



## CALIFORNIA WETFISH PRODUCERS ASSOCIATION

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April 6, 2015

Ms. Dorothy Lowman, Chair  
And Members of the Pacific Fishery Management Council  
7700 NE Ambassador Place #200  
Portland OR 97220-1384

RE: Agenda Item G.1 Pacific Sardine Specifications & Management Measures

Dear Ms. Lowman and Council members,

As Executive Director of the California Wetfish Producers Association (CWPA), representing the majority of coastal pelagic species 'wetfish' fishermen and processors in California, I appreciate your consideration of the following facts in the continuing discussion regarding sardine management. This statement also highlights comments from Dr. Richard Parrish, an author of Amendment 8, whose figures are appended to this letter as they are key to illustrate the natural cycles of sardines.

It is important to understand that the sardine harvest control rule is extraordinarily precautionary – perhaps the best example of ecosystem-based management in the world. Quoting from Dr. Parrish's November 2014 statement: **"Clearly, the CPSMT recommended control rule significantly reduces the allocation of surplus production to the fishery in favor of considerably higher biomass levels for forage."** Average depletion increased from 64 percent in Amendment 8 to 75 percent in Amendment 13.

Dr. Parrish also points out in the attachment to this letter:

"The reason that the sardine population has declined so rapidly in the last few years is exceedingly simple. The story is easily seen in the figures .... There was a very poor year-class in 2010 followed by three years of total recruitment failure. Both the sardine stock assessment and the Acoustic-Trawl series clearly show this. End of story.

**The sardine control rule did exactly what it was designed to do. It has shut down the directed fishery after a series of poor recruitment years. "**

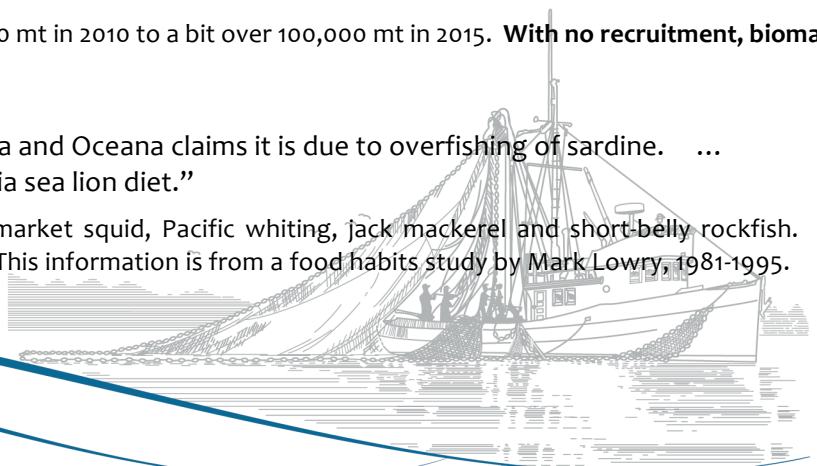
Dr. Parrish also notes:

"The spawning stock biomass fell from about 600,000 mt in 2010 to a bit over 100,000 mt in 2015. **With no recruitment, biomass drops very fast with or without a fishery. "**

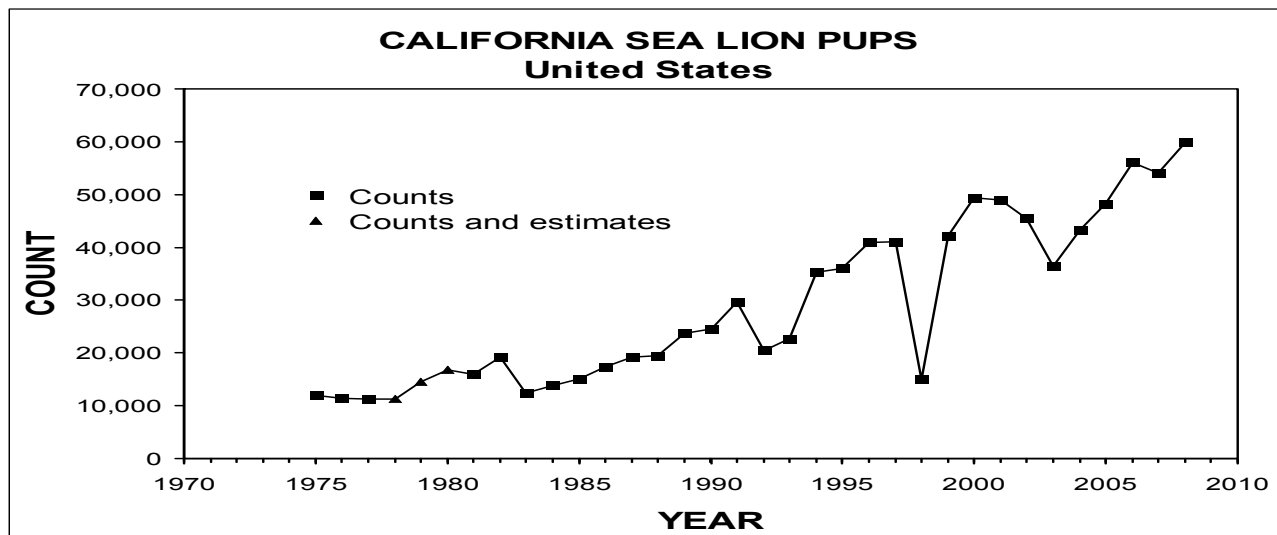
And:

"Sea Lion pups are starving in Southern California and Oceana claims it is due to overfishing of sardine. ... [Yet sardine] are 8<sup>th</sup> in abundance in the California sea lion diet."

First on the list is northern anchovy, followed by market squid, Pacific whiting, jack mackerel and short-belly rockfish. Even pelagic red crab are higher on the list than sardine. This information is from a food habits study by Mark Lowry, 1981-1995.



Dr. Parrish includes a figure from Lowry et al illustrating the trend in sea lion pup counts:



**Figure 2.** U.S. pup count index for California sea lions (1975-2005 2008). Trends in pup counts from 1975 through 2008 are shown for four rookeries in southern California and for haulouts in central and northern California. Records of pup counts from 1975 to 2008 were compiled from Lowry and Maravilla (2005) and unpublished NMFS data.

Actually, many scientists now acknowledge that sea lions may have reached carrying capacity. The increase in pup mortality is part of a natural cycle; note the dip during the 1997-98 El Niño event. Mother Nature is not kind in these situations.

I would also like to highlight the importance of sardines to California's wetfish industry. From historic times to the present, this industry has relied on a complex of coastal pelagic species including mackerels, anchovy and market squid as well as sardines. As I've testified many times, sardines are one very important leg of a three- or four-legged stool.

**This industry produces on average 80 percent of total fishery landings statewide, and close to 40 percent of dockside value.**

We know that pelagic fishes of the same size often school together. Sardines typically school with other CPS species, and are now showing up in other CPS catches, so an allowance of sardine caught incidentally in these other fisheries will be necessary to keep wetfish boats fishing and processors' doors open.

It is also important to note that this update stock assessment was driven by 2014 acoustic surveys that did not 'see' all the fish, although assigned a Q of 1 in the model. Small sardines have since been observed in both California and the Pacific Northwest, indicating that at least some recruitment has occurred. **We support the precautionary sardine HCR that closes the directed fishery when the population declines below the cutoff level, but a total prohibition on sardine caught incidentally in other fisheries could curtail California's wetfish industry and seriously harm California's fishing economy.**

Finally, please understand that achieving **Optimum Yield requires balancing both fishery opportunity and economic stability along with forage needs.** We would appreciate the Council's recognition of the continuing importance of the sardine resource to California's historic wetfish industry.

Thank you for your attention to these comments.

Diane Pleschner-Steele  
Executive Director

ATTACHMENT 1

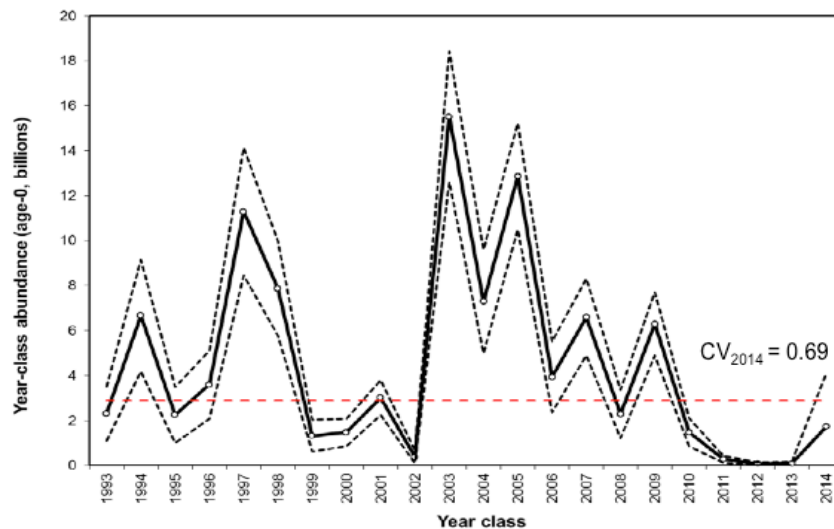
INFORMATION COMPILED BY DR. RICHARD PARRISH

