



By-Product assessment report

BP002

Thien Quynh Product and Trading Co. Ltd

Report code	BP002	Date of issue	August 2024
--------------------	--------------	----------------------	-------------

1. Application details		
Applicant	Thien Quynh Product and Trading Co. Ltd	
Applicant country	Vietnam	
2. Certification Body details		
Name of Certification Body (CB)	NSF / Global Trust Certification Ltd	
Contact information for CB	NSF-MarinTrust@nsf.org	
Assessor name	Sam Peacock	
CB internal peer reviewer name	Matthew Jew	
Internal peer review evaluation	Agree with evaluation	
Comments on the assessment	n/a	
3. Approval validity	Valid from 08/2024	Valid until 08/2025

4. By-product assessment outcomes		
By-product species name	Flag country(ies)	MarinTrust approval status
Cod, <i>Gadus morhua</i>	Russia, Norway	Approved source with caution
Haddock, <i>Melanogrammus aeglefinus</i>	Russia, Norway	Approved source with caution
Pacific cod, <i>Gadus macrocephalus</i>	Russia	Approved source with caution
Alaska pollack, <i>Gadus/theragra chalcogrammus</i>	Russia	Approved source with caution
Yellowfin tuna, <i>Thunnus albacares</i>	USA, Papua New Guinea, Solomon Islands, Fiji, TAIWAN, Korea, Philippines, Nauru, Federated States of Micronesia, Vanuatu, Kiribati, China, Cook Islands, Australia	Approved source with caution
Yellowfin tuna, <i>Thunnus albacares</i>	USA, Cook Islands, Tokelau, Fiji, Vanuatu, Samoa, Korea, Tuvalu, China	Approved source with caution
Skipjack tuna, <i>Katsuwonus pelamis</i>	USA, Papua New Guinea, Solomon Islands, Taiwan, Korea, Philippines, Nauru, Vanuatu, New Zealand	Approved source with caution
Skipjack tuna, <i>Katsuwonus pelamis</i>	Korea, USA, Nauru	Approved source with caution
Albacore tuna, <i>Thunnus alalunga</i>	USA, Vanuatu, Fiji	Approved source with caution
Albacore tuna, <i>Thunnus alalunga</i>	USA	Approved source with caution
Bigeye tuna, <i>Thunnus obesus</i>	Korea, Philippines, USA, Nauru, Solomon Islands, Vanuatu, Micronesia, Fiji, Kiribati, Cook Islands	Approved source with caution

Guidance for on-site auditor

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

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

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

Approved by-products

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

Additional checks of Approved Source with Caution by-products

- Review supplier records or procedures in place.

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

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

Guidance for the applicant/certificate holder

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

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

Appendix 1 – assessment outcomes

By-product species name	Flag country(ies)	IUCN Red List	CITES Appendices	Step 2 risk status	Step 3 required	Step 3 risk Outcome
Cod, <i>Gadus morhua</i>	Russia, Norway	Vulnerable	Not listed	High risk	Yes	Risk downgraded to Medium risk
Haddock, <i>Melanogrammus aeglefinus</i>	Russia, Norway	Vulnerable	Not listed	High risk	Yes	Risk downgraded to Medium risk
Pacific cod, <i>Gadus macrocephalus</i>	Russia	Not Evaluated	Not listed	High risk	Yes	Risk downgraded to Medium risk
Alaska pollack, <i>Gadus/theragra chalcogrammus</i>	Russia	Near threatened	Not listed	High risk	Yes	Risk downgraded to Medium risk

Yellowfin tuna, <i>Thunnus albacares</i>	USA, Papua New Guinea, Solomon Islands, Fiji, Taiwan, Korea, Philippines, Nauru, Federated States of Micronesia, Vanuatu, Kiribati, China, Cook Islands, Australia	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Yellowfin tuna, <i>Thunnus albacares</i>	USA, Cook Islands, Tokelau, Fiji, Vanuatu, Samoa, Korea, Tuvalu, China	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Skipjack tuna, <i>Katsuwonus pelamis</i>	USA, Papua New Guinea, Solomon Islands, Taiwan, Korea, Philippines, Nauru, Vanuatu, New Zealand	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk
Skipjack tuna, <i>Katsuwonus pelamis</i>	Korea, USA, Nauru	Least concern	Not listed	Medium risk	No	Not applicable
Albacore tuna, <i>Thunnus alalunga</i>	USA, Vanuatu, Fiji	Least concern	Not listed	High risk	Yes	Risk downgraded to Medium risk

Albacore tuna, <i>Thunnus alalunga</i>	USA	Least concern	Not listed	Medium risk	No	Not applicable
Bigeye tuna, <i>Thunnus obesus</i>	Korea, Philippines, USA, Nauru, Solomon Islands, Vanuatu, Micronesia, Fiji, Kiribati, Cook Islands	Vulnerable	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
Russia	High	4.33	2.78	2.81	1	1	1	1	13.21%
Norway	Medium	2.42	2.39	2.1	1	1	1	1	92.00%
USA	Medium	2.29	3	2.37	1	1	1	1	91.04%
Papua New Guinea	High	2.04	2.94	2.07	1	1	5	1	26.42%
Solomon Islands	High	1.58	3.28	2.07	1	1	5	1	21.70%
Fiji	Medium	2	2.17	1.9	1	1	1	1	50.47%

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

| Approved by MarinTrust Fisheries Manager

Controlled Copy- No unauthorised copying or alteration permitted

© Marine Ingredients Certifications Ltd., for authorised use only

Taiwan	High	4.17	3.06	2.27	1	1	5	1	90.57%
Korea	Medium	3.67	3.11	1.97	1	1	1	1	83.96%
Philippines	Medium	2.04	2.06	2.53	1	1	1	1	53.77%
Nauru	Medium	2.04	1	1.64	1	1		1	53.30%
Federated States of Micronesia	High	1.92	2.94	1.93	1	1	5	1	31.13%
Vanuatu	High	2.88	1.56	2.17	2	1	1	1	48.58%
Kiribati	High	1.79	3.11	1.96	1	1	5	1	42.92%
China	High	4.21	4.33	3.2	1	1	5	1	36.79%
Cook Islands	Medium	2.17	1.29	1.74	1	1		1	49.53%
Samoa	High	1.42	2.94	2.26	1	1	5	1	41.98%
Tuvalu	High	1.67	2.67	1.81	1	1	5	1	47.64%
New Zealand	Medium	2.46	2.11	1.5	1	1	1	1	99.06%
Australia	Medium	2.42	1.94	1.27	1	1	1	1	99.53%

Step 3 outcomes

Category C assessment

Assessor note: Duplicate for each species/stock.

