

MINUTES
Scientific and Statistical Committee

Pacific Fishery Management Council
DoubleTree by Hilton Sonoma
Salon II Room
One Doubletree Drive
Rohnert Park, CA 94928
Telephone: 707-584-5466

April 10-11, 2015

Members in Attendance

Mr. Alan Byrne, Idaho Department of Fish and Game, Boise, ID
Dr. Andrew Cooper, Simon Fraser University, Vancouver, B.C.
Dr. Martin Dorn, National Marine Fisheries Service, Seattle, WA
Dr. John Field, National Marine Fisheries Service, Santa Cruz, CA
Dr. Owen Hamel, National Marine Fisheries Service, Seattle, WA
Dr. Daniel Huppert, University of Washington, Seattle, WA
Mr. Tom Jagielo, Seattle, WA
Dr. Galen Johnson, Northwest Indian Fisheries Commission, Olympia, WA
Ms. Meisha Key, SSC Chair, California Department of Fish and Wildlife, Santa Cruz, CA
Dr. Peter Lawson, National Marine Fisheries Service, Newport, OR
Dr. Todd Lee, National Marine Fisheries Service, Seattle, WA
Dr. Kevin Piner, National Marine Fisheries Service, La Jolla, CA
Dr. André Punt, University of Washington, Seattle, WA
Dr. David Sampson, Oregon Department of Fish and Wildlife, Newport, OR
Dr. William Satterthwaite, SSC Vice-Chair, National Marine Fisheries Service, Santa Cruz, CA
Dr. Cameron Speir, National Marine Fisheries Service, Santa Cruz, CA
Dr. Tien-Shui Tsou, Washington Department of Fish and Wildlife, Olympia, WA

Members Absent

None.

SSC Recusals for the April 2015 Meeting		
SSC Member	Issue	Reason
Dr. André Punt	G.1 Final Action on Sardine Assessment, Specifications, and Management Measures	Dr. Punt chaired the update review panel
Dr. André Punt	Ocean Modeling Forum	Dr. Punt is leading the OMF initiative

A. Call to Order

Chair Meisha Key called the meeting to order at 0800. Dr. Donald McIsaac provided an overview of the agenda.

Dr. André Punt recused himself from Agenda Item G.1 since he chaired the update Pacific sardine assessment review. He also recused himself from the Ocean Modeling Forum since he is leading the initiative. Dr. Cameron Speir volunteered to serve on the Economics and Salmon subcommittees. Dr. Dave Sampson provided an overview of the Nearshore Assessment Workshop. A report will be provided in the June briefing book. The group discussed future workload planning. For most SSC members, the June meeting will be four days with the Groundfish Subcommittee meeting on June 10, the full SSC on June 11 and 12, and the Groundfish and Economic Subcommittees meeting on June 13. Dr. Martin Dorn briefed the SSC on the Council's decision on Fishery Ecosystem Plan initiatives. The Ecosystem Working Group has scheduled a teleconference for April 29 to discuss the process of working with the Integrated Ecosystem Assessment team to make progress on the initiatives.

E. Groundfish Management

8. Inseason Adjustments Including Carryover and Regulatory Amendment to Manage Set-Asides

Mr. Daniel Erickson presented the Groundfish Management Team (GMT) report (Agenda Item E.8.a, GMT Report 2) on big skate catch and the recent ecosystem component (EC) designation for the stock. The presentation included catch monitoring data that was not included in the report. To improve the current analysis, the Scientific and Statistical Committee (SSC) recommends the big skate portion of the unspecified skate catch be apportioned using catch monitoring data in Washington and catch composition data in Oregon and California. Given it appears that big skate is a targeted fishery with substantial levels of catch, the SSC recommends the big skate EC designation be revisited.

Furthermore, additional information may be available in the literature on skate discard mortality and the SSC requests the GMT review the relevance of this information for determining the discard mortality rate. Alternative discard mortality estimates should be reviewed by the SSC.

G. Coastal Pelagic Species Management

1. Final Action on Sardine Assessment, Specifications, and Management Measures

Dr. Kevin Hill presented the 2015 sardine update assessment to the Scientific and Statistical Committee (SSC). This update was reviewed by the SSC Coastal Pelagic Species (CPS) Subcommittee on March 6, 2015. The update assessment was complete and well documented and followed the Terms of Reference for update assessments. The SSC endorses an overfishing limit (OFL) of 13,227 mt and the tier-1 default sigma (σ) of 0.36 to be used in determining the ABC.

New data in the 2015 update include catch data for 2014 (and updated catch data from 2013), indices from both the spring and summer 2014 Acoustic Trawl Method (ATM) surveys, and 2013 fishery and survey conditional age-at-length data and 2014 length composition data. Age data

were not available for the 2014 fisheries or surveys in time for inclusion in the update. The 2014 Daily Egg Production Method (DEPM) estimate was not included in the 2015 update because the CalVET gear used for that index caught no eggs during the 2014 California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey, and therefore a usable index for the model could not be produced. Dr. Hill noted that very low and zero egg counts had occurred previously when the biomass of Pacific sardine was at very low levels. The issue of how to include zero and near zero biomass indices should be addressed prior to the next full assessment.

