

North Pacific Fishery Management Council

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



605 West 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Telephone: (907) 271-2809

Fax: (907) 271-2817

Certified: Paul Bendyler
Date: 11/23/99

MINUTES Scientific Statistical Committee October 11-13, 1999

The Scientific Statistical Committee met October 11-13, 1999 at the Doubletree Hotel in Seattle, Washington. All members were present except Richard Marasco and Steve Hare:

Jack Tagart, Vice Chair
Dan Kimura
Terry Quinn
Hal Weeks

Keith Criddle,
Doug Larson
Doug Eggers

Sue Hills
Seth Macinko
Al Tyler

C-2(d) Excessive Shares

The SSC received a report from Chris Oliver. Public testimony was received from John Gauvin (Groundfish Forum) and Earl Comstock (Fair Fisheries Coalition).

The discussion paper in the briefing book does a good job outlining the complexities and potential pitfalls this issue presents to the Council and analytical staff. The SSC commends the authors for their clear, concise narrative.

The SSC suggests that the Council carefully consider the proposed actions presented under items 3 and 4 on pages 10-11 of the discussion paper. At this point in time, the SSC suggests that the Council consider carefully whether it is reasonable to devote further staff time to analysis of this issue. As the discussion paper makes clear, defining numerical "excessive shares" caps will be extremely difficult if not impossible. Fundamental decisions on issues such as whether the excessive shares caps apply to all firms or only to AFA qualified firms must be made before further analytical work is pursued. Additionally, it seems prudent to wait until specific action on processing sideboards is identified because of the interrelationship between sideboards and excessive shares (as outlined in the discussion paper). Finally, the SSC believes that future consideration of this issue would benefit from more information on trends in markets as the post-AFA era unfolds. Industry adjustment to the many features of the AFA (and subsequent AFA-related Council actions) presents analysts with a moving target at the present time.

C-2(e) Inshore Catcher Vessel Cooperatives

The SSC heard a presentation from Robert Halvorsen and Fahad Khalil (University of Washington) of the "Discussion Paper on Inshore Sector Catcher Vessel Cooperatives in the Bering Sea/Aleutian Islands Pollock Fisheries." Public testimony was provided by Levis Kochin (University of Washington for Trident Fisheries), Brent Paine (United Catcher Boats), Scott Matulich and Marat Sever (Washington State University), John Young and John Dooley (representing Independent Catcher Vessels Association), Joe Plesha (Trident Seafoods), Glen Merrill (Aleutians East Borough), Earl Comstock (Fair Fisheries Coalition), John Iani (Unisea), and Greg Baker (Westward Seafoods).

While the SSC believes the discussion paper is useful, we point out that the paper lacks much of the documentation normally contained in an EA/RIR/IRFA. The document should be fleshed out to include an introduction with a purpose, need for action, and explicit identification of alternatives. The usual NEPA discussion is needed. The discussion paper would fit into a portion of the RIR, but the RIR should include a broader discussion of why this analytic approach was selected in lieu of an assessment of the impact on net benefits to the nation, and the other socio-economic effects of the proposed alternatives.

The discussion paper is useful in that it makes clearly-stated assumptions, and uses bargaining theory to suggest the possible effects of the Dooley-Hall proposal and other cooperative provisions. The key assumptions are

- (a) the adoption of a "benchmark" against which proposed policies are measured;
- (b) that the degree of excess capacity in pollock processing is modest;
- (c) that processors will largely refrain from aggressive price competition;
- (d) that processors have greater knowledge about costs and demand, and control of a substantial number of catcher vessels, which results in bargaining advantages;
- (e) there is a substantial amount of "under-vested" fishing effort; i.e., boats whose qualifying catch history in 1995-97 is lower than their fishing power.

Given these assumptions, the paper states that

- (1) "there will be a significant probability that independent catcher vessels will be adversely affected by the AFA's provisions for cooperatives;"
- (2) "ICVs would be better off, and processors worse off, under the Dooley-Hall proposal than under the AFA;
- (3) adverse effects to processors under Dooley-Hall would be reduced by limiting increases in the share of deliveries by processing facilities or firms.
- (4) raising the limit on co-op deliveries to processors could reduce the likelihood of adverse effects on ICVs
- (5) eliminating the open-access year for ICVs to change processors could benefit ICVs, depending on how it is applied;
- (6) limiting increases in open-access catch by ICVs would tend to help fully-vested ICVs and hurt under-vested ICVs, while guaranteeing minimum shares of catch history in open access would do the opposite.

