DRAFT
MINUTES
SCIENTIFIC STATISTICAL COMMITTEE
June 7-9, 2004

The Science Statistical Committee met June 7-9, 2004 at the Benson Hotel in Portland, Oregon. Members present:

Rich Marasco, Chair	Gordon Kruse, Vice Chair	Keith Criddle
George Hunt	Doug Woodby	Ken Pitcher
Sue Hills	Terry Quinn	Franz Mueter
Farron Wallace	Pat Livingston	Steve Hare
David Sampson	Seth Macinko	

C-2 DPSEIS

The SSC received staff presentations by Diana Evans and Steve Davis on this agenda item. No public testimony was received.

C-2 (a) Develop workplan for addressing management policy actions

The SSC considered the research needed to implement PSEIS policy objectives in the preferred alternative and identified the following high priority research items:

- Continued work to define and implement an improved system for non-target species management including observer-related issues,
- More effort by stock assessment scientists to incorporate ecosystem considerations into individual stock assessments,
- Research to define ecosystem-level reference points, which would necessitate improvements to predator-prey data and multi-species and ecosystem models and improved links to bottom-up processes,
- Research to evaluate present OY ranges, MSSTs for priority stocks, improvements in spawning stock biomass estimates for species in Tiers 4-5 and continued evaluation of harvest policies,
- Programs to review status of endangered or threatened marine mammal stocks and fishing interactions, and
- Research program to identify regional baseline habitat information and mapping.

C-2 (b) Groundfish FMP revisions

The SSC commends staff on their efforts to standardize the outline and format of different FMPs. The revised FMPs provide well structured and readable documents with excellent sections on the most pertinent characteristics of major stocks, fisheries, and fishing communities. While originally intended as a housekeeping amendment, the SSC concurs with others that this is a good time to review the document in its entirety and make changes as necessary. The majority of SSC concerns were in regard to definitions and specifications of OY, MSY, TAC, ABC, overfishing definitions, and harvest control rules in sections 3.2.1 and 3.2.2 of the FMP. Because of the importance of these issues, the SSC wishes to conduct a more thorough review of these sections before final action is taken. To this end, a SSC subcommittee consisting of Rich Marasco (chair), Terry Quinn, Gordon Kruse, Pat Livingston, Franz Mueter, and Farron Wallace was established and will conduct a review prior to the next council meeting.

In addition, the SSC noted a number of issues that may require either substantive changes or minor reorganization. The SSC recommends that the following changes be performed and a thorough review of the FMPs and language be conducted before final action.

- A rewrite of the procedures for setting TACs to clarify the Council process for annual TAC-setting and the role of the SSC in the Council process (see also specific suggestions below).
- An expansion of section 3.10 on Council review of the FMP. Currently, this section singles out management objectives (3.10.2), EFH components (3.10.3), and PSC catch limits (3.10.3, BSAI only) for periodic review. However, periodic review of all critical components of the plan should be performed on a regular basis. The SSC suggests that a schedule be developed to specify when, how often, and by whom other components of the FMP are reviewed, including MSY/OY definitions and specification, overfishing criteria, procedures for setting TACs, stock definitions, restrictions, and monitoring and reporting requirements.
- If possible, a mechanism to update section 4.1.2 on the status of stocks should be developed. Staff noted that any changes require an amendment to the FMP. SSC suggested updating stock status on the NPFMC website and reference the website in the FMP.
- The amount of habitat information in the FMP far exceeds information on the biology and dynamics of stocks, which is far more relevant to current management. The SSC suggests, if possible, shortening detailed habitat information and deleting Appendix I unless required by law.
- Current MSY and OY definitions and specifications are outdated and confusing. Moreover, the current definition of OY in GOA FMP, section 3.2.1.1. (*[OY]..is prescribed as such on the basis of the MSY from such fishery,* ***as modified by*** *any relevant economic, social, or ecological factors*), is inconsistent with the MSA, which reads: … ***as reduced by*** *any relevant economic, social, or ecological factors*. The SSC subcommittee will review modifications suggested by Grant Thompson (Notebook, Item C-2(b)2).
- The organization seems to be fitting for easily updating the appendices when new information arrives, though some more thought might be given to including sections of the SEIS that provide overviews of non-fishing and cumulative impacts or threats to resources and to more clearly outline the other institutional components that may be involved in managing human activities in these ecosystems and what the SEIS said were some of the most important threats that might need to be considered.