The spring and summer 2014 ATM surveys produced biomass indices of 35,339 mt (CV = 0.4) and 26,280 mt (CV = 0.7), respectively. These surveys were conducted in a similar manner to previous ATM surveys, and the biomass indices are both far below those produced in 2014 (each was over 300,000 mt). Both fishery fleets saw, on average, larger fish in 2014 and 2013 than were seen in previous years. This appears to reflect a lack of smaller fish due to poor recent recruitment.

In the course of reviewing the update assessment it became evident that the base model used in the 2014 assessment did not correspond to the best fit to the data. Upon further exploration, a better fit was achieved (Table 9, column “T-2014 Revised”, Agenda Item G.1.a). This revised 2014 model resulted in selectivity patterns similar to those in the 2015 update, while differences in selectivity patterns between the two assessments had been a point of concern in reviewing the 2015 update. The 2014 stock biomass in the revised 2014 model is lower than that reported in the 2014 assessment (275,705 vs. 369,506 mt). Application of the OFL control rule to the 2014 biomass estimate in the revised 2014 model results in a value of 29,256 mt (vs. 39,210 mt), while application of the HG control rule in place in 2014 to the revised 2014 biomass estimate results in a value of 16,405 mt (vs. 28,646 mt). It is not appropriate, in this context, to contemplate what the 2014/2015 OFL would have been based upon the 2014 biomass estimate from the 2015 assessment.

Recent assessments, including the 2014 assessment, have estimated the most recent recruitment from the stock-recruitment curve. However, this approach has been found to consistently overestimate the recruitment in recent years (based upon subsequent information). Because of this, the stock assessment team (STAT) recommended averaging the estimates of the previous three years’ recruitments (as has been done previously in the Pacific mackerel assessment). The SSC considers this approach to be consistent with recent observed patterns and supports this method for estimating the 2014 recruitment. The SSC finds the 2015 update with this recruitment estimation approach to represent both an appropriate update of the 2014 sardine assessment model and the best available science. The biomass estimate (96,688 mt) and management quantities for this model are shown in part (b) of the table on page 12 of Agenda Item G.1.a, Assessment Report Executive Summary. The SSC endorsed 2015/16 Pacific sardine OFL of 13,227 mt is in that table.

The SSC notes that the 2014 ATM surveys were fairly influential in the final update assessment results. However, given the above SSC endorsed approach for estimating 2014 recruitment, the biomass estimate for 2015 remains below 150,000 mt (145,785 mt; Kevin Hill, pers. comm.) even when the 2014 ATM surveys are not included in the model.

The fits to the abundance indices and composition data in the assessment update remain poor, and the fits are worse in recent years than earlier in the time series. This lack of fit is concerning, and

it is not clear how this can be fixed without better data. The catchability and selectivity of the acoustic and trawl portions of the ATM surveys in particular remain large sources of uncertainty in the assessment. The SSC recommends prioritizing a methodology review of the ATM survey over a full assessment next year. If the Council also considers this a priority, the SSC CPS subcommittee will work with the Southwest Fisheries Science Center (SWFSC) to evaluate progress on recommendations from the last ATM survey review and prepare for the recommended methodology review.

SSC Notes:

SSC CPS subcommittee meeting report:

Sardine assessment update review March 6, 2015, Vancouver WA.

Dr. Kevin Hill (SWFSC) presented the 2015 sardine update assessment to the CPS subcommittee with input from Dr. Paul Crone (SWFSC) as well as a presentation on the 2014 Acoustic Trawl Method (ATM) surveys from Dr. David Demer (SWFSC).

New data in the 2015 update included conditional age-at-length data for 2013 and length composition data for 2014 from the MexCal and PacNW fisheries and ATM surveys, catch data for 2014 (and updated catch data from 2013), and indices from both the spring and the summer 2014 ATM surveys. Ages were not yet available for 2014 fisheries or surveys. The 2014 DEPM estimate was not included in the 2015 update because although the sampling protocol was unchanged from that in previous years, the CALVET gear used for that index caught no eggs during the 2014 CalCOFI survey, and therefore a plausible index for use in the model could not be produced. The point estimate of abundance from any DEPM method would be zero but there is no reviewed and approved basis to estimate its variance or to include such an estimate in the SS model. Dr. Hill noted that very low and zero egg counts had occurred when the biomass of Pacific sardine was at a very low level. The issue of how to include zero and near zero estimates of abundance should be addressed prior to the next full assessment.

