

**SUMMARY MINUTES**  
**Scientific and Statistical Committee**

Pacific Fishery Management Council  
Red Lion Hotel Sacramento  
Comstock 1  
1401 Arden Way  
Sacramento, CA 95815  
(916) 922-8041  
April 2-3, 2001

**Call to Order**

The meeting was called to order at 8 A.M. by Chair Cynthia Thomson. Dr. Donald Mclsaac, Executive Director, provided opening comments and discussed the priority of items on the Scientific and Statistical Committee (SSC) agenda. The most important items include: F.7, F.6, C.1, E.2, and B.3; items of secondary importance include: B.2, E.3, and F.2.

The SSC and Dr. Mclsaac discussed the briefing book materials relevant to Marine Reserves. The SSC was curious what the Council was looking for in terms of SSC review, i.e., review of the science in the briefing material or a deeper review of the marine reserve options presented in the briefing material. Issues such as how would fisheries be regulated and how would jurisdiction be coordinated were also of interest to the SSC. Dr. Mclsaac noted that these issues were also of great interest to the Council and any advice the SSC could offer would be appreciated. As to the focus of the SSC review, Dr. Mclsaac noted that this should be limited to the information in the briefing material. That is, the SSC review should focus on the information provided, but SSC comments on larger issues would also be helpful. If the SSC finds flaws in the material presented (especially attachments 2 and 3), feedback should be provided to the presenters and guidance provided to the Council.

After minor changes to work assignments, the agenda was approved.

**Members in Attendance**

Dr. Brian Allee, Columbia Basin Fish and Wildlife Authority, Portland, OR  
Mr. Alan Byrne, Idaho Department of Fish and Game, Nampa, ID  
Mr. Robert Conrad, Northwest Indian Fisheries Commission, Olympia, WA  
Dr. Ramon Conser, National Marine Fisheries Service, La Jolla, CA  
Dr. Michael Dalton, California State University, Monterey Bay, CA  
Dr. Robert Francis, University of Washington, Seattle, WA  
Dr. Kevin Hill, California Department of Fish and Game, La Jolla, CA  
Mr. Tom Jagielo, Washington Department of Fish and Wildlife, Olympia, WA  
Dr. Peter Lawson, National Marine Fisheries Service, Newport, OR  
Dr. Andre Punt, University of Washington, Seattle, WA  
Dr. Stephen Ralston, National Marine Fisheries Service, Santa Cruz, CA  
Ms. Cynthia Thomson, National Marine Fisheries Service, Santa Cruz, CA  
Dr. Shijie Zhou, Oregon Department of Fish and Wildlife, Portland, OR

**Members Absent**

Dr. Gary Stauffer, National Marine Fisheries Service, Seattle, WA

**SSC Administrative Matters**

The SSC reviewed subcommittee assignments decided on at the March 2001 meeting. Dr. Punt was added to two subcommittees: groundfish and highly migratory species. Mr. Conrad was added to the highly migratory species subcommittee. Assignments are as follows:

Salmon	Groundfish	Coastal Pelagic Species	Highly Migratory Species	Economic
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Brian Allee	Ray Conser	Michael Dalton	Alan Byrne	<b>Mike Dalton, Chair</b>
Alan Byrne	Michael Dalton	Ray Conser	Robert Conrad	Cynthia Thomson
Robert Conrad	Tom Jagielo	<b>Robert Francis, Chair</b>	Ray Conser	
Kevin Hill	Andre Punt	Tom Jagielo	<b>Kevin Hill, Chair</b>	
<b>Pete Lawson, Chair</b>	<b>Steve Ralston, Chair</b>	Steve Ralston	Andre Punt	
Shijie Zhou	Gary Stauffer	Gary Stauffer	Cindy Thomson	
	Robert Francis			

## Scientific and Statistical Committee Comments to the Council

The following text contains SSC comments to the Council.

