

DRAFT
MINUTES
SCIENTIFIC STATISTICAL COMMITTEE
June 1-3, 2005

The Scientific and Statistical Committee met during June 1-3, 2005 at the Alyeska Prince Hotel in Girdwood, AK. Members present were:

Gordon Kruse, Chair
University of Alaska Fairbanks

Pat Livingston, Vice Chair
NOAA Fisheries—AFSC

Keith Criddle
Utah State University

Sue Hills
University of Alaska Fairbanks

Anne Hollowed
NOAA Fisheries—AFSC

Franz Mueter
University of Washington

Terry Quinn
University of Alaska Fairbanks

David Sampson
Oregon State University

Farron Wallace
Washington Dept of Fish and Wildlife

Doug Woodby
Alaska Department of Fish and Game

Members absent:

Steven Hare
International Pacific Halibut Commission

Mark Herrmann
University of Alaska Fairbanks

George Hunt
University of California, Irvine

Seth Macinko
University of Rhode Island

Ken Pitcher
Alaska Department of Fish and Game

B-1 Plan Team Nominations

The SSC reviewed the nominations of Jie Zheng for the Scallop Plan Team, Ward Testa for the GOA Groundfish Plan Team and Dan Lew for the BSAI Groundfish Plan Team. **The SSC recommends approval of these nominations by the Council.**

B-7/B-10 NPRB and AOOS Reports

The SSC received informational reports from Clarence Pautzke (North Pacific Research Board) and Molly McCammon (Alaska Ocean Observing System) on the NPRB and AOOS programs.

NPRB is focused on studies of marine ecosystems with an emphasis on applied research for fisheries management. Research priorities submitted by the Plan Teams and the SSC have been helpful to identify research needs for the annual NPRB Request for Proposals. One indicator of NPRB success is the extent to which NPRB-funded projects yield products that are useful to stock assessments and management, for example via contributions to the ecosystem considerations chapter of the SAFE.

The AOOS program is part of a national and international network of integrated ocean observing systems and is in the development and planning stages. With funding to implement AOOS, the program will be an important source of information to help us understand ecosystem dynamics. AOOS has identified multiple user groups, including fishermen, fisheries researchers, and fisheries managers.

The SSC will continue to identify research priorities for fisheries off Alaska on an annual basis (usually in February) and will check these priorities against priorities identified by NPRB. In addition, the SSC encourages the Council to strengthen its ties with NPRB and AOOS through

continued information exchanges (such as these presentations) and through other collaborations as appropriate (for example joint participation in the Marine Science Symposium).

B-8 AFSC Fishery Interaction Team (FIT) Report

The SSC received reports by Libby Logerwell and Liz Connors (NMFS-AFSC) on fishery interaction studies being conducted by NMFS on pollock (Kodiak), Atka mackerel (Aleutian Is.), and Pacific cod (Bering Sea). The SSC continues to support investigations into the potential effects of fishing on Steller sea lions. SSC compliments the FIT group on their work on these three very challenging projects and looks forward to future reports.

The SSC offers the following specific comments to the investigators on additional analyses and future research directions.

General comments. Although the first projects of this group were specifically related to fisheries effects on SSL prey fields from the SSL BiOp, it appears that this group will be able to shed light on many other important questions such as fishery effects on changes in fish distribution and habitat use, changes in biological characteristics such as fish size, reproduction and genetic make-up and changes in marine community characteristics such as predator-prey relationships and species composition.

The FIT group asked the SSC for input on future directions for the three projects on which they reported. The SSC suggests a hierarchy of reports. First, we suggest that they return to the original questions of the space and time scale of fishing effects on prey fields of SSL. The experiments were designed to examine specific questions and assumptions arising from the SSL Biological Opinion (BiOp) and the information needed for an upcoming revision to that BiOp. The results, for example of the pollock experiment, are less clear than had been hoped, but with no vessel available until 2007, it is unlikely that additional field work will be possible in time for the next BiOp revision. Nonetheless, further field work would be useful. The SSC encourages additional analyses of currently available data such as comparing local and regional exploitation rates compared to the global control rule, and looking at fish biomass (e.g., Atka mackerel) in protected areas relative to SSL energetic needs.

The SSC recommends coordinating future fishery interaction studies with field work on SSLs to improve the ability to link fishing effects and SSL response. Now that the experimental methods are worked out, for example for the cod project, it could be valuable to repeat it in conjunction with SSL site-specific tagging and diet studies. Particularly for the pollock and Atka mackerel studies, existing data on rookery counts and scat collections should be brought into the analysis to the extent possible.

Beyond the SSL-related questions, the projects, especially the tagging projects, may be very useful to stock assessment. The SSC recommends that the FIT group work closely with stock assessment authors to prioritize needs for additional work on fish movement and estimation of natural mortality and exploitation rates.

Project-specific Comments

Pollock project. Of the four years of the project (2000-2001, and 2003-2004), the treatment and control only existed in two years (2001, 2004) in which fishing occurred, with conflicting results. In 2001, during the first survey pass one concentrated patch was found that was not encountered again, giving large variability and consequently no significant difference between Barnabas and Chiniak troughs, unlike 2004. The SSC agrees with the presenter's statement that "interannual variability suggest caution in interpretation of the results." In addition the SSC suggests:

- Complete a power analysis on the 2001 data and contrast to 2004 results.
- Further data exploration is needed concerning changes in results between study years.

