

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON
FUTURE COUNCIL MEETING AGENDA AND WORKLOAD PLANNING

Discussion of the Central Subpopulation of Northern Anchovy Overfishing Limit: Process and Timeline

The Scientific and Statistical Committee (SSC) reviewed a draft SSC/Coastal Pelagic Species Management Team (CPSMT) joint report entitled "Potential options for setting an OFL for the Central Substock of Northern Anchovy." Ms. Lorna Wargo (CPSMT chair) and Mr. Joshua Lindsay (CPSMT) were also in attendance and provided comments on behalf of the CPSMT, which had been provided a copy of the draft report. An earlier draft was reviewed and revised at a meeting of the CPSMT, with Drs. Satterthwaite and Punt (chairs of the SSC and SSC CPS Subcommittee, respectively) participating remotely. The SSC anticipates coordinating with the CPSMT on finalizing the report and submitting it to the advance briefing book for the April 2017 Council meeting.

Review of the Proposed Methodologies in the Amendment 28 Essential Fish Habitat Process

The SSC reviewed the report of the SSC Economics Subcommittee on "Methodology for Estimating Catch, Revenue, And Effort for Pacific Coast Groundfish Bottom Trawl EFH and RCA Areas" and agreed with the recommendations of the report (appended to this statement).

- No quantitative predictions of the social and economic impacts of the proposed alternatives are made.
- Biological data from habitat maps and anecdotal information from fishermen could indicate the relative level of effort that re-opened areas are likely to experience.
- The results should be presented by port group as well as coast-wide.

The Project Team asked the Economic Subcommittee for guidance on the base period for the historical effort analysis prior to closures. The Subcommittee recommended conducting separate analyses using two base periods. The Project Team indicated it will use a single, expanded base period (1994-2001). Using a single base period results in a loss of information about variability in effort displacement estimates, but there is a tradeoff between the timeliness of analysis and the additional benefit of this information.

REPORT OF THE SSC ECONOMICS SUBCOMMITTEE ON “METHODOLOGY FOR ESTIMATING CATCH, REVENUE, AND EFFORT FOR PACIFIC COAST GROUND FISH BOTTOM TRAWL EFH AND RCA AREAS”

The SSC’s Economics Subcommittee conducted a webinar on February 9, 2017 to discuss proposed methods for evaluating socioeconomic impacts of alternative proposal for changes to groundfish essential fish habitat (EFH) and the trawl Rockfish Conservation Area (RCA). This report summarizes the discussion during the webinar with emphases on recommendations by the subcommittee to the analysts.

Overview of the Proposed Analysis

The Project Team provided a document “Methodology for estimating catch, revenue, and effort for Pacific Coast groundfish bottom trawl EFH and RCA areas” to the subcommittee prior to the webinar. The document consists of definitions of the proposed alternatives, detailed description of the data, and a statement of the project teams proposed methods of analysis. At the webinar, the Project Team provided additional details on the proposed analysis.

The Project Team describes its approach to assessing the potential impacts of the Council’s proposed alternatives as using a “qualitative methodology informed by quantitative indicators.” The Project Team does not propose quantifying future catch or other impacts for the alternatives. Rather, the analysis of future impacts would be qualitative. The exact nature of the qualitative analysis is not clear. However, the Project Team proposed generating quantitative estimates of historical catch, effort, and revenue in areas subject to closure or re-opening to help inform this analysis.

The subcommittee recommends that the quantitative indicators should be clearly separated into two components:

- 1) Effort, catch, and revenue that would be displaced by proposed closed areas (new closure analysis).
- 2) Historical effort, catch, and revenue that occurred in previously closed EFH and RCA areas, but would be re-opened (re-opening analysis) under various alternatives.

The first indicator (new closure analysis) is a straightforward tabulation of the effort, catch, and revenue that occurred in a recent baseline period within areas that would be closed under an alternative. The second indicator (re-opening analysis) consists of a tabulation of the effort, catch, and revenue that occurred in some baseline period prior to historical closures that occurred in areas that were closed as a result of implementation of the RCA (2002/2003) and EFH actions (2006).

Summary of Subcommittee Comments

Comments on the Method of Analysis

There is more certainty associated with the new closure analysis since effort has been observed in areas proposed for closure in the recent past. By contrast, the re-opening analysis does not extrapolate cleanly how effort might redistribute after areas are re-opened because conditions in

the fishery are so different from the pre-closure periods; there are many fewer vessels operating, the geographic distribution of landings has changed substantially, there are new gear restrictions in place, and catch limits are different for many species. In addition, the biomass of fish inside areas that have been closed for many years would be expected to differ from pre-closure periods.

