

SUMMARY MINUTES

Scientific and Statistical Committee

Pacific Fishery Management Council
Red Lion's Sacramento Inn
Klamath Room
1401 Arden Way
Sacramento, CA 95815
(916) 922-8041
April 5 - 6, 1999

Call to Order

The meeting was called to order at 8:10 a.m. by Chairman, Dr. Peter Lawson. Executive Director, Mr. Lawrence D. Six reviewed items on the Council agenda for which the SSC comments to the Council would be particularly important: Possible emergency action on bocaccio (G.8.), Determination of Total Catch (G.5.), Salmon Methodology Reviews (F.2.), and Salmon Management Measures for 1999 (F.3.). The agenda was approved with the following changes: omit Agenda item B.2. and G.12. and add several topics under the open discussion section of the meeting.

The minutes of the March meeting were approved. Any further comments on changes to the minutes should be forwarded to Council staff.

Members in Attendance

Mr. Alan Byrne, Idaho Department of Fish and Game, Nampa, ID
Dr. Robert Conrad, Northwest Indian Fisheries Commission, Olympia, WA
Dr. Ramon Conser, National Marine Fisheries Service, Newport, OR
Dr. Robert Francis, University of Washington, Seattle, WA
Dr. Susan Hanna, Oregon State University, Corvallis, OR
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, Tiburon, CA
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

Dr. Gilbert Sylvia, Hatfield Marine Science Center, Newport, OR
Dr. Richard Young, Crescent City, CA

Scientific and Statistical Committee Comments to the Council

The following text contains the Scientific and Statistical Committee (SSC) comments to the Council. (Related SSC discussion not included in written comment to the Council is provided in italicized text).

Open Discussion

Cyreis Schmitt gave the SSC an update on stock assessment review activities to date, and on the GMT's efforts to begin review of the default Fmsy proxy for groundfish. The SSC discussed who its representatives would be on the STAR panels for 1999. In addition, Ms. Schmitt reported to the SSC on some potential changes to the Stock Assessment Terms of reference for next year. Dr. Susan Hanna also led a SSC discussion of strategic planning. The SSC gave the following statement to the Council:

The SSC supports the decision of the Council to proceed with long-term strategic planning for groundfish. We encourage the Council to define a specific scope and endpoint for the planning process in advance of facilitated meetings. We offer our assistance to the Council in developing this definition.

Coastal Pelagic Species Management

Exempted Fishing Permits

The SSC reviewed the applications from Mr. John Tarantino and Mr. Michael McHenry for exempted fishing permits (EFPs) to harvest anchovy in District 10. Mr. Tarantino's application is complete, but Mr. McHenry's application does not include all of the information required by Federal Regulations on EFPs (e.g., amount of target species, disposition of regulated species, anticipated impacts on marine mammals and endangered species).

Anecdotal evidence suggests there may be bycatch of salmon and steelhead in anchovy fisheries in this area. The SSC considers it prudent to determine the extent of bycatch in the existing live bait fishery before considering opening the area to additional harvest, for the following reasons:

1. A documented basis is needed to predict the bycatch associated with a reduction fishery in advance of opening such a fishery. A reduction fishery in District 10 has the potential of significantly increasing anchovy harvest and corresponding bycatch over and above the amount currently taken in the live bait fishery.
2. The size of the anchovy biomass in District 10 is unknown.
3. Species of concern (e.g., salmon) are present in that area.

If EFPs are issued, a well-designed observer program including reporting and analysis should be conditional requirement of the permits.

Although the new coastal pelagic species fishery management plan (FMP) includes a provision for EFPs, the FMP has not yet been approved or implemented. Therefore, these two permit applications are being considered under federal regulations pertaining to General Provisions for Domestic Fisheries. It is not clear to the SSC whether such permits would apply in state as well as federal waters or whether independent action by the state would also be required. Moreover, the permit applications propose a fishing period of May through October. Given that Title 14, Item 147 of the *California Code of Regulations* prohibits reduction fishing in northern permit areas during the month of July, it is not clear whether the applications are intended to include a waiver of the July closure.

Salmon Management

Methodology Reviews for 1999

The SSC has identified the following issues and analyses as potential candidates for review in 1999.

Selective Fishery Harvest Models

The SSC approved an interim fishery regulation assessment model (FRAM) for coho salmon for use in 1999. Several other models of potential usefulness to the Council are under development. If expanded selective fisheries are going to be proposed in the future, better modeling tools than those currently available are needed. Any new model proposed for selective fisheries in the year 2000 must be submitted for review by the SSC prior to the September 1999 meeting for adoption at the November 1999 meeting. If selective fisheries are implemented in 1999, the SSC will want to review the performance of the modified coho FRAM if it remains the only available modeling tool.

