SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON GROUNDFISH ESSENTIAL FISH HABITAT (EFH) AND ROCKFISH CONSERVATION AREA (RCA) AMENDMENT 28 ALTERNATIVES

Development of Spatial Boundaries for Groundfish EFH

Allison Bailey (Sound Geographic Information Systems) presented "Development of Spatial Boundaries for Groundfish EFH Alternative 2.b, New EFHCAs within the Trawl RCA based on presence of Priority Habitats" (Agenda Item F.4.a, Supplemental Project Team Report 2, pp. 16-19) to the Scientific and Statistic Committee. Alternative 2.b involves opening the trawl RCA to bottom trawling, but establishing EFH Conservation Areas (EFHCAs) that are closed to bottom trawling. The EFHCAs would be based on the presence of priority habitats. This report outlines the approaches proposed to identify areas where there are hard substrates, habitat-forming invertebrates, submarine canyons and gullies, seamounts, and areas with the 20 percent highest suitability for overfished groundfish species.

The Scientific and Statistical Committee (SSC) was unable to review the methods and data sets underlying the approaches in detail as these are not fully described in the documentation included in the Briefing Book. Many of the methods rely on the 2013 Groundfish EFH Synthesis Report. The SSC was asked to review this report at its April 2013 meeting, but the SSC was unable to review the methods underlying the report as the Appendices (which provided the documentation of the methods) were not available in time for review (Agenda Item D.6.c, Supplemental SSC Report, April 2013).

Although it is unable to conduct a full review of the approaches on which the priority habitats are based, the SSC provides the following comments and suggestions to the analysts.

- The locations of habitat-forming invertebrates were based on several data sets, but only data sets that had 1km or finer resolution. Thus, the data from the Northwest Fisheries Science Center (NWFSC) trawl survey were excluded. The SSC recommends that the trawl survey data be used even if its resolution is coarser than 1km.
- The 20 percent highest suitability for overfished groundfish species was defined by computing habitat suitabilities by location and selecting the locations for which the habitat suitability is 80 percent of the maximum. This approach will be sensitive to the presence of areas with anomalously high habitat suitability. Analyses presented during the meeting showed that there was a 200-fold difference in the area determined to be in the highest 20 percent habitat suitability for yelloweye rockfish depending on which of two models was used. A more robust way to use habitat suitability information would be to sort locations by habitat suitability and then select some quantile as a threshold. The data sets on which habitat suitability is evaluated would need to be species-specific.
- The analyst identified priority habitats by overlaying the priority habitat for each data source. This ignores the extent to which each location could be considered a priority habitat (e.g., some locations may be considered as priority habitat based on multiple data sources). The SSC recommends providing maps for each data source as well as for the union of the maps.

Overfished Species Hot Spots Analysis Tool

Dr. Kit Dahl (Council Staff) presented '"Hotspot Analysis" to Identify Discrete Area Closures for Overfished Species' (Agenda Item F.4.a, Supplemental Project Team Report 2, pp. 20-25, the SSC received an earlier draft of this material) to the SSC. This analysis tool is based on applying a spatial clustering algorithm to catch rate data. Dr. Dahl provided results using fishery-dependent (West Coast Groundfish Observer Program) and fishery-independent (NWFSC trawl survey) data. The SSC recommends not basing identification of hot spots on fishery-dependent data, because few of the fishery-dependent data will have been collected from within the RCA. The SSC also has major concerns with the analyses based on fishery-independent data.

There is a need to better understand the performance of the analysis tool prior to its use for developing options for closures. This could be achieved by reviewing the scientific literature for papers that have evaluated this method in situations similar to identifying hotspots using trawl survey catch-rate data or using simulation analysis. Until the properties of the analysis method are better understood, the SSC recommends using the results of habitat suitability modeling or a geostatistical hurdle approach such as that developed by Dr. Jim Thorson (NWFSC) to identify hot spots.

PFMC
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