“The reason that the sardine population has declined so rapidly in the last few years is exceedingly simple. The story is easily seen in the figures I have attached here. There was a very poor year-class in 2010 followed by 3 years of total recruitment failure. Both the sardine stock assessment and the Acoustic-Trawl series clearly show this. End of story.

**The sardine control rule did exactly what it was designed to do. It has shut down the directed fishery after a series of poor recruitment years.** “ Richard Parrish

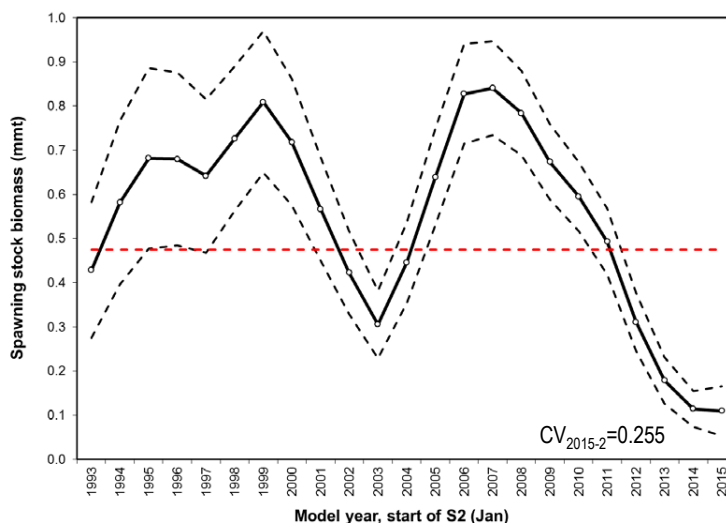
Sardine recruitment in billions of one-year-old fish; 2010 was a very poor reproductive year and it was followed by three years of complete reproductive failure (2011, 12, 13). The estimate for 2014 is a statistical forecast based on the average recruits per spawner. Few 2014 sardines have been observed. (Hill et al 2015 Sardine Stock Assessment)

### Recruit (age-0) abundance



“The spawning stock biomass fell from about 600,000 mt in 2010 to a bit over 100,000 mt in 2015. **With no recruitment, biomass drops very fast with or without a fishery.** The same thing happened in the Japanese Sardine fishery about 20 years ago.”

### Spawning Stock Biomass

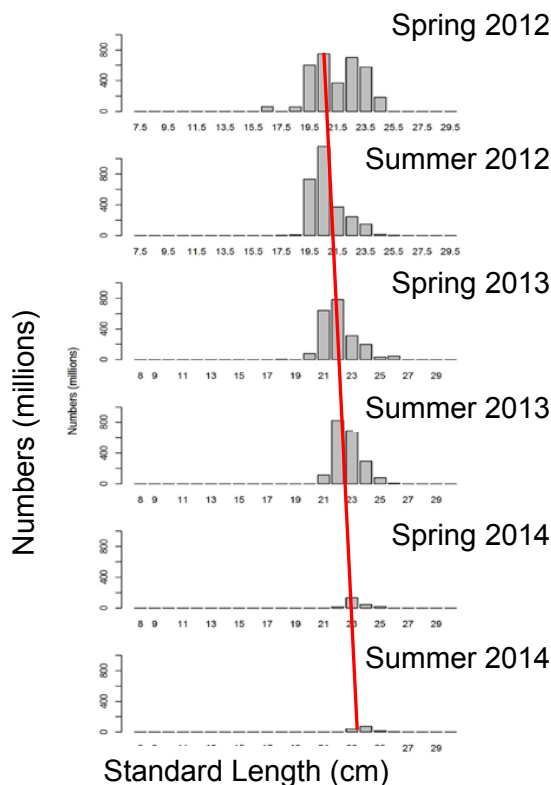


Here is the Acoustic survey data showing again the complete reproductive failure in the 2011-13 year classes.

