



MarinTrust Standard V2

By-product Fishery Assessment *Report Template (Pacific cod in FAO 61, Western Bering Sea - Russia)*

MarinTrust Programme

Unit C, Printworks

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Pacific cod (<i>Gadus macrocephalus</i>)
	Geographical area:	FAO Area 61 Pacific Northwest
	Country of origin of the product:	Flag Country is Russia
	Stock:	Western Bering Sea Pacific cod
Date	15 June 2022	
Report Code	VNM09	
Assessor	Léa Lebechnech	
Country of origin of the product - PASS	Flag Country is Russia	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Thien Quynh Co Ltd			
Country: Vietnam			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Léa Lebechnech	Conor Donnelly	0,5 days	Surveillance 1
Assessment Period	To June 2022		

Scope Details	
Main Species	Pacific cod (<i>Gadus macrocephalus</i>)
Stock	Western Bering Sea-Russia Pacific cod
Fishery Location	Pacific cod in FAO Area 61 Pacific Northwest
Management Authority (Country/ State)	Russian Federal Fisheries Agency (FFA)
Gear Type(s)	Bottom (demersal) longline
Outcome of Assessment	
Peer Review Evaluation	Agree with recommendation
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. Pacific Cod <i>Gadus macrocephalus</i>, is neither listed as Endangered or Critically Endangered on IUCN's Red List, nor listed in CITES appendices; therefore, product originating from the Pacific cod in the Western Bering Sea fishery is eligible for approval for use as Marin Trust by-product raw material.</p> <p>The TAC of Pacific cod for the Western Bering Sea and Chukotskaya zones is combined, taking into account that this species is represented here by a single stock. The TAC value is then distributed between two zones based on the current trend in catch values. There are defined reference points for the Western Bering stock and it is subject to a species-specific management regime and reference points are defined to assess the stock status relative to. Consequently, the stock has been assessed under Category C. However, a point of attention has to be raised concerning the lack of recent data: the most updated data come from 2018. The assessment of next year, will have to include 2021 and 2022 data.</p> <p>Fishery removals of the stock are considered in the stock assessment process so the stock PASSES Clause C1.1. Further, as the biomass is above MSY, the stock PASSES Clause C1.2.</p> <p>The stock assessed has passed both Clauses C1.1 and C1.2. Therefore, Pacific Cod in Western Bering Sea is APPROVED for the production of fishmeal and fish oil under the current Marin Trust v 2.0 by-product standard.</p>
Fishery Assessment Peer Review Comments
<p>The assessor correctly classified Pacific cod from the Western Bering Sea as category C, reference points are defined to assess status of the stocks relative to. Fishery removals are included in the stock assessment process so the stock PASSES Clause C1.1. The Pacific cod from the Western Bering Sea is considered, in its most recent stock assessment, to have a biomass above the limit reference point. Therefore, it PASSES Clause C1.2. Therefore, Pacific cod from the Western Bering Sea is APPROVED.</p> <p>As noted by the assessor this assessment is based on relatively old stock assessment information. The next assessment should be based on more recent information.</p>
Notes for On-site Auditor
None.

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 cod	<i>Gadus macrocephalus</i>	Western Bering Sea Pacific cod	Russian Federal Fisheries Agency (FFA)	C	Not listed	Not listed

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		Pacific cod from the Western Bering Sea	
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.	YES
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.

The available quantitative information on catch (rather than landings) in the fishery is heterogeneous both between areas and years. The TAC for the Years 2020 + 2021 was set at 288,100 tonnes. The most updated information is not available, so the data from last year assessment have been used again for this assessment. The assessment next year will have to take into account the most updated information.

The catches of Pacific cod in Western Bering Sea until 2018, are recorded in the table below:

Zone	Parameter	2012	2013	2014	2015	2016	2017	2018
Western Bering Sea	TAC	21,200	25,600	36,900	25,300	27,400	36,200	66,000
	Catch	19,150	20,390	25,550	23,350	25,010	33,590	58,280
	% of TAC	90.3	79.6	69.2	92.3	91.3	92.8	88.3

Table 1. Pacific cod catch and TAC (mt) in Western Bering Sea, 2012–2018 (according to Information System 'Rybolovstvo').

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process. **The fishery 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.