In evaluating the conclusions of the discussion paper, the key points to keep in mind are

- (a) the assumptions directly affect the conclusions drawn;
- (b) there is little quantitative evidence to either support or refute the assumptions;
- (c) there is considerable disagreement among knowledgeable people in the industry about the "truth" of the assumptions.

The SSC's comments are as follows.

Benchmark. The benchmark, or status quo, chosen for the analysis determines whether different firms are helped or hurt by specific provisions. The benchmark in the discussion paper is, "the AFA with all provisions in place except for cooperatives." An alternative benchmark could be employed to consider benefits and costs under the AFA as opposed to pre-AFA. While choice of a benchmark affects the statements about whether ICVs and processors gain or lose overall under specific provisions, it does not alter the statements about the general trends or directions of impact.

Excess Capacity in Processing. While many would agree that there is excess processing capacity, there is disagreement over whether the degree is "modest." No quantitative estimates of pollock processing capacity were presented to the SSC.

Price Competition by Processors. There is strong disagreement both among industry sources and academic commenters about how aggressive the price competition between processors will be under AFA coops. Those who feel there will be strong price competition point to the reductions in number of harvesting vessels and reductions in daily processing throughput in 1999 pollock operations as evidence. Those who feel there will not be strong price competition point to the high degree of concentration in processing and the long-run incentives to refrain from aggressive competition when there are only a few firms in an industry.

Bargaining advantages. There is substantial disagreement about the magnitude of any bargaining advantage. Those who feel processors have a large advantage point to the much greater complexity of processing operations, making knowledge of their cost structure to outsiders much more difficult to obtain; and to the high potential share of harvest and numbers of CVs "controlled" by processors (though "control" is difficult to define rigorously). Those who feel there is no large processor advantage point to processor practices of "opening their books," to IRS scrutiny of processor pricing practices, and to the ownership of offshore processing by CVs in nearly every processor coop.

Overall. The SSC feels that the discussion paper provides "reasoned speculation" about effects of coop provisions. It sheds light on key assumptions and resulting conclusions. Whether one agrees with the document's conclusions depends on whether one agrees with its assumptions. It is very difficult to corroborate the truth of the assumptions based on hard evidence. Reasonable people disagree strongly over the merits of the assumptions. The judgment call is, appropriately, the Council's to make. Since the SSC does not believe this is the last time the Council will evaluate cooperative management structures, the Council should consider putting in place mechanisms to collect the appropriate data on prices, and quantities, so that better information is available to evaluate proposed modifications to coop structures in the future.

C-2 (f) AFA Data Requirements

The SSC received a brief staff presentation on the status of efforts to coordinate State and Federal data reporting requirements for processors.

C-7 Groundfish SEIS

The SSC reviewed a copy of the SEIS Remand Order and oral presentation by NMFS Regional Staff. The presentation and discussion addressed the types of information that will be in the SEIS, the approximate schedule for its development, and the range of alternatives to be analyzed. Choice and wording of alternatives to be considered will be a critical element. The number of possible combinations of potential fishery management measures (e.g. harvest levels, seasons and areas of operations, allocation to gear types, etc) is infinite, but our ability to make analytic distinctions between many of these will be quite limited. The alternatives chosen need to cover a realistic range of biologic removals and human impacts to the ecosystem, but without mandating the analysis of minuscule distinctions.

C-9 Essential Fish Habitat

Dave Witherell (NPFMC) presented the staff report. The discussion paper addressing Habitat Areas of Particular Concern (HAPC) represents the start of a second phase of the Council's efforts to identify, describe and protect essential fish habitats. The discussion paper puts forward an interesting mix of potential habitat types, specific areas, and possible management measures to be considered in this context.