Species name		Cod, <i>Gadus morhua</i>	
Fishing area and stock		FAO 27, ICES 1&2	
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
<p>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.</p> <p>Northern Norwegian coastal cod is subject to annual stock assessment by the ICES Arctic Fisheries Working Group (AFWG). The most recent assessment was an age-based analytical assessment conducted in 2024, which used catches in the model and forecast. The stock assessment included commercial and recreational landings data and bycatch, and ICES considers discarding to be negligible. The 2024 catch advice notes several potential sources of uncertainty; however, overall the results of the assessment are considered reliable (ICES 2024).</p> <p>The 2024 ICES advice states that, “ICES advises that when the Norwegian management plan is applied, combined recreational and commercial catches in 2025 should be no more than 26 672 tonnes” (ICES 2024). Catches are shown in Figure 1 below.</p>			

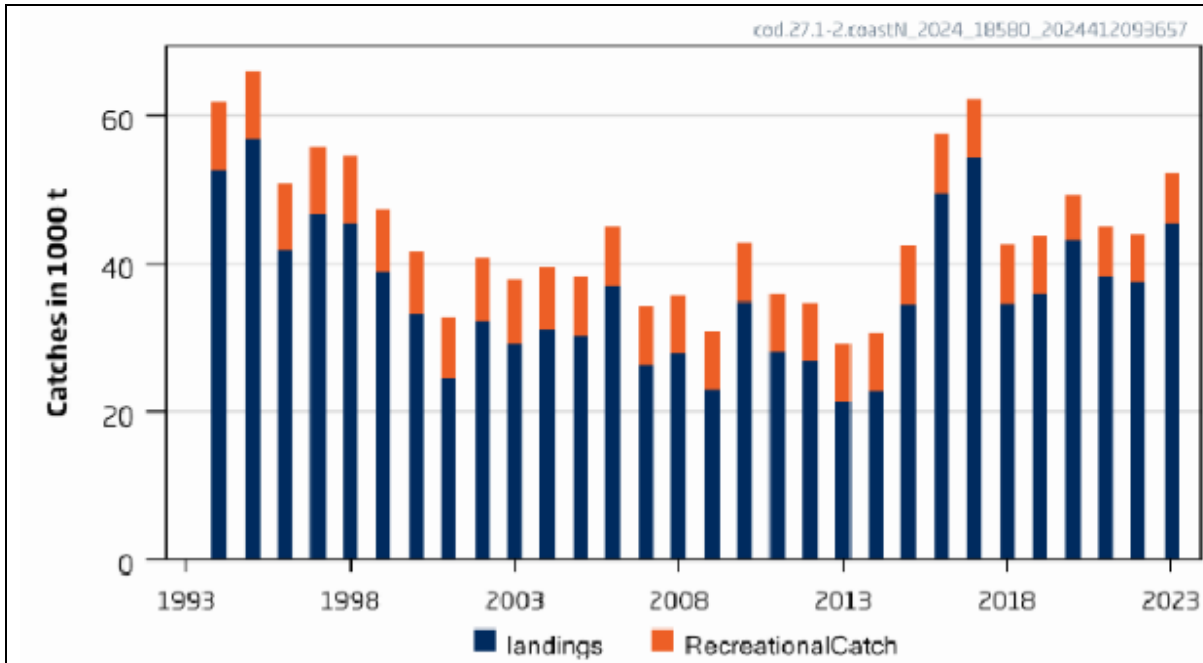


Figure 1. Northern Norwegian coastal cod, catches (ICES 2024).

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 2024 catch advice includes an indication of the current status of the cod stock relative to reference points. Although there are no MSY or precautionary-approach-based reference points established for the stock, the reference point $SSB_{lowerbound}$ has been established by the management plan for the stock as “the limit above which the management plan is considered precautionary” (ICES 2024). The value for $SSB_{lowerbound}$ is 46,723t, and the most recent stock assessment included a short-term forecast for SSB in 2024 of 61,030t. The catch advice states that “spawning-stock size is above $SSB_{lowerbound}$ ” (ICES 2024). Biomass relative to the current reference point is shown in Figure 2 below.

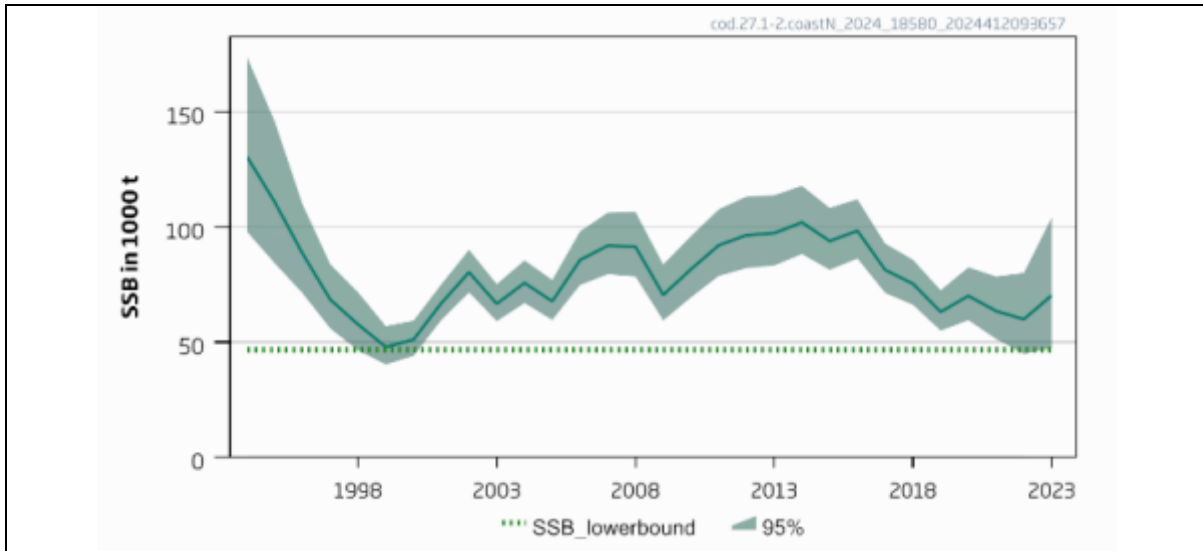


Figure 2. Northern Norwegian coastal cod, estimated SBB relative to current reference point SSB_{lowerbound} (ICES 2024)

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

ICES (2024). Cod (*Gadus morhua*) in subareas 1 and 2 north of 67°N (Norwegian Sea and Barents Sea), northern Norwegian coastal cod. ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.25019207.v1>

Species name		Haddock, <i>Melanogrammus aeglefinus</i>	
Fishing area and stock		FAO 27, ICES 1&2	
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 and catch advice for this stock are usually provided by the ICES Arctic Fisheries Working Group (AFWG). However, in March 2022 all Russian participation in ICES was temporarily suspended. Since that time, advice has been provided by a newly-created Joint Russian-Norwegian			

Working Group on Arctic Fisheries (JRN-AFWG), which conducts stock assessments using the same methodology as ICES applies. The 2024 stock assessment utilised international catch data, catch-at-age samples, natural mortality estimates, and four survey indices (IMR 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 2024 JRN-AFWG report includes an indication of the current status of the stock relative to the established reference points. The target reference point B_{pa} is set at 80,000t, and the limit reference point B_{lim} is set at 50,000t. The report states that “the estimate of SSB for 2024 is 150kt which is above $MSY B_{trigger} = 80,000t$ ” (IMR 2024).