A number of minor modifications were suggested, including:

- Chapter 2.2, Management approach, lacks a clearly identified policy statement. The 3rd sentence in section 2.2 appears to contain the Council's key policy statement. The SSC suggests changing the sentence to read: "*The Council's policy is to apply judicious and responsible fisheries management practices, based on sound scientific research and analysis* …" and to highlight or move this statement to the beginning of the policy section.
- As noted in SSC minutes from April 2004, the jurisdictional authority with regards to finfish managed by the State of Alaska should be more clearly identified. This is covered in some detail in section 5.4. We suggest including the current section 3.1.2.1 on state regulation of demersal rockfish assemblage under section 5.4 and inserting a general statement with regard to stocks managed jointly with the State or by the State of Alaska in section 3.1.2. A table listing the agency that has jurisdiction of each stock/area combination may be helpful.
- The SSC suggests providing a brief rationale for important quantities specified in the FMP. For example:
    - The TAC of the other species category is set to 5% of the combined TACs for target species without a clear justification
    - Parameter '*a*' under Overfishing Criteria (3.2.2) is set to default value of 0.05 without rationale.

- Section 3.2.3.1 of the GOA FMP is confusing because it combines the rebuilding plan for POP with a general procedure for setting TACs. The SSC suggests deleting the discussion regarding rebuilding of POP stocks as well as adding a general procedure for setting TACs (steps 1-3 in section 3.2.3.1) to the BSAI FMP.
- Section 3.2.3.3 of the GOA FMP, which specifies a reserve amount of 20%, should be reconciled with Table ES-2, which specifies a reserve amount of 15%.
- Section 3.3.1 of GOA FMP, which states that vessels less than 26' will be exempt from LLP should be reconciled with Table ES-2 (vessels less than 32').
- GOA FMP has a section on vessel safety (3.8.3), which presumably should be in the BSAI FMP as well.
- Table ES-2 in the GOA FMP should include definition of MSY, as in BSAI
- Some of the species descriptions in the GOA FMP refer to BSAI region (e.g. distribution of rock sole) and should be updated to reflect life history of species in the GOA.
- Section 4.1.1 (GOA FMP): Rock sole is listed as single species, should be northern (L. polyxystra) and southern (L. bilineata) rock sole.
- GOA FMP, Tables D.1.b/c: replace BSAI in title with GOA
- Section 4.2.3.2 in BSAI was written for GOA, not BSAI, and should be deleted or updated.
- BSAI FMP, section 4.3.2 lists ex-vessel value of GOA groundfish catch (p.85), should be BSAI groundfish catch.
- Boiler plate language needs updating in some sections so that it reflects the present and not initial implementation of each amendment
- Need referencing of the $F_{40\%}$ review and inclusion of the historical review of the Council process contained therein
- Description of fishing communities needs updating and AFSC sociologist Jennifer Sepez may have information on Alaskan fishing community profiles. It also seems non-Alaskan communities have been ignored.
- Sometimes it is made clear what the source of the information was while other times it is not, making it unclear how recent some of the information was.
- Insufficient consideration of the role of climate in influencing ecosystem processes and species production is included in the descriptive parts of the FMP dealing with climate.
- Elements required of Fishery Ecosystem Plans might also be included in these plans more explicitly.
- A listing of other FMPs that are in place in the region would also be informative to readers of these FMPs.

Differences between the two plans that should be minimized are:

- Table ES-2 for BS makes clear that non specified species are not included in OY but GOA does not
- Table ES-2 for BSAI does not include mention of the fishing year as GOA does in section on time and area restrictions
- Table 3-1 in BSAI lists some main groups of nonspecified species, GOA has no mention of non specified species in its table
- OY definitions differ between the two FMPs. Definition of BSAI OY does not seem to match the way OY is implemented in BSAI (as a range in which individual ABCs are not exceeded) p11 BSAI, p12 GOA
- No TAC definition was included in the BSAI FMP, p11
- There was no mention of PSC limits in the TAC setting procedures of Section 3.2.3 of BSAI, p. 14
- GOA FMP has section 3.6.3.3 on size limits (p.31) which was not contained in BSAI FMP.

- Appendices: GOA FMP is missing a section on marine mammals, neither has a section on seabirds

C-3 HAPC

The SSC heard a report from Cathy Coon (NPFMC) summarizing the HAPC problem statement, purpose and need for action and a proposed set of HAPC alternatives and management measures from which the Council will select for further analysis in an EA. Staff has prepared draft sections of the EA/RIR/IRFA that included the Table of Contents, environmental consequences of the alternatives, and recommended methodology to evaluate the potential effects of HAPC management measures. John Kurland (NMFS) gave a review of public comments and summarized the next steps and timeline to finalize the EFH EIS. Public comment was heard from Whit Sheard (Ocean Conservancy) and Susan Murray (Oceana).

