By-Product assessment report

BP071

Chotiwat Manufacturing Public Co. Ltd

Document TEM-003 (prev. FISH-1) - Version 3.1

Issued April 2025 – Effective April 2025

Report code	BP071	Date of issue	March 2025

1. Application details		
Applicant	Chotiwat Manufacturing Public Co. Ltd	
Applicant country	Thailand	
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	José Peiró Crespo	
Internal peer review evaluation	Agree with evaluation	
Comments on the assessment	This assessment covers ten byproduct species/source location combinations. All ten byproducts are fished by at least one High Risk flag state, and therefore all were subjected to the Step 3 assessment. The applicant provided detailed additional information, meeting the KDE requirements for all ten byproducts. All ten byproducts also passed the Category C assessment, meaning that all ten were downgraded to Medium Risk, and subsequently Approved, source with caution.	
3. Approval validity	Valid from 03/2025	Valid until 03/2026

4. Scope Extension Assessment	
Name of Certification Body (CB)	LRQA
Contact information for CB	mt-ca@lrqa.com
Assessor name	Sam Peacock
CB internal peer reviewer name	Blanca Gonzalez
Internal peer review evaluation	Agree with evaluation

Comments on the assessment	This assessment was originally completed in March 2025. In July 2025, flag states were added to several byproducts via scope extension. The flag states added via scope extension were as follows: • USA was added to bigeye tuna from FAO areas 71 & 77 • USA was added to skipjack tuna from FAO area 77 • Indonesia and Philippines were added to skipjack tuna from FAO areas 61 & 71 • USA was added to yellowfin tuna from FAO areas 61, 71, 77 & 87 None of these additions lead to any changes in the assessment outcomes.
Approval validity	Valid from 08/2025 – Valid Until 03/26

1. By-product assessment outcomes		**Valid from March 25**
By-product species name *Common and Latin names*	**Flag country(ies)**	**MarinTrust approval status**
Thunnus alalunga - Albacore tuna	China	Approved source with caution
Thunnus alalunga - Albacore tuna	Taiwan	Approved source with caution
Thunnus alalunga - Albacore tuna	Taiwan	Approved source with caution
Thunnus alalunga - Albacore tuna	China, Taiwan	Approved source with caution
Thunnus obesus - Bigeye tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Micronesia, Nauru, South Korea	Approved source with caution

Katsuwonus pelamis - Skipjack tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, South Korea, Taiwan, Tuvalu, Vanuatu	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Maldives	Approved source with caution
Thunnus albacares - Yellowfin tuna	Micronesia, Nauru	Approved source with caution
Thunnus albacares - Yellowfin tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Approved source with caution

2. Scope Extension Assessment		**Valid from August 25**
By-product species name *Common and Latin names*	**Flag country(ies)**	**MarinTrust approval status**
Thunnus obesus - Bigeye tuna	USA	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	USA	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Indonesia, Philippines	Approved source with caution
Thunnus albacares - Yellowfin tuna	USA	Approved source with caution

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

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

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

Approved by-products

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

Additional checks of Approved Source with Caution by-products

- Review supplier records or procedures in place.

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

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

Guidance for the applicant/certificate holder

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

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

Appendix 1 – assessment outcomes

By-product species name *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*	**Step 3 risk Outcome** *Not applicable /Risk downgraded to Medium risk/ Remains High risk*
Thunnus alalunga - Albacore tuna	China	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Thunnus alalunga - Albacore tuna	Taiwan	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Thunnus alalunga - Albacore tuna	Taiwan	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Thunnus alalunga - Albacore tuna	China, Taiwan	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk

Thunnus obesus - Bigeye tuna	Japan, Kiribati, Micronesia, Nauru, Papua New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu, USA	Vulnerable	Not listed	High risk	Yes	Risk downgraded to Medium risk
Katsuwonus pelamis - Skipjack tuna	Micronesia, Nauru, South Korea, USA	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Katsuwonus pelamis - Skipjack tuna	Indonesia, Japan, Kiribati, Micronesia, Nauru, Papua New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Katsuwonus pelamis - Skipjack tuna	Maldives	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Thunnus albacares - Yellowfin tuna	Micronesia, Nauru	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk

Thunnus albacares - Yellowfin tuna	Japan, Kiribati, Micronesia, Nauru, Papua New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu, USA	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk

Appendix 2 – detailed assessment outcomes

(step 2 and step 3 if applicable)

Step 2 outcomes

Assessor note: Copy and paste from Spreadsheet.

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
China	High	4.21	4.33	3.2	1	1	5	1	36.79%
Taiwan	High	4.17	3.06	2.27	1	1	5	1	90.57%
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%
Micronesia (FS of)	High	1.92	2.94	1.93	1	1	5	1	31.13%
Nauru	Medium	2.04	1	1.64	1	1		1	53.30%
Papua New Guinea	High	2.04	2.94	2.07	1	1	5	1	26.42%

Philippines	Medium	2.04	2.06	2.53	1	1	1	1	53.77%
Korea (Rep. South)	Medium	3.67	3.11	1.97	1	1	1	1	83.96%
Tuvalu	High	1.67	2.67	1.81	1	1	5	1	47.64%
Vanuatu	High	2.88	1.56	2.17	2	1	1	1	48.58%
Maldives	High	2.25	1.67	2.13	1	1	1	1	26.89%
Indonesia	Medium	3.33	2.56	2.47	1	1	1	1	59.43%
USA	Medium	2.29	3	2.37	1	1	1	1	91.04%

Step 3 outcomes

Additional information was requested from the applicant. This information revealed the following catch/landing combinations:

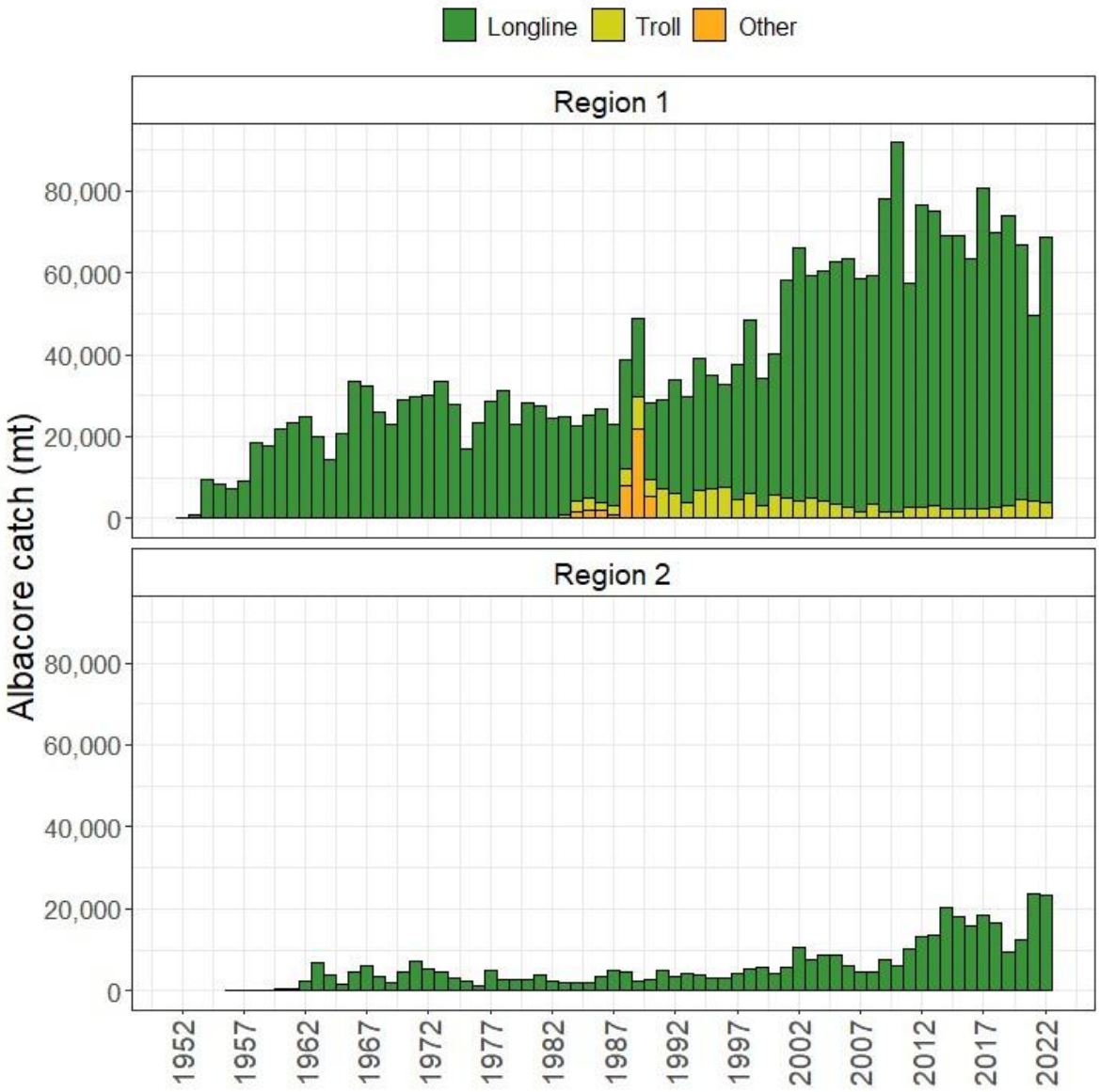
By-product species name *Common and Latin names*	**Flag country(ies)**	**Location of catch**	**Location of landing**
Thunnus alalunga - Albacore tuna	China	FAO 77, 81, 87	China
Thunnus alalunga - Albacore tuna	Taiwan	FAO 41,47	Uruguay
Thunnus alalunga - Albacore tuna	Taiwan	FAO 21, 27, 31, 34	Trinidad and Tobago
Thunnus alalunga - Albacore tuna	China, Taiwan	FAO 61,71	Solomon Islands
Thunnus obesus - Bigeye tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	FAO 71, 77	Micronesia, Marshall Islands
Katsuwonus pelamis - Skipjack tuna	Micronesia, Nauru, South Korea	FAO 77	Kiribati
Katsuwonus pelamis - Skipjack tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, South Korea, Taiwan, Tuvalu, Vanuatu	FAO 61, 71	Micronesia, Marshall Islands
Katsuwonus pelamis - Skipjack tuna	Maldives	FAO 51,57	Maldives
Thunnus albacares - Yellowfin tuna	Micronesia, Nauru	FAO 77, 87	Micronesia
Thunnus albacares - Yellowfin tuna	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	FAO 61, 71	Micronesia, Marshall Islands

Category C assessment

Species name		**Albacore tuna**	
Fishing area and stock		**FAO Areas 77, 81, 87, Southern 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. Fishery removals are incorporated into the stock assessment, and C1.1 is met.

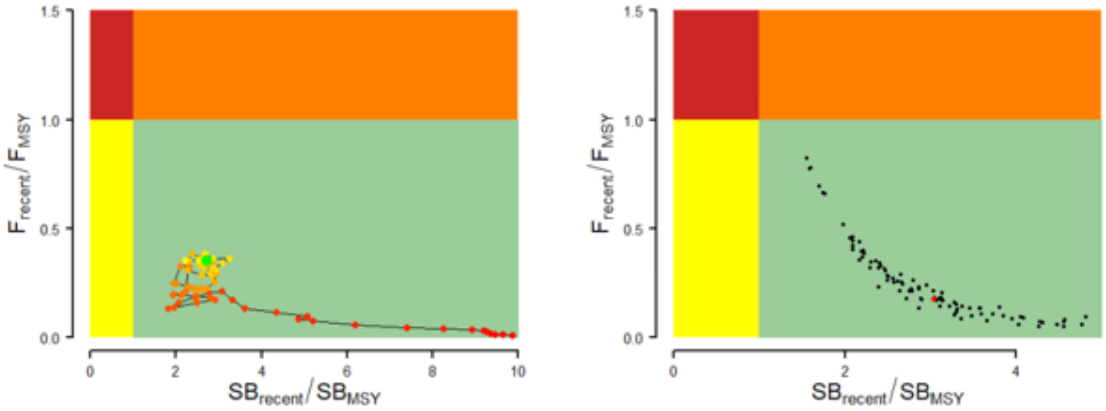


Historical catches of South Pacific albacore in each model region (WCPFC-CA = region 1, EPO = region 2) from 1952-2022 by gear type (WCPFC 2025)

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, and therefore C1.2 is met.



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).

References

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

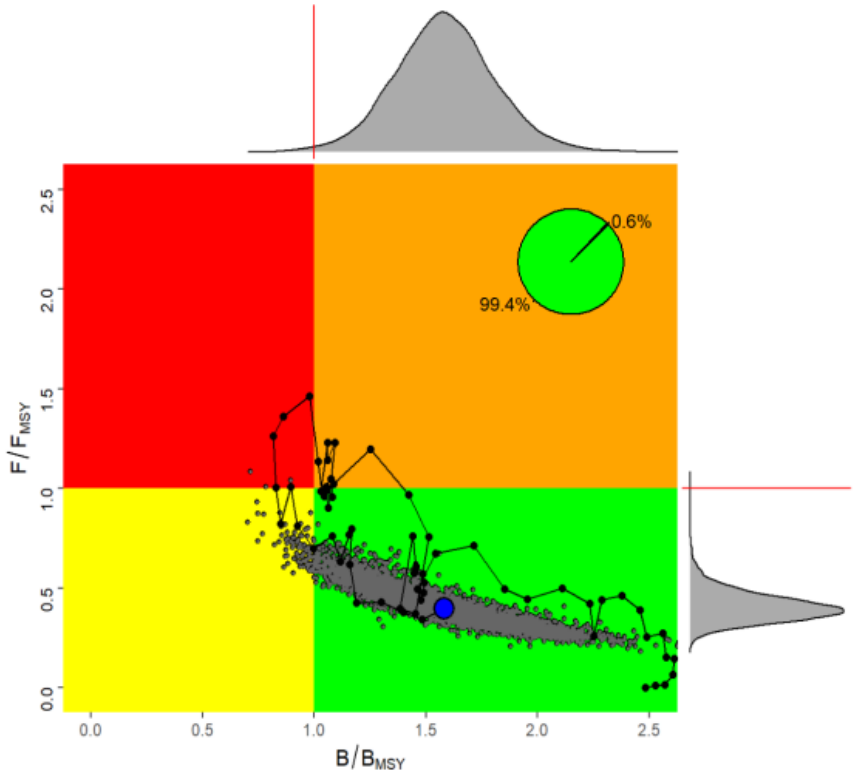
Species name		**Albacore tuna**	
Fishing area and stock		**FAO Areas 41, 47, South Atlantic Albacore**	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific 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 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 was conducted in 2020 (ICCAT 2025). The stock assessment utilised catch and effort data up to 2018, and no concerns were raised relating to the completeness of the data. Fishery removals are included in the stock assessment process, and C1.1 is met.

