



By-Product assessment report

BP106

EXU SA

Report code	BP106	Date of issue	May 2025
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1. Application details	
Applicant	EXU SA
Applicant country	Ecuador
2. Certification Body details	
Name of Certification Body (CB)	Global Trust Certification
Contact information for CB	NSF-MarinTrust@nsf.org
Assessor name	Sam Peacock
CB internal peer reviewer name	Léa Lebechnech
Internal peer review evaluation	Agree with evaluation
Number of Assessment days	1.5
Comments on the assessment	This assessment covers 8 byproduct species, all exclusively caught by Ecuadorian vessels within Ecuadorian waters, and landed at Ecuadorian ports. All 8 species is either Least Concern or Data Deficient on the IUCN Red List, and none appears in the CITES appendices. Ecuador is a High Risk flag state, and so all 8 species were subjected to Step 3 assessment. All species passed the Step 3 risk assessment via Path 2. Seven of the species also passed the Category C assessment, and were scored as Approved, Source with Caution. Dolphinfinch is not subjected to regular stock assessment and there are no established reference points, therefore the stock did not pass the Category C assessment and this byproduct was scored Not Approved.
3. Approval validity	Valid from 05/2025 Valid until 06/2026*
4. Assessment cycle	Re-Approval

* Originally valid until 05/2026.

5. By-product assessment outcomes			
By-product species name	Flag country(ies)	Fishing Areas	MarinTrust approval status
Etrumeus acuminatus - Sardina redonda	Ecuador	Ecuadorian EEZ	Approved source with caution
Thunnus albacares - Yellowfin tuna	Ecuador	Ecuadorian EEZ	Approved source with caution
Katsuwonus pelamis - Skipjack tuna	Ecuador	Ecuadorian EEZ	Approved source with caution
Merluccius gayi - South Pacific hake	Ecuador	Ecuadorian EEZ	Approved source with caution
Coryphaena hippurus - Common dophinfish	Ecuador	Ecuadorian EEZ	Not approved
Auxis rochei - Bullet Tuna	Ecuador	Ecuadorian EEZ	Approved source with caution
Scomber japonicus - Pacific chub mackerel/macarela	Ecuador	Ecuadorian EEZ	Approved source with caution
Opisthonema spp. - Pacific thread herring/pinchagua	Ecuador	Ecuadorian EEZ	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
Sardina redonda <i>Etrumeus acuminatus</i>	Ecuador	Least concern	Not listed	High risk	Yes
Yellowfin tuna <i>Thunnus albacares</i>	Ecuador	Least concern	Not listed	High risk	Yes
Skipjack tuna <i>Katsuwonus pelamis</i>	Ecuador	Least concern	Not listed	High risk	Yes
South Pacific hake <i>Merluccius gayi</i>	Ecuador	Data deficient	Not listed	High risk	Yes
Common dolphinfish <i>Coryphaena hippurus</i>	Ecuador	Least concern	Not listed	High risk	Yes
Bullet Tuna <i>Auxis rochei</i>	Ecuador	Least concern	Not listed	High risk	Yes
Pacific chub mackerel/macarela <i>Scomber japonicus</i>	Ecuador	Least concern	Not listed	High risk	Yes
Pacific thread herring/pinchagua <i>Opisthonema spp.</i>	Ecuador	Multiple species, all 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
Sardina redonda <i>Etrumeus acuminatus</i>	Ecuador	FAO 87, Ecuadorian waters	Ecuadorian sardina redonda	Pass	Path 2 - Yes	Downgraded to Medium risk
Yellowfin tuna <i>Thunnus albacares</i>	Ecuador	FAO 87, Ecuadorian waters	EPO Yellowfin	Pass	Path 2 - Yes	Downgraded to Medium risk
Skipjack tuna <i>Katsuwonus pelamis</i>	Ecuador	FAO 87, Ecuadorian waters	EPO skipjack	Pass	Path 2 – Yes	Downgraded to Medium risk
South Pacific hake <i>Merluccius gayi</i>	Ecuador	FAO 87, Ecuadorian waters	Peruvian hake	Pass	Path 2 - Yes	Downgraded to Medium risk
Common dolphinfish <i>Coryphaena hippurus</i>	Ecuador	FAO 87, Ecuadorian waters	EPO dolphinfish	Fail	Path 2 – Yes	Remains High risk
Bullet Tuna <i>Auxis rochei</i>	Ecuador	FAO 87, Ecuadorian waters	Ecuadorian bullet tuna	Pass	Path 2 – Yes	Downgraded to Medium risk
Pacific chub mackerel/macarela <i>Scomber japonicus</i>	Ecuador	FAO 87, Ecuadorian waters	Ecuadorian macarela	Pass	Path 2 - Yes	Downgraded to Medium risk
Pacific thread herring/pinchagua <i>Opisthonema spp.</i>	Ecuador	FAO 87, Ecuadorian waters	Ecuadorian thread herring	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%

