesus - Bigeye tuna	Marshall Islands, Taiwan, Kiribati, Nauru, South Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Spain, Japan	FAO 71, 77	Approved source with caution
Seriola quinqueradiata - Japanese amberjack	Japan	FAO 61	Approved source with caution
Oncorhynchus gorbusha - Pink salmon	USA, Canada	FAO 67	Approved source with caution
Oncorhynchus keta - Chum salmon	USA	FAO 67	Approved source with caution

By-product species name	Flag country(ies)	Fishing Areas	MarinTrust approval status
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	FAO 71	Not Approved
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	FAO 61	Approved source with caution
Sardinops sagax - Pilchard/Sardine	Japan, China	FAO 61	Approved source with caution
Sardinella longiceps - Indian oil sardine	Japan, Pakistan, China	FAO 61, 71	Not Approved
Rastrelliger kanagurta - Indian Mackerel	Thailand, Myanmar	FAO 61,71	Not Approved
Decapterus maruadsi - Japanese scad	Thailand, Myanmar	FAO 51, 57	Not Approved
Sardinella gibbosa - Goldstripe sardinella	Thailand, Myanmar	FAO 57, 71	Not Approved
Limanda aspera - Yellowfin Sole	USA	FAO 61, 67	Approved source with caution
Rastrelliger faughni - Island mackerel	Thailand, Myanmar	FAO 51	Not Approved
Rastrelliger brachysoma - Short mackerel	Thailand, Myanmar	FAO 57	Not Approved
Decapterus macrosoma - Shortfin scad	Thailand, Myanmar	FAO 71	Not Approved

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

Step 2 Assessment Outcomes

By-product species name	Flag country(ies)	IUCN Red List	CITES Appendices	Step 2 risk status	Step 3 required
Katsuwonus pelamis - Skipjack tuna	Japan, Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Philippines, Papua New Guinea, Vanuatu, China, Spain, Republic of Korea (South), Maldives, Fiji, Solomon Islands	Least concern	Not listed	High risk	Yes
Katsuwonus pelamis - Skipjack tuna	Maldives, Indonesia, France, Seychelles	Least concern	Not listed	High risk	Yes
Katsuwonus pelamis - Skipjack tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Papua New Guinea, Republic of Korea (South), Maldives, Fiji, China, Solomon Islands	Least concern	Not listed	High risk	Yes
Thunnus alalunga - Albacore tuna	Indonesia, Fiji, Australia	Least concern	Not listed	Medium risk	No

Thunnus alalunga - Albacore tuna	Malaysia, Taiwan, Indonesia, Maldives	Least concern	Not listed	High risk	Yes
Thunnus alalunga - Albacore tuna	New Zealand, Japan, Australia, China	Least concern	Not listed	High risk	Yes
Thunnus albacares - Yellowfin tuna	Maldives, Indonesia, France	Least concern	Not listed	High risk	Yes
Thunnus albacares - Yellowfin tuna	Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Republic of Korea (South), Spain, Solomon Islands	Least concern	Not listed	High risk	Yes
Thunnus albacares - Yellowfin tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Republic of Korea (South), Papua New Guinea, Solomon Islands	Least concern	Not listed	High risk	Yes
Thunnus obesus - Bigeye tuna	Maldives, Indonesia, France, Japan	Vulnerable	Not listed	High risk	Yes
Thunnus obesus - Bigeye tuna	Marshall Islands, Taiwan, Kiribati, Nauru, South Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Spain, Japan	Vulnerable	Not listed	High risk	Yes

Seriola quinqueradiata - Japanese amberjack	Japan	Least concern	Not listed	Medium risk	No
Oncorhynchus gorbuscha - Pink salmon	USA, Canada	Least concern	Not listed	Medium risk	No
Oncorhynchus keta - Chum salmon	USA	Least concern	Not listed	Medium risk	No
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	Least concern	Not listed	High risk	Yes
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	Least concern	Not listed	High risk	Yes
Sardinops sagax - Pilchard/Sardine	Japan, China	Least concern	Not listed	High risk	Yes
Sardinella longiceps - Indian oil sardine	Japan, Pakistan, China	Least concern	Not listed	High risk	Yes
Rastrelliger kanagurta - Indian Mackerel	Thailand, Myanmar	Least concern	Not listed	High risk	Yes

Decapterus maruadsi - Japanese scad	Thailand, Myanmar	Least concern	Not listed	High risk	Yes
Sardinella gibbosa - Goldstripe sardinella	Thailand, Myanmar	Least concern	Not listed	High risk	Yes
Limanda aspera - Yellowfin Sole	USA	Least concern	Not listed	Medium risk	No
Rastrelliger faughni - Island mackerel	Thailand, Myanmar	Vulnerable	Not listed	High risk	Yes
Rastrelliger brachysoma - Short mackerel	Thailand, Myanmar	Vulnerable	Not listed	High risk	Yes

Step 3 Assessment Outcomes

By-product species name	Flag country(ies)	Fishing Area	Stock name	Category C Assessment Outcome	Traceability information	Step 3 Risk Outcome
Katsuwonus pelamis - Skipjack tuna	Japan, Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Philippines, Papua New Guinea, Vanuatu, China, Spain, Republic of Korea (South), Maldives, Fiji, Solomon Islands	FAO 61, 71	West Pacific skipjack tuna	Pass	Path 2 - Yes	Downgraded to Medium Risk
Katsuwonus pelamis - Skipjack tuna	Maldives, Indonesia, France, Seychelles	FAO 51, 57	Indian Ocean skipjack tuna	Pass	Path 2 - No	Downgraded to Medium Risk
Katsuwonus pelamis - Skipjack tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Papua New Guinea, Republic of Korea (South), Maldives, Fiji, China, Solomon Islands	FAO 77	East Pacific skipjack tuna	Pass	Path 2 - Yes	Downgraded to Medium Risk
Thunnus alalunga - Albacore tuna	Malaysia, Taiwan, Indonesia, Maldives	FAO 51, 57	Indian Ocean albacore tuna	Pass	Path 2 - No	Downgraded to Medium Risk

Thunnus alalunga - Albacore tuna	New Zealand, Japan, Australia, China	FAO 77, 81, 87	South Pacific albacore tuna	Pass	Path 2 - No	Downgraded to Medium Risk
Thunnus albacares - Yellowfin tuna	Maldives, Indonesia, France	FAO 51, 57	Indian Ocean yellowfin tuna	Pass	Path 2 - No	Downgraded to Medium Risk
Thunnus albacares - Yellowfin tuna	Marshall Islands, Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Republic of Korea (South), Spain, Solomon Islands	FAO 61, 71	West Pacific yellowfin tuna	Pass	Path 2 - Yes	Downgraded to Medium Risk
Thunnus albacares - Yellowfin tuna	Taiwan, Kiribati, Nauru, Korea, Federated States of Micronesia, Tuvalu, Vanuatu, Spain, Republic of Korea (South), Papua New Guinea, Solomon Islands	FAO 77,87	East Pacific yellowfin tuna	Pass	Path 2 - Yes	Downgraded to Medium Risk
Thunnus obesus - Bigeye tuna	Maldives, Indonesia, France, Japan	FAO 51, 57	Indian Ocean bigeye tuna	Pass	Path 2 - No	Downgraded to Medium Risk

Thunnus obesus - Bigeye tuna	Marshall Islands, Taiwan, Kiribati, Nauru, South Korea, Federated States of Micronesia, Tuvalu, Japan, Philippines, Papua New Guinea, Vanuatu, China, Spain, Japan	FAO 71, 77	West Pacific bigeye tuna	Pass	Path 2 - Yes	Downgraded to Medium Risk
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	FAO 71	Chub mackerel in FAO 71	Fail	Path 2 - No	Remains High Risk
Scomber japonicus - Pacific chub mackerel/macarela	Japan, South Korea, China	FAO 61	Chub mackerel in FAO 61	Pass	Path 2 - No	Downgraded to Medium Risk
Sardinops sagax - Pilchard/Sardine	Japan, China	FAO 61	Japanese Pacific Ocean pilchard	Pass	Path 2 - Yes	Downgraded to Medium Risk
Sardinella longiceps - Indian oil sardine	Japan, Pakistan, China	FAO 61, 71	Not regularly found in the Pacific	Fail	Path 2 - No	Remains High Risk
Rastrelliger kanagurta - Indian Mackerel	Thailand, Myanmar	FAO 61, 71	Unknown stock structure	Fail	Path 2 - Yes	Remains High Risk

Decapterus maruadsi - Japanese scad	Thailand, Myanmar	FAO 51, 57	Unknown stock structure	Fail	Path 2 - No	Remains High Risk
Sardinella gibbosa - Goldstripe sardinella	Thailand, Myanmar	FAO 57, 71	Unknown stock structure	Fail	Path 2 - Yes	Remains High Risk
Rastrelliger faughni - Island mackerel	Thailand, Myanmar	FAO 51, 57	Unknown stock structure	Fail	Path 2 - No	Remains High Risk
Rastrelliger brachysoma - Short mackerel	Thailand, Myanmar	FAO 51, 57	Unknown stock structure	Fail	Path 2 - No	Remains High Risk
Decapterus macrosoma - Shortfin scad	Thailand, Myanmar	FAO 71	Unknown stock structure	Fail	Path 2 - Yes	Remains High Risk
Comments on Step 3 Assessment: Traceability information was provided for all byproducts.						

