



MarinTrust Standard V2

Reduced Whole Fish Assessment
(Category C and/or D) - MSC verification

Mexico - Mexico - Gulf of California
small pelagics Sonora - FAO 77,
Northern/Central

Document TEM-025 - Version 1.0

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MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Japanese sardine/red-eye round herring (<i>Etrumeus teres</i> / <i>Etrumeus sadina</i> / <i>Etrumeus acuminatus</i>) [<i>“sardina japonesa”</i> , in Spanish] Pacific jack mackerel (<i>Trachurus symmetricus</i>) [<i>“charrito”</i> , in Spanish] Leatherjackets (<i>Oligoplites spp.</i>) [<i>“sardina piña”</i> , in Spanish]
	Geographical area:	Northern and central Gulf of California, Sonora, Mexico
	Country of origin of the product:	Mexico
	Stock:	Japanese sardine/red-eye round herring in Gulf of California Pacific jack mackerel in Gulf of California Leatherjackets in Gulf of California
	MSC-certified fishery name:	Small Pelagics in Sonora Gulf of California
Date	05 th December 2023	
Report Code	MSCV22	
Assessor	Ana Elisa Almeida Ayres	
Country of origin of the product - PASS	Pass (Mexico)	
Country of origin of the product - FAIL	N/A	

Application details and summary of the assessment outcome			
Company Name(s): Sardinias de Sonora SA de CV, Guyamas Protein CV			
Country: Mexico			
Certification Body Details			
Name of Certification Body:		Global Trust Certification/NSF	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/Re-approval
Ana Elisa Almeida Ayres	Matthew Jew	0.5	Initial
Assessment Period	December 2023 – December 2024		
Assessment Validity	December 2024		

Scope Details	
Species	Japanese sardine/red-eye round herring (<i>Etrumeus teres</i> / <i>Etrumeus sadina</i> / <i>Etrumeus acuminatus</i>) [<i>“sardina japonesa”</i> , in Spanish] Pacific jack mackerel (<i>Trachurus symmetricus</i>) [<i>“Charrito”</i> , in Spanish] Leatherjackets (<i>Oligoplites spp.</i>) [<i>“sardina piña”</i> , in Spanish]
Stock	Japanese sardine/red-eye round herring in Gulf of California Pacific jack mackerel in Gulf of California Leatherjackets in Gulf of California
Fishery Location	Northern and central Gulf of California, Sonora, Mexico
Management Authority (Country/ State)	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food SAGARPA, Mexico
Gear Type(s)	Purse seine nets
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor’s recommendation
Recommendation	Approved

Table 2. Assessment Determination

Assessment Determination
<p>Japanese sardine/red-eye round herring (<i>Etrumeus teres</i>/<i>Etrumeus sadina</i>/<i>Etrumeus acuminatus</i>) [<i>“sardina japonesa”</i>, in Spanish] and Pacific jack mackerel (<i>Trachurus symmetricus</i>) [<i>“Charrito”</i>, in Spanish] and Leatherjackets (<i>Oligoplites spp.</i>) [<i>“sardina piña”</i>, in Spanish] are secondary minor species of the Small Pelagics in Sonora Gulf of California MSC certified assessment (MSC, 2023).</p> <p>If any species is categorised as Endangered or Critically Endangered on Union for Conservation of Nature's Red List of Threatened Species - IUCN’s Red List, or if it appears in the Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES appendices, it cannot be approved for use as Marin Trust raw material. Japanese sardine/red-eye round herring, Pacific jack mackerel and leatherjackets are not categorised as Endangered or Critically Endangered on IUCN’s Red List and do not appear in CITES appendices; therefore, they are eligible for approval for use as Marin Trust by-product raw material.</p> <p>Japanese sardine/red-eye round herring, Pacific jack mackerel and leatherjackets are managed passively, according to the Mexican Management Plan. The passive management species only requires monitoring landings with a maximum percentage of fish smaller than the legal minimum size, thus no reference points were provided for these species and they were assessed under the category D.</p> <p>Up to the public MSC certification report published in January 2018 during the re-assessment process started in 2016, the Japanese sardine/red-eye round herring was referred as <i>“Etrumeus teres”</i>. From the Announcement Comment Draft Report (published in October 2022), the Japanese sardine/red-eye round herring is now referred to as <i>“Etrumeus acuminatus”</i> by the assessment team. <i>“Etrumeus teres”</i> was previous considered a synonym for <i>“Etrumeus sadina”</i>, but <i>“Etrumeus teres”</i> is not an accepted name anymore. Recent information shows that <i>Etrumeus sadina</i> is restricted to the northwestern Atlantic (from the Bay of Fundy to the Gulf of Mexico) and <i>Etrumeus acuminatus</i> is found in eastern Pacific [Monterey Bay (California, USA) to Chile]. Herein, it was considered the productivity and susceptibility data for both species, <i>Etrumeus sadina</i> and <i>Etrumeus acuminatus</i> and given the similarity of these species, the results does not change the scores. Japanese sardine/red-eye round herring was awarded a Productivity score of 1.42 and a Susceptibility score of 2.75, leading to a <i>“Pass”</i> rating against Table D3 of the Productivity-Susceptibility Analysis – PSA.</p>