The spring and summer 2014 ATM surveys produced biomass indices of 35,400 mt ($cv = 0.4$) and 26,280 mt ($cv = 0.7$). These surveys were conducted in a similar manner to previous ATM surveys, and the estimates of abundance are both far below the indices produced in 2014 (both over 300,000 mt).

Both the MexCal and PacNW fleets saw on average larger fish in 2014 and 2013 than were seen in previous years. This reflects a lack of smaller fish due to apparent poor recent recruitment.

In the course of reviewing the update assessment, concern was raised about the difference between the 2014 Stock Biomass estimate and the biomass estimate obtained after adding and updating catch data through 2014 (the estimate of 2014 stock biomass declined by more than 5% from 369,506 mt to 350,853 mt; see columns T-2014 and +Catch in Table 8 in the update assessment). The estimated selectivity of the spring ATM survey changed from being a fairly wide logistic curve to an almost knife-edged function in the new assessment. This change is associated with the reduction in the absolute scale of the entire time series of biomass estimates. It became evident upon further exploration that the base model used in the 2014 assessment did not correspond to

the best fit to the data.

Starting from the 2014 assessment model, after changing the phasing of the parameter estimation algorithm and the initial value for R_0 , an apparently converged result was arrived at which was similar to the low point of the profile on R_0 in the 2014 assessment report. The selectivity pattern for the spring ATM survey and the biomass trajectory from the 'revised' 2014 assessment were much closer to those estimated in the 2015 update. This discovery appears to have resolved the concern about the change in scale from the 2014 full assessment to the 2015 update. Given that the results of the tasks below continue to support that conclusion, the CPS Subcommittee finds the 2015 update to represent an appropriate update of the 2014 sardine assessment model.

Before the April meeting, the STAT will examine the convergence of the final 2015 update model further by exploring alternative phasing, initial values, and jittering. The STAT will also add a column to Table 8 in the assessment document representing the newly converged model for 2014 and compare spring ATM selectivity as well as 1+ biomass trajectories across all columns of that table.

While the most consistent update is the model with the 2014 recruitment estimated within the model, there has been a persistent retrospective issue with recruitment in recent years (overestimated based on subsequent information), and at the April 2015 Council meeting the SSC should consider an alternative way to estimate recruitment, namely setting 2014 recruitment to be the average of the previous three estimated recruitments.

The Subcommittee wishes to thank the STAT for a complete and well documented update assessment.

2. Finalize Methodology Review COP

The Scientific and Statistical Committee (SSC) reviewed a draft of Council Operating Procedure (COP) 26 for Coastal Pelagic Species (CPS) Methodology reviews, presented by Mr. Kerry Griffin. The SSC recommends the following changes to the last sentence in paragraph 1 of page 2 (Agenda Item G.2, Attachment 1):

The Terms of Reference for the Methodology Review Process for Groundfish and Coastal Pelagic Species Terms of Reference (TOR) includes detailed descriptions of the responsibilities of methodology proponents and other participants, the mechanism for identifying review panel members, the format and contents for the panel's report, requirements for making meeting materials available, and other information germane to conducting the methodology review meeting.

D. Salmon Management

2. Methodology Review Preliminary Topic Selection

The Scientific and Statistical Committee (SSC) met with Dr. Robert Kope and Mr. Mike Burner to discuss possible methodology review topics for 2015. Dr. Kope stated that the Salmon Technical Team (STT) had no new items for methodology review topics, and all items from last year were completed, so there was no carryover. Mr. Mike Burner noted two ongoing items from

the Model Evaluation Workgroup (MEW) and introduced three new items from the Salmon Advisory Subpanel (SAS), which may be ready for methodology review in October. The lead entity for each work product is identified at the end of the item.

- The Chinook FRAM base period data set will be updated, and some associated base period algorithm changes proposed (MEW).
- The Fishery Regulation Assessment Model documentation will be updated (MEW).

Three proposals to evaluate stock composition by area were presented, each of which would potentially lead to new management boundaries and harvest model modifications if sufficient differences between areas are found.

- The stock composition in the northern and southern areas of the open portion of the California Klamath Management Zone will be compared (CDFW/NMFS).
- To explore the effectiveness of fisheries restrictions south of Point Sur in reducing impacts on Winter run Chinook, the stock-specific fisheries impacts on Chinook north and south of Point Sur line will be compared (CDFW/NMFS).
- The stock-specific fisheries impacts north and south of the Point Reyes line will be compared (CDFW/NMFS).

Work on the development of a new model for the estimation of ocean impacts for Klamath Spring Chinook will be initiated by the California Tribes in 2015, but is not expected to be ready for review by this fall.

