

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

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**Crabs and Calamari**

The fertile waters of Monterey Bay sustained many of the early inhabitants of the central coast. Each ethnic group seemed to find something different to harvest or exploit. The Japanese used hardhat diving to collect abalone at Point Lobos. Immigrants from the Azores, Portugal and even Norway went after the whales, and the Italians fished for sardines, anchovies and lots of other fish as well.

The fishing industry has changed like everything else along the coast over the past 150 years or so. Very few abalone remain, and certainly no wild commercial fishery. Whales have been protected since 1971. Many of the groundfish catches have gone downhill. Salmon have been in significant decline in recent years, due to both troubles in the watersheds and changing ocean climate. In response to dwindling numbers, the Coho salmon fishery terminated in 1993.

How big is the California commercial fishery catch each year? Well, the peak years are long gone, but reached 550,000 to 700,000 tons annually during the heyday of the sardine industry from about 1935 to 1945.

The offshore ocean conditions then shifted to a cooler phase of the Pacific Decadal Oscillation and the sardine population crashed, lowering the overall catch in a big way. The commercial fishery overall was depressed throughout the 1950s and 1960s, with total catch much lower but relatively stable, ranging from about 150,000 to 200,000 tons of fish per year.

Beginning about 1970 and continuing to the present, however, fish catches improved somewhat, with fishers in most years landing 200,000 to 300,000 tons. While some fisheries declined, others have developed or expanded as new markets have opened up, many of these in Asia.

Before you read any further, take a guess at what California's biggest fishery is in tonnage. What do you think the top three or four fisheries are?

I have to admit that I was surprised. In 2010, California's biggest catch by far was market squid, coming in at over 144,000 tons, or 66% of the state's entire

commercial catch! This is 8 pounds of squid for every person in California! The squid fishery has been gradually increasing for the past 30 years with the exception of large El Niño years, such as 1982-83 and 1997-98, when the catch went to nearly zero.

Squid are attracted to the surface at night using very bright lights, where they are caught in nets. They only live for a year and are terminal spawners, meaning when they spawn, they die. Life is quite brief for your typical squid. About half of the California squid catch is typically exported, with most going to China and Japan.

So what is number two on California's commercial catch list? Sardines! At 37,100 tons, sardines made up 17% of the tonnage landed in 2010. Sardines and squid are by far the two biggest commercial industries, often trading off in the number 1 and 2 spots; but in 2010, these two fisheries totaled 83% of the entire catch.

How about number 3? Right now with the season in full swing you probably guessed Dungeness crab, and you are right. Commercial fishers brought in 11,000 tons of crab in 2010, which made up 5% of the total catch. Depending upon the year and the price, however, Dungeness crab is often the most valuable of California's fisheries.

Dungeness crabs typically have a two-year lifespan, and there are size limits and a fishing season so as to protect the breeding grounds and to insure reproduction. While there are striking year-to-year fluctuations in catch, the crab catch has been gradually climbing since the early 1900s when it was virtually non-existent.

Going down the list to number four is one I would not have guessed - the red sea urchin. The urchin population is declining overall, and most of the catch is exported. What is left helps feed the southern sea otter population. At 5600 tons the urchin catch makes up about 2.5% of California's total commercial catch.

Somewhat surprisingly, at least to me, in 2010 the market squid, sardine, Dungeness crab and red urchin catch totaled 90.5% of California's total commercial landings! Two of these four are almost never found on menus in any seafood restaurant in California and end up overseas.