

North Pacific Fishery Management Council

Richard B. Lauber, Chairman
Clarence G. Pautzke, Executive Director

605 West 4th Avenue
Anchorage, Alaska 99501



Mailing Address: P.O. Box 103136
Anchorage, Alaska 99510

Telephone: (907) 271-2809
FAX: (907) 271-2817

Certified: Alan Benduser
Date: 3/22/95

MINUTES Scientific and Statistical Committee January 9-11, 1995

The Scientific and Statistical Committee of the North Pacific Fishery Management Council met January 9-11, 1994 at the Anchorage Hilton. All members were present except Al Tyler and Marc Miller:

Terrance Quinn, Chair
Doug Eggers
Rich Marasco
Jack Tagart
Bill Aron

Keith Criddle, Vice-Chair
Susan Hills
Phil Rigby
Harold Weeks
Doug Larson

ELECTION OF OFFICERS

Dr. Terry Quinn was elected to his fifth term as Chair and Dr. Keith Criddle to his second term as Vice-Chair.

PLAN TEAM MEMBERSHIP

The nomination of Dr. Brenda Norcross to the Bering Sea Plan Team met the approval of the SSC. The SSC agreed that Dr. Norcross has extensive qualifications and will be an effective member of the Team. The Gulf of Alaska Plan and Bering Sea Plan Teams are now without a Washington Department of Fish & Wildlife (WDF&W) member because of the retirement of Sam Wright. The SSC believes that the appointment of a WDF&W member is advisable and will provide additional and necessary expertise.

C-3 INSHORE/OFFSHORE

The SSC heard a summary of the proposed outline of analysis for the Inshore-Offshore amendment from Marcus Hartley and Chris Oliver. We commend staff for their attempt to construct a realistic analytical approach that takes into account prior SSC recommendations. Public testimony was also received from the following individuals: Paul McGregor, Chris Blackburn, Brent Paine, and Vince Curry.

One concern that arose during the SSC's discussion is that the proposed analysis may be too ambitious given available data and staff resources. While each of the topics itemized in the outline could contribute to a better understanding of the fishery and its impacts over time, not all are necessary to give a good accounting of likely impacts of the two alternatives. Some items, such as sec. 1.6.4.2.2 (Infrastructure) are not likely to be much different with or without continuing the inshore/offshore allocations, and may be deleted. Not all the

different approaches outlined in sec. 5.2 (Projections of Harvest) need to be analyzed. It is reasonable to treat the rate at which fish are harvested in the pollock fishery as constrained by processing capacity, so methodologies (1) and (2) (Maximum and average daily production) or some combination of them are the most suitable to use. For the remaining topics staff should be careful to set priorities for the depth of analysis based on whether their importance is likely to be major or minor.

We emphasize that the qualitative assessment of the alternatives should focus on determining how efficiency, equity and management stability will be affected by each of the options under consideration. The analysis of the efficiency and equity impacts should contain at a minimum a description of the analytical framework, the data available, analytical approach, and results. The examination of the management stability issue would entail an assessment of whether or not adoption of an option would result in an environment that would lead to an increase in the number of problems requiring Council attention. The following comments are offered to further assist staff in the development of the analysis:

Efficiency or Net Economic Benefits

The primary impacts (measures of net economic surpluses such as producer's and consumer's surplus) deserve greater attention in the analysis and discussion than the outline suggests, as they are one of the primary criteria to justify rule-making. Even though it is not reasonable to expect that these can be quantified, the qualitative changes in these measures can be discussed at some length. It is important that certain unavoidable, but limiting, assumptions in determining net economic benefits be clearly articulated; among these are the lack of suitable cost data and the fact that it will likely be necessary to assume that product prices and product mixes are constant. Nevertheless, accounting for changes in the pattern of gross revenues by fishery sector will be useful.

One of the important determinants of changes in net economic benefits is the opportunity cost of labor in alternative employments. The SSC encourages the staff to present information on unemployment rates by community and wage rates for the two or three major job classifications listed for each community in the Community Profile Reports released by the Council in December.

