



By-Product assessment report

BP106

EXU S.A

Report code	BP106	Date of issue	June 2026
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1. Application details			
Applicant		EXU S.A	
Applicant country		Ecuador	
2. Certification Body details			
Name of Certification Body (CB)		NSF / Global Trust Certification Ltd	
Contact information for CB		Fisheries@nsf.org	
Assessor name		Ana Ayres	
CB internal peer reviewer name		Matthew Jew	
Internal peer review evaluation		Agree with evaluation	
Number of Assessment days		2	
Comments on the assessment		This assessment covers 7 byproduct species, all exclusively caught by Ecuadorian vessels within Ecuadorian waters, and landed at Ecuadorian ports. Ecuador is a High Risk flag state, and so all 7 species were subjected to Step 3 assessment. All species passed the Step 3 risk assessment via Path 2 and passed the Category C assessment, being scored as Approved, Source with Caution.	
3. Approval validity		Valid from 06/2026	Valid until 06/2027
4. Assessment cycle		Re-Approval	

5. By-product assessment outcomes			
By-product species name	Flag country(ies)	Fishing Areas	MarinTrust approval status
<i>Thunnus albacares</i> - Yellowfin tuna	Ecuador	FAO 77 and 87	Approved source with caution
<i>Katsuwonus pelamis</i> - Skipjack tuna	Ecuador	FAO 77 and 87	Approved source with caution
<i>Opisthonema</i> spp. - Pacific thread herring/pinchagua	Ecuador	FAO 87	Approved source with caution
<i>Scomber japonicus</i> - Pacific chub mackerel/macarela	Ecuador	FAO 87	Approved source with caution
<i>Etrumeus acuminatus</i> - Sardina redonda	Ecuador	FAO 87	Approved source with caution
<i>Merluccius gayi</i> - South Pacific hake	Ecuador	FAO 87	Approved source with caution
<i>Auxis rochei</i> - Bullet tuna	Ecuador	FAO 87	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

Step 2 Assessment Outcomes

By-product species name	Flag country(ies)	IUCN Red List	CITES Appendices	Step 2 risk status	Step 3 required
<i>Thunnus albacares</i> - Yellowfin tuna	Ecuador	Least concern	Not listed	High risk	Yes
<i>Katsuwonus pelamis</i> - Skipjack tuna	Ecuador	Least concern	Not listed	High risk	Yes
<i>Opisthonema</i> spp. - Pacific thread herring/pinchagua	Ecuador	Least concern	Not listed	High risk	Yes
<i>Scomber japonicus</i> - Pacific chub mackerel/macarela	Ecuador	Least concern	Not listed	High risk	Yes
<i>Etrumeus acuminatus</i> - Sardina redonda	Ecuador	Least concern	Not listed	High risk	Yes
<i>Merluccius gayi</i> - South Pacific hake	Ecuador	Data deficient	Not listed	High risk	Yes
<i>Auxis rochei</i> - Bullet tuna	Ecuador	Least concern	Not listed	High risk	Yes

Step 3 Assessment Outcomes

By-product species name	Flag country(ies)	Fishing Area	Stock name	Category C Assessment Outcome	Traceability information	Step 3 Risk Outcome
<i>Thunnus albacares</i> - Yellowfin tuna	Ecuador	FAO 77 and 87	Eastern Pacific Ocean (EPO) yellowfin tuna	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Katsuwonus pelamis</i> - Skipjack tuna	Ecuador	FAO 77 and 87	Eastern Pacific Ocean (EPO) skipjack tuna	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Opisthonema</i> spp. - Pacific thread herring/pinchagua	Ecuador	FAO 87	Ecuadorian thread herring	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Scomber japonicus</i> - Pacific chub mackerel/macarela	Ecuador	FAO 87	Ecuadorian macarela	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Etrumeus acuminatus</i> - Sardina redonda	Ecuador	FAO 87	Ecuadorian sardina redonda	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Merluccius gayi</i> - South Pacific hake	Ecuador	FAO 87	Peruvian hake	Pass	Path 2- Yes	Downgraded to Medium risk
<i>Auxis rochei</i> - Bullet tuna	Ecuador	FAO 87	Ecuadorian bullet tuna	Pass	Path 2- Yes	Downgraded to Medium risk
Comments on Step 3 Assessment: N/A						

Appendix 2 – detailed assessment outcomes

(step 2 and step 3 if applicable)

Step 2 outcomes

Flag state	Risk rating	Flag score	Port score	General score	Flag State is contracting party or cooperating non-contracting party to all relevant RFMOs	'Carded' under EU Carding system	Flag state party to PSMA	Flag state mandatory vessel tracking for commercial seagoing fleet	WGI Governance rank
Ecuador	High	2.58	2.11	2.43	1	3	1	1	35.38%

Step 3 outcomes

Category C assessment

Species name		Yellowfin tuna (<i>Thunnus albacares</i>)	
Fishing area and stock		FAO 77 and 97 (Eastern Pacific Ocean – EPO yellowfin 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.			
The assessment and management of the Eastern Pacific Ocean (EPO) yellowfin tuna stock fall under the responsibility of the Inter-American Tropical Tuna Commission (IATTC). The scientific staff reported the results of a new benchmark stock assessment and risk analysis for yellowfin tuna (Minte-Vera et al 2025). The 2025 benchmark assessment builds on IATTC’s risk analysis framework (SAC-16-03), which explicitly incorporates uncertainty into stock status evaluation and management advice. The approach considers alternative hypotheses regarding the spatial structure of the stock across the eastern Pacific Ocean and its northeastern and southwestern regions, as well as biological uncertainties related to growth and natural mortality. In addition, a gradual increase in catchability over time, represented as a 1% annual effort creep, is included, along with different assumptions about the steepness of the stock–recruitment relationship. Together, these elements generate a total of 72 reference models. The assessment also introduces important methodological advances, including improved spatial modelling based on new cluster analyses of length composition data that define northeastern and southwestern regions with limited movement between them, leading to the use of separate regional models. Biological parameters such as growth, natural mortality, and reproductive dynamics were updated using information from otoliths, tagging studies, and spawning data, and effort creep was incorporated to better reflect increasing fishing efficiency over time (Minte-Vera et al, 2025). Updated catches of yellowfin tuna are provided in Figure 1.			

