

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

The Coastal Pelagic Species Advisory Subpanel (CPSAS) and Coastal Pelagic Species Management Team (CPSMT) received a joint briefing from Dr. Kevin Hill (SWFSC) on the Pacific Mackerel Stock Assessment Report for USA Management in 2015-16 (Agenda Item G.2.a, Stock Assessment Report).

The CPSAS thanks the Stock Assessment Team for their efforts. The CPSAS appreciates the Council's consideration of the following points in deliberating management measures for the 2015-2016 and 2016-2017 Pacific mackerel fisheries:

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.

The CPSAS is concerned that the model is predicting a further decline in biomass, based on 2014 data. According to the stock assessment report:

*“current low abundance as indicated in the AT survey time series, unrealized quotas by the U.S. fishery, and limited catches reported in Mexico;...”*

However, the CPSAS notes the following:

- The AT survey initially considered in the model surveyed only a portion of the Pacific mackerel range. It excluded Mexico, which is a substantial portion of the range.
- Unrealized quotas should not necessarily be attributed to a decreasing biomass.
  - The California CPS fleet was focusing effort on other fisheries (i.e. squid and tuna), but did report seeing more mackerel.
  - Catches DID more than double in the Pacific Northwest, and mackerel have been increasingly observed in the northwest. There was interest by Oregon and Washington fishermen to target mackerel. However, state regulations in Washington don't allow for directed mackerel fishing. Oregon reduced sardine bycatch to a level that prevented directed mackerel fishing. It is quite likely catches would have been much higher had state regulations allowed.
- Further, the assumption that biomass declined because Mexico did not land mackerel fails to consider the harvest effort which shifted to other fisheries (i.e. sardine and tuna).

The model had insufficient data to predict biomass. As a result, the fishery will be penalized this year by further quota reductions. This comes at a time when fishermen are seeing increased numbers of Pacific mackerel on the fishing grounds. This year virtually everyone will be targeting mackerel given the El Niño impact on squid and closure of the sardine fishery.

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 are also expressed in the Research and Data Needs section of the Pacific Mackerel Stock Assessment Report.

The one overarching recommendation that we believe is critical 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.

It is important to reiterate that with the closure of the sardine fishery, and the likely decline in squid abundance due to the current El Nino cycle, effort will increase on Pacific mackerel in 2015, both in California and Oregon. The Council needs maximum flexibility to adjust the biomass estimate mid-management cycle, i.e., prior to the 2017-2018 fishing year.

### **Harvest and Management Specifications**

The CPSAS supports the CPSMT recommendations for Pacific mackerel management, including P\* value of 0.45 and Tables 3 and 4 from the CPSMT report (Agenda Item G.2.a Supplemental CPSMT Report) which are duplicated below, for the 2015-16 and 2016-17 fisheries. The CPSAS recommends a set aside of 1,000 mt for incidental catches in other CPS fisheries.

Should the directed fishery reach the 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 strongly recommends an in-season review of the 2015-2016 Pacific mackerel fishery at the March 2016 Council meeting, if needed, to consider releasing a portion of the incidental set-aside to the directed fishery.

<b>Table 3. 2015-2016 Pacific Mackerel Harvest Formulas</b>	<b>MT</b>
Biomass	120,435
OFL=Biomass*Fmsy*Distribution	25,291
ABC <sub>0.45</sub> = Biomass*Buffer <sub>0.45</sub> *Fmsy*Distribution	23,104
ACL	23,104
HG = (Biomass - Cutoff) * Fraction * Distribution	21,469
ACT = HG - Incidental	20,469
Incidental set-aside	1,000

<b>Table 4. 2016-2017 Pacific Mackerel Harvest Formulas</b>	<b>MT</b>
Biomass	118,968
OFL=Biomass*Fmsy*Distribution	24,983
ABC <sub>0.45</sub> = Biomass*Buffer <sub>0.45</sub> *Fmsy*Distribution	22,822
ACL	22,822
HG = (Biomass - Cutoff) * Fraction * Distribution	21,161
ACT = HG - Incidental	20,161
Incidental set-aside	1,000

PFMC  
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