

SUMMARY MINUTES
Scientific and Statistical Committee

Pacific Fishery Management Council
Double Tree Hotel – Spokane City Center
Salon III Room
322 North Spokane Falls Court
Spokane, WA 99201
June 7-9, 2011

Call to Order and Scientific and Statistical Committee (SSC) Administrative Matters

The meeting was called to order at 8 a.m. on Tuesday, June 7, 2011. Council Executive Director, Dr. Don McIsaac briefed the SSC on priority agenda items.

Members in Attendance

Dr. Louis Botsford, University of California, Davis, CA
Mr. Robert Conrad, Northwest Indian Fisheries Commission, Olympia, WA
Dr. Ramon Conser, National Marine Fisheries Service, La Jolla, CA
Dr. Martin Dorn, SSC Chair, National Marine Fisheries Service, Seattle, WA
Dr. Carlos Garza, National Marine Fisheries Service, Santa Cruz, CA
Dr. Vladlena Gertseva, National Marine Fisheries Service, Newport, OR
Dr. Owen Hamel, SSC-Vice Chair, National Marine Fisheries Service, Seattle, WA
Dr. Selina Heppell, Oregon State University, Corvallis, OR
Ms. Meisha Key, California Department of Fish and Game, Santa Cruz, CA
Dr. Peter Lawson, National Marine Fisheries Service, Newport, OR (Absent June 9)
Dr. Todd Lee, National Marine Fisheries Service, Seattle, WA
Dr. Charles Petrosky, Idaho Department of Fish and Game, Boise, ID
Dr. David Sampson, Oregon Department of Fish and Wildlife (Alternate)
Ms. Cindy Thomson, National Marine Fisheries Service, Santa Cruz, CA
Dr. Theresa Tsou, Washington Department of Fish and Wildlife, Olympia, WA

Members Absent

Dr. André Punt, University of Washington, Seattle, WA
Dr. Vidar Weststad, Research Analysts International, Seattle, WA

SSC Recusals for the June 2011 Meeting.		
SSC Member	Issue	Reason
Dr. Owen Hamel	Darkblotched Rockfish Updated Assessment	Dr. Hamel was a member of the STAT.
Dr. Pete Lawson	Amendment 16 to the Salmon FMP	Dr. Lawson was a member of the Salmon Amendment Committee
SSC members of External Review Panels for items considered at the June 2011 Meeting. <i>SSC members of external review panels are noted below for the record. SSC members of External Review Panels may participate in SSC deliberations, but they are expected to remain neutral if the SSC is being asked to arbitrate differences between review panels and technical teams.</i>		
SSC Member	External Panel Membership	
Dr. Vladlena Gertseva	Chaired the June 6th SSC Groundfish Subcommittee Meeting to review updated groundfish assessments.	

Scientific and Statistical Committee Comments to the Council

The following is a compilation of June 2011 SSC reports to the Pacific Fishery Management Council (Council) in the order they were discussed by the SSC. (Related SSC discussion not included in written comment to the Council is provided in *italicized text*).

Salmon Management

C.1 Fishery Management Plan Amendment 16- Annual Catch Limits and Accountability Measures

The Scientific and Statistical Committee (SSC) reviewed the Ad Hoc Salmon Amendment Committee’s (SAC) Report “Public Review Draft Environmental Assessment for Pacific Coast Salmon Plan Amendment 16: Classifying Stocks, Revising Status Determination Criteria, Establishing Annual Catch Limits and Accountability Measures, and *De Minimis* Fishing Provisions” (Agenda Item C.1.). Mr. Chuck Tracy (Council staff) and Dr. Peter Dygert (SAC) were present to facilitate the discussion. The SSC has reviewed and commented on earlier drafts of this document at the June, September, and November 2010 Council meetings.

The SSC has the following comments on the current document:

FMSY and SMSY reference points: There are three salmon stocks in the Fishery Management Plan (FMP) amendment with reference points that have not been reviewed by the SSC: (1) Columbia River Fall and Summer Upriver Bright Chinook, (2) Willapa Fall Chinook, and (3) Willapa Natural coho. As proposed in Amendment 16, reference points can be changed or modified during the annual Salmon Methodology Review (SMR) process. Given that there is insufficient time to review the reference points for these stocks now, the SSC recommends that the reference points proposed in the amendment be adopted on a provisional basis. However, the SSC also recommends that the Council schedule a review of the reference points for these stocks

by the SMR process as soon as practical. In addition, the SSC recommends that the exploitation rate break point and average maximum sustainable yield (MSY) spawning escapement management framework for Puget Sound coho stocks be scheduled for the SMR process.

