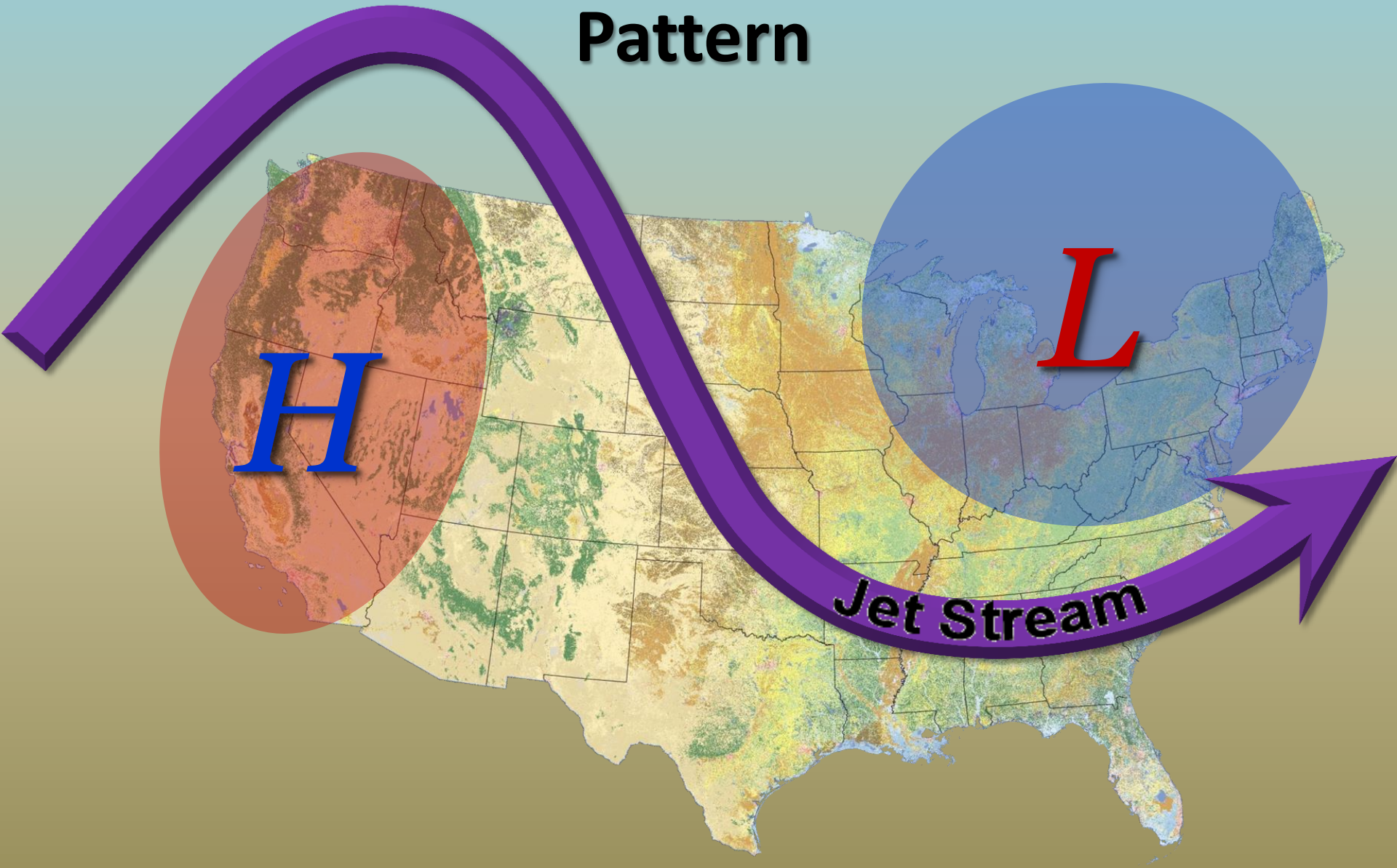
2015 Fire Season Outlook

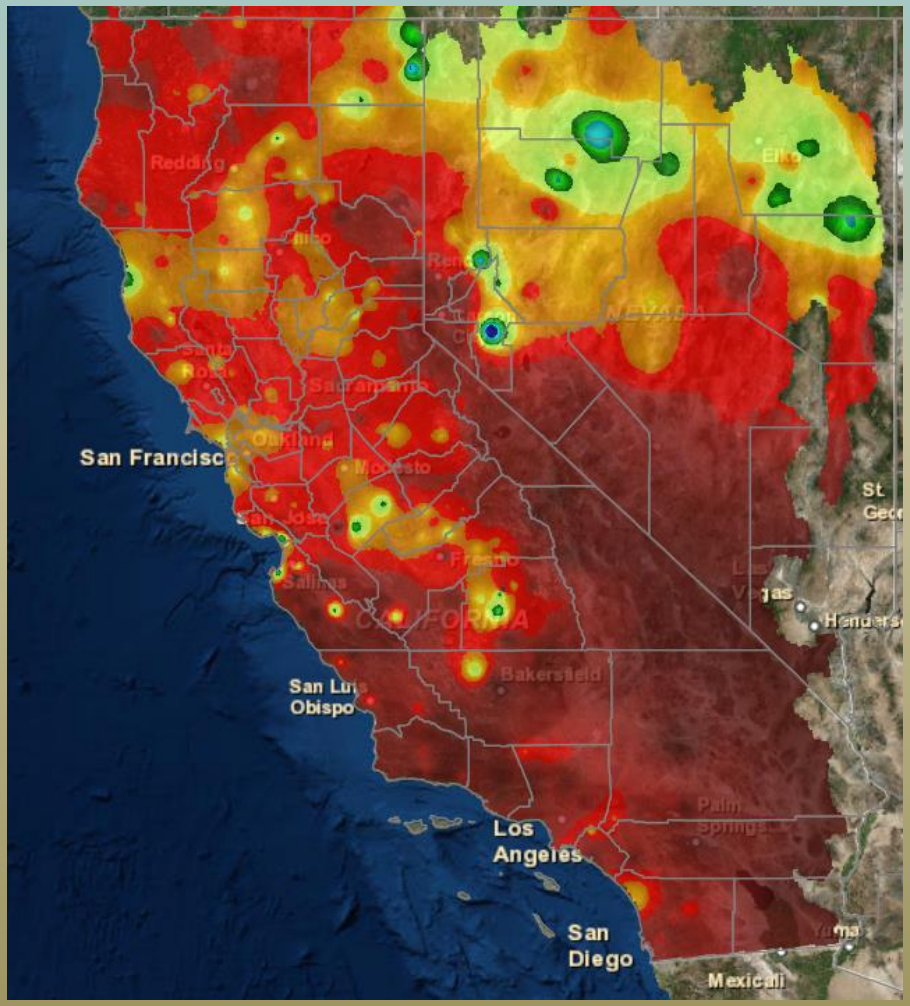
Rob Krohn – USFS Meteorologist, South Ops