The SSC had a number of specific comments and recommendations for development of the EA/RIR/IRFA during the April Council meeting and requested the analysts consider these when preparing the document. To evaluate the effects of proposed HAPC management measures, analysts proposed using GIS methods to spatially intersect proposed HAPC areas with the State catch areas to calculate the difference in area size. This ratio is then applied to the State area catch data to estimate the amount of foregone catch if fishing is restricted in the proposed HAPC area. The SSC does not endorse this approach because the spatial resolution of summarized catch data will not likely be sufficient to adequately measure any effect if fishing is restricted. The SSC recommends, if possible, maintaining the spatial resolution of the available information so that catch can be distributed in a more precise manner. In addition, analysts are encouraged to explore other sources of information including survey and other fishery information datasets to augment the analysis. If analysts find that confidentiality limits restrict inclusion of the fisheries data, the SSC recommends that they attempt to gain waivers from the fishers to facilitate the analysis.

Specific comments on the EA

- There needs to be a clearer distinction between areas of "HAPC designation-only", which do not have any associated management measures, and HAPC areas that include restrictions. The figures and tables are not consistently labeled as to which sites are HAPC designation-only.

- Evaluation of the alternatives should explicitly assess the effect of shifting fishing effort out of areas where bottom contact is prohibited to nearby areas, especially areas that received "HAPC designation" status.

- The crafting of the "hybrid" regions in the Aleutian Islands included a subjective delineation of one-mile no bottom contact regions ("buffers") around six coral garden sites. The hybrid regions are all smaller than the regions proposed by NMFS for no bottom contact. Justification given for the one-mile buffer is lacking and the SSC recommends that further analysis on the appropriate size of the buffer be undertaken.

- A great deal of research on the impacts of fishing has been conducted worldwide. Much of this research bears some similarity to the proposed HAPC areas, including cold water corals and tropical coral reefs. The SSC suggests that the EA review these impacts and place Alaska within this larger global context.

- The size of the Cape Ommaney HAPC (Action 2, Alternative 3) was reduced substantially by the Technical Subcommittee in order to allow continued fishing along the 100-meter contour. The

SSC notes that the reduced area, upon which submersible dives demonstrated the presence of corals, is part of a larger geographic feature that may also support similar coral structures. Evidence for the similarity in geographic structure was provided by sidescan sonar and this was not available to the Technical Subcommittee at the time of its meeting. The SSC recommends that the size of the Cape Ommaney HAPC be revisited.

- The SSC is concerned that the broad use of HAPC designation (i.e., without explicit accompanying management measures) will result in a glut of areas for which further research is suggested but no commitment is made. Many of the areas recommended for HAPC designation were identified on the basis of "anecdotal information". It is imperative that firm commitments are made to conduct research on these areas such that future actions are based on relevant science. For example, some changes to the observer program could be explored to help facilitate data collection and research in these areas.

EFH Comments

- The Council needs to clarify its habitat policy in regards to "no net loss" (the Council's 1988 habitat policy statement explicitly states a "no net habitat loss" goal).

- The SSC supports the suggested modifications to Alternative 5B of the EFH EIS.

- The SSC supports the use of both type and site designation, which allows for a broader range of management measures to be used in protection of EFH.

Since there will be an on-going need for the consideration of EFH and HAPC issues for the foreseeable future, it would be prudent to develop an overall strategy for identifying areas of importance and to initiate data collection necessary to make well-informed decisions. Data requirements would drive a variety of fisheries and oceanographic research that could provide information on important marine habitats. Additionally, use of existing information should be fully explored. For example, multi-beam and side scan sonar provides a means to create detailed imaging of sea floor, bathymetry and habitat. This technology is widely used today and it may be possible to merge existing habitat maps into a comprehensive database for Alaskan waters. Development of habitat models may extend the value of habitat maps such as models now being attempted for AI corals. The SSC believes that the funding and implementation of such a research program is essential if both fishers and fish habitat are to be protected.

C-4 Aleutian Island Pollock

The SSC received a detailed presentation from Bill Wilson (staff) and Ben Muse (NMFS) on the EA/RIR/IRFA to establish an allocation of the Aleutian Islands pollock TAC to the Adak Corporation. Because the main issue here is an allocation issue within the constraints of existing harvest control rules and protections, the main task of the SSC is to review the scientific content of the document and highlight any scientific issues of importance. The document is comprehensive and contains careful descriptions of the alternatives, issues, information sources, and analyses.