Equity or Distributional Impacts

The outline of the proposed analysis suggests a number of indices of economic performance in the harvesting and processing sectors, and measures of community economic well-being. These are useful indicators which should help the Council gain some perspective on the distribution of economic impact under each regulation. Another means of gauging community impacts would be to report the distribution of gross revenues from the fishery by both harvest area and, where possible, by home port of vessels. The SSC encourages staff to develop this information because these measures of the distributional impacts are most easily and directly linked to the regulatory alternatives.

Stability

The discussion of stability in sec. 1.6.4.2.1 differs from the concept expressed by the SSC in its direction to the staff in December. The SSC was, and continues to be, concerned about the issue of management continuity or stability for the fisheries and the communities dependent on them. The benefits of continuing the same management rules as opposed to the adjustments required when management changes should be a major focus in the document.

The proposed outline attempts to discuss the issues involved if one were to try to evaluate the effects of each alternative on community "stability." The SSC does not believe that there is any generally accepted, meaningful

notion of how to measure this by a quantitative variable. Instead, all of the measures under 1.6.4.2, Economic and Social Indices attempt to highlight different factors that contribute to or reduce community stability. The SSC believes it is better to simply present the Council with the array of different social and economic indices and not attempt to aggregate them into a single index of "stability." The discussion in 1.6.4.2.1 raises more concerns than it solves and should be eliminated.

CDQ and CVOA

With respect to the treatment of the CDQ and CVOA issues we recommend that:

1. The review of CDQ should restate the original program goals and include an assessment of how participants have benefited. To facilitate social analyses, it would be helpful to define when a community is considered to be developed.
2. Graphical data summaries showing the spatial and temporal distribution of biomass, fleet activities, and catches by size of fish should be developed to facilitate discussion of the CVOA. A better set of boundaries for the CVOA may be indicated by such an analysis.

United Catcher Boat Proposed Alternative 3

The SSC also discussed an alternative suggested by United Catcher Boats that would create a harvester based inshore/offshore allocation. The proposal does not provide a clear explanation of how the 85/15 split would be administered and enforced. Moreover, the proposal represents a substantial departure from the current status quo and would require additional analyses which could not be completed by April.

C-4 SEAMOUNT FISHERIES

Kaja Brix (NMFS-AKR) presented a summary of the proposed regulatory amendment to regulate fishing beyond the U.S. Exclusive Economic Zone (EEZ). Groundfish resources beyond the EEZ are found on seamounts and probably include sablefish and rockfish populations among others. Little information is available on these populations, and they are not included in biomass and ABC calculations.

The proposed regulatory change is intended to prevent vessels from misrepresenting the location of harvest. Instances of past claims that fish landed were harvested outside the EEZ have corresponded with closures of specific fisheries within the EEZ. NMFS Enforcement believes the fish landed in these instances were actually harvested inside the EEZ; there is no evidence that groundfishing effort and harvest outside the EEZ is extensive at this time. Implementation of the Council's ITQ management in the sablefish and halibut fisheries will increase the incentive to make such claims. Inability of enforcement to determine the location of harvest could result in over-harvest of the Council's TACs.

For species which will be managed under an ITQ system, Alternative 5 - which would deduct any landings from an individual's quota share regardless of where harvested - should remove the incentive to misrepresent harvest location. To the degree that harvesting activities do take place outside the EEZ, this would result in lower catch within the EEZ (because catches outside would be deducted from the inside TAC), unknown effects on the outside population, and a slightly more conservative harvest regime within the EEZ (because the biomass on the seamounts cannot currently be estimated and would not be reflected in calculation of ABC's).