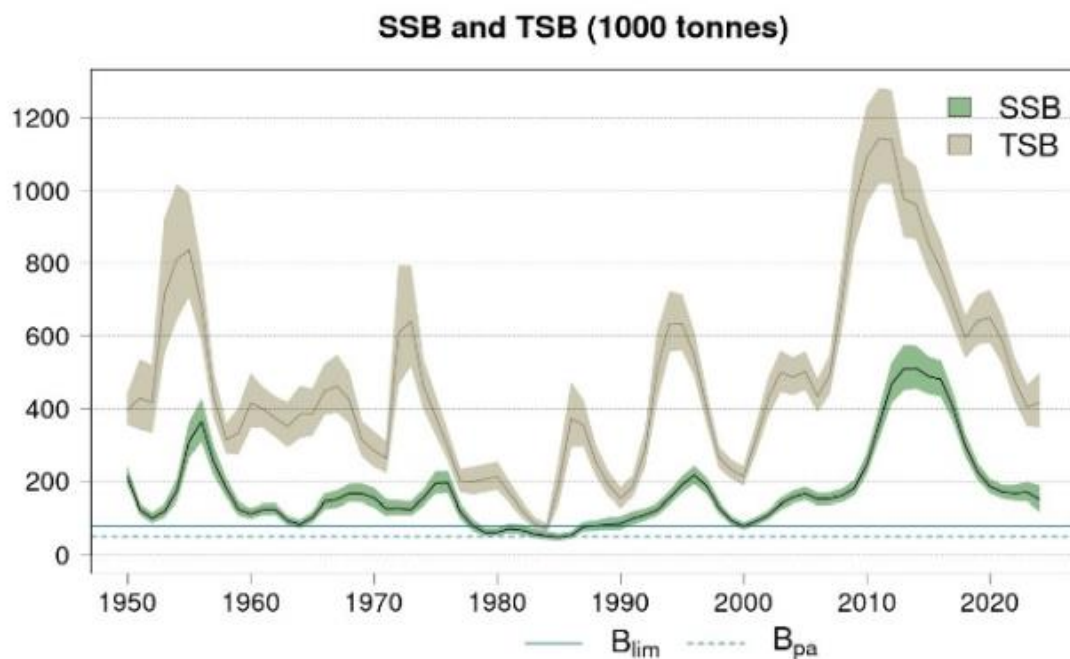


Figure 3: Northeast Arctic haddock, Spawning-Stock Biomass (SSB) and Total Stock Biomass for ages 3+ (TSB) relative to current target and limit reference points (IMR 2024)

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

IMR (2024). Report of the Joint Russian-Norwegian Working Group on Arctic Fisheries (JRN-AFWG) 2024. <https://www.hi.no/hi/nettrapporter/imr-pinro-2024-7>

Species name		Pacific cod, <i>Gadus macrocephalus</i>
Fishing area and stock		FAO 61, Western Bering Sea
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 is assessed annually according to the standard assessment methods (Aravind and Samy-Kamal, 2022). The stock assessment process is conducted using the ‘SYNTHESIS’ method which algorithm is realized in a computer program ‘Methods’ version 3.06 (Aravind and Samy-Kamal, 2022). The model uses a variety of fishery-dependent and -independent sources including CPUE.

As this stock is managed by TAC, total catch efforts are recorded each year and used in the stock assessment process. Figure 1 shows the long-term trends in catch data. More recent catch data does not appear to be available.

Catches are presented in the figure below:

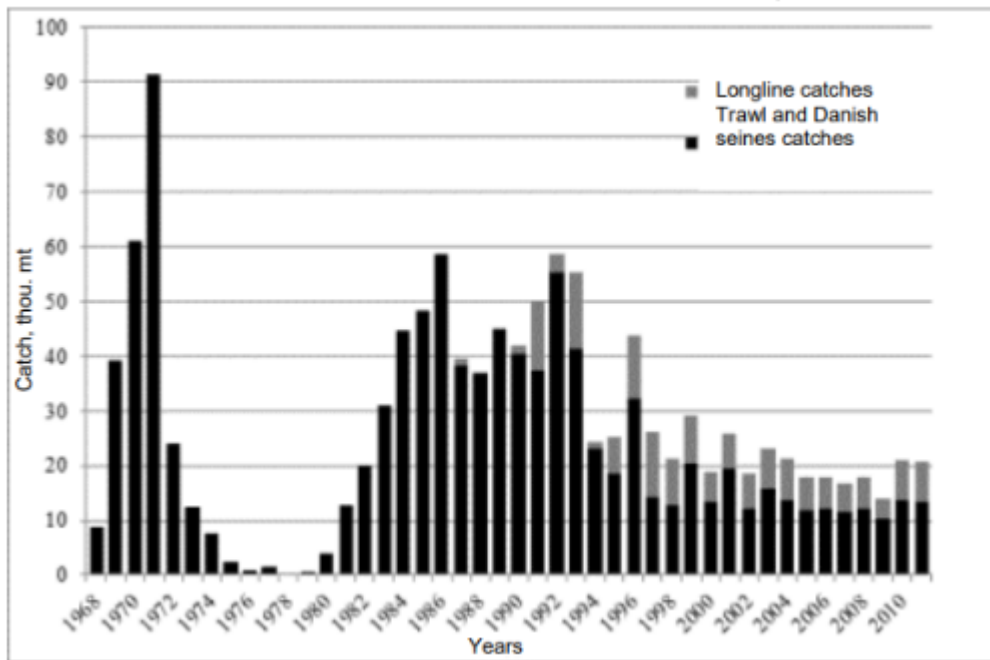


Figure 4. Catches of Pacific cod in the Western Bering Sea from 1968 – 2011 (Lajus *et al* 2019)

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.

Biomass for this stock appears to have been last evaluated in 2022, against the following reference points:

- $B_{MSY} = 1,123,210t$
- $B_{lim} = 291,080t$
- $B_{pa} = 375,620t$

At the time of the 2022 stock assessment, biomass was estimated to be fluctuating around B_{MSY} , substantially higher than the limit reference point level.

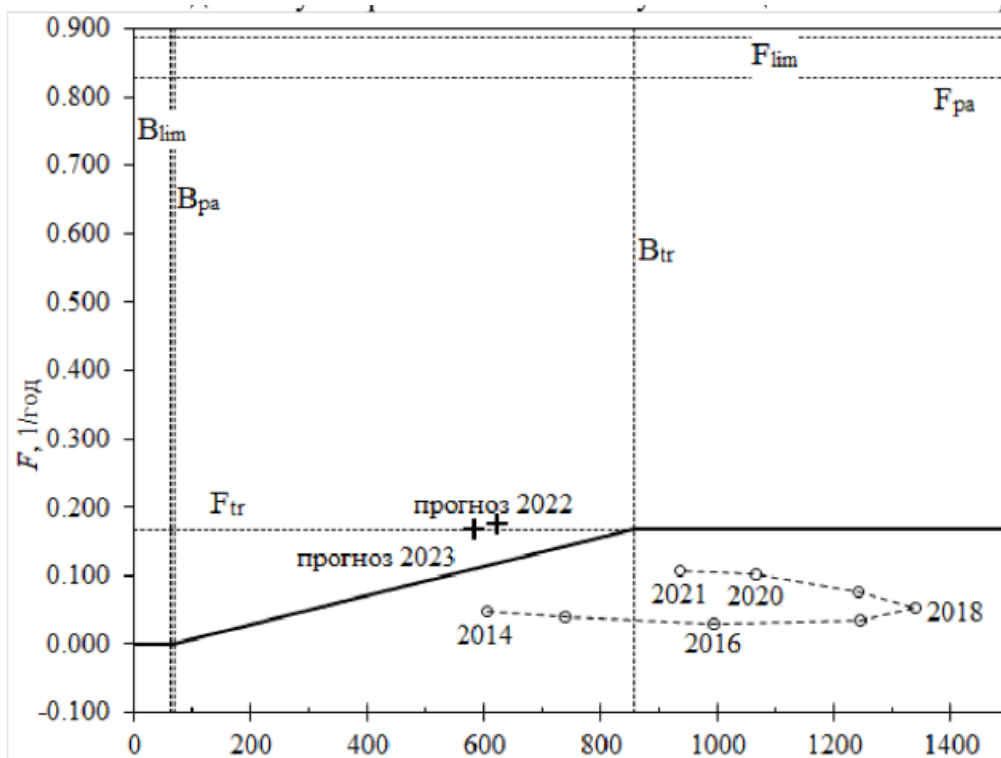


Figure 5. Harvest Control Rule of Pacific cod fishery in the western Bering Sea (West Bering Sea and Chukotskaya zones) and evaluation of its implementation from 2014 to 2021 with forecasts for 2022 and 2023. Biomass parameters are on the horizontal axis and fishing mortality on the vertical axis (UCSL 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

