



MarinTrust Standard V2

By-product Fishery Assessment *Pacific cod (*Gadus macrocephalus*) in FAO Area 67, Aleutian Islands*

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 Subarea 67 - Aleutian Islands
	Country of origin of the product:	Vietnam Flag country: USA
	Stock:	Pacific cod (<i>Gadus macrocephalus</i>) FAO Subarea 67 - Aleutian Islands
Date	20 August 2023	
Report Code	VNM12	
Assessor	Ana Elisa Almeida Ayres	
Country of origin of the product - PASS	Vietnam Flag country: USA	
Country of origin of the product - FAIL	N/A	

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:		NSF	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Ana Elisa Almeida Ayres	Léa Lebechnech	0.5	Surveillance 2
Assessment Period	Up to August 2023		

Scope Details	
Main Species	Pacific cod (<i>Gadus macrocephalus</i>)
Stock	Pacific cod (<i>Gadus macrocephalus</i>) FAO Subarea 67 - Aleutian Islands
Fishery Location	FAO Subarea 67 - Aleutian Islands
Management Authority (Country/ State)	Alaska Department of Fish and Game (ADF&G)
Gear Type(s)	Bottom Trawl, vertical lines, and pots
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 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 MarinTrust raw material. Pacific cod (<i>Gadus macrocephalus</i>) is not categorised as Endangered or Critically Endangered on IUCN's Red List and does not appear in CITES appendices; therefore, Pacific cod (<i>Gadus macrocephalus</i>) is eligible for approval for use as Marin Trust by-product raw material.</p> <p>Since 2014, there is a specific management plan for this stock and reference points are defined for the Aleutian Island Pacific cod stock. The stock is certified by Marine Stewardship Council – MSC since 2010 and from 2020 onwards, it was assessed together with Alaska Pacific cod stocks of Gulf of Alaska and Bering Sea. Therefore Aleutian Island Pacific Cod stock was assessed under Category C.</p> <p>Fishery removals are included in the stock assessment and it PASSES Clause C1.1. The stock is considered, in its most recent stock assessment from 2022, to have biomass above the limit reference point, it PASSES Clause C1.2.</p> <p>Therefore, Pacific cod (<i>Gadus macrocephalus</i>) in FAO Subarea 67 - Aleutian Islands is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v2.3 by-products standard.</p>
Fishery Assessment Peer Review Comments
<p>The assessor correctly classified Pacific cod in FAO Subarea 67 - Aleutian Islands under category C, as the stock is managed and reference points are defined to assess the stock status against.</p> <p>Fishery removals from the stock are considered in the stock assessment process, and the most recent stock assessment shows that the stock is considered to have a biomass well above the limit reference point: the fishery passes both clauses C1.1 and C1.2.</p> <p>Therefore, Pacific cod in FAO Subarea 67 - Aleutian Islands is APPROVED for the production of fishmeal and fish oil under the current MarinTrust V2.0 by-products standards.</p>
Notes for On-site Auditor

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>	Pacific cod FAO Subarea 67 - Aleutian Islands	Alaska Department of Fish and Game (ADF&G)	C	Not Evaluated	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		Pacific cod (<i>Gadus macrocephalus</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.	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.

In the most recent stock assessment conducted by Alaska Fisheries Science Center, catches of Aleutian Islands Pacific cod for 1991 - 2021 were used, as well as a preliminary catch estimate for 2022. Partial catch information for 2022 was available and was extrapolated to estimate the catch for the full year and the catch of Pacific cod in the Aleutian Islands as of the end of October, 2022, was 11,138 t (Spies et al., 2022).

