

10. Assessment of the Alaska plaice stock in the Bering Sea/Aleutian Islands

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Executive Summary

Alaska plaice are assessed on an annual basis in the Bering Sea/Aleutian Islands region to coincide with the annual Bering Sea multispecies groundfish trawl survey conducted each summer. Due to a temporary lapse in appropriations, the Department of Commerce implemented a U.S. government shutdown from October 1 – October 16 2013. Although the trawl survey was completed again in 2013, the shutdown did not allow time to produce a full stock assessment for Alaska plaice and many other species. Therefore an executive summary is presented to provide management recommendations for the 2014 fishing season.

Alaska plaice are managed as a Tier 3 stock using a statistical age-structured model as the primary assessment tool. Details of the model can be found at <http://www.afsc.noaa.gov/REFM/docs/2012/BSAIPAlice.pdf>. The assessment model is not re-run for this update but instead, a projection model is run with updated catch information. This projection model run incorporates the most recent catch and provides estimates of 2014 and 2015 ABC and OFL without re-estimating the stock assessment model parameters or biological reference points.

Summary of changes in assessment input

Changes in the input data: There were no changes made to the assessment model input data. New input data for the projection model included updating the 2012 catch and estimating the 2013 and 2014 catch. The 2013 catch was 22,952 t as of the week of October 24. This value was rounded-up to 23,000 t to estimate the 2013 total since flatfish fishing was still ongoing at that time. For 2015, the average catch from the 5 year period 2009-2013 was used to estimate the 2014 catch at 18,800 t.

For the 2014 fishery, the authors recommend the maximum allowable ABC of 55,100 t from the updated projection model. This value is a decrease of less than 1% of the 2013 ABC of 55,200 t and similar to the projected value of 55,800 t derived from last year's full stock assessment.

Reference values for Alaska plaice are summarized in the following table, with the recommended 2014 values in bold. The stock was not being subjected to overfishing last year, is currently not overfished, nor is it approaching a condition of being overfished.

Quantity/Status	Last year		This year	
	2013	2014	2014	2015
M (natural mortality)	0.13	0.13	0.13	0.13
Specified/recommended Tier	3a	3a	3a	3a
Projected biomass (ages 3+)	588,500	580,400	576,300	572,900
Female spawning biomass (t)				
Projected	260,500	253,600	250,600	246,300
$B_{100\%}$	380,000		380,100	
$B_{40\%}$	152,000		152,000	
$B_{35\%}$	133,000		133,000	
F_{OFL}	0.19	0.19	0.19	0.19
$maxF_{ABC}$ (maximum allowable = F40%)	0.158	0.158	0.158	0.158
Specified/recommended F_{ABC}	0.158	0.158	0.158	0.158
Specified/recommended ABC (t)	55,200	55,800	55,100	54,700
Specified/recommended OFL (t)	67,000	60,200	66,800	66,300
Is the stock being subjected to overfishing?	No	No	No	No
Is the stock currently overfished?	No	No	No	No
Is the stock approaching a condition of being overfished?	No	No	No	No

SSC and Plan Team Comments on Assessments in General.

No comments relevant to Alaska plaice.

SSC and Plan Team comments Specific to this Assessment.

Plan Team comment: It was noted that the author used data from the pre-1982 surveys, which is not done in any other assessment. Tom said that he plans to remove those data in next year's assessment. Mike Sigler requested that the author complete retrospective analyses for the flatfish species, which the PT retrospective working group will examine next year (along with several other groundfish species).

The SSC understands that the assessment authors indicated that they will remove the pre-1982 survey data from next year's assessment. The SSC agrees that this is likely to be prudent, given the reported differences in survey catchability for other groundfish species associated with the switch from the 400 eastern to the 83-112 trawl in 1982. When this is done, the SSC requests retaining a model fit with full data in next year's assessment so that the effect of this change can be evaluated.

The assessment authors plan to not include the pre-1982 survey data when the next full assessment is implemented (2014?). Retrospective model runs were made in early 2013 and provided to the PT retrospective working group. These will be included in the next full assessment.

2013 Survey results and new information since 2012

The 2013 Bering Sea survey biomass estimate for Alaska plaice was 505,583 t, a 13% decrease from the 2012 biomass point estimate (Figure 1). The 2012 estimate of $B_{35\%}$ was 374,000 t, indicating that the

Alaska plaice resource is at a high and stable level. The exploitation level remains at less than 3% for 2013. The projection model predicts that fishing at the current 5-year average fishing mortality rate will not result in a significant change in stock size, and will retain the stock well above estimated $B_{40\%}$.

Estimates of the survey age composition for 2012 are also available since the last assessment in 2012 (Figure 2). Consistent with the past few years, the ageing results indicate the presence of a strong 2002 year class as ten-year olds in 2012 (<http://www.afsc.noaa.gov/REFM/docs/2012/BSAPlaice.pdf>). The indication of a high estimate of 8 year-old males in the age composition may also indicate an above-average cohort.

Figure 1. NMFS Bering Sea shelf survey biomass estimates (1987-2013), with 5% and 95% confidence intervals.

