

**DRAFT SUMMARY MINUTES**  
**Scientific and Statistical Committee**

Pacific Fishery Management Council  
San Mateo Marriott  
Inspire I  
1770 South Amphlett Boulevard  
San Mateo, CA 94402  
Telephone: 650-653-6000  
**September 13-15, 2011**

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

The meeting was called to order at 8 a.m. on Tuesday, September 13, 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  
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 (Thursday Only)  
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  
Dr. Todd Lee, National Marine Fisheries Service, Seattle, WA  
Dr. Charles Petrosky, Idaho Department of Fish and Game, Boise, ID  
Dr. André Punt, University of Washington, Seattle, WA  
Dr. David Sampson, Oregon Department of Fish and Wildlife, Newport, OR  
Ms. Cindy Thomson, National Marine Fisheries Service, Santa Cruz, CA  
Dr. Tien-Shui Tsou, Washington Department of Fish and Wildlife, Olympia, WA

**Members Absent**

Mr. Robert Conrad, Northwest Indian Fisheries Commission, Olympia, WA  
Dr. Vidar Wespestad, Research Analysts International, Seattle, WA

<b>SSC Recusals for the September 2011 Meeting.</b>		
<b>SSC Member</b>	<b>Issue</b>	<b>Reason</b>
Dr. Owen Hamel	Pacific ocean perch Assessment	Dr. Hamel was lead member of the STAT.
Dr. Vladlena Gertseva	Spiny dogfish Assessment	Dr. Gertseva was lead member of the STAT.
<b>SSC members of External Review Panels for items considered at the March 2011 Meeting.</b> <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>		
<b>SSC Member</b>	<b>External Panel Membership</b>	
Dr. Louis Botsford	Member of the Stock Assessment Review (STAR) Panel for blackgill and greenspotted rockfish.	
Dr. Ramon Conser	Chaired the STAR Panel for Pacific ocean perch and petrale sole.	
Dr. Vladlena Gertseva	Chaired the STAR Panel for Blackgill and Greenspotted Rockfish.	
Dr. David Sampson	Member of the STAR Panel for sablefish and dover sole.	
Dr. Tien-Shui Tsou	Chaired the STAR Panel for widow rockfish and spiny dogfish.	

## **Scientific and Statistical Committee Comments to the Council**

The following is a compilation of September 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*).

### ***Highly Migratory Species Management***

#### **E.1 NMFS Report**

The Scientific and Statistical Committee (SSC) considered the stock assessment report for albacore tuna conducted by the Albacore Working Group of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). Dr. Steve Teo of the Southwest Fisheries Science Center presented the assessment results and answered questions. The SSC did not formally review the assessment itself, which will undergo an external review by the Center for Independent Experts (CIE) in October 2011. Results of this review will inform the next albacore assessment, as the ISC has accepted and approved the current assessment for current management.

The documentation provided to the SSC was a great improvement over the last assessment (2006), although the report lacked details on analysis of area-specific catch information and likelihood profiles for key parameters. The SSC did not identify major problems with the

assessment, but would have requested additional analyses in a full review.

The SSC noted the following issues which should be addressed in future assessments:

- Management advice for this stock is currently based on a spawning biomass limit reference point, but no target reference points based on maximum sustainable yield (MSY) biomass have been set. This enables the assessment to provide management advice based on catch per unit of effort (CPUE) in spite of high uncertainty in recruitment and biomass. A thorough evaluation of uncertainty in the absolute magnitude of biomass will be required if total allowable catch (TAC) management is a goal.
- Steepness (h) is currently set at a default value of 1, which is optimistic. Further exploration of the effects of steepness on biomass estimates and future stock status should be explored, especially because the data do not appear to be informative for estimating h.
- The age-length relationship has a large effect on model outputs. This relationship is assumed to be constant for all areas in the model; however, there is evidence for region-specific growth. Further evaluation of area specific age-length relationships and an update of the maturity function are needed.
- External peer review and a standard format for the assessment document will assure that management advice is based on best available science and methodology.

*Model fits to CPUE are not informative if the data are highly uncertain and essentially flat over time. The effects of weighting data sets should be explored further.*

### **Groundfish Management**

#### G.4 Stock Assessments for the 2013-2014 Groundfish Fisheries

The Scientific and Statistical Committee (SSC) completed a review of eight stock assessments and Stock Assessment Review (STAR) panel reports, including Pacific ocean perch, petrale sole, sablefish, spiny dogfish, Dover sole, widow rockfish, greenspotted rockfish, and blackgill rockfish. Seven of the eight full assessments conducted since the June 2011 Council meeting are endorsed by the SSC for use in management as described below. The widow rockfish assessment was not endorsed by the STAR Panel or the SSC, and is recommended for further review at the September 26-30, 2011 meeting of the SSC Groundfish Subcommittee. All the stock assessment teams submitted well-prepared documents in a timely manner and were responsive to all requests during the review process. The SSC commends all the personnel and staff involved in this cycle's assessment review process for having performed at such a high level.

#### **Pacific Ocean Perch**

Dr. Owen Hamel presented the Pacific ocean perch (*Sebastes alutus*) (POP) assessment and Dr. Ray Conser summarized the report of the June 20-24, 2011 STAR Panel. The last full assessment of POP was conducted in 2003, and it was subsequently updated in 2005, 2007, and 2009.

POP is a long-lived rockfish most abundant in the Gulf of Alaska. The previous assessment region ranged from southern Oregon to the US-Canada border, while the 2011 assessment extends south to northern California. This area encompasses the most southern part of the range of POP. Linkages with POP in British Columbia were assumed to be negligible in the 2011 and previous assessments.

The 2011 assessment is the first POP assessment conducted in the Stock Synthesis (SS) modeling framework since the 1990s. Other key changes in the 2011 assessment include: a) length-based selectivities, b) growth estimated, and c) natural mortality and stock-assessment steepness estimated with new prior distributions.

The point estimate for depletion of spawning biomass at the start of 2011 is 19.1 percent. Summary (3+) biomass in 2011 is 25,482 mt, which is close to the estimate that a straight update of the old model would produce (26,839 mt). However, due to the much higher estimates of unfished summary biomass (119,914 mt) in the 2011 assessment, the 2011 depletion (19.1 percent) is much lower than the value would be (31.5 percent) in the update.

A major change in the outcome of the assessment is the change to the  $B_0$  estimate. The very large recruitment estimate in the late 1950s seen in all previous assessments is not evident in the 2011 assessment. This estimate was based on few data. The 2011 assessment estimated a longer sequence of higher recruitment based on fitting to the data available for early years of the assessment period. The SSC considers this an appropriate way to analyze the early data.

The SSC endorses the use of the 2011 POP assessment as the best scientific information available for status determination and management in the Council process as a category 1 stock. The SSC recommends that the next POP assessment be an update rather than a full assessment in the next cycle because uncertainties and model sensitivities have been investigated.

### **Petrale Sole**

Dr. Melissa Haltuch, of the National Marine Fisheries Service Northwest Fisheries Science Center (NMFS/NWFSC), and a member of the Stock Assessment Team (STAT), presented the stock assessment for petrale sole that had been reviewed by the STAR Panel held during 20-24 June 2011 in Seattle, WA. Dr. Ray Conser (SSC and NMFS/SWFSC), chair of that STAR Panel, summarized the STAR Panel report.

The last full assessment for petrale sole was completed in 2009, with the resulting classification that the stock was overfished and in need of rebuilding.

