

# North Pacific Fishery Management Council

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## MINUTES Scientific Statistical Committee June 22-25, 1992 Sitka, Alaska

The Scientific and Statistical Committee of the North Pacific Fishery Management Council met June 22-25 at Sitka Centennial Hall. All members except John Burns were present, namely:

Terry Quinn, Chair  
Larry Hreha  
Don Rosenberg  
Jack Tagart  
Richard Maraso  
Marc Miller

Bill Clark, Administrator  
Dan Huppert  
Bill Aron  
Doug Eggers  
Phil Rigby (alternate for Gordon Kruse)

### C-1 MORATORIUM ON THE ENTRY OF NEW VESSELS

The SSC reviewed the final draft document on the proposed moratorium on the entry of new vessels into the groundfish, crab and halibut fisheries, the public comment received and the report of the Moratorium Committee. As stated in the January 1992 SSC minutes, the SSC views the moratorium as a temporary, interim measure and not as a solution to problems of over-capacity or economic inefficiency. An expansion of harvesting capacity beyond levels that existed during any of the qualifying periods is possible under both alternatives specified in the moratorium. Alternative 2 does limit the number of larger vessels in the fishery. The SSC concurs with the Moratorium Committee that vessel length serve as the standard for the determining allowable changes to a vessel, recognizing that only restricting length of replacement vessels will not effectively control harvesting capacity of the fleet. The SSC also note that if an exemption for vessels under 61 feet is approved, a large increase in capacity could occur (vessels could be replaced with larger vessels that could catch significantly more fish).

### C-2 INSHORE/OFFSHORE

The SSC commends the analysts for their excellent work in a short amount of time and believes the general scope of work is appropriate.

The SSC recommends the following revisions to the document before it is released for public review:

## Chapter 2 Benefit/Cost Analysis

The SSC notes that the benefit/cost analysis presented in the Supplementary Analysis of Proposed Amendment 18 relies upon a large number of important parameters that are estimated with great uncertainty. Some improvements to the analysis which might be completed in the short term are suggested below. Substantial improvement in the long term depends upon expanded and improved economic data collection and research on the production and marketing of pollock products.

1. Treatment of Labor Costs. Labor costs would normally be estimated as the actual payments to workers on vessels and in processing plants. Where workers are paid a share of the gross earnings, however, actual payments might rise or fall independently of the amount of work done. Crew share payments would then not accurately reflect labor costs. In the long run, we would expect crew sharing agreements to be adjusted to make labor payments equal opportunity costs of labor. During the three-year period covered by the benefit/cost analysis, it is unclear whether pay to share-compensated labor will just cover opportunity cost or whether positive and negative surplus values will accrue to workers. To deal with this uncertainty the supplementary analysis uses two alternative approaches to labor costs in harvesting and processing. The first takes labor cost as fixed, converting increases or decreases in labor payments under the share agreement into positive or negative net benefits. The second approach takes labor cost as fully variable and equal to labor payments. In the full assessment of net benefits the analysis uses these two approaches as endpoints of a range of possibilities.

We suggest that the net benefit estimates using each of the two labor cost approaches be highlighted in the discussion of the analytical results. The choice between the two approaches will be more fully explored by the SSC at the August meeting.

2. Product Recovery Rates. Establishing valid product recovery rates is an important element in the benefit/cost analysis, but it is a difficult task and involves a number of highly variable effects that could not be incorporated in the present report. The SSC is unsure that the ranges of PRRs used in the report adequately characterize the recovery rates that will be experienced by the onshore and offshore sectors during the three year period. However, we have no new information to provide nor a specific approach for improving the analysis for this amendment.

