

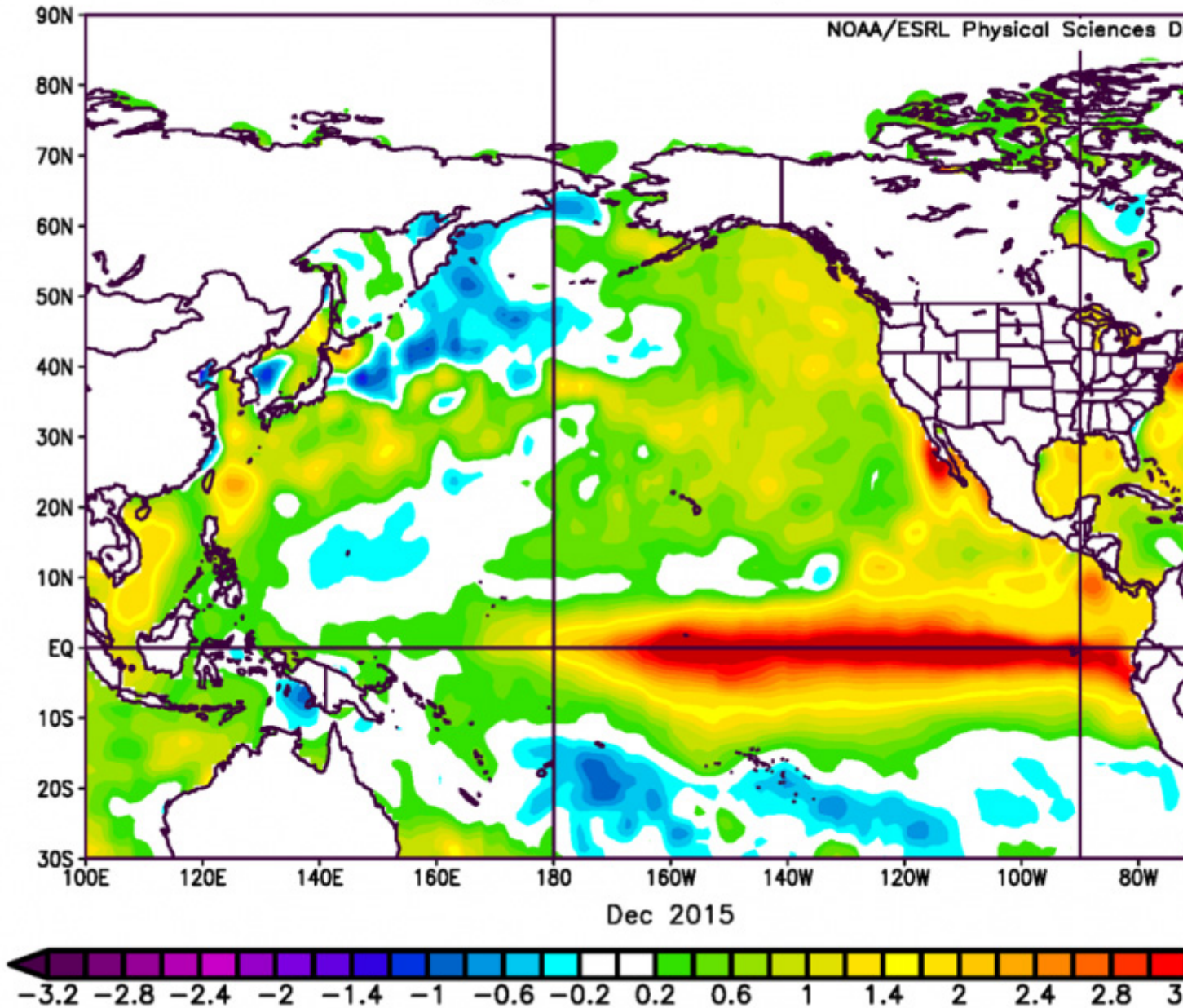
The Northeast Pacific Blob: fading or not?

Submitted by Virginia Keast Tue, 2016-02-09 13:43

The warm surface water anomaly dubbed the 'Blob' that has fascinated scientists and many Canadians for two years has all but disappeared from surface satellite maps. But is it gone for good?

'It's not dead yet. There may still be a lot of heat down there?deep down?below the view from the satellites,' says Richard Dewey, Ocean Networks Canada's Associate Director, Science Services.

