*Meeting #606*

CAPISTRANO BAY DISTRICT
AGENDA REPORT
*October 28, 2014*

*Manager's Reports/Old Business*

# ITEM J.6

Evaluation of El Nino Weather Forecast

The National Oceanographic and Atmospheric Administration (NOAA) provides an interesting diagnostic discussion on El Nino every month. Attached are three pages of the October discussion. It's mostly boring and hard to understand but for science-types it is very interesting.

What it all boils down to is that the NOAA forecasters think we'll have a wet winter after December. This could mean more resources on the beach for storm drain maintenance as the tide washes up and buries our drain outfalls every few days after they've been cleared.

The typical procedure is to watch the daily and long range forecasts very closely and be prepared with equipment and hand crew to keep the drains open ahead of expected rain. If the drains are opened up too early they just get buried again before the rain hits so timing is everything.

The District relies heavily on the National Weather Service forecasts and the real-time satellite images on a great website at ***www.unisysweather.com***

# EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by
CLIMATE PREDICTION CENTER/NCEP/NWS
and the International Research Institute for Climate and Society
9 October 2014

## ENSO Alert System Status: El Niño Watch

Synopsis: **El Niño is favored to begin in the next 1-2 months and last into the Northern Hemisphere spring 2015.**

During September 2014, above-average sea surface temperatures (SST) continued across much of the equatorial Pacific (Fig. 1). The weekly Niño indices were relatively unchanged from the beginning of the month, with values ranging from +0.3°C (Niño-3.4) to +1.1°C (Niño-1+2) at the end of the month (Fig. 2). The change in subsurface heat content anomalies (averaged between 180°-100°W) was also minimal (Fig. 3) due to the persistence of above-average temperatures at depth across the central and eastern Pacific (Fig. 4). Equatorial low-level winds were largely near average for the month, though brief periods of westerly wind anomalies continue to arise. Upper-level winds were also close to average for the month. The Southern Oscillation Index has remained negative, and rainfall was near average around the Date Line, with a mix of positive and negative anomalies over Indonesia and Papua New Guinea (Fig. 5). The lack of coherent atmospheric and oceanic features indicates the continuation of ENSO-neutral.

Most models predict El Niño to develop during October-December 2014 and to continue into early 2015 (Fig. 6). The consensus of forecasters indicates a 2-in-3 chance of El Niño during the November 2014 - January 2015 season. This El Niño will likely remain weak (3-month values of the Niño-3.4 index between 0.5°C and 0.9°C) throughout its duration. In summary, El Niño is favored to begin in the next 1-2 months and last into the Northern Hemisphere spring 2015 (click CPC/IRI consensus forecast for the chance of each outcome).

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site (El Niño/La Niña Current

**Don Russell**

**From:** David Unger - NOAA Federal <david.unger@noaa.gov>
**Sent:** Friday, October 24, 2014 9:24 AM
**To:** Don Russell
**Subject:** Re: ENSO Discussion on website

**ITEM NO. J.6**

Don:
I got your phone message, I though perhaps an E-mail might be best to help.

ENSO is climate "oscillation". It has three phases: A warm phase = El Nino, a neutral phase which would indicate that the oscillation is close to average, and a cold phase = La Nina. We are still in the "ENSO neutral phase, although some atmospheric indicators point to the warm (El Nino) phase. We expect that by the winter most indicators will be in the "El Nino" territory, but only weakly so.

I've included a graph of the influence of ENSO on southern California precipitation

http://www.wrcc.dri.edu/enso/CA_div_6.png

The dots are color coded by ENSO phase. We are close to the -0.5 line, indicating boarder line between ENSO Neutral and El Nino.

As you can see, S. Cal tends to be wetter than average in El Nino years, as we are expecting this year. The signal for wet conditions doesn't get reliable until El Nino gets strong, in which case serious flooding rains become quite likely.. La Nina's are mostly dry.

But the graph shows that flooding events can happen in both in neutral and warm event conditions. The chances of dry conditions begin to diminish as soon as we approach the warm-side of the ENSO spectrum. Considering that we expect weak El Nino conditions, I would say that the chances for significant, even flooding rainfall is higher than average. Nothing is a sure bet, because the very driest year was also a weak El Nino. I would say that our index this year will be around -0.75. (Note the SOI is a atmospheric response to El Nino. Negative SOI corresponds to WARM Sea Surface Temperature anomalies, warm ENSO, and El Nino. )
Generally the late winter is more dependably influenced by ENSO than early in the season.
I hope this helps.
** Dave Unger **

