SUMMARY MINUTES
Scientific and Statistical Committee

Pacific Fishery Management Council
Doubletree Hotel
California Ballroom Salon 2
2001 Point West Way
Sacramento, CA 95815

March 9-11, 2008

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

The meeting was called to order at 8 a.m. Dr. Donald McIsaac briefed the SSC on priority agenda items. Dr. McIsaac addressed the record low Sacramento River fall Chinook escapements of 2007 and requested the SSC review necessary revisions to this stock's forecast methodology as proposed by the Salmon Technical Team (STT). Additionally, the STT has developed a new harvest impact model for Sacramento River fall Chinook that would also benefit from SSC review.

The SSC held elections at the March 2008 meeting. Dr. Steve Ralston was elected SSC Chair and Dr. Tom Helser was elected SSC Vice-Chair. Per Council Operating Procedure 4, their terms will begin at the April 2008 meeting and go through the March 2010 meeting.

Subcommittee assignments for 2008 are detailed in the table at the end of this document. Dr. Selina Heppell was added to the Highly Migratory Species (HMS) and Ecosystem Based Management Subcommittees. Dr. Vidar Wespestad was added to the Groundfish and HMS Subcommittees. Dr. Steve Ralston resigned his post as Coastal Pelagic Species Subcommittee Chair and was succeeded by Dr. Tom Helser.

Members in Attendance

Mr. Tom Barnes, California Department on Fish and Game, La Jolla, CA
Mr. Robert Conrad, SSC Chair, Northwest Indian Fisheries Commission, Olympia, WA
Dr. Ramon Conser, National Marine Fisheries Service, La Jolla, CA
Dr. Martin Dorn, National Marine Fisheries Service, Seattle, WA
Dr. Owen Hamel, National Marine Fisheries Service, Seattle, WA
Dr. Tom Helser, National Marine Fisheries Service, Seattle, WA
Dr. Selina Heppell, Oregon State University, Corvallis, OR
Dr. Peter Lawson, National Marine Fisheries Service, Newport, OR
Dr. Todd Lee, National Marine Fisheries Service, Seattle, WA
Dr. André Punt, University of Washington, Seattle, WA
Dr. Stephen Ralston, SSC Vice Chair, National Marine Fisheries Service, Santa Cruz, CA

Members in Attendance, continued

Dr. David Sampson, Oregon State University, Newport, OR
Ms. Cindy Thomson, National Marine Fisheries Service, Santa Cruz, CA
Dr. Theresa Tsou, Washington Department of Fish and Wildlife (Alternate), Olympia, WA
Dr. Shizhen Wang, Quinault Indian Nation, Mercer Island, WA
Dr. Vidar Wespestad, Research Analysts International, Seattle, WA

Members Absent

Dr. Charles Petrosky, Idaho Department of Fish and Game, Boise, Idaho

Scientific and Statistical Committee Comments to the Council

The following is a compilation of March 2008 SSC reports to the Council. (Related SSC discussion not included in written comment to the Council is provided in *italicized text*).

Groundfish Management

F.2. Stock Assessment Planning for 2011-2012 Management

The Scientific and Statistical Committee (SSC) reviewed the draft Terms of Reference (TORs) for Groundfish Stock Assessments and Rebuilding Analyses. These documents have been updated by the SSC groundfish sub-committee based on the process used during the 2007 assessment cycle and the recommendations from the December 2007 Groundfish Assessment Review Workshop. The TOR for Rebuilding Analyses do not reflect changes in analyses that may be required to calculate annual catch limits (ACLs) for overfished stocks because the ACL guidance document has not been completed by NOAA Fisheries. Although the SSC has suggestions for how both of these documents should be updated, they are sufficiently complete that they can be made available for Public Review. The SSC groundfish sub-committee will provide updated versions of both documents for adoption at the June Council meeting based on the comments received.

The TORs for Groundfish Stock Assessments were updated to (a) reflect that simple assessment methods can be applied to data-poor stocks and that the results of these methods may not provide the same information as full assessments, but could be used for decision making, (b) expand on the responsibilities of the Stock Assessment Review (STAR) Panel chair and the expectations for STAR Panel members, (c) provide guidelines for how disagreements between a STAR Panel and a Stock Assessment team (STAT) should be documented and handled by the SSC, and (d) identify the requirements for draft assessments and a process to decide whether an assessment is sufficiently complete to warrant review by a STAR Panel.