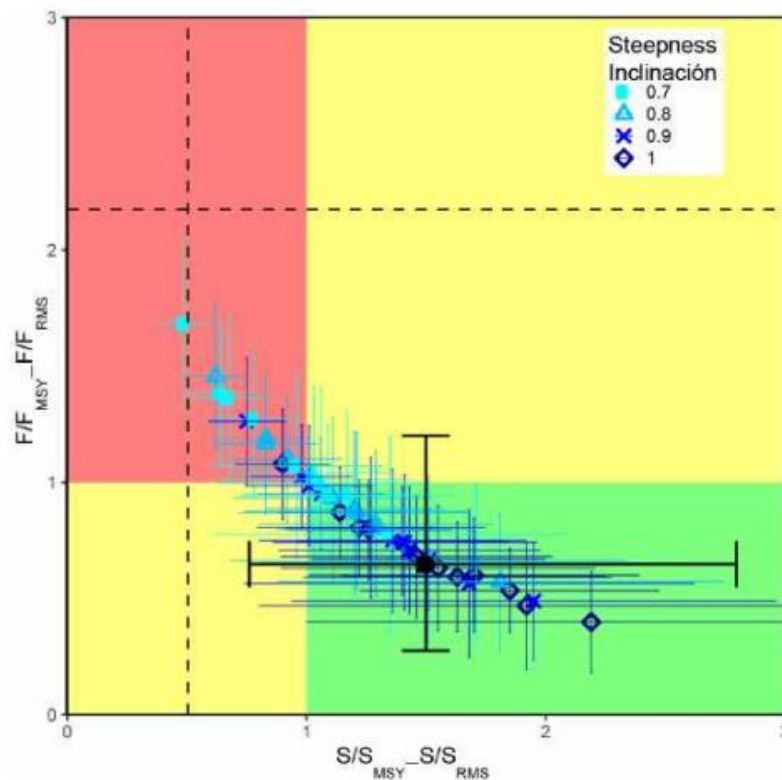
Step 3 outcomes

Category C assessment

Species name		<i>Thunnus albacares</i> - Yellowfin tuna
Fishing area and stock		FAO 87, Ecuadorian waters (Eastern Pacific 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.
	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.
		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>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.</p>		
<p style="text-align: center;">Total catches of yellowfin tuna in the EPO by set type (IATTC 2024).</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.

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

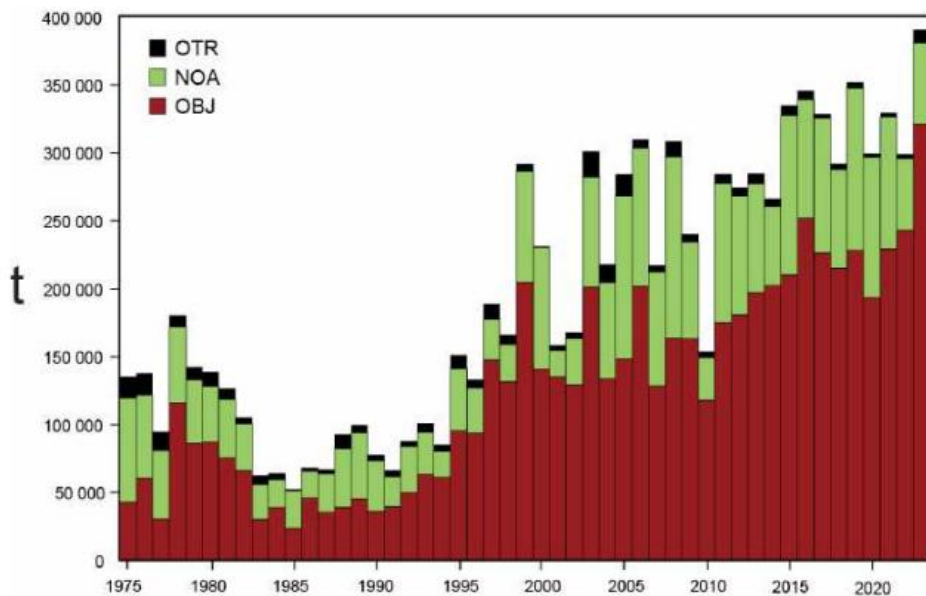
IATTC (2022). Stock Status Indicators (SSIs) for tropical tunas in the Eastern Pacific Ocean. 13th Meeting of the IATTC Scientific Advisory Committee, Document SAC-13-06 Corr. [https://www.iattc.org/GetAttachment/22511b5b-ba2b-4126-9ba2-0bffee89f4d5/SAC-13-06%20-%20Stock%20status%20indicators%20\(SSIs\)%20for%20tropical%20tunas%20in%20the%20EPO](https://www.iattc.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		<i>Katsuwonus pelamis</i> - Skipjack tuna
Fishing area and stock		FAO 87, Ecuadorian waters, EPO 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.
	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.
		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.

