

# 15. Assessment of the Thornyhead stock in the Gulf of Alaska

S. Kalei Shotwell and James Ianelli  
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## Executive Summary

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

We use the exploitable biomass from the most recent trawl survey to determine the recommended ABC for thornyhead rockfish, which qualifies as a Tier 5 stock. For an off-cycle year, there is no new survey information for thornyhead rockfish; therefore, the 2011 estimates are rolled over for the next two years.

## 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 2013 fishery, we recommend the maximum allowable ABC of 1,665 t for thornyhead rockfish. Reference values for thornyhead 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 <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2012	2013	2013	2014
$M$ (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)	73,990	73,990	73,990	73,990
$F_{OFL}$	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)	2,220	2,220	<b>2,220</b>	2,220
maxABC (t)	1,665	1,665	1,665	1,665
ABC (t)	1,665	1,665	<b>1,665</b>	1,665
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2010	2011	2011	2012
Overfishing	No	n/a	No	n/a

Updated catch data (t) for thornyhead rockfish in the Gulf of Alaska as of October 1, 2012 (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. The 2012 catch in the western GOA exceeded the 2012 ABC in that area.

Year	Western	Central	Eastern	Gulfwide Total	Gulfwide ABC	Gulfwide TAC
2011	151	298	163	612	1,770	1,770
2012	167	312	204	683	1,665	1,665

### Area Apportionment

The apportionment percentages are the same as in the 2011 full assessment. The following table shows the recommended apportionment for 2013. Please refer to last year's full stock assessment report for information regarding the apportionment rationale for thornyhead rockfish.

	Western	Central	Eastern	Total
Area Apportionment	9%	46%	45%	100%
Area ABC (t)	<b>150</b>	<b>766</b>	<b>749</b>	<b>1,665</b>
OFL (t)				<b>2,220</b>

### Summaries for Plan Team

Species	Year	Biomass <sup>1</sup>	OFL	ABC	TAC	Catch <sup>2</sup>
Thornyhead rockfish	2011	78,795	2,360	1,770	1,770	612
	2012	73,990	2,220	1,665	1,665	683
	2013	73,990	2,220	1,665		
	2014	73,990	2,220	1,665		

Stock/ Assemblage	Area	2012				2013		2014	
		OFL	ABC	TAC	Catch <sup>2</sup>	OFL	ABC	OFL	ABC
Thornyhead rockfish	W		150	150	167		150		150
	C		766	766	312		766		766
	E		749	749	204		749		749
	Total	2,220	1,665	1,665	683	2,220	1,665	2,220	1,665

<sup>1</sup>Total biomass from trawl survey estimates.

<sup>2</sup>Current as of October 1, 2012. 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)

### **SSC and Plan Team Comments Specific to this Assessment**

*“The Team made an additional request to Paul and Jon (for September discussion of consistency or lack thereof between assessment treatment of biomass and other issues) to also look at how individual assessments expand biomass to account for unsurveyed areas and depths.”* (Plan Team, November 2011)

### **Responses to Comments and Research Priorities for Full Assessment**

We will provide responses to the previously listed SSC and Plan Team Comments 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 thornyhead rockfish assessment will be considered in the upcoming 2013 Center for Independent Experts (CIE) Alaska rockfish scientific peer review. Evaluation of assessment methods to estimate model parameters, uncertainty, and projections as well as recommendations or prioritizations for future research to improve the assessments will likely be part of this process.

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