The SSC has the following suggestions for further modifications to the TOR:

- The introduction should provide the expectations for an assessment; in particular that an assessment should identify and quantify major uncertainties, balance realism and parsimony, and make good use of the available data.
- The document needs to reflect that it takes additional time to review contested assessments and assessments for species that are made up of several stocks.

- The number of STAR Panel members should ideally be n+2 where n is the number of stock assessments being reviewed.
- The description of how requests are made to STAT teams needs to reflect that requests for additional analyses may lead to suggested changes to the base model, and that it would not be unusual for the base model in the draft assessment document to change during a STAR Panel.
- It needs to be clearer that STAR Panel reports are not minutes, but rather summary documents.
- The SSC groundfish sub-committee should consider whether items in Appendix B that are not required of a draft assessment document should be annotated.

The TORs for Rebuilding Analyses have been modified substantially to reflect how rebuilding analyses were conducted in 2007, how progress towards rebuilding was evaluated by the SSC groundfish sub-committee in 2007, and the information provided to the Groundfish Management Team by assessment authors.

The SSC has the following suggestions for further modifications to the TOR:

- The discussion of the benefits of the two empirical methods for generating future recruitment should be deleted or updated to reflect a lower priority for these methods.
- When selecting an empirical method for generating future recruitment, analysts should examine the consistency between historical recruitments and projected recruitments during the period of rebuilding. Projected recruitment should be consistent with historical recruitment between the current stock size and the rebuilding target.

Ms Stacey Miller (Northwest Fisheries Science Center) presented the proposed list of assessments for 2009. The SSC notes that there may be new abundance data for yelloweye rockfish based on underwater visual surveys which might warrant a new full assessment of this species. If such data are available and an assessment lead can be identified, completing a full assessment of yelloweye rockfish should be preferred to a full assessment of Pacific Ocean perch. Pacific Ocean perch is predicted to recover to the B_{MSY} proxy by 2011 and so a full assessment of Pacific Ocean perch could be delayed until in 2011 when it will be a high priority. Washington Department of Fish and Wildlife will conduct a full assessment of spiny dogfish unless the Council recommends that a full assessment of lingcod be conducted in 2009. Efforts should be made to ensure that research on spiny dogfish population dynamics and life history at the University of Washington can be used in the Council process.

Three of the ten full assessments will be for the minor shelf, slope and nearshore complexes. These assessments will be based on assessment methods for data-poor species, and it is anticipated that all analysts will collaborate extensively. The SSC notes that the standard STAR review process is not likely to be ideal for the assessments of these complexes. Moreover, the SSC notes that although the development of assessments of data-poor species is encouraged, there are at present no control rules for such species. Moreover, there is no process to devise and evaluate the performance of alternative control rules, even though this will be important given the need to develop ACLs and accountability measures for all stocks. The SSC therefore recommends that these assessments be reviewed through a workshop process involving several reviewers, including some from the SSC groundfish sub-

committee and the committee of independent experts. Ideally, a first workshop would identify potential analysis methods and control rules, and a second workshop would review the results and evaluate alternative control rules. The SSC notes that California Department of Fish and Game (CDFG) and California Sea Grant are organizing a workshop on assessment and management of data-poor stocks. This workshop may provide a forum for evaluating assessment results and evaluations of harvest control rules for data-poor species, although this would benefit from involvement by the SSC groundfish sub-committee in its planning.

SSC Notes

Stock Assessment Terms of Reference

- *Make clear that the TOR provides guidelines and is not meant to be prescriptive.*
- *How to handle assessments of hake conducted by Canadian scientists – should these follow the PFMC terms of reference?*
- *Clarify what is a "significant contribution" to the development of an assessment. For example, in the case of an index, this could depend on whether the index has been reviewed by a STAR Panel in the past.*
- *Move footnote 2 to the section on STAT responsibilities. Stop the footnote after the word "circumstances."*
- *The process for deciding whether an assessment document is sufficiently complete to be reviewed by a STAR Panel should be modified to indicate that the groundfish sub-committee will not be contacted if the STAR Panel chair makes an initial determination that the document is sufficiently complete.*
- *Clarify that the post-Panel review of an assessment report pertains to checking that the report follows the TORs and reflects the discussions and decisions during the STAR Panel.*
- *Add a note that diagnostics are also required in a draft assessment document.*
- *Council staff should develop a document which lists the changes in management regulations for each stock so assessment authors can provide a summary of these changes in the assessment report.*
- *Item 6 of Section D of Appendix B should include that assessment authors should include an equilibrium yield curve showing various B_{MSY} proxies.*
- *Section E of Appendix B should be dropped as rebuilding analyses are included in a different document.*
- *Section F of Appendix B should be updated to include all of the biological reference points included in summary tables*

