

North Pacific Fishery Management Council

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April 6, 2000

DRAFT AGENDA
143rd Plenary Session
North Pacific Fishery Management Council
April 12-17, 2000
Hilton Hotel
Anchorage, Alaska

The North Pacific Fishery Management Council will meet April 12-17 beginning at the Hilton Hotel in Anchorage, Alaska on Wednesday April 12, and moving to the 4th Avenue Theatre on Sunday, April 15. Other meetings to be held during the week are:

Committee/Panel

Advisory Panel
Scientific and Statistical Committee
Halibut Charter IFQ Committee
GOA Co-op Committee

Beginning

8:00 am, Mon., Apr. 10 (Dillingham-Katmai Room)
9:00 am, Mon., Apr. 10 (King Salmon Room)
1:00 pm, Mon., Apr. 10 (Iliamna Room)
6:00 pm, Mon., Apr. 10 (King Salmon Room)

All meetings, except as noted above, will be held at the hotel and are open to the public except Council executive sessions. Other committee and workgroup meetings may be scheduled on short notice during the week, and will be posted at the hotel.

INFORMATION FOR PERSONS WISHING TO PROVIDE PUBLIC COMMENTS

Sign-up sheets are available at the registration table for those wishing to provide public comments on a specific agenda item. Sign-up must be completed **before** public comment begins on that agenda item. Additional names are generally not accepted **after** public comment has begun.

Submission of Written Comments. Any written comments and materials to be included in Council meeting materials must be received at the Council office **by 5:00 p.m. (Alaska Time) on Wednesday, April 5, 2000.** Written and oral comments should include a statement of the source and date of information provided as well as a brief description of the background and interests of the person(s) submitting the statement. Comments can be sent by mail or fax--please **do not** submit comments by e-mail. **Material received after the deadline will not be included in notebooks for this meeting. It is the submitter's responsibility to provide an adequate number of copies of comments after the deadline.** Materials provided during the meeting for distribution to Council members should be provided to the Council secretary. A minimum of 18 copies is needed to ensure that Council members, the executive director, NOAA General Counsel and the official meeting record each receive a copy. If copies are to be made available for the Advisory Panel (23), Scientific and Statistical Committee (13), staff (10) or the public (50) after the pre-meeting deadline, they must also be provided by the submitter.

FOR THOSE WISHING TO TESTIFY BEFORE THE ADVISORY PANEL

The Advisory Panel has revised its operating guidelines to incorporate a strict time management approach to its meetings. Rules for testimony before the Advisory Panel have been developed which are similar to those used by the Council. Members of the public wishing to testify before the AP **must** sign up on the list for each topic listed on the agenda. Sign-up sheets are provided in a special notebook located at the back of the room. The deadline for registering to testify is when the agenda topic comes before the AP. The time available for individual and group testimony will be based on the number registered and determined by the AP Chairman. **The AP may not take public testimony on items for which they will not be making recommendations to the Council.**

FOR THOSE WISHING TO TESTIFY BEFORE THE SCIENTIFIC AND STATISTICAL COMMITTEE

The usual practice is for the SSC to call for public comment immediately following the staff presentation on each agenda item. In addition, the SSC will designate a time, normally at the beginning of the afternoon session on the first day of the SSC meeting, when members of the public will have the opportunity to present testimony on any agenda item. The Committee will discourage testimony that does not directly address the technical issues of concern to the SSC, and **presentations lasting more than ten minutes will require prior approval from the Chair.**

COMMONLY USED ACRONYMS

ABC	Acceptable Biological Catch	MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
AP	Advisory Panel	MMPA	Marine Mammal Protection Act
ADF&G	Alaska Dept. of Fish and Game	MRB	Maximum Retainable Bycatch
BSAI	Bering Sea and Aleutian Islands	MSY	Maximum Sustainable Yield
CDQ	Community Development Quota	mt	Metric tons
CRP	Comprehensive Rationalization Program	NMFS	National Marine Fisheries Service
CVOA	Catcher Vessel Operational Area	NOAA	National Oceanic & Atmospheric Adm.
EA/RIR	Environmental Assessment/Regulatory Impact Review	NPFMC	North Pacific Fishery Management Council
EEZ	Exclusive Economic Zone	OY	Optimum Yield
EFH	Essential Fish Habitat	POP	Pacific ocean perch
FMP	Fishery Management Plan	PSC	Prohibited Species Catch
GHL	Guideline Harvest Level	SAFE	Stock Assessment and Fishery Evaluation Document
GOA	Gulf of Alaska	SSC	Scientific and Statistical Committee
HAPC	Habitat Areas of Particular Concern	TAC	Total Allowable Catch
IBQ	Individual Bycatch Quota	VBA	Vessel Bycatch Accounting
IFQ	Individual Fishing Quota	VIP	Vessel Incentive Program
IPHC	International Pacific Halibut Commission		
IRFA	Initial Regulatory Flexibility Analysis		
IRIU	Improved Retention/Improved Utilization		
ITAC	Initial Total Allowable Catch		
LAMP	Local Area Management Plan		
LLP	License Limitation Program		

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	<u>Estimated Hours</u>
A. CALL MEETING TO ORDER	
(a) Approval of Agenda	•
(b) Approval of December Meeting Minutes	•
B. REPORTS	
B-1 Executive Director's Report	•
B-2 State Fisheries Report by ADF&G	•
B-3 NMFS Management Report	•
B-4 Enforcement and Surveillance Reports	•
B-5 Seabird Bycatch Report	•
B-6 Results of March Board of Fisheries Meeting	•
B-7 Gulf Ecosystems Management Report: Phil Mundy	•
	(6 hours for A/B items)
C. NEW OR CONTINUING BUSINESS	
C-1 <u>Halibut Charter GHL/IFQ</u>	(6 hours)
Receive committee report on preliminary elements and options of potential IFQ System.	
C-2 <u>Observer Program</u>	(2 hours)
(a) Observer committee report.	
(b) Initial review of six regulatory amendments.	
(c) Experimental Fishing Permit (EFP) report on observer sampling methods.	

