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March 20, 2015

Ms. Dorothy Lowman, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220

Mr. Will Stelle  
Administrator, Northwest Region, NMFS  
7600 Sand Point Way, NE, Bldg 1  
Seattle, WA 98115

**RE: Agenda Item B.1 – Open Public Comment: Emergency Action to Close the 2014-15 Pacific Sardine Fishery**

Dear Chair Lowman, Mr. Stelle, and Council Members:

We are writing to request immediate emergency action to close the directed sardine fishery for the remainder of the 2015 season due to overfishing and ecological concerns. The preliminary 2015 Pacific sardine assessment<sup>1</sup> indicates that the northern Pacific sardine population has declined approximately 90 percent since 2007 and that the previous stock assessment grossly overestimated sardine abundance. According to the preliminary assessment, the retrospective estimate of the 2014 age 1+ sardine biomass was 150,334 metric tons (mt) – not 369,506 mt as estimated in last year’s assessment. This means that the July 2014 to June 30, 2015 Harvest Guideline selected by the Council in April 2014 was seriously overinflated and there should have been very little if any harvest guideline set for this year.

We recommend the Council correct this error by closing the directed sardine fishery at this meeting through its Point of Concern Framework. Alternatively, we request NMFS take emergency action independently to stop overfishing and provide for adequate forage for dependent predators.

Right now, given the decline of the northern sardine population and lack of recruitment, any sardine fishing is overfishing. There are serious ecological impacts associated with this sardine collapse, including stranded and starving sea lion pups and Brown Pelican nesting failures, both linked to inadequate prey availability. This year, approximately 70% of sea lion pups are expected to die due to starvation.

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<sup>1</sup> Hill, K.T., P.R. Crone, D.A. Demer, J. Zwolinski, E. Dorval, and B.J. Macewicz. 2015. Assessment of the Pacific Sardine Resource in 2015 For U.S.A. Management in 2015-16. Preliminary Draft for SSC CPS Subcommittee Review on 6 March 2015.

## I. Point of Concern Framework

Under the Coastal Pelagic Species Fishery Management Plan (CPS FMP), the Council can initiate the “Point of Concern Framework” to address serious resource or ecological concerns like we are now seeing.

According to the CPS FMP:<sup>2</sup>

*The point-of-concern process is **the Council's primary tool** (along with setting HGs, ACLs, ACTs, or harvest quotas) **for exercising resource stewardship responsibilities**. The process is intended to foster continuous and vigilant review of Pacific Coast CPS stocks and fisheries. The process is also to prevent overfishing or any other resource damages. The CPSMT will monitor the fishery throughout the year, and account for any new information on status of each species or species group to determine if a resource conservation or ecological issue exists. Point-of-concern criteria are intended to assist the Council in determining when a focused review on a particular species is warranted and may require implementation of specific management measures. **This framework provides the Council authority to act based solely on a point-of-concern. Thus, the Council may act quickly and directly to address resource conservation or ecological issues.** In conducting this review, the CPSMT will utilize the most current catch, effort, abundance and other relevant data from the fishery.*

The CPS FMP states the situations whereby a "point-of-concern" occurs, including when:

- Any adverse or significant change in the biological characteristics of a species (age composition, size composition, age at maturity, or recruitment) is discovered.
- An overfishing condition appears to be imminent or likely within two years.
- Any adverse or significant change in ecological factors such as the availability of CPS forage for dependent species or in the status of a dependent species is discovered.
- An error in data or a stock assessment is detected that significantly changes estimates of impacts due to current management.

Each of these four points is true based on the information in the 2015 preliminary draft stock assessment. As for the process, however, we stress that delaying action until the June Council meeting would be pointless since the fishery closes on June 30. The Council must address this issue immediately at the April meeting and recommend NMFS close the sardine fishery from the remainder of the 2015 season as an emergency action.

