

North Pacific Fishery Management Council

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Certified _____

Date _____

**REPORT
of the
SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
October 2-5, 2006**

The Scientific and Statistical Committee met during October 2-5, 2006 at the Grand Aleutian Hotel in Dutch Harbor, AK. Members present were:

Gordon Kruse, Chair
University of Alaska Fairbanks

Pat Livingston, Vice Chair
NOAA Fisheries—AFSC

Keith Criddle
University of Alaska Fairbanks

Mark Herrmann
University of Alaska Fairbanks

Sue Hills
University of Alaska Fairbanks

Anne Hollowed
NOAA Fisheries—AFSC

George Hunt
University of Washington

Seth Macinko
University of Rhode Island

Franz Mueter
SigmaPlus Consulting

Steve Parker
Oregon Department of Fish and Wildlife

Ken Pitcher
Alaska Department of Fish and Game

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:

Steven Hare
International Pacific Halibut Commission

B-7 Protected Resources

The SSC received an informational report from Bill Wilson (NPFMC staff). He presented brief summaries of the following topics, none of which require action by the SSC.

- **Seabirds** - During the June meeting the Council and SSC received reports regarding the distribution of seabirds, particularly species with conservation concerns, within inside waters and trials of seabird avoidance measures from small longline vessels. The Council approved proceeding with additional analyses and preparation of an Environmental Assessment of new regulations regarding requirements for seabird avoidance measures within inside waters and standards for seabird avoidance measures from small vessels operating in outside waters.
- **Cook Inlet Beluga Whales** - NMFS is conducting a status review of the Cook Inlet beluga whale population for consideration for listing under the U.S. Endangered Species Act. They completed a 90 day finding, published in the Federal Register, concluding that there was adequate information to warrant preparation of an EIS that considers population status in relation to several human activities including salmon fisheries.

- Sea Lion Research - In late May 2006, as a result of a judicial ruling on a lawsuit filed by the Humane Society challenging the legality of Steller sea lion research permits issued by NMFS, all Steller sea lion permits were vacated. Negotiations between the Humane Society and NMFS resulted in an agreement to allow certain non-invasive research to resume. NMFS has contracted for the preparation of an EIS on their program for issuance of research permits for SSLs and northern fur seals. The schedule for completion of the EIS is March 2007 and permits could be potentially issued for research by May or June 2007.
- Experimental Pollock Fishery - The NPFMC authorized an experimental pollock trawl fishery within Steller sea lion critical habitat to be conducted by the Aleut Enterprise Cooperation in cooperation with AFSC NMFS. The objective of this fishery was to evaluate the use of small commercial vessels for acoustic surveys of pollock in the Aleutian Islands, with trawling being used to validate acoustic surveys. A preliminary report on the project has been prepared and distributed.
- Sea Lion Recovery Plan - The SSC met and reviewed the draft Steller sea lion recovery plan in mid-August. Comments on the draft plan were formulated and provided to the Council. The Council met via teleconference in late August to discuss the SSC comments and develop their own comments that were then provided to NMFS. The comments are now under review by NMFS Office of Protected Resources.
- International Whaling Commission - The International Whaling Commission will meet in Anchorage during May 2007. The IWC chairman is Dr. Hogarth, director of NMFS. It is anticipated that the IWC will discuss subsistence whaling by Alaskan Natives among other topics. It is not anticipated that the IWC will discuss issues directly relevant to the NPFMC.
- Sea Lion Biological Opinion - NMFS provided a draft of the first four chapters of the BiOp on Alaskan groundfish fisheries in relationship to the endangered western population of Steller sea lions. The Council will receive a detailed presentation on the completed draft during the February 2007 meeting. The SSC received public testimony from Ed Richardson regarding the current draft.

C-1 SSL Management

Bill Wilson (NPFMC staff), Kristen Mabry (NMFS AK Region) and Larry Cotter (SSLMC chair) provided an overview of ongoing development of a multi-criteria decision tool to be used to evaluate proposals for changes to SSL protection measures in the GOA and BSAI groundfish fisheries. Dave Fraser (Adak Fisheries), Ed Richardson (Pollock Conservation Cooperative), and Clem Tillion (Aleutian Enterprise Corporation) provided public comment.

The SSC commends the SSLMC and staff for the substantial effort that has been invested in the development of the proposal review tool (PRT). In particular, the SSC notes that the PRT has been adjusted to incorporate many of the suggestions included in our June and August 2006 minutes including use of the Analytic Hierarchical Process approach. The SSC recognizes the difficulty facing the SSLMC in developing a PRT that realistically reflects the relative impacts of competing proposals and a proposal against the status quo. Many of the data required by the model are either not readily available or have not reached agreement among SSL biologists.

The SSC remains encouraged by the progress that has been made and recommends that the PRT continue to be refined as the SSLMC moves forward with review of the proposals that have been received. The PRT provides an explicit representation of the criteria that the SSLMC considers relevant to discriminating among proposals, the weights assigned to those criteria, and the variables used to inform those criteria. This transparency facilitates public review, which can be expected to lead to evolution of the criteria, weights, and variables and to identify information gaps. In examining the PRT, it is important to remember that the PRT is intended as a mechanism to help the SSLMC develop advice to help the Council identify proposals or suites of proposals to advance for analysis and review.

