10. Assessment of the Alaska Plaice Stock in the Bering Sea and Aleutian Islands

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Executive Summary

Alaska plaice (*Pleuronectes quadrituberculatus*) are assessed on a four year cycle with a full assessment conducted every four years. A harvest projection is done on the off years. A harvest projection involves projecting the model, established in the last full assessment, forward to predict future population estimates and recommended harvest levels for the next two years. The primary assessment tool for the Bering Sea/Aleutian Islands (BSAI) Alaska plaice assessment, a Tier 3 stock, is Stock Synthesis version 3.30.22 (SS3; Methot and Wetzel (2013)). The data sets used in the last full assessment in 2024 include total catch biomass, fishery age compositions, eastern Bering Sea (EBS) shelf bottom trawl survey abundance estimates, and EBS shelf bottom trawl survey age compositions. For the 2026 Alaska plaice stock assessment, a harvest projection was conducted.

The full assessment model is not rerun in a harvest projection year. Instead, all fishing scenarios are projected 13 years to 2039 with updated catch estimates in SS3. This incorporates the most current harvest information without re-estimating model parameters and biological reference points. The Tier 3 projection operates outside the full assessment model by projecting estimates of future female spawning biomass, age 3+ total biomass, ABC and OFL from the full model estimates of 2024 numbers-at-age, weight-at-age, maturity, and selectivity. Please refer to the last full stock assessment report for further information regarding the stock assessment model and a description of the projection scenarios [Cronin-Fine (2024); available online at https://www.npfmc.org/library/safe-reports/].

When looking at the entire survey index timeline, there has been a gradual decline since 1982. Though the survey index is around an all time low, it has remained relatively stable since 2019 with the new survey index value for 2025 showing very little change from the previous year. The catch up to August 08, 2026 has also been low with it only being 19.8% of 2026 TAC. Based on this, there are no stock concerns.

Description of Updated Catch

New data used in the harvest projection included an updated 2025 catch estimate (7,113 t) and a new catch estimate for 2026 through August 08, 2026. Following the method used in the 2024 full assessment,

the full-year 2026 catch (3,993 t) was estimated by averaging the three weeks of catch prior to August 08, 2026 and using this value as the assumed weekly catch for the remaining 20 weeks in 2026.

Harvest Projection

Reference values for BSAI Alaska plaice are summarized in the following table, with the recommended ABC and OFL values for 2027 in bold.

	As estimated or *specified last* year for:		As estimated or *recommended this* year for:	
Quantity	2025	2026	**2027**	2028
M (natural mortality rate)	0.13	0.13	0.13	0.13
Tier	3a	3a	3a	3a
Projected total (3+) biomass (t)	406,051	402,028	441,105	428,560
Female spawning biomass (t)	150,892	148,177	176,245	173,932
$B_{100\%}$	296,407	296,407	296,407	296,407
$B_{40\%}$	118,563	118,563	118,563	118,563
$B_{35\%}$	103,743	103,743	103,743	103,743
F_{OFL}	0.17	0.17	0.17	0.17
$maxF_{ABC}$	0.14	0.14	0.14	0.14
F_{ABC}	0.14	0.14	0.14	0.14
OFL (t)	34,576	33,965	**39,724**	38,264
maxABC (t)	28,745	28,230	33,021	32,522
ABC (t)	28,745	28,230	**33,021**	32,522
	As determined *last* year for:		As determined *this* year for:	
Status	2023	2024	2025	2026
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

The stock is not being subject to overfishing, is not currently overfished, nor is it approaching a condition of being overfished. These three statements are base on examining the official total catch from the most recent complete year (2025) and the current model projections of spawning biomass relative to B_{MSY} for 2027 and 2028. The estimated total catch for 2025 is 7,113 t, far below the 2025 OFL of 34,576 t; therefore, the stock is not being subjected to overfishing. The estimates of female spawning biomass for 2027 and 2028 from the 2026 stock assessment projections are 176,245 t and 173,932 t, respectively.

Both estimates are well above the estimate of $B_{35\%}$ of 103,743 t and therefore the stock is not currently overfished nor approaching an overfished condition.

Summary of Results

Fishery

The 2026 projected catch for Alaska plaice is 3,993 t, well below the 2026 ABC of 28,230 t (Figure 10-1). If it is realized, it will be the lowest catch since 1977. The 2025 catch (7,113 t) was also low, being the lowest catch since 1982. The 2026 exploitation ratio (catch/total biomass) is also projected to decrease and be significantly below the 1975-2026 long-term average of ~ 0.03 (Figure 10-2).

