North Pacific Fishery Management Council

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September 28, 2007

DRAFT AGENDA
184th Plenary Session
North Pacific Fishery Management Council
October 3-9, 2007
Hilton Hotel
Anchorage, Alaska

The North Pacific Fishery Management Council will meet October 3-9, 2007 at the Hilton Hotel, 500 West 3rd Avenue, Anchorage, AK. Other meetings to be held during the week are:

Committee/Panel	Beginning
Advisory Panel	Oct 1-6, Mon – 8:00am - Dillingham/Katmai
Scientific and Statistical Committee	Oct 1-3, Mon – 8:00am - King Salmon Room
Enforcement Committee	Oct 2, Tue - 1-4pm - Iliamna Room
Crab Advisory Committee	Oct 2, Tue - 6-8pm - King Salmon Room

All meetings are open to the public, except executive sessions of the Council. Other committee and workgroup meetings may be scheduled on short notice during the week, and will be posted at the hotel.

INFORMATION FOR PERSONS WISHING TO PROVIDE PUBLIC COMMENTS

Sign-up sheets are available at the registration table for those wishing to provide public comments on a specific agenda item. Sign-up must be completed **before** public comment begins on that agenda item. Additional names are generally not accepted **after** public comment has begun.

Submission of Written Comments. Written comments and materials to be included in Council meeting notebooks must be received at the Council office by **5:00 pm (Alaska Time) on September 26, 2007.** Written and oral comments should include a statement of the source and date of information provided as well as a brief description of the background and interests of the person(s) submitting the statement. Comments can be sent by mail or fax—please **do not** submit comments by e-mail. **It is the submitter's responsibility to provide an adequate number of copies of comments after the deadline**. Materials provided **during** the meeting for distribution to Council members should be provided to the Council secretary. A minimum of **25** copies is needed to ensure that Council members, the executive director, NOAA General Counsel, appropriate staff, and the official meeting record each receive a copy. If copies are to be made available for the Advisory Panel (**28**), Scientific and Statistical Committee (**18**), or the public after the pre-meeting deadline, they must also be provided by the submitter.

FOR THOSE WISHING TO TESTIFY BEFORE THE ADVISORY PANEL

The Advisory Panel has revised its operating guidelines to incorporate a strict time management approach to its meetings. Rules for testimony before the Advisory Panel have been developed which are similar to those used by the Council. Members of the public wishing to testify before the AP **must** sign up on the list for each topic listed on the agenda. Sign-up sheets are provided in a special notebook located at the back of the room. The deadline for registering to testify is when the agenda topic comes before the AP. The time available for individual and group testimony will be based on the number registered and determined by the AP Chairman. **The AP may not take public testimony on items for which they will not be making recommendations to the Council.**

FOR THOSE WISHING TO TESTIFY BEFORE THE SCIENTIFIC AND STATISTICAL COMMITTEE

The usual practice is for the SSC to call for public comment immediately following the staff presentation on each agenda item. In addition, the SSC will designate a time, normally at the beginning of the afternoon session on the first day of the SSC meeting, when members of the public will have the opportunity to present testimony on any agenda item. The Committee will discourage testimony that does not directly address the technical issues of concern to the SSC, and **presentations lasting more than ten minutes will require prior approval from the Chair.**

COMMONLY USED ACRONYMS

ABC Acceptable Biological Catch
AP Advisory Panel
ADFG Alaska Dept. of Fish and Game
BSAI Bering Sea and Aleutian Islands
CDQ Community Development Quota
CVOA Catcher Vessel Operational Area
EAM Ecosystem Approach to Management
EA/RIR Environmental Assessment/Regulatory Impact Review
EEZ Exclusive Economic Zone
EFH Essential Fish Habitat
ESA Endangered Species Act
FEP Fishery Ecosystem Plan
FMP Fishery Management Plan
GHL Guideline Harvest Level
GOA Gulf of Alaska
HAPC Habitat Areas of Particular Concern
IFQ Individual Fishing Quota
IPHC International Pacific Halibut Commission
IRFA Initial Regulatory Flexibility Analysis
IRIU Improved Retention/Improved Utilization
ITAC Initial Total Allowable Catch
LAMP Local Area Management Plan
LLP License Limitation Program
MSFCMA Magnuson-Stevens Fishery Conservation and Management Act
MMPA Marine Mammal Protection Act
MRA Maximum Retainable Amount
MSY Maximum Sustainable Yield
mt Metric tons
NMFS National Marine Fisheries Service
NOAA National Oceanic & Atmospheric Adm.
NPFMC North Pacific Fishery Management Council
OY Optimum Yield
POP Pacific ocean perch
PSC Prohibited Species Catch
SAFE Stock Assessment and Fishery Evaluation Document
SSC Scientific and Statistical Committee
SSL Steller Sea Lion
TAC Total Allowable Catch
USFWS United States Fish & Wildlife Service
VIP Vessel Incentive Program

DRAFT AGENDA
184th Plenary Session
North Pacific Fishery Management Council
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Estimated Hours

A. CALL MEETING TO ORDER
(a) Oath of Office
(b) Election of Officers
(c) Approval of Agenda
(d) Approval of Minutes

B. REPORTS (6 hrs)
B-1 Executive Director's Report (including MSA update)
B-2 NMFS Management Report
B-3 USCG Report
B-4 ADF&G Report
B-5 USFWS Report
B-6 Protected Species Report (SSL Measures EIS: Review Notice of Intent; Draft MMPA List of Fisheries for 2008; SSL Recovery Plan and BiOp Update, action as necessary)
B-7 NOAA General Counsel (informational handout)

C. NEW OR CONTINUING BUSINESS

C-1 Charter Halibut Management (16 hrs)
(a) ADF&G report on 2006 data.
(b) Initial review of Charter Halibut 3A GHL Measures.
(c) Preliminary review of Charter Halibut Allocation/Compensation.
(d) SSC review of charter halibut discard mortality information.(SSC only)
(e) SSC review of estimation procedures for charter halibut, DSR, and shark catch. (SSC only)

C-2 Halibut Subsistence (1 hr)
Discuss Alternatives for Halibut Subsistence Rural definition.

C-3 BSAI Crab Fishery Management (10 hrs)
(a) ~~Report on Crab data collection quality/confidentiality.~~ (delayed until Dec)
(b) Committee report-discussion paper on BSAI Crab 'B' Shares. Council Direction
(c) Initial review BSAI Crab 'C" share 90/10 exemption.
(d) Initial review BSAI Crab custom processing.
(e) Initial review BSAI Crab post-delivery transfers.

C-4 GOA Groundfish Issues (5 hrs)
(a) Preliminary review GOA P. cod sector split.
(b) Discussion paper on GOA fixed gear LLP recency; action as necessary.
(c) Discussion paper on GOA Sideboards; action as necessary.
(d) Initial review CGOA rockfish post-delivery transfers.

C-5 LLP Trawl Recency (3 hrs)
Initial review of EA/RIR/IRFA.

C-6 Amendment 80 (1 hr)
Review discussion paper on Amendment 80 post-delivery transfers.

C-7 Socioeconomic Data Collection (1 hr)
Report on Comprehensive socioeconomic data collection.

D. FISHERY MANAGEMENT PLANS

D-1 Groundfish Management (4 hr)
(a) Final action on GOA arrowtooth MRA - Regulatory amendment.
(b) Initial review WGOA pollock trip limit- Regulatory amendment.
(c) Report on specifications per Amendment 80 and 85; action as necessary.
(d) Review new stock assessment information (SSC only)/Initial action on Groundfish specifications.
(e) Discussion paper on seabird avoidance measures for Area 4E; action as necessary.
(f) Review tasking plans for managing Other Species complex and discussion paper on analytical approach.

D-2 Salmon Management (2 hr)
(a) Salmon Bycatch Workgroup report.
(b) Refine problem statement and alternatives.
(c) Report on Salmon excluder EFP.

D-3 Crab Management (2 hrs)
(a) Crab Plan Team Report; Approve BSAI crab SAFE.
(b) Initial review BSAI crab overfishing definition.

D-4 Arctic Fishery Management (1 hr)
(b) Ecosystem Committee report and action as necessary.
(a) Review and approve outreach plan.

D-5 Staff Tasking (4 hrs)
(a) Review Committees and tasking, and take action as necessary.
(b) ~~Review broader (PSEIS) community outreach plan (T)~~ (delayed until December)
(c) Remainder of Ecosystem report and action as necessary.

D-6 Other Business

Total Agenda Hours: 56 hours

OCTOBER 2007

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 SSC/AP	2 SSC/AP	3 SSC/AP Council	4 AP/Council	5	6 AP/Council
7 Council	8 Council	9 Council	10	11 PNCIAC - Sea	12	13
14	15	16 SSLMC thru 18 - Sea	17	18	19	20
21	22	23 Council member training thru 25 - WA, DC	24	25	26 PICES thru Nov 1 - Victoria, BC	27
28	29	30	31 Charter Halibut Stakeholder Mtg thru 2nd - Anch			

NOVEMBER 2007

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12 Veteran's Day	13 Groundfish PT thru 16 - Sea BOF thru 15th-Homer AFS/AK Chapter thru 16 - Ketchikan	14	15	16	17
18	19	20	21	22 Thanksgiving	23	24
25	26	27	28	29	30	

DECEMBER 2007

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 SSC/AP	4 SSC/AP	5 SSC/AP Council	6 AP/Council	7 AP/Council	8 AP/Council
9 Council	10 Council	11 Council Crab Interagency Research Mtg thru 13 - Anch	12	13	14	15
16	17	18	19	20	21	22
23	24	25 Christmas	26	27	28	29
30	31					

JANUARY 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 New Year's Day	2	3	4	5
6	7	8 Interium CCC/NOAA workshop thru 10th - DC	9	10	11	12
13	14 Martin Luther King Day	15 IPHC meeting thru 18 - Portland	16	17	18	19
20	21 AK Marine Science Symposium thru 23 - Captain Cook Anch	22	23	24	25	26
27	28	29	30	31		

FEBRUARY 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4 SSC/AP	5 SSC/AP	6 SSC/AP/ Council	7 AP/Council	8 AP/Council	9 AP/Council
10 Council	11 Council	12 Council	13	14	15	16
17	18 President's Day	19	20 Scallop Plan Team thru 21 (T)	21	22	23
24	25	26	27	28	29	

MARCH 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23 Easter	24	25	26	27	28	29
30	31 SSC/AP					

APRIL 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 SSC/AP	2 SSC/AP/ Council	3 AP/Council	4 AP/Council	5 AP/Council
6 Council	7 Council	8 Council	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5 Annual CCC and NOAA meeting thru 9th - St Thomas, VI	6 Crab Plan Team thru 8th - Sea	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 Memorial Day	27	28	29	30	31

JUNE 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 SSC/AP	3 SSC/AP	4 SSC/AP/ Council	5 AP/Council	6 AP/Council	7 AP/Council
8 Council	9 Council	10 Council	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

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Certified: John Bundy
Date: 9/26/07

SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
August 1-2, 2007

The SSC met during August 1-2, 2007 at the Marriott Hotel, Anchorage, Alaska. Members present were:

Pat Livingston, Chair *NOAA Fisheries—AFSC*	Keith Criddle, Vice Chair *University of Alaska Fairbanks*	Sue Hills *University of Alaska Fairbanks*
Anne Hollowed *NOAA Fisheries—AFSC*	George Hunt *University of Washington*	Lew Queirolo *NMFS—Alaska Region*
Terry Quinn II *University of Alaska Fairbanks*	Farron Wallace *Washington Dept of Fish and Wildlife*	Doug Woodby *Alaska Department of Fish and Game*

Members absent were:

Bill Clark *International Pacific Halibut Commission*	Gordon Kruse *University of Alaska Fairbanks*	Seth Macinko *University of Rhode Island*
Franz Mueter *SigmaPlus Consulting*		

A. Review of May 2007 Draft Revised SSL Recovery Plan

Presentations were provided by Bill Wilson (NPFMC staff), Kaja Brix (NMFS-PRD), Tom Gellatt (NMFS-NMML), Lowell Fritz (NMFS-NMML), Paul Wade (NMFS-NMML), Tom Loughlin (TRL Wildlife Consulting), Don Bowen (NPRB Review Panel), and Earl Krygier (ADF&G). Public testimony was provided by Andrew Trites (UBC, NPMMC, and former member of SSLRT), Dave Fraser (FV Muir Milach and former member of SSLRT), John Gauvin (H&G Workgroup), and Dave Benton (MCA).

The May 2006 draft recovery plan, prepared by the Steller sea lion recovery team (SSLRT), was delivered to NMFS and the SSLRT disbanded upon completion of that draft. Subsequently, the May 2006 draft was revised by NOAA. The SSC notes that the current May 2007 draft, while built upon the foundation of work completed by the SSLRT, is not solely the product of that team and, therefore, may not necessarily reflect the views of all of the SSLRT members.

The SSC appreciates the substantial efforts that were involved in developing the revised draft recovery plan and in organizing the external reviews of earlier drafts of the recovery plan. Some portions of this draft have incorporated previous comments made by the SSC. However some issues are still outstanding and these form the basis of our comments that follow.

Background and Conservation Measures

Distribution and Population Structure. The SSC appreciates the added information on the Asian portion of the wDPS and some additional discussion on the possibility of SSL being a metapopulation. However, metapopulations or other alternatives to the current legally sanctioned structure of two distinct populations should be developed further. In particular, a discussion of the criteria (for example, rates of movement, in addition to genetics) that would be needed for the agency to revise its determination of the population structure would be helpful. The SSC recognizes that analysis and interpretation of genetic and movement data are not easy. **Therefore, until stock structure has been definitively delineated, the recovery plan should explore the management implications of possible alternative stock structures.**

The recovery plan does not include a parallel discussion of population structure (or lack thereof) for the eDPS. As a basis for and justification of the subsequent lack of subregional recovery requirements, it seems reasonable to expect evidence here that the eDPS has no structure, or much less than that in the wDPS. This aspect of similarity or dissimilarity between the eDPS and wDPS should be explored.