Skipjack tuna in the Eastern Pacific Ocean (EPO skipjack) falls under the jurisdiction of the Inter-American Tropical Tuna Commission (IATTC). The most recent stock assessment was a benchmark stock assessment conducted in 2024 using an integrated statistical age-structured catch-at-length model in Stock Synthesis (IATTC 2024). Data incorporated into the model includes international catch and discard data, and the outputs of five surveys. The 2024 stock assessment is considered to reflect “major advancements in the assessment methodologies”, and incorporates new data sets compared to the previous, interim assessment, conducted in 2022. **C1.1 is met.**



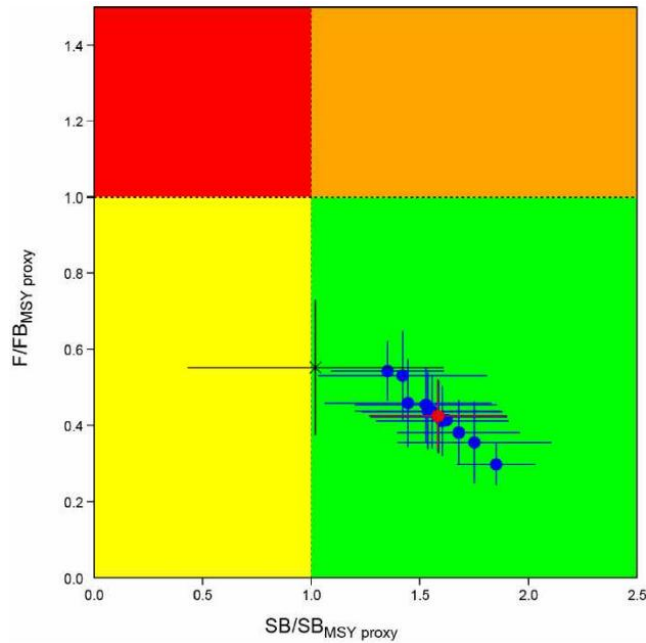
Total catches of EPO skipjack tuna by purse seine gears, including as bycatch in other fisheries (OTR) (IATTC 2024).

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.

EPO skipjack is managed relative to a conservative proxy for target biomass, as no MSY-based reference point can be generated under the assumptions applied in the stock assessment (IATTC 2024). The conclusions of the 2024 stock assessment were as follows (IATTC 2024):

- All but one of the assessment models estimated that biomass was above the target reference point level, and fishing mortality below the target reference point level.
- None of the models indicated that biomass was below the limit reference point level.

Consequently, **C1.2 is met**.



Kobe plot showing stock status estimates from all the 2024 stock assessment models. Red dot is the reference model, lines represent error bars (IATTC 2024).

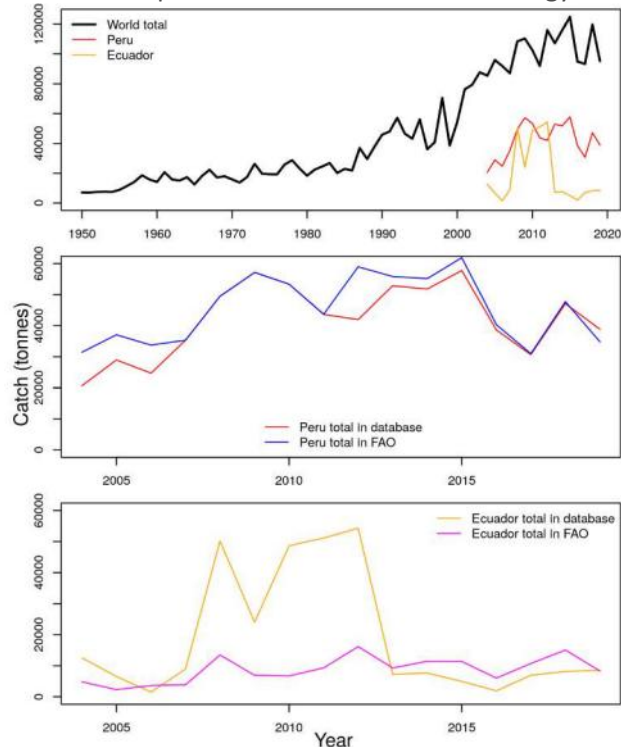
References

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	<i>Coryphaena hippurus</i> - Common dolphinfish		
Fishing area and stock	FAO 87, Ecuadorian waters, EPO dolphinfish		
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	FAIL
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	FAIL
		Clause outcome:	FAIL

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 structure of dolphinfish in the Pacific Ocean is not known, and regular stock assessments are not undertaken (Fishsource, 2025). The most recent stock assessment was conducted in 2021, using data up to 2019. The assessment incorporated Ecuadorian and Peruvian catch data; while the unknown stock structure means it is not possible to determine whether this represents all fishery removals from this stock, it does cover those vessels within the scope of the present assessment. However, the fishery is considered “data poor” in both countries, and the stock assessment report notes significant gaps in much of the source data (IATTC 2021). On top of this, the stock assessment is now 4 years old and based on data which are 6+ years old, approaching the limit of what is acceptable within the MT methodology. Overall, **C1.1 is not met**.



World and country landings of dolphinfish, taken from the 2021 stock assessment report (IATTC 2021).

