

**Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.**

**#176 January 24, 2015**

**Calamari- Still No. 1 after all these Years**

Dungeness crab and calamari fishermen were happy campers this past year with full nets and pots typically coming back on board vessels. In recent years, these two have been at the top of the state's commercial fisheries.

Calamari, or market squid, has been fished in Monterey Bay for over 150 years, originally by Chinese immigrants and later by Italians. Their short life span (6 to 12 months, which is a little depressing to think about), their reproduction style (they are terminal spawners, meaning they die after laying or fertilizing eggs, also a little depressing), and the huge numbers of eggs laid by each female (about 4000, give or take a few), has made this an historically sustainable fishery.

Squid congregate in dense schools near their spawning grounds, usually over sandy areas on the sea floor, where the females deposit their fertilized eggs. Most of the squid are caught using very bright lights at night after the females have released their eggs. The eggs then take several days to a few months to hatch, depending on water temperature. As they grow, they feed on little crustaceans, small fish, and other smaller squid. On the flip side, squid are a critical diet ingredient for a wide variety of fish, as well seabirds and marine mammals.

Over each of the last four years, calamari has made up nearly 2/3 of the entire commercial fish catch in California, averaging about 125,000 tons annually! If we each ate our share, every Californian would have to consume about 7 pounds a year. I don't eat anywhere near that much, so it must be going somewhere else.

About 75% of the entire catch gets exported, primarily to China, but also to the Philippines, Japan, Vietnam, Peru, and Spain. The 25% that remains here normally goes to restaurants, Asian fresh fish markets, or is used as bait.

This fishery is about a \$70 million a year industry, and is typically number two in value, after Dungeness crab. While for decades the market squid fishery was completely unregulated, the total catch is now limited each year (to 118,000 tons in 2014), and by the end of December the limit had nearly been reached. In 2013, large catches of calamari combined with high prices generated an average income

for the 66-boat squid fleet of \$1.3 million per vessel. During strong El Niño years, however, the catch has typically fallen off dramatically, probably in response to warmer water.

The Dungeness crab fishery has been number 1 in value in California for the past two years, returning \$85 to \$90 million annually. In 2013, crab brought about 9 times as much per pound as calamari. At 10,000 to nearly 16,000 tons per year, crab makes up about 7-8% of the total catch by weight, but 25 to 35% by value.

The Pacific sardine, which reached its population peak in the warmer Pacific Decadal Oscillation (PDO) years (which occurred during the heyday of Cannery Row), has fallen off in recent years as our ocean climate has transitioned to a cooler PDO period. Sardines were number two from 2010 to 2012 at 25,000 to about 35,000 tons/year, but the catch dropped off last year to just 8,000 tons, making life difficult for sardine fishers.

Looking at California's highest value per pound commercial landings (average at the dock value in 2013), California spiny lobster was on top at \$18.11/lb.! Spot prawns were second at \$12.18/lb., followed by Chinook salmon (\$6.03/lb.), swordfish (\$3.33/lb.), and Dungeness crab (\$2.86/lb.).

Which fishing ports in California bring in the most valuable catch in dollars? In 2013, Eureka was out in front with a total catch value of \$65.4 million. Santa Barbara was second at \$50.5 million, followed by San Francisco (\$38.8 million), Los Angeles (\$37.4 million), Ft. Bragg (\$17.3 million), and Monterey (\$17 million). Overall, commercial fishing was a \$256 million industry for the state of California in 2013, and this steadily increased over the past 4 years.