- Examine more local changes in fish abundance relative to fished and unfished portions of Barnabas trough instead of the entire treatment area.
- Use the 2000 and 2003 data as interannual controls for 2001 and 2004.
- Work with SSL researchers to look at diet and satellite tracking data for local SSL haulouts.
- Look at the centroid of distribution relative to SSL use areas.
- Coordinate with ongoing efforts to evaluate pollock tagging methods.
- Consider conducting a pollock fishery interaction study in the areas proposed for a potential state parallel fishery in the Aleutian Islands. Vessels taking part in those fisheries should have VMS to be sure fishing locations are reported at a finer resolution than the level of state statistical areas. Biological samples should be collected from the catch. Some additional sea lion counts and diet studies would be desirable.

Atka mackerel project. For this species, the questions concerned biomass estimation and movement of fish between closed and open areas so a tag release and recovery approach was used. Stock assessment methods for Atka mackerel have always been less than satisfactory and this project has resulted in interesting and useful data beyond the original SSL-centered questions. For example, trawl survey biomass estimates in Seguam pass are lower than those derived from the tagging study. The SSC encourages further analysis, such as the recruitment factor and the cohort-based model. This project especially has given additional weight to the idea that SSL-protection areas need to be shaped to the environment and resources. For example, at Seguam and Tanaga passes the trawl exclusion zones (TEZ) encompass natural clumps with high biomass and low movement between zones, but at Amchitka the TEZ bisects an Atka mackerel area with lower biomass and high movement rates from protected to non-protected areas. Thus, the former TEZs seem to be effective, whereas the latter may not be effective.

To help identify potential problem areas, we suggest pursuing the idea of estimating the magnitude of local depletion relative to overall exploitation rate. There was some suggestion that local exploitation of Atka mackerel was as high as 20-80% at one of the study sites. Additional sites would need to be studied, to more fully assess the question of local depletion. Some potential future study sites for both Atka mackerel and Pacific cod were identified in the presentation and such sites should be areas which have substantial documented fishing effort in the vicinity of SSL rookeries and a high proportion of the “target species” in the diet of SSL.

The SSC also encourages further efforts to quantify the energetic demands of sea lions at particular SSL rookeries. Such models should take into account the actual diet composition of sea lions and the size composition of the major prey items (to the extent that it is known). To assess, for example, availability of Atka mackerel as prey, it will be necessary to expand biomass estimates from tagging studies to include juvenile life stages. This could be done by including information on year-class strength and natural mortality from the stock assessment. Recent oceanographic data on Aleutian Islands passes (upcoming supplement to the journal *Fisheries Oceanography*) should be incorporated into future analyses and study planning.

Pacific Cod project. The study area was carefully chosen to be an area of high cod harvest with a closed area that bisected a well-known “cod alley.” Because it is a localized fishery in space and time it was hypothesized that localized depletion would be more likely to be apparent there. However, it appears that this is not a closed population and any “hole” in the prey field does not persist in the study area for at least two weeks. Power calculations show that a decline of 25-30% or 20% could have been detected in 2004 or in 2005, respectively. Thus, in this case, it appears that local depletion is not a big issue because of the high degree of fish movement.

The question of movement of cod among federal areas and between federal and state waters is important for cod fishery management, especially if the stock assessment moves to an age structured model.

Additional suggestions include:

- Time of capture needs to be explored to see if this could explain spatial patterns in pot survey catch rates.
- Need to make the linkage to spatial and temporal scales related to SSL behavior.
- Further collaboration is need with marine mammal scientists to better understand the relationships of cod movement and fishery effects.
- Future studies should be focused on movement to better understand the spatial and temporal movement dynamics of Pacific cod before continuing research on fishing effects. In the case of this study, it appears that the spatial and temporal scale of the effect was larger than the scale of experiment. For example, it may be desirable to move the study to an embayment system where cod may have longer residence times to try to tease apart the effects of fishery depletion from pre-spawning immigration and post-spawning emigration.

B-9 Protected Species Report

Bill Wilson (NPFMC staff) presented the protected species report. The SSC appreciates these reports at each meeting to keep us abreast of new developments and issues. Public testimony was provided by Donna Parker of Arctic Storm from her position as a member of the SSL Recovery Team.

A. Whales: In April 2005, a workshop on “rogue” killer whales was convened by the Marine Mammal Commission at the direction of Congress. The SSC looks forward to the report from that meeting and a follow-up meeting to identify data needed to distinguish between the predation cascade hypothesis and other explanations. **The proposed distinction of a third killer whale stock in Alaskan waters (offshore ecotype) could exacerbate the issues identified by the SSC with respect to the List of Fisheries at recent meetings.**

B. Steller Sea Lion Recovery Team: The SSL Recovery Team’s next meeting will be in Homer in August, when a draft recovery plan will be finalized. **The SSC requests a status report from the Recovery Team in October on the recovery plan, as well as the anticipated schedule for the next Steller Sea Lion BiOp.** New data, including information in the B-8 report from the Fisheries Interaction Team, can be brought to bear on the central questions raised in the last BiOp.

C. State Pollock Fishery: The State is considering a fishery for pollock in state waters in the Aleutian Islands. **The SSC requests that, if the State decides to approve this new fishery, there should be some consideration of setting this fishery in the context of experimental fishery management. Such a fishery could present an opportunity to research the effects of fishing in critical habitat.** Specific comments are provided in our recommendations to the Fishery Interaction Team (see agenda item B-8).

