

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

Recent years have seen our November Coastal Pelagic Species Advisory Subpanel (CPSAS) statement echoing the same message—the stock assessment models are underestimating sardine abundance, especially in the Pacific Northwest (PNW). Each year we have thanked the Coastal Pelagic Species Management Team (CPSMT) and the Scientific and Statistical Committee (SSC) for their work in calculating the annual stock biomass and each year we begrudgingly have accepted the resulting harvest guideline (HG) recommendations.

This year the CPSAS cannot accept the recommended HG.

We note (albeit for different reasons) that the SSC Coastal Pelagic Species (CPS) Subcommittee (Subcommittee) also rejected the 2008 sardine stock assessment. We appreciate the efforts of the CPSMT to resolve the problems manifested by one ‘outlier’ data point that changed the history of both sardine biomass and recruitment. Unfortunately, the rigid Terms of Reference, now in place for Pacific sardine, tied the hands of both the CPSMT and Subcommittee. The Pacific Fishery Management Council (Council) must act on whatever ‘best available science’ the scientists recommend, but the fundamental point remains – the stock assessment does not reflect the reality reported by fishermen and spotter pilots over the last eight years. It is clear that a second index of abundance is absolutely necessary. At the very least it is required to gain perspective on the accuracy and validity of the assumptions and enormous uncertainty inherent in the current stock assessment methodology.

We ask in the face of this uncertainty, “Does it not make sense – is it not time – to count actual numbers of fish?” In view of our observations we have asked this question now for eight years. It is time for something to change in this equation. The same old answers are no longer sufficient.

Our disappointment in past years was masked by an overriding consideration—the annual HG still allowed for an economically viable fishery – at least it did until 2008. Unfortunately, next year’s Subcommittee recommended HG, which is dramatically reduced from the 2008 level and only 37 percent of the 2007 HG, will cause further major economic disruption to our fishing communities.

The CPSAS is largely comprised of commercial and recreational fishing representatives—laymen if you will—and clearly not scientists. With that said, we are now nearly 10 years into a resurgent fishery and in recent years we have observed sardine abundance in the Northwest and California that belies current biomass estimates. Meanwhile the scientific committee has recommended successive cuts in the HG, declining from 152,000 mt in 2007 to 89,000 mt in 2008 and only 66,932 mt (recommended by the CPSMT) or 56,946 mt (proposed by the Subcommittee) for 2009. Intuitively, in light of the major uncertainties in the current assessment, and echoing concerns voiced by the scientists, who agree that one data point should not have such a dramatic affect on the past history of the resource, we cannot accept this precipitous decline in predicted abundance.

The CPSAS will be the first to admit that a growing world demand for Pacific sardines and higher ex-vessel prices are now driving increased fishing effort in California and the PNW. This, coupled with a fully developed harvesting and processing sector in the PNW, allows for greater utilization of Pacific sardine quota. However, our objection to the recommended HG is not predicated on a “what

the industry needs in 2009” argument. Rather, we regrettably maintain that the SSC continues to work within the confines of historic assumptions untested in today’s environment, and a narrowly constructed stock assessment model driven by incomplete data. Further stock assessments have been unable to quantify on-the-water observations or the upward trending harvest rates and catches per unit of effort for all harvest areas. Consequently, we must conclude that the National Oceanic and Atmospheric Administration (NOAA) and, by implication, the Council, have relegated the Pacific sardine fishery to a second tier status that does not warrant the same level of resources and attention directed to other Council-managed fisheries, this notwithstanding the growing economic importance of the Pacific sardine fishery on the west coast.

Frustrated by eight years of disregard for our observations, this year we sought to validate our “layman” opinion. Industry employed respected scientists to design and implement, through industry funding, an aerial-based sardine abundance survey for the PNW coast. This study, which included a systematic sampling design, was developed in consultation with an expert panel and took into consideration that the Pacific sardine stock assessment review (STAR) panel had until recently utilized a California aerial spotter index in the base model. The industry-sponsored study concluded that aerial surveys can provide a scientifically valid approach for Pacific sardine stock assessment. Further, when combined with adequate sampling, this approach provides for an accurate biomass estimate. Not surprising from our perspective, when the 225,000 mt found in 91 nautical miles of the PNW coast is extrapolated, the aerial survey study projects a sardine biomass far in excess of any of the SSC’s present or recent estimates. In fact, one 30 mile transect identified sardine biomass equal to one-third of the entire 2009 biomass estimate.