As it continues to refine the PRT, the SSC encourages the SSLMC to consider the following:

1. Although there are many advantages to pairwise comparison of alternatives, with 29 proposals and many possible combinations of proposals to consider, the number of pairwise comparisons is too large. (There are 435 unique pairings of the 29 proposals, with each pairing requiring the evaluation of multiple variables.) Therefore, the SSC recommends that the PRT be used to rate proposals and suites of proposals.
2. It appears that “structural adjustment” decreases the effective weight of nodes with smaller numbers of subsidiary nodes. While this may be appropriate if the subsidiary nodes are all of equal importance, it is unclear if the structurally adjusted weights will reflect the relative weights intended by the SSLMC. Therefore, the SSC recommends that the SSLMC contrast the standard and structurally weighted results of a few representative proposals before deciding whether to use a structurally balanced framework for evaluating the actual proposals.
3. The interaction of distance zones and numbers of sites warrants careful review; the lack of difference between impacts to single sites and multiple sites in the 0-3 mile zone is counterintuitive. This is one example; the SSC encourages the SSLMC to continue its sensitivity analyses and investigation of the PRT to be sure it reflects the weights intended by the committee.
4. Because this is the first time that the PRT will be used to inform Council deliberations, it would be very useful to have it very well documented. The final report should elaborate on the reasoning that led the SSLMC to adopt the particular criteria, variables, and model structure. This includes the reasoning that led to the weighting scores of each of the criteria, the data used, the role of and rationale behind expert opinions, etc. For example, from discussion it appears that the % TAC variable is intended to use the regional/seasonal TAC but that is not explicitly stated.
5. The percent of sites affected in a region may not be a good proxy for the significance of the impact of proposals because sites differ in SSL numbers and demographics and in the timing of use. It may be advantageous to solicit NMFS-PRD input regarding the relative importance of individual sites and to use that importance to weight the number of sites impacted and the magnitude of impact anticipated. If numbers of animals on terrestrial sites is incorporated into the PRT, then the SSC suggests getting the detailed data on seasonal use of rookeries and haulouts such as data from the western and central Gulf of Alaska collected under the oversight of Kate Wynne of the University of Alaska Fairbanks. The Alaska Sea Life Center has limited data on seasonal use of several sites in the eastern Gulf of Alaska.
6. The assumption that fishing during the spawning season would result in localized depletion of the prey field available to SSL should be carefully discussed. The SSC notes that the argument for the Shelikof Strait pollock allocation was that the likelihood of localized depletion would be reduced in the winter because pollock have a strong behavioral response that could be expected to result in rapid re-composition of schools in the wake of disturbance by fishing. The goal of TAC management with time area partitions is to maintain more even exploitation rates over meso-scale spatial areas.
7. The SSC notes that use of the PRT has not yet been evaluated by NMFS-PRD and suggests that NMFS-PRD seek an early opportunity to meet with the SSLMC to contribute to further development of the PRT.
8. The SSC concurs with the principle of dividing the TAC into subunits more aligned with SSL regions. There is some question about how well the groundfish fishery statistical areas correlate with the SSL regions and how to best align these two different regional reporting methods.
9. When proposals have impacts that could affect multiple dimensions of a single node, the node should be restructured into two or more nodes.
10. The SSC suggests that the SSLMC reexamine which season is the most important for SSL, especially adult females. Summer haulouts are ranked second, below summer rookeries but ahead of winter rookeries and winter haulouts. However, summer haulouts are occupied by non-reproductive animals

without the strong affinity to specific terrestrial sites. It might be appropriate to reconsider this ranking and assign a ranking of summer haulouts below that of winter rookeries and winter haulouts, both of which contain females with dependent young. Unfortunately, only limited data are available on the winter foraging range of reproductive females with dependent young. It is known that lengths of foraging trips are relatively short, 2-3 days (Trites and Porter, 2002)¹, therefore females cannot range great distances from winter haulouts. The SSC suggests that the SSLMC re-examine the bioenergetics data, especially Winship et al. (2002)². It may be most appropriate to add a third season (spring) to the model or to weight the score by a bioenergetics curve. The SSC requests that whatever the decision is, that the SSLMC document the decision thoroughly and specifically.

As they review proposals rated by the SSLMC using the PRT, the Council and public should be aware that:

1. Irrespective of whether the SSLMC relies on ratings of proposals against a status quo, or conducts pairwise comparisons, the significance of differences in scores will be uncertain. It is important not to make too much of small differences in ratings unless these differences are insensitive to modest variations in the weights.
2. SSC heard several suggestions by fishers to do a “pre-fishery” assessment of local biomass using their own vessels so that local fisheries could be established. The SSC cautions against taking this idea to the limit of de facto individual TACs. Carried to the extreme, someone could propose to go assess the biomass in a particular area, then take some percentage of that within some period of time at some distance from SSLs with the idea being that “enough” fish are left in the water so that SSLs in the area have enough food so that no nutritional stress occurs. We don’t know what “enough” is, what the energetic demand is, or even how many SSLs are feeding in any given area. Nevertheless, the SSC is supportive of projects that could lead to refined understanding of spatial and temporal patterns of fish populations and interactions with SSL. Giving heightened priority to proposals that include a research component to collect the necessary information may be advantageous, although it is not clear whether such a “research-bonus” should be incorporated into the PRT, considered in general discussions of the SSLMC, or reserved for consideration in the Council’s analysis and review processes. For example, if a proposal calls for opening an area near a haul-out or rookery where seasonal attendance is uncertain, “extra points” could be given to those proposals that provided a sampling design that would allow collection of information to reduce the uncertainty in seasonal attendance and diet information or if it included a sampling design for conducting an assessment of local prey density prior to opening the fishery.

C-6 Social and Economic Data

Mark Fina (NPFMC staff) provided an overview of a draft discussion paper that proposes the development of a comprehensive social and economic data collection process.