Habitat characterization and use. The new information on habitat usage by Steller sea lions (presented in section 2—Marine Habitat Use) improves on the information that was originally used to designate critical habitat (section 3—Designated Critical Habitat). Thus, in accord with our previous recommendations, the SSC recommends that Recovery Task 2.1 (maintain, modify as needed, critical habitat) be given a priority of 2a, instead of 3.

Feeding Ecology. Data on energetic demands should be addressed separately from discussion of the validity of the "junk food hypothesis"; understanding energetic demands is important to understanding potential impediments to Steller sea lion recovery, irrespective of the validity of the "junk food hypothesis". Continued use of the term "junk food" in reference to nutritional studies is potentially confusing and should be discontinued.

Factors Potentially Influencing Western and Eastern Populations

Overall, this section presents a comprehensive discussion of the potential threats to Steller sea lion recovery. **The SSC is not aware of additional threat factors that should be considered, but notes that the recovery of Steller sea lions will be influenced by the interplay of multiple factors.**

Issues of food quality and/or limitation are discussed in three sections of the document: page 40, page 81, and page 100. This treatment is confusing. On page 81, the document correctly states that bottom up forces may result from: a) natural changes in the species composition, distribution, or quality of prey; or b) changes in the species composition, distribution, or quality of prey caused by fishing. However, the discussion of the influence of these changes on Steller sea lions appears on pages 40 and 100. Page 81 notes that the potential effects of bottom up forcing include changes in size at age and the number of successful pregnancies. Juvenile survival should be added to this list. Likewise, page 100 should include a discussion of nutritional stress related to changes in prey diversity.

Care should be taken to differentiate between the effect of shifts in the abundance and composition of Steller sea lion prey and the nutritional value of gadids and other forage fish.

It is important to maintain balance in the presentation of alternate hypotheses. For example, on page 101, the document cites a paper by Fritz and Hinckley (2005), as conclusive evidence that climate-induced changes in prey availability were not associated with the Steller sea lion decline. For balance, this section should reference the paper by Trites et al (2006), which suggests that climate-induced changes may have contributed to the decline. **The SSC notes that climate-induced shifts in the carrying capacity could occur. These shifts could influence the abundance and distribution of prey.** Differentiating between climate-induced and fishery-induced reductions in carrying capacity will be difficult, but is of substantial research and public interest.

The SSC appreciates that the revised draft recovery plan includes historical references. However, it may be advantageous to consider including the historical references under a separate section, to highlight that

the information is different in scope and character from information generated in modern sampling efforts.

The draft recovery plan should include additional explanation of the reasons for which the threat assessment for killer whale predation was downgraded from high to medium. Was the change made because there is a low probability of mitigating the impact, or because the weight of evidence suggests that the estimates of killer whale predation do not exceed the estimated natural mortality rate of Steller sea lions? The draft recovery plan should explain if the threat assessments, in general, are influenced by mitigation potential. **Threat assessment should be determined independent of mitigation potential.**

The section on sequential megafaunal collapse should be moved either immediately before, or immediately after, the section on the potential impact of killer whale predation. **The SSC agrees with the NPRB reviewers who remarked that rejecting the sequential megafaunal collapse hypothesis does not lessen the possibility of top-down impacts of killer whale predation; it is a separate issue.**

The SSC was pleased to see the new information on transient killer whale abundance, distribution, and diet in the document and in Paul Wade's (NMFS-NMML) overview of recent information on transient killer whale abundance, distribution, and diet that was used for the new killer whale threat discussion.

Throughout the document (e.g., pages 27, 42, 82, and 106) the recovery plan references Holmes et al. (in press) as a study that provides evidence of prolonged declines in birthrate. The SSC received a pre-publication copy of this manuscript. Page 17 of the manuscript includes a description of sensitivity analyses that were conducted. However, none of these examples held birthrate constant. Figure 4 of the manuscript shows adult survivorship was perhaps inversely correlated with birthrate. The constant birthrate hypothesis would balance the hypotheses regarding change in birthrate and change in juvenile survivorship.

Threats Assessment

Overall, this section presents a comprehensive discussion of potential threats to Steller sea lion recovery that might be operating in both the eastern and western DPS. Sections of the recovery plan regarding threats posed by killer whale predation, threats posed by environmental change, and threats posed by competition with fisheries have been revised from the 2006 version of the plan that was provided to the external reviewers. **To guard against the perception of an unbalanced treatment of the scientific data, and to be sure that all new data are included, a small group of non-agency scientists should be included in a team responsible for preparing a final draft of the recovery plan.**

- The ranking of impacts of threats needs further clarification. How was the "weight of evidence approach" used to categorize the relative impact of each threat? Providing detailed explanation of how factors were ranked and what influenced the ranking decisions would contribute to public understanding.
- The SSC notes that the recovery plan includes separate discussions of the food web and threats affecting Steller sea lions. This partitioning results in discussions on nutritional stress being presented several pages after the discussion of bottom-up forcing. The section on nutritional stress should be moved closer to, or included in, the bottom up section.
- The recovery plan concludes that toxic substances are found in relatively low concentrations in SSL tissues, but provides no evidence to support the "medium" threat level designation. Further clarification is needed.
- Although the reasons for the decline of the western DPS are unlikely to ever be known with certainty, it is clear that the factors responsible for the decline may not be identical to the factors limiting population growth at this time. This realization is mentioned in the recovery plan, but further discussion of how multiple factors may be operating and may have differing strengths in various regions is warranted.

Recovery Strategy, Development of Recovery Criteria, and Delisting Criteria

One substantive improvement in this draft recovery plan is that it more fully incorporates the PVA model developed by Goodman. The SSC reiterates that an appropriately structured PVA "provides a useful framework for evaluation of population recovery and changes in extinction risk". Nevertheless, endorsement of the use of a PVA should be understood as an endorsement of PVA as an analytic framework designed to highlight assumptions and data gaps; our August 2006 report includes several recommendations for needed improvements and modifications to the PVA developed by Goodman, as well as several suggestions for improvements that are needed in the estimation and forecasts of population trajectories. While our advice was acknowledged in NMFS' response to comments, the technical issues that we identified in the PVA and in the trend projections have not been addressed in the current draft recovery plan. The extinction risk of 1% in 100 years, lack of density dependence, and use of old growth rates in the PVA are examples of assumptions that need to be re-examined in future analyses.

The recovery criteria are based on an assumption that a change in carrying capacity has not occurred, even though the recovery plan (page 89) acknowledges that it may have. **The recovery plan should include a discussion of how a modified carrying capacity might affect the appropriateness of the proposed recovery criteria.** When the PVA is developed for the implementation plan, the issue of a change in carrying capacity should be fully explored.

The recovery plan should include a more detailed explanation of the reasons for the recovery criteria, and how their attainment will be assessed. For example, more justification is needed for using the 100-year timeframe as a recovery criterion for Steller sea lions, a pinniped with a shorter generation time than is characteristic of the large cetaceans for which the 100-year timeframe was developed.

The description of the recovery criteria should be revised to emphasize that the specific values obtained (e.g., 3% over thirty years) are subject to revision as new information becomes available and new analyses are undertaken. Furthermore, those values should be connected with the concepts of recovery explained earlier in the section involving risk probability and increasing population trends.

Recovery criteria are required to be objective and measurable under the ESA. However the first and second downlisting criteria (page 136) are vague with respect to the definition of statistical significance, and need to be defined explicitly.

NMFS has indicated that it intends to revisit recovery criteria every five years, but this schedule is not specified in the body of the recovery plan. In fact, the only place that modification of approved recovery plans is mentioned is in the discussion on page *ii*. There it says that plans may be changed for "new information, changes in species status and the completion of recovery actions." Is this really intended to be an "and", and how will this comport with the 5-year revision scenario? **The process for the 5-year evaluation of recovery criteria should be described in the recovery plan and in the implementation plan.** It is important that this process be specified soon, because compiling and analyzing new information will be a multi-year task.

Recovery Action Outline and Implementation Schedule for the Western DPS of SSL.

The SSC has again reviewed the proposed recovery actions for the wDPS of SSL and notes that four items (1—maintain population monitoring and research on key threats, 2—maintain current fishery conservation measures, 3—design and implement an adaptive management program, and 4—develop an implementation plan) were selected from the list of recovery actions and identified on pages 124-125 as items to be implemented. The SSC suggests that the plan provide greater justification for the selection of those items. Items two through four are identified in the plan as having priority 2a, while numerous other actions identified in the schedule (pages 176-184) as priority 2a are not included. **In particular, action 1.2 "estimate vital rates" should be included in the short list of priority items to implement.** We concur that the implementation plan itself (item 3) belongs in the list of items to implement first. When

the implementation plan is written, attention should be given to identification of actions that will be taken in the event that one or more of the recovery criteria for downlisting and delisting are not met during periodic review/revision of the recovery plan (e.g., every 5 years). **The implementation plan should provide an outline of the process, timeline, and expected participants for revising the plan and using a PVA to identify the most prudent actions to promote recovery.**

The SSC suggests that item 2.1 "maintain and modify critical habitat" be elevated from priority 3 to 2a. In addition, research to specifically test whether the wDPS is now under a new, lower natural carrying capacity, should be included as a priority 2a action, and a hypothesis testing framework should be included with clear criteria for that determination.

With regard to the priority levels, the SSC suggests that the agency revisit the recovery planning guidelines and consider adding a category for monitoring activities. The motivation for this suggestion is that monitoring activities are vital for determining the status of the population, but cannot be easily construed as "an action that must be taken to prevent extinction ..."

It should be noted that the recovery action costs reported in this section are projected costs incurred by the agency to conduct research and outreach activities as outlined. These agency costs do not reflect the costs (e.g., foregone net revenues) to communities and industry, nor the relative distribution of costs across industry sectors and regions.

As noted in our August 2006 report, and as noted by the NPRB review panel, because the causes of the decline and slow recovery of Steller sea lion populations are unknown, the efficacy of management actions taken to date, and those actions contemplated in the recovery plan, are, at best, uncertain.

North Pacific Fishery Management Council

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Certified: Dan Benda
Date: 9/19/07

SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
June 4-6, 2007

The Scientific and Statistical Committee met during June 4-6, 2007 at the Harrigan Centennial Hall, Sitka Alaska. Members present were:

Pat Livingston, Chair
NOAA Fisheries—AFSC

Keith Criddle, Vice Chair
University of Alaska Fairbanks

Bill Clark
International Pacific Halibut Commission

Sue Hills
University of Alaska Fairbanks

Anne Hollowed
NOAA Fisheries—AFSC

Gordon Kruse
University of Alaska Fairbanks

Seth Macinko
University of Rhode Island

Steve Parker
Oregon Department of Fish and Wildlife

Lew Queirolo
NMFS—Alaska Region

Terry Quinn II
University of Alaska Fairbanks

Farron Wallace
Washington Dept of Fish and Wildlife

Members absent were:

George Hunt
University of Washington

Franz Mueter
SigmaPlus Consulting

Ken Pitcher
Alaska Department of Fish and Game

Doug Woodby
Alaska Department of Fish and Game

B-1(c) Plan Team Nominations

The SSC reviewed the nomination of Ms. Cleo Brylinsky to the GOA groundfish plan team. **The SSC recommends approval of this nomination by the Council.**

B-7 Protected Species

Bill Wilson (NPFMC staff) reported on recent developments for various protected species issues. Robyn Angliss (AFSC-NMML) responded to the SSC request for additional information about the analytic methods used for the annual List of Fisheries (LOF). No public testimony was offered on any of these topics.

Update on FMP consultation and SSL recovery plan. The Revised Draft SSL Recovery Plan was released in May 2007, and mailed to the SSC along with Dr. Loughlin's review of other recovery plans, and the agency's responses to comments on the previous draft recovery plan. There were no presentations on these documents at this meeting. The next steps will be public review, CIE review, NPRB review,

SSLMC review, and Council family review at a special August meeting. The SSC's role at the August meeting will be to review the external reviews, the most recent research, the Recovery Plan, and to forward recommendations to the Council at that meeting. The external reviews are scheduled to be finished in July and distributed to the Council family prior to the August meeting. It is anticipated that the Recovery Plan will be finalized after the reviews have been completed.

The FMP consultation will continue with the NEPA analysis as outlined in Sue Salveson's B-2 report from this meeting.

Humane Society Lawsuit. The EIS on SSL and NFS research is now out for review. The agency hopes to have a Record of Decision, a BiOp, and authorization of research by June 12. Research that was delayed last year is expected to be completed this summer.

Cook Inlet Beluga Whale. The Federal Register notice on the proposed rule to designate the Cook Inlet Distinct Population Segment of belugas as endangered under the ESA is out for public review until June 19, 2007. If a decision to list is taken, it is expected that critical habitat will be designated during the upcoming year.

Sea Otters. The Sea Otter Recovery Team met in April 2007, to develop a draft recovery plan for the northern sea otter. The draft recovery plan should be ready for internal review in 2008. Under terms of a court settlement, the USFWS is required to publish a Federal Register notice of its determination of whether designation of critical habitat is prudent and, if so, to identify a date by which critical habitat will be designated. USFWS must publish its determination by November 30, 2008.