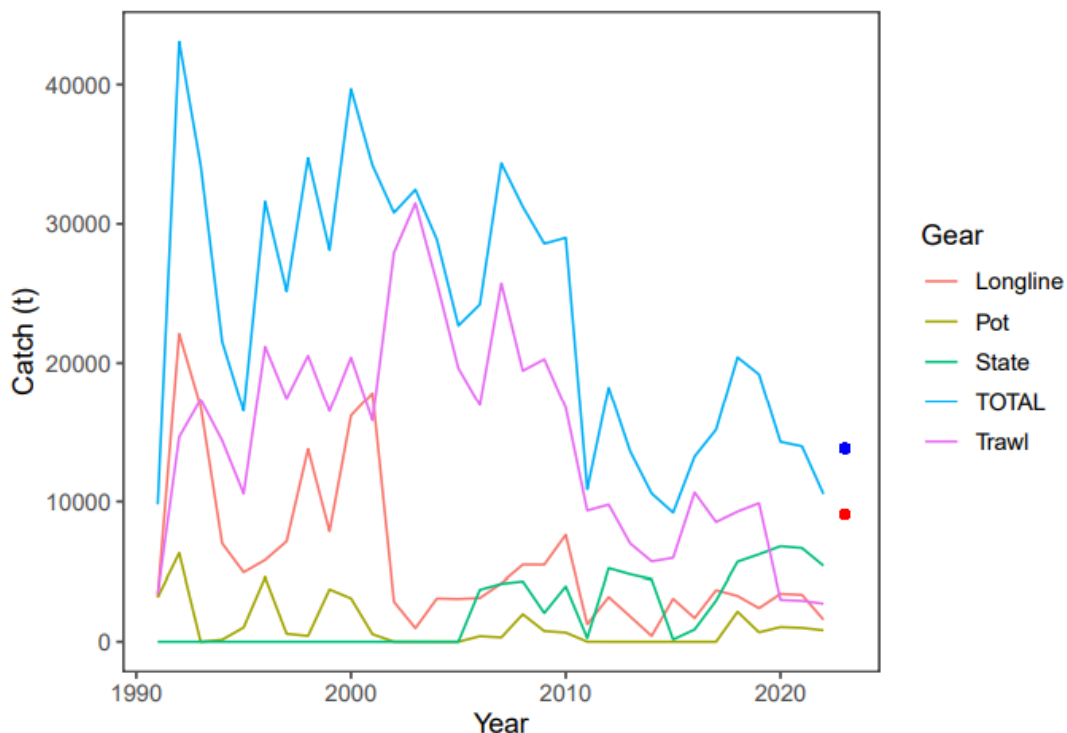


Figure 1: Aleutian Islands Pacific cod catch history, with federal catches by gear type, from 1991-2022 (through October 31). The blue dot represents the ABC for 2023 based on the Tier 5 Model, and the red dot represents the ABC for 2023 based on Model 22.0.

Figure 1. Source: Spies et al (2022).

Harvest specifications for Aleutian Islands Pacific cod have been based on Tier 5 methodology since 2014. Several age-structured models of this stock have been explored in assessments. 3 age structure were presented (Model 22.0, 22.1 and 13.4) for the 2022 assessment. Spies et al. (2022) recommended retaining Model 13.4 for the 2023 - 2024 harvest recommendations, which is the random effects model of Tier 5 Methodology recommended by the Survey Averaging Working Group, and that has been accepted by the Plan Team and Scientific and Statistical Committee - SSC since the 2013 assessment for the purpose of setting Aleutian Islands Pacific cod harvest specifications.

According to Spies et al (2022): “The Tier 5 ABCs [Acceptable Biological Catch] and OFLs [Overfishing Limits] for 2023 and 2024 are lower than 2021 estimates, due to the reduction in estimated Aleutian Islands Pacific cod trawl survey biomass in 2022, which represented a 37% decline. Model 13.4 incorporates this biomass estimate directly in the calculation of reference points; therefore, the random effects model estimated exploitable biomass of 54,166 t produced OFLs (18,416) and ABCs (13,812) that were reduced by 37% for 2023 and 2024.” The principal results of the assessment, based on the authors’ recommended model, are listed in the Figure 2.

Quantity	As estimated or <i>specified</i> last year for:		As estimated or <i>recommended</i> this year for:	
	2022	2023	2023	2024
<i>M</i> (natural mortality rate)	0.34	0.34	0.34	0.34
Tier	5	5	5	5
Biomass (t)	80,700	80,700	54,165	54,165
<i>F_{OFL}</i>	0.34	0.34	0.34	0.34
<i>maxF_{ABC}</i>	0.255	0.255	0.255	0.255
<i>F_{ABC}</i>	0.255	0.255	0.255	0.255
<i>OFL</i>	27,400	27,400	18,416	18,416
<i>maxABC</i>	20,600	20,600	13,812	13,812
<i>ABC</i>	20,600	20,600	13,812	13,812
Status	2020	2021	2021	2022
Overfishing	No	n/a	No	n/a

Figure 2. Principal results of the assessment, based on the authors’ recommended model (Model 13.4). Source: Spies et al (2022).

Fishery removals of the species in the fishery under assessment are included in the stock assessment process, C1.1 is met.

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 MFRAG (2023) “Stock status is determined relative to B40% and B35%, which are regarded as reference points that trigger the harvest control rule. B40% can be considered a proxy for B_{MSY} proxy reference point though it is really treated as a limit within management such that if female spawning biomass is assessed as below B40%, maximum allowable fishing mortality rate (FOFL) is reduced. 20% of virgin biomass can be considered a proxy of point of recruitment impairment – PRI”.

Model 22.0 combined all fishery data incorporated into a single fishery from 1991 - 2022, as well as data from the trawl survey and it was used for providing graphs of relative spawning output (B/B35%) with respect to fishing intensity (F/F35%) in Spies (2022) assessment. This Model, which according to Spies (2022) “appears to have several positive qualities; it estimated natural mortality close to expected values and fit the trawl survey biomass index to a reasonable degree”, indicated that spawning biomass fell below B20% from during 2020 and 2021, but increased to B20% in 2022 (Figure 3).

