11. Assessment of the Shortraker Rockfish stock in the Gulf of Alaska

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Executive Summary

Rockfish are assessed on a biennial stock assessment schedule to coincide with the availability of new survey data. For Gulf of Alaska (GOA) rockfish in alternate (even) years we present an executive summary to recommend harvest levels for the next two years. Please refer to the last full stock assessment report presented in 2011 for further information regarding the assessment calculations (Clausen and Echave 2011, http://www.afsc.noaa.gov/refm/docs/2011/GOAshortraker.pdf). A full stock assessment document with updated assessment results will be presented in next year's SAFE report.

We average the biomass estimates from the three most recent GOA trawl surveys to estimate exploitable biomass and determine the recommended ABC for the shortraker rockfish stock. This stock is classified as a Tier 5 stock. For an off-cycle year, there is no new survey information for the shortraker rockfish stock; therefore, the 2013 estimates (Echave and Shotwell 2013, http://www.afsc.noaa.gov/REFM/Docs/2013/GOAshortraker.pdf) are rolled over for the next year.

Summary of Changes in Assessment Inputs

Changes in the input data: There were no changes made to the assessment inputs since this was an off-cycle year.

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

Summary of Results

For the 2015 fishery, we recommend the maximum allowable ABC of 1,323 t for shortraker rockfish. Reference values for shortraker rockfish are summarized in the following table, with the recommended ABC and OFL values in bold. The stock was not being subjected to overfishing last year.

Quantity	As estimated or *specified last* year for:		As estimated or *recommended this* year for:	
	2014	2015	2015	2016
M (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)	58,797	58,797	58,797	58,797
F_{OFL}	0.03	0.03	0.03	0.03
$maxF_{ABC}$	0.0225	0.0225	0.0225	0.0225
F_{ABC}	0.0225	0.0225	0.0225	0.0225
OFL (t)	1,764	1,764	**1,764**	1,764
maxABC (t)	1,323	1,323	1,323	1,323
ABC (t)	1,323	1,323	**1,323**	1,323
Status	As determined *last* year for:		As determined *this* year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

Updated catch data (t) for shortraker rockfish in the Gulf of Alaska as of October 1, 2014 (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	Western	Central	Eastern	Gulfwide Total	Gulfwide ABC	Gulfwide TAC
2013	37	449	244	730	1,081	1,081
2014	27	297	235	559	1,323	1,323

Area Apportionment

The following table shows the recommended apportionment for 2015. The apportionment percentages are the same as in the 2013 assessment (for the 2014 fishery). Please refer to the last full stock assessment report for information regarding the apportionment rationale for the shortraker rockfish stock.

	Western	Central	Eastern	Total
Area Apportionment	6.98%	29.94%	63.08%	100%
Area ABC (t)	**92**	**397**	**834**	**1,323**
OFL (t)				**1,764**

Summaries for Plan Team

Species	Year	Biomass[1]	OFL	ABC	TAC	Catch[2]
Shortraker Rockfish	2013	48,048	1,441	1,081	1,081	730
	2014	58,797	1,764	1,323	1,323	559
	2015	58,797	1,764	1,323		
	2016		1,764	1,323		

Stock/ Assemblage	Area	2014				2015		2016	
		OFL	ABC	TAC	Catch[2]	OFL	ABC	OFL	ABC
Shortraker rockfish	W		92	92	27		92		92
	C		397	397	297		397		397
	E		834	834	235		834		834
	Total	1,764	1,323	1,323	559	1,764	1,323	1,764	1,323

[1]Total biomass from trawl survey estimates.

[2]Current as of October 1, 2014. Source: NMFS Alaska Regional Office Catch Accounting System via the Alaska Fisheries Information Network (AKFIN) database (http://www.akfin.org).

Responses to SSC and Plan Team Comments on Assessments in General

Because of the government shutdown in 2013, there was only sufficient time to compile SSC and Plan Team comments in last year's assessment. Since this is an "off" year and only an executive summary is presented, we respond here to priority comments. For comments that are relevant to or require a full assessment, we will present responses in next year's full assessment.

