

Minutes of the Gulf of Alaska Groundfish Plan Team

September 2nd 2011

North Pacific Fishery Management Council
605 W 4th Avenue, Suite 306
Anchorage, AK 99501

The GOA groundfish Plan Team convened Friday, Sept 2nd, 2011 at 9:00 am at the Alaska Fisheries Science Center in Seattle, Washington. Plan Team members present are listed under the Joint BSAI/GOA Groundfish Plan Team minutes. Approximately 10 members of the public and State and agency staff also attended.

Survey results

MACE GOA hydroacoustic survey

Mike Guttormsen provided a summary of the summer 2011 acoustic-trawl survey of walleye pollock in the GOA. The proposed survey area was from the Islands of Four Mountains to Yakutat. The survey is designed to sample commercial pollock fishery catch locations from about 50m to 1000m. Actual survey days were only 40 days instead of the planned 56, resulting in 1/3 less sampling effort than planned due to loss of sea days. Therefore, many of the transects east of Kodiak were not sampled. The pollock distribution in the WGOA was sporadic, but it was noted that the pollock schools were difficult to separate from rockfish due to time constraints. Pollock distribution in the CGOA was concentrated near the shelf break. Biomass estimates are still being reviewed, but in Shelikof Strait they appear to be similar to what was seen in summer 2003 and 1/3 of what is typically seen in the winter. Length compositions varied by area with the largest range of age classes seen in Shelikof.

Quite a few age 1 fish were seen in Shelikof but not elsewhere. Capelin were observed in 2003 and 2005 but were less common this year. The summer GOA survey history is 2003, 2005, and 2011 with another planned for 2013. Unfortunately, including winter surveys, only 40 of the planned 91 survey days were completed in 2011.

A feasibility study was conducted near Kodiak to look at ways to improve rockfish sampling in trawlable/untrawlable areas by using oblique instant backscatter technology to tell if the seafloor is trawlable or untrawlable. This data was collected at night during the pollock acoustics survey to map the seafloor and will be compared to ground-truthed information collected using different methods such as drop cameras. This study may provide improved knowledge regarding sampling rockfish in trawlable/untrawlable habitats.

The Team noted the significant loss of sampling days in this year's winter and summer surveys, and that this has become a recent trend. This is unfortunate considering the importance of the survey for determining pollock abundance and its use in the pollock assessment. These lost days are primarily due to poor ship performance. It was noted the poor ship performance has

affected the GOA disproportionately more than the Bering Sea. The lack of 2011 GOA data will have a large impact on the pollock assessment because it may not be complete enough to use in the assessment. This is especially true for the summer data. However, it was noted this year was the first summer survey, and it was unclear how this data would have been used in the assessment this year. The assessment author stated that at this time he is not planning to use the summer survey data in this year's assessment because of the limited amount of data. The Team also noted that not having this data may impact other important aspects of the pollock assessment, such as determining sea lion closure measures. The Team requested that the pollock assessment author and MACE provide a table with a history of sampling days lost, and brief discussion of how this has affected the pollock assessment to highlight the importance of this survey and how it has been reduced in recent years.

2011 GOA Bottom Trawl Survey

Wayne Palsson provided a preliminary summary of the 2011 GOA bottom trawl survey. The entire GOA survey area was sampled this year but depth coverage was limited. The chartered vessels *F/V Seastorm* and *F/V Ocean Explorer* were used in 2011. Only two vessels were used this year instead of three. This reduction in overall effort resulted in fewer "deep" stations sampled in 2011. Only 670 of the planned 812 (83%) survey stations were sampled in 2011. To help account for this decrease in effort only stations less than 700 m were sampled. Fortunately, the AFSC was able to extend the duration of the survey to August 15th which helped to minimize the loss of the third vessel. The main cause for the reduction of vessels is budget-related and specifically due to the numerous continuing resolutions.

RACE plans to release the data in mid-September for use in stock assessments. Several other projects and data were collected during the 2011 survey; including the collection of acoustic data with an ES60 which will be used for bottom typing and may have important stock assessment applications. Also, ambient light data was collected and will be compared to CPUE to determine if there is a relationship.