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

The most recent stock assessment, 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 and C1.2 is met.



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).

References

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

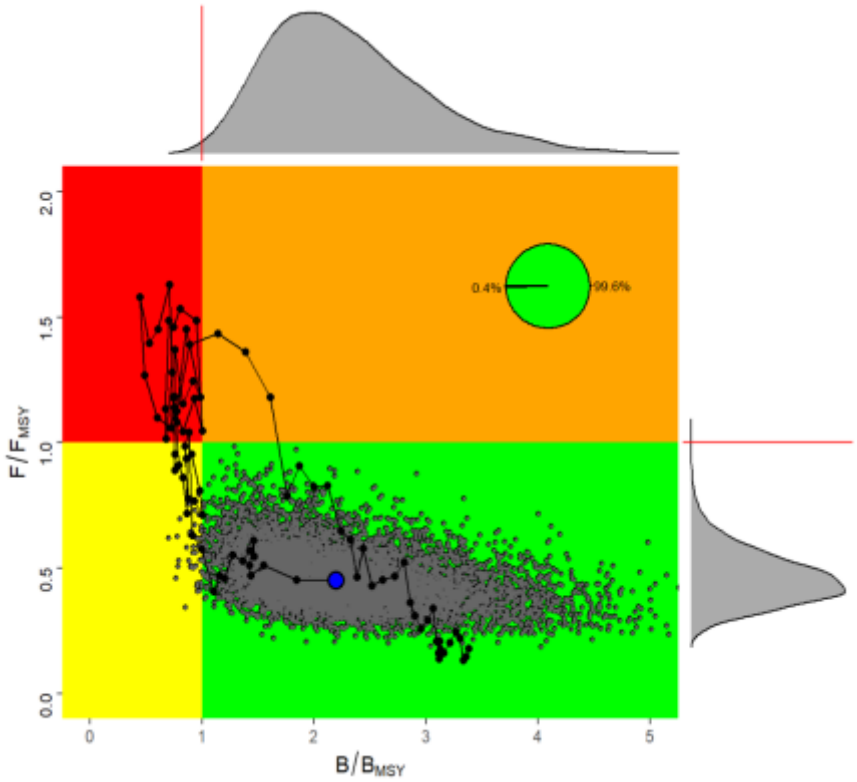
Species name		Albacore tuna	
Fishing area and stock		FAO Areas 21, 27, 31, 34, North Atlantic albacore	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific 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 was conducted in 2023 using data up to 2021 (ICCAT 2025). The stock assessment utilised catch and effort data, and no concerns were raised relating to the completeness of the data. Fishery removals are included in the stock assessment process, and C1.1 is met.

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

The most recent stock assessment, 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 and C1.2 is met.



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%).

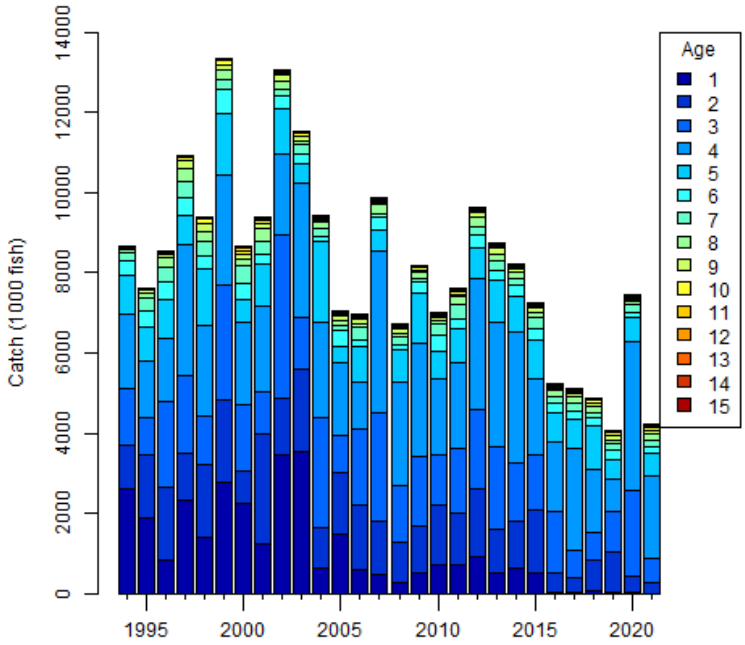
References

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

Species name		**Albacore tuna**	
Fishing area and stock		**FAO Areas 61, 71, Northern 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.

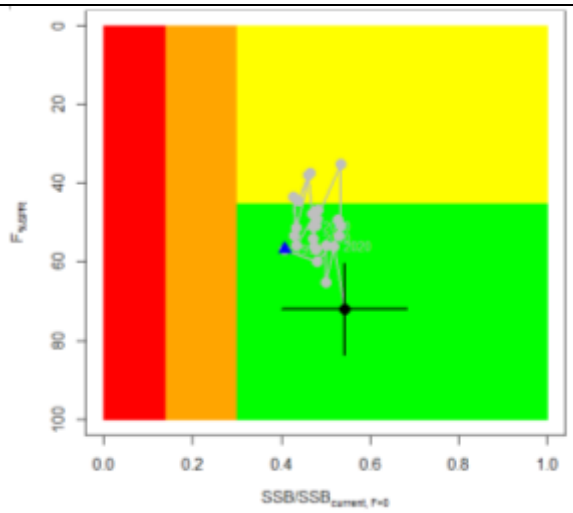
The most recent available stock assessment for the northern Pacific albacore stock was conducted in 2023 and utilised all available data up to 2021. Catch and size composition data were used to inform a length-based, age- and sex-structured Stock Synthesis model. No concerns were raised in the reporting documentation as to the completeness of the catch data (WCPFC 2024). Fishery removals are considered and C1.1 is met.



Historical catch-at-age of North Pacific Albacore estimated by the base case stock assessment model (WCPFC 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.

A limit reference point is established for the northern Pacific albacore stock, and is based on dynamic biomass estimates and therefore fluctuates according to changes in recruitment. The limit reference point 14%$SSB_{current, F=0}$ is calculated as 14% of the unfished dynamic female spawning biomass in the terminal year of the assessment (WCPFC 2024). SSB in the most recent stock assessment, conducted in 2023 and providing an indication of stock status in 2021, was estimated to be 54% of $SSB_{current, F=0}$, considerably above the limit reference point. The conclusion reached at the time of the stock assessment was that the stock is likely not overfished relative to the limit reference point, and therefore C1.2 is met.



Stock status phase plot showing the status of the north Pacific albacore (*Thunnus alalunga*) stock relative to the biomass-based threshold and limit reference points, and fishing intensity-based target reference point (F45%SPR) over the modelling period (1994 – 2021). (WCPFC 2024).

