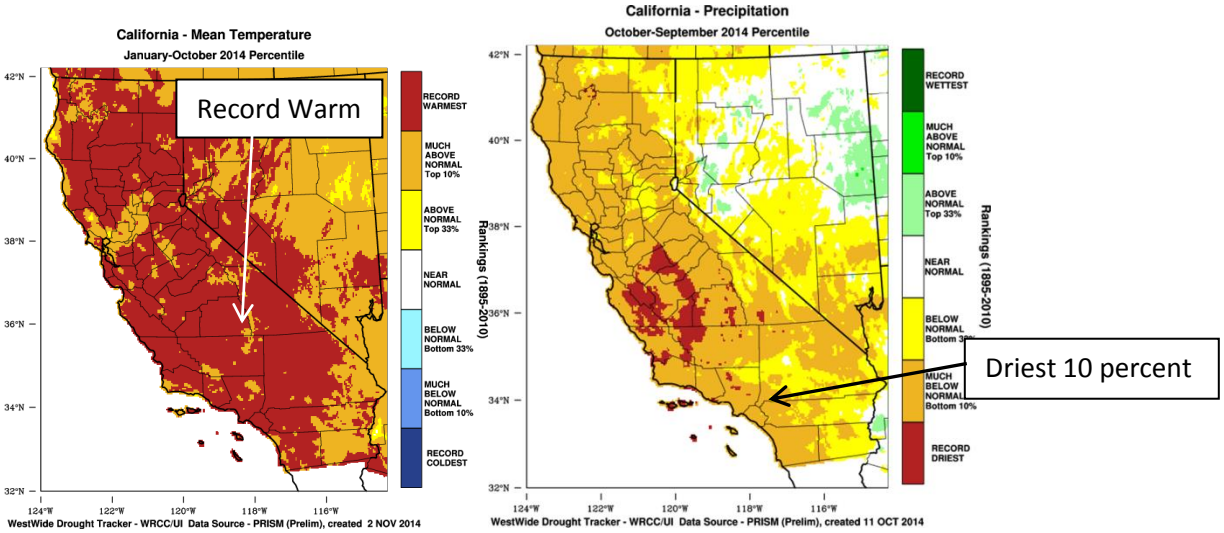
The Drought Story and Impact

Record warmth has occurred from January to October 2014 (+4 F for California), and October 2013 to September 2014 received much below average precipitation (third year in a row) and second driest in California since 1976-77. The past 36 months is the driest period on record for California (minus 21 inches of precipitation statewide). The outlook for the fall 2014 and winter 2015 predicts warmer than normal conditions with periods precipitation leading to near normal or slightly above normal precipitation for southern California. Due to the ongoing historic drought, the fire danger is much above normal across most of California. Across the equatorial Pacific Ocean average sea surface temperatures, currently neutral, are expected to warm into an El Nino state by early winter. The resultant weather pattern is expected to bring an increased southern storm track impact southern California. Historically, several El Nino winters have brought normal and below normal precipitation. Only the strong phase of the El Nino has been the most consistent with above normal precipitation for southern California.

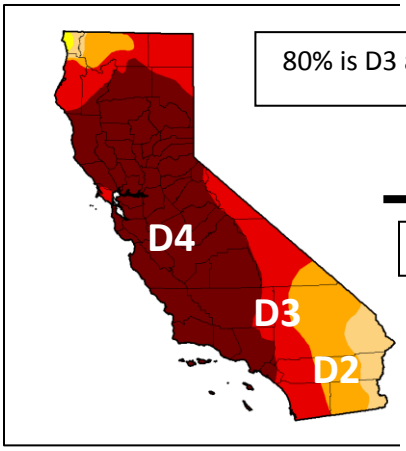
Currently, state water supply is 35 to 45 percent of capacity (half or about 55% of historical average) and snow melt runoff and recharge was very little this spring due to historical low snowpack. Water supply is nearing all-time lows but remains higher than 1976-77. The diminishing water supply combined with the below normal precipitation this past year, and the past 3 years combined being the driest on record, have all led to the extreme drought conditions. In general, California would need about 150 percent of average for the rainy season (October to April) in order to significantly reduce the drought (long term precipitation deficits) and raise the low water supply in reservoirs and bring soil moisture to near normal levels.