Survey

The 2025 EBS shelf trawl survey biomass estimate for Alaska plaice decreased by 2.3% when compared to 2024 however the 95% confidence intervals for the two biomass estimates closely overlap. This years survey biomass estimate is also 34.3% lower than the long-term mean (Figure 10-3). Because this is a harvest projection, the 2025 survey biomass estimate was not included when determining the recommended harvest levels for 2026 but will be added in the next full assessment model. Interested readers may note the increasing trend in the projected population biomass, despite survey biomass estimates showing a slight decline between 2022 and 2025 (see Summary of Results table). This result is attributed to strong recruitment events since 2016 (Figure 10-4: Cronin-Fine (2024)).

5 Year Projections

The 2027-2031 catches are determined by applying the average fishing mortality rate from 2019-2023.

Year	Expected Catch	OFL	ABC	Mean SSB	Mean Relative Spawning Biomass*
2027	16,719	39,724	33,021	176,245	0.595
2028	17,354	38,264	32,522	184,171	0.621
2029	17,923	36,949	32,030	191,144	0.645
2030	18,330	35,557	31,370	195,141	0.658
2031	18,529	34,017	30,483	195,905	0.661

*Ratio of female spawning biomass to equilibrium unfished female spawning biomass ($B_{100\%}$).

References

Cronin-Fine, L. (2024) Assessment of the alaska plaice stock in the bering sea and aleutian islands. In: *Stock assessment and fishery evaluation report for the groundfish resources of the Bering Sea and Aleutian Islands regions*. North Pacific Fishery Management Council, Anchorage, AK.

Methot, R.D. and Wetzel, C.R. (2013) Stock synthesis: A biological and statistical framework for fish stock assessment and fishery management. *Fisheries Research* 142, 86–99.

Figures

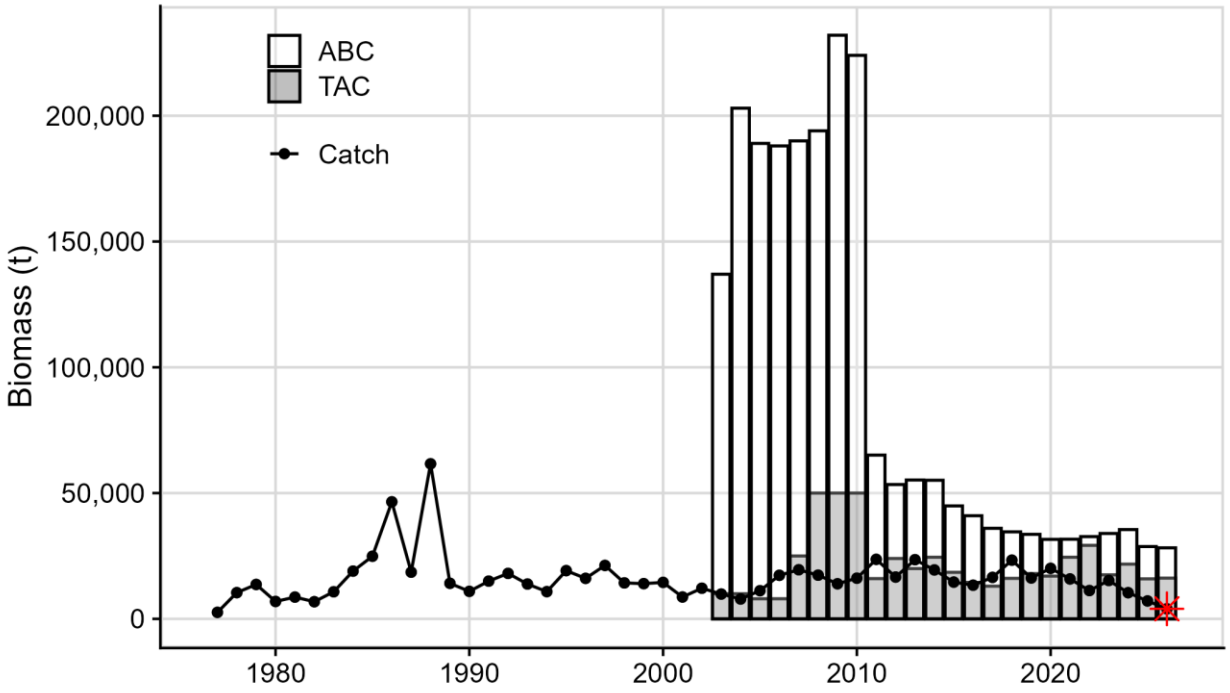

Figure 10-1. Alaska plaice catch, ABC and TAC from 1977-2026, with the projected 2026 catch estimate shown as a red asterisk. Data reflect catch posted through August 08, 2026 (sourced August 10, 2026 from the NMFS Alaska Regional Office using the AKFIN database (http://www.akfin.org)).

