DRAFT MINUTES

Groundfish Management Team and Groundfish Subcommittee of the Scientific and Statistical Committee Meeting

Shilo Inn
11707 NE Airport Way
Portland, OR 97220
(503) 252-7500

August 27-28, 2002

Tuesday, August 27, 2002 10:00 A.M.

Members Present:
Dr. Steve Ralston, National Marine Fisheries Service Southwest Fisheries Science Center, SSC
Dr. Martin Dorn, National Marine Fisheries Service Alaska Fisheries Science Center, SSC
Dr. Han-Lin Lai, National Marine Fisheries Service Northwest Fisheries Science Center, SSC
Dr. Michael Dalton, California State University, Monterey Bay, SSC
Dr. Jim Hastie, National Marine Fisheries Service Northwest Fisheries Science Center, GMT
Mr. Brian Culver, Washington Department of Fish and Wildlife, GMT
Ms. Michele Robinson, Washington Department of Fish and Wildlife, GMT
Mr. Mark Saelens, Oregon Department of Fish and Wildlife, GMT
Mr. Tom Barnes, California Department of Fish and Game, GMT
Mr. Dave Thomas, California Department of Fish and Game, GMT
Mr. Rob Jones, Northwest Indian Fisheries Commission, GMT
Ms. Becky Renko, National Marine Fisheries Service Northwest Region, GMT
Dr. Alec MacCall, National Marine Fisheries Service Southwest Fisheries Science Center, GMT
Dr. Kevin Piner, National Marine Fisheries Service Northwest Fisheries Science Center, GMT

Others present:
Dr. Rick Methot, National Marine Fisheries Service Northwest Fisheries Science Center
Mr. Rod Moore, West Coast Seafood Processors Association, GAP
Ms. Yvonne deReynier, National Marine Fisheries Service Northwest Region
Mr. Jim Glock, National Marine Fisheries Service
Mr. Don Bodenmiller, Oregon Department of Fish and Wildlife
Ms. Laura Deach, Washington limited entry fixed gear
Mr. Steve Bodnar, Coos Bay Trawlers Association
Mr. Brian Petersen, Shrimp Producer's Marketing Cooperative
Mr. Dan Waldeck, Pacific Fishery Management Council staff
Mr. John DeVore, Pacific Fishery Management Council staff

A. Call to Order

Dr. Ralston explained the new accelerated science process for groundfish assessments this year. He briefed the group on what was done this summer and how it will drive the Council process this September. The SSC will formally endorse the science used for 2003 groundfish management at the September meeting. Mr. Culver agreed that this meeting will be useful to guide the Council process in September.

B. Review and Approve Agenda

The agenda was approved without change.

C. Overview of the New Yelloweye Stock Assessment and Rebuilding Analysis

1. Overview of the new yelloweye stock assessment

Dr. Methot gave an overview of the new yelloweye stock assessment. The time series of yelloweye catch from 1955-2001 is fraught with uncertainty. California catches only include northern California although the assessment is coastwide. The catch decline is even sharper than management constraints alone can account for in the trend. What about uncertainty of historical foreign catch composition? A sensitivity analysis where the assumed foreign yelloweye catch was 2x or 3x larger made little difference in the trend. Washington also had a lesser catch and presumably catch rate than the other areas, although there is a sense that densities are higher in Washington waters. High catch years in the series are also non-coincident among areas (i.e., high line catch in S. CA line fisheries in 1981, N. CA trawl catch in 1982, and OR trawl catch in 1983). Some math errors were found in the catch series table.

A GLM delta method of estimating CPUE in the CPFV data in CA from the proportion of zero tows and the CPUE of positive tows were key indices in determining abundance in CA. Depth was the most informative variable correlated to CA CPUE. The MRFSS data series was not used in the 2002 assessment. How did the exclusion of MRFSS data affect the 2002 outcome relative to the 2001 assessment result? This sensitivity analysis was not done but could be done prior to the September Council meeting. These data were not particularly noisy since there are a lot of data points; however, there are few samples of yelloweye in the dataset.