E. Groundfish Management, continued

4. Finalize Methodology Review COP

The Scientific and Statistical Committee (SSC) reviewed the revised Council Operating Procedure (COP) 25 for Groundfish Methodology Reviews. The SSC recommends the modified COP 25, as shown in the appended revised version of COP 25, be adopted. The recommended modifications include:

- Separating the review processes and time tables for reviewing methods used for stock assessments and methods used for setting groundfish harvest specifications.
- In the “Purpose” section, highlight the SSC’s role in evaluating whether a review of the methodology is warranted, and, if so, the type of review that is warranted.
- Clarify the GAP’s role in the methodology review process.
- Change the subtitle of the COP to Groundfish Methodology Reviews.

COUNCIL OPERATING PROCEDURE

Groundfish Methodology Reviews

Approved by Council:

PURPOSE

To establish procedures for the review and Council approval of groundfish impact analyses and new methodologies that inform stock assessments, utilizing the Scientific and Statistical Committee (SSC), the Groundfish Management Team (GMT), and the Groundfish Advisory Subpanel (GAP). The SSC will review new methodologies proposed in the Council process and inform the Council of the type of review necessary to evaluate proposed new methodologies, whether the methodology review should include involvement of external reviewers such as the Center for Independent Experts (CIE) or whether the review will only be conducted by the SSC. The SSC will also recommend whether the methodology review would benefit from GMT and GAP participation and advice. Two types of methodology reviews are described in this process: methods used to predict impacts, both biological and socioeconomic, in the biennial specifications process and methodologies proposed to inform stock assessments. The review of proposed methodologies is intended to help clarify the technical basis for the Council's management actions in a scheduled manner that avoids ad hoc timing perplexities. The procedure is intended to provide peer review of the technical estimation and modeling procedures, to ensure the best and most objective technical analyses possible, to minimize confusion during the biennial management decision-making process, and to resolve disputes over methodology.

OBJECTIVES AND DUTIES

New Methodologies for Impact Analyses Proposed to Inform Decisions in the Biennial Specifications Process

During the September meeting during even years or at other appropriate times, the SSC, in conjunction with the GMT, will identify methodology issues which need documentation and/or merit a full review. The SSC is responsible for reviewing new or changed methodology as opposed to specific applications of the methodology. Examples of issues that could merit a full review include new model algorithms, methods for incorporating base data into models, catch forecasting methods for major PFMC stocks, and technical changes to stock complexes or conservation objectives. Examples of issues that do not merit full review include updating existing data sets in models, adding new stocks to models, and changing data ranges used to estimate parameters in models. Issues in this latter category will be reviewed within the GMT, and can be implemented without formal review by the SSC and approval of the Council; provided both the Council and SSC receive updates on such changes; however, if warranted, the Council may require additional review by the SSC. However, the review of new proposed methodologies that could inform stock assessments are part of this COP as described below.

At the November meeting during even years the SSC will inform the Council of the methodologies ready for review and recommend a review schedule. The SSC also will notify the Council of assistance needed from management entities and the GMT to accomplish the review. In rare cases, there may be a need to schedule a methodology review outside the schedule prescribed in this COP. The SSC and GMT will notify the Council when such unanticipated reviews are recommended.

New Methodologies Proposed to Inform Stock Assessments

Stock assessment reviews are not part of this COP as they are governed by a specific stock assessment Terms of Reference, which is established biennially. However, a separate methodology review process will formally review new methodologies proposed for use in groundfish stock assessments. New stock assessment methodologies will be proposed to the SSC during September of odd years. The stock assessment methodology reviews will be conducted during even years and completed at least by March of odd years. If endorsed, these new methodologies would be available for use in that year's cycle of stock assessments.

The objectives, roles and responsibilities of participants, and the template for methodology review panel reports in the groundfish methodology process are outlined in the latest version of the Terms of Reference for the Methodology Review Process for Groundfish and Coastal Pelagic Species. The appropriate management entities, either themselves or with assistance from the GMT, are expected to provide background information on procedures and data bases for methodologies undergoing full review, as well as early notification and documentation of anticipated changes in procedures for methodologies not under full review in a particular year. Management entities who submit proposals for the Methodology Review, are responsible for ensuring that materials they provide to the SSC and Council are technically sound, clearly documented, and identified by author. Documents should receive internal entity review before being sent to the Council. To provide adequate review time for the SSC, materials must be received in the Council office at least two weeks before scheduled review meetings.

The SSC has the responsibility for determining whether any proposed methodology is acceptable for use in stock assessments and in analysis of harvest specifications. The SSC and the GMT and the GAP, if involved in a particular methodology review, will report to the Council at the September meeting during odd years on the results of these reviews and provide recommendations for all proposed methodology changes. During the September meeting during odd years, the Council will adopt all proposed changes to be implemented in the coming biennial management cycle or will provide directions for handling any unresolved methodology problems.