5% and 10% buffers between F_{MSY} and F_{ABC} for Tier 1 and Tier 2 stocks: The SSC reiterates its comment from earlier reviews that the size of the buffer and the acceptable risk of over-fishing is ultimately a policy decision.

Minimum Stock Size Threshold (MSST): The alternative that specifies MSST as 86% of S_{MSY} is based on an analysis for the Klamath River but would be applied to all relevant stocks in the amendment under Alternative 3b. Also, when considering alternatives for MSST for a stock complex (e.g., 50% S_{MSY} for an indicator stock in the complex) the SSC notes there is a risk that some stocks in the complex may be fished below acceptable levels relative to S_{MSY} .

***De minimis* fishing alternatives:** The choice of *de minimis* fishing alternatives is largely a policy decision. The SSC notes that Alternative 4 would allow fishing at stock abundances below levels that have been seen previously.

Role of the SSC: The SSC endorses the proposed role for the SSC in amendment 16, specifically, approving (1) control rules and conservation objectives, (2) F_{MSY} and S_{MSY} reference points, (3) changes to harvest model algorithms, and (4) recommending annual acceptable biological catches (ABCs) and overfishing limits (OFLs) for pertinent stocks. These would all be accomplished under either the Salmon Methodology Review process or at Council meetings. It is unclear whether changing the uncertainty tiers defined in the amendment could be done under the SMR process or would require an FMP amendment. Adding stocks to the FMP or changing the percentage of S_{MSY} used to specify MSST would require an FMP amendment. Clarification is needed on whether removing a stock from a stock complex or changing the indicator stock(s) for a complex would also require an FMP amendment.

Economic analysis: The economic analysis relies on results of a retrospective evaluation of harvest levels that would have occurred in each sector (ocean commercial, ocean sport, in-river sport, and tribal) during 2002-2010 under each catch limit alternative considered in the Environmental Assessment. The economic analysis converts the harvest numbers from the retrospective analysis to income impacts, applies a discount rate to the impact estimates, then compares the alternatives on the basis of the discounted impacts. In interpreting these results, it is important to note that the economic analysis is based on fishing conditions during 2002-2010. A more comprehensive analysis of the effects of each alternative in response to future salmon abundances would have been more informative.

Additional documentation is needed regarding how the harvest estimates from the retrospective analysis were converted to income impacts. The economic analysis should also include a caveat that income impacts pertain to impacts on the regional economy and do not reflect the economic benefits and costs of each alternative to fishery participants.

The SSC notes that the economic analyses for proposed FMP amendments are often the very last analyses conducted. As a result they are often available for review too late in the process for comments and suggestions of the SSC and other committees to be addressed and incorporated in Council decisions.

Groundfish Management

E.2 Updated Stock Assessments for 2013-2014 Groundfish Fisheries

The Groundfish Subcommittee of the Scientific and Statistical Committee (SSC) met on June 6, 2011 in Spokane, Washington, to review assessment updates for bocaccio, darkblotched, yelloweye and canary rockfish, and data report for cowcod. The reports for these assessment updates were then discussed by the full SSC.

In assessment updates developed within the current and the last assessment cycles, several changes were made to the data used in the previous assessments. These changes included the use of reconstructed historical catch series and an updated approach to estimate survey abundance indices. In addition, the updated version of the modeling software was used for updates. Although these changes likely represent improvements, they have not been formally reviewed. The SSC recommends that the terms of reference (TOR) for assessment updates should be strengthened to clarify criteria for the assessment updates. The TOR should also specify a procedure to follow when an assessment does not meet the criteria for an update.

The SSC recommends that recently reconstructed historical catch time series should be reviewed outside of the normal stock assessment review process. A major effort to reconstruct historical landings was initiated in 2008 in response to the Council's call to compile the best estimates of catch history early in the development of Pacific coast groundfish fisheries. Currently, this effort has produced published estimates for California fisheries, and more recently, estimates for Oregon fisheries, but landings are still being compiled for Washington. The SSC recommends conducting an off-year science workshop to review reconstructions of all landings comprehensively, ideally when the Washington information is available. This review would need to be structured differently than a Stock Assessment Review (STAR) Panel, since the most expertise is to be found among current and former employees of state agencies. The SSC recommends that the uncertainty of the historical catch estimates also be reviewed.

Bocaccio rockfish

Dr. John Field of the Southwest Fisheries Science Center (SWFSC) presented the assessment update for bocaccio, which underwent a full assessment in 2009.

New information available for the update included:

- 2009 and 2010 abundance data from the CalCOFI larval survey, the Southern California Bight hook and line survey, the Northwest Fisheries Science Center (NWFSC) combined trawl survey, the SWFSC juvenile rockfish survey, and the recreational pier juvenile index.
- 2009 and 2010 length data from the NWFSC combined trawl survey and the recreational fishery.
- The power plant impingement index of recruitment (which was not used in the previous full assessment).

