

COASTAL PELAGIC SPECIES MANAGEMENT TEAM REPORT ON
PACIFIC SARDINE STOCK ASSESSMENT AND MANAGEMENT FOR 2013

The Coastal Pelagic Species Management Team (CPSMT), the Coastal Pelagic Species Advisory Panel (CPSAS) and the Scientific and Statistical Committee (SSC) jointly received a presentation from Dr. Kevin Hill concerning the Pacific sardine stock assessment conducted in 2012. The CPSMT recommends that the Pacific Fishery Management Council (Council) adopt the update assessment (model X6e) for management of the 2013 sardine fishery (Agenda Item G.3.b, Supplemental Assessment Report 2). Based upon the 659,539 metric tons (mt) age 1+ biomass estimate from this assessment, the harvest control rule produces a harvest guideline (HG) of 66,495 mt (Table 1 below). The 2012 biomass estimate represents a 33 percent decrease from the full stock assessment previously adopted by the Council in November, 2011. The CPSMT notes the 2012 results of the Daily Egg Production Index and the hydroacoustic trawl surveys contributed to the decrease in the biomass estimate.

Harvest Specifications for 2013

Table 1 (below) contains the resulting overfishing limit and a range of acceptable biological catch values based on various P* (probability of overfishing) values. The CPSMT recommends that the annual catch limit equal the ABC resulting from the Council's P* choice, and that the HG/annual catch target be set equal to 66,495 mt. Considering the results of the full stock assessment conducted in 2011, the Council chose a P* of 0.40 for the 2012 fishery.

The Quinault Indian Nation (Agenda Item G.3.a, Attachment 1) requests 9,000 mt of Pacific sardine for their participation in the 2013 fishery, the same as requested for 2012. The CPSMT notes that 6,000 mt of the 2012 set-aside for the Quinault Indian Nation was not used and was released to the third fishing period. Acknowledging that a set-aside for the Quinault Indian Nation has yet to be determined, the CPSMT presents a preliminary allocation scheme for the 2013 fishery (Table 2 below) that incorporates a set-aside of 9,000 mt.

The Northwest Sardine Industry LLC has notified the Council (Agenda Item G.3.a, Attachment 2) it intends to request an exempted fishing permit (EFP) for 3,000 mt, the same as approved in 2012. Recognizing the Council will determine whether to approve the EFP at a future meeting, CPSMT recommends setting aside 3,000 mt for the Northwest sardine industry EFP, and this is reflected in Table 2.

Further, the CPSMT recommends any EFP set-aside not included in an EFP, as well as any EFP fish allocated but not utilized, should be re-allocated to the third period directed fishery. Finally, the CPSMT recommends that the incidental catch for CPS fisheries in each of the three allocation periods should be set to 1,000 mt (Table 2) and that the incidental landing allowance for CPS fisheries be no more than 40 percent Pacific sardine by weight.

Based on the values in Table 1, the CPSMT recommends adoption of the allocation scheme in Table 2.

Table 1. Pacific sardine harvest formula parameters for 2013.

Harvest Formula Parameters	Value			
BIOMASS (ages 1+, mt)	659,539			
P^* (probability of overfishing)	0.45	0.40	0.30	0.20
$BUFFER_{P^*}$ (Sigma=0.36)	0.95577	0.91283	0.82797	0.73861
F_{MSY}	0.18			
FRACTION	0.15			
CUTOFF (mt)	150,000			
DISTRIBUTION (U.S.)	0.87			

Harvest Formulas	MT
OFL = BIOMASS * F_{MSY} * DISTRIBUTION	103,284
$ABC_{0.45}$ = BIOMASS * $BUFFER_{0.45}$ * F_{MSY} * DISTRIBUTION	98,716
$ABC_{0.40}$ = BIOMASS * $BUFFER_{0.40}$ * F_{MSY} * DISTRIBUTION	94,281
$ABC_{0.30}$ = BIOMASS * $BUFFER_{0.30}$ * F_{MSY} * DISTRIBUTION	85,515
$ABC_{0.20}$ = BIOMASS * $BUFFER_{0.20}$ * F_{MSY} * DISTRIBUTION	76,287
HG = (BIOMASS - CUTOFF) * FRACTION * DISTRIBUTION	66,495

Table 2. Preliminary allocation scheme for 2013 Pacific Sardine ACT

HG = 66,495 mt; Tribal set-aside = 9,000 mt; potential EFP set-aside = 3,000 mt Adjusted HG = 54,495 mt				
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	19,073 (35%)	21,798 (40%)	13,624 (25%)	54,495
Incidental Set-Aside (mt)	1,000	1,000	1,000	3,000
Adjusted (Directed) Allocation (mt)	18,073	20,798	12,624	51,495

Recommendations for future actions

In regards to the industry-sponsored aerial survey in 2012, the CPSMT commends the EFP applicants for their efforts. The CPSMT understands that the duration of the fishing periods, weather and other logistical limitations precluded completing the survey as designed, resulting in relatively few data points useful in the stock assessment. However, while nearly the entire set-aside was utilized, a substantial portion was not used to achieve the scientific goals of the EFP. If approved for 2013, the CPSMT encourages the EFP applicants to improve utilization of the set-aside to achieve science goals.

A methodology review of the Canadian West Coast Vancouver Island Swept Area Trawl Survey was completed in 2012 (Agenda Item G.3.a, Attachment 5). The CPSMT supports the continuation of the West Coast Vancouver Island trawl sardine survey (WCVI), and that it be conducted as recommended in the review report. The panel considered the last two years of the survey (2010-2011) as the best data and stated the necessity of at least four years of data using the latest survey design and methods before including in a stock assessment. The CPSMT recommends the stock assessment team evaluate the time series when it comprises at least four estimates, at which time it could be included in a future stock assessment.

PFMC
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