Rebuilding Analysis Terms of Reference

- *Clarify that spawning output should reflect maternal effects (if these are known).*
- *Update the references and add tables and figures from the 2007 canary rockfish rebuilding analysis.*
- *Expand on what is meant by "realized recruitment."*
- *Delete the last paragraph on page 7 which refers to updating estimates as additional data are accumulated.*

Salmon Management

D.1. Review of 2007 Fisheries and 2008 Stock Abundance Estimates

Dr. Robert Kope, from the Salmon Technical Team (STT), provided the Scientific and Statistical Committee (SSC) with an overview of the 2007 salmon fisheries and abundance estimates for 2008, including a modification by the STT to the data set used to forecast the Central Valley Index (CVI). Dr Pete Lawson, from the SSC, reviewed a change made in the approach to forecasting abundance for Oregon Coast Natural (OCN) coho salmon. Mr. Michael Mohr, from the STT, gave a presentation on a proposed new abundance estimator for Sacramento River fall Chinook salmon.

The CVI predictor in 2008 was modified by excluding the 2005 data point. An analysis provided in Appendix D to the report indicated that the point had excessive leverage. The SSC concurs with the decision to exclude this data point, which otherwise would distort the prediction of the CVI at the current low levels of abundance. Only about 6,000 age-2 jacks were estimated to have returned to the Central Valley in 2007, the lowest return on record. The CVI forecast for adult Chinook in 2008 is about 157,000, the lowest CVI forecast on record.

With regard to the OCN predictor the Oregon Production Index Technical Team (OPITT) had adopted a new abundance time series based on new run reconstructions and application of the backwards FRAM model. The new data series has the advantage of being consistent with the data series used for FRAM modeling, but it is much shorter than the data series used in previous years and has less contrast in the environmental variables. The OPITT examined several models for forecasting abundance but considered all to predict unreasonably high abundances. The OPITT decided to use the 2007 postseason abundance estimate as the forecast for 2008. The SSC concurs with this decision.

The Sacramento River fall Chinook stock comprises the major portion of the CVI collection of stocks. The CVI does not include ocean harvests of these stocks from north of Point Arena. As a consequence, the impact on CVI stocks of harvest management actions north of Point Arena cannot be modeled. Mr. Mohr outlined a new approach to directly modeling Sacramento River fall Chinook (SRFC), separately from the CVI. One key step in the approach uses a relationship between age-2 jack returns and adult fish returning one year later. As with the CVI predictor, the 2005 data point for the SRFC predictor is extreme and highly influential. Several possible regression models were explored. The SSC agrees with the STT that the approach to modeling SRFC is valid and appropriate, and would be an improvement over leaving the Sacramento River fall Chinook stock embedded in the CVI index. The SSC recommends that the aberrant 2005 SRFC data point be excluded from the predictor and recommends using the regression model that is forced to go through the origin, on the grounds that a positive intercept in the adult-jack relationship is implausible at this time given that there have been back-to-back low jack returns.

The SSC commends the STT for adding figures to the Preseason Report I that compare preseason with corresponding post-season forecasts for various stocks making significant contributions to Council area fisheries (Fig. I-1, 2a and 2b). This additional information facilitates the visual evaluation of uncertainty regarding preseason estimates. As a further step towards a formal

evaluation of uncertainty and risk in salmon management, the SSC recommends that the Preseason Report include prediction intervals for estimates of salmon abundance and exploitation rates. Given the uncertainties in projecting salmon abundance and exploitation rates, it is difficult to assess the chances of achieving management objectives or to evaluate whether a management goal has been attained. The explicit recognition of uncertainty in salmon statistics is a necessary first step towards incorporating uncertainty and risk in salmon management decision making.