	YFT			SKJ			BET			Total		
	EPO	WCPO	Total	EPO	WCPO	Total	EPO	WCPO	Total	EPO	WCPO	Total
1995	244,639	442,805	687,444	150,661	977,478	1,128,139	108,210	110,385	218,595	503,510	1,530,668	2,034,178
1996	266,928	425,669	692,597	132,335	999,701	1,132,036	114,706	107,168	221,874	513,969	1,532,538	2,046,507
1997	277,575	481,019	758,594	188,285	939,497	1,127,782	122,274	133,495	255,769	588,134	1,554,011	2,142,145
1998	280,606	536,845	817,451	165,489	1,244,132	1,409,621	93,954	152,415	246,369	540,049	1,933,392	2,473,441
1999	304,638	474,648	779,286	291,249	1,070,280	1,361,529	93,078	162,524	255,602	688,965	1,707,452	2,396,417
2000	286,863	506,028	792,891	230,479	1,194,139	1,424,618	148,557	148,094	296,651	665,899	1,848,261	2,514,160
2001	425,008	504,501	929,509	157,676	1,100,714	1,258,390	130,546	134,459	265,005	713,230	1,739,674	2,452,904
2002	443,458	489,995	933,453	167,048	1,253,634	1,420,682	132,806	157,958	290,764	743,312	1,901,587	2,644,899
2003	415,933	563,926	979,859	300,470	1,245,155	1,545,625	115,175	143,471	258,646	831,578	1,952,552	2,784,130
2004	296,847	595,888	892,735	217,249	1,354,765	1,572,014	110,722	182,599	293,321	624,818	2,133,252	2,758,070
2005	286,492	551,822	838,314	283,453	1,418,105	1,701,558	110,514	154,748	265,262	680,459	2,124,675	2,805,134
2006	180,519	537,076	717,595	309,090	1,479,366	1,788,456	117,328	165,386	282,714	606,937	2,181,828	2,788,765
2007	182,141	565,930	748,071	216,324	1,663,353	1,879,677	94,260	165,365	259,625	492,725	2,394,648	2,887,373
2008	197,328	644,365	841,693	307,699	1,649,067	1,956,766	103,350	171,317	274,667	608,377	2,464,749	3,073,126
2009	250,413	558,914	809,327	239,408	1,761,272	2,000,680	109,255	169,294	278,549	599,076	2,489,480	3,088,556
2010	261,871	564,607	826,478	153,092	1,680,215	1,833,307	95,408	139,796	235,204	510,371	2,384,618	2,894,989
2011	216,720	530,946	747,666	283,509	1,536,806	1,820,315	89,460	168,119	257,579	589,689	2,235,871	2,825,560
2012	213,310	625,697	839,007	273,519	1,731,944	2,005,463	102,687	167,245	269,932	589,516	2,524,886	3,114,402
2013	231,170	578,467	809,637	284,043	1,831,413	2,115,456	86,029	154,783	240,812	601,242	2,564,663	3,165,905
2014	246,784	618,262	865,046	265,490	1,985,110	2,250,600	96,054	169,046	265,100	608,328	2,772,418	3,380,746
2015	260,265	589,128	849,393	334,049	1,788,545	2,122,594	104,820	145,709	250,529	699,134	2,523,382	3,222,516
2016	255,465	660,291	915,756	345,163	1,788,760	2,133,923	92,952	156,656	249,608	693,580	2,605,707	3,299,287
2017	224,800	710,202	935,002	327,629	1,609,970	1,937,599	102,860	130,595	233,455	655,289	2,450,767	3,106,056
2018	253,305	696,706	950,011	291,352	1,843,398	2,134,750	94,479	154,404	248,883	639,136	2,694,508	3,333,644
2019	242,248	682,704	924,952	350,992	2,044,477	2,395,469	97,145	131,808	228,953	690,385	2,858,989	3,549,374
2020	231,603	726,403	958,006	298,583	1,721,476	2,020,059	104,893	146,497	251,390	635,079	2,594,376	3,229,455
2021	263,755	747,354	1,011,109	328,616	1,684,029	2,012,645	79,953	132,915	212,868	672,324	2,564,298	3,236,622
2022	298,897	689,051	987,948	298,136	1,715,934	2,014,070	68,217	140,838	209,055	665,250	2,545,823	3,211,073
2023	306,170	739,277	1,045,447	390,549	1,631,322	2,021,871	67,233	140,673	207,906	763,952	2,511,272	3,275,224
2024	294,493	*	294,493	645,260	*	645,260	51,936	*	51,936	991,689	*	991,689

Figure 1. Total annual catches (t) of yellowfin, skipjack, and bigeye tunas, by all types of gear combined, in the Pacific Ocean. The EPO totals for 1995-2024 include discards from purse-seine vessels with carrying capacities greater than 363 t. (IATCC, 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.