- C-3 Steller Sea Lion Issues (2 hours)
 - (a) Status report on litigation, implementation of sea lion measures, and comprehensive FMP consultation.
 - (b) Extend emergency rule for protective measures.
 - (c) Discussion of Pacific cod interactions.
 - (d) U.S.-Russian sea lion research: status report.
- C-4 Pacific Cod LLP Endorsements (12 hours)
 - Final action on amendment package.
- C-5 American Fisheries Act (2 hours)
 - (a) Council action to extend emergency rules for 180 days.
 - (b) Status report on development of EIS.
- C-6 Halibut Subsistence (2 hours)
 - Initial review of amendment package.
- C-7 Habitat Areas of Particular Concern (4 hours)
 - Final action on protection of invertebrates.

D. FISHERY MANAGEMENT PLANS

- D-1 Groundfish Management (3 hours)
 - (a) Groundfish FMP updates/Review SEIS scoping document.
 - (b) TAC setting process: Status report.
 - (c) Review EFP for Halibut Excluders.
- D-2 Crab Management (4 hours)
 - (a) St. Matthew blue and Opilio crab rebuilding plans: Initial review.
 - (b) Crab co-ops and permit buyback program: Status reports.

E. PUBLIC COMMENTS

F. CHAIRMAN'S REMARKS AND ADJOURNMENT

Total Agenda Hours: 43

TIME SUMMARY

Total agenda hours	43.0 hours
Lunches - 6. days (1 hr ea)	6.0 hours
Breaks (3/day, 15 min ea x 6 days)	<u>4.5 hours</u>
Total estimated hours required:	53.5 hours

Meeting as follows:
 Wed. - Mon - 8am-5:30pm = 9.5 hours x 6 = 57.0 (Total number of hours available)

**DRAFT
MINUTES
Scientific Statistical Committee
February 7-9, 2000**

The Scientific Statistical Committee met February 7-9, 2000 at the Hilton Hotel in Anchorage, Alaska. All members were present except Sue Hills and Doug Eggers:

Richard Marasco, Chair	Jack Tagart, Vice Chair	Keith Criddle
Steve Hare	Dan Kimura	Hal Weeks
Doug Larson	Seth Macinko	Terry Quinn
Al Tyler	Jeff Hartman	

C-1 HALIBUT CHARTER GHL ANALYSIS

Council staff (Jane DiCosimo and Chuck Hamel) provided an overview of revisions to the halibut GHL EA/RIR/IRFA. Public testimony was provided by Patrick Bookey; Jerry Merrigan, (Petersburg Vessel Owners Association); Gail Vick (Afognak Native Corporation, Koning Inc, Kodiak Native Tourism Association, Gulf of Alaska Coastal Communities Coalition); Jon Sutinen (University of Rhode Island on behalf of Halibut Coalition); Tim Henkel and Alan Norris (Deep Sea Fisherman's Association); Bruce Gabrys, (Eagle River); Bob Alverson, (Fishing Vessel Owners Association); Robert Ward, (Anchor Point); and Donald Weslin, (Ketchikan).

The staff was responsive to SSC comments from the December meeting in making revisions to the draft sent out for public review. New information developed since December has also been presented, in the form of an Addendum sent out last week.

The analysis and addendum present a substantial amount of useful information about the sport and commercial halibut sectors. It discusses and attempts to quantify the relative effectiveness (or lack thereof) of different policy tools to curtail sport harvest once a GHL has been reached, and many implementation, monitoring, and enforcement issues. Nevertheless, several key caveats and issues highlighted in our December minutes remain relevant and are worth reiterating as the Council makes its decision:

(1) "The document does not provide definitive evidence of the net benefits of different options for halibut charterboat management... it is important that all participants in the Council process understand that even if a comprehensive set of studies were available, such models have limited ability to predict the consequences of major changes in regulatory structure or management strategy." Implementation of a binding GHL and enforcement of the GHL through restrictive daily or seasonal bag limits are major changes.

(2) "Overall, the analysis does not provide as comprehensive an evaluation of the commercial sector." And, the reported "... sport fishing studies address marine fisheries off the Kenai Peninsula" may not generalize to other regions. Nevertheless, these shortcomings are duly noted the analysis includes a reasonable qualitative discussion of potential impacts on the commercial fishery and on sport fisheries in regions outside the Kenai Peninsula area.

(3) ... "The EA/RIR/IRFA makes an interesting attempt to link the bag limit reduction to changes in participation and expenditures, but it is unclear exactly what the magnitude of the effects will be." The

SSC notes that the participation rate model was developed from a set of questions designed to explore hypothetical rankings of trips with varying costs and catch attributes. Consequently, the model is best suited to address changes in the size and availability of halibut. While it is reasonable to infer that changes in participation due to changes in catches are a useful proxy for changes in retention limits, it is unlikely that there is a one-for-one correlation.

(4) "The EA/RIR/IRFA makes a generally persuasive case that most of the management measures under consideration for implementing the GHL will not be effective in constraining and reducing sport halibut harvests." Bag limits do appear to be the most effective measure but their quantitative effects are hard to predict, because the number of potential sport fishers vastly exceeds the number of participants in any one year. Models to predict how much of the latent capacity could become active in any given year are, at best, crude. Consequently, we wish to caution the Council that some information presented in the Addendum may be misconstrued to be more solid than it really is. In particular, the information in Section III, which details the implementation and enforcement of the GHL, contains several tables (6.18 and 6.19) and figures (6.5-6.8) which present "estimates" of the effects of different measures. These are better characterized as informed guesses by the agency staffs of the possible initial effects when different policies are implemented. In particular, while figures 6.7 and 6.8 may indicate the relative effects of different management measures, it is unrealistic to suggest that their absolute effects are known with any certainty.

(5) The SSC shares IPHC's concern about adoption of a GHL specified in number of fish. If the GHL is expressed in number of fish at a time when the halibut stock is characterized by large numbers of relatively small fish, a change in stock structure to fewer and larger fish will result in a large reallocation to the disadvantage of the commercial sector.