The SSC encourages continued development of this discussion paper and notes that the document could benefit from inclusion of research priorities identified in our April 2006 report. In preparing a more complete draft of the discussion paper, the SSC encourages inclusion of a more detailed description of social data and the types of performance studies that could be developed from such data. The proposal should contain a short description of the envisioned linkage between economic analyses and social analyses. The SSC also notes that the inventory data are essential for understanding demand relationships

¹ Trites A. W., and B. T. Porter. 2002. Attendance patterns of Steller sea lions and their young during winter. *Journal of Zoology*, London. 256:547-556

² Winship, A. J., A. W. Trites, and D.A.S. Rosen. 2002. A bioenergetics model for estimating the food requirements of Steller sea lions in Alaska. *Mar. Ecol. Prog. Ser.* 229:291-312.

and that without information on product inventories, discussion of revenue and welfare impacts of management measures is seriously impaired. The next draft of the discussion paper should recognize that the CP sector is not well represented as a component of the catching sector or as a component of the processing sector and should be subject to a specifically designed data collection instrument. In addition to data identified in the discussion paper or referenced in the SSC list of Research Priorities, data on plant/vessel production and consumption of fish oil should be collected.

D-1(a) Groundfish Plan team report and Ecosystem SAFE report

The SSC received a report from Diana Stram (NPFMC staff) and Jim Ianelli (AFSC) on the joint BSAI/GOA Plan Team meeting as well as the GOA and BSAI Groundfish Plan Team meetings in September. The report covered a variety of issues and included a very brief summary of the Ecosystem SAFE report and results from 2006 bottom trawl and EIT surveys.

Public comment was received from Thorn Smith (North Pacific Longline Association), Dave Fraser (Adak Fisheries), Gerry Merrigan (Prowler Fisheries), Ed Richardson (Pollock Conservation Cooperative), and Jon Warrenchuk (Oceana).

The SSC provides comments on the following specific issues:

- Criteria for assessing stocks in off-years (i.e., years without surveys). In response to a previous SSC request, the Plan Teams developed a protocol for determining criteria that help determine if a specific assessment will be conducted in an off-year. **The SSC endorses these criteria, but requests some clarification of how stocks that are classified as approaching an overfished condition would fit into the framework.**
- Substantially revised assessments. There are at least two assessments that were modified substantially from previous assessments (not including other species). In particular, the sablefish model was substantially revised and the northern rockfish model for the Gulf of Alaska were revised and updated in an off-year to address some concerns noted last year. We commend the authors for their work in improving these assessments. The full assessments will be reviewed at the December meeting.

Regarding the northern rockfish assessment, the SSC noted two issues of concern:

(1) The model fits poorly to recent high but extremely variable survey estimates. This high variability is related to the patchy distribution of rockfish and the presence of a number of untrawlable areas. The treatment of untrawlable areas in the analysis of survey data potentially affects all rockfish species (as well as other species) and was highlighted as a concern in the recently completed CIE review of rockfish assessments. Presently, estimates from trawlable areas are simply expanded to untrawlable areas and it is assumed that densities are the same in these areas. **The SSC encourages the stock assessment authors and the RACE division to initiate a more thorough exploration of the effects of untrawlable areas on survey estimates of abundance and of alternative ways to deal with untrawlable areas.** This work could build on previous work by Mark Zimmerman (AFSC) on the effect of untrawlable areas on biomass estimates in the West Coast survey region.

(2) A second issue raised by the Plan Team was the recognition that preliminary results from an analysis of the maturity schedule for northern rockfish suggest that the age at 50% maturity is younger. The SSC notes that this revised schedule will likely influence the calculation of biological reference points and encourages the release of the results of this study after reviews are completed.

- Dark rockfish. Diana Stram reviewed the GOA groundfish Plan Team recommendations concerning the draft EA to remove dark rockfish from the GOA groundfish FMP and defer management responsibility for dark rockfish to the state. The Plan Team recommended the analysis go forward and recommended dropping alternative 3 from the EA because it is unlikely

that the State will take on additional assessment/survey responsibility for a federally managed species. **The SSC concurs with both Plan Team recommendations and further recommends the analysis encompass both the GOA and BSAI FMPs for consideration. The analysis should consider previous comments and suggestions outlined in the SSC's April 2006 minutes.**

- Budget for groundfish surveys. The SSC is quite alarmed to learn that reductions in the NMFS budget may lead to reductions in survey effort in 2007. Reducing the extent and/or frequency of surveys has important implications for uncertainty of biomass estimates and catch specifications in the future. Survey biomass and age composition are critical information sources for all stock assessments, so reducing the quality of the information will reduce the quality of the stock assessments. The potential for increased errors in assessments may require more conservative harvest specifications in the future. The SSC encourages the Council to write NMFS and congressional representatives to advocate restoration of survey funding. Also, the SSC noted that the AFSC is currently conducting research to examine the effects of different survey designs and survey frequency on stock assessments. **The SSC strongly encourages these efforts, given the importance of surveys to stock assessments, and would like to receive a presentation on findings when they become available.**
- Tier 5/Tier 6 determinations for other species. For some of the other species assessments, authors noted that Tier 6 determinations seem inappropriate, yet there is insufficient information to use the Tier 5 formula. **The SSC points out that the Tier 6 formula is not binding and encourages the assessment authors and plan teams to explore other creative ways of determining reasonable harvest levels for species with minimal information on stock size.**
- Ecosystem Considerations. The SSC received a copy of the ecosystem SAFE and Plan Teams received an in-depth presentation on the ecosystem chapter. Because of logistical constraints, the SSC received only an abbreviated summary of the Ecosystem SAFE and will receive the full presentation in December (time permitting). In the future, as in the past, the SSC would like to receive a full report in October and a brief summary of the highlights in December. The SSC noted that the authors were very responsive to SSC requests (see October 2005 minutes) and the structure of the Ecosystem Chapter has improved greatly over time. The only suggestion the SSC provides at this point is to further streamline the Executive Summary to a short, bulleted list that only highlights major physical and biological changes that affect the Northeast Pacific environment in 2006 and their potential significance. We also seek clarification on page 39 under the target species status concerning which species are "overfished" or not.
- Pacific cod allocation among EBS and AI. The Plan team considered cod structure and, based on available information, did not recommend splitting Pacific cod specifications for the EBS and AI but provided subarea allocations for the Council if needed. The SSC re-iterates its position from the December 2003 minutes, which states that: "*The ABC for BS/AI cod is not currently allocated by area. ... The SSC believes that the ABC should be split among BS and AI areas* (Note: highlight not in original), *but we are not in a position to address the concerns expressed by the authors. Therefore, for the 2005 specification process, the SSC requests the authors to evaluate the methods used to split the ABC and their potential management implications, so that specific recommendations can be made to the Council on this issue in the future.*" While methods have been developed to estimate appropriate apportionments to the EBS and AI, there are still allocation issues to be resolved before the geographic split can be implemented (see staff discussion paper of September 15 on "Apportionment of BSAI Pacific cod sector allocations to BS and AI subareas"). New genetic information on Pacific cod will soon become available. **The SSC is interested in receiving a report from Mike Canino (possibly in February 2007) on the genetic basis for differences in cod populations between the EBS and AI.**
- The Plan Teams and SSC received a paper on estimating Pacific cod off-bottom distance from archival tag data that was collected for different purposes. The SSC encourages continued work along those lines, recognizing that such estimates could prove extremely valuable for improving survey estimates of abundance and stock assessments.