Across all spatial hypothesis, yellowfin tuna spawning biomass has consistently remained well above the limit reference point (Minte-Vera et al 2025). The likelihood of the stock being below the target spawning biomass is close to zero in nearly all risk assessment scenarios and spawning stock abundance exceeds the limit reference point in every scenario, with an estimated probability of falling below the limit equal to zero in all cases. Fishing mortality is well below MSY and limit reference points. These outcomes are graphically represented in Figure 2.

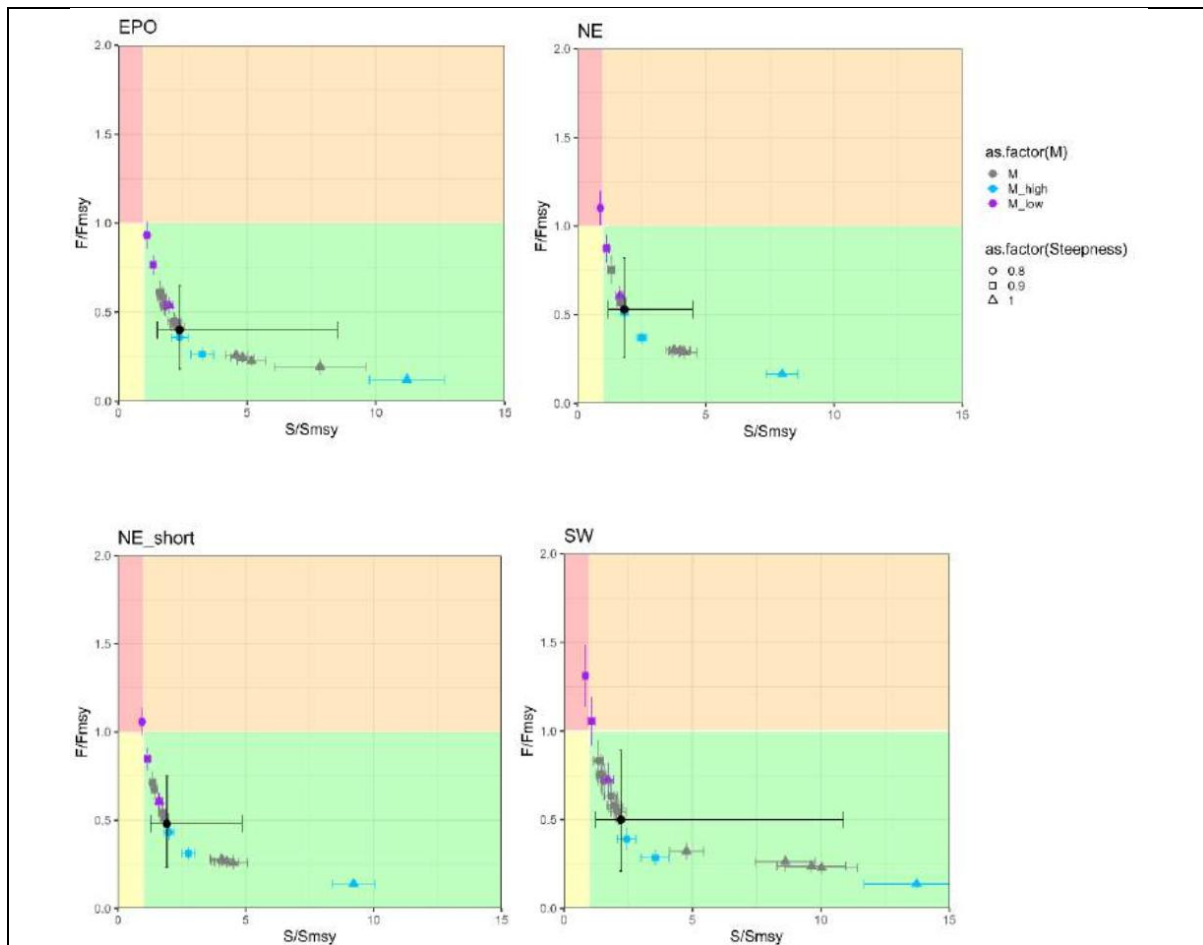


Figure 2. Kobe plots showing the most recent stock assessment status of yellowfin tuna in the Eastern Pacific Ocean and subregions relative to the dynamic level producing MSY and fishing mortality relative to the level producing the same biomass dynamic level associated with MSY. Each dot is based on the average F over the most recent three years, 2021-2023, and the S for the first quarter of 2024 and the error bars represent the 80% confidence interval of model estimates. The black dot and error bars represent the medium and 80% confidence interval of combined values, respectively. Minte-Vera et al. (2025).