The Team discussed whether 2012 budget issues will be similar to this year. Guy Fleischer noted that there are plans to ensure the AI survey will be done in 2012, and that the Bering Sea vessel contracts are already in place. But, budget issues and fuel costs continue to have serious repercussions on AFSC surveys and there is uncertainty for 2012. The Team discussed the loss of the deep stations and noted the primary species affected are short-spine thornyheads, dover sole, and grenadiers. In general, major impacts to stock assessment are not expected. Additionally, the Team noted that going to 700m was much better than going to only 500m, and the entire GOA was sampled rather than dropping large regional areas, which has been done in the past. Therefore, the impact of reduced stations in the 2011 survey on stock assessments was minimized.

Northern and dusky rockfish

Pete Hulson from ABL/AFSC presented the following topics to the Team.

Northern and Dusky rockfish Age Structured Assessment (ASA) model updates

Input data (Dusky and Northern): Weight at age updated and size-age matrices were updated for both dusky and northern. The sample sizes increased from 808 to 3316 for dusky

rockfish, and from 989 to 3432 for northern rockfish. The updated and previous weight-at-age growth curves were shown for both species. The asymptotic weight at age increased for both species with the greatest difference shown for northern rockfish.

Selectivity Functions (Dusky only): The Pacific ocean perch and northern rockfish assessments have logistic selectivity functions. The dusky rockfish assessment estimates selectivity parameters by age. Pete compared the estimation of parameters by age to logistic selectivity. He used the Deviance Information Criterion (DIC) and Akaike Information Criterion (AIC) for comparison. DIC/AIC favored the logistic function. He found that uncertainty in total biomass was reduced with the logistic function (~5% reduction in CV in total biomass in last year of model). Recommendation to use logistic function for both survey and fishery selectivity.

Age composition plus age group analysis (Northern rockfish only)

The northern rockfish assessment previously fit up to age 23+ for the plus age group. The plus age group was extended out to 50+. Pete examined model performance with a comparison of objective function values over increasing age plus groups. A minimum was reached at age 31+. He also looked at uncertainty in model predictions associated with extending the age plus group out to 31+. Extending the plus age group out to 31+ resulted in the best fit to data compared to ages 21-50 and reduced the uncertainty in model predictions. Recommendation to extend the plus age group to 31+ for northern rockfish.

Maturity schedule updates (Dusky and Northern)

Two issues: 1) incorporation of new maturity information from Chilton *et al.* (2007, 2009) maturity study to supplement Lunsford *et al.* (1997) study, and 2) incorporation of uncertainty in maturity parameters into model predictions and management reference points.

The 2 studies collected samples close in time (Lunsford: 1996, Chilton: 2000-2001) relative to the time series modeled (dusky 1977-present, and northern 1961-present). Both studies are valid and there is no rationale to use results of one study over the other. Pete developed an intermediate maturity curve with combined data for each species. He compared fits to the intermediate curve and observations for each species. There was a reasonably good fit to both datasets. The largest difference was noted for northern rockfish. Recommendation to use intermediate curve for both species.

Pete looked at incorporation of maturity parameter uncertainty for dusky and northern for 2 cases: independent (fit outside of model, current methodology) and dependent (fit inside model with other fitted data). The dependent method allows for uncertainty in maturity parameters to be incorporated in ABC and other management quantities. The maturity parameters are identical with the independent and dependent method. Thus, ABC estimates, etc. are the same. However, the dependent method resulted in a small increase in uncertainty when taking into account maturity parameter uncertainty. Recommendation to fit maturity parameters dependently to account for uncertainty.

Paul Spencer asked if each dataset was fit separately and then all data combined were fit to get intermediate curve for each species? Yes.

Questions about maturity data and the 2 studies. Issues are sample sizes, and spatial and temporal differences in sample collection. Would like to get more and updated maturity data. The Team supported the use of the intermediate maturity curve for each species and fitting the maturity parameters dependently to account for uncertainty in maturity parameters for both dusky and northern rockfish.

Pete provided the following general future recommendations for GOA rockfish:

- All rockfish: update weight-at-age and size-age matrices
- Rougheye/blackspotted: update age bins and incorporate logistic selectivity
- Conduct a length composition analysis
- Implementation of length-based models (SS3): James Murphy will be working on this for shortspine thornyheads

Christina Conrath currently working on rockfish maturity.