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
Australia	Medium	2.42	1.94	1.27	1	1	1	1	99.53%
Canada	Low	1.92	1.89	1.4	1	1	1	1	95.75%
China	High	4.21	4.33	3.2	1	1	5	1	36.79%
Fiji	Medium	2	2.17	1.9	1	1	1	1	50.47%
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%
Japan	Medium	2.92	2.06	1.93	1	1	1	1	91.51%
Kiribati	High	1.79	3.11	1.96	1	1	5	1	42.92%

Korea (Rep. South)	Medium	3.67	3.11	1.97	1	1	1	1	83.96%
Maldives	High	2.25	1.67	2.13	1	1	1	1	26.89%
Marshall Isl.	High	1.79	3.17	1.89	1	1	5	1	37.74%
Micronesia (FS of)	High	1.92	2.94	1.93	1	1	5	1	31.13%
Myanmar	High	1.5	1.93	2.5	1	1	1	1	9.91%
Nauru	Medium	2.04	1	1.64	1	1		1	53.30%
New Zealand	Medium	2.46	2.11	1.5	1	1	1	1	99.06%
Pakistan	High	1.55	3.28	2.8	1	1	5	1	20.28%
Philippines	Medium	2.04	2.06	2.53	1	1	1	1	53.77%
Papua New Guinea	High	2.04	2.94	2.07	1	1	5	1	26.42%
Seychelles	Medium	1.79	2.39	1.57	1	1	1	1	62.26%
Solomon Isl.	High	1.58	3.28	2.07	1	1	5	1	21.70%
Spain	Medium	3.21	3.39	2.03	1	1	1	1	75.94%
Taiwan	High	4.17	3.06	2.27	1	1	5	1	90.57%
Thailand	Medium	1.96	2.22	2.23	1	1	1	1	58.49%
Tuvalu	High	1.67	2.67	1.81	1	1	5	1	47.64%

USA	Medium	2.29	3	2.37	1	1	1	1	91.04%
Vanuatu	High	2.88	1.56	2.17	2	1	1	1	48.58%

Step 3 outcomes

Category C assessment

Category C assessments were conducted for the majority of byproduct stocks. Assessments were not conducted for some stocks, for the following reasons:

Pacific chub mackerel in FAO 71: No stock assessments were found for this species in this area.

Indian oil sardine in FAO 61, 71: This species is not regularly found in the Western Pacific, and no stock assessments were found for this species in this area.

Indian mackerel in FAO 61, 71: No stock assessments were found for this species in this area.

Japanese scad in FAO 51, 57: No stock assessments were found for this species in this area.

Goldstripe sardinella in FAO 57, 71: One stock assessment was found for this species[1], covering the Bay of Bengal and using catch data up to 2019. As the stock assessment is outdated and does not cover a significant portion of the relevant area, it was not used for a Category C assessment.

Island mackerel in FAO 51, 57: No stock assessments were found for this species in this area.

Short mackerel in FAO 51, 57: Stock structure is unknown and no stock assessments were found. Some efforts have been made to determine stock structure in recent years[2].

Shortfin scad in FAO 71: Some stock assessments conducted in Philippine waters; however evidence submitted by the applicant indicates catch is taken in Thailand and Myanmar waters. No other stock assessments could be found for this species in this area.

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

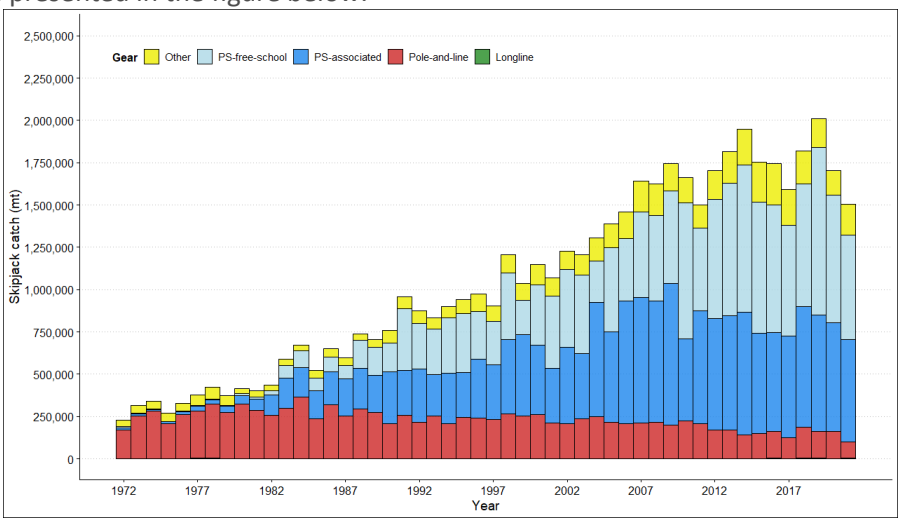
[1] https://www.mdpi.com/2077-1312/9/10/1137

[2] E.g. https://www.researchgate.net/publication/371592492_Stock_Identification_of_Short_Mackerel_Rastrelliger_brachysoma_in_the_Upper_and_Middle_Gulf_of_Thailand_by_Morphological_Characters

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 2022, using data up to 2021. The assessment incorporated catch, effort- and length-frequency estimates, and tag-recapture data (WCPFC 2022). The stock assessment report includes a discussion of structural uncertainties and needs for further data gathering; however, it does not raise major concerns.

Catches are presented in the figure below:

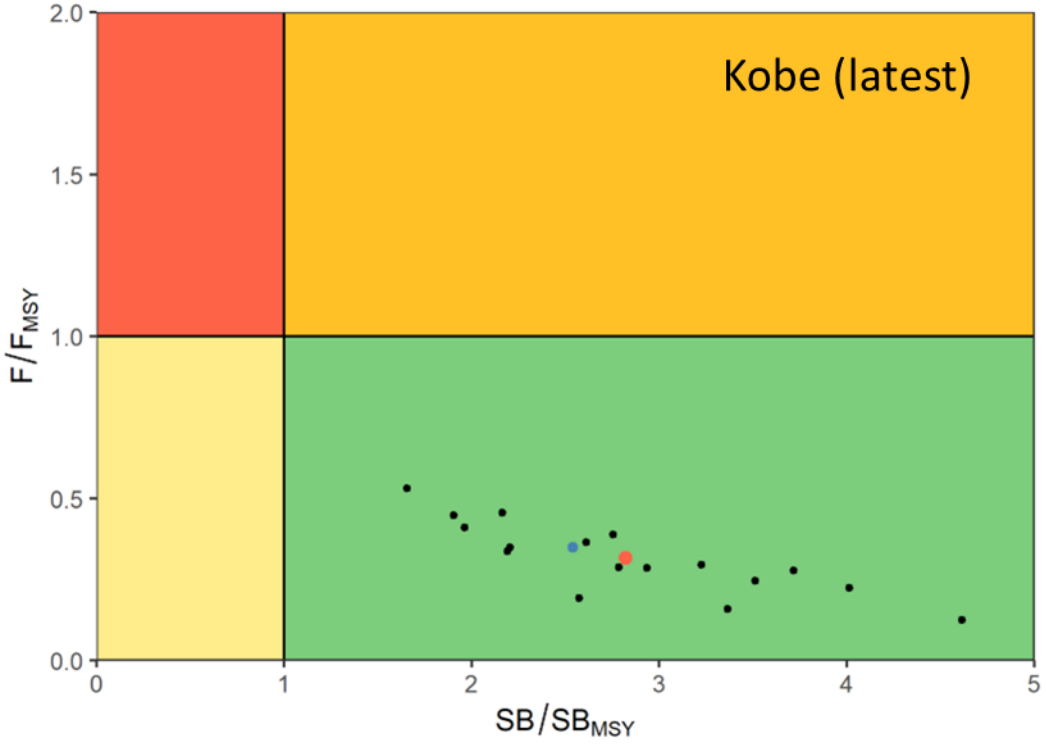


Annual catches of skipjack by gear type in the WCPO area covered by the stock assessment (WCPO 2023)

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 for WCPO skipjack concluded that "according to WCPFC reference points the stock is not overfished, not undergoing overfishing" (WCPFC 2023). None of the model outcomes produced by the stock assessment indicated that the stock biomass was below the limit reference point of $0.2*SB_{F=0}$. The median model outcome indicated that stock biomass is very close to the interim target reference point of $SB_{recent}/SB_{F=0} = 0.5$.



Kobe plot summarising the results for each of the models in the "latest" period (i.e. 2021). The black dots represent model outcomes, the blue point is the diagnostic model, and the red point 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 (2022). WCPO skipjack tuna stock assessment, 2022. https://meetings.wcpfc.int/node/16242

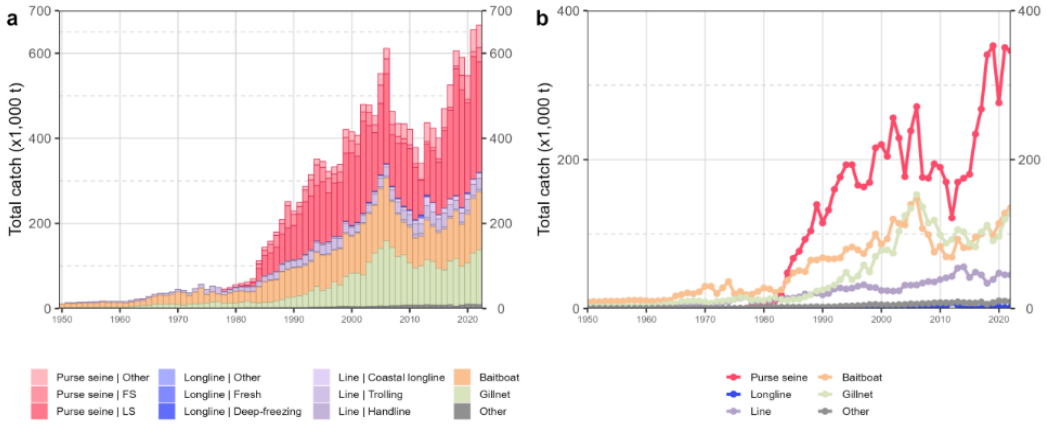
WCPFC (2023). Skipjack tuna, current stock status and advice. https://www.wcpfc.int/file/987813

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 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 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).