Salmon Management, continued

D. 2. Identification of Stocks Not Meeting Conservation Objectives

Dr. Robert Kope reported to the Scientific and Statistical Committee (SSC) that five salmon stocks have failed to achieve their conservation objectives for one year or two consecutive years. These are Sacramento River fall Chinook (2007), Oregon Coastal Chinook (2007), Grays Harbor natural coho (2006 and 2007), Queets natural coho (2006 and 2007), and Quillayute fall natural coho (2006 and 2007). If any of these stocks fails to achieve the conservation objective for three consecutive years, Overfishing Concern will be triggered.

The Queets River spring/summer Chinook and Quillayute spring/summer Chinook have not met their escapement goals for four or more consecutive years. However, these stocks are exceptions to the Council's overfishing policy because they are harvested at a less than five percent exploitation rate in Council fisheries. Klamath River fall Chinook, which triggered an Overfishing Concern in 2006, had a natural spawning escapement level above the floor in 2007.

D.3. Klamath River Fall Chinook Overfishing Assessment and Recommendations

Dr. Robert Kope presented the "Assessment of factors affecting natural area escapement shortfall of Klamath River fall Chinook salmon in 2004-2006" to the Scientific and Statistical Committee (SSC). This document is improved over the draft we previously reviewed and contains information pertinent to understanding freshwater and harvest factors affecting the current status of the KRFC. Flow, temperature, and disease are among the many environmental factors that may be affecting the productivity of Klamath stocks. In recent years, one or another of these has been unfavorable most of the time. A *priori* one would expect these factors to be important, however, it is difficult to relate any of them quantitatively to the recent low escapements. Ocean survival has also been variable, and relatively low. For escapements to be good, everything needs to be favorable. If even one factor is unfavorable then escapements can be low.

One thing that is clear is that in the three years of Overfishing Concern there have been enough ocean recruits to meet the escapement floor in the absence of harvest. In two of three years in the Overfishing Concern Period fisheries regulations targeted the escapement floor and exploitation rates were higher than modeled. In the third year, the target was below the floor. As a result, there was overfishing in those three years.

In general, the report's recommendations outline a reasonable program for rebuilding Klamath stocks, but the SSC wanted to see more quantitative evaluation of alternative harvest policies.

Of the recommendations, the first three are most germane to Council management:

Recommendation 1, requiring three out of four years of adequate escapements to end the Overfishing Concern, appears to be reasonable, but the report does not provide an adequate justification. The SSC was concerned that this could become a precedent, but it is stock-specific and would not necessarily apply in other rebuilding scenarios.

Recommendation 2, targeting the S_{MSY} escapement of 40,700 instead of the 35,000 escapement floor is prudent, and would increase the rate of rebuilding while decreasing the likelihood of continued overfishing. However, targeting S_{MSY} leads to escapements below the goal half the time.

Recommendation 3, redefining the harvest control rule when in *de minimis* fisheries to be consistent with the S_{MSY} target, is a logical extension of Recommendation 2. However, the costs and benefits of this more risk-averse strategy have not been systematically explored.

For these three recommendations, the SSC agrees that they are risk averse and would likely lead to faster rebuilding, at some short-term cost to the fishery. Additional analysis could help quantify the likely costs and benefits of such actions.

Salmon Management, continued

D.4. Identification of Management Objectives and Preliminary Definition of 2008 Salmon Management Options

Dr. Michael Ford presented the original and addendum to *Analyses to support a review of an ESA jeopardy consultation on fisheries impacting Lower Columbia River tule Chinook salmon*. The original document had been reviewed by the SSC salmon subcommittee (SSCSS) in October, 2007; however that document was not provided to the full Scientific and Statistical Committee (SSC) for review before the November 2007 meeting. Upon review, the SSC reiterates the points made in the November SSC (SS) statement. The SSC also requests better documentation of the method used to impute missing age data.

The addendum provides some additional analyses, the most pertinent for management consideration being new recovery exploitation rate (RER) estimates based on alternative treatment of age data and estimates of historical exploitation rates based on a new composite set of hatchery indicator stocks using coded-wire tags (CWT) recoveries. These further investigations have not changed the general conclusions from the original report. However, a number of further analyses are needed, many of which are planned or in progress. The “to do” list includes recommendations from the November SSC statement.