It was noted that the Observer Program has stopped collecting maturity data and is reluctant to take on maturity projects as they are labor intensive. The Plan Team strongly recommended that maturity collections be taken. These data are important for stock assessments and allow for the estimation of critical stock assessment parameters and management quantities. Maturity information is a research priority for stock assessment.

The Plan Team also recommended looking into the issue of whether to incorporate length composition data if age composition data is unavailable, and then replacing with age composition data when it becomes available.

Paul Spencer noted that his estimate of 50% maturity for Aleutian Islands northern rockfish is similar to Pete's result.

Rockfish PSA

No presentation occurred on Rockfish PSA.

Stock structure template

Dusky rockfish stock structure template

Chris Lunsford presented an analysis of dusky rockfish stock structure based on the template developed by Paul Spencer. Following the template discussion, four aspects of dusky rockfish were addressed 1) harvest and trends, 2) barriers and phenotypic characters, 3) behavior and movement, and 4) genetics. Not much known about dusky rockfish relative to other species of targeted rockfish.

Dusky rockfish are patchily distributed and highly aggregated. Fishery catches generally correspond to survey distribution. Little is known about YOY, larvae distribution and juveniles. Eastern GOA growth data compared to other areas showed that EGOA dusky rockfish reach a smaller maximum size, but this may be due to small sample sizes at young? ages. Central and Western GOA dusky rockfish generally have similar growth characteristics. There is no information available on regional differences in maturity. Morphometrics indicate

some slight variations among areas. No information available on spawning site fidelity. There are no recapture or natural tagging studies or genetics studies for dusky rockfish. Past studies indicate that localized depletion occurs within a fishing season but local populations seem to recovery relatively quickly. Authors continue to recommend status quo spatial management.

The Plan Team suggested a more in depth look at harvest and abundance trends by geographic area and time especially in relationship to the rockfish fish pilot program in the central Gulf. Additionally, a statistical analysis of regional age and growth differences and a genetic study on dusky rockfish would be useful. The Team concurred that the results presented do not indicate that any changes are needed to the spatial management of dusky rockfish at this time.

Revised rockfish categories

Chris Lunsford presented a discussion paper outlining a plan for reorganizing the Pelagic Shelf Rockfish (PSR) complex. The proposed plan is to establish a separate chapter for dusky rockfish and combine the remaining PSR species (widow and yellowtail) into an 'other rockfish' category. Widow and yellowtail are very different biologically from dusky rockfish and thus combined management of these species in a complex is not scientifically justifiable. Widow and yellowtail comprise a small component of the ABC, are not targeted by industry, thus the economic impact of recombining them into the other rockfish category is not anticipated to have any economic impacts. This change could be done in conjunction with the specifications for 2012/13. A housekeeping amendment would be needed to remove the complex name PSR from the FMP and to modify the name of the 'other slope rockfish' category to 'other rockfish'.

These changes would result in a slightly higher quota for the combined other rockfish category. The Team discussed the concern that the other rockfish complex is also biologically dissimilar. While moving dusky rockfish into its own target category is advisable at this time, further examination should be done of the species in the other rockfish category. The Team recommends that this type of PSA for the species in the other rockfish complex be completed for next September. This would include an examination of catch in relation to the ABC and an overview of known biological information such as habitat differences, life-history characteristics, maturity etc.

Julie Bonney expressed concern regarding management implications of establishing smaller 'boxes' for management should the Team recommend breaking other rockfish species out of the other rockfish complex in the future.

Proposed specs

The Team recommends the attached specifications for the proposed specifications for 2012-2013. The Team discussed consideration of a GOA-wide OFL for POP but recommended this be examined after the application of the stock structure template for POP. The preliminary ABC/OFL specifications recommend shifting widow and yellowtail rockfish from the "pelagic shelf rockfish" category into "other slope" (which should be renamed "Other rockfish." Likewise, the PSR category will now comprise only dusky rockfish and should be renamed.

The Team notes that shortraker was (inadvertently?) omitted from the FSSI listings (to Congress). Since this stock is important, the Team noted that it should be included in future reports.