Management and implementation will require extensive coordination between ADF&G, NMFS and IPHC. The costs to these agencies associated with alternative management measures are not well developed in the analysis. The IPHC letter included in the briefing book expresses concerns that cost of enforcing a GHL may be high. Once a GHL has been adopted, and if it becomes binding, it may be necessary to couple on-water enforcement with log book and creel consensus sampling programs to guard against under reporting.

Finally, it was noted in the SSC December 1999 minutes and pointed out more than once during public testimony that under the current suite of management measures the Council will need to continually revisit this allocation issue. The SSC recommends that the Council seriously evaluate the feasibility of emerging IFQ proposals. Among the issues that would need considering are (a) whether to define the basic unit of share in pounds or fish; (b) how to ensure commercial and sport IFQs can be traded if denominated in different units; (c) how to determine who is qualified for what initial assignment of quota share; (d) whether quota shares defined over commercial regions can address local area management problems; (e) can a charterboat IFQ program be enforced; (f) do existing data sets provide a basis for an initial allocation; etc.

C-2 STELLER SEA LION RESEARCH

Anne Hollowed (AFSC-REFM) and Chris Wilson (AFSC-RACE) presented the draft EA for a proposed regulatory amendment to temporarily re-open the 10nm no trawl zones around Gull Point and Cape Barnabas. These regulatory changes would be effective from August 1 to no later than September 20 in years 2000-2003. These changes will allow analysts to employ hydro-acoustic surveys to further understand the impacts of fishing on pollock distribution and abundance as part of a more comprehensive research program on sea

lion/fishery interactions. Public testimony was provided by Glenn Merrill (Aleutian East Borough), Ed Richardson (At-Sea Processors Association) and Chris Blackburn (AGDB).

The SSC is strongly supportive of this proposal. This research begins to respond to SSC research priority C(11). The proposal is well conceived, well written and represents the type of experimental and adaptive approach that is essential to resolve questions such as fishery/marine mammal interactions. We agree with the proponents' assessment that the proposed study has low power, i.e. there is substantial risk that statistically significant results may not be realized. Adding additional experimental units (locations) would likely be the most effective way to increase the power of the experiment. Public testimony suggested that industry platforms may be available to conduct these surveys in additional areas. Use of otherwise idle fishing vessels may be a means of economically increasing the number of areas surveyed. Deployment of NMFS personnel and equipment calibration would have to be addressed.

C-3(b) PROCESSING SIDEBOARDS/EXCESSIVE SHARE ANALYSIS

The SSC received a presentation of the draft analysis from Chris Oliver (NPFMC) and Marcus Hartley (Northern Economics). Public testimony was received from Earl Comstock (Fair Fisheries Coalition), Glenn Merrill (Aleutian East Borough), John Henderschedt (Groundfish Forum), Donna Parker (Arctic Storm), and Trevor McCabe and Ed Richardson (At-Sea Processors Association).

The draft analysis presents the SSC with something of a dilemma. On one hand, the draft analysis presents a considerable amount of relevant information in a clear and concise manner. On the other hand, there are a number of serious deficiencies in the analysis:

- (1) The Council needs to clarify and focus the problem statement so that the analysis is driven by what the Council's objectives are and not the analysts' best guess of the Council's objectives. The analysts should then link sections of the analysis to the problem statement.
- (2) The table (Table 2) that appears in several places in the document should be revised in a number of ways. First, the table should be more closely linked to the problem statement. Second, the issue of 'weighting' of the table cells should be discussed. Currently, all cells implicitly carry an equal weight. It is not clear that this equal weighting is appropriate. For example compliance with the Paperwork Reduction Act is not as relevant as responding to the problem statement. The analysis should note that the table presents the analysts' "best guess" as to how the various options address various perspectives. The analysts should attempt to ground truth this assessment with a broader spectrum of industry input. The SSC does note however that the table serves to illustrate the complexity of the choices facing the Council.
- (3) Some of the assumptions and conclusions presented in the analysis are normative and too strong in light of the complexity of issues portrayed in the analysis. Some conclusions are unsupported by analysis (e.g. there is no basis for suggesting that a 20% limit is preferable to 10% or 30% or 17.5% or 22.5%).
- (4) The discussion of impacts of alternatives considered in the document is minimal. The analysis is too quick to dismiss consideration of impacts on small entities.
- (5) The analysis does not address implementation and management problems associated with enforcement (e.g., estimation precision) of species specific processing limits at plants, company and entity levels.

(6) The analysis is framed in terms of a static perspective of the status quo option. The SSC notes that the status quo is dynamic and that failure to consider where the fishery would go under the no action alternative is likely to mis-state the direction and magnitude of impacts.

The SSC recognizes the difficulty of the analytical task and commends the analysts for their efforts. The SSC recommends that the draft analysis be released for public review after the above issues are addressed.

Finally, the SSC notes that the Council is likely to face a continuing stream of AFA mitigation measures. In essence the Council is progressing down a path of piecemeal modification of the structure of North Pacific groundfish fisheries. A piecemeal approach may or may not be preferred to a comprehensive approach, nevertheless, caution is warranted to ensure that undesirable consequences are avoided.

C-4 PACIFIC COD LLP EA/RIR/IRFA AMENDMENT 67

The Council staff provided background information on the EA/RIR for Amendment 67, including previous amendments leading to the April 1999 proposal to implement a Pacific cod endorsement in the BSAI. The SSC recommends that the IRFA be sent forward to public review with the following revisions.