As was the case for the 2009 assessment, the new assessment covers the stock of petrale sole off the entire US west coast. There were no major changes in the model structure of the new assessment compared to the 2009 assessment. However, there were important changes in some input information including: revised ageing-error vectors, an estimated value for steepness (0.86) based on the Myers meta-analysis for pleuronectids, and estimated annual sex-specific natural mortality rates (0.16 for females, 0.18 for males) based on a prior probability distribution developed by Dr. Owen Hamel.

There were also some important changes in the data used in the new assessment relative to the 2009 assessment, including new readings of age data with all readings based on the break-and-burn method and abundance indices derived from Generalized Linear Model analyses of trawl logbook data catch-per-unit-effort (CPUE). In the SS model the CPUE indices included estimated beta parameters to allow non-linear relationships between CPUE and exploitable stock biomass.

The assessment base model estimates that depletion in spawning biomass was 18 percent at the start of 2011, above the 12.5 percent minimum stock size threshold (MSST) for flatfish but below the 25 percent management target. The base model estimates that spawning output dropped below the MSST during 1980, reached a minimum of 6 percent during 1993 and has been rising more or less steadily since, crossing above the MSST by the start of 2003. Compared to the 2009 assessment, which estimated that depletion was 11.6 percent in 2009, the new stock assessment indicates a more optimistic view (depletion of 15.7 percent in 2009).

The SSC endorses the use of the 2011 petrale sole assessment as the best scientific information available for status determination and management in the Council process. The petrale sole spawning stock biomass is projected to be above the 25 percent  $B_{msy}$  proxy at the start of 2013, but the SSC recommends that this change in status should be confirmed by a new full assessment. Because the petrale sole assessment is based on a fully developed age-structured model, the SSC recommends that petrale sole be treated as a category 1 stock.

### **Sablefish**

Dr. Ian Stewart summarized the 2011 stock assessment for sablefish and Dr. David Sampson presented the results of the 25-29 July 2011 STAR Panel. Several assessments of sablefish have been conducted in the past, most recently in 2007. The 2011 assessment was based on the SS3 modeling framework; the 2007 assessment was based on SS2. The 2011 assessment used indices from four surveys, length and age compositions for the three fishery fleets, and conditional age-at-length data from the surveys.

Although the basic data on which the 2011 assessment was based are essentially the same as those used for the 2007 assessment, many changes were made to the structure of the assessment and how the data are used. The changes reflect a review by the STAT of the way past assessments were conducted as well as past recommendations by STAR panels and the SSC. Among the most important changes from the 2007 assessment were: (a) not pre-specifying the value for catchability for the Northwest Fisheries Science Center (NWFSC) slope survey, (b) how the NWFSC shelf-slope data were treated, (c) estimating natural mortality for males and females instead of pre-specifying these parameters, (d) using conditional age-at-length from the survey, which allows the growth parameters to be estimated within the assessment, (e) revising how selectivity is modeled and selectivity blocks are chosen, (f) fixing the value for steepness rather than trying to estimate it, (g) changing how the various data sources and penalties are weighted, and (h) removing length-at-age and body weight observations where these data are included in the assessment in a different form.

There is a strongly and robustly-estimated declining trend in spawning biomass, and there is little likelihood for recovery to the MSY proxy biomass under the catches considered in the decision tables. The estimate of current stock depletion from the 2011 assessment is 33 percent. The level of uncertainty in estimates of both depletion and absolute biomass is greater in the present assessment than in earlier assessments, in particular because allowance was made in the present assessment for uncertainty in key parameters such as natural mortality, growth and survey catchability. The SSC notes that the 2011 assessment estimates that the harvest rate exceeded the  $F_{MSY}$  proxy in the recent past.

The SSC endorses the use of the 2011 sablefish assessment as the best scientific information available for status determination and management in the Council process as a category 1 stock. The SSC notes that there is an appreciable (about 15 percent) probability that the stock is currently depleted below the overfished threshold. Steepness cannot be estimated reliably given the currently-available data and had to be set to an assumed value (0.6) in the assessment. However, it may be possible to estimate this parameter in the future if there is evidence for recovery from surveys. The SSC therefore recommends that this stock is suitable for an update assessment in two years, but that a full assessment should be conducted if there is evidence for strong recruitment and an increasing trend in survey estimates. Over the longer term, a full assessment should be conducted to explore the need for possible changes in model structure.

### **Spiny Dogfish**

Dr. Vladlena Gertseva presented the spiny dogfish assessment to the SSC, and Dr. Tien-Shui Tsou summarized the report of the 11-15 July 2011 STAR Panel.

This is the first assessment for spiny dogfish off the continental U.S. Pacific Coast. The SS modeling platform was used to conduct the analysis and estimate management quantities. The modeling period begins in 1916, assuming an unfished equilibrium state of the stock in 1915. The assessment treated females and males separately due to differences in biology and life history parameters between genders.

The model includes eight fishing fleets (bottom trawl, bottom trawl discard, midwater trawl, hook-and-line, hook-and line discard, other gears, recreational fishery and at-sea hake fishery bycatch) that operate within the entire area of assessment. Fishery-dependent biological data were derived from both port and on-board observer sampling programs. Discard information was provided by the West Coast Groundfish Observer Program.

Fishery-independent data were derived from four National Oceanic and Atmospheric Administration (NOAA) Fisheries trawl surveys conducted by Northwest and Alaska Fisheries Science Centers on the continental shelf and slope of the Northeast Pacific Ocean, and one International Pacific Halibut Commission longline survey. Survey data used in the assessment included abundance indices and fishery-independent biological samples that together provided information on relative trend and demographics of spiny dogfish in the assessed area.

The assessment base case showed that the stock of spiny dogfish off the continental U.S. Pacific Coast is currently at 63 percent of its unexploited level and, therefore, not overfished; and that, historically, the abundance of spiny dogfish has always been above the Council's management target of  $SB_{40}$  %. During the last 10 years, relative exploitation rates (catch/summary biomass) were estimated to have hovered around one percent and SPR is estimated to be well above current management target of  $SBR_{45}$  %. The assessment identified only one period – during the vitamin A fishery in the 1940s – when the exploitation rate exceeded the  $F_{45}$  % maximum sustainable yield proxy harvest rate.

The SSC endorses the use of the 2011 spiny dogfish assessment as the best scientific information available for status determination and management in the Council process. For management purposes, the spiny dogfish assessment is a category 2 assessment due to the model structure (fixed key parameters and no recruitment deviations) and sensitivity of model results. The

decision table presented in the assessment – using natural mortality as the major axis of uncertainty – does not adequately reflect the range of scientific uncertainty in the assessment. The SSC recommends that the uncertainty envelope be broadened by adding an additional column to the decision table based on the retrospective analysis that excluded the last three years of the time series. The net effect is to add a plausible, more pessimistic state of nature to the decision table in which the spawning depletion falls below the management target of  $SB_{40}$  % in recent years. The revised decision table is attached as Appendix A.

First stock assessments are often complicated and time-consuming to prepare. The spiny dogfish assessment was particularly difficult and the SSC commends the STAR for its efforts and dedication in completing this first assessment. However, the SSC noted several technical issues – some of which were highlighted by the STAR Panel – that could not be fully resolved during this review cycle. While these issues do not warrant referring the spiny dogfish assessment to the Mop-Up Panel later this month, the SSC recommends that the next assessment be a full stock assessment. This will allow for full exploration of the modeling issues as well as incorporation of additional data sources that were not available for this assessment, e.g. ageing data back to 2005.