3. Monte Carlo Risk analysis. To explore the effect of uncertainty concerning various model parameters, the analytical team implemented a risk analysis which provides information on the likely distribution of net economic benefits. We have some specific suggestions regarding the computations. First, the distribution of values for the product prices and costs should be centered on the best estimates of these parameters as reported in Chapter 1 of the report. This change will likely have a substantial effect on costs and benefits, given the difference between the actual data average and the mean of the triangular distribution used in the simulation. Second, the analysts should reconsider the specified ranges (variances) for the probability distributions. For prices, the range of variation should reflect inter-annual variability. For costs, the range should reflect the fact that variable costs of production must be greater than zero.

4. Linkage with CVOA Proposal. Because the product recovery rates and product mixes are to some extent dependent upon area and season fished, regulations which shift the location of the fishery (such as the CVOA) will affect the economic value of the fishery. The analysts should consider linking the analysis of net benefits of the onshore/offshore allocation to the CVOA proposal (i.e. discussing the effect of the CVOA on product recovery rates and product mixes).

5. Consumer Benefits. The supplementary analysis contains a first-cut attempt to measure changes in consumer benefits stemming from the onshore/offshore allocation of pollock in the Bering Sea. Unfortunately, valid information concerning demand curves for the many pollock products generated from the Bering Sea fishery is scarce. Consequently, the results presented in Section 2.7 of the report are illustrative at best.

### Chapter 3. Economic Impact Analysis

The economic impact analysis will need to be reexamined in light of changes that have been suggested for the benefit/cost analysis. Also, we would emphasize the warnings contained in the report (p. 3-5). Employment impacts displayed there are unlikely to accurately reflect changes in future employment due to the pollock allocation.

### Chapter 4. Catcher Vessel Operational Area.

1. Revision of section 4.3.1. The SSC recommends that this section be revised to address the question: Do sufficient quantities (rather than stocks) of pollock exist inside and outside of the CVOA to allow the harvest of each sector's allocation? In the document estimates of summertime distribution of pollock may not represent the distribution of the exploitable biomass of pollock inside and outside the CVOA throughout the year. Thus information does not exist at this time to estimate the distribution of exploitable biomass and exploitation rate inside and outside the CVOA. To address the question regarding harvest quantities the SSC recommends that the team develop historical estimates of pollock removals inside and outside the CVOA, and examine whether the projected removals under the alternatives are comparable to these historical removals.

2. Impacts on marine mammals and seabirds. The document should address potential impacts on marine mammal and seabird populations caused by the establishment of the CVOA. It may be helpful to compare projected future removals of pollock from the CVOA with historic removals and fishing patterns.

### Chapter 5. SIA

It is recommended that this chapter be redrafted, with emphasis given to discussing impacts of changes described in Chapter 3. The redraft should begin by referring the reader to the original SIA for detailed information on communities. Next a brief recap of impacts described in Chapter 3 should be given. The main section of the chapter should build upon material presented in section 5.4 on infrastructure, with a limited discussion of CDQs, if necessary. Currently, the discussion of impacts in this section is limited to Unalaska. There is a need to broaden the discussion to other communities.

## **C-3 NORTH PACIFIC FISHERIES RESEARCH PLAN**

The SSC received presentations by council staff on the Research Plan and Framework as provided in Item C-3(a) and by Chris Blackburn as Chair of the Observer Oversight Committee, Item C-3(b). Additional information on the observer program was provided by Russ Nelson (NMFS). With this assistance the SSC proceeded with its review of the research plan.

Of particular concern to the SSC is the potential for reduced observer coverage under the plan. Based on revised observer program cost estimates and 1% of 1991 ex-vessel fishery values, projected observer program revenues are approximately 14% below the funding necessary to maintain observer coverage at current levels.

In view of this potential funding deficit the SSC reviewed the plan's objectives: (1) to accommodate the determinations of stock status, (2) to provide sufficient data for inseason management decisions, and (3) to provide information for vessel incentive programs (VIPs). From the SSC's perspective the highest priority for the observer program is the first objective, which allows the Council to determine total fishing mortality for the primary target and incidental species within the groundfish fishery. This objective is the most basic reason for conducting an observer program and must be given the highest priority, particularly in view of potential observer program reductions. Observer data are essential in the determination of ABC's and management for optimum yield.