The interim final rule (52FR 66531, December 19, 1998) says that potential HAPCs must meet one or more of the following criteria: (1) important ecological function, (2) sensitivity of the habitat to human-caused degradation, (3) vulnerability of the habitat type to development activities and (4) rarity of the habitat type. The areas put forward in the discussion paper were nominated based primarily on the latter three criteria. Our understanding of the ecological importance of particular habitat types or areas is generally quite limited. While this is a problem, it is also an opportunity for the Council's Ecosystem Committee and Plan Teams to focus on research and monitoring activities that would improve our understanding (see minutes for C-12, Ecosystem Management). Council support for these activities could help guide researchers and funding toward these questions.

As the analysis evolves, the SSC encourages the authors to attempt to define habitat types or areas as explicitly as possible to minimize the potential for mis-understanding.

C-12 Ecosystem Management

Dave Witherell (NPFMC) presented the staff report on this item which also included the Ecosystem Considerations chapter of the draft SAFE documents.

The Plan Team's and the Council's Ecosystem Committee continue to incorporate and present updated information and concerns relating to ecosystem structure and function.

As a complement to their commendable work in compiling and providing information, the SSC suggests that the Teams and Committee identify some of the priority research and monitoring needed to improve our understanding of cold marine ecosystems. For example, the Council's closure of most of Bristol Bay to bottom trawling to protect red king crab habitat logically suggests an evaluation of the efficacy of this measure specifically, and of natural change in shallow, untrawled areas more generally. Identification of priority research questions or topics could aid researchers forming research proposals.

In addition to questions of the "natural" ecosystem, the Plan Teams and the Ecosystem Committee also raise broader conceptual questions of the role of humans in the ecosystem. The priority placed by the Committee on reducing excess fishing capacity speaks to this question, and to the challenge of evaluating the condition of ecological systems that are influenced by human activity.

D-2 Preliminary Stock Assessment Fishery Evaluation (SAFE) and Specifications

A. General Issues

Consistency in ABC Determinations

At the December 1998 SSC meeting, the SSC noted that ABC adjustments below the maximum permissible ABC level were adopted for several species and asked the Plan Teams whether a consistent policy could be developed for such adjustments. The Teams have carefully responded to the SSC in their minutes and itemized the concerns that led to these adjustments. The SSC is further pleased that the Teams will include a table in the SAFEs that show the adjustments. The SSC agrees with the Plan Teams that further exploration of the issue of consistency must await the outcome of the proposed plan amendment to redefine ABC and OFL.

Risk Assessment

The move by several analysts to use ADModel Builder is a welcome one, in that more formal risk assessments should be easier to carry out and present. The SSC is enthusiastic about this opportunity to present risk curves and decision tables and urges analysts and the Plan Teams to consider such approaches in their assessments.

EA/RIR

Tamra Faris (NMFS) outlined the new approach of presenting the EA/RIR for TAC-setting during the process rather than after. The idea is to look at the big picture of the overall impact of the TAC recommendations in a holistic way. The SSC is concerned that sufficient time will not be available to accomplish this meritorious objective in a useful way. The Plan Teams make their recommendations in late November and the EA/RIR will need to be ready just a few days later. This lack of time creates the possibility that inaccurate conclusions could be drawn and that excessive boilerplate material will be used. The SSC urges the preparers to be judicious in their choice of material, so that the EA/RIR will be useful.

The document will make its evaluation based on alternative F values ranging from that corresponding to the maximum permissible ABC to $F=0$. To provide balance in the consideration of fishing effects and to illustrate the conservation effects of actual recommendations, the authors should also consider at least one F value higher, such as F_{OFL} .

B. Bering Sea Aleutian Islands

The SSC reviewed a series of progress reports on the generation of groundfish ABCs. The ABCs from last year have been rolled over to start the year 2000 fisheries and by the December Council meeting, the new ABC estimates will be available.

The analysts are generally proceeding well with converting last years' Stock Synthesis age-structured models into the new ADModel Builder framework. The SSC is concerned with a systematic discrepancy between the

stock synthesis and ADModel Builder approaches in the estimation of recruit year-class strengths in the last few years for yellowfin sole, rocksole, and Alaska plaice. The SSC suggests that analysts carefully evaluate the convergence properties of their models. For example, they could conduct a sensitivity analysis. The analysts could use final estimates from its Stock Synthesis program as starting values in ADModel Builder to ascertain that the objective function is actually minimized.