The Project Team stated that combining the two quantitative estimates does not generate reasonable estimates of the net effect of alternatives. That is, for example, a result that an alternative displaces 10 percent of existing effort and re-opens areas that previously hosted 10 percent of effort prior to historical closures does not imply a net impact of zero. The subcommittee agrees that the two are not equivalent and that it is not possible to do a rigorous analysis of the net effects of closures and re-openings of previously closed areas by presenting the proportion of historical effort that occurred in current or proposed closed areas. The final presentation of results should avoid any side-by-side comparisons or presentations of the two displaced effort analyses.

The subcommittee recommends that a set of areas that have remained open across the entire time period be analyzed. Changes in the proportional effort in these areas would give a sense of how much the distribution of effort has changed over time and provide a mechanism to validate the reliability of the proposed quantitative indicators for drawing conclusions about redistribution of effort.

Quantitative estimates of the proportion of catch/effort in historical closures that may be reopened or in areas that may be closed will be most useful for assessing whether the effects of an alternative would be felt disproportionately by a particular port or region. The subcommittee recommends presenting results by port group (or other geographic classifications) as an indicator of which regions will be most affected by each alternative.

It is not clear from the written document or from the discussion during the webinar whether the Project Team intends to make some statement on the net effects of the alternatives. Future iterations of the proposal should clarify what the qualitative assessment of impacts will consist of including what results will be presented, what the analysis can accomplish, and how it will inform the Council's decision. Further, the methods proposed by the Project Team include only the analyses of historical effort and catch. Qualitative analysis of re-opening areas would be strengthened by using additional information. Species distribution from trawl survey data or habitat suitability maps could be used to identify which re-opened areas might experience larger (or smaller) increases in effort based on target species preferences, for example. Surveys or anecdotal information from fishermen could also indicate the relative level of effort that specific re-opened areas are likely to experience.

Comments on Data

The Project Team proposes to use data from the West Coast Observer Program (WCOP) and vessel logbooks to tabulate effort, catch, and revenue by area.

Data Quality

The subcommittee has some concern regarding the accuracy of the positional data, particularly in

older logbook entries. Sampson (2011) found that reported depth did not agree well with actual depth at reported latitude and longitude in logbook data prior to 2001. This indicates that either or both of the reported depth and position may be unreliable. Holland and Speir both noted that their own internal analysis comparing logbook position and reported depth to actual depth at the reported coordinates (Holland) and to logbook position and Vessel Monitoring System data (Speir) indicated relatively good agreement in more recent data (2008-2013). Agreement of depth and position is an indicator of the quality of the spatial data, and should be explored if possible (for different periods and places).

Baseline Data for Re-opening Analysis

There are four sets of data that could be used as a baseline for estimating the amount of effort, catch, and revenue that occurred in a given area: (1) logbook data from 1994-1998 supplemented with fish ticket data; (2) logbook data from 1998-2001 supplemented with fish ticket data; (3) trawl logbook data from 2002-2005; and (4) observer data supplemented with logbook and fish ticket data for 2011-2014. For analysis of re-opening RCAs, data are limited to pre- 2002 data when RCAs were closed. Newer data (2002-2005) can be used for EFH closures, and recent 2011-2017 data can be used to evaluate displacement from new closures.

The consensus view of the subcommittee is that the recent years' data (2011-2014 WCOP) should be used for the new closures analysis.

The best time period to use for the re-opening analyses is less clear because the two historical closures occurred at different times. There are two options for base periods:

- Option 1: Evaluate each historical closure (RCA and EFH) using data that is most recent. For the RCA this is 1998-2001, and for EFH this is 2002-2005. The advantage of this option is that the proportion of effort displaced by each closure will incorporate important changes in gear restrictions and fleet composition that had occurred up to that time.
- Option 2. Use a common base period to evaluate both closures (e.g., 1994-1998). One advantage of this option is that the proportion of effort displaced by each closure would be measured in terms of a common base period. Another advantage is that displaced effort would be measured from a time period when spatial choice and target species choice were less restricted.

Both options would provide useful input to the qualitative analysis of effects of the alternatives. There have been many major changes in the groundfish trawl fishery over the last 25 years including the disaster declaration, foot rope restrictions, changes in abundance and allowable catch for many species, and the vessel buyback program. Each of these changes occurred at different times, which makes interpreting displaced effort estimates as indicators of future changes very difficult. Using multiple base periods (i.e., using both options), if possible, would strengthen the analysis.

Use of area/species specific CPUE as an indicator

There was discussion about whether the analysts should use historical catch per unit effort (CPUE) or revenue per unit effort (RPUE) in the analysis. The advantages of using CPUE or RPUE are limited. Changes in harvest strategies, technological advances, markets, and species distribution

since the RCA and EFH closures may make application of CPUE/RPUE to current time periods misleading. Information on current species distribution (trawl survey and habitat suitability) and prices would likely provide better input to an assessment of future impacts.

Reference

Sampson, David B. "The accuracy of self-reported fisheries data: Oregon trawl logbook fishing locations and retained catches." *Fisheries research* 112.1 (2011): 59-76.

PFMC
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