SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON AMENDMENT TO MODIFY GROUNDFISH ESSENTIAL FISH HABITAT AND TO ADJUST ROCKFISH CONSERVATION AREAS

The Scientific and Statistical Committee (SSC) reviewed two methods for providing information on the spatial distribution of the density of rockfish caught using the trawl fishery. This information could be used to identify areas of high catch-per-unit-effort (CPUE) for potential Rockfish Conservation Areas (RCAs). The outcomes from applying the methods could not be used for the impact analysis that will be used to evaluate the consequences of the selected alternatives without methodological refinements that integrate predictions of density over space, because there is no way to compare the cumulative density of fish included or excluded from particular areas. The methods were based on visualizing the CPUE data from the trawl survey (Agenda Item H.8, Attachment 3) and the commercial fishery data collected by observers (Agenda Item H.8, Attachment 4).

Application of both methods is restricted spatially because data from the fishery and the trawl survey are only available for trawlable areas and because the fishery data are only available for areas open to fishing. There are several other sources of data that are available, that were not analyzed, such as the results from the hook-and-line survey and the International Pacific Halibut Commission survey. Use of these data would complicate the analysis but would provide increased sample sizes for some areas of the coast.

Trawl survey data are available from the RCAs as well as from areas open to fishing. The approach for analyzing the trawl survey data is based on maps of trawls, where each trawl is categorized according to its catch-rate. However, methods chosen for visualizing differences in CPUE in Agenda Item H.8, Attachment 3 are not consistent among species, which makes interpretation of the plots difficult. Moreover, the basis for visualizing differences in CPUE (color-coding observations by catch rate) was not fully explained, but the results of the analysis could potentially be very sensitive to how CPUE differences are characterized. The SSC recommends that if this method be used, the color coding be based on the same percentiles of the distribution of CPUE for all species so that the colors have the same meaning for all species and so that the analysis is replicable.

Commercial CPUE data based on observer sampling may be available for the entire year unlike the trawl survey data, and hence could provide information on seasonal distribution patterns. However, the "line density" calculation in Agenda Item H.8, Attachment 4 does not estimate average density spatially and should not be used.

The SSC does not support use of either of the methods in Agenda Item H.8, Attachments 3 and 4 to rank RCA alternatives. Use of geostatistical methods to map species distributions spatially and seasonally would provide a better way to use both trawl survey and commercial CPUE data to characterize species distributions. Analysis of the trawl survey data should be based on a common set of percentiles, but these data can only provide information on the distribution of species in summer. Spatial and temporal distributions could be estimated using methods such as that developed by Dr. James Thorson (Northwest Fisheries Science Center), which has been used to analyze the trawl survey data for the current round of assessments. This method could be used to account for factors ignored by current approaches such as differences in catchability among vessels.