



MarinTrust Standard V2

By-product Fishery Assessment Yellowfin sole (*Limanda aspera*) in FAO 61 & 67: Bering Sea and 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:	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 state(s) not provided by client)
	Stock:	Yellowfin sole in FAO 61 & 67 Northwest Pacific Ocean, Northeast Bering Sea and Aleutian Islands
Date	9 December 2022	
Report Code	THA35	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Thailand (flag state(s) not provided by client)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Golden Prize Canning Co Ltd; Asian Alliance International Co., Ltd; Jana Fish Industries Limited; Piyo Bhokabhan Co., Ltd.; S.P.A International Food Group Co., Ltd; Sirisaengarumpee Co. Ltd.; South East Asian Packaging and Canning Ltd; T.C. Union Agrotech Co, Ltd; Thai Union Ingredients Co Ltd			
Country: Thailand			
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 December 2022		

Scope Details	
Main Species	Yellowfin sole, <i>Limanda aspera</i>
Stock	Yellowfin sole in FAO 61 & 67 Northwest Pacific Ocean, Northeast 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 the assessor's recommendation of approval
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. Yellowfin sole (<i>Limanda aspera</i>) is not assessed on IUCN’s Red List, and does not appear in CITES appendices; therefore, <i>Limanda aspera</i> is eligible for approval for use as Marin trust by-product raw material.</p> <p>NOAA Fisheries has not published the stock assessment for 2022. Thus, the following By-Product Fishery Assessment is based on the 2021 stock assessment and will be very similar to the 2021 MarinTrust By-Product Fishery Assessment for this stock.</p> <p>The stock is managed under the Magnusen-Stevens Act and the 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 (LRPs) (OFL and MSY) and the NPFMC recommends TAC to the Secretary of Commerce based on these LRPs. Therefore, there is a species-specific management system in place and the species is 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, not overfished and not subject to overfishing based on 2021 catch data, it PASSES Clause C1.2.</p> <p>Therefore, yellowfin sole in the FAO 61 & 67 Northwest Pacific Ocean (northwest Bering Sea and Aleutian Islands) 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 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 based on 2021 catch data, 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>Determine which flag state(s) the species is being sources from.</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>	Northwest Bering Sea and Aleutian Islands (FAO 61 & 67)	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 2020, there were changes in the data used in the models:</p> <ol style="list-style-type: none"> The 2020 fishery age composition was added The estimate of the total catch made through the end of 2020 was updated as reported by NMFS Alaska Regional office. The catch through the end of 2021 was estimated based on available data to be 108,096 t. Catch for 2022 and 2023 projections were assumed to be the mean of the past five years, 2017 – 2021, 126,929 t. The 2021 NMFS survey biomass estimate and standard error was included. A VAST estimate of the EBS biomass estimate and standard error were used in Model 18.2a. The 2021 Northern Bering Sea biomass estimate and standard error were combined with the 2021 EBS survey VAST estimate in Model 18.2b. <p>Fishing mortality (and total commercial catches) are used in the models and stock assessment process. Table 1 describes the tier 3 reference points for the 2021 model, including the F_{OFL} and F_{ABC}. Figure 1 shows the total catch annual catch by year from 1954 to 2021.</p>																																																																																																	