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

The 2021 stock assessment provides estimates of biomass up to the end of the assessed time series – i.e. December 2019 (IATTC 2021). No reference points are established for this stock (Fishsource 2025). Due to the age of the most recent stock assessment, and the lack of reference points, it is not possible to determine whether the current stock status is above the limit reference point. **C1.2 is not met.**

References

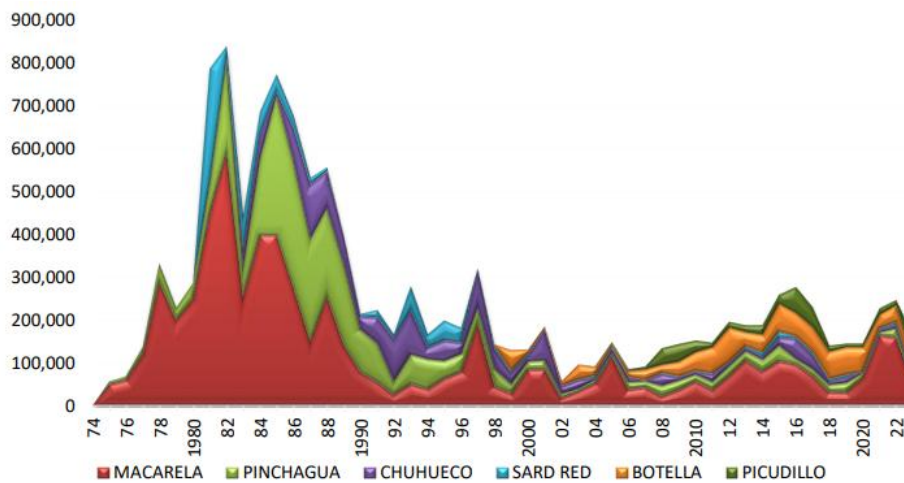
Fishsource, 2025. Common dolphinfish in the Eastern Pacific Ocean. https://www.fishsource.org/stock_page/1036

IATTC, 2021. Stock Assessment of the dolphinfish (*Coryphaena hippurus*) in the South-East Pacific Ocean. https://www.iattc.org/GetAttachment/76cad98f-5a38-4aa2-b7cb-df4cfd23ef00/SAC-13-INF-O_Evaluacion-del-stock-de-dorado-OPO-Sur.pdf

Species name		<i>Auxis rochei</i> - Bullet Tuna
Fishing area and stock		FAO 87, Ecuadorian waters, Ecuadorian bullet 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.

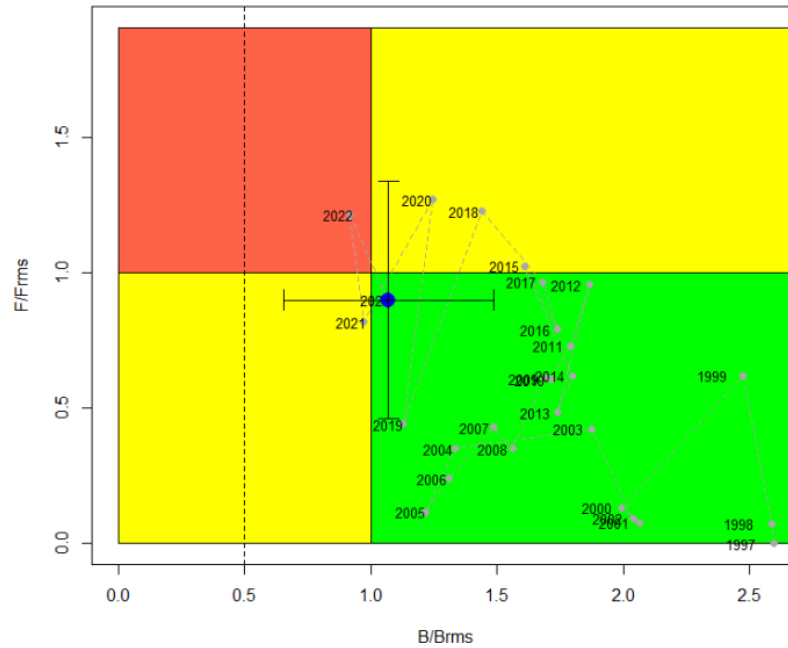
Stock assessments covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian Instituto Público De Investigación De Acuicultura Y Pesca (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch 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 semi-regular hydroacoustic cruise survey (IPIAP 2024). Consequently, **C1.1 is met.**



Landings in the Ecuadorian small pelagic fishery, 1975 – 2023. Bullet tuna is “Botella” (orange) (IPIAP 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 biomass target reference point for this stock (B_{MSY}), 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 (IPIAP 2024). Due to uncertainty in the model, the probability that the stock biomass is below B_{MSY} is estimated to be around 37%, but with a very low probability that biomass is below the limit reference point. Consequently, **C1.2 is met.**



Kobe chart for bullet tuna in Ecuadorian waters. The blue dot is the most recent estimate of stock status (IPIAP 2024).

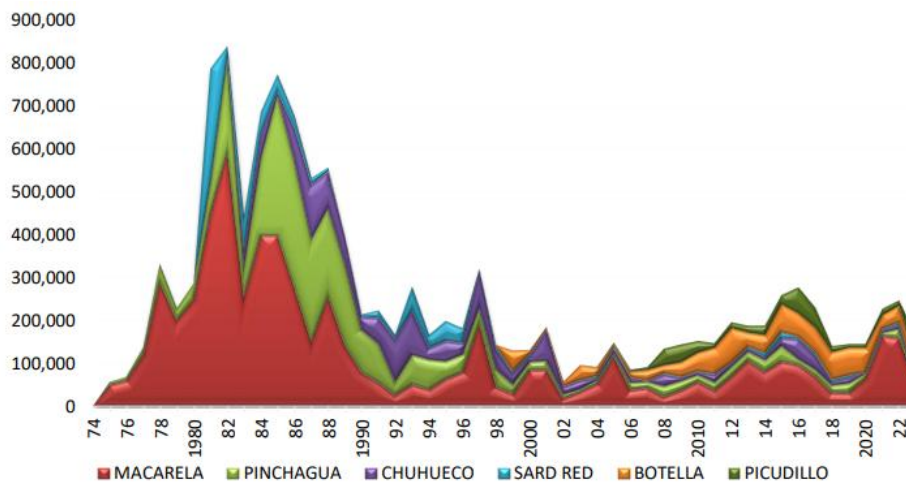
References

IPIAP (2024). Evaluacion Del Stock De Recursos Pelagicos Pequeños Del Ecuador 2023 (*Stock assessment of Ecuador’s small pelagic resources 2023*). https://institutopesca.gob.ec/wp-content/uploads/2024/07/Informe_Evaluacion_2024.pdf