1. Potential spillover effects of the licensing program could extend beyond the EEZ to State of Alaska fisheries. These effects could arise from vessels excluded when the endorsements are implemented and could alter effort in adjacent fisheries. It is suggested that potential effects on these fisheries be discussed. In addition, there should be a discussion of the possible expansion of state waters fisheries as a response to the exclusion of vessels by the program.
2. Neither the indirect effects nor other distributional effects on localities are discussed in the analysis. An expanded treatment of these consequences should be included in the section on the Regulatory Flexibility Act. For example, there is some expectation that communities may be impacted as a result of adjustments to the exclusions associated with LLP.
3. As indicated in the analysis the number of vessels qualified under the LLP varies greatly according to the qualification criteria. Previous analyses indicate that a small number of participants account for the lion share of landings. Consequently, the qualification criteria would have to be very restrictive to have a meaningful effect on capacity. To illustrate this point, the analysis should include a series of plots that show both the number of qualified vessels and the magnitude of their catch as a function of the quantification criteria.
4. The analysis should include a section that summarizes regional, national and international experience with license limitation programs, focusing on the extent to which such programs have successfully constrained fishing power.
5. The static status quo adopted as a basis for evaluation of the alternatives is inappropriate. The no action alternative should reflect changes in fishery organization performance that are likely to occur in the absence of management action. In fact the problem statement expressly notes that the motivation for exploring LLP is to "promote stability" suggesting that the no action alternative will result in a continuing influx of capacity. The analysis should address the efficacy of the alternatives in controlling capacity growth.

C-7 RESEARCH PRIORITIES

The SSC updated the list of research priorities from last year by incorporating Plan Team recommendations and its own new thoughts. The SSC emphasizes that this list is not 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, ADF&G, IPHC, other agencies, and institutions of higher learning. Items added this year are italicized.

A. Critical Assessment Problems

1. *Some of our stocks are disproportionately harvested across large areas of the GOA and BSAI due to area closures, other management actions, or fishery behavior. Additional analysis should be undertaken to examine potential effects of disproportional harvesting.*
2. *More information is needed on "other species." Observer data should be collected and analyzed for individual species. Better estimates of abundance are needed. Lastly, life history data is limited for many species in this complex.*
3. Rockfish: There is a general need for better assessment data, particularly investigation of stock structure and biological variables.
 - a) Supplement triennial trawl survey biomass estimates with estimates of biomass or indices of biomass obtained from alternative survey designs.
 - b) Obtain age and length samples from the commercial fishery, especially for Pacific ocean perch, northern rockfish, and dusky rockfish.
 - c) Increase capacity for production ageing of rockfish so that age information from surveys and the fishery can be included in stock assessments in a timely manner
4. Walleye pollock: There is a continuing need for research on stock structure as it relates to assessment. There is a critical need for a tagging study to focus on stock interactions. We continue to emphasize the need for age-structured assessments of recognized stock units. As the Bering Sea pollock population has declined, the forecasts of future pollock recruitment have undergone greater scrutiny. Research on alternative forecasting methods is needed

The SSC believes that 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 is needed. 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. *Beginning next year, these surveys will be conducted every two years. While this is a positive development, various ways of supplementing the biennial survey data should be evaluated.*

More research should also be conducted on the movement of pollock between the GOA and BSAI and across regions within GOA and BSAI, (e.g., Bogoslof, Donut Hole, PWS, Shelikof, and SE inside).

5. Crab research: Research should be expanded on handling mortality, stock structure and life history parameters.
6. 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. Age structured assessments depend upon age determination techniques and ongoing age validation is needed.

Correct model specification is critical to stock assessment. Further research is needed on model performance in terms of bias and variability. In particular, computer simulations, sensitivity studies, and retrospective analyses are needed. As models become more complex in terms of parameters, error structure, and data sources, there is a greater need to understand how well they perform.

7. Life history information, e.g., growth and maturity data, is incomplete for a number of stocks. This information is essential for determination of ABC, OFL and preferred fishing mortality rates. Maturity data are lacking for: Pacific cod, Dover sole, other flatfish, sablefish, and many species of rockfish. Life history and distributional patterns of Greenland turbot are lacking. To better understand sablefish recruitment variability, additional information on the geographical distributional and movement of juvenile sablefish is needed.
8. 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 is important in the consideration of bycatch management.
9. There is need for information about stock structure and movement of walleye pollock, Atka mackerel, Pacific cod, POP, and other rockfish.
10. Further research is needed about management strategies that provide for conservation of aquatic resources. Topics that need attention include: which measure of biomass should be used in biomass-based adjustment of ABC and OFL; what measure of average recruitment to use in $B_{40\%}$; the effect of seasonality in spawning, recruitment, and harvest on optimal harvest rate; adaptive management schemes which are designed to provide understanding of multispecies interactions and spatial population dynamics. One objective is to develop multispecies analysis of stocks.
11. Presentation of uncertainty in stock assessments is often lacking or incomplete. Further research is needed into which methods are most appropriate for capturing uncertainty in the status of populations. *The use of Markov Chain-Monte Carlo (MCMC) methods appears to be a promising line of research and its use with AD Model Builder should be further explored.*
12. Management measures such as time-area closures and other restrictions are frequently imposed, but rarely rescinded. Studies are needed to evaluate the effectiveness of management measures on conserving populations, achieving management goals and assessing other ecosystem effects.

B. Stock survey concerns

1. Conservation of aquatic resources in the North Pacific is critically dependent on a consistent time series of trawl, hydroacoustic, and longline surveys. The continuity of these series must remain one of the highest priorities of NMFS and the Council. Data analysis should be expanded to include non-target, non-FMP species.
2. Explore ways for inaugurating or improving surveys to assess rockfish (including nearshore pelagics), pollock, squid and Atka mackerel.
3. Expand bottom trawl surveys in the Gulf of Alaska and Bering Sea to include slope areas that encompass the population range of Greenland turbot, rockfish, thornyheads, and sablefish.
4. Conduct surveys of the Aleutian Islands management area to assist in the assessment of groundfish stocks found in this region.
5. Improve surveys for Bering Sea crab complementary to the existing Bering Sea crab/groundfish survey (e.g. Norton Sound, Pribilof Islands, St. Matthew Island, and Bristol Bay).
6. Direct observation (e.g. submersible and dive surveys) offers unique opportunities to directly examine gear performance, fish behavior in the proximity of gear, gear related habitat impacts, and differences of fish density between trawlable and nontrawlable habitat.
7. There is a continuing need to perform gear calibration and fish observation studies to validate indices of abundance (e.g. fishing longline and trawl gear side-by-side, and fishing different baits on longline gear over the same stations).
8. Little scientific sampling has occurred of seamounts within the EEZ for groundfish, halibut, and crab abundance. Surveys that sample these seamounts may improve estimates of total abundance in the EEZ, particularly for sablefish and rockfish stocks.
9. Data from annual ADF&G crab surveys should be examined and their usefulness for assessing groundfish abundance in near-shore areas should be evaluated. Dialogue between ADF&G and NMFS assessment scientists regarding ways of gaining more useful groundfish data from this survey should be encouraged.