Proposed changes to the Pacific cod model are discussed in the GOA minutes.

The SSC heard testimony from Paul Ison (skipper of the Unimak) that flatfish in the Bering Sea were more off-bottom than in previous years, coinciding with very low water temperature. The SSC notes that this observation may explain why the survey's biomass decreased this year.

The SSC continues to be interested in the overall sampling program that develops the data base used by assessment authors in the models to arrive at ABC estimates. In testimony to the Senate Subcommittee on Oceans and Fisheries, NPFMC Chairman Richard Lauber noted that the SSC initiated a "framework plan to evaluate and improve catch estimation," and "has developed a formal process to review annually the sampling methods and catch estimation procedures." The SSC recommends this process should next address the sampling scheme for Pacific cod in view of the complexities of the fishing gear types used in the cod fisheries, difficult age determinations, and the complex distribution of cod on the grounds.

In particular the SSC suggests planning an analysis of the Pacific cod length-frequency samples used in the catch-at-age calculations. Age compositions of the catches are determined through the length-frequency samples and as a consequence, the catch-age modeling is strongly influenced by that sampling program. The sampling might be examined with respect to a number of factors, in particular the influence of sample size, stratification by fleet sector (gear), time of year and fishing location (statistical area). The sizes of samples and the distributions of the samples through the data stratifications influence the values produced by the assessment model. Several outstanding questions need to be addressed: Is the sampling program adequate? If more fish cannot be measured, should more but smaller samples be taken? Does the spread of samples among the gear-month-area strata lead to biasing the results of the model? What distinctions between the GOA and BSAI suggest different sampling needs for the two areas? How are State of Alaska samples in the GOA entered into the model?

A review of cod sampling procedures by observers needs to be conducted first. This would be a performance audit describing the current sampling protocols and how well the samples have met these protocols. In addition, a description of how the "blend system" works in relation to Pacific cod catches would be desirable. This overview would require coordination with personnel from AFSC, the Observer Program and the NMFS Regional office. The SSC recommends planning the first review at its February 2000 meeting, but recognizes the need to coordinate scheduling and staff limitations with NMFS.

In the second stage of this analysis, the SSC recommends that the analysts and Plan Team explore the impacts of the sampling program and resulting data base on ABC estimates made by the current model. The SSC notes that the Observer Program has contracted for review of the Observer Program and its sampling design. After these reviews are completed, more progress on this second stage is anticipated.

C. Gulf of Alaska

Walleye Pollock

The boundary of the area covered by the stock assessment model was moved eastward to 140° W. to coincide with the area open to trawling in the Gulf of Alaska. This results in a cleaner assessment because now all of area 640 is covered by the model. Previously, area 640 survey and fishery catches had to be split.

The SSC recommends that the ADF&G Prince William Sound biomass estimate be added to the NMFS survey as a first step in incorporating the Prince William Sound population into the GOA stock assessment. Although there are survey gear differences, the result would be conservative. The SSC recommends that the NMFS and ADF&G survey trawls be calibrated in the future so ADF&G survey estimates can be incorporated more accurately.

The 1999 triennial bottom trawl survey resulted in an unusual distribution of biomass westward in the Shumagin area. Unless adjustments are made, this will result in areal allocations of TAC much different than in 1999.

Pacific cod

Difficulties with some aspects of the current Pacific cod stock assessment has lead the author to explore alternatives. The author has come up with a creative length-based model using the Kalman filter approach. The author noted several advantages of this new approach including fewer parameters, the ability to include both process and measurement error, and ease in estimating uncertainty in stock size. The estimates (or guesses) of process and measurement error will be difficult to arrive at and could strongly influence the modeling results. At this early stage it is difficult to judge the probability of success for this new model.

Another approach would be to convert the current synthesis type model to an AD model builder approach. There the author can more easily explore different modeling approaches and assumptions concerning the data. This approach would be worthwhile in determining whether it is data characteristics rather than model characteristics that are causing problems.

Sablefish

The current sablefish assessment has come up with several notable improvements. These include adding data from 1960 to 1978, which allows biomass estimate from 1960 to the present time. This extended analysis indicates biomass estimates are near their historic lows. Another improvement is the addition of an ageing error matrix based on the age determination of known age fish. This data appeared to sharpen estimates of strong year-classes.