### Salmon

#### Identification of Stocks not Meeting Escapement Goals for Three Consecutive Years

The Salmon Technical Team (STT) reviewed the chinook and coho natural spawner escapement estimates for the Scientific and Statistical Committee (SSC). Most stocks met their escapement goals in 2000 and most are predicted to achieve their goals in 2001.

Three stocks: upper Columbia River summer chinook, Grays Harbor fall chinook, and Queets River spring/summer chinook did not achieve their escapement goals in each of the past three years. Exploitation rates of Council managed fisheries on these stocks were less than 5% in the base period. Hence these stocks are exceptions under the overfishing criterion of Amendment 14.

The Queets River coho stock failed to meet its escapement objective from 1997 to 1999, but exceeded the escapement goal in 2000. This stock is predicted to meet the escapement goal this year. The STT is conducting an overfishing review of this stock. A draft of their assessment will be available in September 2001.

#### Methodology Reviews for 2001

There are three major salmon methodology projects that, if completed, will require Council review prior to their use in the season setting process for salmon in 2002.

- The Scientific and Statistical Committee (SSC) received an update on the status of the development of the new Klamath Ocean Harvest Model (KOHM). We encourage the completion of this project so it can be reviewed by the SSC prior to the November 2001 Council meeting.
- The coho cohort analysis project is designed to produce a new data base for harvest modeling of coho salmon. The SSC expected a final review of this project in 2000, but progress has been slower than anticipated. The SSC encourages the completion of this project as it will be an important component for any update to the coho FRAM.
- The chinook FRAM is currently being modified so that selective fisheries for chinook salmon can be modeled. This will result in major changes to the model and will require a detailed review by the SSC when completed.

The SSC recognizes the need for salmon forecast methodology reviews, but acknowledges that these have lower priorities in comparison to the projects described above.

The SSC requires good documentation and ample review time to make the most efficient use of the SSC Salmon Subcommittee's time. As per Council Operating Procedures (Council Operating Procedure Number 15, Salmon Estimation Methodology Updates and Review), agencies should be responsible for ensuring materials submitted to the SSC are technically sound, comprehensive, clearly documented, and identified by author. Documents should receive internal agency review before being submitted to the Council. To provide adequate review time, materials must be received at the Council office at least three weeks prior to the scheduled review meetings. The SSC will need to review any proposed changes to

salmon methodologies for the year 2002 at the November 2001 Council meeting.

## **Marine Reserves**

### Channel Islands National Marine Sanctuary Program

The Scientific and Statistical Committee (SSC) heard a presentation of the process to establish marine reserves in the Channel Islands National Marine Sanctuary (CINMS). The process described seems to be well designed, with guidance from scientists who are experts in their fields. Recommendations are scheduled to be forwarded to the Sanctuary Advisory Committee in May, the Channel Islands National Marine Sanctuary and California Department of Fish and Game in June, and agencies including the Council, National Oceanic and Atmospheric Administration, and the California Fish and Game Commission in the Fall of 2001.

The Council is currently exploring the possibility of establishing marine reserves. Reserves established under the Channel Islands Marine Reserves Process (CIMRP) are likely to be the first substantial reserves to be incorporated under Council management.

Much of the SSC discussion focused on the role of the Council in this process. Given the advanced state of design, negotiation, and consensus building in the marine reserves process it would be difficult for the SSC or the Council to provide much substantive input for the immediate proposal. The CIMRP presenters indicated their interest in coordinating marine reserve proposals with existing management systems that have been implemented by the Council. There is a critical need to evaluate the interaction of closed areas with existing controls. The SSC can review the products of the science and socio-economics panels to verify that their work represents sound science, keeping in mind that the science and economics of marine reserve design is a young field with much uncertainty. The Council must be present during future stages of reserve design to ensure effective integration of reserve design with fishery management.