References

Minte-Vera, C., M.N. Maunder, H. Xu and R. Bi. 2025. Stock assessment of yellowfin tuna in the Eastern Pacific Ocean: 2025. Document SAC-16-03 of the Scientific Advisory Committee, 16th Meeting of the Inter-American Tropical Tuna Commission. La Jolla, California (USA). 02-06 June 2025. 108 pp. [SAC-16-03 Yellowfin-benchmark-assessment---2025.pdf](#)

IATTC. 2025. The Tuna Fishery in the Eastern Pacific Ocean in 2024. Document SAC-16-01 CORR of the Scientific Advisory Committee, 16th meeting. Inter-American Tropical Tuna Commission. La Jolla, California (USA). 02-06 June 2005. 48 pp. [SAC-16-01 The-tuna-fishery-in-the-Eastern-Pacific-Ocean-in-2024.pdf](#)

Species name		Katsuwonus pelamis - Skipjack tuna	
Fishing area and stock		FAO 77 and 87 (Eastern Pacific Ocean – EPO 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:			
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.			
One stock of skipjack is defined in the eastern Pacific Ocean (EPO). Catch data is available and it is used by the IATTC to assess the stock status of skipjack tuna in the EPO. In 2024, a benchmark stock assessment was conducted using an integrated statistical age-structured catch-at-length model in Stock Synthesis. Several data sources were used to fit the model, including data from sixteen defined fisheries and five “surveys”. The fisheries are classified by gear type (purse-seine, longline) and purse-seine set. The "surveys" data included: a) catch-per-set indices for purse-seine sets, by set type (OBJ, NOA), where the relationship between catch-per-set and abundance remains uncertain; b) an index based on recently developed echosounder buoy data; c) absolute biomass from a spatiotemporal Petersen-type model applied to tag-recapture data; and d) an index of relative biomass from a tagging biomass model that uses a flexible effort assumption. A reference model was developed based on the most plausible assumptions and sensitivity analyses were conducted by changing the assumptions of the reference model (IATCC, 2024). Catches of this stock are shown in Figure 1above. Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met. C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible. According to the reference model, current fishing mortality remains below the threshold associated with the MSY proxy, while the spawning biomass exceeds the dynamic level linked to the same benchmark (Figure 3). Furthermore, there is less than a 10% chance that the spawning biomass surpasses the established limit reference point. This conclusion holds true across all sensitivity models as well.			

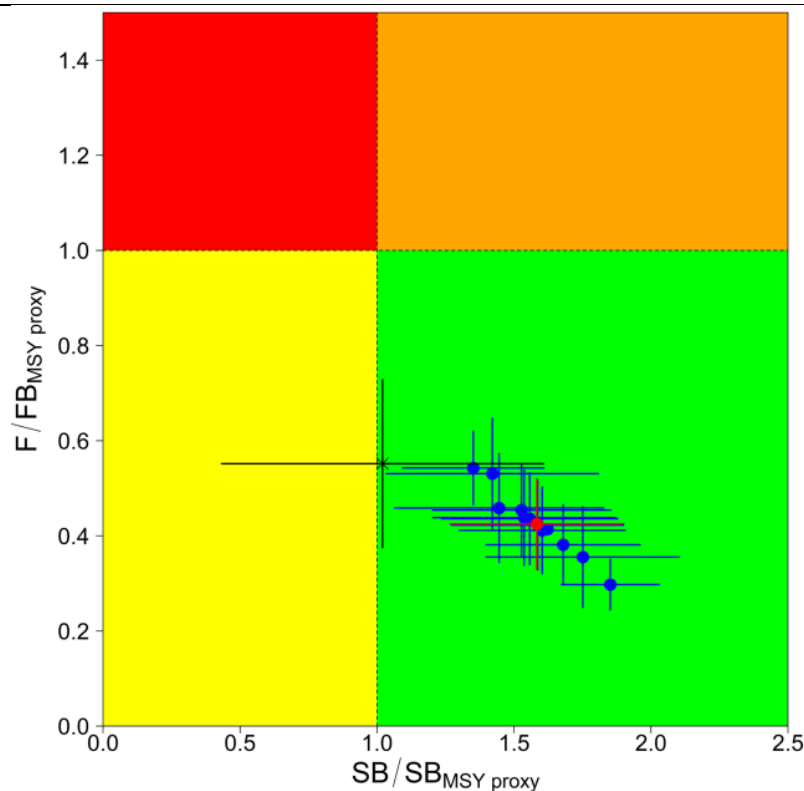


Figure 3. Kobe plot showing the most recent stock status estimates from all the models for skipjack tuna. The x-axis is $SB_{current}/0.3 \times \text{dynamic } SB_0$. Each dot is based on the average F over the most recent three years, 2021-2023, and the error bars represent the 80% confidence intervals of model estimates. The red dot and error bars represent the estimates from the reference model. The black cross and error bars represent the estimates from the model that removed the ECHO index (IATCC, 2024).

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

References

- IATCC. (2024). DOCUMENT SAC-15-04 REV STOCK ASSESSMENT OF SKIPJACK TUNA IN THE EASTERN PACIFIC OCEAN: 2024 BENCHMARK ASSESSMENT. https://www.iattc.org/GetAttachment/f57dece1-81ba-4771-8fa8-3362320a368a/SAC-15-04_Skipjack-tuna-benchmark-assessment-2024.pdf
- IATCC (2025). The tuna fishery in the Eastern Pacific Ocean in 2024. https://www.iattc.org/GetAttachment/0f3c1e8c-0ae6-41f3-a3a9-5d5891b5cc4e/SAC-16-01_The-tuna-fishery-in-the-Eastern-Pacific-Ocean-in-2024.pdf

Species name		Opisthonema spp. - Pacific thread herring/pinchagua			
Fishing area and stock		FAO 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.					
Fishery removals are not negligible, and removals (landings data) corresponding to the period 1975 – 2023 are included in the latest stock assessment (ref. 3.2 Datos e información (3.2 Data and information) – a) Estadísticas de desembarques (a) Landing statistics) in Canales and Jurado, 2024) and demonstrated on Table 1 below.					
Table 1. Small pelagic landings in Ecuador in tons (2021-2024) (IPIAP 2025).					
ESPECIES		2021	2022	2023	2024
MACARELA		164.707	158.121	54.931	29.496
BOTELLA		30.972	40.133	40.108	76.188
PICUDILLO		15.587	12.348	52.403	9.558
PINCHAGUA		7.127	22.064	7.742	32.657
ANCHOVETA		13	55	24.126	
CHUHUECO		6.184	9.250	8.210	294
SARDINA REDONDA		2.679	4.906	1.192	359
ROLLIZO		164	66	1.332	119
SARDINA DEL SUR			119		
JUREL		1	27	6	84
ANCHOA		3	5	49	0
Total		227.436	247.096	190.098	148.753
Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.					
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.					