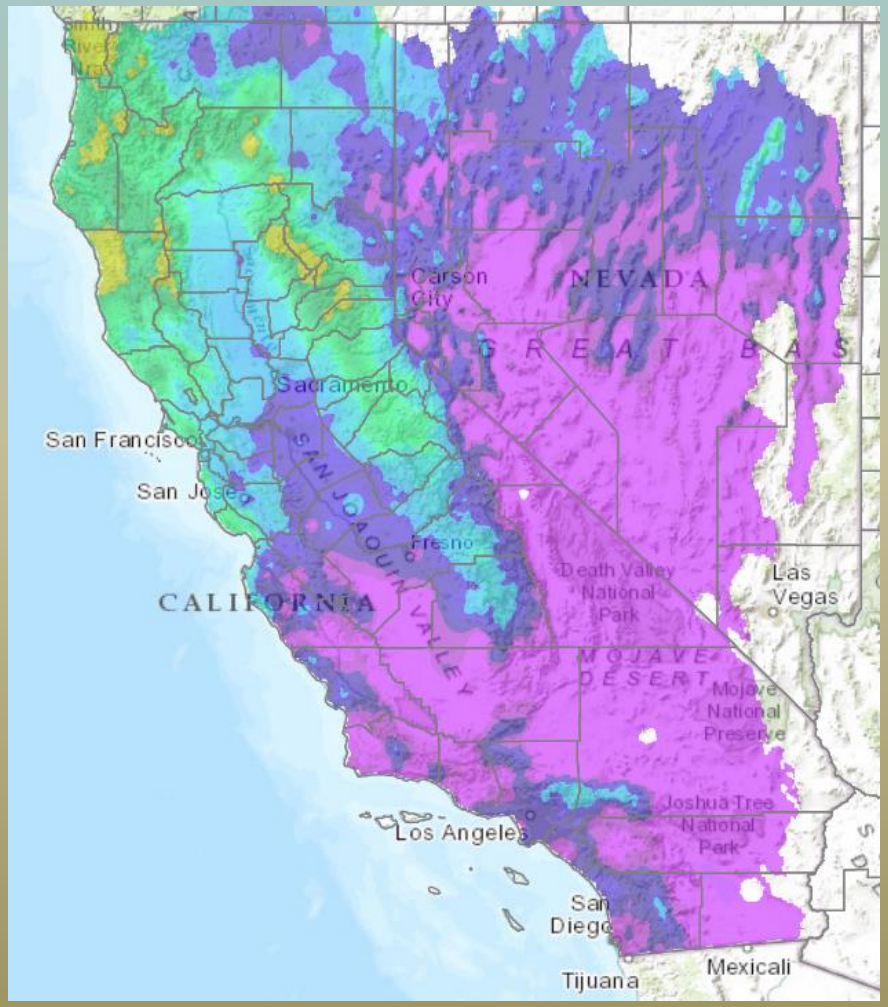
Dominant Winter/Spring Weather Pattern

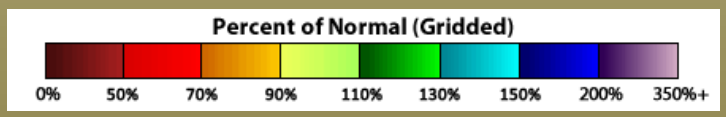


Precipitation Departure from Normal

November 2014

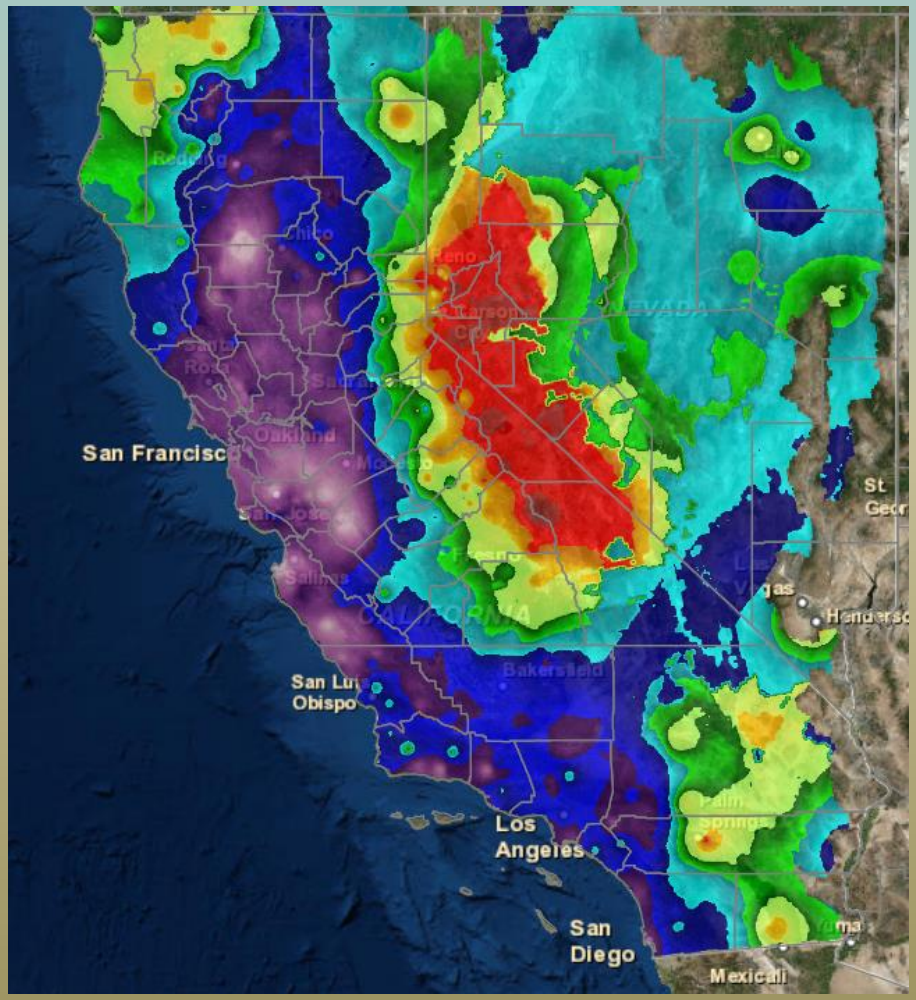


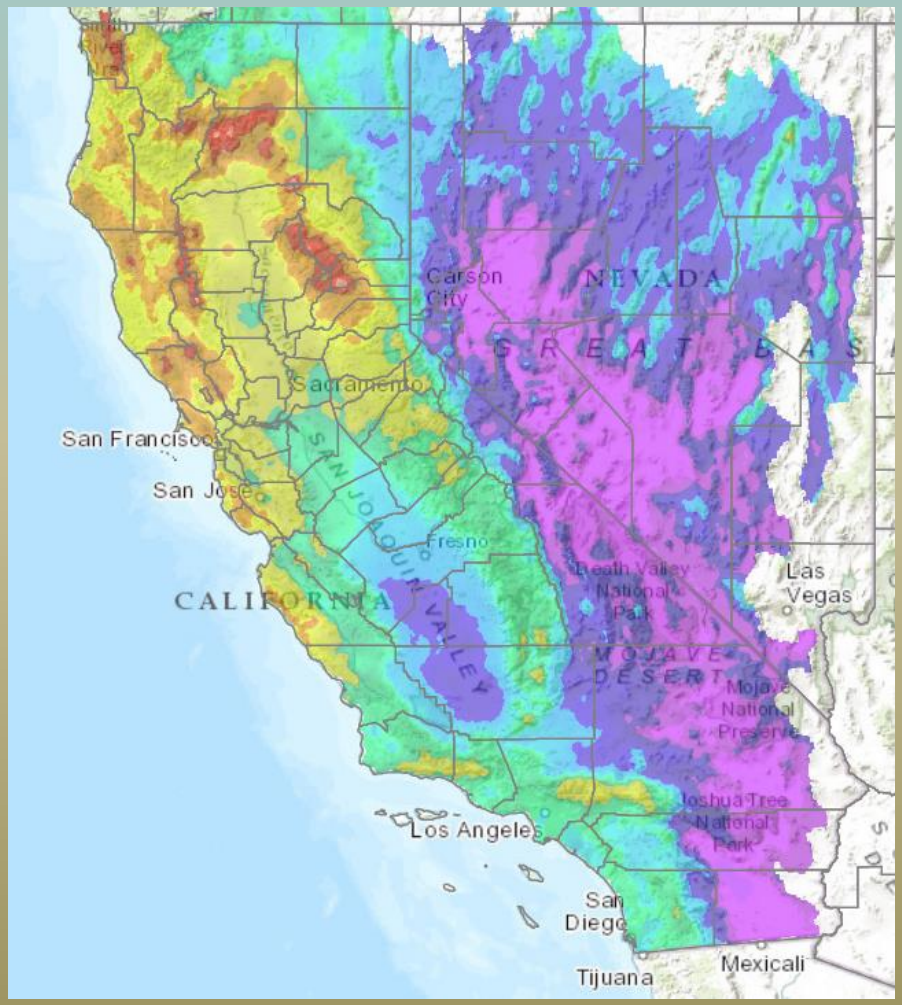


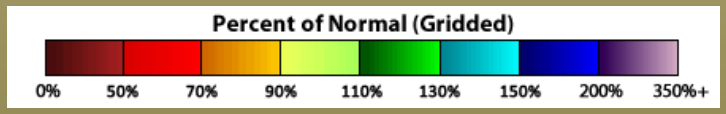


Precipitation Departure from Normal

December 2014

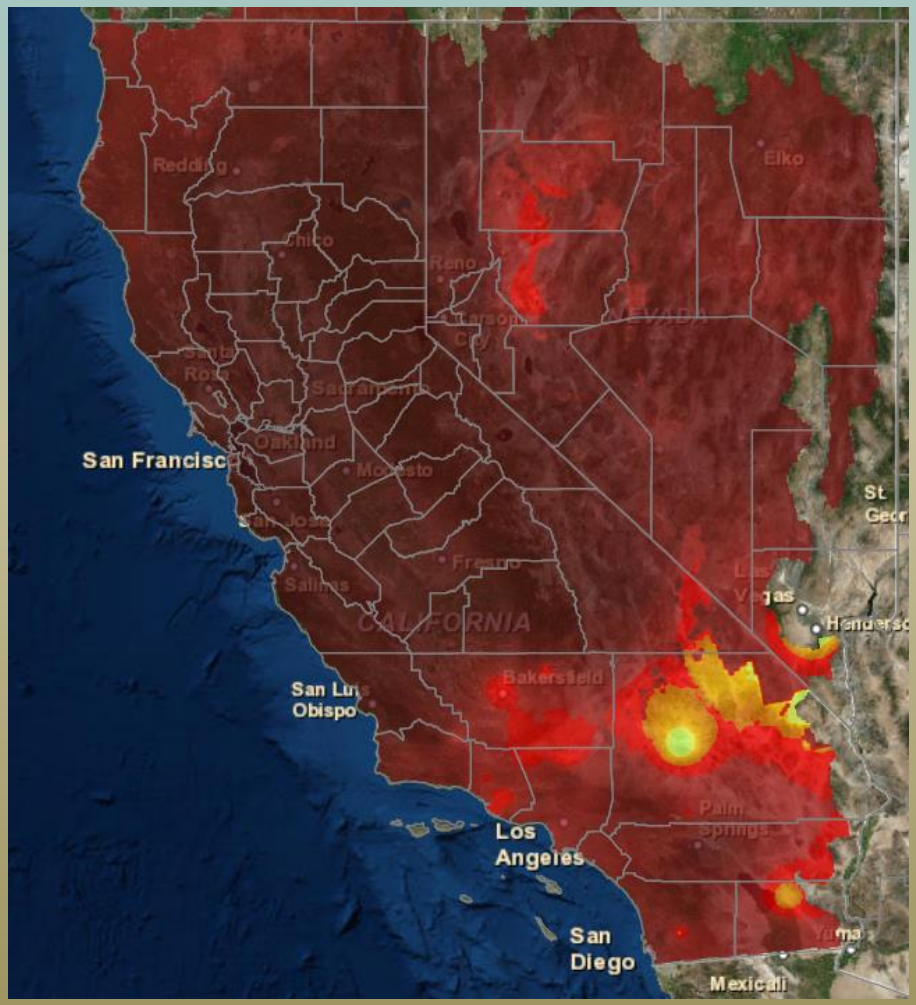


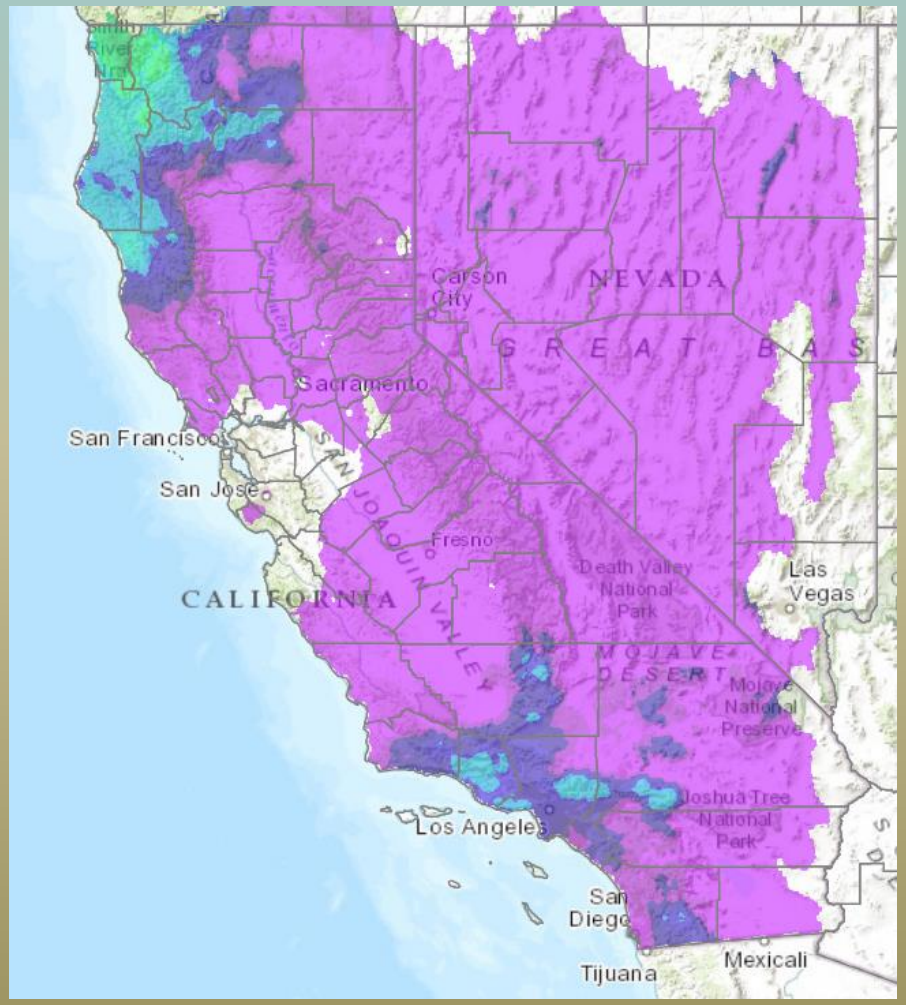


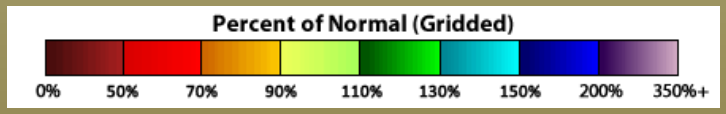


Precipitation Departure from Normal

January 2015