J. Emergency Sardine Considerations

1. Consideration to Schedule Emergency Action for Changes to the 2014-2015 Pacific Sardine Directed Fishery

The Scientific and Statistical Committee (SSC) discussed the Status Determination Criteria (SDC) adopted to define overfishing, approaching overfishing, overfished, and approaching overfished for the Pacific sardine stock within the Coastal Pelagic Species Fishery Management Plan (CPS FMP). The SSC reviewed each definition in sections 4.3 and 4.4 of the CPS FMP, considered each in the context of the adopted reference points and the best available scientific information, and prepared Table 1 to address each determination.

With respect to the definition of overfishing, the existing National Standard 1 (NS1) guidelines state that each FMP must describe which of two possible methods will be used to determine an overfishing status. The two alternatives available for determining overfishing are: 1) Fishing mortality rate exceeds the Maximum Fishing Mortality Threshold (MFMT), and: 2) the catch exceeds the overfishing limit (OFL). In operational terms, the CPS FMP uses method 2, such that overfishing is defined as occurring when catch exceeds the adopted OFL. Thus, by the definition of overfishing in the NS1 guidelines, overfishing is not currently occurring for Pacific sardine, as the 2014-2015 catch (18,935 mt, estimates provided by CPS Management Team) has not exceeded the adopted 2014-2015 OFL (39,210 mt).

Had the errors in the 2014 assessment been addressed in early 2014 and an OFL adopted based on the revised model, the recommended OFL would have likely been 29,256 mt. The SSC does not find this alternative OFL calculation to be appropriate to apply in order to address the question of whether overfishing is currently taking place. The SSC does not recalculate OFLs for any FMP species based on new assessment updates or information, since the consequences of mid-stream recalculation of previously-adopted OFLs would disrupt the process. However, this does not preclude taking action to reduce catches in situations in which updated information has been made available to the Council.

The SSC evaluated the question of whether the Pacific sardine stock is “approaching overfishing” by referencing section 4.3 in the CPS FMP, which reads “...overfishing is approached whenever projections indicate that fishing mortality or exploitation rates will exceed the OFL level within two years.” The SSC notes that the term “approaching overfishing” as defined in the CPS FMP is not clearly defined and should be revisited. The SSCs calculation of the current exploitation rate is based on the best available estimate of the current (2014-2015) sardine catch (18,935 mt), and the best available science regarding the status of the stock (the 2014 age 1+ biomass from the 2015 update assessment; 150,335 mt). This provides an estimated exploitation rate for the 2014-2015 fishing year to date of 12.6 percent. The adopted target exploitation rate for the 2014-2015 fishing season, based on application of the 2014 harvest control rule was 12.2 percent. Consequently, the stock is approaching overfishing in the 2014-2015 fishing season. Final estimation of exploitation rates will depend on a number of additional factors, including catches in U.S. waters during the remainder of the fishing year, catches of the northern sardine subpopulation caught in Mexico, and the fraction of observed U.S. catches that are estimated to represent fish from the southern subpopulation caught in the U.S. The current U.S. catches represent the best estimate for the total (U.S. + Mexico) catch for the northern subpopulation, given the stock assessment team’s description of the current temperature regime.

With respect to the question of whether the stock is overfished, the SSC finds that the current biomass estimated by the 2015 update assessment (96,688 mt as of July 1, 2015) is greater than the adopted Minimum Stock Size Threshold (MSST) for this stock (50,000 mt), therefore, the stock is not overfished.

With respect to the question of whether the stock is approaching an overfished condition, the SSC reiterates the stock assessment finding that the total stock biomass of Pacific sardine is declining as a result of poor recruitment. The best available stock projection at this time is from the 2015 update assessment (96,688 metric tons as of July 1, 2015). If poor recruitment conditions persist, it is plausible that the stock could reach an overfished condition within two years.

The SSC briefly discussed the “projections” of sardine recruitment presented on slide 14 of the supplemental PowerPoint attachment from Oceana (Agenda Item B.1.b, Supplemental Open Public Comment 10). The SSC observes that these projections are not included in the stock assessment or Stock Assessment Review Panel report, and the SSC was not provided with their scientific basis.

Table 1: Pacific sardine management quantities for 2014-2015.

State	Finding	Rationale
Overfishing?	N	2014-15 catch (18,935) < 2014 OFL (39,210)
Approaching overfishing?	Y?	2014-15 E (12.6%) > target E _{MSY} (12.2%)
Overfished?	N	Current 1+ biomass (96,688) > MSST (50,000)
Approaching overfished?	Unknown	No stock assessment projections available

SSC notes:

The finding that the stock is not overfished (Current 1+ biomass (96,688) > MSST (50,000)) is conditioned upon catches for the 2014-2015 season being equal to the adopted 2014-2015 Harvest Guideline; if the realized catches are lower than the adopted OFL, the estimate would need to be revised accordingly.

A. SSC Administrative Matters, Continued

6. Overview of the Ocean Modeling Forum

Dr. André Punt provided an overview of the Ocean Modeling forum. No report or notes were produced for this agenda item, which was only informational for the SSC.

