

7. Assessment of the Kamchatka flounder stock in the Bering Sea and Aleutian Islands

By

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Executive Summary

Bering Sea and Aleutian Islands (BSAI) Kamchatka flounder stock is usually assessed biennially according to the stock assessment prioritization schedule. A forward projecting age structured model is the primary assessment tool for BSAI Kamchatka flounder, which qualifies as a Tier 3 stock. The assessment model is not run during an off-cycle year. During odd years, a harvest projection is presented with recommendations of harvest levels for the next two years for this species, using updated catch information in the projection model. The most recent full assessment was conducted in 2024, information regarding the stock assessment model and results is available online (Bryan et. al, 2024 available at <https://files.npfmc.org/SAFE/2024/BSAIkamchatka.pdf>). Due to changes in assessment prioritization a full stock assessment document with updated assessment and projection model results is expected in November 2027.

Catch for this stock has been 80% of the maximum permissible acceptable biological catch (maxABC) and total allowable catch (TAC), on average, since 2021. The TAC has also been set equal to maxABC since 2021 and between 2017 and 2020, TAC was ~56% of maxABC.

Description of updated catch

New data added to the projection model included an updated 2024 catch of 5,172 t, which was increased from 4,955 t. New catch estimates for 2025-2027 were also included in the model. The 2025 catch, 5,045 t, was the official catch reported and was lower than the previous preliminary estimate of 5,773 t. We estimated the 2026 catch by increasing the official catch as of August 31, 2026 by an expansion factor. The expansion factor used was 1.10 and represents the average

fraction of catch taken after August 31st in the last five complete years (2021-2025). This resulted in an estimated catch for 2026 of 1,914 t. The estimate for 2026 is lower than expected because catch through August is 50% lower than 2024 and is ~33% lower, on average, than the previous 5 years. Catch in 2027 was set equal to 6,412 t, which was estimated from the product of the 5-yr average proportion of ABC achieved (80%) and the 5-yr average ABC (8,015 t). The 2027 value is similar to the average catch between 2021 and 2025 (Table 1).

Summary of Results

Survey biomass in the Aleutian Islands had been somewhat flat since 2016 (Figure 1). The 2022 estimate was 12% higher than 2018, the 2024 estimate was similar to 2022 and in 2026 the estimate was 11% lower than 2024. Survey biomass on the Eastern Bering Sea shelf has been increasing since 2023 (Figure 1). The 2024 estimate was 9% higher than 2023 and the 2025 estimate was 17% higher than 2024.

Exploitation rates increased between 2018 and 2022 and have exhibited a declining trend since 2022 (Table 2, Figure 2).

Based on the projection model results, recommended ABCs for 2026 and 2027 are 6,706 t and 6,770 t. The recommended OFLs are 7,912 t and 7,988 t for 2026 and 2027, respectively. The new ABC and OFL recommendations for 2026 are 2% higher than the 2024 ABCs and OFL developed using the 2024 full assessment model. In 2025, the projections were not updated due to the lapse in appropriation. The stock is not overfished and is not approaching a condition of being overfished. The results are presented in the following table.

ABC is for the entire BSAI and not apportioned between the Bering Sea and Aleutian Islands.

	Tier 3 assessment model			
	As estimated last year for		As estimated this year for	
Quantity	2025	2026	2027	2028
<i>M</i> (natural mortality rate)	0.11	0.11	0.11	0.11
Tier	3a	3a	3a	3a
Projected total (age 2+) biomass (t)	106,850	104,888	106,999	104,409
Projected female spawning biomass	44,883	44,051	45,980	44,165
Projected				
<i>B</i> _{100%}	85,751	85,751	86,541	86,541
<i>B</i> _{40%}	34,300	34,300	34,616	34,616
<i>B</i> _{35%}	30,013	30,013	30,289	30,289
<i>F</i> _{OFL}	0.101	0.101	0.101	0.101
<i>maxF</i> _{ABC}	0.085	0.085	0.085	0.085
<i>F</i> _{ABC}	0.085	0.085	0.085	0.085
OFL (t)	8,019	7,790	7,988	7,630
maxABC (t)	6,800	6,606	6,770	6,466
ABC (t)	6,800	6,606	6,770	6,466
	As determined <i>last</i> year for:		As determined <i>this</i> year for:	
Status	2023	2024	2024	2025
Overfishing	No	n/a	no	n/a
Overfished	n/a	no	n/a	no
Approaching overfished	n/a	no	n/a	no

*Based on model 16.0b and the 2024 full assessment.

5 Year Projections

For the 5-year projections, two projection runs were completed. The first projection used the catch inputs as follows:

1. Catch for years 2024 – 2027 were specified as above.
2. The 2028 expected catch was specified as the 2027 maxABC.
3. The author specified the 5-year average *F* from 2021-2025 in the projection model to get the expected catch for 2029-2031, where the fishing mortality values for 2021 – 2023 were from the 2024 assessment model and the values for 2024 and 2025 were from the projection model (Table 3).