Observer and voluntary logbook cpue data were analyzed from the 1990 to 1998 longline fishery. This analysis showed that survey and fishery trends from 1995 to 1998 were the same for all areas except West Yakutat where the survey data steadily declined while the fishery data increased in 1996 to 1997. These data were included in assessment model.

A Bayesian analysis was performed assuming a uniform prior for M, and a prior on log-q that was equivalent to a uniform prior exploitation rate. The resulting posterior distribution looked identical to the normalized likelihood, suggesting equilibrium catch out to 2008 is approximately 15,000 mt.

The SSC recommends that more informative priors than the uniform priors on M and Q be used.

Northern Rockfish

The SSC was shown an early draft of a new AD Model Builder stock assessment model for northern rockfish. Analysis so far shows inconsistencies between age data and length frequency data. Additional age data from the 1996 survey and beyond should help resolve this discrepancy. Despite this problem, the stock assessment scientists might want to consider using this model for the current stock assessment. The reason is that the 1999 biomass of northern rockfish came in quite high, and the Tier 4 ABC may be high. Using the new stock assessment model would use all of the best available information and moderate the 1999 biomass estimate. If this approach were to be used, the SSC recommends using the "alternative" model fit to the age data. Northern rockfish are thought to be easy to age, and the year-class strengths from this approach appears more realistic.

Other Species

Appendices B and C to the draft GOA SAFE continue to show progress in developing our understanding of the Other Species complex. These assessment documents relate closely to the proposed Amendments 63/63 to the Fishery Management Plans to Revise Management of Sharks and Skates. Under the Gulf of Alaska FMP, the TAC for the other species complex is set at 5% of the sum of TACs of managed species. If an alternative is selected to remove sharks and skates from the Other Species complex, any allowable catch will be taken from a complex of much reduced size. This is because approximately 60% of the Other Species biomass, as currently defined, is made up of sharks and skates.

D. New ABC/OFL Plan Amendment

The SSC supports the Plan Teams' recommendation that a new plan amendment be developed that includes consideration of a minimum SST (MSST), as proposed by NMFS, AMCC, and CMC. Grant Thompson presented the staff report and public testimony was provided by Joshua Sladek-Nowlis and Mariel Combs (CMC). The SSC notes (without specifically endorsing the recommendations contained therein) that the proposal by CMC was especially thoughtful and well-written.

History

The Council has continually evolved a TAC-setting process that has resulted in some of the most conservative ABC/OFL recommendations found in the world. The quantitative definition of OFL as a level that avoids jeopardizing the long-term sustainability of managed resources came into being in the early 1990s as a consequence of a NMFS (D.C.) initiative. Two subsequent revisions have been made to strengthen conservation recommendations and to respond to provisions of the Magnuson-Stevens Act. The policy most recently approved by the Council is a biomass-based policy wherein fishing mortality is reduced at low population levels below a specified target, separate definitions are given for target (ABC) and limit (OFL) catches, and tiers are set up to accommodate different levels of available information. In addition, the Council has always operated to always set TAC (the actual recommended catch) at or below the ABC level. The SSC noted last year that further consideration of improvements to ABC/OFL definitions would be desirable, including some that were first proposed during initial consideration of the Magnuson-Stevens changes.

Our current ABC/OFL definitions did not incorporate NMFS guidelines that called for a minimum stock size threshold (MSST) that would provide rebuilding within a fixed period of 10 years to an MSY biomass level

using a maximum fishing mortality threshold (MFMT) that is contained within a harvest control rule. The SSC rationale was that the biomass-based policy for ABC and OFL contained sufficient conservation measures to achieve the same goal without the additional complexity and liabilities (see below). The Council concurred with the SSC recommendation and NMFS eventually approved the definitions. Nevertheless, NMFS is requiring the same scientists who so ably work within the Council arena on stock assessments to also perform the status determination evaluation (required by the Magnuson-Stevens Act) using NMFS guidelines. This is creating a confusing, if not untenable, situation for NMFS scientists.