D. Trawl Closure Request: The letter from the St. George Traditional Council requesting additional protection around their SSL haulouts, particularly Dalnoi Point, point out some of the data that are available and that were not included in the last BiOp.

E. Seabirds: Thorne Smith of the North Pacific Longline Association updated us on the Integrated Weight Groundline experimental fishing permit work planned for July 2005. Although the permit is still at NMFS, the SSC understands that it is very likely to be granted and the work to go forward. The SSC continues to support this kind of cooperative work.

C-3 Central GOA Rockfish Demonstration Program—GOA Groundfish FMP Amendment 68

Mark Fina and Jim Richardson (Council staff) provided an overview of revisions to the draft EA/RIR/IRFA. Public testimony was provided by Julie Bonney (Alaska Groundfish Databank).

The revised draft EA/RIR/IRFA is responsive to many of the concerns identified in the April 2005 SSC minutes. **The SSC remains concerned about the challenges involved in monitoring target and incidental catches in this fishery and is supportive of plans to evaluate the relative effectiveness and pitfalls of different monitoring systems (video, electronic logbook, observer).** It would also be important to explore the feasibility of applying information from various monitoring systems in the enforcement of multi-species sector allocations in fisheries with cooperative and limited access fishing. **The design of a monitoring program should consider the level of sampling needed to achieve levels of accuracy and precision for target and incidental catches necessary to achieve management and enforcement objectives.**

The SSC requests that the GOA rockfish stock assessment analysts comment on the likely biological consequences of changes in fishery duration that may result in seasonal shifts of target catch and bycatch and potential effects on reproductive success and other population dynamics as a result of this amendment.

C-5 BSAI Salmon Bycatch—BSAI Groundfish FMP Amendment 84

Diana Stram (NPFMC staff) provided a briefing on the initial review draft EA to modify existing bycatch reduction measures for chinook and chum salmon in the BSAI groundfish management FMP for the BSAI pollock trawl fishery (proposed Amendment 84). Scott Miller (NMFS Alaska Region) provided a briefing on the corresponding initial review draft RIR/IRFA. John Gruver (United Catcher Boats; Inter-Cooperative manager), Joe Sullivan (Mundt & McGregor), and Karl Haflinger (SeaState) reported on implementation of the AFA Pollock Inter-Cooperative Agreement. Public Testimony was provided by Paul Peyton (Bristol Bay Economic Development Corporation), Jill Kline (Yukon River Drainage Fisheries Association), Joe Sullivan (Mundt & McGregor), John Gruver (United Catcher Boats; Inter-Cooperative manager), Brent Paine (United Catcher Boats), and Karl Haflinger (SeaState).

As summarized in the SSC minutes from the April, 2005 meeting, bycatch of Chinook and chum salmon in 2003 and 2004 increased dramatically over past levels triggering closure of the Salmon Savings Area. This situation continues into 2005. There is evidence that the closures may not be effective at reducing salmon bycatch. Therefore, at the December 2004 Council meeting, a problem statement was drafted along with a number of alternatives. At that meeting, the SSC recommended that a full analysis be conducted to establish whether the fixed closed areas are contributing to the high bycatch levels. Alternatives drafted in December were split into two Amendment packages with package A (the subject of the present EA) to be set on a fast track for analysis. Three alternatives are included in amendment package A: a no action alternative, an alternative to eliminate the Salmon Savings Area closures, and an alternative to suspend the Salmon Savings Area closures and allow pollock cooperatives and CDQ groups to avoid salmon bycatch through a voluntary rolling hot spot (VRHS) closure program. The draft EA included a problem statement for Amendment package B with alternatives to consider if the proposed voluntary approach does not achieve the desired bycatch reduction. The analysis of package B is on a slower pace pending developments in package A.

The SSC appreciates the effort by Council staff in preparing the EA/RIR/IRFA document and the attention given to the issues raised by the SSC following a preliminary presentation by staff at the April, 2005 meeting. **The SSC offered a number of suggestions to expand and add analyses that would**

more clearly show salmon bycatch rates on finer spatial and temporal scales that might demonstrate the efficacy of the existing Salmon Savings Area for inclusion in the document prior to the October meeting. A detailed list of recommendations by the SSC is included below:

1. Part of the justification for changing management of salmon bycatch in the Bering Sea is based on recent evidence that bycatch rates are lower within the Salmon Savings Areas (SSA) as compared to outside those areas. The current analyses do not adequately allow an evaluation of the new evidence. To facilitate this evaluation, the SSC would like to see tables of averages and standard deviations of bycatch rates inside and outside the savings areas as well as inside and outside the Catcher Vessel Operating Area (CVOA). These tables should be prepared by sector (catcher vessels and catcher processors), by season, and possibly by subsets of pollock fishing seasons, particularly the B season. To reduce the influence of a relatively small number of large bycatch rates on averages and standard deviations, and to facilitate comparisons, it would be useful to present these tables on the scale of log-transformed rates as well as raw rates.
2. To better represent the number of tows with high bycatch rates, the SSC recommends preparation of frequency diagrams (histograms) showing the number of tows for each catch rate increment (bin), as well as a cumulative frequency diagram of the same data. The temporal aspects of these distributions should be shown for the A and B seasons for Chinook, and the B season should be broken out into meaningful divisions for Chum, for example, the period prior to the August closure, during the August closure, prior to any additional chum closure, during closure, and after closure.
3. Weekly trends in bycatch for Chinook and chum salmon in Figures 4-1 through 4-7 should also be shown as bycatch rates in those figures. This would facilitate understanding of the base rate criteria of the rolling hot spot method. To help interpret temporal patterns in more recent years (when closures were triggered) it would be useful to summarize the average temporal pattern in bycatch rates across those years when no closures were triggered.
4. The geographic data displays (Figures S1 through S9) could be made easier to read if they were enlarged to include just those data points in the primary area of interest between St. Paul Island to the NW and False Pass to the SE.
5. Comparisons of salmon bycatch in Table 3-4 would be improved if related to total run size by region (where available), rather than in comparison to statewide or regional commercial catches, which are subject to various market conditions and management activities. A recent analysis (Shotwell and Adkison) of indices of total escapement for one of these western Alaska salmon stocks and should be included.
6. The criteria for determination of a non-significant impact (page 35, paragraph 3) need to be documented. Further, documentation needs to be provided on these criteria relative to impacts on other salmon user groups
7. Information should be explored to evaluate the relative contribution of hatchery fish to bycatch stratified by region of origin to the degree possible. Published information on migration routes of Japanese hatchery chum salmon should be included.
8. Voluntary hotspot closures have been in effect since 2004, and it would be useful to examine bycatch rates before and after closures on a weekly basis.
9. Section 4.4.2 discusses future actions, and staff should consider inclusion of the potential impact of salmon excluder devices on bycatch rates.
10. The discussion of effects on salmon user groups in the RIR/IRFA should be expanded, and this should include a discussion of the levels and values of subsistence, recreational, and commercial harvests.
11. In general, all tables and graphs should be reviewed to ensure they could be fully interpreted as a stand-alone product without reference back to the text.

The remaining suggestions are reiterations/expansions of comments in SSC minutes from April, 2005:

12. The analyses and data needs for evaluating the effectiveness of the voluntary rolling hotspot closure program should be identified.
13. An analysis or expanded discussion is needed of the effects on bycatch of other species when pollock trawl vessels are moved out of hot spots and/or out of the SSAs.
14. To aid the interpretation of increased bycatch rates in recent years, the SSC recommends inclusion of maps showing annual changes in distribution of pollock and salmon. These data can be found in the annual assessment of pollock (AFSC) and attained from the Bering-Aleutian Salmon International Survey (BASIS) results.

The following issues are longer term and are recommended for inclusion in the analysis for Amendment package B.

1. The SSC had noted in the April, 2005 meeting minutes the potential importance of a bycatch cap to meet the requirements of National Standard 9. To this end, the SSC recommends 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.
2. The industry base rate calculation for Alternative 3 assumes that there is a reasonable relationship between the average B season rate and salmon abundance. This relationship should be evaluated with available data, including salmon run size data.

C-6 *Chionoectes bairdi* Split—BSAI Crab FMP Amendment 20

Mr. Mark Fina (Council Staff) described a RIR/EA/IRFA for Amendment 20 of the FMP for BSAI crab. The amendment is needed to determine the allocation of quota shares (QS), processor quota shares (PQS), individual fishing quotas (IFQ), and individual processing quotas (IPQ) for two separate fisheries for *Chionoectes bairdi* in the Bering Sea district. Under the authority provided in the FMP for BSAI king and Tanner crabs, the Alaska Department of Fish and Game (ADF&G) determined that two geographically separate *C. bairdi* stocks inhabit the Bering Sea. The ADF&G recognized one stock east of 166° W longitude and one stock west of 166° W longitude. The Council's recent action to rationalize crab fisheries in the Bering Sea did not include management provisions for these separate stocks of *C. bairdi*. This amendment addresses this deficiency.

The SSC reviewed the draft amendment and recommends releasing it for public comment after the following issues are addressed:

1. The SSC recommends moving sections of the EA to the Introduction to introduce the reader to the biological basis for the two stock management system. The information found in paragraphs 2 and 3 on page 21 could be used for this purpose. These paragraphs should be expanded to include reference to the biological information used to distinguish distinct stocks as well as their boundaries.
2. The SSC requests adding a description of units (\$/lb, thousands of pounds) on the table captions for Tables 2 and 3.
3. Section 3.3.2 of the document references abundance estimates based on the area-swept and length-based assessment (LBA) methods. The SSC recommends that the document should clarify which of the two methods is currently used to determine stock status. The SSC also

recommends that the authors add a section that describes the imminent revisions to the overfishing definitions for crab, and that changes to OFL and ABC may change the methods of GHl determination.

C-7 IR/IU—BSAI Groundfish FMP Amendment 80

John McCracken and Darrell Brannan (NPFMC) provided the SSC with an overall briefing of the initial review draft of an EA/RIR/IRFA to amend the BSAI groundfish FMP to allow cooperatives in the non-AFA trawl catcher-processor sector. Oberon Davis (NMFS Alaska Region) provided an overview of portions of the draft EA/RIR/IRFA that address options related to the CDQ fisheries. Jason Anderson and Jeff Hartman (NMFS Sustainable Fisheries Division) provided an overview of portions of the draft EA/RIR/IRFA that address enforcement and monitoring requirements. Bill Karp (NMFS Observer Program) provided additional motivation for the proposed catch monitoring program. Public testimony was provided by Arni Thomson (Alaska Crab Coalition), Teressa Kandianis (Legacy Fishing, Inc.), Lori Swanson (Groundfish Forum), Bob Alverson (Seattle Fishing Vessel Owners Association), and Donna Parker (Arctic Storm).

