

COASTAL PELAGIC SPECIES ADVISORY SUBPANEL REPORT ON THE ACOUSTIC TRAWL SURVEY METHODOLOGY REVIEW TERMS OF REFERENCE

The Coastal Pelagic Species Advisory Subpanel (CPSAS) received a presentation from Mr. Dale Sweetnam on the proposed terms of reference (TOR) for the upcoming Acoustic Trawl Method survey (ATM) methodology review scheduled for January 30 through February 2, 2018 (Agenda Item C.1, Attachment 1). The CPSAS supports this review, and recommends prioritizing the eight elements in the proposed TOR, recognizing that the amount of work required to address all eight elements is daunting.

Highest priority:

4) Effects of trawl survey design

Rationale: The consequences of time delay between daytime ensonification of backscatter and nighttime trawling is a serious issue, as species composition may change. In current surveys, the survey ship does not trawl fast enough to capture fast-swimming CPS. Alternate methods to capture samples should be considered, such as chartering purse seine vessels to wrap observed backscatter. This would have dual advantages of capturing sufficient sample sizes, as inadequate sample size has been criticized in prior reviews, and evaluating species composition day vs. night. In addition, potential interactions with marine mammals would also be minimized. Enhanced National Oceanic and Atmospheric Administration (NOAA) Fisheries collaboration with local fishing vessels could both build mutual understanding and improve stock assessments.

6) Effects of vessel avoidance for the upper water column

Rationale: Vessel avoidance has been a longstanding “hot-button” issue that has not been adequately resolved for the ATM survey. It is important to test and validate new multi-beam and side-looking systems and evaluate to what degree they improve survey accuracy over standard down-looking sonar systems.

7) ATM survey design in areas where the ATM vessel is currently not sampling

Rationale: The size of the NOAA survey vessel prevents it from sampling a significant portion of the CPS biomass that is known to be present in nearshore waters. The near-shore limit of current NOAA surveys is 50 meters depth. However, about 70 percent of California’s CPS fishery occurs inside the 20-fathom (36.5 meter) curve. The CPSAS strongly supports cooperative research employing purse seine vessels and technology including aerial surveys utilizing knowledgeable spotter pilots to better assess the portion of the biomass in nearshore waters.

8) ATM data analysis and quantification of uncertainty

Rationale: If the ATM survey is to be used as an estimate of absolute abundance, setting Q equal to 1 must be evaluated and justified, as surveys do not cover the full range of the stocks. It will also be important to quantify or at least provide a correction factor for the likely substantial proportion of the CPS biomass not in the survey area, and potentially, in

the upper water column. The Methodology Review should also include a discussion of how best to apply any correction factors that may be derived from additional sampling of the upper water column and nearshore areas. This is essential to produce accurate biomass estimates.

Second highest priority:

1) ATM survey documentation

This is a given and important to define standardized survey guidelines. Regarding rules for conducting trawls, a continuing criticism of the ATM survey is inadequate sample size, so this should be addressed in this review. See (4) above.

2) Estimated target strengths (TS) of CPS from the California Current

The CPSAS acknowledges and thanks the Southwest Fishery Science Center (SWFSC) for its work to develop target strengths based on local CPS species, rather than relying on TS from “similar” species from other ecosystems.

Third highest priority:

5) Effects of upgrading from the Simrad EK60 to EK80

During the teleconference Mr. Sweetnam noted that the Acoustic Team is now evaluating the outcomes from the EK80 relative to EK60 and will provide information at the methods review addressing this topic.

3) Trawl survey design protocols for using a CPS preferred habitat model to determine adaptive sampling areas

While work to improve the preferred habitat model and validate assumptions made is important, and could lead to future efficiencies in adaptive survey design, the CPSAS believes the highest priority should be as noted above: particularly to improve survey design, incorporate areas not currently assessed, and review assumptions on how uncertainty is quantified.

We thank the SWFSC for producing a comprehensive and thoughtful TOR document, again recognizing that the amount of work required to address all eight elements is enormous. We also thank the SWFSC for their support of collaborative research involving the fishing industry. We look forward to cooperating to improve future stock assessments.

PFMC
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