

Scientists recruit public to help study "The Blob"

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A huge mass of unusually warm water that scientists have dubbed "The Blob" has lurked off the West Coast for much of the past two years and speculation is growing that it may be connected in some way with the drought plaguing West Coast states.

So researchers are planning a new study to see what role The Blob – as well as human-induced climate change – may have played in creating the parched conditions in California, Oregon and Washington.

And they are looking for your help.

The research team plans to run hundreds of variations of computer models to disentangle these causes. The amount of data such a process creates is staggering and could require as many as three supercomputers to generate. Instead, the team will rely on thousands of citizen science volunteers that will let the researchers run simulations during idle times on their personal computers.

This study is part of an umbrella project, climateprediction.net, originally launched by Oxford University in 2003, and joined by researchers at Oregon State University in 2010 to use the combined power of thousands of individual computers to run climate modeling simulations. This latest project is supported by Climate Central, a non-profit climate research and journalism organization.

Anyone interested in participating in the project – or just following the

analysis in real-time – can go to [drought](#)"
target="_blank">www.climateprediction.net/weat ... ern-us-[drought](#)

"It's a great way for the general public to help the scientific community investigate some of the climate variations we're seeing," said Philip Mote, director of the Oregon Climate Change Research Institute at Oregon State University. "It takes about a week to run a year-long unit of climate data and the program is set up to automatically feed the results back to the scientists."

Scientists don't yet know "what the answer will be at this point," said Friederike Otto, who leads the study at Oxford University. "But anyone can go online and watch as the causes of the drought emerge."

The West Coast drought has ranged from pesky to severe. In California, it has lasted four years and this is the most severe dry spell during the instrumental record, dating back to the late 1800s. Much of the state has suffered a double-whammy of near-record high temperatures and extremely low precipitation. Gov. Jerry Brown declared a drought state of emergency in January.

Oregon is in its second year of drought, and in both years, the issue has been very low snowpack because of warm, mild winters. Almost every county in the state has had a governor-declared drought at some time during the two years.

"It's been a one-two-three punch here," Mote said. "We're getting warm winters, followed by a dry February through April period, and fairly warm but unusually dry summers. In the past, when we've had droughts, things look bad initially from a snowpack standpoint, but cool, wet March and April months bailed us out. We're haven't gotten those the past two years."

Washington is in its first year of drought – a result almost exclusively tied to warmer winter temperatures. Just last month, Washington Gov. Jay Inslee declared a statewide drought.

This past period of December 2014 through February 2015 was the warmest on record in western Oregon and Washington. Mountain snowpack was at record low levels throughout much of the past six months in all three states.

"Scientists sometimes call this a 'wet drought' because the extremely low snowpack in the Northwest has been caused by unusually high temperatures, not abnormally low precipitation," said Heidi Cullen, chief scientist with Climate Central and a former climate expert with the Weather Channel. "Winter rain has replaced snow during much of the past two winters."

Is "The Blob" the culprit in the West Coast drought? No one seems to know for sure whether this warm-water mass, which is hundreds of miles long, is to blame. The Blob, which is about 4 degrees (F) warmer than normal, has appeared during the last two late winters/early springs and lingered for months.

"Four degrees may not sound like much, but that kind of anomaly in the ocean is huge," said Mote, who is a professor in OSU's College of Earth, Ocean, and Atmospheric Sciences. "It has many implications, from physical processes in the ocean to biological impacts."

In mid-June, for example, thousands of red crabs washed ashore in southern California – a phenomenon attributed to The Blob. Oregon and Washington are in the throes of a shutdown on shellfish harvesting, due to domoic acid accumulation. Caused by toxic algal blooms, the spike in domoic acid is thought to be caused by some kind of physical stress to the plankton, though it is uncertain if it is related to The Blob.

To test the connection between climate change, The Blob, and the drought, the research team will compare computer simulations of possible weather from an 18-month stretch (Dec. 1, 2013 to May 31, 2015) – including observed sea surface temperatures – with other 18-month stretches from 1981 to 2010. By running hundreds of computer models with slight variations, they hope to be able to determine what impacts The Blob and its swath of warm water have had on West Coast climate.

"Since we began involving citizen science volunteers, we've been able to address a wide range of climate-related issues throughout the world," noted Myles Allen of Oxford University. "The public has a great opportunity to help researchers find out if there is a connection between The Blob and the West Coast drought, to what extent [climate change](#) may have contributed, and whether other factors are behind it."

Provided by Oregon State University

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