The assessment results indicated that because of the longevity, low productivity, and other vital rates of the spiny dogfish stock, fishing at the  $F_{MSY-Proxy}$  level (spawning potential ratio [SPR] 45 percent) is expected to severely reduce the spawning output of spiny dogfish over the long term. The STAR Panel suggested that the SSC may want to consider the appropriateness of using the current proxy harvest rate for spiny dogfish. The SSC concurs that the Council's  $F_{MSY-Proxy}$  may be too aggressive for spiny dogfish and other elasmobranches managed under the Groundfish Fishery Management Plan. However, the supporting data and analysis needed to recommend a more appropriate SPR (greater than the current proxy) are not currently available. The SSC was made aware, however, that pertinent research is underway and should be completed in time for the SSC to recommend more appropriate reference points for elasmobranches prior to the next assessment cycle.

Finally, the spiny dogfish stock included in this assessment likely has interaction and overlap with dogfish observed off British Columbia. There are high densities of dogfish close to the U.S.-Canada border, at the mouth of the Strait of Juan de Fuca which connects the outside coastal waters with the inside waters of Puget Sound and the Strait of Georgia. This distribution, combined with potential seasonal or directed movement patterns for dogfish suggest that U.S. and Canada should explore the possibility of a joint stock assessment in future years.

### **Dover Sole**

Dr. Alan Hicks presented the Dover sole assessment and Dr. David Sampson summarized the report of the July 25-29, 2011 STAR Panel. The last full assessment of Dover sole was conducted in 2005. The current model was simplified structurally compared to previous assessments.

The assessment was based on the length- and age-structured model developed in SS. The data included fishery landings, length and age data, as well as abundance indices from the NMFS Alaska Fisheries Science Center (AFSC) triennial slope surveys, and from the NWFS slope and

shelf/slope surveys. The extension of the NWFSC shelf/slope survey was new to this assessment and added a considerable amount of information, including age data, which were fit in the model as conditional age-at-length vectors. Also, recent data on discarding collected by the West Coast Groundfish Observer Program (WCGOP), including length data, were used to determine retention curves and selectivity for the commercial fleets.

A major difference between the current assessment and the last is that the current estimate of annual natural mortality is 0.117 for males and 0.114 for females, as opposed to 0.09 for both in the last assessment. These estimates made use of a prior probability distribution developed by Dr. Owen Hamel. A lognormal distribution was used to characterize the variability of length-at-age. In addition, selectivity curves for the slope surveys were modeled using cubic splines which allows for a greater possibility of shapes. Lastly, the female selectivity curves were not forced to asymptote at one, allowing for the possibility of differential sex selection.

The estimated spawning biomass has shown a slight decline over the entire time series with two periods of significant decline (the early 1960s and the 1980s). Recently, spawning biomass has been increasing, although a recent increase in catch and low estimated recruitment in the early 2000s seem to be resulting in a slight downturn in spawning biomass. The level of depletion is well above the target of 25 percent of unfished spawning biomass.

Throughout the 1970s, 1980s, and 1990s, the exploitation rate generally increased, hence the SPR generally decreased. However, the exploitation rate never dropped below the target SPR of 30 percent. Recent exploitation rates on Dover sole have been low, even though management allowed for increased catch levels in 2007.

The SSC endorses the use of the 2011 Dover sole assessment as the best scientific information available for status determination and management in the Council process.

The SS software does not allow independent estimation of male and female selectivities. The lack of independent selectivities seemed to be the cause of strong linkage between the estimated male mortality and the estimate of female spawning biomass. The SSC strongly recommends that the SS software be modified to allow independent selectivity estimates for males and females as noted. The SSC recommends that the next assessment be a full assessment, but only if the SS software has been modified to allow independent mortality estimates for males and females. The SSC recommends that Dover sole be treated as a category 1 stock.

### **Widow Rockfish**

Dr. Tien-Shui Tsou, the widow rockfish STAR Panel Chair, summarized the report of the July 11-15, 2011 STAR panel meeting. Dr. Xi He, the STAT lead, was present to comment. The STAR panel did not endorse the assessment model for management use, and instead recommended alternative model configurations be investigated. The primary issues raised by the STAR panel included: 1) spatial structure (one area vs. two area model), 2) length-based vs. age-based selectivity, and 3) asymptotic vs. dome-shaped selectivity. Similar concerns were expressed by the 2009 STAR panel. There was not enough time during the STAR panel meeting to address these issues adequately since it would involve setting up very different models and compiling new data sets for model input.

On July 27, 2011, a subgroup of the SSC, including the SSC chair and vice chair, discussed the draft STAR panel report during a conference call. Both the STAR panel chair and the widow rockfish STAT participated in the discussion. The SSC subgroup agreed with the STAR panel that it would be beneficial to explore alternative model configurations at the Mop-up meeting prior to endorsing a base model for use in this management cycle. Following the conference call, the SSC subgroup developed a list of requested analyses for the STAT to complete for the Mop-up Panel meeting.

The full SSC reviewed the widow STAR Panel report and also concurred with the STAR Panel recommendation to explore the widow assessment further at the Mop-up. The SSC also reviewed the list of requested analyses developed by the subgroup for the widow STAT to complete and approved the list as well. The requested analyses are attached as Appendix B.

The SSC discussed the issue of timing, related to assessments sent to Mop-up, which are reviewed after the June SSC meeting, but before the September SSC meeting. The September meeting and the Mop-up are only two weeks apart; this would not allow sufficient time for a STAT to conduct thorough analyses to respond to the requests developed by the SSC at the September meeting. The SSC therefore, endorses the approach taken this cycle (established by the SSC Chair), whereby the SSC subgroup developed and coordinated requests before the September meeting. This approach allowed additional time for the STAT to complete its analyses for the Mop-up meeting.

### **Greenspotted Rockfish**

Dr. E.J. Dick presented results from the first greenspotted rockfish assessment and Dr. Vladlena Gertseva summarized the report of the August 8-12, 2011 STAR Panel.

Greenspotted rockfish range from Washington State to Baja California, with higher abundance from Cape Mendocino to northern Baja California. Only the California portion of this stock was assessed, using the SS modeling framework. This resource was assessed as two separate stocks (north and south of Point Conception) to account for differences in growth and exploitation history. A relatively simple model was used, in which recruitment was assumed to follow a deterministic Beverton-Holt stock recruit relationship and natural mortality and stock-recruit steepness were assumed.

The assessment incorporated a variety of fisheries-dependent and independent data sources. The fishery-independent data sources include the NWFSC's shelf-slope bottom trawl survey and NWFSC Southern California hook-and-line survey. Both models utilize recreational CPUE indices, while the northern model also includes an index derived from recreational catch per fishing vessel data from California Department of Fish and Game's onboard observer program.

The best estimate of current stock depletion is 30.6 percent for the northern stock, and 37.4 percent for the southern stock. The SSC endorses the use of this assessment as the best scientific information available for status determination and management in the Council process. It should be treated as a category 2 stock because annual recruitment deviations were not estimated, there were many fixed parameters, and the data were limited.

The SSC notes that the recent increase in biomass is a direct consequence of a substantial reduction in catch and the assumption of deterministic dynamics (i.e. no recruitment deviations are estimated), rather than any increasing trend in the abundance index for greenspotted rockfish.

The SSC concurs with the STAR Panel recommendation that the next greenspotted rockfish assessment be a full assessment, particularly to provide an opportunity to explore alternative model structures (e.g. single-area model). The SSC endorses the research and data collection recommendations of the STAT and the STAR Panel. In addition, the SSC recommends that the prior distribution for natural mortality (M) developed by Dr. Owen Hamel be considered in the next assessment. The SSC also requests that full documentation of this method be provided.