C. Expanded Ecosystem Studies

1. *Considerable research is being conducted on the effects of climate on the biology and dynamics of marine populations. Research effort is required to develop methods to incorporate climate variability and its influence on processes such as recruitment and growth into our models of population dynamics.*
2. *There have been considerable recent advances in using naturally occurring stable isotopes in diverse types of studies. Examples include identifying residence times and areas at various life stages; computing trophic levels and food web dynamics; examining ontogenetic changes and patterns of migration. Studies using these natural markers should be encouraged.*

3. 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 among oceanographic conditions and animal condition and health should be explored. Research should be done on sources of age-specific fish mortality.
4. Effort is needed on status of stocks and distribution of forage fishes, such as capelin, eulachon, and sand lance. Forage fish are an important part of the ecosystem, yet little is known about these stocks. The Lowell-Wakefield Symposium (October 1996) presented current research on forage fishes.
5. Studies of the effects of harvesting and processing activities on the ecosystem and habitat should be instituted. One example would be a study contrasting species diversity and abundance in the red king crab savings area with that in adjacent regions.
6. Trophic dynamics research should be undertaken on the relationships among critical species, e.g., Pacific cod and its prey (including shrimp and crabs). The feasibility of constructing multispecies models using ongoing collection of gut contents data should be investigated.
7. 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?
8. Studies are needed to identify essential habitat for groundfish and forage fish species in the Gulf of Alaska and Bering Sea. This identification is required by the MSFCMA and would benefit from field studies conducted across a matrix of spatial, temporal, and life history stages. Mapping of nearshore and shelf habitat should be continued for FMP species.
9. Expand studies of distribution, abundance, and productivity of seabird populations and ensure that data are collected in ways that provide for rigorous analyses of seabird/marine mammal/oceanographic/fisheries interactions. The majority of data on seabirds in Alaska was collected during the 1970s (through OCSEAP); the quantity of data collected afterwards has been insufficient to adequately examine these interactions.
10. Multivariate statistical analysis of the time series of annual survey data may identify which species regularly occur in assemblages. Mapping these assemblages through space and time may reveal changes in the distribution and abundance of the species of the Eastern Bering Sea. These mappings and trajectories may be applicable to adaptive management approaches suggested for exploring ecosystem concerns. Although related analyses were started by NMFS in the late 1970's, they have not been conducted in recent years. Recent advances in spatial statistics may prove fruitful tools for re-examining these existing data.
11. Uncertainty about the relationship between the Steller sea lion population and groundfish fisheries has taken an elevated significance. With this uncertainty as to the extent of factors affecting Steller sea lions, it is critically important to investigate the effects of mitigation measures on the sea lions, the fisheries, and the ecosystem. The monitoring must be based on

an experimental design that provides information about the interaction of fisheries and Steller sea lions. Five questions are central to future work:

- (a) What is the distribution of fish in relation to areas used for fishing, and what are the seasonal changes?
- (b) What is the distribution of fish in fishing areas before and after fishing?
- (c) How do Steller sea lions use pollock in relations to pollock distributions?
- (d) How does the Steller sea lion's pollock feeding habits influence sea lion population dynamics?
- (e) Does the fishery effect Steller sea lions in other ways (e.g., behavioral disturbance)?

D. Social and economic research

There is a critical need for the development and continued maintenance of basic social and economic information databases on the fisheries and fisheries dependent communities 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.

1. There is a need to develop a cross section-time series of data on:
 - a) Exvessel and wholesale prices (information is needed on actual transactions and sources of variability).
 - b) Inventories and exports (greater detail on product form, volume, and transactions prices).
 - c) Cost of variable inputs to fishing
 - d) Patterns of ownership in fishing and processing operations (concentration, vertical integration, foreign participation).
 - e) Employment and earnings for crew and skippers
 - f) Patterns of employment/unemployment, earnings, transfer payments in fishery dependent communities, and
 - g) The location where goods and services are purchased.

2. There is a need for economic analyses of:
 - a) The demand for fisheries products (exvessel, wholesale, international, and retail markets)
 - b) Production functions for catch and processing
 - c) Regional models of economic activity in fishery dependent communities,
 - d) An assessment of the cumulative efficiency and equity consequences of management actions that apply time/area closures
 - e) An assessment of the consequences of the halibut/sablefish IFQ program (changes in product markets, characteristics of quota share markets, changes in distribution of ownership, changes in crew compensation, etc.)
 - f) Estimates of the net economic benefits of recreation and subsistence harvests, and,
 - g) Improved representation of fleet behavioral response to alternative fishing opportunities to provide better prediction of how fishing effort will shift in response to time/area closures.

4. Research pertinent to assessment of the social impacts of actions contemplated by the Council include:
 - a) **Fishery/Community Linkages:** Field research aimed at capturing the full array of linkages between fisheries and social and economic life in fishery dependent communities.
 - b) **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.
 - c) **Social Impacts:** Social impact and policy research should be conducted regarding the identification and potential effects of alternative management actions.
 - d) **Develop better methods for determining the social costs and benefits of management actions (e.g. through the use of non-market valuation techniques).**

E. Bycatch problems

1. Research on gear modification and other methods for reducing bycatch should be expanded.
2. A better quantification of discard mortality rates is needed, especially for halibut and crab.
3. Data on size/age and sex of crabs taken as bycatch are needed to assess impacts.
4. Comprehensive evaluations are needed of single and multiple time/area closures and other bycatch management measures.
5. Develop better methods for assessing the social costs of bycatch.
6. Identify sources of variability in actual and estimated bycatch rates.
7. Collect bycatch information in the directed halibut fisheries using observer coverage. Current logbook information is inadequate to quantify this bycatch.