The Council, upon determining that it supports the recommendations coming out of the process, can work to modify fishery management plans (FMPs) and other Council documents and procedures to enable implementation of the plan. Accomplishing these tasks may take one or two years and constitute a significant work load for the Council.

Following are brief notes on some observations and concerns.

- The Council has jurisdiction only over species with FMPs. Protection for other species will need to come from other authorities.
- Management of the reserves will likely require amendments to all of the Council's FMPs (Coastal Pelagic Species, Groundfish, Salmon). It will take time once reserves are designed to modify FMPs and regulations to accommodate reserves. This also provides opportunity for baseline monitoring of reserves.
- The CIMRP science panel recommended a reserve size of 30-50% of the area in their jurisdiction. They indicated that regulations prohibiting catch would be required in the reserve and that effort outside the reserve would require additional controls. The SSC requests documentation regarding the basis for the recommendations for reserve size, siting and effort control.
- Two of the goals of the process are to (1) maintain fisheries benefits and (2) maintain long-term socio-economic viability while minimizing short-term losses. The SSC requests documentation of the cost-benefit analysis relative to these goals.
- Enforcement requirements depend on the areas designated. The CIMRP science panel recommends a network of reserves ranging in size from 10 to 100 square kilometers. This recommendation will need to be reconciled with enforcement considerations: enforcement may or may not be easier with fewer, larger reserve areas.
- Performance criteria based on appropriate monitoring programs have to be identified to maximize information gain from the reserve system and to evaluate its effectiveness. The presenters acknowledged that this has not yet been done, and solicited suggestions.

## Coastal Pelagic Species

### Review Capacity Goal and Related Issues

Drs. Kevin Hill and Sam Herrick of the Coastal Pelagic Species Management Team (CPSMT) briefed the Scientific and Statistical Committee (SSC) on fleet profile, capacity goal and permit transferability options for the coastal pelagic species (CPS) finfish limited entry fishery. The window period for CPS permit transferability closed December 31, 2000. The current fleet consists of 65 vessels.

The CPSMT considered a number of alternative capacity goals (1) long-term, expected average allowable harvest of 108,306 mt, with physical capacity to harvest peak period landings of 273,507 mt, (2) average total finfish landings during 1981-2000 of 57,676 mt, (3) long-term expected average allowable harvest of 108,306 mt, and (4) fixed fleet of 65 vessels with no capacity goal.

In order to determine the number of vessels needed to achieve capacity goal options 1-3, it was necessary to estimate capacity per vessel. The CPSMT considered two alternative approaches to such estimation (1) an approach based on Data Envelopment Analysis (DEA) and (2) an approach based on observed historical behavior of the fleet. Using both these approaches, the CPSMT provided estimates of "physical" and "normal" capacity, with physical capacity being a measure of hold capacity and normal capacity being the amount of capacity used under average stock abundance and market conditions.

The DEA approach (Table 3, p. 11) involves estimation of a technically efficient production frontier and the assumption that all vessels in the fleet are capable of performing at the frontier. This approach assumes a homogeneous fleet; for instance, it does not consider variations in performance among vessels due to differences in skill among skippers and crews. Moreover, for most of the fleet, the frontier exceeds even their maximum historical harvest. For these reasons, the SSC considers this approach to greatly overestimate fleet capacity.

The second approach (Appendix Table 3, p. 22) is based on the assumption that each vessel is capable of consistently replicating its own peak performance in terms of the maximum landings per trip and the maximum number of trips per year during 1981-2000. Although this approach provides a more realistic estimate of each vessel's capacity than DEA, it likely overestimates the extent to which such capacity is likely to be utilized in the pursuit of CPS finfish.