A Possible Solution

The SSC suggests that a subcommittee of about 3 SSC members (Quinn, Kimura, Hare, and/or Criddle) and 3 groundfish Plan Team members be formed to construct alternatives to current ABC/OFL specifications. The full Teams and SSC could then review these alternatives in November and December. This would lead to an amendment package that could be considered by the Council family in April and June, 2000.

The alternatives should be developed after consideration of the following issues:

- A. What are the pros and cons of incorporating an MSST into the groundfish FMPs? Should the MSST follow NMFS guidelines or be altered? Should the MSST be a performance indicator (of how close biomass is to a reference point) or explicitly incorporated into the decision rule? [Currently, there is an MSST for most species calculated by NMFS scientists that follows NMFS guidelines. It will be reported in the November SAFEs.]
- B. Can more precaution be built into Tiers with less information? [See Thompson's earlier work on OFL and the CMC proposal.]
- C. Should the default F's be changed? (e.g., the CMC proposal contains F50% instead of the current F40%.)
- D. Should the current OFLs be altered or dropped altogether? [The current OFLs are based on defining a "bad" fishing mortality to stay away from; the NMFS MFMT's are more like a target than an upper limit.] Is it necessary to define MFMT's as equivalent to OFLs or could maximum permissible ABC's or even TAC's be used instead?

Comments on the NMFS Guidelines

The NMFS Guidelines were set up to implement the stronger language in the Magnuson-Stevens Act regarding overfishing. The SSC has previously commented on the problems with these Guidelines and is discouraged that NMFS has not seen fit to revise these guidelines to cure the flaws previously identified and to allow consideration of alternative approaches that take advantage of modern science. Consequently, the SSC believes that strict adherence to the NMFS Guidelines is problematic for several reasons.

- A. Fish populations fluctuate widely due to a variety of reasons. One of the most important is recruitment fluctuations due to changes in the environment. Setting an MSST that balances conservation concerns with efficacious management is very difficult in these circumstances.

- B. Using $BMSY/2$ as the lower bound for the MSST is fairly arbitrary and is based on population dynamics concepts that are about 50 years old. The use of such a high value may be draconian in its effect and induce unnecessary management action in light of naturally fluctuating stocks.
- C. The use of a fixed 10 year period for evaluating rebuilding is also arbitrary. It also conveys the impression that we can predict where the population will be ten years hence and ignores where the population currently is in the definition of overfished.
- D. Uncertainty in stock projections is not explicitly considered and the notion of risk is ignored.
- E. The requirement to set an MSST that can “recover” to a target biomass while being fished at F_{OFL} is baffling. By definition, F_{OFL} is defined as a fishing rate which, if continued is likely to jeopardize a stock’s long-term productivity. This is clearly inconsistent with the National Guidelines that seem to expect this same fishing rate to also promote stock recovery.
- F. There is strong potential for public confusion concerning the term “overfished”. Stocks with wide natural swings in abundance will be classified as “overfished” with minor or no contribution from fishing. Under this definition, there are probably hundreds of species that were “overfished”; and these are species that went extinct long before humans walked the planet. No rebuilding plan, no matter how stringent, would have “rebuilt” these species. All of this is to say that the public’s expectation of rebuilding must be tempered with an understanding of ecological possibilities. Since these are often largely unknown, the SSC feels it is appropriate for primary conservation emphasis to be on avoiding overfishing.

The SSC notes that the Council chairmen have raised similar concerns about rebuilding periods and overfishing definitions at their June meeting and in their testimony on MSFCMA reauthorization.

D - 3 Crab Management

The SSC was guided through a review of the crab SAFE by Dave Witherell and Brad Stevens (NMFS). Public Testimony was given by Edward Poulsen, John Gauvin, and Arni Thompson.

The 1999 Crab SAFE is improved over past SAFE documents. The SAFE contains a summary section with information to evaluate stock status, an overview of abundance estimation methods, and rationale for establishing the 2000 GHF for snow crab.

The SSC was provided a brief overview of the *C. bairdi* rebuilding plan. The draft plan was revised to address comments by the SSC and AP. In particular, the revised plan provided projections of rebuilding, under the rebuilding alternatives.