What was the CA sample data? The data recorded is the amount of time anglers fish on CPFV trips and landings made during these trips. The result showed an increasing number of zero yelloweye trips with an increasing CPUE for positive yelloweye trips. This is due to a trend of anglers spending less time on the water. The mean CPUE is therefore affected by the change in how this fishery operates. The CPFV logbook data did not record discards. The assertion has been that yelloweye are so highly valued that discarding is minimal.

Oregon CPUE was not analyzed with the GLM delta method since the digitized dataset was aggregated. This is the same problem identified for the 2001 black rockfish assessment. It may not be possible to get this information from Oregon port sampling in the future. How did OR data get incorporated in the assessment? A CV of 0.2 was assumed and the aggregated data was input.

The NMFS bottom trawl survey wasn't used since yelloweye tend to reside in non-trawlable habitat. There are no occurrences of yelloweye in the survey south of 37°30' N. lat., although some yelloweye appear in catches further south. The trawl survey shows the highest densities off Cape Flattery and on Heceta Bank. Canada survey catches of yelloweye are higher than in U.S. waters. Genetic information suggests there is no stock difference of yelloweye within their distribution. The U.S. West Coast is clearly on the southern end of the range. The new submersible survey is looking for yelloweye in areas previously designated as untrawlable. It will take some time to fold in submersible observations with trawl survey information. There is also a desire to look at a habitat-based trawl survey model. This will be further refined in the near future.

Scrutiny of Washington fishery samples showed some very low incidences of yelloweye in the samples (i.e., only 7 yelloweye sampled in 1983). This dataset was therefore extremely noisy. Overall size selectivity and trend information was derived by blending sampling data from multiple years. Recruitment variability is not shown in these data due to blending of samples across years. Otherwise, the data would have to be thrown out due to small sample sizes. Age composition data was used in this assessment while last year's assessment used only size composition data. On Table 8 of the assessment there is a series of WA commercial data that combines trawl and line catches and a separate series for line gears in 2000 and 2001. The line catches changed in 2000. The limit decreased in 2000 and more fishers targeted the more valuable yelloweye. The assessment therefore stratified this fishery starting in 2000.

Similar growth rates were observed in all areas (except Bowie Seamount, where larger yelloweye are found) and by gender. There were differences in size selectivities of gears fished in different West Coast fisheries. Gear selectivities were parameterized in the model by varying the time series of gear-area strata. Shifts occurred in WA recreational and OR commercial fisheries. The fit for increasing mortality is poorer than for varying gear selectivities. How were the time series in the selectivities decided? This was done by visual examination. A continuous function would be more difficult for the model to resolve.

Natural mortalities, based on longevities, range between 0.038 and 0.053. Catch curve analysis range more due to low sample sizes. A natural mortality estimate of 0.045 was modeled which is in the range of

estimates from both analyses.

How to model ageing errors was an issue raised by the STAR Panel. This will be an issue to resolve in future assessments. Percent agreement among readers is a methodology that needs to be improved. Another difference from the 2001 assessment is an assumption of dome-shaped recruitment and time-varying fishery selectivity. Age varying natural mortality was not evident by looking at the profiles of log-likelihood on natural mortality for the most affected area-gear strata. The full range of steepness can be gotten just by tweaking natural mortality. A recruitment trend is indistinguishable from varying natural mortality. The steepness parameter tracks the recruitment trend. Spawning biomass depletion is not sensitive to the natural mortality of younger fish.

The recruitment trend in the new assessment did not change appreciably from last year's assessment. The size data signaled recruitment variation as well as age data. A penalty imposed on recruitments that varied much from the spawner-recruit line smoothed the data and decreased emphasis on the nominal variation. A sensitivity analysis was done to show compensation emphasis and de-emphasis. Scenarios with high vs. low virgin recruitment and low vs. high steepness did not affect recruitment estimates in the middle of the time series but did have an effect at the end of the time series. Recruitment trends were different looking at specific areas in the 1980s (similar in 1970s and 1990s).