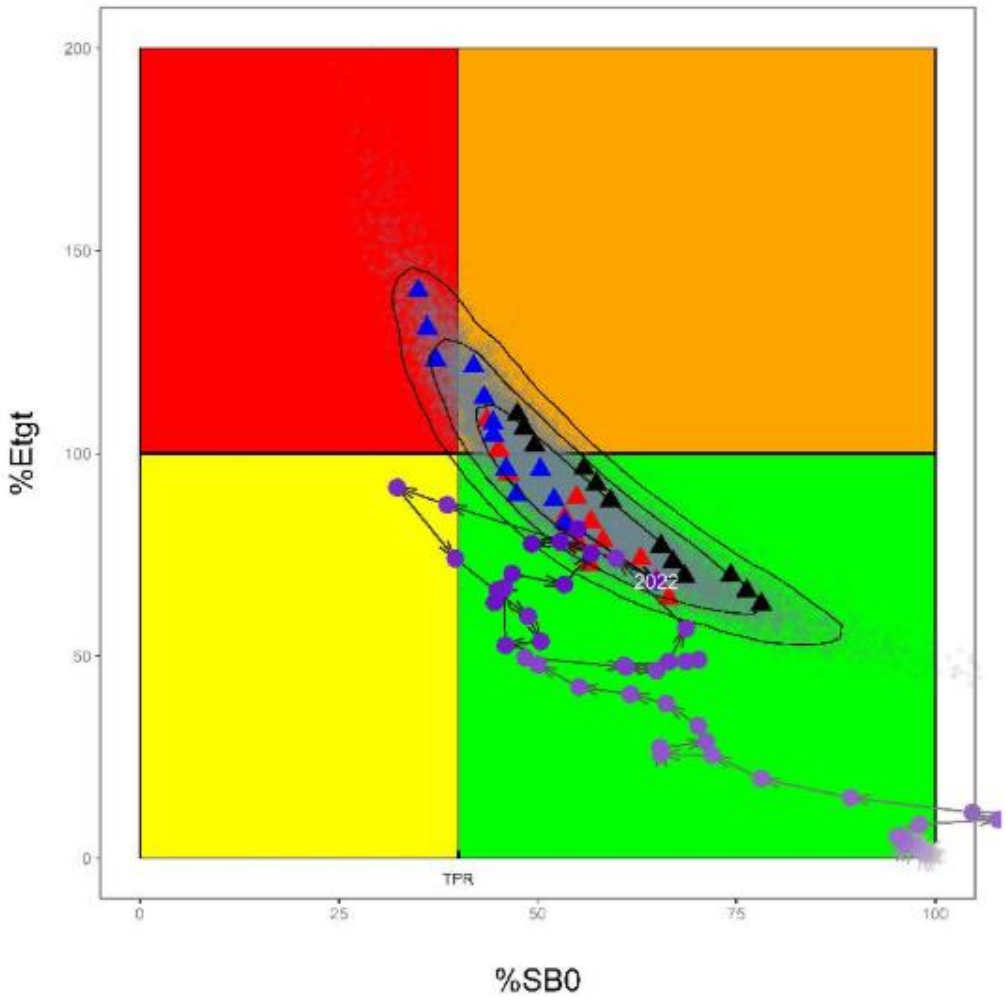
Annual time series of (a) cumulative nominal catches (metric tonnes; t) by fishery and (b) individual nominal catches (metric tonnes; t) by fishery group for Indian Ocean skipjack tuna during 1950-2022 (IOTC 2024)

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).

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

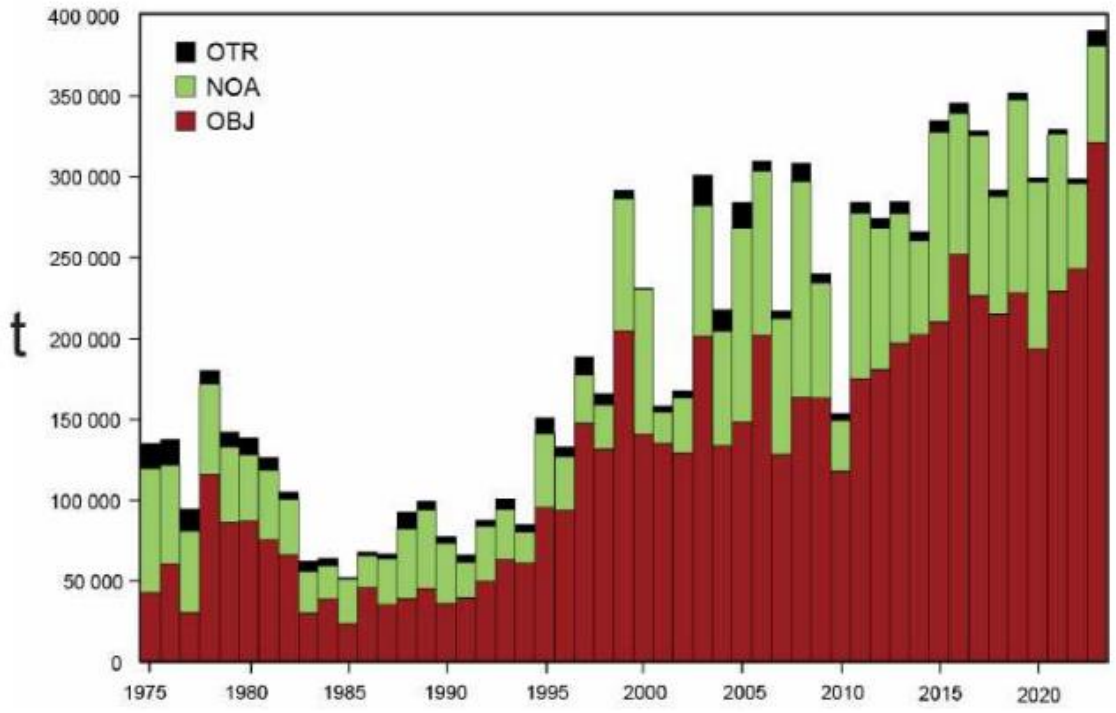
IOTC (2025). Available datasets. https://www.iotc.org/data/datasets

Species name	*Katsuwonus pelamis* - Skipjack tuna

Fishing area and stock		East 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.

EPO skipjack has historically been subject to "interim" integrated statistical age-structured catch-at-length stock assessments carried out by the IATTC. In 2023, a benchmark stock assessment was conducted using an integrated statistical age-structured catch-at-length model in Stock Synthesis, which is considered by the IATTC to represent "a significant improvement from the initial interim assessment conducted in 2022" (IATTC 2024). The assessment incorporates all available data from across the EPO, including catch data but also size and age frequency data and other sources.

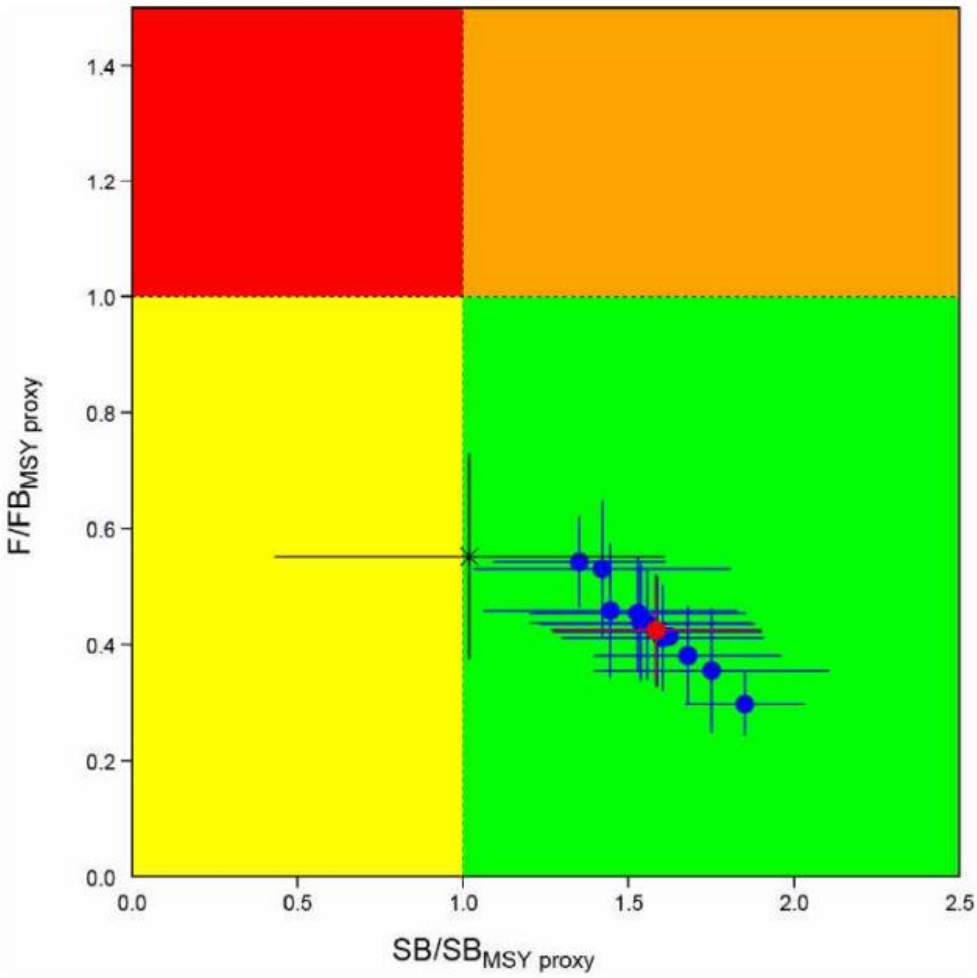


Skipjack catches (retained plus discards) in the EPO, 1975-2023 (IATTC 2024).

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.

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.

MSY-based estimates and reference points cannot be estimated for EPO Skipjack due to the nature of the model used. Instead, the IATTC management process utilises a conservative proxy for target biomass of SBR = 0.3, with the fishing mortality corresponding to that target biomass used as the target reference point for fishing mortality (IATTC 2024). The reference model and most of the sensitivity analyses conducted in 2023 indicated that biomass is above the target reference point and fishing mortality is below the target level. None of the model scenarios concluded that stock biomass is below the limit reference point level.



Kobe plot for skipjack tuna in the EPO (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.