References

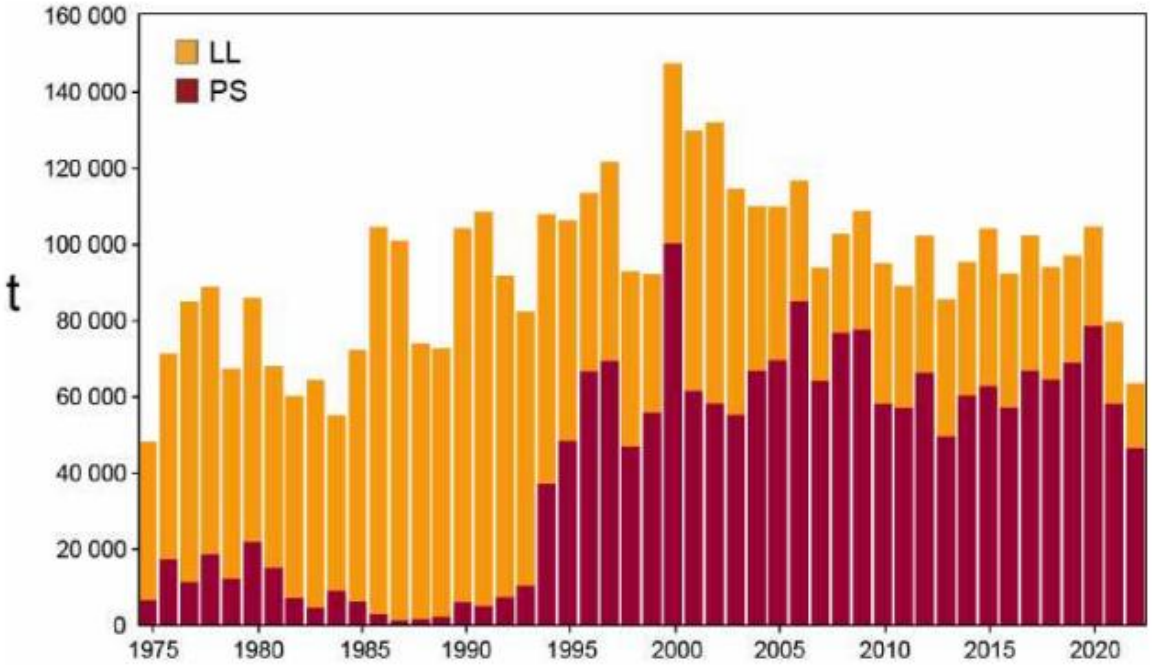
WCPFC (2024). North Pacific albacore tuna, stock assessment summary. https://www.wcpfc.int/doc/05/north-pacific-albacore-tuna

Species name		**Bigeye tuna**	
Fishing area and stock		**FAO Areas 71, 77, Eastern Pacific 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 EPO is subject to regular stock assessment by the Inter-American Tropical Tuna Commission (IATTC). The most recent full stock assessment was conducted in 2024. The assessment utilised all international catch data. 44 models were applied to take into account the main sources of uncertainty, and the results are presented alongside the likely confidence intervals. In 2023, risk-based Stock Status Indicators (SSIs) were introduced. SSIs are considered to be important alternatives to formal stock assessments, particularly where those stock assessments may be too

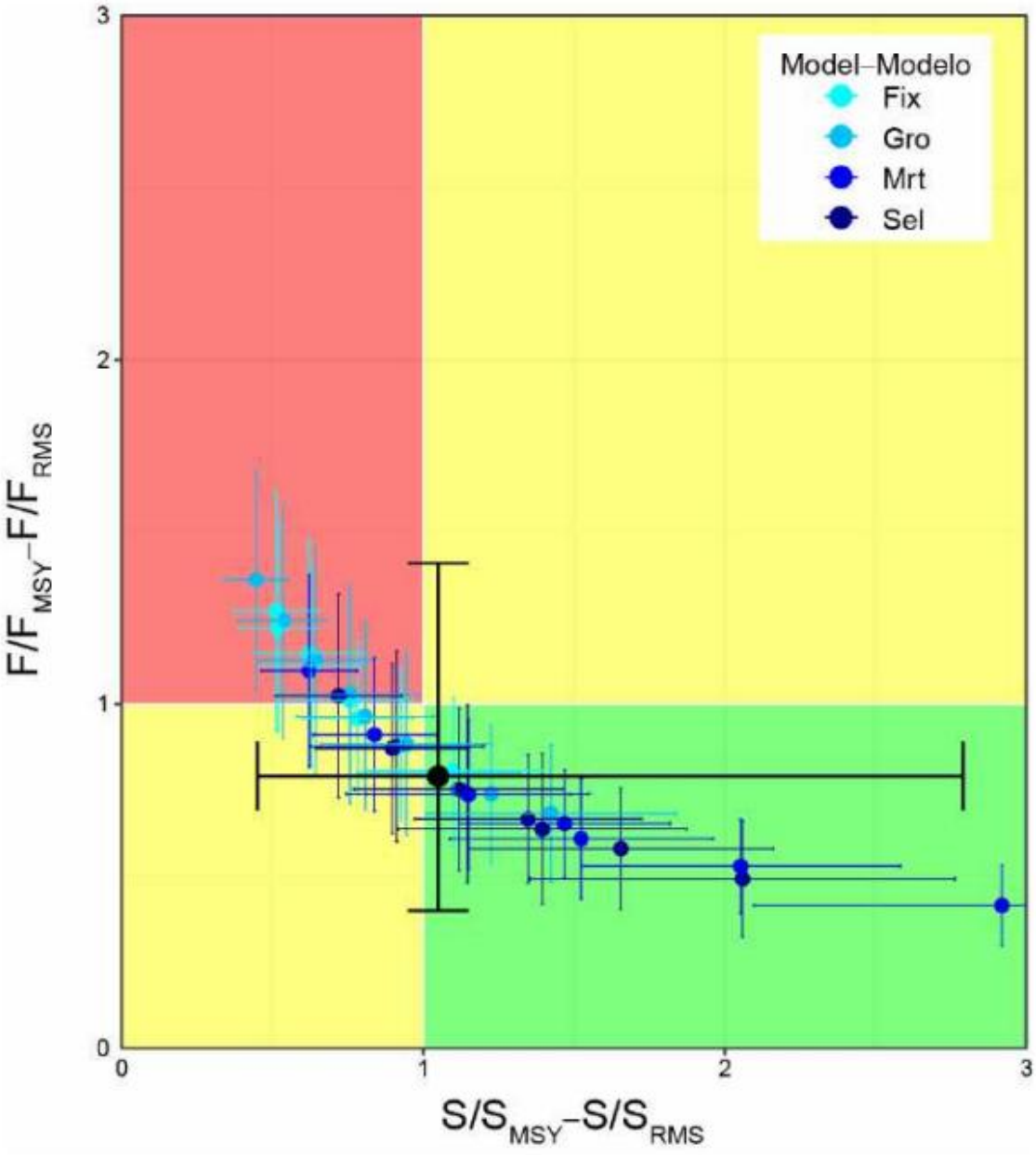
unreliable to form the basis for management advice (IATTC 2022). In the case of bigeye, they are incorporated into the annual stock status review (IATTC 2024). All available catch data are incorporated into the assessment, and C1.1 is met.



Total EPO bigeye catch by purse seine gears (PS), and retained catches by longline gears (LL), 1975 – 2022. (IATTC 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 2020 stock assessment produced statistical probabilities for the status of the stock relative to target and limit reference points. The key conclusion for the purposes of this byproduct assessment is that there is a "0.2% probability that the spawning biomass at the beginning of 2024 is below the limit reference point ($SLimit$)" (IATTC 2024). Therefore, there was a very low probability of the biomass being below the limit reference point, and C1.2 is met.



Kobe plot of the most recent estimates of spawning biomass (S) and fishing mortality (F) relative to their MSY reference points (SMSY_d and FMSY) from the thirty-three reference models. Each dot is based on the average F over the most recent three years, 2021-2023, and the error bars represent the 95% confidence interval of model estimates. The black dot and error bars represent the medium and 95% confidence interval of combined values, respectively. (IATTC 2024)

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.

