

# Unusual warm ocean conditions off West Coast bringing odd species

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Hawaiian ono swimming off the California coast? Giant sunfish in Alaska? A sea turtle usually at home off the Galapagos Islands floating near San Francisco?

Rare changes in wind patterns this fall have caused the Pacific Ocean off California and the West Coast to warm to historic levels, drawing in a bizarre menagerie of [warm-water](#) species. The mysterious phenomena are surprising fishermen and giving marine biologists an aquatic Christmas in November.

Temperatures off the California coast are currently 5 to 6 degrees Fahrenheit warmer than historic averages for this time of year - among the warmest autumn conditions of any time in the past 30 years.

"It's not bathtub temperature," said Nate Mantua, a research scientist with the National Marine Fisheries Service in Santa Cruz, "but it is swimmable on a sunny day."

In mid-October, it was 65 degrees off the Farallon Islands and in Monterey Bay, and 69 degrees off Point Conception near Santa Barbara. In most years, [water](#) temperatures in those areas would be in the high 50s or low 60s.

The last time the ocean off California was this warm was in 1983 and 1997, both strong El Nino years that brought drenching winter rains to the West Coast.

But El Nino isn't driving this year's warm-water spike, which began in mid-July, experts say. Nor is climate change.

What's happening is winds that normally blow from the north, trapping warm water closer to the equator, have slackened since the summer. That's allowed the warm water to move north.

In most years, the winds also help push ocean surface waters, churning up cold water from down below. That process, called upwelling, isn't happening as much this year.

"If the wind doesn't blow, there's no cooling of the water," Mantua said. "It's like the refrigerator fails. The local water warms up from the sun, and is not cooling off."

Mantua said researchers don't know why the winds slacked off - or when they will start again.

"It's a mystery," he said.

All year, scientists at the National Oceanic and Atmospheric Administration have been forecasting an El Nino, conditions in which warm ocean water at the equator near South America can affect the weather in dramatic ways. But now the water is only slightly warmer than normal at the equator, leading scientists to declare a mild El Nino is on the way. And although strong El Ninos often have brought wet winters to California, mild ones have just as often resulted in moderate or dry winters.

For people who study the ocean, this fall has been a wonderland.

"It's fascinating," said Eric Sanford, a marine biology professor at the UC Davis Bodega Marine Laboratory in Bodega Bay. "To see so many

southern species in a single year is really a rare event."

Sanford, colleague Jackie Sones and other researchers at the Bodega lab, along with scientists at Point Blue Conservation Science, a nonprofit group in Petaluma, have documented more than 100 common dolphins off the Farallon Islands in the past two months. They're normally seen hundreds of miles away, off Southern California.

The scientists have scooped up a tiny species of ocean snail called the tropical sea butterfly, normally found far to the south. They have documented a Guadalupe fur seal, normally found off Baja California in Mexico; blue buoy barnacles and purple-striped jellyfish, which usually drift off Southern California; and a Guadalupe murrelet, a tiny seabird that frequents Mexico.

In September, a fisherman off San Francisco caught an endangered green sea turtle, an extremely rare find for Northern California, since the species usually lives off Mexico and the Galapagos Islands. He returned it to the sea unharmed.

Similar tales are turning up in Southern California, where fishermen and scientists have found Hawaiian ono, along with tripletail, a fish species commonly found between Costa Rica and Peru, and other warm-water species.

In August and September there were even sightings of skipjack tuna and giant sunfish, or mola mola, off Alaska.

"They are following the water temperature," said H.J. Walker, a senior museum scientist at the Scripps Institution of Oceanography at UC San Diego. "Fish come up against a cold-water barrier normally and turn around. But now they aren't encountering that, so they are swimming farther north."

Over the past week, the water temperature at the Scripps pier in La Jolla was 71 degrees. The historic average back to 1916 for late October is 65 degrees.

In many parts of California, the commercial salmon catch was down, and squid were caught as far north as Eureka, which is unusual.

"Our guys in Santa Barbara are saying there's almost nothing down there. Just a lot of warm, clear water, a little bit of salmon and not much else," said Zeke Grader, executive director of the Pacific Federation of Fishermen's Associations in San Francisco.

The ocean changes also have affected birds. As ocean upwelling stalled in the summer, less krill and other food rose from the depths. As a result, several species of birds, including common murre, had high rates of egg failure on the Farallon Islands, 27 miles west of San Francisco.

"The krill that is usually present disappeared, and the fish that some of these birds rely on disappeared," said Jaime Jahncke, California Current Group director of Point Blue in Petaluma.

"Up until July we had an abundance of whales around the Farallons, mostly humpback whales, and some blue whales. And when we went back in September, there was no krill and the whales were nearly absent."

More common local species are expected to return when waters cool, as they did after the 1983 and 1997 warmings.

"It is an oddball year. But I'm not surprised," said Joe Welsh, associate curator of collecting for the Monterey Bay Aquarium. "These things come and go. There's a lot to learn out there."

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