<table border="1"> <thead> <tr> <th rowspan="2">Quantity</th> <th colspan="2">As estimated or <i>specified</i> last year for:</th> <th colspan="2">As estimated or <i>recommended</i> this year for:</th> </tr> <tr> <th>2021</th> <th>2022</th> <th>2022</th> <th>2023</th> </tr> </thead> <tbody> <tr> <td>M (natural mortality rate)</td> <td>0.12, 0.135</td> <td>0.12, 0.135</td> <td>0.12, 0.135</td> <td>0.12, 0.135</td> </tr> <tr> <td>Tier</td> <td>1a</td> <td>1a</td> <td>3a</td> <td>3a</td> </tr> <tr> <td>Projected total (age 1+) biomass (t)</td> <td>2,755,870 t</td> <td>3,025,430 t</td> <td>3,282,396 t</td> <td>3,301,360 t</td> </tr> <tr> <td>Projected female spawning biomass (t)</td> <td>1,040,900 t</td> <td>996,044 t</td> <td>816,003 t</td> <td>780,284 t</td> </tr> <tr> <td>$B_{100\%}$ (B_0 for Tier 1a)</td> <td>1,528,700 t</td> <td>1,528,700 t</td> <td>1,890,560 t</td> <td>1,890,560 t</td> </tr> <tr> <td>$B_{40\%}$</td> <td>-</td> <td>-</td> <td>756,223 t</td> <td>756,223 t</td> </tr> <tr> <td>$B_{35\%}$ (B_{MSY} for Tier 1a)</td> <td>559,704 t</td> <td>559,704 t</td> <td>661,695 t</td> <td>661,695 t</td> </tr> <tr> <td>F_{OFL}</td> <td>0.124</td> <td>0.124</td> <td>0.14</td> <td>0.14</td> </tr> <tr> <td>$maxF_{ABC}$</td> <td>0.114</td> <td>0.114</td> <td>0.117</td> <td>0.117</td> </tr> <tr> <td>F_{ABC}</td> <td>0.114</td> <td>0.114</td> <td>0.117</td> <td>0.117</td> </tr> <tr> <td>OFL (t)</td> <td>341,571 t</td> <td>374,982 t</td> <td>220,127 t</td> <td>226,860 t</td> </tr> <tr> <td>$maxABC$</td> <td>313,477 t</td> <td>344,140 t</td> <td>185,284 t</td> <td>190,898 t</td> </tr> <tr> <td>ABC (t)</td> <td>313,477 t</td> <td>344,140 t</td> <td>185,284 t</td> <td>190,898 t</td> </tr> <tr> <td>Status</td> <td>2019</td> <td>2020</td> <td>2020</td> <td>2021</td> </tr> <tr> <td>Overfishing</td> <td>No</td> <td>n/a</td> <td>No</td> <td>n/a</td> </tr> <tr> <td>Overfished</td> <td>n/a</td> <td>No</td> <td>n/a</td> <td>No</td> </tr> <tr> <td>Approaching overfished</td> <td>n/a</td> <td>No</td> <td>n/a</td> <td>No</td> </tr> </tbody> </table> <p>Projections were based on estimated catches of 108,157 t in 2021 and 126,929 t used in place of maximum ABC for 2022.</p>				Quantity	As estimated or <i>specified</i> last year for:		As estimated or <i>recommended</i> this year for:		2021	2022	2022	2023	M (natural mortality rate)	0.12, 0.135	0.12, 0.135	0.12, 0.135	0.12, 0.135	Tier	1a	1a	3a	3a	Projected total (age 1+) biomass (t)	2,755,870 t	3,025,430 t	3,282,396 t	3,301,360 t	Projected female spawning biomass (t)	1,040,900 t	996,044 t	816,003 t	780,284 t	$B_{100\%}$ (B_0 for Tier 1a)	1,528,700 t	1,528,700 t	1,890,560 t	1,890,560 t	$B_{40\%}$	-	-	756,223 t	756,223 t	$B_{35\%}$ (B_{MSY} for Tier 1a)	559,704 t	559,704 t	661,695 t	661,695 t	F_{OFL}	0.124	0.124	0.14	0.14	$maxF_{ABC}$	0.114	0.114	0.117	0.117	F_{ABC}	0.114	0.114	0.117	0.117	OFL (t)	341,571 t	374,982 t	220,127 t	226,860 t	$maxABC$	313,477 t	344,140 t	185,284 t	190,898 t	ABC (t)	313,477 t	344,140 t	185,284 t	190,898 t	Status	2019	2020	2020	2021	Overfishing	No	n/a	No	n/a	Overfished	n/a	No	n/a	No	Approaching overfished	n/a	No	n/a	No
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<p>Table 1. Tier 3 reference points for the 2021 Yellowfin Sole assessment model 18.2 (Source: Spies et al. 2021)</p>																																																																																																	

