4. Gulf of Alaska Shallow water Flatfish (Executive Summary)

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4.1 Introduction

Assessment for the shallow water flatfish complex has been moved to a biennial schedule to coincide with the expected receipt of new survey data. Usually, on alternate (even) years we will present an executive summary with last year's key assessment parameters and projections for this year. However, due to the Federal government shutdown and furlough of federal employees from October 1-17, only an updated executive summary is presented here. A discussion at the September 2006 Groundfish Plan Team meetings concluded the following two important points for updating information in off-year assessments:

1) Anytime the assessment model is re-run and presented in the SAFE Report, a full assessment document **must** be produced.
2) The single-species projection model **may** be re-run using new catch data without re-running the assessment model.

The shallow water complex is comprised of northern rock sole, southern rock sole, yellowfin sole, butter sole, starry flounder, English sole, sand sole and Alaska plaice. Northern and southern rock sole are in Tier 3a while the other species in the complex are in Tier 5. For further information regarding the shallow water flatfish complex, please see the last full stock assessment (Turnock et al. 2011, http://www.afsc.noaa.gov/refm/docs/2011/GOAshallowflat.pdf).

4.2 Updated catch

The new information available concerning the shallow water flatfish complex are the updated 2012 catch of 4,022 t and the partial 2013 catch of 5,139 t through October 31, 2013 as well as projections using the updated catches from the northern and southern rock sole assessment (A'mar et al. 2013). The 2013 survey data have been used for the Tier 5 calculations; however, for northern and southern rock sole projections the 2013 survey biomass was not included in the model due to time constraints imposed by the government shutdown. Biomass, OFL and ABC values for northern and southern rock sole are estimated using projections from the 2012 assessment model with catches updated for 2012 and 2013. The 2012 and 2013 catches by species are presented in the following table:

Species		
Shallow-water flatfish	2012 Catch	2013 Catch[1]
Northern rock sole	972	1,914
Southern rock sole	1,857	1,753
Yellowfin sole	3	8
Butter sole	803	1,198
Starry flounder	277	151
English sole	78	104
Sand sole	20	9
Alaska plaice	13	1
Total shallow-water	4,022	5,139

[1]Through Oct. 31, 2013.

Survey Biomass estimates by species for 2011 and for 2013 (used for Tier 5 species, not for rock sole).

	2011	2013
Northern rock sole	72,875	74,586
Southern rock sole	120,573	131,441
Yellowfin sole	46,576	23,016
Butter sole	19,695	8,122
Starry flounder	39,757	30,028
English sole	16,720	18,121
Sand sole	755	703
Alaska plaice	12,266	8,044
Total	329,217	294,061

4.3 Area Apportionment

The recommended apportionment percentages are estimated using the 2013 survey biomass for the shallow water flatfish complex by INPFC areas.

	Western	Central	Yakutat	Southeast
Proportions	0.499	0.437	0.050	0.014

4.4 Research Priorities

More aging data is needed to improve estimates of natural mortality for Tier 5 species.

4.5 Summaries for Plan Team

Species/Assemblage	Year	Biomass	OFL[1]	ABC[1]	TAC[1]	Catch[2]
Shallow water flatfish	2007	365,766	62,418	51,450	19,972	8,788
	2008	436,591	74,364	60,989	22,256	7,390
	2009	436,591	74,364	60,989	22,256	8,483
	2010	398,961	67,768	56,242	20,062	5,534
	2011	398,961	67,768	56,242	20,062	3,974
	2012	329,217	55,943	45,802	37,029	4,022
	2013	433,869	55,680	45,484	37,077	5,139
	2014	384,134	50,007	40,805		
	2015	362,534	46,207	37,505		

The recommended 2014 and 2015 shallow-water flatfish ABC and OFL levels with tier 3a estimates from projections run with the 2012 model and updated with 2012 and 2013 catches for northern and southern rock sole (see A'mar et al 2013):

