Chapter 1A. Assessment of the pollock stock in the Aleutian Islands

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November 2017

Executive Summary

The Aleutian Islands (AI) pollock stock assessment has changed to a biennial cycle with full assessments in even years, timed with the Aleutian Islands bottom trawl survey. For AI pollock in partial assessment years, we present an executive summary to recommend harvest levels for the next two years. A full assessment was conducted in 2016 and can be found at (https://www.afsc.noaa.gov/REFM/Docs/2016/AIpollock.pdf). A full stock assessment document with updated assessment and projection model results will be presented in next year's SAFE report.

The AI pollock assessment consists of a population model, which uses survey and fishery data to generate a historical time series of population estimates, and a projection model, which uses results from the population model to predict future population estimates and recommended harvest levels. The Aleutian Islands walleye pollock stock assessment uses the Assessment Model for Alaska (here referred to as AMAK). AMAK is a variation of the "Stock Assessment Toolbox" model presented to the Plan Team in the 2002 Atka mackerel stock assessment (Lowe et al. 2002). The data sets used in this assessment include total catch biomass, fishery age compositions, AI bottom trawl survey abundance estimates, and AI bottom trawl survey age compositions. For a partial assessment year, we do not re-run the assessment model, but do update the projection model with new catch data. This incorporates the most current catch information without re-estimating model parameters and biological reference points. The stock remains at tier 3b.

Summary of Changes in Assessment Inputs

Changes in the input data: There were no changes made to the assessment model inputs since this was an off-cycle year. New data added to the projection model included an updated 2016 catch estimate (1,257 t) and new catch estimates for 2017-2019. The 2017 catch was estimated by increasing the official catch as of October 29, 2017, by an expansion factor of 3.1%, which represents the average fraction of catch taken after October 29 in the last three complete years (2014-2016). The 2018 catch was set at the 3-year average for 2014-2016 of 1,516 t.

Changes in the assessment methodology: There were no changes in assessment methodology since this was an off-cycle year.

Summary of Results

For the 2018 fishery, we recommend the maximum allowable ABC of 40,788 t from the updated projection model. This ABC is up from last year's ABC of 36,061 t and exactly the same as last year's projected 2018 ABC of 40,788 t. Reference values for AI pollock are summarized in the following table, with the recommended ABC and OFL values for 2018 in bold.

Quantity	As estimated or *specified last* year for: 2017	2018	As estimated or *recommended this* year for: 2018	2019
M (natural mortality rate)	0.19		0.19	
Tier	3b		3b	
Projected total (age 1+) biomass (t)	250,221	271,831	272,675	262,010
Projected female spawning biomass (t)				
Projected	77,579	81,545	78,305	67,627
$B_{100\%}$	203,100		203,100	
$B_{40\%}$	81,240		81,240	
$B_{35\%}$	71,085		71,085	
F_{OFL}	0.378	0.397	0.397	0.341
$maxF_{ABC}$	0.304	0.319	0.319	0.273
F_{ABC}	0.304	0.319	0.319	0.273
OFL (t)	43,650	49,291	**49,289**	37,431
maxABC (t)	36,061	40,788	40,788	30,803
ABC (t)	36,061	40,788	**40,788**	30,803
	As determined *this* year for: 2015	2016	As determined *this* year for: 2016	2017
Status				
Overfishing	no	no	no	n/a
Overfished	n/a	n/a	n/a	no
Approaching overfished	n/a	n/a	n/a	no

The stock is not being subject to overfishing, is not currently overfished, nor is it approaching a condition of being overfished. The tests for evaluating these three statements on status determination require examining the official total catch from the most recent complete year and the current model projections of spawning biomass relative to $B_{35\%}$ for 2017 and 2019. The official total catch for 2016 is 1,257 t which is a small fraction of the 2016 OFL of 39,075 t; therefore, the stock is not being subjected to overfishing. The estimates of spawning biomass for 2018 and 2019 from the current year (2017) projection model are 78,305 t and 67,627 t, respectively. The 2018 estimate is above $B_{35\%}$ at 71,085 t and the 2019 estimate is above ½ $B_{35\%}$ and the stock is expected to be above $B_{35\%}$ in 2029 under projection Scenario 7, therefore, the stock is not currently overfished nor approaching an overfished condition.