The Stock Assessment Teams (STATs) proposed base model, which includes the use of the power plant impingement data and removal of the 2010 NWFSC survey length data, does not fall within the rules of update assessments.

Length composition data from the NWFSC combined survey in 2010 showed an exceptionally strong peak in the 16-20 cm range, which represents young-of-the-year bocaccio. When these data are included in the assessment, the estimate of 2010 year class is the largest in over 50 years. A year class of this magnitude has a large influence on bocaccio stock dynamics, and would result in the stock reaching the rebuilding target in 2013, when this year class would become mature. Other survey information also suggests that the 2010 year class may be above average, but the magnitude of the 2010 year class will remain highly uncertain until additional information becomes available.

In a full assessment, alternative approaches would typically be evaluated to deal with sensitivity to exceptional data, but this is not possible with an update assessment where no changes in the model or data sets used in the assessment are allowed. Therefore the SSC recommends that bocaccio assessment be revisited at the mop-up panel to consider a narrow set of modeling and data issues related to the estimated strength of the 2010 year class.

It should be noted that if this recommendation is followed, this year's bocaccio assessment could be considered neither an update nor a full assessment according to strict compliance with the groundfish terms of reference for stock assessments. The SSC discussed the alternative of basing management advice on the 2009 bocaccio assessment, but this could have detrimental repercussions. A very strong bocaccio year class would be unavoidable by the California fishery as soon as 2011 and 2012, and the SSC considers it important for any future management measures to take this into account.

Specifically, the SSC requests the following analyses be done for review at the mop-up panel:

- 1) Evaluate
 - a. models with time-varying selectivity for the NWFSC trawl survey and/or
 - b. models where the selectivity of the NWFSC trawl survey for young-of-the-year bocaccio is decoupled from that for the older fish;
- 2) Evaluate models in which the abundance of young-of-the-year bocaccio is modeled as a separate recruitment index with an estimated catchability coefficient;
- 3) Evaluate models where the newly updated power plant impingement data set is included as a recruitment index (as the STAT proposed within the current update);
- 4) Consider other time series (e.g. sport fishery length data) that may be informative about bocaccio recruitment strength.

Any model changes or sensitivity analyses should start from a base model that conforms to the requirements of an update assessment (Alt State 2 in the current update document). The SSC anticipates that these model evaluations would not require substantial additional effort by the STAT team, and expects that the review would require no more than half a day during the mop-up panel meeting.

Darkblotched rockfish

Dr. Andi Stephens of the Northwest Fisheries Science Center (NWFSC) presented the update

assessment for darkblotched rockfish. The last full assessment for this species was conducted in 2007, and it was subsequently updated in 2009.

The current update was conducted using the updated version (v3.21d) of the Stock Synthesis (SS) platform. New data used in the update included:

- Updated Oregon catch history (1892-1986);
- Updated (recently re-analyzed) discard data from the West Coast Groundfish Observer Program;
- Fishery data (landings, length and age compositions) from the most recent years (2009 and 2010);
- NWFSC shelf and slope survey data (abundance, length and age compositions) from the most recent years (2009 and 2010);
- Updated time series of survey abundance for the NWFSC shelf and slope surveys, estimated with an updated generalized linear mixed model (GLMM) package assuming gamma error distribution (instead of lognormal as in the 2009 update).

The recent landings of the darkblotched remain below 200 mt. The 2009 depletion level estimated by the current update (15.1 percent) is lower than the depletion reported by the 2009 update (27.5 percent). The magnitude of the change in perceived stock status is greater than would normally be expected in an update. However, unlike the bocaccio update, the darkblotched update assessment followed the TORs for updates, and there is no obvious technical issue with respect to the modeling assumptions or the data that would justify rejecting this as an update.

The analysis explored which new or altered data or methods might have caused the change in depletion, but the responsibility for the change could not be attributed to any of the modifications in the assessment model or previously used data sources, including the new SS version, the newly reconstructed Oregon catch series, a change in the starting year of the model, and new GLMM abundance indices (which are estimated using a different error distribution than the previous assessment). The model output appeared to be driven primarily by the length composition data from the two most recent years (2009, 2010) of the NWFSC slope survey. The indication is that the strength of the 1999 and 2000 year classes were previously over-estimated.

The SSC recommends that the darkblotched update be accepted as a valid assessment update and be used as the basis for management decisions in the 2013-2014 groundfish management cycle as it represents the best available science. The SSC notes that in the Decision Table the labels for catch and landings should be reversed. The SSC also recommends conducting a full assessment for darkblotched rockfish in the next assessment cycle because of the large change in estimated depletion level.