References

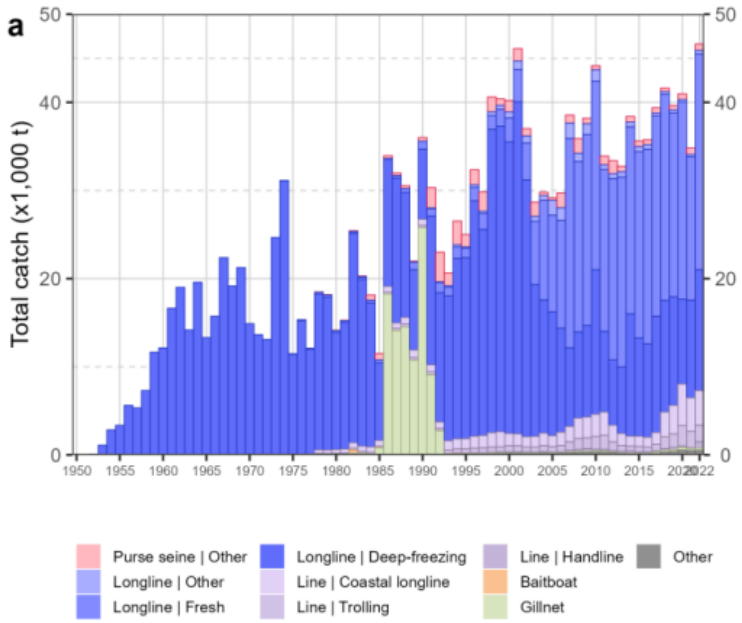
IATTC (2024). The tuna fishery in the Eastern Pacific Ocean in 2023. https://www.iattc.org/GetAttachment/1ed36788-07ce-4bf4-80e4-10c6c3b2b14d/No-22-2024_Tunas,-stocks-and-ecosystem-in-the-eastern-Pacific-Ocean-in-2023.pdf

Species name		***Thunnus 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:



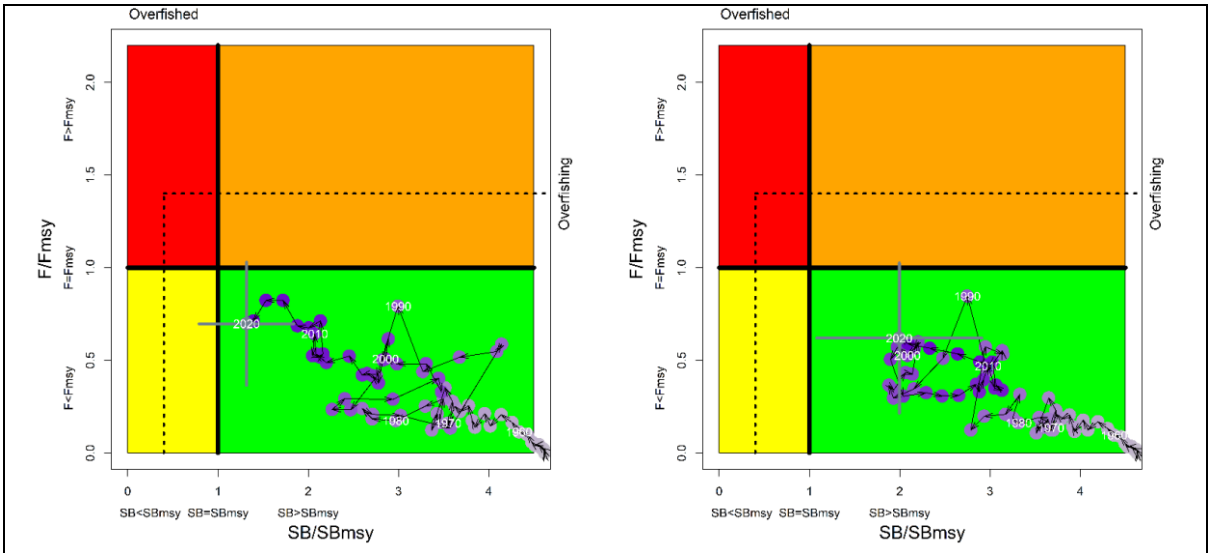
Albacore tuna in the Indian Ocean: Cumulative nominal catches by gear type (IOTC 2024)

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.



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.

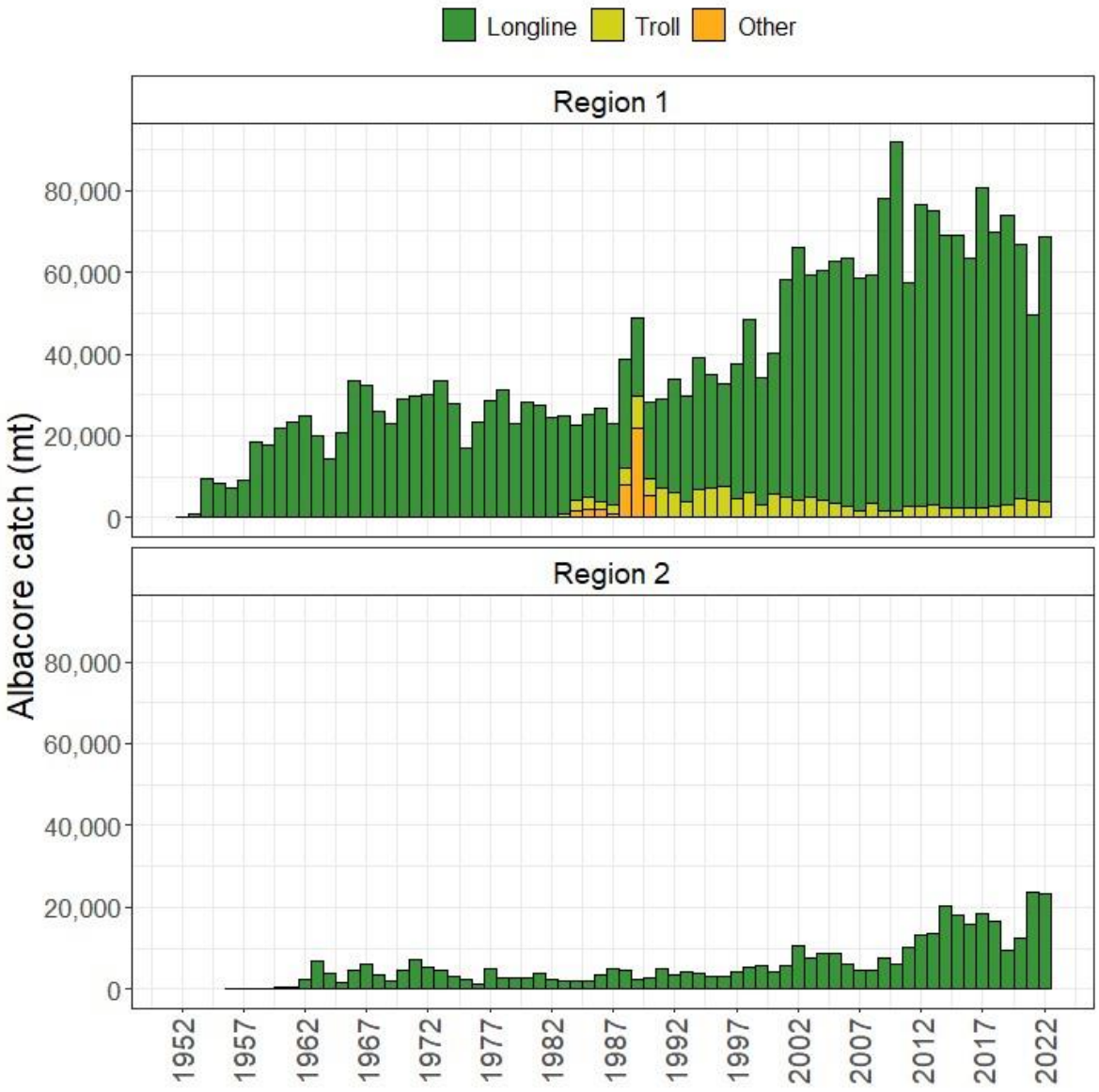
References

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 alalunga* - Albacore tuna**	
Fishing area and stock		**South Pacific 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.

The most recent stock assessment for albacore tuna in the south Pacific was conducted in 2024, using data up to 2022. The assessment used catch data including international catches by fishing gear. The published stock assessment summary (WCPFC 2025) does not appear to include any concerns relating to the availability of catch data.

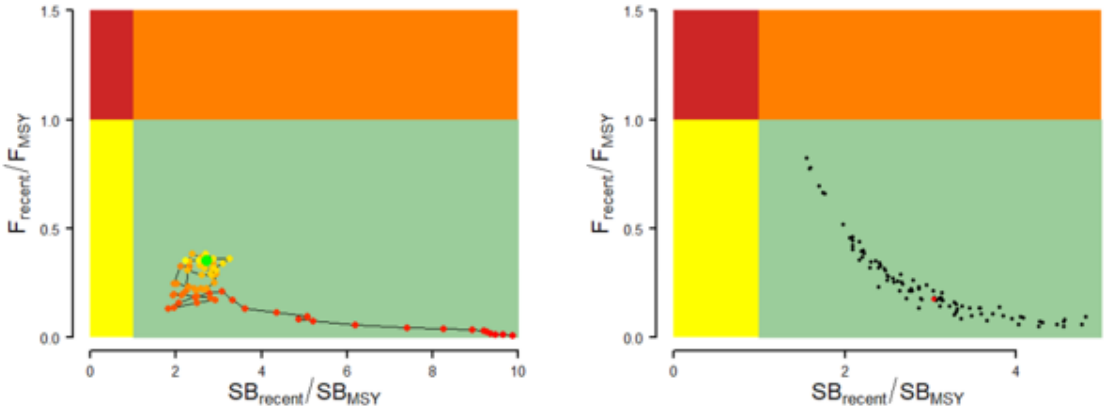


Historical catches of South Pacific albacore in each model region (WCPFC-CA = region 1, EPO = region 2) from 1952-2022 by gear type (WCPFC 2025)

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 stock is assessed relative to a range of potential reference points (WCPFC 2025), with the key reference point used to determine whether the stock was overfished being 20%$SB_{F=0}$. The 2024 stock assessment concluded that "the median recent spawning biomass from the model ensemble with estimation uncertainty is well above the spawning biomass to achieve MSY" (WCPFC 2025), and that in "all models…$SB_{recent}/SB_{F=0}$ was above the limit reference point of 0.2" (WCPFC 2025). The most recent stock assessment concluded that the stock biomass is highly likely above the target and limit reference points.