The SSC notes the following considerations should be examined:

1. Observer coverage should be maintained at least at the same level as found in other fisheries. In addition, if an appreciable portion of the allocation is to be taken by small vessels under 60', then it will be necessary to have at least 30% coverage of this sector.

2. No matter which "funding" mechanism is selected, it should be ascertained that TAC remains below ABC for any groundfish stock. The current funding mechanisms appear to meet this condition, but it needs to be verified under all conditions.

3. Some evaluation of the precision of bycatch estimation for chinook salmon should be made.

4. The SSC recommends against the allocation alternative 1.3^C that sets TAC equal to ABC. Alternative 1.4^C that sets TAC as a fixed function of ABC is also problematic (but less so, because TAC is set much lower than ABC). This specification would set a new precedent that has not been done for any other groundfish specification and may have important negative consequences. The Council's flexibility in setting the AI pollock TAC to account for uncertainty and risk would be removed. The optimal harvest for this stock that determines the TAC may need to be based on ecological or economic considerations not considered in determining ABC. Further, the stock assessment for AI pollock is highly uncertain, and consequently, requiring TAC to be equal to ABC will increase the risk to the AI pollock stock, with potential impacts on Steller sea lions and other ecosystem components. For these reasons, the Council should retain its ability to adjust TAC.

5. In order to improve the AI pollock assessment, the AI pollock survey needs improvement. In particular, better knowledge of the off-bottom portion would provide a better idea of total pollock biomass in this region.

6. The resumption of a fishery in the Aleutians will obviously change the spatial nature of pollock removals compared to the complete closure of this area since 1999. Further clarification is needed for the rationale for determining whether this spatial change is significant or not. The document states that spatial concerns are not an issue for an annual catch near 15,000 mt but may be an issue for a catch near 40,000 mt.

In accordance with the NRC's recommendation for examining the ecosystem effects of fishery removals on SSL, the SSC proposes that when the pollock fishery in the Aleutian Islands reopens, a research program be established to test hypotheses concerning the effects on upper trophic level predators of fishing for pollock. This fishery provides an opportunity to determine how changing the rate of pollock removals will influence the local distribution and abundance of adult pollock (local depletion hypothesis), the abundance, pupping rate and foraging distribution of SSL (prey depletion hypothesis), the reproductive success of seabirds (indices of forage fish abundance and availability, prey quality hypothesis) and the distribution and abundance of forage fish, including age-0 and age-1 pollock. These objectives can be achieved by conducting appropriately timed and thorough surveys of seabird colonies and sea lion rookeries and haulouts, as well as quantitative acoustic surveys of fish distribution and abundance. To account for bottom-up effects that could affect pollock and forage fish distribution and abundance, the SSC recommends measuring physical processes, nutrient availability, and standing stocks of phytoplankton and zooplankton. The program should be a closely integrated, interdisciplinary study that is closely focused on the region to be fished or potentially fished, including inshore waters. The duration of the study should be a minimum of five years to allow observations under the variety of conditions reflecting interannual variation in climate patterns.

The SSC suggests that the draft EA/RIR be revised to address a number of deficiencies before it is released for public review. First, the vocabulary employed throughout the document leads to unnecessary confusion for many readers. For example, there are numerous instances where it is not clear whether the text is referring to limitations that will be applied at the individual CDQ group level or on an aggregate CDQ program-wide level (references to managing "at the CDQ reserve level" or to "non-allocated CDQ reserves" may be understood within NMFS to refer to program-wide accounting but are simply confusing to many readers including the SSC).

Second, the SSC requests that a diagram depicting the CDQ allocation accounting process (under both the status quo and the alternatives) be included in the document.

Third, the draft problem statement is opaque and confusing. In fact, the SSC was unable to determine the precise nature of the problem alleged to be occurring. If, as suggested in the middle of the draft problem statement (p. 4), "the problem. . . is that existing CDQ regulations may not be structured to allow CDQ groups to fully utilize their CDQ target allocations," then the SSC recommends that the document include a discussion of specific examples where the CDQ groups have failed to harvest their allocations. To the extent possible, this discussion should identify the specific causal factors involved in producing these harvest shortfalls and the net economic losses associated with these harvest shortfalls.