"The SSC concurs with the Plan Teams' recommendation that the authors consider issues for sablefish where there may be overlap between the catch-in-areas and halibut fishery incidental catch estimation (HFICE) estimates. In general, for all species, it would be good to understand the unaccounted for catches and the degree of overlap between the CAS and HFICE estimates, and to discuss these at the Plan Team meetings next September." (SSC, December 2011)
The authors of HFICE were unable to delineate the overlap between CAS and HFICE (Tribuzio et al. 2014). The HFICE authors recommended waiting for more years of the restructured observer program data so that a comparison between the two procedures can be made. The SSC reviewed that recommendation again with regards to the GOA shark assessment at its October 2014 meeting and agreed with the authors that waiting for more data was appropriate (see Appendix 20.A of the 2014 BSAI or GOA shark assessments).

"The SSC encourages assessment authors of stocks managed in Tier 5 to consider the recommendations found in the draft survey averaging workgroup report." (SSC, December 2012)
Efforts are underway to determine the most appropriate approach for this species and will be presented in the next full assessment.

"The Teams recommended that SAFE chapter authors continue to include "other" removals as an appendix. Optionally, authors could also calculate the impact of these removals on reference points and specifications, but are not required to include such calculations in final recommendations for OFL and ABC." (Plan Team, September 2013)
An appendix of "other" removals will be included in the next full assessment.

"The Teams recommend that stock assessment authors calculate biomass for Tier 5 stocks based on the random effects model and compare these values to status quo. In addition, the Teams recommend that the working group examine autocorrelation in subarea recruitment when conducting spatial simulations for evaluating apportionment." (Plan Team, September 2014)
Various approaches to calculated biomass based on the random effects model were presented to the Plan Team in September 2013. Continued efforts are underway to determine the most appropriate approach for this species, and this method will be presented in the next full assessment.

SSC and Plan Team Comments Specific to this Assessment

"The Plan Team recommends this species be included in the review of area apportionments [to be presented] *in September 2012."* (Plan Team, November 2011)
Authors continue to use status quo methods of area apportionments. Currently the Plan Team's working group on survey averaging is evaluating alternative methods for area apportionments.

"The assessment authors note that the trawl survey can only sample a limited proportion of the likely range of shortraker, and that the longline survey may be providing a better abundance index. The SSC encourages the authors to continue to look at ways the longline survey data can be incorporated into the assessment." (SSC, December 2011)
Authors agree that the longline survey may provide a better abundance index for several rockfish species, shortrakers included. Work continues to be done addressing this problem and will be included in the next full assessment.

"The Plan Team recommends that in addition to the current assessment methodology, authors use the Kalman filter method to estimate survey biomass and summarize the results for comparison at the September 2013 meeting. The Plan Team did not make other recommendations for changes to the

assessment model but noted that recommendations may occur as a result of the March 2013 CIE review. The Plan Team also supports ongoing efforts to validate current ageing methodology." (Plan Team, November 2012)
Various approaches to calculated biomass based on the random effects model were presented to the Plan Team in September 2013. Continued efforts are underway to determine the most appropriate approach for this species and will be presented in the next full assessment. Ongoing efforts to validate current aging methodology continue, but no method has yet been approved.

"The Team recommends that the random effects survey averaging approach be explored for future apportionment calculations. The Team also recommends the author provide an executive summary for the 2014 assessment as no new data will be available, to include any outstanding Team or SSC recommendations with the summary." (Plan Team, November 2013)
Various approaches to calculated biomass based on the random effects model were presented to the Plan Team in September 2013. Continued efforts are underway to determine the most appropriate approach for this species, and this method will be presented in the next full assessment.

Literature Cited

Clausen, D. M. and K.B. Echave. 2011. Assessment of shortraker rockfish. In Stock assessment and fishery evaluation report for the groundfish resources of the Gulf of Alaska, p. 971-1008. North Pacific Fishery Management Council, 605 W 4th Ave, Suite 306, Anchorage AK 99501. Available online: http://www.afsc.noaa.gov/refm/docs/2011/GOAshortraker.pdf

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