NOAA OI SST
Surface SST (C) Composite Anomaly 1981–2010 climo



Sea surface temperature maps showing the difference between the current temperature and the average temperature, for December 2015. Notice the apparent absence of the Blob and the emergence of the eastern equatorial El Niño (the red mass stretching along the equator)

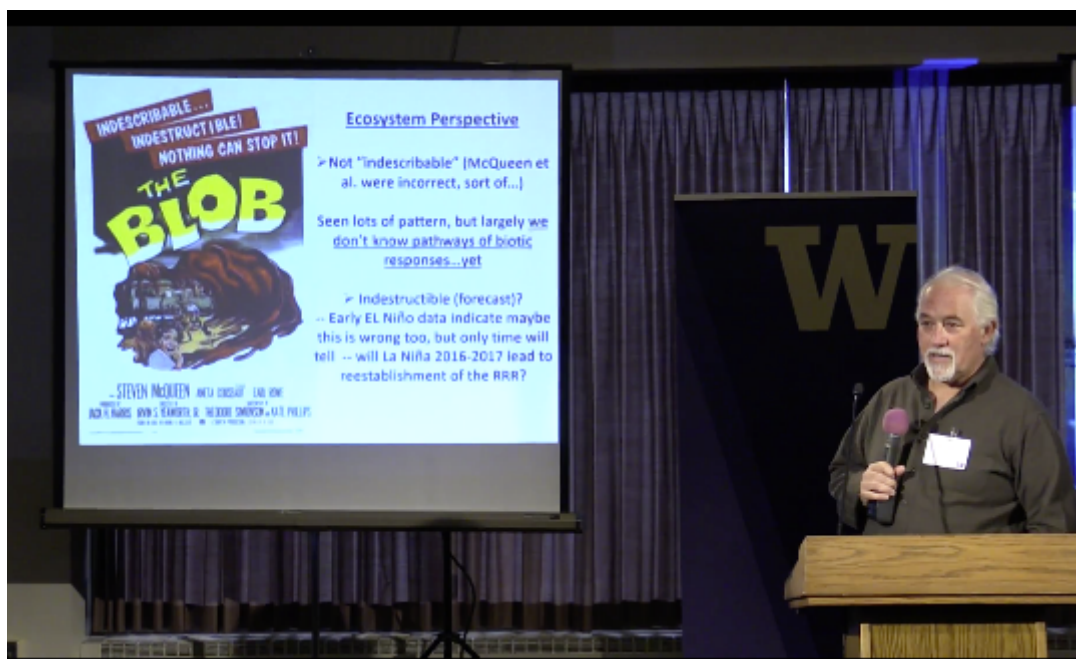
A series of cold winter storms cutting across the Gulf of Alaska since November has effectively wiped out the surface signature on the surface of the ocean, reports Dewey in his [?Blob Blog.?](#)

These are the same storms that were absent in 2013 and allowed the Blob to develop. This huge body of water in the northeast Pacific did not cool down as it normally does each winter and remained significantly warmer than average?up to 3 degrees Celsius.

Scientists come together to tackle the Blob

In January 2016, Dewey provided an overview of the Blob at the second Pacific Anomalies Workshop Two hosted by the Pacific Association of Networked Ocean Observing Systems. The two-day event in Seattle, Washington, brought together over 180 scientists from Alaska to California to discuss all aspects of the anomaly. Meteorologists, climatologist, biologists and oceanographers: they shared local observations, reports and theories. And while not always agreeing, they were all fascinated by the data and how it might inform the future.

- Presentations from the Pacific Anomalies Workshop Two, Day 1



Bill Sydeman (Farallon Institute of Advance Ecosystem Research, California) compares the north Pacific Blob to the 1958 sci-fi classic at the Pacific Anomalies Workshop Two.

Where did the Blob come from?

The accepted working theory is that the Aleutian Low pressure system, which regionally drives weather, was small and weak in 2013, resulting in reduced storms, and thus, ocean cooling. One idea as to why this occurred points to the Arctic, which is undergoing rapid climate change.

In the fall of 2012, a season or two before the Blob showed up, the Arctic Ocean recorded its lowest summer sea-ice extent on record, allowing a significant amount of heat to be released by this open water, which weakened the polar vortex and changed the shape and position of the jet stream, so much so that fewer storms occurred in the northeast Pacific.

When the abnormally warm patch of water first appeared in early 2014, scientists also

observed disrupted weather patterns that brought warmer than normal weather to British Columbia. There were droughts in California, warm wet winters in Alaska, and record cold winters to the northeast, all consistent features associated with a shifted and meandering jet stream.