Aravind, V., and Samy-Kamal, M. 2022. Western Bering Sea Pacific cod and Pacific halibut longline 1st Surveillance Report. MSC fisheries assessment. UCSSL – United Certification Systems Limited. https://fisheries.msc.org/en/fisheries/western-bering-seapacific-cod-and-pacific-halibut-longline/@assessmentdocumentsets?assessment_step=Surveillance+Audit&documentset_name=Surveillance+report&assessment_id=FA02765&phase_name=Ongoing+surveillance&start_date=2021-09-03

Lajus, D., Safronova, D., Orlov, A., and Blyth-Skyrme, R. 2019. Western Bering Sea Pacific cod and Pacific halibut longline Public Certification Report. MSC fisheries assessment. Marine Certification. https://fisheries.msc.org/en/fisheries/western-bering-seapacific-cod-and-pacific-halibut-longline/@assessmentdocumentsets?assessment_step=Initial+assessment&documentset_name=Public+certification+report&assessment_id=FA01881&phase_name=Public+certification+report+and+certificate+issue&start_date=2018-04-18

UCSL, 2024. Additional materials for "Western Bering Sea Pacific cod and Pacific halibut longline" Second Surveillance Report, https://drive.google.com/file/d/119Uac_QEUyk3AakhCdD4pQLMVBfg3fu/view

Species name		Alaska pollack, <i>Gadus/theragra chalcogrammus</i>	
Fishing area and stock		FAO 61	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	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.			
<p>This fishery is currently MSC certified, with the most recent full re-assessment report published in December 2023 (UCSSL 2023). Stock assessments for both stocks are conducted annually by the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO), the most recent of which was carried out in 2022. The assessment utilised all catch and discard data, plus length and age samples, plankton, trawl and acoustic survey indices.</p> <p>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.</p>			

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 produced estimates of the current status of the stock relative to established reference points. The 2023 ACDR for the MSC certification indicates that the biomass of both stocks is above the target reference points level (see graphs below).

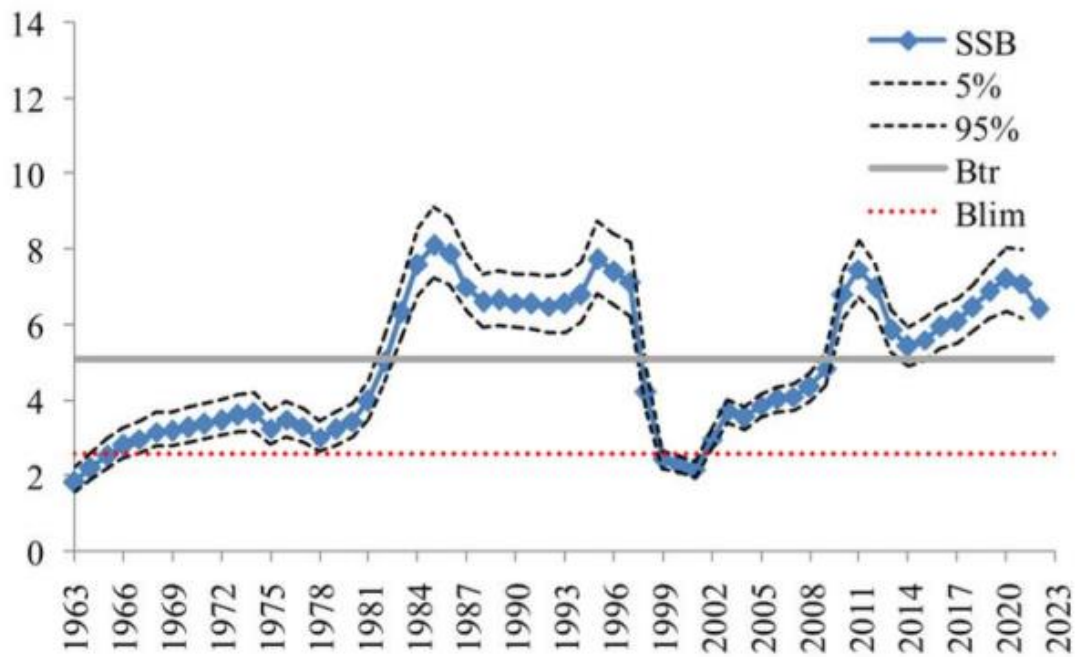


Figure 6: North Okhotsk Sea pollock, estimated SSB relative to current reference points (UCSL 2023)

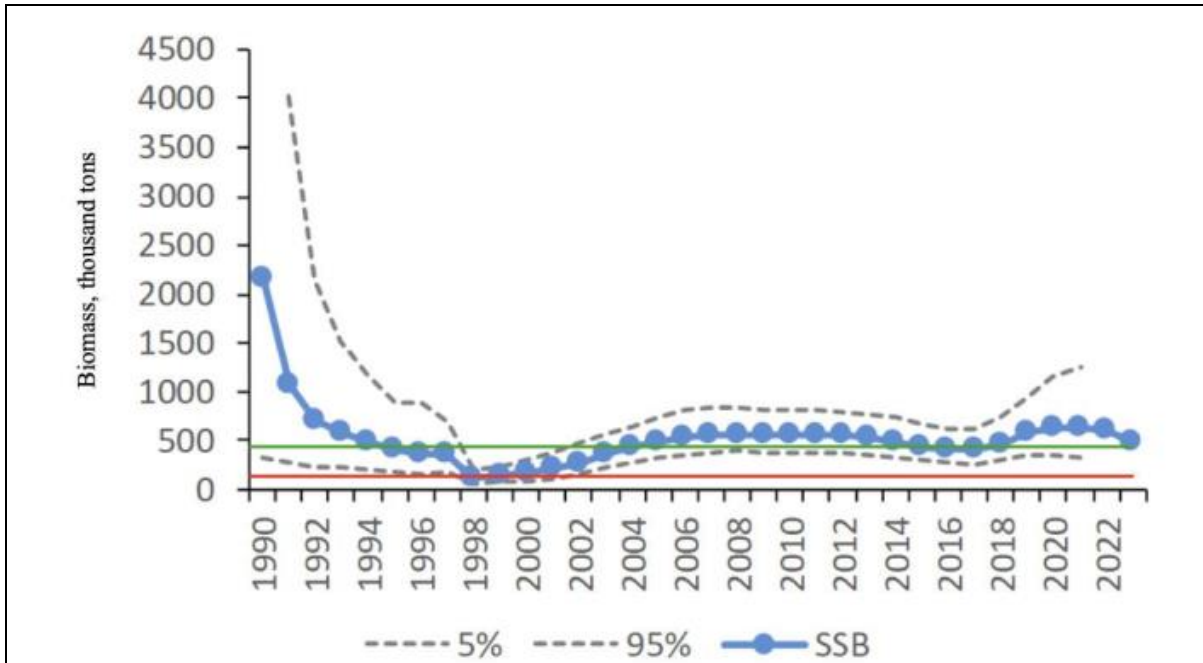


Figure 7: East Sakhalin pollock, estimated biomass relative to target (green line, SSB_{tr}) and limit (red line, SSB_{lim}) reference points (UCSL 2023)