GOA membership

The Team greatly appreciates the contributions of Sarah Gaichas and Bob Foy for their years of participation and membership on the GOA Plan Team. They will both be sorely missed. Due to a variety of circumstances the GOA Team is losing 4 Team members for the November 2011 meeting.

The Team would like to replace these members as soon as possible, ideally in time for participation at the November meeting, particularly in a survey year. Two of the members are permanently leaving the Team while two others have not participated in recent years. The Team discussed the necessity that new nominees (e.g. University, IPHC, and ADF&G) should be prepared to firmly commit to 2 annual meetings and full participation thru COB Friday of meeting week. The Team recommended that additional membership be solicited from the Observer Program and RACE. Ideally these nominees could be put forward to the SSC in October and thus approved for participation in November. The Team requested that Diana follow up with relevant AFSC staff to solicit these nominations in the next several weeks.

GOA Halibut PSC discussion

Due to the timing of the availability of the GOA halibut PSC analysis, the Team was not able to provide any comments to the Council on this issue. The Team would like to review the analysis in November prior to action by the Council and provide comments to the Council per the Council's request. The Team would also like to see alternatives developed which evaluate biomass-based caps for halibut in a future analysis.

The Team recommends that the effects on groundfish fleets of modifying these caps be analyzed. The analysis should also evaluate alternative mechanisms for management flexibility across sectors in managing the caps.

Notes on GOA Pacific cod

The Team looks forward to receiving the updated stock synthesis application based on analyses done for the BSAI Pacific cod assessment (and recommended in the Joint Team discussions). Should the SSC consider the newly developed Aleutian Islands Kalman filter approach be appropriate for that region, then the GOA Team agrees with the SSC in that it might be useful for contrast in the GOA region (**but only if the computation and work is simple and requires little extra work**). This may prove useful simply to compare model results.

November meeting planning.

Team assignments are shown in the table below.

Chapter summary	Lead/assist
Pollock	Nancy, Jim
Pacific cod	Paul, Jon
Sablefish	Sandra, Chris
Deep water flats	Kristen
Shallow water flats	Kristen
Arrowtooth	Kristen, Diana
Flathead sole	Chris
Rex sole	Chris, Diana
POP	Nick
Shortraker	Nick
Rougheye complex	Nick, Mike
Northern rockfish	Mike, Diana
Dusky rockfish	Paul
Other rockfish (o slope +widow and yellowtail)	Paul
DSR	Mike
Thornyheads	Chris
Atka mackerel	Chris
Skates	Sandra, Diana
Sculpins	Tom
Squid	Tom
Octopus	Tom
Sharks	Tom
Forage Fish	Diana
Ecosystem (overview)	Nancy, Jim, Jon
Tables	Jim, Diana, Tom, Sandra
Economic summary (GOAwide by species)	Mike