F. Fishery Monitoring

1. Inseason management and stock assessment are critically dependent on catch estimates. There is a need to conduct ongoing analyses of the accuracy and precision of catch estimates in all fisheries. An analysis of the utility of fishery logbook information should be conducted. In particular, determine if it is possible to gain insight into fleet performance from such information. Examine feasibility for developing a representative CPUE index and determine if it is proportional to stock size
2. Evaluate sampling procedures used by observers and various catch estimation procedures. *Recent analyses have been conducted on efficient methods of collecting representative biological data from target species. Similar studies should be conducted on the collection of prohibited species biological data.*

3. Development of catch and bycatch sampling procedures for individual vessel accountability programs.

D-1 HABITAT AREAS OF PARTICULAR CONCERN (HAPC)

Dave Witherell (NPFMC) presented the staff report on this item. John Gauvin (Groundfish Forum) and Dorothy Childers (AMCC) presented public testimony.

This is the second phase of discussion of habitat issues; the first led to definition of essential fish habitat. In the second phase, habitat areas of particular concerns (HAPC) are considered, along with related management measures.

The SSC recommends that the Council take a measured, comprehensive and scientific approach to these habitat issues. The SSC is concerned that the current document is focusing on isolated habitat concerns without any strong connections drawn to resultant fish productivity. The SSC believes that aspects of a more comprehensive approach would include (1) experimental designs with controls and treatment that can evaluate the effectiveness of management measures, (2) process oriented research that establishes the connections between habitat and fish production, and (3) a full treatment of marine reserves (or refugia or closed areas). Therefore the SSC cautions against taking an incremental approach, because the management measures applied in this fashion could do more harm than good. Specifically, with respect to the current document, the SSC recommends sending out the portion of the document related to definition of HAPC but withholding the management measures in Part C until a more comprehensive plan is developed.

The SSC also has several specific comments:

- (1) The evaluation table for proposed HAPC types and areas (p.16) should be accompanied by increased discussion of definitions and rationale. We ask that the authors define the high-medium-low and 1-2-3 data level terms used in the table cells, and discuss the bases for their evaluations.
- (2) The document should provide an overlay of fishing activity and harvests in the proposed HAPC areas, particularly areas of Gorgonian coral abundance.
- (3) The document could better frame previous Council actions to protect habitat, and their evaluations, as accomplishments.
- (4) Notwithstanding our recommendation concerning incremental protective measures, conservation of Gorgonian corals warrants further analysis. Their long-life and slow growth means that changes to this habitat type from fishing activities could be irreversible.

Among the concerns over classification of HAPC is the apparent lack of integration with a comprehensive management plan for fishery regulation. The SSC believes the Council should evaluate a more integrated strategy for habitat protection and fish management.

As an illustration of an integrated habitat/fishery management regime, the Council might consider the longline fisheries of Southeast Alaska. The human population of the region is growing, with increasing pressure on vulnerable resources. Predominant fisheries are sablefish, halibut and rockfish. The rockfish fishery is managed around estimates of available habitat. Knowledge of the preferred habitats for these species is

continuing to be acquired with commensurate revisions on estimates of available biomass. Sablefish and halibut are both mobile species, while rockfish tend to be more sedentary. This difference in life history complicates analysis of anticipated benefits from habitat protection measures. Evaluation of an integrated habitat fishery management regime could provide the Council with valuable input on the practicality of implementation, and the anticipated benefits of the habitat protection measure to the sustainable production of the managed fish resources.

ABC/OVERFISHING DEFINITIONS

The joint SSC/PT committee (Central Rule Alternatives workshop, Design, Analysis, Decision: CRAWDAD) met in Seattle January 31, 2000 to explore the process for a new ABC/overfishing protocol. The workshop was successful in exploring the scope of alternatives and analysis to be conducted, although much fleshing out of activity remains to be done. A report of the workshop is available from Grant Thompson, Chair of the Committee.

The SSC has one major concern over the simulation strategy proposed for estimating a generic MSY control rule for major stock types (i.e., gadid, pleuronectid, and scorpaenid). The suggested method assumes a stock-recruitment curve, age-structured model, and an MSY control rule which is optimized in the simulation. A problem arises because the optimal MSY control rule will strongly depend on the assumed stock-recruitment relationship which can easily be mis-specified. This perspective suggests an optimal MSY control rule may not be precautionary. Therefore, the robustness of the analyst's approach needs careful consideration in the alternative to be developed and in the study design. Furthermore, the SSC suggests that the timeline for the new analysis be sufficiently long enough to involve the SSC and Plan Teams in the range of alternatives and analytical approach. It is not necessary to rush this analysis; our current procedures can be used one more year if necessary.

The SSC has strongly criticized shortcomings in the NMFS guidelines for status determination in its previous minutes. The SSC intends to prepare a letter to NMFS outlining its concerns and requesting clarification about whether these guidelines can be modified in the new overfishing amendment.

PACIFIC COD DATA COLLECTION PROTOCOLS

Dan Ito (Observer Program Manager) and Shannon Fitzgerald reviewed the catch sampling protocols used by the Alaska Fishery Science Center Observer Program. The SSC commends the presenters for a highly organized and clearly focused review.

The sampling protocols for length frequencies and otolith collections were significantly changed in 1999, so distinct sampling methods were used in pre-1999 samples compared with current 1999+ sampling. The current protocols are characterized by much smaller random samples taken over a far greater number of hauls. In theory these smaller samples should provide greater statistical efficiency, while at the same time filling gaps in sampling strata that were apparent under the pre-1999 sampling scheme. However, since sampling protocols have changed so significantly, it is important that the results of the two sampling methods be carefully compared to assure that the smaller samples have not led to increased sampling bias.