D-1(b) Groundfish harvest specification EIS

Ben Muse (NMFS AK Region) presented a summary of a draft EIS for 2007/2008 groundfish harvest specifications. NMFS decided to prepare an EIS for the 2007/2008 specifications instead of an EA (which was used in the past to compare alternative harvest strategies). The advantage is that in future years there is no need to prepare a lengthy document for each assessment cycle but instead rely on a supplementary EIS (which can refer back to this EIS) if substantive issues arise that would change the conclusions of this EIS. The SSC appreciates these efforts to streamline the NEPA process.

The draft EIS has been released for public review and the SSC offers the following comments on the structure and contents of the draft EIS:

- The authors produced a very readable and well structured document and the SSC appreciated the efforts to organize the draft EIS into separate stand-alone chapters with parallel structures. A number of short tables in each chapter contain brief and useful summaries of anticipated impacts under the different alternatives.
- The SSC also appreciates the responsiveness of the authors to previous SSC comments, in particular the inclusion of an appendix that details the projection methodology and efforts to compute confidence bounds for estimates of gross revenue. However, the SSC notes that including a discussion of unsuccessful efforts to compute such confidence intervals in the draft EIS may be premature at this point. Moreover, we re-iterate previous SSC concerns that estimates of gross revenue are not a very useful measure of revenue without cost information.
- While the organization into separate stand-alone chapters enhances readability, it also created a lot of redundancy. In particular, the SSC notes that sections on “reasonable foreseeable future actions” within each chapter repeat much of the same information and the authors may wish to consider combining the discussion of “reasonable foreseeable future actions” and their impacts on the different components of the ecosystem into a single chapter.
- The narrative format and a number of small tables in each chapter provide excellent summaries and discussions of anticipated impacts, but the large number of components examined within each chapter makes it sometimes difficult for the reader to identify those components that may be impacted under one or more alternative. The SSC suggests adding a single summary table at the beginning of each chapter that indicates for each component examined in the chapter and for each alternative whether anticipated impacts are unknown, of no concern, or of potential concern.

Regarding the move from annual EAs to an EIS/SEIS process, the SSC requests clarification on the following issues:

- If the SIR results in a finding that a Supplementary EIS is required, does the SEIS apply to all of the harvest specifications (regions and species) or can it be limited to only those regions and/or species that are affected?
- The changes that would trigger a Supplementary EIS are rather vague and should be formalized to the extent possible.
- It appears that the SIR determination is made exclusively by NMFS. It should be clarified whether there is a role for the Council in the process that determines whether a SEIS is required.

Other, minor comments regarding the contents of the draft EIS:

- Page v of the Executive summary contains a strong statement under ‘Essential Fish Habitat’ that “... *the assessment concludes no action is needed to further conserve EFH*”. This determination cannot be made based on the Harvest Specification EIS and the statement should be removed.
- Table 7-2 contains numbers that either suggest unreasonable precision or may be in error. We suggest dropping all decimal points.
- There is an apparent large contradiction between the first paragraph on page 13-6 and the numbers of unemployed Akutan residents in Table 13-2. This contradiction should be clarified in the text, rather than in a footnote on the following page (Footnote 33).

- In the analysis of seabird impacts, the authors should consider separating the discussion of albatrosses from those of shearwaters because albatrosses are much rarer and have a very different life history and life expectancy. For example, on page 9-5 it is stated that the takes of other albatrosses and shearwaters are less than 1% of the populations at risk. A take of one percent of the albatross population may reflect a substantial increase in total mortality of these species, which may experience natural mortality rates on the order of 5-10%.
- On p. 9-4, first paragraph under ‘Incidental take’: The second sentence should read “average **annual** longline bycatch ...” instead of “average longline bycatch...”.

D-1(c) Groundfish Harvest Specifications

Diana Stram (NPFMC staff) presented groundfish harvest specifications for 2007 and 2008 as summarized in the draft EIS and approved by the Plan Teams.

