



MarinTrust Standard V2

By-product Fishery Assessment *Report Template (Gulf of Alaska Flathead Sole in FAO Areas 61 and 67)*

MarinTrust Programme

Unit C, Printworks

22 Amelia Street

London

SE17 3BZ

E: standards@marin-trust.com

T: +44 2039 780 819

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:	Gulf of Alaska (GOA)
Date	May 2022	
Report Code	THA06	
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	Gulf of Alaska (GOA)
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. GOA Flathead sole is not listed as Endangered or Critically Endangered on IUCN's Red List, nor it is listed in CITES appendices; therefore, GOA 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 GOA 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>GOA 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 Gulf of Alaska 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>Gulf of Alaska 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>	Gulf of Alaska	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
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.			
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 4 . Therefore, the stock PASSES Clause C1.1.			

TABLE 4. TOTAL CATCH (T) OF GOA FLATHEAD SOLE BY AREA. CATCH FOR 2021 IS CURRENT UP TO OCTOBER 28, 2021. COLUMNS LEFT BLANK INDICATE CONFIDENTIAL CATCH INFORMATION BY AREA. BOLDDED YEARS ARE NOT USED IN THE BASE MODEL.

Year	Total Catch	Western Gulf	Central Gulf	Eastern Gulf
1978	452			
1979	165			
1980	2,068			
1981	1,070			
1982	1,368			
1983	1,080			
1984	549			
1985	320			
1986	147			
1987	151			
1988	520			
1989	747			
1990	1,447			
1991	1,237	199	1,036	2
1992	2,315	355	1,947	13
1993	2,824			
1994	2,525			
1995	2,180	589	1,563	28
1996	3,074	807	2,166	101
1997	2,441			
1998	1,731			
1999	897	186	687	25
2000	1,548			
2001	1,912			
2002	2,146			
2003	2,459	525	1,934	0
2004	2,398			
2005	2,552	611	1,941	0
2006	3,142	462	2,679	1
2007	3,130	666	2,462	2
2008	3,446			
2009	3,663	303	3,359	1
2010	3,865	462	3,403	0
2011	2,732	393	2,338	0
2012	2,167	277	1,890	0
2013	2,819	588	2,230	0
2014	2,557	219	2,337	1
2015	2,001	199	1,802	1
2016	2,422	228	2,191	2
2017	2,050	73	1,978	0
2018	2,202	150	2,051	0
2019	2,668	210	2,457	0
2020	1,911	100	1,811	0
2021	586	70	516	0

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. Thus, the single species projection model was run using parameter values from the accepted 2017 flathead sole assessment model (Turnock et al. 2017), together with updated catch information for 2017-2020, and estimated catches for 2021 and 2022-2023 to predict stock status for flathead sole in 2022

and 2023 and to make ABC recommendations for those years. Projections are conducted using numbers-at-age for flathead sole from age 3-21+ and historical recruitment of age 3 individuals is used to calculate OFLs and ABCs.

The status of the stock is not overfished (Table 5). Therefore, the assessor determines that, the stock is considered to have a biomass above the limit reference point, it PASSES Clause C1.2.

TABLE 5. STOCK STATUS OF GOA 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)	280,980	278,418	279,975	276,796
Projected Female spawning biomass (t)	95,338	96,833	97,614	97,876
<i>B</i> _{100%}	91,551	91,551	91,551	91,551
<i>B</i> _{40%}	36,620	36,620	36,620	36,620
<i>B</i> _{35%}	32,043	32,043	32,043	32,043
<i>F</i> _{OFL}	0.36	0.36	0.36	0.36
<i>maxF</i> _{ABC}	0.28	0.28	0.28	0.28
<i>F</i> _{ABC}	0.28	0.28	0.28	0.28
OFL (t)	47,982	48,534	48,928	48,757
maxABC (t)	39,377	39,851	40,175	40,046
ABC (t)	39,377	39,851	40,175	40,046
Status	As determined <i>this</i> 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/GOAflathead.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	