Pacific jack mackerel was awarded a Productivity score of 1.29 and a Susceptibility score of 2.5, leading to a “Pass” rating against Table D3 of the PSA.

Leatherjackets was awarded a Productivity score of 1.57 and a Susceptibility score of 2.5, leading to a “Pass” rating against Table D3 of the PSA.

Therefore, Japanese sardine/red-eye round herring, Pacific jack mackerel and leatherjackets in Northern and central Gulf of California, Sonora, Mexico are APPROVED for the production of fishmeal and fish oil under the current MarinTrust v2.3 by-products standard.

Fishery Assessment Peer Review Comments

Japanese sardine/red-eye round herring, Pacific jack mackerel and leatherjackets all in Gulf of California as the correct categorization. Japanese sardine/red-eye round herring and Pacific jack mackerel are not subject to active management and are managed passively. Under the passive management, reference points are not defined therefore both species were assessed under Category D.

The assessor correctly assigned values and scores on table D1 (Japanese sardine/red-eye round herring). The given average attribute scores result in passing scores on Table D3 for the Japanese sardine/red-eye round herring.

The assessor correctly assigned values and scores on table D1 (Pacific jack mackerel). The given average attribute scores result in passing scores on Table D3 for the Pacific jack mackerel.

The assessor correctly assigned values and scores on table D1 (leatherjackets). The given average attribute scores result in passing scores on Table D3 for the Pacific jack mackerel.

Japanese sardine/red-eye round herring, Pacific jack mackerel and leatherjackets all in Gulf of California passes their respective categories and should be approved under the MarinTrust Standard v.2.3.

Notes for On-site Auditor

N/A

Note: This assessment is only allowed through the MarinTrust MSC Verification Tool, which accepts assessments of “by-catch” species from MSC-certified fisheries from applicants holding valid MSC Chain of Custody Certificates.

This reduced whole fish assessment recognises the equivalence between the MarinTrust, the Management, Ecosystem and Category A species against the MSC Fisheries Standard through the MarinTrust recognition process.

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

Raw 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.

Raw 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

Note: Category A species are approved through recognition of MSC certified fisheries through the MarinTrust MSC verification tool.