Yelloweye rockfish

Dr. Ian Taylor of NWFSC presented the updated yelloweye rockfish stock assessment. Yelloweye is an overfished stock that has been under a Council rebuilding plan since 2004. The last full stock assessment (2009) indicated that the stock was rebuilding, albeit slowly.

The current update was conducted using the updated version (v3.21d) of the Stock Synthesis platform. New data used in the update included:

- Updated Oregon catch history (1892-1986);
- Updated (recently re-analyzed) discard data from the West Coast Groundfish Observer Program;
- Revised 2008 recreational catch estimate;

- Fishery data (landings, length and age compositions) from the most recent years (2009 and 2010);
- NWFSC trawl survey data (abundance, length and age compositions) and IPHC survey data (abundance) from the most recent years (2009 and 2010);
- Updated time series of survey abundance for the NWFSC trawl survey, estimated with an updated GLMM package assuming gamma error distribution (instead of lognormal as in the 2009 assessment).

The SSC recommends that the yelloweye update be accepted as a valid assessment update.

Comparison of the assessment update results with those from the 2009 full assessment indicated minor changes in spawning stock biomass (SSB) estimates in the early years due to revised Oregon landings estimates, small changes in SSB estimates in recent years, no appreciable differences in stock biomass trends or SSB trends, little change in spawning depletion estimates through 2008, and modest stock rebuilding. 2009 depletion level estimated by the current update (20.2 percent) is comparable to the depletion reported by the 2009 update (20.3 percent).

The yelloweye rockfish assessment update represents the best available science and should be used as the basis for management decisions in the 2013-2014 groundfish management cycle. Finally, the SSC suggests that another assessment update should be sufficient for the 2015-2016 management cycle.

Canary rockfish

Mr. John Wallace of the NWFSC presented the update assessment for canary rockfish. The last full assessment for this species was conducted in 2007, and it was subsequently updated in 2009. The SSC notes that the briefing book version of this update was not the version reviewed by the SSC. Rather, a corrected version of the executive summary and key tables was provided by the STAT as supplemental material.

This updated assessment used the updated version (v3.21d) of the Stock Synthesis platform. Model structure and data sources remained the same as in 2009 assessment. New information used in this update includes:

- Reconstructed Oregon historical landings for (1892-1986);
- Landings and discards for 2009 and 2010 added. It is to be noted that catches are below optimum yield (OY) in 2009 and 2010 for the first time since 2000.
- Length and age composition data from the fisheries and survey for 2009 and 2010 added;
- Updated estimates of discard rates, total mortality and discard mortality (recreational only) for 2002-2010;
- Updated time series of survey abundance for the NWFSC trawl survey, estimated with an updated GLMM package assuming gamma error distribution (instead of lognormal as in the 2009 update).

Comparison of the assessment update results with those in 2009 assessment update indicates lower spawning biomass during 1950s-1980s, and slightly lower spawning biomass in recent years. Spawning depletion at the beginning of 2009 was lower in this update (21 percent) than that in the 2009 update (24 percent). Despite the lower depletion estimate for 2009, the stock is rebuilding slowly. Spawning biomass and depletion at the beginning of 2011 are estimated to be 6,416 mt and 23 percent, respectively.

The assessment update represents the best available science and should be used as the basis for management decision in the 2013-2014 groundfish management cycle. The SSC recommends that a full assessment be conducted for canary rockfish for the next cycle.

Cowcod

A cowcod status report was provided by Dr. E.J. Dick of the SWFSC.

The 2007 catch of cowcod was reported in the document to be 5 mt, which is 1 mt higher than the OY of 4 mt. However, upon investigation of the basis for this number, it was discovered that some catch data had been double-counted, and the updated total estimated 2007 catch is well under 4 mt. Given this new information, it is confirmed that catch of cowcod has been below the OY in all recent years (2002-2009).

The SSC recommends that until further data on stock trends become available or significant overages in catch are observed, there is no need for an updated cowcod assessment. The rebuilding analyses could be undertaken every other assessment cycle as there is no information that would change the rebuilding trajectory, except for catch, which is too small to have an impact over just two years. The SSC found the results of the stock structure investigations presented in the appendix informative.

Assessment Methods for Data-Poor Stocks

The SSC reviewed the report of the April review panel meeting which considered assessment methods for data-poor stocks. Dr. Martin Dorn, the chair of the review panel, presented the report to the SSC. For each data-poor method, the review panel considered whether it could be endorsed for general use without extensive review of individual applications. Two categories of methods were reviewed:

- 1) Catch-Only methods (appropriate for category 3 assessments) that use catch history and some limited information about life history such as natural mortality or maturity. These include Depletion-Corrected Average Catch (DCAC), Depletion-based Stock Reduction Analysis (DB-SRA) and Stock Synthesis – Catch Only (SS-CO); and
- 2) Simple Assessment methods (appropriate for category 2 assessments) that use some additional data, either length composition data or indices of abundance. These include Stock Synthesis – Catch and Length (SS-CL), extended DB-SRA (XDB-SRA) and Stock Synthesis – Catch and Indices (SS-CI).