Groundfish, continued

F.3. Pacific Whiting Harvest Specification and Management Measures for 2008

The Scientific and Statistical Committee (SSC) discussed three separate stock assessments of Pacific whiting (hake) in U.S. and Canadian waters; one that was based upon the stock synthesis 2 (SS2) modeling platform, a second that utilized a Virtual Population Analysis (VPA), and a third based on a single fleet age-structured population dynamics model (TINSS). Each of the assessments was conducted by different members of the combined U.S.-Canada assessment team but all were based on essentially the same data. There were, however, some fundamental differences in assumptions among the three assessments, specifically regarding selectivity, how the data were aggregated and entered into the models, the weighting of the data, and productivity.

Dr. Thomas Helser presented the SSC with an overview of the SS2-based assessment, and responded to questions during the SSC discussions. Dr. David Sampson summarized the report of the joint Canadian and U.S. Pacific Whiting Stock Assessment and Review (STAR) Panel and discussed the minority report submitted by the Canadian members of the assessment team and the STAR Panel's response to this report. The STAR Panel considered all three assessments. It did not reject any of these as being flawed. However, the Panel did identify a preferred base model based on SS2 because it was considered to provide a more flexible platform for evaluating assumptions and because it made better use of the available data. In particular, unlike TINSS, the SS2 model allowed for either dome-shaped or asymptotic fishery and survey selectivities.

The 2008 SS2-based assessment was similar to the 2007 assessment, except that natural mortality was estimated for older ages, stock-recruitment steepness was estimated although constrained by a prior, ageing error was accounted for, and acoustic survey catchability (Q) and selectivity were estimated. In addition, the pre-recruit survey was removed. The assessment exhibited a marked retrospective pattern in that recruitment and spawning stock biomass changed as the terminal year of the assessment was reduced from 2007 to 2001. The SSC notes that Q has been fixed in previous assessments because of concerns regarding the ability of the data to estimate the value of this parameter.

The SS2-based assessment led to higher acceptable biological catch and optimum yield catch levels than the other two assessments. However, the decision table (which included high, medium and low catch scenarios and constant catch levels of 250,000 mt, 300,000 mt and 400,000 mt) presented in the Executive Summary of the SS2-based assessment encompasses the range of point estimates for coastwide fishery yields that were provided in the other two assessments. The SSC endorses the use of the SS2-based 2008 Pacific whiting assessment and the associated decision table for management purposes and recommends that the results from it form the basis for management advice. Notwithstanding this endorsement, the SSC has concerns about estimating natural mortality and selectivity for the oldest ages as was done with the SS2 assessment. Furthermore, this is the first time that the value of Q has been estimated for whiting, and it is questionable whether the data are informative enough to rely only on the point estimate from the base model for management decisions. The SSC noted the comments in the minority report, in particular the retrospective pattern, but concludes that none of the information provided is sufficient to warrant changing the

recommendations of the STAR Panel.

The decision table included in the SS2 assessment is different from those presented for most other groundfish assessments because it reflects uncertainty within one model rather than the implications of different models. For example, the column "25th" in the spawning depletion part of the decision table reflects that there is a 25% probability that the depletion will be equal to the value presented or be lower. The wide range of spawning depletions highlights that the data for whiting are not very informative about absolute population size or depletion. The SS2 base model indicates that the stock is near the upper bound of the precautionary range (0.25-0.40 SSB_0), and has been declining since 2003. The spawning biomass is expected to increase in the near future for a harvest level of about 500,000 mt and lower because a moderate 2005 year class. However, in using these results, the Council should be cognizant of the considerable uncertainty associated with stock size estimates, that the 2005 recruitment has not been sampled adequately to confirm its strength, and that the three assessments presented to the STAR Panel differ in their predictions. Furthermore, the SS2 decision table does not capture the full range of uncertainty from the other models.

The SSC further notes that the population dynamics of whiting may not match the default harvest policy for groundfish. If the fishery were to be conducted under the $F_{40\%}$ harvest policy over an extended period, the biomass would be expected to fluctuate at a level well below $SSB_{40\%}$. Given that whiting recruitment is very variable, application of the 40-10 harvest policy will lead to frequent excursions into the overfished zone. The SSC recommends that an appropriate harvest policy for whiting be further investigated. The SSC also recommends that the next assessment consider whether natural mortality for the older age classes should be estimated by the model, examine the implications of sexually dimorphic growth, and assess whether the shored-based and at-sea sectors should be modeled as separate fleets.

