



MarinTrust Standard V2

By-product Fishery Assessment *Report Template (Bering Sea Aleutian Islands Flathead Sole in FAO Areas 61 and 67*

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Flathead Sole <i>Hippoglossoides elassodon</i>
	Geographical area:	Northeast Pacific, FAO 61 and FAO 67
	Country of origin of the product:	USA (Flag Country)
	Stock:	Bering Sea and Aleutian Islands (BSAI)
Date	May 2022	
Report Code	THA05	
Assessor	Ivan Mateo	
Country of origin of the product - PASS	USA (Flag Country)	
Country of origin of the product - FAIL	NA	

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 Trust			
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Ivan Mateo	Geraldine Criquet	0.5	Initial
Assessment Period	To May 2022		

Scope Details	
Main Species	Flathead Sole <i>Hippoglossoides elassodon</i>
Stock	Bering Sea and Aleutian Islands (BSAI)
Fishery Location	Northeast Pacific, FAO 61 and FAO 67
Management Authority (Country/ State)	North Pacific Management Council (NPFMC)
Gear Type(s)	Bottom Trawl
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor's determination of approval
Recommendation	APPROVE

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 MARINTRUST raw material. BSAI Flathead sole is not listed as Endangered or Critically Endangered on IUCN's Red List, nor it is listed in CITES appendices; therefore, BSAI Flathead Sole is eligible for approval for use as MARIN TRUST by-product raw material.</p> <p>This stock is managed in by North Pacific Management Council (NPFMC). NMFS conducts stock assessments; reference points are defined for the BSAI Flathead sole stock The stock is classified as Category C.</p> <p>Fishery removals of the stock are considered in the various stock assessment processes so the stock PASSES Clause C1.1.</p> <p>In the most recent stock assessment, the stock is considered to have a biomass above the limit reference point, the stocks PASSES Clause C1.2.</p> <p>In order to be approved, the stock under assessment must pass both Clauses C1.1 and C1.2.</p> <p>BSAI Flathead sole passes both Clauses C1.1 and C1.2, and therefore is APPROVED by the assessor for the production of fishmeal and fish oil under the current Marin Trust v.2.20 by-product Standard.</p>
Fishery Assessment Peer Review Comments
<p>The assessor correctly classified Bering Sea and Aleutian Islands flathead sole stock as Category C, the stock is subject to a specific management regime and reference points are defined.</p> <p>Fishery removals are considered in the stock assessment process. The most recent stock assessment determined that the stock is not overfished. Therefore, the stock is considered to have a biomass above the limit reference point.</p> <p>Bering Sea and Aleutian Islands flathead sole passes both Clauses C1.1 and C1.2 and therefore should be approved under the Marin Trust Standard v.2.</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 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
Flathead sole	<i>Hippoglossoides elassodon</i>	Bering Sea Aleutian Islands	NPFMC	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		Flathead Sole, <i>Hippoglossoides elassodon</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.	Pass
	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.	Pass
			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>Data to support the stock assessment is derived from commercial catches: relative catches in weight, relative catch per set and relative average length of catch. Total catches (retained plus discards) are shown in Table 3. Therefore, the stock PASSES Clause C1.1.</p>			

TABLE 3. CATCH (IN TONS) OF FLATHEAD SOLE AND BERING FLOUNDER COMBINED (HIPPOGLOSSOIDES SPP.), FLATHEAD SOLE ONLY, AND BERING FLOUNDER ONLY IN THE BSAI AS OF OCTOBER 28, 2021

Year	Total (<i>Hippo. spp</i>)	Flathead sole	Bering Flounder
1964	12,315		
1965	3,449		
1966	5,086		
1967	11,218		
1968	12,606		
1969	9,610		
1970	21,050		
1971	26,108		
1972	10,380		
1973	17,715		
1974	13,198		
1975	5,011		
1976	7,565		
1977	7,909		
1978	13,864	13,734	130
1979	6,042	6,042	0
1980	8,600	8,026	574
1981	10,609	10,599	10
1982	8,417	8,397	20
1983	5,518	5,509	9
1984	4,458	4,395	63
1985	5,636	5,626	10
1987	3,595	3,479	116
1988	6,783	6,697	86
1989	3,604	3,594	10
1990	20,245	19,264	981
1991	14,197	14,176	21
1992	14,407	14,347	60
1993	13,574	13,463	111
1994	17,006	16,987	19
1995	14,715	14,710	4
1996	17,346	17,341	5
1997	20,683	20,678	5
1998	24,387	24,381	7

Year	Total (<i>Hippo. spp</i>)	Flathead sole	Bering Flounder
1999	18,573	18,553	20
2000	20,441	20,408	33
2001	17,811	17,795	16
2002	15,575	15,550	25
2003	13,785	13,767	18
2004	17,398	17,374	24
2005	16,108	16,077	31
2006	17,981	17,975	6
2007	18,958	18,952	6
2008	24,540	24,526	14
2009	19,558	19,530	28
2010	20,127	20,101	26
2011	13,558	13,538	20
2012	11,368	11,362	6
2013	17,355	17,275	80
2014	16,512	16,479	33
2015	11,308	11,274	33
2016	10,313	10,301	12
2017	9,111	9,108	3
2018	11,007	11,001	5
2019	15,880	15,879	1
2020	9,392	9,389	3
2021*	9,609	9,696	2

*2021 catches are current as of October 29, 2021

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.

Flathead sole is assessed using an age-structured model and Tier 3 determination. The single species projection model is run using parameter values from the accepted 2020 assessment model, together with updated catch information for 2020 and estimated catches for 2021 and 2022-2023, to predict stock status for flathead sole in 2022 and 2023 and make ABC recommendations for those years.

The status of the stock is not overfished (Table 4). Therefore, the assessor determines that, the stock is considered to have a biomass above the limit reference point, it PASSES Clause C1.2.

TABLE 4. STOCK STATUS OF BSAI FLATHEAD SOLE

Quantity	As estimated or specified last year for:		As estimated or recommended this year for:	
	2021	2022	2022*	2023*
<i>M</i> (natural mortality rate)	0.2	0.2	0.2	0.2
Tier	3a	3a	3a	3a
Projected total (3+) biomass (t)	602,497	608,576	608,631	612,001
Projected Female spawning biomass (t)	150,433	154,906	155,379	160,748
<i>B</i> _{100%}	203,658	203,658	203,658	203,658
<i>B</i> _{40%}	81,463	81,463	71,280	71,280
<i>B</i> _{35%}	71,280	71,280	81,463	81,463
<i>F</i> _{OFL}	0.46	0.46	0.46	0.46
<i>maxF</i> _{ABC}	0.37	0.37	0.37	0.37
<i>F</i> _{ABC}	0.37	0.37	0.37	0.37
OFL (t)	75,863	77,763	77,967	80,034
maxABC (t)	62,567	64,119	64,288	65,988
ABC (t)	62,567	64,119	64,288	65,988
Status	As determined last year for:		As determined this year for:	
	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

References

<https://apps-afsc.fisheries.noaa.gov/refm/docs/2021/BSAIfathead.pdf>

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			
Standard clauses 1.3.2.2			

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	