The draft EA/RIR/IRFA is incomplete in a number of important areas. The following major issues should be addressed before the draft EA/RIR/IRFA is released for review.

1. As noted in the draft EA/RIR/IRFA, the document requires updating to include data from the 2002 and 2003 fisheries and to include analysis of PSC allocation estimates for Atka mackerel and AI POP.
2. The draft EA/RIR/IRFA needs to include an introductory section that provides an overview of the allocation of TAC for species proposed for allocation to directed catches in the non-AFA trawl catcher-processor sector. The discussion should describe how the TAC is allocated to CDQs, CDQ reserves, the non-AFA trawl catcher-processor sector (cooperative members and non-cooperating non-AFA trawl catcher-processor sector qualified permits holders), and other sectors (AFA catcher and catcher-processor sectors, non-AFA trawl catcher sector, other trawl sectors, non-trawl sectors, fixed gear sectors, etc.). The discussion should clearly describe the priority order of allocations. How will this differ under the status quo and action alternatives and under the alternatives that increase the CDQ allocation? Are the resulting MRAs manageable?
3. There needs to be a more thorough discussion of how PSC allocation to the non-AFA trawl catcher-processor sector would affect PSC management for other sectors. In particular, the revised document should clarify the implications of the options under component 6 and whether particular options could lead to double-allocation of PSC to the non-AFA trawl catcher-processor sector.
4. The SSC notes that the suite of options across components of the alternatives is complex and suggests that it would be helpful to reduce the number of options to the minimum set that the Council is actively considering and that directly pertain to the problem statement. It would also be helpful for the draft EA/RIR/IRFA to include a section that identifies the intended purpose of each option and how that option addresses aspects of the Council's problem statement. In addition, the SSC is concerned that the analysis proceeds by considering a mere three alternatives drawn from the myriad of options across 13 components. The document must clearly justify that the anticipated consequences of the three alternatives provide appropriate bookends for the breadth of outcomes that could be observed across the suite of components and options.
5. The draft EA/RIR/IRFA should include a section on alternatives (e.g., revenue or zero-revenue auctions, VBAs, IBQs, reduced PSC caps, area closures) for addressing the problem statement (reduction of bycatch, minimization of waste, improved utilization to maximize benefits) that are

not considered in the analysis and a brief discussion of why those alternatives were not considered.

6. The draft EA/RIR/IRFA needs to discuss the potential impact of the \$75 million license retirement fund. While it is true that the fund has not yet resulted in the retirement of permits, it seems unduly conservative to assume that the fund will be entirely ineffectual and that the number of non-AFA trawl catcher-processor sector qualified permits will remain at 26.
7. The draft EA/RIR/IRFA should be revised to accurately convey information about how revenue estimates and CDQ royalty estimates were determined and the degree of confidence associated with those estimates. Similarly, the draft EA/RIR/IRFA should provide evidence to support the assumption of homogeneity of products, product markets and product prices across the non-AFA trawl catcher-processor sector; the analysis should provide information about the degree of confidence associated with those estimates. Where the degree of confidence is low, the EA/RIR/IRFA should caution against attempting to use the reported information as a basis for judging the relative net benefits of the alternatives and options.
8. The draft EA/RIR/IRFA should provide additional motivation for the proposed structure of the monitoring program for determining catch and bycatch by vessels within Amendment 80 cooperatives and non-AFA trawl catcher-processor sector vessels that do not join cooperatives. The discussion should identify the level of precision required for enforcement action and any special circumstances associated with this sector that might suggest the need for heightened levels of monitoring and enforcement. The analysis should demonstrate how that level of precision depends on variations in the relative frequency of multiple species in each haul, the sample fraction of each sampled haul, the fraction of hauls sampled on each vessel, and the number of vessels included in a cooperative or in the non-cooperative pool that are pooled for estimation of directed and incidental catches. This discussion should note that the coefficient of variation (CV) for estimates of catch and bycatch is inversely related to the relative frequency of catch and bycatch species. Consequently, similar sampling strategies for high bycatch fisheries and low bycatch fisheries will yield lower CVs in the high bycatch fisheries. Also, similar levels of estimated precision can be obtained with less comprehensive sampling strategies in high bycatch fisheries than in low bycatch fisheries^a. While monitoring catch and bycatch levels in the non-AFA trawl catcher-processor sector may require the level of sampling proposed in the draft EA/RIR/IRFA, the need is not justified by the mixed-species character of the non-AFA trawl catcher-processor sector fishery relative to the AFA sector fisheries (page 176); the need should instead be motivated by specific sampling conditions and concerns associated with the non-AFA trawl catcher-processor sector. In addition, this section of the EA/RIR/IRFA should clarify that each haul must be available for sampling (if needed for monitoring and enforcement) rather than that each haul will be sampled.
9. The draft EA/RIR/IRFA should include additional discussion of the information that NMFS needs about privately negotiated within-cooperative agreements (internal rules) related to penalties and incentives for compliance with contractual sub-allocations of target and PSC allocations to the cooperative. The need for information that is more detailed than information collected from the AFA-cooperatives should be explained (page 15). The analysis should also explain why participants in cooperatives in this sector would be required to file cooperative agreements annually when participants in the proposed Central GOA Rockfish Demonstration Project (many of whom are also participants in the non-AFA trawl catcher-processor sector) would be required to file cooperative agreements once every two years. The draft EA/RIR/IRFA

