

North Pacific Fishery Management Council

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MINUTES Scientific and Statistical Committee June 7-9, 1999

The Scientific and Statistical Committee of the North Pacific Fishery Management Council met June 7-9, 1999 in Kodiak, AK. All members were present:

Richard Marasco, Chair
Doug Eggers
Dan Kimura
Terry Quinn

Jack Tagart, Vice Chair
Steve Hare
Doug Larson
Al Tyler

Keith Criddle
Sue Hills
Seth Macinko
Hal Weeks

C-1 AMERICAN FISHERIES ACT

Chris Oliver presented the staff report on this agenda item. Dr. Scott Matulich (Washington State University) presented an addendum to his report, "Economic Reliance on Crab by AFA Section 208 Crossover Vessels: Implications for Sideboards," prepared for the Alaska Department of Fish and Game and the Council. Public testimony was presented by David Gentry (Kodiak, AK), Joe Plesha (Trident Seafoods), and Earl Comstock (Fair Fisheries Coalition).

The SSC acknowledges staff for its effort to respond to the requests in our April minutes despite a very heavy workload. The staff evaluated target designations done on a weekly instead of a haul-by-haul basis, and found no statistically-significant differences at the 10 % significance level, though for one species there was a significant difference at the customary 5% significance level. This point should be noted in the document. Chapter 10 has been revised and shortened substantially, in response to our comments. Some modifications have been made to Chapter 11 in response to our comments, though we cannot judge their adequacy because the new version was inadvertently not included in our review draft. It is important to clarify a misstatement (p. 264) about SSC guidance on the adequacy of analyses. The SSC believes that in exceptional circumstances it's permissible to omit quantitative economic analyses when available data are lacking or limited, *provided* that an adequate *qualitative* consideration of relative benefits and costs is made.

The sideboard and implementation decisions for the AFA are among the most important Council actions. The EA/RIR contains useful descriptive information about the issues and options. However, due largely to the speed with which these decisions are being taken, the EA/RIR does not contain sufficient information to judge the relative benefits and costs of the different options for sideboard measures. The IRFA (p. 267) argues that the sideboards will not have significant impacts because the sideboard measures are designed to preserve the status quo. This argument is incorrect. The keen interest by all parties in what the Council decides is compelling evidence of the potential for major impacts on different industry sectors. One example of this is

the testimony the SSC received, on both sides of the question, about how much potential there is for inshore processors to engage in monopsony pricing and “predatory” behavior.

With respect to the crab sideboard analysis, as noted in the analysis, “reliance” is not a well-defined concept. The author suggests some motivations related to this issue: a “portfolio” motivation, fishing for expected returns, and fishing for rights. We note that:

1. depending on the time frame adopted, one could reasonably ascribe a portfolio motivation to *all* vessels who landed *any* crab during the ten-year period examined; the relative importance of specific time frames and relative landings/earnings amounts is a Council judgment;
2. “fishing for rights” is one way to fish for high expected earnings; i.e., the motivations described are not mutually exclusive; and
3. “fishing for rights” is an example of trying to do the best one can economically in response to expected changes in the institutional structure of a fishery. The same behavior (doing the best one can economically) occurs within the *existing* institutional structure, or status quo, as well.
4. The presence or absence of an “expected revenue” motivation on the part of any individual operation is difficult to interpret, because participation in any particular crab fishery is driven both by *alternative* fishery returns (not included in the analysis) as well as expected crab revenues (included).

Finally, the data probing illustrated by the crab sideboard analysis could be profitably emulated in other RIR/IRFA analyses.

C-2 STELLER SEA LIONS

The SSC received NMFS staff presentation from Tim Ragen and Lowell Fritz with input from Craig Johnson and Mike Paine. Public testimony was heard from Ed Richardson (At-Sea Processors), Chris Blackburn (AGDB), Glenn Merrill (Aleutian East Borough), Ken Stump (Greenpeace), and Dorothy Childers, (AMCC).

Since the action before the Council is an FMP amendment, the role of the SSC is to advise the Council as to the likelihood that the proposed alternatives will effectively address the issues flagged in the problem statement, comment on the soundness of the hypotheses that underlie the alternatives, examine the quality of the data and appropriateness of the methodologies used to evaluate the potential impacts of the alternatives, and to comment on the reasonableness of the conclusions. Our April 1999 minutes address these items at some length.

With the enormous uncertainty as to the extent of factors affecting sea lions, and the potentially large and deleterious impacts that these measures could have on fishing communities, the Council has a responsibility to ensure that the management measures are designed and implemented in such a way that their efficacy can be determined. If uniform management measures are implemented across all areas, it will be impossible to identify which, if any, are responsible for mitigating the decline of Steller sea lion populations.