The SSC approves the BSAI and GOA groundfish harvest specifications as recommended by the Plan Team and summarized in the Plan Team minutes with two minor corrections:

- The 2008 OFL for rex sole in the GOA should be 11,200, not 112,000
- The sablefish OFL and ABC values for 2007 and 2008 should be apportioned to the BS and AI subregions based on the same ratio used for ABC apportionments in 2006 (49.7% BS, 50.3% AI):

sablefish	2007		2008	
	OFL	ABC	OFL	ABC
BS	3080	2580	2680	2240
AI	3120	2620	2720	2260

In the OFL and ABC projections for 2007/2008, the SSC noted small discrepancies between the 2007/08 OFL/ABC specifications adopted in December 2005 (which will open the 2007 fishery) and projections used in the draft EIS. The difference arises because the projection model for the draft EIS used a Tier 3 model, whereas the projection used in December 2005 (as recommended by SSC) used Tier 1 projections. **The SSC believes that the Tier 3 projections provide a reasonable approach for this year. However, we recommend that, in the future, projections should be done using the same approach that is approved by the Council in December of the previous year.** The SSC also encourages further exploration of the projection methodology by stock assessment authors and the Plan Teams to more closely approximate the management process.

The SSC notes that projections for 2007/2008 indicate relatively large decreases in the OFL and ABC of walleye pollock and Pacific cod and smaller decreases in other species. The total ABC for 2008 is projected to be just above the 2 million mt cap and catches may be constrained by halibut PSC limits.

D-1(d) VMS Requirements

The SSC received a presentation on the draft RIR/IRFA from Dr. Ben Muse (NMFS AKR). Public testimony was received from Gerry Merrigan (Halibut fisherman), Ann Williams (Alaska Longline Fishermen’s Association), and Bubba Cook (World Wildlife Fund).

The SSC recommends releasing the draft analysis for public review pending additional consideration of the following issues:

- **The current statement of purpose and need does not seem sufficiently relevant to the proposed alternatives.** The SSC notes that the bulk of the impacts of the proposed alternatives to the status quo result from increases in VMS coverage of the halibut and sablefish fleets. The SSC suggests that the Council further refine the problem statement to address this inconsistency,

specifying the need for extending VMS coverage to these two fishery components, and how this need varies regionally.

- **It is hard to assess who is affected and who is not under various options.** The SSC suggests the addition of a table near the beginning of the document that clarifies which gears/fisheries will be required to comply with the VMS regulations and which gears/fisheries are exempt.
- To the extent possible, the SSC would like to see the existing analysis taken to a finer scale in terms of the specific fleets, fisheries, and areas affected (e.g., break down the halibut/sablefish fisheries into existing vessel size and area categories).
- The program may create unintended behavioral incentives. For example, the exemptions that are tied to vessel size may encourage the kind of odd vessel design noted in other fisheries in Alaska featuring vessel length-based regulations. Additionally, implementation of the program may create incentives that could lead to consolidation of fishing operations.

D-1(e) Other Species Analysis Action Plan

Jane DiCosimo (Council staff) provided a review of the action plan to develop an EA/RIR/IRFA to evaluate approaches for managing the “other species” category. There was no public comment. The action alternatives could break out some or all of the species assemblages in “other species” for separate management, potentially eliminating the “other species” category altogether (remove BSAI and GOA sharks, sculpins, and octopuses, along with BSAI skates and GOA squids). GOA skates and BSAI squids have already been removed from the “other species” category and are currently managed as separate assemblages. Reclassification to separate management groups would require assemblage-specific OFLs and ABCs be set for each group as part of the annual specifications process for the BSAI and the GOA.

The problem statement describes the potential vulnerability of non-target species with small population sizes to overfishing under the current management approach of lumping these groups under a single “Other Species” TAC. The objectives of the proposed action should be clarified in the EA by describing how this action will help facilitate integration with the more global plan for managing non-target species, which is currently awaiting requirements under a reauthorized MSFMCA.

Under the programmatic management objective to prevent overfishing, this action is an intermediate step as it reduces the vulnerability to excessive fishing mortality for an assemblage, but does not provide species-level OFL and ABC protection for assemblage members (recognizing that these data are often not available). Given an upcoming more global action to evaluate management of non-target species, the SSC believes that the present action should focus on developing a framework that could be applied to “other species” assemblages, that is logically consistent with management of assemblages such as “other rockfish”, and that is consistent between the BSAI and GOA. This exercise could be used to inform proposals for a framework for addressing non-target species management. The criteria used to identify sensitive species or species assemblages should be logically consistent with the criteria to be used to separate these assemblages into species categories in the future, if possible.

The EA should provide details on how well the newly separated assemblages will be monitored to provide better protection from overfishing given the difficulty to apply the tier-level framework to some taxa with unique life histories. Recommendations for enhanced data collection, such as species-level identification in the observer programs and in the landings, along with new biological studies, would be useful.

The SSC understands that the alternatives presented are not mutually exclusive and do not need to be, allowing the Council to choose to remove any combination of groups from the “other species” category; the document should clearly state this intent. To that end, BSAI skates could be removed from Alternative 3 as it is redundant.

Because this action is an intermediate effort to protect species groups incidentally captured in target fisheries, the SSC recommends that it focus on groups that are likely to have a high prevalence in the catch. Accordingly, the SSC supports including the option to evaluate the grenadier group, but does not recommend including non-specified species because they would be more effectively addressed when the non-target species amendment is undertaken. Because of the number of species involved, they would consume analysis effort in this action that should be focused on developing a consistent framework.

Jane DiCosimo (NPFMC) discussed the Council's plan to consider rockfish management in December. Owing to a full December meeting agenda, the SSC recommends that this agenda item be delayed until the February SSC meeting to allow more time for discussion and review. Delaying this agenda item until February would have the added advantage of allowing time for the AFSC to develop a plan to address comments raised by the CIE rockfish harvest strategy and stock assessment review.

D-2 (a) Vessel Incentive Program (VIP)

The SSC received a report from Ben Muse (NMFS-AKR) summarizing the EA/RIR/IRFA on the Vessel Incentive Repeal initiative and outlining three alternatives for Council consideration. The SSC compliments Dr. Muse on condensing a fairly complex issue into a relatively brief presentation. Public comment was received from Mr. Paul McGregor (on his own behalf).