Past Weather and Climate



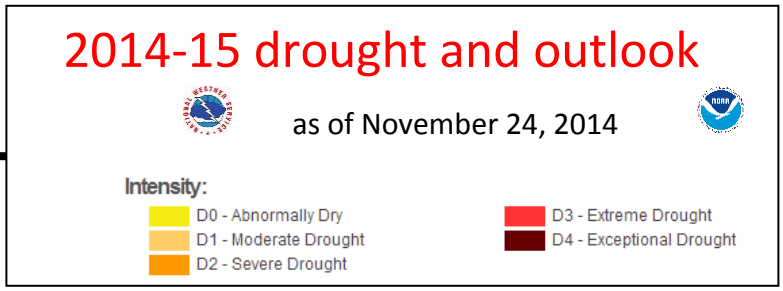
Rankings of average (high and low) temperature (left) from January to October 2014.
Precipitation from October 2013 to September 2014 (right). Source Western Region Climate Center.

Most of southern California is missing 1 to 2 seasons of precipitations in the past 4 years.
Much below normal precipitation and widespread near record or record warmth.



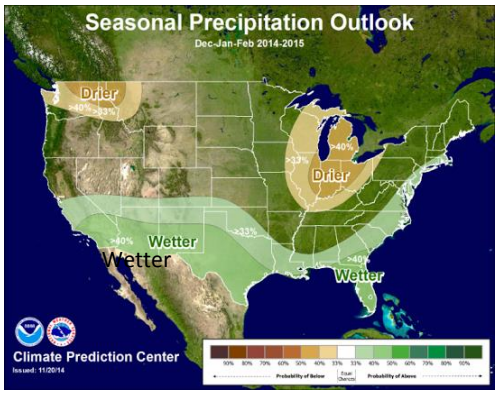
80% is D3 and D4

Short and Long Term



December to February 2015

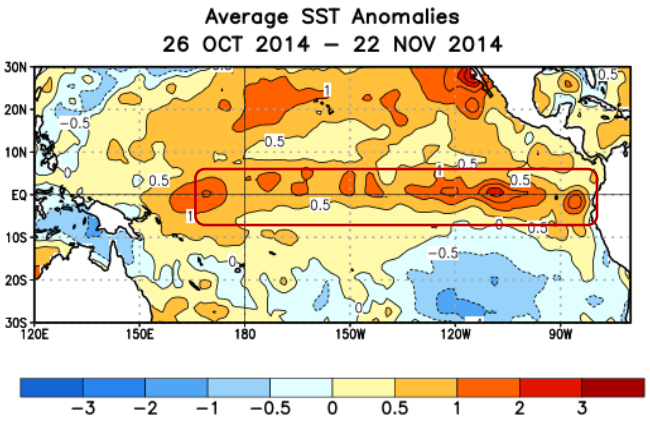
Outlook

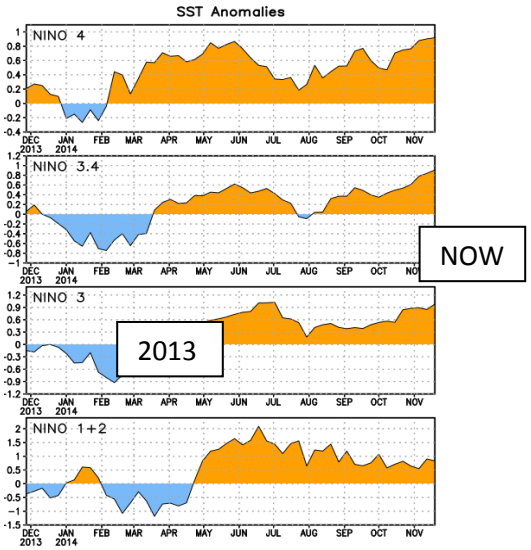


Temperature (left) and precipitation (right) outlook for the period December to February 2015.
Blue is 33 to 40 percent chance of "above normal" precipitation. Source: Climate Prediction Center.

ENSO El Nino Current Conditions

Significant warming occurred earlier this summer in the equatorial Pacific as seen in sea surface temperatures. In mid-summer, the water temperatures decreased and leveled off (orange is warm, blue is cool) but there has been warming since late August.