The second projection run used the catch inputs from steps 1 and 2 above and used the expected catch from step 3 as catch inputs and then obtained the OFL, ABC, mean SSB, and mean relative SSB from projection scenario 1, where fishing mortality is set to maxABC. In this step the input catch is assumed to be the maxABC.

The table below summarizes the 5-year projections:

Year	Expected catch	OFL	ABC	mean SSB	mean relative SSB
2027	6,411	7,988	6,770	45,980	0.53
2028	6,770	7,630	6,466	44,165	0.51
2029	5,550	7,289	6,177	41,971	0.48
2030	5,432	7,136	6,047	40,489	0.47
2031	5,360	7,042	5,967	39,310	0.45

Tables

Table 1. Summary of catch, ABC, TAC and the ratio between catch and TAC from 2021-2025.

Year	Catch	ABC	TAC	Catch/TAC
2021	6,667	8,982	8,982	0.74
2022	8,369	9,214	9,214	0.91
2023	6,949	7,579	7,579	0.92
2024	5,172	7,498	7,498	0.69
2025	5,046	6,800	6,800	0.74
mean	6,441	8,015	8,015	0.80

Table 2. Biomass estimates for Kamchatka flounder from the 2024 full assessment model, except 2025-2026, which were generated by the single species projection model. *Catch data is from the NMFS AKRO BLEND/Catch Accounting System, except for 2026, which is an estimate based on an expansion factor of 1.10 and the reported catch as of August 31, 2026. Exploitation is the ratio between catch and total biomass.

Year	Total biomass (t)	Catch	Exploitation
1991	156,801	1,951	0.012
1992	155,568	1,190	0.008
1993	154,592	930	0.006
1994	153,155	1,434	0.009
1995	150,499	928	0.006
1996	147,861	1,465	0.010
1997	144,606	1,047	0.007
1998	141,814	1,524	0.011
1999	138,826	1,138	0.008
2000	136,234	1,323	0.010
2001	133,610	1,406	0.011
2002	131,619	1,185	0.009
2003	131,217	1,325	0.010
2004	133,338	1,818	0.014
2005	136,081	1,424	0.010
2006	140,050	1,344	0.010
2007	144,444	1,192	0.008
2008	148,753	7,266	0.049
2009	146,481	12,558	0.086
2010	139,428	20,960	0.150
2011	123,726	10,053	0.081
2012	119,713	9,594	0.080
2013	116,160	7,836	0.067
2014	114,678	6,568	0.057
2015	114,656	5,072	0.044
2016	116,385	4,924	0.042
2017	117,948	4,582	0.039
2018	119,536	3,166	0.026
2019	122,135	4,581	0.038
2020	122,880	7,478	0.061
2021	119,660	6,667	0.056
2022	116,634	8,369	0.072
2023	111,736	6,949	0.062
2024	108,189	5,172	0.048
2025	106,511	5,046	0.047
2026	105,062	1,914	0.018

Table 3. The fishing mortality rate estimates for 2021-2025 and the source of the estimate. The average fishing mortality rate was used as the average F in the 5-year projections for alternative 3.

Source	Year	F
2024 assessment	2021	0.077
2024 assessment	2022	0.098
2024 assessment	2023	0.084
projection model	2024	0.063
projection model	2025	0.063
Average		0.077