Species	Area	2011 final			8/20/2011	2012 final			2012 proposed			2013 proposed		
		OFL	ABC	TAC	Catch	OFL	ABC	TAC	OFL	ABC	TAC	OFL	ABC	TAC
Pollock	W(61)	27,031	27,031	8,560		34,932	34,932		34,932		34,932		34,932	
	C(62)	37,365	37,365	27,864		48,293	48,293		48,293		48,293		48,293	
	C(63)	20,235	20,235	7,113		26,155	26,155		26,155		26,155		26,155	
	WYAK	2,339	2,339	2,273		3,024	3,024		3,024		3,024		3,024	
	Subtotal	118,030	86,970	86,970	45,810	151,030	112,404	112,404	151,030	112,404	112,404	151,030	112,404	
	SEO	12,326	9,245	9,245	0	12,326	9,245	9,245	12,326	9,245	9,245	12,326	9,245	
	Total	130,356	96,215	96,215	45,810	163,356	121,649	121,649	163,356	121,649	121,649	163,356	121,649	
Pacific cod	W	30,380	22,785	14,481		27,370	20,528		27,370		27,370		27,370	
	C	53,816	40,362	22,924		48,484	36,362		48,484		48,484		48,484	
	E	2,604	1,953	667		2,346	1,760		2,346		2,346		2,346	
	Total	102,600	86,800	65,100	38,072	92,300	78,200	58,650	92,300	78,200	78,200	92,300	78,200	
Sablefish	W	1,620	1,620	1,206		1,484	1,484		1,484		1,484		1,484	
	C	4,740	4,740	4,059		4,343	4,343		4,343		4,343		4,343	
	WYK	1,990	1,990	1,633		1,818	1,818		1,818		1,818		1,818	
	SEO	2,940	2,940	2,345		2,700	2,700		2,700		2,700		2,700	
	E subtotal	4,930	4,930	3,978		4,518	4,518		4,518		4,518		4,518	
	Total	13,340	11,290	11,290	9,243	12,232	10,345	10,345	12,232	10,345	10,345	12,232	10,345	
Shallow water Flatfish	W	23,681	4,500	84		23,681	4,500		23,681		23,681		23,681	
	C	29,999	13,000	2,323		29,999	13,000		29,999		29,999		29,999	
	WYAK	1,228	1,228	0		1,228	1,228		1,228		1,228		1,228	
	SEO	1,334	1,334	1		1,334	1,334		1,334		1,334		1,334	
	Total	67,768	56,242	20,062	2,408	67,768	56,242	20,062	67,768	56,242	56,242	67,768	56,242	
Deep water Flatfish	W	529	529	10		541	541		541		541		541	
	C	2,919	2,919	335		3,004	3,004		3,004		3,004		3,004	
	WYAK	2,083	2,083	6		2,144	2,144		2,144		2,144		2,144	
	SEO	774	774	1		797	797		797		797		797	
	Total	7,823	6,305	6,305	352	8,046	6,486	6,486	8,046	6,486	6,486	8,046	6,486	
Rex sole	W	1,517	1,517	104		1,490	1,490		1,490		1,490		1,490	
	C	6,294	6,294	2,321		6,184	6,184		6,184		6,184		6,184	
	WYAK	868	868	1		853	853		853		853		853	
	SEO	886	886	0		889	889		889		889		889	
	Total	12,499	9,565	9,565	2,426	12,279	9,396	9,396	12,279	9,396	9,396	12,279	9,396	
Arrowtooth Flounder	W	34,317	8,000	1,183		33,975	8,000		33,975		33,975		33,975	
	C	144,559	30,000	15,423		143,119	30,000		143,119		143,119		143,119	
	WYAK	22,551	2,500	144		22,327	2,500		22,327		22,327		22,327	
	SEO	11,723	2,500	62		11,606	2,500		11,606		11,606		11,606	
	Total	251,068	213,150	43,000	16,812	248,576	211,027	43,000	248,576	211,027	211,027	248,576	211,027	
Flathead sole	W	17,442	2,000	324		17,960	2,000		17,960		17,960		17,960	
	C	28,104	5,000	1,758		28,938	5,000		28,938		28,938		28,938	
	WYAK	2,064	2,064	0		2,125	2,125		2,125		2,125		2,125	
	SEO	1,523	1,523	0		1,568	1,568		1,568		1,568		1,568	
	Total	61,412	49,133	10,587	2,082	63,202	50,591	10,693	63,202	50,591	50,591	63,202	50,591	
Pacific ocean Perch	W	3,221	2,798	2,798	1,809	3,068	2,665	2,665	3,068	2,665	2,665	3,068	2,665	
	C	11,948	10,379	10,379	9,007	11,379	9,884	9,884	11,379	9,884	9,884	11,379	9,884	
	WYAK	1,937	1,937	1,870		1,845	1,845		1,845		1,845		1,845	
	SEO	1,883	1,883	0		1,793	1,793		1,793		1,793		1,793	
	E (subtotal)	4,397	3,820	3,820	1,870	4,188	3,638	3,638	4,188	3,638	3,638	4,188	3,638	
Total	19,566	16,997	16,997	12,686	18,635	16,187	16,187	18,635	16,187	16,187	18,635	16,187		
Northern Rockfish	W	2,573	2,573	1,734		2,446	2,446		2,446		2,446		2,446	
	C	2,281	2,281	1,528		2,168	2,168		2,168		2,168		2,168	
	E	0	0	0		0	0		0		0		0	
	Total	5,784	4,854	4,854	3,262	5,498	4,614	4,614	5,498	4,614	4,614	5,498	4,614	
Shortraker	W	134	134	78		134	134		134		134		134	
	C	325	325	158		325	325		325		325		325	
	E	455	455	208		455	455		455		455		455	
	Total	1,219	914	914	444	1,219	914	914	1,219	914	914	1,219	914	
Other slope rockfish	W	212	212	273		212	212		225		225		225	
	C	507	507	320		507	507		573		573		573	
	WYAK	276	276	180		275	275		284		284		284	
	SEO	2,757	200	14		2,757	200		2,771		2,771		2,771	
	Total	4,881	3,752	1,195	787	4,881	3,752	1,195	5,017	3,853	3,853	4,881	3,853	