List of Fisheries. Robyn Angliss (AFSC-NMML) provided a detailed discussion of the extrapolation methods as discussed in Perez (2006). This presentation was requested by the SSC in February 2007. The procedure for determining the take of marine mammals in fisheries has several steps: the target species of each haul is determined by the catch accounting system and reported to NMML, any marine mammal interactions are assessed to determine which are serious or fatal, any marine mammal takes are assigned to a marine mammal stock, the marine mammal takes are extrapolated to the entire fishery and the estimated take is compared to the PBR for that stock. Previous SSC comments were addressed in the presentation and subsequent questions:

1. The SSC has been concerned with the positive bias introduced to the estimate by adding observed takes from unmonitored hauls when no other takes of that species are seen in monitored hauls in that stratum. After discussion, the SSC concluded that the small amount of positive bias is likely to be insignificant.
2. Another SSC concern has been that of "double counting" when the stock of a marine mammal take is not known. It was explained genetic analyses have been done so that there is only one orca take that cannot be genetically assigned to a stock and continues to be a part of estimates of marine mammal take in each of the two stocks to which it may pertain. The SSC does not disagree with the Agency's solution to the issue.
3. It remains possible for a marine mammal take to be assigned to the wrong fishery depending on how the catch accounting system classifies the haul during which a take occurs. This issue is addressed in an appendix to Perez (2006). The SSC agrees that the likelihood of this happening is very low.
4. The SSC has been concerned over the continued use of "stale" or "legacy" data. This is mostly a problem in fisheries that are not included in the groundfish, crab, or scallop fishery observer programs, fisheries which, for the most part, are in state waters. Because of the limited funding available for the marine mammal observer program and the lack of a fishery observer program on vessels in the fleets characterized by the legacy observations, there is little prospect for timely

updates of take estimates in the affected fisheries. The Perez (2006) document does not deal with this issue because it deals with federal fisheries only. No comparable document exists for the observations and calculations for state water fisheries.

5. Because of the expense and small scale of the marine mammal observer program, the SSC had requested that the analysts consider proxies for direct observations of marine mammal take such as logbook data. It was explained that AFSC-NMML has noted discrepancies between logbook data and observer reports on observed vessels and is reluctant to rely on logbook data for unobserved vessels. The SSC suggests that the discrepancy between logbook data and observer reports be quantified and included in a discussion of possible alternatives be included in future LOF reports.

The SSC is satisfied that, although the estimates of marine mammal take in Federal fisheries off Alaska are subject to difficulties common to estimation of rare events, the estimates and estimation methodologies are reasonable and acceptable.

The SSC also received an update on the issue of determining serious injury/mortality (SI/M) from entanglements. Although guidelines are available, five members of the Alaska Marine Mammal Scientific Review Group independently reviewed reports of 40 entanglements to determine SI/M and found very great disagreement among the various reviewers. That information will be presented at a national workshop, to be held in Seattle in September 2007. At that workshop, about 70 participants, including marine mammal veterinarians, will revise guidelines. New guidelines probably will not affect LOF determinations for another 1.5-2 years.

It is anticipated that the 2007 LOF will be released this summer and that the Council family will have an opportunity to comment at the October meeting.

The SSC has some suggestions and requests, not necessarily for the 2007 LOF, but for the future.

1. When the LOF is brought to the Council, it would be helpful if additional information was included, beyond just the Federal Register notice (e.g., the data on which the determinations were made).
2. The SSC suggests that since the analysis calls for subjective judgments and, thus, could be open to criticism, the analyst could explore different approaches to pooling observations, or using moving averages of different length, or exponential smoothing. Other ways to see if current estimates are reasonable would be to test the stratification decisions with simulations using different marine mammal trends, or collapsing strata, as the Southwest Fisheries Science Center has recently done.

Fisheries Depredation by Killer Whales and Sperm Whales Conference. The proceedings of the October 2006 workshop are not yet available. The goals of the workshop were to explore the extent of the problem and to identify possible methods to reduce depredation and prevent its spread to new areas.

SSLMC Progress. The minutes from the last two meetings of the SSLMC were attached to the action memo. At the last meeting, the PRT was finalized and applied to the proposals that have been received. The minutes contain the weightings of the 206 bins of the model and the "triggers" for each proposal. At the June 19-21 meeting, the SSLMC will continue to exercise the model with the proposals and discuss the issues raised as being "outside the model." The SSC looks forward to an update at the next meeting.

C-4(a,b) Crab Plan Team Report and Overfishing Definitions

The SSC received an overview of these items from Diana Stram (NPFMC staff) with help from members of the Crab Workgroup (Jack Turnock, Shareef Siddeek, Jie Zheng) and a report of comments by the PNCIAC from the chair Steve Minor. The Crab Plan Team spent most of their May meeting reviewing the overfishing definitions contained in Amendment 24 and provided an extensive set of constructive comments to improve the document. The PNCIAC wishes to have a review of the document by BSFRF and wants sufficient time to understand the new Tier system, as well as the stock assessment models that will be utilized in conjunction with the new Tier system.

The SSC commends the Crab Workgroup for being responsive to SSC questions and comments from February 2007. The analysis has improved considerably, but is not yet ready for initial public review; documents dealing with the OFL-setting process need to be exceptionally clear to provide a rigorous description of the OFL-setting process in a manner that is readily understandable to the public. **The SSC recommends that the document be revised to address concerns noted below, and then reviewed by the Crab Plan Team in September 2007 and the Council family in October 2007, before it is released for public review.**

The SSC commends the Crab Plan Team for providing detailed and thoughtful comments and suggestions for improvement of the draft analysis and recommends that the Crab Workgroup use the Plan Team comments as guidelines for revising the analysis. In particular, the SSC encourages the Crab Workgroup to follow the Plan Team recommendations on the organization of the document and clarification of the rationale behind the OFL-setting process.

In particular, the descriptions of the Tier system and the calculation of OFL could benefit from several clarifications. The document needs to clarify what constitutes "reliable catch history" for purposes of determining OFLs for tier 5 and 6 stocks. Currently, there is an inconsistency in these determinations under Alternatives 2 and 3. For instance, the stocks numbered 13-22 on page 31 are determined to have adequate catch history for determination of OFLs under tier 5 in Alternative 2, but they are determined to have inadequate catch histories for tier 5 determinations in Alternative 3, even though the historical catch records are the same under both Alternatives. A convincing explanation of why there is uncertainty in whether catch history is adequate needs to be provided.

The harvest control rules involve two parameters, α and β. The parameter α is the intercept on the biomass axis that determines the slope of the control rule line, whereas the parameter β determines the relative biomass level at which the fishery would be closed. The Crab Plan Team recommends fixing these two parameters. The SSC instead recommends frameworking these two parameters, with the Plan Team's recommended values as defaults. This would avoid the necessity of a plan amendment if better parameter estimates are developed in the future.

The description of the tier system on page 11 of the EA is confusing and not consistent with Table 2-3. For instance, the 3rd paragraph on p. 11 states that B_{msy} is specified for Tiers 1-4, but the 4th paragraph indicates that a proxy is used for B_{msy} in Tier 3 and, the last paragraph on page 11 does not mention B_{msy} as an integral aspect of Tier 4. Similarly, Table 2-3 indicates that B_{msy} is used in Tiers 1 and 2 only, that $B_{35\%}$ is used in Tier 3, and that a B_{msy} proxy is used in Tier 4. After questioning staff, the SSC understands that Tier 3 actually uses a B_{msy} proxy with $B_{35\%}$ as the default. Also, the SSC was told that average historical survey biomass is used for Tier 4 instead of a B_{msy} proxy. These inconsistencies and errors in the text and in Tables 2-3 and 2-4 need to be corrected.

In Alternative 3, OFL is set to 0 for Tier 6 stocks. This could have adverse consequences to some fisheries, because a catch or bycatch of even one crab would constitute overfishing. The intention is that there would be no directed fishery, so a better phrasing would set OFL to a level that would provide for

bycatch needs in other fisheries, while not jeopardizing the status of the stock. Furthermore, a description of how in-season management utilizes OFL should be included in the EA, because apparently, OFL is utilized differently in crab management than in groundfish management.

The Crab Plan Team suggests having a retained OFL, R(OFL), and a total OFL, C(OFL). The SSC is concerned that this will confuse the public. Instead the SSC recommends that the document be clarified to indicate that total removals are used in Tiers 1-3 and retained catch is used in Tiers 4-6. Retained catch should not be used to determine OFL and then compared to total catch. If it is useful to compare the difference between using these two metrics for Tiers 1-3, this should be done in a separate paragraph and table. Furthermore, the document should clarify the difficulties in determining total catch and problems with timing in obtaining this information.

The alternatives contain two options: under Option 1 the Council would set OFL in June using the previous year's data. Under Option 2 the Council would review OFL in October after survey information has been incorporated into the assessment, but the Council would not be able to change this value. The document should be expanded to include additional detail about the implementation and management implications of these two options.

The draft analysis treats EBS Tanner crab as a tier 3 stock, but the Crab Plan Team recommended shifting them to tier 4. The issue is that information for the Bristol Bay portion of the range qualifies for tier 3, whereas information available for the Pribilof Islands portion of the stock does not. The team appears to be concerned about extrapolating information from Bristol Bay to the Pribilof Region. However, the SSC notes that this situation is not unlike the procedure currently used for BSAI cod, where assessments for the EBS are extrapolated to the AI. The SSC encourages the Workgroup to consider an alternative which would split Tanner crab into Bristol Bay (tier 3) and Pribilof Islands (tier 4) for separate OFL determinations to match the separate TACs assigned to these areas by the state. However, it is not necessary for the Workgroup to spend too much time on this issue now, as the amendment is intended to provide the framework for such tier decisions as information is developed in the future.

The SSC previously reviewed and approved the analytical procedures used in the analysis.

C-4(c,d,e) Discussion Papers on Custom Processing, C-shares, and Post-Delivery Transfers

Mark Fina (NPFMC staff) provided the SSC with a brief overview of draft discussion papers pertaining to possible modifications to the crab rationalization program and an option for post-delivery acquisition of quota in the rockfish program. Public testimony was provided by Mateo Paz-Soldán (City of St. Paul, Central Bering Sea Fishermen's Association, Tanadgusix Corporation, and St. Paul IRA), Steve Minor (North Pacific Crab Association), and Dave Fraser (Adak Fisheries). The discussion papers provide useful initial explorations of the potential structural, economic, and distributional implications that may derive from changes to the status quo management rules. The SSC remarks that the Council (not the analysts) bears responsibility for developing problem statements and supporting objectives; it is difficult for the SSC to comment on the clarity of problem statements that staff describe as placeholders that have not been adopted by the Council.

The discussion papers indicate that the contemplated actions could lead to fundamental and potentially conflicting structural changes to the crab rationalization (and rockfish QS) programs. **The SSC recommends that the Council articulate the problem being addressed and the purpose and need for the actions, to provide context for changes in management objectives.**

D-1 Research Priorities for 2007

Diana Evans (NPFMC staff) provided an overview of new MSFCMA requirements for the development of five-year research priorities. The SSC also heard interesting presentations on ocean acidification (Jeff Short, NMFS-Auke Bay) and observations of endangered seabirds (Steller's Eiders and Short-tail Albatross) in the northern Bering Sea (Greg Balogh, USFWS). The SSC is grateful for these excellent thought provoking presentations. There was no public testimony on these presentations or on the topic of research priorities.

The revised Magnuson Stevens Fishery Conservation and Management Act (MSFCMA) requires that Councils develop research priorities for 5-year periods for "fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes". The Council and SSC have a long history of working with the plan teams to develop lists of research priorities on an annual basis. **To meet the new MSFCMA requirements, the SSC has developed a list of research priorities for the next 5 years, plus a more comprehensive list of research needs.** (The more comprehensive list is included as Appendix 3.) The 5-year research priorities were selected based on the SSC's assessment of critical, pressing research needs on which progress can be made. In developing these research priorities and needs, the SSC considered advice from the groundfish, crab, and scallop plan teams, the NPFMC's groundfish policy work plan, data gaps identified in the Aleutian Islands Fishery Ecosystem Plan, and research priorities likely to be included in the new Future Integrative Science Program (FISP) of the North Pacific Marine Science Organization (PICES).

Within the 5-year priority list and within the comprehensive list, numbers are <u>not</u> intended to represent priorities.

<u>Research Priorities for 2007-2012</u>

1. Fisheries

A. Stock Assessments

1. Continuation of annual and biennial surveys in the GOA, AI and EBS are a critical aspect of fishery management in Alaska. It is important to prioritize these surveys in light of recent proposed federal budgets in which funding may not be sufficient to conduct these surveys. These surveys provide baseline distribution and abundance data that form the foundation for stock assessments and the development of ecosystem approaches to management. These surveys are considered the highest priority research activity contributing to assessment of Alaskan groundfish fisheries. Moreover, the expansion of routine surveys into the northern Bering Sea and baseline surveys of the Arctic Ocean will become increasingly important under ongoing warming ocean temperatures and range expansions of economically valuable fishery resources.
2. Continuation and expansion of cooperative research efforts to supplement existing surveys to provide seasonal or species specific information for use in improved assessment and management.
3. Improved stock assessment of "other species" and non-target crab. Highest priority research tasks include: (1) alternative indices of abundance (and biomass) and fishing mortality, necessary for species for which standard surveys are inadequate, and (2) life history information (specifically, natural mortality, size at maturity, and other basic indicators of stock productivity) for "other species" and non-target crab, to allow application of Tier 5 or Tier 4 assessment criteria. Little information is available especially for sculpins, skates, octopuses , squids, grenadiers, and some sharks.

B. Fishery Performance and Monitoring

1. Improvements in at-sea observations are needed in several areas: (1) species-specific identification of priority species on scientific surveys, (2) review and revision of observer deployment and coverage to adequately characterize total catch, as well as a review of sampling procedures (e.g., basket versus whole haul) employed by observers that form the basis for total catch estimation, (3) improved means of data collection, especially on small vessels, and (4) improved biological data collection of bycatch species (e.g., octopus, squid, skates, sharks, and non-target crab).
2. Improved estimation methods for total catch and fishing mortality of all target and non-target species at the stock and fishery level, as well as at the level needed for various management programs. This may include revised observer deployment, use of flow scales, etc.

