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# Marine heat wave reaches B.C. coast, water temperatures about 4 C higher than normal

[Roxanne Egan-Elliott](#)

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1 / 2 Lauren Dykman, Sam Starko, Matt Csordas and Tessa Rehill, marine biologists from the Baum Lab at the University of Victoria, monitor changes in ocean temperatures and kelp cover in Barkley Sound in early August. SUBMITTED

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A marine heat wave that formed in the waters of the Pacific Ocean about 1,000 kilometres offshore has made its way to the B.C. coast, bringing with it temperatures about four degrees warmer than normal.

The ocean heat wave developed in May and reached B.C.'s coast about a month ago, before hitting the Oregon and Washington coasts a week later, said Andrew Leising, research oceanographer at the Southwest Fisheries Science Center, part of the U.S. National Oceanic and Atmospheric Administration.

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The warmer water grew to an area covering about four million square kilometres, or twice the size of Alaska, before moving toward the coast, Leising said.

Heat waves have settled into a pattern of forming offshore in the Pacific each spring and growing during early summer, but they don't always reach the coast, he said. Last year, a heat wave resulted in the closure of some shellfish fisheries in the U.S. because of a harmful algae that makes shellfish toxic to humans. Razor clams, mussels and Dungeness crab fisheries were affected, Leising said.

Leising expects this year's heat wave to have a similar impact in the U.S., although he said he's not aware of any closures yet.

When the warmer water comes to shore, it can lead to more marine mammals getting caught in fishing nets or hit by ships while they're migrating along the coast, he said, because the heat wave narrows the corridor of cool water that the animals normally travel in and they're pushed closer to shore.

Nico Prins, executive director of the B.C. Shellfish Growers Association, said he's not aware of any unusual or prolonged closures of fisheries this summer due to impacts from the heat wave. The industry predominantly grows Pacific oysters, which can tolerate higher temperatures, he said.

However, rising temperatures are something the industry needs to be aware of in the medium to long term and it's working on mitigation measures to protect against warming oceans, such as a program that uses genetic selection to breed hardier animals.

Marine heat waves are "one of the driving forces" of change in the ocean, with the capacity to affect all coastal ecosystems by creating harmful algal blooms, increasing bacteria or disease and leading to fish and shellfish die-off, said Julia Baum, a professor in the biology department at the University of Victoria.

Climate change is amplifying marine heat waves, making them more intense and more frequent, Baum said.

“And so any damage that is done during a heat wave to our coastal ecosystems, another one hits before the ecosystem has time to recover. So that’s a huge problem,” she said.

Warmer ocean temperatures can affect every living thing in the ocean, from the smallest phytoplankton to marine mammals, Baum said. Some species are directly affected by heat, becoming stressed, while others experience a loss of food, because the animals they eat are dying.

Field teams near Denman Island that are studying long-term change in kelp forests have noticed “extremely warm” waters, measuring 21 C in June, she said, when historical average summer temperature is about 14 C to 15 C.

Baum said it’s not known yet how serious the impacts will be from this current heat wave, but ocean warming around the world is alarming.

“With the types of intense marine heat wave that we’re now experiencing on the coast, nothing’s off limits. Anything in our coastal ocean can and will likely be affected,” she said.

Leising said conditions are not yet as dire as they were in 2014 and 2015, when a large marine heat wave that became known as the Blob took hold in the Pacific, leading to seabird die-offs, record numbers of whales caught in fishing lines, starving California sea lion pups washing up on beaches and plummeting salmon returns.

Waters off the coast of California are colder than normal this year, making Leising hopeful the current heat wave won’t become a repeat of the Blob.

However, with forecasts showing El Niño looming next winter, a worst case scenario could see the heat wave sticking around and rolling into warm El Niño conditions, which could lead to a similar situation as the Blob, he said.

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