



MarinTrust Standard V2

By-product Fishery Assessment Yellowfin sole (*Limanda aspera*) in FAO 61 & 67: Bering Sea and Aleutian Islands

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Yellowfin sole (<i>Limanda aspera</i>)
	Geographical area:	FAO 61 & 67 (Northwest Pacific Ocean) - Northeast Bering Sea and Aleutian Islands
	Country of origin of the product:	Thailand Flag country: USA
	Stock:	Yellowfin sole in the Bering Sea and Aleutian Islands
Date	06 th December 2023	
Report Code	THA35	
Assessor	Ana Elisa Almeida Ayres	
Country of origin of the product - PASS	Thailand Flag country: USA	
Country of origin of the product - FAIL	N/A	

Application details and summary of the assessment outcome			
Company Name(s): Piyo Bhokabhan Co. Ltd			
Country: Thailand			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Certification Trust/NSF	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Ana Elisa Almeida Ayres	Matthew Jew	0.5	Surveillance 2
Assessment Period	December 2023 – December 2024		

Scope Details	
Main Species	Yellowfin sole (<i>Limanda aspera</i>)
Stock	Yellowfin sole in the Bering Sea and Aleutian Islands
Fishery Location	FAO 61 & 67 (Northwest Pacific Ocean) - Northeast Bering Sea and Aleutian Islands
Management Authority (Country/ State)	North Pacific Fishery Management Council (NPFMC) and Magnuson-Stevens Act
Gear Type(s)	Otter trawls
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor's recommendation
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. Yellowfin sole (<i>Limanda aspera</i>) is not categorised as Endangered or Critically Endangered on IUCN's Red List and does not appear in CITES appendices; therefore, yellowfin sole (<i>Limanda aspera</i>) is eligible for approval for use as Marin Trust by-product raw material.</p> <p>The stock is managed under the Magnusen-Stevens Act and the Fishery Management Plan - FMP for Groundfish of the Bering Sea/Aleutian Islands. North Pacific Fisheries Management Council (NPFMC) set an annual catch limit for yellowfin sole, and NOAA Fisheries conducts the stock assessments in this region. The management plan is based on limit reference points (Overfishing Level - OFL and Maximum Sustainable Yield - MSY) and the NPFMC recommends Acceptable Biological Catch - ABC to the Secretary of Commerce based on these points. Therefore, there is a species-specific management system in place and the species is assessed under Category C.</p> <p>The last stock assessment was performed in November 2022. Fishery removals are included in the stock assessment, and it PASSES Clause C1.1. The stock is considered, in its most recent stock assessment, not overfished and not subject to overfishing based on 2022 catch data, it PASSES Clause C1.2.</p> <p>Therefore, yellowfin sole (<i>Limanda aspera</i>) in FAO 61 & 67 (Northwest Pacific Ocean) - Northeast Bering Sea and 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 internal peer reviewer agrees with the assessor's determination, who correctly classified yellowfin sole (<i>Limanda aspera</i>) in FAO 61 & 67 Northwest Pacific Ocean (northwest Bering Sea and Aleutian Islands) under Category C, as there is a specific management regime in place for this stock and limit reference points.</p> <p>Fishery removals are included in the stock assessment and the stock is considered, in its most recent stock assessment, not overfished and not subject to overfishing, so it PASSES Clauses C1.1 and C1.2.</p> <p>Therefore, yellowfin sole (<i>Limanda aspera</i>) in FAO 61 & 67 Northwest Pacific Ocean (northwest Bering Sea and Aleutian Islands), is APPROVED.</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
Yellowfin sole	<i>Limanda aspera</i>	Yellowfin sole in the Bering Sea and Aleutian Islands	North Pacific Fishery Management Council (NPFMC) and Magnuson-Stevens Act	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		Yellowfin sole (<i>Limanda aspera</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
<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>From the last full assessment conducted in 2021, there were changes in the data used in the models (Spies et al., 2022):</p> <ol style="list-style-type: none"> 1. The 2021 fishery and survey age compositions were added. 2. The estimate of the total catch made through the end of 2021 was updated as reported by the NMFS Alaska Regional office. The catch through the end of 2022 was estimated based on available data to be 127,712 t. Catch for the 2023 and 2024 projections were assumed to be the mean of the past 5 years, 2018 - 2022, 126,157 t. 3. The 2022 NMFS survey biomass estimate and standard error were included. A model-based (VAST) estimate of the EBS and NBS biomass estimates, standard error, and age composition were used in Model 22.1. <p>Fishing mortality (and total commercial catches) are used in the models and stock assessment process. Spies et al (2022) clarified that the catch of yellowfin sole up to October 1, 2022 was 106,096 t and over the past 5 years (2017 - 2021), approximately 83.1% of the catch has taken place by this date. Therefore, the full year's estimate of catch in 2022 was extrapolated to be 127,718 t.</p> <p>Figure 1 describes the reference points for the 2022 model, including the Overfishing Level - F_{OFL} and Acceptable Biological Catch - F_{ABC}. Figure 2 shows the total catch annual catch by year from 1954 to 2022.</p>			