When these data were combined they showed a remarkably similar trend. Ideally, the assessment would be stratified by these area differences, but the data is too sparse to stratify. A coastwide management structure could lead to localized depletion in some areas where there are fewer fish yet higher fishing effort. Distributing the catch should occur along the lines of the distribution of exploitable biomass. Could the individual area biomass estimates be used to draw management lines? This is problematic in that some area strata have extremely sparse data available to have much confidence in these area-specific biomass estimates. Could the NMFS trawl survey data be used to draw management lines? The distribution of trawlable habitats is different among areas. For instance, there is much more untrawlable habitat in Washington where yelloweye densities are highest. Therefore, using trawl survey data in a quantifiable analysis is problematic.

There was some discussion of the differences in this year's vs, last year's assessment. The inclusion of the Washington data, which was relatively flat, made some difference, but the changes in the treatment of CA CPFV catch data made a significant difference. An assumption of dome-shaped selectivity made a difference as well. It was suggested that a table be produced showing a step-by-step treatment of the input data for these assessments and how they affect the bottom line estimate of relative biomass.

2. Yelloweye STAR Panel report

Dr. Han-Lin Lai presented the yelloweye STAR Panel report. The STAR Panel spent much time analyzing the CPUE data. They investigated the model sensitivity to empirical observations. The Washington sport CPUE data was modeled using the delta-GLM method with year, port, and months effects selected. The Northern California CPFV data was treated with delta-GLM with year, port, and depth effects selected. Nothing could be done with the aggregated Oregon CPUE data. Apparently this can't be done because the port sampling did not differentiate individual rockfish species. Since 2000, the species compositions were noted in samples. Another aspect of the Oregon fishery is the general trend for fishers to move inshore which artificially lowered CPUE. Trip by trip rockfish catch data is available which could be analyzed, but not at the species level.

Further STAR Panel deliberations included the question of profiling on initial recruitment, sport catchability, sample sizes for size and age data, the possibility of high line catches before 1981, and using an area-specific vs. a coastwide model. The STAR Panel strongly recommended a single sport catch sampling methodology coastwide. The proportional relationship between CPUE and spawning stock size has yet to be proven. The STAR Panel recommended a coastwide assessment.

The assessment was approved by the STAR Panel for use in 2003 management.

3. Overview of the new yelloweye rebuilding analysis

The new yelloweye rebuilding analysis was presented by Dr. Methot. Current spawning biomass is 24% of virgin. Mean generation time equals 44 years and T_{MIN} is 2027. The probabilities of rebuilding by

TMAX between 50% and 80% predicts a 2003 OY of 27 mt to 24 mt, respectively. The median time to rebuild at P=0.5 is 67 years and, at P=0.8, 55 years. A steepness of 0.437 was used which comports with the sensitivity analyses done. A lower steepness factor would be predicted with an underestimate of historical catch.

There was much discussion of the implications of resampling recruits/spawner (as was done in the current analysis), resampling recruits, and the time series of these recruitments used to predict future recruitment. These additional profiles could characterize the uncertainty in yelloweye rebuilding. The $B_{40\%}$ point on the spawner-recruit curve seemed like an objective break in the distribution for resampling recruits (or R/S). The group decided to project recruitment assuming a range of steepness between 0.350 and 0.700. These runs will be done tonight and shared tomorrow.

D. Overview of the Revised Bocaccio Rebuilding Analysis

1. Overview of the revised bocaccio rebuilding analysis

Dr. Alec MacCall explained the revised bocaccio rebuilding analysis. The change in 2003 rebuilding OYs resulted from changes in the Punt rebuilding program that reflect the effects of 2000-2002 catches on rebuilding, given the initial conditions in 1999 when an overfished status was declared.

There is no available 2003 harvest of bocaccio in the new rebuilding analysis. The group was in general agreement that the revisions were reasonable.