Species name	<i>Scomber japonicus</i> - Pacific chub mackerel/macarela		
Fishing area and stock	FAO 87, Ecuadorian waters, Ecuadorian macarela		
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.

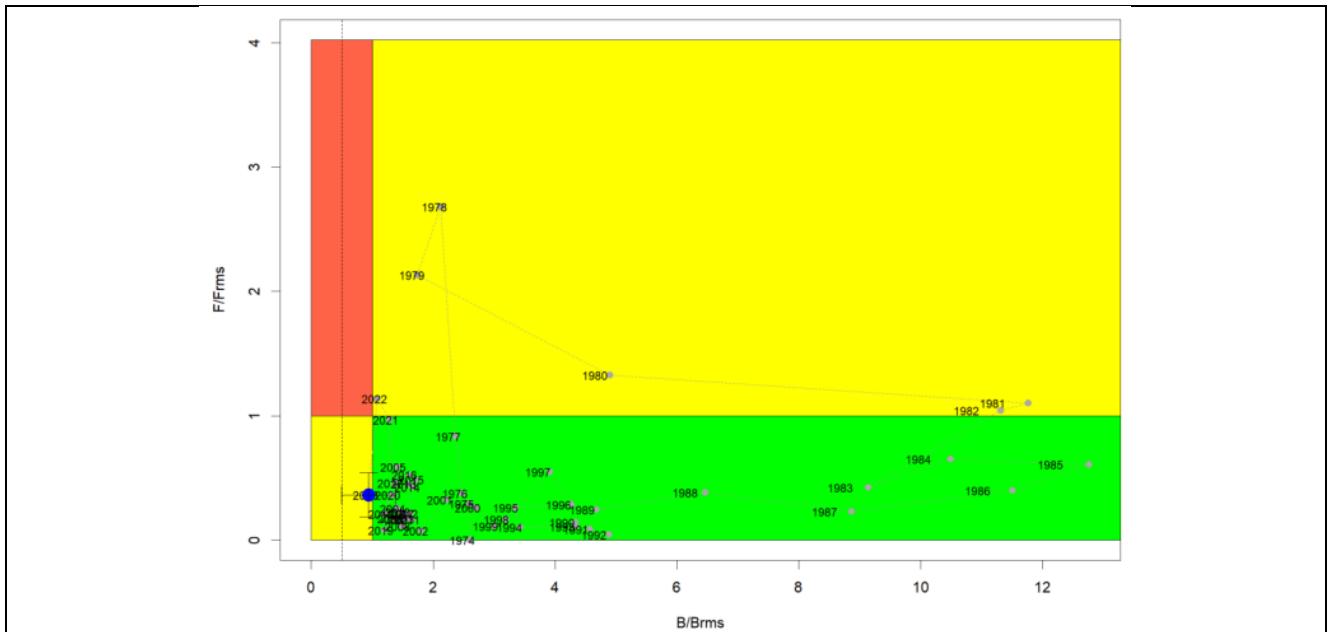
Stock assessments covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian Instituto Público De Investigación De Acuicultura Y Pesca (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch 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 semi-regular hydroacoustic cruise survey (IPIAP 2024). Consequently, **C1.1 is met.**



Landings in the Ecuadorian small pelagic fishery, 1975 – 2023. Bullet tuna is “Botella” (orange) (IPIAP 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 biomass target reference point for this stock (B_{MSY}), 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 (IPIAP 2024). Due to uncertainty in the model, the probability that the stock biomass is below B_{MSY} is estimated to be around 61%, but with a low probability that biomass is below the limit reference point. Consequently, **C1.2 is met.**



Kobe chart for Pacific chub mackerel in Ecuadorian waters. The blue dot is the most recent estimate of stock status (IPIAP 2024)

