

Near-record recent ocean warming along Pacific Coast

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Researchers say the Pacific Ocean is seeing the second-largest marine heatwave tracked since the 1980s, touching from the Alaskan coast to Hawaii.

Having developed early in June, the heatwave is 50 to 100 feet thick. It stretches for hundreds of miles along the coast, about two-thirds of the distance of the U.S., said Nate Mantua, a research scientist with the National Oceanic and Atmospheric Administration's Southwest Fisheries Science Center.

For that matter, said NOAA, the summer of 2019 was the hottest on record for the Northern Hemisphere. And last month was the second-hottest August worldwide.

Because of the coastal upwelling of deep, cold water, the heatwave has stayed mostly offshore. But along the northern Pacific Coast - including northern California - its edge reaches within 10 to 20 miles of the coastline.

Its temperature is 5 to 7 degrees Fahrenheit - higher than the usual ocean temperatures.

Scientists haven't seen a heatwave like this since its predecessor, nicknamed "the blob," in 2014.

“The warming that we’re seeing is similar to the amount of warming that we saw at the surface during ‘the blob’ years, but the difference is that this heat wave we’re seeing develop right now, it’s still pretty young,” said Stephanie Moore, a research oceanographer with NOAA’s Northwest Fisheries Science Center.

That “blob,” the largest marine heatwave scientists have tracked since the 1980s, lasted for three years and caused havoc in marine ecology. It covered some 7.8 million kilometers.

The current heatwave covers about 6.5 million kilometers and is only about 50 meters deep, said Moore.

“As ‘the blob’ continued, because it did last for so long, we saw warming get down to about 200 meters,” Moore said. “But (the current heatwave) is still covering a very extensive area in the Pacific Ocean.”

The cause of the heatwave is attributed to a ridge of high pressure that weakened the wind patterns above the Pacific Ocean. Weak winds reduce the ocean mixing, which normally releases heat from the ocean surface and allows the ocean to mix with cooler waters.

Although early in the heatwave’s existence, scientists are seeing some effects already, said Moore. Researchers have found tuna much closer to shore, smaller-sized krill, and isolated, harmful algal blooms.

A poor salmon season along the Washington, Oregon and northern California coasts this year also might have been attributable somewhat to the warming ocean temperatures. The very edge of the warm water is reaching near the shore and affecting marine life, changing their distributions, Mantua said.

Researchers have no way of knowing if the heatwave will continue, worsen or dissipate. Some elements of the previous heatwave are not present now, for example.

But it’s going to depend on what happens with the weather patterns that favor these events, said Mantua. “Odds are pretty good that the weather patterns are going to change,” he said.

On the other hand, “I could be wrong, though. We could see another set of weird things happen.”