2. Overview of the bocaccio sustainability analysis

The sustainability analysis indicates the probabilities of no further decline in biomass with a bocaccio harvest in 2003. At zero fishing, there is a 50% probability of rebuilding by 2111 (infers a 10% probability of further decline even at F=0). The other extreme: with a 79 mt harvest in 2003, there is a 50% probability of no further decline by 2102 (and 7% of the cases are rebuilt by T_{MAX} (2109)). This sustainability analysis may be used to determine a 2003 bocaccio harvest that won't drive the stock to further decline. NOAA General Counsel is exploring the legal ramifications of a harvest larger than zero. Some OY is clearly needed for research and many low bycatch impact fishing opportunities.

Scenarios were modeled where the 2002 year class is assumed to be as high as the 1999 year class and where the 1999 and 2002 year classes are twice as high as modeled in the assessment. The first scenario indicated a 400 kg harvest could occur under rebuilding in 2003. The second scenario indicates a harvest of 19 mt under rebuilding could be sustained. It was noted that the second scenario where the 1999 year class strength is twice is high is still not as high as the "weak" year class scenario considered in the 1999 rebuilding analysis.

E. Overview of the Revised Groundfish Bycatch Model

Dr. Jim Hastie presented an overview of the revised trawl bycatch model. A key revision is the addition of depth strata. Logbook data is limited for depth-based modeling since only the start depth of tows is recorded. Tows may cut across many depth contours and cloud our understanding of bycatch rates by depth. Another difficult suite of modeling assumptions is how the effort will shift as areas and depth zones are closed. Some of the deeper water opportunities may not be available for smaller vessels that are not equipped to fish deep. An ad hoc assumption of anticipated effort shifting was made which was discussed by the group. Adjustments to the model will need to be made once depth-based restrictions are in place and effort shifts occur. In the same vein, observer data will be included in future versions of the model. The group discussed th mechanics of assumed effort shifts in the model. It seemed reasonable to assume not all the catch that previously came from closed areas could be recouped.

Wednesday, August 28, 2002 8:00 A.M.

Members Present:
Dr. Steve Ralston, National Marine Fisheries Service Southwest Fisheries Science Center, SSC
Dr. Martin Dorn, National Marine Fisheries Service Alaska Fisheries Science Center, SSC
Dr. Han-Lin Lai, National Marine Fisheries Service Northwest Fisheries Science Center, SSC
Dr. Michael Dalton, California State University, Monterey Bay, SSC

Dr. Jim Hastie, National Marine Fisheries Service Northwest Fisheries Science Center, GMT
Mr. Brian Culver, Washington Department of Fish and Wildlife, GMT
Ms. Michele Robinson, Washington Department of Fish and Wildlife, GMT
Mr. Mark Saelens, Oregon Department of Fish and Wildlife, GMT
Mr. Tom Barnes, California Department of Fish and Game, GMT
Mr. Dave Thomas, California Department of Fish and Game, GMT
Mr. Rob Jones, Northwest Indian Fisheries Commission, GMT
Ms. Becky Renko, National Marine Fisheries Service Northwest Region, GMT
Dr. Alec MacCall, National Marine Fisheries Service Southwest Fisheries Science Center, GMT
Dr. Kevin Piner, National Marine Fisheries Service Northwest Fisheries Science Center, GMT

Others present:
Dr. Rick Methot, National Marine Fisheries Service Northwest Fisheries Science Center
Mr. Bill Robinson, National Marine Fisheries Service Northwest Region
Mr. Rod Moore, West Coast Seafood Processors Association, GAP
Ms. Yvonne deReynier, National Marine Fisheries Service Northwest Region
Mr. Jim Glock, National Marine Fisheries Service
Mr. Don Bodenmiller, Oregon Department of Fish and Wildlife
Mr. Tom Ghio, California limited entry fixed gear representative, GAP
Ms. Laura Deach, Washington limited entry fixed gear
Mr. Joe Easley, Oregon Trawl Commission
Mr. Steve Bodnar, Coos Bay Trawlers Association
Mr. Brian Petersen, Shrimp Producer's Marketing Cooperative
Ms. Ky Russell, Institute for Fisheries Resources, Pacific Coast Federation of Fishermen's Associations
Dr. Kit Dahl, Pacific Fishery Management Council staff
Mr. Dan Waldeck, Pacific Fishery Management Council staff
Mr. John DeVore, Pacific Fishery Management Council staff