Common name	Latin name	Stock	Management	Category	IUCN Red List Category ¹	CITES Appendix 1 ²
Japanese sardine/red-eye round herring ["sardina japonesa", in Spanish]	<i>Etrumeus teres/Etrumeus sadina/Etrumeus acuminatus</i>	Japanese sardine/red-eye round herring in Gulf of California	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food SAGARPA, Mexico	D	LC ³	No
Pacific jack mackerel ["charrito" in Spanish]	<i>Trachurus symmetricus</i>	Pacific jack mackerel in Gulf of California	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food SAGARPA, Mexico	D	LC ⁴	No
Leatherjackets ["sardina piña", in Spanish]	<i>Oligoplites spp.</i>	Leatherjackets in Gulf of California	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food SAGARPA, Mexico	D	LC ⁵	No

¹ <https://www.iucnredlist.org/>

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

³ <https://www.iucnredlist.org/species/82626288/15603445>

⁴ <https://www.iucnredlist.org/species/183729/8166054>

⁵ <https://www.iucnredlist.org/search?query=Oligoplites&searchType=species>

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.

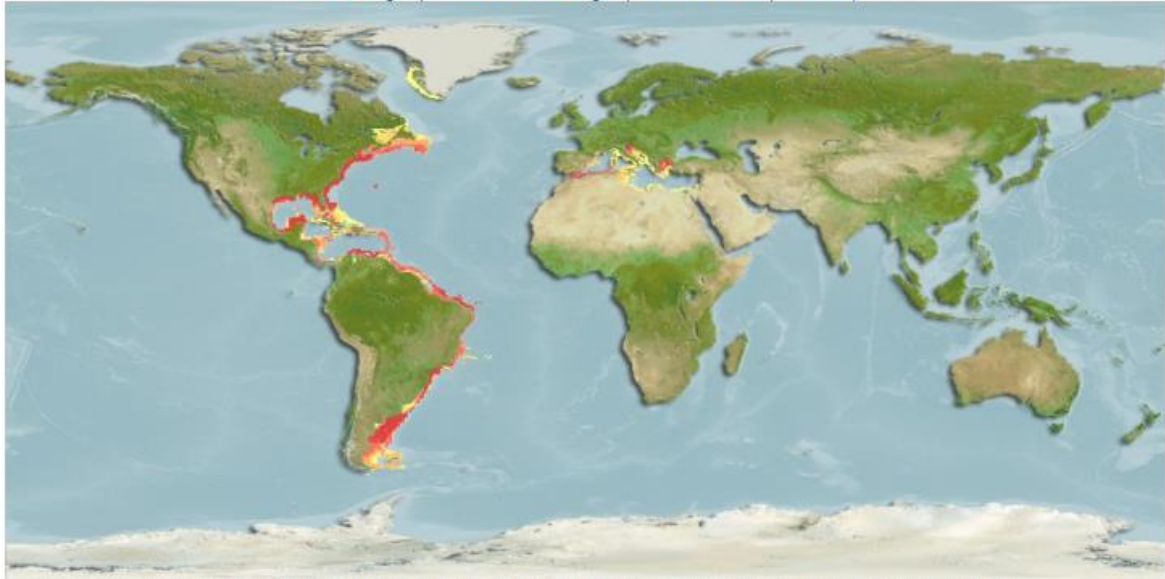
D1	Species Name	Japanese sardine/red-eye round herring (<i>Etrumeus teres</i> / <i>Etrumeus sadina</i> / <i>Etrumeus acuminatus</i>) [<i>“sardina japonesa”</i> , in Spanish]	
	Productivity Attribute	Value	Score
	Average age at maturity (years)	0.5 ¹ - 0.9 ²	1
	Average maximum age (years)	1.7 ¹ -3.3 ²	1
	Fecundity (eggs/spawning)	1,409-21,023 ¹	2
	Average maximum size (cm)	22.7 ¹ -27.8 ²	1
	Average size at maturity (cm)	13.8 ¹ -16.5 ²	1
	Reproductive strategy	Broadcast spawner ^{1,2}	1
	Mean trophic level	3.5 ² – 3.6 ¹	3
	Average Productivity Score		1.42
	Susceptibility Attribute	Value	Score
	Availability (area overlap)	Precautionary score ¹	2
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	High overlap	3
	Selectivity of gear type	Precautionary score	3
	Post-capture mortality	Retained	3
	Average Susceptibility Score		2,75
	PSA Risk Rating (From Table D3)		Pass
	Compliance rating		Pass
	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>		
	<p>Up to the public MSC certification report published in January 2018 during the re-assessment process started in 2016, the Japanese sardine/red-eye round herring was referred as <i>“Etrumeus teres”</i>. From the Announcement Comment Draft Report (published in October 2022), the Japanese sardine/red-eye round herring is now referred to as <i>“Etrumeus acuminatus”</i> by the assessment team. <i>“Etrumeus teres”</i> was previously considered a synonym for <i>“Etrumeus sadina”</i>, but <i>“Etrumeus teres”</i> is not an accepted name anymore ^{1,3}. Recent information shows that <i>Etrumeus sadina</i> is restricted to the northwestern Atlantic (from the Bay of Fundy to the Gulf of Mexico)^{1,4} and <i>Etrumeus acuminatus</i> is found in eastern Pacific [Monterey Bay (California, USA) to Chile]^{2,4}. Herein, it was considered the productivity and susceptibility data for both species, <i>Etrumeus sadina</i> and <i>Etrumeus acuminatus</i> and given the similarity of these species, the results does not change the scores.</p> <p>A precautionary score of 3 was given to the <i>“Selectivity of gear type”</i> attribute due lack of specific data of the gear.</p> <p>The distribution of <i>Etrumeus sadina</i> is provided in figure 1. No map of distribution was available for <i>Etrumeus acuminatus</i>. As such, a precautionary score of 2 was awarded for <i>“availability (area overlap)”</i>, considering that <i>Etrumeus acuminatus</i> is restrained to the region between Monterey Bay (California, USA) to Chile, resulting in about 10% of overlap.</p>		