C. Fishery Management

1. Evaluate the effectiveness (e.g., potential for overharvest or unnecessarily limiting other fisheries) of setting ABC and OFL levels using Tier 5 and 6 approaches for rockfishes and other poorly assessed species (e.g., squid, octopus, skates, non-target crab).
2. Advancing ecosystem approach to fisheries management. This includes development of suitable indicators and indicator species (including novel approaches such as using corticosterone levels in predators as an indicator of prey availability), developing ecosystem reference points, including OY cap considerations, and improvements of current ecosystem models.
3. Development of forecasting tools that incorporate ecosystem indicators into single or multi-species stock assessments to conduct management strategy evaluations under differing assumptions regarding climate and market demands. Standardization of "future scenarios" will help to promote comparability of model outputs. Process-oriented research focused on local impacts of fishing on prey availability for top trophic level consumers will also be informative.
4. Development of spatially explicit stock assessments that allow for management to be linked appropriately to stock boundaries and habitat use.

2. Fisheries Interactions

A. Bycatch

1. Improved estimation of total bycatch, including tier 2 marine mammals and seabirds. At present, it is clear that observer coverage in some fisheries is insufficient for estimation of total bycatch. Examples include the sablefish longline fishery, skate fishery, Pacific cod pot and longline fisheries, halibut longline fishery, and sport fisheries. Improved accuracy of identification and enumeration of bycatch species is necessary. The current program results in imprecise bycatch estimates for species, such as skates, sharks, yelloweye rockfish, and sablefish in halibut longline fisheries and discards in sport fisheries. Improved methods may include direct and alternative monitoring options (e.g., electronic logbooks, video monitoring) on smaller groundfish and halibut vessels.
2. Research on discard and handling mortality rates. Better estimates of discard mortality rates by gear and fishery are needed to estimate more accurately total bycatch mortality for all discarded species, with an emphasis on such species as crabs, skates, sharks, rays, and octopuses.
3. Gear technology. Further research is needed on gear modifications and fishing practices for reducing bycatch, particularly for PSC species.

B. Expanded Ecosystem Studies

1. Climate change and fish communities. Changes in ocean temperature and acidity may affect managed species and lower trophic levels. For instance, if recent changes in ice cover and temperatures in the Bering Sea persist, they may have profound effects on marine communities. Apparent declines in zooplankton wet weight over the shelf, measured by the Oshoro Maru, could imply the loss of critical copepod and euphausiid prey of important species, such as pollock.

Existing data sets (bottom trawl surveys, BASIS surveys) can be used to quantify changes in relative species composition of commercial and non-commercial species, identify and map assemblages, and monitor changes in the distribution of individual species and assemblages. Additional monitoring may be necessary in the Aleutian Islands and other areas of the Gulf of Alaska.

2. Ecosystem structure studies. Studies are needed on the implications of food web interactions and global warming, ocean acidification, and selective fishing. For instance, studies are needed to fully evaluate selective removal of some components of the ecosystem (e.g., Pacific cod, pollock) relative to others (e.g., arrowtooth flounder).

C. Protected Species Interactions

1. Population dynamics, life history, and assessment of protected species, including Steller sea lions, northern fur seals, spectacled eider, short-tailed albatross
2. Local fishery interaction studies. Whereas global fishery control rules may generally prevent overfishing on a broad regional basis, non-random patterns of fishing may cause high rates of removals in local areas important to apex predators, such as Steller sea lions and northern fur seals, spectacled eider, short-tailed albatross, and whales. More studies are needed to fully evaluate potential local effects of fishing on other components of the ecosystem (e.g., marine mammals and seabirds).
3. Economic, social, and cultural valuation research is needed to fully assess the monetary and non-monetary costs and benefits attributable to proposed management or other regulatory actions.

3. Habitat

A. Habitat mapping

1. Improved habitat maps are required to identify essential fish habitat and distributions of various substrates and habitat types, including habitat-forming living substrates.

4. Other Areas of Research Necessary for Management Purposes

A. Social and economic research

1. Development of an ongoing database of product inventories, trade volume, and prices for principal shellfish, groundfish, and salmon harvested by U.S. fisheries in the North Pacific and Eastern Bering Sea. This database needs to include information about product form (e.g., fresh, frozen, whole fish, fillets, value-added product and grade, etc.), but need not be firm specific.
2. Analyses of current determinants of exvessel, wholesale, international, and domestic retail demands for principal seafood products from the GOA and BSAI;
3. Kodiak is at the center of controversy associated with the recently adopted crab rationalization program. What were the direct and indirect impacts and how were the impacts distributed throughout the community? As Kodiak is also likely to be at the center of controversy over the likely consequences of Gulf groundfish rationalization, it would be particularly advantageous if research could be designed to use Kodiak, or other Gulf communities, as case studies in analyses of these effects.
4. Develop a framework for collection of economic information on commercial, recreational, and charter fishing, as well as associated fish processing, to meet the requirements of this MSFCMA sections 303(a)(5, 9, 13), 303(b)(6), and 303A.

D-2(a) Increased maximum retainable allowances (MRAs) in the arrowtooth fishery

Tom Pearson (NMFS) and John McCracken (NPFMC staff) presented the initial review draft of the analysis of a proposal to raise the maximum retainable allowances of some groundfish species in the directed arrowtooth fishery in the Gulf of Alaska. Public testimony was provided by Julie Bonney (Alaska Groundfish Data Bank).

At present, the allowances are zero for all species, except pollock (5%), cod (5%), the "other species" category (20%), and forage fish (2%). The original intent of the zero rates, adopted in the 1990s, was to prevent fishing for arrowtooth as a means of gaining access to other species (i.e., topping off with economically valuable species other than arrowtooth). At that time there was no market for arrowtooth, but since then a market and a directed fishery have developed, so the zero retention allowances now have a potential to cause regulatory discards. The proposed amendment would increase the retention allowances, to a greater or lesser extent, depending on the alternative.

The actual mortality for all species in the fishery is not expected to change with the adjustment, unless the new MRAs stimulate changes in fishing behavior. The fishery is currently constrained by halibut PSC limitations. Potential changes in fishing behavior are theorized, but are not quantitatively included in the analysis. To decide what the appropriate MRAs should be for the arrowtooth fishery, the public needs to understand the scale of the economic incentives new MRAs will present to the fishery. **The analysis should provide additional information showing the potential economic impacts attributable to changes in MRAs for each alternative, assuming no change in fishing behavior, acknowledging that some different species may be targeted through a "topping off" process. The staff agreed to undertake the addition of those figures, tables, and the interpretive text to the analysis. With that addition, the SSC recommends the analysis be released for public review.**

D-2 (b) Salmon Bycatch workgroup report

The SSC received the Council's Salmon Bycatch Workgroup report and presentation by Diana Stram (NPFMC staff). The workgroup was tasked with formulating methodology for establishing trigger and hard cap closure options to reduce salmon bycatch in the groundfish trawl fisheries. These recommendations will be considered by the Council for incorporating into the forthcoming analysis of FMP Amendment 84B alternatives of caps and closure areas. **The SSC endorses the workgroup recommendations and encourages additional consideration of the cap/closure accounting system, based on salmon biological year (B season, plus A season of the following year) and specific caps/triggers for A and B seasons.**

D-2 (c) Guidelines for External review and cod workshop report

The SSC provided comments on draft guidelines for external review at the December 2006 Council meeting that have since been reviewed and revised by the groundfish, scallop, and crab plan teams. The guidelines are intended to provide procedural information to the public on appropriate timing and expected results of external stock assessment review. **The SSC endorses the revised guidelines and recommends use of these procedures in current and future stock assessment cycles.**

The SSC also reviewed and revised SSC report writing policies and guidelines for SSC reviews of SAFE (Stock Assessment and Fishery Evaluation) documents. These documents are included as Appendix 1 and Appendix 2, below. The SSC recommends that both documents be posted on the Council's web site.

The SSC also reviewed the Pacific cod workshop report that evaluated stock assessment models in both the BS and GOA. The SSC received public comment from Kenny Down (Alaska Frontier Company). The SSC commends Dr. Grant Thompson (AFSC) for his excellent work and thanks the AFSC for conducting the workshop. **The SSC looks forward to presentation of results of additional model simulations in October, 2007.**

D-2(d) Review of EFP for electronic monitoring of CGOA rockfish fisheries

Jason Anderson (AFSC) and John Gauvin provided a presentation of a proposed EFP to evaluate electronic monitoring (EM) as a tool to estimate halibut discards in the GOA rockfish pilot program fishery and the Environmental Assessment of the proposed EFP. The goal of the project is test the utility of EM as a means of estimating halibut PSC. If successful, EM may provide a more accurate estimate of discards than is provided by basket sample methodologies, and may do so at a lower cost than the cost of deploying groundfish observers.

The SSC supports the proposed project and encourages work to provide better tools for estimating discards and PSC.

One design aspect that should be discussed in the EFP is the process of sampling the retained catch for halibut not discarded. A major comparison in this feasibility test is whether the count of halibut by EM is a full count. Therefore, the catch should be segregated onboard to the smallest unit possible so that halibut discovered during offloading can be traced back to particular segments of the deck video.

Effective and efficient video review requires training and skill. This review process can be the most expensive component of EM and, therefore, cost of the review process should be well defined to allow comparison with the cost of observer coverage. Information on the time spent reviewing video from each camera, as well as measuring halibut lengths from the video observations should also be collected. The same care should be taken to record time on deck (likely on the video itself) so that the time required for different processes can be determined.

The experimental design for the project provides a comparison of halibut discard using EM, with a complete census of halibut discard by a human sampler, and with basket sample estimates conducted by a second sampler. The proposal lists a number of secondary comparisons to evaluate impacts of some other variables on halibut estimates, such as pace of discard, equipment placement, and reviewer bias. The project proposes a relatively small number of tows (30). Because the variability between tows could be large, comparisons should focus on standardizing the experimental configuration (i.e., discard chute placement, camera placement, etc.) and estimating the catch and size distributions, rather than trying to create multiple treatments or to post-stratify operational effects for comparison. It will be useful, after data are collected, to conduct a power analysis to determine the sample sizes needed to discern differences in estimated means.

The EFP application should be amended to provide a clear description of the intended disposition of bycatch. While focusing the experiment on halibut discard and testing the feasibility of full retention of other species is a reasonable experiment, a much broader application to other non-retained species would need to be tested prior to implementing EM in the fishery. The EFP application indicates an aspiration to conduct additional experiments in 2008, and may consider broadening the experiment to fully cover objectives of the observer program. The EFP should clearly indicate if this comparison is planned as a future experiment.

The document specifically details that catch would not be attributed to the TAC, but should explain the accounting process and categories to be debited for the mortality incurred under the EFP, to prevent future confusion.

D-4 Aleutian Islands FEP

The latest draft Aleutian Islands Fishery Ecosystem Plan (AI FEP) was presented by Diana Evans (NPFMC staff). Public testimony was provided by Dave Benton (MCA), Dave Fraser (Adak Fisheries), and Chris Krenz (Oceana).

The SSC compliments the writing team for their excellent efforts to prepare the latest draft document. The document contains a good overview of the Aleutian Islands marine ecosystem, including its physical setting, history, oceanography, biology, economics and socio-economics, and interrelationships. At its March 2007 meeting, the SSC provided extensive comments on an early draft of the FEP. The current draft addresses many, but not all, of the SSC's comments. In their May meeting minutes, the Ecosystem Committee suggested that the AI FEP be treated as a living document, to be reviewed on an annual basis. **The SSC agrees that the AI FEP should be treated as a living document.** Treating the AI FEP as a living document would allow the following significant additions and revisions to be addressed in future annual updates:

1. Identification of objectives, such as desirable and undesirable states of the ecosystem. A description of the Aleutian Islands ecosystem is interesting, but if the FEP is to have a role in influencing Council decision-making, it will be necessary for the Council to identify objectives related to attributes of the AI ecosystem. As the Council, Ecosystem committee, FEP team, and public move towards identification of ecosystem states with preferred characteristics, it will be important to differentiate between feasible and infeasible states. Complex dynamic systems, such as the AI ecosystem, may not be capable of regenerating some past ecosystem states.
2. Fuller incorporation of ecosystem information provided in the 2005 special issue of the journal *Fisheries Oceanography* dedicated to the Aleutian Islands.
3. More thorough development of linkages with respect to ecosystem structure and function.
4. More thorough analysis of cumulative impacts.
5. Other substantive comments in the SSC's March 2007 report, not addressed in the latest draft.
6. While the approach used to develop the risk and impact assessments in section 4 and summarized in Figure 4-3 and 4-4 is an appropriate initial step, it is important to recognize that Delphi methods are sensitive to the composition of the panel tasked with developing consensus. If the Council intends for the AI FEP to reflect human dimensions, it would be useful to expand the AI FEP team to include personnel with specific expertise; the present assessment of risk associated with commercial and subsistence activities and impacts is speculative.

The SSC supports release of the AI FEP, once the following substantive and minor comments have been addressed.

Substantive Comments

Page 3-4. The text on page 3 (and also page 152) and Figure 1-1 on page 4 vaguely describe how the AI FEP team interfaces with the Council process. The bottom of page 1 of the Ecosystem Committee's Minutes for May 21, 2007, includes a description of a three-step reporting process that links the AI FEP team with the Council process. The draft AI FEP should be revised to incorporate a description of that process.

The draft AI FEP needs to include a discussion of processes that will be used to obtain and update data derived from non-NOAA sources. For example, data related to oil and minerals development, marine transportation, etc.

Page 27. The AI FEP team should consult with NMFS-NMML staff as to the appropriateness of Figure 3-12 as a representation of the distribution of SSLs within the Aleutian Islands. Previous analyses prepared by NMML have indicated that a coarser geographic scale is required to represent regional distributions of sea lions.