Quantity	As estimated or <i>specified</i> last year for:		As estimated or <i>recommended</i> this year for:	
	2022	2023	2023	2024
M (natural mortality rate)	0.12, 0.135	0.12, 0.135	0.12, 0.125	0.12, 0.125
Tier	1a	1a	1a	1a
Projected total (age 6+) biomass (t)	2,479,370 t	2,284,820 t	3,321,640 t	4,062,230 t
Projected female spawning biomass (t)	857,101 t	727,101 t	885,444 t	897,062 t
B_0	1,489,190 t	1,489,190 t	1,407,000 t	1,407,000 t
B_{MSY}	495,904 t	495,904 t	475,199 t	475,199 t
F_{OFL}	0.152	0.152	0.122	0.122
$maxF_{ABC}$	0.143	0.143	0.114	0.114
F_{ABC}	0.143	0.143	0.114	0.114
OFL (t)	377,071 t	347,483 t	404,882 t	495,155 t
$maxABC$	354,014 t	326,235 t	378,499 t	462,890 t
ABC (t)	354,014 t	326,235 t	378,499 t	462,890 t
Status	2020	2021	2021	2022
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

Projections were based on estimated catches of 127,712 t in 2022 and 126,157 t used in place of maximum ABC for 2023. This estimate was based on the mean of the past 5 years, 2018 - 2022, which includes the extrapolated catch of 127,712 t for 2022.

Figure 1. Reference points for the 2022 yellowfin sole assessment (Spies et al., 2022).

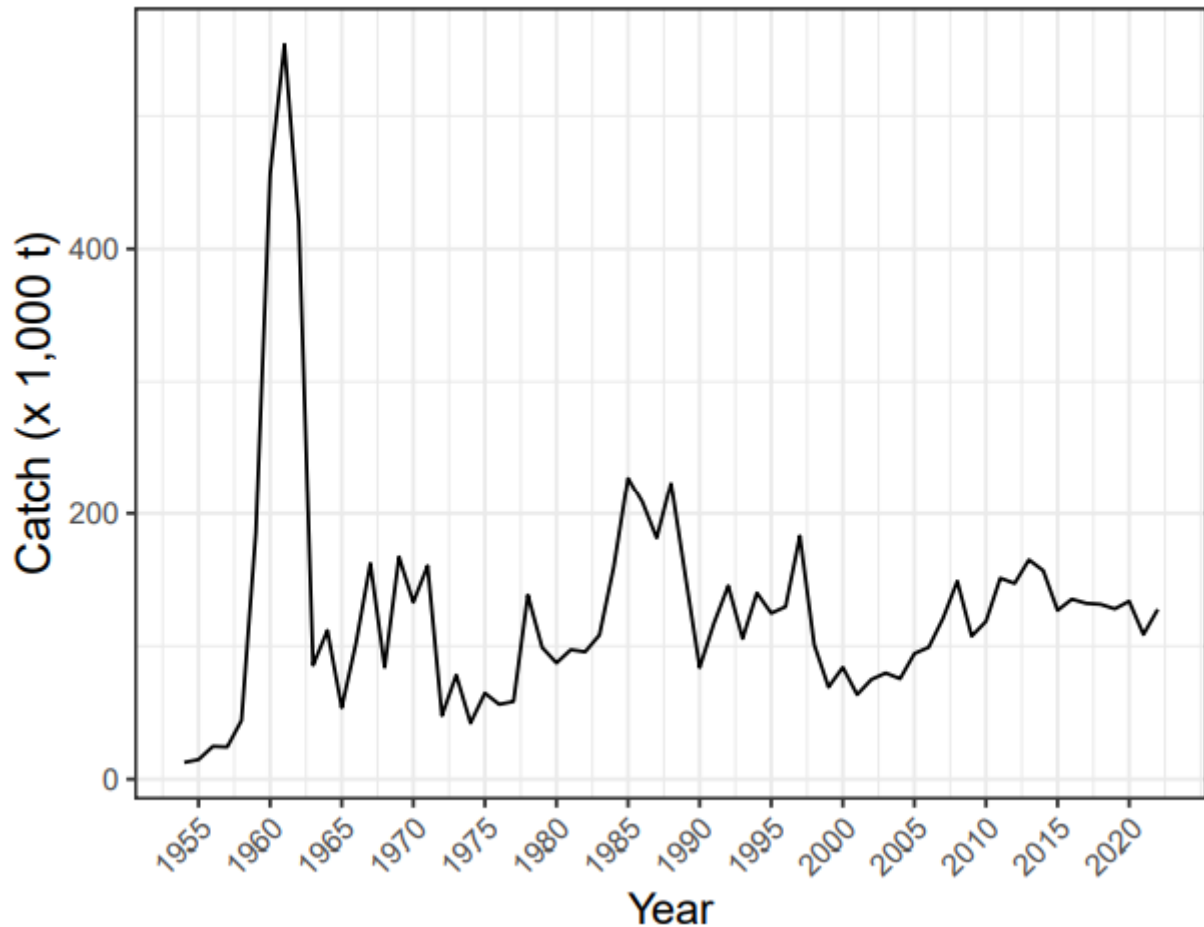


Figure 2. Yellowfin Sole annual total catch (1,000s t) in the Eastern Bering Sea from 1954-2021 (Spies et al., 2022).

