SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON PACIFIC MACKEREL ASSESSMENT AND MANAGEMENT MEASURES

Dr. Paul Crone from the National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center (SWFSC) presented the results of the Pacific mackerel stock assessment, and Dr. André Punt of the Scientific and Statistical Committee (SSC) presented a report on the Pacific mackerel Stock Assessment Review (STAR) Panel that convened at the SWFSC in La Jolla, CA on April 27-29, 2015.

The Stock Assessment Team's (STAT's) preferred assessment model is a modification of the Stock Synthesis model used in the previous full assessment in 2011. It includes commercial fishery age composition data as well as abundance indices and length compositions developed from Commercial Passenger Fishing Vessel (CPFV) logbooks. The California Recreational Fishery Survey (CRFS) CPUE index, which had been used in the 2011 assessment, was removed from the current assessment model. The Acoustic-Trawl (AT) survey indices and length composition data were included in some model runs, but were not included in the STAT's preferred model. The current model shows a strong positive retrospective pattern, as was true to a lesser extent in the 2011 model, and which is indicative of model misspecification.

In contrast to the recent assessment updates for this species, current and future recruitment is projected directly from the stock-recruitment curve instead of using an average of recent years' recruitment deviations, since recent recruitments have not been consistently above or below the stock-recruit curve. The biomass at the start of the 2016 fishing year is projected by assuming catch during the 2015 fishing year will equal the harvest guideline (HG) rather than forecast from the previous year's catch, due to the expectation of higher mackerel harvest given the closure of the directed sardine fishery for the 2015 fishing year.

The STAR Panel did not endorse any of the models explored as being adequately defensible in terms of both fitting the data and providing reasonable parameter and stock size estimates. While recognizing the substantial issues that remain in determining the scale of the stock, the SSC endorses the STAT-preferred assessment model as the best available scientific information for management of Pacific mackerel. The SSC further endorses the overfishing limits (OFLs) of 25,291 mt for 2015-16 and 24,983 mt for 2016-17. The 2016-17 OFL should be recalculated if the acceptable biological catch (ABC) for 2015-16 is less than the HG for that year. ABC alternatives should be based upon the category 2 sigma of 0.72 in the assessment for the upcoming two fishing seasons, rather than the category 1 sigma used following the 2011 assessment. The new category designation is due to the uncertainty in stock levels demonstrated by the retrospective pattern. The ABC alternatives depend on the Council's risk policy as reflected in the choice of P*.

There remain several critical data and research needs for this stock. Both the SSC and the STAT emphasize the importance of a fishery-independent survey, preferably as part of a multi-species coastal pelagic survey. As was noted by the SSC in 2011 (Agenda Item G.2.c, Supplemental SSC Report, June 2011), the AT survey is potentially well-suited to provide an index; however, it would need to be expanded to encompass Mexican waters, and ideally Canadian waters as well, to be useful for Pacific mackerel assessment. In addition to the current AT survey design being not ideal for Pacific mackerel, the associated trawling strategy is ineffective at catching Pacific mackerel. This results in small sample sizes to estimate size compositions as well as high uncertainty in the species composition observed in the acoustic portion of the AT survey.

PFMC
06/15/15