AGENDA C-3(b)
DECEMBER 2008

MEMORANDUM

TO: Council, AP and SSC

FROM: Chris Oliver
Executive Director

ESTIMATED TIME
8 HOURS
(all D-1 items)

DATE: December 3, 2008

SUBJECT: Final GOA Groundfish Specifications for 2009 and 2010

ACTION REQUIRED

Review and approve GOA SAFE report (including Ecosystem and Economic SAFEs) and approve final GOA Harvest Specifications for 2009-2010 including:

1. Acceptable Biological Catch (ABC), and annual Total Allowable Catch (TAC).
2. TAC considerations for the State Pacific cod fishery.
3. Prohibited Species Catch Limits

BACKGROUND

At this meeting, the Council makes final recommendations on groundfish and bycatch specifications as listed above to manage the 2009 and 2010 Gulf of Alaska (GOA) groundfish fisheries.

GOA SAFE Document

The groundfish Plan Teams met in Seattle November 17-21, 2008 to prepare the final SAFE reports and to review the status of groundfish stocks. The GOA SAFE report forms the basis for the recommended GOA groundfish specifications for the 2009 and 2010 fishing years. Note that there are three volumes to the SAFE report: a stock assessment volume, a fishery evaluation volume ("economic SAFE"), and an ecosystems considerations volume. The introduction to the GOA SAFE report was mailed to the Council and Advisory Panel in late November 2008. The full GOA SAFE report, the economic SAFE report and the ecosystem considerations volume were mailed to the SSC. The Joint Plan Team and GOA Plan Team minutes are attached as Items C-3(b)(1) and C-3(b)(2), respectively. An overview of the GOA SAFE report and ecosystem considerations volume will be provided to you at the meeting.

Two year OFL and ABC Determinations

Amendment 48/48 to the GOA and BSAI Groundfish FMPs, implemented in 2005, made two significant changes with respect to the stock assessment process. First, annual assessments are no longer required for rockfishes, flatfish, and Atka mackerel since new data during years when no groundfish surveys are conducted are limited. For example, since 2008 was an off-year for the NMFS GOA groundfish trawl survey, only summaries for these species were produced.

The second significant change is that the proposed and final specifications are to be specified for a period of up to two years. This requires providing ABC and OFL levels for 2009 and 2010. In the case of stocks managed under Tier 3, 2009 and 2010 ABC and OFL projections are typically based on the output for Scenarios 1 or 2 from the standard projection model using assumed (best estimates) of actual catch levels. In the case of stocks

managed under Tiers 4-6, 2009 and 2010 projections are set equal to the Plan Team's recommended values for 2008.

The 2010 ABC and OFL values recommended in next year's SAFE report are likely to differ from this year's projections for 2010, for the same reasons that the 2009 projections in this SAFE report differ from the projected values from last year's SAFE report.

ABCs, TACs, and Apportionments

At this meeting, the Council will establish final catch specifications for the 2009 and 2010 fisheries. The SSC and AP recommendations will be provided to the Council during the meeting. Item C-3(b)(3) lists the 2008 specifications and catch (through November 8, 2008) and GOA Plan Team recommendations for OFLs and ABCs for 2009 and 2010. The sum of the preliminary 2009, 2010 ABCs for target species are 516,055 t (2009), 562,762 t (2010). The sum of 2009 and 2010 OFLs are 632,498 t and 722,734 t, respectively.

The sum of the ABCs decreased by 5% (26,700 t) compared with last year (not counting "other species"). This is primarily driven by decreases in pollock and Pacific cod (both declined by 17% or by 21,500 t). Sablefish also declined by 1,600 t (-12%). ABC levels increased in deep water flatfish (3%) and flathead sole (4%). Arrowtooth flounder was down by 2% (about 5,000 t). The ABC level increased slightly for Pacific ocean perch (112 t or 2%). The ABC for northern rockfish declined by 187 t (-4%) while demersal shelf rockfish ABC dropped by 5% and pelagic shelf rockfish by 9%. All other species groups ABC levels stayed the same since new survey data were unavailable.

The abundances of Dover sole, flathead sole, arrowtooth flounder, Pacific ocean perch, rougheye rockfish, northern rockfish, and dusky rockfish are above target stock size. The abundances of pollock, Pacific cod, and sablefish are below target stock size. The target biomass levels for other deep-water flatfish, shallow-water flatfish, rex sole, shortraker rockfish, demersal shelf rockfish, other pelagic shelf rockfish, other slope rockfish, thornyhead rockfish, Atka mackerel, skates, sculpins, squid, octopus, and sharks are unknown. None of the groundfish stocks are overfished nor are they approaching an overfished condition.

Following approval of GOA FMP amendment 79, this assessment cycle represents the first time specifications are established in aggregate for the other species complex in the GOA. Previously neither OFL nor ABC was established for this complex but a TAC was set at or below 5% of the sum of the target TACs. In this year's SAFE report separate assessments are presented for sculpins, squid, octopus and sharks with an resulting aggregate OFL and ABC recommendation for the complex.

TAC Considerations for State Pacific Cod Fishery

Since 1997, the Council has reduced the GOA Pacific cod TAC to account for removals of not more than 25% of the Federal P. cod TAC from the state parallel fisheries. The relative percentage in the Central GOA was increased by the Board of Fisheries in March 2005 from 24.25 in 2004 to 25%. Using the area apportionments of the 2009 and 2010 P. cod ABC recommended by the Plan Team, the Federal TAC for P. cod would be adjusted as listed below.

Plan Team recommended 2009 Gulf of Alaska Pacific cod ABCs, and resulting TACs and state Guideline Harvest Levels (GHLs) (t).

Specifications	Western	Central	Eastern	Total
ABC	21,567	31,521	2,212	55,300
State GHL	5,392	7,880	221	13,493
(%)	25	25	10	24.4
Federal TAC	16,175	23,641	1,991	41,807

Plan Team recommended 2010 Gulf of Alaska Pacific cod ABCs, and resulting TACs and state Guideline Harvest Levels (GHLs) (t).

Specifications	Western	Central	Eastern	Total
ABC	31,005	45,315	3,180	79,500
State GHL	7,751	11,329	318	19,398
(%)	25	25	10	24.4
Federal TAC	23,254	33,986	2,862	60,102

Prohibited Species Catch Limits

In the GOA, Prohibited Species Catch (PSC) limits are established for halibut. Since 1995, total halibut PSC limits for all fisheries and gear types have totaled 2,300 t. This cap was reduced from 2,750 t after the sablefish IFQ fishery was exempted from the halibut PSC requirements in 1995. The halibut PSC apportionments recommended based upon the 2008 apportionments for the Gulf of Alaska groundfish fisheries are shown below.

GOA Pacific halibut PSC Limits

2009-2010Trawl			2009-2010 Hook and Line	
Jan 20 - Apr 1	550 t	1st trimester	Jan 1 - Jun 10	250 t
Apr 1 - Jul 1	400 t	2nd trimester	Jun 10 - Sep 1	5 t
Jul 1 - Sep 1	600 t	3rd trimester	Sept 1 - Dec 31	35 t
Sept 1 - Oct 1	150 t			
Oct 1 - Dec 31	300 t	DSR	Jan 1 - Dec 31	10 t
TOTAL	2,000 t			300 t

Trawl fishery categories

Season	Shallow Water	Deep Water	Total
Jan 1 - Apr1	450 t	100 t	550 t
Apr 1 - Jul 1	100 t	300 t	400 t
Jul 1 - Sep 1	200 t	400 t	600 t
Sep 1 - Oct 1	150 t	any rollover	150 t
Oct 1 - Dec 31	*no apportionment*		300 t
TOTAL	900 t	800 t	2,000 t

Joint Groundfish Plan Team minutes

November 18, 2008
Alaska Fisheries Science Center
Seattle, WA

The Joint meeting of the BSAI and GOA groundfish Plan Teams convened Tuesday, November 18th at 9:00 am at the Alaska Fisheries Science Center in Seattle, Washington.

Members of the Plan Teams present for the meeting included:

Loh-Lee Low	AFSC REFM(BSAI chair)	Jim Ianelli	AFSC REFM (GOA co-chair)
Mike Sigler	AFSC (BSAI Vice chair)	Diana Stram	NPFMC (GOA co-chair)
Kerim Aydin	AFSC REFM	Sandra Lowe	AFSC REFM
Lowell Fritz	AFSC NMML	Jeff Fujioka	AFSC ABL
David Carlile	ADF&G	Jon Heifetz	AFSC ABL
Alan Haynie	AFSC	Mike Dalton	AFSC
Jane DiCosimo	NPFMC (Coordinator)	Cleo Brylinsky	ADF&G
Yuk. W. Cheng	WDFW	Tom Pearson	NMFS AKRO Kodiak
Brenda Norcross	UAF	Nick Sagalkin	ADF&G
Mary Furuness	NMFS AKRO Juneau	Paul Spencer	AFSC
Grant Thompson	AFSC REFM	Leslie Slater	USFWS
Dave Barnard	ADF&G	Nancy Friday	AFSC NMML
Leslie Slater	USFWS	Yuk. W. Cheng	WDFW
Dana Hanselman	AFSC ABL		

Plan Team members who were unable to attend included Ken Goldman (GOA Plan Team ADF&G), Sarah Gaichas (GOA Team AFSC REFM), Bob Foy (GOA Team, AFSC Kodiak) and Steven Hare (IPHC).