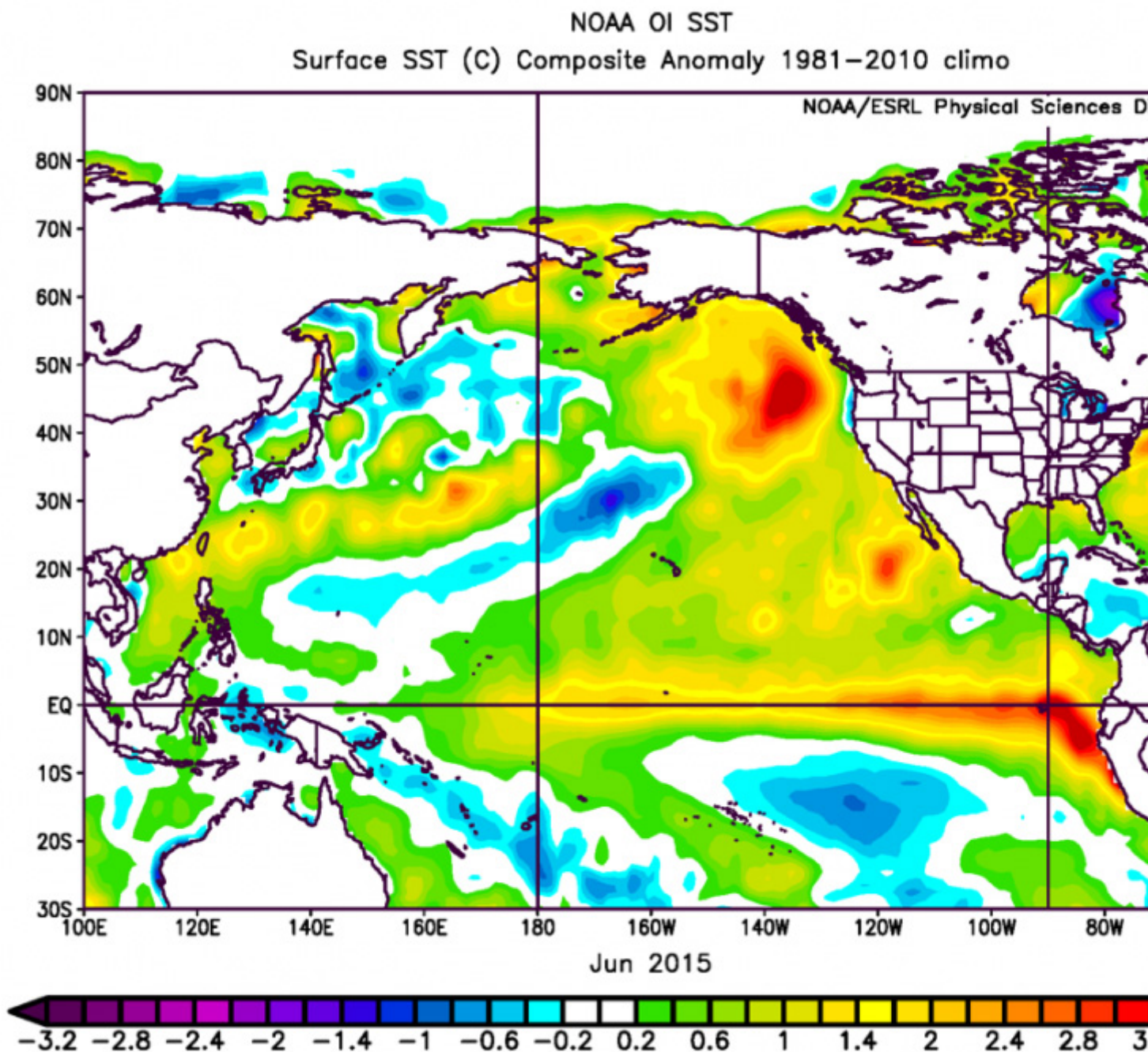
The reduced storm activity also resulted in a reduction in mixing of deep ocean waters with surface waters that reduced the nutrient supply to the surface waters. Cold-water species such as salmon and herring were impacted, and warm water species migrated to the Blob.



A school of warm water-loving sunfish (Mola mola) float near the R/V Thompson during ONC's 2015 summer expedition. They thrive on jellyfish, another species found to have moved north with the change in ocean temperature.

While the Blob formed in late 2013, the recent El Niño formed in May 2015 and now dominates sea surface temperature images along the equator. Forecasts suggest this El Niño will fade by the summer of 2016, while the heat below the surface in the northeast Pacific and what remains of the Blob may take longer to dissipate.

If it's just out of sight, when will it return?



The re-emergence of the Blob as revealed by sea surface temperature maps showing the difference between the current temperature and the average temperature, for June 2015, after the Blob seemed to fade in the winter of 2014-15. The 2015 El Niño is making its first appearance in the eastern equatorial Pacific.

We'll have to wait and see if the surface expression of the Blob returns this spring, as it did in 2015. Some people are now asking: are the last two Blob years a result of climate change?

?It could be an indication of what climate change will look like, with large-scale shifts in weather patterns and long-lasting variations in the ocean and marine ecosystems,? said Dewey, pointing out that the Blob was not anticipated by climatologists because most long-forecast and climate models are relatively

conservative.

Reinforcing the importance of the ocean to global climate change

This month, scientists will be traversing along [Ocean Line-P](#) in the northeast Pacific to [Ocean Station Papa](#), approximately 800 miles off the coast. [Fisheries and Oceans Canada](#) conducts this oceanographic observation program, now in its 60th year, to support ocean circulation and climatology studies.

The Line-P expedition will bring back deep-sea data that, when added to Ocean Networks Canada's undersea data, may well shed new light on the status of the Blob.

Stay tuned.

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- What the blob tells us about ocean warming ([Maclean's](#))
- The Pacific blob is breaking up but that may not be good news ([Toronto Star](#))
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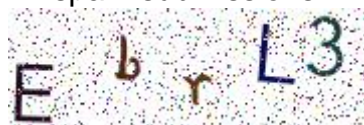
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