A noted advantage of all of the methods considered is that the assumptions and priors are clearly laid out.

DCAC improves upon a simple average catch method by accounting for the fishing down of the population by including a “windfall” ratio. This is helpful for species with low natural mortality rates (<0.2), but otherwise provides little to no benefit over simple average catch. DCAC is dependent on priors on important parameters and provides an estimate of sustainable catch rather than OFL. This sustainable catch level can be biased high (and possibly not sustainable) if the stock is more depleted than assumed.

DB-SRA is somewhat more complicated than DCAC in that it includes a production function and requires an estimate of age at maturity, with the assumption that only mature fish are exploited by the fishery. This method was deemed appropriate if more life-history information is available. As with DCAC, the sustainable catch level can be biased high if the stock is actually more depleted than assumed.

The SS-CO (version 2, developed during the panel) uses Stock Synthesis to estimate unfished recruitment given estimates of other parameters. This was considered a better method in cases of complex life-histories (such as sex-specific growth and/or natural mortality).

These Catch-Only methods are not assessments and cannot define stock status, but none-the-less represent an improvement over the status quo in terms of choosing harvest levels. The SSC endorses these catch-only methods for use in setting harvest levels for category 3 stocks, as was done in the 2011-2012 harvest specification process.

The Simple Assessment methods for category 2 stocks were not considered by the panel to be ready for use in the Council process. The panel identified an alternative estimation procedure that should be evaluated for use with these methods. These methods could then be reviewed again once those algorithms are implemented.

The review panel recommended an off-year STAR Panel review to further refine and modify the methods and test their application to both assessed and simulated stocks. There remains a need for simple assessment tools that are well understood and that can be applied routinely and rapidly to multiple stocks. The SSC supports the recommendation for a review panel to further evaluate these simple assessment methods once the identified improvements have been made. Given positive results from this off-year review panel, the SSC supports having a STAR Panel dedicated to reviewing the application of these methods to a number of stocks in the next assessment cycle.

All of the methods reviewed are dependent upon accurate historical catch estimates, including discards. The further investigation of these to obtain the best possible estimates is a high priority, and uncertainty in the catch history should be included in evaluating and implementing these data-poor methods.

Groundfish Management, continued

E.4 Final Schedule for Completing the 2013-2014 Specifications and Management Measures and Considerations for Solving Biennial Cycle Process Issues.

Ms. Kelly Ames briefed the Scientific and Statistical Committee (SSC) on this Agenda Item. The SSC discussion focused on two issues: 1) a review of the economic models used in the groundfish harvest specification process, and 2) the GMT Report on a review of a proposed economic analysis of the Council's rebuilding plans (Agenda Item E.4.b).

The SSC has previously emphasized the importance of review of the data and methodologies used in the harvest specification process to evaluate economic effects of management alternatives. At the April 2011 meeting, the SSC compiled a list of economic analyses and groundfish harvest forecast models that could potentially be reviewed:

- California Recreational Model;
- Oregon Recreational Model;
- Washington Recreational Model;
- Non-nearshore Fixed Gear Model;
- Limited Entry Fixed Gear Sablefish Daily-Trip-Limit Model north of 36 N. latitude;
- Limited Entry Fixed Gear Sablefish Daily-Trip-Limit Model south of 36 N. latitude;
- Open Access Daily Trip Limit Model Sablefish north and south of 36 N. latitude;
- Commercial Nearshore Fixed Gear Model;
- Commercial harvest projections to port regions;
- Trawl rationalization model (to be developed this year by the GMT).

The SSC Economics Subcommittee has developed a draft Terms of Reference (TOR) for a review process for economic analyses. Given workload considerations, the SSC now recommends that a one-day meeting of the Economics Subcommittee be scheduled prior to the Council meeting in September, and proposes that the commercial harvest projection model be reviewed at this meeting. This model (developed by Mr. Ed Waters) allocates catch and ex-vessel value to port groups. The review of this model could have immediate benefit, since recommended changes would likely be implemented in time for the 2013-2014 harvest specifications analyses.

Review of the remaining economic projection models continues to be a priority, but the SSC recommends this be done as an off-year science activity. One possibility to ensure routine review of economic and forecast models is to establish an annual or biannual review process, similar to the salmon methodology review process.

Mr. Corey Niles also presented a Groundfish Management Team (GMT) request for SSC review of a proposed economic analysis of alternative rebuilding plans for overfished groundfish species. The SSC is willing to discuss and review analytical tools developed by the GMT to evaluate alternative rebuilding strategies.