Fourth, the two alternatives presented in the document are actually sub-options under a single alternative (i.e., the alternative of managing allocations of "non-target" species at a program-wide level as opposed to the status quo approach of managing these allocations on an individual group basis). Staff indicated that the shift to program-wide accounting of non-target species harvests is not likely to lead to harvest overruns of these species because aggregate harvests (i.e., across all six CDQ groups) have never approached the overall program allocations for non-target species. The SSC is concerned that this outcome may be precisely the result of the demands placed on individual groups to be individually accountable for all of their harvests. Removing the constraint imposed by the demands of individual accountability could reduce the incentive to avoid bycatch and lead to aggregate harvests that are higher than those witnessed in the past under the old incentive regime.

The proposed alternative essentially transfers the responsibility for staying within non-target allocations to NMFS. The SSC is concerned that the shift away from individual accountability represents a fundamental shift away from the rationale underlying all of the Council's various "rationalization" programs including the CDQ program. Arguably, programs built on appeals to markets and individual accountability should use markets and individual accountability to handle the kinds of management issues raised in the document. On one hand, the CDQ program appears to be doing just that (using markets and individual accountability) under the status quo (staff indicated that the CDQ groups regularly trade allocations in advance to ensure that allocations are in fact harvested). The SSC requests that two additional alternatives be added to the analysis. Specifically, an alternative that allowed for post-harvest transfer of non-target species allocations could potentially provide additional flexibility to the groups while retaining accountability (and the incentive structure) at the individual group level. A different alternative to consider would allow harvest overages of non-target species to be rolled over and applied to the subsequent year limits.

Fifth, the species contemplated for permanent designation as non-target species under the current Alternative 2 (what the SSC suggests is better labeled as Alternative 1, Option 2) should be specifically identified to allow for meaningful public comment.

Sixth, the current draft does not adequately consider the potential impacts of the proposed changes on the non-CDQ fisheries and on the fishery resource. As noted above, the document largely relies on faith to predict that harvest overruns will not occur under an aggregate accounting system. If however, overruns

do occur, the document is quiet on the implications for the non-CDQ fisheries and the fishery resources involved. Further, the document is vague on how, precisely, NMFS will attempt to constrain these aggregate harvests (the explanation on p. ES-2 that NMFS would specify additional management measures "as needed" is insufficient.) and the document does not discuss what would happen, in terms of accountability, in the event of a harvest overage. Nor does the document provide a justification for shifting the cost of compliance from the users to the agency; that is, a transferal of compliance costs from those who benefit directly from exploitation of the public resource to the taxpayers at large (and the resource itself). Under the current regime, staff indicated that fines can be levied on individual CDQ groups. Under the aggregate accounting scheme proposed, it is unclear whether any party will be held accountable since responsibility has been shifted to NMFS.

C-9 SSL Mitigation Measures

The presentation was divided into two parts. First, Lowell Fritz (NMML) presented preliminary information on a new analysis tool. Then Bill Wilson (Council staff), Scott Miller, Kristin Mabry, and Steve Lewis (NMFS Juneau) presented the EA/RIR/IRFA for the proposed changes to SSL measures in the GOA. Public testimony was taken from Julie Bonney (AGFDB) and Chuck McCallum.

New Analysis Tool. Lowell Fritz briefed the SSC on a conceptual model or "tool" to be used to evaluate if a proposed package of proposals would result in a "net loss" in protection of SSLs. This tool would be used for proposals to trade off open and closed areas rather than proposals such as TAC rollovers. The tool would use weighted rankings based on the type of fishery, the distance from the SSL site, the season of the impact, and the number of SSLs at the affected site. The SSC was shown hypothetical examples of how it could work, the limited scope in which it is intended to be used, and areas in which more work is needed, such as justification for assigned weights. The SSC suggested several refinements to the tool such as adding elements for seasonality, length of time of the fishery, using transformed numbers instead of raw counts, spatial considerations, disturbance, cumulative effects, and presence of alternate prey. Lowell Fritz and Shane Capron (NMFS Juneau, PR) explained that this tool is seen as useful for sifting through proposals until the next formal Section 7 consultation is conducted, and is expected to be used in the SSLMC as a way of evaluating whether a package of proposals result in no net loss of protection for SSL. The informal consultation on the proposed package would then look at the other additional issues the SSC mentioned in qualitative ways.

The "tool" appears to be very similar to the "bump" analysis that was used in previous SSL analyses, and the SSC has not changed its concerns with this kind of analysis, e.g., summing over arbitrary ranks. However, the SSC also recognizes the need for such a tool for coarse sifting among proposed changes to mitigation measures. The SSC was pleased to see at least a partial list of assumptions and recommends development of a complete list, along with a clear statement of the purposes for which the tool is intended. Although the SSC recommends further development of the tool, this in no way implies that the SSC has had adequate time for review of this method as it was handed out at the meeting. We will look forward to a more developed version for review prior to the October meeting.