^a For example, if 1 match in a million is bad, you have to strike a lot of matches to get a small coefficient of variation (CV) for your estimate of the relative frequency of bad matches; if 1 match in 10 is bad, you don't need to strike as many matches to get a small CV for your estimate of the relative frequency of bad matches. In either case, you can reduce your CV by drawing large samples or by drawing large numbers of small samples.

should note that the cooperatives may adopt internal rules that allow penalties or incentives to be triggered at levels of Type I and Type II error below those that would be necessary to satisfy evidentiary standards required for enforcement action by NMFS (page 143).

10. As noted in the SSC's October 2004 minutes, the draft EA/RIR/IRFA should include a discussion of why revenue generating or zero-revenue auctions are not evaluated as options for the initial allocation of catch and bycatch shares or for the within season reallocation of unused catch and bycatch allocations. In addition, as noted in the SSC's October 2004 minutes, the draft EA/RIR/IRFA should include a discussion of why the Council's objectives cannot be satisfied through the allocation of fixed-term (e.g., 5-year, 10-year, 15-year, ...) overlapping or non-overlapping catch shares.
11. Section 3.3.8—Effects on Net Benefits to the Nation—should be revised to more fully reflect information presented in the body of the EA/RIR/IRFA. At a minimum, the analysis should include discussions on: the likely impacts of Amendment 79 on net benefits under the status quo; the relative difference in benefits under Alternative 2 and Alternative 3; likely differences in the distribution of benefits as a function of vessel size under the status quo and action alternatives (including the alternative criteria proposed for determining the initial allocation); likely increase in target catches under rationalized utilization of binding PSC catch limits; and effects of increased CDQ allocations on the estimated net benefits under the action alternatives and relative to the status quo. Moreover, while the draft EA/RIR/IRFA seems to provide a basis for determining that Alternative 2 will result in an increase in net economic benefits relative to Alternative 1 under implementation of BSAI groundfish FMP Amendment 79, it is not clear that net benefits are increased relative to the status quo under Alternative 3 or under options that transfer catch shares from the non-AFA trawl catcher-processor sector to the CDQ fishery.

The following additional issues should also be addressed to the extent practicable before the draft EA/RIR/IRFA is released for review.

1. The draft EA/RIR/IRFA should be extensively edited to improve clarity. Particular attention should be given to the Executive Summary. The Executive Summary should help the reader understand the motivation for the choice of the alternatives and how options within components of the alternatives can be expected to address the problem statement and to understand the advantages and disadvantages of the alternatives. We also note that the nomenclature applied to sectors described in this amendment is cumbersome and potentially confusing. For example, vessels with permits that qualify for inclusion in the non-AFA trawl catcher-processor sector and choose not to enter into cooperatives are referred to as participating in an "open access fishery"; the fishery that they participate in is anything but open access. Similarly, the "limited access trawl fishery" seems to refer to catches and bycatches (of the species allocated under Amendment 80) in an eclectic combination of AFA trawl catcher-processors, AFA trawl catcher boats, non-AFA trawl catcher boats, and other trawl catcher boats. Catches and bycatches (of the species allocated under Amendment 80) from various fixed gear sectors are, presumably, accommodated from the reserve.
2. The draft EA/RIR/IRFA needs to include clarification about the derivation and meaning of the values reported in Table 3-8.
3. Discussion of the probable impacts of the action alternatives on crew participation and compensation should draw on information about the outcomes of the AFA for predictions of the likely percentage changes in employment and compensation (page 187).
4. The draft EA/RIR/IRFA should include a discussion of the interaction of component 6 (options for reducing PSC) and component 9 (allocation between cooperatives and non-cooperating non-AFA trawl catcher-processor sector eligible vessels). How would the PSC reduction be

apportioned between cooperatives and the non-cooperating pool? Is it possible to define and monitor reduced PSC limits for a potentially small non-cooperating pool?

5. The discussions of product markets and consumer benefits need to be revised to note the high specificity of product demand in the secondary processing markets in Asia and that non-trivial quantities of secondary processed products are re-imported into the US.

With respect to concerns raised in the supplemental document labeled “Mandatory Data Collection Issues” included in the briefing book, the SSC notes that economic and socioeconomic data are absolutely necessary to determine whether regulatory actions are compliant with National Standard 1. Experience with voluntary data reporting programs in the North Pacific region and in other regions suggests that such programs are inadequate. **Therefore, it would be irresponsible to eliminate the data collection requirement from the proposed amendment.** Moreover, the SSC notes that without economic and socioeconomic data, it will not be possible to determine the extent to which this amendment is successful at addressing the Council’s problem statement, which specifies that the intent of this amendment is to “...reduce bycatch, minimize waste, and improve utilization of fish resources to the extent practicable in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, communities, and the nation as a whole.”