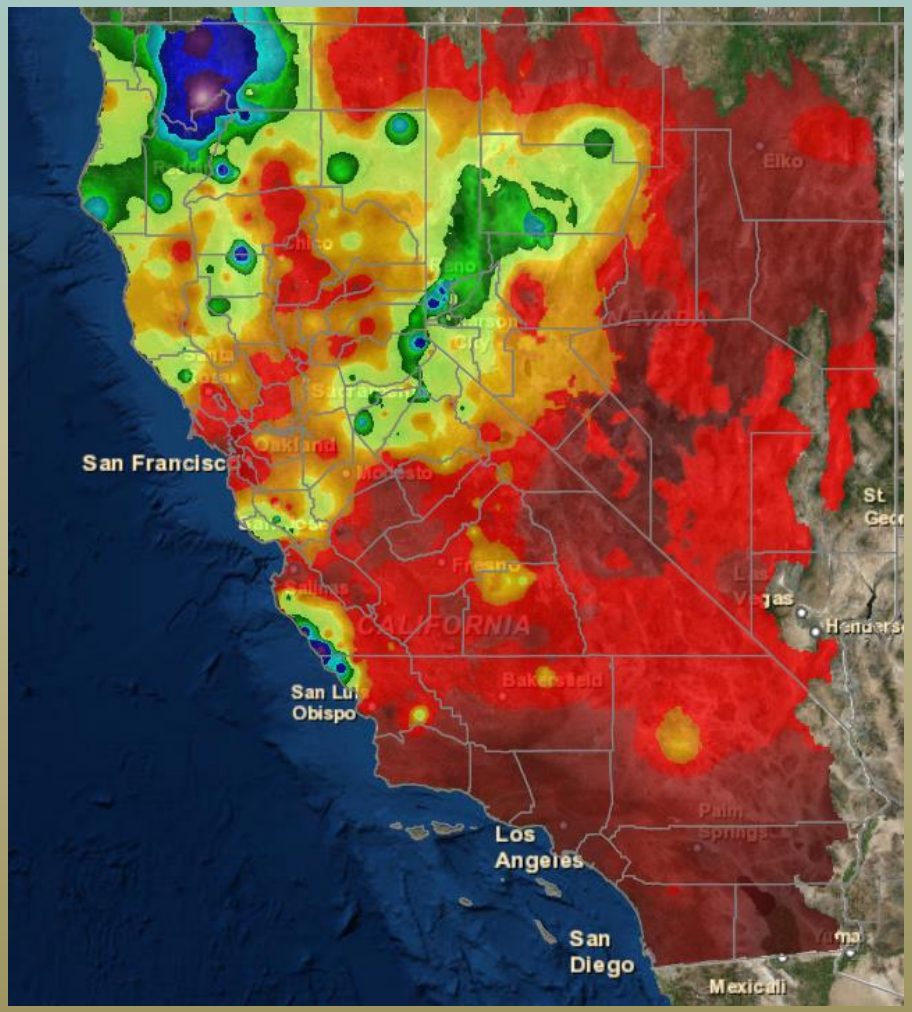


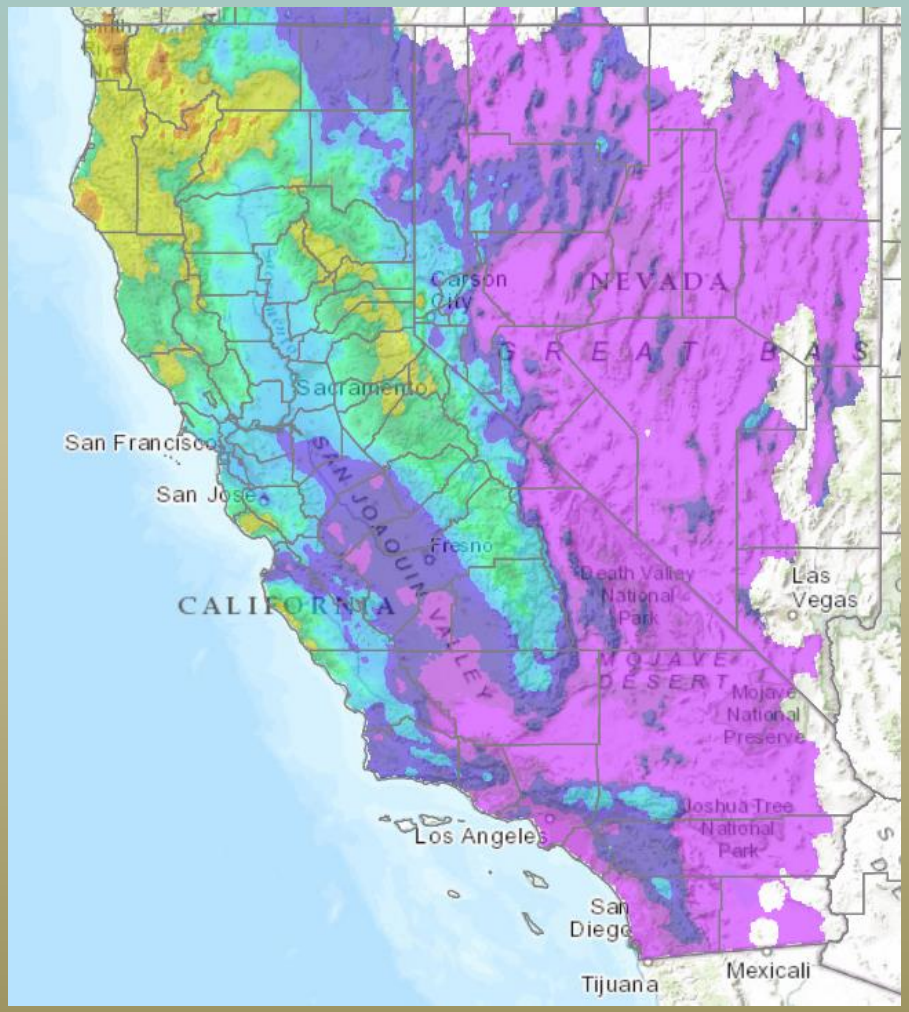


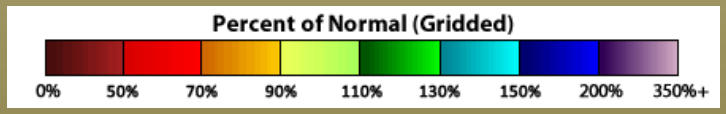


Precipitation Departure from Normal

February 2015

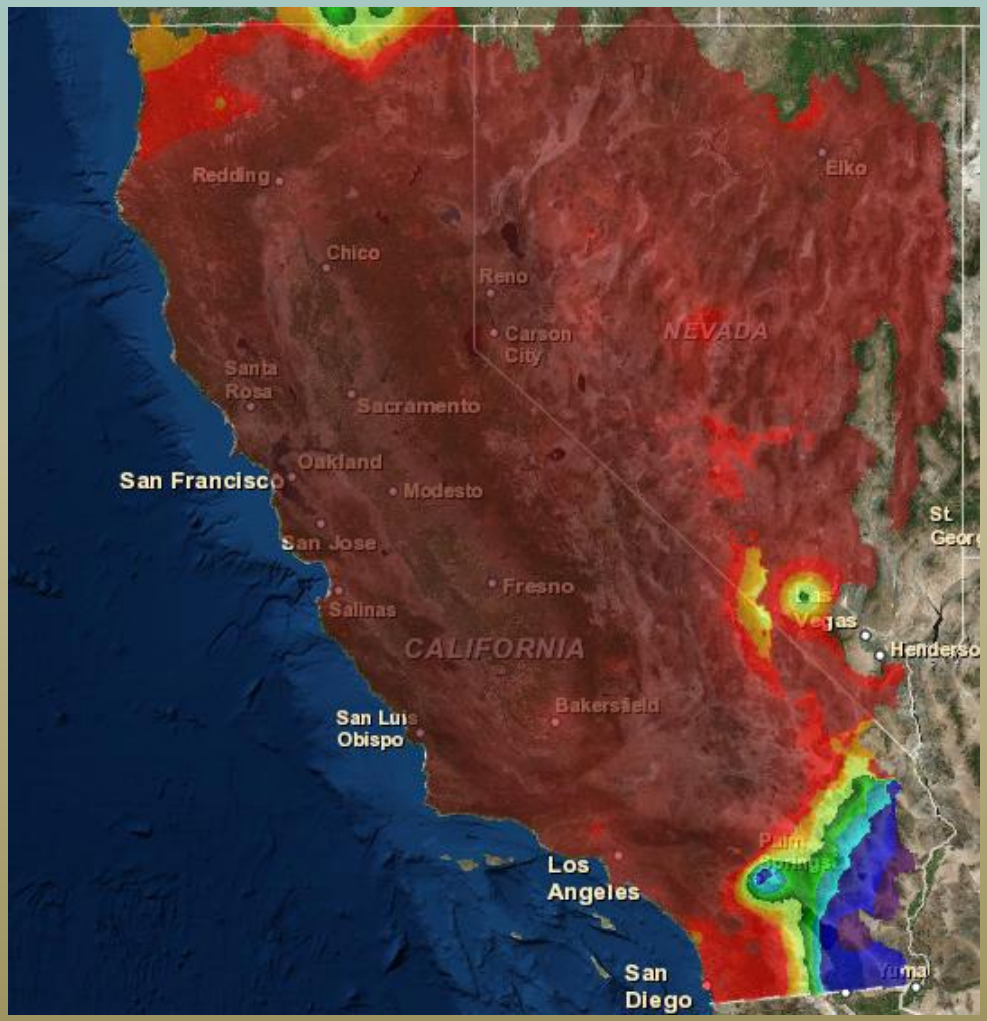


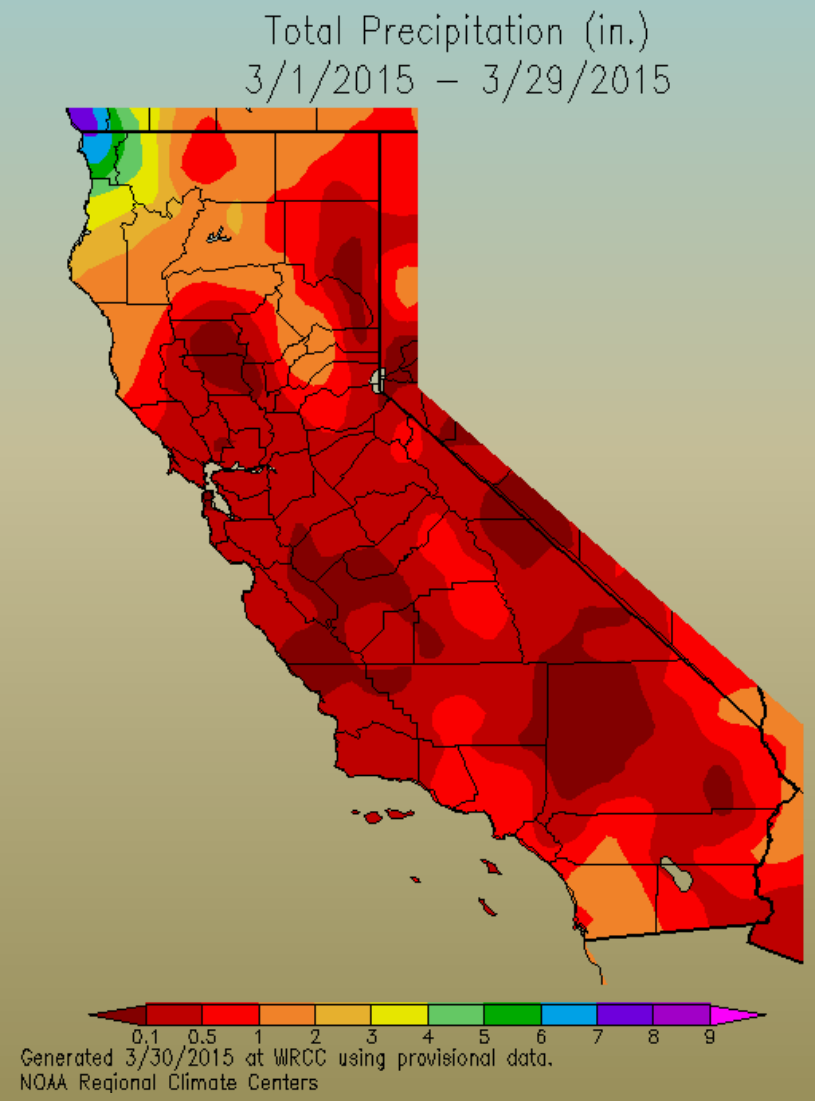


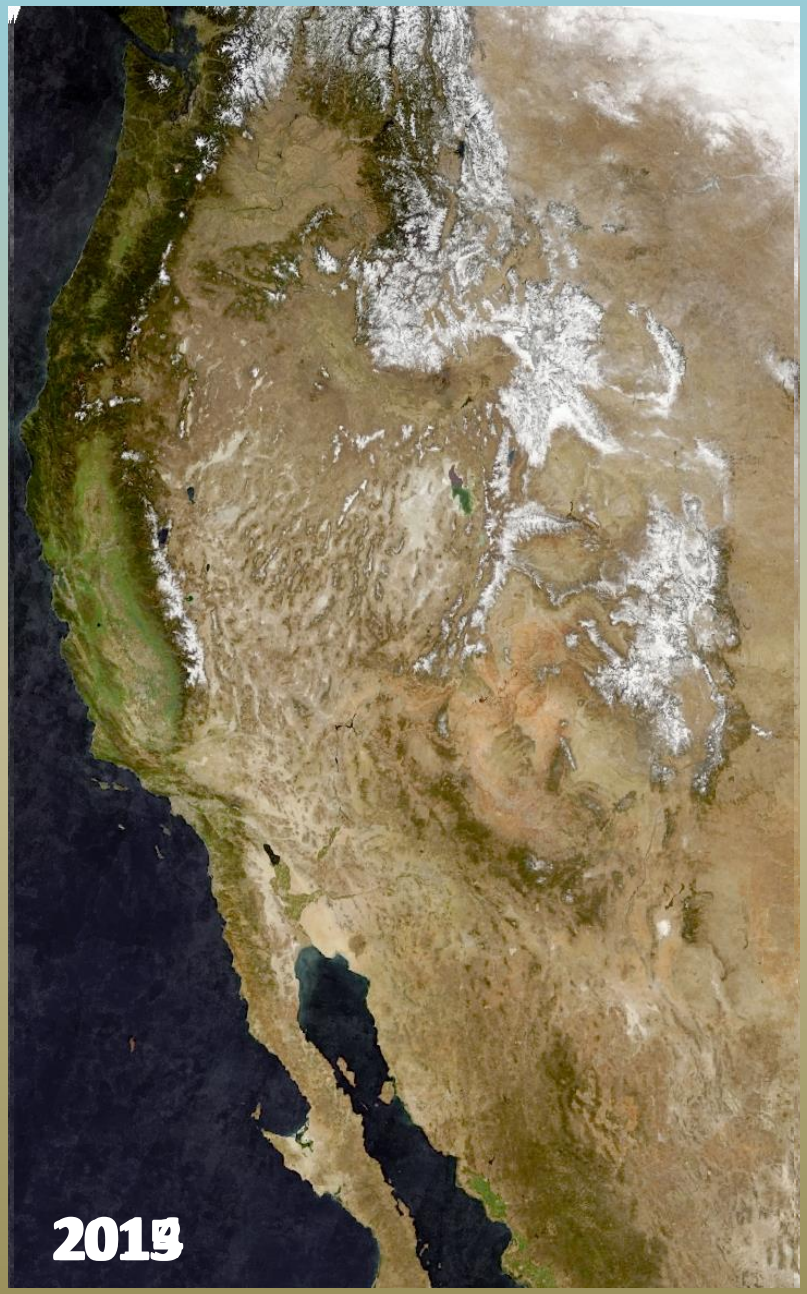


Precipitation Departure from Normal

March 2015

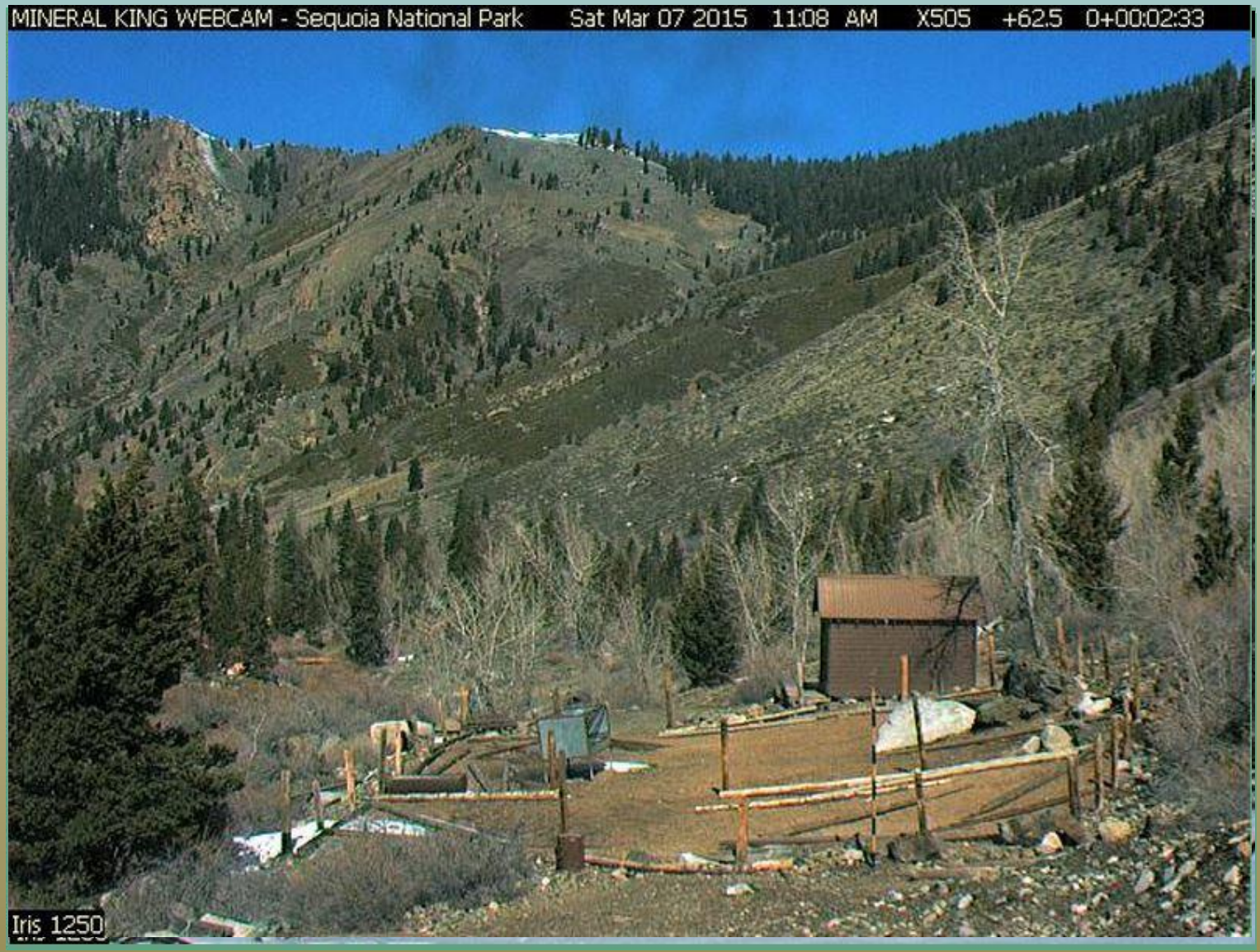






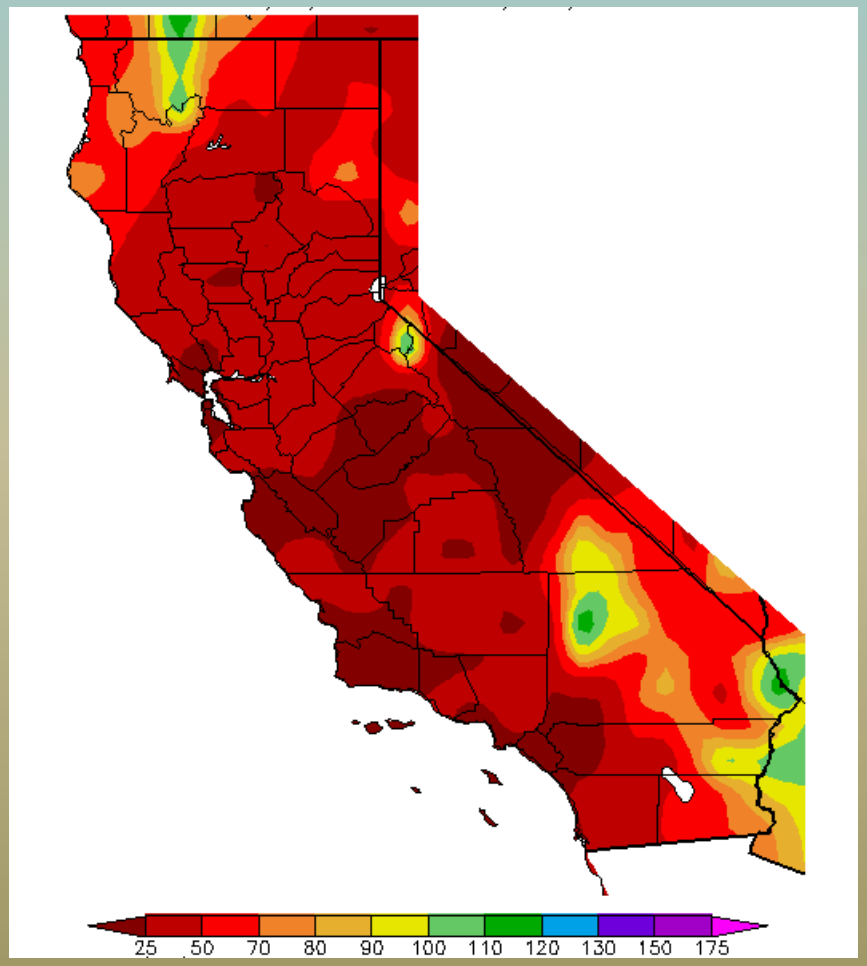
High Resolution Composite Satellite imagery (Feb 1 – March 5) showing snow cover