The SSC recommends that the Council retain Alternative 1 (status quo) and not proceed with the research plan until (1) an adequate funding mechanism is determined to maintain at least the present level of observer coverage and (2) further research is conducted to determine the level of observer coverage that is required to maintain adequate mortality estimates for target and bycatch species by fishery.

When implemented with adequate funding the research plan will have two primary advantages: (1) an equitable and industry-wide supported funding mechanism and (2) greater agency control of observer placement with a process for annual evaluation of observer coverage.

With adequate funding the SSC recommends variable coverage under Option 2. The SSC also suggests that additional information on vessel fishing plans may be needed to assist NMFS in efficiently placing observers.

The SSC believes that the halibut fishery should not be exempt from observer coverage, and a pilot program should be initiated for this fishery (Option 3).

The SSC suggests that assessments on discards should be avoided in particular because of the difficulty in producing accurate estimates and determining the appropriate value for the species and sizes discarded.

## **C-5 COMPREHENSIVE RATIONALIZATION PROGRAM**

The SSC considered a memorandum (June 19, 1992) from Executive Director C.G. Pautzke to the Council, the AP, and the SSC which noted the need to initiate the comprehensive rationalization program planning process. The SSC endorses the Executive Director's suggestion that a planning committee be created. The SSC also endorses the tentative schedule in the memorandum and the idea of a retreat (or time at the January 1993 meeting) designed to focus on the analytical agenda.

### **Social Impact Assessment**

The SSC believes that consideration of social issues (as, for example, suggested in the SSC's April minutes and the Council Staff's background document on the comprehensive rationalization program [C-6, April 1992]) can take advantage of recent documents and activities which concern the craft of social impact assessment. These were summarized for the SSC by Marc Miller. Specifically:

1. The American Fisheries Society's Socioeconomic Section Newsletter (June 1992) describes several sessions at the forthcoming annual meetings (September 14-17, 1992, Rapid City, South Dakota) which will address socioeconomic topics.

2. The U.S. Fish and Wildlife Service has provided support for the AFS Socioeconomic Section to contract a private firm (Southwick Assoc.) to prepare a volume to be titled "Handbook for Interpreting Socioeconomic Information for Fishery Scientists." (The SSC briefly examined a 1977 U.S. Forest Service document titled "Social Impact Assessment: An Overview.")

3. AFS Socioeconomic Section members were active in the World Fisheries Congress (May 3-8, 1992, Athens); congress proceedings will be published in 1993.

4. NMFS has announced an opening for a cultural anthropologist/sociologist to work with Dr. Peter Fricke on matters of FMP review and the analysis of social and ethnographic data. Relatedly, Fricke has indicated that new economic and social impact assessment guidelines are available (in Appendix 2.g) in a revised (draft) edition of the NMFS Operational Guidelines. The SSC will review these guidelines by the end of this year. Another document pertinent to strategies to rationalize fisheries is a progress report of the Interorganizational Committee on Standards and Guidelines for Socioeconomic Impact Assessment. (Organizations represented on the Committee include the Agricultural Economics Association, the American Anthropological Association, the American Psychological Association, the American Sociological Association, the International Association for Impact Assessment, and the Rural Sociological Association.)

## D-1 CRAB MANAGEMENT

### Adjustments to OY

The SSC was provided an overview by Council staff on the potential need to reassess the optimum yield for C. opilio in the Bering Sea. The present OY is based on 1975 survey data and potentially dated information on size at maturity and exploitation rates. Considering these factors and the restraints placed on the 1991-1992 opilio fishery the SSC recommends that the crab Plan Team reevaluate the optimum yield for C. opilio. The alternatives developed should include:

1. The status quo (a fixed OY cap of 333 million tons).
2. A flexible OY definition which is the Plan Team's suggested Alternative: "the amount of crab that may be legally landed under the requirements of the FMP and under the laws of the State of Alaska." (The SSC believes this alternative essentially limits the upper end of the OY range to the current ABC, which may be "anywhere between 0 and the current threshold biomass less the biomass necessary to mate with a threshold level of females [Crab FMP, p. 4-2]", contrary to the statement in the memorandum.)
3. A fixed OY definition, which sets the upper end of the OY range as a fixed value using the most appropriate biomass as estimated by recent surveys. (This alternative essentially updates the status quo with new information.)