The most recent assessment of the status of the stock (Canales and Jurado, 2024) concluded that the adult biomass is estimated on average around 86 thousand tons equivalent to 49% of the virgin biomass against a management objective equivalent to safeguarding 40% of the virgin adult biomass. Stock status is summarised in the below Kobe diagram BELOW together with the uncertainty measures, highlighting practically no risk of overfishing or overexploitation (Figure 4)

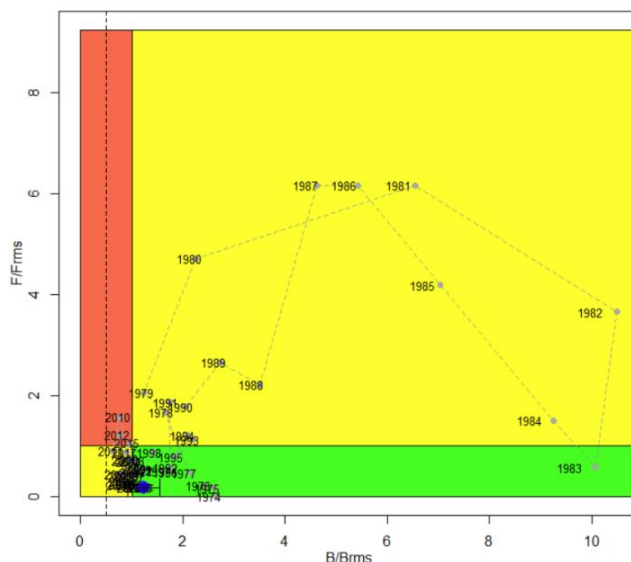


Figure 4. Kobe diagram for the stock ($B/B_{MSY} = 1.23$ ($Risk_{SE} = 0.08$); $F/F_{MSY} = 0.18$ ($Risk_{SP} = 0$)) (Canales and Jurado, 2024).

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

References

- Canales C. M. and Jurado, V. 2024. Evaluation of Ecuador's Small Pelagic Resource Stock 2023: https://institutopesca.gob.ec/wp-content/uploads/2024/07/Informe_Evaluacion_2024.pdf
- IPIAP. 2025. Desembarques de pelágicos pequeños Toneladas (2021-2024). <https://institutopesca.gob.ec/wp-content/uploads/2025/05/Panel-desembarques-FLOTA-CERQUERA-2021-2024.pdf>

Species name		<i>Scomber japonicus</i> - Pacific chub mackerel/ <i>macarela</i>	
Fishing area and stock		FAO 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.			
Data on size composition, landings, hydroacoustic cruises, and CPUE data were analysed using a statistical catch-at-age model in the last stock assessment provided by Canales & Jurado (2024). The stock assessment report discusses potential sources of uncertainty and includes recommendations for further study to reduce uncertainty in future. However, overall, the assessor considers the results to provide a reliable indication of stock status.			
Recent catches of Pacific chub mackerel/ <i>macarela</i> are shown in Table 1above (IPIAP, 2025).			
Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.			
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.			
The biomass target reference point for this stock (BMSY), defined as 40% of the unfished biomass, is estimated to be 374,000t. The 2024 stock assessment concluded that biomass was approximately 352,000t, equivalent to 38% of the unfished level and below the target reference point (Canales & Jurado, 2024) (Figure 5). Due to uncertainty in the model, the probability that the stock biomass is			

below BMSY is estimated to be around 61%, but with a low probability that biomass is below the limit reference point.

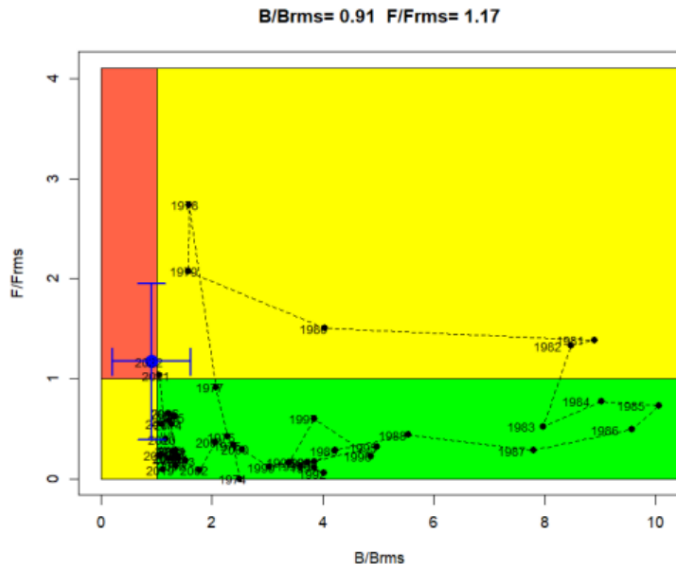


Figure 5. Kobe plot for Pacific chub mackerel in the Ecuadorian small pelagic fishery. Blue dot is the current estimated status (Canales & Jurado 2024).