Page 39 The AI FEP should carefully review the regional scale represented in Figure 3-22 (see also page 184 in Appendix E). For some areas, the numbers of stomachs from which data are summarized are very low. For instance, only 11 stomachs were analyzed in area 166. The SSC recommends that the team should consider summarizing information over larger regional scales when sample sizes are small.

Page 57. This section should provide a reference to the NPFMC goals stated in the PSEIS. How do the management measures map into the goals selected by the Council?

Page 70. The methodology section needs further refinement. In particular, the criteria used to determine the likelihood of occurrence of adverse events and the magnitude of impacts associated with those events needs to be better explained. In addition, there should be a section that differentiates between impacts that would and would not necessitate Council action.

Page 84. The motivation for identifying separate OYs to support predator species is not clearly articulated. Defining separate OYs would seem to undermine the ongoing efforts to develop multispecies assessments that account for species interactions. This section is weak and should be dropped or perhaps abbreviated to indicate that there is a need to consider fishing mortality in the context of predation mortality within a complex predator-prey system.

Page 130. The captions in Figures 4-3 and 4-4 should be clarified to indicate that the x-axis is not probability in a statistical sense and that the y-axis does not reflect empirical estimates of the magnitude of impacts, rather, the axes represent subjective expectations about the relative probability of occurrence of events and subjective judgments about the magnitude of impacts.

The draft document should differentiate between qualitative judgments and subjective judgments. Qualitative judgments are judgments about attributes that are qualitative in nature, such as the difference between day and night. Different individuals asked to judge qualitative characteristics can be expected to agree on the value (day or night) of those characteristics. In contrast, subjective judgments are judgments where different individuals can be expected to disagree in their perception of the value of attributes.

Minor Comments

Page 16. Standardize the format for Figures 3-4 and 3-5.

Page 20. Reformat this graph to show the fishing mortality rate relative to FMSY or its proxy.

Page 24. Include scale of miles and a map showing the location where the transects were taken, in an insert.

Page 26. Include a line showing the number of stations per regional block. Does RACE division agree that these strata can be post-stratified in this fine-scale manner?

Page 70. The authors should reference the goals of the Council as stated in the PSEIS and examine current activities occurring in the AI to assess whether these goals are being achieved. The SSC agrees with the ecosystem committee's recommendation that the AI FEP team should attempt to evaluate thresholds for Council action.

Page 80. The idea of establishing a new advisory body would be unnecessary and undermine this current process where information is reported to Plan Teams and the SSC. The SSC recommends that the Council encourage the continuation of the practice of developing a report on the status and trends of regional ecosystems and that this report be reviewed by the groundfish plan teams and the SSC to ensure that the information is provided during the annual specification process. The SSC feels that the state of science regarding EAM is evolving and that the periodic reporting on the state of ecosystems relative to the goals of the NPFMC is a useful activity.

Pages 83-86. The document suddenly changes the format for the implications for management section. The section provides vague guidance regarding Council action and several issues should be considered:

1. What is the goal for "balancing tradeoffs arising from biological (and other) ecosystem interactions?"
2. The document should clarify when mitigating an interaction is a TAC issue (as stated in the document) and when it is an ABC issue.
3. Page 84. If a food web model is used and the food web model utilizes information that is dated, in terms of current feeding relationships, then is the information useful to managers?
4. The document states that a different management approach would be applied to prey species than predator species. However, the Council's management policy is designed to set fishing mortality in recognition of the existing natural mortality. It is not clear why a separate harvest policy would be required for prey species.
5. Remove the jargon - What is a "detailed next generation ecosystem model"?
6. The reference to changing TACs when important predator prey interactions change, needs reconsideration. This suggests that we alter harvest strategy to adjust for species abundance. Isn't this what we are currently doing? The focus should be on biological reference points and not on TACs.

Page 130. Figure 4-3 and 4-4.. Events with unknown likelihoods and unknown impacts cannot be clearly determined to differ from events with low likelihoods or low impacts; thus it seems inappropriate to include them within the set of events highlighted in the charts.

Page 152. Revise sentence to read "groundfish plan teams and the SSC..."

Page 115. The analysis in Section P oversimplifies differences among fishery governance regimes and their social and economic consequences. A serious discussion of these issues would need to consider the effect on investment behavior, profitability, locus of ownership, patterns of employment, etc. There would also need to be a careful differentiation between governance structures that include spatial restrictions and those that do not.

D-5 Arctic Management

Bill Wilson (NPFMC staff) gave a presentation on a discussion paper that outlined options for management of fisheries in the Arctic. Public testimony was provided by Chris Krenz (Oceana).

The SSC agrees that the precautionary approach to management of the Arctic is warranted.

Although existing regulations may already restrict commercial fishing in the Arctic waters, **the SSC encourages going forward with a comprehensive approach to Arctic fishery management as a proactive step to establish a regulatory framework in the event that a proposal for a commercial fishery is brought forward.**

If Alternative 2 is selected and each FMP is amended, the SSC recommends that the FMP boundaries for the separate FMPs be consistent, to create a common region for all FMPs. The SSC recommends that the authors clarify whether Alternative 2 only pertains to commercial fishing in the Chukchi Sea, or whether the Beaufort Sea is also included.

As this is a discussion paper and problem scoping document, the text does a good job explaining the operational areas and potential relative to each FMP. Although the landmarks associated with FMP boundaries are mentioned, there are enough of them that a figure showing how the FMPs overlap and differ in overall footprint would be useful. The boundary between the Chukchi Sea and the Beaufort Sea is not well defined in the documents, but would need to be defined under Alternative 2, at least for FMP purposes.

In developing the NPFMC's Arctic management plan, some accommodation for existing fisheries, such as the Kotzebue Sound crab fishery, may need to be considered. Stakeholder consultation would likely assist in the scoping of alternatives and objectives for management in this region.

The SSC recommends that the need for an FEP should be assessed after selecting the preferred alternative for management. The SSC considers the FEP to be an information document, not a policy setting document. If Alternative 3 is selected, the information on cross jurisdictional connections provided by a FEP could be addressed in the FMP. If Alternative 2 is selected, then the development of an FEP may be needed. The SSC recommends that the comprehensive FMP envisioned under Alternative 3 consider the broad array of ecosystem issues in this region, to the extent practicable.

Other

The SSC expresses deep appreciation for the service provided by Steve Parker and Gordon Kruse. Dr. Parker has accepted a new position in New Zealand. Dr. Kruse will be on sabbatical leave through June 2008. They will be missed.

Appendix 1: Policy Regarding Preparation of the SSC Report

Report preparation is one of the most important duties of SSC members. The SSC report should reflect the discussions of the SSC, as a body, during the SSC meeting. The report serves multiple purposes: (1) a record of what transpired at the meeting, (2) scientific advice to the Council and to the public, and (3) the "institutional memory" of the development of SSC guidance regarding various issues. As such, it is important that the SSC report be clearly written, accurate, and transparent. The following guidelines are meant to assist in achieving these goals.

1. Before the meeting, the SSC Chair will assign individuals to lead various agenda items.
2. Each individual should read the documents pertaining to their assigned agenda item(s) particularly carefully. Look for the key issues involved and research previous SSC comments on the item.
3. Be prepared to take the lead at the meeting in asking questions and formulating SSC advice on those agenda items. Generally, there is a presentation by staff, followed by SSC questions, public testimony, and finally SSC discussion and formulation of advice.
4. The Chair will summarize the main points that constitute SSC advice. Be sure to write these points down.
5. Get together with other individuals responsible for writing the report on the particular agenda item. Decide how to divide up the task. One person should assume the lead to assemble written and electronic submissions cohesively and to give the draft section to the SSC vice-chair.
6. The start of the SSC report should contain the agenda number and title and a list of staff members and the public who spoke before the SSC. After that, provide a summary of previous consideration of this item and address what are key issues being discussed by the SSC. For documents considered to be influential scientific information (ISI), according to the OMB Peer Review Bulletin, the SSC shall also characterize the nature of the public testimony in its report. The SSC written recommendations and discussion should demonstrate the SSC's response related to the public testimony. Typically, the main ISI documents that the SSC reviews are the annual groundfish SAFE reports.
7. The SSC report should provide an accurate description of the scientific discussion. Therefore, sufficient detail should be provided to reflect the range of opinions that were expressed.
8. Use bold font to highlight key statements that should be emphasized by the Chair when presenting the report to the Council. Try to write the report with this aspect in mind. For example, detailed criticisms of methodology or results meant for the analysts should appear in separate paragraphs, so that the Chair can easily navigate through the reading of the report to the Council.
9. Other SSC members are encouraged to read the draft sections of all agenda items and provide comments to the leader of that agenda item. Please make your comments constructive and clear. If you have suggested changes, please write these out legibly. Avoid ambiguous advice such as "Put something in about ...", "This is not clear to me", "This needs work..."
10. You may come up with a brilliant idea that should have been considered at the meeting, but wasn't. The idea does not belong in the SSC report. Reconsiderations by individual SSC members should be brought to the attention of the entire SSC and, if warranted, included in a subsequent SSC report.
11. Avoid recommending changes of a substantive nature that were not discussed at the meeting.
12. The SSC Chair has responsibility for final editing of the SSC report. The Chair may change or delete the report for clarity, scientific logic, and accuracy.
13. The SSC secretary will send the draft report out to all members, after the meeting, and members are encouraged to recommend final changes.

Appendix 2: Guidelines for SSC Review of Stock Assessment and Fishery Evaluation (SAFE) documents

Federal fisheries managers strive to use the best available scientific and commercial data and analyses when making regulatory decisions. Scientific peer review is a useful process for ensuring the quality and integrity of scientific assessments that are used to determine biologically acceptable catch limits. By conducting a stock assessment review, the NPFMC SSC helps NMFS fulfill its stewardship mission to manage and conserve our Nation's living marine resources in a scientifically sound manner.

The purpose of the review is to assess the scientific validity of the stock assessment, including any assumptions, methods, results and conclusions. Specific aspects of the review will vary, but may include: quality of the data collected or used for the assessment, appropriateness of the analyses, validity of the results and conclusions, and appropriateness of the scope of the assessment (e.g., were all relevant data and information considered).

After reviewing the stock assessment document and receiving the respective report of the NPFMC plan team that also reviewed the stock assessment, the SSC shall make the final determination regarding the tier level of the assessment and will recommend ABC and OFL limits for groundfish or OFL limits for crab and scallops for each assessed stock or complex. Alternate (e.g., stairstep) procedures may be recommended to arrive at ABC recommendations at the SSC's discretion. Such procedures have been used in the past as precautionary measures to avoid large fluctuations in ABC recommendations across years. In its report, SSC recommendations regarding future research priorities and direction will also be made.

Typically three SSC members will be assigned as the lead reviewers for each stock or stock complex. These lead reviewers will be members that are not directly responsible for the production of the stock assessment or directly supervising the person producing the assessment. The lead reviewers will lead the discussion on that particular assessment and will draft the portion of the SSC report dealing with that species. Recommendations may be made to the stock assessment author, plan team, or Council and the report shall clearly explain to whom the SSC's recommendations are directed.

The October SSC meeting is generally when detailed examination of any new stock assessment models for groundfish (benchmark assessments) occur. More scrutiny should be given at this stage to methods of model construction, fitting, and new data sources used. Additional workshops or reviews may be recommended to resolve any outstanding technical questions in a proposed new assessment prior to implementation. CIE (Center for Independent Experts) reviews are also conducted on a rotating or as-needed basis on stock assessments at the request of NMFS and the SSC will typically also receive a presentation on the findings of the CIE panel. The groundfish stock assessments are reviewed for setting ABC and OFLs at the December SSC meeting.

In general, with respect to peer review panels, the NPFMC SSC has adopted the May 12, 2003 Policy of the National Academies with respect to Committee composition and balance and conflicts of interest for committees used in the development of reports. (http://www.nationalacademies.org/coi/bi-coi_form-0.pdf)

The NPFMC SSC has also developed a written policy with respect to the development of its reports (see above).

Appendix 3: Comprehensive List of Research Needs

1. Fisheries

A. Stock Assessment

The SSC notes that continuation of annual or biennial surveys in the GOA, AI and EBS are a critical aspect of natural resource management. These surveys provide baseline distribution and abundance data that form the foundation for stock assessments and the development of ecosystem approaches to management. These surveys should be considered a high priority research activity. Also the SSC notes that continued research on the life history of groundfish, crab and scallop should be considered an essential activity to improve stock assessments and management of managed resources. Critical life history research topics include: estimates of natural mortality (including temporal shifts in predation for target species), size-at-maturity or age-at-maturity (including environmental factors influencing maturity schedules), maternal effects (especially for Pacific cod and long-lived species such as rockfish), environmental impacts on growth, and environmental factors influencing reproductive success.

The following lists identify high priority research for groundfish, crab and scallops.

Groundfish

1. Rockfish – a general need for improved fishery independent estimates of abundance, catch, stock structure, and biological variables.
   a. Direct observations (e.g., submersible and dive surveys) to compare fish densities, particularly for rockfish, between trawlable and nontrawlable habitats.
   b. Improved surveys for minor rockfish species to verify range relative to standard surveys.
   a. Supplemental trawl survey biomass estimates to address patchy distribution.
   b. Age samples from the fishery, esp. POP, northern rockfish, and dusky rockfish. There is a need to increase the number of age determinations annually conducted for rockfish and to train researchers to make age determinations on species that are difficult to age.
2. Improved stock assessment of "other species." The SSC ranks items a, e, and f very high because they form the basis for a tier 5 calculation.
   a. Improved identification of priority species within each group in the fisheries by both processors and observers to avoid misidentifications, as well as categories containing large numbers of unidentified species.
   b. Species-specific identification of priority species on scientific surveys, including NMFS trawl and longline surveys, IPHC surveys, and ADF&G surveys.
   c. Increase knowledge of the acoustic sign types and target strength to length relationships to allow assessment of other targets during hydroacoustic surveys.
   d. Improved biological data collection via enhanced survey sampling, fishery port sampling and at-sea observations, including collection of lengths and age structures for priority species.
   e. Alternative indices of abundance (and biomass) and fishing mortality are necessary for species for which standard surveys are inadequate. With an increase in the number needed stock assessments, it will be critical to develop alternative estimates of abundance and/or direct estimates of fishing mortality. Two possibilities that require dedicated research for development are: (1) directly estimate fishing mortalities through large-scale tagging programs, and (2) habitat-based estimates of abundance based on local density estimates in combination with large-scale habitat maps.

f. Life history information (specifically, natural mortality, size at maturity, and other basic indicators of stock production) must be improved for many members of the others species complex to allow application of Tier 5 or Tier 4 assessment criteria. Little information is available especially for sculpins, skates, octopuses, squids, grenadiers and some sharks.

g. Improved catch histories for groups in this complex for improved stock assessment and application of Tier 6 criteria. Greater use of historical foreign observer data is needed, as part of this activity.