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

UCSL (2023). Russia Sea of Okhotsk pollock, Public Certification Report. 19 December 2023. <https://fisheries.msc.org/en/fisheries/russia-sea-of-okhotsk-pollock/@@assessments>

Species name		Yellowfin tuna, <i>Thunnus albacares</i>	
Fishing area and stock		FAO 71, 81	
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:

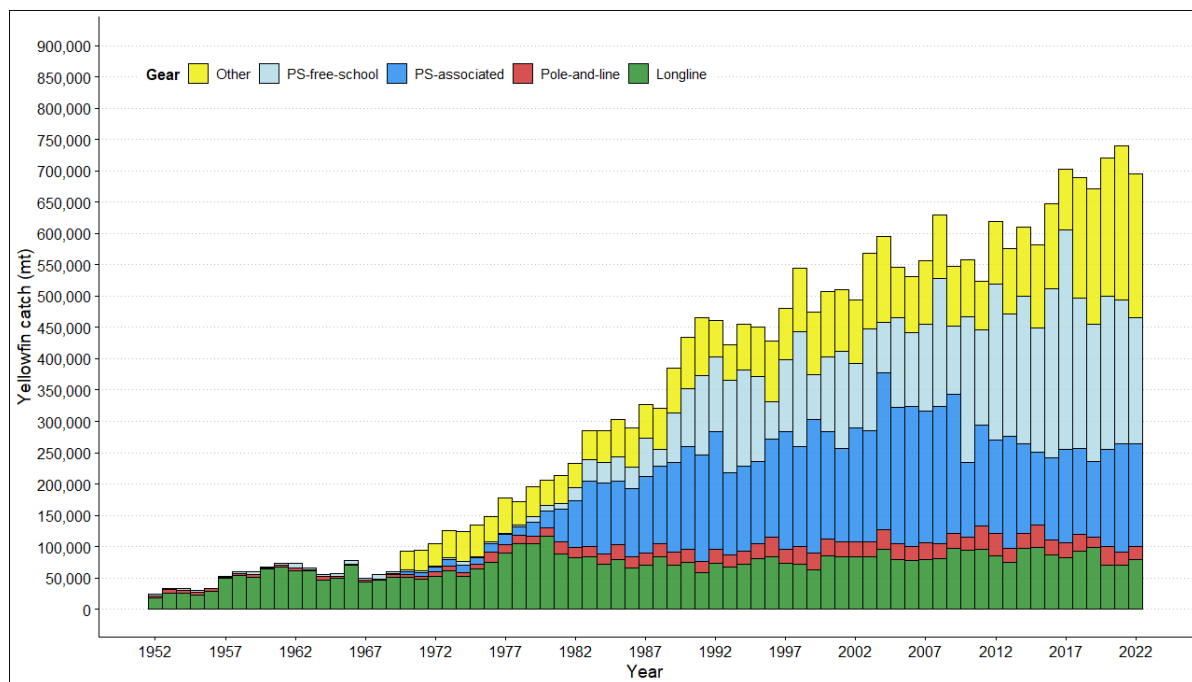


Figure 8. WCPO yellowfin catches, 1952-2022 (WCPFC 2023)

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).

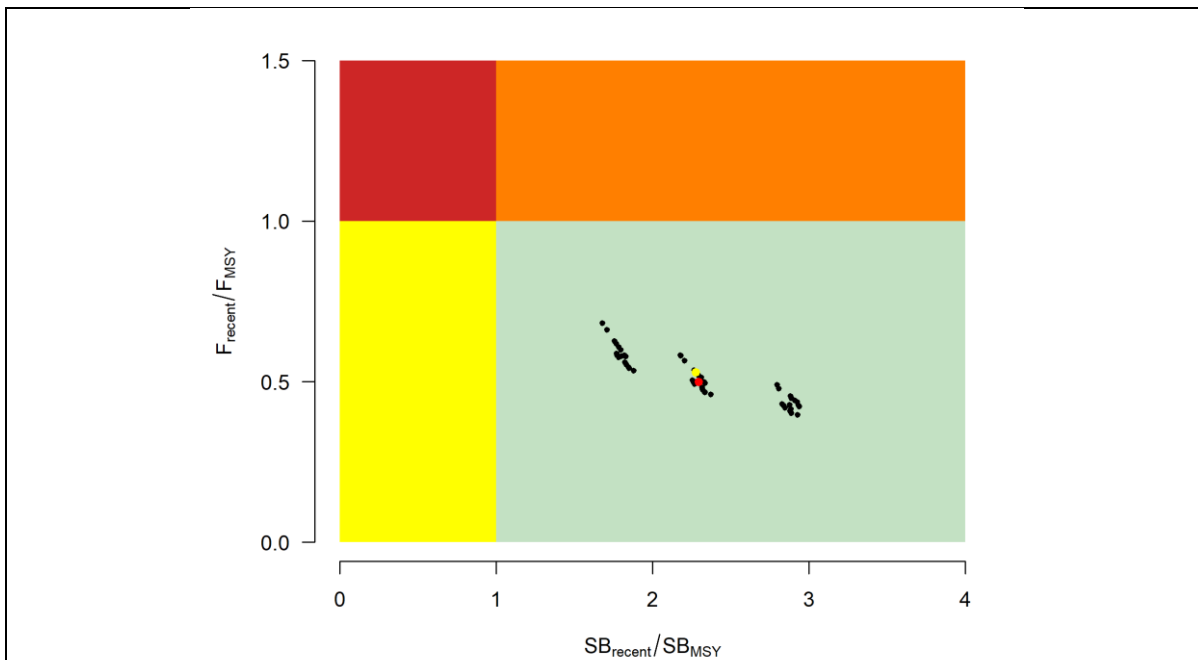


Figure 9. WCPO yellowfin tuna, Kobe plot summarising the results of each of the stock assessment models. The yellow dot is the 2023 diagnostic model and the red dot is the median (WCPFC 2023).

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=wFUhc7q7>

Species name		Yellowfin tuna, <i>Thunnus albacares</i>	
Fishing area and stock		FAO 77, 87	
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 yellowfin tuna stock in the Eastern Pacific Ocean (EPO yellowfin) is managed and assessed by the Inter-American Tropical Tunas Commission (IATTC). The most recent assessment for yellowfin tuna was conducted in 2020 and followed a risk assessment framework. This framework uses Stock Status Indicators (SSIs). SSIs estimations include quantities such as fishing effort, catch, catch per unit effort, and the size of fish in the catch (IATTC 2023a). Thus, removals of the species are included in the stock assessment process (Figure 10).