The SSC also recommends that the crab Plan Team determine whether new maturity data are available to reexamine the 3.1 inch minimum size and its relationship to OY and ABC.

## **D-2 GROUND FISH MANAGEMENT**

### **D-2(a) Amendment 21**

The SSC reviewed the Draft Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for this amendment, received an overview from staff, and took public testimony. Methods used in the analysis [the bycatch simulation model, the analysis of tradeoffs, and the Alaska Fishery Economic Assessment Model (I/O model)] have received past review. Results of the analyses conducted provide useful insights into the benefits and costs of alternative bycatch caps under consideration and should be of assistance to the Council.

Alternative 2.2 or Alternative 2.4 if adopted would replace the trawl fishery bycatch limit with one based on mortality. The SSC supports this approach. Mortality limits should encourage fishermen to take action to reduce mortality. Consistency with bycatch management in other fisheries will be achieved. However, if this approach is adopted, there is the potential that estimates of discard mortality rates could become more controversial. Further, the need to monitor on-deck sorting undertaken to reduce halibut mortality could complicate observer sampling.

### **D-2(b) Amendment 26**

The SSC reviewed the Draft EA/RIR/IRFA for this amendment, received an overview from staff and took public testimony. The analysts have compiled and summarized a large quantity of information that is of assistance in evaluating the nature of problems addressed and management alternatives under consideration.

Amendment 26 contains two proposals:

1. Prohibition of trawl gear from fishing for groundfish in waters east of 140 degrees West longitude in the eastern Gulf of Alaska, and
2. Re-establishment of the crab protection time/area closures around Kodiak Island.

Comments are offered below on each of these proposals.

#### **Prohibition of trawl gear east of 140 degrees west in GOA**

The draft EA/RIR/IRFA indicates that the problem addressed by this proposal is multifaceted. The SSC has the following comments on issues identified in the problem statement (p. 2-3):

#### **Biological Issues**

#### **Problem 2. Concern with further depletion of Eastern Gulf rockfish stocks which are still considered by many to be depressed**

Given the high level of uncertainty in biomass estimates and concern about depressed rockfish stocks, the SSC has recommended conservative procedures in developing ABC recommendations, e.g., low exploitation rates, subdivision of ABC, subdivision of assemblages, and application of the overfishing definition. The SSC concurs with the analysts that gear allocation is not an appropriate way to deal with concerns about acceptable biological catch.

**Problem 3. Concern over high trawl bycatch levels of salmon in the Eastern Gulf**

The EA/RIR/IRFA concluded that a review of the observer data did not demonstrate a noteworthy problem with interception of salmon in the Eastern Gulf trawl fishery during 1990. The composite bycatch rate of 0.0076 salmon per metric ton of groundfish was considerably lower than the composite bycatch rate of 0.08 salmon per metric ton of groundfish observed in the Central and Western Regulatory Areas. Preliminary analysis of 1991 observer data show a bycatch rate of 0.009 salmon per metric ton of groundfish in the Eastern Gulf.

**Problem 4. Concern over potential declines of marine mammals and seabirds as a result of trawl fishing activity in the Eastern Gulf**

The EA/RIR/IRFA states that there is no evidence linking changes in marine mammal or seabird abundance to fishing activity.

**Problem 5. Concern over the potential impacts of trawling on deep water corals and benthic habitat**

Both the EA/RIR/IRFA and public testimony indicated that there is the potential for fishing gear to impact bottom habitat. However, no information is currently available to assess the impact of fishing gear on bottom habitat.

