Weakening La Niña forecast may mean closer to normal SoCal rain this winter

Sanden Totten, Southern California Public Radio, 7-14-16

Federal climate scientists on Thursday downgraded their predictions of a La Niña climate pattern forming this fall, potentially boosting chances for more typical rainfall in Southern California this winter.

That's because in the past, strong La Niña events typically bring warm, dry winters in Southern California. However, when there is a weak La Niña or none at all, odds are better we might see a regular winter with average rainfall.

"I'd say that's a reasonable bet," said Michael Jacox, an ocean scientist with the Southwest Fisheries Science Center, a division of the National Oceanic and Atmospheric Administration.

Fellow NOAA researchers said Thursday that chances a La Niña will form this fall are about 55 to 60%. Last month, they had reported the odds were 75%. La Niñas occur when ocean temperatures in the equatorial Pacific are cooler than average -- the exact opposite of the better known El Niño phenomenon.

The prospect of a dry La Niña winter is frustrating since last winter's much-hyped El Niño never delivered the above average rains anticipated in Southern California.

If a La Niña does form, researchers now say it would likely be weak, which could open the door to a more typical winter with closer to average rainfall.

"It’s certainly something we’re going to be paying attention to," added NOAA climate meteorologist Tom Di Liberto.

He noted that even without a strong La Niña, other factors could keep things dry, like temperatures over the Pacific Ocean or the return of a ridge of high pressure air over the region.

Of course, last winter, all eyes were on a strong El Niño signal that was expected to bring major rainfall of Southern California. Instead, those storms made landfall further north, mostly in the Pacific Northwest. A new research paper published in the journal Geophysical Research Letters suggests that was largely the result of two other climate phenomena.

One was the so-called "Ridiculous Resilient Ridge" -- a mass of high pressure that hovered over the West Coast on and off for the past few years. The other was "The Blob" -- a massive swath of unusually warm water that stretched from the Gulf of Alaska to Hawaii.

Scientists think the blob was created by the high pressure ridge that also blocked storms from hitting the region.

The blob raised average ocean temperatures by about 1 to 4 degrees Fahrenheit, encouraging tropical fish to swim much further north than usual.

Of course, El Niño also typically brings warmer water to the California coast, but as lead researcher Jacox discovered, those effects were "relatively weak."

"A lot of the things we were seeing off the West Coast that we associate with these El Niño events... they were really due to the conditions that were there prior because of this warm water blob," he said.

Jacox and his team used data complied by underwater drones that swim back and forth from the coastline gathering information about the ocean.

They expected that as El Niño peaked in winter 2015 and spring 2016, there would be a corresponding uptick in ocean temperatures and sightings of tropical fish. That wasn't the case, he explained.

Instead, those things were already happening thanks to the blob.

Fast forward to now, Jaycox said, and the affects of the high pressure ridge and the blob are on the wane.

"I think the resilient ridge as we knew it is gone away and the blob is headed out too," Jaycox said.

NOAA researcher Nate Mantua agrees.

"[The blob] has broken up a lot," he said.

It's no longer spanning the entire West Coast, he said. Instead it's formed pockets off the coast Southern California, further off shore in the Pacific Northwest and around most of Alaska.

Since it's been in place so long though, Mantua said the warm water is starting to spread deeper into the ocean, in some places as far down as a few hundred feet below the surface.

“That is likely to be a lot more extensive than whats going on in the upper ten or twenty meters,” he said.

That's a problem since a large mass of warm water can prevent cooler water at lower depths from welling up. Also, the same weather patterns leading to the formation of the blob have limited the winds that normally help stir the ocean so lower water mixes with the warmer water above.

This process is important since deeper water is rich in nutrients that feed phytoplankton found closer to the surface. These tiny creatures are the base of the marine food web and when they have trouble feeding, it can spell hard times for animals all around the ecosystem.