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

Katy B. Echave and S. Kalei Shotwell
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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 rockfish in alternate (odd) years we present a full stock assessment to recommend harvest levels for the next two years. However, due to the 2013 government shutdown, we present an executive summary with updated survey biomass estimates and recommended ABC. Please refer to the last full stock assessment report presented in 2011 for further information regarding the assessment calculations (Clausen and Echave 2011, available online at 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.

Summary of changes in Assessment Inputs

Changes in the input data: The only new information for this assessment is biomass estimates from the 2013 trawl survey. This survey showed a large increase in the Gulfwide biomass for shortraker rockfish, which is now at the highest level for the time series. As in all previous assessments for shortraker rockfish, current exploitable biomass is based on averaging the biomass estimates in the last three Gulf of Alaska (GOA) trawl surveys (currently 2009, 2011, and 2013). This results in an exploitable biomass of 58,797 t for shortraker rockfish, which is an increase of 22% compared to the exploitable biomass in the 2011 assessment. Much of the large increase in biomass in 2013 is due to a very large catch of over 1,900 kg in a single haul in the Yakutat area. This unusually large catch is likely responsible at least in part for the very wide confidence bounds of the 2013 biomass estimate and the relatively high coefficient of variation (CV) of 34.4%. Consequently, the apportioned ABC in the eastern GOA has increased substantially. It should be noted that there is a degree of increased uncertainty in the 2013 trawl survey biomass estimate, due to a reduction in survey effort. As with the 2011 survey, the 2013 survey had both a reduced number of boats (2 instead of 3) and the 700 – 1000 m depth stratum was not sampled. Additionally, the number of stations sampled was further reduced from the 2011 survey (550 versus 670 in 2011). This is a 30% drop in stations sampled from the long-term average.

In 2013, gulfwide catch (as of Oct. 1) was down approximately 11% from 2012. In 2013 (and subsequently since the change in the observer restructuring), estimated shortraker catch decreased in all fisheries except the halibut fishery (up 56 t). The majority of shortraker catch was still taken in the sablefish fishery. It is unknown to what extent the restructuring of the observer program in 2013 may have affected catch estimation. Future analyses will aim to investigate shifts in observer coverage and the effects on shortraker catch estimation.

Changes in assessment methodology: There were no changes in assessment methodology.

Summary of Results

For the 2014 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:	
	2013	2014	2014	2015
M (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)				
Upper 95% confidence interval	NA	NA	80,237	80,237
Point estimate	48,048	48,048	58,797	58,797
Lower 95% confidence interval	NA	NA	37,356	37,356
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)	1,441	1,441	**1,764**	1,764
maxABC (t)	1,081	1,081	1,323	1,323
ABC (t)	1,081	1,081	**1,323**	1,323
Status	As determined *last* year for:		As determined *this* year for:	
	2011	2012	2012	2013
Overfishing	No	n/a	No	n/a

Updated catch data (t) for shortraker rockfish in the Gulf of Alaska as of October 1, 2013 (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
2012	101	315	349	765	1,081	1,081
2013	39	393	250	682	1,081	1,081

Area Apportionment

The following table shows the recommended apportionment for 2014. The shortraker apportionment of ABC has decreased in the western GOA, but has increased in the central GOA and substantially in the eastern GOA. Please refer to the 2011 full stock assessment report for information regarding the apportionment rationale for shortraker rockfish.

	Western	Central	Eastern	Total
Area Apportionment	6.98%	29.94%	63.08%	100%
Area ABC (t)	**92**	**396**	**834**	**1,323**
OFL (t)				**1,764**

Summaries for Plan Team

Species	**Year**	**Biomass[1]**	**OFL**	**ABC**	**TAC**	**Catch[2]**
Shortraker Rockfish	2012	48,048	1,441	1,081	1,081	765
	2013	48,048	1,441	1,081	1,081	682
	2014	58,797	1,764	1,323		
	2015		1,764	1,323		

Stock/ Assemblage	Area	2013 OFL	2013 ABC	2013 TAC	2013 Catch[2]	2014 OFL	2014 ABC	2015 OFL	2015 ABC
Shortraker rockfish	W		104	104	39		92		92
	C		452	452	393		396		396
	E		525	525	250		834		834
	Total	1,441	1,081	1,081	682	1,764	1,323	1,764	1,323

[1]Total biomass from trawl survey estimates.

[2]Current as of October 1, 2013. Source: NMFS Alaska Regional Office Catch Accounting System via the Alaska Fisheries Information Network (AKFIN) database (http://www.akfin.org).

SSC and Plan Team Comments on Assessments in General

"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 Teams recommend that authors continue to include other removals in an appendix for 2013. Authors may apply those removals in estimating ABC and OFL; however, if this is done, results based on the approach used in the previous assessment must also be presented. The Teams recommend that the "other" removals data set continue to be compiled, and expanded to include all sources of removal." (Plan Team, September 2012)

"The Plan Teams recommend that assessment authors retain status quo assessment approaches for the November 2012 SAFE report but also apply the Kalman filter or random effects survey averaging methods for Tier 5 stocks and summarize the analytical results for comparison purposes only. ADMB code for implementing the random effects method will be made available." (Plan Team, September 2012)

"The Teams recommend that the whole time series of each category of 'other' catches be made available on the NMFS "dashboard," so that they may be listed in all SAFE chapters." (Plan Team, November 2012)

"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)

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)

"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)

"The Teams recommend that the whole time series of each category of 'other' catches be made available on the NMFS "dashboard," so that they may be listed in all SAFE chapters." (Plan Team, November 2012)

"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)

"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)

Responses to Comments and Research Priorities for Full Assessment

Due to the government shutdown, and hence an abbreviated working period, responses to the previously listed SSC and Plan Team Comments will be provided in next year's full stock assessment report. To address several of these comments, we plan to follow the recommendations listed in the various working group reports (e.g. the methods for averaging surveys report) submitted to the Plan Team in September 2012. In addition, we anticipate that many of the comments specific to the shortraker rockfish assessment during the 2013 CIE rockfish assessment review will be incorporated. Please refer to the Summary and response to the 2013 CIE review of the AFSC rockfish document presented to the September 2013 Plan Team for further details.