The Teams welcomed new members Dana Hanselman and Alan Haynie (BSAI, AFSC) Nancy Friday (GOA, NMML), Yuk W (Henry) Cheng (WDFW), Paul Spencer and Mike Dalton (GOA, AFSC). The Teams reviewed changes to the draft agenda. The final agenda is attached.

Members of the public and State and Agency staff in attendance included: Julie Bonney (AGDB), Lori Swanson (GFF), Anne Vanderhoeven (BBEDC), Mike Symanski (FCA), Kenny Down (Freezer Longline Coalition), John Gauvin (Best Use Coop), Donna Parker (Arctic Storm), , Glenn Reed (PSPA), Mark Maunder (Quantitative Resource Associates), Jack Tagart (Freezer Longline Coalition), Jason Anderson (Best Use Coop), Mike Perry (Blue North Fisheries), Bob Lauth (NOAA AFSC), Bill Clark (SSC), Chris Rooper (AFSC), Chris Lunsford (AFSC/ABL), Kalei Shotwell (AFSC/ABL), Tom Casey, Steve Barbeaux (AFSC/REFM), Ed Richardson (APA), Mark Zimmerman (AFSC REFM), Anne Hollowed (AFSC REFM), Gary Stauffer (FSA), Craig Faunce (AFSC/FMA), William Stockhausen (AFSC REFM), Suzanne McDermott (AFSC REFM), Jack Turnock (AFSC REFM), Martin Loefflad (AFSC), Lisa Rotterman (NMFS PRD), Dana Seagars (NMFS PRD), Steve Whitney (NMFS AKR), Tom Wilderbuer (NMFS AFSC), Teresa A'mar (UW/AFSC), Jennifer Boldt (UW/AFSC), Phil Rigby (AFSC/ABL), Olaf Ormseth (NMFS AFSC), Neal Williamson (NMFS AFSC), Melanie Brown (NMFS AKR SF), Todd Loomis (Cascade Fishing Inc.), Beth Stewart (AEB), Dave Benson (NPFMC), Joe Childers (UFA/WGOAF), Taina Honkalehto (NMFS AFSC)

Introductions and overview information

Species Fact Sheets

Rebecca Reuter requested plan team assistance on review information for species fact sheets. She provided team members individual packets for review and requested any comments and editorial changes by the end of the week.

Agenda changes

The teams noted the following agenda changes and clarifications: Grenadiers is scheduled for GOA only review, the BSAI will start earlier on Wednesday to allow more time to review the pollock assessments. For Pacific cod the teams will meet jointly for the presentations and then adjourn separately to individual teams for specification deliberations.

Grant Thompson reminded the teams that the SSC requested that all assessment authors provide a general description of calculations for biological reference points in the introduction of the SAFE report. In each SAFE chapter, specific details could be provided, if the calculation is done differently. This information used to be included in the introductory chapters and will be included again. Grant volunteered to check with SSC member Anne Hollowed to see if she thought that would satisfy SSC intent.

Sablefish

Dana Hanselman presented an overview of the sablefish assessment. He noted that in the past few years substantive improvements have been made to the model and presented to the teams. However, this year only minor modifications were made in anticipation of changes that are likely to be suggested by the Center for Independent Experts (CIE) review scheduled for 2009. The teams were encouraged by some changes that reduced the model complexity and supported selection of model 3.

Whale depredation:

The teams discussed the impacts of whale depredation in the longline survey and the fishery. Information was provided on sperm whale depredation in the EGOA and CGOA. Station-specific survey catch rates are presently unadjusted for observed sperm whale depredation. The authors noted that it is difficult to quantify the impact of depredation. An earlier study using survey data estimated a depredation rate but was found to not be statistically significant. Implementing a survey correction factor would necessitate an appropriate fishery correction factor (for CPUE) to account for fishery induced depredation mortality in the calculation of ABC.

The teams commented that the CIE review might provide additional advice on the use and approximation of a correction factor. Dan Falvey commented that it is widely believed that whale depredation is more common in the survey than in the fishery and thus is biasing survey results by area due to this uncorrected depredation.

Discussion noted that if there are differences in depredation rates between the fishery and survey, this could be tested by looking at the presence of whales in the fishery and comparing the relative differences in absolute presence between the fishery and survey. Chris Lunsford noted that starting in 2007 vessel operators record whale presence during haulback in their logbook records. Preliminary information indicates that catch rates are roughly 5% lower when whales were present. The authors noted that they will continue to look at this in the future. Dana commented that depredation may be highly variable between vessels and events. There is the possibility that while fishery vessels are hit less than survey vessels, when the whales occur the impact on that fishery operation could be greater as the whales would not also be feeding on offal present during survey operations.

Age distribution by area:
The authors evaluated the mean age in the survey and fishery by region. The proportion varies by area but on average 80% are 10 years old or younger. The western and central GOA areas show the highest proportions of the 1997 year class. The 2000 year class survey abundance has varied by area and over time, peaking in 2003 in WGOA and then later in the EGOA. Dan Falvey asked if there is any concern with the lack of older fish in the western region, and will the CIE comment on the lack of maintenance on broad range age distribution? Dana noted that while this could be a matter of concern, it is also possible that this is a region of recruitment and fish are outmigrating to other regions. The other possibility is that the region is heavily exploited and thus the age structure has been truncated, but that this seems unlikely given the estimates of exploitation by area. Mike Sigler commented that the decline may be due to previous strong year-classes that have aged and now compose a smaller portion of the population.

ABC recommendations
The teams discussed the current stock status and authors' recommendations for OFL and ABC for 2009-2010. The stock is at 90% of $B_{40\%}$. The authors' recommendation for ABC is an 11% decrease in ABC for 2009 from the 2008 value.

The teams discussed the overlap between the survey and the fishery, noting that there is currently a two week voluntary stand-down on the fishery prior to the survey to allow the population to settle out. Mike Sigler commented that previously due to the derby nature of the fishery (prior to IFQs), the survey and fishery did not overlap. The only time there was a fishery during the survey was in 1992.

The team discussed the halibut survey and differences between that and the sablefish longline survey. The Halibut commission does not have a similar stand-down period. The spatial density of stations for the halibut survey is much higher than for the sablefish survey thus the potential for fishery impacts may be reduced.

Dan Falvey requested that the teams recommend the assessment for sperm whales be updated. Chris Lunsford reiterated the importance of updating the sperm whale assessment given the findings on whale depredation and presence in their current sablefish assessment report. Nancy Friday commented that the sperm whale assessment was updated in 2007 but no estimate was made of minimum population size for PBR (potential biological removal) impacts. Melanie Brown noted that sperm whales are included in the Biological Opinion, which is being completed by the NMFS Alaska Region at this time. The team requests additional information on the level of take that would require some form of fishery closure as the previous sperm whale assessment indicates a high risk from the sablefish fishery due to one whale taken historically.

Mike Sigler commented that the depredation rate should be re-estimated to include four years of additional data collected since 2004. It is possible that there is a potential increase in recent years. There was a suggestion that a model-based random effects approach may be useful to evaluate whale depredation. This would likely increase the uncertainty in the index.

The Teams discussed the influence of aging error on the assessment and suggested that a diagnostic model run which excludes aging error be evaluated. The author agreed to evaluate this.

Apportionment
Apportioning out the ABC across regions resulted in different trends by area. The EGOA declined by 15-16% while the BS rose by 5%.

The Teams discussed the apportionment strategy, noting the current strategy of giving the survey twice the weight (for apportionments) compared to the fishery CPUE. The Teams have noted that modifications to the apportionment strategy are unlikely to cause a conservation concern but expressed

the desire to re-evaluate this if substantive changes are made. In 2007, alternative apportionment strategies were considered but did not result in any modification to this recommendation. The teams requested information from the authors regarding any potential changes observed since last year that would indicate a biological concern. The authors did not believe that there were any apparent changes that would merit modification to the apportionment scheme at this time. Dan Falvey commented that whale depredation could be having a major impact and this would impact apportionment. Jeff Fujioka commented that the relative importance of spawning biomass levels by region are poorly understood. If such information were available, alternative region-specific ABC measures could be refined.

The teams had the following suggestions to the author on sperm whale depredation correction factors and killer whale depredation factors:
1-Analyze current sperm whale depredation data and see if there is a statistical effect;
2-Analyze survey and fishery data together to evaluate the relative impact of depredation;
3-Evaluate differences between depredation in survey and fishery to investigate trends.

Dan Falvey requested that the teams recommend modification in the survey depredation measurement for better estimation of depredation (e.g., using hydrophones to detect presence under the vessel).

The Teams agreed with the author's recommendation for ABC and OFLs for 2009-2010 and apportionments as listed in the assessment.

Steller Sea Lion update

Lowell Fritz provided a presentation on recent survey work on the western stock of Steller sea lions. The survey consists of processing aerial photographs over rookeries and haul outs. Ninety-five percent of sites were surveyed (168 of 173 trend sites). The overall trend since 2004 in Alaska's western population of Steller sea lions is stable or declining slightly. Despite the stability or slight decline observed in the overall western Alaska population, scientists continued to find considerable regional variability in population trends between 2004 and 2008. The percentages listed below are percent changes between years: 1) the eastern Aleutian Islands is the only consistently increasing region (+7%); 2) the central and western Aleutian Islands declined at relatively high rates (-30% and -16%, respectively); 3) the central and western Gulf of Alaska increased between 2004 and 2007, but declined slightly between 2007 and 2008; and 4) the eastern Gulf of Alaska increased by 35%, but likely because of immigration of eastern distinct population segment animals from southeast Alaska.