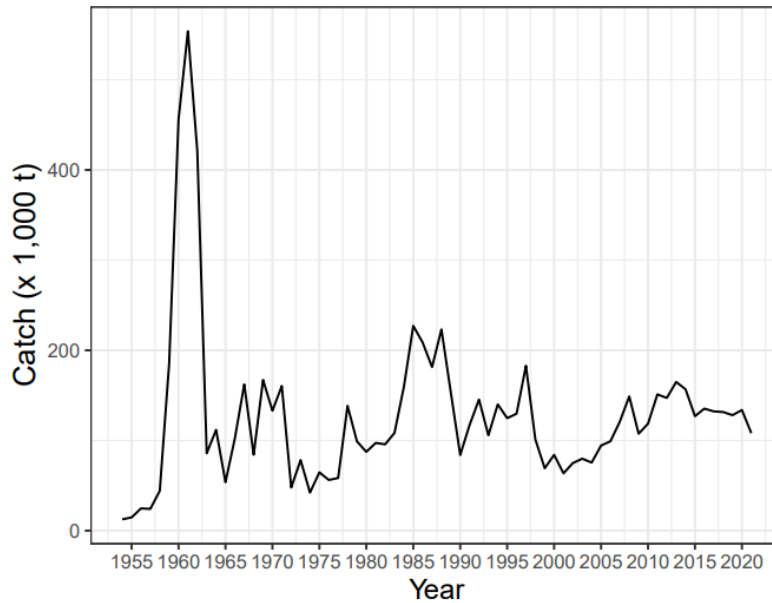


Figure 1. Yellowfin Sole annual total catch (1,000s t) in the Eastern Bering Sea from 1954-2021 (Source: Spies et al. 2021)

Therefore, 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.

The 2021 stock assessment indicates that total and female spawning biomass estimates are trending downward, but still above overfished threshold (Figure 2). Similarly, fishing mortality has also been slightly declining over the same period of time. However, the 2021 model estimates that ABC and OFL are higher than the previous stock assessment (2020), due to the revision and addition of assumptions for annual weight-at-age. The stock is below F_{OFL} and F_{MSY} and above B_{MSY} .

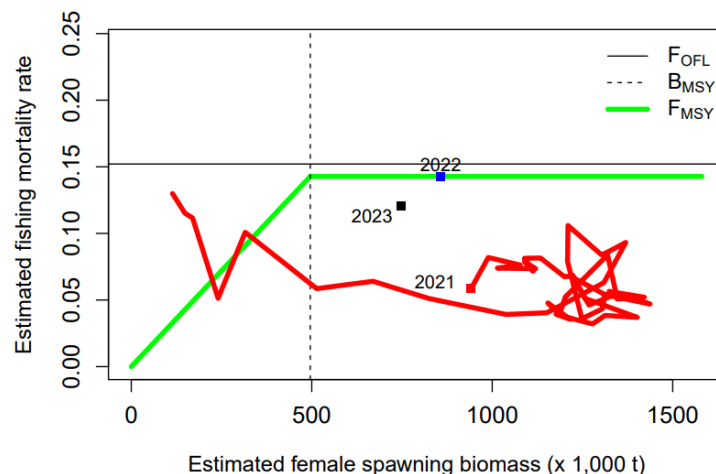


Figure 2. Fishing mortality rate and female spawning biomass from 1975 to 2021 compared to the F35% and f40% control rules, based on Model 18.2. Vertical line is B35%. Squares indicate estimates for 2021, 2022, and 2023 (Source: Spies et al. 2021)

Therefore, the stock is considered, in its most recent stock assessment, not overfished and not subject to overfishing based on 2021 catch data. The stock PASSES Clause C1.2.

References

Spies I, Haehn R, Siddon E, Conner J, Markowitz E, Yeung C, Ianella J. 2021. Assessment of the Yellowfin Sole Stock in the Bering Sea and Aleutian Islands. NPFMC Bering Sea and Aleutian Islands SAFE <https://apps-afsc.fisheries.noaa.gov/refm/docs/2021/BSAlyfin.pdf>

NOAA. 2022. Yellowfin sole.
<https://www.fisheries.noaa.gov/species/yellowfin-sole#seafood>

Links

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