



MarinTrust Standard V2

By-product Fishery Assessment

Horse mackerel (Trachurus trachurus) in FAO 27, ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Horse mackerel, <i>Trachurus trachurus</i>
	Geographical area:	FAO Area 27 northeast Atlantic
	Country of origin of the product:	Norway (Flag country: Norway)
	Stock:	Horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8
Date	13 February 2023	
Report Code	NOR03	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Norway (Flag country: Norway)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Karmsund Protein AS, TripleNine Vedde AS, Prima Protein AS, Pelagia AS			
Country: Norway			
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	Surveillance 1
Assessment Period	Up to February 2023		

Scope Details	
Main Species	Horse mackerel (<i>Trachurus trachurus</i>)
Stock	Horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8
Fishery Location	FAO Area 27 northeast Atlantic
Management Authority (Country/ State)	Norwegian Directorate of Fisheries
Gear Type(s)	2021 estimates: Pelagic trawl (45%), Purse seine (18%), Otter trawl (3%), others (33%)
Outcome of Assessment	
Peer Review Evaluation	Agree with the assessor's determination
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. Horse mackerel (<i>Trachurus trachurus</i>) is not assessed on IUCN’s Red List, and does not appear in CITES appendices; therefore, <i>Trachurus trachurus</i> is eligible for approval for use as Marin trust by-product raw material.</p> <p>There is not any precautionary management plan in place for this stock. The stock is assessed under a Stock Synthesis 3 model which uses fishery removals in the stock assessment process, and it PASSES C1.1. The stock assessment process has produced two sets of reference points that align with the MSY and precautionary approaches. The stock was benchmarked in 2017 and, subsequently, the reference points were updated in 2019 and 2021. The stock is considered, in its most recent stock assessment, to have biomass below both MSY and limit biomass reference points, it FAILS Clause C1.2.</p> <p>As the stock fails category C, it was assessed under category D. Table D1 (PSA) shows that the stock as an average productivity score of 1.49 and an average susceptibility score of 2.75. The PSA risk rating results (Table D3) determined that the species passes.</p> <p>Therefore, horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 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 the stock of horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 under Category C, as the stock is subject to a specific management regime in place and reference points are defined.</p> <p>The assessor confirms that the stock is considered, in its most recent stock assessment, to have biomass below both MSY and limit biomass reference points, so it FAILS Clause C1.2 and has been assessed under category D.</p> <p>The stock, with an average productivity score of 1.49 and an average susceptibility score of 2.75 determined in the PSA (Table D1), passes Table D3.</p> <p>Therefore, horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8, is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v 2.0 by-products standards.</p>
Notes for On-site Auditor
<p>N/A</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
Horse mackerel	<i>Trachurus trachurus</i>	Horse mackerel in ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8	Norwegian Directorate of Fisheries	Fails category C, assessed as category D	VU (LC in Europe)	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		Horse mackerel (<i>Trachurus trachurus</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

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.

ICES advises that when the MSY approach is applied, there should be zero catches in 2023. ICES is not aware of any existing, agreed-upon management plan in place for this stock, however EU and UK have an established TAC for which they share. Over the past EU/UK established TAC have largely complied with ICES advised catches.

This stock is assessed using a length- and age-based analytical assessment (Stock Synthesis 3) that uses fishery removals in the model and forecast (Figure 1). The input data considered in the last stock assessment are the following: commercial catches (including international catches and length and age data from catch sampling), three survey indices, PELACUS acoustic biomass index, length frequency distributions from PELACUS, time variant maturity-at-age, and constant natural mortality at all ages. Partial (prior to 2014) and full (since 2014) discards are included in the assessment.

Catches are presented in the figure below:

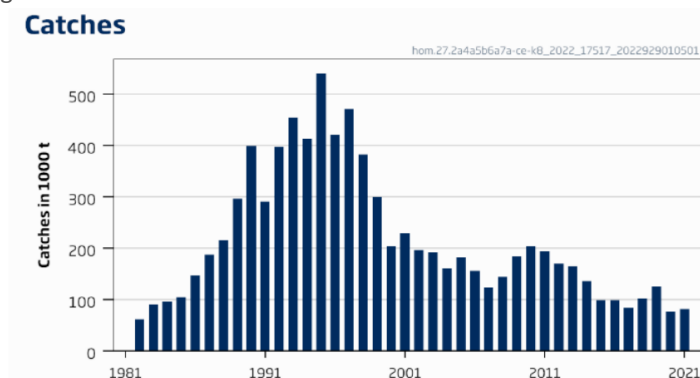


Figure 1. Long term catches for horse mackerel in 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 from 1982 to 2021.