Computer Generated Native Distribution Map for *Etrumeus sadina* (Red-eye round herring), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario

Currently known distribution: Restricted to the northwestern Atlantic: from the Bay of Fundy to the Gulf of Mexico.

Native Range | Year 2050 Native Range | Suitable Habitat | Point Map



Note: Distribution range colours indicate degree of suitability of habitat which can be interpreted as probabilities of occurrence.

<p>Relative probabilities of occurrence</p> <ul style="list-style-type: none"> 0.80 - 1.00 0.60 - 0.79 0.40 - 0.59 0.20 - 0.39 0.01 - 0.19 	<p>Explore:</p> <ul style="list-style-type: none"> Native range map Suitable habitat map Point map Show mapping parameters Create your own map 	<p>Download native range data:</p> <ul style="list-style-type: none"> csv format NetCDF (view in Godiva) About AquaMaps 	<p>More species info:</p> <ul style="list-style-type: none"> List of countries List of FAO areas List of ecosystems Comments & Corrections 	<p>Session no. 50</p> <p>-Close window-</p> <p>Please use -Close window- link just above to exit instead of the browser's X button.</p>
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Figure 1. Distribution of *Etrumeus sadina* (former *Etrumeus teres*)⁵.

References

- ¹ Froese, R. and D. Pauly. Editors. 2023. FishBase. World Wide Web electronic publication. *Etrumeus sadina* (Mitchill, 1814) <https://fishbase.mnhn.fr/summary/1455>
- ² Froese, R. and D. Pauly. Editors. 2023. FishBase. World Wide Web electronic publication. *Etrumeus acuminatus* (Gilbert, 1890) <https://www.fishbase.se/summary/66828>
- ³ Worms. 2023. *Etrumeus teres* (DeKay, 1842). <https://www.marinespecies.org/aphia.php?p=taxdetails&id=158693>
- ⁴ Fricke, R., Eschmeyer, W. N. & Van der Laan, R. (eds) 2023. Eschmeyer's catalog of fishes: genera, species, references <https://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>
- ⁵ AquaMaps. 2019. Computer generated distribution maps for *Etrumeus sadina* (Red-eye round herring), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario. https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached

Standard clauses 1.3.2.2

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.

