

Have you noticed the "bait balls"?

This year has seemed unique in the frequency of bait balls we see when we go sailing. You first recognize a bait ball from a distance as a swarm of seabirds churning the air over the ocean. As you sail closer you notice something is going on in the water under the birds. It may just be white caps and splashing. Perhaps dolphins and sea lions charge through the mix, the dolphins sometimes leaping and spinning in the air.

The reason for this is a 'ball' of bait fish – anchovies or sardines. A school of bait tends to do the opposite of scatter when attacked. Forming a densely packed ball of swirling panicky little fish would seem the worst possible scenario for the baitfish, but it is just the thing for the bigger fish that are attacking from below. Once these minnows are at the surface of the ocean they have nowhere to escape and helplessly churn the water and get eaten.

Now the marine mammals and sea birds get into the act; they don't even have to work very hard. The plummeting dives of pelicans look more like crashing into the water. Hundreds of sea gulls hang around grabbing bits and pieces of anything they see. The hapless bait is caught in the middle, being feasted upon both from above and below.

Anchovies and sardines are filter feeders. They filter plankton from the sea using rakers on their gills. At times in the spring there are blooms of large quantities of plankton which result in large schools of fish. With all of the rainfall this past winter a lot of nutrients were rinsed from the land and washed into the sea. These nutrients might come from the fertilizers we use on our lawns and golf courses or just natural accumulations from the previous year. But once in the ocean it causes tiny planktonic plants, the diatoms and dinoflagellates frequently simply called "algae", to begin to bloom. These are grazed upon by slightly larger planktonic herbivores. This is like a microscopic version of the vast herds of buffalo grazing across our Great Plains only in this case, tiny shrimp-like copepods are the grazers.

But here the analogy breaks down because microscopic predators, including the larval stages of most other sea creatures, feast on the copepods. Then our schools of bait cut a swath through and filter out whatever's there.

The flavor of this plankton soup is always different. There are so many hundreds of different plankton that the makeup of the bloom is never the same. Perhaps we humans influence this flavor by what we flush into the sea, but we haven't yet figured this out. This year something different happened. Baitfish apparently at random choked a marina in Redondo, used up all the oxygen in the water suffocating themselves, and then left their stinking rotting carcasses for the locals to deal with. While our brown pelicans would normally have moved on by now, this year folks up and down the coast have been commenting on how many more than usual they have seen. These birds have given us their impressive aerial shows; flying across the sea in perfect V shaped formations as well as crash dives into the water for fish.

Because some phytoplankton ("algae") can produce various types of neurotoxins, occasionally these get concentrated in the coastal food chain with fatal results for some of us at the top of the chain. People have died from something called shellfish poisoning. In recent years a new kind of poisoning attacks the brains of marine mammals making them "crazy". So if you see a sea lion on the beach acting sick, don't try to help. It may attack you like a rabid animal, but definitely report it.