



MarinTrust Standard V2

By-product Fishery Assessment *Red-eye Round Herring (Etrumeus sadina) in FAO 87: Southeast Pacific*

MarinTrust Programme

Unit C, Printworks

22 Amelia Street

London

SE17 3BZ

E: standards@marin-trust.com

T: +44 2039 780 819

Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Red-eye round herring (<i>Etrumeus sadina</i>)
	Geographical area:	FAO 87 (Southeast Pacific)
	Country of origin of the product:	Flag country not supplied by client
	Stock:	Red-eye round herring in FAO 87 (Southeast Pacific)
Date	5 August 2022	
Report Code	ECU04	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Flag country not supplied by client	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Productos Pesqueros S.A Produpes			
Country: Ecuador			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Matthew Jew	Léa Lebechnech	0.5	Re-approval
Assessment Period	Up to August 2022		

Scope Details	
Main Species	Red-eye Round Herring (<i>Etrumeus sadina</i>)
Stock	Red-eye Round Herring in FAO 87 (Southeast Pacific)
Fishery Location	FAO 87 (Southeast Pacific)
Management Authority (Country/ State)	Vice Ministry of Aquaculture and Fisheries of Ecuador (MPCEIP); National Fisheries Institute of Ecuador (INP)
Gear Type(s)	Purse seines and pelagic trawls
Outcome of Assessment	
Peer Review Evaluation	Agree with the assessor's recommendation of approval
Recommendation	APPROVED

Table 2. Assessment Determination

Assessment Determination
<p>If any species is categorised as Endangered or Critically Endangered on IUCN's Red List, or if it appears in the CITES appendices, it cannot be approved for use as Marin trust raw material. Red-eye Round Herring (<i>Etrumeus sadina</i>) do not appear as Endangered or Critically Endangered on IUCN's Red List, nor do they appear in CITES appendices; therefore, <i>Etrumeus sadina</i> is eligible for approval for use as Marin trust by-product raw material.</p> <p>One stock is part of this assessment:</p> <ol style="list-style-type: none">1) Red-eye round herring (<i>Etrumeus sadina</i>) in FAO 87 (Southeast Pacific Ocean). <p>The Vice Ministry of Aquaculture and Fisheries of Ecuador and the National Fisheries Institute of Ecuador (INP) are responsible for the stock assessment of small pelagic fishes in Ecuador. A formal stock assessment was carried out in 2021 which established limit reference points for both fishing mortality and spawning biomass. The stock is subject to a specific management regime and reference points are defined, therefore it was assessed under Category C.</p> <p>Fishery removals are included in the stock assessment and it PASSES Clause C1.1. However, in its most recent stock assessment, the stock has biomass below limit reference points and therefore the stock FAILS Clause C1.2. Where a species fails Category C, it may be assessed as Category D.</p> <p>Table D1 (PSA) shows that the stock as an average productivity score of 1.4 and an average susceptibility score of 3. The PSA risk rating results (Table D3) determined that the species passes.</p> <p>Therefore, Red-eye Round Herring in FAO 87 is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v2.0 by-products.</p>
Fishery Assessment Peer Review Comments
<p>The internal peer reviewer agrees with the assessor's determination, who correctly classified Southeast Pacific Ocean Red-eye round herring stock under category C, as reference points are defined to assess status of stock relative to.</p> <p>The internal peer reviewer confirms that it PASSES Clause C1.1, but failed Clause C1.2 because the stock is considered, in its most recent stock assessments, to have biomasses below the limit reference points (or proxies).</p> <p>The fishery stock was further assessed as Category D. With an average productivity score of 1.4 and susceptibility score of 3, it passes D1.</p> <p>Therefore, Southeast Pacific Ocean Red-eye round herring in FAO 87 is APPROVED.</p>
Notes for On-site Auditor
<p>Determine which flag state(s) the plant is sourcing its Red-eye round Herring from.</p>

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
Red-eye Round Herring	<i>Etrumeus sadina</i>	Red-eye Round Herring in FAO 87 (Southeast Pacific)	Vice Ministry of Aquaculture and Fisheries of Ecuador (MPCEIP); National Fisheries Institute of Ecuador (INP)	D (Failed C)	LC	No


¹ <https://www.iucnredlist.org/>

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

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		Red-eye round herring (<i>Etrumeus sadina</i>)	
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.	Yes
	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.	No
			Clause outcome: FAIL
<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 2021 stock assessment conducted by the Public Institute for Aquaculture and Fisheries Research (Instituto Público de Investigación de Acuicultura y Pesca) uses a MESTOCKL model that includes landings (including commercial fishing mortality up to 2020) in the model. Long-term fishing mortalities are presented in Figure 1.</p> <p>Therefore, fishery removals of the stock, including from the fishery under assessment, are included in the stock assessment process. The stock passes Clause C1.1.</p>			
			
<p>Figure 1. Long-term fishing mortalities of red-eye round herring. The red line represents limit fishing mortality. Source: Canales & Jurado 2021.</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 results of the 2021 stock assessment concluded that the spawning biomass is below limit reference points. The 2020 stock assessment found similar results and subsequently, fishing mortality was reduced to a point below the limit in 2020. The stock biomass has not rebounded from over-exploitation. New reference limits were suggested by Canales & Jurado (2021).</p>			