Figures

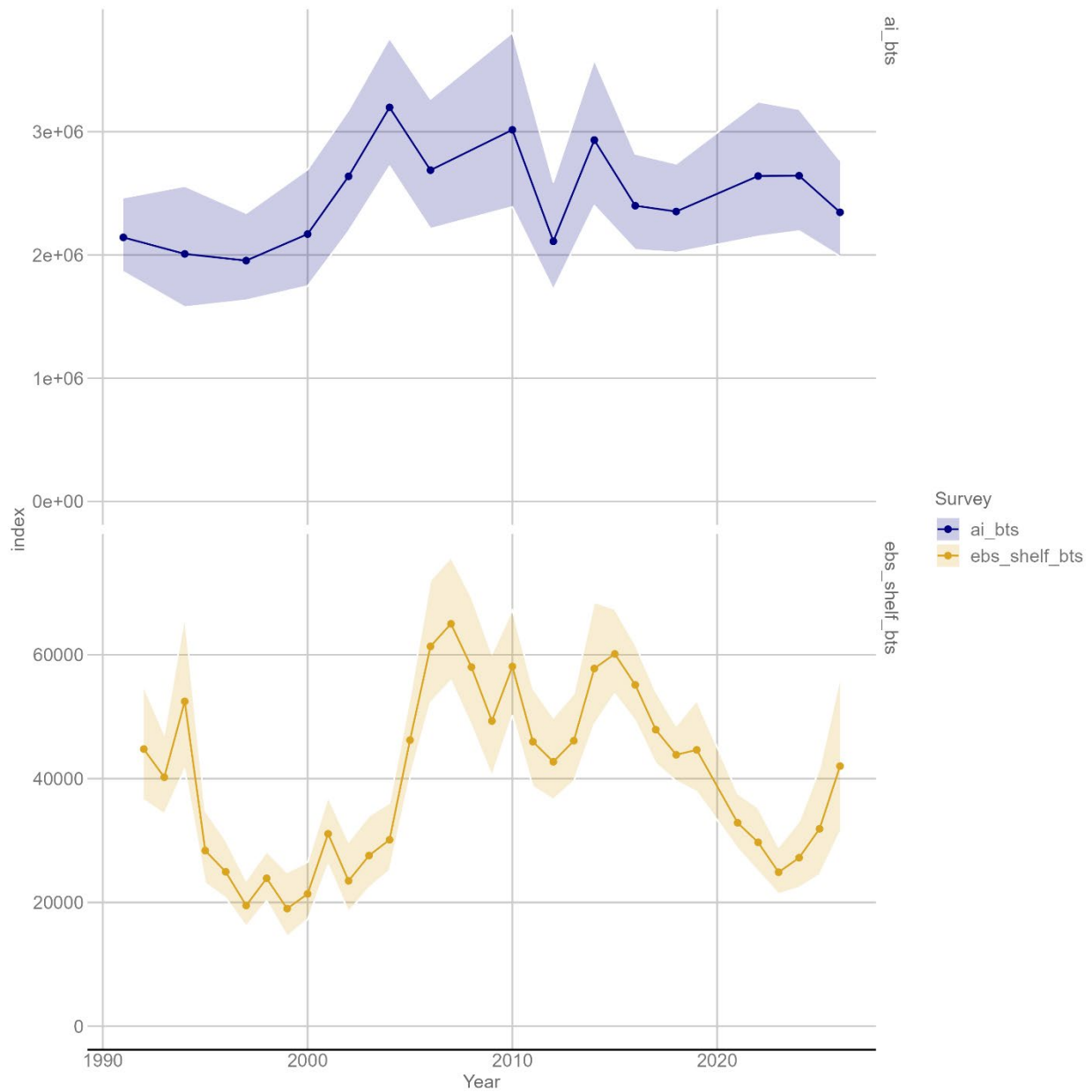


Figure 1. Survey biomass 1991 – 2026 for the Aleutian Islands bottom trawl survey (ai_bts) and the EBS shelf bottom trawl survey (ebs_shelf_bts). The y-axis scale differs between panels.

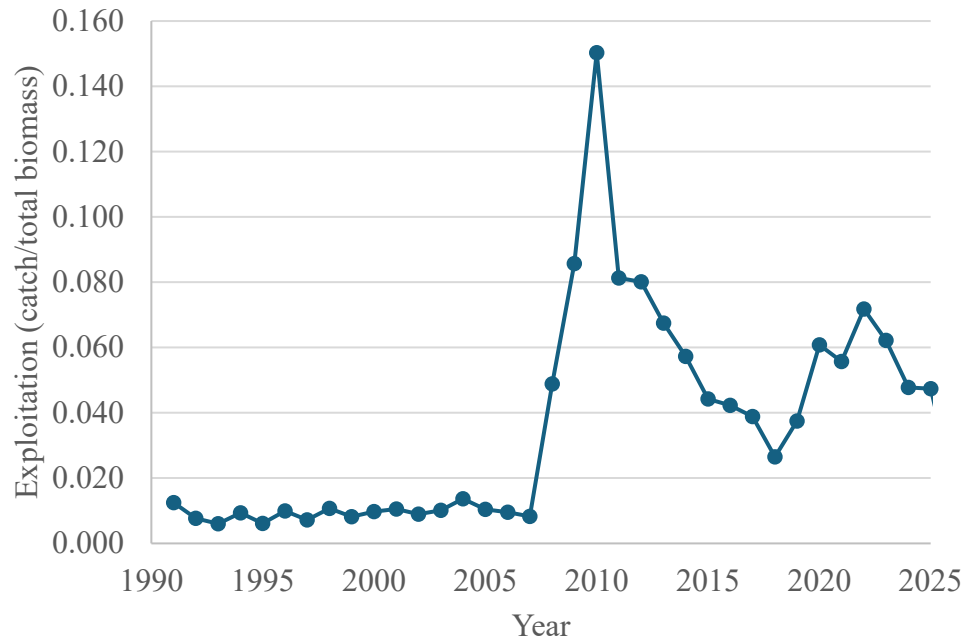


Figure 2. Catch to biomass ratio for BSAI Kamchatka flounder from 1991-2026. Total biomass values for 2025 and 2026 were based on the projection model.