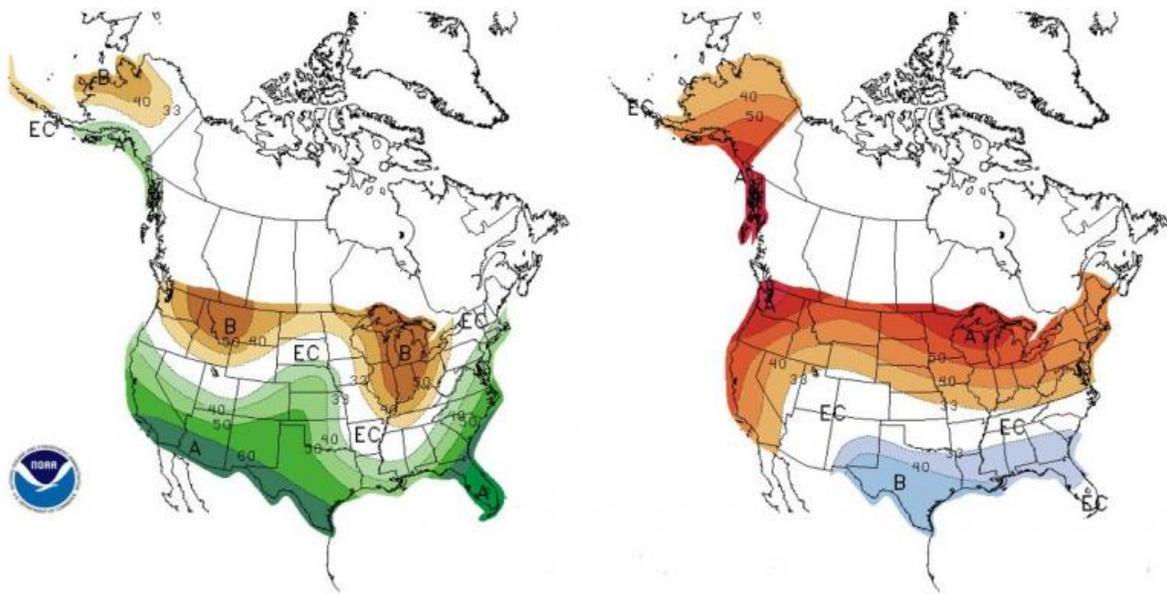


Northwest winter weather—El Niño, coastal effects, no more 'blob'

January 12 2016, by Hannah Hickey



A U.S. projection for trends in precipitation (left) and temperature (right) during the first three months of 2016. Washington state is expected to be drier (brown) and warmer (red) than usual, in this Dec. 17 seasonal forecast. Credit: NOAA

What some have called the "Godzilla El Niño" is now lumbering ashore, right on schedule. El Niño tends to influence North American weather after the first of January, and indeed, we're seeing warm temperatures in Alaska and much-needed rain in California.

University of Washington researchers are tracking what the season will deliver to the Pacific Northwest region.

For Washington, El Niño typically brings warm, and often dry, winter weather. That may seem surprising, since the state just experienced a very wet December, according to the latest [monthly weather report](#) from the UW-based state climatologist's office. Many places broke previous records for the month. But that precipitation does not seem to be linked to El Niño.

"We were very fortunate, from a water-supply point of view, to get all that lowland rain and mountain snow when we did, because that's not always the case during El Niño," said Nick Bond, Washington's state climatologist and a researcher with the UW-based Joint Institute for the Study of the Atmosphere and Ocean.

"And looking ahead, at least in the short term, it looks like there's not going to be a lot of precipitation."

The West Coast effects of El Niño tend to peak in January and February and continue to be felt through March. But the Godzilla El Niño in the tropical Pacific doesn't necessarily mean we need to brace for monster-sized effects in this region.

"There's not a strict relationship between the magnitude of the El Niño and the magnitude of the response at the higher latitudes," Bond said.

"Sometimes more moderate El Niños seem to have a really big response, and other times the strong ones have a more moderate response. It's not a one-to-one relationship."

So far, this El Niño is shaping up to be a textbook event, said Cliff Mass, a UW professor of atmospheric sciences who has covered the topic on his blog.

"It's been following the typical route for a strong El Niño," Mass said. "Typically, even a strong El Niño doesn't have a lot of implications for this region in the early winter, but after the first of the year the teleconnections develop and the jet stream splits to bring rainstorms to California and Alaska, with Washington right in the middle," he said.

"This El Niño is following the typical game plan, particularly the increasing effects after the new year."

Observations show this El Niño is already weakening in the tropics, Mass said, and models suggest a neutral situation by the middle of summer, and either neutral or the opposing La Niña phase by next winter.

Along the West Coast, El Niño conditions tend to bring higher sea level and bigger winter waves, which together can create more flooding and storm damage along the coast. They also can shift the direction of storm waves to come from the southwest, rather than from the west, which has been shown in past years to alter the shape of beaches in Oregon and California.

How these various factors influence Washington state, though, is less clear, said Ian Miller, a coastal hazards specialist in Port Angeles with the UW-based Washington Sea Grant. Miller discussed the coastal effects of El Niño in a blog post last fall. He will be checking tide gauges to see if average sea levels for the year are unusually high, and visiting beaches to see how they fare this season.

"One of the things I'm interested in doing this winter is better documenting what an El Niño winter means for Washington's coast, in particular the north coast and the Strait of Juan de Fuca," Miller said.

In the water, El Niño leaves its mark by both water and air, said Jan Newton, an oceanographer at the UW Applied Physics Laboratory who

tracks regional ocean conditions.

"During an El Niño year we often have warmer and saltier than normal ocean conditions," Newton said. "And it's coming from both the effect of the ocean, which would have those warmer waters, and the effects on our weather, which would be warmer air temperatures and less precipitation."

El Niño's effects on the ocean will largely replace the phenomenon known as "the blob," the unusually warm patch in the northern Pacific that influenced coastal weather and marine ecosystems in 2014 and 2015.

That pattern – which included ocean temperatures of up to 7 degrees Fahrenheit warmer than usual – continues to be a subject of scientific study. A workshop at the UW Jan. 20 and 21 will review the unusual pattern of the blob, its effects, whether this event could have been forecast, and also consider how any remnants may be interacting with El Niño.

Although the warm-water blob is now mostly history, climate models project that the coastal winds will be more from the south than usual, resulting in a strip of relatively warm water along the West Coast this spring, Bond said. This phenomenon is related to yet another climate cycle known as the Pacific Decadal Oscillation.

"All the models are showing that to be the case, but to varying extent. It looks like it will be warm enough along the coast to have some significant effects," Bond said. "People are keeping an eye on that, because the ocean has [already] been warm for a couple of years. If that continues, it's going to have implications for the marine ecosystem."

Provided by University of Washington

Citation: Northwest winter weather—El Nino, coastal effects, no more 'blob' (2016, January 12)
retrieved 22 September 2024 from

<https://phys.org/news/2016-01-northwest-winter-weatherel-nino-coastal.html>

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