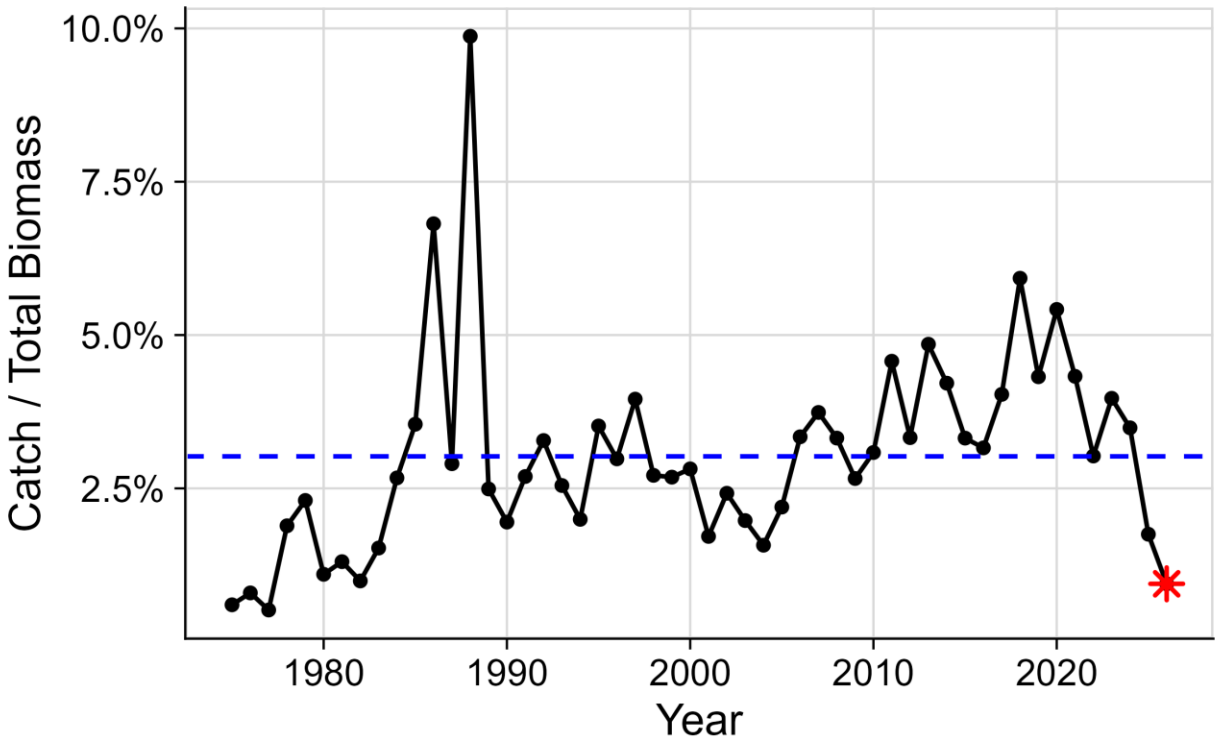

Figure 10-2. Exploitation ratio (catch divided by the total predicted age-3+ biomass) for BSAI Alaska plaice. The total predicted biomass is obtained from SS3 projections. The red star shows the 2026 projected exploitation ratio which is based on the projected 2026 catch of 3,993 t. The 1975-2026, long-term average (0.03) is shown by the blue horizontal dashed line.