SSL GOA Mitigation Measures EA/RIR/IRFA.

Mitigation mesures contained in the EA/RIR/IRFA included a reduction in the area closed to pollock trawling around the Puale Bay haulout, a closure out to 20 nm to pollock trawling around the Cape Douglas/Shaw Island haulout, a reduction in the area closed to Pacific cod pot fishery around the Kak Island haulout, opening Pacific cod pot fishing to the shoreline around Castle Rock, removal of the stand-down periods between the A and B and C and seasons in the GOA pollock trawl fishery, and change in

the method for rolling over the unharvested pollock TAC in the western and central GOA pollock trawl fishery. The SSC finds it difficult to advise the Council on these proposals. This is because of the lack of data and the uncertainty associated with how both the SSLs and fishery will be affected by the proposed changes.

SSL protection measures established through the Biological Opinion process are based on the assumptions that SSLs in the western population are "food limited" and that some fisheries, particularly those for pollock, Pacific cod, and Atka mackerel can contribute to food limitation, primarily through localized depletion near rookeries and haulouts. Although there is considerable uncertainty as to the role of food limitation in SSL decline and lack of recovery, protective measures, primarily in the form of closures near these sites, were established to mitigate these assumed effects.

During the October 2003 meeting, National Marine Fisheries Service and members of the SSL Mitigation Committee introduced the concept of passing regulations that would increase fishing opportunity among other regulations that would provide SSL protection equal to that lost by the liberalization. This concept, dubbed "no net loss," was to be the standard used to evaluate alternative regulatory changes involving SSL protection measures.

Proposals opening additional areas around the Puale, Kak, and Castle haulouts and the additional closure around the Cape Douglas/Shaw Island haulout may not meet the "no net loss" standard, if it was applied, primarily because winter surveys have not detected SSLs at the Cape Douglas/Shaw Island site during the period it would be closed and because very low pollock harvests have occurred in this area. However, the SSC recognizes that these proposals involve a small number of haulout sites occupied by a relatively small number of SSLs and any effect on the overall western population would likely be impossible to measure. Further, regarding other considerations, the proposal to open Castle Rock to the shoreline to fishing for Pacific cod with pots raised concerns about possible disturbance to SSLs using this haulout.

The original intent of stand-downs between seasons was to ensure that there would not be one fishing pulse with high catch rates. However, this goal is accomplished by having separate seasons. While there could to be a redistribution of the catch temporally, it is unlikely to be significant.

The original intent of the method for rolling over of under-harvested Pollock TAC in the GOA, as with the stand-downs, is to prevent the concentration of harvest is space and time. Current regulations actually allow very large roll-overs that are contrary to the original intent of limiting the amount to 5% of the annual TAC by area, or in other words 20% of any seasonal quota. While there could to be a redistribution of the catch in time and space, it is unlikely to be significant.

The SSC is concerned about the apparent inconsistent use of the no net loss standard. Comments from Shane Capron during presentation of the new analysis tool (see first part of this section) indicated that although the tool is designed to evaluate no net loss, a Section 7 consultation will take into account additional factors. The proposed development of a new no net loss analytical tool, reported by Lowell Fritz at this meeting, adds to the confusion about the types of information and procedures to be used by NMFS and the Council to evaluate potential changes to SSL mitigation measures in the future. The no net loss standard may not be the only consideration, but clarity and consistency is needed.

The SSC had questions regarding the fisheries analysis contained in the EA/RIR/IRFA. The spatial resolution of the summarized catch data was not sufficient to adequately measure the effects of closing and area to fishing. Only a few vessels recorded harvest in some of the potentially affected areas and confidentiality limits restrict inclusion of these data. For many years examined, there were no harvests recorded. This lack of historical fishing appears to contradict the emphasis on local fleet reliance on these areas. Public testimony indicated that more fishery activity took place in the Chignik area than was

indicated in the analysis, however, there may still be too few boats fishing in an area to be able to report the catch. The fishery analysis is severely constrained to report meaningful effects on harvest and revenue. Because of this the analysts had to treat the potential effects of the alternatives in what was called "a qualitative way" but several SSC members suggested that a qualitative analysis could and should have been more rigorous even considering the large uncertainties when such small areas are considered.

The SSC recommends that any changes in SSL protection measures be used as an opportunity to examine how changing fishery effort and distribution may affect SSLs. The study should include surveys of pollock and Pacific cod before and after the fishery to determine if prey depletion occurred. Additionally effort should be made to determine if the change in fishing effort is accompanied by changes in the number of SSLs present during summer and winter, and if possible if there are detectable changes in SSL diet.