Kobe plots for Southern Pacific albacore tuna the results for the dynamic MSY analysis (left) and each of the models in the model ensemble for the recent period (2019– 2022; right). Colours for dynamic MSY go from red to green over time. The red point in the model ensemble (right) represents the median (WCPFC 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

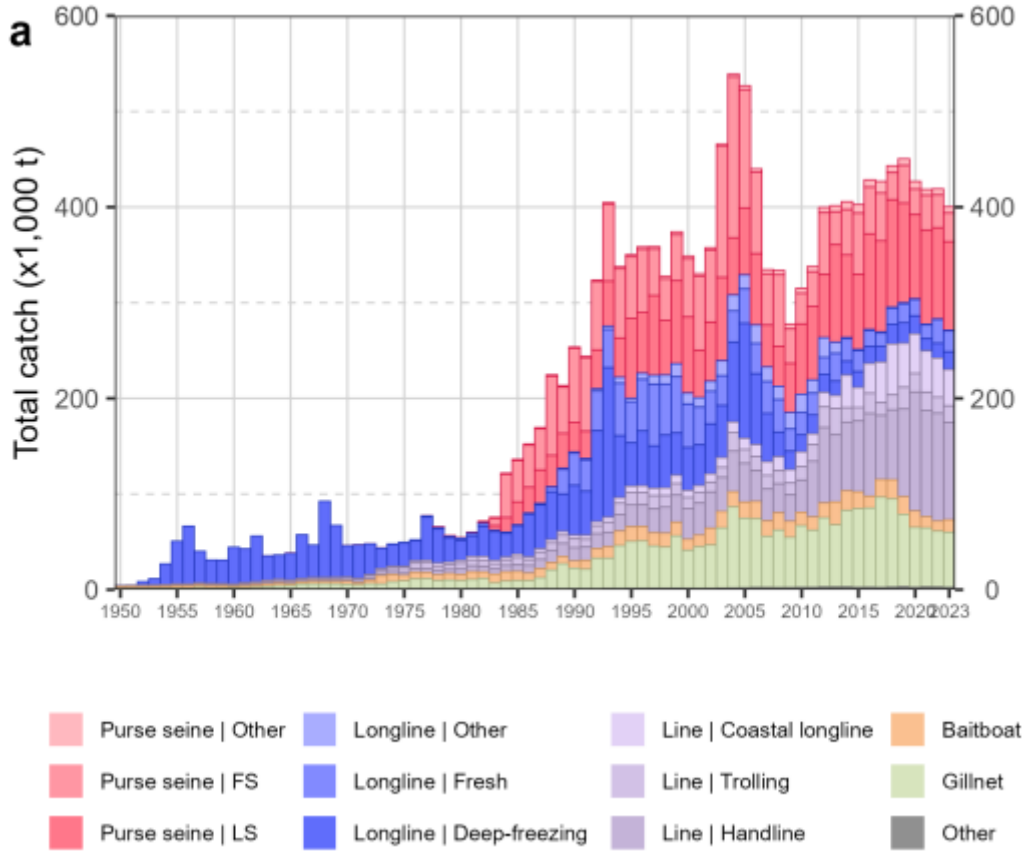
WCPFC (2025). Stock status and advice key documents, South Pacific albacore tuna. https://www.wcpfc.int/doc/04/south-pacific-albacore-tuna

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

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).

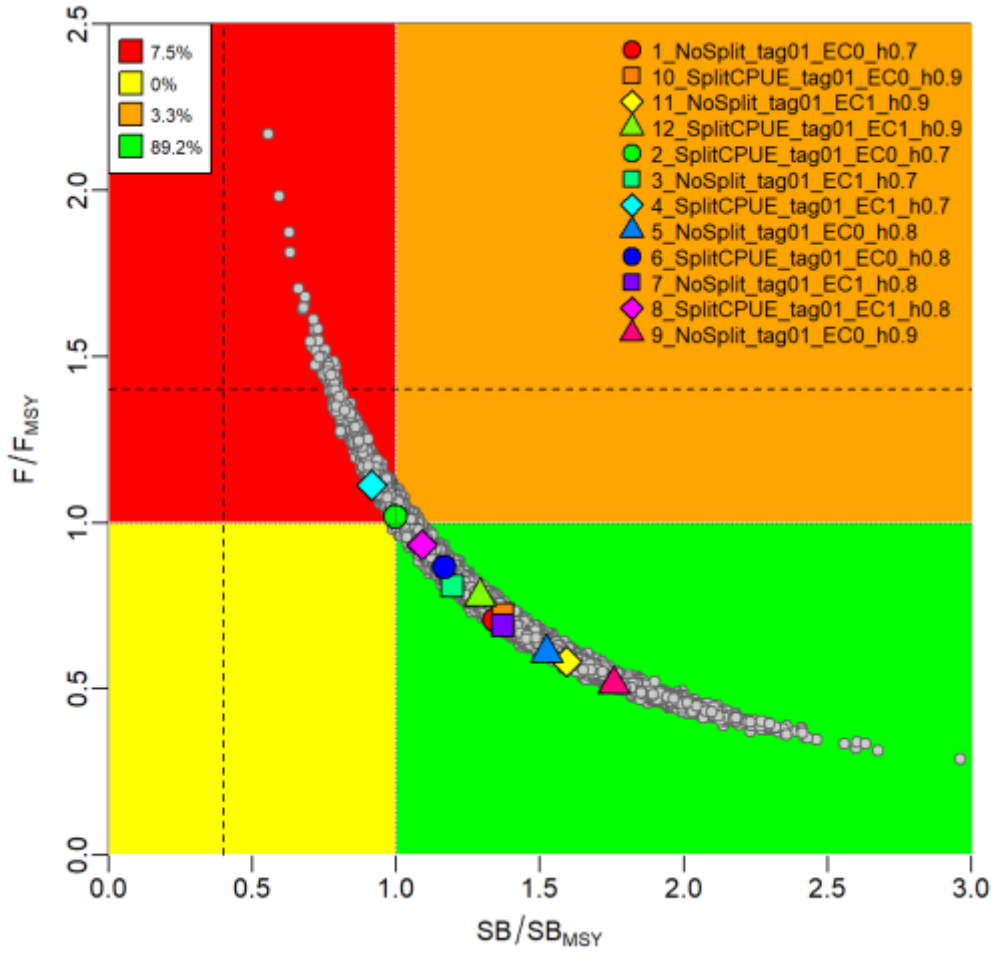


Catches of yellowfin tuna in the Pacific Ocean by gear type, 1950 – 2023 (IOTC 2024)

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 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

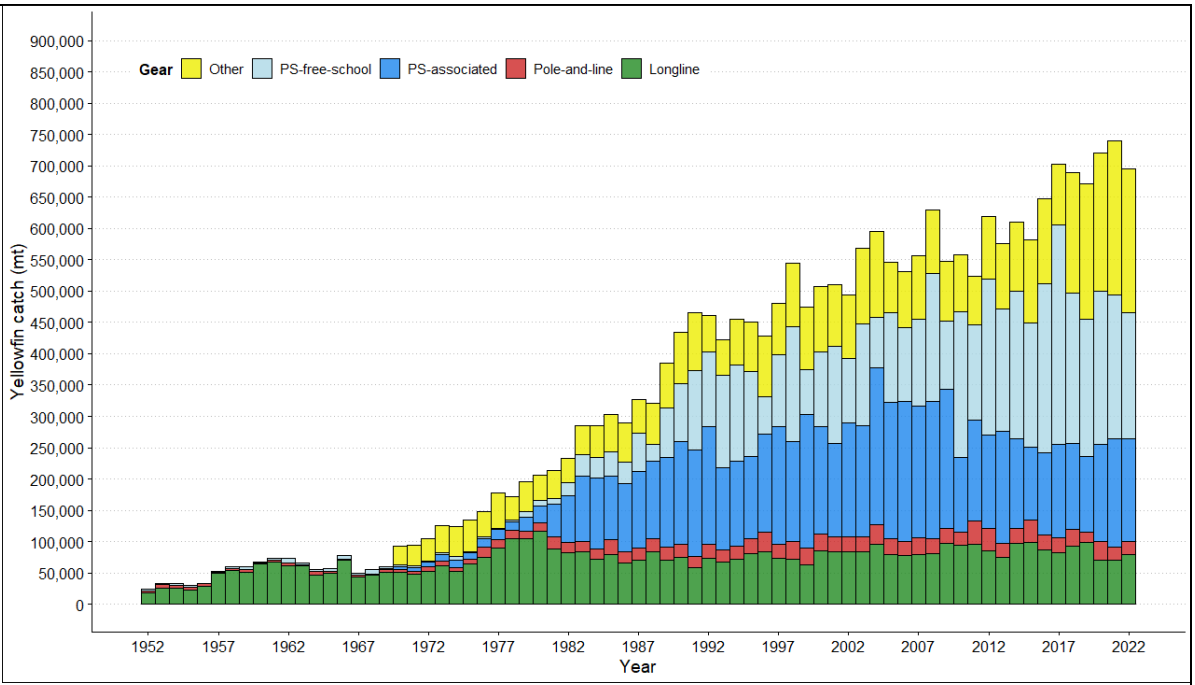
IOTC (2024). Indian Ocean Yellowfin Tuna Stock Status: Executive Summary. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES04_YFTE.pdf

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:

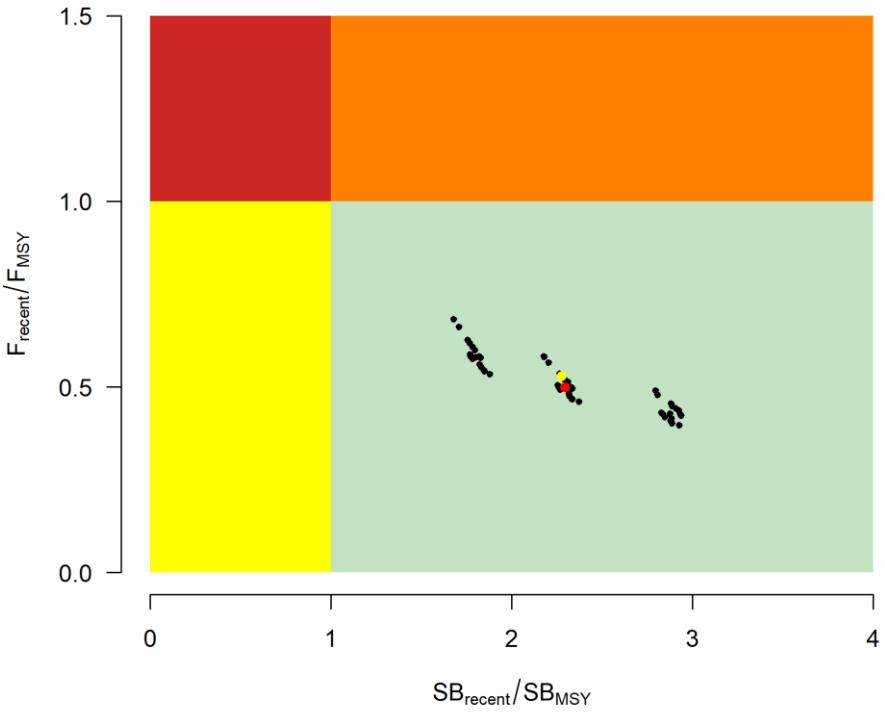


WCPO yellowfin catches, 1952-2022 (WCPFC 2023)

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).



