



MarinTrust Standard V2

By-product Fishery Assessment

ECU02 Pacific chub mackerel in FAO Area 87

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Pacific chub mackerel (<i>Scomber japonicus</i>)
	Geographical area:	FAO Area 87
	Country of origin of the product:	Ecuador
	Stock:	Ecuadorian Pacific chub mackerel
Date	March 2024	
Report Code	ECU02	
Assessor	Sam Peacock	
Country of origin of the product - PASS	Ecuador	
Country of origin of the product - FAIL	None	

Application details and summary of the assessment outcome			
Company Name(s): URISA S.A.; TADEL S.A.; PRODUCTOS PESQUEROS S.A.; PESQUERA EXU S.A.; NIRSA S.A; Manabita de Comercio SA – Manacorsacom; Exu SA; Fortidex SA; Universal de Comercio SA Unicorsa; Lucomercon SA; Marine Protein Marprot SA			
Country: Ecuador			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		LRQA	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Sam Peacock	Jose Peiro Crespo	0.2	Surveillance 1
Assessment Period	March 2024 – March 2025		

Scope Details	
Main Species	Pacific chub mackerel (<i>Scomber japonicus</i>)
Stock	Ecuadorian Pacific chub mackerel
Fishery Location	FAO Area 87
Management Authority (Country/ State)	Ecuador
Gear Type(s)	Purse seine, hand-line, pelagic trawls
Outcome of Assessment	
Peer Review Evaluation	Pass
Recommendation	Maintain approval

Table 2. Assessment Determination

Assessment Determination
<p>Pacific chub mackerel has been categorised by the IUCN as a species of Least Concern, and it does not appear in the CITES appendices. In Ecuadorian waters it is managed relative to the target reference point 40%B₀, and was therefore assessed under Category C.</p> <p>As identified by the initial MT assessment carried out in 2023, Pacific chub mackerel is subject to annual stock assessment by the Instituto Público de Investigación de Acuicultura y Pesca. The 2023 stock assessment concluded that stock biomass was slightly improved compared to the previous year, at 36% of B₀ where it was previously 32%. Although there is no formal limit reference point for the stock, biomass remains above the default limit reference point set out by the MT byproduct assessment guidance of half the target reference point, in this case 20% of B₀.</p> <p>The byproduct continues to meet the MT requirements and should remain approved for use as a raw material.</p>
Fishery Assessment Peer Review Comments
<p>The by-product fishery under assessment is the Pacific chub mackerel (<i>Scomber japonicus</i>) caught with Purse seine, hand-line and pelagic trawls gears in FAO area 87. The species is classified as LC by the IUCN. The species is managed relative to biomass-based reference points (target reference point 40%B₀) in Ecuadorian waters and therefore it is assessed under category C.</p> <p>The most recent stock assessment conducted by the Instituto Público de Investigación de Acuicultura y Pesca in 2023 indicated that that B was below (but close) to the target point ($B_{2023}/B_{MSY} = 0.91$, $B_{2023} = 36\%B_0$). This is well over the MT byproduct assessment guidance for a default limit reference point (20%B₀). Therefore, it passes category C.</p> <p>The peer review supports the auditor’s recommendation to pass the Pacific chub mackerel caught with Purse seine, hand-line and pelagic trawls gears in Ecuadorian waters (FAO area 87) under the Marin Trust IFFO RS v2.0 by-fishery standard for the production of fishmeal and fish oil.</p>
Notes for On-site Auditor

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as an MarinTrust raw material.

IUCN Red list Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

Common name	Latin name	Stock	Management	Category	IUCN Red List Category ¹	CITES Appendix 1 ²
Pacific chub mackerel	<i>Scomber japonicus</i>	Ecuadorian Pacific chub mackerel	Yes	C	Least Concern ³	No