Finally, the SSC notes that review of this assessment was complicated because three "competing" assessments were presented to the STAR Panel and the STAR Terms of Reference (TOR) does not explicitly address this situation. Since it is likely that multiple models could be brought forward for other future assessments, the SSC recommends that the TOR be revised to provide guidance on dealing with a possible recurrence of this scenario. In addition, it would have been desirable for there to have been a decision table that included the TINSS and VPA assessments as alternative states of nature so that the impacts of model uncertainty could have highlighted. However, the relevant calculations are not available and the STAR Panel did not in any case assign probabilities to each model.

SSC Notes:

Comments on Martell, S. (2008) Assessment and management advice for Pacific hake in U.S. and Canadian waters in 2008

The Martell (2008) model uses "leading parameters" rather the usual stock-recruit parameters. This in itself would be unlikely to change assessment results, but should improve the statistical properties of parameters, and perhaps speed up the process of fitting the model. This is a relatively new approach argued by the authors to represent an improvement over usual practice.

Bayesian priors are developed for the two leading model parameters, F (FMSY), and C* (MSY catch).*

The prior for C is derived from mean level of catches since 1966. There may be some circularity in this approach. Hake catches (at least since the early 1980's) have been close to (or less than) the quotas established by the Council, which in turn have been based on sustainable yield estimates from an assessment model. Therefore the prior depends to certain extent on assumptions (such as q=1) and data of those earlier assessments. Using the same data to generate the prior and to fit the model is generally not considered acceptable in Bayesian modeling. Since a relatively diffuse prior was used for C*, this may not have had a large influence on the results.*

The prior for F is based on the assumption that FMSY is between F30-F45% with 80% probability, and applying an equilibrium age-structured model with assumed selectivity and growth. Perhaps more critically, an assumed value of M (0.23) is used. Typically the value of F* is strongly dependent on M, and F=M is widely used as a proxy for F_{MSY}. Nevertheless, an independent prior was assumed for both F* and M in the assessment model, ignoring the actual correlation between F* and M that was the basis of the prior. The priors for F* and M should reflect their correlation. The consequence of incorrectly assuming the prior for F* and M are independent is unknown, but most likely there would have been greater uncertainty in model results.*

The value of FMSY also depends on the growth curve. Since the hake growth has varied substantially over time, F would only be appropriate for the period during which the growth curve was estimated. The prior for F* was developed using the growth curve in Francis et al. (1982), and it appears that the conversion from F* and C* to biological parameters was done using a growth curve suitable to initialize the model in 1965. The estimated value of F* would not be applicable to current hake growth patterns.*

Generally it appears that the leading parameter approach is not as "transparent" as advertised. Specifying suitable priors for F and C* appears to be problematic, and the hake application in Martell et al. (2008) raises a number of concerns. Further development is needed before these models are used in stock assessment applications.*

Finally, there may to be several errors in the equations in the model documentation. It is unknown whether the computer code implementing the model is correct or not.

Page 47, equation T15.7: there is a missing e^{-M} *term in the numerator for the plus group.*

Page 47, equation T15.8: there is a missing e^{-M-Fv} *term in the numerator for the plus group.*

Page 49, equation T17.11: There is no separate equation for the plus group for updating the population numbers at age.

Comments on Sinclair, A. and C. Grandin. (2008). Canadian fishery distribution, index analysis, and virtual population analysis of Pacific hake, 2008

Sinclair and Grandin (2008) applied several log linear models to the acoustic estimates of numbers at age. Although the use of log linear models for index analysis is a powerful data exploration tool, results need to be interpreted carefully. The Sinclair and Grandin (2008) analysis of relative F (catch/survey numbers) shows that relative F is nearly constant from age 4-14, which they argue implies that the fishery must be asymptotic. However, relative F measures only relative availability to the survey and the fishery. If survey selectivity is dome-shaped, a fishery selectivity pattern that is dome-shaped would also result in constant relative F.

Groundfish, continued

F.4. Fishery Management Plan Amendment 22: Open Access Limitation

The Scientific and Statistical Committee (SSC) reviewed the Preliminary Draft Environmental Assessment (EA) for Amendment 22: Conversion of the Open Access Fishery to Federal Permit Management. Mr. LB Boydstun gave a presentation to the SSC and answered questions.