Sierra Snowpack

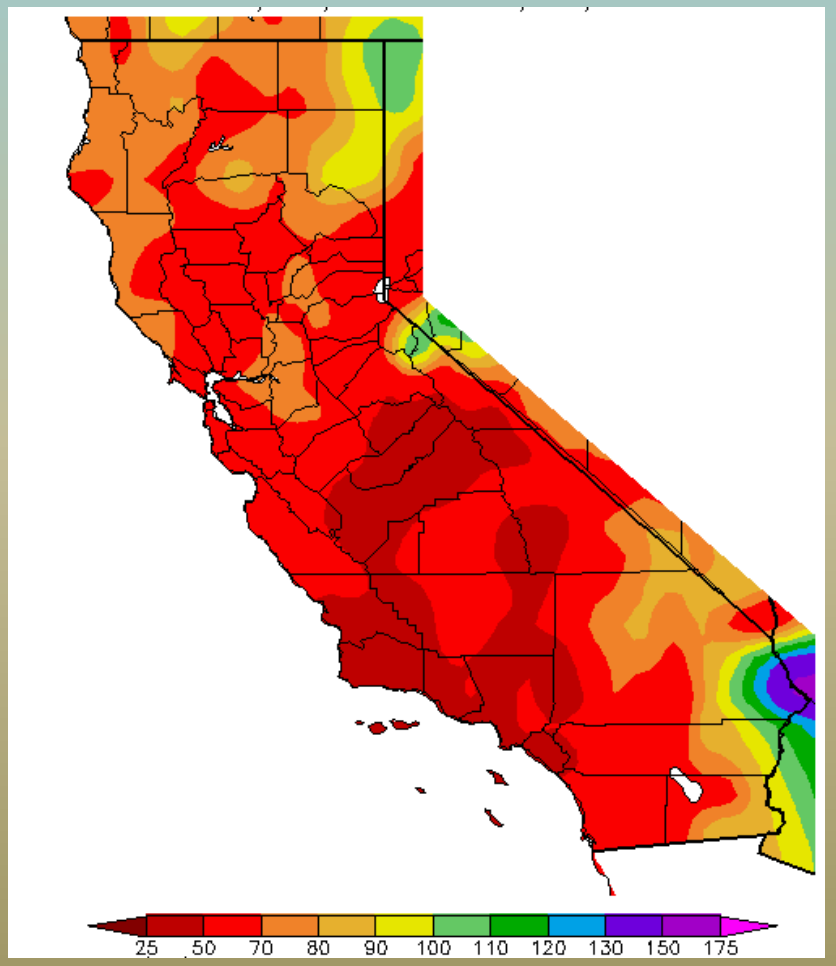


Precipitation Deficit

Since Jan. 1st:

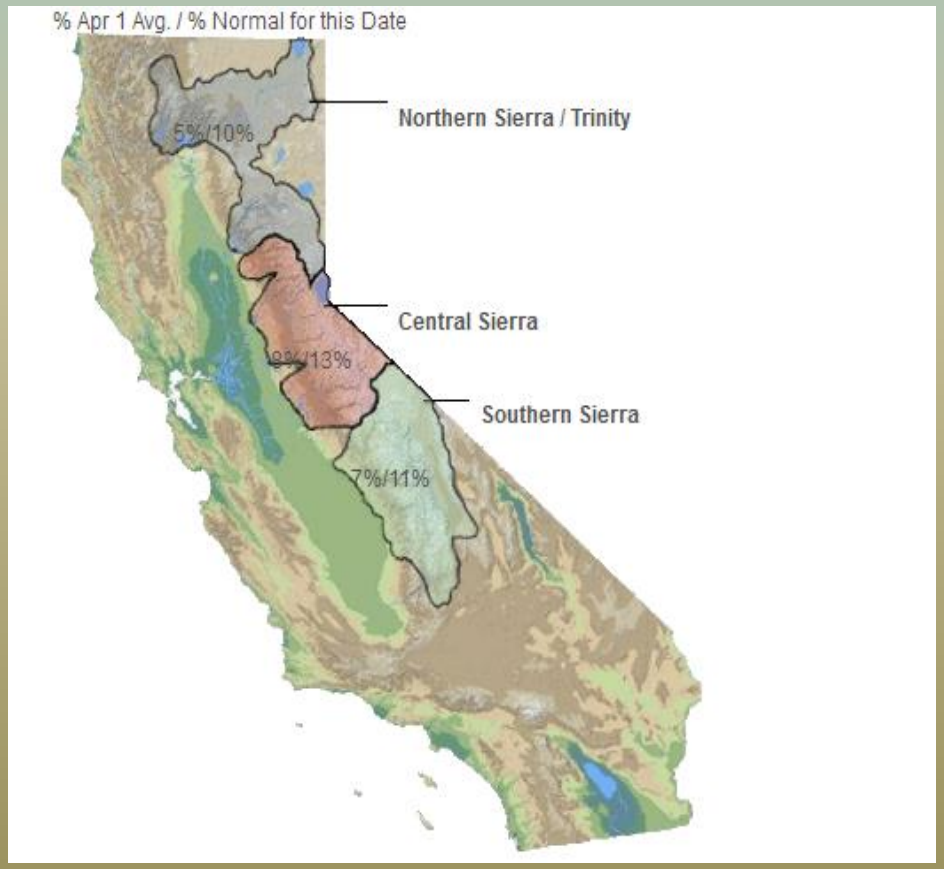


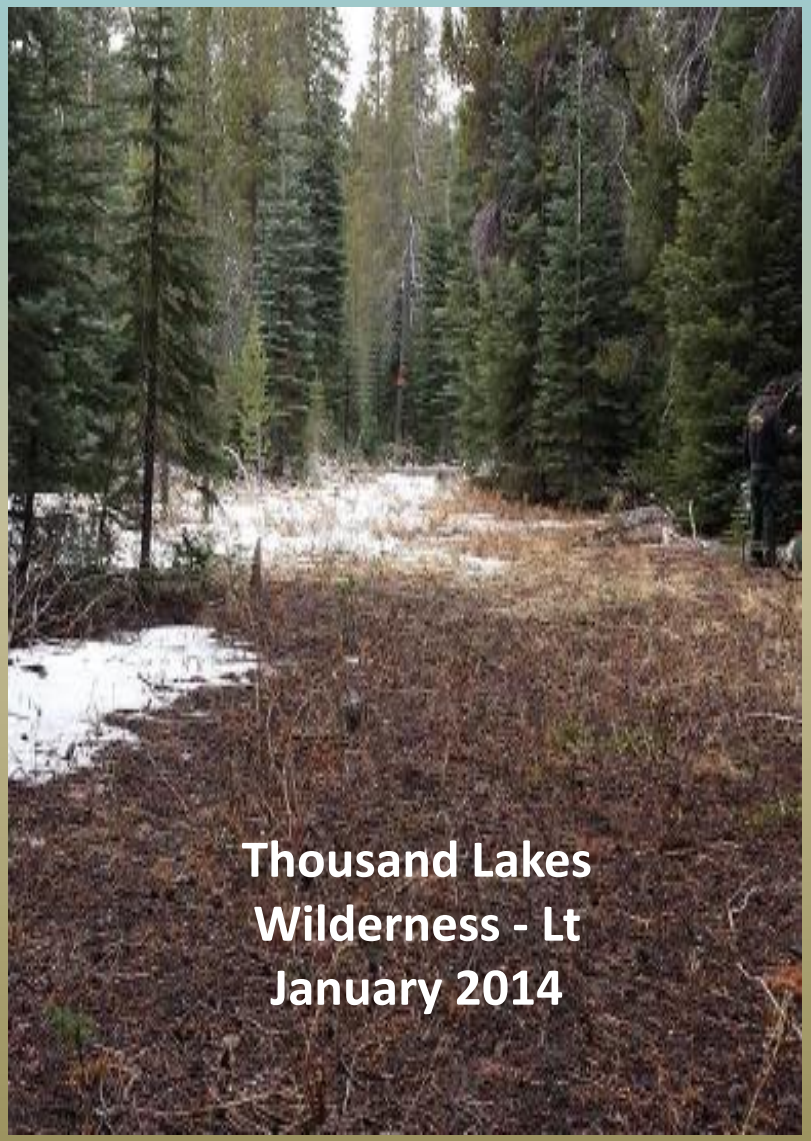
Since April 2012:



Winter Snow Pack Last Year

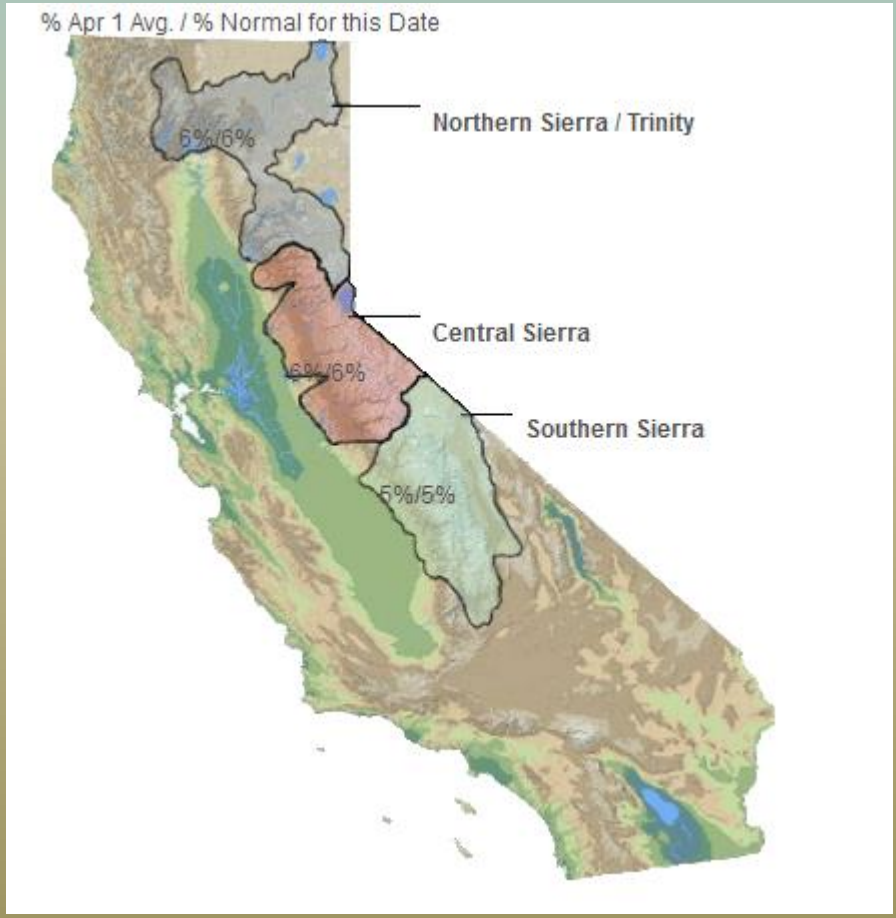
- **Snowpack in the Sierra in 2014 was under 15% of Normal**