Alternative 1 (status quo) would require that the agency renew enforcement of the VIP, leading to additional administrative and other costs. Alternative 2 would reduce the twice annual publication of rates to just once per year. Alternative 3 would eliminate the program in regulation, and possibly also by amending the GOA and BSAI groundfish FMPs.

The SSC believes that the EA/RIR/IRFA report is ready for release.

D-2(b) BSAI Salmon Bycatch

Diana Stram (Council Staff) provided an update on the status of the BSAI salmon bycatch reduction program. John Gruver (AFA Catcher Vessel Intercooperative) provided public comment.

Currently before the Council is Amendment package B-1 (a follow-up for measures not in Amendment 84), which would establish new salmon savings systems and an evaluation of the need and strategy for salmon bycatch caps. Package B-1 is to be considered prior to package B-2, which would develop an individual vessel salmon bycatch accountability program. Also, the Council will be considering the efficacy of the Voluntary Rolling Hot Spot (VRHS) closure system. An experimental fishing permit (EFP) has been granted for the period August 3 to November 1, 2006 to exempt AFA and CDQ vessels testing the efficacy of a VRHS program from regulations pertaining to salmon savings area closures.

The staff report identified continued increases in Chinook salmon bycatch in 2006, with the highest ever bycatch (over 59,000 fish) in the A season (January – March) in the recent 8 years, triggering the first ever Chinook savings area closure in the A season. Continued high catches in the B season (beginning in June) resulted in closure on September 1, 2006. Vessels under the EFP were exempt from these regulated closures. Bycatch of non-Chinook salmon (primarily chum salmon) has been lower this year than in 2005 and a closure was not triggered.

In regards to the performance report required by the Intercooperative Agreement under the EFP, the SSC notes the importance of accurately estimating the effect of the VRHS closure program in reducing bycatch. The number of salmon avoided may be difficult to estimate without a direct effort to estimate the number of salmon that would be caught if vessels were not moved from the hotspot. **One possible method of estimation would be to obtain bycatch rates from a small number of vessels allowed to**

continue fishing for a limited time in the hotspot, and to compare those bycatch rates with rates from vessels that moved from the area. The benefit of this method relative to using only pre-closure bycatch rates might be judged based on a comparison of pre- and post-closure bycatch rates.

The SSC also noted that there should be a consistent set of criteria used to determine when to not close areas under the VRHS closure program. At present, there are clear criteria for closure, but there are occasional decisions to not follow through with closures for various ad hoc reasons. These criteria will be needed to evaluate the efficacy of the criteria in providing the best bycatch reduction. Also, the SSC notes that the goal should be to reduce the number of salmon caught, whereas the VRHS closure system focuses on salmon per ton of pollock.

In June 2005 the SSC recommended “an expanded examination of an appropriate limit on salmon bycatch that considers such factors as region of origin and, at least for salmon of Alaskan origin, total run sizes and the allocated quantities of salmon to subsistence, commercial and sport users, as well as escapement goals.” This recommendation is still appropriate, and the SSC suggests that one approach to the analysis is to consider salmon bycatch as an “allocation” of catch in the context of allocations to the directed salmon fisheries by the state of Alaska. To do so properly will involve considerations of the percentage of bycatch from western Alaska and estimated natural mortality expected to occur between age of salmon in bycatch and mean age of salmon returning to the rivers.

Improvements in identification of salmon stock of origin are needed before biomass caps can be established. Other data sources to investigate, which might assist in understanding origins and amounts of salmon in the Bering Sea, include North Pacific Anadromous Fish Commission information on chum salmon hatchery release numbers by year and country as well as country specific marking efforts; BASIS survey information; and foreign fishery data on locations and timing of salmon bycatch.

The SSC offers several suggestions for spatial analysis of salmon bycatch. First, it may be worthwhile to examine the relationship between salmon bycatch and surface or subsurface water temperatures, as there may be a correlation. Placing oceanographic moorings in the outer shelf domain might provide useful information in this regard. Second, it might be worthwhile to look for consistent hot spots relative to pollock densities when the spatial data are displayed on relatively short time scales, instead of looking at cumulative salmon bycatch over the duration of the pollock fishery. Specifically, maps of chum salmon bycatch over 2003-2006 seemed to suggest two spots of consistently high bycatch. Do these hold up over prior years and are they observable using daily bycatch rates used by SeaState? Comparisons of bycatch during the foreign fishing days could perhaps reveal some insights about ways (time/areas) to reduce bycatch.

D-3(a) Crab Vessel Use Caps

The SSC received a presentation from Mark Fina (NPFMC) based on a draft discussion paper. Public testimony was received from Tom Suryan (Mariner Fleet, Sea Boats), Arni Thompson (Alaska Crab Coalition), and Lenny Herzog (Alaska King Crab Harvesters Cooperative).

The SSC found the discussion paper to be a well-written, thoughtful consideration of the issues at this preliminary stage. It is not clear whether the Council will continue to pursue action on this issue but, if so, the SSC looks forward to the development of a full draft analysis.

D-3 (b) Crab SAFE and Plan Team report

Diana Stram (NPFMC Staff) briefed the SSC on recent Crab Plan Team activities, including development of the SAFE. Public testimony was received from Leonard Herzog (Alaska King Crab Harvesters Intercooperative) and Arni Thompson (ACC).

The SSC commends the Team for its excellent work and progressive approach in achieving its responsibilities. The SAFE is well organized and gets better each year. An Executive Summary provides a convenient overview of stock condition and status determination criteria. The SSC suggests that the Plan Team develop a section of the SAFE that provides further information about how the State of Alaska determines TAC; this will be useful for forecasting future catches in OFL evaluations. This section would summarize the biomass measure used (whether from a survey or from a model), the harvest rate used, and the formula and process used for the calculation of TAC.