¹ <https://www.iucnredlist.org/>

² <https://cites.org/eng/app/appendices.php>

³ <https://www.iucnredlist.org/species/170306/170083106>

CATEGORY C SPECIES

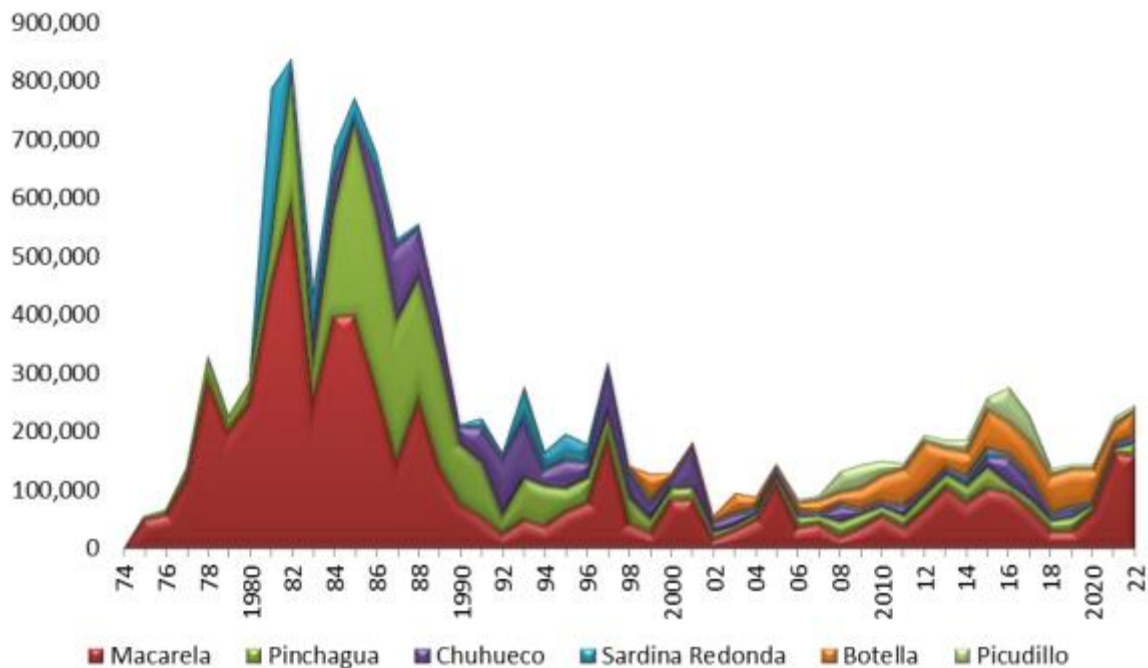
In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for each Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. Where a species fails this Clause, it should be assessed as a Category D species instead.

Species Name		Pacific chub mackerel	
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.

Pacific chub mackerel in Ecuador, also known locally as macarela, is one of several species covered by the Ecuador Small Pelagics Purse Seine FIP. As part of this FIP it continues to be subjected to annual stock assessments, most recently in 2023. Data on size composition, landings, hydroacoustic cruises, and CPUE data were analysed using a statistical catch-at-age model (Canales & Jurado 2023). 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 and C1.1 is met.