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.

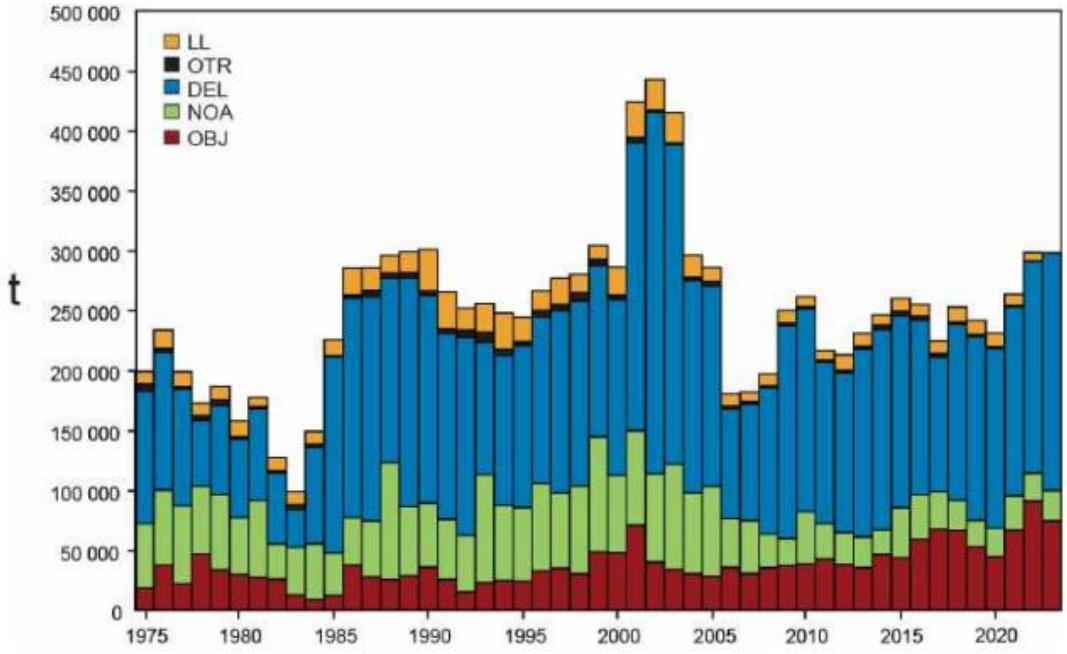
References

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

Species name		***Thunnus albacares* -Yellowfin Tuna**	
Fishing area and stock		**East 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.

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.



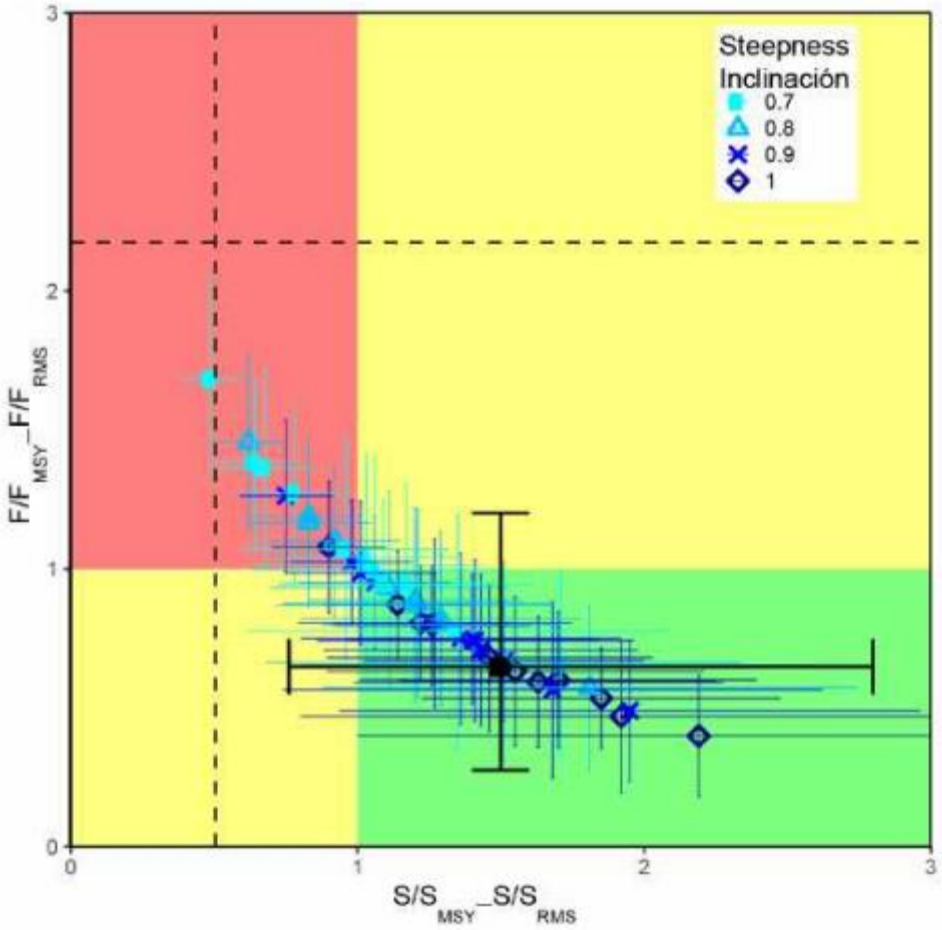
Total catches of yellowfin tuna in the EPO by set type (IATTC 2024)

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.

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.

References

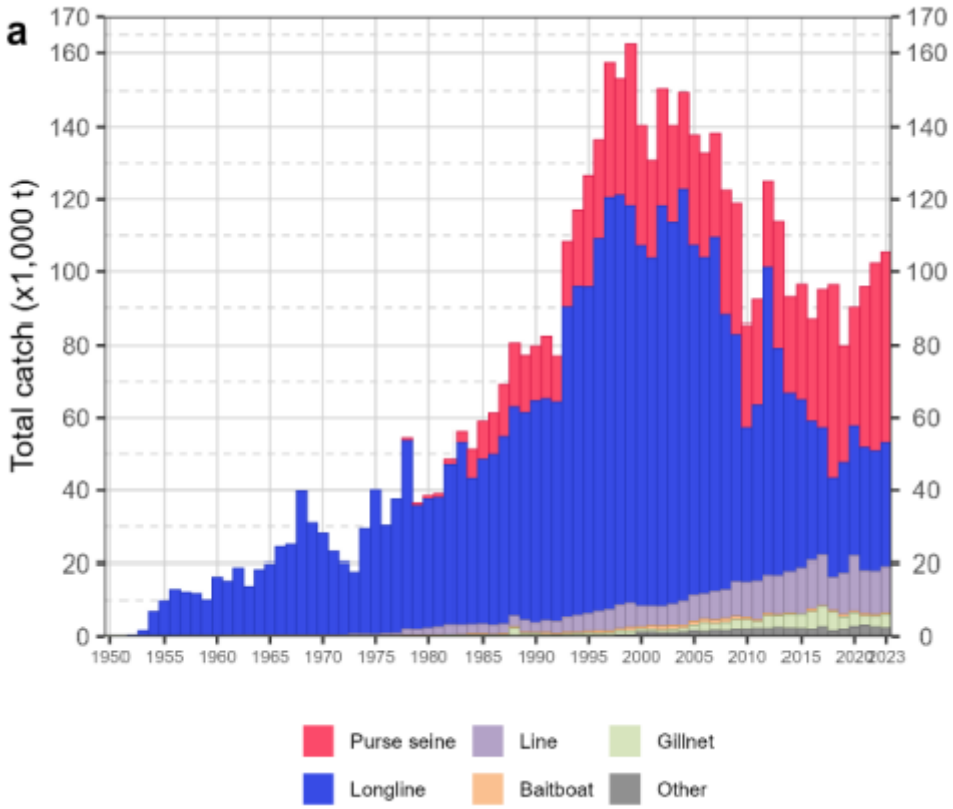
IATTC (2022). Stock Status Indicators (SSIs) for tropical tunas in the Eastern Pacific Ocean. 13th Meeting of the IATTC Scientific Advisory Committee, Document SAC-13-06 Corr. https://www.iattc.org/GetAttachment/22511b5b-ba2b-4126-9ba2-0bffee89f4d5/SAC-13-06%20-%20Stock%20status%20indicators%20(SSIs)%20for%20tropical%20tunas%20in%20the%20EPO

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 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

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).



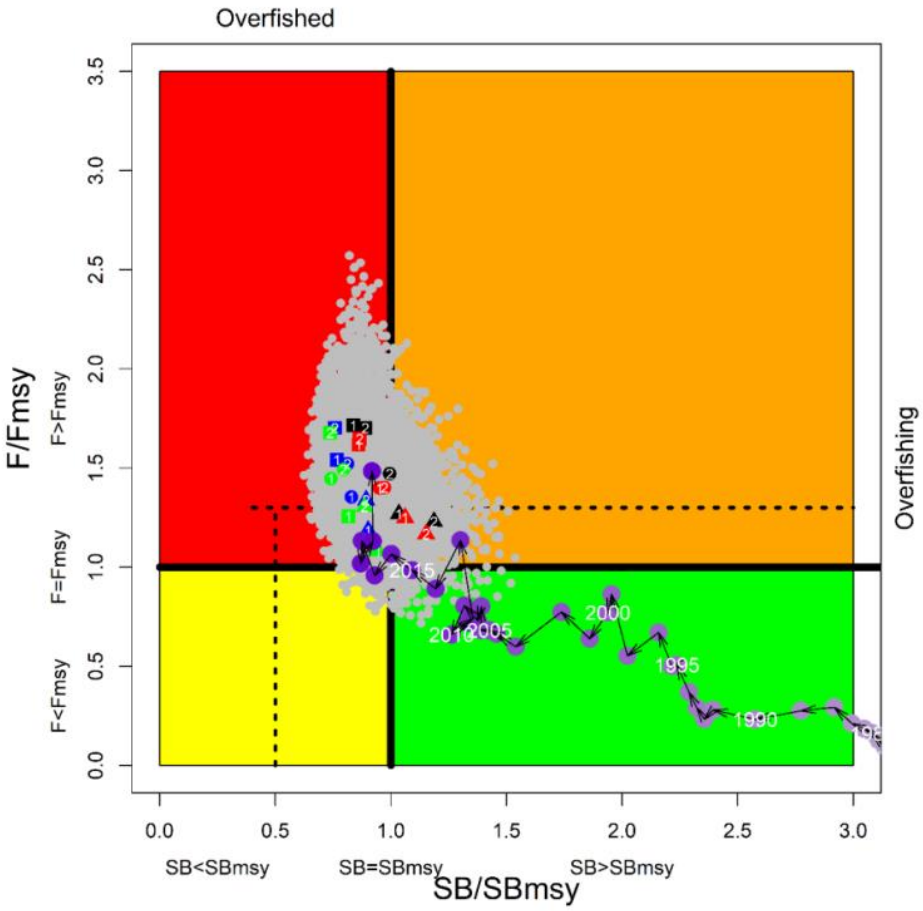
Indian Ocean bigeye tuna, catches (IOTC 2024)