Fishery removals of the stock, including from the fishery under assessment, are included in the stock assessment process. 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.

Yellowfin sole female spawning biomass continues to be above B_{MSY} and the annual harvest remains below the ABC level. The projected estimate of total biomass for 2023 was higher by 45% from the 2021 assessment, being currently estimate at 3,321,640 t and based on that, the model projection of spawning biomass for 2023, assuming catch was 885,444 t, 22% higher than the projected 2022 spawning biomass. The 2023 and 2024 ABCs using F_{ABC} from this assessment model were 378,499 t and 462,890 t. The 2023 and 2024 OFLs estimated were 404,882 t and 495,155 t (Spies et al., 2022). Figure 2 summarises the results of this stock assessment. The stock is not overfished and not subject to overfishing.

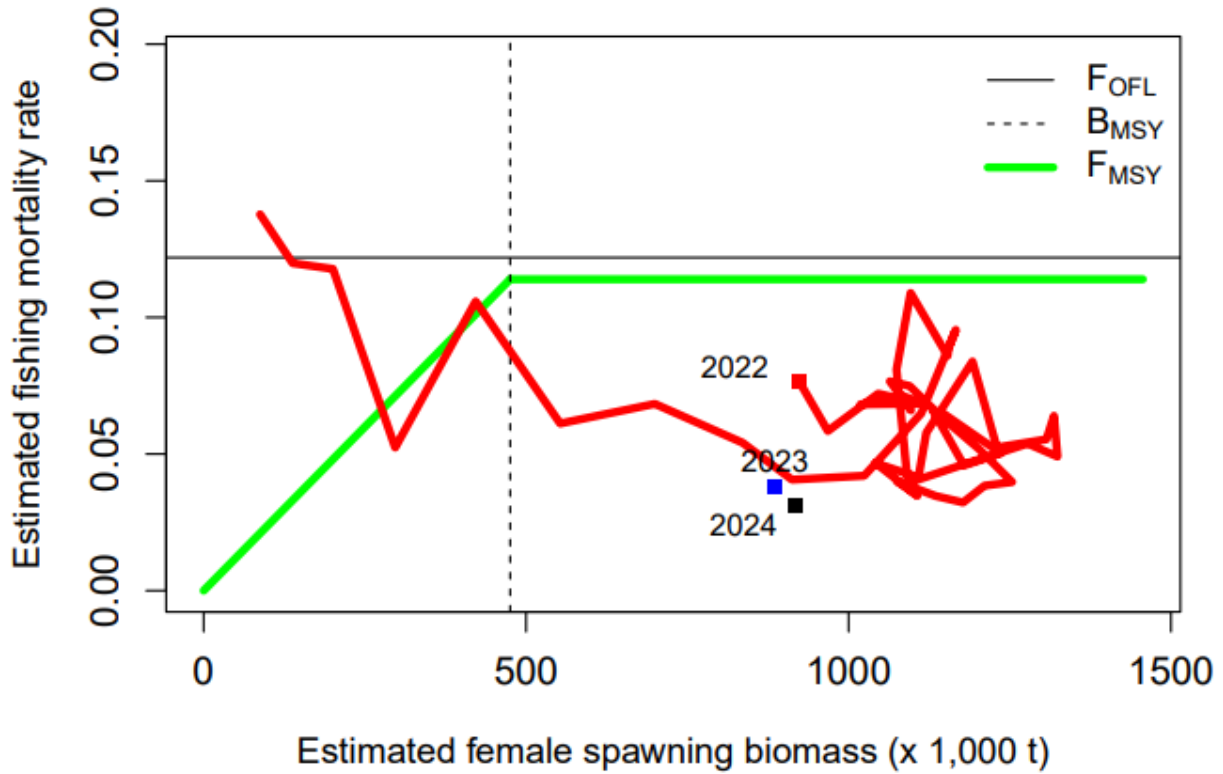


Figure 46: Yellowfin sole fishing mortality rate and female spawning biomass from 1975 to 2022 compared to the F35% and F40% control rules, based on Model 22.1. Vertical line is B35%. Squares indicate estimates for 2022, 2023, and 2024.

Figure 3. Source: Spies et al (2022).

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point. C.1.2 is met.

References

Ingrid Spies, Lewis Barnett, Rebecca Haehn, James Ianelli, Emily Markowitz, Zack Oyafuso, Elizabeth Siddon, Cynthia Yeung. 2022. Assessment of the Yellowfin Sole Stock in the Bering Sea and Aleutian Islands. <https://www.fisheries.noaa.gov/resource/data/2022-assessment-yellowfin-sole-stock-bering-sea-and-aleutian-islands>

Links

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