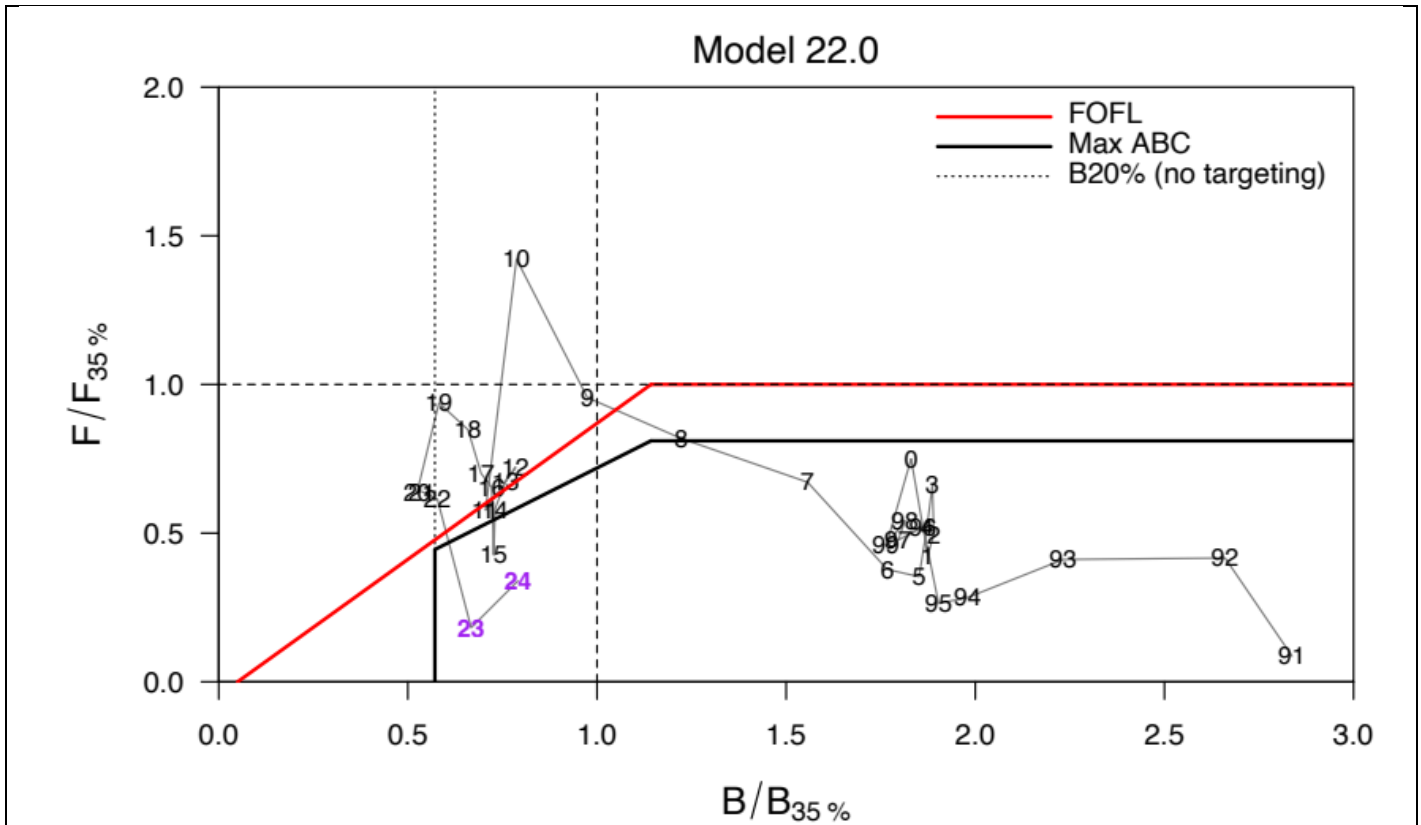


Figure 3. Relative spawning output (B/B35%) with respect to fishing intensity (F/F35%) for Model 22.0 (Spies, 2022).

MFRAG (2023) stated that: “Considering the trend of biomass relative to unexploited stock, in 2022 the stock was above PRI (20% of SSB₀) and above B_{MSY} proxy (40% of SSB₀) estimated in the previous assessments.”

All the models of 2022 assessment indicated that the stock is being not subjected to overfishing and not overfished. Spies et al (2022) concluded that “if fishing continues at its average rate for the past 5 years, female spawning biomass is predicted to be above B35%, which is the maximum sustainable - MSY level defined as for spawning biomass”.

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), thus C1.2 is met.

References

MFRAG. 2023. Bering Sea and Aleutian Islands and Gulf of Alaska Cod No: MSC-F-31493. 2nd Surveillance Report April 9, 2023. MRAG Americas, Inc. <https://fisheries.msc.org/en/fisheries/bsai-and-go-a-pacific-cod/@assessments>

Spies, I., Barbeaux, S., Hulson, P., Laman N., Ortiz, I. 2022, Assessment of the Pacific cod stock in the Aleutian Islands. Alaska Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, 7600 Sand Point Way NE., Seattle, WA 98115-6349, November 2022. https://apps-afsc.fisheries.noaa.gov/Plan_Team/2022/Alpcod.pdf

Links

MarinTrust Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01