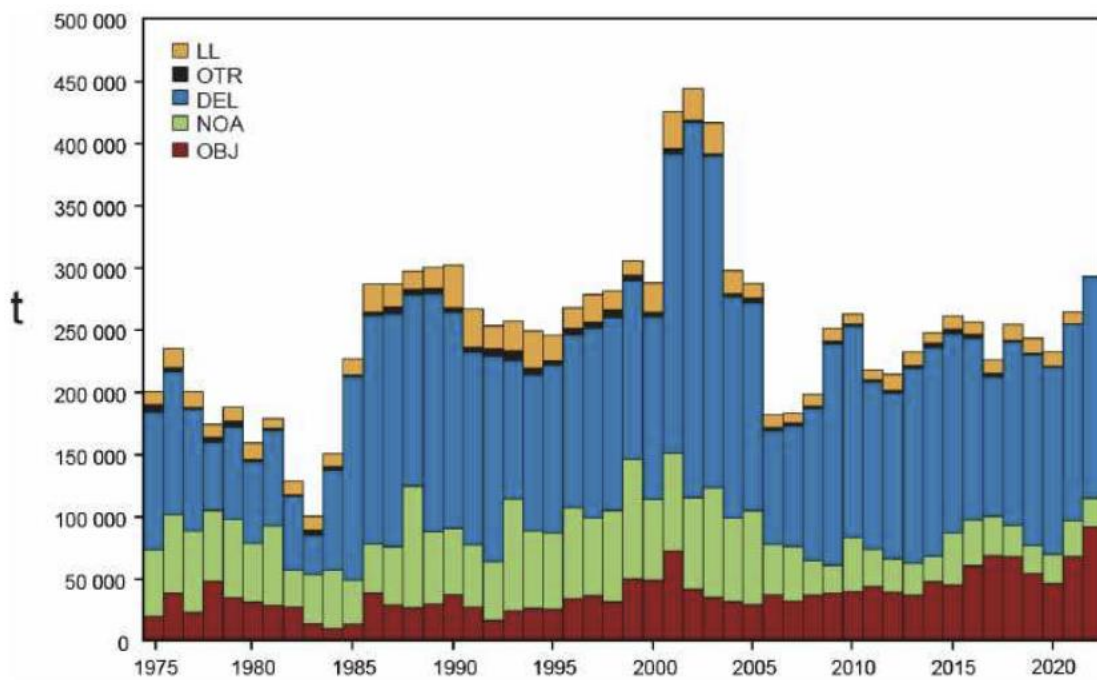


Figure 10. EPO yellowfin, catches by gear (IATTC 2023b)

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 assessment for yellowfin tuna was conducted in 2020 and followed a risk assessment framework. At the beginning of 2020, the spawning biomass (S) of yellowfin ranged from 145% to 345% of the limit reference level (S_{limit}); no models suggest that it was below that limit. (IATTC 2023).

The results from the reference models are combined in a risk analysis to provide management advice. The probabilities of exceeding the reference points were estimated for each model result and its associated weight. There was a low probability of F_{cur} being above F_{MSY} (9%). The probability

of F_{cur} being above F_{LIMIT} was zero. The probability of the spawning biomass being below $SMSY_d$ was low (12%). The probability of the spawning biomass exceeding S_{LIMIT} was zero. (IATTC 2023a)

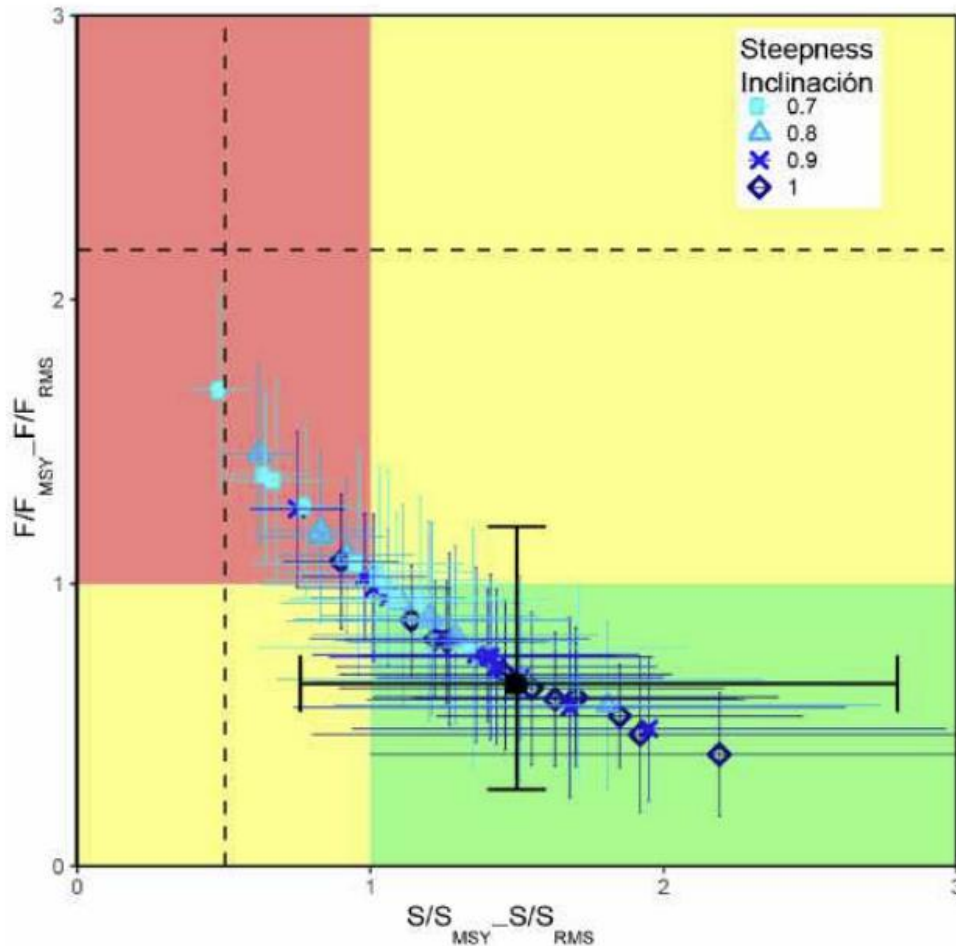


Figure 11. EPO yellowfin, Kobe plot (IATTC 2023b)

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 (2023a). Stock Status Indicators (SSIs) for tropical tunas in the Eastern Pacific Ocean. Document SAC-14-04. May 2023. [https://www.iattc.org/GetAttachment/663cdcd-f599-4802-b9fd-6611959ff893/SAC-14-04_Stock-status-indicators-\(SSIs\)-fortropical-tunas-in-the-EPO.pdf](https://www.iattc.org/GetAttachment/663cdcd-f599-4802-b9fd-6611959ff893/SAC-14-04_Stock-status-indicators-(SSIs)-fortropical-tunas-in-the-EPO.pdf)

IATTC (2023b). The tuna fishery in the Eastern Pacific Ocean in 2022. https://www.iattc.org/GetAttachment/0f48f889-2aa5-437f8d03-648d62ecfb75/No-21-2023_Tunas,-stocks-and-ecosystem-in-the-eastern-Pacific-Ocean-in-2022.pdf

Species name	Skipjack tuna, <i>Katsuwonus pelamis</i>
--------------	--

Fishing area and stock		FAO 71, 81	
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.