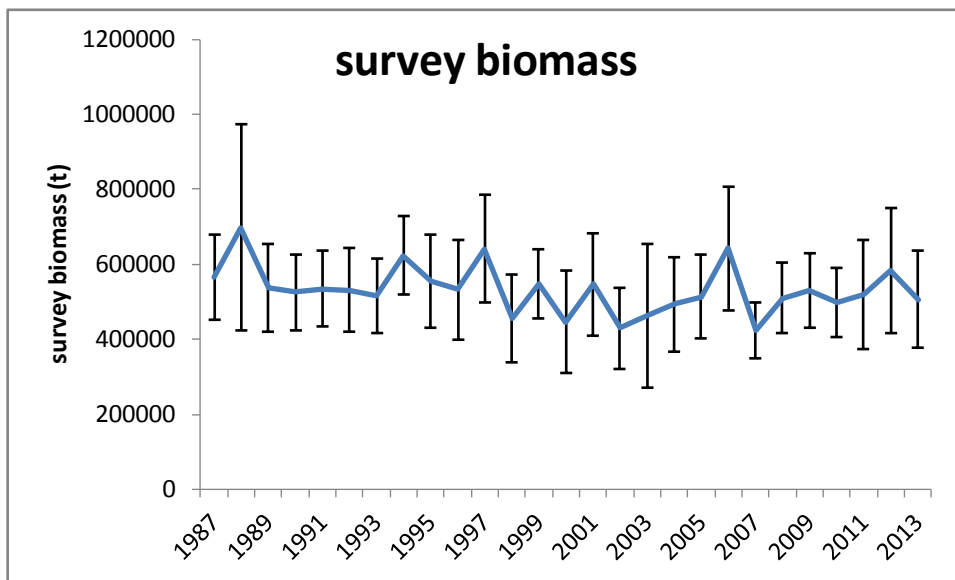


Figure 2. New estimates of the survey age composition for samples collected in the 2012 field season.

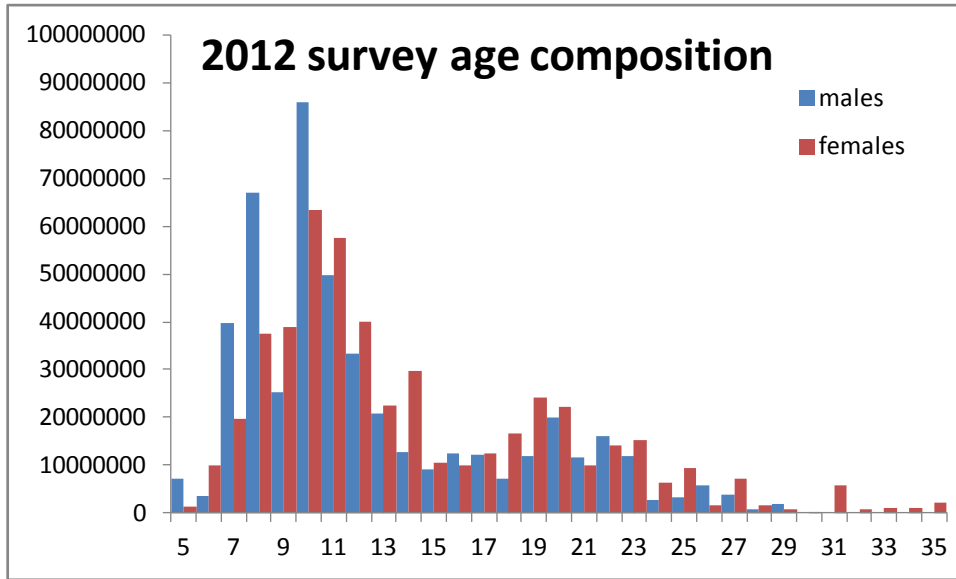


Figure 3. Projected female spawning biomass for 2012 to 2024 fishing at the average 5 year F.

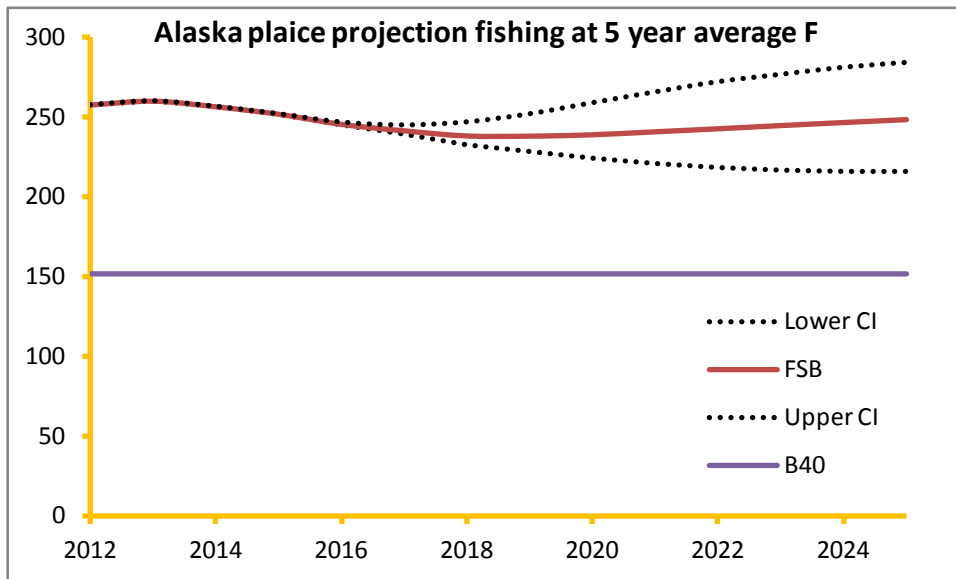


Table 1. Discarded and retained catch of Alaska plaice, 2003-2012.

Year	Discarded	Retained	Total	Proportion discarded
2003	11,806	370	12,176	0.97
2003	9,428	350	9,778	0.96
2004	7,193	379	7,572	0.95
2005	10,293	786	11,079	0.93
2006	14,746	2,564	17,310	0.85
2007	15,481	3,946	19,427	0.80
2008	9,330	8,046	17,376	0.54
2009	5,601	8,883	13,944	0.36
2010	5,845	10,322	16,165	0.34
2011	7,197	16,459	23,656	0.03
2012	3,588	13023	16611	0.22

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