Members of the public asked about whether differences between areas could be due to movement between areas. Lowell responded this issue could not be addressed without data on individuals from branding. He pointed out that the 2002 count could have been artificially high due to movement, and possible double counting due to the time lag between surveying different portions of the survey area. The Biological Opinion will attempt to answer some of these questions about migration. The teams requested an opportunity to review the Draft Biological Opinion at its joint meeting in September 2008.

Ecosystem Considerations

Kerim Aydin summarized changes from the September 2008 draft of the Ecosystem Considerations chapter. There are 23 updates and 4 new contributions. He also summarized the revised Ecosystem Assessment, which will include 2008 assessment results; therefore, the teams do not have a draft to review. The teams will review the 2008 Ecosystem Assessment at its joint meeting in September 2009, when it reviews the draft Ecosystem Chapter for 2010.

Pacific cod

Grant Thompson presented the BSAI and GOA assessments during the joint meeting. The teams subsequently broke into separate sessions to deliberate on OFLs and ABCs (refer to those minutes for team recommendations). The author summarized the numerous comments that were provided for suggestions to revise the Pacific cod assessments by the BSAI Plan team, GOA Plan Team, SSC, and public. He reviewed the exploratory models that were presented in September 2008.
Grant summarized the models included in the new BSAI and GOA assessments: 1) the SSC reference model (similar to the "exploratory" model from September, but with the lower bound on selectivity width not constraining and other minor changes); 2) the authors' preferred model (based on the SSC reference model), and 3) additional models (BSAI only) that were suggested by the authors for comparison or requested by members of the public. He noted that, for fisheries with asymptotic selectivity, one suggestion from the 2007 Pacific cod technical workshop was to force one or more fisheries to exhibit asymptotic selectivity. Two procedures that have been used recently to accomplish this had problems.

For the preferred model, the following new procedure was applied 1) determine which fisheries are "major"; 2) create sample-size-weighed, long-term, relative size composition for each gear/season fishery; 3) for each 5-cm size bin 70 cm or larger, rank each fishery in terms of relative size composition; 4) average ranks across size bins 70 cm or larger; 5) repeat for size bins 75 cm or larger, etc.; and 6) select the highest ranked set of fisheries that consistently includes at least one major fishery.

The algorithm resulted in: 1) sets of major fisheries (BS: Jan-May trawl, Jan-May longline, Sep-Dec longline and GOA: Jan-May trawl, Jan-May longline, Jan-May pot) and 2) sets of fisheries with forced asymptotic selectivity (BS: everything except Jan-May longline, Sep-Dec longline, and Jan-May pot and GOA: Jan-May trawl.)

Grant described how he addressed selectivity parameters. Specifications were determined iteratively. He addressed whether some parameters could be held constant, and model selection criteria. He described how he finalized the models and selected the one that is most consistent with recent Team/SSC consensus regarding model structure and stock size/productivity as his preferred model. He then went on to separately summarize the BSAI and GOA assessments.

BSAI Grant reviewed historical quota, catch, and bottom trawl (BT) survey trends. He compared BT survey catch-per-unit-effort (CPUE) vs. longline fishery CPUE, which showed an improved correlation when fishery data were examined seasonally rather than annually and survey data were limited to the stratum where the longline fishery is concentrated. He reviewed the eight models in detail. He reviewed selectivities from the trawl, longline, and pot fisheries and from the BT survey. He reviewed trends in biomass in both the model and the survey, as well as recruitment. He reported that the stock was healthy when comparing fishing rate v. spawning biomass. In developing the author's recommended ABC, he applied Tier = 3b, the policy that the SSC adopted in December 2007 (if survey biomass trend is downward and biomass is low relative to mid-1980s, but model indicates trend will reverse soon, then keep ABC at current level). He noted that the conditions listed in the SSC policy still exist, therefore the maxABC of 182,000 t (2009) and 199,000 t (2010) was reduced for 2009-2010 to 176,000 t. He noted that another reason to set ABC < maxABC is that when M is estimated internally (Model C1), the maxABC falls to 158,000 t (2009) and 180,000 t (2010).

GOA Grant provided similar information for the GOA, as described above for the BSAI. He recommended Tier = 3b and recommended an ABC for 2009 of 55,300 t (equal to maxABC) and an ABC for 2010 of 79,500 t (less than the maxABC of 103,700 t). The large increase in 2010 is fueled by the estimated strength of 2006 cohort, which has been observed only once (at age 1) by the 2007 survey. He noted that if the 2006 cohort is only average, then the 2010 maxABC = 57,300 t. The 2010 ABC of 79,500 t corresponds to 2-year stair-step.

During his presentation, Grant (and others) clarified the following points in response to questions from team members and members of the public.

- The asymptotic algorithm was used for the GOA assessment, but gave the same result as the assumption used in the preliminary assessment, namely, that the January-May trawl fishery is the only fishery that should be forced to exhibit asymptotic selectivity.
- Q cannot be estimated in the GOA.
- Two-year-old fish were seen throughout the survey area in 2008; this was confirmed by industry.
- The SSC would likely amend its "ABC rule" policy if the result was higher than the max permissible ABC.
- Grant has not identified a research plan to address the problem of age 2 fish missing from the GOA survey.
- The model's estimated time trend of age 0+ biomass is close to the survey trend in the GOA, but much higher than the survey trend in the BSAI. This is due to differences in estimated catchability.
- The fit of GOA Model B to the 27+ cm survey abundance underestimated each of the observed data points. This reflects an inconsistency between the survey age and length composition and the survey abundance estimates, as lowering the emphasis on the age and length composition data improved the fit to the survey abundance index.
- The GOA BT survey is unfunded for 2009. NMFS HQ knows how important the survey is to the assessment. AFSC is planning to conduct the survey, pending funds. There was no AI BT survey in 2008. Funding for an AI BT survey in 2010 is also uncertain.

2009 Plan Team meetings

Meeting dates for 2009 are as follows:

September: Joint Plan Team meeting September 16-17; BSAI/GOA Team meetings September 18

November: Plan Team meetings November 16-20

Items for 2009 September Plan Team discussion:

The Teams identified a number of topics to schedule for the September 2009 Joint or individual BSAI/GOA Team meetings. These include (in no order of priority):

1. role of economists on the Plan Teams (joint session)
2. reviews of new approaches for modeling sharks, skates, squid, sculpins, and octopus. Including review of data availability and alternative time periods to be used for Tier 6 analysis for other species groups.
3. review genetic information that forms the basis for area apportionments of ABC and management implications (e.g., rockfishes and Pacific cod) with invited participants
4. review fur seal pup survey discussion
5. review Biop (including CIE review)
6. review Ecosystem Report and Ecosystem Assessment
7. review effects of BSAI Amendment 80 and Groundfish Retentions Standards on reporting bycatch/retention in the SAFE reports
8. review weight based apportionments for Atka mackerel (BSAI only)
9. Joint discussion of Skate assessment in BSAI and GOA (time permitting)
10. ACL updates and guidance
11. Discuss preparation of Team minutes

A. Joint Plan Team Meetings

GOA team to commence at 9am Monday, BSAI at 2pm

Tuesday November 18th — **Room 2076 (Traynor room)**

9:00 am	Introductions, Adoption of Agenda, Council Actions, Review of report summaries, minutes, assignments etc…
9:30 am	Sablefish
12:00 pm	*Lunch*
1:00 pm	2008 SSL survey update
1:30 pm	Ecosystem assessment report
2:00 pm	Pacific cod (with BSAI and GOA spec discussions)

B. Bering Sea/Aleutian Islands Groundfish Plan Team

Monday November 17th — **Room 2076 (Traynor room)**

2:00 pm	Yellowfin sole, Rock sole, Flathead sole

***Note:** Joint Team meetings on Tuesday*

Wednesday November 19th

8:00 am	Bogoslof Pollock, AI Pollock, EBS Pollock
12:00 pm	*Lunch*
1:00 pm	Skates, other species
3:00 pm	Atka mackerel

Thursday November 20th

9:00 am	Greenland Turbot
10:00 am	Alaska Plaice, Arrowtooth flounder, Other flatfish
12:00 pm	*Lunch*
1:00 pm	Red rockfish, other rockfish
3:30 pm	POP, Northern rockfish

Friday November 21st

9:00 am	Review Halibut DMRs for CDQ fisheries
9:30 am	Table preparation, Report writing
12:00 pm	*Lunch*
1:00 pm	Report finalization
5:00 pm	Adjourn

C. Gulf of Alaska Groundfish Plan Team

Monday November 17th — **Room 1055 (Observer training room)**

9:00 am	Pacific ocean perch, northern rockfish
10:00 am	shortraker, rougheye, other slope rockfish, PSR
12:00 pm	*Lunch*
1:00 pm	GOA pollock

***Note:** Joint Team meetings on Tuesday*

Wednesday November 19th

9:00am	demersal shelf rockfish, thornyheads
10:00 am	Other species: sharks, squid, sculpin, octopus
12:00 pm	*Lunch*
1:00 pm	Arrowtooth flounder, Flathead sole, SWF, DWF (Dover sole), rex sole
4:00 pm	Grenadiers