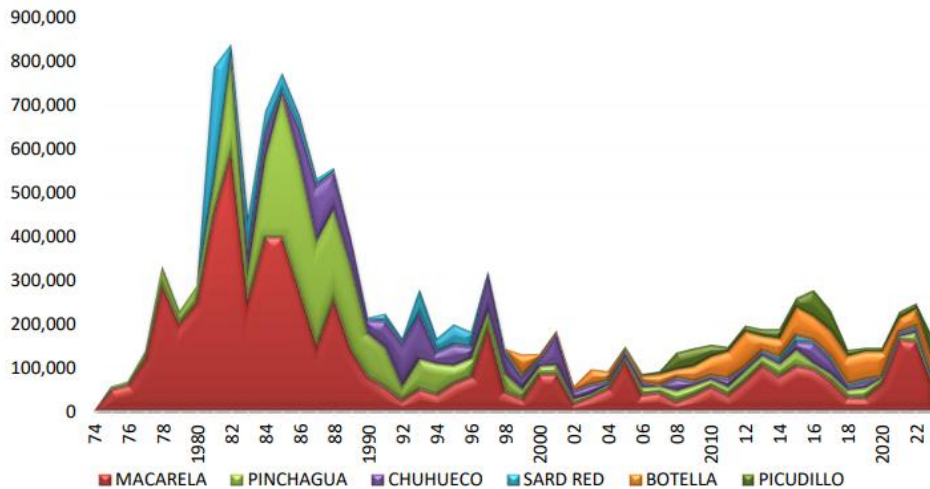
References

IPIAP (2024). Evaluacion Del Stock De Recursos Pelagicos Pequeños Del Ecuador 2023 (*Stock assessment of Ecuador’s small pelagic resources 2023*). https://institutopesca.gob.ec/wp-content/uploads/2024/07/Informe_Evaluacion_2024.pdf

Species name		<i>Etrumeus acuminatus</i> - 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.

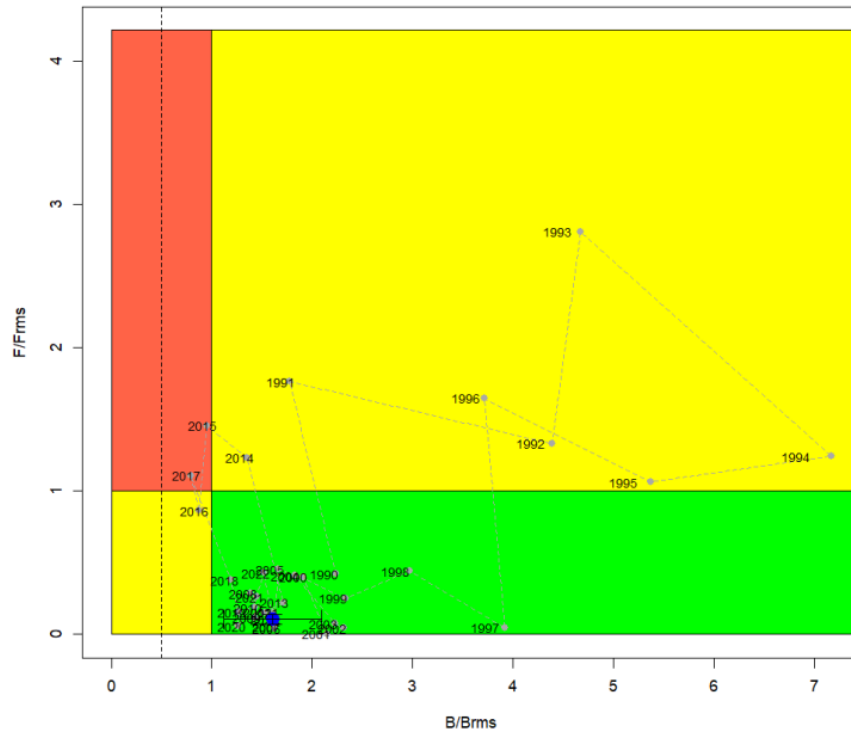
Stock assessments covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian Instituto Público De Investigación De Acuicultura Y Pesca (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch 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 semi-regular hydroacoustic cruise survey (IPIAP 2024). Consequently, **C1.1 is met.**



Landings in the Ecuadorian small pelagic fishery, 1975 – 2023. Bullet tuna is “Botella” (orange) (IPIAP 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 biomass target reference point for this stock (B_{MSY}), defined as 40% of the unfished biomass, is estimated to be 11,800t. 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 B_{MSY} is estimated to be negligible, and therefore so is the probability that biomass is below the limit reference point. Consequently, **C1.2 is met.**



Kobe chart for sardina redonda in Ecuadorian waters. The blue dot is the most recent estimate of stock status (IPIAP 2024).

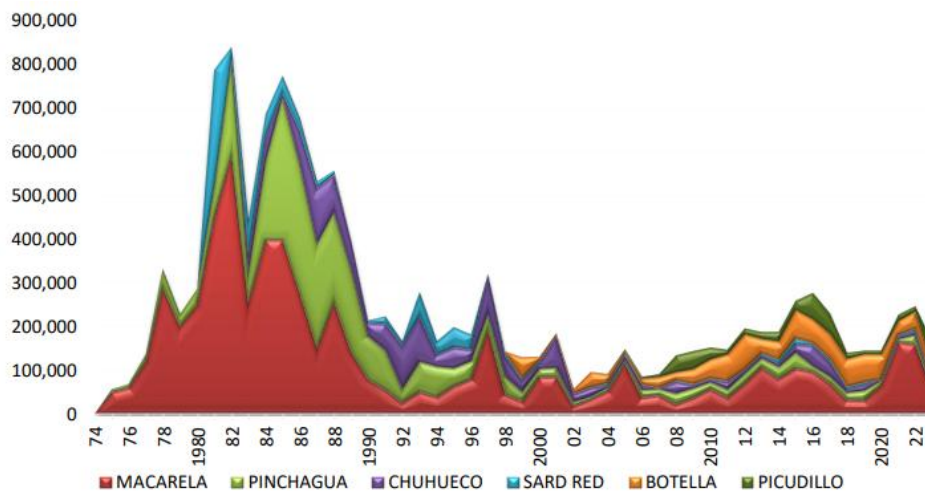
References

IPIAP (2024). Evaluacion Del Stock De Recursos Pelagicos Pequeños Del Ecuador 2023 (*Stock assessment of Ecuador’s small pelagic resources 2023*). https://institutopesca.gob.ec/wp-content/uploads/2024/07/Informe_Evaluacion_2024.pdf

Species name		<i>Opisthonema spp.</i> - Pacific thread herring/pinchagua
Fishing area and stock		FAO 87, Ecuadorian waters, Ecuadorian thread herring
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.

