SUMMARY MINUTES
Scientific and Statistical Committee

Pacific Fishery Management Council
DoubleTree Hotel - Columbia River
Deschutes Room
1401 N Hayden Island Drive
Portland, OR 97217
(503) 283-2111
April 8-9, 2002

Call to Order

The meeting was called to order at 8 A.M. by Chair Tom Jagielo.

After discussing the need to be flexible on the timing of certain items, the SSC approved the agenda.

After corrections to the table of subcommittee assignments, the March 2002 meeting summary was approved.

Members in Attendance

Dr. Brian Allee, Northwest Power Planning Council, Portland, OR
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. 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. Stephen Ralston, National Marine Fisheries Service, Santa Cruz, CA
Dr. Andre' Punt, University of Washington, Seattle, WA
Dr. Gary Stauffer, National Marine Fisheries Service, Seattle, WA
Ms. Cynthia Thomson, National Marine Fisheries Service, Santa Cruz, CA
Dr. Shijie Zhou, Oregon Department of Fish and Wildlife, Portland, OR

Members Absent

Mr. Alan Byrne, Idaho Department of Fish and Game, Nampa, ID
Dr. Robert Francis, University of Washington, Seattle, WA

Open Discussion

SSC Administrative Matters

Scientific and Statistical Committee Comments to the Council

The following text contains SSC comments to the Council. (Related SSC discussion not included in written reports to the Council is provided in italicized text).

Salmon

Identification of Stocks Not Meeting Escapement Goals for Three Consecutive Years (Agenda B.2)

Mr. Dell Simmons from the Salmon Technical Team (STT) reviewed the chinook and coho natural spawner escapement estimates for the SSC. Most stocks met their escapement goals in 2001 and most are predicted to achieve their goals in 2002.

The following three stocks did not achieve their escapement goals in each of the past three years:

Upper Columbia River Summer Chinook
Grays Harbor Fall Chinook
Queets River Spring/Summer Chinook

Exploitation rates of Council managed fisheries on these stocks were less than 5% in the base period. Therefore, these stocks are exceptions under the overfishing criterion of Amendment 14.

Although these stocks are considered exceptions under Amendment 14, the SSC is concerned that these stocks have failed to meet their stated goals. The SSC recommends the cause for these failures be documented and reported by the co-managers to the Council.

Methodology Review Process for 2002 (Agenda B.3)

The SSC met with Mr. Dell Simmons of the STT to identify and prioritize potential methodology review issues for 2002. Mr. Simmons presented a list of eight items which the STT is scoping for possible review:

1. Klamath Ocean Harvest Model (KOHM) Effort Estimates for Ft. Bragg Area: A review of the KOHM effort submodel is needed to examine commercial fishing effort estimates, which are apparently high and unrealistic for the Ft. Bragg cell. The SSC will not have time to address this matter for the current management season, but will place priority on reviewing the problem during 2002.

2. Coho Impact Model (CIM) for California: Coho encounters modeled for California are not scaled to Oregon Production Index coho abundance as they are for fisheries north of the Klamath Management Zone.

3. Oregon Coastal Natural (OCN) Coho Prediction Methodology: The OCN coho prediction methodology has performed poorly in the past several years. The SSC views this item as important, but not one which may be easily addressed in short order. OCN predictor modifications should not take priority over other more pressing matters.

4. Oregon Department of Fish and Wildlife (ODFW) Management Plan for Lower Columbia River Coho: ODFW is developing a fishery management plan for Lower Columbia River (LCR) coho and has requested SSC review of the document. ODFW's LCR Recovery Plan includes an exploitation rate matrix which may constrain Council-managed ocean fisheries. The SSC will review the plan, including the exploitation rate matrix, when materials are made available.

5. Fishery Regulation Assessment Model (FRAM) Models for Mark-Selective Fisheries: The chinook FRAM has reportedly been modified by Mr. Jim Packer to accommodate mark-selective fisheries using methodologies similar to that of the coho FRAM. In addition to modeling harvest impacts, effects of mark-selective fisheries on the coast-wide coded-wire tag database are of concern. The SSC places high priority on this review.