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

References

- Canales C. M., Jurado V. (2024). Evaluación del stock de recursos pelágicos pequeños del Ecuador 2023. Informe Técnico. Guayaquil, Marzo 2023. 154 pp. <https://institutopesca.gob.ec/wp-content/uploads/2023/05/Informe-Evaluacio%CC%81n2023final.pdf>
- IPIAP. 2025. Desembarques de pelágicos pequeños Toneladas (2021-2024). <https://institutopesca.gob.ec/wp-content/uploads/2025/05/Panel-desembarques-FLOTA-CERQUERA-2021-2024.pdf>

Species name		Etrumeus acuminatus - Sardina redonda	
Fishing area and stock		FAO 87, Ecuadorian waters, Ecuadorian sardina redonda	
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 covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian Instituto Público De Investigación De Acuicultura Y Pesca (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch data from 1975 – 2023; fishery-dependent sampling data collected by the IPIAP, including fishing areas, catch composition, size frequency data, and environmental conditions; CPUE estimates; and the outputs of a semiregular hydroacoustic cruise survey (Canales & Jurado, 2024). Catches are shown in Table 1 above (IPIAP 2025).			
Fishery removals of the species in the fishery under assessment are included in the stock assessment process. C1.1 is met.			
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.			
The biomass target reference point for this stock (BMSY), defined as 40% of the unfished biomass, is estimated to be 11,800t (Figure 6). The 2024 stock assessment concluded that biomass was approximately 19,000t, equivalent to 64% of the unfished level and substantially above the target reference point (IPIAP 2024). The probability that the stock biomass is below BMSY is estimated to be negligible, and therefore so is the probability that biomass is below the limit reference point.			

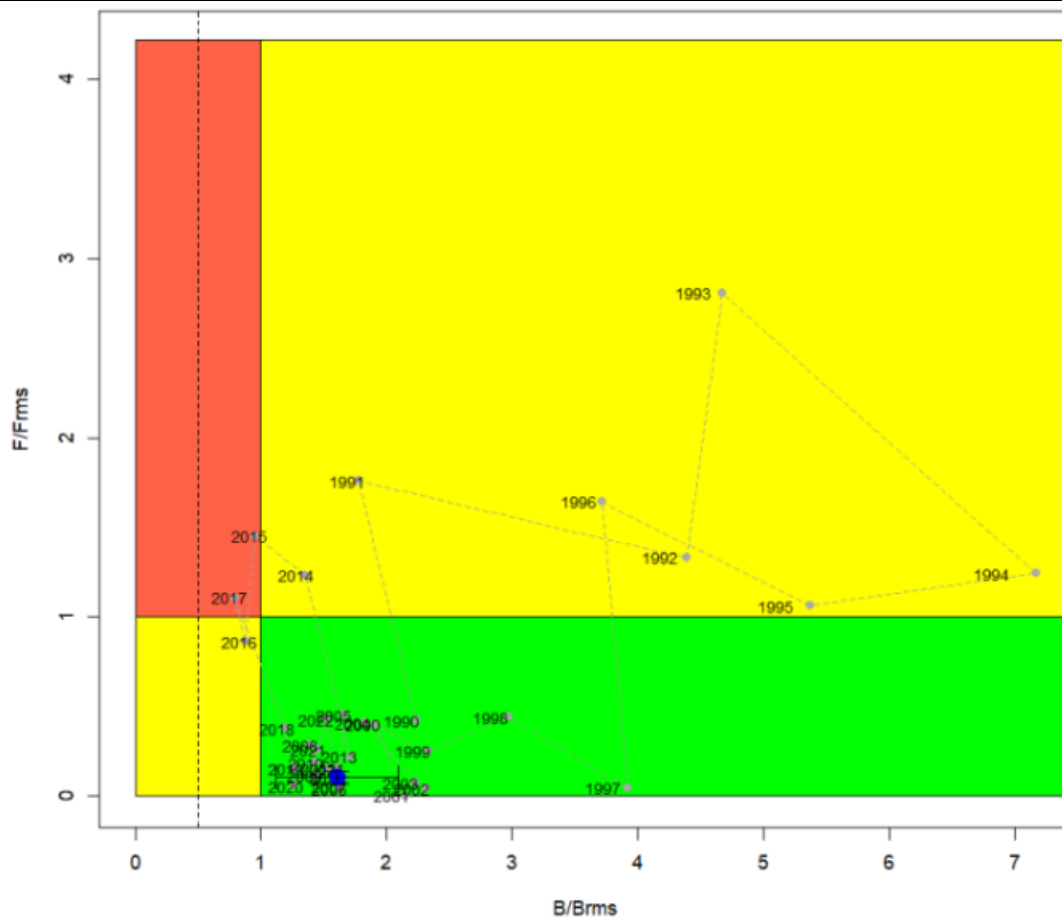


Figure 6. Kobe chart for sardina redonda in Ecuadorian waters. The blue dot is the most recent estimate of stock status (Canales & Jurado, 2024).

References

Canales C. M., Jurado V. (2024). Evaluación del stock de recursos pelágicos pequeños del Ecuador 2023. Informe Técnico. Guayaquil, Marzo 2023. 154 pp. <https://institutopesca.gob.ec/wp-content/uploads/2023/05/Informe-Evaluacio%CC%81n2023final.pdf>

IPIAP. 2025. Desembarques de pelágicos pequeños Toneladas (2021-2024). <https://institutopesca.gob.ec/wp-content/uploads/2025/05/Panel-desembarques-FLOTA-CERQUERA-2021-2024.pdf>

Species name	<i>Merluccius gayi</i> - South Pacific hake	
Fishing area and stock	FAO 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.