Stock/		2013				2014		2015	
Assemblage	**Area**	**OFL[1]**	**ABC[1]**	**TAC[1]**	**Catch[2]**	**OFL**	**ABC**	**OFL**	**ABC**
Shallow water flatfish	W	--	19,489	13,250	177	--	20,376	--	18,728
	C	--	20,168	18,000	4,959	--	17,813	--	16,372
	WYAK	--	4,647	4,647	1	--	2,039	--	1,875
	SEO	--	1,180	1,180	2	--	577	--	530
	Total	55,680	45,484	37,077	5,139	50,007	40,805	46,207	37,505

[1]As published in the Federal Register. [2]As of Oct. 31, 2013.
Note: Tables of ABCs, OFLs, and TACs published in the Federal Register are available for:
2013: http://alaskafisheries.noaa.gov/sustainablefisheries/specs13_14/goatable1.pdf
2014: http://alaskafisheries.noaa.gov/sustainablefisheries/specs13_14/goatable2.pdf

The summary table is:

	Last year		**This year**	
Quantity/Status	2013	2014	**2014**	2015
M (natural mortality)	0.2[1]	0.2[1]	0.2[1]	0.2[1]
Specified/recommended Tier	3a and 5	3a and 5	3a and 5	3a and 5
Biomass (t)	433,869	408,469	384,134	362,534
F_{OFL} (F=M)	*	*	*	*
$maxF_{ABC}$ (maximum allowable = 0.75x F_{OFL})	*	*	*	*
Specified/recommended F_{ABC}	*	*	*	*
Specified/recommended OFL (t)	55,680	51,580	50,007	46,207
Specified/recommended ABC (t)	45,484	42,084	40,805	37,505
Status	As determined *last* year 2011	2012	As determined *this* year 2012	2013
Is the stock being subjected to overfishing?	No	No	No	N/A
(for Tier 5 stocks, data are not available to determine whether the stock is in an overfished condition)				

* See following table and A'mar et al 2013 for values by species
[1] Northern rock sole male M=0.275, southern rock sole male M= 0.267, all other M=0.2.

The recommended 2014 and 2015 shallow-water flatfish ABC and OFL levels by species including values for Tier 3a for northern and southern rock sole (See A'mar et al 2013) are:

Species					Previous Assessment				Current Assessment			
					2013		2014		2014		2015	
Shallow-water flatfish	Tier	FABC	FOFL	Biomass[1]	ABC	OFL	ABC	OFL	ABC	OFL	ABC	OFL
Northern rock sole	3a	0.152	0.180	*	9,700	11,400	8,500	9,900	9,400	11,000	8,300	9,700
Southern rock sole	3a	0.193	0.230	*	18,600	21,900	16,400	19,300	18,200	21,400	16,000	18,900
Yellowfin sole	5	0.15	0.2	23,016	5,895	7,678	5,895	7,678	3,452	4,603	3,452	4,603
Butter sole	5	0.15	0.2	8,122	2,493	3,246	2,493	3,246	1,218	1,624	1,218	1,624
Starry flounder	5	0.15	0.2	30,028	5,032	6,554	5,032	6,554	4,504	6,006	4,504	6,006
English sole	5	0.15	0.2	18,121	2,116	2,756	2,116	2,756	2,718	3,624	2,718	3,624
Sand sole	5	0.15	0.2	703	96	124	96	124	105	141	105	141
Alaska plaice	5	0.15	0.2	8,044	1,552	2,022	1,552	2,022	1,207	1,609	1,207	1,609
Total shallow-water					45,484	55,680	42,084	51,580	40,805	50,007	37,505	46,207

[1] 2013 survey biomass estimates

4.6 Literature Cited

A'mar, Z.T. and W. Palsson. 2013. Assessment of the northern and southern rock sole (*Lepidopsetta polyxystra and bilineata*) stocks in the Gulf of Alaska for 2014. In: Stock Assessment and Fishery Evaluation Report for Groundfish Resources in the Gulf of Alaska. North Pacific Fishery Management Council, Anchorage, AK, USA.