In its October 1999 minutes, the SSC outlined a two-stage process to evaluate the adequacy of Pacific cod biological sampling relative to the needs of age-structured modeling. The first stage was an examination of sampling protocols and an audit to verify that they have been properly carried out. The second stage would

evaluate the impact of sampling on the age-structured stock assessment model. Therefore, the SSC requests that the next Pacific cod assessment evaluate the adequacy of the length frequency sampling on the fishery strata used in the age-structured stock assessment model.

Historically, in Canada and the U.S., Pacific cod has proved to be an extremely difficult species to age. The lack of progress suggests that unusual growth characteristics of Pacific cod may play a role in the difficulties encountered ageing and, hence, modeling this species.

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ADVISORY PANEL MINUTES December 6-9, 1999 Anchorage Hilton Hotel, Anchorage, AK

Advisory Panel members in attendance:

Alstrom, Ragnar	Gundersen, Justine
Benson, Dave	Jones, Spike
Blott, Tim	Jordan, Melody
Bruce, John (Chair)	Kandianis, Teressa
Burch, Alvin	Madsen, Stephanie (Vice-Chair)
Cross, Craig	Nelson, Hazel
Falvey, Dan	Ogden, Doug
Fanning, Kris	Stephan, Jeff
Fuglvog, Arne	Ward, Robert
Fraser, Dave	Yeck, Lyle
Ganey, Steve	

C-1 American Fisheries Act

Emergency Rule #1: Single Geographic Location Requirement

The Advisory Panel recommends the Council request that National Marine Fisheries Service modify the language regarding the single geographic location in the AFA Emergency Rule to allow shoreside floating processors the opportunity to change locations once each year. The intent would be to mirror the inshore/offshore rule on single geographic location. This rule mandates that a floating processor must remain in the same location where it begins processing at the start of each year.

Motion passed 18-0.

Emergency Rule #2: Calculation of Groundfish and Prohibited Species Catch Sideboards

1700 MT Exemption

The Advisory Panel ultimately voted to recommend to the Council that there be no exemptions for either Bering Sea Cod or in the Gulf of Alaska, as approved in June or any alternatives presented at this meeting.

Motion passed 12-7-1.

In keeping with Council policy, below are listed the motions that failed by a close margin:

- 1. Bering Sea Cod. For an AFA catcher vessel to be eligible for the 1700mt exemption, it would have to meet the following additional prerequisites:*
 - a. Be less than 125 feet in length*
 - b. The catcher vessel had a minimum of 30 cod landings in the directed fishery for Bering Sea cod over the period of 1995, 1996, and 1997*
- 2. Gulf of Alaska. For an AFA catcher vessel to be eligible for the 1700 mt exemption, it would have to meet the following additional prerequisites:*

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- a. *Be less than 125 feet in length*
- b. *The catcher vessel had a minimum of 40 groundfish landings in the Gulf of Alaska over the period of 1995, 1996, and 1997*

3. *Catcher vessels that meet the requirements of being an exempt vessel shall be treated by NMFS, in those fisheries to which the exemption applies, as a non-AFA vessel. The catch history of the exempt vessel (in the fishery to which the exemption applies) will not be included within the AFA cap for that fishery and the harvest of the exempt vessel will not be counted against the AFA cap. The AP further requests the opportunity to review this action in one year.*

*A motion to amend the above motion to delete exemptions in the Gulf of Alaska failed 9/10.
The original motion failed 8/11.*

Two attempts were made to reduce the Gulf of Alaska threshold:

- *1200 mt (failed 3/15)*
- *750 mt (failed 5/14)*

679.61 Inshore Pollock Co-operatives

The Advisory Panel recommends the Council substitute the following language:

“(4) provisions that require co-operative members to comply with the ‘traditional harvest level’ restrictions of Section 211 (c) (1) (a) of the Act, as the same may be implemented by the Council and National Marine Fisheries Service from time to time.”

In addition, the text above would substituted for the relevant operative language of Section 679.6 (c)(4), mothership and catcher/processor cooperatives.

Motion passed 18-0.

The Advisory Panel also requests the Council or NMFS provide a supplemental analysis between now and February to examine implementing sideboards based on retained catch or total catch for all sectors with particular reference to how it would impact the amount of sideboard available for directed fisheries and impacts on regulatory discards. The AP requests this information in order for the Council to comment with full information on the AFA proposed rule at the February meeting.

Motion passed 12/2/4.

C-2 Essential Fish Habitat

The AP recommends the Council request an extended comment period on the EFA interim final rule.

Motion passed 20/0.

C-3 Halibut Charterboat Management

The AP recommends the Guideline harvest level (GHL) analysis be released for public review with the following changes:

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Chapter 1

- Add to list of management measures
 - A prohibition on charter skippers and crew-fishing and retention;
 - Possession limits reduction
 - Prohibitions on using downriggers
- Add a provision to manage the GHL based on a 3-5 year weighted and regular rolling average
- Eliminate the option of closing the charter fishery in-season once the GHL is reached
- Tie the GHL as an allocation and the sportfish banking reserve together as an option

Chapter 2

- Add information on rod hours to catch a halibut for charter and non-charter anglers for past 6 years

Chapter 3

- Review in more depth existing information from 1997 GHL analysis, the Glacier Bay analysis, and other sources of baseline data for area 2C
- Add to figure 3.20 area 2C and 3A specific halibut harvests by sector, rather than by state-wide
- Reference preliminary data on 1999 charter harvest by area and commercial ex-vessel price information
- Add description of taxes each sector pays and the effect of these taxes on social structures in communities
- Provide a summary table which clarifies how the economic components presented are being used and what comparable components are for the other sector. For example:

Component, figure or table	Data Source	Caveats	Relevance in evaluating economic impacts (economic activity, impact, or net benefit)	Relevance in evaluating social impacts	Relevance in evaluating alternatives	Comparable data in analysis for other sectors (longline, charter, clients, consumers)

- add current IPHC staff recommendations to update the biomass projections and the 2000 quota recommendations

Chapter 4

- Add comparable economic multipliers for commercial sector
- Expand QS net benefit discussion to include estimates of rents and impacts of status quo on value of QS
- Either refine the participation rate model to differentiate between catch and catch and release fish or eliminate from analysis