Highly Migratory Species Management

D.1 North Pacific Albacore Tuna Fisheries Economic Analysis

Mr. Henry Pontarelli (Lisa Wise Consulting Inc.) briefed the Scientific and Statistical Committee (SSC) on the report “West Coast U.S. Commercial Albacore Fishery Economic Analysis” (Agenda Item D.1.b, Attachment 1). The report describes trends and economic conditions in the U.S. albacore fishery.

To demonstrate the relative effects of economic versus biological factors on the fishery, the report includes five regression equations that relate fishing activity (measured in number of boats, exvessel revenues, revenue per vessel, landings, and number of processors) to an employment cost index, fuel cost, and an albacore biomass index. The report was not written as a scientific paper so details needed by the SSC to adequately review this analysis were not provided. Some SSC concerns regarding the analysis are as follows:

- The regressions are estimated using time series data (1981-2010) for 54 ports. Thus, regression diagnostics such as tests for autocorrelation and heteroscedasticity should be conducted as part of model estimation.
- An employment cost index for manufacturing was used as a proxy for crew costs in the albacore fishery. It is not clear how closely the index resembles crew costs, particularly since crew remuneration is based on a share of landings.
- A 2004 Department of Fisheries and Oceans (DFO) Canada report was cited as the source of the biomass estimates. The DFO report includes biomass estimates for years up to 2002. Since the data in the regression cover the period 1981-2010, it is not clear what biomass estimates were used in the regression for the post-2002 years. Also, a more recent assessment was conducted in 2006, so the biomass estimates used are not the most current.
- Because U.S. trollers largely target juvenile albacore, the portion of the biomass relevant to their fishing activity is age 2-5 fish. It is not clear whether the biomass estimates used in the regression pertain only to those age classes.
- The regression assumes a fixed port effect. Given that albacore landings have markedly declined in California and markedly increased in Oregon and Washington over the past decade, a fixed port effect does not appear reasonable.

The Council requested that the SSC consider this report in terms of its utility for management. The report provides an overview of trends in the U.S. albacore troll fishery and economic conditions faced by the fishery. It is not obvious how the report could be used as a scientific basis for management. The SSC notes that the analysis focuses on the commercial fishery and that Council management may affect the recreational fishery as well.

Groundfish Management, continued

E.7 Priority Trailing Action Under Trawl Rationalization Slated for Preliminary Action

Mr. Jim Seger briefed the Scientific and Statistical Committee (SSC) on control limit safe harbors for community fishing associations (CFAs) and risk pools. The SSC reviewed Agenda Item E.7.a Attachments 1 and Supplemental Attachment 2, which contain analyses of control limit safe harbors for CFAs. No analysis of risk pool safe harbors was available to the SSC, thus our review focused only on the CFA control limits.

The rationale for setting control limits under Amendment 20 included the following five objectives: 1) preventing excessive shares, 2) preventing the exertion of market power without impacting efficient operations, 3) dispersion of harvest and landings to the benefit of communities, 4) fairness and equity, and 5) sector health. Relaxing the control limits for CFAs may reduce the benefits achieved, however, it would be very difficult to provide a quantitative evaluation of this effect. This is due to the lack of available data and the complexity of the analysis that would be required. Nevertheless, the reviewed attachments provide useful information and analyses that can be used to inform the setting of control limits, and how changes in control limits may affect the stated objectives.

The Council has asked what quantity of landings is needed by a port to maintain its infrastructure and remain viable. Figures A-3 and A-4 of Attachment 1 depict the amounts of various species

landed at ports relative the current control limits. Given the available data, this historical analysis is informative as it may point to the amount of landings necessary to maintain continued operation. The SSC notes, however, that there are several qualifications:

- It does not show whether other fisheries or conditions have changed or will change. The combined effect of groundfish and other landings and activity is important. The SSC recommends that the percentage of landings that are limited entry trawl groundfish be added to the bottom of each port listed in the figures. This would provide information about the relative importance of groundfish landings in each port.
- The analysis of landings is on an annual basis. How landings are distributed throughout the year, which may be affected by trawl rationalization, is also important.
- The life span of infrastructure and the level of activity necessary for infrastructure investment are significant factors to long-term port viability. These quantities are not captured in the analysis.

The interaction between ports and their effect on one another is an important consideration to the adjustment of control limits. Tables A-4 through A-6 describe the number of vessels delivering to each port. The SSC recommends that these data also be used to show the relationship between ports by using a matrix of ports where each cell contains the number of vessels delivering to any two ports.