Chinook FRAM Modeling

In March 1999, the SSC received a progress report and update on the chinook FRAM. However, there

was not sufficient time allowed, or details presented, for a comprehensive review. In the future, the SSC requests that detailed information for review of changes and enhancements to this model be presented in a timely manner. The SSC will not approve any proposed changes to the model for the year 2000 unless they are presented in a detailed manner at the November 1999 meeting.

Review of Hooking Mortality and Encounter Rates

Recent studies have contributed to our understanding of hooking mortality rates and encounter rates in ocean salmon fisheries. A comprehensive review of historical and new studies is currently being conducted. If modified rates are to be adopted for use in the year 2000, all material must be submitted for review by the SSC prior to the November 1999 meeting.

Coho Salmon Cohort Analysis

This 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 1998, but progress has been slower than anticipated. The SSC encourages the completion of this project, as it will likely form the base data set for any new fishery regulation models for coho salmon.

Klamath Ocean Harvest Model

The SSC has previously reviewed preliminary versions of this new model. No additional reports or updates for this model were submitted for review in 1998. We hope that this project is completed and submitted for review by the SSC prior to the November 1999 meeting.

As we have stated previously, to make the most efficient use of the SSC Salmon Subcommittee's time, the SSC requires good documentation and ample review time. Agencies should be responsible for ensuring that 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.

Salmon Management Measures for 1999

The SSC restricted its discussion to technical aspects of the Independent Multidisciplinary Science Team (IMST) letter and the status of Oregon coastal natural (OCN) coho. Examination of trends in abundance and escapement have led us to concern about the status of OCN coho stocks. Figure 1 shows a time trend of OCN coho (rivers only) recruits (catch plus escapement) and the number of spawners three years earlier which produced those recruits. Several things are quite clear:

Over the past 30 years, OCN coho (river) recruits have steadily declined while spawning escapement has remained relatively constant (Figure 1), reflecting the successful curtailment of harvest by management. However, since 1994 harvest has been essentially eliminated and recruitment has continued to decline.

As we stated in our March 1999 report to the Council, the OCN 1999 pre-season run size estimate is lower than the size of the spawning brood that produced it. This forecast implies that, even with a zero harvest mortality, the OCN cohort returning in 1999 will not replace itself, with 14,000 fewer recruits than parental spawners in 1996 (Figure 2, 1996 Brood). If this prediction holds true, all three brood cycles will have consecutively (1997 to 1999) failed to replace themselves (Figures 1 and 2). We emphasize that this would be the first time since 1970 that any brood has failed to replace itself, much less three consecutive broods.

The SSC emphasizes that OCN run sizes have been at such low levels during the 1990s that any arguments about which runs are lower, or lowest, are immaterial. Given the imprecision of the statistics used to make the estimates, it seems silly to argue about the fine details. Productivity is currently so low that any fishing-induced mortality is inconsistent with a precautionary approach.

The SSC also reviewed the IMST letter, dated March 22, 1999, concerning salmon management options for 1999. We have the following comments on their points 1 through 6:

1. The SSC acknowledges that OCN coho stocks are at record lows, and since the 1980s adult recruits to all three brood cycles of OCN coho (rivers component) have declined (Figure 2). Spawning escapement for this year's brood has shown marginal increases over its last two cycles (Figure 2, 1996 Brood). Record low spawning escapements (rivers component) for the other brood cycles occurred in 1997 (14,000) and 1998 (16,500). Record low for this year's brood occurred in 1990 (16,500). However, as we stated above, arguing over which year is lower seems immaterial to the overriding issue.

2. The SSC agrees that north and north central components of the OCN coho are especially depressed. The North Coast stocks are at particularly low levels of abundance, and are vulnerable to impacts from ocean fisheries at the Columbia River mouth. In 1996 the North Coast subaggregate did not meet the lowest escapement trigger for Amendment 13 (spawning numbers above 19% of full seeding of the best habitat).

3. The appropriate level of hooking mortality is particularly important to evaluate the effects of selective fisheries. The eight percent hooking mortality standard was adopted in 1994 and was based on studies of ocean recreational fisheries. More recent studies show hooking mortality rates may be higher. The SSC strongly recommends that the Council encourage agencies to complete the ongoing review of hooking mortality and encounter rate estimates in time for the year 2000 management cycle. Information on other gear-related mortality factors should also be evaluated.