A single South Pacific hake stock is considered to extend through Ecuadorian and Peruvian waters. Regular stock assessments are conducted by the Peruvian Instituto del Mar del Perú (IMARPE). The most recent assessment was conducted in 2025, and incorporated catch data from both countries (Figure 7).

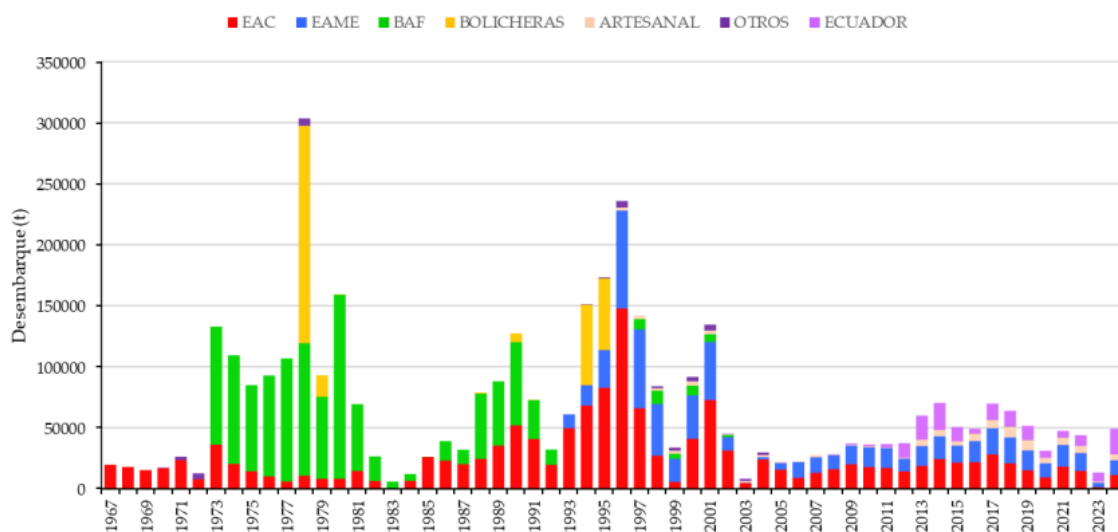


Figure 7. Hake landings by fleet type, 1971-2023. As the stock is distributed in Ecuadorian and Peruvian waters, these data include Peruvian landings (IMARPE 2025).

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

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

The 2025 biomass estimates produced by the two possible model calibrations were 158 148 and 219 852 t (Figure 8). Although the stock assessment report does not appear to indicate specific biomass target or limit reference points, it states: “According to the results of the assessment model, the Peruvian hake (*Merluccius gayi peruanus*), while showing a reduction in available biomass in the Peruvian Maritime Domain, remains above the biological reference points.”