C-8 Observer Program

Jason Anderson (NMFS-AK) and Kent Lind (NPFMC) gave the staff presentation on a preliminary version of an initial EA/RIR/IRFA to improve the existing observer program. Bob Alverson (FVOA), Paul McGregor (Observer Advisory Committee), Thorn Smith (North Pacific Longline Association), and Gerry Merrigan (Prowler Fisheries) gave public testimony. The SSC commends the authors for coming before the Council family with this preliminary version, in order to solicit input to ensure that the initial document contains all essential information necessary for public review and comment.

In 1989 the SSC alerted the Council that the lack of observer coverage on the domestic fishery compromised the ability of the Council to manage its fish stocks and proposed a plan amendment to develop an observer program. The Council responded with a pilot program in 1990 with the help of Alaska Sea Grant, which evolved into the Pay-As-You-Go program in effect today.

In 1995 the SSC noted that six essential elements of a valid observer program were: (1) statistically sound levels of coverage, (2) flexible observer placement with a random sampling scheme, (3) good compensation and treatment of observers, (4) “arms length” relationship between the observer supplier and the recipient, (5) periodic review of the program, and (6) annual evaluation of data needs and priorities. The Pay-As-You-Go program lacked 5 out of 6 of these elements, and the SSC recommended changes to the Observer Program either by modifying the existing program or building changes into the proposed “Research Plan.” Neither of these actions was carried through.

In the intervening ten years, there have been repeated attempts to come up with an alternative observer program, but all have failed. Yet public concerns have increased about the effectiveness of the existing program, related to issues of data quality, lack of flexibility, lack of control for observer deployment, disproportionate costs and inequities to particular industry sectors, mismatch of observer skill level to assignments, and lack of data quality control. **While the existing program has probably been one of the most important elements in allowing the Council to sustain its fisheries, improvements to the program are long overdue and critical to maintaining the effectiveness and credibility of Council management.**

In January 2003 (and February 2004 and December 2004), the SSC recommended that three studies be conducted to improve the observer program: (1) establishment of baseline data that would measure coverage by area, time, and fishery to assure representativeness of observer sampling, (2) statistical analysis of observer data to indicate what levels of observer coverage are necessary to achieve program goals, and (3) field experiments to test whether bias exists due to vessels selecting the trips for observers for the fleets with 30% coverage. This bias could be due to non-random selection of trips or due to changes in fishing behavior when an observer is onboard.

The new Observer Program described in the document addresses many of the issues described above. Depending on the alternative, some or all fleet sectors will receive observer deployment through a new mechanism, in which NOAA Fisheries contracts with observer companies. NOAA Fisheries determines which vessels and plants receive observers for particular trips. The remaining fleet sectors (if any) remain in the Pay-As-You-Go program. In addition, the number of vessels and fleet sectors paying into the observer program is enlarged to possibly include vessels that do not currently take observers (e.g., small boats, Pacific halibut longliners), so that program costs are better spread across the users that benefit from the program. The authors of the document have done a good job in describing the elements and critical decision points in developing the new program. **However, the document needs substantial enhancement in a number of areas described below, and several problems need to be resolved before the new program will be feasible.**

1. The document does not contain analyses to allow the Council to choose among the alternatives. Examination of existing coverage levels for fleet sectors and performance indicators of precision attained for estimating catch, bycatch, and PSC would help to ascertain which sectors should be included in the new program. Information from previous contracted studies (Versar, MRAG) should be useful to this effort and reports from these studies should be abstracted in the document.
2. The document should describe what experiments will be done in the future to evaluate bias in observer deployment (as elaborated above and in the January 2003 SSC minutes).
3. The document should explicitly link the goals and objectives of the observer program to their implications on levels of coverage and precision. Aspects of the program related to catch estimation, biological sampling, individual vessel catch, bycatch estimation, and PSC estimation should be described. To the extent possible, a quantitative specification of their associated desired levels of precision should be given (e.g., determine total removals for a target species from a fishery to a precision of 10%). Likewise, needs related to monitoring marine mammal and seabird interactions should be given. Details should be provided about the economic benefits of the observer program to industry, such as improving the ability of a fishery to obtain MSC certification and the ability to achieve sustainable harvests.
4. NOAA Fisheries has indicated that it may not have the infrastructure necessary to support both the Pay-As-You-Go program and the new observer deployment system. Consequently, the Council may wish to simplify the range of alternatives to those that are feasible. One suggestion is to reduce the alternatives to: (1) No action. Existing observer program expires in 2007 and is not renewed; (2) Status quo. Pay-As-You-Go program is rolled over with no other changes; (3) New program applied to all fisheries (Alternative 7 in the document); and (4) New program in Gulf of Alaska, Pay-As-You-Go in the BSAI (select one of Alternatives 2 – 4 in the document). If NOAA Fisheries cannot support both programs, it is not fruitful to consider the myriad of alternatives with both programs in place.
5. A critical element for the new program is for industry to support the fee collection program and view it as being equitable. Attempts should be made to have industry negotiate ahead of time which fee system in which they are willing to participate.
6. Another critical element for the new program is whether or not observers need to be paid overtime. Until this overtime issue is resolved, it will be impossible to accurately determine the costs of the new program.