The CPS finfish fishery possesses a number of unique characteristics that make it difficult to estimate capacity in a realistic way. CPS finfish landings typically fall well below allowable harvest levels, for reasons that are largely market driven. The fleet is highly diversified and typically targets low-priced CPS finfish only when higher-priced alternatives such as squid or tuna are not available. The few vessels that are CPS finfish specialists tend to make very modest landings. Moreover, it is customary for vessels to avoid filling their hold on CPS finfish trips, due not only to processor limits but also the desire to avoid compromising the marketability of their catch. Thus, while the fleet is certainly capable of CPS finfish landings that exceed its normal capacity, it is unlikely to harvest its physical capacity.

According to Appendix Table 3 (p. 22), the normal capacity estimates associated with option 1 (65 boats) and option 2-A (41 boats) are very similar to each other, as are the physical capacity estimates. These results are not surprising, given the lack of incentive for the fleet to maximize its CPS finfish harvests. Although the physical capacity estimates likely exceed the amount of capacity likely to be utilized even under optimal stock abundance and market conditions, they are sufficiently high to suggest that the number of vessels allowed under both options 1 and 2-A would be capable of harvesting the long term expected allowable harvest (capacity goal option 3 - 108,306 mt) and perhaps even peak amounts of CPS finfish that might be available on an occasional basis (capacity goal option 1 - 273,507 mt).

While fleet size options 1 and 2-A are not distinguishable on the basis of capacity, it is possible to distinguish between these options by considering how they interact with the vessel profile options. Of the 65 CPS finfish limited entry boats, 55 also hold squid permits. Vessel profile option 1, which is to maintain a diverse CPS finfish fleet that also relies on other fishing opportunities, reflects the manner in which this fleet has historically operated. Fleet size option 1 (65 boats) is consistent with vessel profile option 1. Fleet size option 2-A (41 boats) is also consistent with fleet profile option 1, at least for the 41 CPS finfish permit holders who maintain their diversity of opportunities by holding onto their CPS finfish permits. However, option 2-A may significantly reduce the diversity of opportunities for vessels that give up their

CPS finfish permit and makes them economically vulnerable in years of low squid and tuna availability. Option 2-A is also potentially disruptive of a long-standing pattern of behavior by fishery participants.

The SSC agrees with the CPSMT's recommendation that permit transfers be allowed in the CPS finfish limited entry fishery so long as fleet capacity does not exceed recommended levels. The SSC also supports the CPSMT's recommendation that transferability provisions be re-evaluated should the fleet's gross registered tonnage change by 5%.

#### Update on Squid Maximum Sustainable Yield Methodologies Workshop

The Department of Commerce rejected portions of Amendment 8 to the Coastal Pelagic Species Fishery Management Plan (CPS FMP) on the grounds that the amendment did not include an estimate of maximum sustainable yield (MSY) for squid. In September 2000, the Scientific and Statistical Committee (SSC) reviewed newly derived estimates of squid MSY. Because of the uncertainties surrounding these estimates and more generally, ongoing concern regarding the appropriateness of defining MSY for this species, the SSC did not recommend an MSY value. Fortunately, recent research conducted on squid life history (including growth, maturity, and fecundity) along with augmented fishery-dependent data (port sampling and logbooks) have provided significant new information and data. The SSC recommended (and the Council concurred) that the SSC work with the National Marine Fisheries Service (NMFS) and California Department of Fish and Game (CDFG) to organize a stock assessment review (STAR) panel during 2001 to integrate the ongoing squid research in California into the Council's CPS FMP. Terms of reference for the STAR panel were meant to address the MSY issue as well as candidate control rules for practical squid management.

The STAR Panel will convene during May 14-17, 2001 (3.5 days) at the Southwest Fisheries Science Center, La Jolla, California. The Panel will include representatives of the SSC, CDFG, NMFS, CPSMT, CPSAS, and two outside reviewers. Tentative panel members are:

SSC:	Tom Jagielo (Co-Chair)
SSC:	Ray Conser (Co-Chair)
SSC:	Cindy Thomson
CDFG:	Tom Barnes
CPSMT:	Paul Smith
CPSAS:	Heather Munro
Outside Reviewer:	Johann Augustyn (Marine and Coastal Management Institute - South Africa)
Outside Reviewer:	Larry Jacobson (NMFS - Woods Hole)

Approximately ten working papers are in preparation for the review, and will be distributed to the STAR Panel by May 1, 2001. All working paper authors will present their paper(s) to the STAR Panel and will be available throughout the week to consult with the panel, provide additional information & data, and to carry out additional analyses, if needed. A draft STAR Panel report will be available for distribution with the briefing book prior to the June Council meeting.