Coastal Pelagic Species Management

G.2 Pacific Mackerel Management for 2011-2012

Dr. Paul Crone from the Southwest Fisheries Science Center (SWFSC) presented the results of the Pacific mackerel stock assessment for the 2011-12 fishing year, and Dr. Ray Conser of the Scientific and Statistical Committee (SSC) presented a report on the Pacific mackerel Stock Assessment Review Panel that convened at the SWFSC in La Jolla, CA on May 2-5, 2011.

The assessment model was a modification of the Stock Synthesis-based model used in the previous assessment in 2009. It used commercial fishery age composition data and abundance indices developed from Commercial Passenger Fishing Vessel (CPFV) logbooks and the California Recreational Fishery Survey (CRFS) catch and effort data. The current model shows a strong retrospective pattern, which could be indicative of model overestimation of biomass.

The SSC endorses the updated assessment as best scientific information available for management of Pacific mackerel. The SSC further endorses the overfishing limit (44,336 mt), and ABC alternatives outlined in the assessment for the upcoming fishing season. The acceptable biological catch (ABC) alternatives depend on the Council's risk policy as reflected in the choice of P*.

The SSC highlights several critical data and research needs. Both the SSC and the Stock Assessment Team emphasize the importance of a fishery-independent survey, preferably as part of a multi-species coastal pelagic survey. There was general consensus that the acoustic trawl methodology is well-suited for such a survey, but would need to be expanded to encompass Mexican waters, and ideally Canadian waters as well, to be useful for Pacific mackerel assessment.

The current F_{MSY} value used for Pacific mackerel has not been recently updated and appears to be based at least partly on qualitative considerations. The SSC recommends that F_{MSY} be reevaluated using more current information and analytical approaches.

Ecosystem-Based Management

H.1 Ecosystem Fishery Management Plan

The Scientific and Statistical Committee (SSC) reviewed the report prepared by its Ecosystem-Based Management Subcommittee (EMS) summarizing recommendations from a subcommittee meeting held on April 19-20, 2011. Dr. Selina Heppell, chair of EMS, presented the report to the SSC. The report provided recommendations on the potential ways of incorporating ecosystem science into single-species stock assessments, fishery management, and Council decision-making, with an emphasis on review processes that should be developed for ecosystem science tools and products.

The SSC endorses the report in general and makes the following recommendations:

- Incorporation of ecosystem considerations into management should continue to be an evolving process. All science can and should be reviewed and held to a high standard of scientific rigor, but the precise nature of those reviews should depend on specific applications.
- A possible framework for employment of an Ecosystem Fishery Management Plan (FMP) is one of advisory and science teams, similar to the existing FMPs. This should include an Ecosystem Technical Team and Advisory Team. Coordination with existing FMP teams is essential. This could be accomplished through joint appointment if time commitments are reasonable.
- A report on the state of California Current Ecosystem is available now to provide information on physical processes, habitat, and food web dynamics that are affecting Council-managed stocks. However, this information needs to be distilled into a useful product for Council review and discussion.
- A section on ecosystem considerations should be added to all stock assessments, starting with the 2013 assessment cycle. The detail and length of the section will vary and evolve over time. Stock assessment teams should include expertise in ecosystem processes to assist with this section development and stock assessment review.
- The SSC will need to modify Terms of Reference for stock assessment reviews to include reviews of ecosystem consideration sections of assessments and application of ecosystem processes in assessments and harvest control rules. Consideration of resources needed will be important to insure that STATs are not overcommitted.
- Workshops should be planned to discuss ecosystem models and their application to biological and socio-economic evaluations. Improved communication with developers of the California Current Integrated Ecosystem Assessment is desired to prioritize applications of the models to specific questions, such as cumulative effects evaluation and forecasting models for salmon.

Adjournment: The SSC adjourned at approximately 5:30 p.m., Thursday, June 9, 2011.

SSC Subcommittee Assignments, June 2011

Salmon	Groundfish	CPS	HMS	Economic	Ecosystem- Based Management
Robert Conrad	Vidar Wespestad	André Punt	Ray Conser	Cindy Thomson	Selina Heppell
Loo Botsford	Loo Botsford	Ray Conser	Robert Conrad	Vlada Gertseva	Ray Conser
Carlos Garza	Ray Conser	Carlos Garza	Selina Heppell	Todd Lee	Martin Dorn
Owen Hamel	Martin Dorn	Owen Hamel	Tom Jagielo	André Punt	Vlada Gertseva
Meisha Key	Vlada Gertseva	Selina Heppell	André Punt		Pete Lawson
Pete Lawson	Owen Hamel	Tom Jagielo	Vidar Wespestad		Todd Lee
Charlie Petrosky	Tom Jagielo	Meisha Key			André Punt
	André Punt				Cindy Thomson
	Theresa Tsou				Theresa Tsou