Paraphrasing from our June 1998 Atka mackerel minutes and quoting from our November 1998 marine mammal issue minutes, the SSC sees the main questions to be answered as:

- 1) The distribution of fish in relation to areas that are used for fishing;
- 2) The distribution of fish in fishing areas during and after fishing;
- 3) How do sea lions use pollock in relation to pollock distribution;

- 4) What does the answer to #3 mean in relation to sea lion population dynamics; and
- 5) Does the fishery affect sea lions in other ways (e.g., disturbance).

Statement of Concern

The SSC has pointed out that there is no unequivocal evidence to suggest that the pollock fishery has had detrimental effects on the sea lion population. The SSC has repeatedly argued for conservative and cautious policies in management of the groundfish fisheries under Council jurisdiction. While this caution has most frequently involved the protection of the species being harvested, it also involved forage species and predators of these species as well. In the current situation, the decline of sea lions is clearly a cause for concern and we urge the Council to use caution in its management of fisheries that cohabit the same area. The increases in CHCVOA catch, percentage of catch, and estimated exploitation rate, the concentration of the pollock fisheries seasonally in the Bering Sea, and the currently low percentages of CHCVOA summer survey biomass are causes for concern. The spatial and temporal dispersal of the Bering Sea fishery found in the alternatives is consistent with Council practices in other fisheries (e.g., Atka mackerel, rockfishes), although the particular suite of measures that would be most beneficial for the sea lion population is necessarily unknown. The case for large management changes in the Gulf is less supportable, given that its fishery has already dispersed in both time and space. Nevertheless, further protection in areas near sea lion habitat cannot be summarily rejected, especially if the fishery has a reasonable opportunity to take its TAC. In summary, there is no scientific way to choose the appropriate suite of management measures to balance ESA concerns with the needs of the fisheries. It may be that the most important thing to do is to set up a system for the future that better allows us to understand the relationship among the fisheries, the various species and their interconnections, and the environment.

Process

The entire procedure of ESA Section 7 consultation, emergency rules, and how this EA/RIR has been rushed through, has not allowed thorough discussion and analysis. For example in this document, several suggestions from industry relative to GOA closed areas were not analyzed due to lack of time (pp. 74-75). The SSC has been told that "data are being gathered", "experiments and monitoring are being planned", "further analysis will be done" and so on. These activities should be completed and the mechanism/timing for inclusion of new information in revised management measures clarified.

The SSC understands that the Section 7 consultation will be reinitiated when significant new information is available or when the action that is the subject of the consultation changes significantly. The SSC suggests advance planning to ensure that all relevant sources of information can be included in upcoming Biological Opinions.

Detailed review of EA/RIR

Because the analysts had limited time between the April and June meetings, they did not make many changes suggested by the SSC. The SSC encourages that the historical record be impartial, accurate, and a thorough scientific exploration of the issues involved.

1. Overall tenor.

The SSC continues to be concerned with the tenor of this document. The SSC does not see this concern as a minor request for change of editorial details, but rather an important matter.

The major flaw in the document is that the scientific principles espoused in determining management actions are either not explicitly stated or represent a point of view that does not cover the full range of scientific opinion possible based on the amount (or lack thereof) of information. The SSC reiterates that the document should explicitly avoid stating underlying hypotheses as statements of fact and should clearly state that the efficacy of these management measures is unknown. Indeed, it should admit the possibility that these management measures could even make matters worse if they inadvertently redistribute the fleet in space and time in a way that increases the interactions between the fishery and the sea lion population. This possibility exists because of our poor knowledge of the distribution of sea lions during their entire life history and the lack of knowledge of direct or indirect interactions between the fleet and sea lion population. The range of opinion expressed in the Bowen review panel and Boyd review provide a starting point for the revised document.

2. **Range of Alternatives and Spatial dispersal and distribution.** The SSC notes that the spatial analysis is much improved, but that there is much uncertainty in the results because of the uncertainty in survey catchability. The results do suggest that the proportion of catch in the CHCVOA during the B/C seasons may be higher than the proportion of biomass there.

The SSC reiterates that an important data set, fishery distribution data, as detailed in our April minutes, has been rejected by the analysts in considering this issue. The SSC disagrees with this rejection. While the problems noted (p. 112-113) are major ones, it is also true that important insights into spatial and temporal distribution could be revealed. The SSC acknowledges that it may take some time to undertake such an analysis, but believes that some supportive mention of this approach should be in the document. The statement on page 44, "...that this approach is unreliable and is inconsistent with RPA principles," should be removed.