9. Review the Management Strategy Evaluation of Rebuilding Revision Rules

The report to Council is scheduled for June. The following are the SSC notes on this item:

SSC Notes:

Scientists at the Northwest Fisheries Science Center (NWFS) and the University of Washington (UW) have been working on a management strategy evaluation (MSE) to compare different strategies to rebuild overfished groundfish stocks. This research evaluates how to monitor progress towards achieving rebuilding goals and how often (if at all) to adjust the parameters of the rebuilding plans as new information and stock assessments become available (rebuilding revision rules). Ms Chantel Wetzel (NWFS and UW) presented initial results of an MSE she is conducting with Dr André Punt (UW). The MSE is structured to compare strategies across different groundfish life history types, ranging from a productive flatfish species to a much less productive rockfish species. The MSE is designed to evaluate performance with respect to the following management objectives:

1. *Rebuilding revision rules are robust to statistical uncertainty.*
2. *The stock is rebuilt quickly while taking into account economic impact.*
3. *Changes in harvest rates are limited during rebuilding (predictability).*

The MSE for rebuilding revision rules is tentatively scheduled for presentation and Council action at the June meeting. Ultimately, this MSE could form the basis for a Council policy on revising rebuilding plans. The SSC's review at this meeting is intended to provide guidance to the analysts on the design and implementation of the MSE. The SSC makes the following recommendations:

- *The fixed rebuilding plan alternative is similar to the guidance on revising rebuilding plans in the draft National Standard One (NS1) guidelines (Agenda Item F.2, Attachment 1). The NS1 guidelines recommend changing to the maximum of rebuild fishing mortality and 75% of F_{MSY} (or its proxy) if the stock has not rebuilt by T_{target} , while the fixed rebuilding plan alternative increases the SPR rate by 25% in the same situation. This alternative should use the NS1 guidelines approach except that the harvest rate should be held constant if 75% of F_{MSY} is a higher harvest rate than the rebuilding SPR rate. The draft NS1 guidelines should be checked to evaluate whether other alternatives could be usefully added to MSE.*
- *Consider adding an alternative that decouples the timing for stock assessments and revising rebuilding plans. One possibility is a fixed, but infrequent, schedule for application of the rebuild revision rules (an example is 16 years or $\frac{1}{2}$ of T_{target} whichever is smaller) along with more frequent assessments.*
- *Provide an alternative that evaluates sensitivity to an incorrect value of stock-recruit steepness.*
- *Currently there is constraint that catches cannot increase by 1.2 x current catch, or decrease by 0.5 x current catch. Sensitivity to this constraint should be evaluated. For example, drop the constraints altogether or constrain the catch to be no greater than the ABC.*
- *Develop a graphic that depicts the hierarchical process whereby rebuilding plan parameters are adjusted to improve rebuilding probabilities (i.e., first SPR is adjusted, then T_{target} is adjusted, and finally the entire rebuilding plan is reset).*
- *Add spawning biomass plots to the figures for each alternative. Include both median and 95% simulation intervals as well as plots of individual simulations.*
- *Develop plots that summarize the standardized error rate, (estimated – true)/true.*
- *Develop a plot that displays results for multiple alternatives in a single plot, such as a Zeh plot (multiple box and whisker plots) or violin plot. Generally for these kinds of displays, provide results in one plot for rebuilding plan revision alternatives, and results in another plot for scenarios that evaluate sensitivity to parameter uncertainty (i.e., uncertainty in M , historical catches, steepness)*
- *Consider adding a performance metric that evaluates the predictability of rebuilding plans. An example is the absolute average variation in catch (AAV).*

F Council Administrative Matters

2. Prepare Comments on Proposed Changes to National Standard Guidelines 1, 3, and 7

The Scientific and Statistical Committee (SSC) was briefed by Dr. Wes Patrick on the proposed

revisions to National Standards (NS) 1, 3 and 7, as well as the general section of the National Standards. The proposed revisions address several of the SSC's early comments on modifications to the Magnuson-Stevens Act (MSA) (Supplemental SSC reports: Agenda Item A.4, April 2013; Agenda Item H.1, September 2013). However, the revisions do not address issues such as the 10-year maximum rebuilding time because these issues are recommended to be implemented in the MSA for the next re-authorization.

While the proposed revisions should introduce additional flexibility into management decision-making, there is a danger that decision-making could become substantially more complicated without additional guidance. For example, three alternative definitions are provided for how to calculate the maximum time to rebuild overfished stocks (T_{MAX}). However, no guidance is provided on who would choose among the options and how the choice should be made.

Management of groundfish complexes involves computing overfishing level (OFL) and acceptable biological catch (ABC) components for each stock within the complex and summing these to compute an OFL and ABC for the complex. The SSC was advised by Dr. Patrick that management of a stock complex could be informed by an indicator stock that is not part of the complex. The SSC recommends that the guidelines specifically include this possibility.