For species which will not be managed under an ITQ system, Alternative 5 is inappropriate. A combination of Alternatives 3 and 4 (observers with appropriate positioning devices, and a requirement to off-load fish

harvested outside the EEZ before resuming fishing within the EEZ) would serve to preserve opportunities to fish outside the EEZ while providing a means to avoid misrepresentation of harvest location. Alternative 3 and 4 are also desirable for ITQ fisheries as well, because they provide information and enhance enforcement.

C-6 OIL & GAS

The SSC received a brief overview by Chris Oliver of the re-issued Preliminary Finding Regarding Proposed Oil and Gas Lease Sale 79, Cape Yakataga (October 17, 1994) prepared by the Alaska Department of Natural Resources (ADNR). The SSC believes that fisheries impacts were addressed, but notes that some additional information is available and recommends that Council staff provide this information in comment to ADNR.

The Council has three plans for fisheries occurring adjacent to the lease area: salmon, GOA groundfish, and scallop (draft). The SSC was unable to provide a full review of the findings in the document, but offered the following comments related to fisheries and marine mammals. Most of the Yakataga shore is a high energy zone, with the beach and nearshore substrate generally composed of sand and gravel. Although little fishing effort for groundfish occurs in the lease area, it is likely an important rearing area for juvenile flatfish and sablefish, as are similar habitats in the Gulf of Alaska. Scallops are harvested within the area, but catch data are not provided in the document. Significant quantities of sablefish and rockfish are taken along the continental shelf adjacent to the lease area and delivered onshore area reported; however additional harvests by at-sea processors are not addressed. NMFS weekly production and observer reports for at-sea processors do provide this catch information, which should be provided by Council staff to ADNR.

The SSC was unable to assess the risk projections provided in the findings document. If Yakutat is the primary support community, risks to marine mammals will be smaller than if the transportation corridor were to the west of the proposed sale area. If oil were to be spilled in the sale area, drift toward Kayak Island and Prince William Sound would be expected. Important sea lion and harbor seal rookeries and haulouts are located on Kayak Island. Containment and cleanup of any marine spill could be very difficult considering the exposed nature of the area.

C-7 OBSERVER PLAN

The SSC heard the report from Chris Blackburn (Chair) on the Observer Oversight Committee's (OOC) review of the issue of creating alternative qualifications for entry into the observer corps. The SSC commends the OOC for the thoroughness of its review and endorses its recommendations.

C-9 RESEARCH PRIORITIES

The SSC reviewed its January 1994 recommendations for research priorities. The SSC emphasizes that this list is not necessarily inclusive of all needed research nor is it prioritized; rather it represents a compilation of research ideas recognized by the SSC as deserving attention by NMFS and other agencies. In addition, it may be helpful to share these research topics with institutions of higher learning; we request that this portion of the minutes be distributed appropriately. Finally, it would also be helpful if the Council solicited from these institutions a list of ongoing research activities which may be related to groundfish and crab management. In this way, these institutions and the Council can become aware of mutual interests and needs.

A. Critical Assessment Problems

1. **Rockfish.** There is a general need for better assessment data, particularly investigation of stock structure and biological variables. These activities are included in the AFSC Rockfish Research Plan.
2. **Walleye pollock.** There is a continuing need for research on stock structure as it relates to assessment. We continue to emphasize the need for age-structured assessments of recognized stock units. In particular, an age-structured analysis of the Aleutian Island stock should be done in 1995.

The SSC believes that immediate research should be undertaken to determine the magnitude of the catch, size and age structure of the EBS stock harvested in the Russian zone in the vicinity of the transboundary area. It may be necessary to consider fishing removals from the Russian zone and their impact on EBS pollock mortality in the estimates of ABC and TAC.

Assessment of the status of the Gulf of Alaska resource is critically dependent upon results of resource surveys. Currently, these surveys are conducted every three years. Various ways of supplementing the triennial survey data should be evaluated.