Thursday November 20th

9:00am	Forage Fish, Skates, Atka Mackerel
12:00 pm	*Lunch*
1:00 pm	Table preparation, Report writing, other business

Friday November 21st

9:00 am	Report finalization
12:00 pm	Adjourn

Gulf of Alaska Plan Team Minutes

The meeting of the Gulf of Alaska groundfish Plan Team convened on November 17th, 2008 at 9am at the Alaska Fishery Science Center, Seattle, WA. Members of the GOA plan Team in attendance included:

Jim Ianelli	NOAA/AFSC REFM (GOA co-chair)
Diana Stram	NPFMC (GOA co-chair)
Sandra Lowe	NOAA AFSC REFM
Jeff Fujioka	NOAA AFSC ABL
Jon Heifetz	NOAA AFSC ABL
Nancy Friday	NMML
Cleo Brylinsky	ADF&G
Tom Pearson	NOAA AKRO
Nick Sagalkin	ADF&G
Mike Dalton	NOAA AFSC REFM
Leslie Slater	USFWS
Paul Spencer	NOAA AFSC REFM
Yuk. W. Cheng	WDFW

Team members Sarah Gaichas (NOAA AFSC REFM), Ken Goldman (ADF&G), Steven Hare (IPHC) and Bob Foy (NOAA AFSC RACE) were absent. Approximately 10 state and agency staff and members of the public also attended. Names of attendees are included in the Joint Plan Team minutes.

The revised agenda for the meeting is included in the Joint Plan Team minutes.

Introductions

The Gulf of Alaska Team welcomed new members Nancy Friday, Paul Spencer, Mike Dalton, and Henry Cheng (jointly with the BSAI Team). The Team reviewed summary section assignments and the process for turning in summaries for revision throughout the week.

GOA Pollock

Martin Dorn presented an overview of the GOA Pollock assessment. New data included catch at age from the fishery, Shelikof Strait acoustic survey data and other acoustic survey data evaluated in aggregate, ADF&G survey data, age composition from the 2007 NMFS bottom trawl survey, and the vessel comparison study between the Miller Freeman and Oscar Dyson.

Nick Sagalkin questioned whether young of year pollock are picked up at all in surveys. Martin indicated that they occur infrequently, but the FOCI forecast is for young of the year pollock (but these predictions have not changed from average in recent years).

The Team discussed the PSC bycatch estimates for the pollock fishery. Julie noted that problems inherent in the 2007 Chinook estimate relating to the extrapolation procedure employed that resulted in a high estimate in that year. She noted that the Council will be considering changes to the service delivery model for deploying observers in the GOA in December. Henry suggested that uncertainty estimates (confidence bounds) be added to these numbers. The Team noted that this would need to occur at the in-season management level, however, as estimates reported in the assessment are from the Regional Office, not estimates made by the assessment author.

2007 catch at age by area and season showed marked differences in the age of catch between the winter fishery and the summer/fall fishery. There are indications of a strong age-2 year class from the catch data in the second half of the year.

Henry Cheng questioned to what extent changes in maturity could be influenced by changes in bottom water temperature. Martin indicated he has not looked into that aspect specifically but that this could merit further evaluation.

Sandra Lowe questioned to what extent the egg production biomass dataset influences model results. Martin indicated that it probably only impacts results close to the time period (1981-1992) that it was utilized and has limited influence on model results at present.

The assessment evaluates the treatment of results from the Miller Freeman versus Oscar Dyson vessel comparison experiment. The Team discussed methodologies for alternative measures for incorporating vessel comparison information. While Martin selected approach #4, incorporating results directly in the log likelihood of the assessment model without a process error term, he noted that there was limited difference between all of the approaches and any modifications could be made easily in next year's assessment.

There was a major change in the estimated age composition in 2008 relative to the previous assessment. The age-4 pollock (2004 year class) is now estimated to be one-half as abundant. Since recent spawning biomass is now lower, fishing mortality estimated to be closer to the OFL fishing mortality threshold than previously believed. Since ABCs are based on the down-sloping portion of the harvest control rule, minor changes in stock size can produce dramatic changes in ABC recommendations.

The Team discussed the change in projections from last year's assessment, which had indicated that 2008 would be the minimum in spawning stock biomass, with an increase projected for 2009 and subsequently. In this year's assessment, the 2009 estimate is similar to 2008, and the projections indicate an increase after this year.

ABC recommendations
The Team endorsed the author's recommended ABC and OFLs for 2009 and 2010 noting the ABC recommendation incorporates added precaution over the use of the point estimate of the model and the maximum permissible F_{ABC} by fixing trawl catchability at 1.0 and applying a more conservative harvest rate than the maximum permissible F_{ABC}. These risk-averse elements reduce the recommended ABC to approximately 54% of the model point estimate.

The GHL for PWS is 1650 t, thus the final 2009 ABC = 41,620 and 2010 ABC =66,050. Julie Bonney requested clarification on the relative differences in pollock backscatter between the Miller Freeman vs. Oscar Dyson in the GOA as compared to the Bering Sea. She was concerned that the calibration factor will be fixed and that the Dyson is likely to become noisier over time. Taina Honkalehto noted that the Dyson's noise profile will be monitored over the years.

Southeast Alaska assessment:
A Tier 5 calculation is employed for the Southeast Alaska portion of the stock.

Allocation to area
The winter allocation is modified this year by applying a multiplier from the vessel comparison between the Miller Freeman and the Oscar Dyson. Different values are employed for Shelikof Strait (1.13) and the Shumagin and Sanak regions (1.31). This procedure shifts some percentage of the catch into 610 and out of 620. This is a transitional step until the four most recent surveys are all done by the Dyson.

The Team discussed the authors recommended approaches for incorporating the vessel comparison data. Jim noted the inconsistency in the use of 1.13 in the allocation scheme, while 1.12 is the estimated OD:MF ratio in the assessment based on the author's recommended approach.

The Team approved the author's recommended apportionment scheme for the ABC.

The Team discussed the change in specifications as recommended now for 2009 with respect to what is currently specified to open the fishery in 2009 (as specified last year). NMFS staff indicated that in-season actions can often be taken to mitigate against changes from one year to the next without having to take emergency rule action. The change from the proposed rule (as specified from the proposed specs in October) to the final specifications can ideally be taken care of without the need for modification in proposed and final rulemaking.

Julie requested a more realistic short-term projections of stock status (2-5 years) in the current specifications process. In recent years the one-year projected ABC has been low, while the two-year out provides a much more optimistic prediction of harvest, yet this has not been borne out in recent years. Martin noted the difficulty in projecting forward under the time frame scenarios as required for stock status determination. The Team discussed other possible means to evaluate status determination scenarios in a more realistic manner than the current projections.

Team members discussed the higher prevalence of 2 year olds in the catch in recent years. Beth Stewart noted that this catch was not desirable but was unavoidable. The public noted that this would be different if the fishery were rationalized as they would have a greater ability to avoid a specific year class. The Team discussed the increased ability of the fleet to stand down from undesirable fishing situations under a rationalized system.

Requests for additional considerations in the next assessment include:
1-Estimate Q.
2-Reevaluate bottom trawl selectivity
3-Start model at age -1 rather than age-2 (to allow for better treatment of recruitment than currently)
4-Incorporate ADF&G information on PWS as available.

GOA Pacific cod (specifications only)

Note for discussion of the Pacific cod assessment model please see the Joint Plan Team minutes.
The Team noted that the assessment is very complex and there are some specific concerns with model specificity and configuration. The Team's primary concerns regarding the model are the following:

1. Fits to the survey time series.
2. The age composition sample size needs to be decreased in order to fit the length data. There appears to be an inconsistency between data sets in the assessment.
3. Age-specific selectivity

The Team requests the assessment include a specific discussion of selectivity outside of the discussion of the model. For example, does the available information on habitat use of Pacific cod, the response to fishing gear, seasonal or ontogentic changes in distributions, changes in natural mortality with age, etc. help explain the selectivity patterns obtained from the model? The Team questioned to what extent the software being employed is limiting the ability to address many issues in the assessment.

The Team had extensive discussions of several model issues. The model does not allow for any catch over age 12. There is a fundamental inconsistency between the size and age compositions from the survey and the biomass from the survey. Thus, the author downweights the age composition data to fit the trend better. Both size and age data have to be downweighted substantially however to fit the observed survey data.

The Team discussed future work on the model and the use of the model for specifications this year. A version of the model was first presented last year but not used for specifications purposes. The model

was next presented in September of 2008. Concerns remain regarding model configuration and specification. The Team discussed the two options of 1-recommending the preferred assessment model (i.e. Model B) for specifications, or 2- employing a Tier 5 calculation as last year.

Julie Bonney requested clarification on why the ABC is so low and how to justify this as reasonable given the expressed concerns by the Team regarding the model and its use for specification purposes.

The Team discussed general trends in survey biomass and model predictions of trends. The further we move from the survey, the less reasonable it seems to base the quota on the survey estimate (as was done last year), as opposed to reliance on a model which incorporates a significant amount of additional data.

After much discussion, the Team provisionally accepted the use of Model B as recommended by the assessment author for specification purposes this year. The Team would like to see additional examination of the selectivity patterns and other issues as noted regarding model configuration. Grant noted that he would like to continue to include both selectivity at age and length in the model.