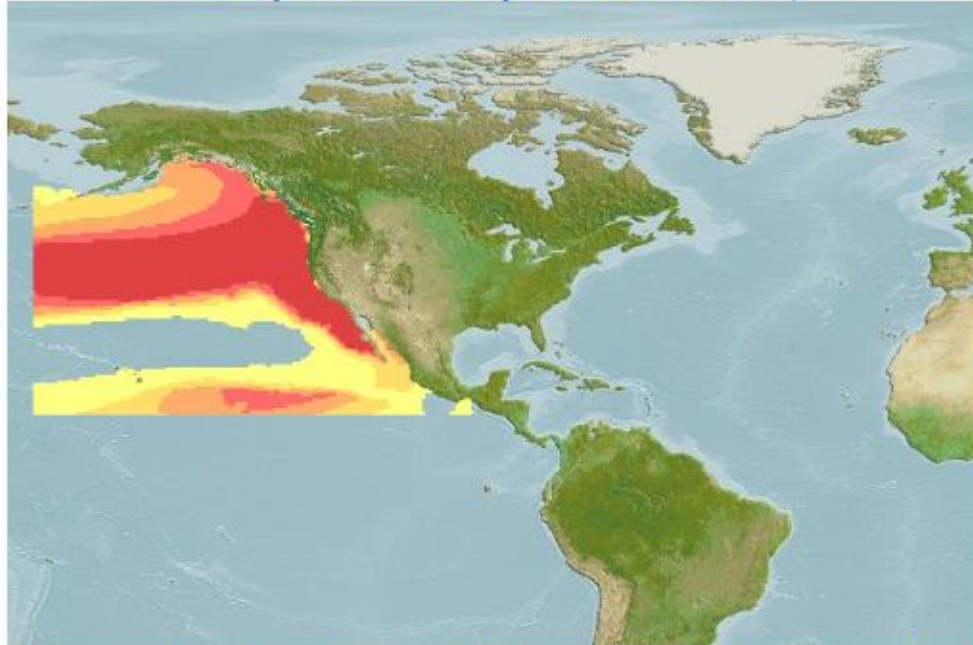
D1	Species Name		Pacific jack mackerel (<i>Trachurus symmetricus</i>) ["charrito", in Spanish]		
	Productivity Attribute		Value	Score	
	Average age at maturity (years)		1.0 ¹	1	
	Average maximum age (years)		4.1 ¹	1	
	Fecundity (eggs/spawning)		>20,000 ^{1,3}	1	
	Average maximum size (cm)		55.7 ¹	1	
	Average size at maturity (cm)		30.9 ¹	1	
	Reproductive strategy		Broadcast spawner ¹	1	
	Mean trophic level		3.6 ¹	3	
	Average Productivity Score			1.29	
	Susceptibility Attribute		Value	Score	
	Availability (area overlap)		<10	1	
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)		High	3	
	Selectivity of gear type		Precautionary	3	
	Post-capture mortality		Retained	3	
	Average Susceptibility Score			2.5	
	PSA Risk Rating (From Table D3)			Pass	
	Compliance rating			Pass	
	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>				
	Pacific jack mackerel is found in a depth range of 0 - 400 m and distributed along the eastern Pacific: southeastern Alaska to southern Baja California, Mexico and the Gulf of California; reported from Acapulco in Mexico and the Galapagos Islands ¹ (Figure 4). Fishbase provides only an estimate of the maximum fecundity for this species (53,000) ¹ , while there are reports of 31,572-171,466 of batch fecundity in California ³ . Thus, the fecundity is estimated to be > 20,000 eggs.				
Due lack of specific data of the selectivity of gear type, a precautionary score of 3 was given for this attribute.					



Computer Generated **Native** Distribution Map for *Trachurus symmetricus* (Pacific jack mackerel), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario

Currently known distribution: Eastern Pacific: southeastern Alaska to southern Baja California, Mexico and the Gulf of California; reported from Acapulco in Mexico and the Galapagos Islands.