The proposed revisions attempt to address the Council's concern regarding stocks mistakenly determined to be overfished. However, the proposed guidelines refer to whether the stock was overfished in the year when the stock was originally declared overfished. This may be an inadequate guideline given that the years in which a stock was overfished may change between assessments. The SSC recommends that a wider set of years be used when deciding whether to discontinue a rebuilding plan. In addition, consideration should be given to discontinuing a rebuilding plan only if two consecutive assessments confirm that the stock was mistakenly determined to be overfished.

The proposed guidelines include several data-poor methods for determining Annual Catch Limits (ACLs). The SSC agrees that there is need for additional methods for setting ACLs in data-poor situations, particularly when estimates of catch are highly uncertain. The SSC recommends that the guidelines should be expanded to include other methodologies (e.g., spatial closures and empirical CPUE methods) if analyses, such as management strategy evaluations, show that they can achieve management goals.

The SSC notes that the definition of overfishing in Section e.2.i.B. (fishing mortality $> F_{MSY}$) conflicts with that in Section e.2.ii.A.2 (catch exceeding the OFL) in the proposed revision to NS1 guidelines. An alternative term should be developed for one of these two terms to avoid confusion.

The definitions of overfished and depleted should be revisited in Sections e.2.i.E. and e.2.i.F in the proposed revision to NS1 guidelines to ensure they are clearly delineated either as exclusive terms or with one as a subset of the other. Defining a stock as depleted only if there was no overfishing in two generation times, which may be more than 100 years for many rockfish species, can be unduly restrictive.

In relation to the SSC's previous comments on revisions to the NS Guidelines and the MSA, the proposed revisions do not include:

- a transboundary stock rebuilding exception;

- an exception for rebuilding provisions for short-lived as well as annual species; and
- making the mixed stock exemption operational, and providing guidelines for the biological and economic analyses needed for justifying its application.

The SSC recommends that guidelines be expanded to address these issues.

SSC Notes:

1. *In F.4.iv., it states that the ABC is designed to prevent overfishing. However, in F.3.ii., it suggests a rebuilding ABC may be defined. But this would have a different goal – to rebuild the stock. A different term such as rebuilding ACL would be more consistent with the definitions of ABC and ACL.*
2. *A rebuilding plan should not be required even if the stock was below the MSST sometime in the past but the stock was not declared overfished.*

SSC Subcommittee Assignments, April 2015

Salmon	Groundfish	Coastal Pelagic Species	Highly Migratory Species	Economics	Ecosystem-Based Management
Pete Lawson	David Sampson	André Punt	Kevin Piner	Todd Lee	Martin Dorn
Alan Byrne	Andrew Cooper	Alan Byrne	Andrew Cooper	Dan Huppert	John Field
Owen Hamel	Martin Dorn	Owen Hamel	John Field	André Punt	Pete Lawson
Galen Johnson	John Field	Dan Huppert	André Punt	David Sampson	Galen Johnson
Meisha Key	Owen Hamel	Tom Jagielo	David Sampson	Cameron Speir	Todd Lee
Will Satterthwaite	Tom Jagielo	Meisha Key			Kevin Piner
Cameron Speir	Meisha Key	Will Satterthwaite			André Punt
	André Punt				Will Satterthwaite
	Tien-Shui Tsou				Tien-Shui Tsou

Bold denotes Subcommittee Chairperson

PFMC
03/20/15

DRAFT Tentative Council and SSC Meeting Dates for 2015

Council Meeting Dates	Location	Likely SSC Mtg Dates	Major Topics
<p>March 7-12, 2015 Advisory Bodies may begin Fri, March 6 Council Session begins Sat, March 7</p>	<p>Hilton Vancouver Washington 301 W. Sixth Street Vancouver, WA 98660 USA Phone: 360-993-4500</p>	<p>One-day CPS Subcm Session Thu, March 5 Two-day SSC Session Fri, March 6 – Sun, March 7</p>	<p>IEA annual report Final CPS EFP Pacific mackerel set-aside Final CPS methodology review Salmon review/Pre I CA current & IEA reports Unmanaged forage fish FPA</p>
<p>April 11-16, 2015 Advisory Bodies may begin Fri, Apr 10 Council Session begins Sat, Apr 11</p>	<p>DoubleTree by Hilton Sonoma One Doubletree Drive Rohnert Park, CA 94928 Telephone: 707-584-5466</p>	<p>Two-day SSC Session Fri, April 10 – Sat, April 11</p>	<p>Pacific sardine assess. Groundfish methodology review COP – final Salmon methodology topic selection NS1 guidelines comments</p>
<p>June 10-17, 2015 Advisory Bodies may begin Thu, June 11 Council Session begins Fri, June 12</p>	<p>DoubleTree by Hilton Spokane City Center 322 N. Spokane Falls Court Spokane, WA 99201 Phone: 509-455-9600</p>	<p>One-day GF Subcm Session Wed, June 10 Two-day SSC Session Thu, June 11 – Fri, June 12 One-day GF/Econ Subcms Session Sat, June 13</p>	<p>Mackerel assess. & mgt. measures Anchovy update Groundfish stock assess. Groundfish spex process and schedule Rebuilding Revision Rules</p>
<p>September 11-16, 2015 Advisory Bodies may begin Thu, Sept 10 Council Session begins Fri, Sept 11</p>	<p>DoubleTree by Hilton Hotel Sacramento 2001 Point West Way Sacramento, CA 95815 Phone: 916-929-8855</p>	<p>Two-day SSC Session Thu, Sept 10 – Fri Sept 11</p>	<p>Plan science improvements Salmon methodology topic priorities Tule control rule review Groundfish stock assess. Groundfish EFH amendment</p>
<p>November 14-19, 2015 Advisory Bodies may begin Fri, Nov 13 Council Session begins Sat, Nov 14</p>	<p>Hyatt Regency Orange County 11999 Harbor Blvd. Garden Grove, CA 92840 Phone: 714-750-1234</p>	<p>Two-day SSC Session Fri, Nov 13 – Sat, Nov 14</p>	<p>CPS methodology topic selection Groundfish stock assess, and reb. anal. Groundfish biennial spex Salmon methodology review</p>