3. **Crab research.** Research should be expanded on handling mortality, stock structure and life history parameters.
4. **Age- and length-structured assessments:** These assessments integrate several data sources using some weighting scheme. Little research has gone into evaluation of different weighting schemes, although the weight can have a large effect on the assessment results. Research is needed on which weighting schemes are robust to uncertainties among the different data sources.
5. There is incomplete life history information, e.g., growth and maturity data, for a number of stocks. This information is essential for determination of preferred fishing mortality rates. Maturity data are lacking on the following: Pacific cod, Dover sole, other flatfish, sablefish, and many species of rockfish.
6. Identification of the origin of chum and chinook salmon stocks captured incidentally in the groundfish fisheries is needed. The chum salmon stocks in particular are recognized as a mixture of Asian and North American origin. Resolution of stock origin will facilitate bycatch management.

The SSC notes also that additional studies are needed on ageing techniques and age validation for several species. Stock identification research should be conducted on Atka mackerel, walleye pollock, POP, and other rockfish.

B. Improved stock surveys

1. Improvements in surveys can sometimes be made without great increase in cost. Rockfish, Atka mackerel, and pollock surveys are in the category for which improved statistical sampling design may result in improved data.
2. Calibrations should be carried out between the two longline surveys for sablefish, and between the trawl survey and the longline survey.

3. Explore the possibility of improving fishing surveys by organizing joint agency and commercial fishing effort.
4. Increased emphasis should be put on deepwater longline surveys for Greenland turbot and also thornyheads.
5. Develop a new trawl survey for Bering Sea crab complimentary to the existing Bering Sea crab/groundfish survey. This survey would also be used to assess Norton Sound Crab which was not surveyed in the last Bering Sea Triennial Survey due to budget constraints. There are many problems with the current survey's ability to assess crab, since the surveys are designed primarily to assess groundfish. These problems can be more effectively addressed in a separate survey using gear designed to more effectively catch crabs. For stocks where it is not possible to assess abundance with trawl surveys (various king crab stocks in the Aleutian Islands, Pribilof Islands, and St. Matthew Island areas), develop assessment methods based on catch/length models fitted to fishery performance data. Fishery performance is effectively measured by individual pot lift data collected through the observer program.
6. There is need to verify longline survey abundance indices with direct observation (e.g., submersible and dive surveys).
7. Within the EEZ are seamounts which are unsampled for groundfish, halibut, and crab abundance. Surveys which sample these seamounts may improve estimates of total abundance in the EEZ, particularly for sablefish and rockfish stocks.

C. Expanded Ecosystem Studies

1. Because of the importance of marine mammal and seabird considerations in fisheries management, further studies are needed on interactions among fisheries, marine mammals, and seabird populations. In particular relationships should be explored between oceanographic conditions and feeding conditions in relation to animal condition and health. Research should be done on age-specific mortality. Effort is needed on status of stocks and distribution of forage fishes, such as capelin, eulachon, and sand lance.
2. Trophic dynamics research should be undertaken on the relationships among critical species, e.g., Pacific cod and its prey (including shrimp and crabs); and particularly the possibility that the large arrowtooth flounder stocks may interfere with the productivity of more valuable species and there may be a linkage between population increases of arrowtooth flounder and pinniped declines due to competition for prey.
3. Groups of species in the rockfish and flatfish families are now managed as "species complexes." Research should be expanded on the question of biological linkages among the components of "species complexes" that justify this management approach. Further, are there other, unidentified groups of species that are ecologically related and could be managed as a unit? Assemblage management has to be evaluated to determine its ecological validity.

D. Socioeconomic research

1. There is a critical need for the development and continued maintenance of basic economic information databases on the fisheries of GOA and BS/AI. This information is required for

establishing a baseline to be used in the evaluation of the impacts of alternative management measures. At a minimum there is a need for reliable information on:

- (a) the cost and revenues of fishing operations,
- (b) the nature, magnitude and location of where goods and services are purchased,
- (c) the nature of markets for various fish products,
- (d) ownership of fishing and processing operations,
- (e) the nature of relationships between harvesting and processing sectors,
- (f) unemployment rates by community over time, and labor wage rates in alternative occupations to fishing by community over time,
- (g) research to examine the cumulative efficiency and equity consequences of management actions that apply time/space closures,
- (h) research summarizing the transfer of halibut and sablefish IQ's (transactions price, volume, changes in distribution of ownership, etc.),
- (i) update the Bering Sea bycatch allocation model to provide better predictions of how fishing effort will shift in response to time/area closures,
- (j) research to identify a comprehensive method for managing directed and incidental removals,
- (k) assessment of the net economic benefits of commercial and recreational harvests of halibut,
- (l) assessment of the opportunity costs of labor,
- (m) identification of the sources of variability in bycatch rates.

2. Research pertinent to assessment of the social impacts of actions contemplated by the Council include:

- (a) Social Assessments: Selected community and industry assessments should be conducted to establish baseline conditions underlying social problems identified by the Council and the Advisory Panel. As appropriate, these projects can be extended to generate time series information.
- (b) Social Impacts: Social impact and policy research should be conducted regarding the identification and potential effects of alternative management actions.

E. Bycatch problems

- 1. Gear research should be expanded on methods of reducing bycatch and fishing gear design that would make fishing methods more selective. Trawl mesh experiments are one area of promise, but gear design work should also be investigated.**
- 2. A better quantification of discard mortality rates of Pacific halibut is needed.**
- 3. Fisheries catch and effort data should be reviewed to determine the effectiveness of single and multiple time/area closures in reducing bycatch.**

F. Alaska Fishery Monitoring

- 1. An analysis of the utility of fishery logbook information should be conducted.**
- 2. Observer data would be more credible in stock assessments if NMFS were authorized to specify the dates and localities for observer coverage of vessels in the 30% coverage category.**

D-2(a) HALIBUT GRID-SORTING AMENDMENT

Bob Trumble (IPHC) summarized the contents of this proposed amendment and Bill Karp (NMFS) provided additional information in regard to the Observer Program. We also received public testimony from Shari Gross and Steve Hughes. This document was given to the SSC upon its arrival, and the SSC was unable to carefully review the analysis. During its discussions the following issues surfaced:

- 1. Some of the options under consideration could result in biased estimates of both fleet-wide and individual vessel bycatches. The document should contain a thorough discussion of bias under the various options. A table summarizing the effects of grid-sorting on bias and variability would also be helpful. Trumble suggested that special projects might be used to determine adjustment factors to alleviate bias. The document should contain a description of such projects.**
- 2. With respect to the effects of grid sorting on the VIP program, modification of sampling procedures would be required to maintain the viability of the program. The feasibility of revising these procedures should be examined.**
- 3. If grid-sorting is implemented, it is unclear how halibut discard mortality will be calculated for each vessel and across vessels. At a minimum, stratification of the data collected above deck and below deck will probably be necessary. The document should describe the estimation procedure that will be used to calculate discard mortality at the vessel and fleet levels.**
- 4. The discard mortality from the grid-sorting experiment (66%) should be compared with the recommended rate for the non-pelagic trawl pollock fishery (77%) rather than the rate for the Pacific cod fishery (65%). This is because the experiment more closely resembled the former fishery.**

These issues should be addressed before the document is released for public review.

D-2(b) CRAB BYCATCH

The SSC received reports from Dave Ackley (ADF&G) on the Council's request for an emergency rule to limit Zone 1 red king crab bycatch and possible alternatives for a groundfish plan amendment to reduce crab bycatch. Gordon Kruse (ADF&G) also presented a report on results of investigations into crab handling mortality and presented a list of potential bycatch reduction measures for Chionecetes opilio and c. bairdi as well as for king crab. The studies indicate that crab handling mortality rates can be very low, although as emphasized in public testimony, the numbers of undersized, female, and nontarget crabs discarded are high. One study showed that temperature and exposure time are important factors affecting crab mortality.

Public testimony was provided by John Gauvin, Steve Hughes, Mark Kandianis, and Arni Thomson.