Source: ICES 2022.

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1.

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.

This stock was benchmarked in 2017 which led to the revision of reference points in 2019 and 2021.

Horse mackerel in 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 has had biomass trending downward since the early 1990s. Despite reducing average annual catches by more than 50%, the biomass has continued to decline. Since the early 1990s, fishing pressure remained above F_{MSY} for more than 75% of the years (Figure 2). In 2012, the estimated SSB dropped below B_{lim} for the first time and has remained below the limit reference point to 2022 (despite the 2021 projection that biomass had recovered to above B_{lim} and below B_{MSY} that has since been updated).

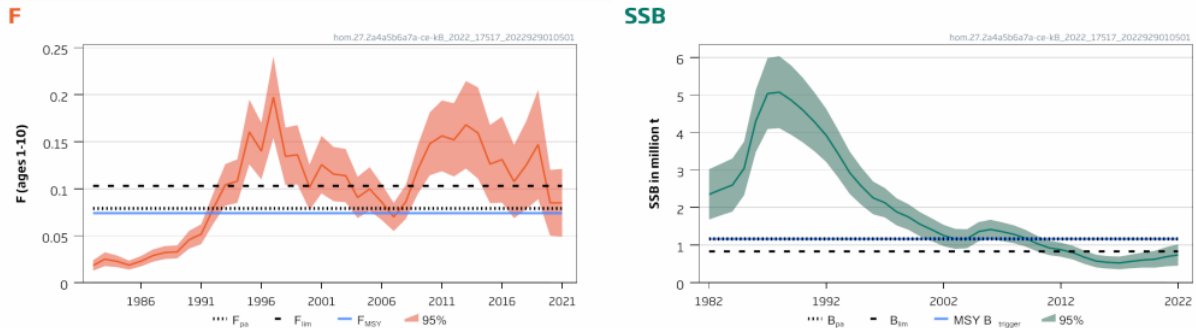


Figure 2. Horse mackerel in 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 summary of the stock assessment. The left panel shows the historical fishing pressure from 1982 to 2021 and the right panel show historical biomass over the same time period. Source: ICES 2022.

Fishing pressure on the stock is above F_{MSY} and F_{pa} , but below F_{lim} , and spawning-stock size is below $MSY B_{trigger}$, B_{pa} , and B_{lim} .

Therefore, the species is considered, in its most recent stock assessment, to have a biomass below the limit reference point and it FAILS clause C1.2.

The stock will be assessed under category D.

References

ICES. 2022. Horse mackerel (*Trachurus trachurus*) in Subarea 8 and divisions 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k (the Northeast Atlantic). In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, hom.27.2a4a5b6a7a-ce-k8. <https://doi.org/10.17895/ices.advice.19772383>

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	Horse mackerel (<i>Trachurus trachurus</i>)		
	Productivity Attribute	Value	Score	
	Average age at maturity (years)	4.5 years	1	
	Average maximum age (years)	19 years	2	
	Fecundity (eggs/spawning)	96,943 eggs	1	
	Average maximum size (cm)	47.9 cm	1	
	Average size at maturity (cm)	27 cm	1	
	Reproductive strategy	Broadcast spawn	1	
	Mean trophic level	3.7	3	
	Average Productivity Score		1.43	
	Susceptibility Attribute	Value	Score	
	Availability (area overlap)	10% - 30%	2	
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)	High encounterability	3	
	Selectivity of gear type	High susceptibility	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)			
	<ol style="list-style-type: none"> 1. Availability: The geographic range of the species encompasses the northeast Atlantic Ocean, Mediterranean Sea, and west coast of western and southern Africa. The region covered by ICES 2.a, 4.a, 5.b, 6.a, 7.a-c, e-k, 8 has high overlap with the most populous range of the species distribution. <div> </div> 2. Gear types not provided by client. According to ICES, the primary gears utilized to fish this stock are pelagic trawl, purse seine, and unspecified gears. Purse seine gear is highly targeted and would receive a score of 3 due to the nature of capturing schooling fish. Pelagic trawl gear is operated in high overlap with the typical depth range of the species (0 -1050 meters) and would also receive a score of 3. 3. Without information provided by the plant regarding gear types used harvest horse mackerel, selectivity received a 3 out of precaution. 4. This species is retained and receives a score of 3. 			
References				
Froese, R. and D. Pauly. Editors. 2022. FishBase. World Wide Web electronic publication. www.fishbase.org, (08/2022). https://www.fishbase.se/summary/Trachurus-trachurus.html				
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