While there are unresolved issues with the assessment, progress on these problems is likely to be difficult without additional biological data and information on stock structure. Additionally, much of this stock is in Mexican waters, where assessment information is not available.

### **Blackgill Rockfish**

Dr. John Field (NMFS/SWFSC) presented the stock assessment for blackgill rockfish that had been reviewed by the STAR Panel held during 8-12 August 2011 in Santa Cruz, CA. Dr. Vladlena Gertseva (SSC and NMFS/NWFSC), Chair of that STAR Panel, summarized the STAR Panel report.

The last full assessment for blackgill rockfish was completed in 2005. Since then there has been no update assessment for this stock.

As was the case for the 2005 assessment, the new assessment covers the stock of blackgill rockfish in the Conception and Monterey INPFC areas, off southern and central California. There were several important structural changes in the new assessment relative to the 2005 assessment including: a revised fleet structure, a revised value for steepness (0.76) based on an updated meta-analysis by Martin Dorn, use of annual sex-specific natural mortality rates (0.063 for females, 0.065 for males) from a prior probability distribution developed by Dr. Owen Hamel, and annual recruitment values were estimated without stochastic recruitment deviations.

There were also several important changes to the data used in the new assessment relative to the 2005 assessment, including: a revised catch history, updated relationships for female maturity versus length and for female fecundity versus weight, a more than 10-fold increase in the number of age-at-length observations, and use of unsexed length composition data that had not been used in the 2005 assessment. The updates to the maturity and fecundity relationships resulted from a comprehensive effort to collect adult blackgill specimens for histological studies of maturity and to measure fecundity, as recommended by the 2005 STAR Panel.

The assessment base model estimates that depletion in spawning output was 30 percent at the start of 2011, above the 25 percent minimum stock size threshold (MSST) but below the 40 percent management target. The base model estimates that spawning output dropped below the MSST during 1989, reached a minimum of 18 percent during the mid-1990s and has been rising steadily since. The SSC notes that the increase in estimated spawning output is partially an artifact of the assumption of deterministic recruitment, but is consistent with recent survey data that also indicate an increase in biomass. Compared to the 2005 assessment, which estimated

that depletion had never dropped below 50 percent, the new stock assessment indicates a much more pessimistic view.

The SSC endorses the use of the 2011 blackgill rockfish assessment as the best scientific information available for status determination and management in the Council process. The SSC concurs with the STAR Panel that the next assessment of this stock should be an update. Because the assessment approach for blackgill rockfish is essentially a production model, blackgill rockfish be treated as a category 2 stock.

## Appendix A: Revised Spiny Dogfish Decision Table

Decision table of 12-year projections for alternative states of nature defined based on the alternative time series of removals and natural mortality of spiny dogfish and the retrospective analysis.

Forecast	Year	Total removals (mt)	Retrospective run (data from the last three years removed)		Low M, low removals		Base model		High M, high removals	
			Spawning		Spawning		Spawning		Spawning	
			output (1,000s)	Depletion	output (1,000s)	Depletion	output (1,000s)	Depletion	output (1,000s)	Depletion
Forecast catch calculated from 45% SPR applied to base model	2011	3,041	14,133	34.32%	20,442	49.27%	44,660	63.15%	105,868	74.11%
	2012	3,010	13,622	33.08%	19,827	47.79%	44,130	62.40%	105,499	73.85%
	2013	2,980	13,122	31.86%	19,228	46.34%	43,615	61.67%	105,144	73.60%
	2014	2,950	12,631	30.67%	18,644	44.93%	43,113	60.96%	104,802	73.36%
	2015	2,921	12,150	29.50%	18,074	43.56%	42,624	60.27%	104,472	73.13%
	2016	2,893	11,678	28.36%	17,518	42.22%	42,147	59.59%	104,152	72.91%
	2017	2,866	11,214	27.23%	16,975	40.91%	41,682	58.94%	103,841	72.69%
	2018	2,839	10,757	26.12%	16,444	39.63%	41,228	58.29%	103,538	72.48%
	2019	2,813	10,307	25.03%	15,926	38.38%	40,783	57.67%	103,243	72.27%
	2020	2,787	9,865	23.95%	15,420	37.16%	40,349	57.05%	102,953	72.07%
	2021	2,763	9,430	22.90%	14,926	35.97%	39,924	56.45%	102,669	71.87%
	2022	2,738	9,002	21.86%	14,444	34.81%	39,508	55.86%	102,391	71.67%
2011-2012 OFL-derived catch	2011	1,584	14,133	34.32%	20,442	49.27%	44,660	63.15%	105,868	74.11%
	2012	1,584	13,977	33.94%	20,226	48.75%	44,530	62.96%	105,899	74.13%
	2013	1,584	13,822	33.56%	20,013	48.23%	44,402	62.78%	105,933	74.15%
	2014	1,584	13,666	33.18%	19,802	47.72%	44,277	62.61%	105,968	74.18%
	2015	1,584	13,509	32.80%	19,593	47.22%	44,153	62.43%	106,003	74.20%
	2016	1,584	13,350	32.42%	19,385	46.72%	44,030	62.26%	106,037	74.23%
	2017	1,584	13,189	32.03%	19,179	46.22%	43,907	62.08%	106,069	74.25%
	2018	1,584	13,025	31.63%	18,972	45.72%	43,783	61.91%	106,098	74.27%
	2019	1,584	12,858	31.22%	18,766	45.23%	43,659	61.73%	106,122	74.29%
	2020	1,584	12,688	30.81%	18,560	44.73%	43,533	61.55%	106,142	74.30%
	2021	1,584	12,513	30.38%	18,354	44.23%	43,405	61.37%	106,156	74.31%
	2022	1,584	12,334	29.95%	18,147	43.74%	43,275	61.19%	106,164	74.32%
Forecast catch calculated from 77% SPR applied to base model	2011	928	14,133	34.32%	20,442	49.27%	44,660	63.15%	105,868	74.11%
	2012	928	14,138	34.33%	20,406	49.18%	44,530	62.96%	105,899	74.13%
	2013	928	14,143	34.34%	20,373	49.10%	44,402	62.78%	105,933	74.15%
	2014	928	14,148	34.35%	20,341	49.02%	44,277	62.61%	105,968	74.18%
	2015	928	14,152	34.36%	20,309	48.95%	44,153	62.43%	106,003	74.20%
	2016	928	14,154	34.37%	20,278	48.87%	44,030	62.26%	106,037	74.23%
	2017	928	14,153	34.37%	20,247	48.79%	43,907	62.08%	106,069	74.25%
	2018	927	14,149	34.36%	20,214	48.72%	43,783	61.91%	106,098	74.27%
	2019	927	14,142	34.34%	20,182	48.64%	43,659	61.73%	106,122	74.29%
	2020	926	14,130	34.31%	20,147	48.56%	43,533	61.55%	106,142	74.30%
	2021	926	14,113	34.27%	20,111	48.47%	43,405	61.37%	106,156	74.31%
	2022	925	14,091	34.22%	20,073	48.38%	43,275	61.19%	106,164	74.32%

## Appendix B: Widow Rockfish Requests

### List of widow rockfish analyses to be reviewed at the Mop-up Panel

**August 2, 2011**

The widow rockfish STAR panel did not endorse the base assessment model for management use, and instead recommended alternative model configurations be investigated in addition to the base model. The primary issues raised by the STAR panel include: 1) spatial structure (one-area vs. two area model), 2) length-based vs. age-based selectivity, and 3) asymptotic vs. dome-shaped selectivity patterns. Similar concerns were expressed by the 2009 STAR panel. There was not enough time during the STAR panel meeting to address these issues adequately since it would involve setting up very different models and compiling new data sets for model input.