6. Columbia River Fall Chinook Abundance Predictors: The current Columbia River fall chinook predictor is based on inriver run size. A more useful predictor for the purpose of fishery modeling would account for ocean abundance. The SSC will review an ocean abundance predictor for these stocks if the appropriate material is provided.

7. Coho FRAM Terminal Fisheries: The coho FRAM may need to be revised in the way it handles terminal fisheries in the final time step.

8. Protocol for Boundary Changes: The STT raised a concern that there is no standard methodology for evaluating impacts of changing management boundaries for salmon stocks. At this point, it is unclear whether this is a technical issue for further consideration by the SSC.

In March 2002, the SSC recommended formation of Model Evaluation Subgroups for both the coho and chinook FRAM models. The Model Evaluation Subgroups would serve to increase the number of people who understand the models, validate and document the current models, review changes to the models,

conduct postseason evaluations, conduct sensitivity analyses to model inputs, and implement methods to quantify uncertainty of model predictions. For example, the subgroups could serve to address FRAM models for mark selective fisheries (Item 5) and coho FRAM terminal fisheries (Item 7) for the 2002 review.

The SSC requires good documentation and ample review time to make efficient use of the SSC Salmon Subcommittee's time. Agencies should be responsible for ensuring materials submitted to the SSC are technically sound, comprehensive, clearly documented, and identified by author. Materials must be received at the Council office at least three weeks prior to the review meetings, which are tentatively scheduled for October 2002.

Marine Reserves

Review Process for Channel Islands National Marine Sanctuary and
Update on Other Marine Reserves Processes (Agenda D.1)

Mr. Jim Seger briefed the SSC on the current status of marine reserves at the Channel Islands National Marine Sanctuary. The State of California is developing a California Environmental Quality Act (CEQA) document and is requesting that the Council form a committee to review the document. The committee, consisting of Council members and members of Council advisory committees (including the SSC), would meet on April 29 and perhaps again in May. The exact charge of the committee is not yet defined.

If the purpose of the proposed review committee is to evaluate the scientific content of the CEQA document, the SSC requests that its Marine Reserves Subcommittee have the opportunity to conduct a full review of the document. If the Council agrees with this suggestion, the SSC requests it be provided with state guidelines for how such documents should be reviewed. Given the Council's public meeting requirements and the expected length of the CEQA document, the SSC notes that a technical review would take significant time to complete and could not be accomplished by April 29.

If the purpose of the review committee is to determine consistency with the Magnuson-Stevens Fishery Conservation and Management Act and with Council fishery management plans, the SSC suggests that one of its members attend to observe the review committee's April 29 meeting and report back to the SSC. Scheduling conflicts with other meetings will make it impossible for the SSC economists and most of the SSC groundfish biologists to participate in the April 29 meeting. However, the SSC would ensure that at least one of its members would be available to participate.

The SSC understands it is the state's prerogative to make decisions about marine reserves in state waters, and the CEQA document may not be fully reviewed in the Council process. However, it is important to note that Council consideration of the CEQA document is not a substitute for full review of the National Environmental Policy Act analysis regarding effects of reserves in federal waters once that becomes available.

Groundfish

Groundfish Fishery Management Plan Environmental Impact Statements (Agenda E.6)

The SSC was briefed by Mr. Jim Glock and Mr. Steve Copps, who provided an update on progress towards completing the groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS) and the Essential Fish Habitat Environmental Impact Statement (EFH EIS). While there will be significant overlap between the two documents, they have been placed on separate completion schedules because of legal considerations. A range of PSEIS alternatives for analysis is expected to be available at the June Council meeting. At this time, however, there were no specific issues for the SSC to consider.

The PSEIS will establish the basic policies, goals, and objectives of groundfish management into the future and, as a consequence, the recently completed Groundfish Strategic Plan should prove useful in developing the range of options, as well as selecting a preferred option from the range of alternatives analyzed. While the PSEIS will not alter the fishery management plan, a subsequent amendment may redefine the goals of groundfish management, consistent with the groundfish strategic plan.