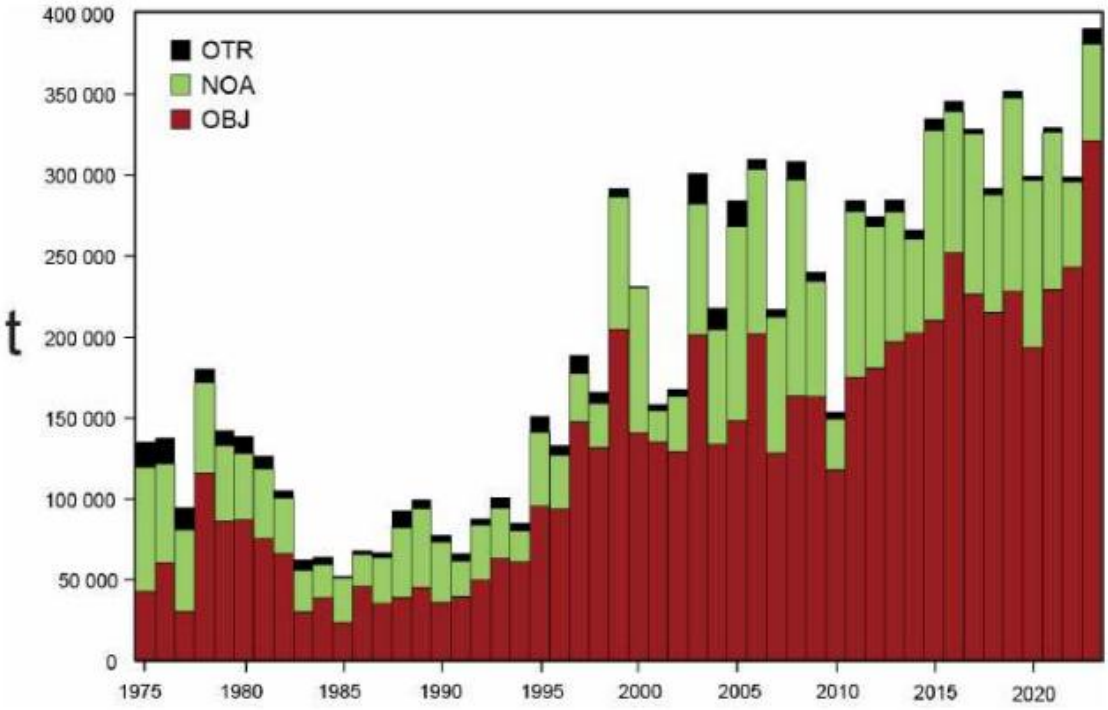
https://www.iattc.org/GetAttachment/22511b5b-ba2b-4126-9ba2-0bffee89f4d5/SAC-13-06%20-%20Stock%20status%20indicators%20(SSIs)%20for%20tropical%20tunas%20in%20the%20EPO

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		**Skipjack tuna**	
Fishing area and stock		**FAO Area 77, Eastern 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.

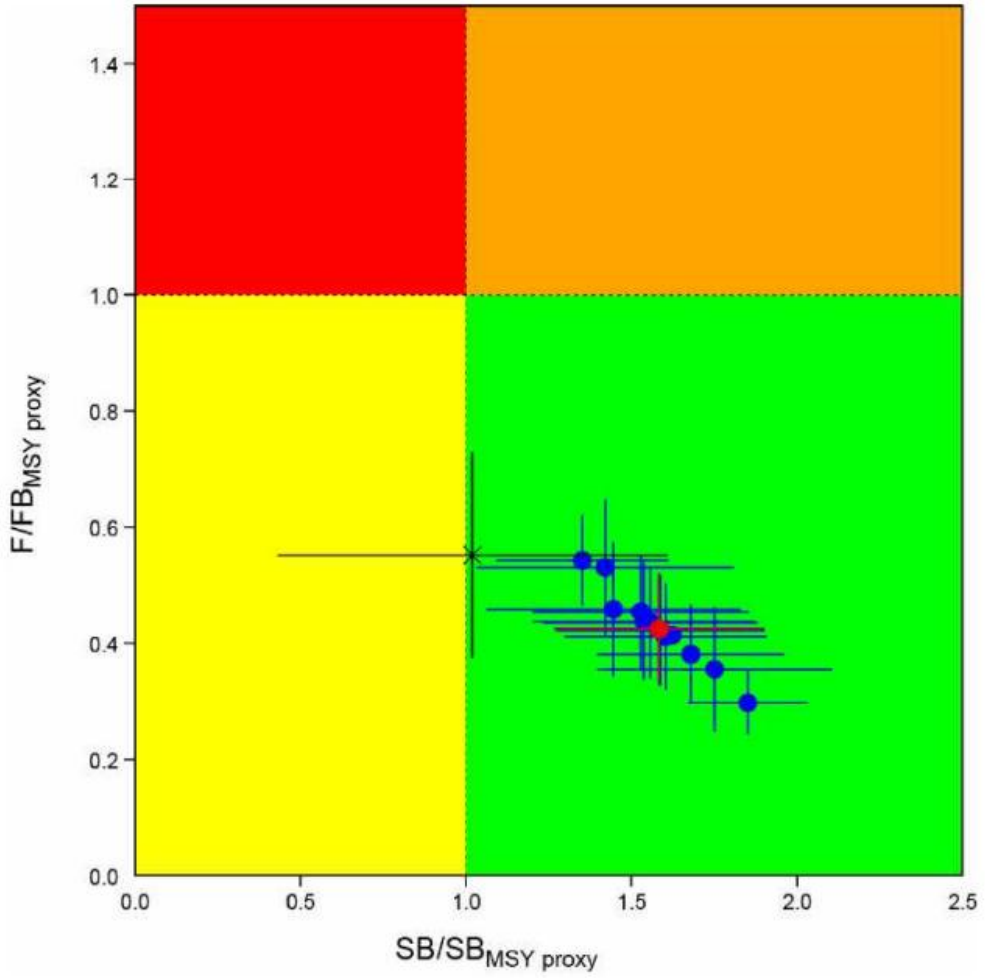
EPO skipjack has historically been subject to “interim” integrated statistical age-structured catch-at-length stock assessments carried out by the IATTC. In 2023, a benchmark stock assessment was conducted using an integrated statistical age-structured catch-at-length model in Stock Synthesis, which 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. C1.1 is met.



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

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. C1.2 is met.



Kobe plot for skipjack tuna in the EPO (IATTC 2024).