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 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

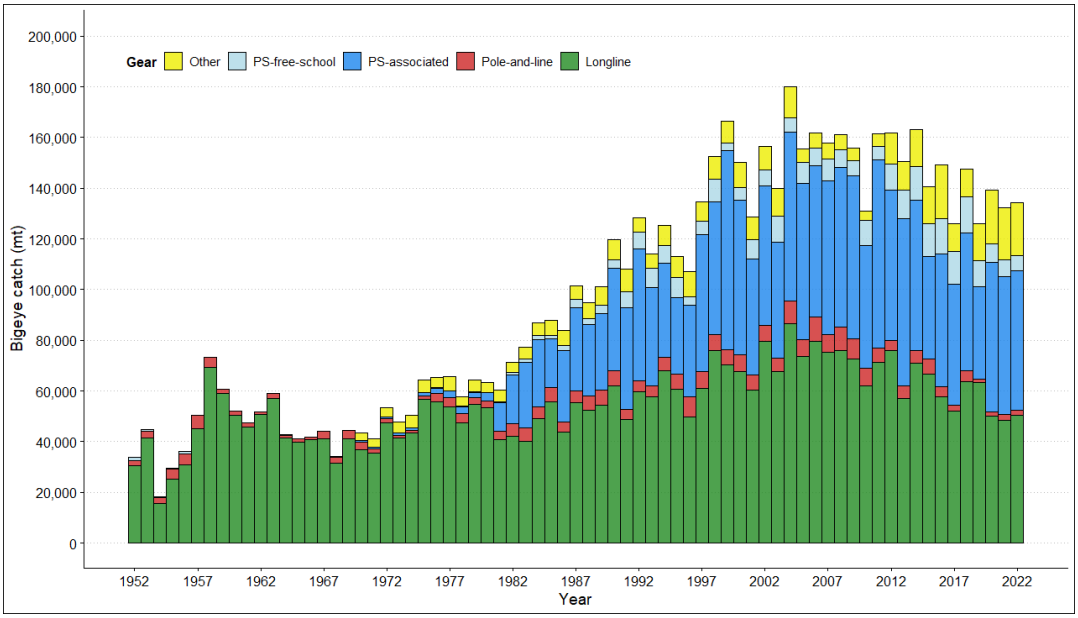
IOTC (2024). Indian Ocean bigeye tuna stock status and advice, executive summary. https://iotc.org/sites/default/files/content/Stock_status/2024/Engish/IOTC-2024-SC27-ES02_BETE.pdf

Species name	***Thunnus obesus* - Bigeye tuna**
Fishing area and stock	**Western and Central Pacific bigeye**
	Category C Stock Status - Minimum Requirements

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.

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.

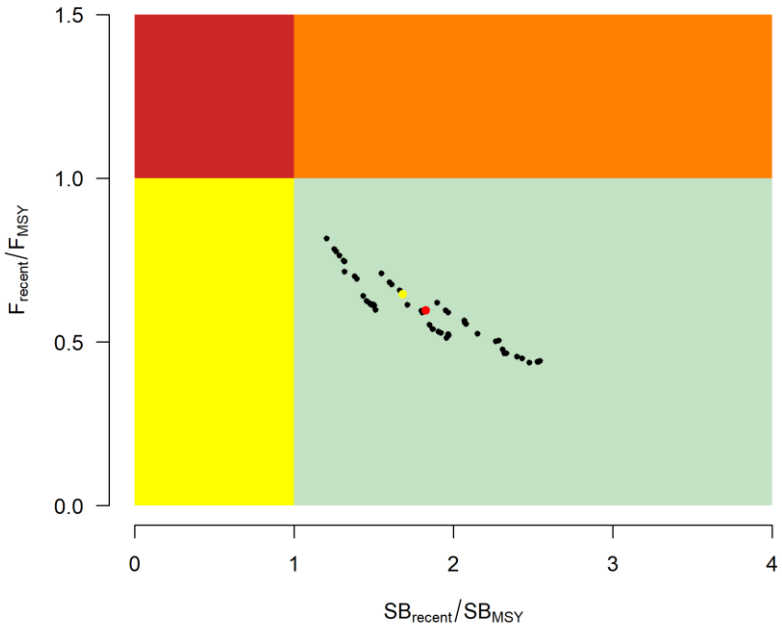


Time series of total annual catch ('000t) by fishing gear for the diagnostic model over the full assessment period. Green = longline; red = pole and line; blue = purse seine (WCPFC 2024)

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 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).



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

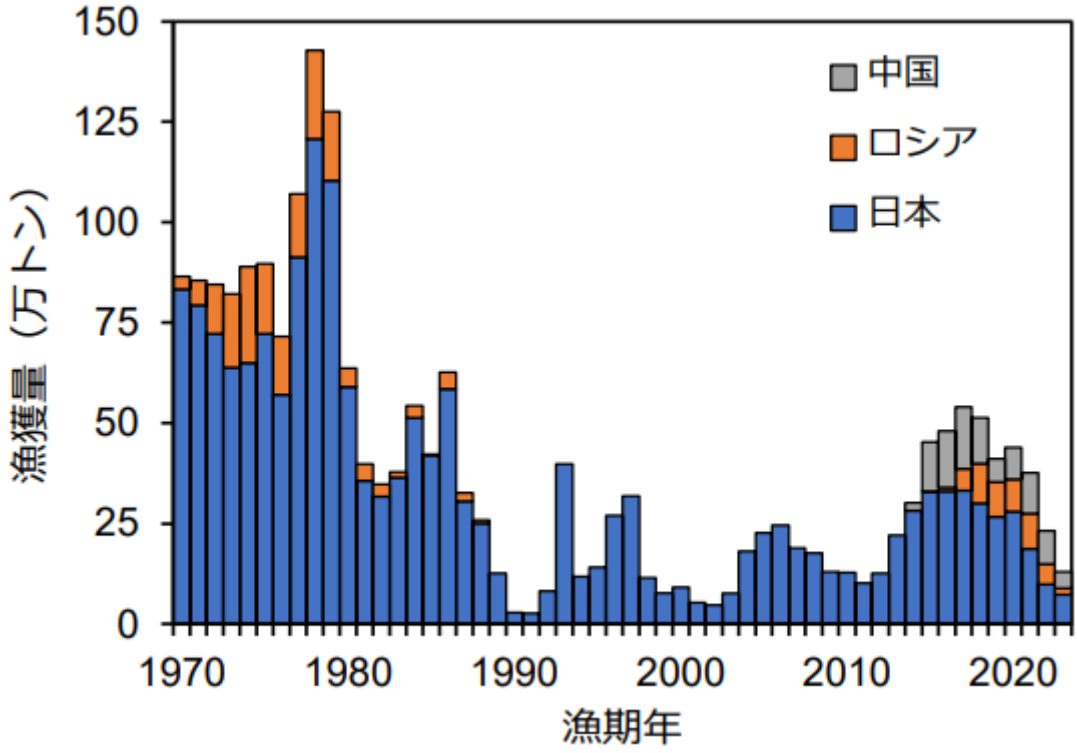
Species name		*Scomber japonicus* – Pacific chub mackerel	
Fishing area and stock		**Chub mackerel in FAO 61**	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR	PASS

		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.

Chub mackerel in the North Pacific is subject to regular stock assessment by the Japanese Fishery Research and Education Agency (FRA). The results of the most recent assessment were published in January 2025. All international catches are included in the assessment; these are primarily taken by Japan, China and Russia (see graph below).

Fishery removals are included in the stock assessment, and C1.1 is met.

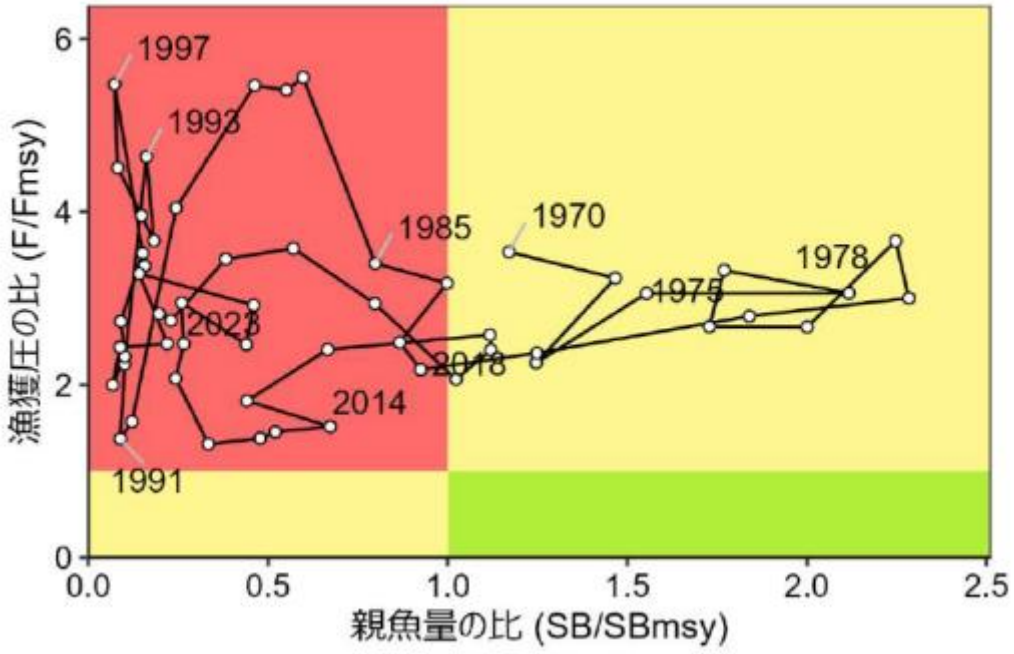


International catches of chub mackerel from the North Pacific stock, 1970 – 2023. Grey is China, Orange Russia, and blue Japan. Y-axis shows catch volume in '0,000t (i.e. 25 on the y-axis indicates 250,000t) (FRA 2025a)

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 concluded that stock biomass has been below the target reference point SB_{msy} since 2019, and is currently around a quarter of SB_{msy}. The stock assessment report recommends a limit reference point for the stock of 10% of the unfished biomass (i.e. $0.1B_0$). This would place the limit reference point at 142,000t, while the current biomass is estimated to be 144,000t. In comparison, the same report recommends that the target reference point SB_{msy} should be set at 626,000t; this is defined as the average predicted biomass when fishing mortality is at F_{msy}, which in turn is set at $SPR_{50\%}$. Implemented together, these recommendations would mean that the LRP was set at 23% of SB_{msy}.