Catches are presented in the figure below:

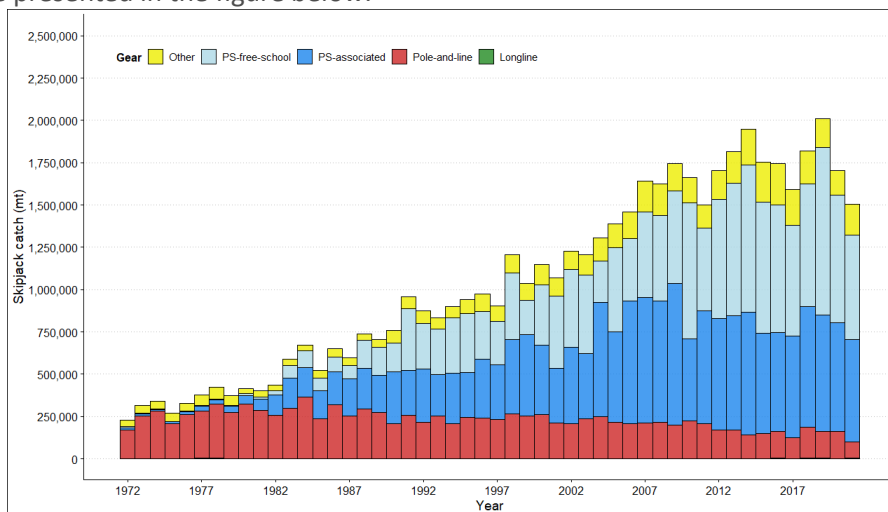


Figure 12. Annual catches of skipjack by gear type in the WCPO area covered by the stock assessment (WCPO 2023)

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 $0.2 \cdot SB_{F=0}$. The median model outcome indicated that stock biomass is very close to the interim target reference point of $SB_{recent}/SB_{F=0} = 0.5$.

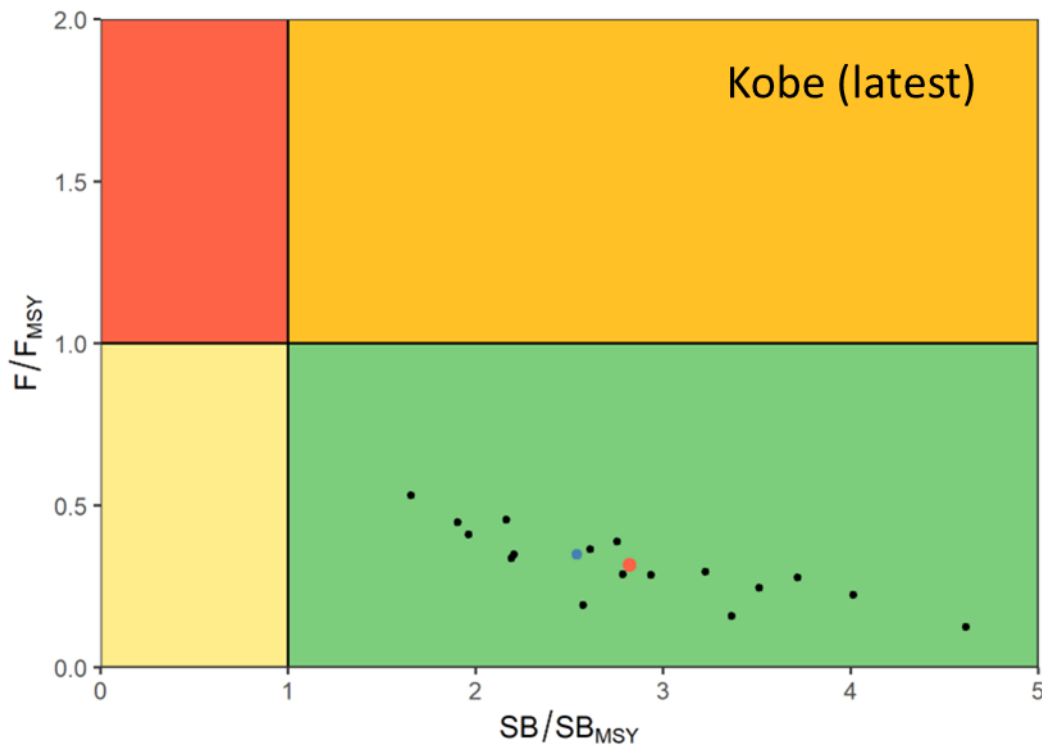


FIGURE 13. Kobe plot summarising the results for each of the models in the “latest” period (i.e. 2021). The black dots represent model outcomes, the blue point is the diagnostic model, and the red point is the median (WCPFC 2023).

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	Albacore tuna, <i>Thunnus alalunga</i>
Fishing area and stock	FAO 71
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.

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).

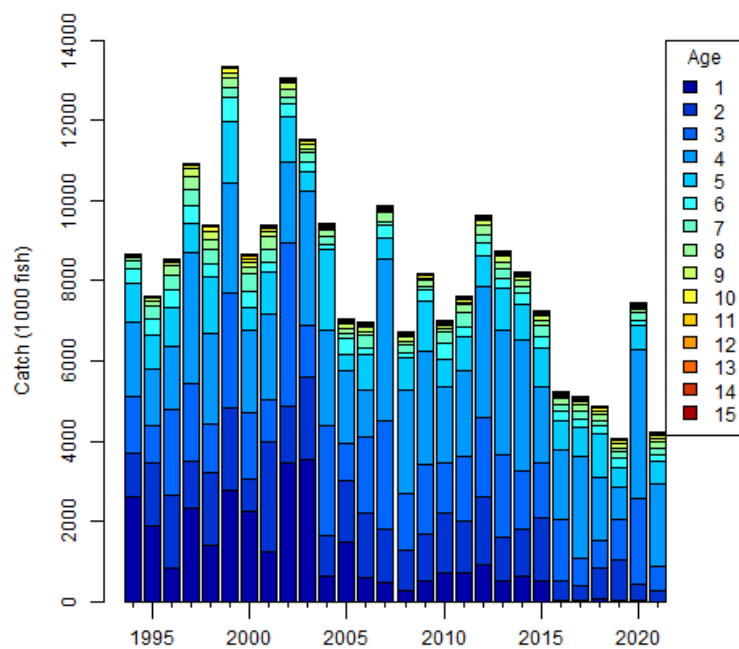


Figure 14. Historical catch-at-age of North Pacific Albacore estimated by the base case stock assessment model (WCPFC 2024)

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.

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.

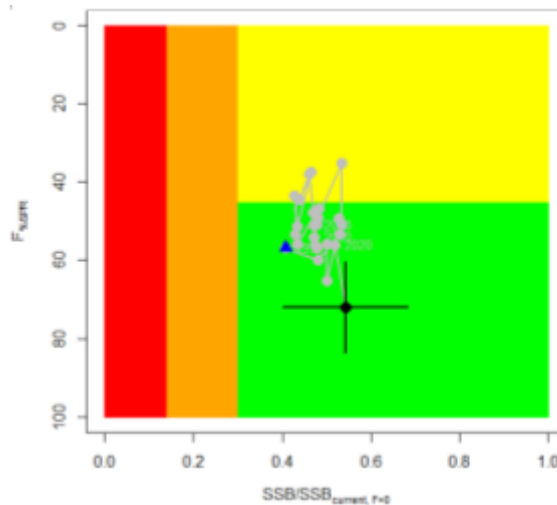


Figure 15. Stock status phase plot showing the status of the north Pacific albacore (*Thunnus alalunga*) stock relative to the biomass-based threshold and limit reference points, and fishing intensity-based target reference point ($F_{45\%SPR}$) over the modelling period (1994 – 2021). (WCPFC 2024).

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

Species name		Bigeye tuna, <i>Thunnus obesus</i>	
Fishing area and stock		FAO 71, 77	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	PASS
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR	PASS

	removals by the fishery under assessment are considered by scientific authorities to be negligible.	
--	---	--

Clause outcome: PASS

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

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 2024). All available catch data are incorporated into the assessment.