References

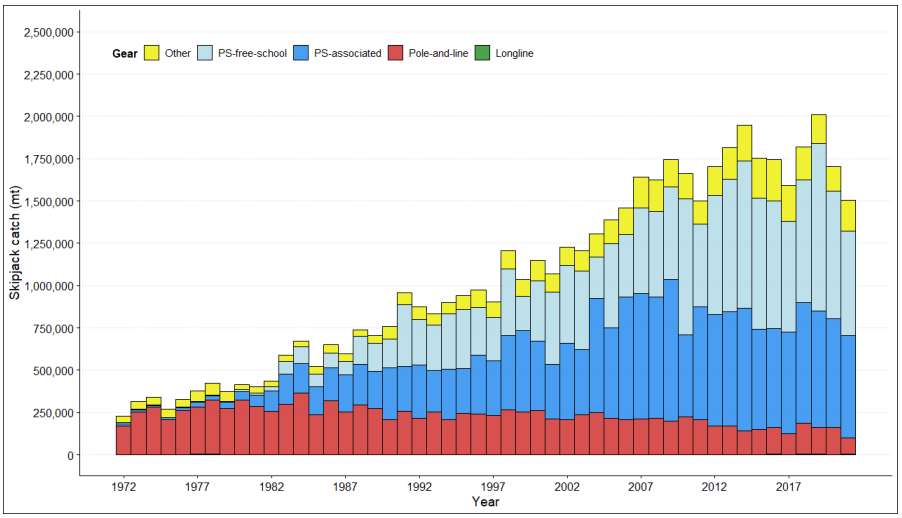
IATTC (2024). The tuna fishery in the Eastern Pacific Ocean in 2023. https://www.iattc.org/GetAttachment/1ed36788-07ce-4bf4-80e4-10c6c3b2b14d/No-22-2024_Tunas,-stocks-and-ecosystem-in-the-eastern-Pacific-Ocean-in-2023.pdf

Species name		**Skipjack tuna**	
Fishing area and stock		**FAO 61, 71, Western and Central Pacific skipjack tuna**	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS

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

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

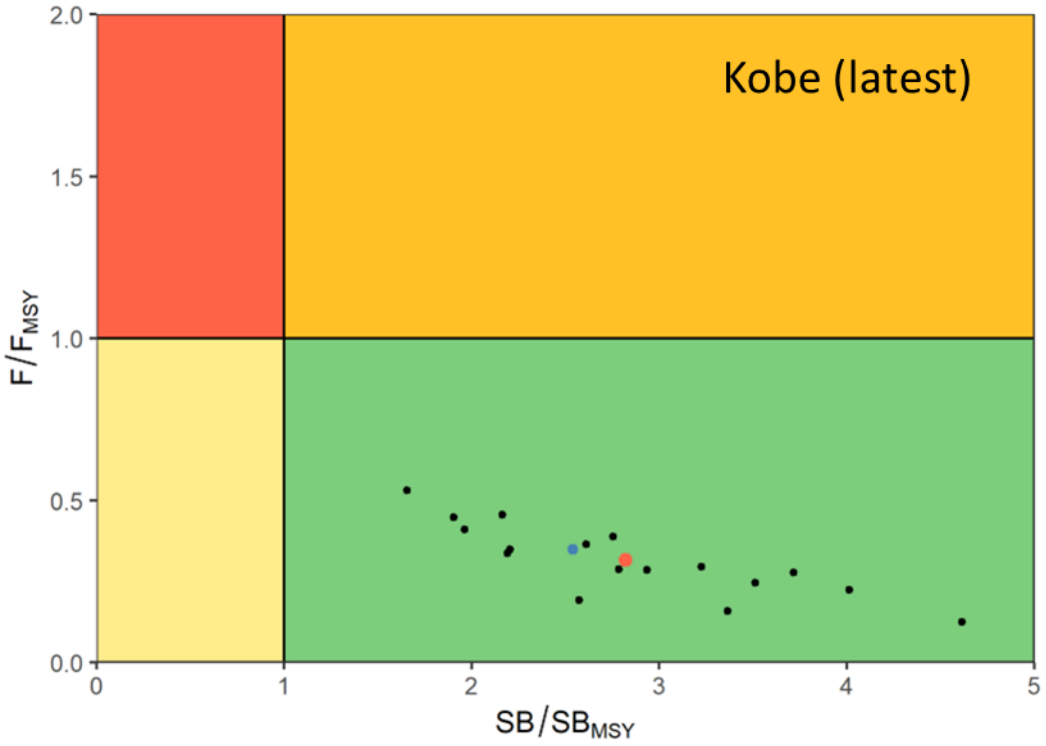
WCPO skipjack tuna is subjected to regular stock assessments by the WCPFC. The most recent of these was carried out in 2022, using data up to 2021. The assessment incorporated catch, effort- and length-frequency estimates, and tag-recapture data (WCPFC 2022). The stock assessment report includes a discussion of structural uncertainties and needs for further data gathering; however, it does not raise major concerns. C1.1 is met.



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

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 $SB_{recent}/SB_{F=0} = 0.5$. C1.2 is met.



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).

References

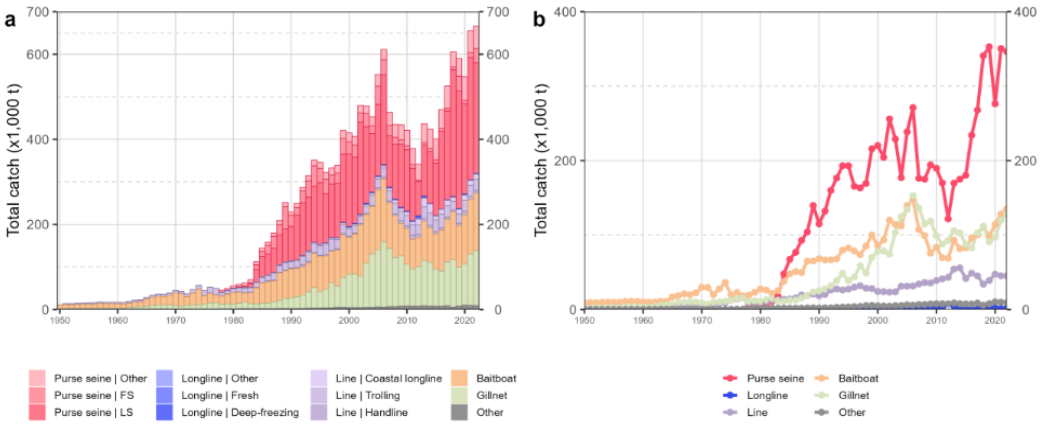
WCPFC (2022). WCPO skipjack tuna stock assessment, 2022. https://meetings.wcpfc.int/node/16242

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

Species name		**Skipjack tuna**	
Fishing area and stock		**FAO Areas 51, 57, 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 2024).