E. Overview of the Revised Groundfish Bycatch Model (continued)

Dr. Hastie continued his review of the revised trawl bycatch model. An example output with a scenario of low darkblotched and sablefish OYs (pg. 6 of his handout) reveals the anticipated decrease in sablefish landings in 2003 based on effort shifts to deeper water. One problem encountered with modeling bycatch is underestimating landings of target species early in the year. In this case, the associated bycatch is modeled to be higher, which leads to more severe fishery constraints later in the year.

How many species' trip limits are modeled? The DTS and flatfish species are the primary targets. There are also trip limits for minor slope rockfish and yellowtail. Trip limits are adjusted by seasonal period to attempt to maximize the target species catch within the bycatch constraints imposed for overfished species. The current analytical approach has many different scenarios that mix and match the range of OYs for overfished species that the Council adopted for consideration. The model does not optimize these trip limits; it is more of a computational tool. Once a scenario is run and an overfished species OY is exceeded in the model, Dr. Hastie goes back to the model to adjust trip limits seasonally to force a reasonable result. Does the model try to optimize opportunities - if one opportunity is not available during a period, does the model search for other reasonable opportunities? The model is not that sophisticated, these are ad hoc decisions made by the modeler. Modeled scenarios range from closing the shelf from 50-250 fm coastwide to limited closures, especially in the north, to stay within overfished species' OYs. The key dynamic in the model is the ability to shift effort out of closed areas seasonally. The group thought it reasonable to use the power function (table on pg. 2 of the handout), although some might quibble about the scalar used.

What changes to the model are anticipated next year? There will be an effort to incorporate observer data in the model. Darkblotched and canary are expected to be the main constraining stocks in the north and bocaccio in the south. What about yelloweye? Dr. Hastie has not been able to model yelloweye since it has not been required for sorting and QSM until this year. Yelloweye is also a minor component in the trawl catch of minor shelf rockfish (due to small footrope regulations), it is not believed to be a binding constraint for the trawl fishery. If observer data suggests that darkblotched bycatch rates are lower than originally modeled, is the model adaptable for making that change? Yes, the bycatch rates used are easily adjusted. Seasonal depth restrictions are also easily adjusted.

There was some discussion of the criteria used to determine the target species in any given tow from the logbook record. Dr. Hastie said the criteria can be changed to determine targets. There is still some confounding data since trawl tows may be mixing or combining targets by trip. Is this the best approach to use? Could we alternatively predict trawl effort? Yes, but this is much more complicated than estimating how trip limits are going to affect target opportunities and trawl effort. A more conservative call early on how much effort might be shifted (i.e., 100% effort shift) risks not being able to approach target species' OYs for the year once the landings come in and the conservative assumption led to lower than projected landings. There may not be an opportunity to harvest the OY given the seasonal bycatch implications.

Further questions of how depth and seasonal periods are used to manage bycatch revealed that there are many pathways to attain target species' OYs without exceeding overfished species' OYs. The page 11 example was used to illustrate how this is done to reduce, in this example, lingcod bycatch. Most often the GMT meets with the GAP to propose a solution. In some cases, changing target species trip limits in a period may be better than changing the depth zone where fishing can occur (and vice versa).

Does the model assume the same participation in 2003 as in 2002? Actually, the model assumes the same vessel participation as in 1999. Is it more likely that vessels that didn't attain trip limits in 1999 will drop out than more successful vessels? The danger is that the model might underestimate participation early in the year. Dr. Hastie did make some ad hoc changes in vessel participation based on actual participation in 2002 relative to what the model estimated. How did the model behave in 2002? The model came within 3-4% of DTS landings, but was 10-15% off on sablefish. The model was judged to be useful for 2002 management. It is difficult to predict effort shifts when trip limits are adjusted. Depth-based restrictions will be helpful in 2003. There is more flexibility in recommending risk-averse management measures by avoiding overfished species' depth zones.