Chapter 6

- Expand alternative 1 to reflect the impact of status quo on new entrants ability to meet existing loans
- Consider the effect of status quo on the process of developing LAMPs, moratoriums, and other efforts to address the problem statement
- Add discussion on the effect of setting GHL as a fixed number of fish given the current high abundance and age composition of halibut stocks
- Reconcile estimates of participation impacts associated with bag limit reductions with current catch and release behavior
- Review effects of bag limit management in other fisheries including catch and release fisheries
- Provide information on the SE AK king salmon and ling cod sport fishery which shows:

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- Frequency and lead time associated with bag limit changes
- ADF&G's expected effectiveness of bag limit changes at reducing harvest
- # of clients using charter over past 6 years, and in season changes pre and post bag limit changes
- Summarize in a table the management measures identified and their relative ability to constrain harvests to the GHL and to address issues identified in the problem statement
- Include a discussion about the ability of the charter industry to harvest the GHL in times of reduced biomass

Motion passed 18/0

C-4 Steller Sea Lions

The AP recommends the Council request NMFS to provide a public presentation on the ongoing and planned research projects.

Additionally, the AP requests NMFS provide a status report on the process for Section 7 consultation efforts with federally recognized tribes.

Motion passed 14/0.

C-5 Pacific Cod LLP

The Advisory Panel recommends the Council not proceed with an additional option separating out the P.cod pot catcher/processors from pot cod catcher vessels to its cod species/ gear endorsement analysis.

Motion passed 9/8.

Additionally, the AP recommends the Council initiate a trailing analysis separating P.cod pot catcher processors from pot cod catcher vessels on a separate track from LLP.

Motion passed 13/3/1.

Grandfather Provisions:

The AP recommends the Council incorporate potential grandfather provisions in the LLP analysis to be brought back in February.

Motion passed 16/0/1.

C-7 Halibut Subsistence

The AP recommends moving forward with the subsistence halibut analysis as outlined with the following changes:

1. Change option 4 to read as follows:

Option 4: Customary and traditional trade of subsistence halibut

Sub-option 1: Customary and traditional trade through monetary exchange shall be limited to an annual maximum of:

1. \$0
2. \$200
3. \$400
4. \$600

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Sub-option 2: Customary and traditional trade through non-monetary exchange is allowed with

1. Other Alaska Tribes
 2. Any Alaska rural resident
 3. Any Alaska resident
 4. Anyone
2. Add to option 5 a sub-option of no daily bag limit
3. Update and revise existing analysis to discuss recent changes in subsistence management , federal policy, relevant court cases, and the roll of other public subsistence management boards.
4. A discussion of existing co-management arrangements and the applicability of these models to data gathering, LAMPs, catch, monitoring, and enforcement of halibut subsistence.

Motion passed 18-0.

D-1 (a, b) Bering Sea Groundfish Specifications 2000

Final BSAI Groundfish Specifications for 2000

a. The AP recommends the Council approve the 2000 BSAI EA and Final Stock Assessment and Fishery Evaluation (SAFE) report.

Motion passed 18-0.

Acceptable Biological Catch (ABC's) and Total Allowable Catch (TAC's)

b. The AP recommends the Council adopt the SSC's ABC's listed in Attachment 1.

Motion passed 18-0.

The AP recommends the Council adopt the SSC's 2000 ABC's as the 2000 TAC's: except for the Aleutian Islands and Bogoslof pollock; yellowfin sole; rocksole; flathead sole; and other flatfish (see attachment 1).

Motion passed 18-0.

b.2. Seasonal apportionment of the fixed gear Pacific cod TAC

The AP recommends the Council adopt the following TAC apportionment (see attachment 2).

January 1 - April 30	65,000 mt
May 1 - August 31	0 mt (passed 11/9)
September 1 - December 31	26,048 mt

Motion passed 10/6.

A motion failed 8/11 which would amend the above motion to set apportionments at

<i>60,000 mt</i>	<i>1st trimester</i>
<i>0mt</i>	<i>2nd trimester</i>
<i>31,048</i>	<i>3rd trimester</i>

The AP recommends the Council adopt the halibut mortality for fixed gear P.cod listed in attachment 2.

Motion passed 19/0.

b.3. The AP recommends the Council adopt the 2000 BSAI trawl fisheries Prohibited Species Catch as listed in attachment 2.

Motion passed 19/0

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D-1 (c, d, e) Gulf of Alaska Groundfish Specifications for 2000

c. The AP recommends the Council adopt the 2000 GOA EA and Stock Assessment and Fishery Evaluation (SAFE) document.

Motion passed 19-0.

d. ABC's and TAC's for GOA

The AP recommends the Council adopt the SSC's 2000 ABC's for the GOA. (see attachment 3)

Motion passed 19/0.

The AP recommends the Council adopt the ABC's as TAC's with adjustments noted on attachment 3 for the flatfish complex, pollock, and Pacific cod.

Motion passed 17-1.

PSC's

The AP recommends the Council adopt the PSC limits for halibut as listed in attached chart for trawl gear and hook and line. Additionally, the AP recommends the Council adopt the trawl apportionments as listed in attachment 4.

Motion passed 19/0.

e. Halibut discard mortality rates

The AP recommends the Council adopt halibut discard mortality rates for BSAI as listed in table 13 and for the Gulf of Alaska as listed in table 14.

Motion passed 19-0.

Further, the AP recommends the to the Council:

1. The Plan team and SSC standardize their procedures for setting ABC's lower than tier levels would indicate.

Motion passed 19/0.

2. Request NMFS continue to incorporate sablefish fishery catch rates in the assessment. The AP additionally requests the Council recommend to the plan team and SSC work with NMFS to address their concerns about using sablefish fishery catch rate data, including catch rate bias and catchability differences.

Motion passed 19/0.

3. Adopt the Plan team's recommendation to consider placing the "other species" assemblage on bycatch status until an FMP amendment is in place.

Motion passed 8-5.

The AP approved the minutes from the October 1999 meeting. Motion passed unanimously.