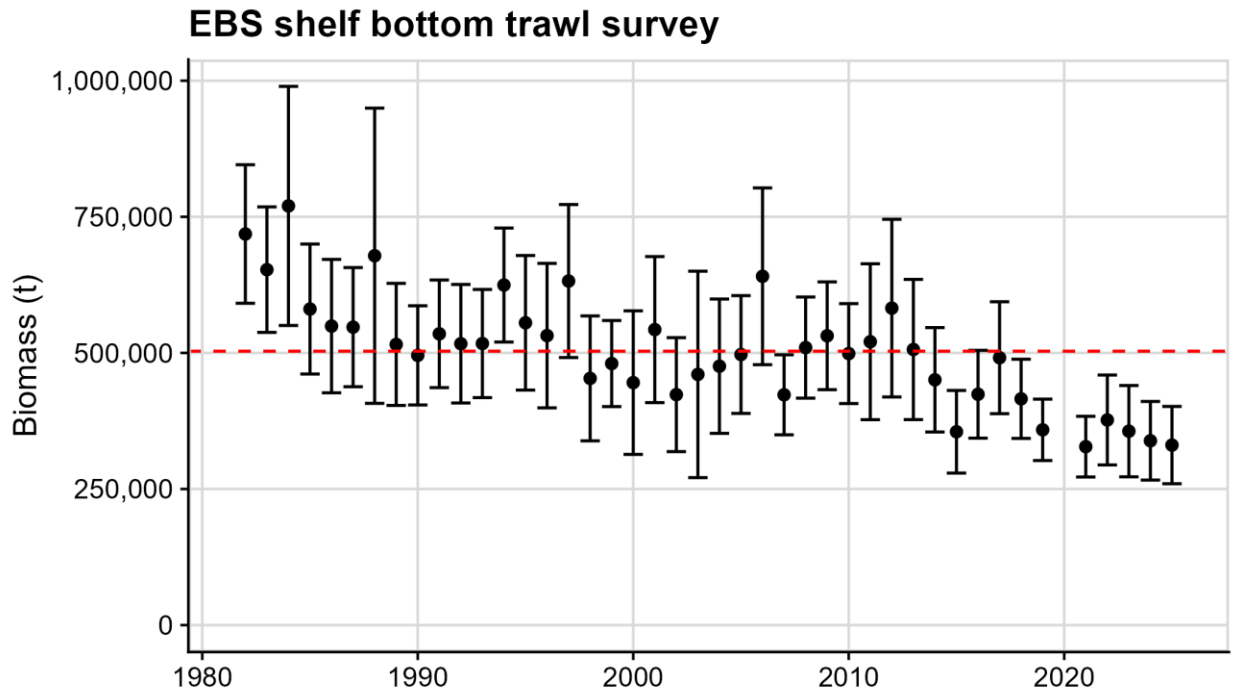

Figure 10-3. Alaska plaice biomass estimates from the EBS shelf trawl survey using the standard grid (no Northern EBS), 1982-2025. No survey was conducted in 2020 due to the COVID-19 pandemic. Data, sourced from the AKFIN database, may differ slightly from previous assessments due to minor modification in the strata definitions. The 1982-2025 long-term average biomass (503,206 t) is shown by the red horizontal dashed line.

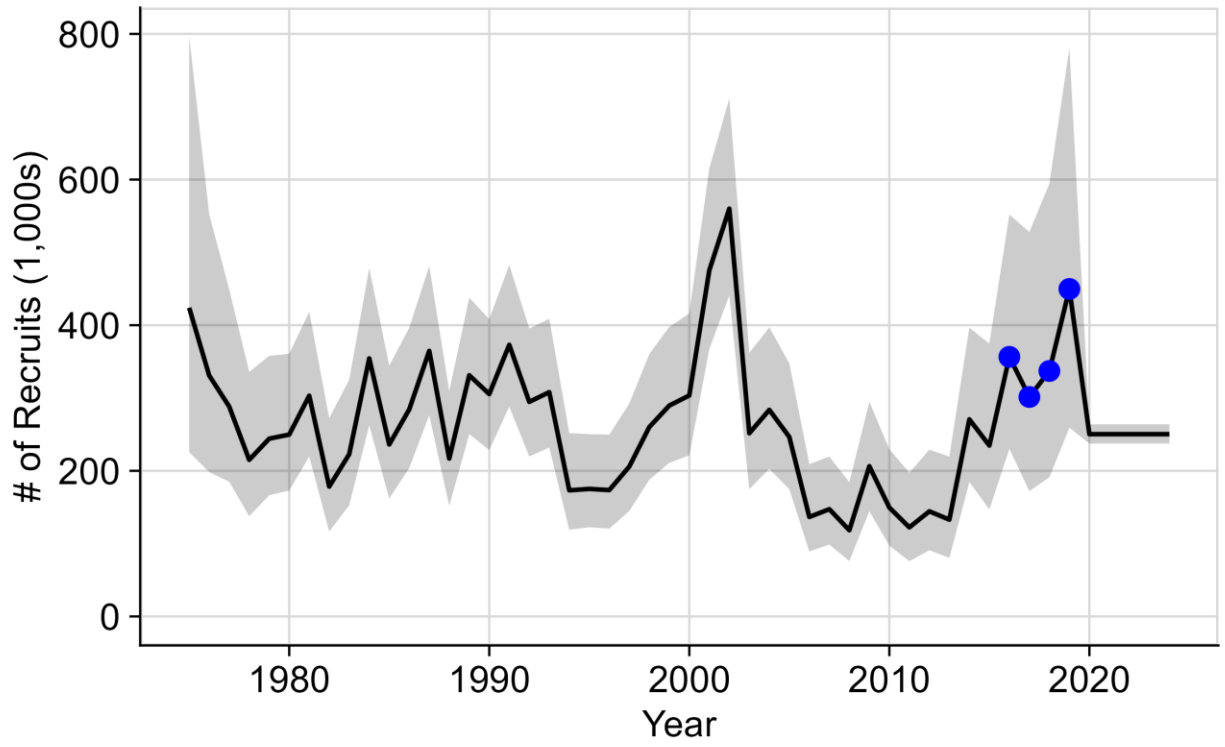

Figure 10-4. Recruitment to age-0 from the 2024 Alaska plaice assessment model. The blue dots are the recruitment values from 2016-2019. Recruitment from 2020 onwards is fixed at the unfished equilibrium recruitment.