On July 27, 2011, several SSC members (including the SSC chair and vice chair) discussed the draft STAR panel report and a draft response prepared by the STAT during a conference call. Both the STAR panel chair and members of the STAT were included in the discussion. The conclusion of the SSC members present was that there would be benefit to explore alternative model configurations at Mop-up Panel prior to endorsing a base model for use in this management cycle. Usually the recommendation to send an assessment to the Dr.-up panel is made by the full SSC, but the September SSC meeting occurs very close to Mop-up Panel, and would not give the STAT sufficient time to complete their assignments. The full SSC will have the opportunity at the September meeting to review these interim recommendations (and alter them if deemed necessary).

The following models are requested for evaluation at the Mop-up Panel. The goal is to begin with simpler models with fewer parameters, and build to more complex models while giving appropriate consideration to the data necessary to support them.

1. One Area Model. The model should use the assumptions of the base model in the draft assessment with respect to fishery delineation, selectivity, and natural mortality. Growth parameters should be representative of the population as a whole, rather than of northern and/or southern areas. Fishery-independent data (NWFSC slope/shelf and AFSC triennial surveys) should be reanalyzed using the GLMM approach to provide appropriate stock-level indices. A detailed comparison between the current base model (two-area) and a one area model should be provided.

Steepness ( $h$ ) is a difficult parameter to estimate in stock assessment in the best of circumstances, and often it is necessary to fix steepness at some plausible value during model evaluation. In these cases, steepness should be fixed to mean of the 2009 meta-analysis results of 0.76.

Model evaluations should take place in the order listed above, in which the “best” model from the preceding analysis forms the base run for the subsequent analyses. However, the analysts should be prepared to provide different permutations of the various choices of model setup at the Mop-up Panel.

2. Length-based vs. age-based selectivity. Compile length compositions for all fisheries (and surveys if this has not already been done). Evaluate the relative merits of assuming that the selection process for fisheries and surveys is primarily length-based or age-based from a theoretical perspective, considering the characteristics of widow rockfish biology and relevant features of the fishery. Compare models with length-based and age-based selectivity (for each individual fishery and survey, then for all fisheries and surveys at the same time). Evaluate differences in model fit, overall plausibility of the selectivity patterns, and whether parameters are robustly estimated. Specific recommendations are:
  - a. Use PacFIN database to extract widow rockfish fishery length composition data.
  - b. Assume the same selectivity parameters for both genders, since the use of length-based selectivity should eliminate the need to estimate offset parameters for female selectivity (however this should be checked).
  - c. The conditional age at length approach is the most appropriate when using both age and length information simultaneously, however separate fitting of age and length composition data is also an acceptable approach. Use conditional age at length approach to input data for at least one fishery (or survey), and marginal age compositions for all other fisheries (with length and age data down weighted by setting appropriate emphasis factors  $\lambda$ s in the SS control file to 0.5).
  - d. Ideally, the fishery or survey data selected for the conditional age at length compositions should have broad geographic scope, adequate sample sizes, and consistent selection characteristics. Several possibilities were discussed, including the use of age data from: a) Pearson and Hightower (1991), b) the at-sea hake fishery and the NWFSC shelf/slope survey, and c) the Oregon midwater trawl and the California trawl fisheries. A preferred alternative was not identified, however the approach taken should be justified based on the criteria above.
  - e. Conduct a run with growth parameters estimated within the model and compare the results with run(s) where growth parameters are fixed (at the level representative of the whole population).
3. Asymptotic vs. Dome-shaped Selectivity. The utility of the comparison depends on the outcome of length-based selectivity analysis, as it is possible that estimated length-based selectivity will be asymptotic. Provide results from a structured stepwise approach, beginning with asymptotic selectivity assumption for all surveys and fisheries, and moving incrementally to more complex models with dome-shaped selectivity. Survey selectivity patterns should be considered asymptotic unless a plausible biological justification can be provided. Criteria for evaluating fishery selectivity patterns are less rigorous, but should include improvements in model fit, overall plausibility, and whether parameters are robustly estimated. A common rule of thumb is that at least one fishery should be assumed asymptotic to ensure stable model behavior.
4. Compare model runs with and without the prior for natural mortality ( $M$ ) developed by Dr. Owen Hamel (pers. comm.). The value of  $M$  (when estimated), is confounded with the downward slope of (dome-shaped) selectivities, and therefore sensitivities should include estimating  $M$  in models with one or more asymptotic selectivity patterns.

## ***Groundfish Management, continued***

### G.5 Biennial Management Process for the 2013-2014 Groundfish Fisheries – Part I.

#### **Overfishing Limits and Acceptable Biological Catches**

The Scientific and Statistical Committee (SSC) reviewed draft tables for 2013-2014 groundfish overfishing limits (OFLs) and acceptable biological catches (ABCs) as presented by Mr. John DeVore (Agenda Item G.5.a, Supplemental Revised Attachment 2; and Agenda Item G.5.a, Supplemental Revised Attachment 4). The tables are still in development, as the Mop-up Panel has yet to occur and the composition of complexes for 2013-2014 management has not yet been finalized. The SSC recommends the species-specific OFLs provided in the tables for 2013-2014 management, with the exception of those not yet provided, including those species to be reviewed at the September 2011 Mop-up Panel. The Council's P\* choice will determine the ABC for each species or complex. The SSC is not modifying the sigma values for the 2013-2014 cycle, and thus the table in Agenda Item G.5.a, Attachment 3 provides the correct buffer ratios to be used given the Council's preferred P\*.

The 2013-2014 OFLs from the most recent assessments are based upon the assumption that ACL catches will be taken in 2011 and 2012, along with a projected catch for 2013 (for 2014). Previous assessments generally project forward from the last year of the assessment assuming OFL catches. OFL catch projections are usually larger than actual catches, resulting in 2013-2014 OFLs that are biased low. Ideally, actual and projected catches would be used, but the relatively small bias is not a great concern, especially given the greater uncertainty associated with longer-term projections.

OFLs and preliminary ABCs for complexes represent the summed OFLs and ABCs from the component species, with the exception of the Other Fish complex, for which they are not yet defined. The values for the Other Fish complex should equal the summed values of the component species. The SSC will recommend stock complex OFLs at the November Council meeting after the Council has determined the final composition of those complexes.

For most data-poor species the depletion-corrected average catch (DCAC) and depletion-based stock reduction analysis (DB-SRA) methods are applied instead of simple average catch. These methods were modified from those used in the last cycle and reviewed at the Data-Poor Workshop in April, 2011; and endorsed by the SSC at the June Council meeting. Dr. E. J. Dick provided updated OFLs for these data-poor species, as well as catch-based allocation information for greenspotted rockfish.

Dr. Jason Cope presented a report on Analysis of Stock Vulnerability and Configuration of Stock Complexes prepared by a GMT subgroup and Council staff. In that document, eight species which currently are not in the FMP are recommended for consideration for inclusion in the FMP. One advantage of this change would be that a number of these species, including skate and grenadier species, could be added to the Other Fish complex. DB-SRA and/or DCAC would be used to provide OFL values for these species such that the Other Fish complex would have a stronger basis for a combined OFL. The SSC agrees that this approach could address its

concerns about the Other Fish complex, and recommends that the Other Fish complex be the highest priority should the Council consider changes to stock complexes.