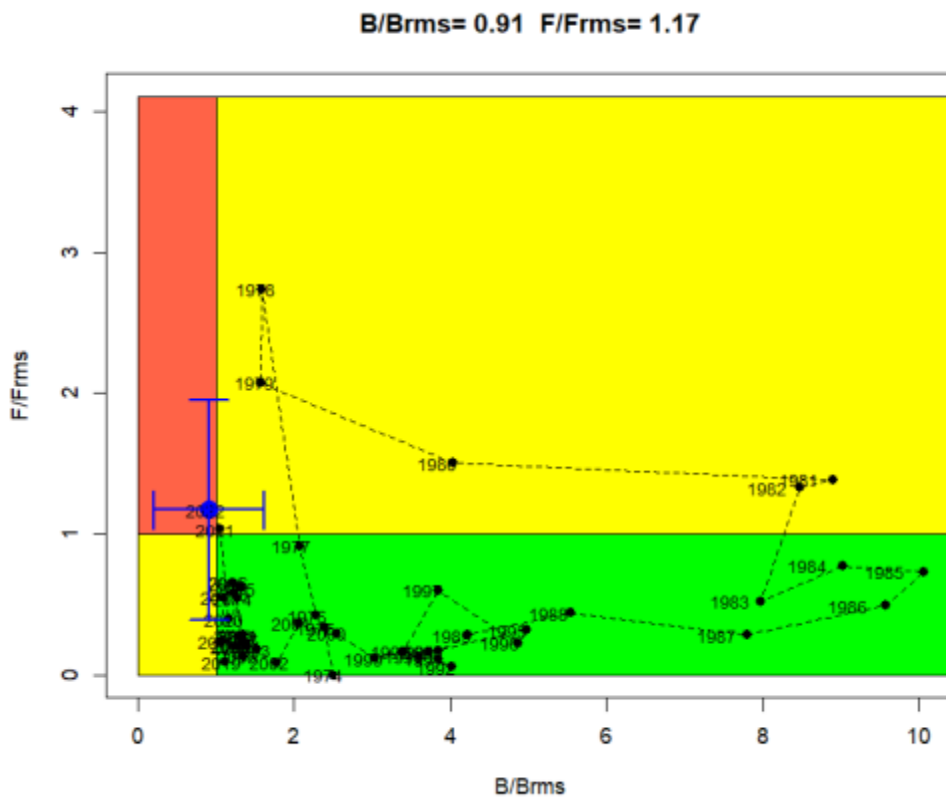


Landings of the main species targeted by the Ecuadorian small pelagic fishery, 1975-2022. Pacific chub mackerel is “Macarela”, in red (Canales & Jurado 2023)

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

The 2023 stock assessment concluded that macarela is both overfished and subject to overfishing. In the previous stock assessment biomass was estimated to be 32% of B_0 ; however biomass in 2022 was estimated to be around 36% of B_0 , relative to a target reference point of 40% B_0 (Canales & Jurado 2022).

As previously, there is no limit reference point established for this stock. In this scenario, the MT byproduct assessment guidance indicates that the limit reference point should be assumed to be half of the target reference point, which in this case translates to 20% B_0 . As the stock is currently estimated to be at 36% B_0 , the biomass remains above the default limit reference point and C1.2 is met.



Kobe plot for Pacific chub mackerel in the Ecuadorian small pelagic fishery. Blue dot is the current estimated status (Canales & Jurado 2023)

References

Canales C. M., Jurado V. (2023). 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%81n-2023final.pdf>

Links

MarinTrust Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01

CATEGORY D SPECIES

Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

D1	Species Name	n/a	
	Productivity Attribute	Value	Score
	Average age at maturity (years)		
	Average maximum age (years)		
	Fecundity (eggs/spawning)		
	Average maximum size (cm)		
	Average size at maturity (cm)		
	Reproductive strategy		
	Mean trophic level		
	Average Productivity Score		
	Susceptibility Attribute	Value	Score
	Availability (area overlap)		
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)		
	Selectivity of gear type		
	Post-capture mortality		
	Average Susceptibility Score		
	PSA Risk Rating (From Table D3)		
	Compliance rating		
	Further justification for susceptibility scoring (where relevant) <i>For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision</i>		
	References		
Standard clauses 1.3.2.2			

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	High productivity (Low risk, score = 1)	Medium productivity (medium risk, score = 2)	Low productivity (high risk, score = 3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size	<100 cm	100-300 cm	>300 cm
Average size at maturity	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Mean Trophic Level	<2.75	2.75-3.25	>3.25

Susceptibility attributes	Low susceptibility (Low risk, score = 1)	Medium susceptibility (medium risk, score = 2)	High susceptibility (high risk, score = 3)
Areal overlap (availability) Overlap of the fishing effort with the species range	<10% overlap	10-30% overlap	>30% overlap
Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability).	Medium overlap with fishing gear.	High overlap with fishing gear (high encounterability). Default score for target species
Selectivity of gear type Potential of the gear to retain species	a Individuals < size at maturity are rarely caught	a Individuals < size at maturity are regularly caught.	a Individuals < size at maturity are frequently caught
	b Individuals < size at maturity can escape or avoid gear.	b Individuals < half the size at maturity can escape or avoid gear.	b Individuals < half the size at maturity are retained by gear.
Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released post-capture and survival.	Evidence of some released post-capture and survival.	Retained species or majority dead when released.

D3		Average Susceptibility Score		
		1 - 1.75	1.76 - 2.24	2.25 - 3
Average Productivity Score	1 - 1.75	PASS	PASS	PASS
	1.76 - 2.24	PASS	PASS	TABLE D4
	2.25 - 3	PASS	TABLE D4	TABLE D4

D4	Species Name	n/a	
Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements			
D4.1	The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.		
D4.2	There is no substantial evidence that the fishery has a significant negative impact on the species.		
			Outcome:
Evidence			
D4.1: The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.			
D4.2 There is no substantial evidence that the fishery has a significant negative impact on the species.			
References			
Links			
MarinTrust Standard clause		1.3.2.2, 4.1.4	
FAO CCRF		7.5.1	
GSSI		D.5.01	