Fishery Trends

Updated catch data (t) for AI pollock as of October 29, 2017 (NMFS Alaska Regional Office Catch Accounting System via the Alaska Fisheries Information Network (AKFIN) database, http://www.akfin.org) are summarized in the following table.

Year	Easter 541	Central 542	Western 543	Aleutians Total	Aleutians ABC	Aleutians TAC
2016	899	195	162	1,257	32,227	19,000
2017	565	517	302	1,427*	36,061	19,000

* Projected catch through end of year based on 3.1% correction to 1,384 t observed through 29 October 2017.

Although open to fishing, there continues to be no directed fishing for pollock in the Aleutian Islands. Catch reported is incidental in other groundfish fisheries.

Summaries for Plan Team

Species	Year	Biomass[1]	OFL	ABC	TAC	Catch[2]
AI pollock	2016	231,258	39,075	32,227	19,000	1,257
	2017	250,928	43,650	36.061	19,000	1,384
	2018	272,675	49,289	40,788	19,000	
	2019	262,010	37,431	30,803	19,000	

[1]Total biomass (ages 1+) from the age-structured model

[2]Current as of 29 October 2017. Source: NMFS Alaska Regional Office Catch Accounting System via the AKFIN database (http://www.akfin.org).

Responses to SSC and Plan Team Comments on Assessments in General

No applicable comments.

Responses to SSC and Plan Team Comments Specific to this Assessment

November 2016 Plan Team

The Team recommends reviewing Team recommendations from Nov 2015 (i.e., "The Team recommends examining alternative models with higher M (compared to the low M coming out of the estimation procedure), and further recommends exploring the unscaled estimates of selectivity with respect to the survey's low apparent catchability.") **We will address this issue in the full assessment in 2018.**
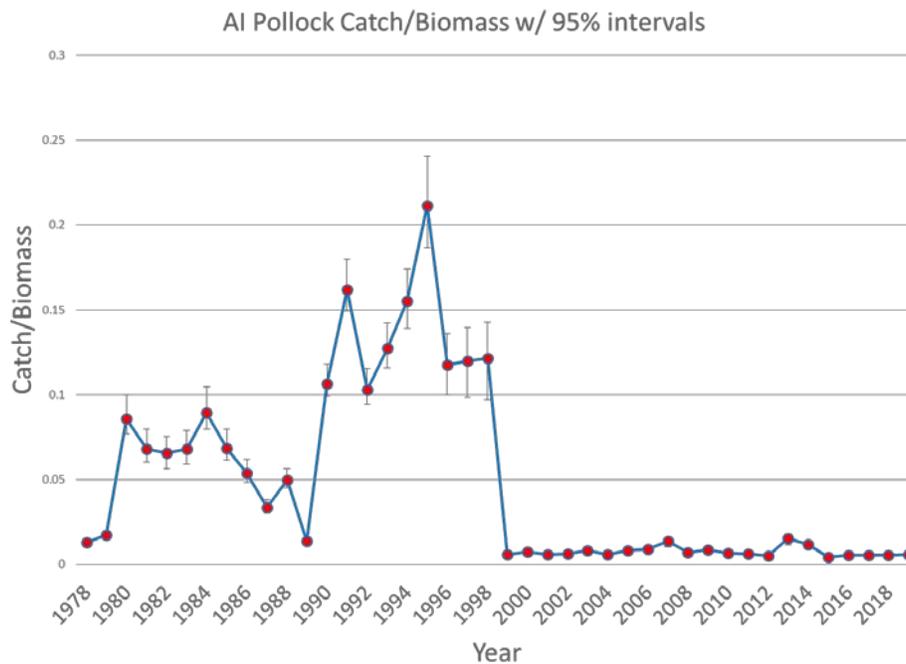
Figures

Figure 1A:1. Modeled catch over total biomass (point estimates in red circles) with 95% sampling error confidence intervals for AI pollock from 1978-2019. Catch for 2018 and 2019 estimated at 1,516 t, the three-year average for 2014-2016.