The report also suggests new stock complex structure based upon vulnerability, as well as depth and adding a separate elasmobranch complex. These changes would reduce the concern that vulnerable species could be harvested at unsustainable levels even when the ACL for a complex is not exceeded. The analysis provides a good ecological basis for complexes. However, implementing management with the complete suite of suggested changes would likely prove difficult due to the higher number of complexes to monitor and consider. The SSC endorses the approach outlined in the report for developing complexes for 2013-2014 management. Whether or not changes are made to the current complex structure, the SSC recommends that total mortality reports be developed for as many species as feasible so that impacts to those individual species can be estimated and evaluated.

#### ***Draft Model Review and Economic Subcommittee Report***

*The SSC Economics Subcommittee met on September 12, 2011 to review the Commercial Fishery Landings Distribution Model (LDM) (Agenda Item G.5.a, Attachment 6), and discussed future science improvements and reviews. The SSC reviewed the Economics Subcommittee report, and conducted a review of the LDM. Dr. Ed Waters was present at both reviews to explain the LDM model and answer questions related to it.*

*The SSC notes that the review of socioeconomic models is currently not as frequent or formalized as the review of stock assessment models. As such, there are some key differences relative to other review processes such as STAR panels with a subsequent SSC review. First, there is no default model to fall back on if there are unresolved problems. Second, given when this review occurred during the 2013-14 harvest specification process, there is limited opportunity to revise and review models before they are used. Lastly, there are other models that need review and this will likely need to take place over a period of time greater than one harvest specification cycle. Nevertheless, the availability of model documentation, which does not currently exist at an adequate level, is necessary for model reviews.*

*The SSC discussed the various models that contribute to socio-economic analysis of the groundfish harvest specification. A list of prioritized models will be presented under Agenda Item G.10.*

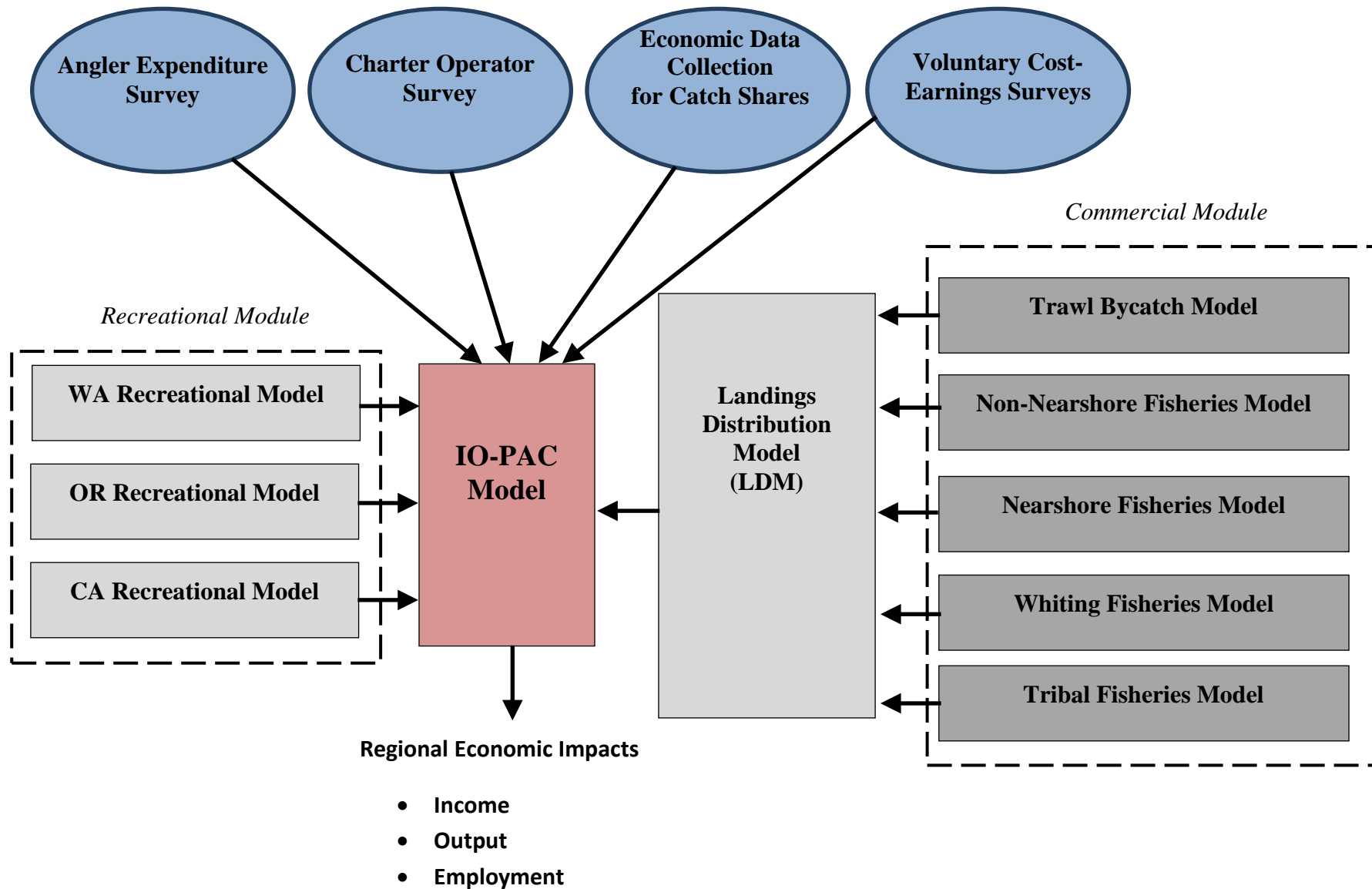
#### **LDM Model Review**

*The LDM distributes projected landings and revenue by species and fishery sector to port areas. The inputs to the LDM model are the outputs of the Groundfish Management Team commercial harvest models and Pacific Fishery Information Network vessel summary data (see the below Figure 1). The projections of harvest and revenue by port area provided by the LDM are important for economic analysis of regulatory alternatives, as they are key inputs to the IO-PAC model, which estimates the regional economic impacts of the commercial groundfish fishery. The projections also inform the community vulnerability analysis.*

*The LDM projections perform fairly well when examined at an aggregate level across all sectors and port areas. However, the projections by port area and sector performed far worse as they deviated from the actual by rather large percentages. As a result, port area and sector landings projections that are carried into other analyses potentially lead to a large amount of noise in*

*those subsequent results. Given the model's structure and diagnostics, it is not possible to quantify the uncertainty or determine the relative importance of potential sources of bias. Nevertheless, the general modeling approach and calculations are a reasonable method for distributing landings given available data and model inputs. It is appropriate to use the LDM for this harvest specification cycle. However, given the potentially large projection errors at the sector and port area level, which is the level the model outputs are used in the IO-PAC model and other economic and social models, an emphasis should be placed on understanding and quantifying the sources of error and improving projections. This also requires an evaluation of the inputs to the LDM (see Figure 1).*

Figure 1. Flow of Models and Data into the IO-PAC Model



## ***Groundfish Management, continued***

### G.10 Plan Science Improvements for Next Generation Management Cycle

The Scientific and Statistical Committee (SSC) reviewed possible topics for off-year workshops related to improving groundfish stock assessments for the 2015-16 management cycle based on recommendations from 2011 Stock Assessment Review (STAR) panels (Agenda Item G.10, Attachment 1), and suggestions to the SSC from Dr. Jim Hastie (Northwest Fisheries Science Center, NWFSC) and Dr. Russ Vetter (Southwest Fisheries Science Center, SWFSC). The SSC notes that many important recommendations for data collection and work to be conducted were made during the STAR panel meetings. However, most of these issues are best dealt with through individual research projects and not Council-sponsored workshops. They will be included in the next version of the Council's research and data needs document as appropriate.