C. Overview of the New Yelloweye Stock Assessment and Rebuilding Analysis (continued)

Dr. Methot came back to review suggested yelloweye model runs suggested by the group yesterday (Table 1). Model runs that varied the spawner/recruit curve steepness factor (0.35-0.70; ~a 70% confidence interval). With a steepness of 0.35 the OYs go down to 14 mt (P=0.8) to 17 mt (P=0.5). With a steepness of 0.70, the OYs go up to 54 mt (P=0.8) to 59 mt (P=0.5). If the recruits/spawner resampled are from the 1989-1999 period, the OYs go down (16-18 mt at P= 0.8 and 0.5, respectively). If recruits are resampled from the same period the OYs go up (28-33 mt at P= 0.8 and 0.5, respectively).

An experimental model run used a "hockey stick" spawner recruit curve to model the central tendency of recruitments. This approach has been used in other contexts and is as reasonable as the Beverton-Holt spawner recruit curve used in the draft rebuilding analysis. The rebuilding result is similar to recruit/spawner results noted above. Low steepness provides about the same result as resampling recruits/spawner. These results are reassuring in that there are intermediate results from the extremes originally modeled. Another expectation is that, even with a low steepness of 0.35, the status quo (13.5 mt) is about T_{MID} under this state of nature. The dynamic nature of our understanding of these states of nature obviates the need for the SSC to determine how rebuilding parameters are incorporated into the FMP (or in regulations). The SSC has previously gone on record saying parameters should be incorporated in as flexible a way as possible since new assessments typically bring dramatic changes in our understanding of stock status and productivity.

What information is needed to declare a stock rebuilt? If a new assessment indicates that the stock has achieved B_{MSY}, then the stock is declared rebuilt. Paying attention to the uncertainty of the assessment is important as well. Also determining an appropriate F_{MSY} harvest rate would be needed to declare a stock officially rebuilt and on a sustainable management footing.

TABLE 1. Yelloweye rockfish rebuilding results.

Prob to rebuild by Tmax:	50%	60%	70%	80%	100%
	baseline; S/R steepness = 0.437				
Fishing Rate	0.0173	0.0167	0.0161	0.0153	0
2003 OY (mt)	27	26	25	24	0
Median Year to Rebuild	2070	2067	2062	2058	2026
	steep=0.35				
Fishing Rate	0.0108	0.0103	0.0097	0.0091	0
2003 OY (mt)	17	16	15	14	0
Median Year to Rebuild	2078	2074	2070	2065	2034
	steep=0.70				
Fishing Rate	0.0337	0.0328	0.0321	0.0312	0
2003 OY (mt)	59	57	56	54	0
Median Year to Rebuild	2060	2055	2052	2048	2016
	resamp R/S in 89-99				
Fishing Rate	0.0115	0.0112	0.0108	0.0104	0
2003 OY (mt)	18	18	17	16	0
Median Year to Rebuild	2076	2073	2070	2067	2032
	resamp R in 89-99				
Fishing Rate	0.0208	0.0200	0.0191	0.0180	0
2003 OY (mt)	33	31	30	28	0
Median Year to Rebuild	2066	2059	2054	2048	2022