## Acoustic-Trawl Biomass-Weighted Length Distributions

- Population comprised of one cohort
  - 2009-2010 cohort evident in 2011
  - No sign of a new cohort

D.A. Demer, J.P. Zwolinski, G.R. Cutter, Jr, K.A. Byers, B.J. Macewicz, and K.T. Hill, 2013, "Sampling selectivity in acoustic-trawl surveys of Pacific sardine (*Sardinops sagax*) biomass and length distribution," *ICES Journal of Marine Science*.



“Sea Lion pups are starving in Southern California and Oceana claims it is due to overfishing of sardine. Here are the food habits of sardine. They are 8<sup>th</sup> in abundance in the California sea lion diet.”

TABLE 3  
Frequency of Occurrence of Common Prey Found in California Sea Lion Scat Collected Seasonally at San Clemente ( $n = 2,543$ ) and San Nicolas Islands ( $n = 2,980$ ), and in Summer at Santa Barbara Island ( $n = 736$ ), 1981–95

Scientific name	Common name	San Clemente Island		San Nicolas Island		Santa Barbara Island	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>Engraulis mordax</i>	Northern anchovy	1,155	45.4	897	29.4	360	48.9
<i>Loligo opalescens</i>	Market squid	895	35.1	1,323	44.3	315	42.7
<i>Merluccius productus</i>	Pacific whiting	631	24.8	931	31.2	290	39.4
<i>Trachurus symmetricus</i>	Jack mackerel	631	24.8	659	22.1	147	19.9
<i>Sebastes jordani</i>	Shortbelly rockfish	328	12.8	423	14.1	100	13.5
<i>Pleuroncodes planipes</i>	Pelagic red crab	301	11.8	244	8.1	72	9.7
<i>Scomber japonicus</i>	Pacific mackerel	264	10.3	463	15.5	59	8.0
<i>Sardinops sagax</i>	Pacific sardine	122	4.7	371	12.4	73	9.9

Lowry, M. S. and J. V. Carretta. 1999. Market squid (*Loligo opalescens*) in the diet of California sea lions (*Zalophus californianus*) in southern California (1981-1995). *CalCOFI Rep.* 40:196-207.

Here is the time series of sea lion pups. This is used as the primary population index. The most recent total estimate is as follows: (from CALIFORNIA SEA LION (*Zalophus californianus*): U.S. Stock. Revised 12/15/2011)

#### POPULATION SIZE

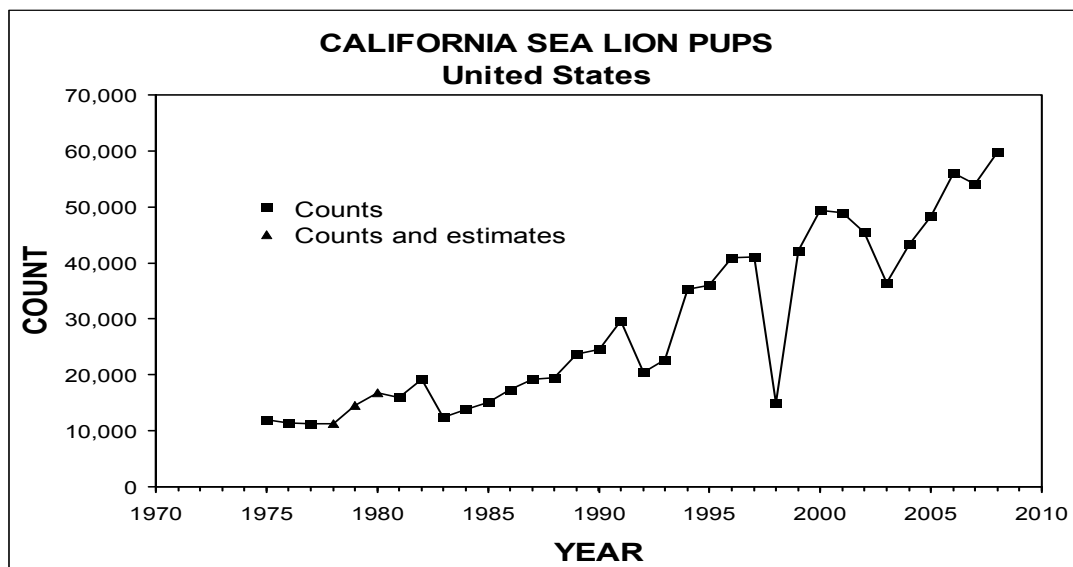
The entire population cannot be counted because all age and sex classes are not ashore at the same time. In lieu of counting all sea lions, pups are counted during the breeding season (because this is the only age class that is ashore in its entirety), and the number of births is estimated from the pup count. The size of the population is then estimated from the number of births and the proportion of pups in the population. Censuses are conducted in July after all pups have been born. To estimate the number of pups born, the pup count for rookeries in southern California in 2008 (59,774) was adjusted for an estimated 15% pre-census mortality (Boveng 1988; Lowry et al. 1992), giving an estimated 68,740 live births in the population. The fraction of newborn pups in the population (23.2%) was estimated from a life table derived for the northern fur seal (*Callorhinus ursinus*) (Boveng 1988, Lowry et al. 1992) which was modified to account for the growth rate of this California sea lion population (5.4% yr<sup>-1</sup>, see below). Multiplying the number of pups born by the inverse of this fraction (4.317) results in a **population estimate of 296,750**.