**Economic/Social Issues**

**Problem 1. Anticipation of unprecedented levels of factory trawler participation in the SEO during 1991 and even greater future expansion**

Available data from the EA/RIR/IRFA indicates that a large expansion did not occur in 1991.

**Problem 6. Grounds preemption and economic displacement of the local shore-based hook and longline fleet**

No evidence of grounds preemption was presented in the EA/RIR/IRFA. Further, the document states, "... economic displacement of the hook-and-line fleet as a result of trawl effort cannot be established at current levels of effort."

**Problem 7. Concern that trawl harvests could exceed the TAC's for some species thus potentially curtailing important traditional fisheries for groundfish and halibut**

Both fixed and trawl fisheries are capable of curtailing important fisheries over concerns about overfishing. This hasn't happened to date in the Gulf of Alaska. The Regional Office has taken steps to reduce the possibility of TAC overruns. These measures include: requiring the submission of daily observer reports for at-sea and preparation of notices in advance to expedite fishery closures. However, given the large harvesting capacities of both fleets, the potential for exceeding TAC's remains under open access.

In conclusion, the SSC continues to be concerned over potential damages to bottom habitat, the stock status of the rockfish complex, the ability to manage fisheries with small TAC's, and potential increases in levels of effort in open access fisheries. However, the analysis shows that sufficient information does not exist to conclude that the proposed action to ban trawling would directly address these issues.



### Re-establishment of crab protection closures

The SSC supports extension of existing time/area closures. (The EA/RIR/IRFA indicates that foregone revenues associated with implementing these closures are in the vicinity of \$1.0 million. The document suggests that large benefits could accrue from the closures. During the last five years that the fishery was open in the Kodiak region (1978-1983), annual catch averaged about 16 million pounds, which at \$4/lb (exvessel) was worth \$64 million).

### D-2(d) BS/AI Cod Allocation

The SSC was briefed on work in progress on two allocation proposals.

(1) Allocation by gear type. Joe Terry reported that yield by gear type (trawl and longline) was being calculated from the Bering Sea cod model and combined with estimates of bycatch and product value to determine the net benefits of allocating fish to each gear type. A draft analysis is due in September.

(2) Allocation by season. Sally Bibb of LGL reported on a preliminary review of issues involved in a seasonal allocation of cod, prepared to assist the Council in developing an amendment package. Council work on this issue has been delayed by the press of other business.

### D-2(i) Total weight measurements

Ron Berg reported on improved catch weight measurements and reporting by at-sea processors. Rapid reporting of data by computer over satellite links is expected to be feasible and affordable soon.

NMFS believes that it may not be practical to install scales on all vessels. Surveyed holding bins are a promising alternative, but require good estimates of specific density so that catch weight can be calculated from catch volume. For some pollock catches, as an example, the specific density is 0.92, but the value can be quite different for loads with jellyfish, loads of flatfish, and so on. The agency's inclination at present is to allow each vessel to devise its own system for determining catch weight, and to accept those reports just as it accepts the reports of onshore processors.

### Redefinition of ABC and Overfishing

At its January 1992 meeting the SSC reviewed difficulties that had been encountered in applying the Council's definition of overfishing, and it appointed a working group to prepare alternative definitions of ABC and overfishing for consideration at the June meeting. Bill Clark reported that the working group had agreed on definitions that would avoid the  $F_{msy}$  and  $B_{msy}$  reference points, and assure some margin between the ABC and overfishing levels of catch. The working group's proposal is to define ABC and overfishing in terms of fishing mortality rates that maintain specified levels of spawning biomass per recruit, namely 30% of the unfished level for overfishing and 35% for ABC. Both the ABC and overfishing levels may be set lower for sufficient reason, but not higher.

The SSC decided to proceed with a proposed plan amendment based on the working group's recommendations. The proposal will be submitted by July 1 and the draft recommendations will be widely circulated. The SSC will reconsider the details of the new definitions at the September meeting in light of written comments and public testimony.