The SSC notes that time-area closures cause area shifts in groundfish fishery effort. With each additional bycatch restriction, options for the groundfish trawl fleets are reduced, and these effort shifts could increase the bycatch of other prohibited species. Because the impacts of multiple closures are not well evaluated at this time and because Council harvest objectives may be precluded, the SSC believes that the cumulative effects of bycatch measures must be analyzed in a comprehensive manner looking at costs and benefits of present and proposed fishery restrictions.

Evaluation of prior bycatch restrictions as well as proposed actions is an important part of a comprehensive analysis. Determining the effectiveness of bycatch restriction is complicated by the apparent low number of animals saved relative to the estimated abundances of bycatch species and the high variance of the estimates. The SSC recommends that impacts of both directed crab fisheries and the groundfish trawl fisheries be evaluated.

Studies referred to above will be helpful in calculating bycatch and discard mortality, a common measure of impact. As with halibut, estimating mortality in terms of adult equivalents would provide better estimates of bycatch impacts across fisheries. However, better information on size and sex composition of crab bycatch and discards will be needed from the observer program, because these data are currently very limited. Trophic interactions, including predator-prey interactions, are considered to be very important in determining species abundance. Even though the SSC is not optimistic that such inter-specific impacts can be quantified, a presentation or overview of what is known on this topic should be part of a comprehensive analysis.

We believe that the Terry Smith-Fritz Funk bycatch model should be updated as a tool that can address contemporary questions of how groundfish effort will redistribute in response to recent and contemplated closures. The analysis should also address possible changes in crab management to minimize impacts of factors such as temperature, discard of target and non-target crab species, lost gear, etc., and include an examination of the spatial distribution of crab species at differing levels of abundance. Because the distribution and abundance of both target and bycatch species do change, any management structure should be adaptable to current conditions. It may be desirable to use a framework approach to bycatch management, so that management actions such as time-area closures can be modified based on the most recent bycatch data.

As a means of initiating the development of a more comprehensive bycatch amendment, the SSC recommends, as it did in December, that the Bering Sea Groundfish and Crab Plan Teams meet jointly to review available data and alternatives and to define the amendment objectives. The SSC believes that an industry working group, representing both crab and groundfish interests, would also be helpful in developing acceptable alternatives.

D-2(c) SALMON RESEARCH FOUNDATION

The SSC heard a report from Joe Sullivan on activities of the Salmon Research Foundation. The SSC supports these activities. The SSC notes that the Salmon Research Foundation will receive funds from United Catcher Boats to be directed at studies of stock identification of chum salmon bycatch, which is a critical research priority.

D-2(c) SALMON BYCATCH

The SSC heard a staff report on and reviewed the EA/RIR for Chum Salmon Bycatch in the Bering Sea Trawl Fisheries and Alternatives for Closure Areas. In addition the SSC heard public testimony by Brent Paine and Dave Fraser.

The SSC notes that bycatches of chum salmon increased greatly in 1993. The 1994 chum salmon bycatch level was reduced from the 1993 level as a result of the emergency closure of the 5-block area in the CVOA; however, it was high relative to historical levels.

These increases in chum salmon bycatch have most likely resulted from changes in the fishing regimes for pollock in the eastern Bering Sea accompanying the establishment of the CVOA and delays in the opening of the pollock "B" season. Under the new fishing regime substantial trawling for pollock has occurred at times and areas with high chum salmon bycatch rates and where previous trawling effort was low.

The chum salmon bycatch consists entirely of immature fish, which would mature after 1 to 2 additional winters at sea. The area of chum salmon bycatch is central to the ocean distribution of Asian and western Alaska chum salmon. The stock origins of the chum salmon bycatch are unknown; however, the stock composition of the bycatch is undoubtedly highly mixed with potential contribution from the entire North Pacific region. In view of the mixed-stock nature of the trawl bycatch, and because the magnitude of the chum salmon bycatches is low relative to the overall abundance of chum salmon in the North Pacific Ocean, the effect of the trawl bycatch on returns to individual river systems is likely to be small. However, these effects cannot be fully evaluated without additional stock identification studies.

