



MarinTrust Standard V2

By-product Fishery Assessment

ECU02 Pacific chub mackerel in FAO Area 87

MarinTrust Programme

Unit C, Printworks

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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 (Pacific, Southeast)
	Country of origin of the product:	Ecuador
	Stock:	Ecuadorian Pacific chub mackerel
Date	March 2023	
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			
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	Sam Dignan	0.2	Re-approval
Assessment Period	March 2023 – March 2024		

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	

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>Pacific chub mackerel, known locally as macarela, has been subject to several stock assessments in recent years as part of the Ecuadorian Small Pelagics Purse Seine FIP. The most recent stock assessment was carried out in 2022 and incorporated catch data. The assessment concluded that stock biomass is currently below the target reference point. No limit reference point is established for the stock, but by utilising the assumed limit reference point set out in the MT byproduct assessment guidance (50% of the target reference point), it can be concluded that the stock biomass is currently above the limit reference point. The byproduct meets the MT requirements and should be approved for use as a raw material.</p>
Fishery Assessment Peer Review Comments
<p>Based on the evidence presented herein and examination of the latest assessment of the target stock, the byproduct meets relevant MarinTrust requirements and should be re-approved for use as a raw material.</p>
Notes for On-site Auditor
Empty space for notes

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 a 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>

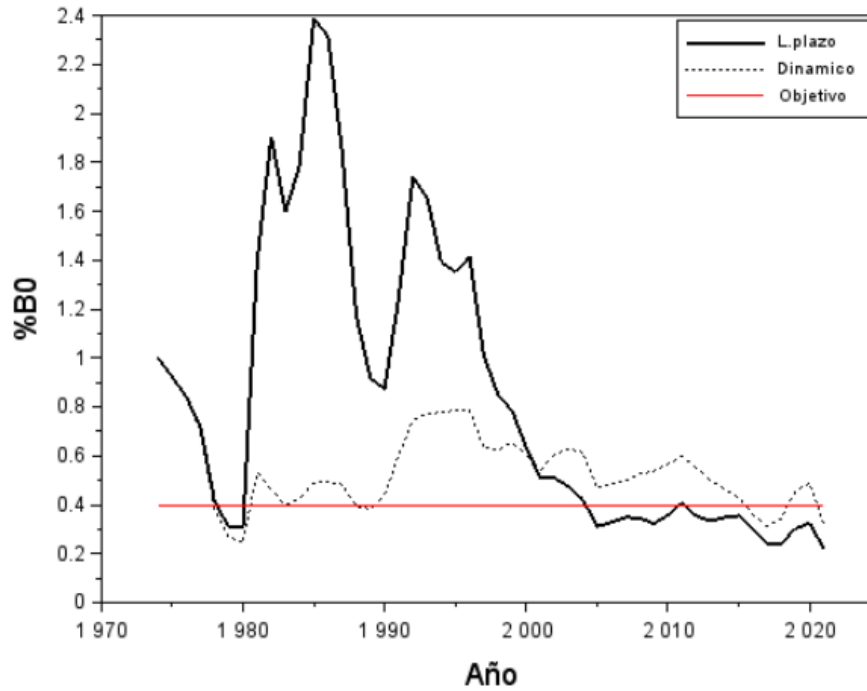
³ <https://www.iucnredlist.org/species/170306/6737373>

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
<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>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 has been subjected to several stock assessments, most recently in 2022. Data on size composition, landings, hydroacoustic cruises, and CPUE data were analysed using a statistical catch-at-age model (Canales & Jurado 2022). 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.</p> <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.</p> <p>The 2022 stock assessment concluded that macarela is both overfished and subject to overfishing, with biomass estimated to be around 32% of B_0, relative to a target reference point of 40%B_0 (Canales & Jurado 2022). 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 32%B_0, the biomass is above the assumed limit reference point and C1.2 is met.</p>			



Pacific chub mackerel estimated biomass as a proportion of B_0 (unfished biomass). The red line represents $40\%B_0$, the target reference point (Canales & Jurado 2022).

References

Canales C. M., Jurado V. (2022). Evaluación del stock de recursos pelágicos pequeños del Ecuador. Año 2021. Informe Técnico. Guayaquil, Julio 2021. 126 pp. https://institutopesca.gob.ec/wp-content/uploads/2022/10/Informe_Eval_Final_2022.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		
	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		
<i>Standard clauses 1.3.2.2</i>			

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			
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			
<p>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.</p> <p>D4.2 There is no substantial evidence that the fishery has a significant negative impact on the species.</p>			
References			
Links			
MarinTrust Standard clause		1.3.2.2, 4.1.4	
FAO CCRF		7.5.1	
GSSI		D.5.01	