Native Range | Year 2050 Native Range | Suitable Habitat | Point Map



Note: Distribution range colours indicate degree of suitability of habitat which can be interpreted as probabilities of occurrence.

<p>Relative probabilities of occurrence</p> <ul style="list-style-type: none"> ■ 0.80 - 1.00 ■ 0.60 - 0.79 ■ 0.40 - 0.59 ■ 0.20 - 0.39 ■ 0.01 - 0.19 	<p>Explore:</p> <ul style="list-style-type: none"> Native range map Suitable habitat map Point map Show mapping parameters Create your own map 	<p>Download native range data:</p> <ul style="list-style-type: none"> csv format NetCDF (view in Godiva) About AquaMaps 	<p>More species info:</p> <ul style="list-style-type: none"> List of countries List of FAO areas List of ecosystems Comments & Corrections 	<p>Session no. 4</p> <p>-Close window-</p> <p>Please use -Close window-link just above to exit instead of the browser's X button.</p>
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Figure 2. Distribution of Pacific jack mackerel.²

References

- ¹Froese, R. and D. Pauly. Editors. 2023. FishBase. World Wide Web electronic publication. <https://fishbase.mhn.fr/summary/trachurus-symmetricus.html>
- ²AquaMaps. 2019. Computer generated distribution maps for *Trachurus symmetricus* (Pacific jack mackerel), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario. https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached
- ³Macewicz, B.J. and Hunter, J.R. 1993. Spawning frequency and batch fecundity of jack mackerel, *Trachurus symmetricus*, off California During 1991. California Cooperative Oceanic Fisheries Investigations Reports 34: 112-121. <https://www.semanticscholar.org/paper/SPAWNING-FREQUENCY-AND-BATCH-FECUNDITY-OF-JACK-Mackerel/66dc90feddd6d57a4a12e31e814790df04087a95>

Standard clauses 1.3.2.2

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		Leatherjackets (<i>Oligoplites spp</i>) ["sardina piña", in Spanish]	
	Productivity Attribute	Value	Score	
	Average age at maturity (years)	1.4 ¹	1	
	Average maximum age (years)	5.7 ¹	1	
	Fecundity (eggs/spawning)	Precautionary	3	
	Average maximum size (cm)	36.6 ¹	1	
	Average size at maturity (cm)	21.2 ¹	1	
	Reproductive strategy	Broadcast spawner ¹	1	
	Mean trophic level	4.3 ¹	3	
	Average Productivity Score		1.57	
	Susceptibility Attribute	Value	Score	
	Availability (area overlap)	<10%	1	
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	Precautionary	3	
	Selectivity of gear type	Precautionary	3	
	Post-capture mortality	Retained	3	
	Average Susceptibility Score		2.5	
	PSA Risk Rating (From Table D3)		Pass	
	Compliance rating		Pass	
	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>			
	Leatherjackets (<i>Oligoplites spp</i>) was assessed based on information available for <i>Oligoplites saurus</i> (Bloch & Schneider, 1801) ¹ . The species is found in Western Atlantic: Maine, USA and northern Gulf of Mexico to Uruguay; throughout most of the West Indies; and in Eastern Pacific: Baja California, Mexico to Ecuador. Two subspecies exists: <i>Oligoplites saurus saurus</i> (western Atlantic population) and <i>Oligoplites saurus inornatus</i> (eastern Pacific population). Due lack of specific data of fecundity, selectivity and encounterability of gear type, a precautionary score of 3 was given for these attributes. As it is a commercial species, it is usually retained.			



FIGURE 3. Distribution of leatherjackets².

References

¹Froese, R. and D. Pauly. Editors. 2023. FishBase. World Wide Web electronic publication.
<https://www.fishbase.se/Summary/SpeciesSummary.php?id=1001&lang=swedish>

²AquaMaps (2019). Computer generated distribution maps for *Oligoplites saurus* (Leatherjacket), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario.
https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached

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