#### **Workshops related to stock assessments (in priority order):**

- 1. A 'post-mortem' workshop on the 2011 assessment process.** A post-mortem workshop was held following the 2007 assessment round to discuss how the process could be modified to overcome concerns identified by participants and the Committee of Independent Experts reviewer who attended all the panels. No such workshop took place following the 2009 assessment round. A number of general issues emerged during the STAR panels, such as the use of age data and priors, which should ideally be discussed during a workshop, with the aim of modifying the Terms of Reference for groundfish stock assessments to reflect best practices. Such a workshop should take place early in 2012.
- 2. A workshop to continue development of data-poor assessment methods.** The panel which took place during April 2011 made considerable progress towards identifying assessment methods for data-poor species, and made a number of recommendations. A follow-up workshop would review progress implementing the recommendations of the April 2011 workshop, review trial applications of the methods, and further discuss how data-poor assessments should be reviewed. This workshop would also provide an opportunity to further evaluate methods for determining sigma for stocks in each of the three categories of stock assessment uncertainty.
- 3. A workshop to review historical landings time series.** 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. An off-year science workshop would review reconstructions of all landings comprehensively, ideally when the Washington information is available. This review would need to be structured differently than the other proposed workshops, since the most expertise is to be found among current and former employees of state agencies. Estimation of the extent of uncertainty of the historical catch estimates due, for example, to uncertainty in estimates of landings species compositions, would also be a focus of this workshop. A future research project, but not a focus of the proposed workshop, would be to determine how uncertainty in catches can be integrated into stock assessments.
- 4. A workshop on  $B_0$  and harvest control rules.** The Council's harvest control rules depend on estimates of stock size relative to  $B_0$ . Changes in stock assessment methods or

data inputs can lead to large changes in estimated  $B_0$  (e.g. Pacific ocean perch and Dover sole this year) and in some cases to marked changes in depletion levels, overfishing limits, acceptable biological catches, or rebuilding times. This workshop would review alternative control rules (e.g., control rules based on “Dynamic  $B_0$ ” or on direct estimates of  $B_{MSY}$ ) and compare their performance with current approaches using management strategy evaluation (MSE). The workshop would build on the last  $B_0$  workshop, but would be more focused on the performance of control rules. It would also include review of stock status for a range of stocks when stock status determinations are based on “Dynamic  $B_0$ .”

5. **A workshop to evaluate an acoustic-ROV (remotely operated vehicle) survey for rockfishes.** There is a need for estimates of abundance for areas which are currently unsurveyed (e.g. the Cowcod Conservation Area, CCA). This workshop would evaluate a proposal for a combined acoustic-ROV sampling technique whereby acoustic methods are used to determine biomass, and ROVs (or autonomous underwater vehicles, AUVs) are used to estimate species- and length-compositions. Although the workshop would focus on the work in the CCA for cowcod and bocaccio, the terms of reference for the workshop would include evaluating the extent to which the recommendations and suggestions of the workshop panel could be applied generally along the west coast. The SWFSC will be sponsoring an independent review of this approach irrespective of Council involvement, but Council involvement will help to facilitate use of the results of this methodology in Council stock assessments.
6. **A workshop on transboundary stocks.** Several Council stocks are shared with Mexico and/or Canada. This workshop would consider the implications of assessing and managing only a component of a stock. Ideally, Canadian and Mexican scientists would be invited to participate in the workshop, with a view towards conducting assessments which cover the full range of Council-managed stocks.

#### **Review activities that could take place outside of a workshop:**

The SSC also discussed the value of a workshop on discard estimation and discard reconstruction. The SSC considers review of West Coast Groundfish Observer Program (WCGOP) methods for estimating discard rates as a high priority issue. Such a review could be accomplished during an SSC meeting rather than as part of a workshop. Review of discard reconstructions could only occur once sufficient preparatory work has been undertaken.

The SSC will conduct a review of information on productivity for teleosts and elasmobranches with a view to making recommendations regarding an  $F_{MSY}$  proxy for elasmobranches once appropriate information becomes available.

#### **Workshops related to socio-economics:**

In relation to socio-economics, the top priority is a workshop to further review the models that contribute to the socio-economic analysis of groundfish harvest specifications. It is not feasible to review all of the models used in socio-economic analyses, so it is necessary to prioritize the review process. Based on discussions with some Groundfish Management Team (GMT) members, four models with the highest priority for review over the next two years have been identified: the California recreational model, the nearshore fixed gear model, the non-nearshore fixed gear model, and revisions to the IO-PAC model. Future model reviews would cover other

models: (a) the Oregon recreational model; (b) the Washington recreational model; (c) the limited entry fixed gear sablefish daily trip limit model north of 36<sup>0</sup> N. latitude (d) the open access daily trip limit (DTL) sablefish north and south of 36<sup>0</sup> N. latitude; (e) the commercial harvest projections to port regions; (f) the trawl rationalization model (which will be developed this year by the GMT); (g) the community vulnerability analysis; (h) the NWFSC's new vessel financial profile model; and (i) the economic data collection program for catch shares.

The SSC was advised of a motion during the June 2011 Council meeting that the GMT was requested to prepare a list of questions related to clarification on the conservation performance of the Council's rebuilding plans. The SSC, through its Groundfish and Economics subcommittees, is willing to work with the GMT on identifying these questions. Should a list be developed, a workshop or a joint meeting of the SSC Groundfish and Economics subcommittees may be an ideal way to assemble the responses to the questions.

### **Logistics**

The SSC is willing to help organize the workshops by developing terms of reference and objectives, and nominating members of its Groundfish and Economics subcommittees to participate as reviewers and chairs of the meetings. The SSC notes that the success of any workshop depends on appropriate background work being conducted. The SSC is willing to work with the science centers regarding work plans, but recognizes that the ability of the science centers to conduct all of the desired work will be limited by available resources and conflicting commitments.

### ***Pacific Halibut Management***

#### **I.2        Review Halibut Bycatch Estimates for the International Pacific Halibut Commission**

Dr. Jason Jannot briefed the Scientific and Statistical Committee (SSC) on the updated estimates of Pacific halibut bycatch along the West Coast. Estimated discard mortality for 2010 has declined since 2009 in the limited entry (LE) bottom trawl fishery, the non-nearshore fixed gear fishery, and other sectors (e.g., the pink shrimp trawl fishery).

The SSC reviewed and endorsed the methods used to estimate Pacific halibut bycatch at the September 2010 Council meeting. There were minor changes to the methods in this year's report (Agenda Item 1.2.b, NMFS Report) which resulted in small differences in estimates. In the non-nearshore fixed gear open access fishery, the effort metric changed from sablefish to all fishery management plan (FMP) groundfish, because it was considered to better represent the behavior of the fishery. For the fixed gear fishery, data are excluded within two days (instead of four days) of the opening of the Pacific halibut directed fishery. The SSC agrees that these estimates are based on the best available science.