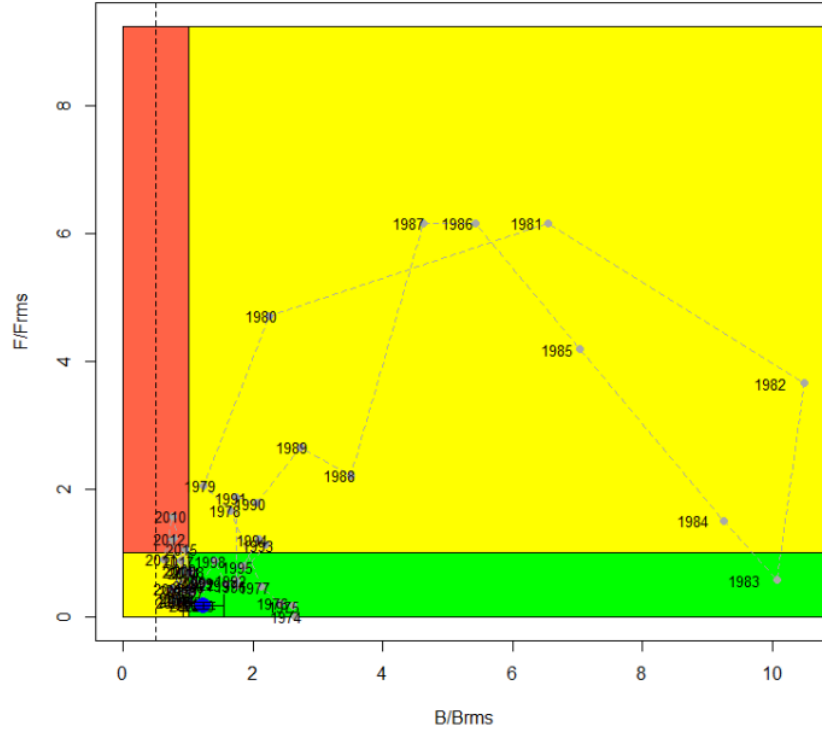
Stock assessments covering all the main species caught in the Ecuadorian small pelagic fishery have been conducted annually since 2019 by the Ecuadorian Instituto Público De Investigación De Acuicultura Y Pesca (IPIAP). Data incorporated into the most recent assessment, conducted in 2024, included catch 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 semi-regular hydroacoustic cruise survey (IPIAP 2024). **C1.1 is met.**



Landings in the Ecuadorian small pelagic fishery, 1975 – 2023. Bullet tuna is “Botella” (orange) (IPIAP 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 biomass target reference point for this stock (B_{MSY}), defined as 40% of the unfished biomass, is estimated to be 70,000t. The 2024 stock assessment concluded that biomass was approximately 86,000t, equivalent to 49% of the unfished level and above the target reference point (IPIAP 2024). The probability that the stock biomass is below B_{MSY} is estimated to be negligible, and therefore so is the probability that biomass is below the limit reference point. **C1.2 is met.**



Kobe chart for thread herrings in Ecuadorian waters. The blue dot is the most recent estimate of stock status (IPIAP 2024).

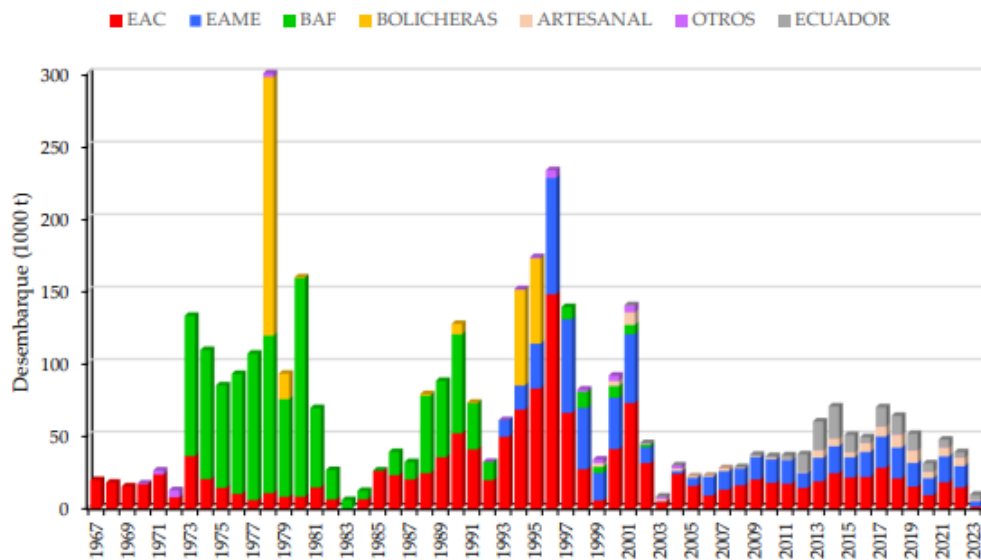
References

IPIAP (2024). Evaluacion Del Stock De Recursos Pelagicos Pequeños Del Ecuador 2023 (*Stock assessment of Ecuador’s small pelagic resources 2023*). https://institutopesca.gob.ec/wp-content/uploads/2024/07/Informe_Evaluacion_2024.pdf