## II. The sardine population decline is worse-off than estimated last year

The 2014 Pacific sardine assessment project that age 1+ biomass would be 369,506 mt as of July 2014. This was used in calculating an Annual Catch Limit of 23,293 mt. If the preliminary assessment stands, the biomass estimate for 2014-15 management was grossly overestimated

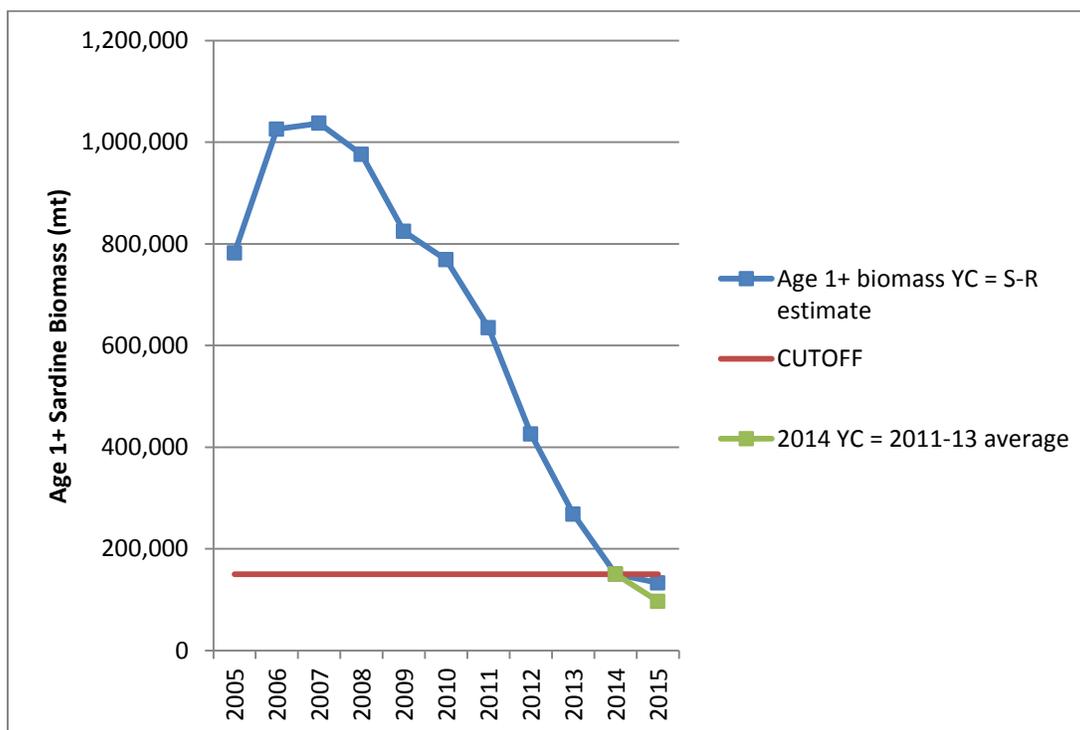
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<sup>2</sup> Pacific Fishery Management Council. 2011. Coastal Pelagic Species Fishery Management Plan as amended through Amendment 13, at page 15. [www.pcouncil.org](http://www.pcouncil.org)

and should have been 150,335 mt. That would have equaled a Harvest Guideline (HG) for 2014-15 of 43.7 mt.<sup>3</sup>

Among the contributing factors to the overestimation of the 2014-15 Harvest Guideline was a key assumption about sardine recruitment that has since proven to be overestimated. Rather than using recent average recruitment that was known at the time to be at historic lows, the Council approved an assessment that included a “phantom year class” based on long-term average recruitment using data from a period where sardines were highly productive.

This phantom year class inflated the biomass estimate by over 22%, along with a much higher HG. This phantom year class never appeared. The combination of scientific and management errors caused by overly optimistic assumptions could not have come at a worse time. We are glad to see in the preliminary 2015 sardine assessment that the authors believe that the recent average recruitment is more likely than the predicted model recruitment, acknowledging a key mistake made in last year’s specification process.



**Figure 1.** Age 1+ Pacific sardine biomass as presented in the preliminary 2015 Pacific sardine assessment.<sup>4</sup> This shows that the 2014 biomass estimate was just marginally above CUTOFF and the HG should have been no higher than 43.7 mt for this fishing year.

<sup>3</sup>  $HG = (BIOMASS - CUTOFF) * FRACTION * DISTRIBUTION$ ,  $HG = (150,335 - 150,000) * 0.15 * 0.87$

<sup>4</sup> Hill, K.T., P.R. Crone, D.A. Demer, J. Zwolinski, E. Dorval, and B.J. Macewicz. 2015. Assessment of the Pacific Sardine Resource in 2015 For U.S.A. Management in 2015-16. Preliminary Draft for SSC CPS Subcommittee Review on 6 March 2015.