7. The authors should consider whether an alternative criterion could be used to define tiers that specify coverage levels. Currently, vessel length is the primary criterion but an alternative might be to consider vessel production. That is, a vessel that is 59' in length but produces 500 tons per day may deserve higher coverage than a vessel that is 61' in length but produces 50 tons per day.
8. If the program uses exvessel value to determine fee percentages, then the revenues available to the observer program could fluctuate widely from year to year. The document suggests that a 5-year running average could help stabilize funding. The document needs further analysis of how fluctuation in exvessel value-based fees over time could affect program performance and the ability to achieve sampling goals. This is particularly critical, because the Administrative Procedures Act apparently requires a specified fee percentage (by number or formula) rather than an annually determined value.
9. The annual process by which coverage levels will be determined (mainly for Tiers 3 and 4) should be developed. Details about scheduling, participation, parameters for the evaluation, rationale, and the review process are needed. This could be part of the Plan Team meetings, or a separate process.
10. The document should contain a description by fleet sector of the initial coverage levels that will be put in place with the new program for Tiers 3 and 4. Industry and the public need to know what levels of coverage will be in place in the new program, and this information needs to be presented in the document, along with sufficient analysis to understand the effects on program performance and program costs. A default value of 30% for Tier 3 could be used. The SSC recommends further that a meeting of AFSC assessment scientists and Observer Program personnel be held as soon as possible to obtain recommendations of coverage levels that address stock assessment needs.
11. The document should describe the approach intended to be used to provide funding for observer coverage when new fisheries develop. The proposed program anticipates coverage levels for existing fisheries, but if a new fishery developed, it is not clear that additional coverage would be possible, given the fixed fee percentage.

D-1 Groundfish Management - TAC calculation of other species complex for GOA

The SSC received a report from Diana Stram (NPFMC) and Tom Pearson (NMFS AK Region) on the Draft EA/RIR/IRFA for the proposed Amendment 69 to the GOA Fishery Management Plan for Groundfish. The amendment modifies the TAC for the Other Species complex. Three alternatives are considered: (1) status quo in which TAC for Other Species is set at 5% of the total groundfish TAC; (2) TAC for Other Species can be set less than 5% of the total; or (3) TAC for Other Species can be set less than 5% of the total with no directed fisheries for any of the Other Species. The SSC received no public testimony on this item.

The document notes (p. 19) that if a single species within the Other Species complex should become the target of a directed fishery, then that targeted species could suffer negative long-term effects. **To support the argument that fishing to date has not caused any long-term impact on any of the species in the complex the SSC suggests that the Secretarial Review Draft of the Amendment include available data showing time-trends in biomass for those species in the complex for which such estimates are available (e.g., sculpins).** The proposed amendment is an interim measure pending development of a new amendment that will break individual species in the BSAI and GOA out from the Other Species complex so that OFL and ABC by species can be developed. **Alternatives 2 and 3 provide the Council with flexibility to respond to the development of new directed fisheries on species in the complex.**

D-2 Crab

The SSC received a report from Robert Otto (AFSC, Crab Plan Team Chair) and Diana Stram (NPFMC) describing the May Crab Plan Team meeting. The Plan Team representatives discussed several issues of

interest to the SSC and the SSC thanks the representatives for their report. The SSC commented on four issues.

- The Plan Team representatives reviewed a schedule for establishing harvest recommendations. They noted potential problems associated with compliance with the OMB guidelines for peer review given the tight time lines required for estimation of annual TACs for crab stocks. The SSC is sympathetic to the Plan Team's concerns regarding issues surrounding the added complexity imposed by implementation of OMB guidelines for peer review. **The SSC recommends that the Plan Team document the issues associated with implementation of peer reviews under short time lines imposed by the timing of the survey and opening of the fishing season. The SSC recommends that the Plan Teams seek guidance from the Council regarding resolution of these issues.** Also, Bubba Cook (NMFS AKR) can provide assistance concerning this issue.
- **Regarding difficulties with this stock assessment cycle, the SSC recommends that stock assessment authors evaluate the possibility of setting annual (or interim annual) TACs using one year old data.**
- The SSC continues to support the development of length-based assessment models that allow for the integration of data from a variety of sources. The SSC will review these assessments, if available, at the June Council meeting. **Given the Plan Team's plans to review the snow crab model in spring 2006, the SSC requests that the Plan Team present to the SSC a summary of their review, as well as the 2003 CIE review of the snow crab model at the June 2006 meeting.** Also, the SSC recommends that the Team establishes a schedule for external reviews of all crab stock assessments and clearly outline the internal and external review procedures for assessments (e.g., periodic CIE review, annual plan team and SSC review).
- The SSC notes that, although the Plan Team requested forecasts of stock status for the May meeting, these forecasts were not provided. The SSC is disappointed that this information was not provided and continues to encourage assessment authors to provide this information on an annual basis. **The SSC encourages a meeting between State, Federal and Council representatives to discuss a time line and priority list for providing assessment information to the Plan team.** The December interagency crab meeting might be a forum for this type of discussion.
- **The SSC notes that the several members of the current Plan Team are also stock assessment authors and that it might be useful to add additional members with stock assessment and other needed expertise to strengthen the peer review process of the plan team.**

The SSC received a report from Jack Turnock (AFSC) on the status and discussions of the interagency working group on overfishing definitions. It was noted that while a progress report on the working group was discussed, that the Crab Plan Team had not yet reviewed all of the information presented. It was reported that the Plan Team consulted with the working group in the establishment of a revised, more realistic schedule for completion of their work that includes initial review in April 2006.

D-3 Ecosystem Management

Unfortunately, the SSC did not have time to address this agenda item at this meeting.