

COASTAL PELAGIC SPECIES ADVISORY SUBPANEL REPORT ON
PACIFIC MACKEREL STOCK ASSESSMENT AND MANAGEMENT MEASURES

During a webinar on May 31, 2017, the Coastal Pelagic Species Advisory Subpanel (CPSAS) heard a presentation from Dr. Paul Crone on the Pacific Mackerel Biomass Projection Estimate for USA Management in 2017-18 and 2018-19 (Agenda Item D.1 Attachment 1).

The CPSAS thanks the Stock Assessment Team (STAT) for their efforts. The CPSAS would appreciate the Council's consideration of the following concerns in deliberating management measures for the 2017-18 and 2018-19 Pacific mackerel fisheries:

This catch-only projection was based on the 2015 model H3, which included only one index – commercial passenger fishing vessel (CPFV) catches – as the Acoustic Trawl Method (ATM) survey was omitted. As noted in the Stock Assessment Review Panel (STAR) report (Agenda Item G.2, Attachment 1), *“the STAT recommended model H3 as the best available interim model and the Panel could not identify a model that was adequately defensible, in terms of fitting the data and leading to a plausible value for the catchability coefficients for the ATM survey indices.”* The problem with the ATM survey was, and continues to be, that it covers only a fraction of the full range of the Pacific mackerel stock, which extends from Baja California into the Pacific Northwest.

Now the Council is faced with basing management for the next two years on a model that had identified flaws. We repeat the comments from our 2015 CPSAS report: *“It is apparent that the model and data are inconsistent and do not reflect mackerel abundance on the fishing grounds. The model is attempting to estimate the entire Pacific mackerel biomass, but the Commercial Passenger Fishing Vessel (CPFV) index, the only index left in the model, measures only a small part of the biomass. CPFV logbooks reflect mackerel landings in California, which according to the 2011 and 2015 STAR panel reports are likely underreported. Moreover, 2014 mackerel landings in the Pacific Northwest more than doubled in a truncated and shortened season. Biological data for these landings were not collected to inform the model about age structure, particularly for older and larger fish.”*

Pacific mackerel are still reported to be abundant in the Pacific Northwest. In fact, the Washington Department of Fish and Wildlife has authorized a directed fishery for Pacific mackerel. Any catches made in Washington and Oregon will be subtracted from the coast-wide harvest guideline established by this Council. Yet the biomass estimate is based largely on California “party boat” logs that are known to be underreported.

Although Pacific mackerel catches in California have been relatively low in recent years, this was due in part because effort was focused on the squid fishery. Also, in many cases, attempts to catch mackerel were thwarted because the schools contained more than 40 percent sardine and could not be landed because the sardine fishery has been closed since 2015. However, California fishermen are now observing more Pacific mackerel on the grounds and catches have increased recently. Veteran fishermen report that Pacific mackerel always follow anchovy, and surveys as well as fishermen are reporting an abundance of anchovy in inshore waters now.

In summary, our recommendations include the following:

- Data collection programs need to be substantially expanded:
 - Biological data in the Pacific Northwest should be collected and included in future models as soon as possible to incorporate data on stock age structure, including older and larger fish.
 - Recreational catch data collection programs should emphasize the need to report all Pacific mackerel catches, whether retained, returned or used for bait.
- AT survey methodology should be modified:
 - increase the spatial boundaries of the survey grid
 - add side-looking sonar acoustics to capture fish in the upper water column
 - trawl samples must be substantially increased to accurately measure the true CPS assemblage
- Efforts should be continued to encourage collaborative tri-national research and data exchanges, and to collaborate with the fishing industry toward improving the knowledge of Pacific mackerel.

Similar recommendations also have been expressed in the Research and Data Needs section of the Pacific Mackerel Stock Assessment Report.

The one overarching recommendation that a majority of the CPSAS believes is critically important is to allow the Council flexibility to adjust management measures as needed between scheduled stock assessment reviews. Pacific mackerel are acknowledged to have rapid “spikes” in abundance in favorable conditions. In addition, the majority of the CPSAS believes that rolling over any unused HG from one season to the next would help to account for a sudden spike in Pacific mackerel abundance during “update” years.

It is important to reiterate that with the closure of the sardine fishery, and the possible decline in squid abundance due to the forecasted El Nino cycle, effort may increase on Pacific mackerel in 2017, both in California and the Pacific Northwest. A majority of the CPSAS suggests that the Council needs maximum flexibility to adjust the biomass estimate mid-management cycle if warranted, i.e., prior to the 2018-2019 fishing year.

Harvest and Management Specifications

In light of the increasing abundance of Pacific mackerel now observed on the grounds, and the likelihood that the population could increase further due to reports of increasing anchovy abundance, the CPSAS supports the management values for 2017-18 and 2018-19 as described in Table A2 in Appendix A of the Pacific Mackerel Biomass Projection Estimate (Agenda Item D.1 Attachment 1). While similar to Table A1 (the projection from the baseline model), the additional 1,971 mt HG in Table A2 would provide additional fishing opportunity that could benefit fishing communities without risking harm to the resource.

The CPSAS recommends a set aside of 1,000 mt for incidental catches in other CPS fisheries.

Should the directed fishery reach the annual catch target (ACT) and shift to an incidental catch-only fishery, the CPSAS recommends a 45 percent incidental landing allowance of mackerel in other CPS fisheries. In addition, 3 mt of Pacific mackerel may be landed without any other CPS.

The CPSAS also recommends an in-season review of the 2017-2018 Pacific mackerel fishery at the March 2018 Council meeting, if needed, to consider releasing a portion of the incidental set-aside to the directed fishery.

A2) Average recruitment (2012-14)

A) Fishing year (2017-18)

Harvest Control Rule Formulas										
OFL = BIOMASS x E_{MSY} x DISTRIBUTION										
ABC _{p*} = BIOMASS x BUFFER _{p*} x E_{MSY} x DISTRIBUTION										
HG = (BIOMASS - CUTOFF) x E_{MSY} x DISTRIBUTION										
Harvest Formula Parameters										
BIOMASS (ages 1+, mt)	152,790									
P*	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.10	0.05	
ABC Buffer _{Tier-1}	0.9558	0.9128	0.8705	0.8280	0.7844	0.7386	0.6886	0.6304	0.5531	
$E_{MSY} \equiv$ FRACTION	0.30									
CUTOFF (mt)	18,200									
DISTRIBUTION (U.S.)	0.7									
Harvest Control Rule Values (MT)										
OFL =	32,086									
ABC _{Tier-1} =	30,667	29,289	27,930	26,566	25,169	23,699	22,094	20,228	17,748	
HG =	28,264									

B) Fishing year (2018-19)

Harvest Control Rule Formulas										
OFL = BIOMASS x E_{MSY} x DISTRIBUTION										
ABC _{p*} = BIOMASS x BUFFER _{p*} x E_{MSY} x DISTRIBUTION										
HG = (BIOMASS - CUTOFF) x E_{MSY} x DISTRIBUTION										
Harvest Formula Parameters										
BIOMASS (ages 1+, mt)	139,820									
P*	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.10	0.05	
ABC Buffer _{Tier-1}	0.9558	0.9128	0.8705	0.8280	0.7844	0.7386	0.6886	0.6304	0.5531	
$E_{MSY} \equiv$ FRACTION	0.30									
CUTOFF (mt)	18,200									
DISTRIBUTION (U.S.)	0.7									
Harvest Control Rule Values (MT)										
OFL =	29,362									
ABC _{Tier-1} =	28,064	26,803	25,559	24,311	23,032	21,687	20,218	18,511	16,241	
HG =	25,540									