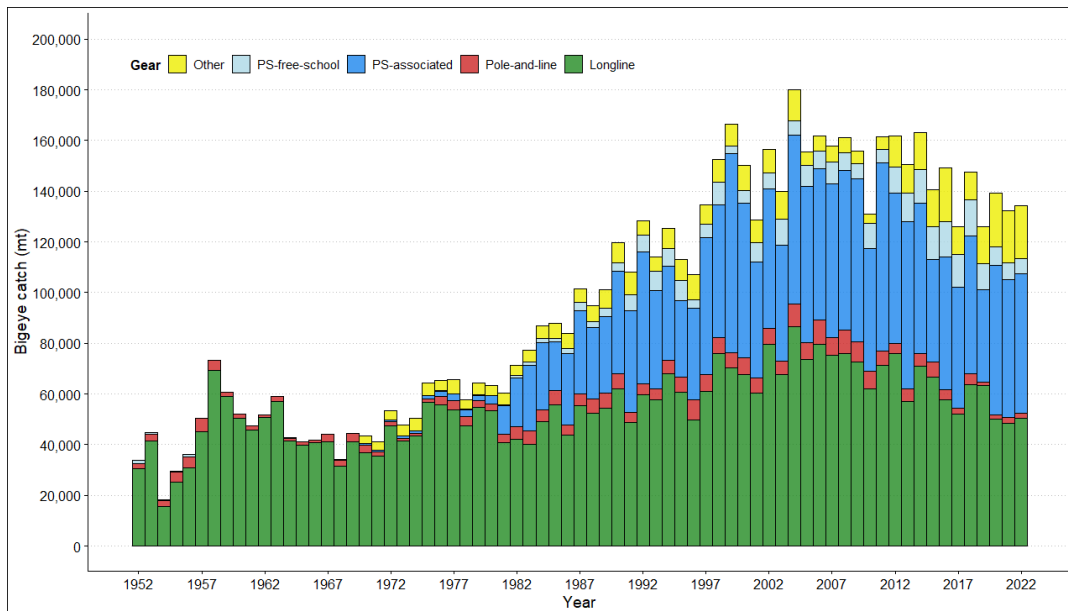


Figure 16. Time series of total annual catch ('000t) by fishing gear for the diagnostic model over the full assessment period. Green = longline; red = pole and line; blue = purse seine (WCPFC 2024)

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).

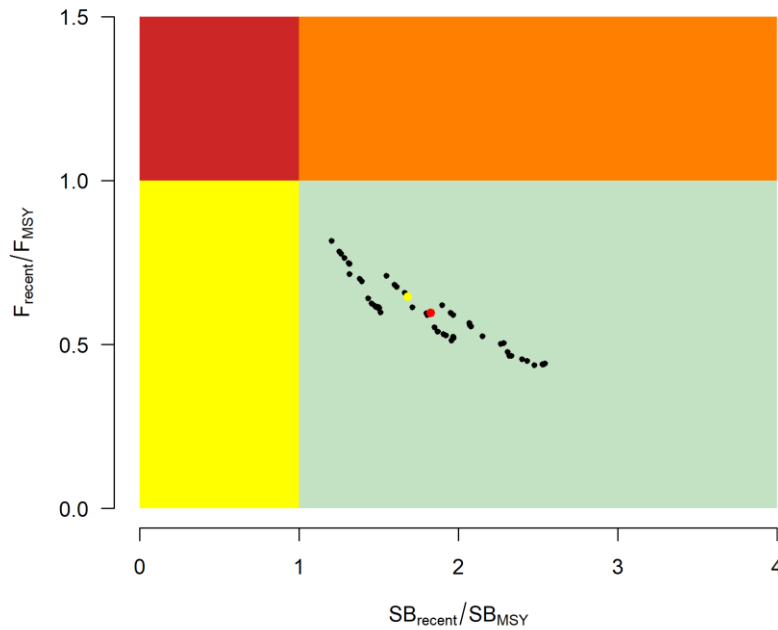


Figure 17. Western and Central Pacific bigeye tuna, Kobe plot for recent spawning potential (2018-2021) summarising the results for each of the models in the structural uncertainty grid. Median value is shown in red (WCPFC 2024)

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>

Traceability information

Information provided for Step 3 Path 1 or Path 2

Assessor note: Duplicate for each species/stock.

Species name		Cod, <i>Gadus morhua</i>		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	Russia & Norway	Russia & Norway MEDIUM RISK	Russia & Norway MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Haddock, <i>Melanogrammus aeglefinus</i>		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	Russian, Norway	Russia & Norway MEDIUM RISK	Russia & Norway MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Pacific cod, <i>Gadus macrocephalus</i>		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	Russia	Russia MEDIUM RISK	Russia MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Alaska pollack, <i>Gadus/theragra chalcogrammus</i>		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	Russia	Russia MEDIUM RISK	Russia MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Yellowfin tuna, <i>Thunnus albacares</i> FAO 71, 81		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	USA, Papua New Guinea, Solomon Islands, Fiji, TAIWAN, Korea, Philippines, Nauru, Federated States of Micronesia, Vanuatu, Kiribati, China, Cook Islands, Australia	Micronesia, Papua New Guinea, Kiribati, Marshall Islands MEDIUM RISK	Papua New Guinea, Tuvalu, Marshall Islands, Micronesia, Kiribati, Solomon Islands, Ecuador, Fiji, Korea MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Yellowfin tuna, <i>Thunnus albacares</i> FAO 77, 87		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	USA, Cook Islands, Tokelau, Fiji, Vanuatu, Samoa, Korea, Tuvalu, China	Kiribati, Cook Islands, Solomon Islands MEDIUM RISK	Kiribati, Solomon Islands, Samoa, Marshall Islands MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Skipjack tuna, <i>Katsuwonus pelamis</i> FAO 71, 81		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	USA, Papua New Guinea, Solomon Islands, Taiwan, Korea, Philippines, Nauru, Vanuatu, New Zealand	Micronesia, Papua New Guinea, Kiribati, Marshall Islands MEDIUM RISK	Papua New Guinea, Tuvalu, Marshall Islands, Micronesia, Kiribati, Solomon Islands, Ecuador, Fiji, Korea MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Albacore tuna, <i>Thunnus alalunga</i> , FAO 71		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	USA, Vanuatu, Fiji	Fiji, Kiribati MEDIUM RISK	Papua New Guinea, Fiji, Kiribati MEDIUM RISK	Downgraded to medium risk
				Choose an item.

Species name		Bigeye tuna, <i>Thunnus obesus</i> FAO 71, 77		
Path 1		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Confirm all KDEs are provided		Yes <input type="checkbox"/> No <input type="checkbox"/>		
Path 2		Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If yes for Path 2, complete the next section</i>		
Path 2 outcome <i>Countries may be different for Coastal State and Port State.</i>	Flag country	Coastal score	Port score	Risk outcome
	Korea, Philippines, USA, Nauru, Solomon Islands, Vanuatu, Micronesia, Fiji, Kiribati, Cook Islands	Papua New Guinea, Tuvalu, Solomon Islands, Micronesia, Marshall Islands, Fiji, Kiribati MEDIUM RISK	Papua New Guinea, Tuvalu, Solomon Islands, Micronesia, Marshall Islands, Fiji, Kiribati MEDIUM RISK	Downgraded to medium risk
				Choose an item.