

COASTAL PELAGIC SPECIES ADVISORY SUBPANEL REPORT ON FINAL ACTION ON SARDINE ASSESSMENT, SPECIFICATIONS, AND MANAGEMENT MEASURES

The Coastal Pelagic Species Advisory Subpanel (CPSAS) heard a presentation by Dr. Kevin Hill on the Assessment of the Pacific Sardine Resource in 2017 for U.S. Management in 2017-18 (Agenda Item G.5.a, Stock Assessment Report), given at the Science and Statistical Committee (SSC) meeting. CPSAS members also heard a summary review of the Pacific Sardine Stock Assessment Review (STAR) Panel Meeting Report (Agenda Item G.5.a, STAR Panel Report) by Dr. Andre Punt. CPSAS members reviewed both documents prior to the SSC meeting.

A majority of the CPSAS remains extremely frustrated that this STAR panel review found the same unresolved problems as in prior assessments. As noted in the STAR Panel Report under Unresolved Problems and Major Uncertainties (page 9), ***“The core issues for stock assessments continue to be related to the temporal and spatial scale of the surveys and insufficient sample sizes of age-length for sardine in the ATM survey.”***

The STAR Panel Report expressed concerns with all the assessment approaches offered, but reviewers were asked to recommend the “least worst” option for the Council to set management measures for the 2017 sardine fishery. Model ALT turned out to be marginally better than the biomass estimated in the summer Acoustic Trawl Method (ATM) survey proposed by the Stock Assessment Team (STAT). Following discussion, the SSC ultimately approved this approach for 2017, recognizing this as the basis for two years of update assessments before the next full assessment review.

A majority of the CPSAS ask the Council to heed fishermen who are reporting a large biomass of sardines (as well as anchovy) in waters inshore of the current ATM survey area. We agree with the concerns expressed in the CPSAS representative’s statement in the STAR Panel Report. Quoting from that statement: *“ATM surveys at present do not capture fish in the upper water column, nor a large biomass of young fish (sizes 3 inches and up) that fishermen have observed in nearshore waters since late 2014; this biomass is largely inside ATM survey tracks. But the ATM survey is assigned a catchability quotient (Q) of 1 nonetheless, meaning it “sees” all the fish. The Q for Model ALT, which is based largely on ATM survey data, is estimated at 1.1, which the STAR Panel report calls into question, given for example the unquantified volume of fish in nearshore waters.*

The summer 2016 ATM survey reported a fourfold increase in age 1+ biomass, but the biomass estimate produced is substantially lower than the estimate used for management in 2016. The STAR panel found fault with the methodology used to project the 2016 biomass to 2017. So do we – but using the 2016 ATM biomass estimate without adjusting for recruitment ignores reality.”

A majority of the CPSAS also express concern that stock assessments seem to be gravitating to only one independent index, ATM surveys, which measure only one point in time. In our view this is a big problem, based on the following:

- The current trawl speed (4 knots or less) likely results in under sampling larger sardines.
- The nearshore area (where young sardines are often concentrated) is not sampled.

- ATM surveys have not been able to estimate recruitment.
- Q is assumed to be 1 – and in Model ALT, Q freely estimated is 1.1, which the STAR panel questioned. Clearly, current ATM surveys do not “see” all the fish, and thus biomass estimates must be considered to be negatively biased.
- In fact, the projected biomass estimate for 2017 is lower than 2016 at a time that sardines are increasing in abundance, apparently coast-wide, but certainly in California. The STAR Panel Report attributed the reduction in biomass to a change in assessment methodology.

Nevertheless, this assessment is a recipe for disaster, and the impact is being felt coastwide. Fishermen are having a hard time finding schools of CPS with a mix of less than 40 percent sardines.

The majority of the CPSAS ask the Council to consider the following recommendations:

- Assessments should be based on more than one survey index. The 2015 and 2016 juvenile rockfish surveys were informative as evidence of recruitment and should be considered in future stock assessments.
- Please support cooperative research with industry to survey nearshore waters now missed in National Oceanic and Atmospheric Administration acoustic surveys.
- The Terms of Reference (TOR) for stock assessments should be revised to provide more flexibility, particularly in update years, to incorporate new findings and data into assessments that more accurately reflect ocean conditions. The TOR should also provide for a process to reopen a fishery based on new lines of evidence as soon as possible, rather than the current requirement to wait for the next full assessment. Without flexibility to adaptively manage dynamic CPS stocks, industry is forced to sit idle for the better part of one or two years, or even more –which may be beyond its economic tipping point.

Management Measures

The majority of the CPSAS recommends continuing the management measures approved by the Council in 2016, including:

Annual Catch Limit (ACL) 8,000 mt

Automatic in-season actions:

- An incidental per landing allowance of 40 percent Pacific sardine in non-Treaty CPS fisheries until a total of 2,000 mt of Pacific sardine are landed.
- When the 2,000 mt is achieved, the incidental per landing allowance would be reduced to 20 percent, until a total of 5,000 mt of Pacific sardine have been landed.
- When 5,000 mt have been landed, the incidental per landing allowance would be reduced to 10 percent for the remainder of the 2017-2018 fishing year.

In addition, the Council should adopt a 2 mt incidental per landing allowance in non-CPS fisheries.

Conservation representative statement:

The conservation representative of the CPSAS recommends setting incidental catch for Pacific sardine at a precautionary level that both protects the spawning stock while not unduly constraining other fisheries, including other CPS fisheries. Of an 8,000 mt ACL for the current season, approximately 1,000 mt in sardine landings have been recorded so far, suggesting that the current ACL on its own is not having a constraining effect on other fisheries. Given that the July 2017 projected biomass for Pacific sardine is lower than the estimated biomass from the past two years, and the overfishing limit and acceptable biological catch for the coming season will necessarily be reduced from the 2016-2017 specifications, the Council could consider and adopt an ACL for 2017-2018 that is commensurately reduced from last year's ACL. The conservation representative suggests that a high level of precaution is appropriate in setting incidental catch, given Pacific sardine's continued low abundance and its essential role as forage in the California Current Ecosystem. Finally, the conservation representative echoes the majority of the CPSAS's support for cooperative research to improve the capacity of acoustic surveys to survey inshore waters.

PFMC
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