

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

**#146 November 30, 2013
Offshore Feeding Frenzies**

Pelicans, sea lions, whales, and dolphins have been in an unusual feeding frenzy, astounding all of us who have visited the coast in the past few weeks. From Natural Bridges to Capitola and beyond, and well as offshore, the food chain is in full bloom at a time when we don't normally experience this concentration of feeding animals.

It's really all about free food, somewhat akin to the sampling tables at Costco on a Saturday or Sunday afternoon. Only instead of cheese and crackers, offshore it's all about anchovies.

While the waters off California are some of the most biologically productive on the planet, the timing of this feeding orgy is a bit abnormal. Usually the upwelling or overturning that brings the nutrients to the surface occurs in the spring and again in late summer.

The intense blooms of life in October and nearly into December are odd. And we don't usually see this many larger marine mammals or pelicans. In addition to dozens of humpback whales, there has also been a large pod of killer whales that aren't wasting their energy chasing anchovies, but are picking off sea lions – going for the steak rather than the pizza topping.

Exactly why we are seeing these incredible numbers of anchovies isn't completely clear. There are some ideas that surface, perhaps the warmer water in the bay is more conducive to anchovy egg and larval survival right now, and the fish know that. But we aren't sure.

These tasty little silvery fish haven't been particularly abundant in recent years, and the anchovy fishery has been pretty modest in California. Last year the commercial catch was just 2,700 tons, or 1.6% of the total offshore fishery. But then, how many of you head off to the supermarket looking for anchovies?

What were California's biggest fisheries last year? I often ask this question to different groups that I'm speaking to, and the answers I get are always surprising. Last week in my large oceanography class, I saw a hand rise ready to volunteer an answer: "abalone". Maybe my student thought this was a trick question, as abalone, is pretty scarce in California these days.

But before reading any further, take out a pencil and jot down what you think the four largest catches were in 2012. And a hint, one of them isn't anchovies. I'll give you another hint, 3 of the top 4 are rarely seen in the fish section of your local market. While we spend a lot of time, effort and resources studying our offshore fisheries and trying to either sustain or rebuild them, 3 of our top 4 fisheries in tonnage are almost all exported.

So what are the big four? I have to admit that the first time I looked into this two years ago I was surprised.

The overall catch of all fish and shellfish last year was 175,000 tons, which had a value at the dock of \$232 million, which averages out to about 66 cents a pound for the hard working fishers. Today it's only about 25-30% of what it was during the peak of the sardine industry in the 1930s and 40s.

As in prior years, the California market squid continues to dominate the commercial catch and makes up 61% of the total tonnage. How many of you cook squid at home? While a few restaurants serve it, most gets exported. Coming in at Number 2 is the Pacific sardine with 14.4% of the catch, also canned and/or exported.

And finally one that we all do eat, Dungeness crab, almost 13,000 tons last year and 7.3% of the catch. The last of the big four is the red sea urchin! Virtually all of it is shipped to Asia, where the reproductive organs are primarily what is consumed.

So these four, squid, sardines, crab and sea urchins make up 86% of the total catch. All the rest of the stuff you usually eat from the ocean, salmon, sole, shrimp, albacore and the rest, are relatively small fisheries. Now if you were reading carefully, you would notice I changed subjects, diverted your interest, and never really answered the question of why there are all those anchovies out there. If I was absolutely certain I knew the answer, I would definitely share it with you.