D-1 Scallop FMP

Diana Stram (NPFMC staff) provided a discussion on the initial review draft EA/RIR/IRFA for amendment 10 to the FMP for the scallop fishery off Alaska. Public testimony was provided by Teressa Kandianis (North Pacific Scallop Co-op). The SSC recommends that the document be augmented to address the following issues before it is released for public review:

- Include data and a discussion of historic and recent trends in the inflation-adjusted exvessel and first-wholesale prices of scallops.
- Include data and a discussion of the full history of landings from the Alaska fishery, and a corresponding time series of US and World landings.
- Include a discussion of where catches have been off-loaded, the relative importance of scallop landings to regional economic activities in those ports, and how off-loading patterns might change under the proposed alternatives.
- Revise the document to eliminate confusing references to "statewide waters" and instead use terms such as "State waters", "Federal waters inside Cook Inlet", "Federal waters outside Cook Inlet", etc.
- If possible, include a breakeven analysis of the current fishery and a projection of changes that could be anticipated under the alternatives.

D-4(b) Crab Overfishing Definition

The SSC received a report on the Crab Plan Team (CPT) meeting of May 18-19 by Diana Stram and Doug Pengilly (ADF&G, CPT Chair). Jack Turnock (NMFS) gave a presentation on progress by a NMFS-ADF&G working group toward development of revised overfishing definitions for BS/AI crab. Gary Painter (Bering Sea Fisheries Research Foundation) provided public testimony.

Principal topics discussed at the CPT meeting included implications of the data quality act on the Crab Plan Team, survey catchability studies for snow crab, industry-funded augmentation to the NMFS annual trawl survey, updates on crab rationalization, and a report on overfishing working group progress. The CPT seeks guidance from the Council as to whether the CPT should continue their spring meeting in the future in addition to their usual fall meeting. CPT members felt that the spring meeting was a useful venue to discuss important crab issues, because there is often insufficient time to do so at their fall

meeting that tends to focus on stock assessments and fishery management. The SSC continues to support the CPT meeting in spring, as long as there are sufficient issues to justify this meeting.

Original consideration of crab overfishing definitions occurred in April and June 1998. The SSC had several concerns about the overfishing definitions at that time. First, numerical values were used, instead of frameworking a general procedure. Second, there was not always more conservatism with less information. Third, there were differences between definitions between the groundfish and the crab FMPs that did not seem to be necessary. Because the CPT was planning to review the crab definitions every five years, the SSC accepted the proposed definitions.

At the February 2004 Council meeting, the SSC heard a report on the progress of the NMFS-ADF&G working group. At that time, the SSC requested that the working group focus on a careful evaluation of crab overfishing definitions, including a more formalized procedure for setting overfishing levels, such as the tier system used for groundfish. At the present meeting, an outline of such a tier system for crab was presented. The plan for further analysis, including simulation modeling, appears reasonable to the SSC and resolves many of the issues raised in 1998.

The SSC offers the following comments to the crab working group:

- Under tier 2, the scalar F_{target}/F_{pmsy} is used to buffer the difference between ABC and OFL. The SSC was confused by the use of the proxy F_{pmsy} when an estimate of this value F_{msy} is available. Part of the SSCs concern may be semantic. Perhaps it would be better to define the scalar in terms of a limit reference point (F_{lim}), as in the National Standard Guidelines, and then to assign F_{pmsy} as the available reference point for F_{lim}.
- Consider whether there is evidence for density dependence in biological parameters, such as growth and maturity. If so, consider including these in the analysis.
- The SSC supports the three alternatives presented (status quo, numerical values for overfishing definitions fixed in the FMP, and overfishing definitions frameworked in the FMP). These alternatives will foster an analysis of the timing and review process for stock assessment relative to overfishing on an annual basis. The SSC notes that the timing of decision-making and the overall process differ between crab and groundfish, so that there may be reasons for having fixed numerical values instead of a framework in the crab FMP.
- One weakness of constant harvest control rules for rapidly fluctuating stocks is that they may not efficiently adapt to changing conditions. The SSC would like to see an evaluation of a harvest control rule that recognizes fluctuations between different periods of productivity and the possibility of implementing a switching rule between overfishing reference points. This evaluation could consider the prospects of both higher reference points during periods of greater productivity, as well as the need to constrain harvest to avoid potential stock depletion during the next phase of low productivity.
- The working group should explicitly consider whether parameter β, the biomass below which fishing is curtailed, is also defined to be the MSST. If it is also the MSST, then the National Standard Guidelines require that a rebuilding plan be established within one year. However, a crab stock could be classified as overfished and in need of rebuilding one year, but be totally rebuilt one or two years later, independent of any management measures. This volatility in crab populations could thus create a chaotic management environment requiring continual attention to revising rebuilding plans. The SSC has learned that MSST may be of lesser importance in new National Standard Guidelines, so defining an explicit MSST may not be necessary.
- The SSC recognizes a pressing time frame for completion of this overfishing analysis, and encourages the working group to work efficiently and to provide routine updates on progress to the CPT and SSC.