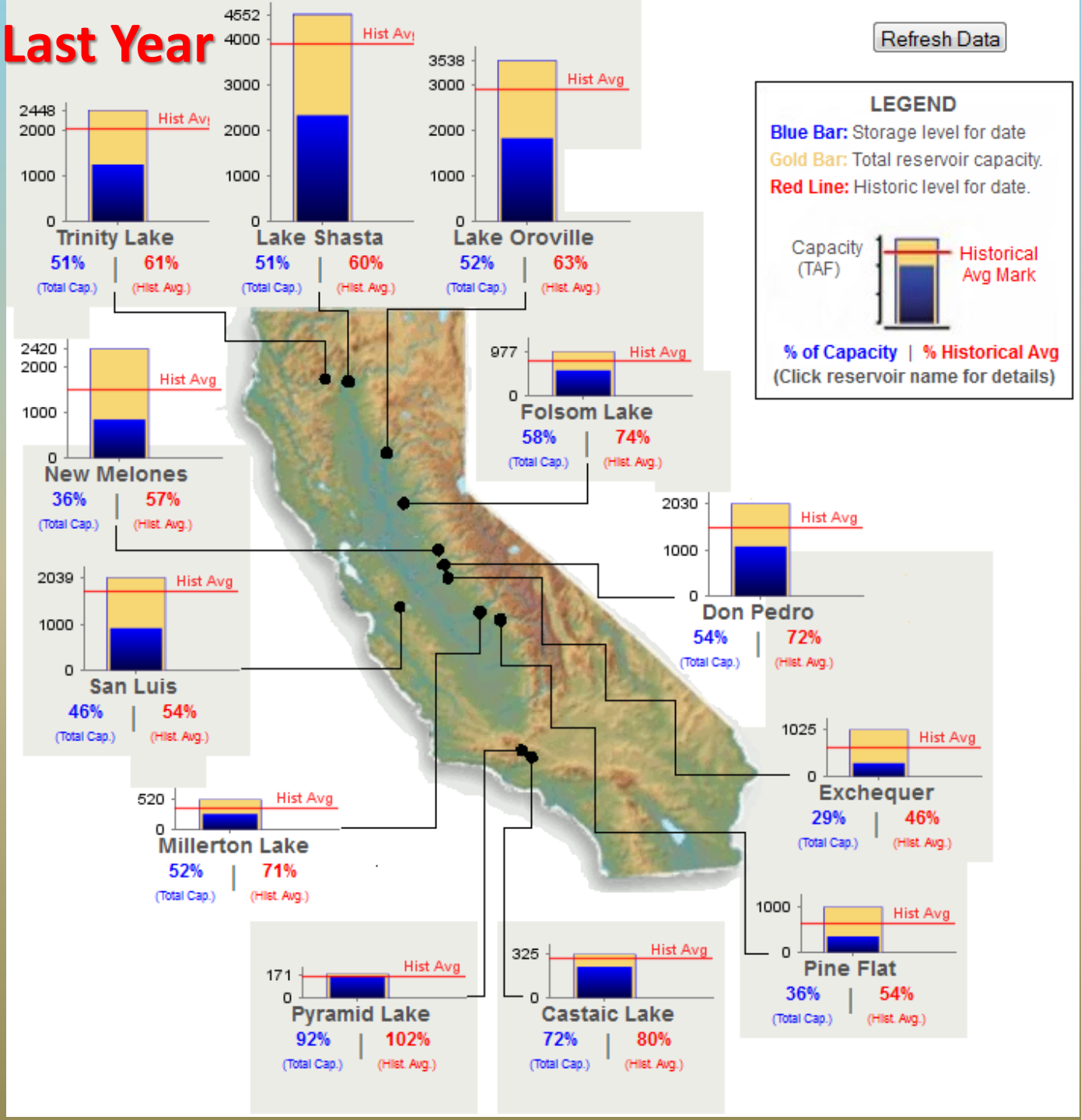
Winter Snow Pack This Year

- **Snowpack in the Sierra under 6% of Normal**



Mineral King, Spring 2015

Last Year

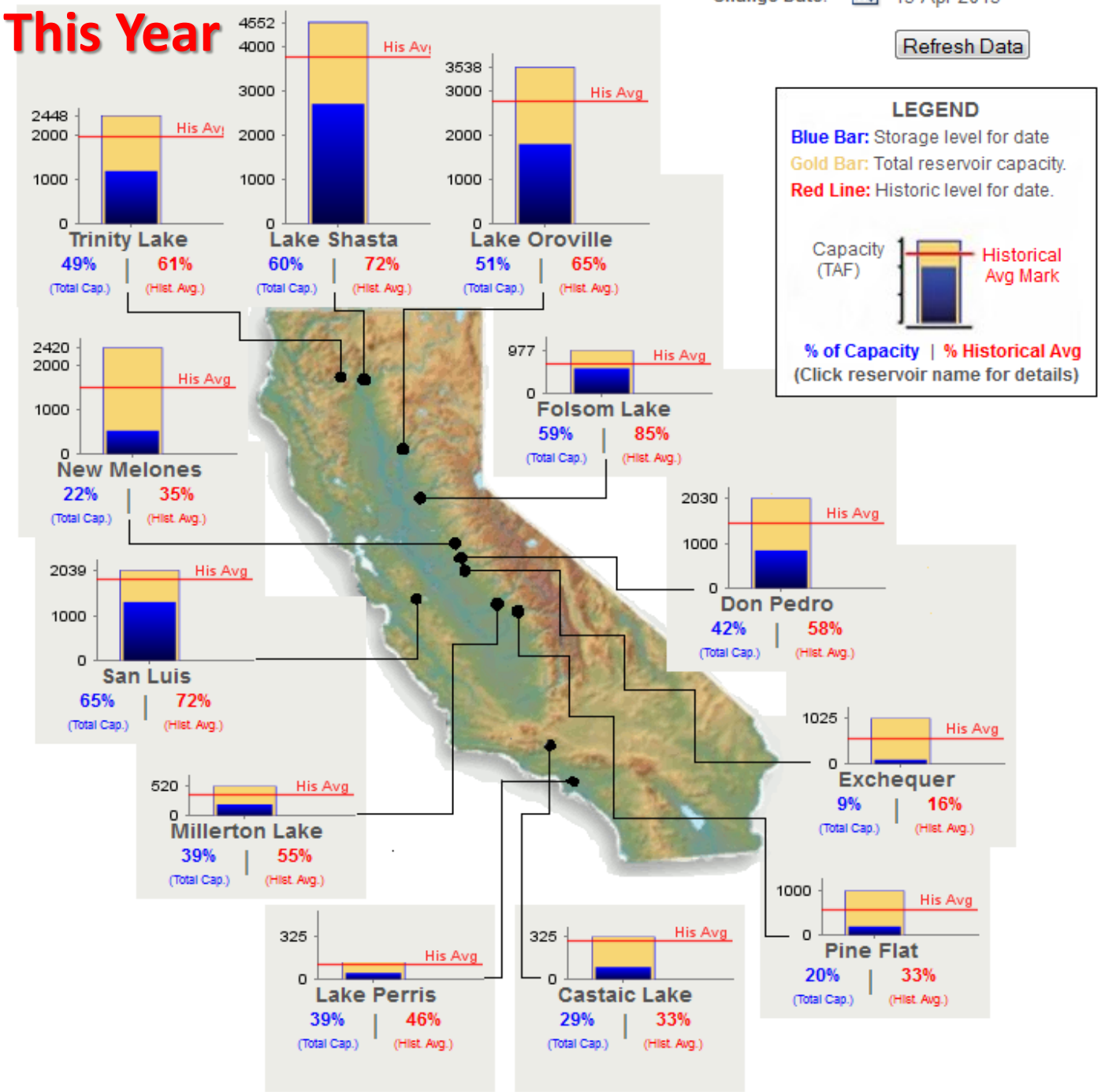

Refresh Data
LEGEND
Blue Bar: Storage level for date
Gold Bar: Total reservoir capacity.
Red Line: Historic level for date.
Capacity (TAF)
Historical Avg Mark
% of Capacity | % Historical Avg
(Click reservoir name for details)
Trinity Lake
51% (Total Cap.) | 61% (Hist. Avg.)
Lake Shasta
51% (Total Cap.) | 60% (Hist. Avg.)
Lake Oroville
52% (Total Cap.) | 63% (Hist. Avg.)
New Melones
36% (Total Cap.) | 57% (Hist. Avg.)
Folsom Lake
58% (Total Cap.) | 74% (Hist. Avg.)
Don Pedro
54% (Total Cap.) | 72% (Hist. Avg.)
San Luis
46% (Total Cap.) | 54% (Hist. Avg.)
Exchequer
29% (Total Cap.) | 46% (Hist. Avg.)
Millerton Lake
52% (Total Cap.) | 71% (Hist. Avg.)
Pine Flat
36% (Total Cap.) | 54% (Hist. Avg.)
Pyramid Lake
92% (Total Cap.) | 102% (Hist. Avg.)
Castaic Lake
72% (Total Cap.) | 80% (Hist. Avg.)

Data as of Midnight: 13-Apr-2015

Change Date: 13-Apr-2015

Refresh Data

This Year



LEGEND

Blue Bar: Storage level for date

Gold Bar: Total reservoir capacity.

Red Line: Historic level for date.

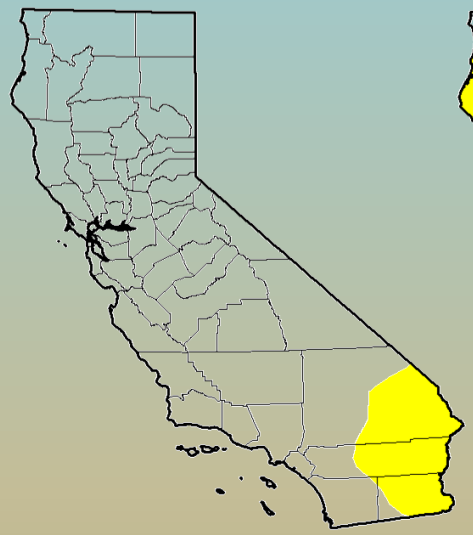
Capacity (TAF) — Historical Avg Mark

% of Capacity | **% Historical Avg**

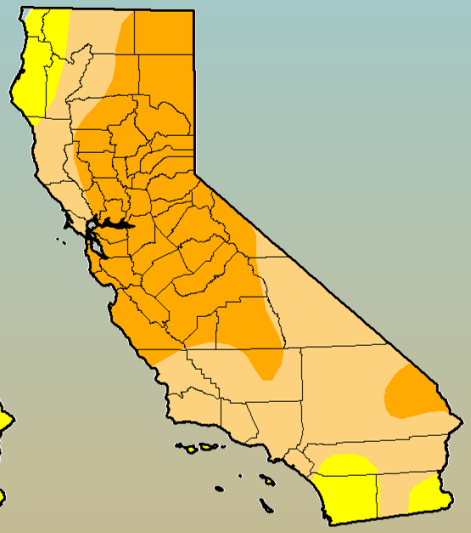
(Click reservoir name for details)

Drought Progression

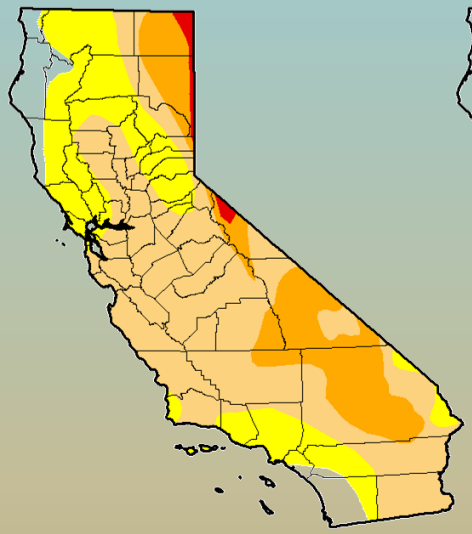
Fall 2011



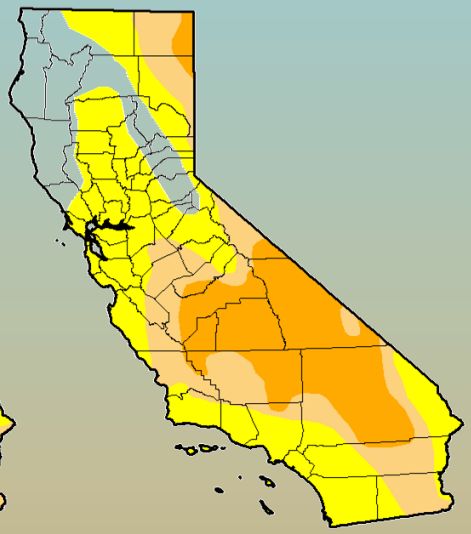
Spring 2012



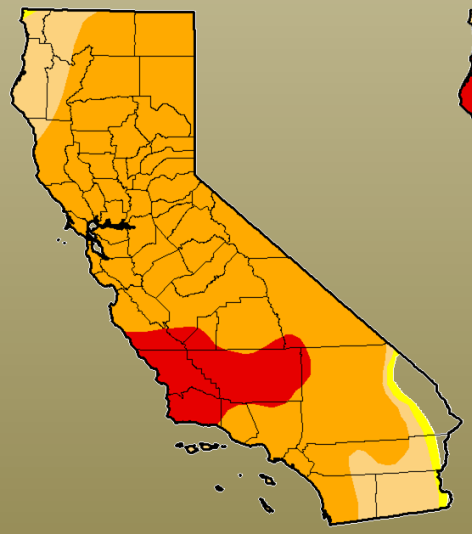
Fall 2012



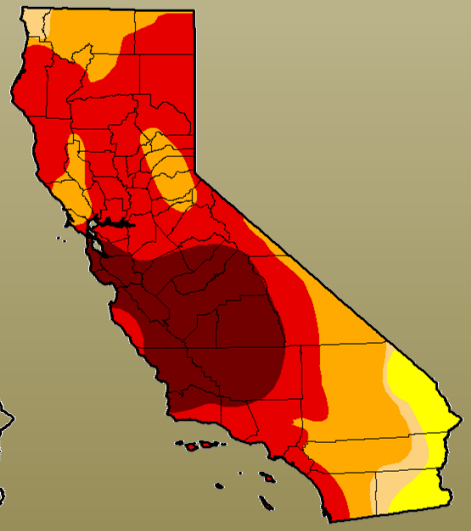
Spring 2013



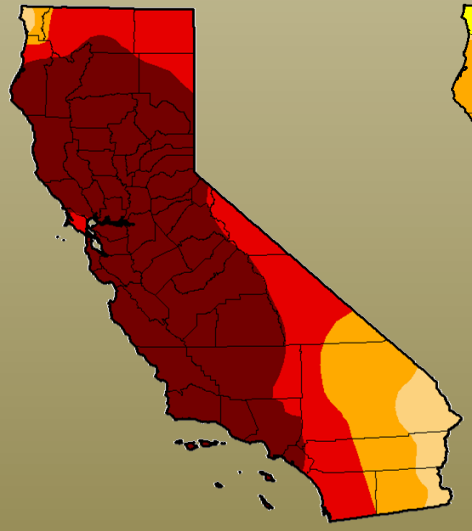
Fall 2013



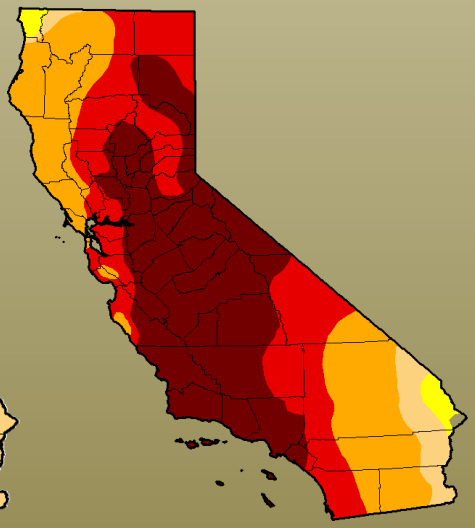
Spring 2014



Fall 2014

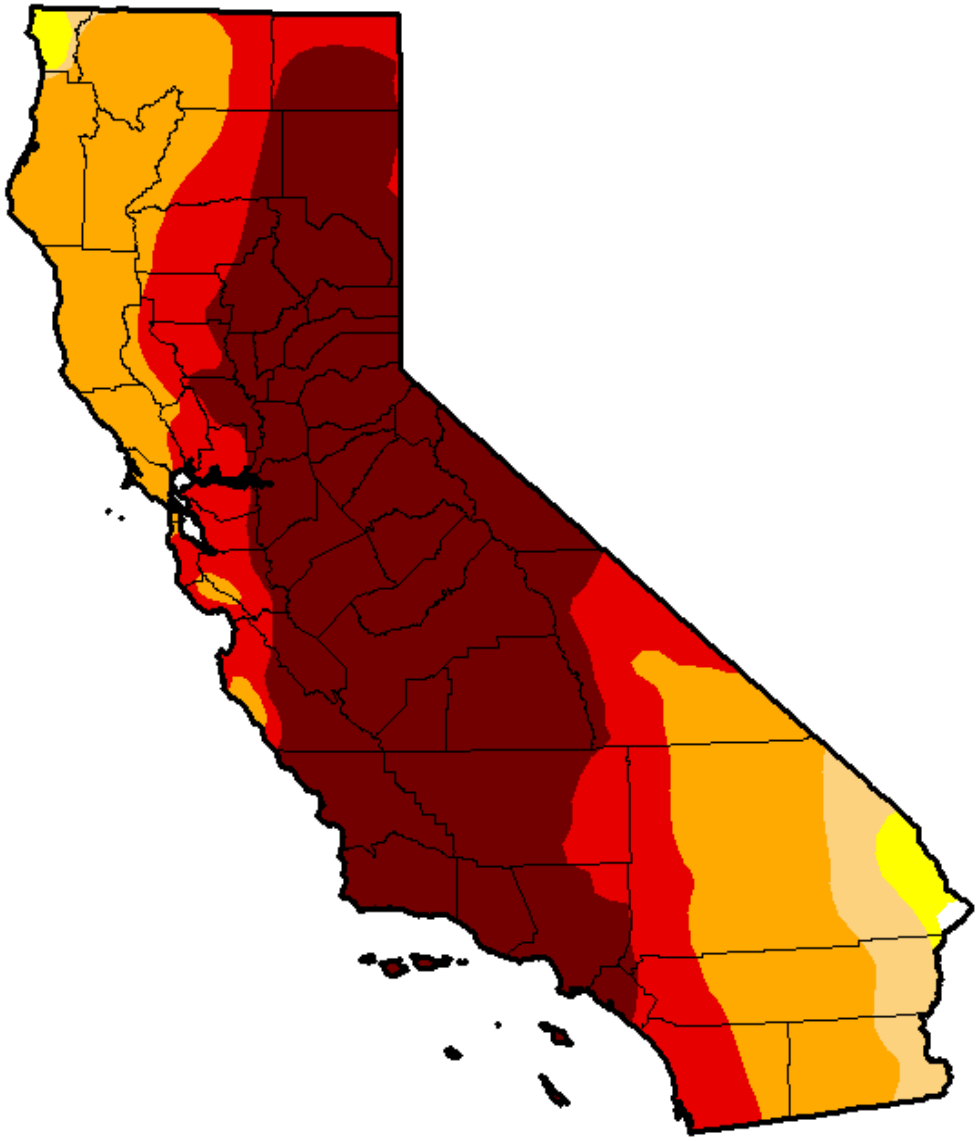


Spring 2015



U.S. Drought Monitor

California



May 5, 2015

(Released Thursday, May. 7, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.14	99.86	98.28	93.91	66.60	46.77
Last Week 4/28/2015	0.14	99.86	98.11	93.44	66.60	46.77
3 Months Ago 2/3/2015	0.16	99.84	98.13	93.57	77.46	39.99
Start of Calendar Year 12/30/2014	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago 5/6/2014	0.00	100.00	100.00	95.93	76.68	24.77