There have been declines in runs of chum salmon in western and central Alaska since the late-1980's, except that the 1994 chum salmon run was average to above-average. Overall chum salmon abundance in the North Pacific Region (i.e., Japan, Russia and Alaska) has been high and stable since the mid-1980's due to the very large and stable production of Japanese hatchery chum salmon.

The SSC notes that conservation and allocation concerns continue to exist for the Yukon River fall chum salmon runs. Although some rebuilding of these runs occurred in 1994, escapements that will produce runs in the next several years have been below desired levels for several upper river spawning areas. There is a need to pass more fish upriver for rebuilding and for allocation to upriver subsistence fisheries.

The analysis demonstrated that seasonal time-area closures would be an effective tool to cap chum salmon bycatch without impacting the aggregate fleets' ability to harvest the pollock quota. The SSC recommends against total closures proposed under alternative 2. These would result in only slightly greater bycatch savings than seasonal closures due to the highly seasonal nature of chum salmon bycatch. Among the various area options, the contour and Unimak closures were less effective than the more limited block closures. The CVOA and Area 517 closure were effective in reducing bycatch (80% and 88% of the 1993 chum bycatch came from these respective areas); however, closure of these areas would relocate a large portion of the groundfish catch (26% and 28% of the 1993 groundfish catch, respectively). The SSC believes that these large area closures proposed under suboptions 3 and 4 are too draconian. The 9, 7, and 5 block closures resulted in substantial

bycatch savings (67%, 59%, and 54% of the 1993 chum salmon bycatch, respectively). Much lower amounts of groundfish catch came from these limited block areas (10%, 8%, and 7% of the 1993 bycatch, respectively).

Because there were minor differences in bycatches and catches among the 9, 7, and 5 block closures, it would be difficult to distinguish between these suboptions based solely on catches and bycatches. The SSC notes that, based on public testimony, reallocation of quota among sectors of the catcher boat fleet would occur under any time-area closure.

Finally, the SSC notes that an alternative triggering mechanism for closure is possible. Rather than closing an area after a cap is reached, an area could be closed during the expected peak time of chum salmon bycatch (say September) and reopened after the peak.

D-3 STAFF TASKING

The SSC received the Plan Team and PAAG reports and heard public testimony from Chris Blackburn, AGDB, on the amendment proposals. **The SSC recommends that 3 proposals of biological concern be analyzed in 1995: rockfish rebuilding (which would make the TAC formula an upper bound rather than a fixed specification), SSC overfishing definition revision (which would revise the Council's overfishing definition as explained in proposal #29), and the forage fish protection proposal (Block 6, proposals 5 and 6, which would prohibit fishing for capelin and other forage fish).** The SSC notes that the forage fish proposal seeks to protect forage fish which are important to harvested groundfish species, marine mammals, and seabirds. The SSC notes that the Secretary of Commerce may already have authority to restrict or prohibit harvest of forage fishes critical for preservation of endangered or threatened marine mammal and seabird populations under the MMPA and ESA.

The SSC further recommends that the FMP update (Block 12, proposal #25) proposal by Council staff should go forward. The SSC suggests that the statement of this proposal be changed to allow subsequent housekeeping changes and updating without the onerous and unnecessary burden of preparing a plan amendment.

In regard to other proposals, most pertain to allocation issues and management problems exacerbated by overcapitalization and gear conflicts. However, the SSC suggests that staff resources be reserved for analysis of CRP alternatives and a comprehensive examination of bycatch management.

The SSC notes that Council schedules, procedures and rules of operation are frequently not followed at the current time due to the press and urgency of fishery management issues. The SSC Chair will write the Council about this issue and suggest that a subcommittee of Council, AP and SSC members be formed to examine operating procedures with staff. Such a process was undertaken about 10 years ago and a report should be in the Council files.