Rebuilding Plans (Agenda E.7)

Mr. John DeVore briefed the SSC on the planning and progress toward rebuilding amendments to the groundfish fishery management plan (FMP). The expectation is that rebuilding plans for cowcod, darkblotched rockfish, lingcod, Pacific ocean perch, and widow rockfish will be incorporated in the first rebuilding FMP amendment scheduled for Council adoption in September 2002. A second rebuilding amendment – scheduled for Council adoption in November 2002 – will include bocaccio, canary, and yelloweye rockfish.

As highlighted in the SSC's March 2002 statement, the Council should expect numeric details of rebuilding plans (e.g., B_{MSY} in metric tons) to change over time – whether due to improved estimates of these parameters from updated stock assessments or due to technical errors that were not caught in the previous stock assessment review. The use of hard numbers in the rebuilding amendment should be minimized in order to avoid the need to repeatedly amend the FMP with each stock assessment cycle. Instead, formulae and algorithms should be specified whenever possible (e.g., $B_{MSY} = 0.4\ B_0$), and Stock Assessment Team (STAT) teams should be asked to identify and explore assessment models that will be more robust with respect to the numeric values that do need to be specified. The terms of reference for STAT teams and Stock Assessment Review Panels should be modified accordingly.

Further, it is important to distinguish between the biological and policy parameters that collectively govern the rebuilding process. Virgin biomass(B_0), biomass target for rebuilding (B_{MSY}), and minimum rebuilding time (T_{min}) are examples of biological parameters; while the target rebuilding time (T_{target}) and the probability of achieving the rebuilding goal (B_{MSY}) within T_{target} years are examples of policy parameters. While it should be possible to specify numerically some or all of the policy parameters, only the formulae and algorithms for biological parameters should be specified in FMP amendments.

Groundfish Stock Assessment Review Process (Agenda E.8)

The SSC and Dr. Rick Methot, Northwest Fisheries Science Center, discussed (1) the groundfish Stock Assessment Review (STAR) process for 2001 and 2002, (2) the Terms of Reference for Expedited Stock Assessment Updates to be used in 2002, and (3) the possibility of a future workshop to address issues related to the uncertainty of estimating initial stock abundance and rebuilding parameters.

1. STAR Process in 2001 and 2002

Typically, the STAR process is reviewed at the November Council meeting of each year. However, that review did not take place in 2001, and instead an informal review was conducted by way of a phone conference in December 2001. The phone conference included some SSC participation, but the SSC never formally approved the review. Consequently, stock assessment teams used the draft Terms of Reference during 2001 and 2002. Ideally, the assignment of STAR panels, scheduling of reviews, and all other related procedural matters for the following year should be made available by the November Council meeting.

2. Terms of Reference for Expedited Stock Assessment Updates

A final version of the draft Terms of Reference for Expedited Stock Assessment Updates (revised version of Exhibit E.8.c) has been approved by the SSC and is ready for Council review. More generally, the SSC suggests that consideration for expedited review be a formal part of the STAR planning process. The timeframe for expedited review of sablefish for this year will be limited. The SSC Groundfish Subcommittee expects to receive the draft sablefish assessment on May 1, have a conference call on May 6, and complete work by May 10th. This sequence of events will allow the expedited review to be available to the Groundfish Management Team (GMT) in time for their meeting on May 13. The phone conference schedule will likely need to be published in the *Federal Register* twenty-three working days prior to the conference call.

3. Workshop on Stock Abundance and Rebuilding Parameters

Dr. Methot informed the SSC about ongoing national (and international) efforts to define overfishing and characterize stocks in an overfished condition. The set of issues involved is complex and much broader than West Coast groundfish. The SSC agrees that such a formal workshop for Council staff and advisors is worthwhile. The SSC recommends the decision to proceed with this workshop be revisited in November 2002.