Bold denotes Subcommittee Chairperson

2011 Review Panels

As of 03/28/2011	Dates	Location	Species 1 (STAT Lead)	Species 2 (STAT Lead)	SSC Reprs.	Additional Reviewers
<u>CPS Panel 1</u>	Feb 2-5	La Jolla	Methodology Review	N/A	Punt – Chair Dorn – 2nd	CIE1: Gerlotto, CIE 2: Rune Godø, CIE 3: Simmonds
Whiting	Feb. 7-11	Seattle, WA	Pacific hake / Whiting	N/A	Jagielo	CIE 1: Jiao CIE 2: Wheeler CIE3: Cardinale
GF Panel 1	Apr 25-29/	SWFSC Santa Cruz Lab	Data Poor Methods / Examples	N/A	Dorn – Chair Punt – 2nd	CIE 1: Stokes Add.: Berkson
<u>CPS Panel 2</u>	May 2-6	SWFSC La Jolla	Pacific Mackerel (Crone)	N/A	Punt – Chair Key – 2nd	CIE: Casey Add.: Deroba
Updates	June 6	June Council Meeting Spokane, WA	bocaccio (Field), canary (Wallace), cowcod (Dick, data report only),	darkblotched (Stephens), yelloweye (Taylor)	SSC GF Sub.	N/A
GF Panel 2	June 20-24	Hotel Deca Seattle	Pacific ocean perch (Hamel)	Petrable sole (Haltuch)	Conser	CIE 1: Stokes CIE 2: Chen Add.: Ianelli
GF Panel 3	July 11-15	Hotel Deca Seattle	Widow rockfish (He)	Spiny dogfish (Gertseva)	Tsou	CIE 1: Stokes CIE 2: Cieri Add.: Spencer
GF Panel 4	July 25-29	NWFSC Newport Research Station	Sablefish (Stewart)	Dover sole (Hicks)	Wespestad	CIE 1: Stokes CIE 2: Kupschus Add.: Samson
GF Panel 5	August 8-12	SWFSC Santa Cruz Lab	Greenspotted rockfish (Dick)	Blackgill rockfish (Field)	Gertseva	CIE 1: Stokes CIE 2: Armstrong Add.: Botsford
Mop-up	Sept. 26-30	Seattle, WA	Assigned, as needed		GF Sub.	
<u>CPS Panel 3</u>	October 4-7	SWFSC La Jolla	Pacific Sardine (Hill)	N/A	Punt – Chair Conser – 2nd	TBD

DRAFT Tentative Council and SSC Meeting Dates for 2011

Council Meeting Dates	Location	Likely SSC Mtg Dates	Major Topics
March 5-10, 2011 Advisory Bodies may begin Thu, March 3 Council Session begins Sat, March 5	<u>Hilton Vancouver Washington</u> 301 W. 6th Street Vancouver, WA 98660 Phone: 360-993-4500	o Day Session Fri, March 4 – Sat, March 5	Pacific Hake Assessment Salmon Review/Pre I Salmon EFH Final SFCH Overfishing Report
April 9-14, 2011 Advisory Bodies may begin Thu, April 7 Council Session begins Sat, April 9	<u>San Mateo Marriott</u> 1770 South Amphlett Boulevard San Mateo, CA 94402 Phone: 650-653-6000	Two Day Session Fri, April 8 – Sat, April 9	Final CPS EFPs CPS Method. Rev.
June 8-13, 2011 Advisory Bodies may begin Tue, June 7 Council Session begins Wed, June 8	DoubleTree Hotel Spokane City Center 322 N. Spokane Falls Court Spokane, WA 99201 Phone: 509-455-9600	GF – Sub Monday June 6 Three Day SSC Session Tues, June 7 – Thurs, June 9	GF Assessment Review P. Mackerel Assessment
September 14-19, 2011 Advisory Bodies may begin Tue, Sept 13 Council Session begins Wed, Sept 14	<u>San Mateo Marriott</u> 1770 South Amphlett Boulevard San Mateo, CA 94402 Phone: 650-653-6000	Three Day SSC Session Tues, Sept 13 – Thurs, Sept 15	GF Assessment Review GF Econ Model Review GF Fishery Model Review OFL/ABC Recs.
November 2-7, 2011 Advisory Bodies may begin Tue, Nov 1 Council Session begins Wed, Nov 2	<u>Hilton Orange County/Costa Mesa</u> 3050 Bristol Street Costa Mesa, CA 92626 Phone: 714-540-7000	Three Day SSC Session Tues, Nov 1 – Thurs, Nov 3	GF Assessment Review Final Salmon Method. Rev Pacific Sardine Assessment

SSC Meeting Dates and Durations are tentative and are subject to change in response to Council meeting dates and agendas, workload, etc.