The MarinTrust guidance for this clause states that "In the case where BMSY is analytically determined to be greater than 40%B0 [as is the case here], and there is no analytical determination of the PRI, the default PRI should be ½BMSY". While in the case of this fishery there is an analytically determined limit reference point, it is less than half the level set out as a default by the assessment guidance.



Kobe chart for chub mackerel, Pacific stock (FRA 2025b)

In addition to the regular FRA assessment, in 2024 the first North Pacific Fisheries Commission (NPFC) stock assessment was conducted for Pacific chub mackerel. This assessment did not determine specific reference points or stock status, stating, "the estimated values of SSB0 and SSB_{MSY}…varied greatly depending on which year's biological parameters were used", and also that "the MSY reference points differed greatly among the different model specifications owing to the extreme extrapolation" (NPFC 2024). In their conclusion, the authors write that they "[do] not recommend the use of MSY-based reference points for management advice" (NPFC 2024).

It is challenging to reach a conclusion on the status of this stock with regards to clause C1.2. One stock assessment estimates that stock biomass is slightly above 10% of the unfished level; the other does not provide an indication of stock status relative to reference points but only relative to historical biomass estimates. On balance, given that stock biomass is estimated to be slightly above the only available limit reference point, C1.2 is considered to be met.

References

FRA (2025a). Chub mackerel, Pacific stock. Stock assessment summary, January 2025. https://abchan.fra.go.jp/wpt/wp-content/uploads/2025/01/simple_2024_05.pdf

FRA (2025b). Chub mackerel, Pacific stock. Stock assessment details, January 2025. https://abchan.fra.go.jp/wpt/wp-content/uploads/2025/03/details_2024_05.pdf

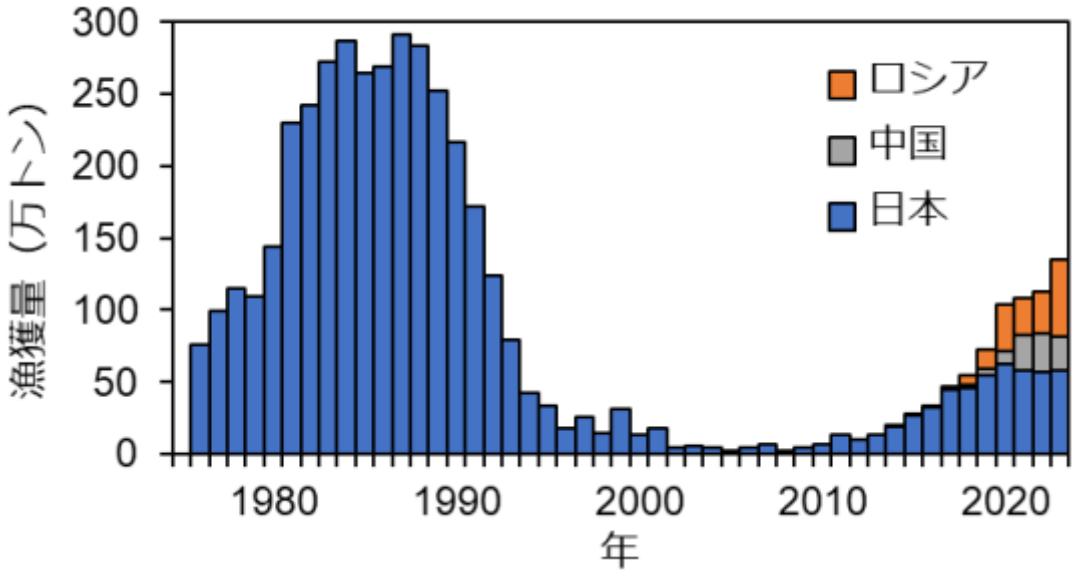
NPFC, 2024. Stock Assessment of Chub Mackerel in the Northwest Pacific Ocean. https://www.npfc.int/stock-assessment-chub-mackerel-northwest-pacific-ocean

Species name		*Sardinops sagax melanostictus* - Japanese pilchard	
Fishing area and stock		**Japanese Pacific Ocean Pilchard**	
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.

Catches of Japanese sardine from the Pacific stock are monitored by Japanese authorities and by the North Pacific Fisheries Commission (NPFC). Landings by Japanese vessels into Japanese ports are recorded at the prefecture level, with international landings data collected by the NPFC. Total international landings are used to inform an annual stock assessment conducted by the Japanese Fisheries Research and Education Agency (FRA).

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



Landings of Pacific Japanese sardine by country. Orange represents Russian catches, grey Chinese, and blue Japanese. The y-axis shows catches in '0,000t (i.e. 50 on the y-axis is 500,000t) (FRA 2024).

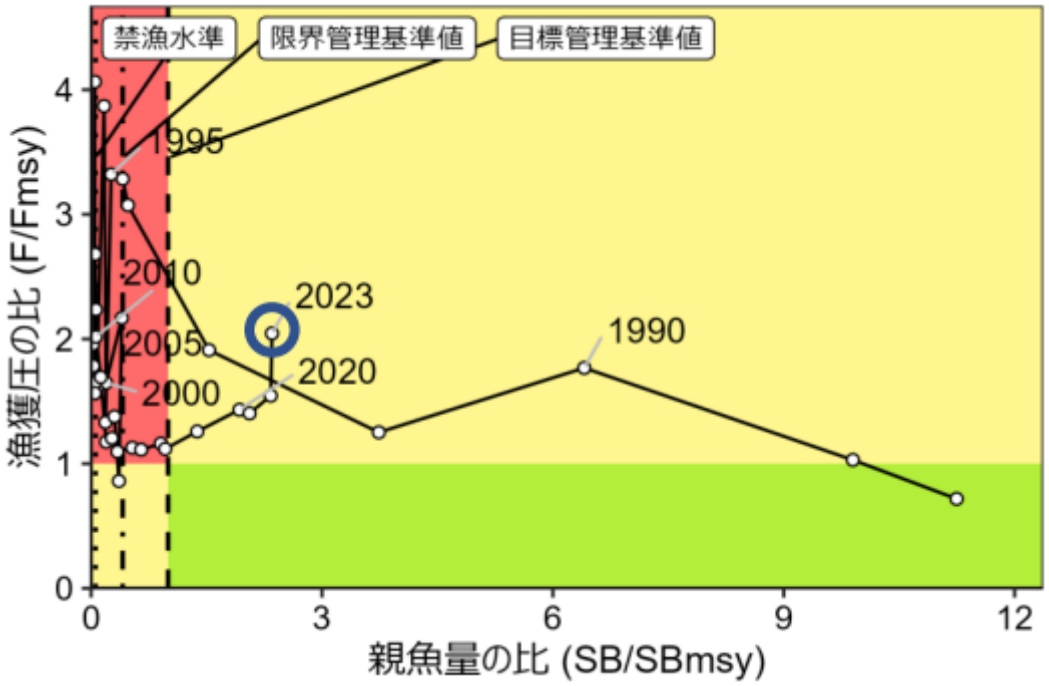
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

The regular FRA stock assessment provides an indication of the current status of the spawning stock relative to three reference points: a recommended target reference point, limit reference point, and no fishing reference point. The 2024 stock assessment recommended these be set as follows (FRA 2024):

- Target reference point SB_{msy}: 1,187,000t
- Limit reference point $0.6SB_{msy}$: 487,000t
- No fishing reference point $0.1SB_{msy}$: 69,000t

The assessment also estimated that spawning biomass in 2023 was 2,791,000t, more than double the target reference point level.

The most recent stock assessment concluded that stock biomass was above the limit reference point level, and C1.2 is met.



Kobe chart for Pacific Japanese sardine, showing the most recent estimate of fishery status for 2023 along with historical estimates for years since 1988 (FRA 2024)

References

FRA (2024). Japanese sardine, Pacific stock. Stock assessment summary August 2024. https://abchan.fra.go.jp/wpt/wp-content/uploads/2024/08/simple_2024_01.pdf

Traceability information

The applicant was able to demonstrate that all KDEs are collected for each of the byproducts for which a traceability assessment was required.

Species name	West Pacific skipjack tuna			
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**
				Choose an item.

Species name	Indian Ocean skipjack tuna			
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**
				Choose an item.

Species name	East Pacific skipjack tuna			
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**
				Choose an item.

Species name	Indian Ocean albacore tuna
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**
				Choose an item.

Species name	South Pacific albacore tuna			
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**
				Choose an item.

Species name	Indian Ocean yellowfin tuna			
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**
				Choose an item.

Species name	West Pacific yellowfin tuna			
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**
				Choose an item.

Countries may be different for Coastal State and Port State.				

Species name	East Pacific yellowfin tuna			
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**
				Choose an item.

Species name	Indian Ocean bigeye tuna			
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**
				Choose an item.

Species name	West Pacific bigeye tuna			
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**
				Choose an item.

Species name	Pacific Chub mackerel in FAO 61

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**
				Choose an item.

Species name	Japanese Pacific Ocean pilchard			
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**
				Choose an item.

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.

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