Terms of Reference for Expedited Stock Assessment Updates

While the ordinary STAR process is designed to provide a general framework for obtaining a comprehensive, independent review of a stock assessment, in other situations a less rigorous review of assessment results is desirable. This is especially true in situations where a "model" has already been critically examined and the objective is to simply update the model by incorporating the most recent data. In this context a model refers not only to the population dynamics model per se, but to the particular data sources that are used as inputs to the model, the statistical framework for fitting the data, and the analytical treatment of model outputs used in providing management advice, including reference points, the allowable biological catch (ABC) and optimum yield (OY). When this type of situation occurs, it is an inefficient use of scarce personnel resources to assemble a 6 person panel for a whole week to evaluate an accepted modeling framework. These terms of reference establish a procedure that can accommodate an abbreviated form of review for stock assessment models that fall into this latter category. However, it is recognized that what in theory may seem to be a simple update, may in practice result in a situation that is impossible to resolve in an abbreviated process. In these cases, it may not be possible to update the assessment – rather the assessment may need to be revised in the next full assessment review cycle.

Qualification

The Scientific and Statistical Committee (SSC) will determine when a stock assessment qualifies for an expedited update under these terms of reference. To qualify, a stock assessment must carry forward its fundamental structure from a model that was previously reviewed and endorsed by a full STAR panel. In practice this means similarity in: (a) the particular sources of data used, (b) the analytical methods used to summarize data prior to input to the model, (c) the software used in programming the assessment, (d) the assumptions and structure of the population dynamics model underlying the stock assessment, (e) the statistical framework for fitting the model to the data and determining goodness of fit, (f) the weighting of the various data components, and (g) the analytical treatment of model outputs in determining management reference points, including F_{MSY}, B_{MSY}, and B_0. It is the SSC's intention to employ an expedited stock assessment update in situations where no significant change in these seven factors has occurred, other than extending time series of data elements within particular data components used by the model, e.g., adding information from a recently completed survey with an update of landings. In practice there will always be valid reasons for altering a model, as defined in this broad context, although, in the interests of stability, such changes should be resisted when possible. Instead, significant alterations should be addressed in the next subsequent full assessment and review. In principle, an expedited update is reserved for stock assessments that maintain fidelity to an accepted modeling framework, but the SSC does not wish to prescribe in advance what particular changes may or may not be implemented. Such a determination will need to be made on a case by case basis.

Composition of the Review Panel

The groundfish subcommittee of the SSC will conduct the review of an expedited stock assessment update. A review panel chairman will be designated by the chairman of the groundfish subcommittee from among its membership and it will be the panel chairman's responsibility to insure the review is completed properly and that a written report of the proceedings is produced. Other members of the subcommittee will participate in the review to the extent possible, i.e., input from all members will not be required to finalize a report. At a minimum, one member of the SSC's groundfish subcommittee will be needed to conduct a review (i.e., the panel chairman). In addition, the groundfish management team (GMT) and the groundfish advisory panel (GAP) will designate one person each to participate in the review, although the GMT and GAP panelists will serve in an advisory capacity only.

Review Format

Typically, a physical meeting will not be required to complete an expedited review of an updated stock assessment. Rather, materials can be distributed electronically. STAT and panel representatives will largely be expected to interact by email and telephone. A conference call will be held to facilitate public participation in the review.

The review process will be as follows. Initially, the STAT team that is preparing the stock assessment update will distribute to the review panelists a document that summarizes the team's findings. In addition, Council staff will provide panelists with a copy of the last stock assessment reviewed under the full STAR process, as well as the previous STAR panel report. Each panelist will carefully review the materials provided. A conference call will be arranged by the panel chairman, which will provide an opportunity to discuss and clarify issues arising during the review, as well as provide for public participation. Notice of the conference call and a list of public listening stations will be published in the Federal Register (generally, 23 days in advance of the conference call) and a Meeting Notice will be distributed (generally, 14 days in advance). A dialogue will ensue among the panelists and the STAT team over a period of time that generally should not exceed one week. Upon completion of the interactive phase of the review, the panel chairman may, if necessary, convene a second conference call to reach a consensus among panel members and will draft a report of the panel's findings regarding the updated assessment. The whole process should be scheduled to occur within a two week period and the STAT team and panelists should be prepared to complete their work within that time frame. It will be the chairman's responsibility to insure that the review is completed in a timely manner.