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

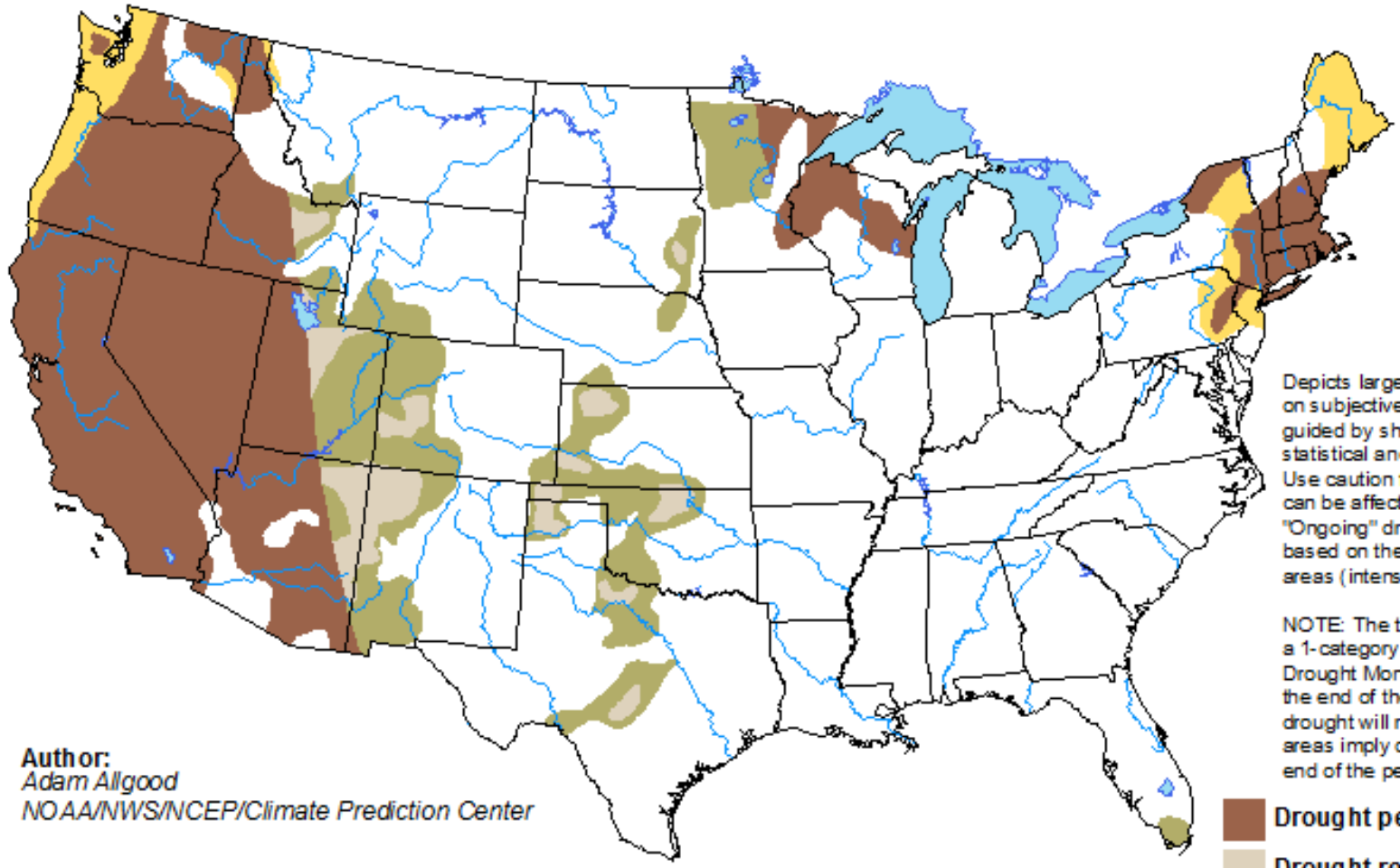
Mark Svoboda

National Drought Mitigation Center

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for May 21 - August 31, 2015
Released May 21, 2015



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

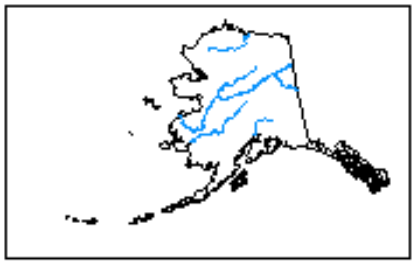
Drought persists/intensifies

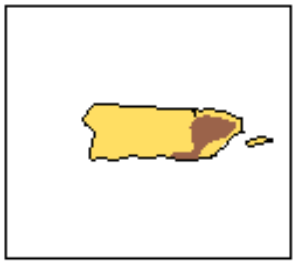
Drought remains but improves

Drought removal likely

Drought development likely

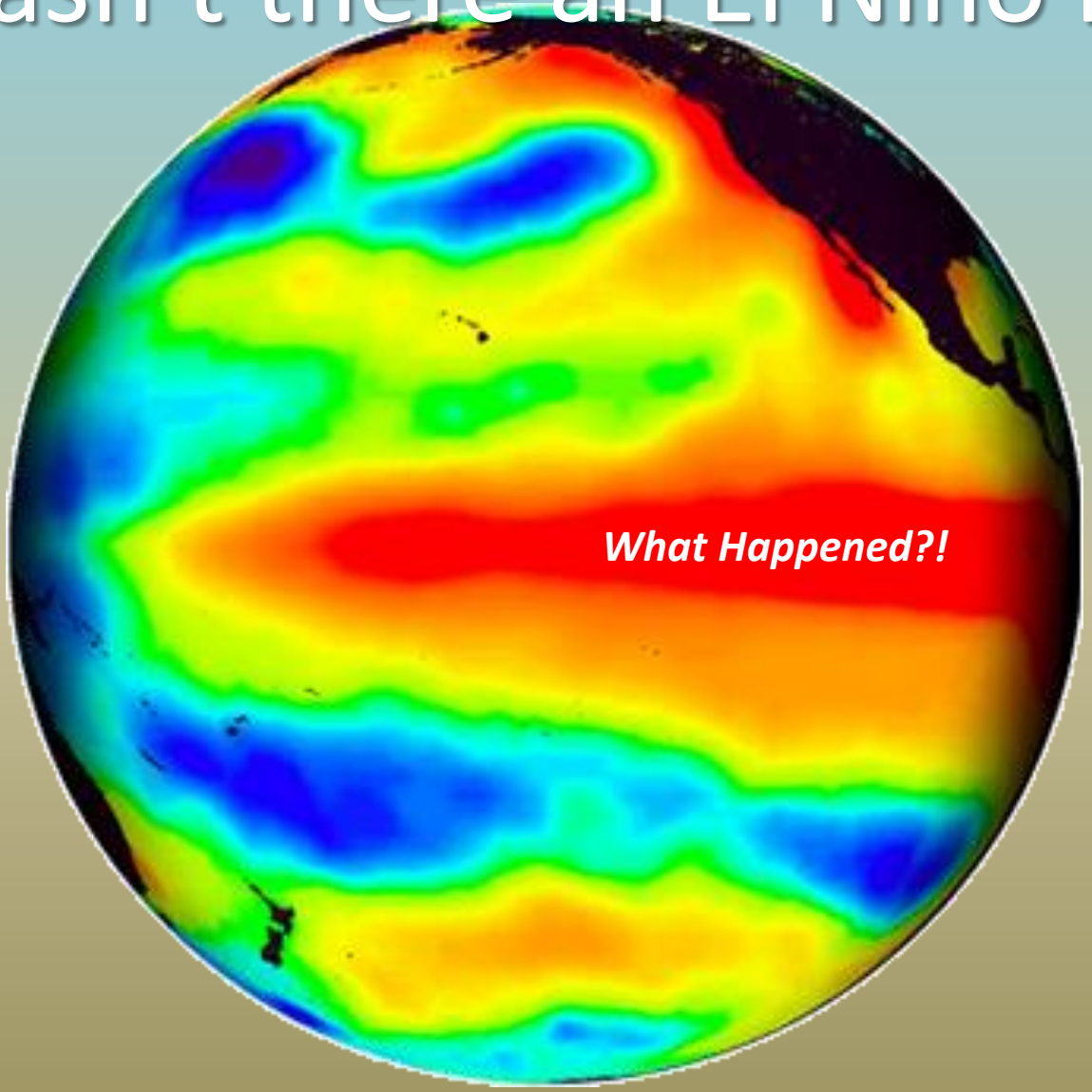
Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center



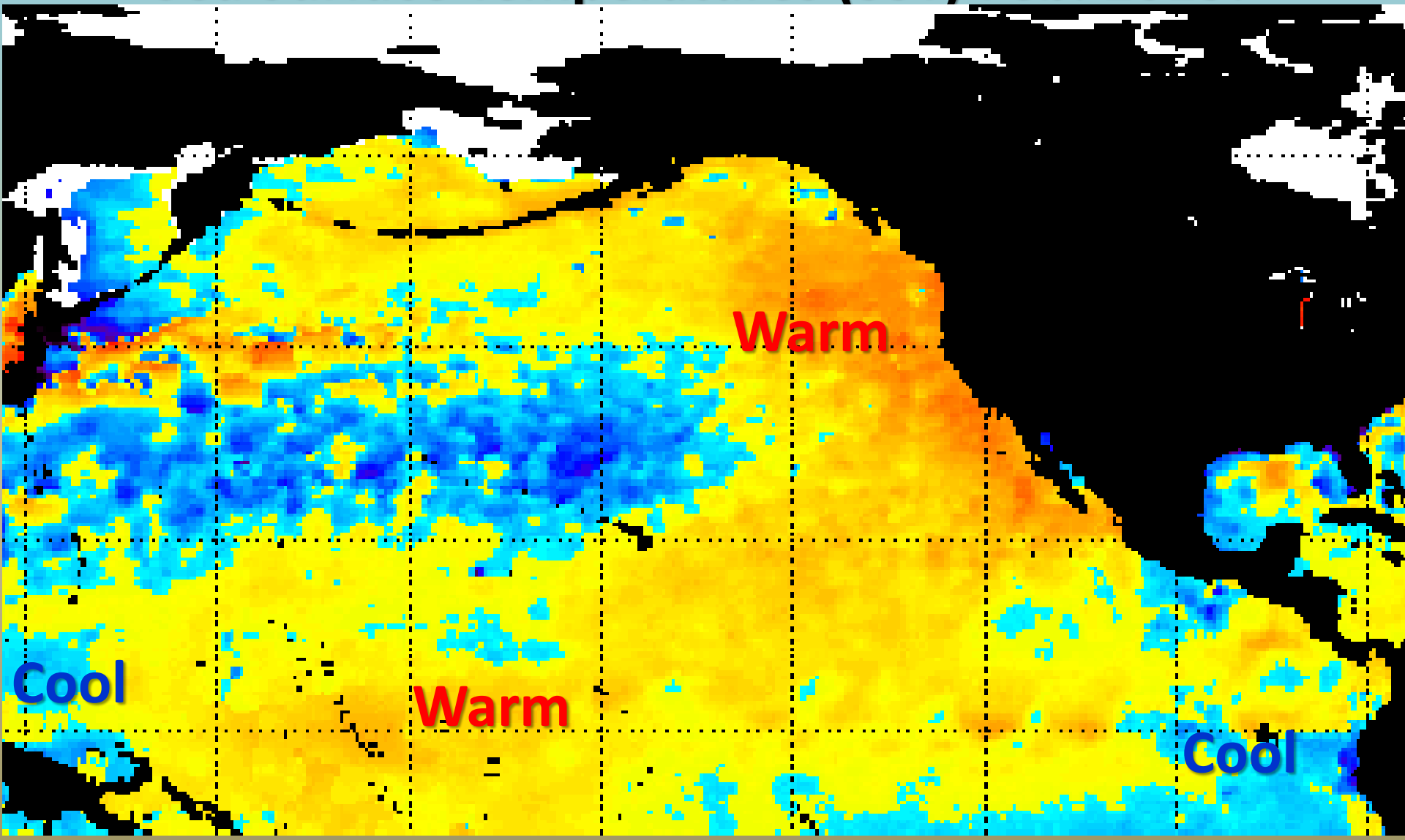


http://go.usa.gov/hHTe

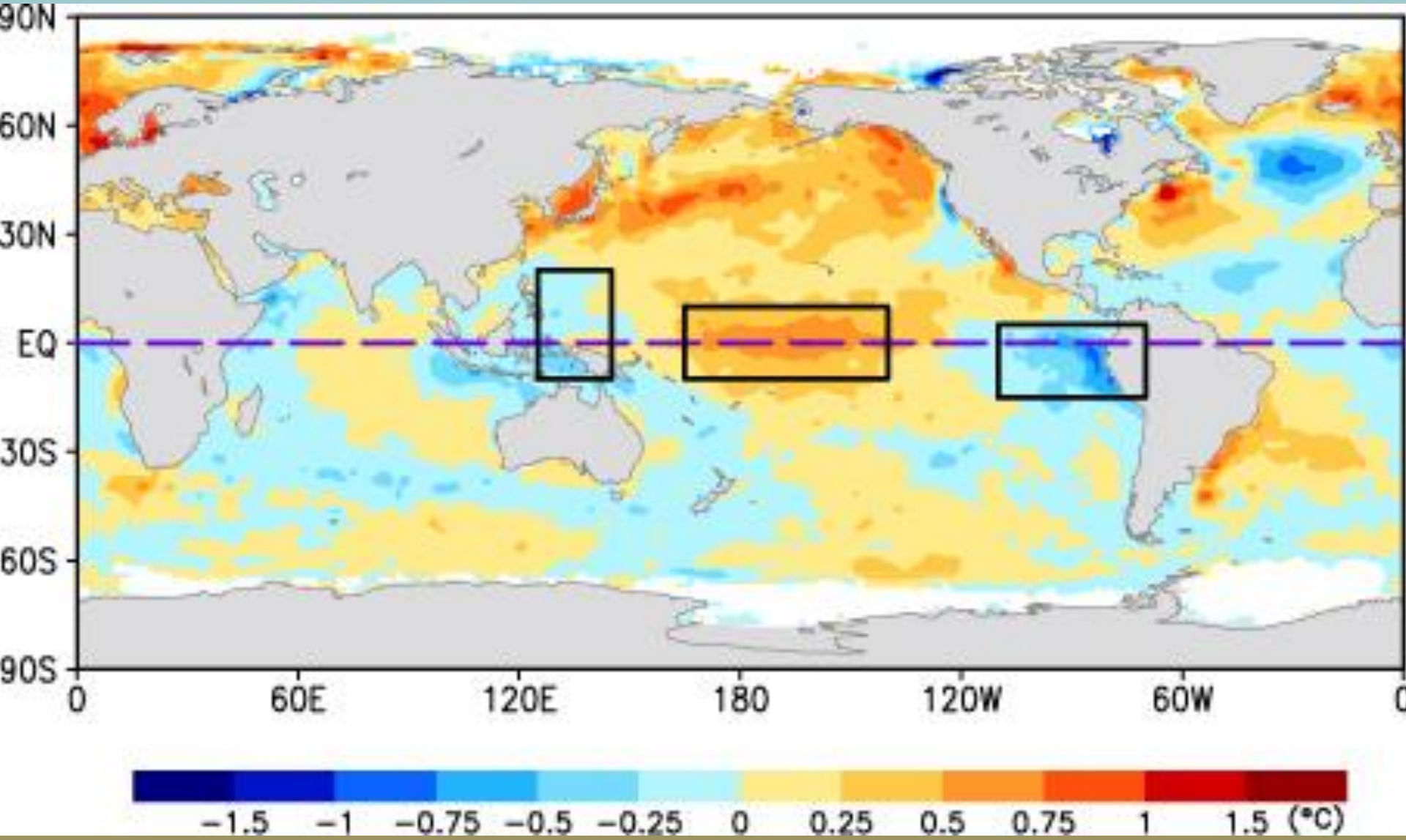
But wasn’t there an El Nino last fall?