The Team accepted the authors recommended ABC and OFLs for both 2009 and 2010. The Team reiterates the need for a survey for this stock given the uncertainty surrounding the 2006 year class. For this stock in particular, the absence of additional information leads to increased conservatism in stock management. The uncertainty regarding the incoming year class warrants the need for the additional incremental decrease in the 2010 specifications. There is a great deal of uncertainty in the size of the 2006 year class. This would be the highest recorded year class for this stock since 1976. Grant noted that there has been only limited instances for this stock of year classes initially estimated as strong than did not pan out (in contrast to GOA Pollock, pollock where the magnitude of this situation estimated).The uncertainty regarding the incoming year class seems to warrant the need for an incremental decrease in the 2010 specifications until further information on the strength of the 2006 year class is more common).available.

Flatfish

All flatfish assessments are on an off-year cycle due to the lack of survey data in this assessment cycle. Thus each assessment is an executive summary with full assessments planned for next year.

Deepwater flatfish

Buck Stockhausen presented an overview of the deepwater flatfish assessment. This assessment is also on an off-year schedule thus catches were updated and the projections run for the 2009 and 2010 specifications. Of the deep water flatfish (DWF) species only Dover sole is a Tier 3 species (all others are Tier 6 thus specifications are rolled over from 2008). Fishery size composition data is lacking and may compromise the ability to estimate fishery selectivity. It is unclear as to whether or not this is related to a lack of catch of this species or observer protocols which are not emphasizing this species for sampling purposes. Team members noted that this should be highlighted to the observer program to ensure adequate data is being collected for the assessment.

The Team approved the author's recommended ABCs and OFLs for 2009 and 2010.

Flathead sole

Buck Stockhausen presented an overview of the flathead sole assessment. This assessment is also on an off-year schedule thus catches were updated and the projections run for the 2009 and 2010 specifications. This stock is also lightly fished however catch trends continue to increase, primarily in the CGOA. Size composition data indicates some evidence of recruitment.

The Team approved the author's recommended ABCs and OFLs for 2009 and 2010.

Rex sole

Buck Stockhausen presented an overview of the rex sole assessment. This assessment is also on an off-year schedule thus catches were updated and the projections run for the 2009 and 2010 specifications. Here the biomass is estimated using the projection model but specifications are set using a Tier 5 calculation on the adult biomass from the projection model (rather than the survey estimates). Size composition data indicates some evidence of recruitment.

The Team approved the author's recommended ABCs and OFLs for 2009 and 2010.

Shallow water flatfish

Jack Turnock provided an overview of the shallow water flatfish assessment. This assessment is also on an off-year schedule. These are Tier 4 and 5 species thus ABCs and OFLs are based on survey biomass estimates and are not updated until there is new data to incorporate. Thus specifications this year are a simple rollover from last year.

The Team approved the author's recommended ABCs and OFLs for 2009 and 2010.

Arrowtooth flounder

Jack Turnock provided an overview of the shallow water flatfish assessment. This assessment is also on an off-year schedule thus catches were updated and the projections run for the 2009 and 2010 specifications.

The Team approved the author's recommended ABCs and OFLs for 2009 and 2010.

GOA rockfish

Kalei Shotwell presented an overview of the GOA rockfish assessments. All GOA rockfish are on a biennial assessment cycle and in off-survey years only an executive summary of the full assessment is provided. This is an off-year for these assessments.

Pacific ocean perch

Total catch was less than expected from 2007-2008. Catch is always less than the ABC due to the under-harvested amount from the EYAK/Southeast area. The ABC is slightly higher than last year's 2009 projection.

Julie Bonney requested clarification regarding data gaps and future research, and specifically what model specifications are going to be evaluated in the next assessment. Dana Hanselman replied that a PhD student currently working on evaluating best means to estimate sample size weighting and ages and lengths. This will be applicable for all rockfish models. Julie commented that the catch of POP was difficult to control this season as catch levels at times were so high that there was a fear of exceeding CQ caps in-season. Members of the public questioned the relatively low ABCs when anecdotal evidence from the fishery indicates that abundance is very high right now. There is also evidence of POP aggregations in areas where the fishery has not previously fished. The concerns of exceeding CQ caps led to an actual underharvest of catch this year. The Team noted that this calls further attention to the necessity for a GOA trawl survey. If there is no survey next year as well then there will be further projections based on dated survey information and increased uncertainty on the assessment.

Martin Dorn questioned the perception of stability and strength of recruitment and why it is considered to be stable and strong. Kalei noted that recruitment is based on model estimates and trends consistent with trawl survey results. The Team questioned the impact on this assessment if there were no survey next year. There would likely be a full assessment produced by authors but with limited additional information to include. It was commented that the national initiative for annual catch limits (ACLs)

prescribed that as information decreases then the additional uncertainty will likely result in more conservative management measures.

The Team agreed to include a paragraph in the SAFE report to address concerns if the planned GOA survey is cancelled. They noted that it is unlikely that national guidance will be available in 2009 regarding ACLs and how uncertainty would be explicitly incorporated. The Team discussed whether full assessments or executive summaries would be required in the event of a cancelled survey. The Team noted that new fishery information might be available for some stocks, such as fishery ages or other biological information. The 2008 Aleutian survey was cancelled full assessments were still completed and submitted in that year, thus it is likely full assessments would be required in the GOA as well.

Team members requested clarification on the dichotomy between survey and model biomass estimates. Kalei noted that this is due to the expansion of survey results in the model whereby the model is not accounting for them due potentially to herding issues and difficulty in trawling all areas. She noted that this is the focus of on-going trawlable versus untrawlable research.

The Team approved the recommended ABCs and OFLs for 2009 and 2010.

Northern rockfish

Updated 2007 and 2008 catch total catch were less than expected previously. There has been low recruitment observed in recent years. Jim Ianelli questioned the persistent catch below the TAC levels in recent years. Julie Bonney noted that the POP fishery and coop structure provides a limiting factor on all rockfish catch.

The Team approved the recommended ABCs and OFLs for 2009 and 2010.

Rougheye and blackspotted rockfish

The authors proposed a new chapter name for the rougheye rockfish complex which includes both rougheye and blackspotted rockfish species. Updated catch was included in this executive summary and projections. As with other rockfish species, total catch was less than expected. The assessment highlights research needs for accurate and verified species identification. Preliminary results of 2-day experiment to compare species identification are provided in the assessment chapter. The results indicated a high misidentification of blackspotted rockfish. Reliable identification is necessary for these species prior to development of a rationale for mixed species assessment.

The Team discussed to what extent at-sea genetic identification methods could be used for these species, for example using single-nucleotide polymorphism (SNP). In particular, improved species identification of these species is critical for the surveys. The Team expressed concerns regarding the misidentification of blackspotted rockfish in past surveys and the possibility that results from 2007 are compromised by the misidentification issues between these two species. The Team reiterated their concern that no species should be reported separately in the survey database until reliable criteria for their identification are developed.

The Team approved the recommended ABCs and OFLs for 2009 and 2010.

Pelagic shelf rockfish

Dark, widow and yellowtail rockfish are in Tier 5 thus no updated information (other than catch data) is available in this off-year and ABCs for these species are simply rolled over from 2007 estimates. Dusky rockfish are in Tier 3 and updated catch is included in a new projection. Thus the total ABC is slightly higher than last year due to the increase from dusky rockfish. Dark rockfish are slated to be turned over to the State for full management with a final rule package prepared but not yet implemented, thus

specifications are made for the complex in this cycle both with and without the inclusion of dark rockfish. Implementation of the final rule should be roughly similar to the timing of the final specifications.

Identification problems persist with catch accounting for all of these species. Julie Bonney noted that there are species identification problems at the processing plants between dusky, dark, northern, black and blue rockfish. One component of the northern rockfish is apparently visually very similar to dark rockfish. Craig Faust (Observer Program) reiterated the difficulty of observer identification between other species as well. Nick Sagalkin noted that the State has had difficulty with black rockfish identification where darks have been misidentified as black rockfish. This is potentially complicated by market considerations for black rockfish from the jig fishery whereby they command higher prices than dark rockfish thus an incentive exists to incorrectly identify them on fish tickets.

Jon Heifetz noted that it would be useful to determine what percentage of fish are misidentified by visual markings versus genetic identification. Julie Bonney commented that from the experience of the rockfish pilot program (RPP), sampling at plants is an improvement over onboard sampling. Nick reiterated that the State is also grappling with identification of species at delivery, and is currently using an ad hoc sampling method by State observers for species identification verification. The observer program has noted problems as well, including observers being placed in an enforcement role versus a plant observer role, and the difficulty in ascertaining appropriate sample fractions for each offload.

Staff from the observer program and the State discussed their intent to share techniques for species identification. Nick commented that the GHLs for black rockfish are very small and fisheries and areas could be shut down due to trawl bycatch thus highlighting the importance of this issue if rockfish are misidentified. There is also the possibility that there is a higher biomass of dark rockfish offshore than previously believed. This could prove problematic in management of this species and resulting bycatch in the federal fishery. The Team commented that management and assessment of state rockfish species needs to be expanded.

The Team approved the recommended ABCs and OFLs for 2009 and 2010.

Shortraker and other slope

All of the species in this complex are in Tier 5 with the exception of sharpchin rockfish which is in Tier 4. Thus, specifications for these species are rolled over from the previous year. There are no directed fisheries for shortraker and other slope rockfish.