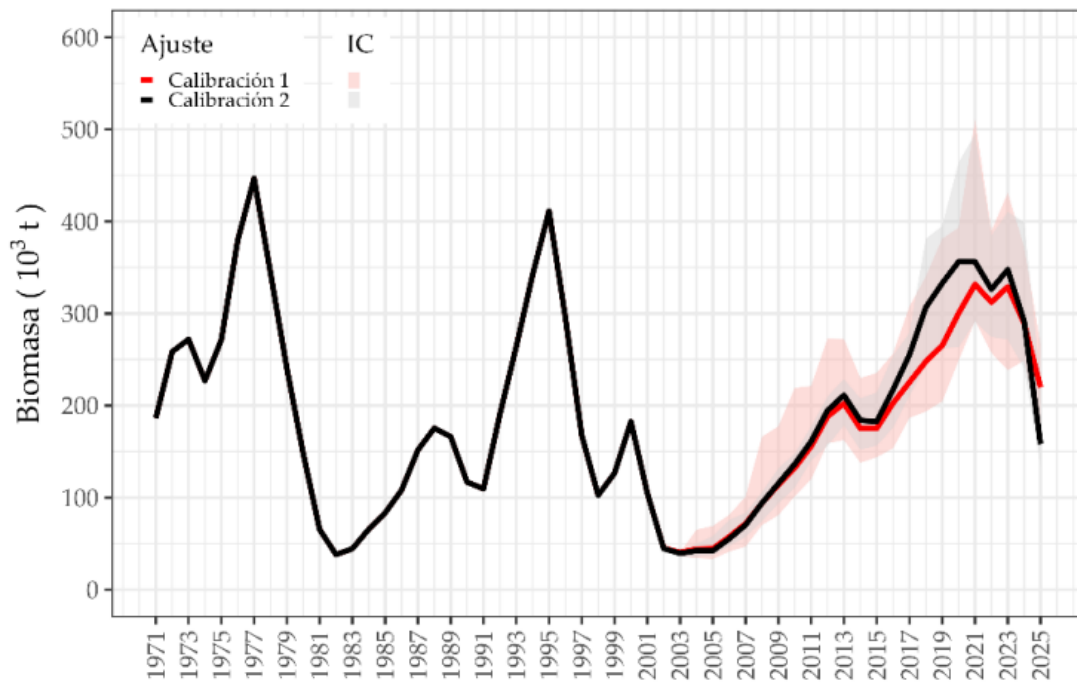


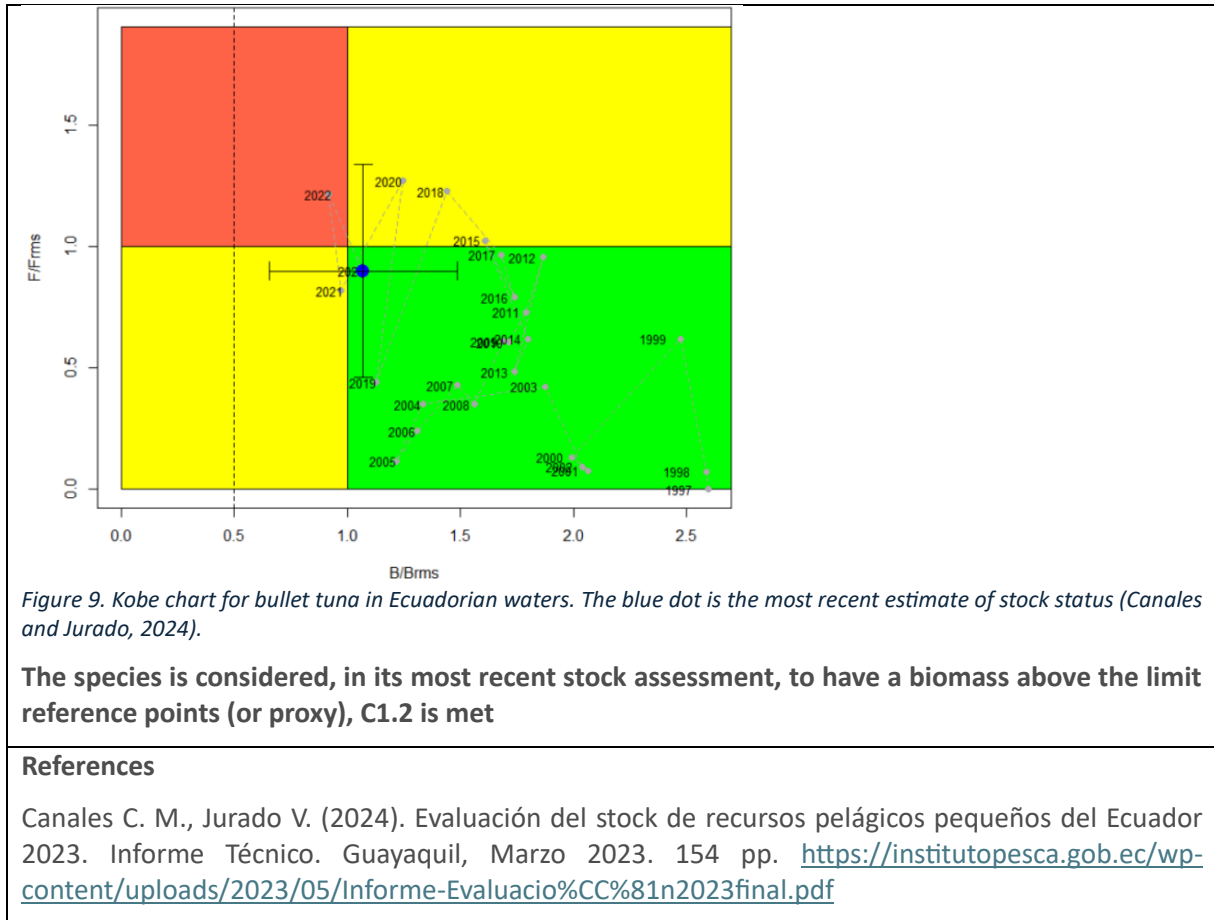
Figure 8. Estimated hake biomass under two calibration approaches (IMARPE 2025).

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

References

IMARPE (2025). Análisis De La Pesquería, Estado Poblacional Y Proyecciones De Pesca De La Merluza Peruana, Julio 2025 – Junio 2026
<https://cdn.www.gob.pe/uploads/document/file/8581594/7102842-informe-analisis-de-la-pesqueria-estado-poblacional-y-proyecciones-de-pesca-de-la-merluza-peruana-merluccius-gayi-peruanus.pdf?v=1756761306>

Species name		Auxis rochei - Bullet tuna/botella	
Fishing area and stock		FAO 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.			
Stock assessments covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian <i>Instituto Público De Investigación De Acuicultura Y Pesca</i> (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch data from 1975 – 2023; fishery-dependent sampling data collected by the IPIAP, including fishing areas, catch composition, size frequency data, and environmental conditions; CPUE estimates; and the outputs of a semi-regular hydroacoustic cruise survey (Canales and Jurado, 2024).			
Updated catches of Bullet tuna/botella are shown in Table 1 above.			
Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.			
C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.			
The biomass target reference point for this stock (BMSY), defined as 40% of the unfished biomass, is estimated to be 69,000t. The 2024 stock assessment concluded that biomass was approximately 74,000t, equivalent to 43% of the unfished level and above the target reference point (Canales and Jurado, 2024) (<i>Figure 9</i>). Due to uncertainty in the model, the probability that the stock biomass is below BMSY is estimated to be around 37%, but with a very low probability that biomass is below the limit reference point.			



Traceability information

Information provided for Step 3 Path 1 or Path 2

Species name	All listed by-product species			
Path 1	Yes ☐ No ☒			
Confirm all KDEs are provided	Yes ☐ No ☐			
Path 2	Yes ☒ No ☐			
Path 2 outcome	Flag country	Coastal score	Port score	Risk outcome
.	Ecuador	2.69	2.11	Downgraded to medium risk

Guidance for Applicants/Certificate holders on improved traceability

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

What does better practices look like?

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

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

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