3. Research is needed to incorporate seasonal movements, and stock boundaries of managed species into stock assessments. To identify stock boundaries, expanded studies are needed in the areas of genetics, reproductive biology, larval distribution and advection. Expanded tagging efforts are needed to support the development of spatially explicit assessments. High priority species for spatially explicit models include: walleye pollock, Pacific cod, sablefish, yellowfin sole, rock sole, Pacific ocean perch, and Atka mackerel.
4. Incorporating uncertainty into the stock assessment advice. This requirement was proposed in the PSEIS, but progress towards amending the groundfish guidelines to address this issue has not been started. Management strategy evaluations are also encouraged because these evaluations serve as useful tools to assess the efficacy of harvest control measures under different assumptions regarding stock production.
5. Efforts to incorporate ecosystem considerations into stock assessments should be accelerated through research to improve knowledge of the functional relationship between environmental factors (e.g. physics, competition, and predation) and recruitment, growth, natural mortality and availability to surveys.
6. Expand surveys beyond typical boundaries to include the shelf break and the northern Bering Sea to evaluate the fraction of the stocks that are not assessed by the shelf survey. This will become increasingly important as species distributions shift northward as the Bering Sea continues to warm.
7. Expand the collection of underway oceanographic data and marine mammal sighting during standard assessment surveys.

Crabs

1. Natural mortality (M) estimates. Estimates of M (obtained independently from models) are needed for all stocks (except Bristol Bay red king crab), with highest priority assigned to Tanner and snow crabs.
2. Improved stock assessment of non-target crab. Highest priority research tasks include: (1) alternative indices of abundance (and biomass) and fishing mortality are necessary for species for which standard surveys are inadequate, and (2) life history information (specifically, natural mortality, size at maturity, and other basic indicators of stock production) for non-target crab to allow application of Tier 5 or Tier 6 assessment criteria.
3. Conduct field studies to improve knowledge of growth increments and molting probabilities and the relationship between shell condition and age of Bering Sea Tanner and snow crabs.
4. Improve understanding of seasonal movements, stock structure, natural mortality and harvest rates of crabs through mark recapture studies with emphasis on snow and Tanner crab stocks. In addition, improved understanding of seasonal movements of species without surveys or with a short time series of existing survey data are needed to assess the probability of incidental capture in other fisheries.
5. Improve understanding of processes influencing the fertilization rate of egg clutches, including consideration of spatial dynamics of crab reproduction and contribution to reproduction by males as a function of size, time post molt, and their distribution during stock

assessment surveys and during the fisheries. Primary emphasis is on snow and Tanner crabs, with secondary emphasis on red king crab.

6. Develop a spatial stock assessment model for eastern Bering Sea Tanner crab.
7. Conduct studies to improve crab aging using radiometric aging or lipofuscin and, for Bering Sea Tanner and snow crabs, improve knowledge of the relationship between shell condition and age.
8. Improve understanding of processes controlling recruitment dynamics for all FMP crab species. Incorporate these processes into scenarios regarding temporal trends in recruitment. Perform a management strategy evaluation using variable recruitment scenarios. This is a very broad topic encompassing the need to identify and assess biological and environmental effects on egg production, egg hatching, and larval survival, as well as mechanisms controlling the abundance of juvenile crabs from settlement to recruitment into the fishery. Factors include larval transport, predation, competition, and habitat availability. Effects of ocean acidification on crab larval growth and survival is also of interest. Primary emphasis is on stocks currently declared overfished: eastern Bering Sea Tanner crab, St. Matthew Island blue king crab, eastern Bering Sea snow crab, and Pribilof Islands blue king crab.
9. As an extension to research items 4 and 7, develop a spawning index which is demonstrably proportional to total fertilized egg production and be responsive to fishing mortality that could be used in stock-recruitment models for biological reference points determination for major red king snow, and Tanner crab stocks.
10. Examine the temporal dynamic of size at maturity for eastern Bering Sea Tanner crab and its implications on spawning biomass and fisheries management through analysis of the trawl survey data.
11. Conduct calibration studies to assess survey selectivity and catchability of snow crab, Tanner crab, and blue king crab with current trawl survey gear and new survey net.
12. Research on handling mortality rates. Better estimates of pot handling mortality rates by crab species are needed to estimate more accurately total bycatch mortality for all discarded species.
13. Describe Tanner crab habitat characteristics using side-scanning and/or multi-beam sonar to allow increased precision of survey catch rate estimates.

Scallops

1. Development of an age-structured model for assessment of abundance to be applied to each stock (e.g., Yakutat, Prince William Sound, Cook Inlet, and so forth).
2. Identify larval sources, as well as advective pathways, to evaluate the potential effects of fishing on recruitment for major beds.
3. Estimate survival rates for discarded scallops and of scallops contacted by the dredge that are not captured. [SSC modified with ADF&G Shellfish Priorities]
4. Investigate causes of high natural mortality recently observed in the Cook Inlet fishery, and scallop meat quality issues (i.e. off-color meats, 'weak meats', 'weak shell syndrome') observed in the Yakutat area.
5. Expansion of the recently developed remote video survey method for four objectives:
   a. to estimate densities and abundance of scallops in major fishing areas as well as in nearby unfished areas for monitoring environmental effects independent of fishing,
   b. to estimate catchability coefficients for commercial and research dredges,

c. to evaluate habitat and distribution of non-scallop species that are present in scallop beds, and

d. to conduct field studies to compare the dredge survey used in Central Region to the video sled survey.

6. Develop/standardize scallop shell aging methodology and complete aging of backlogged observer-collected scallop shells.

B. Fishery Performance and Monitoring

1. Improved onboard observations. Improvements in at-sea observations are needed in several areas:

   a. Observer deployment and coverage. There is a long-standing need to review the allocation of observers among fisheries to adequately characterize the total catch, as well as a review of sampling procedures (e.g., basket versus whole haul) employed by observers that form the basis for total catch estimation.

   b. Conduct research on mechanisms to supplement observer program information. Improved means of data collection are needed, especially on small vessels. Research is needed on utility of other data collection methods, such as at-sea video monitoring, port sampling, and other direct methods.

   c. Improved biological data collection. There are needs to improve biological data collection (e.g., age, size, sex) of some bycatch species (e.g., sharks, skates, octopus, squid, sculpins, grenadiers) to better quantify potential effects of bycatch on these stocks. Better estimates of stock of origin are needed for salmon bycatch.

2. Improved estimation methods for total catch (including bycatch) and fishing mortality of all target and non-target species. This may include revised observer deployment, use of flow scales, etc. Two levels of improvements are needed:

   a. Improved estimation at the stock and fishery level. Assessment and management depend critically on catch estimates. More rigorous statistical methods for catch estimation need to be implemented (e.g., Miller 2005). Specifically, identifying sources of variability in actual and estimated bycatch rates is needed. Approaches to integrate estimates of variance on the observed portion of the fisheries into the total catch estimates are needed.

   b. Improved detailed estimation of catch for specific management programs. Some management programs (e.g., IFQ, cooperatives, other rationalization programs) require extensive record keeping to increasingly finer degrees of resolution (e.g., vessel, subareas). Research is needed to evaluate the effectiveness of reporting systems to newly developed management groups or practices.

C. Fishery management

1. Evaluate the effectiveness (e.g., potential for overharvest or unnecessarily limiting other fisheries) of setting ABC and OFL levels using Tier 5 and 6 approaches for rockfishes and other poorly assessed species (e.g., squid, octopus, skates, non-target crab), as appropriate.

2. Continue to develop a systematic approach to lumping and splitting that takes into account both biological and management considerations.

3. Advancing ecosystem approach to fisheries management. This includes development of suitable indicators and indicator species (including novel approaches such as using corticosterone levels in predators as an indicator of prey availability), developing ecosystem reference points, including OY cap considerations, and improvements of current ecosystem models.

4. Development of forecasting tools that incorporate ecosystem indicators into single or multi-species stock assessments to conduct management strategy evaluations under differing assumptions regarding climate and market demands. Standardization of "future scenarios" will help to promote comparability of model outputs. Process-oriented research focused on local impacts of fishing on prey availability for top trophic level consumers will also be informative.
5. Development of spatially explicit stock assessments that allow for management to be linked appropriately to stock boundaries and habitat use.

2. Fisheries Interactions

A. Bycatch

1. Improved estimation of total bycatch including tier 2 marine mammals and seabirds. At present, it is clear that observer coverage in some fisheries is insufficient for estimation of total bycatch. Examples include the sablefish longline fishery, skate fishery, Pacific cod pot and longline fishery, and halibut longline fishery. Improved accuracy of identifications and enumerations of bycatch species is necessary. The current program results in imprecise bycatch estimates for species, such as skates, sharks, yelloweye rockfish, and sablefish in halibut fisheries. Improved methods may include direct and alternative monitoring options (e.g., electronic logbooks, video monitoring) on smaller groundfish and halibut vessesls.
2. Research on discard and handling mortality rates. Better estimates of discard mortality rates by gear and fishery is needed to estimate more accurately total bycatch mortality for all discarded species, with an emphasis on such species as crabs, skates, sharks, rays, and octopus.
3. Efficacy of bycatch mitigation measures. Research is needed on the efficacy of bycatch mitigation measures (e.g., PSCs, time/area closures) and their effects on populations of the bycatch and target species, effects of changes in abundance of bycatch species on bycatch rates, and methods for assessing the economic and social costs of bycatch.
4. Gear technology. Further research is needed on gear modifications and fishing practices for reducing bycatch, such as research that has been conducted to protect salmon, halibut, rockfish and seabirds.

B. Expanded Ecosystem Studies

1. Forage fish. Understanding the dynamics of important pelagic and benthic forage species, such as capelin, herring, myctophids, euphausiids, shrimp, squid, and juvenile pollock remains a high priority for understanding energy flow to commercially important species and to protected species, including seabirds and mammals. Innovative approaches to assessing such stocks are needed and may include novel acoustic techniques (e.g. low-frequency sound), air-borne surveys, and indices based on the diet of predators, including seabirds or marine mammals.
2. Ecological effects of bycatch and discards. Selective removal of certain species of certain size ranges can affect the relative abundance of fish communities, perhaps with consequences on their ecological interactions. Moreover, fishery discards can favor scavenging species over others, perhaps with consequences on groups, such as seabirds and benthic communities.
3. Climate change and fish communities. Changes in ocean temperature and acidity may affect managed species and lower trophic levels. For instance, if recent changes in ice cover and temperatures in the Bering Sea persist, they may have profound effects on marine communities. Apparent declines in zooplankton wet weight over the shelf measured by the Oshoro Maru could imply the loss of critical copepod and euphausiid prey of important

species, such as pollock. Existing data sets (bottom trawl surveys, BASIS surveys) can be used to quantify changes in relative species composition of commercial and non-commercial species, identify and map assemblages, and monitor changes in the distribution of individual species and assemblages. Additional monitoring may be necessary in the Aleutian Islands and other areas of the Gulf of Alaska.

4. Ecosystem structure studies. Studies are needed the implications on food web interactions of global warming, ocean acidification, and selective fishing. For instance, studies are needed to fully evaluate selective removal of some components of the ecosystem (e.g., Pacific cod, pollock) relative to others (e.g., arrowtooth flounder).
5. Ocean acidification and effects on marine ecosystems. As atmospheric greenhouse gas emissions increase, more CO_2 is absorbed by the sea surface, thus increasing levels of carbonic acid, resulting in lower pH. If trends continue, the ability of organisms, such as pteropods and king crab larvae, to form exoskeletons will be compromised, perhaps resulting in extirpation of these species. Monitoring of pH levels and additional studies of these effects are necessary.
6. Environmental effects on recruitment and growth. Studies on effects of climate on recruitment and growth (GPT C1) could include the development of standard environmental scenarios for future variability based on observed patterns. There is also a clear need for information that covers a wider range of seasons than presently available.
7. Nutrients and lower trophic levels. There is limited information regarding nutrient dynamics and phytoplankton/zooplankton dynamics on the Bering Sea and Gulf of Alaska shelves and through the Aleutian Island passes (e.g., supply of nutrients to the shelf, interannual variability and changes in nutrient supply, potential for HABs, etc.). Recent advances in technology such as towed undulating vehicles with various sensors and plankton recorders allow high-frequency sampling of both nutrients and plankton. Such sampling could support detailed process studies as well as the development of relatively low-cost monitoring programs in conjunction with existing surveys or through new surveys.
8. Predator-prey interactions. Diet information from seasons in addition to summer is needed to assess seasonal changes in predator-prey interactions. The diet information should be collected on the appropriate spatial scales for key predators and prey to determine how food webs may be changing.
9. Local fishery interaction studies. Whereas global fishery control rules may generally prevent overfishing on a broad regional basis, non-random patterns of fishing may cause high rates of removals in local areas important to apex predators. More studies are needed to fully evaluate potential local effects of fishing on other components of the ecosystem (e.g., marine mammals and seabirds).
10. Relationships between oceanographic conditions, prey, and effects on scallop population health and distribution with an emphasis on Yakutat. Sporadic poor quality of scallop meats from the Yakutat area is an issue. A broader issue is the relationship between ocean currents and scallop metapopulation structure.