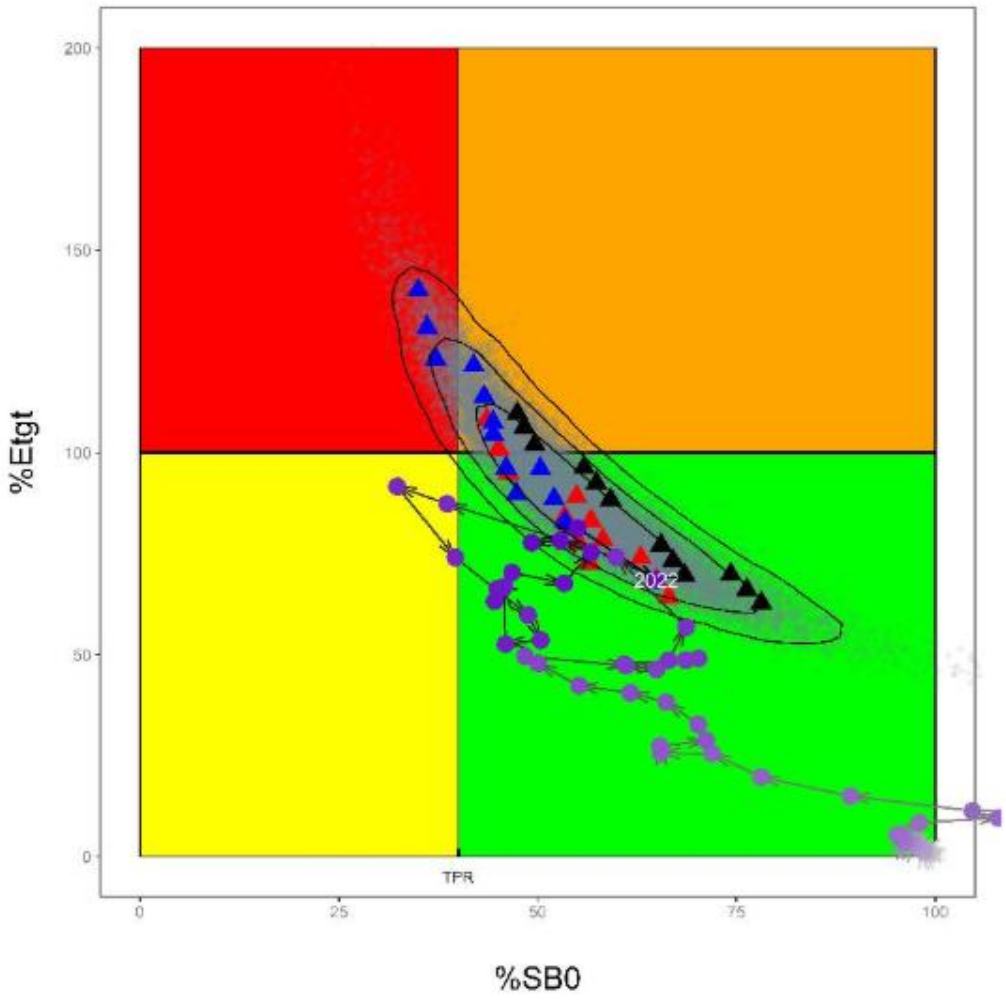


Annual time series of (a) cumulative nominal catches (metric tonnes; t) by fishery and (b) individual nominal catches (metric tonnes; t) by fishery group for Indian Ocean skipjack tuna during 1950-2022 (IOTC 2024)

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 2024 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)

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

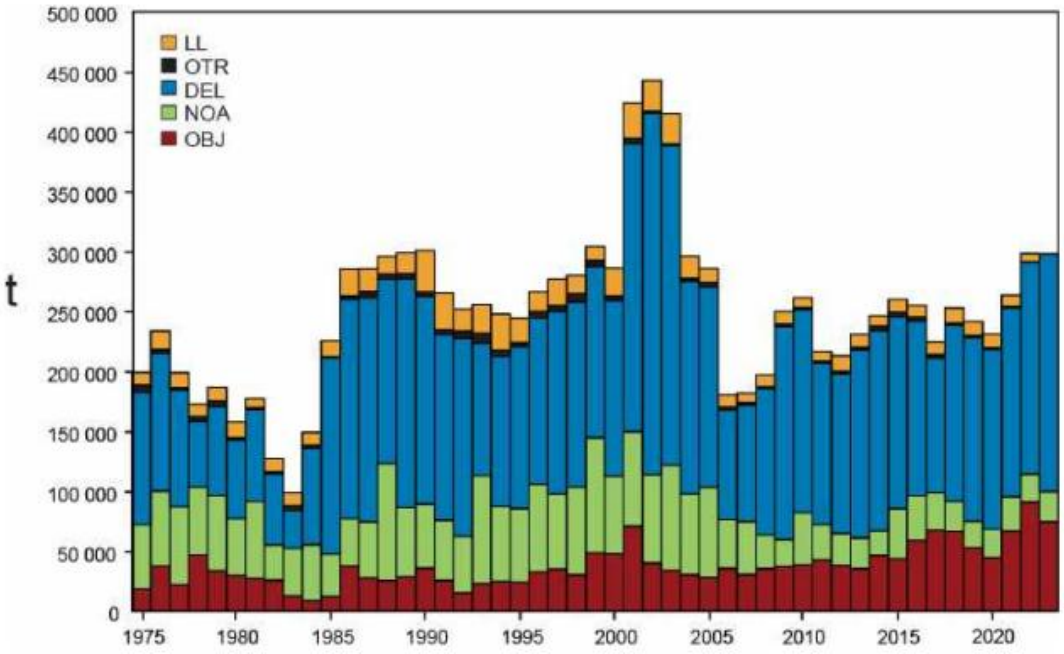
IOTC (2025). Available datasets. https://www.iotc.org/data/datasets

Species name	Yellowfin tuna

Fishing area and stock		FAO Areas 77, 87, Eastern 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.

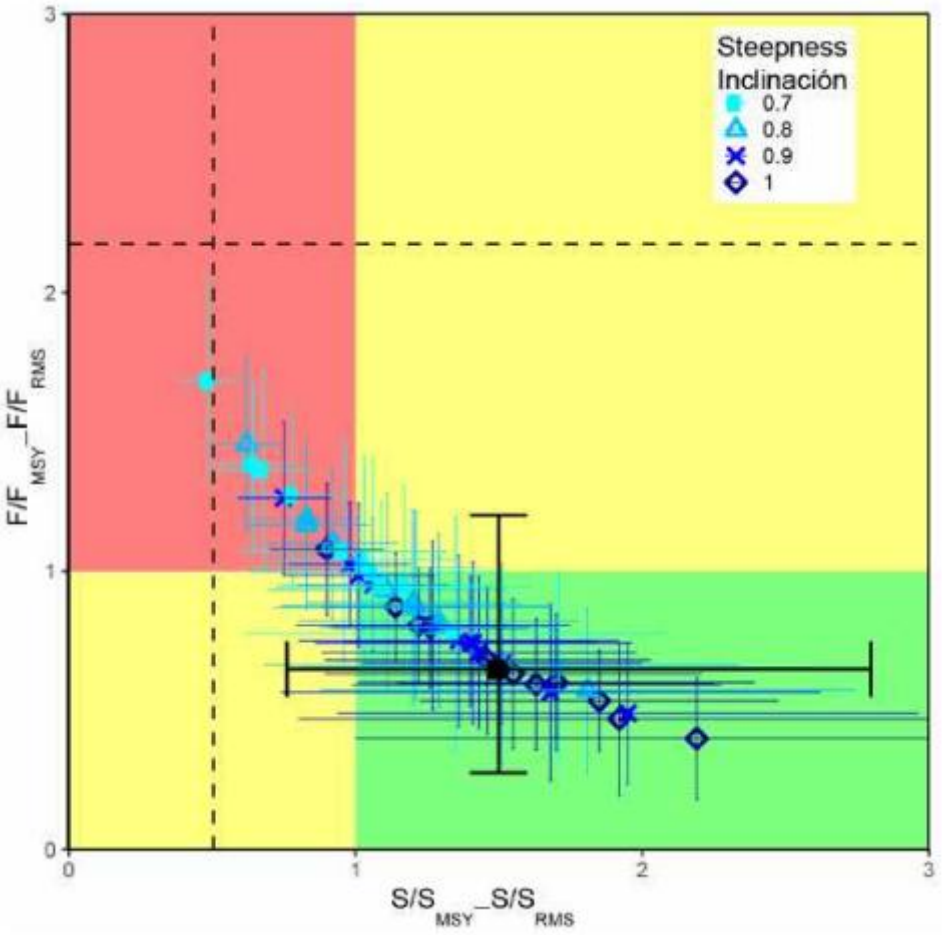
The Eastern Pacific Ocean (EPO) yellowfin tuna stock is managed and assessed by the Inter-American Tropical Tunas Commission (IATTC). A new risk-based approach was introduced to the management of the stock in 2022, with Stock Status Indicators (SSIs) developed using catch and other data collected from 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. C1.1 is met.