4. The run forecast model has clearly overestimated returns of the last two years. The 1997 return was 22% of forecast, and the 1998 return was 50% of forecast. However, these broods were subject to El Niño ocean conditions and severe floods in their freshwater life histories. On the other hand, the 1996 return was 63% above forecast. In addition, the OPI public hatchery predictor, which has an impact on estimated OCN incidental mortalities, has exhibited significant variability since 1983. This serves to add even more uncertainty to predictions of ocean fishing impacts on OCN escapement.

5. The SSC agrees that numbers of returning coho spawners in several basins are at very low levels. This was true in 1996 when half of the total OCN escapement occurred in the Coos and Coquille Basins, at the southern end of the distribution. The SSC is unable to evaluate the IMST statement that "such extremely low populations are approaching levels where extinctions are likely." The IMST provides no indication of how the likelihood of extinction has changed recently or for which stocks that risk is most acute.

6. The lower Columbia River coho stocks are not a part of the OCN stock aggregate and are not covered by Amendment 13. However, the Council should be concerned about the status of these stocks and the effects of Council-managed fisheries. The SSC points out that the resolution of the harvest model does not allow the investigation of area fishery closures to protect specific components of OCN coho.

Groundfish Management

Determination of Total Catch

The SSC reviewed the report of the Ad-Hoc Groundfish Total Catch Determination Committee (Total Catch Committee) (Attachment G.5.a.). The Total Catch Committee held its third meeting in March 1999, and concluded that some level of observer coverage is necessary in order to reliably estimate total groundfish catch. (In this context, total catch is defined as the sum of landings and dead discards). The SSC offers the following comments and recommendations regarding a West Coast groundfish observer program:

40. Reliable total catch estimates are critical for both stock assessment and economic analyses. Sampling programs needed to derive these estimates should be an integral part of the routine fisheries data collection infrastructure, resulting in a consistent time series of total catch estimates. Thus the duration of an observer program, if needed for total catch estimation, should be long-term. There is little advantage to a one-year program, for example, in that startup costs are likely to be greater than benefits derived.

41. An observer program should be viewed as a statistically-based sampling program. Clear scientific objectives should be used to guide a statistically valid, cost-effective sampling program. For example, the species of interest and desired precision of the estimates as well as logistical considerations (among other factors) should all be considered in the design. Considering Options 1 and 2, as discussed in the Total Catch Committee Report, is premature at this time. Observer coverage and deployment decisions should naturally follow from the statistical design.
42. The data from the Oregon Department of Fish and Wildlife pilot observer program should be useful in designing a long-term observer program, e.g. for sampling stratification. Also, the successes and failures of other observer programs should be considered in the planning process, e.g., the North Pacific Database Program (NORPAC) in Alaska and driftnet fishery program off southern California.
43. Planning should also extend well beyond observer coverage and deployment issues. Database design, long-term maintenance of databases, and data analysis and reporting must also be considered in terms of staff requirements and costs.
44. Once established, an observer program should undergo periodic peer review (say every three to five years) to improve performance, to ensure that original objectives are being met, and to formalize any re-design that may be needed. The Council's STAR Panel framework may be an appropriate model for such periodic review.
45. Complementary logbooks (as suggested by the Total Catch Committee) are supported by the SSC. However, logbook design and implementation should be an integral part of the overall observer program statistical design, including observer coverage, allocation, and deployment issues.

Possible Emergency Action for Bocaccio

The SSC attended a presentation by Mary Yoklavich and Mark Wilkins of NMFS on Bocaccio Habitat information and occurrence of bocaccio in the trawl survey.

The SSC reviewed the "Petition for Emergency Action to Halt the Decline of Bocaccio" that was jointly submitted to the Council by the Natural Resources Defense Council, the Pacific Marine Conservation Council, the Environmental Defense Fund, and the Center for Marine Conservation. Those organizations expressed alarm that results from the 1998 Alaska Fisheries Science Center triennial shelf survey indicate that the catch rate of bocaccio declined markedly from survey results obtained three years previously. In addition, the petitioners stated their concern that the Council's decision to set the 1999 optimum yield (OY) of chilipepper at 3,724 mt, rather than 2,000 mt as recommended by the Groundfish Management Team (GMT), would exacerbate bycatch of bocaccio. The petition recommends that measures be implemented immediately to minimize bocaccio fishing mortality. Specific measures might include: reducing the targeted commercial catch of bocaccio to zero, reducing the 1999 OY of chilipepper, and reducing the California recreational bag limit of rockfish and bocaccio.