Terms of reference for the Squid STAR Panel are:

1. Review recent findings on the biology and life history of market squid, including the assessment-related aspects of age and growth, maturity, fecundity, spawning behavior, longevity, habitat, and environment.
2. Review newly developed fisheries-related data, including catch history, effort data, and port sampling protocols as they relate to estimation of key biological, population parameters.
3. Review all aspects of MSY estimation, as required by the Magnuson-Stevens Fishery Conservation and Management Act for all FMPs, and address the concept of MSY as it relates to a species that is short-lived and whose abundance/availability is largely environmentally determined.
4. Consider management measures for market squid, including operationally-practical control rules, long-term monitoring programs, and in-season adjustment mechanisms.
5. Prepare a report for the Council SSC detailing the findings of the review, practical management recommendations, and the key research and data needs.

## **Groundfish**

### Groundfish Strategic Plan Implementation

The Scientific and Statistical Committee (SSC) discussed progress made by the Ad Hoc Groundfish Strategic Plan Implementation Oversight Committee (SPOC) to move forward with strategic plan implementation. Initiatives to achieve capacity reduction are first on the recommended list of priorities, which include buyback and trawl permit stacking. The SSC supports timely action to reduce capacity in the groundfish fishery and the SPOC recommendation that work on trawl permit stacking should go forward promptly if full funding for the buyback program cannot be identified by June. The Council will need to consider the substantial workload issues that moving forward with trawl permit stacking will entail.

Marine reserves were also identified as a relatively high priority item. The SPOC recommended (1) continuing with phase 2 to establish an implementation team to develop a full proposal and (2) developing a summary of “who is doing what, so the Council can figure out where to plug in.” The SSC supports these two recommendations, which will help to coordinate the Council’s interaction with outside entities involved in the marine reserve development process (e.g., the Channel Islands National Marine Sanctuary) and also will facilitate consideration of how marine reserves will interact with existing Council management processes.

### Future Groundfish Management Process and Schedule

The Scientific and Statistical Committee (SSC) discussed the groundfish management process and schedule for the upcoming year. In recent years, the Council’s groundfish process has become increasingly more complex with each management cycle. Growing demands on the system coupled with inherently difficult management decisions have taxed all elements of the Council family. Completion of advisory committee documents and analyses – needed to support Council decision making – is often delayed until late in the calendar year, leaving little time for reflection and discussion.

The Council has established an Ad Hoc Groundfish Management Process Review Committee (GMPC) to address these issues. The GMPC has met twice and developed several ideas to investigate alternatives. Dr. Don McIsaac presented the draft report of the GMPC (Exhibit F.6.b) to the SSC.

While the SSC fully appreciates the multifaceted problems facing the groundfish management process, the SSC is best suited to address the stock assessment review (STAR) elements of the overall process. The STAR process was developed after long and involved negotiations among the Council’s groundfish entities, the SSC, and NMFS to resolve the problem of providing independent and comprehensive review of stock assessments. This has been a resource and time-consuming process, and the challenge has always been to complete the process sufficiently early within the annual groundfish cycle (including assessment documents and STAR Panel reports) to allow for full Council deliberation without sacrificing

the quality and reliability of the stock assessments. The SSC is concerned that some of the options for changing the groundfish management process – as outlined in the draft GMPC report – may result in the inability to use the most recent data in stock assessments. More specifically, modification of the present “2-meeting” sequence to either the “3-meeting” or “4-meeting” sequences considered in the draft GMPC report (p.3), will reduce the time available for stock assessment and review, with concomitant reduction in quality of the products. If the status quo “2-meeting” sequence is to be modified, the SSC prefers the “3-meeting” sequence (June, September, and November).