### III. Current catch levels are leading to overfishing

Current sardine landings are reported here:

[http://www.westcoast.fisheries.noaa.gov/fisheries/pelagic/pacific\\_sardine\\_landings.html](http://www.westcoast.fisheries.noaa.gov/fisheries/pelagic/pacific_sardine_landings.html)

The third period allocation (January 1 to June 30, 2014) is 5,084 mt. If the preliminary 2015 stock assessment holds, the landings so far this season and the remaining authorized allocation are significantly contributing to overfishing as the stock declines toward an overfished condition.

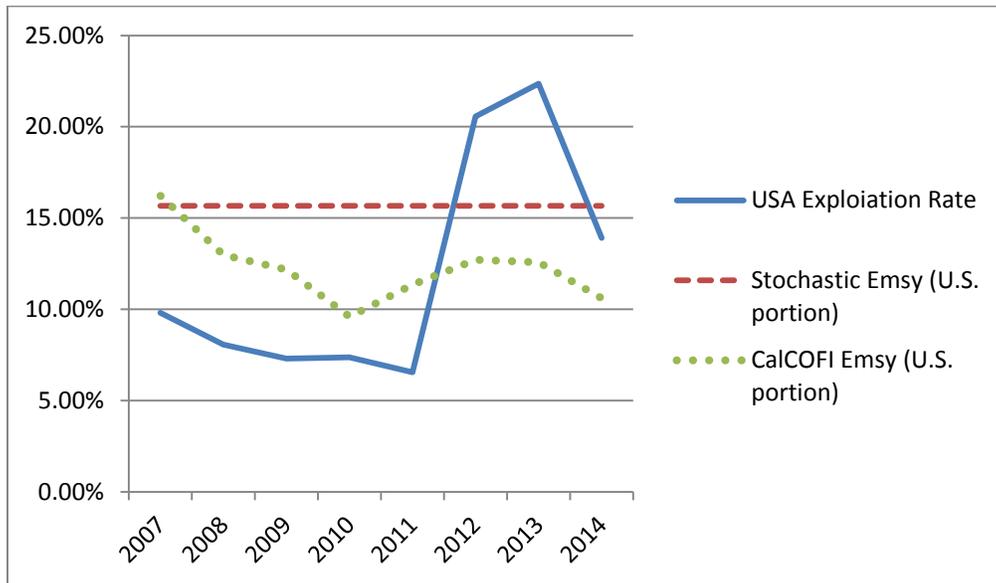
	California	Oregon	Washington	Total
1st Period Totals	70.8	3,881.1	3,107.0	7,058.9
2nd Period Totals	1,915.9	3,694.5	3,221.1	8,831.5
3rd Period Totals	N/A	N/A	N/A	~600 mt*
TOTAL				~16,490

**Table.** 2014-15 Estimated Landings (metric tons) as of January 7, 2015. \*Approximate third period landings to date from J. Lindsay, NMFS, pers comm.

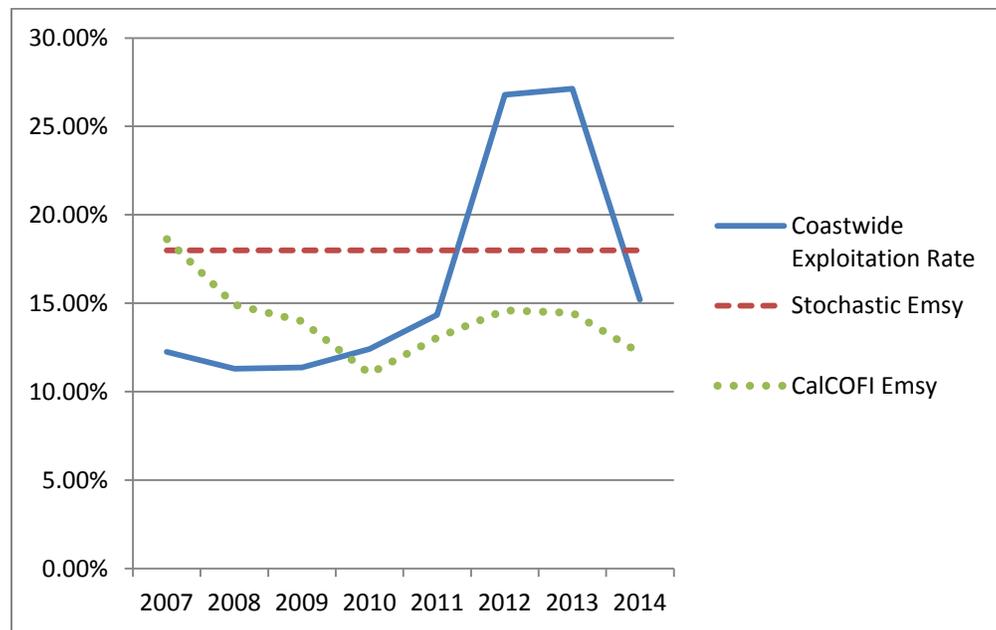
### IV. International and U.S. overfishing has been occurring and must be stopped