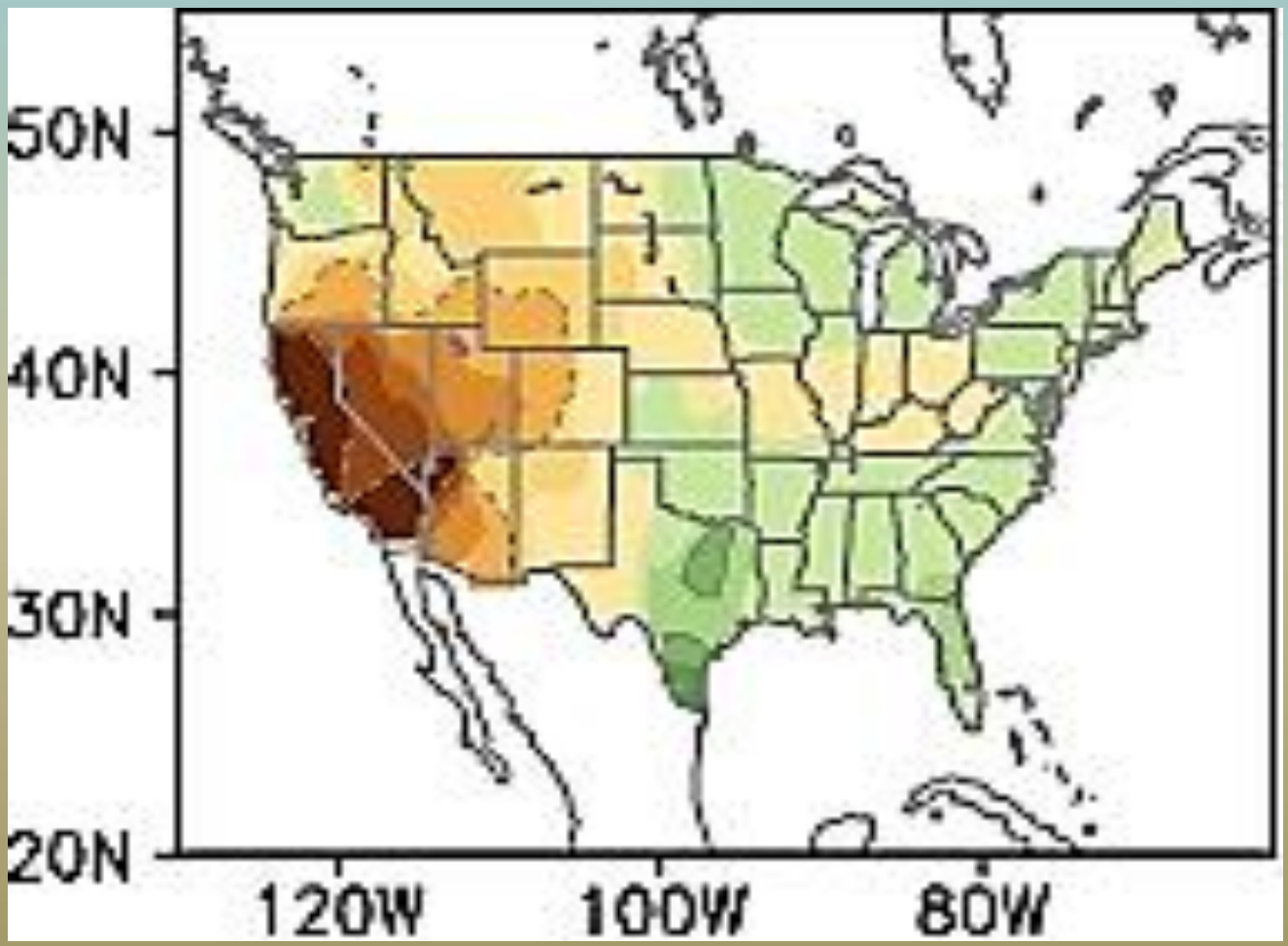
Sea Surface Temperatures (SST) Feb. 2015:



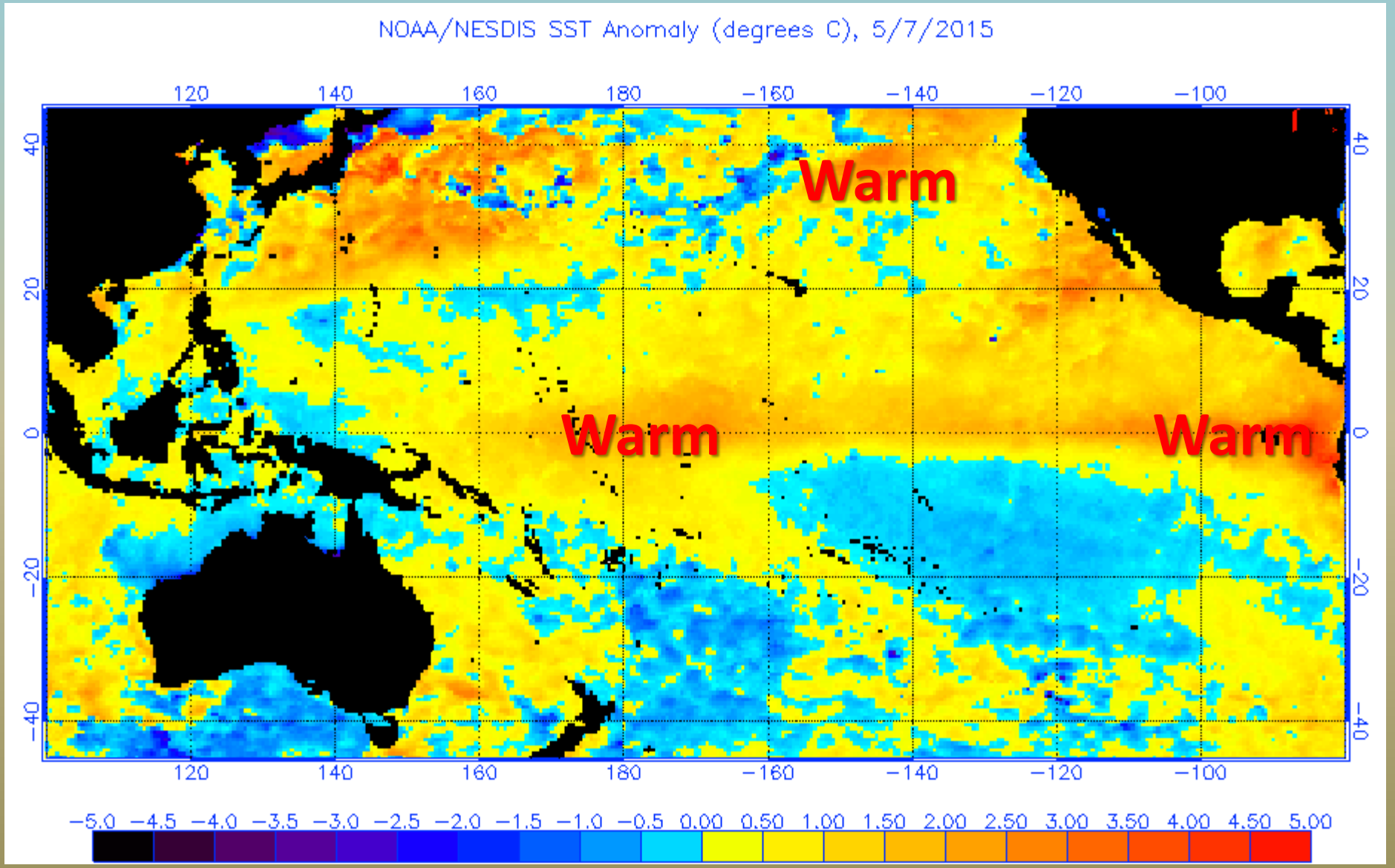
El Niño Modoki Pattern



Resultant Precipitation during a Modoki Pattern



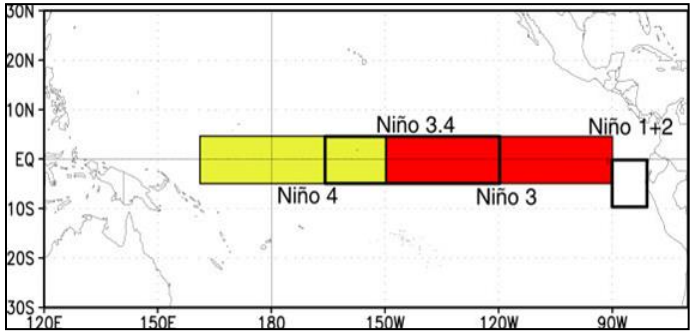
But…cold water off S. American Coast warming