#### Minimum Population Estimate

The minimum population size was determined from counts of all age and sex classes that were ashore at all the major rookeries and haul-out sites in southern and central California during the 2007 breeding season. The **minimum population size of the U.S. stock is 153,337** (NMFS unpubl. data). It includes all California sea lions counted during the July 2007 census at the Channel Islands in southern California and at haul-out sites located between Point Conception and Point Reyes, California. An additional unknown number of California sea lions are at sea or hauled out at locations that were not censused.

#### Current Population Trend

Trends in pup counts from 1975 through 2008 are shown in Figure 2



**Figure 2.** U.S. pup count index for California sea lions (1975-2005 2008). Trends in pup counts from 1975 through 2008 are shown for four rookeries in southern California and for haulouts in central and northern California. Records of pup counts from 1975 to 2008 were compiled from Lowry and Maravilla (2005) and unpublished NMFS data.

INFORMATION COMPILED BY CWPA

ALLOWING AN ADEQUATE INCIDENTAL SARDINE CATCH IN OTHER CPS FISHERIES IS CRITICAL TO SUSTAIN CALIFORNIA'S WETFISH INDUSTRY

# CALIFORNIA PORTS RELY ON HEALTHY CPS FISHERIES

## HALF MOON BAY\*

85% of port landings  
33.8% of dockside value

## MOSS LANDING\*

94.4% of port landings  
63.9% of dockside value

## MONTEREY HARBOR\*

88.8% of port landings  
44.4% of dockside value

## VENTURA\*

97% of port landings  
71% of dockside value

## PORT HUENEME\*

99.98% of port landings  
99.8% of dockside value

## SAN PEDRO\*

99.6% of port landings  
94% of dockside value

## TERMINAL ISLAND\*

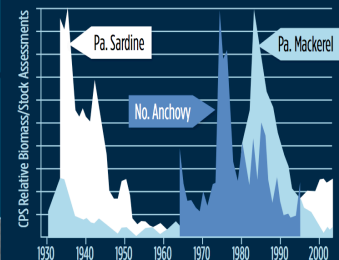
97.9% of port landings  
87.2% of dockside value



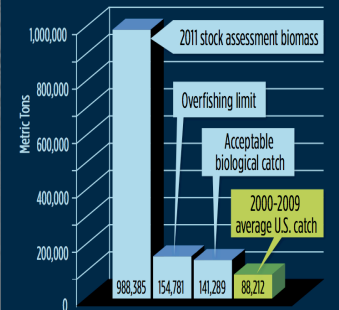
Coastal Pelagic Species fisheries (including sardines, mackerels, anchovy, market squid, coastal tunas) need flexibility in management to account for dynamic ocean cycles and facilitate productive harvest of this complex of species during their unique periods of abundance.

CA CPS fisheries are managed precautionarily with strict quotas/area closures and harvest only a small percentage of the biomass.

## DYNAMIC NATURAL FLUCTUATIONS OF CPS



## STRICT SARDINE QUOTAS



## LOW CARBON FOOTPRINT

To preserve quality, fishing areas for CA CPS are limited to day trips nearby the ports. This makes CA CPS among the most efficient, "greenest" fisheries in the world - with one of the lowest carbon footprints in the world. For example: CA CPS fisheries on average produce 2,000 pounds of protein for 6 gallons of diesel fuel.