Rockfish assessments (general overview of response to SSC comments)

All assessments per SSC request include catch distribution maps to show spatial distribution of catch. The Team discussed to what extent catch distribution displays are influenced by observer coverage (100% in CGOA under RPP). Julie Bonney noted that it would be useful to look at the distribution of POP and northern harvests versus dusky rockfish to see where harvests overlap.

Dana Hanselman provided an overview of appendix A to the POP assessment (per GOA plan Team request) regarding the rockfish ABC apportionment method which is based on weighted averages of biomass by region from the 3 most recent surveys. He compared apportionments using either biomass or proportions of biomass in each year under different regional stock trend scenarios. In most instances the differences were minimal between methods. The only time there is a difference is when relative biomass by area is trending differently by year between regions. In those instances apportionments based solely on the weighted average of biomass (rather than proportion) imparts greater error than apportionments based on the relative proportion of biomass by region.

If the management goal is for more harvest in areas where biomass is increasing then the biomass-based method would be preferable, however, if the goal is to be more conservative in areas where biomass is decreasing then the proportion-based method would be preferable.

The Team did not see any compelling reason at this time to modify the current methodology for apportionment.

Survey discussion for GOA

The Team discussed the importance of a continued survey in the GOA and the possibility that no survey will be conducted in 2009 due to limited funding. The Team reiterates their comments below from the September joint plan Team meeting regarding the critical importance of this survey in assessment and management of GOA groundfish.

The Plan Teams are concerned that a reduction in the number and duration of NOAA surveys will negatively impact Alaska fishery stock assessments. NOAA surveys are an integral part of these assessments. These surveys are conducted annually or biennially and provide important time series of information on ichthyoplankton, fish and shellfish.

NOAA surveys were reduced in 2008 relative to previous years. In 2008, the Aleutian Islands bottom trawl survey was eliminated and the Bering Sea surface trawl survey (BASIS) was reduced by about two thirds. Further reductions may occur in 2009. These reductions would significantly impact Alaska fishery stock assessments and our ability to estimate stock condition and recommend catch quotas. Continuation of the standardized NOAA surveys is necessary for the successful management of Alaska groundfish and shellfish fisheries and to reduce uncertainty. As uncertainty increases, generally risk-averse strategies require further reductions in harvests.

Demersal shelf rockfish

Cleo Brylinsky presented an overview of the executive summary of the DSR assessment. This is an off-year for the DSR assessment.

One notable change from last year's assessment is in the treatment of average weight data. Prior to 2008, average weight data was from the directed fishery only. In 2008, these data are from the IPHC survey and for 2009 will come from a combination of directed fishery weights (for the two management areas with directed fisheries) and incidental catch in the halibut fishery. She noted that it is difficult to use submersible survey data to assess average weight for yelloweye rockfish. She noted that halibut survey average weights were not available this year but will be employed in the assessment next year.

Team members made suggestions on ways to utilize the available submersible survey to improve estimates of weight and size in the assessment. Paul Spencer suggested categorizing size of fish from the submersible survey in terms of large, medium, and small fish. Jon Heifetz suggested taking a subsample of lengths only from nearby fish and assume random sample. However, he noted that if smaller rockfish are likely to exhibit avoidance from submersible then this estimate would be biased. Average weight can also be biased high due to hook sizes used in halibut survey and fishery.

The Plan Team approved the authors recommended ABC and OFLs for 2009 and 2010.

Thornyheads

Sandra Lowe provided an overview of the thornyhead rockfish assessment. This assessment is also on an off-year cycle hence only an executive summary was prepared. This is another species for which the GOA trawl survey in 2009 is extremely important. It is also critical that the survey includes deeper strata specifically for this species as they tend to locate in deepest strata on survey.

Specifications for this species are a rollover from last year. The Plan Team approved the authors recommended ABC and OFLs for 2009 and 2010.

Atka Mackerel

Sandra Lowe provided an overview of the Atka mackerel executive summary assessment. This remains a Tier 6 stock. She noted that 2008 catch is nearly 590 tons over the TAC, and significant catches were taken in areas 610 and 620. The RPP is contributing to increased catch and discards of Atka mackerel given the ability of CPs in the program to remain in 610 to target rockfish after the POP fishery closes.

Julie Bonney commented that 1500 tons was intended to meet incidental catch needs based on the amount taken in the rockfish fishery. Julie noted that the increased catch could be due to either increased incidental catch needs or increased topping off. Beth Stewart commented that anecdotal evidence from other fisheries indicated an increased abundance as people are reporting catching Atka mackerel while seining and set netting for salmon.

Mike Syzmanski commented that fishermen believe that the abundance is much higher than previously thought. The Team has historically made TAC recommendations for Atka mackerel based on increased incidental catch needs in the rockfish fishery. Directed fishing for atka is prohibited due to SSL regulations.

The increased catch in 2008 led to a higher proportion of discards, approximately 50% in 2008. Mike noted that the restrictive MRA is also driving these discards. Mary Furuness noted that any change (i.e. increase) in TAC would not have necessarily impacted the amount of discards. The Team discussed the reasons for the increased catch in 2008, including vessels ability to remain in the area under both the RPP and Amendment 80, as well as potentially increased abundance of Atka mackerel resulting in higher bycatch levels.

The Team has previously discussed the need to allow for sufficient bycatch of Atka mackerel so as not to constrain other fisheries while still discouraging targeting of this species. The Team discussed incidental catch needs and the need to increase the TAC recommendation to allow for this. The Team suggests that a 2009 harvest level of 2000 tons may be sufficient to allow for increased incidental catch need.

The Team approved the authors recommendations for OFL and ABCs for 2009 and 2010.

Skates

Olaf Ormseth presented an overview of the skate assessment. This is an off-year for skates so it is an executive summary of the assessment this year. There is no new survey information thus specifications for these species are rollovers from last year.

Bycatch in the IFQ halibut fishery remains problematic. This is a similar problem with dogfish bycatch in the halibut fishery. Tom Pearson commented that currently given high estimates of bycatch in the halibut fishery there is no directed skate fishery allowed. Cindy Tribuzio is working to obtain estimates for shark species bycatch in the halibut fishery. The Team discussed the continuing problem with estimating bycatch from the halibut fishery. Cleo suggested requesting logbook data to evaluate depth at which they are fishing to obtain additional information for bycatch estimation. The halibut commission does not consider that the survey bycatch information is appropriate to extrapolate to the commercial fleet but she noted that logbook data can be used from the fleet.

The Team discussed whether or not skates caught in the halibut fishery are discarded. Tom noted that many anecdotal reports indicate that they are discarded. Chris Lunsford indicated that commercial

fishermen are starting to retain them as the price for whole skates and skate wings is increasing. Skates are processed onboard.

The State of Alaska is planning to open a skate fishery in PWS. This fishery will be opened in Orca Bay near Cordova. Ken Goldman and Charlie Trowbridge are working to establish guidelines for the fishery. This population is not an assessed portion of PWS thus the catch would not come off the federal TAC.

The Team reiterates their concerns regarding assessment and management of this stock in light of a potential directed fishery in PWS. The following is excerpted from the September 2008 GOA Plan Team minutes:

The Plan Team expressed concern regarding the prosecution of a state waters skate fishery in the absence of any information on the stock. Skates may be vulnerable to over-fishing and if bycatch rates are high in the halibut fishery, added conservation measures may be warranted. This was based on the experience of recent skate management actions in federal waters where high bycatch levels in the halibut fishery precluded the prosecution of a directed fishery in federal waters.

If a directed fishery develops, the Team would like to investigate to what extent this catch should come off the federal TAC. This should be a consideration in the assessment of this stock particularly to what extent it is a single stock in comparison to the GOA stocks including species by species analysis. An index of abundance is necessary for any indication of appropriate harvest thresholds for this stock. The Team expressed concern about the amount of effort that could possibly be involved in this fishery based on current effort in the PWS halibut fishery and the inability of the state to limit entry to this fishery using a commissioner's permit.

The Team requested that if a model is being employed for Tier 3 specifications for skates in the Bering Sea then this should be discussed in the GOA as well. It is possible that Tier 5 may not be sufficiently conservative for this stock. Data on age structure in the GOA is being collected. Beth Matta provided an overview of ongoing maturity studies and age structured data. Fishery data in the GOA is still limited thus assessment authors have not yet moved forward with modeling skate populations in the GOA as with the BSAI. Species identification remains problematic. Length data is also lacking.

The Team suggested including estimates of area-specific ABCs and OFLs for other skates in the next year's assessment. It would be useful to compare these estimates by area with catches by area.

The Team encouraged working with Cindy Tribuzio and other assessment authors (sharks, skates, DSR, cod) to evaluate means of estimating bycatch in the halibut fishery.

The Plan Team approved the author's recommended ABCs for 2009 and 2010. The Team continues to recommend GOA-wide OFLs for these stocks however rather than the author's recommendations for area-specific OFLs.

The Team requested that if time allows in September that a joint assessment presentation be given to the joint Teams on both the BSAI assessment for skates and GOA assessment for skates.

Other species

The GOA FMP has now been amended to allow for aggregate specifications to be set for the other species complex. As with the BSAI, separate species-specific assessments and specification recommendations are considered by the Team with the resulting ABCs and OFLs summed to form the aggregate complex-level specifications. While this is the first year of separate specifications for other species in the GOA, draft assessments were presented last year and included as appendices to the GOA SAFE report thus some of the assessment are presented in the context of updates from the previous assessment.

