

# Blame it on the "blob," scientists say about unusually warm Pacific waters

By Los Angeles Times, adapted by Newsela staff on 04.30.15

Word Count **781**



A storm approaches Williams, California, north of Sacramento. Some experts argue that a 500-mile-wide, 300-foot-deep wedge of warm seawater could bring soaking rains to Southern California this winter, but also accelerate the rise in global temperatures. Photo: Mark Boster/Los Angeles Times/TNS

LOS ANGELES — Dead seabirds and starving sea lion pups have been washing up on California beaches.

Scientists blame it on “the blob.”

But where the blob comes from and what it is going to happen next is another story.

The blob is a 500-mile-wide, 300-foot-deep mass of unusually warm seawater in the Pacific Ocean. It began spreading along the coast a year ago.

Some experts argue that it could cause huge rains in Southern California this winter. They say it could also speed up the rise in global temperatures, or global warming.

Not everyone agrees what will happen, but it is drawing intense attention from climate scientists and oceanographers.

## **Debating Weather Patterns**

At the center of this debate is a poorly understood pattern of wind, ocean current and temperature.

Scientists say that the Pacific Ocean can stay in either a warm or cold phase for decades at a time, switching between the two suddenly. Each phase affects sea life and the climate. Scientists call these phases Pacific Decadal Oscillation, or PDO. The phenomenon mirrors the warm and cool tropical cycles known as El Nino and La Nina, but over a longer period of time.

El Ninos occur when tropical wind patterns move hot seawater from the tropics to slosh across the Pacific Ocean and up against the Americas. This unusually warm water releases heat into the air and causes severe storms and flooding. It also changes air currents from the tropics and the poles.

## **How Long Will The Blob Last?**

Scientists believe that the Pacific Ocean began a cold phase in the 1990s. This cold phase was largely responsible for unexpected cooling of global temperatures. A warm phase could reverse that, they say, by speeding up the increase in global temperature and creating wetter weather for Southern California and the American South.

“I think we may be shifting from a cool, dry phase to a warm, wet phase,” said William Patzert. He is a climatologist at the U.S. space agency NASA in California.

Patzert notes that such a temperature shift occurred in the 1970s, when the state was struggling through several years of drought.

Then there was another shift, ending the drought and causing the three wettest years in Los Angeles history, Patzert said.

During a warm phase, warm waters gather along the Pacific Coast, a situation very similar to the blob, researchers say.

“We’ve definitely entered a warm phase,” said Nicholas Bond, a climatologist for the state of Washington and the scientist who coined the “blob” nickname. “The question now is, how long is it going to last?”

## **Blame The Plankton**

Scientists first described the PDO in 1997, after investigating why Pacific salmon populations could flourish for years on end, then mysteriously disappear. They found the reason in a pattern that either cooled waters along the Pacific Coast or warmed them.

Cooler waters contained fatty, nutrition-packed plankton — tiny sea creatures that form the base of the marine food chain and contributed to greater numbers of salmon. Warmer waters brought skinnier, less healthy plankton. These less-nutritious plankton may be the reason why the marine animals and birds are dying.

“It’s like the difference between eating rice cakes and potato chips. You’re just not getting the same calories,” Bond said.

While scientists agree that PDO shifts are a fact of life, not all agree that the blob means that the four-year California drought may be nearing its end.

## **What The Study Says**

Earlier this year, Penn State University climatologist Michael Mann and a group of other scientists did a study. They said that a warm PDO phase would add to man-made global warming in the coming decades.

However, Mann wrote that he was not prepared to say that a warm phase has definitely arrived.

Matt Newman, a climate scientist at the University of Colorado, studies PDO and says the blob does not fit the pattern. He believes the warm mass of water is better explained by a region of high pressure over the northeast Pacific Ocean.

The high pressure has affected wind and current patterns in a way that prevents deeper, colder and nutrient-rich waters from rising up to the surface of the ocean, he said.

He also doubts that the blob could help bring about El Nino events saying: “I tend to take the view that most of the year-to-year changes in El Nino are due to chance.”

At Scripps Institution of Oceanography, climate researcher Dan Cayan said he was not sure what the blob signaled about the future.

Cayan said there's no doubt the blob is meaningful, but he could not predict what would happen. "The thing that history tells us is that every situation is somewhat different," he said.

## Quiz

- 1 Which detail would NOT be important to include in a summary of the article?
  - (A) Weather and temperature patterns are unpredictable and challenging to interpret.
  - (B) Certain marine animals thrive in warm water while others cannot survive.
  - (C) Shifts in ocean temperatures can cause a change in the climate worldwide.
  - (D) Scientists are unsure of the ocean's future due to climate change.
  
- 2 Which section in the article contains the MOST information that contrasts the main idea?
  - (A) "Debating Weather Patterns"
  - (B) "How Long Will The Blob Last?"
  - (C) "Blame The Plankton"
  - (D) "What The Study Says"
  
- 3 Why are scientists MOST concerned about the warm water blob?
  - (A) It is 500 miles wide and 300 feet deep and spreading along the Pacific Coast.
  - (B) It is causing disagreement about the potential impact it will have on the coast.
  - (C) It might indicate a shift in ocean patterns and hasten climate change.
  - (D) The warmer water is not ideal for plankton, which hurts sea life.
  
- 4 Why does the author include the section "Blame The Plankton"?
  - (A) To help the reader learn about the needs of marine life and the negative impact of warmer water.
  - (B) To explain the original discovery of the changing temperature patterns and how that links to the current situation.
  - (C) To describe why Pacific salmon populations thrived and then suddenly disappeared.
  - (D) To highlight the migration patterns of plankton with various nutritional levels.