Species name	Merluccius gayi - South Pacific hake		
Fishing area and stock	FAO 87, Ecuadorian waters, Peruvian hake		
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.

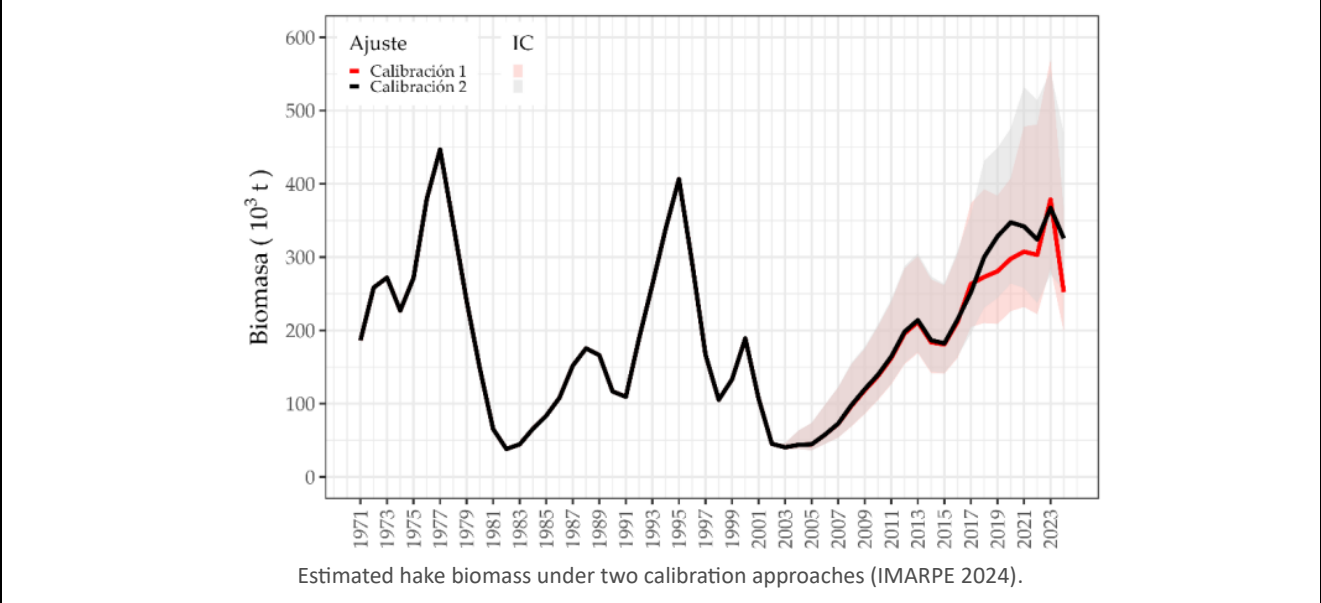
A single South Pacific hake stock is considered to extend through Ecuadorian and Peruvian waters. Regular stock assessments are conducted by the Peruvian Instituto del Mar del Perú (IMARPE). The most recent assessment was conducted in 2024, and incorporated catch data from both countries. **C1.1 is met.**



Hake landings by fleet type, 1971-2023. As the stock is distributed in Ecuadorian and Peruvian waters, these data include Peruvian landings (IMARPE 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 current biomass estimates produced by the two possible model calibrations were 325,489t and 252,370t. Although the stock assessment report does not appear to indicate specific biomass target or limit reference points, it states, “The current status of the Peruvian hake (*Merluccius gayi peruanus*), according to the results of the assessment model, remains above biological reference points”. **C1.2 is met.**



References

IMARPE (2024). Análisis De La Pesquería, Estado Poblacional Y Proyecciones De Pesca De La Merluza Peruana, Julio 2024 – Julio 2025 (*Analysis Of The Fishery, Population Status, And Projections For The Peruvian Hake Fisheries, July 2024 – July 2025*). <https://cdn.www.gob.pe/uploads/document/file/6769050/5866400-analisis-de-la-pesqueria-estado-poblacional-y-proyecciones-de-pesca-de-la-merluza-peruana-merluccius-gayi-peruanus.pdf>

Traceability information

All byproducts covered by this assessment are exclusively caught in Ecuadorian waters and landed at Ecuadorian ports.

Species name	All listed byproduct species			
Path 1	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Confirm all KDEs are provided	Yes <input checked="" 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
	Ecuador	Ecuador – Medium Risk	Ecuador – Medium Risk	Downgraded to medium risk
				Choose an item.

Guidance for Applicants/Certificate holders on improved traceability

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

What does better practices look like?

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

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

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