The SSC had little in the way of supporting documentation and analysis that it could use to comment on the merits of the petition. Nonetheless, several issues are worth reiterating:

Last year the SSC concurred with the GMT's recommendation for a 2,000 mt OY for chilipepper. Part of the GMT's reasoning for that recommendation related to concerns about bycatch of bocaccio.

It is dangerous to over-interpret short-term trends in the catch rate of bocaccio from the triennial survey (e.g., 1992 to 1998), because the survey is relatively imprecise for many of the rockfishes. Also, instability in length compositions from one survey to the next indicates that the availability of bocaccio to the survey changes. Even so, the decadal trend in bocaccio catch rate from the survey shows clearly that the stock is depressed.

It is unlikely that a simple reduction of the chilipepper OY would result in a proportionate reduction in bocaccio bycatch. Restrictions on fishing for chilipepper would likely result in shifting effort to other species and bocaccio appear to be caught with a wide variety of other groundfish. Moreover, through March the cumulative landings of chilipepper are no greater than last year.

There are severe gaps in our knowledge about where, and along with what other species bocaccio are caught. For example, catch data from California trawl logbooks are aggregated for nearly all the rockfishes. Much could be learned about bocaccio bycatch from the proposed observer program.

Rebuilding Plans for Lingcod, Bocaccio, and Pacific Ocean Perch

The SSC reviewed the Ad-Hoc Allocation Committee Report (Attachment G.9.a.), The National Standard Guidelines on Rebuilding (Attachment G.9.b.), and the proposed schedule for the development of rebuilding plans for lingcod, bocaccio, and Pacific Ocean perch (Attachment G.9.c.).

With respect to the proposed schedule of activities to meet the November 1999 decision deadline, the SSC concludes the following activities need to take place before the Ad-Hoc Allocation Committee refines the options for analysis:

1. Each stock is assigned a technical analyst, preferably the author of the most recent assessment for that stock.
2. On the basis of existing stock assessments, technical analysts provide the Ad-Hoc Allocation Committee with rough "orders of magnitude" estimates of harvests allowable under the minimum and maximum fishing mortality rates to assist the Committee with bracketing the options.
3. Technical analysts consult with members of the groundfish subcommittee of the SSC and members of the GMT about how to approach three critical estimations in the rebuilding plans: maximum sustainable yield (MSY) biomass, unexploited biomass, and the recruitments on which to base the projections. The Council may wish to appoint a person to coordinate this communication.
4. Technical analysts make initial estimates of minimum and maximum time frames and target stock sizes for rebuilding.
5. Technical analysts complete rebuilding projections and subject them to SSC review.
6. Technical analysts provide estimates of allowable harvests from rebuilding projections to the Ad-Hoc Allocation Committee.

The completion and review of rebuilding projections will not be completed until August 1999 and for consistency should be done on parallel time scales, with ongoing coordination and consultation. The rebuilding plans will be based on the most recent stock assessment: the 1998 Pacific Ocean perch assessment, the 1997 northern lingcod assessment, the 1999 southern lingcod assessment, and the 1999 bocaccio assessment. The National Marine Fisheries Service should be requested to specify whether southern lingcod is designated as overfished.

The SSC notes that the rebuilding projections will change over time as new information becomes available and as learning takes place. In addition, large-scale conditions such as ocean regimes and climate will change over time. This means rebuilding plans should be periodically reviewed and re-evaluated for progress toward the desired endpoint. The review should take place whenever a stock assessment is revised.

Public Comment

There was no public comment.

Adjournment

The SSC adjourned at approximately 5:30 p.m., Tuesday, April 6, 1999.

Research and Data Needs (ongoing list)

1. Systematic review of salmon run-size predictors; evaluation of forecasts through hindcasts. (Resulting from March 1997 discussion on stock abundance estimates and preseason forecasts.)
2. Localized depletion of groundfish stocks, especially Dover sole and shortspine and longspine thornyheads, may occur at low abundance levels. The SSC recommends the GMT consider using area-specific harvest guidelines for these species. (From November 1997 discussion on 1998 harvest levels.)
3. It may be possible to increase harvest levels while still meeting target mortality fishing rates such as $F_{35\%}$ by deliberately managing the range of age and lengths targeted by the fishery. For example, avoiding capture of young Dover sole who have not yet realized their entire growth by shifting fishing effort in deep water might make larger catches possible. Effects on enforcement and other species would have to be considered. (November 1997.)
4. A recruitment survey for whiting would help reduce uncertainty in the stock assessment. (The SSC agreed that a more comprehensive discussion of research needs to support groundfish stock assessments was necessary, including how to integrate social and economic analyses into the assessment and how to analyze management histories from the assessments.) (November 1997.)

PFMC
07/01/99