Sharks

Jon Heifetz presented an overview of the GOA sharks assessment. Updated catch data for 2008 and biomass estimates for 2007 were included. The authors recommend a Tier 6 approach using average catch over a specified time period not the maximum catch approach as recommended previously. The authors also recommended expanding the timeline for average catch calculations to include 2007 in order to have a longer time series of catch data.

Shark catch declined in 2008 dramatically. The Team discussed the possibility of modest directed fishery for all other species combined on the order of 500 t.

Cindy Tribuzio reviewed the biological parameters included in the assessment. Team members questioned some of the terminology and indications of these parameters. She explained that 'rebound' is an indication of the population growth rate, which for spiny dogfish means that it has potential to grow at 3.4 % in an unfished population. Team members requested clarification on why the Fmax for salmon shark is larger than intrinsic growth rate? It appears that 0.012 is too low. Cindy checked on this and noted that Salmon shark have a much lower annual fecundity and reproductive potential, thus a slower potential population growth rate.

The authors noted that Tier 5 estimates could be calculated using the last three surveys but this approach is not recommended at this time due to lack of confidence in the biomass estimates and that natural mortality estimates only exist for spiny dogfish and salmon shark. Spiny dogfish could be considered as a Tier 5 species in the future with remaining sharks as tier 6.

The authors and Team expressed concerns with the unobserved halibut fishery catch which could represent significantly increased catch of sharks. The Team discussed directed fisheries for sharks in other parts of potential range. Cindy noted there are targeted fisheries in Japan and BC. There is some indication of interest in Alaska for directed fishing, and some permits issued but not active in the last few years. The setnet fishery in Yakutat can retain up to 100% of landings as dogfish while the hook and line fishery can retain up to 35% of landings. The Team reiterated concerns regarding the vulnerability of sharks to overfishing.

Team members discussed information availability on stock structure for sharks. Jon commented that assumed stock structure is based on work in other regions which may not be best representative of the North Pacific as these regions have bays with more resident type fish while the larger North Pacific population may be more migratory. The assessment assumes a closed population, but this may not be the case and further research needs to be done to evaluate estimates of stock structure and migration. The Team recommendation further research on stock structure and a better evaluation of the incidental catch of sharks in the halibut fishery.

Plan Team recommendations

The Plan Team concurs with the author's recommendations for Tier 6 using average catch over the longer time period 97-07 for ABC and OFL considerations.

Tom Pearson noted that if sharks were standalone species for specifications this would not be advisable as this would be a constraining to other fisheries unnecessarily. Currently they remain aggregated within the remaining other species complex.

The Team recommends continued work on evaluating Tier 5 assessment for spiny dogfish and sleeper sharks in next year's assessment.

Squid

Olaf Ormseth presented the overview of squid assessment. The assessment focuses on a discussion of squid as important prey item. Predation of squid likely depends on species and life stage of species. Abundance is poorly sampled, with biomass estimates highly variable and likely represent underestimates. Squid catch has been generally low but there was a very high recorded catch in 2006 primarily in the pollock fishery. The highest catches are in 620. The Team discussed the potential for higher catches in February and March. Julie Bonney commented that absent rationalization in the GOA, the ability to respond quickly to these pulse catch situations is compromised.

The Team noted problems with Tier 5 specifications for squid, specifically poor biomass estimates, and very high mortality rate estimates. More reasonable alternative estimates for M should be explored. The Team discussed different F options including the NW Atlantic where the F rate is applied as a monthly reference fishing mortality.

The Team discussed the intent of Tier 5 in that it implies the existence of reliable biomass estimates. Should Tier 5 be recommended for a species with poor biomass estimates from the survey? Olaf noted that problems exist with management at both Tiers 5 and 6. While noting that biomass estimates are not perfect, he characterized them as reliable for purposes of minimum biomass estimates. Tier 6 is very problematic due to short catch history which does not reflect productivity and results in very low ABCs.

ABC recommendations

The Team notes that the author's recommendation includes consideration of balancing conservation and management objectives. The Team discussed the problem with potentially codifying the use of three most recent surveys for biomass estimates and the difficulty using older biomass estimates from surveys given the life history characteristics and short lifespan. The Team discussed using only the most recent survey instead of an average over several surveys.

Paul Spencer commented on evaluating sampling variability in conjunction with the time frame for survey inclusion. He suggested the use of a weighted average for surveys. The Team discussed Option 1 in the assessment which uses an Fofl=0.25 and the Option 2 decay function and how this is solved by replacing F with M.

Specifications discussion

The Team had extensive discussion of the different specifications resulting from Tier 5 or Tier 6 management. The Team was uncomfortable with the use of Tier 5 biomass estimates but also discomforted by the ABCs and OFLs which result from Tier 6 due to the nature of the incidental catch included. The Team notes that if Tier 6 had a higher ABC and OFL then would be more comfortable. Team members questioned the differential biomass estimate reliability in the Bering Sea than the GOA. Olaf noted that the EBS shelf survey is arguably worse for squid than the GOA survey and biomass estimates in the GOA tend to be more reliable than in the Bering Sea.

While the Team agreed with the author's approaches, the Team was not comfortable with either the biomass estimates or the prescribed F_{OFL} since this value by definition should be prescribed by the Tier system itself as a result of tier determination. The Team was uncomfortable with Tier 5 determination despite the potential constraining aspect to the Tier 6 ABC and OFL.

The Team therefore recommends Tier 6 determination for squid species. The Team then had extensive discussion of multiple approaches to estimate an appropriate catch level for the ABC and OFL. The Team thought that the prescribed average catch under Tier 6 was inappropriate. Alternatives discussed included the following:

1. maximum catch rather than average catch
2. 25% exploitation rate applied to average biomass levels

3. 3 year moving catch average rather than maximum catch

The Team recommended the use of #1, the maximum catch level for the OFL over the time period given that additional information is available to suggest that current catch levels are not compromising the stock. This would lead to an OFL of ~1500 and ABC of 75%OFL. The Team thinks this would represent an interim approach and the Team encourages further development of alternative management for squid understanding that the current tier system is not appropriate to current management of this species.

Discussion of alternatives for squid management
The Team discussed alternative management possibilities for squid management given indications that the current Tier System is inadequate for squid management. Recommendations included the following: move squid into the forage fish category, time and area closures for squid, other alternative management measures. Some issues were noted with movement into forage fish category, notably the potential restriction of the 2% MRA and specific restrictions on processing. If moved to forage fish would need to consider MRA options and processing options.

Olaf noted that there is no upper limit on exploitation of squid and forage fish. Some additional considerations are to evaluate intensive management akin to the Japanese management of squid. There are possible concerns with localized depletion of the prey field but information is limited to determine this. Time area closures are difficult to enact and predict particularly when the timeframe for pulse of catch is very short. Olaf noted some problems with catch data which often comes back as unidentified squid thus difficult to determine if these are spawning aggregations. Some length information are available but not species identification.

Octopus
Liz Conners presented an overview of the Octopus assessment. This is an executive summary of the assessment given that there is no new survey information. The bottom trawl survey estimates do not represent reliable biomass estimates for this stock. If separate specifications were established for octopus it is highly likely that the Tier 6 specifications would be constraining, particularly for the Pacific cod pot fishery. The authors do not think that the average catch approach for octopus is appropriate, nor is Tier 5 justifiable given biological constraints.

Specifications discussion
The authors continued to recommend an alternative Tier 6 calculation using maximum catch. The Team notes this calculation represents an inconsistency with the approach chosen by the Team for Squid. For octopus, the assessment authors recommend a Tier 6 maximum catch calculation where the ABC is established as the maximum catch with the OFL established as a higher % value. The Team instead recommends a similar approach to squid with OFL as the maximum catch and the ABC as 75% of this OFL value. This leads to a recommended OFL =298 and an ABC of 224 t. This should also be considered as an interim measure given that our current tier system is not adequate to manage octopus.

The Team discussed to what extent octopus fits into the forage fish category. The Team does not recommend its inclusion in the forage fish category. The Team discussed the problems with processing under the forage fish processing ban. This species would be a good candidate for management by the State of Alaska solely but the State is not interested in sole management of this species. The majority of catch occurs in Federal waters due to incidental catch but biomass could be largely in State waters.

Liz commented on current and proposed research for octopus. She mentioned their NPRB proposal to evaluate reproductive seasons, habitat, pot gear and tagging and that this study might enable a better estimate for M for this species. This would enable some potential for moving towards a true Tier 5 management category for octopus. The Team encourages further research to move this species into a Tier 5 category.

The Team also encourages further development and consideration of the employment discard mortality rates for this species as presented at the September plan Team meeting, particularly given the potential for separate specifications for this species in the future.

Sculpins

Rebecca Reuter presented an overview of the sculpins assessment. Unlike the other species in this complex sculpin biomass estimates from the trawl survey are considered reliable. The authors note an increased catch of sculpins in the last year, primarily due to increased catch in the shallow water flatfish category. Beginning in 2008 catch by species is available from observer estimates. There is an incremental increase in percentage retained in recent years.

Specifications discussion

The authors recommend Tier 5 with a conservative aggregate species M estimate. She noted that in the Bering Sea species specific natural mortality is applied and the specifications then aggregated afterwards to the complex level. This information is not included in the GOA assessment this year.