ECOSYSTEMS

Plan Team members Low Lee-Loh and Richard Merrick elaborated on Plan Team discussions that led to the expanded Ecosystem Considerations chapter of the 1995 SAFE. The Team requested the SSC's opinion on the usefulness of Ecosystem Considerations chapter, whether it is appropriate for the Plan Team to continue such work, and, if so, what material should be included in future Ecosystem chapters.

The only public testimony on this issue was from Joe Blum (AFTA) who supported the general movement toward more formal consideration of ecosystem relationships. However, he requested that any discussion of goals not be limited to the Plan Teams, but be undertaken within the larger Council family.

After extensive discussion, five main points emerged:

- (1) **The incorporation of ecosystem considerations in management decisions is not a new direction for this Council.** Rather the chapter is a result of the requirements of the laws under which the Council operates and is a natural extension of past policy statements and decisions of this Council. The term "Ecosystem Management" is something of a misnomer, because man cannot alone control all factors affecting an ecosystem. However, much can be done to understand and perhaps alleviate fishery-induced impacts on ecosystem components.
- (2) **As such, it is entirely appropriate that the Plan Teams address ecosystem issues.** The Plan Teams for the last several years have been standardizing the content and increasing the sophistication of the analysis in the SAFE documents; the SSC commends the Plan Teams for extending that process to ecosystem considerations. Current stock assessments do not routinely explicitly address ecosystem considerations, although implicit considerations are part of the assessment. Single species stock assessments are increasingly reporting recognized impacts to other species in the ecosystem, and the transition from implicit recognition of impacts is expanding. The SSC would like to continue working with the Plan Teams and chapter authors on this issue.
- (3) **Research is continuing in several other areas that are relevant to fisheries issues.** The Ecosystem Consideration chapter would be an appropriate place for the Plan Team to summarize recent work on topics such as ecosystem change; oceanographic effects on fisheries, marine birds and mammals; ranges of natural variability; trophic dynamics; natural disturbances, etc.
- (4) **The SSC recognized that the list of objectives for "ecosystem management" in the introduction to the Ecosystem Considerations chapter were put forward to generate discussion rather than as a statement of Council goals.** Because any discussion of reasonable Council goals for ecosystem considerations will likely involve policy issues as well as scientific issues, the SSC proposes the formation of a small working group comprising representatives of the Plan Team, the SSC, the AP and the Council.
- (5) **One operational goal of an ecosystem approach is full accounting of removals of fish and other species due to harvesting: directed harvest, bycatch, discard, and gear-induced mortality.** While much of this is already being done, further research and sampling are desirable to increase precision and accuracy. In the SAFE documents, each analyst should describe the extent to which these factors are included. It would be desirable to have a separate section in each SAFE that characterizes catch, bycatch, and bycatch mortality for each fishery and for all fisheries combined.

OTHER SAFE CONCERNS

The SSC will consider the topic of uncertainty (see December 1994 minutes) at the April meeting when Al Tyler will be present. The SSC has the following recommendations to the Teams regarding SAFE documents:

- (1) **More detailed maps would be desirable which show management areas, closed areas, etc.**
- (2) **Some chapter authors are more responsive to the SSC List of Elements than others.** Further attempts to standardize the presentation of information should be encouraged.
- (3) **When the stock synthesis model is used, sufficient detail about model structure should be presented.** One way to do this is to include a table of parameter estimates along with an explanation of their meaning

(e.g. year-class parameters, selectivity coefficients, fishing mortality parameters, calibration coefficients). Another way is to appendicize the parameter, data, and biological files or some subset.

- (4) Selectivity and fishing mortality parameters in the most recent year should be tabled, in case new calculations of ABC and OFL need to be made.
- (5) In the introductory section of the SAFE, it would be useful to have summaries of current biological and management variables such as abundance, exploitation rate, catch, and ABC, categorized into species groups (e.g. flatfish, rockfish, etc.) and perhaps areas.