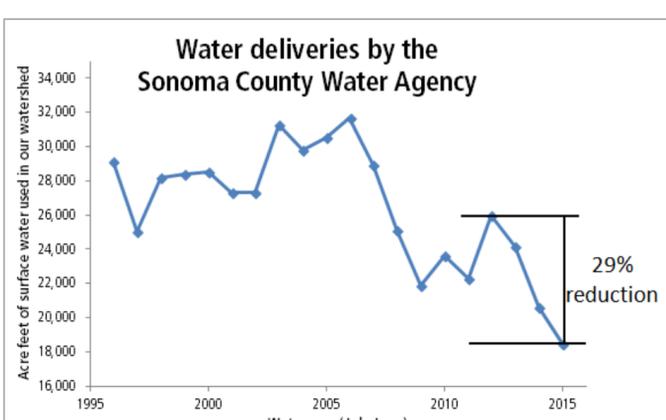


## The 2015-2016 Laguna Watershed Report

On Thursday evening, September 22<sup>nd</sup>, we had our first annual watershed report and invasive species feast to celebrate the start of the new water year. The goal of the report was to sum up the last water year and answer your watershed-related questions before the rains start in October.

### Is the drought over yet?

The simple answer is yes, technically the drought is over here on the North Coast, but of course it is more complicated than that. There are two components to drought, below average rainfall and a shortage in storage. Ever since the long dry spell at the beginning of 2013, we have had below average rainfall and storage. The 2015-2016 rainy season was the wettest since 2011-2012. Which is good news, but it was still slightly below the long-term average. In Santa Rosa we got 27.89 inches and average is 29.74 inches. The storage part of the equation is where things get interesting. Despite five years of below average rainfall, we have an above average amount of water in our reservoirs. How can that be? The simple answer is that we all conserved water. We reduced our use of surface water by 29% over the course of the drought. Does this mean that we should go back to taking hour-long showers and hosing down our driveways? If we all did that we would be right back in a drought. Maybe we can stop using our bath water to flush our toilets, but now is a good time to think about more sustainable solutions like decreasing the size of our lawns, setting up a grey water system, or buying a more efficient toilet. That way we will be better prepared for the next year with below average rain fall.

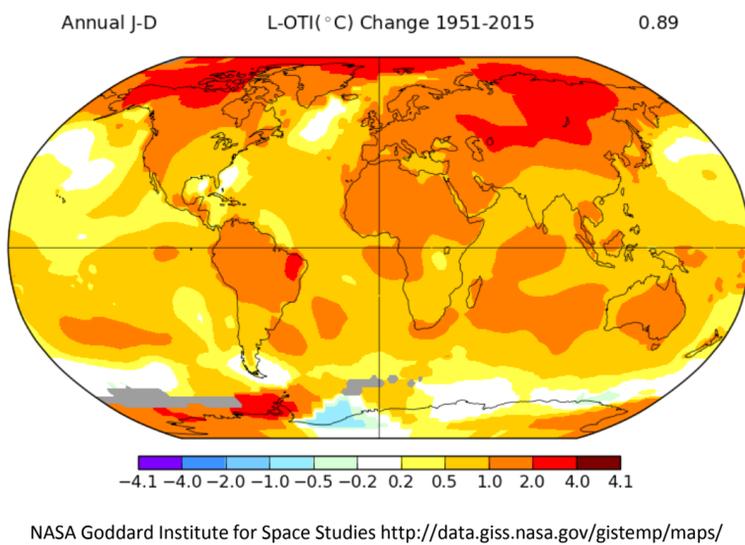


### Whatever happened with that El Nino we were supposed to get last year?

There was, in fact, a large El Nino, but while El Nino conditions in the Pacific Ocean make a wet year more likely, especially in southern California, as we found out last year they are no guarantee. Last year's El Nino was as strong as the big 1982 and 1997 events. There were more hurricanes in the eastern Pacific, more drought-induced fires in Indonesia, reduced monsoon in India, and drought in Southern Africa, but no big rains for us. Large El Nino years are typically followed by La Nina years as the warm water sloshes back west along the equator. It looks like 2016-2017 will be a weak La Nina. In general, El Nino years are wet in Los Angeles and dry in Seattle and La Nina years are the opposite. Since we are stuck in the middle, it is hard to predict the impact of a weak event.