The SSC's recommendations from the September 2010 meeting were not addressed because they were not communicated to the authors. The SSC continues to recommend the inclusion of the diagnostics from the generalized linear model and tree-based regression model for the LE bottom trawl sector as an appendix in the next report.

The SSC notes that groundfish bycatch in the Pacific halibut fishery is not monitored. This could be a significant component of removals for some important groundfish species (e.g.,

yelloweye rockfish and spiny dogfish).

### ***Salmon Management***

#### H.1 Progress Report on Columbia River Tule and Sacramento River Winter Chinook Management Issues

Mr. Chuck Tracy and Dr. Robert Kope attended the Scientific and Statistical Committee (SSC) meeting and answered questions about the draft report entitled Exploration of Abundance-based Management Approaches for Lower Columbia River Tule Chinook. The SSC did not identify any concerns at this time. A more thorough review will be conducted at the Salmon Methodology Review meeting and reported to the Council at the November, 2011 meeting.

Dr. Michael O'Farrell also attended the SSC meeting and answered questions about Agenda Item H.1.b, entitled Progress Report on the Sacramento Winter Run Biological Opinion Reasonable and Prudent Alternative and Development of a New Management Framework.

There will be two documents (a cohort analysis and a harvest model) available for the Salmon Methodology Review meeting, in addition to those identified by the Council in April. In addition, new data from genetic stock identification (GSI) studies are available that provide fine-scale winter-run catch distributions. The SSC encourages the use of these data in development of harvest rules designed to reduce winter-run impacts.

### ***Salmon Management, continued***

#### H.2 Final 2011 Methodology Review

The Scientific and Statistical Committee (SSC) met with Mr. Chuck Tracy and Dr. Robert Kope, of the Salmon Technical Team (STT) to identify which of the following topics prioritized by the Council at the April meeting would be available for the 2011 Salmon Methodology Review:

1. Examination of the potential bias in Coho and Chinook Fishery Regulation Assessment Model (FRAM) of fishery-related mortality introduced by mark-selective fisheries (Model Evaluation Workgroup)
2. A multi-year review and evaluation of preseason and postseason mark-selective coho fisheries both north and south of Cape Falcon (Salmon Technical Team)
3. Risk analysis of fall fisheries relative to future fisheries and returns of Klamath River and Sacramento River fall Chinook stocks (Salmon Technical Team)
4. Incorporation of age-structured run reconstruction information into the Sacramento Harvest Model (Salmon Technical Team)
5. Revisions to Amendment 13 matrix control rules for Oregon coastal natural coho stocks (Oregon Department of Fish and Wildlife)
6. Abundance-based management framework for Lower Columbia River tule fall Chinook (Tule Chinook Workgroup)
7. Forecast methodology for Lower Columbia River tule fall Chinook (Tule Chinook Workgroup)

Reports on the above topics will be available for the methodology review, except for topics 3, 4, and 5.

Three additional review topics were identified for review: a) updated cohort analysis for Sacramento winter-run Chinook (NMFS Southwest Fisheries Science Center); b) Sacramento winter-run Chinook harvest model (NMFS Southwest Fisheries Science Center); and c) progress report and documentation for a new, re-coded version of FRAM (Model Evaluation Workgroup).

The SSC will review reports on these topics for the November meeting. The SSC Salmon Subcommittee and STT will hold a joint meeting on October 4 and 5 in Portland to review these issues. The SSC requires proper documentation and ample review time to make efficient use of the SSC Salmon Subcommittee's time. Materials for review should be submitted at least two weeks prior to the scheduled review. Agencies should be responsible for ensuring that materials submitted to the SSC are technically sound, comprehensive, clearly documented, and identified by author.

**Adjournment:** The SSC adjourned at approximately 5:30 p.m., Thursday, September 15, 2011.

### SSC Subcommittee Assignments, September 2011

<b>Salmon</b>	<b>Groundfish</b>	<b>CPS</b>	<b>HMS</b>	<b>Economic</b>	<b>Ecosystem-Based Management</b>
<b>Robert Conrad</b>	<b>Vidar Wespestad</b>	<b>André Punt</b>	<b>Ray Conser</b>	<b>Cindy Thomson</b>	<b>Selina Heppell</b>
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	André Punt	André Punt	Vlada Gertseva
Meisha Key	Vlada Gertseva	Selina Heppell	Vidar Wespestad	David Sampson	Pete Lawson
Pete Lawson	Owen Hamel	Meisha Key			Todd Lee
Charlie Petrosky	André Punt				André Punt
	David Sampson				Cindy Thomson
	Tien-Shui Tsou				Tien-Shui 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>	<b>Feb 2-5</b>	La Jolla	Methodology Review	N/A	<b>Punt – Chair Dorn – 2nd</b>	CIE1: Gerlotto, CIE 2: Rune Godø, CIE 3: Simmonds
Whiting	<b>Feb. 7-11</b>	Seattle, WA	Pacific hake / Whiting	N/A	<b>Jagielo</b>	CIE 1: Jiao CIE 2: Wheeler CIE3: Cardinale
GF Panel 1	<b>Apr 25-29/</b>	SWFSC Santa Cruz Lab	Data Poor Methods / Examples	N/A	<b>Dorn – Chair Punt – 2nd</b>	CIE 1: Stokes Add.: Berkson
<u>CPS Panel 2</u>	<b>May 2-6</b>	SWFSC La Jolla	Pacific Mackerel (Crone)	N/A	<b>Punt – Chair Key – 2nd</b>	CIE: Casey Add.: Deroba
Updates	<u>June 6</u>	<u>June Council Meeting Spokane, WA</u>	<u>bocaccio (Field), canary (Wallace), cowcod (Dick, data report only).</u>	<u>darkblotched (Stephens), yelloweye (Taylor)</u>	<u>SSC GF Sub.</u>	<u>N/A</u>
<u>GF Panel 2</u>	<u>June 20-24</u>	<u>Hotel Deca Seattle</u>	<u>Pacific ocean perch (Hamel)</u>	<u>Petrable sole (Haltuch)</u>	<u>Conser</u>	<u>CIE 1: Stokes CIE 2: Chen Add.: Ianelli</u>
<u>GF Panel 3</u>	<u>July 11-15</u>	<u>Hotel Deca Seattle</u>	<u>Widow rockfish (He)</u>	<u>Spiny dogfish (Gertseva)</u>	<u>Tsou</u>	<u>CIE 1: Stokes CIE 2: Cieri Add.: Spencer</u>
<u>GF Panel 4</u>	<u>July 25-29</u>	<u>NWFSC Newport Research Station</u>	<u>Sablefish (Stewart)</u>	<u>Dover sole (Hicks)</u>	<u>Wespestad</u>	<u>CIE 1: Stokes CIE 2: Kupschus Add.: Samson</u>
<u>GF Panel 5</u>	<u>August 8-12</u>	<u>SWFSC Santa Cruz Lab</u>	<u>Greenspotted rockfish (Dick)</u>	<u>Blackgill rockfish (Field)</u>	<u>Gertseva</u>	<u>CIE 1: Stokes CIE 2: Armstrong Add.: Botsford</u>
Mop-up	<b>Sept. 26-30</b>	Seattle, WA	Assigned, as needed		<b>GF Sub.</b>	
<u>CPS Panel 3</u>	<b>October 4-7</b>	SWFSC La Jolla	Pacific Sardine (Hill)	N/A	<b>Punt – Chair Conser – 2nd</b>	TBD

# DRAFT Tentative Council and SSC Meeting Dates for 2011

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

PFMC  
 10/17/11