C. Protected Species Interactions

1. Population dynamics, life history, and assessment of protected species, including Steller sea lions, northern fur seals, spectacled eider, short-tailed albatross.
2. Local fishery interaction studies. Whereas global fishery control rules may generally prevent overfishing on a broad regional basis, non-random patterns of fishing may cause high rates of removals in local areas important to apex predators such as Steller sea lions and northern fur seals, spectacled eider, short-tailed albatross. More studies are needed to fully evaluate

potential local effects of fishing on other components of the ecosystem (e.g., marine mammals and seabirds).

3. Economic, social, and cultural valuation research is needed to fully assess the monetary and non-monetary costs and benefits attributable to proposed management or other regulatory actions

3. Habitat

A. Habitat mapping

1. Improved habitat maps are required to identify essential fish habitat and distributions of various substrates and habitat types, including habitat-forming living substrates.

2. Improved identification and quantification of removal of species are needed in the broad "coral" category, by the Fishery Observer Program.

3. Improved mapping of critical habitats are needed for listed marine mammals and seabirds, such as short-tailed albatross, spectacled eider, and Steller sea lions.

B. Habitat models

1. Further development of habitat-based models of distribution, abundance, and sensitivities are necessary. Such models have great potential to improve estimates of stock size and their spatial structure, as well as areas of sensitivity to fishing impacts.

C. Effects of Fishing on Bottom Habitats

1. Additional field studies are needed on the effects of fishing on seafloor habitats. Studies need to be conducted in a variety of bottom habitat types, using a variety of gear types. Studies should focus on short- and long-term effects on benthic communities and bio-geological processes. Such studies are particularly needed in the northern Bering Sea.

D. Management Strategy Evaluations

1. Evaluate the effectiveness of existing closures in meeting stated management objectives.

4. Other Areas of Research Necessary for Management Purposes

A. Social and economic research

The need for the development and continued maintenance of basic economic and social information databases on the fisheries and fisheries dependent communities of GOA and BSAI is made ever more pressing as the Council continues to adopt actions that are intended to improve the long term net benefits derived from fisheries. This information is required for establishing a baseline to be used in identifying stakeholders to be included in the distribution of dedicated access privileges (e.g., harvesting quotas and processing quotas), a baseline to be used for projecting the likely consequences of alternative management measures, and as a baseline for retrospective analysis of management actions that have been taken.

<u>Particularly pressing research needs include:</u>

1. Development of an ongoing database of product inventories, trade volume, and prices for principal shellfish, groundfish, and salmon harvested by U.S. fisheries in the North Pacific and eastern Bering Sea. This database needs to include information about product form (e.g., fresh, frozen, whole fish, fillets, other value-added product forms and grades, etc.), but need not be firm specific.

2. Analyses of current determinants of exvessel, wholesale, international, and retail demands for principal seafood products from the GOA and BSAI;
3. Pre- and post-implementation studies of the benefits and costs, and distribution of benefits and costs associated with changes in management regimes (e.g., changes in product markets, characteristics of quota share markets, changes in distribution of ownership, changes in crew compensation, as a consequence of the introduction of dedicated access privileges in the halibut/sablefish, pollock, and crab fisheries). "Benefits and costs" include both economic and social dimensions.
4. Prospective analyses of the robustness and resilience of alternative management strategies under varying environmental and ecological conditions; and,
5. Prospective and retrospective analyses of changes in the spatial and temporal distribution of fishing effort in response to management actions (e.g., time/area closures, marine reserves, bycatch restrictions, co-ops, IFQs).
6. Kodiak is at the center of controversy associated with the recently adopted crab rationalization program. What were the direct and indirect impacts and how were the impacts distributed throughout the community? As Kodiak is also likely to be at the center of controversy over the likely consequences of Gulf rationalization, it would be particularly advantageous if research could be designed to use Kodiak or other Gulf communities as case studies in analyses of the effects.
7. Develop a framework for collection of economic information on commercial, recreational, charter fishing, and fish processing to meet the requirements of this MSFCMA sections 303(a)(5, 9, 13), 303(b)(6), and 303A.

Additional important research needs include:

Development of longitudinal data sets of:

a. Transaction level observations of exvessel, wholesale, and retail prices;
b. Daily or weekly, firm-scale data on production, by species and product form;
c. Trip-scale data on variable costs (e.g., fuel, labor, supplies, etc.) for catcher vessels, catcher-processors, and sportfishing charters (these data should be matched with existing data on catch, catch composition, and production);
d. Daily or weekly plant-scale data on variable processing costs (e.g., fuel and power, labor, supplies, packaging, etc.) for shore-based and floating processors;
e. Annual vessel- or plant-level data on fixed costs (e.g., capital replacement, maintenance, repair, upgrades, insurance, etc.);
f. Trip-scale information about the location and duration of fishing (e.g., VMS records, or observer information on steaming time, fishing time, etc.);
g. Weekly or monthly data on patterns (location and magnitude) of expenditures associated with harvesting, processing, and sportfishing charters;
h. Pay-period scale, vessel- and plant-level data on employment and income of fishery participants, especially crew and processing plant workers;
i. Socioeconomic and demographic data for fishery dependent communities (income levels and distributions, population levels and distributions); and,
j. Community- and regional-scale annual data on the distribution and magnitude of tax receipts and transfer payments associated with commercial and sport fishing.

2. Analyses or the development of models to evaluate:

a. The evolution of community social and economic structure in response to alternative management actions:
   i. Baseline assessments of selected communities and industry sectors relative to social considerations identified by the Council and the Advisory Panel;
   ii. Field studies to elucidate the full array of linkages between fisheries and social and economic life in fishery dependent communities;
   iii. Regional economic models of activities and impacts associated with commercial, sport, and subsistence fisheries;
   iv. Prospective and retrospective studies of the social and economic impacts of alternative management actions;
   v. Development of better methods for determining the social costs and benefits of management actions (e.g., through the use of non-market valuation techniques);
b. The benefits, costs, and the distribution of benefits and costs associated with consumptive and non-consumptive uses of resources supported by the North Pacific and Eastern Bering Sea ecosystems:
   i. Cost functions for harvesting, processing, and charters sportfishing operations;
   ii. Producers and consumers surpluses associated with commercial fisheries, under current and alternative management regimes;
   iii. The magnitude and distribution of benefits and costs associated with sport and subsistence harvests, under current and alternative management regimes;
   iv. Existence and option values associated with corals, seabirds, and marine mammals;
   v. The value of ecosystem services;
c. Evaluation of alternative management strategies:
   i. The cumulative efficiency and equity consequences of management actions that apply time/area closures;
   ii. Management strategies and optimal yield for multi-use fisheries (e.g., commercial, sport, and subsistence fisheries for halibut and salmon);
   iii. The relationship between sampling strategies and the statistical confidence of bycatch estimates associated with individual and pooled bycatch quotas, and the economic and social costs of bycatch;
   iv. Changes in catch efficiency and operating costs associated with gear modification and avoidance behaviors intended to reduce bycatch;
d. Evolving seafood markets:
   i. Mechanisms and costs of providing traceability systems for certifying product and production attributes of seafoods;
   ii. Consumer demand for seafood and associated byproducts harvested from stocks that have been certified as sustainably managed.

ADVISORY PANEL MINUTES
North Pacific Fishery Management Council
June 4-9, 2007, Harrigan Hall, Sitka, AK

The following members were present for all or part of the meeting:

Lisa Butzner	Jan Jacobs	John Moller
Joe Childers	Bob Jacobson	Jeb Morrow
Craig Cross	Simon Kinneen	Ed Poulsen
Julianne Curry	Kent Leslie	Michelle Ridgway
Tom Enlow	Tina McNamee	Lori Swanson
Bob Gunderson	Mike Martin	
John Henderschedt	Matt Moir	

The AP approved the minutes from the previous meeting.

C-1 Halibut Charter Management

(a) Stakeholder Recommendations and compensated re-allocation

The AP recommends the Council use the following revised elements and options for analysis.

Compensated Reallocation between Commercial and Charter Sectors in Areas 2C and 3A

Problem Statement
The absence of a hard allocation between the longline and the charter halibut sectors has resulted in conflicts between sectors and tensions in coastal communities dependent on the halibut resource. Unless a mechanism for transfer between sectors is established, the existing environment of instability and conflict will continue. The Council seeks to address this instability while balancing the needs of all who depend on the halibut resource for food, sport, or livelihood.

Action 2. Implement measures to allow compensated reallocation between the commercial sector and the charter sector

Element 1: Holder of Quota Share, Method of Funding and Revenue Stream
Element 1.1: Federal – common pool

A. Method of Funding
   - option 1. loan
   - option 2. buyout program

B. Revenue Stream
   - option 1. halibut charter stamp
   - option 2. moratorium permit fee
   - option 3. self-assessment fee
     - suboption 1. fee is based on number of clients
     - suboption 2. fee is based on number of fish

Element 1.2: State of Alaska – common pool

A. Method of Funding
   - option 1. loan
   - option 2. bonding

B. Revenue Stream
   - option 1. charter stamp

option 2. sportfishing license surcharge
option 3. business license fee/surcharge or limited entry permit holder
suboption 1. fee is based on number of clients
suboption 2. fee is based on number of fish

Element 1.3: Regional private non-profit associations – common pool
A. Method of Funding
option 1. loan
B. Revenue Stream
option 1. self-assessment
Suboption 1. fee is based on number of clients
Suboption 2. fee is based on number of fish

Element 1.4: Individual - private (A moratorium permit would be required unless the moratorium is not in place, in which case a Guided Sportfish Business License would be required instead.)
A. Method of Funding
option 1. loan programs
option 2. private funding

Revenue streams will be for a defined period and end after the loan or bond is paid off, i.e. continuous open-ended revenue streams are to be avoided.

Element 2: Restrictions on transferability of commercial quota share by charter sector, with grandfather clause to exempt current participants in excess of proposed limits

Element 2.1: Limits on transferability
The percentages are based on the combined commercial and charter catch limit. These are intended to establish a minimum amount that will always be available to each sector.

A percentage of the combined commercial and charter catch limit will be available for transfer between sectors.
Option 1: 10 percent
Option 2: 15 percent
Option 3: 20 percent
Option 4: 25 percent

Element 2.2: Limits on purchase

A. entities purchasing for a common pool:
Option 1. limited annually to a percentage (30-50%) of the average amount of QS transferred during the previous five years.
Option 2. Restrictions on vessel class sizes/blocked and unblocked/ blocks above and below sweep-up levels to leave entry size blocks available for the commercial market and to leave some larger blocks available for an individual trying to increase their poundage.

(These options are not intended to be mutually exclusive.)

B. individual: subject to the current ownership cap and block restrictions associated with commercial quota share

Element 2.3: Limits on leasing

A. Common Pool:

The common pool may only lease 0-15% of holdings back to the commercial sector.

B. Individual charter operators:

Option 1. an individual may not hold or control more than the amount equal to the current setline ownership cap converted to the number of fish in each area (currently 1% of the setline catch limit in 2C or ½% in 3A)

Option 2. an individual may not hold or control more than 2,000, 5,000, or 10,000 fish. (Note: examine this as a percentage of the catch limit once allocations are established.)

**Option 3.charter operators may lease up to 10% of their QS back to commercial sector

C. Individual commercial fishermen:

i. Commercial fishermen who do not hold a sport fishing guide business license and/or moratorium permit may lease up to 10% of their annual IFQs for use as GAF[1] on an individual basis, or to a common pool.

ii. Commercial fishermen who hold QS and a sport fishing guide business license and/or a halibut moratorium license may convert all or a portion of their commercial QS to GAF on a yearly basis if they own and fish it themselves on their own vessel. Commercial and charter fishing may not be conducted during the same **day.

Element 3: Implementation Issues

1. These qualifying entities may purchase commercial QS and request NMFS to issue annual IFQs generated by these shares as Guided Angler Fish (GAF*).

2. Qualified entities harvesting GAF while participating in the guided sport halibut fishery are exempt from landing and use restrictions associated with commercial IFQ fishery, but subject to the landing and use provisions detailed below.

3. GAF would be issued in numbers of fish. The conversion between annual IFQ and GAF would be based on average weight of halibut landed in each region's charter halibut fishery (2C or 3A) during the previous year as determined by ADF&G. The long-term plan may require further conversion to some other form (e.g., angler days).

4. Subleasing of GAF would be prohibited.

5. GAF holders may request NMFS convert unused GAF into IFQ pounds for harvest in compliance with commercial fishing regulations provided the GAF holder qualifies under the commercial IFQ regulations.

6. Unused GAF may revert back to pounds of IFQ at the end of the year and be subject to the underage provisions applicable to their underlying commercial QS.

7. All compensated reallocation would be voluntary based using willing seller and willing buyer.

8. Guided angler fish derived from commercial QS may not be sold into commerce, i.e., all sport regulations remain in effect.

9. Guided angler fish derived from commercial QS may not be used to harvest fish in excess of the non-guided sport bag limit on any given day.

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[1] * GAF = Guided Angler Fish (This is used only as a charter unit of measurement for commercial quota share converted to charter use and is not indicative) of a particular long term solution.)

** indicates changes made by the AP to the Halibut Stakeholder recommendations

10. There needs to be a link between the charter business operators and the cost of increasing the charter pool. If the charter business operators do not experience the cost of increasing the charter pool, there will not be a feedback loop to balance the market system.
Motion passed 17/2.