The Team recommended using the aggregate M this year as presented in the assessment but that species specific natural mortality rates be included for consideration for next year.

The Team discussed the possibility of splitting sculpin specifications out by species in the future. Rebecca noted that these species are very variable in biological characteristics and that the complex also exhibits spatial variability and is diverse. Observer identification is considered good for the top 5 species in the catch data.

Forage Fish

Olaf Ormseth presented an overview of the forage fish assessment. The Team requested a full assessment for forage fish in this off-year scheduling in order to spend additional time discussing this assessment. Eulachon is the most frequently caught species in the category. Eulachon is a valuable prey species for Cook Inlet belugas as well. There are indications from various survey information of increased eulachon abundance in recent years.

Genetic stock identification work is not available yet for eulachon but work is on-going. Migration of eulachon from spawning regions is also unknown and aging eulachon is difficult. Ecosystem estimates indicate much higher abundance than survey indications. Capelin abundance estimates were also provided in the assessment.

The Team discussed the small mesh survey: Nick noted that there is an ADF&G and NMFS cooperative project to conduct small mesh survey with some funding provided by NMFS. This survey is very valuable in many respects both for indications of recruitment for many species as well as for indices of abundance for forage fish. The Team encourages the continuation of these surveys.

Management aspects of forage fish category:

The Team discussed current management of the forage fish category. The MRA 2% threshold was not based on estimates of sustainability but on accommodating existing incidental catch levels. MRA are on a trip basis. Julie noted that given current observer coverage in the GOA it would be impossible to have tow level accountability. The Team discussed the possibility of a floating MRA based on abundance and questioned how to modify processing restrictions should additional species (such as squid) be moved into this category. The Team recommends that these considerations be explicitly evaluated in any management amendment analysis for forage fish. The processing limitation may not be appropriate for squid. Anne Hollowed further noted that treatment of giant squid should be potentially different from other squid species in that they may not be appropriate for the forage fish category.

Dana Seagar (NOAA PR) commented that Cook Inlet eulachon stocks be further evaluated given the listing of the Cook Inlet belugas and the importance of eulachon as prey items. The Team continues to recommend inclusion of this assessment as an appendix to the SAFE report on an annual basis. The full extent of the assessment will depend upon availability of updated and new information.

Grenadiers

Jon Heifetz presented an overview of the grenadiers assessment. This assessment is included as an appendix to the SAFE report given that grenadiers are a non-specified species currently under the GOA (and BSAI) FMP. The assessment focuses on giant grenadiers. The assessment authors reiterate strongly the need to move the grenadiers back into the FMP to allow for managed status for this stock. This is the first year of good species identification and aging results for giant grenadier. The new estimate of maximum age is 58 years with a new mortality estimate of 0.078.

The majority of the catch comes from the GOA. Catch of giant grenadiers exceeds catch of all other species under FMP. Grenadiers are mostly caught in pot and longline fisheries.

The Team agrees with the authors recommendation for Tier 5 for this stock given reliable biomass estimates from the trawl surveys. The Team would like to see an option for region-specific ABCs and catches by region for grenadiers included in the next update of this assessment.

The Team notes that the authors think that grenadiers should be moved back into the FMP for management purposes. The Team agrees that this complex should be moved into the target categories such that separate specifications could be established for them. The Team reiterates previous requests that the analysis to move grenadiers into the FMP be listed as a priority for the Council for the GOA if not in both regions.

November GOA Plan Team OFL and ABC Recommendations for 2009-'10

Stock/ Assemblage	Area	2008 OFL	2008 ABC	2008 TAC	2008 Catch	2009 OFL	2009 ABC	2010 OFL	2010 ABC
	W (61)		17,602	17,602	17,239		15,249		24,199
	C (62)		19,181	19,181	19,058		14,098		22,374
	C (63)		13,640	13,640	14,263		11,058		17,548
	WYAK		1,517	1,517	1,161		1,215		1,929
	Subtotal	72,110	51,940	51,940	51,721	58,590	41,620	90,920	66,050
	O	11,040	8,240	8,240	0	11,040	8,280	11,040	8,280
Pollock	Total	83,150	60,180	60,180	51,721	69,630	49,900	101,960	74,330
	W		25,932	19,449	14,696		21,567		31,005
	C		37,901	28,426	27,445		31,521		45,315
	E		2,660	2,394	283		2,212		3,180
Pacific Cod	Total	88,660	66,493	50,269	42,424	66,600	55,300	126,600	79,500
	W		1,890	1,890	1,663		1,640		1,523
	C		5,500	5,500	5,268		4,990		4,625
	WYAK		2,120	2,120	2,054		1,784		1,645
	SEO		3,220	3,220	3,299		2,746		2,544
Sablefish	Total	15,040	12,730	12,730	12,284	13,190	11,160	12,321	10,337
Deep-water flatfish[1]	W		690	690	13		706		747
	C		6,721	6,721	543		6,927		7,405
	WYAK		965	965	1		997		1,066
	O		527	527	4		538		575
	Total	11,343	8,903	8,903	561	11,578	9,168	12,367	9,793
Shallow-water flatfish[2]	W		26,360	4,500	754		26,360		26,360
	C		29,873	13,000	8,135		29,873		29,873
	WYAK		3,333	3,333	0		3,333		3,333
	O		1,423	1,423	0		1,423		1,423
	Total	74,364	60,989	22,256	8,889	74,364	60,989	74,364	60,989
	W		1,022	1,022	181		1,007		988
	C		6,731	6,731	2,517		6,630		6,506
	WYAK		520	520	0		513		503
	O		859	859	0		846		830
Rex sole	Total	11,933	9,132	9,132	2,698	11,756	8,996	11,535	8,827
Arrowtooth flounder	W		30,817	8,000	3,113		30,148		29,843
	C		167,936	30,000	25,928		164,251		162,591
	WYAK		15,245	2,500	34		14,908		14,757
	O		12,472	2,500	88		12,205		12,082
	Total	266,914	226,470	43,000	29,163	261,022	221,512	258,397	219,273
Flathead sole	W		12,507	2,000	286		13,010		13,342
	C		28,174	5,000	3,110		29,273		30,021
	WYAK		3,420	3,420	0		3,531		3,622
	O		634	634	0		650		667
	Total	55,787	44,735	11,054	3,396	57,911	46,464	59,349	47,652
Pacific ocean perch	W	4,376	3,686	3,686	3,670	4,409	3,713	4,405	3,710
	C	9,717	8,185	8,185	7,625	9,790	8,246	9,782	8,239
	WYAK		1,100	1,100	1,100		1,108		1,107
	SEO		2,028	2,028	0		2,044		2,042
	E(subtotal)	3,714	3,128	3,128	1,100	3,741	3,152	3,738	3,149
	Total	17,807	14,999	14,999	12,395	17,940	15,111	17,925	15,098

November GOA Plan Team OFL and ABC Recommendations for 2009-'10									
Stock/ Assemblage		2008				2009		2010	
	Area	OFL	ABC	TAC	Catch	OFL	ABC	OFL	ABC
Northern rockfish[3]	W		2,141	2,141	1,885		2,054		1,965
	C		2,408	2,408	2,126		2,308		2,208
	E		0	0	0		0		0
	Total	5,430	4,549	4,549	4,011	5,204	4,362	4,979	4,173
Rougheye	W		125	125	77		125		126
	C		834	834	183		833		842
	E		327	327	120		326		329
	Total	1,548	1,286	1,286	380	1,545	1,284	1,562	1,297
Shortraker	W		120	120	132		120		120
	C		315	315	241		315		315
	E		463	463	219		463		463
	Total	1,197	898	898	592	1,197	898	1,197	898
Other slope[3]	W		357	357	297		357		357
	C		569	569	435		569		569
	WYAK		604	604	50		604		604
	O		2,767	200	24		2,767		2,767
	Total	5,624	4,297	1,730	806	5,624	4,297	5,624	4,297
Pelagic shelf rockfish	W		1,003	1,003	572		819		765
	C		3,626	3,626	2,866		3,404		3,179
	WYAK		251	251	195		234		219
	O		347	347	1		324		302
	Total	6,400	5,227	5,227	3,634	5,803	4,781	5,420	4,465
Demersal rockfish		611	382		261	580	362	580	362
	Total			382					
Thornyhead rockfish	W		267	267	274		267		267
	C		860	860	299		860		860
	E		783	783	164		783		783
	Total	2,540	1,910	1,910	737	2,540	1,910	2,540	1,910
Atka mackerel	Total	6,200	4,700	1,500	2,071	6,200	4,700	6,200	4,700
Big skate	W		632	632	130		632		632
	C		2,065	2,065	1,196		2,065		2,065
	E		633	633	48		633		633
	Total	4,439	3,330	3,330	1,374	4,439	3,330	4,439	3,330
Longnose skate	W		78	78	31		78		78
	C		2,041	2,041	847		2,041		2,041
	E		768	768	118		768		768
	Total	3,849	2,887	2,887	996	3,849	2,887	3,849	2,887
Other skates	Total	2,806	2,104	2,104	1,178	2,806	2,104	2,806	2,104
Other Species	Total		n.a.	4,500	2,116	8,720	6,540	8,720	6,540
Total		**665,642**	**536,201**	**262,826**	**181,687**	**632,498**	**516,055**	**722,734**	**562,762**