The SSC also requests the Team to examine how rationalization has affected discard mortality. Has there been any change in the length and timing of the fishing season? Has the slower pace of the fishery reduced handling mortality? The SSC strongly suggests that field research on discard mortality, especially for Tanner and snow crabs, is needed to improve confidence in stock assessments and estimation of total fishing mortality.

As a note to the Crab Plan Team; the bycatch level totals in the table on p. 5-2 (Tanner crab) appear incorrect for 2004 and 2005.

Snow crab model

Jack Turnock (NMFS -AFSC staff) presented an update of his work on the snow crab model. The SSC notes that the author was very responsive to SSC comments in June and has devoted a large amount of work to this model since June and has greatly improved the model and its results. **While there are remaining improvements to be made, the SSC agrees with the Plan Team that the model should be used this year to provide a more stable biomass estimate than the survey.** The SSC notes that the discard mortality rate used in the model (50%) is different than the one used for management (25%), which creates a disconnect. The SSC encourages the stock assessment author to perform a sensitivity study with various discard mortality values including the rate used in the harvest model, in light of the uncertainty in this parameter.

The SSC also notes that there are patterns in the residuals of the fits to survey size frequency data. Jack Turnock noted uncertainty in the practice of using shell condition as a proxy for shell age. The SSC encourages research on growth patterns and shell age to resolve this problem.

D-3(c) CIE Review and Crab Overfishing Definitions

The SSC received the CIE's document reviewing crab overfishing definitions by Michael Bell, Patrick Cordue, and Nick Caputi. The SSC had received a presentation from Michael Bell at the June council meeting. The report closely follows that presentation and all three reviewers focused on two main issues. They supported the new overfishing definitions framework, with the caveat of developing default parameters, and conducting simulation modeling to test effective spawning biomass measures, fishery sustainability, and rebuilding performance. They suggested that the crab workgroup should focus on developing an effective proxy for effective spawning biomass proportional to total fertilized egg production, but could use mature male biomass in the short term. They also suggested evaluating MSY control rules as distinct from, but in combination with, potential harvest strategies. The SSC notes that the CIE report was helpful to both the crab workgroup and for the Crab Plan Team and believes that the report will continue to be useful in the development of overfishing definitions and stock assessments.

Diana Stram and Jack Turnock reported on progress concerning revising overfishing definitions. The workgroup met in July and resolved most outstanding issues. There is agreement on input parameters and the range of values used for discard mortality. The model is in place and preliminary results have been obtained. Consequently, the final workgroup report should be available by the end of October. The SSC congratulates the workgroup for its substantial progress. The Crab Plan Team has developed a problem

statement and range of alternatives for the analysis along with a draft outline. **The SSC endorses the problem statement and range of alternatives and looks forward to reviewing the EA in December.**

D-4 (a) Review alternatives for the BS EFH analysis

Cathy Coon (NPFMC Staff) provided an overview of Bering Sea Habitat Conservation alternatives formalized by the Council during the June meeting and EA/RAR/ERFA to adjust Aleutian Islands Habitat Conservation Area (AIHCA) boundaries. The presentation included reference to comments and recommendations made in May by the Crab Plan Team with regard to a crab bycatch analysis to evaluate potential new habitat conservation measures. The Crab Plan Team did not believe additional protection measures are required at this time. Public testimony was received from Jon Warrenchuk (Oceana), John Gauvin (H&G Environmental Workgroup), Dorothy Childers (Alaska Marine Conservation Council), Bubba Cook (World Wildlife Fund), Ed Richardson (Pollock Conservation Cooperative) and Donna Parker (Arctic Storm).

The current suite of alternatives adopted by the Council in June employs an open area approach and considers flatfish trawl gear modifications to minimize the effects of fishing on EFH in the Bering Sea. The open area approach has habitat conservation benefits by limiting trawling to those areas already impacted and preventing fishing effects on habitat in untrawled areas.

The current alternatives provide little or no contrast to the status quo due to the magnitude of the open area in consideration. In June, 2006, the SSC recommended an expansion of the alternatives to include consideration of 5 items. **After consideration of information provided in the staff report, comments by the crab plan team, and considerable public comment, the SSC recommends that the Council family and public would be better informed and that more meaningful habitat protection might result through a collaborative effort between the industry, agency, public and NGO's to devise open area bounds, similar to that employed in the creation of the AIHCA.** This effort should allow for the consideration of potential protections for canyon habitats, skate nursery areas, as well as closures for research as suggested by the SSC in June, 2006. The SSC recognizes the possible consideration of canyons and skate nurseries in a subsequent HAPC process, but suggests that inclusion of these in the EFH consideration would allow for a more comprehensive approach.

In order to fully evaluate the impacts of the proposal, the SSC requests that a separate map be provided showing open and closed areas along the slope.

The SSC recommends the following considerations in development of the open area alternatives:

1. Analysis of an option to retain some open areas in the northern Bering Sea that are not currently fished to account for a potential northward, climate-induced shift in fish distributions and displacement of fisheries from traditional fishing grounds. This analysis should include the potential impact on snow crab habitat that does not now receive significant trawl effort, and it should include a Long-term Effects Index (LEI) analysis to help develop area boundaries and assess impacts.
2. Update information used in the 2004 EFH EIS with more recent information on habitat types that may represent essential fish habitat. There are a number of data sources that could be analyzed and may include, but are not limited to:
 - a. Fishery logbook information
 - b. Observer data
 - c. VMS
 - d. Survey observations of living substrate
 - e. Bottom type profiles including bathymetry and sediment type
3. Provide analysis for potential economic impacts.

The SSC notes that research on gear modification is ongoing and looks forward to analysis of new data and how it may help reduce impact on habitat found in the BS.