A second problem with spatial issues relates to the logic of promoting spatial solutions for a highly migratory species like pollock. In both the Gulf of Alaska and the Bering Sea, the spatial and depth distribution of pollock varies by year, yearclass, age, season, and environmental conditions. As pointed out in Boyd's review, spatial measures arise from a terrestrial paradigm that may not be applicable or desirable for marine species. As such, the unequivocal promotion of spatial solutions in the document should be relaxed and balanced against these difficulties. In particular, the description of spatial dispersion on page 11 (2nd paragraph) and pages 43-44 is not fully thought through, and appears to presume that the fishery will amass on the border of critical habitat regardless of the actual distribution of pollock.

3. **The 170° line.** The rationale for dividing the TAC East and West of this line should be enhanced. Given that the Bering Sea is so large, precautionary management should avoid wide variation in harvest rates, so that a case can be made that the division is prudent. The analogy to the divisions of TAC in the Gulf can also be given.
4. **Critical habitat.** The SSC reiterates that critical habitat needs to be reexamined and that new data needs to be collected. While this cannot be done in the document, the analysts should mention this need and explain what needs to be done in order to conduct the reexamination.
5. **AI closure.** The analysts enhanced the document by including a discussion of the AI area as a control area, so the SSC suggests no further changes.
6. **Economic and management effects.** The analysts have done a good job of qualitatively describing these effects. The analysis of 1999 GOA harvest should be analyzed on a finer spatial scale to permit

the analysts to make more informed conjectures about prospects that imposition of additional closures will or will not lead to large economic losses.

7. Table 3-5 clarification. The analysts have done a good job of clarifying the construction of this table, as mentioned above. It would be worthwhile for the analysts to consider adjustments to this table if warranted because the "A" season precedes the survey.
8. Technical comments.
 - a. Page 9, last paragraph. The comment that pollock management is largely a single-species approach ignores the attention that the Council has given to ecosystem issues. The statement should be revised to suggest that further improvements in regard to ecosystem issues could be made by considering spatial and temporal dispersal of catch.
 - b. Page 9, last paragraph. The comparison between summer survey biomass and B-season catch is inappropriate. The comparison should be with the estimated B/C season biomass given in Chapter 3.
 - c. Page 11, second paragraph. The last sentence should be changed to indicate who deems it necessary. Acknowledgment should be given that there is no evidence that "detrimental ecosystem effects" are present in current management. [This implication is found in several places in the document. See p. 44, first paragraph.]
 - d. Page 47, middle of page. The rebuttal of the industry suggestions of the correlation between sea lion populations and fishing areas is overly strong and should be more balanced. The analysts rely on correlations in establishing the potential link between sea lions and the pollock fishery in the finding of jeopardy.
 - e. Page 60. Why is a five day stand down period too short between seasons in the GOA but is adequate in the BS?
 - f. Page 69. The SSC disagrees with the analysts' statement that adaptive management is inconsistent with the RPA principles. More correctly, the development of a reasonable adaptive management scheme would be difficult and could take a fairly long time to craft.
 - g. Page 75. The argument that inadequate information on the GOA small-boat fleet prevents NMFS from considering exemptions inside eight sites is not compelling. The reason for the different treatment for Prince William Sound compared to the rest of the Gulf needs to be more carefully explained.

Adaptive management

Adaptive management offers a way to understand whether management measures have anything to do with future changes in the sea lion population. By adaptive management, we mean experiments and monitoring of management measures that are closely coupled with the revision of management actions and continued monitoring and experimentation. The SSC continues to think that considerable insight can be gained through carefully designed projects. The SSC strongly recommends that effects of any management actions taken relative to Steller sea lions be monitored and considered in future management measures. The SSC also suggests that a workshop potentially sponsored by Alaska Sea Grant, open to all, be held to brainstorm possible adaptive designs. These designs will necessarily be limited by ESA concerns, so that a constraint on

information gained will have to be tolerated. Nevertheless, such a design is preferable to the current no-new-knowledge approach.

C-3 BSAI PACIFIC COD FIXED GEAR ALLOCATIONS

The SSC received a report from Dave Witherell and Chuck Hamel on the initial review of the EA/RIR/IRFA for Pacific Cod Fixed Gear Allocations. Public testimony was provided by Linda Kozak and David Gentry.

