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

The Coastal Pelagic Species Advisory Subpanel (CPSAS), along with the CPS Management Team (CPSMT), received presentations on the 2010 Pacific Coast Aerial Survey from Mr. Tom Jagielo, and the 2010 Pacific Sardine stock assessment from Dr. Kevin Hill. The CPSAS offers grateful thanks to Dr. Hill and the Stock Assessment Team for incorporating the point estimate for the 2010 summer aerial survey despite receiving the data only a few days prior to the stock assessment meeting.

The aerial survey data included the assessment resulted in a biomass (ages 1+) estimate of 537,173 mt. This is a significant reduction from the 702,024 mt in 2009. Applying the harvest control rule, the Harvest Guideline (HG) for the 2011 fishery is 50,526 MT, down from the 72,039 mt approved in 2010.

Discussing the outcome of the 2010 assessment, the CPSAS acknowledged the contradiction of the surveys with observations in the field:

- the Daily Egg Production Model (DEPM) index reflected the lowest egg deposition survey since the early 1990s;
- The 2010 aerial survey indicated a decline of biomass from that photographed in 2009.

However, the scientific advisor for the aerial survey noted that the 2010 survey results were likely reduced by chronic inclement weather conditions. With the exception of Monterey, fishers in the Pacific Northwest, southern California, and Canada all reported large and numerous sardine schools. Landings in Westport were at historic highs. Today, in November, Canadian fishers continue to harvest large volumes of sardines when weather permits.

Even with a reduced biomass estimate, the aerial survey scaled up model output significantly from the DEPM survey alone. The CPSAS supports the proposed improvements for the aerial survey.

The CPSAS acknowledges the new suite of requirements mandated by Amendment 13 of the CPS fishery management plan (FMP). The CPSAS notes that the low assignments of HG coupled with individual seasonal allocations of HG have resulted in a truncated season of every sardine season since 2008. The recommended low target HG for 2011 will result in seasons that are shorter unless some boats and plants choose not to operate. Given the economics, this is a real possibility.

Management Measures

The CPSAS recommends the following management measures for the 2011 sardine fishery:

(1) The HG for the 2011 sardine fishery be approved as derived from Dr. Hill's Model run 10W (50,526 mt).
(2) An aggregate total of 5000 mt be set aside for incidental catch (3000 mt) and a harvest buffer (2000 mt): (1000 mt of incidental allowance would be set aside for each of the three periods for non-sardine fisheries. For the first two periods any of the 1000 mt not utilized would roll into the next period's directed fishing.)
(3) An Exempted Fishing Permit (EFP) set aside of 4,200 mt be approved for industry-supported research, to be deducted from the HG before it is allocated (Table 1).

The CPSAS commends the effective in-season actions taken by the National Marine Fisheries Service (NMFS) to deal with surpluses or shortages in the directed and incidental seasonal allocations.

The CPSAS recommends that the non-sardine incidental landing allowance in 2011 be no more than 30 percent Pacific sardine by weight, as adopted in 2010. The CPSAS recommends that if the directed seasonal allocation and set-asides are reached, the retention of Pacific sardine be prohibited for the remainder of that sardine season.

Table 1. Allocation scheme for the 2011 Pacific Sardine Harvest Guideline

HG = 50,526 mt; Potential EFP set aside = 4,200 mt; Adjusted HG = 46,326 mt				
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	16,214	18,530	11,582	46,326
Incidental Set Aside (mt)	1,000	1,000	1,000	
Management Uncertainty (mt)			2,000	
Adjusted Allocation (mt)	15,214	17,530	8,582	41,326

Research set aside and EFP Request

The CPSAS requests the Council approve an EFP set-aside of 4,200 mt to be allocated as follows:

- 2,100 mt for the Northwest Sardine Survey, under the direction of scientific advisor, Tom Jagielo. This will be utilized to repeat the summer aerial survey in the Pacific Northwest in 2011 and operate under established protocols.
- 2,100 mt for the California Wetfish Producers Association's (CWPA) Pilot Program under the direction of scientific advisor Dr. Doyle Hanan. This will be utilized to expand the pilot project presently underway. This involves approved aerial photographic

techniques with the addition of light detection and ranging (LIDAR), which is intended to enhance existing survey methods. LIDAR will provide density to surface area measurements, and these overlapping technologies can be used to develop an estimate of biomass when the weather is more conducive to such research and sardines are abundant in California.

- A detailed EFP application encompassing the two aerial survey projects, including methodology and operational plans, will be submitted to the Council prior to the March 2011 meeting. The Fall Pilot Program EFP request is subject to the Stock Assessment Review Panel (STAR) review of LIDAR and enhanced photographic methods, and tentatively scheduled for May 2011. If the methodology is not approved, the Fall Pilot Program EFP set aside would be added to the Fall directed allocation.

The CPSAS strongly recommends the Council support the EFP research and our request for STAR Methodology review panels as outlined in Agenda Item I.3.b. We encourage the NMFS to support and fund comprehensive coast-wide annual CPS research. This is necessary to improve understanding of the spawning biomass and migration patterns. We encourage similar cooperative surveys in Canada and Mexico.

We commend NMFS and the Council for their parts in arranging a Sardine Survey Methods Workshop in June of 2010. In particular, we would like to thank Dr. Varanasi and Dr. Sakagawa.

Monitored Stocks

The majority of the CPSAS generally concurs with the approach adopted by the CPSMT to deal with monitored stocks in Amendment 13.

Included are conservation representative comments:
The Magnuson-Stevens Fishery Conservation and Management Act (MSA) mandates that Fishery Management Plans (FMPs) must prevent overfishing.[1] The MSA further requires FMPs to include 'objective and measurable criteria for identifying when the fishery to which the plan applies is overfished' as well as an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks in that fishery.[2] The Specifications and Management Measures for Monitored CPS stocks do not include criteria for identifying when market squid, jack mackerel or northern anchovy are overfished. Market squid, jack mackerel and northern anchovy are "in the fishery" and are not exempt from Stock Determination Criteria.[3] Therefore, the Specifications and Management Measures for Monitored CPS Stocks do not meet the requirements of MSA, they are illegal and should not be approved by the Council and NMFS.

The CPSAS reiterates that coordinated international management of CPS fisheries is essential to understand the potential for coast wide overfishing. The CPSAS encourages the Council, NMFS

[1] 16 USC 1851 Sec. 301(a)(1).
[2] 16 USC 1853 Sec. 303(a)(10).
[3] While market squid is exempt from ACL and AM requirements because of its life history characteristics, "FMPs or FMP amendments for these stocks must have SDC, OY, ABC, and an ABC control rule." 74 FR 11 at 3210 (January 16, 2009).

and the State Department to continue their work to achieve the timely receipt of research and catch data from Mexico and Canada.

PFMC
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