D-4(c) Salmon Excluder Report

John Gauvin (Pollock Industry Contractor) and Craig Rose (NMFS AFSC) provided the SSC with an overview of their work to develop a salmon excluder device for the pollock trawl fishery and evaluate its effectiveness. Field trials with two versions of the device, conducted during fall 2003 and winter 2004, were somewhat successful at releasing chum and chinook salmon (about 12% escapement) without simultaneously releasing large quantities of pollock (about 2-4% escapement). The SSC commends the investigators for their hard work at developing a new technology for reducing salmon bycatch.

D-4 (d) Steller Sea Lion/Pacific Cod Localized Depletion Study.

The SSC received a report on a study conducted by the NMFS Fishery Interactions Team in the Bering Sea near Unimak Pass designed to evaluate whether the trawl fishery in this area resulted in localized depletion of Pacific cod. The logical extension of this research would be that findings of localized depletion by the fishery could have adverse effects on SSLs if the population was nutritionally limited during this time of year. Pacific cod are an important prey of SSLs during winter in many areas.

The study used pot gear in an experimental area where a Pacific cod trawl fishery occurred and in a control area (SSL protection area) where trawling was prohibited. The study plan included a pre-fishery pot index survey in both the experimental and control areas and a second survey in both areas that occurred immediately after the fishery. Comparisons were then made of the rates of change (slope) of the index between the experimental and the control areas during the sampling periods. The localized depletion hypothesis would be supported by findings that rate of change (slope) between the two time periods in the experimental and control were significantly different (either greater rate of decline or lower rate of increase in the experimental area). High variability in catch rates by the pot gear limited the study's ability to detect small changes in catch rates but power analyses suggested that the study could detect catch rate differences of about 20% or greater.

This study was conducted during both 2003 and 2004. Weather and equipment limited the effectiveness of the surveys in 2003. Index values were lower in both the control and experimental area during the late fishery surveys. The study was repeated in 2004 and the field operation was much smoother. In 2004 index values were higher in both the control and experimental areas during the late fishery surveys. Rates of change were similar (although in opposite directions) between control and experimental areas during both years. These results did not detect localized depletion due to the trawl fishery.

Ancillary data including tag returns, size compositions of catches, and reproductive status of catches suggested substantial movement of Pacific cod occurred throughout the study period. This finding complicated interpretation of the study results in relation to localized depletion. It may be that there is substantial turnover of Pacific cod in the study region during the fishing season which would largely mask short-term localized depletion. It may also be that the cod population is large enough that localized depletion could not be detected on the time scale of the experimental design.

The SSC was favorably impressed with the design and execution of the study. There was substantial support for continuation of the work. There was also support for relocating the research to another location where Pacific cod movements would likely be less dynamic thus allowing more definitive interpretation of the results.

D-4(e) Seabird EFP

Kim Dietrich (Washington Sea Grant) and Thorne Smith (North Pacific Longline Association) provided the SSC with an overview of the request from the Washington Sea Grant Program for an exempted fishing permit (EFP) to evaluate the effectiveness of using weighted groundlines to reduce seabird bycatch in the longline fishery. There was no public testimony. The EFP is needed to waive the requirement for streamers while setting longline gear. The new experiment, which builds on previous work that evaluated the use of streamers and weighted groundlines, will compare the performance of three gear configurations: (1) gear with an un-weighted groundline without paired streamer lines, as the control; (2) gear with an un-weighted groundline and paired streamer lines; and (3) gear with an integrated-weight groundline without paired streamer lines. The SSC commends this collaborative work between Washington Sea Grant and the industry to develop technologies to reduce seabird bycatch. The SSC recommends that the Council grant the EFP. The experiment seems well designed and should provide sufficient information to gauge whether the integrated-weight groundline or the paired streamer lines provide greater reductions in seabird bycatch. If time and resources permit, the investigators should consider testing a treatment that has both the integrated-weight groundline and the paired streamer lines to explore possible added benefits from combining the two seabird avoidance measures.