Species	Area	2011 final			8/20/2011	2012 final			2012 proposed			2013 proposed		
		OFL	ABC	TAC	Catch	OFL	ABC	TAC	OFL	ABC	TAC	OFL	ABC	TAC
Pelagic shelf Rockfish	W		611	611	363		570	570		557		557		
	C		3,052	3,052	1,963		2,850	2,850		2,784		2,784		
	WYAK		407	407	58		380	380		371		371		
	SEO		684	684	1		638	638		624		624		
	Total	5,570	4,754	4,754	2,385	5,570	4,754	4,754	5,570	4,336	5,570	4,336		
Rougheye	W		81	81	26		81	81		81		81		
	C		868	868	341		868	868		868		868		
	E		363	363	128		363	363		363		363		
	Total	1,579	1,312	1,312	495	1,579	1,312	1,312	1,579	1,312	1,579	1,312		
Demersal shelf rockfish	SEO	479	300	300	72	479	300	300	479	300	479	300		
Thornyhead Rockfish	W		425	425	140		425	425		425		425		
	C		637	637	267		637	637		637		637		
	E		708	708	131		708	708		708		708		
	Total	2,360	1,770	1,770	538	2,360	1,770	1,770	2,360	1,770	2,360	1,770		
Atka mackerel	GW	6,200	4,700	2,000	1,571	6,200	4,700	2,000	6,200	4,700	6,200	4,700		
Big skate	W		598	598	44		598	598		598		598		
	C		2,049	2,049	1,373		2,049	2,049		2,049		2,049		
	E		681	681	94		681	681		681		681		
	Total	4,438	3,328	3,328	1,511	4,438	3,328	3,328	4,438	3,328	4,438	3,328		
Longnose Skate	W		81	81	22		81	81		81		81		
	C		2,009	2,009	585		2,009	2,009		2,009		2,009		
	E		762	762	56		762	762		762		762		
	Total	3,803	2,852	2,852	663	3,803	2,852	2,852	3,803	2,852	3,803	2,852		
Other skates	GW	2,791	2,093	2,093	612	2,791	2,093	2,093	2,791	2,093	2,791	2,093		
Other species	GW													
Squids	GW	1,530	1,148	1,148	223	1,530	1,148	1,148	1,530	1,148	1,530	1,148		
Sharks	GW	8,263	6,197	6,197	368	8,263	6,197	6,197	8,263	6,197	8,263	6,197		
Octopuses	GW	1,273	954	954	247	1,272	954	954	1,272	954	1,272	954		
Sculpins	GW	7,328	5,496	5,496	547	7,328	5,496	5,496	7,328	5,496	7,328	5,496		
Total	GOA	723,930	590,121	318,288	143,616	743,605	604,307	335,395	743,605	603,990	743,605	603,990		

Notes: Final 2010 OFLs, ABCs, and TACs from final 2010-2011 harvest specifications, 2010 catch from NMFS Catch Accounting System through 12/31/2010.

Final 2011 and 2012 OFLs, ABCs, and TACs from final 2011-2012 harvest specifications, 2011 catch from NMFS Catch Accounting System through 8/20/2011.

For the November PT meeting the Council's recommendations for the proposed 2012-2013 and catch through November 12, 2011 will be included

Pacific cod catch in 2010 does not include catch from State managed fisheries. 2012 final amounts were used as a place holder for 2012-2013 OFLs and ABCs.