Additionally, the AP requests that the Council task the enforcement committee with evaluating the issue of unguided (or bare boat) halibut charters. The AP is concerned that this growing sector may be legally circumventing the intent of the Council to limit charter halibut harvests. *Motion passed 18/0.*

C-1 (b) Area 2C GHL Harvest Measures

The AP recognizes the immediate need for action regarding the implementation of measures that keep charter harvest within the GHL. The AP strongly recommends the Council implement Option 12, with a four fish annual limit. However, the AP recommends the proposed rule also notice the public that if the GHL is reduced to 1.217 million pounds due to CEY reduction, or because one or more elements of option 12 are not implementable, then the preferred alternative would be a one fish daily bag limit for the entire season.
Motion passed 18/1.

Minority Report
The minority of a failed 7/12 motion, wishes to strike Option 1-- Limit vessels to one trip per day from charter fleet management measures -- because it disproportionately impacts operational flexibility of historical participants in the charter industry without yielding significant reductions in halibut harvest. Signed: Mike Martin, Michelle Ridgway, Tina McNamee, Lisa Butzner, Simon Kinneen, Lori Swanson

C-2 Halibut Subsistence

The AP recommends the Council request staff work with State and Federal staff to further research the rural definition issue and report back at a future meeting. *Motion passed 18/1.*

Additionally, the AP recommends the Council initiate an analysis for a regulatory amendment to list the Kanatak tribe fishing area as 3A. *Motion passed 19/0.*

C-3 Trawl LLP Recency

The AP recommends Council establish an "Exemption Statements" section in the Description of Alternatives, Components, and Options. This section would directly follow the description of the three alternatives.

Further, the AP recommends the Council delete Component 3 and Option 1 and add the following to the Exemption Statement section: Exclude LLPs originally issued to vessels qualified under the AFA and any non-AFA LLPs assigned to AFA vessels not having any other license from LLP qualification in the BSAI. *Motion passed 19/0*

The AP recommends adding a statement under the "exemption statements" that would exempt the CGOA rockfish pilot program participants adding the staff's language: exclude central GOA or GOA (ass appropriate) area endorsements of the LLPs qualified for the rockfish demonstration program from LLP qualification under the amendment. *Motion passed 19/0*

The AP recommends the Council delete Component 4 and Option 1 and add the following to the Exemption Statement section: Exempt LLPs assigned to the vessels qualified under Amendment 80 and other LLPs assigned to the qualifying vessels at the time of implementation. *Motion passed 16/3*

The AP recommends the Council delete Component 1 – Option 3 and add the following to the Exemption Statement section: Exempt trawl LLPs in the BSAI or GOA assigned to vessels having a maximum mean length overall designation of 60 feet with landings of Pacific cod in the Bering Sea with any gear from application of the threshold criteria. *Motion passed 19/0*

The AP recommends the Council delete Component 1 – Option 1 requiring at least one landing of groundfish during the qualification period of 1995 – 2005 and delete Component 1 – Option 2 – Suboption 1 requiring at least two landings of groundfish during the qualification period of 1995 – 2005. *Motion passed 19/0*

The AP recommends that the Council include application of the harvest thresholds for LLPs to CP BSAI LLPs that are non-AFA licenses and also are not LLPs qualified for Amendment 80. *Motion passed 19/0*

D-3 (a) Habitat Conservation

The AP recommends the Council adopt Alternative 3 with Option 1, Option 3, Option 4 with the suboption (wedge), and Option 5. The Council review in Option 4 should occur 36 months following the FR publication of the final rule.
Motion passed 16/3.

(b) Habitat Areas of Particular Concern

The AP recommends the Council initiate a call for HAPC proposals with the inclusion of the following priorities:

1. Skate nurseries
2. EBS Canyons
3. Important crab habitat

The AP envisions that initiating this process will begin characterizing these habitat types without presupposing whether they merit designation as HAPC or should management measures be considered until these habitats are profiled and their ecological significance is described. *Motion passed 18/1*

C-4 Crab Management

C-4 (b) Crab overfishing

The AP received a presentation of this agenda item and given the comments of the SSC, has no additional recommendations. *Motion passed 19/0*

C-4 (c) Custom processing exemptions

The AP recommends the Council adopt the following purpose and needs statement:

> *In remote areas and small TAC fisheries, the extended fishing seasons under rationalization may cause processing activity to be extended over a longer period of time. This temporal extension of processing activity, together with the lower throughput levels, limits the ability of processors to achieve production efficiencies. Allowing concentration of processing in fewer facilities, by exempting custom processing at a plant from the use cap of the plant owners, could increase processing efficiency. This efficiency increase could improve competition in processing. In some cases, exemption of custom processing at a facility from use caps of the owner could provide for contingencies in the event of a facility breakdown, assist in allowing full harvest of the TAC, and contribute to community sustainability.*
>
> *In remote areas (e.g. the western region) with small TAC fisheries for crab species (e.g. WAI brown crab) and extended fishing season, the goals of sustaining communities in the region and allowing the full harvest of the TAC could be better achieved by exempting custom processing beyond the processing use cap by processors.*
>
> *Two of the objectives of the proposed action are to protect the economic base of remote communities dependent on crab processing, and to allow for the efficient prosecution of quota held by fishermen.*

The AP adopts the following elements and options:

Fisheries and Regions:

Custom processing will be exempt from use caps in the following regions and fisheries:

The North region of the Bering Sea *C. opilio* fishery (analyzed here for regulation change from MSA reauthorization – not optional)

Option 1) the Western Aleutian Islands golden king crab fishery,
Suboption: West region only

Option 2) the Western Aleutian Islands red king crab fishery,

Option 3) the Eastern Aleutian Islands golden king crab fishery,

Option 4) the St. Matthews blue king crab fishery, and
Suboption: North region only

Option 5) the Pribilof red and blue king crab fishery
Suboption: North region only

Definition of custom processing exemption:

Option 1) Physical processing of crab at a facility owned by an entity does not count toward the cap of the entity (only processor share holdings count toward an entity's cap).

Option 2) Custom processing is the processing of crab received with IPQ that has 50 percent or less common ownership with the processing plant.

Locations qualified for the exemption:
Custom processing will qualify for the exemption provided that processing is undertaken in the applicable fishery and region at:
Option 1) a shore plant
~~Option 2) a shore plant or a floating processor that is moored in a harbor~~
~~A floating processor moored within a harbor, if it is moored within the boundaries of:~~
Option 2) A shore plant, or a floating processor that is moored at a dock or docking facilities in a harbor in a community that is a first or second class city.
~~Suboption A) a first or second class city or borough~~
~~Suboption B) a first or second class city~~
Option 3) any shore plant or floating processor

Plant cap
Outside of the W region, no plant may process more than 60% of
a) EAI golden king crab
b) WAI red king crab
Motion passed 15/0/2

Additionally, the AP recommends adopting the following options and purpose and needs statement regarding community interests:

Option 1) in the event that processing shares are transferred to the community entity holding the right of first refusal for those shares, the processing of those shares in the community of origin will not count toward the cap of the processing plant

Option 2) in the event that processing shares subject to a right of first refusal are transferred from the initial recipient, custom processing of shares in the community of origin will not be counted toward cap of processing plant (the shares would only count toward the cap of the share holder)

Under the rationalization program, community interests in historic processing are protected by granting communities a right of first refusal on the transfer of shares from the community of origin. In some instances, the combination of consolidation of processing share holdings and the counting of processing at a plant against the plant owner's cap on the use of processing shares could complicate the retention of processing in the community of origin. Exempting processing of shares in the plant of origin from the use cap of the plant owner could facilitate retention of historical processing in communities.
Motion passed 16/0/1

Active Participation requirements for C shares
The AP recommends the Council adopt the following purpose and need statement, elements and options:

Owner on board requirements and leasing prohibitions on C shares are scheduled to go into effect after the third year of fishing under the program. Those rules may be overly burdensome to active captains and crew given the current fleet fishing patterns in which vessels may not be active in all fisheries some years. Also, under the current rules in the program, C share holders that are cooperative members are exempt from owner on board requirements and leasing prohibitions. Revisions to the current participation requirements are necessary to establish reasonable participation requirements for C share holders and to ensure that the all C share holders remain active in the fisheries.

Elements and options
Status quo

Options for revision of active participation requirements for C share holders
To receive an annual allocation of IFQ, a C share holder must have participated in at least one delivery in a fishery subject to the crab rationalization program in the 365 days preceding the application for IFQ.

If a C share holder has not demonstrated active participation in a rationalized fishery for a period of 3 consecutive seasons, that C share holder will be required to divest of all C share holdings. This provision will not require individuals to divest of QS until a) 5 b) 7 years after implementation of the crab program.

Initial allocation of quota to C share owners will be:
Option: grandfathered and exempt from active participation requirement. Any purchased quota will not be exempt.

Demonstration of recent participation in the North Pacific fishery will qualify for active participation.
Option 1: Acquision of shares
Option 2: To maintain holdings and annual allocations

Motion passed 16/0/1

Additionally, the AP recommends the Council direct staff to work with financial services to determine possible means of limiting new entrants along with minimum and maximum quota share holding requirements to determine eligibility in the loan program. *Motion passed 18/0.*

Further, the AP recommends the Council adopt the Purpose and Need Statement concerning Processing Share and Regional Landing Requirements

Post delivery transfers
The AP recommends the Council adopt the purpose and needs statement as written.
Further, the AP recommends adoption of the following Alternatives and options – (striking Alternative 4)

Alternative 1 – Status Quo (no post-delivery transfers)

Alternative 2 – Unlimited post-delivery transfers
Purpose of post-delivery transfers
Post-delivery transfers would be allowed exclusively to cover overages.

Shares used for post-delivery transfers
Post-delivery transfers of the following shares are permitted:
- B share IFQ
- A share IFQ (provided a processor simultaneously commits matching IPQ)
- C share IFQ
- catcher processor IFQ
- IPQ

Limits on the magnitude of a post-delivery transfer
None

Limits on the number of post-delivery transfers
None
No person shall be permitted to begin a fishing trip, unless the person holds unused IFQ.

Limits on the time to undertake a post-delivery transfer
A post –delivery transfer will be permitted after a landing for a catcher vessel (or weekending date for a catcher processor) for a period of 30 days.

Eligibility for post-delivery transfers:
1. All harvesters
2. Inter-cooperative members
   The intercooperatve must
   a. Represent 30%, 50%, or 65% of the IFQ for the fishery
   b. Have established reserve pool mechanisms
   c. Have an authorized representative to manage transfers with RAM

Alternative 3 – Moderate limited post-delivery transfers
Purpose of post-delivery transfers
Post-delivery transfers would be allowed exclusively to cover overages.

Shares used for post-delivery transfers
Post-delivery transfers of the following shares are permitted:
B share IFQ
A share IFQ (provided a processor simultaneously commits matching IPQ)
C share IFQ
catcher processor IFQ
IPQ

Limits on the magnitude of a post-delivery transfer
Each post-delivery transfer shall be limited to 10,000 pounds of IFQ (or IPQ).

Limits on the number of post-delivery transfers
Possible options
For each species, an IFQ (or IPQ) holder is limited to receiving post-delivery transfers to cover two overages.
No person shall be permitted to begin a fishing trip, unless the person holds unused IFQ.

Limits on the time to undertake a post-delivery transfer
Post –delivery transfers will be permitted after a landing for a catcher vessel (or weekending date for a catcher processor) for a period of 15 days.

Eligibility for post-delivery transfers:
1. All harvesters
2. Inter-cooperative members
   The intercooperatve must
   a. Represent 30%, 50%, or 65% of the IFQ for the fishery
   b. Have established reserve pool mechanisms
   c. Have an authorized representative to manage transfers with RAM

Motion passed 17/0

Post delivery transfers for rockfish
The AP recommends the Council create separate crab and rockfish post-delivery transfer amendment packages for analysis on a parallel track. *Motion passed 17/0.*

The AP recommends the Council delete Alternative 4, and change the limits on the time to undertake a post-delivery transfer from 15 to 30. *Motion passed 18/0.* Further, the AP recommends adopting the purpose and needs statement as written. *Motion passed 18/0*

C-5 Observer Program

The AP recommends the Council incorporate the OAC committee recommendations on Issues 1-7 in the Alternatives for regulatory revisions of the North Pacific Groundfish Observer program, and further recommends the Council move forward on the additional three committee recommendations. *Motion passed 16/0.*

C-6 CDQ Program

The AP recommends the Council select Alternative 2 for final action, removing the prohibition against discarding rockfish and Pacific cod when halibut or sablefish are onboard a vessel. *Motion passed 16/0/1*

D-2 (a) GOA Arrowtooth MRA adjustment

The AP concurs with the SSC's recommendations, and recommends the Council release the document for public review. *Motion passed 15/0.*

D-2 (b) Salmon Bycatch

The AP recommends the Council adopt the Salmon Bycatch Workgroups recommendations and consider including the cap/closure accounting system recommendations in the analysis. *Motion passed 16/0/2.*

D-2 (d) CGOA Rockfish Monitoring EFP

The AP recommends the Council approve the EFP to explore electronics monitoring in the CGOA rockfish program. *Motion passed 16/0.*

D-4 AI Fishery Ecosystem Plan

The AP recommends the Council approve the AI fishery ecosystem plan. *Motion passed 17/0.*

D-5 Arctic Fishery Management

The AP recommends the Council develop a policy and recommended structure for its management of the Chukchi Sea and Beaufort Sea as a basis of further development of an Arctic management action plan. *Motion passed 16/0.*

D-6 Staff Tasking

The AP recommends the Council initiate an analysis for a change to the POP MRAs in the pollock fishery in the AI. *Motion passes 16/0.*

The AP further recommends the Council request a discussion paper on the feasibility of making MRA percentages part of the annual specifications process. *Motion passed 13/3.*

The AP recommend the Council request staff to prepare a discussion paper concerning a potential amendment to Amendment 80 to allow post harvest transfer of CQ between coops. *Motion passed 16/0.*