According to the MSC Public Consultation Draft Report – August 2019, in the Western Bering Sea, including Chukotskaya zone (67.01) and Western Bering Sea zone (61.01), the Pacific cod total biomass have consistently remained above B_{MSY} level since 2003. During recent years, both research surveys and models demonstrate increasing total biomass and catch per unit effort (CPUE) of Pacific cod in the western Bering Sea, such that the stock is now the highest in the time series, and with the biomass consistently above B_{MSY} . The instantaneous estimate of stock size clearly exceeds 90% B_{MSY} .

The trends of changes in the size of SSB (spawning stock biomass) obtained using the software 'SYNTHESIS' method of cohort analysis are close to the estimates of stocks size obtained during research bottom trawl surveys. Thus, in 1999-2003 the SSB ranged 320,740 to 344,040 mt, by 2009 it had grown to 1,224,430 mt. There was then a decline to 793,070 mt by 2013, followed by a recent increase by 2017 to 2,079,480 mt (latest information available).

According to the precautionary approach, it is appropriate to underestimate the reference points for fishing mortality and to overestimate the threshold reference point for spawning stock biomass (B_{lim}) by an error multiplied by the Student criterion. Thus, the management guidelines for the Harvest Control Rule (HCR) are adjusted:

- target reference point for biomass $B_{tr} = B_{MSY} = 1,123,210$ mt;
- limit reference point for spawning stock biomass $B_{lim} = B_{loss} = 291,080$ mt;
- precautionary estimate of the limit reference point for spawning stock biomass $B_{pa} = B_{lim} \times e^{1,645s} = 375,620$ mt;
- limit reference point on fishing mortality $F_{lim} = F_{Loss} = 0.588$ year⁻¹;
- precautionary estimate of the limit reference point for fishing mortality $F_{pa} = F_{lim} \times e^{-1,645s} = 0.540$ year⁻¹;
- target reference point for fishing mortality $F_{tr} = F_{MSY} = 0.105$ year⁻¹;
- the value of F_0 was assumed to be zero.

In above equations, 1.645 = value of the Student's coefficient for the confidence level of 95% of the lognormal random variable; s = the uncertainty measure expressed in standard error units obtained as a result of 1000 re-samples (bootstrap).

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy). **The fishery PASSES clause C1.2.**

References

Dmitry Lajus, Daria Safronova, Aleksei Orlov, Rob Blyth-Skyrme. 2019. MSC Public Certification Report. Western Bering Sea Pacific cod and Pacific halibut longline: <https://fisheries.msc.org/en/fisheries/western-bering-sea-pacific-cod-and-pacific-halibut-longline/@assessments>

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	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk
	Score 3	Score 2	Score 1
Average age at maturity (years)	>4	2 to 4	<2
Average maximum age (years)	>30	10 to 30	<10
Fecundity (eggs/spawning)	<1 000	1 000 to 10 000	>10 000
Average maximum size (cm)	>150	60 to 150	<60
Average size at maturity (cm)	>150	30 to 150	<30
Reproductive strategy	Live bearer, mouth brooder or significant parental investment	Demersal spawner "berried"	Broadcast spawner
Mean trophic level	>3.25	2.5–3.25	<2.5

Susceptibility attributes		High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk
		Score 3	Score 2	Score 1
Availability	1) Overlap of adult species range with fishery	>50% of stock occurs in the area fished	Between 25% and 50% of the stock occurs in the area fished	<25% of stock occurs in the area fished
	2) Distribution	Only in the country/ fishery	Limited range in the region	Throughout region/ global distribution
Encounterability	1) Habitat	Habitat preference of species make it highly likely to encounter trawl gear (e.g. demersal, muddy/sandy bottom)	Habitat preference of species make it moderately likely to encounter trawl gear (e.g. rocky bottom/reefs)	Depth or distribution of species make it unlikely to encounter trawl gear (e.g. epi-pelagic or meso-pelagic)
	2) Depth range	High overlap with trawl fishing gear (20 to 60 m depth)	Medium overlap with trawl fishing gear (10 to 20 m depth)	Low overlap with trawl fishing gear (0 to 10 m, >70 m depth)
Selectivity		Species >2 times mesh size or up to 4 m length	Species 1 to 2 times mesh size or 4 to 5 m length	Species <mesh size or >5 m length
Post capture mortality		Most dead or retained Trawl tow >3 hours	Alive after net hauled Trawl tow 0.5 to 3 hours	Released alive Trawl tow <0.5 hours

Note: Availability 2 is only used when there is no information for Availability 1; the most conservative score between Encounterability 1 and 2 is used.

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			
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	