STAT Team Deliverables

It is the STAT team's responsibility to provide a description of the updated stock assessment to the panel at the beginning of the review. To streamline the process, the team can reference whatever material it chooses, which was presented in the previous stock assessment (e.g., a description of methods, data sources, stock structure, etc.). However, it is essential that any new information being incorporated into the assessment be presented in enough detail, so that the review panel can determine whether the update satisfactorily meets the Council's requirement to use the best available scientific information. Of particular importance will be a retrospective analysis showing the performance of the model with and without the updated data streams. Likewise, a decision table that highlights the consequences of mis-management under alternative states of nature would be useful to the Council in adopting annual specifications. Similarly, if any minor changes to the "model" structure are adopted, above and beyond updating specific data streams, a sensitivity analysis to those changes may be required.

In addition to documenting changes in the performance of the model, the STAT team will be required to present key assessment outputs in tabular form. Specifically, the STAT team's final update document should include the following:

- Title page and list of preparers
- Executive Summary (see STAR terms of reference, Appendix C)
- Introduction
- Documentation of updated data sources
- Short description of overall model structure
- Base-run results (largely tabular and graphical)
- Uncertainty analysis, including retrospective analysis, decision table, etc.
- 10 year harvest projections under the default harvest policy

Review Panel Report

The expedited stock assessment review panel will issue a report that will include the following items:

- Name and affiliation of panelists
- Comments on the technical merits and/or deficiencies of the update
- Explanation of areas of disagreement among panelists and between the panel and STAT team

- Recommendation regarding the adequacy of the updated assessment for use in management

Groundfish Multi-year Management Cycle (Agenda E.9)

The SSC discussed the implications of multi-year management for the science that underlies the advice provided to the Council, if the assessment process involves "on" and "off" years. Under one scenario, assessments would be conducted during "on" years and more strategic issues, such as model development, would occur during "off" years. The SSC re-iterates the importance of basing management advice on the most recent data, to the extent possible.

Changing to a multi-year management process may have unanticipated impacts. However, many of the identified disadvantages of multi-year management (e.g., the use in management of assessments not based on the most recent survey data) are common to the status-quo management process. The SSC recommends, however, that an analysis of the implications of setting acceptable biological catches (ABCs) for several years (3 to 4 years at present for some species) be conducted. The SSC also highlights the need to develop a process for selecting the assessments to be conducted during an "on" year and how each assessment is to be reviewed (through a full or expedited stock assessment review process).

The SSC identifies the following issues related to providing management advice for groundfish. It notes that these issues relate both to the status-quo and a multi-year management process.

- There is currently a lack of sufficient agency staff to conduct assessments. The ability to conduct many assessments during an "on" year would be increased if the data used commonly for assessment purposes were stored in a standardized database. Extracting the basic data needed for assessments could be accomplished by support staff allowing analysts additional time to conduct assessments. There remains, however, a need for constant contact between analysts and data support staff to ensure that assessments consider the key uncertainties related to the data.

- The use of standardized models would simplify the process of reviewing assessments.

- A two-year assessment process would be consistent with the schedule for updating rebuilding analyses.

- There will be a need for adequate resources (e.g., funds for travel and workshops) and co-ordination of activities, to maximize the benefits from research during the "off" year.

The recreational data used for assessment purposes are summarized in two waves while the commercial data are summarized by quarter. The SSC notes that changing the start of the fishing year to other than July 1 would, therefore, lead to a mismatch with the time strata for the commercial and recreational data.

Public Comment

None.

Adjournment

The SSC adjourned at approximately 4:30 P.M., Tuesday, April 9, 2002.

Research and Data Needs

From March 2002 –

Coho FRAM model needs documentation, post season review, evaluation and validation. It might be

useful to establish model evaluation committees. Need estimates of abundance in addition to pre-season forecasts.

SSC may need to further define the requirements for model “validation.”

Need review of coded-wire tag data.

Research recommendations from the market squid stock assessment review (STAR) panel should be incorporated into Research and Data Needs document. Note recommendation for 2004 squid STAR panel.

PFMC
07/02/02