The choice of whether to base directed trips on exvessel revenue or landings weight has a relatively small effect on the number of qualifying vessels. However, it is not clear from the EA how the qualification of particular vessels is affected, rather than the aggregate number. It would be informative to know if there are differences in the characteristic of these vessels (e.g., landing ports). The choice of which method to use ultimately depends on the Council's objectives and priorities. The revenue based method is a reasonable way to identify directed trips. It has the advantage of focusing on an economic variable that may be correlated with vessel operator incentives to maximize net-earnings, and thus focuses on vessels that intended to primarily harvest B species for economic reasons.

The EA's economic analysis and discussion of the economic effects is incomplete; and at times appears to be misinterpreted. The EA should address at least two general types of economic effects: net benefits to the nation and regional economic impacts. Although data and models are unlikely to exist for a quantitative analysis, a qualitative analysis can be conducted. Text in the EA that incorrectly assumes revenue is a proxy for community impacts should be revised. Fishing expenditures, rather than revenues, are what determine community impacts. Although total revenue may not change much across the alternatives, fleet expenditures will likely decrease for alternatives with smaller fleets. These impacts may not be uniform across states and ports.

The EA does not comprehensively address whether and to what degree the alternatives meet the stated need for limited entry. Each alternative should have a summary table that describes to what degree it meets each need. One important objective is capacity reduction which does not necessarily correspond to vessel reduction. The SSC notes that matching a correct level of capacity reduction to available harvest is very challenging. It is also difficult to control capacity through license limitation programs.

Alternatives 5 and 6 include length and gear endorsements. A program without a length endorsement will likely be more subject to an escalation of capacity over time. The SSC notes,

however, that a length endorsement could make a program with periodic reductions in vessels more complicated since permit sales would need to be matched based on the length endorsement.

The tables in the EA are difficult to follow, and likely will lead to some confusion regarding their information content. Each table should be clearly explained in the document.

Groundfish, continued

F.6. Tracking and Monitoring for the Trawl Rationalization Program

Dr. Steve Freese (Northwest Region) provided the Scientific and Statistical Committee (SSC) with a general outline of two alternative tracking and monitoring programs being considered for trawl rationalization. The two alternatives differ in that one allows and the other prohibits discarding of individual trawl quota (ITQ) species in the non-whiting fishery. This difference has implications for observer and shoreside monitoring requirements.

More detailed specification of monitoring and other requirements is needed to allow estimation of costs associated with each program alternative. Cost analysis should address (1) at-sea and shoreside monitoring requirements, (2) data systems for collection, management, analysis, validation and timely dissemination of needed data (e.g., logbooks, fish tickets, observer data, economic data), and (3) types and levels of enforcement needed to ensure an acceptable level of compliance. Cost analysis will be useful for of identifying cost-effective alternatives and ensuring that program costs are offset by the benefits of rationalization.

Council Administrative Matters

B.2. Magnuson-Stevens Act Reauthorization Implementation

The SSC determined there were no significant issues for the SSC on the proposed rule on exempted fishing permits and, lacking any other review materials on this topic; the SSC cancelled this agenda item.

Adjournment: The SSC adjourned at approximately 3:00 p.m., Tuesday March 11, 2008.

SSC Subcommittee Assignments, March 2008

Salmon	Groundfish	CPS	HMS	Economic	Ecosystem-Based Management
Pete Lawson	**Martin Dorn**	**Tom Helser**	**Ray Conser**	**Cindy Thomson**	Tom Barnes
Robert Conrad	Ray Conser	Tom Barnes	Tom Barnes	Todd Lee	Martin Dorn
Owen Hamel	Owen Hamel	Ray Conser	Robert Conrad	David Sampson	Selina Heppell
Charlie Petrosky	Tom Helser	André Punt	Selina Heppell		Pete Lawson
David Sampson	André Punt	Steve Ralston	André Punt		Todd Lee
Shizhen Wang	Steve Ralston		Vidar Wespestad		André Punt
	David Sampson				Steve Ralston
	Vidar Wespestad				Cindy Thomson

Bold denotes Subcommittee Chairperson

PFMC
05/21/08