### When will we start feeling the impacts of global climate change in our watershed?

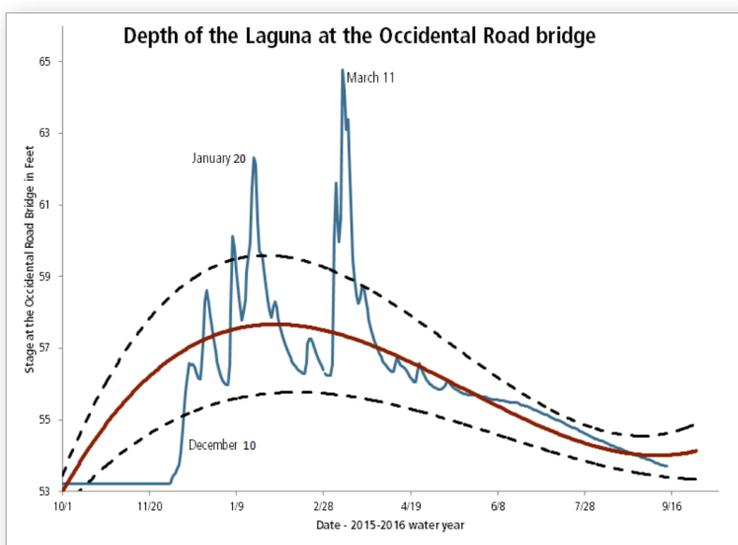
We already have. Below is a global map of the change in annual temperature from 1951 to 2015. As you can see in the figure below, temperatures are changing more in some places than in others. The Arctic is much hotter, but the Bahamas are about the same. The west coast of the United States has gotten 1-2 degrees Celsius (1.8 - 3.6 degrees Fahrenheit) warmer than it was in 1951.



NASA Goddard Institute for Space Studies <http://data.giss.nasa.gov/gistemp/maps/>

### What happened in the Laguna?

It started to rain late and the Laguna didn't really come up until the first week in December. After the slow start, things really got going with a big storm in mid-January. Or biggest storm of the year was in early March. The water under the Occidental Road bridge was 12 feet deep on March 11 and Sanford Road, by the Laguna Environmental Center, was flooded. The timing of the floods worked out well for both coho salmon and steelhead spawning this year.



### How can you get involved with watershed science?

Check out these fun citizen science opportunities:

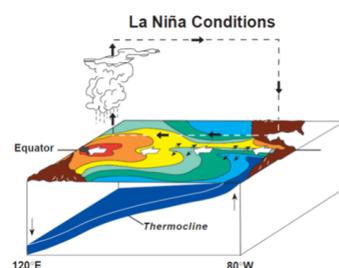
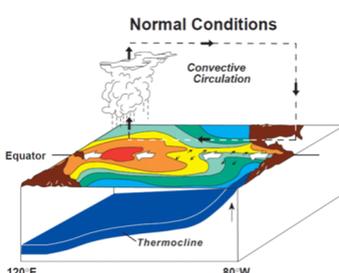
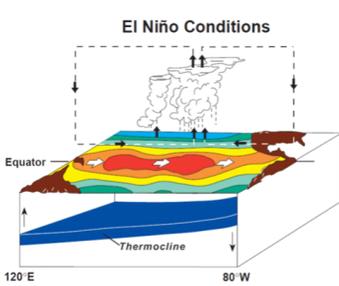
- Adopt a Vernal Pool – The Laguna Foundation's vernal pool project that monitors four endangered plant species and teaches volunteers about these amazing wetlands.
- Otter Spotter – Help the River Otter Ecology project map otter sightings in our watershed.
- Beaver Blitz – On October 8 the Occidental Arts and Ecology Center is hosting a blitz to map the return of beavers to Sonoma County.
- Christmas Bird Count – Help the Audubon Society count the birds in your neighborhood.
- Sudden oak Death Blitz – Collect data about the spread of sudden oak death in our watershed. Find out if you have sudden oak death in your backyard. The University of California Cooperative Extension will test your samples.



Garden Sense is a free program where Master Gardeners come to your house and offer advice about which low-water use plants would work well in your garden, irrigation conversion tips and information about how to convert your lawn. [www.SonomaMasterGardener.org](http://www.SonomaMasterGardener.org) or call 707-565-2608 to schedule your free appointment. [http://ucanr.edu/sites/scmg/Garden\\_Sense\\_Master/Garden\\_Sense/](http://ucanr.edu/sites/scmg/Garden_Sense_Master/Garden_Sense/)



The rainy season is coming. Grab your tools and help us restore the Laguna. Volunteer with the Laguna Stewards [http://www.lagunadesantarosa.org/volunteer\\_lagunastewards.html](http://www.lagunadesantarosa.org/volunteer_lagunastewards.html)



El Nino is change in the circulation of water in the tropical Pacific Ocean. During normal conditions the trade winds push warm surface water west along the equator. During an El Nino the trade winds weaken and the warm water sloshes back east, towards us. Source: NOAA/PMEL/TAO Project Office, Dr. Michael J. McPhaden, Director



Map of the extent of flooding in March 2016 between River Road in the North and Sebastopol in the south.

Sonoma sunshine



Sebastopol meadowfoam



Burke's goldfields



Endangered plants monitored by the AVP program.