The SSC does not believe the analysis is ready for public review. Specific items of concern are as follows:

1. The amendment is lacking a rationale supporting the proposed action. The purpose and need for actions on Section 1.1 must be revised to provide that rationale and an explicit problem statement.
2. Estimates of revenue were generated from proposed alternatives assuming a uniform price for all fishing sectors. No information is provided on product mix or prices for the primary fishing sectors affected by the proposal.
3. Generic profiles of communities involved in the fishery are provided, but no information is provided on the role of the Pacific cod fishery and the participating harvest sectors, or on the changes that might occur under the different options.
4. Some perspective should be provided on the reliance of each of the harvest sectors on access to this fishery.
5. While the analysis acknowledges lack of cost data to evaluate net economic benefits, there is no attempt to discuss potential social or environmental benefits of alternative allocations. This discussion should be provided.
6. The RIR draws no conclusions. The SSC requests that the analysts provide one.
7. At several points in the analyses, it is suggested that there are no impacts from the proposed allocation alternatives. The SSC believes that some harvesting sector participants could be affected. Some vessels will be denied access to this fishery. A discussion of the impacts to those vessels is needed.

Specific comments:

1. Page 21, paragraph 2. Sections of LLP analysis referenced in the EA/RIR should be excerpted for inclusion in this document. This EA/RIR should be able to stand on its own.
2. Page 21. Magnitude of potential impact should be discussed in absolute terms rather than relative to BSAI pollock fishery.
3. Page 21. There should be a discussion of whether cod longline and pot boats are "small" economic entities.
4. Page 29. Table 3.5 needs to be reflected to emphasize that the catches and revenues are cumulative across the qualifying periods.
5. Page 28, 29. Tables 3.4 and 3.5 should include the status quo as a reference.

6. Page 29. Section 3.3 should be revised to acknowledge that the magnitude of bait removals could be estimated.
7. Page 30. Conclusion to section on National Standard 1 should be revised.
8. Page 35. The Summary of Impacts on Communities should be revised to provide a basis for the conclusion drawn.
9. Section 3.2.1, p. 22, fourth paragraph - This paragraph needs clarification.

The SSC requests that the document be revised to address the concerns itemized above prior to release for public review. The SSC further requests the opportunity to read and comment on those revisions prior to release for public review. We are willing to conduct the follow up review by teleconference.

Note: The SSC is concerned at the lack of knowledge about the magnitude of Pacific cod harvested for bait. The SSC encourages the Plan Team and stock assessment authors to consider these removals.

D-1 GROUND FISH AMENDMENTS

D-1(a) - The SSC received a presentation on the Groundfish Forum's halibut mortality avoidance program (HMAP). No comments are offered on this issue at this time.

D-1(b) - The SSC reviewed the experimental permit request submitted by AFDF for a bait test project. There is no objection to granting the request.

D-2 CRAB MANAGEMENT: BAIRDI REBUILDING PROGRAM

Dave Witherell (NPFMC) and Doug Penguilly (ADF&G) described the revised EA/RIR/IRFA for rebuilding the Bering Sea tanner crab population. Public testimony was provided by Dorothy Childers of the Alaska Marine Conservation Council. This testimony emphasized the importance of bycatch reduction and habitat protection as part of the rebuilding process.

The SSC acknowledges that the authors have been very responsive to the SSC requests for an estimate of the probability of rebuilding to B_{MSY} within a given number of years. The resulting curves show that for a 50 (90%) probability of rebuilding, the model estimates 11 (32) years when there is directed fishing and 10 (28) years when there is no directed fishing.

The SSC notes that the rebuilding time period should be considered to be in determinant if, as the authors say, the increases are dependant on the reoccurrence of favorable ocean conditions. Because of imposed national guidelines, the analysts made their calculations for rebuilding time on a stock recruitment relationship that they admit is questionable. A sensitivity analysis should be carried out that explores the relative effects of autocorrelation and stock recruitment.

Although the approach taken in the document is a reasonable effort to address the national guidelines, there are some modifications to the approach that could lead to an improved analysis. For example, since the authors note the importance of environmental forcing, it would be reasonable to include those factors as explanatory variables in the Ricker spawner-recruit function. While the forecasts of environmental conditions are

problematic, inclusion of the additional explanatory estimates will reduce bias in the coefficient estimates and may reduce the extent of positive serial. The environmental variables could be pegged at their mean or modeled as drawn from their empirical distribution. This approach could be used to obtain an estimate of the expected B_{MSY} and used in rebuilding simulations.

The IRFA "Impacts on Communities" appears to be boiler plate, and does not provide information specific to the rebuilding of Bering Sea tanner crab. One possible impact, the cost of no directed fisheries during rebuilding, could be easily calculated from the rebuilding model.

With these suggested additions, the SSC recommends that the draft Bering Sea tanner crab rebuilding plan be sent out for public review.