## CA CPS FISHERIES PROVIDE

82% of all CA port landings\*

37% of all CA dockside value\*



4,000 to 4,500

workers employed by CA CPS fisheries



\$325 MILLION

annual contribution to CA economy\*

\*2012 preliminary data by port

FISHING AREA  
FEDERAL MPA  
STATE MPA  
NON-FISHING AREA





<http://www.montereyherald.com/opinion/20150404/db-pleschner-sardines-are-not-being-overfished>

## **D.B. Pleschner: Sardines are not being overfished**

*By D.B. Pleschner, Guest commentary*

MontereyHerald.com

In recent weeks, sardines have been a hot news topic again. Environmental groups like Oceana complain that the sardine population is collapsing just like it did in the mid-1940s. They blame “overfishing” as the reason and maintain that the fishery should be shut down completely.

Today, in truth, Pacific sardines are perhaps the best-managed fishery in the world — the poster fish for effective ecosystem-based management. The current harvest control rule — established in 2000 and updated last year with more accurate science — sets a strict harvest guideline that considers ocean conditions and automatically reduces the catch limit as the biomass declines.

If the temperature is cold — which hampers sardine recruitment — the harvest rate is low. And if the population size decreases, both the harvest rate and the allowable catch automatically decrease.

Current management sets aside a 150,000 metric ton reserve off the top of the stock assessment and automatically closes the directed fishery when the biomass estimate falls below that level, which it did in the latest stock assessment, after four years of abnormally cold La Niña ocean conditions.

In fact, the truth is much more complicated than environmentalists would lead you to believe. It’s inaccurate and disingenuous to compare today’s fishery management with the historic sardine fishery collapse that devastated Monterey’s Cannery Row.

In the 1940s and ‘50s, the fishery harvest averaged more than 43 percent of the standing sardine stock. Plus, there was little regulatory oversight and no limit on the annual catch.

Today, based on the latest stock assessment, the U.S. exploitation rate has averaged about 11 percent, ranging as low as 6 percent, since the return of federal management in 2000.

Here’s where complications begin because scientists recognize two stocks on the West Coast: the northern or “cold” stock ranges from northern Baja California to Canada during warm-water oceanic cycles and retracts during cold-water cycles.

A southern or “temperate” stock ranges from southern Baja to San Pedro, in Southern California. The federal Pacific Fishery Management Council manages only the northern stock.

Doing the math, our current fishery harvest is less than one-quarter of the rate observed during the historical sardine collapse.

In fact, the current sardine harvest rule is actually more precautionary than the original rule it replaced. It does this by producing an average long-term population size at 75 percent of the unfished size, leaving even more fish in the water, vs. 67 percent in the original rule. The original harvest rule reduced the minimum harvest rate to 5 percent during cold periods. The present has a minimum rate of 0 percent during cold periods.

### **Advertisement**

The so-called “sardine crash due to overfishing” mantra now peddled by Oceana isn’t anything of the sort. It’s simply natural fluctuations in biomass that follow the changing conditions of the ocean, reflected in part by sea temperature.

In April, the council will discuss the most recent sardine assessment report and decide on future management measures. It is important to understand that the sardine stock assessment is a conservative estimate based on acoustic surveys that miss sardines in the upper 10 meters of the water column, above the down-looking acoustic transducer, and in shallow near-shore waters where survey vessels cannot go. It's really a question of scale, fishermen say. While they acknowledge sardines' downward trend, fishermen question the accuracy of the total number of sardines that the stock assessment estimates.

California's wetfish industry relies on a complex of coastal pelagic species including mackerels, anchovy and market squid as well as sardines. Sardines typically school with all these species, so a small allowance of sardine caught incidentally in these other fisheries will be necessary to keep wetfish boats fishing and processors' doors open.

Sardines are critically important to California's historic wetfish industry as well as the Golden State. This industry produces on average 80 percent of total fishery landings, and close to 40 percent of dockside value. A total prohibition on sardine landings could curtail the wetfish industry and seriously harm California's fishing economy.

*D.B. Pleschner is executive director of the California Wetfish Producers Association, a nonprofit dedicated to research and to promote sustainable wetfish resources.*