D. Overview of the Revised Bocaccio Rebuilding Analysis (continued)

Mr. Robinson was asked to comment on the legal ramifications of the bocaccio rebuilding and sustainability analyses. This has been the subject of intense discussion in NOAA Fisheries. One underlying uncertainty is whether future recruitment of bocaccio is more driven by environmental factors or spawning stock size. That aside, the National Standard Guidelines (NSGs) never contemplated a situation where rebuilding would pre-empt all sources of potential fishing mortality. The fact that the stock cannot be rebuilt within T_{MAX} was also not contemplated. Therefore, the judgement is that the NSGs are inadequate in this case. NOAA Fisheries therefore went to the MSA for guidance. The biology of the stock and the needs of fishing communities argues against a zero fishing mortality scenario. What criteria should be used to determine a level of incidental fishing mortality? NOAA Fisheries feels the appropriate criteria are consistency with the MSA, a high probability of not driving the stock to extinction or into further decline, not jeopardize future rebuilding, and not drive the stock to be listed under the ESA. The bocaccio sustainability analysis will be the guide for this decision. The guidance is to adopt a 2003 OY as close to 0 as possible and no greater than 20 mt. The uncertainty in accounting for bocaccio bycatch needs to be taken into account. Whatever management regime is recommended by the Council, the Council, NOAA Fisheries, and the states need to have adequate observer coverage. Incidental catch needs to account for all sources of mortality including research catch. NOAA Fisheries is not invoking a Mixed Stock Exception.

How will the recreational fishery be managed? Mr. Robinson thought that MRFSS needs to be redesigned to meet our management needs. NOAA Fisheries is reviewing this regional recommendation. Another management approach is to make more conservative management decisions for fisheries that are poorly monitored. This could focus attention on the need to redesign programs such as MRFSS.

Another need is to overhaul the FMP to consider options like prohibiting legal gears in closed areas or in how closed areas are defined. These are examples of FMP considerations.

The question of the state of nature driving bocaccio recruitment was raised. There has clearly been an environmental regime shift, but there is no clear evidence that environmental factors drive bocaccio recruitment. We really do not know what environmental factors may be correlated with good bocaccio

recruitment.

What is specified as the bocaccio rebuilding period? In this case it is greater than T_{MAX}. The SSC rebuilding guidelines simply are not applicable to bocaccio.

F. Management Options and Recommendations

1. Recommended harvest levels for yelloweye

The rebuilding analysis for yelloweye is similar to the canary model. However, there is less data for yelloweye and more serial autocorrelation which is problematic. However, the SSC views the base model result in the rebuilding analysis as a good risk-neutral harvest level. The modeled results presented today in Table 1 may provide a reasonable range of harvest for 2003. The base model OY at P=0.5 (27 mt) may not be an upper range since a more risk-averse harvest level than one that rebuilds by T_{MAX} at P=0.5 can be accomplished without too much added constraint to fisheries. Perhaps a 14-22 mt range is reasonable. The lower end of this range (14 mt) conforms to a rebuilding P of 0.8 with a more pessimistic steepness (0.35; Table 1) and the upper end (27 mt) conforms to a 50% rebuilding trajectory in the base case in the new rebuilding analysis.

2. Recommended harvest levels for bocaccio

The GMT recommends a range of 0 to less than 20 mt for bocaccio in light of Mr. Robinson's guidance. Managing for this range will require coordination of all affected management regimes. California is recommending to the California Fish and Game Commission that state managed fisheries would automatically be managed in accordance with federal regulations.

G. Other?

Dr. Methot asked if the NWFSC should provide anything more for Pacific whiting. The Council did specify a range of harvest levels based on the assessment decision table. The SSC accepted the assessment but rejected the rebuilding analysis. Is a new rebuilding analysis needed at this time? One is needed to meet the 1 year deadline for adopting a rebuilding plan. The NWFSC needs to consider the timing of the whiting assessment review and international process to allow time for developing a rebuilding plan.

The GMT briefly discussed the ABC/OY table that Dr. Hastie updated for the upcoming Allocation Committee meeting. There was consensus on the range of yelloweye and bocaccio OYs represented in agendum F. above. The 13.5 mt status quo harvest level would be the low end of the yelloweye range recommended by the GMT. The yelloweye ABC calculated using a proxy $F_{50\%}$ rate is 52 mt. Should a calculated F_{MSY} rate ($F_{57\%}$ for yelloweye) be used instead of the proxy rate to calculate the ABC? This should be resolved after the new assessment and rebuilding analysis are formally adopted at the September Council meeting. The previously-used area-specific harvest guidelines for yelloweye do not conform with the structure of the new assessment and rebuilding analysis.

ADJOURN

PFMC
08/28/02