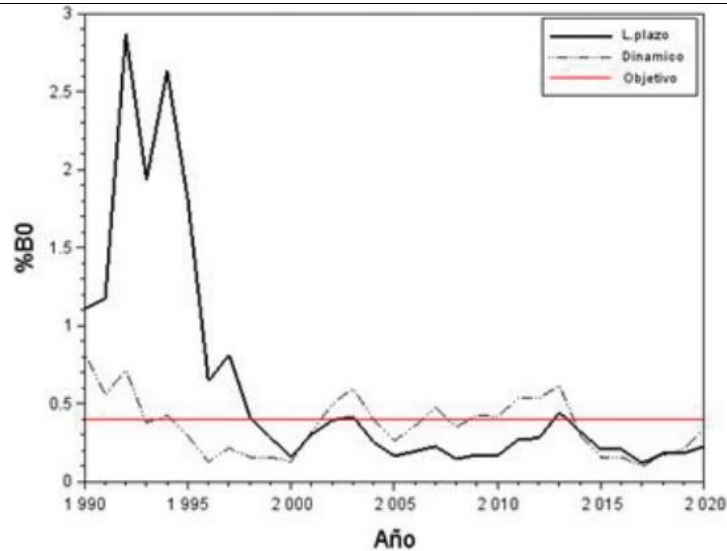


Figure 2. Long-term trends in spawning biomass with limit reference point (red line).

Source: Canales & Jurado 2021.

Therefore, the stock has the biomass below limits and **clause C1.1 is FAILED**.
Consequently, it has to be assessed under Category D, with the PSA risk rating.

References

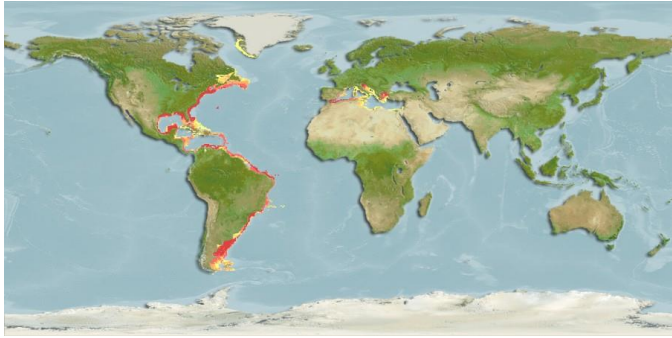
Canales CM, V. Jurado. 2021. Evaluación del stock de recursos pelágicos pequeños del Ecuador, año 2021. <https://www.institutopesca.gob.ec/wp-content/uploads/2018/01/IPIAP-Evaluacion-pe%C3%A1gicos-del-Ecuador.pdf>

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	Red-eye round herring (<i>Etrumeus sadina</i>)	
	Productivity Attribute	Value	Score
	Average age at maturity (years)	0.5	1
	Average maximum age (years)	1.7	1
	Fecundity (eggs/spawning)	4,700 to 20,350	2
	Average maximum size (cm)	33	1
	Average size at maturity (cm)	13.8	1
	Reproductive strategy	Pelagic Spawner (Broadcast)	1
	Mean trophic level	3.6	3
	Average Productivity Score		1.4
	Susceptibility Attribute	Value	Score
	Availability (area overlap)	See Note	Not Assessed
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	Targeted	3
	Selectivity of gear type		3
	Post-capture mortality	Retained	3
	Average Susceptibility Score		3
	PSA Risk Rating (From Table D3)		Pass
	Compliance rating		PASS
	<p>Further justification for susceptibility scoring (where relevant) <i>The species Etrumeus sadina (or c.f. E. teres) do not have published geographic ranges in FAO 87. It is not practical to evaluate the level of overlap between the stock and the species until scientific literature is revised with expanded geographic range of the species.</i></p>		
			
<p>References</p> <p>DiBattista, J.D., J.E. Randall and B.W. Bowen, 2012. Review of the round herrings of the genus <i>Etrumeus</i> (Clupeidae: Dussumieriinae) of Africa, with descriptions of two new species. <i>Cybium</i> 36(3): 447-460. https://sfi-cybium.fr/en/review-round-herrings-genus-etrumemus-clupeidae-dussumieriinae-africa-descriptions-two-new-species.</p>			

Munroe, T., Aiken, K.A., Brown, J. & Grijalba Bendeck, L. 2015. *Etrumeus sadina*. *The IUCN Red List of Threatened Species* 2015: e.T82626288A15603445. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T82626288A15603445.en>. Accessed on 05 August 2022.

Plaza G, Sakaji H, Honda H, Hirota Y, Nashida K. 2007. Spawning pattern and type of fecundity in relation to ovarian allometry in the round herring *Etrumeus teres*. *Marine Biology* 152(5): 1051-64. https://www.researchgate.net/publication/226102332_Spawning_pattern_and_type_of_fecundity_in_relation_to_ovarian_allometry_in_the_round_herring_Etrumeus_teres.

Fish base. *Etrumeus sadina* (Mitchill, 1814). Red-eye round herring: <https://www.fishbase.se/Summary/SpeciesSummary.php?id=1455&lang=french#>. Accessed on 05 August 2022.

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