As described in our comments under agenda item G.1., the preliminary 2015 stock assessment shows that both U.S. and coastwide fishery exploitation has been exceeding the exploitation rate that produces Maximum Sustainable Yield. This is overfishing. Moreover, any fishing right now is overfishing because there has been no surplus production during this population collapse.

We compared recent U.S. and coastwide exploitation rates presented in the draft 2015 sardine assessment to the constant 18% stochastic  $E_{MSY}$  and the newly adopted CalCOFI temperature-based  $E_{MSY}$  and found that overfishing has been occurring in recent years at the both the U.S. and international levels under both the previous and new scientific understanding of the MSY rate (Figures 2 and 3).



**Figure 2.** USA exploitation rate compared to the previous stochastic  $E_{MSY}$  (as in CPS FMP Amendment 13) and new CalCOFI  $E_{MSY}$  rates (as recommend by the SSC) for the U.S. distribution of the stock (87%). Exploitation in excess of  $E_{MSY}$  demonstrates U.S. overfishing, occurring since 2012. (Note: U.S. OFL =  $BIOMASS * E_{msy} * 0.87$  so U.S. exploitation rates greater than  $0.87 * E_{MSY}$  constitute overfishing)



**Figure 3.** Coastwide (U.S., Mexico and Canada) exploitation rate compared to the previous stochastic  $E_{MSY}$  (18% as in CPS FMP Amendment 13) and the new CalCOFI  $E_{MSY}$  rates for the coastwide distribution of the Northern sardine population. Exploitation rates in excess of  $E_{MSY}$  demonstrates coastwide overfishing, occurring since 2010.

## V. Low sardine abundance is impacting dependent predators

The current low abundance of sardine concurrent with continued low abundance of Northern anchovy is taking a serious toll on dependent predators in the California Current Ecosystem. An estimated 70% of the California sea lion pups died in 2013 due to starvation and the current estimates of sea lion pup mortality suggest another 70% or more will die this year.<sup>5</sup> Sea lion pups are starving because nursing mothers are spending more time at sea in search of prey that is unavailable.

In addition to starving sea lions, California Brown Pelicans breeding in the Channel Islands have undergone a decline in reproductive success since around 2007, culminating in major nesting failures in 2012-2014. Brown Pelican productivity in 2012 was the lowest measured since 1970. Range-wide breeding failure (Gulf of California and Channel Islands) occurred in 2014. Unusual adult Brown Pelican stranding events during the non-breeding season on the California and Oregon coasts were observed in 2009-2010. These unusual events were attributed to a lack of prey availability – sardine and anchovy- and reduced fitness.<sup>6</sup>

## VI. Conclusion

We urge the Council and NMFS to take immediate action at this April meeting to close the directed sardine fishery for the remainder of the 2014-15 season. The Council can do this through its Point of Concern framework but to be timely that must be done at this meeting or at a subsequent emergency meeting. If not, we request that NMFS independently take emergency action immediately to ensure the conservation of these important forage species, prevent overfishing, and provide adequate forage for dependent predators.

Thank you for your attention to this critical issue.

Sincerely,



Ben Enticknap  
Pacific Campaign Manager



Geoffrey G. Shester, Ph.D.  
California Campaign Director

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<sup>5</sup> Melin, S. (NOAA Fisheries). As in NMFS February 18, 2015 press conference regarding California sea lion strandings. <http://www.afsc.noaa.gov/News/Sea%20Lion%20Teleconference%202.18.2015.wav>

<sup>6</sup> Harvey, A.L., and D.M. Mazurkiewicz. 2015. California Brown Pelican and Double-crested Cormorant breeding status on Anacapa Island, California in 2014. Unpublished report, Sutil Conservation Ecology.