The SSC suggests that the Council consider an experimental approach to assessing habitat impacts of trawling by adopting a statistical design of open and closed areas in northern Bering Sea areas not now fished. A statistically valid sample of open areas could be selected at random as research areas within a larger area of waters closed to trawling that will remain unfished.

As outlined in previous SSC minutes, the SSC again recommends the preparation of two analyses that may provide insight into development of habitat protection measures including: 1) analysis of data to measure the efficacy of current crab closures and 2) analysis of bycatch data in pelagic trawls.

D-4 (b) AIHCA adjustment

Cathy Coon (NPFMC Staff) noted errors processing observer data used to adjust AIHCA boundaries in the EA/RIR/IRFA. **The SSC recommends that the Council not take further action but requests completion of the analysis to adjust the AIHCA boundaries near Buldir and Agattu Islands.**

Some details that need consideration in the EA/RIR include:

1. Additional information on the avifauna potentially impacted, especially for red-faced cormorants, which have undergone large declines in recent years.
2. Review the significance criteria table (Table 4.1-4) and note any changes to the original habitat analysis in the EFH EIS.
3. Clarification on the link between rockfish and target biomass in terms of significance.
4. Provide additional charts displaying bathymetry or other geographic information pertinent to the analysis including maps to illustrate the location of red-faced cormorant rookeries and their proximity to open fishing areas. Additionally, information on the dive depths of these cormorants, bottom depths in the areas opened, and substrate types in these areas may help to assess the potential for the proposed change to affect cormorant foraging.

D-5 Ecosystem Approaches

Diana Evans (NPFMC Staff) presented updates on the Aleutian Islands FEP and the Alaska Marine Ecosystem Forum. Testimony was received from Jon Warrenchuk (Oceana), Dave Fraser (Adak Fisheries), and John Gauvin (H&G Environmental Workgroup).

The Aleutian Islands FEP effort of the NPFMC is beginning with the formation of a technical AI Ecosystem Team to assist Council staff in the development of the FEP. The team was formed over the summer and met in September. The report of the team's first meeting and proposed outline for the FEP was presented. The SSC provides the following comments and recommendations with respect to the proposed FEP outline and the process for FEP development and communication.

With respect to the proposed FEP outline, the SSC recommended the addition of an implementation section that would clarify that the implementation of actions recommended in the FEP would occur through the existing FMPs. The additions of a research priorities section and a history section were also suggested. The section on "Value added" of FEP process (5.3) should be moved up to the Introduction. Also, the Purpose and need section (1.3) should move up ahead of section 1.1. The Priorities Section (6.0) should point back to the PSEIS work plan and ecosystem research priorities identified by the SSC for the PSEIS. The SSC suggests that the glossy executive summary document could include a schematic of a conceptual model for the Aleutian Islands, similar to the one derived for the GOA by the GEM program. This would help communicate the important processes and interactions occurring in this region to a wide variety of audiences.

Several comments were made concerning the structure and order of sections within Chapter 2. The section should include not only a discussion of fisheries but also how fisheries interact with other activities. The FEP should include a discussion of other activities that potentially affect fisheries, such as shipping, tourism, oil and gas development, and subsistence activities. It might be more logical to put a description of the boundaries (2.2) before AI processes and interactions (2.1). Subsections in 2.1 seem ordered from the middle out and might start with either humans (the top) or oceanography (the bottom).

The SSC expressed concern that the proposed FEP advisory team that would be formed after the FEP technical team might create problems if its work and recommendations are not integrated into the plan teams and Ecosystem Considerations section. The SSC recommends that the advisory team play a role in developing the summary tables for the AI assessment section of the Ecosystem Considerations document. Outreach to stakeholder groups and gathering input from local communities was identified as a very important activity that needed to be done through a variety of avenues such as plan teams, presentations to local communities, and the Internet. Implementation of actions identified should still have to go through the regular plan team and Council process.

The progress in organizing the Alaska Marine Ecosystem Forum was outlined to the SSC. The MOU creating the Forum has been signed and members have met to brief the Forum on each of the respective agency's objectives, activities, and interests in the Aleutian Islands. The SSC thought that there might be ways this group could interact with the FEP group and also mentioned some connections the group might make with research entities, such as NSF.

D-6 (b) PGSEIS Work plan and priority issues

The SSC received a report from Diana Evans (Council staff) on the progress-to-date and future plans for accomplishing the Programmatic work plan.

Several current and ongoing action items and groundfish FMP amendments are not listed in the work plan. For example under habitat, the NPFMC is considering EFH actions in the Bering Sea and HAPC will be further considered through an on-going three year review cycle of proposals. The salmon closure areas should be mentioned under bycatch reduction measures as well as habitat protection. Under "Protection of Steller Sea Lions", it would be useful to acknowledge the following activities: 1) NMFS is preparing a Biological Opinion, and 2) the sea lion recovery plan is being revised. These two documents will include evaluations of the potential impacts of fishing on Steller sea lions. Likewise, the NPFMC's sea lion mitigation committee has solicited proposals to modify existing protection measures and they have developed tools to evaluate the proposals. The item concerning "account for uncertainty" currently listed under "Ecosystem Management" should also be included under "Prevent Overfishing". The Alaska Native Communication issue should include communication activities that might occur with regard to the Aleutian Islands FEP.

The SSC suggests that plan amendment numbers or action items should be included in the table to track work items. The latter could be more effectively incorporated prior to the action name under "specific priority actions".

Although the work plan table would become longer, inclusion of all nine management objectives in the table would allow inclusion of more Council work items, such as including current community outreach activities under "Increase Alaska Native Consultation".

The timelines for items presented indicate only one item (AI FEP) that will continue past April of 2007, while work items such as "other species breakout analysis" are not planned to be finished until 2009. It would be useful to compare the three meeting outlook with the work plan to examine whether we are tracking the milestones in the work plan.