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

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. C1.2 is met.



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).

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.

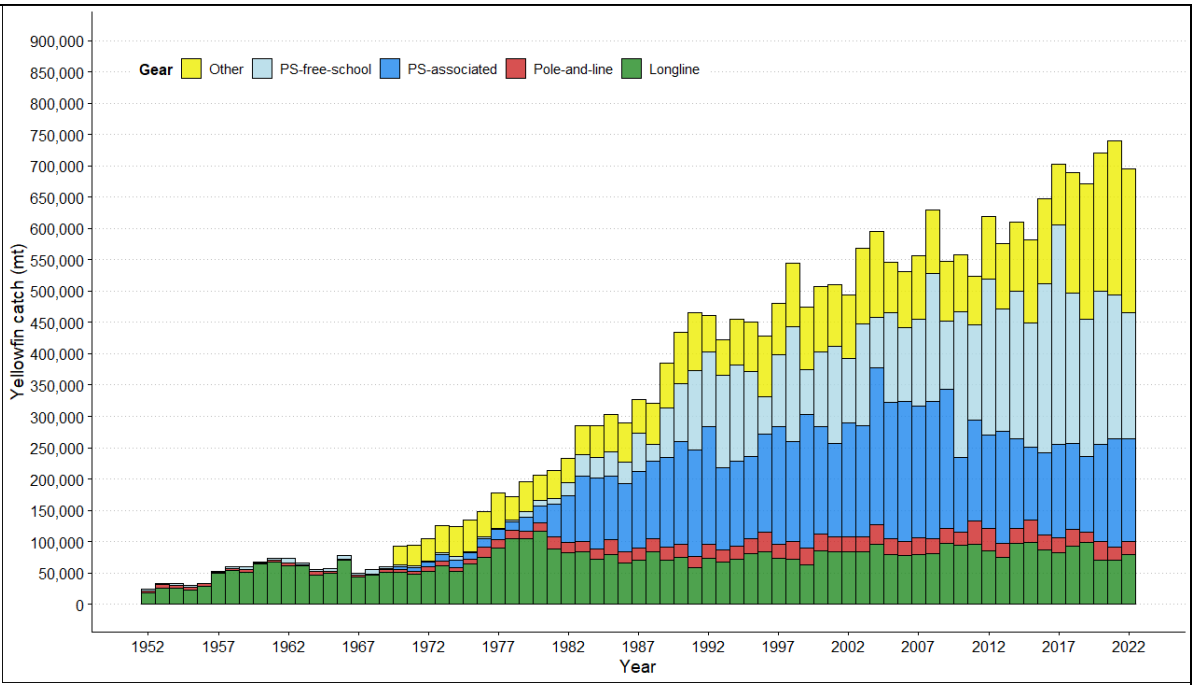
https://www.iattc.org/GetAttachment/22511b5b-ba2b-4126-9ba2-0bffee89f4d5/SAC-13-06%20-%20Stock%20status%20indicators%20(SSIs)%20for%20tropical%20tunas%20in%20the%20EPO

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		**Yellowfin tuna**	
Fishing area and stock		**FAO 61, 71, 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.

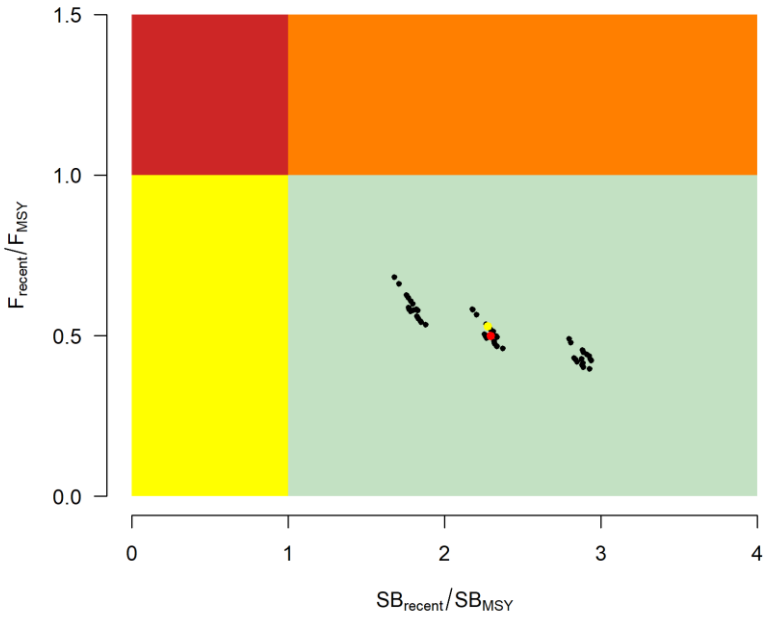
Western and Central Pacific Ocean (WCPO) yellowfin tuna is subject to regular stock assessments by the Western and Central Pacific Fisheries Commission (WCPFC). The most recent stock assessment was conducted in 2023 and utilised all available catch data, as summarised in the graph below. 54 models were used to provide a range of potential outcomes based on different key variables, a process which reduces the inherent level of uncertainty. C1.1 is met.



WCPO yellowfin catches, 1952-2022 (WCPFC 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 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 2024). C1.2 is met.



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 2024).

References

WCPFC (2024). WCPO Yellowfin Tuna, Stock Status and Management Advice. https://www.wcpfc.int/file/1008665/download?token=wFUhc7q7

Traceability information

Information provided for Step 3 Path 1 or Path 2

Species name	Albacore, FAO 77, 81, 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**
				Choose an item.
				Choose an item.

Species name	Albacore, FAO 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**
	Taiwan	Multiple coastal states, highest risk level Medium	Medium (Uruguay)	Downgraded to medium risk
				Choose an item.

Species name	Albacore, FAO 21, 27, 31, 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**
	Taiwan	Multiple coastal states, highest risk level Medium	Low (Trinidad and Tobago)	Downgraded to medium risk
				Choose an item.

Species name	Albacore, FAO 61, 71			
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, Taiwan	Multiple coastal states, highest risk level Medium	Medium (Solomon Islands)	Downgraded to medium risk
				Choose an item.

Species name	Bigeye, FAO 71, 77			
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**
	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Multiple coastal states, highest risk level Medium	Medium (Micronesia, Marshall Islands)	Downgraded to medium risk
				Choose an item.

Species name	Skipjack, FAO 77			
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**

Countries may be different for Coastal State and Port State.	**Micronesia, Nauru, South Korea**	Multiple coastal states, highest risk level Medium	Medium (Kiribati)	Downgraded to medium risk
				Choose an item.

Species name	Skipjack, FAO 61, 71			
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**
	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Multiple coastal states, highest risk level Medium	Medium (Micronesia, Marshall Islands)	Downgraded to medium risk
				Choose an item.

Species name	Skipjack, 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**
				Choose an item.
				Choose an item.

Species name	Yellowfin, FAO 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
	Micronesia, Nauru	Multiple coastal states, highest risk level Medium	Medium (Micronesia)	Downgraded to medium risk
				Choose an item.

Species name	Yellowfin, FAO 61, 71			
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**
	Japan, Kiribati, Micronesia, Nauru, Papa New Guinea, Philippines, South Korea, Taiwan, Tuvalu, Vanuatu	Multiple coastal states, highest risk level Medium	Medium (Micronesia, Marshall Islands)	Downgraded to medium risk
				Choose an item.