

Coastal Pelagic Species Advisory Subpanel REPORT ON THE SARDINE HARVEST
PARAMETERS WORKSHOP

The Coastal Pelagic Species Advisory Subpanel (CPSAS) participated in a webinar presentation by Andrè Punt, to discuss results and analyses from the Sardine Harvest Parameters Workshop. The CPSAS thanks Dr. Punt, Felipe Hurtado and the scientists who generated data for the workshop analyses for their substantial body of work to date. The CPSAS believes this is a good first step. We also think it is important to point out that none of the Harvest Control Rule (HCR) variants, as analyzed, out-perform the existing HCR.

The CPSAS offers the following comments and recommendations for next steps, to provide guidance to the Council regarding its action to consider potential changes to sardine harvest control rule parameters.

The CPSAS endorses the workshop report as being very informative. However, we recommend that the Council request more analyses and information, as described below, before considering whether to change any elements of the current HCR. We further suggest that the Council should continue using the current harvest control rule until further analyses are conducted and reviewed. If warranted, any new policy guidelines could then be considered prior to the full assessment planned for 2014.

With reference to Table 5 in the initial analyses (Agenda Item I.1.b, Attachment 2), and to the additional sensitivity analyses (Agenda Item I.1.b, Supplemental Attachment 4), the CPSAS recommends further model runs and analyses to explore the following additional performance measures:

- 1 For all model runs, include the mean and maximum number of consecutive years in which catch < 50,000 tons and/or biomass < 400,000 tons. (Consistent with CPSMT report)
- 2 In Workshop analyses, Average Catch (total) was computed only when the fishery was open (excluding years with zero harvest). Rerun this performance measure to produce another mean that includes all the zero years. (Consistent with CPSMT report)
- 3 Re-run variant 6, except with a static 15 percent Emsy, paralleling the management measures adopted in recent years. (Consistent with CPSMT report)
- 4 Remaining biomass (unharvested) – how much biomass remains in the ocean after subtracting the fishery harvest?
- 5 Conduct a sensitivity analysis to determine if there is a difference in biomass or fishery performance measures if catch is coming disproportionately from southern or northern waters (due to variance in fecundity between younger vs. older, larger sardine or other biological factors)?
- 6 Conduct an additional simulation that accounts for the presence of a southern stock. This is because the original distribution percentage (i.e. the 87 percent) was made with the assumption of no southern stock. It appears that the consensus is now that

there is a southern stock and the CPSAS recommends a simulation that covers this aspect.

- 7 The supplemental analysis for multiple fleets assumed a worst case scenario for the international fisheries, and the CPSAS recommends running a scenario in which the southern stock is the majority of the Ensenada fishery and part of the Southern California fishery.

The CPSAS expressed several concerns with a Workshop recommendation to change the environmental covariate of sea surface temperature (SST), to an annual California Cooperative Ocean Fisheries Investigations (CalCOFI) temperature series for the “next” stock assessment. The annual CalCOFI time series is collected quarterly, and the last quarterly cruise extends through October/November, so the last quarter data would be omitted in the stock assessment, given the existing assessment schedule.

Based on these concerns, the CPSAS recommends:

- 8 The Workshop Report noted that “...basing management on annual SST may lead to large variation in HG from one year to the next.” (See page 8 of Workshop Report) . Additional analysis should use a 3-year average to smooth the effect and hopefully stabilize harvest guidelines, as is done with the current 3-year average Scripps pier SST parameter.
- 9 The CPSAS would like to know what the past 15 years of HGs would have been, using the proposed SST (CalCOFI) series, compared to HGs using the Scripps Pier SST.
- 10 The CPSAS recommends that the Baja California Extended Reconstructed Sea Surface Temperature (ERSST) time series should be considered as an index in the temperature-recruitment relationship, in light of discussion on page 5 of the Workshop Report, “...recruitment is likely to occur outside the region where the (CalCOFI) temperature time series are measured.”

Regarding distribution, the Workshop focused on the difficulties inherent in defining distribution and presented various hypotheses, including the probability that most of the Ensenada catch now assumed to be from the “northern” stock and included in the stock assessment may actually be from the southern stock. We have asked for an additional sensitivity analysis to examine this. The CPSAS supports the recommendation to assemble and synthesize available information, and further appreciates the comment that the analysis will be complicated. However, not enough is known at present to warrant any change from the status quo, 87 percent distribution rate.

Regarding planning for a Management Strategy Evaluation (MSE), the CPSAS acknowledges the point made by Dr. Punt in his presentation that none of models presented at the Workshop are sufficiently well developed at present to form the basis of an MSE, and substantial modifications will be needed before ecosystem models could be used for this purpose.

Regarding next steps, the CPSAS recommends that after the requested additional work has been completed, a joint meeting be scheduled with the CPS Management Team and the SSC’s CPS Subcommittee, and also including two CPSAS representatives. The purpose will be to further consider and analyze the results, and prepare to report back to the Council at a future meeting.

PFMC
04/10/13