The Subcommittee and CPSMT found the aerial survey methodology promising and saw potential for further development as an absolute or relative index of abundance. However, under the current Terms of Reference, any new data collection methodology must be reviewed by a STAR panel prior to its use in the stock assessment model. A STAR panel to review mackerel and sardine assessment methodology is now being considered for May 2009, but it is unclear at this time if this new, quantifiable, aerial survey methodology will be accepted. The industry would like to mount a synoptic survey in the summer of 2009, but we need help to fund such a synoptic effort. This survey would be intended to cover the PNW and extend at a minimum to Monterey. We ask for the Council’s support in this effort, by emphasizing the importance of this work and requesting that NOAA provide an adequate allocation for cooperative research in 2009, specifically for this purpose.

We are troubled by the lack of substantive forward progress in addressing the uncertainty surrounding the Pacific sardine stock(s). This is a research need that has been identified for many years. It is apparent that the present egg production collection methodology is inadequate to measure the full extent of the resource, and a second index of abundance is necessary. This need has been identified in the past by the SSC and CPSMT, but to date has not been addressed, except through the actions of industry and the independent scientists they employed.

Perhaps most troubling: recent scientific recommendations come on top of a maximum sustainable yield-proxy control rule that is the gold standard for sustainable fisheries management. What other management plan comes anywhere close to the conservation, environmental and forage considerations built into the CPS Fishery Management Plan?

Except for the legal obligations of the Magnuson-Stevens Fishery Conservation and Management Act and strict process nightmare inherent in the Terms of Reference regarding addressing uncertainty in the stock assessment update, the CPSAS sees nothing in available science or management that would preclude the SSC and Council from recommending a 2009 HG of 100,000 mt. This harvest level would promote stability in both the California and PNW fishing communities, and most importantly, provide ample protection to a coastwide Pacific sardine population that fishermen on the grounds believe is expanding—and not contracting. The conservation representative on CPSAS, Ben Enticknap (Oceana), disagrees with the notion of setting a harvest guideline in excess of the allowable biological catch that is determined by the most recent stock assessment and harvest control rule.

Regarding 2009 sardine management measures, the CPSAS provides the following recommendations:

A research set-aside of 1,200 mt is recommended for continuing and expanding the 2008 pilot aerial survey sponsored by the PNW sardine industry. The CPSAS recommends that the research set-aside is taken “off the top” before the HG is allocated seasonally because the results of the research would have coastwide benefits and there are tentative plans to extend the survey into California. Any of the research set-aside that is not used in the second allocation period will be rolled into the third seasonal period’s directed HG.

Seasonal Allocation Period	<b>Period 1 Jan 1-June 30</b>	<b>Period 2 July 1- Sept 14</b>	<b>Period 3 Sept 15-Dec31</b>	<b>Total</b>
Seasonal Incidental Set-Aside (mt)	1,000	1,000	4,500	6,500

The Seasonal Incidental Set-Asides are intended to allow CPS fisheries targeting species other than Pacific sardine to continue if a seasonal allocation to the directed fishery is reached or exceeded in any period. Under these circumstances, the CPSAS anticipates that National Marine Fisheries Service (NMFS) would close the directed sardine fishery and the fishery would revert to an incidental fishery with an incidental landing allowance of no more that 20 percent Pacific sardine by weight. The larger Seasonal Incidental Set-Aside in Period 3 is intended to protect the winter market squid fishery and to minimize the chance of exceeding the allowable biological catch.

Under this proposal, the CPSAS recommends NMFS take the following inseason automatic actions:

- Any unused seasonal allocation to the directed fishery from Period 1 or Period 2 rolls into the next period’s directed fishery.
- Any overage of a seasonal allocation to the directed fishery from Period 1 or Period 2 is deducted from the next Period’s directed fishery.
- Any unused Seasonal Incidental Set-Aside from Period 1 or Period 2 rolls into the next period’s directed fishery.
- If both the seasonal allocation to the directed fishery and the Seasonal Incidental Set-Aside are reached or exceeded in any period, the retention of Pacific sardine will be prohibited.