The SSC briefly reviewed proposals to develop rebuilding plans for *C. opilio* and St. Matthew blue king crab, which fell below the MSST and are now declared overfished. Using the *C. bairdi* rebuilding plan as a model, draft plans will be developed and ready for public review by April, 2000. A stair-stepped harvest policy, bycatch controls, and habitat protection will be examined as possible plan components. The SSC notes that the scientific basis for the current exploitation rates for *C. opilio* is based on a yield per recruit strategy and needs to be re-evaluated in terms of more current information on growth, natural mortality, maturity, and molting probabilities.

It was pointed out in public testimony, that proposals for rationalizing the Bering Sea Crab fisheries such as IFQ or cooperative fishing arrangements, if implemented will result in significantly lower crab bycatch rates. These should be considered as potential alternatives in rebuilding plans.

It was also pointed out in public testimony that trawl-fishing groups were engaged in efforts to reduce their crab bycatch rates. These efforts were very successful and depended on continuing access to data on their respective vessel's catch and bycatches from the observer program. The groups expressed difficulties in obtaining the observer data on an individual vessel basis due to confidentiality restrictions. The SSC urges NMFS to develop means to release this data to trawl fishing groups that are engaged in voluntary efforts to reduce crab bycatches.

Halibut GHL Data Update and Analysis Design

The SSC heard a presentation from Alan Bingham and Rob Bentz (ADF&G) on the statewide harvest survey and saltwater sportfish charter logbook program. Council staff provided a discussion paper that describes an outline for analysis. Public testimony was provided by Doug Ogden (AP member representing sportfishing), Gerry Merrigan (Petersburg Vessel Owners Association), and Robert Johnston (University of Rhode Island for Halibut Coalition).

The ADF&G statewide harvest survey is a self-administered annual mail-out survey of households with licensed anglers. The survey has been administered annually since the late 1970's. The survey is distributed to 45-50,000 households out of the 250,000 household population. The survey is stratified by residency (Alaskan, other US, Canadian, and other foreign). Although the response rate has declined over time, it has stabilized at about 40%. Estimates are usually available in June of the following year. Standard errors of these estimates are derived using bootstrap methods.

The charter logbook survey was initiated in 1998. The first-year results closely correspond with results from the statewide harvest survey. However, the logbook survey produced higher estimates of effort and harvest than corresponding creel census estimates. Although reporting is mandatory and data are to be submitted weekly, the delinquency rate has been about 10%. It is anticipated that the annual estimates can be available by February or March of the ensuing year. Although ADF&G does not have resources for inputting or verifying the logbook data for use in management, this information could be made available on a near real-time basis through additional funding to ADF&G..

The analysts have been responsive to concerns and recommendations expressed in the February 1998 SSC minutes. The current analytic plan seems appropriate given time and data constraints. However, the SSC is concerned that lack of in-season management measures may limit the ability of managers to constrain harvests in this fishery. Moreover, the SSC notes that even in the unlikely event that an initial allocation between charter and commercial operations is optimal, changes in exvessel price, factor costs, willingness to pay for charter trips, etc. will render that allocation suboptimal in subsequent periods. One mechanism that would allow the allocation to self-correct is an IFQ. While this is not an option defined by the Council, it is an option that deserves consideration.

Some additional areas for clarification:

Page 2, items 2 and 4: The last sentences of these two items appear to be confusing, *until* I reached the statement at the end of paragraph 2, page 3: "*Remember that in-season adjustments of quota are not possible*

under the IFQ program.” My suggestion would be to point out near the front that one has a different set of management implications for halibut than, say, for groundfish because (a) the data on halibut sport removals are not available in-season; and (b) the pre-season determination of commercial catch in a year cannot be altered due to the IFQ program.

Page 3, second paragraph: *“The GHL becomes constraining on the commercial sector only when the charter removals reach or exceed the GHL.”* This statement is not quite right: in a fully-subscribed fishery, all levels of GHL are constraining on the commercial fishery if the commercial fishery could otherwise harvest all of the TAC.

SSC Concern 4, page 9: One important element of the concern was comparability in the regional impact models for sport and commercial; my recollection is that, at least initially, one sector’s model predicted state impacts and the other predicted national impacts. This made them effectively non-comparable.