With respect to the other possible changes delineated in the draft GMPC report, the SSC sees both pros and cons for most of these changes. Implementing multi-year management, for example, would have the undesirable effect of generally increasing the lag between stock assessments and the consequent implementation of management actions. However if properly structured, multi-year management could offer the benefits of an “off-year” for assessment and review during which assessment scientists and the SSC could work on development of assessment methods and computer software that should, over time, lead to a more state-of-the-art, efficient, and productive process. As such, the SSC recommends that if a change is made to multi-year management, the stock assessments and reviews should be done on same cycle as Council management, e.g., if the Council changes to a 2-year cycle (Table 6 of the draft GMPC report), groundfish stock assessment and review should be conducted every other year with the “off-year” dedicated to improving assessment methods and software, organizing special workshops (e.g., marine reserves), bio-economic studies (e.g., capacity reduction), etc. The Council should also be aware that a transition period is likely to be necessary if a 2-year cycle is adopted. While certain efficiencies will accrue over time leading to more stock assessments per year, it will not be practical in the short term to double the number of assessments done in the “on-years.”

Finally, the “science barrier” or “wall of science” (as depicted in Table 6 of the draft GMPC report) has been the basis of the SSC’s groundfish STAR process development. In practice, the barrier has worked better in some years than others, but the SSC remains steadfast in supporting the concept of a science barrier in order to ensure that Council decisions have a solid scientific foundation.

## Rebuilding Plan Status Report

### Terms of Reference for Groundfish Rebuilding Analyses

At the March 2001 meeting, the Scientific and Statistical Committee (SSC) completed the 3rd draft of the Terms of Reference for Groundfish Rebuilding Analyses, which was circulated to members of the Groundfish Management Team, Groundfish Advisory Subpanel, and other Council entities over the last month. The Terms of Reference was also distributed to 19 West Coast groundfish stock analysts for comment. The SSC reviewed all comments that were received and revised the Terms of Reference accordingly (4th draft).

### Widow Rockfish

The SSC reviewed the most recent rebuilding analysis for widow rockfish (Exhibit F.7, Attachment 6). The Council should note that this analysis differs from the rebuilding analysis in the 2000 widow stock assessment (Williams et al. 2000) in which recruitment values for the stock projections were erroneously twice what they should have been. As a result, the rebuilding calculations in the current report present a more realistic view of the future.

The SSC would like to highlight the following points about the new analysis:

- $T_{max}$  (time to rebuild under no fishing) is estimated to be 34 years under the default option for stock projection.
- Rebuilding projections are made by incorporating observed catches through the year 2000 and the 2,300 mt optimum yield (OY) for 2001.
- If the Council follows the pattern of selecting a harvest rate which gives a 60% probability of

rebuilding to  $B_{40\%}$  by  $T_{max}$ , then  $OY_{2002} = 944$  mt.

- If rebuilding takes place on schedule, then indications are that the rebuilt stock will be able to sustain an annual harvest of about 3,900 mt. This corresponds to a fishing mortality rate that is less than  $F_{50\%}$ .

#### Canary Rockfish

The SSC received the new canary rockfish rebuilding plan in its supplemental briefing materials but, due to its length and late arrival, was unable to provide a comprehensive review at this meeting. However, the rebuilding analysis that is included in the plan is apparently unchanged from that already endorsed by the SSC. The SSC groundfish subcommittee will review the document and will provide Council staff with whatever comments the subcommittee has in the near future.

#### **Public Comment**

There was no formal public comment.

#### **Adjournment**

The SSC adjourned at approximately 4:00 P.M., Tuesday, April 3, 2001.

PFMC  
04/20/2001