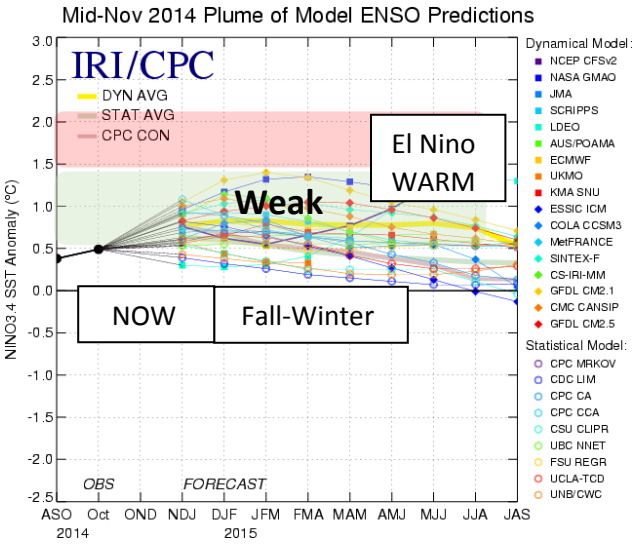


NOW

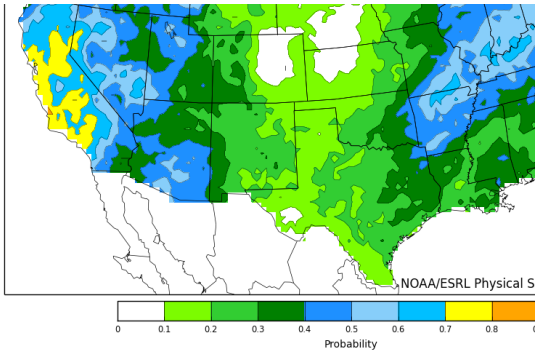
2013

Rectangle is monitoring zone and image is departure from normal (orange is warm).

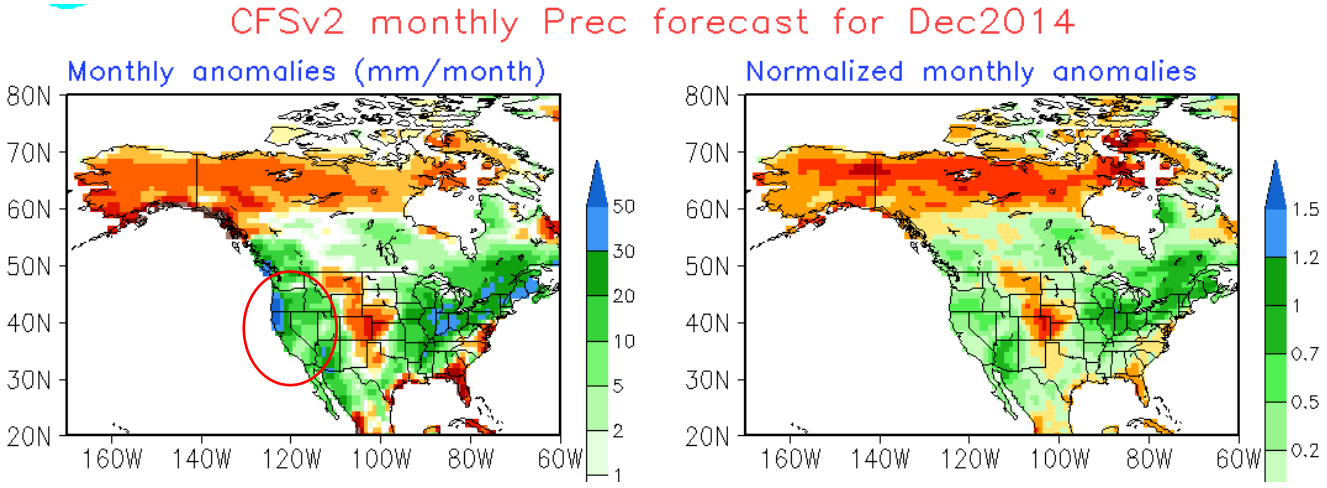
ENSO El Nino Predictions as of November



ENSO forecast for Fall and Winter 2014-15. Consensus (yellow line) is “weak ” El Nino at 0.8 index.



Probability of significant precipitation (yellow equals significantly wet) **November 30 to December 4**, 2014



November 24, 2014 forecast

Daily Climate Forecast System (CFS) precipitation (departure from normal) for December 2014. CFS model has been predicting various of precipitation signals for the West Coast for the month of December 2014 but the majority have been wet.

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