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

Proposed Workshops and SSC Subcommittee Meetings for 2015

Tentative – Depended on funding, dates subject to change

☐– Prep. Work Underway, Scheduled to Occur; ▣– Status of Supporting Analyses Uncertain, Remains a Priority;

▨– Setbacks exist, Questionable; ■– Funding or Prep. Not Avail, likely to be canceled or postponed

Workshop/Meeting		Potential Dates	Sponsor/ Tentative Location	SSC Reps.	Additional Reviewers	AB Reps.	Council Staff
1	National SSC Meeting	Feb. 23 - 25	WPFMC/ Honolulu	Key, Dorn, Hamel, Satterthwaite	TBD	NA	DeVore
2	Pacific Sardine Update Review	Mar. 6	Council/ Vancouver, WA	CPS Subcommittee	None	CPSMT CPSAS	Griffin
3	Nearshore Assessments Workshop	Mar. 31 – Apr. 2	Council/ Portland	Sampson, Cooper, Key, Dorn	None	GMT GAP	DeVore
4	Canary/Darkblotched Rockfish STAR	Apr. 27 – May 1	Council/ Seattle	Jagielo	2 CIE + Ianelli	GMT GAP	DeVore
5	Pacific Mackerel STAR	Apr. 27-29	Council/ La Jolla	Punt, Jagielo	2 CIE + 1	CPSMT CPSAS	Griffin
6	Review for Sablefish, Petrale Sole, and Chilipepper Rockfish Updates; Arrowtooth Data- Moderate Assessment, and Catch Reports	June 10	Council/ Spokane	GF Subcommittee	None	GMT GAP	DeVore
7	Review Trawl IFQ Model	June 13	Council/ Spokane	GF & Econ Subcommittees	None	GMT GAP	DeVore
8	Bocaccio/China STAR	July 6-10	Council/ Santa Cruz	Dorn	2 CIE + 1	GMT GAP	DeVore

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9	Black RF STAR	July 20-24	Council/ Newport, OR	Cooper	2 CIE + 1	GMT GAP	DeVore
10	Kelp Greenling/Widow STAR	July 27-31	Council/ Newport, OR	Sampson	2 CIE + 1	GMT GAP	DeVore
11	Pacific Sardine Distribution Workshop	Aug. 17-18	Council/ La Jolla	CPS Subcommittee	None	CPSMT CPSAS	Griffin
12	Mop-up STAR	Late Sept.?	Council/ TBD	GF Subcommittee	TBD	GMT GAP	DeVore
13	Salmon Methodology Review	Late Oct.?	Council/ Portland	Salmon Subcommittee	None	STT SAS MEW	Burner
14	Data-Weighting Workshop	Oct. 19-23	CAPAM/ La Jolla	TBD	TBD	NA	DeVore?
15	Methods for Data Reweighting Workshop	TBD	NWFSC/ Council	GF & CPS Subcommittees	TBD	GMT GAP	DeVore
16	Reference Points (Bzero) Workshop II	TBD	TBD	GF Subcommittee	CIE/External 1-3:	GMT GAP	DeVore

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17	Evaluation of Stock Productivity Methodological Approaches	Spring 2016?	TBD	GF Subcommittee	TBD	GMT GAP	DeVore
18	Groundfish Historical Catch Reconstructions	Summer 2016?	TBD	GF Subcommittee	TBD	GMT GAP	DeVore
19	Transboundary Groundfish Stocks	?	Council	2 TBD?	?	GMT GAP	DeVore