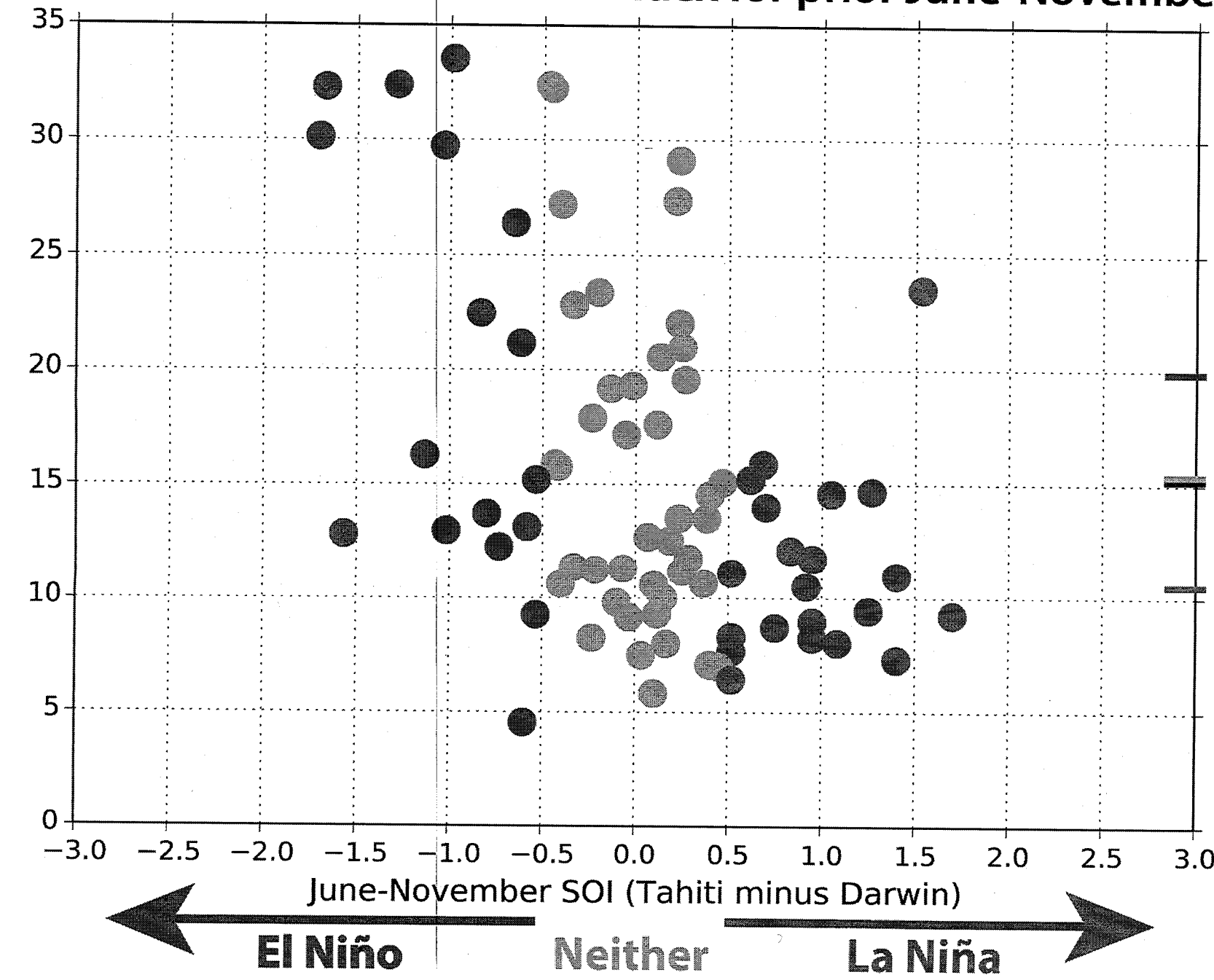
On Thu, Oct 23, 2014 at 7:14 PM, Don Russell <drussell@capobay.org> wrote:

Good afternoon gentlemen,

I manage a residential community of 200 homes on the beach in Dana Point. I just left both of you a phone message and am following up with this email. I read your monthly ENSO Diagnostic Discussion and am wondering what you mean with the term 'ENSO-neutral' which I see fairly regularly in your reports. One of my job responsibilities is with flood control here in our community so I have a stake in the weather forecast and I like to have some understanding of the terms I'm reading and reporting about.

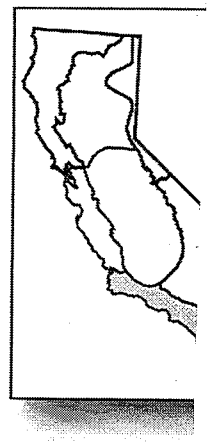
# CA Division 6 October-March Precipitation

## (versus Southern Oscillation Index for prior June-November)




Years 1933/193
2013/2014
$r^2 = 0.22$
Correlation = -0

Mean = 19.89 i
Mean = 15.45 i
Mean all = 15.3(
Mean = 11.27 i



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