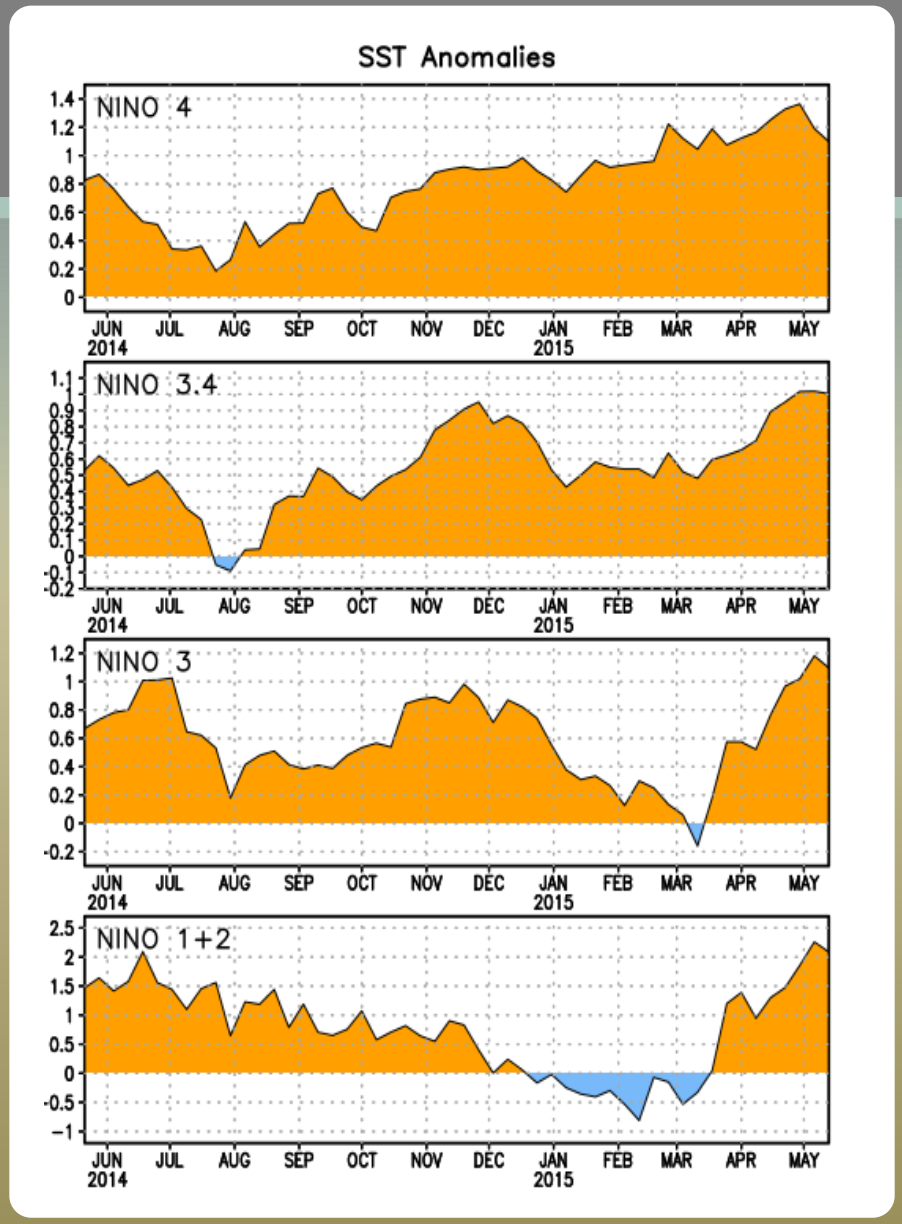


Niño Region SST Departures (ºC) Recent Evolution

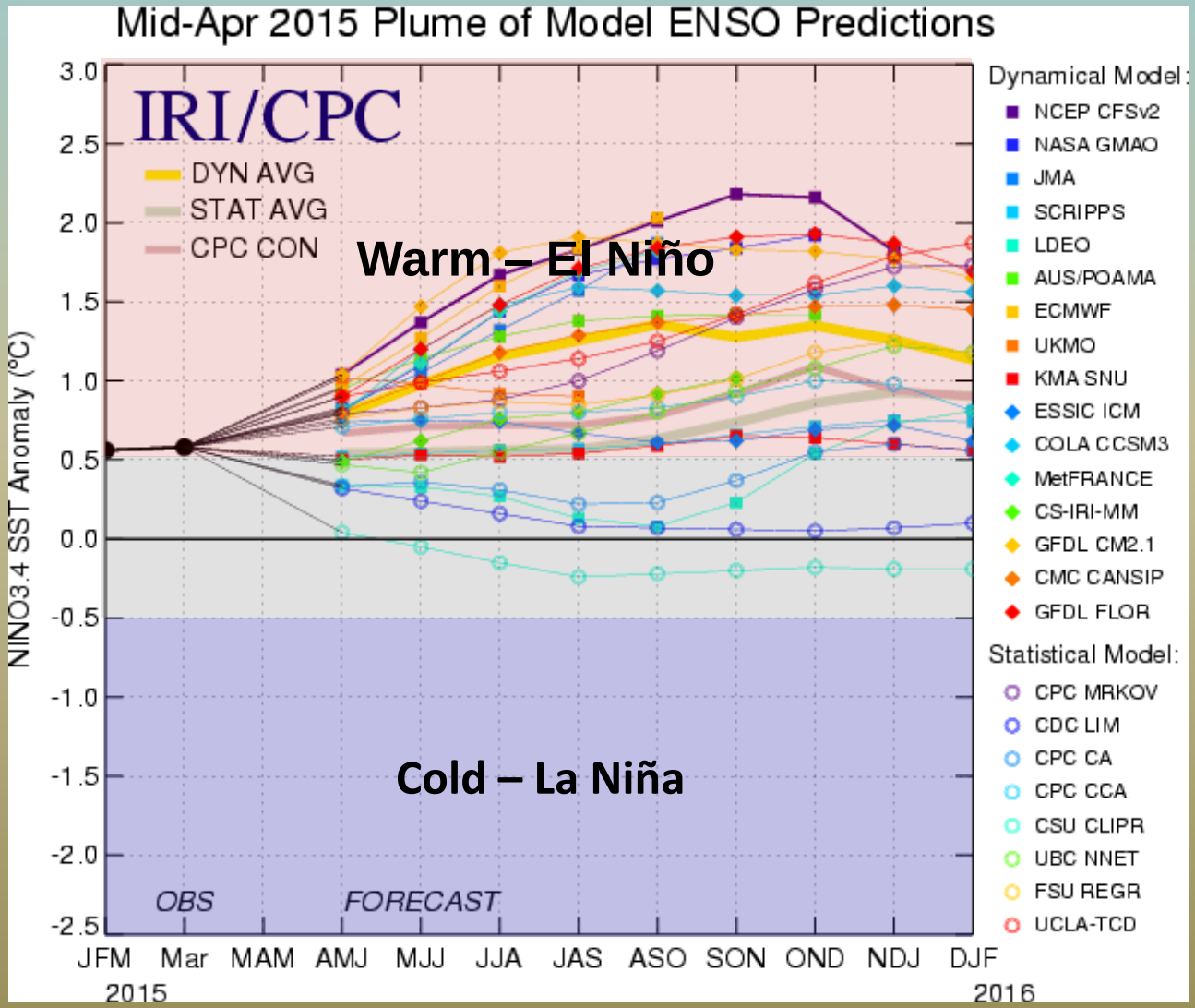
The latest weekly SST departures are:

Niño 4	1.1ºC
Niño 3.4	1.0ºC
Niño 3	1.1ºC
Niño 1+2	2.1ºC



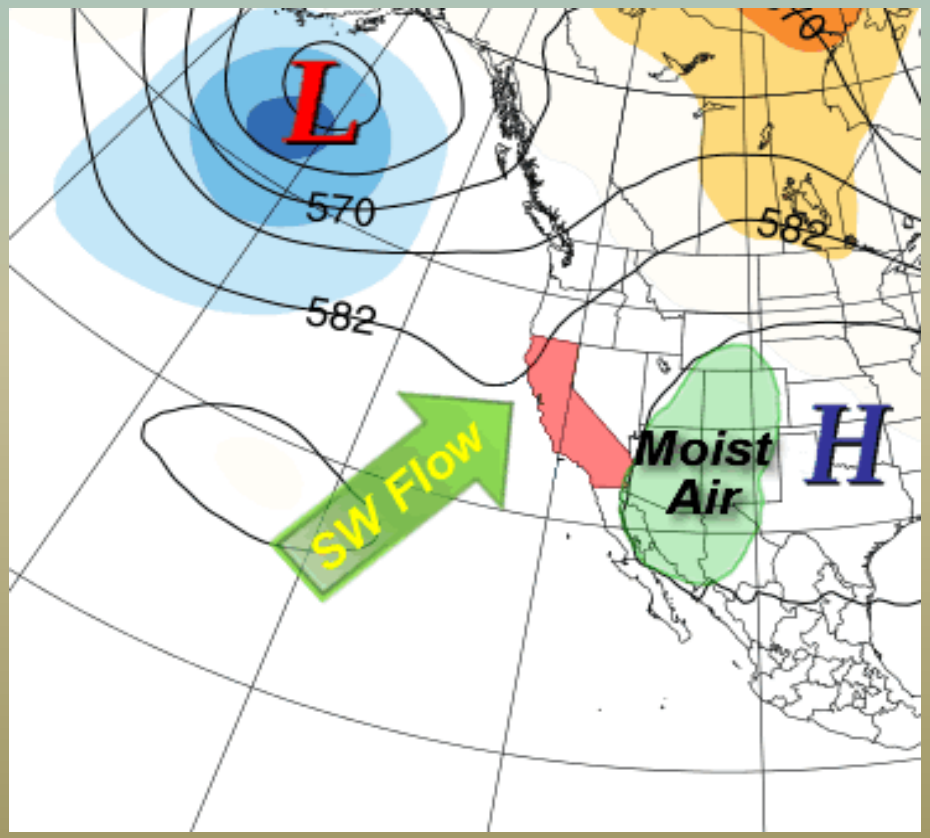


El Niño/La Niña



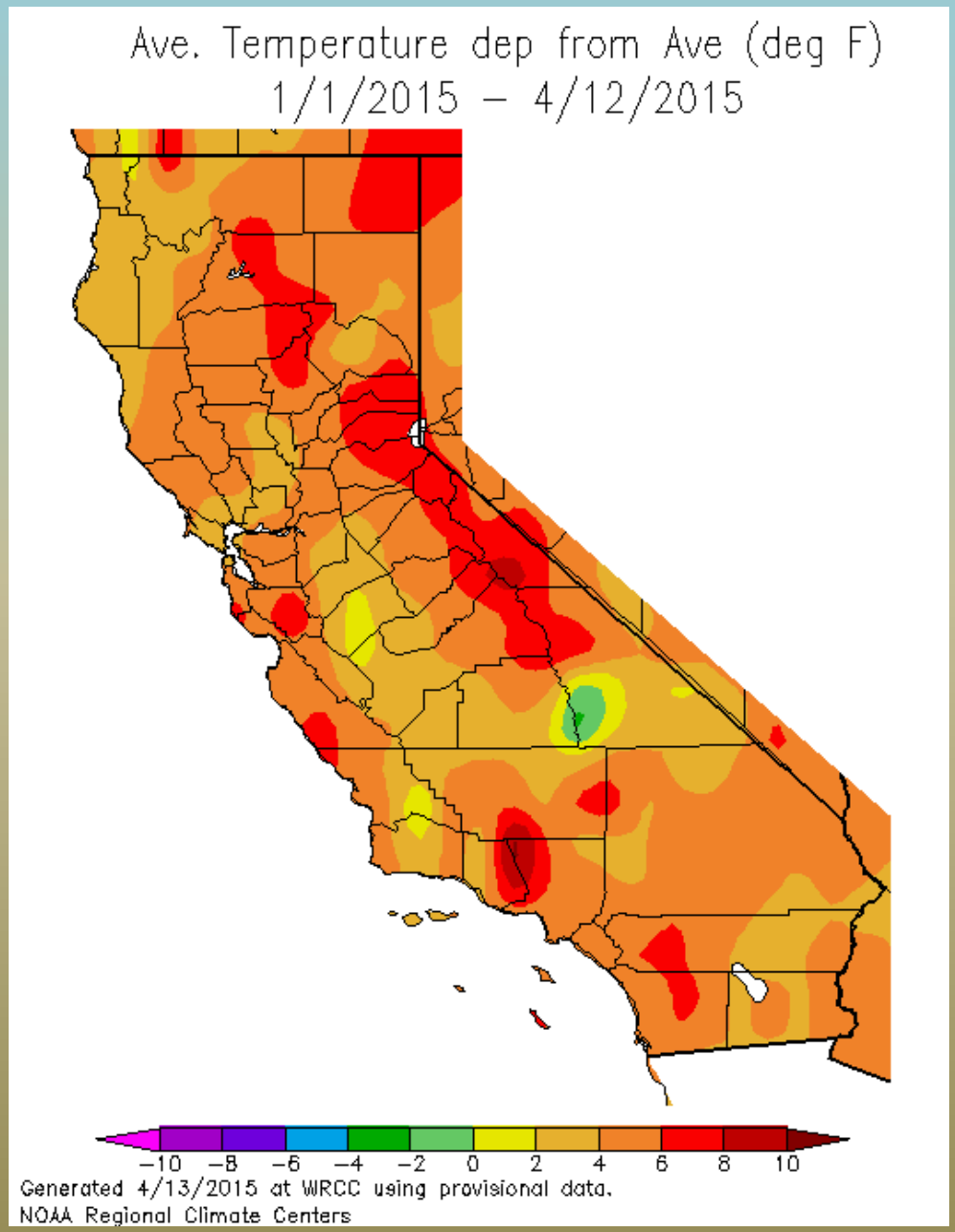
Possible Weather Pattern - Summer

July-August



- If El Niño develops this summer as suggested by computer models, there may be additional moisture available to generate summer thunderstorms.
- There may be a higher number of thunderstorms than usual this summer, especially for the eastern deserts.
- Last year, there were a much higher than normal number of days with wet thunderstorms

Warm SST's likely causing well above normal temps.

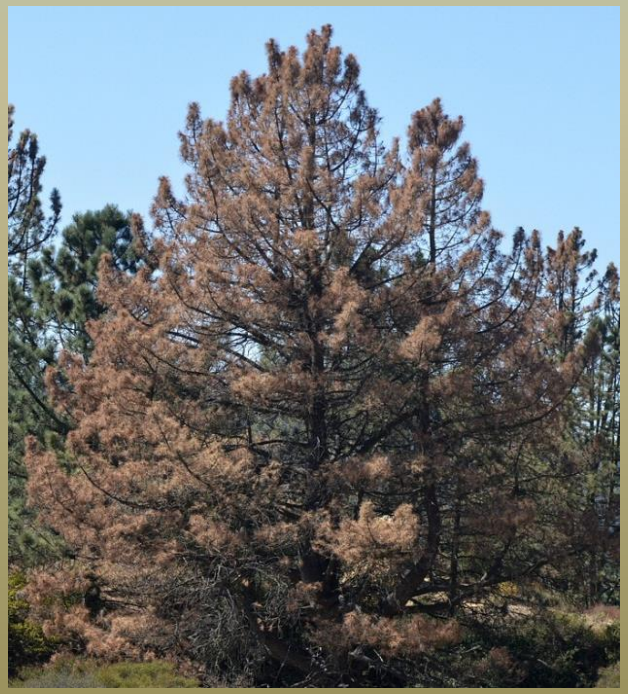


Warm SST's effects are two-fold:

1) Warmer than normal ocean temps will weaken temperature gradient from sea to desert. Result: Weaker onshore flow this spring

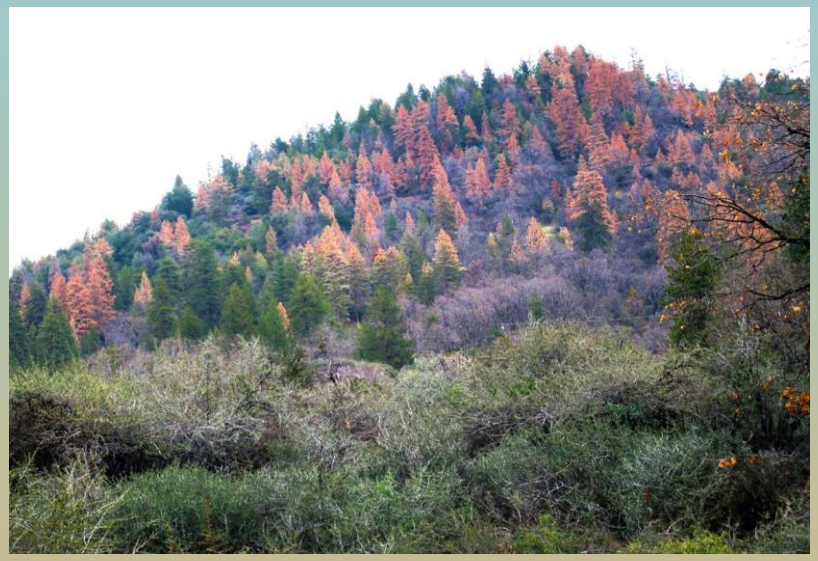
2) Weaker temp. inversion will likely lead to less marine layer coverage this spring.

Drought Stress

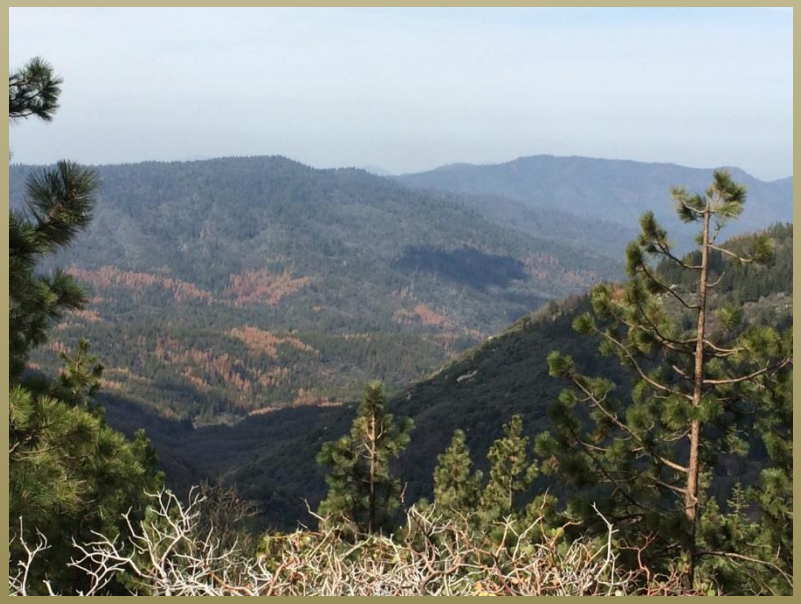


- Native brush is being stressed due to long term drought conditions
- The amount of dead fuel is increasing throughout the region

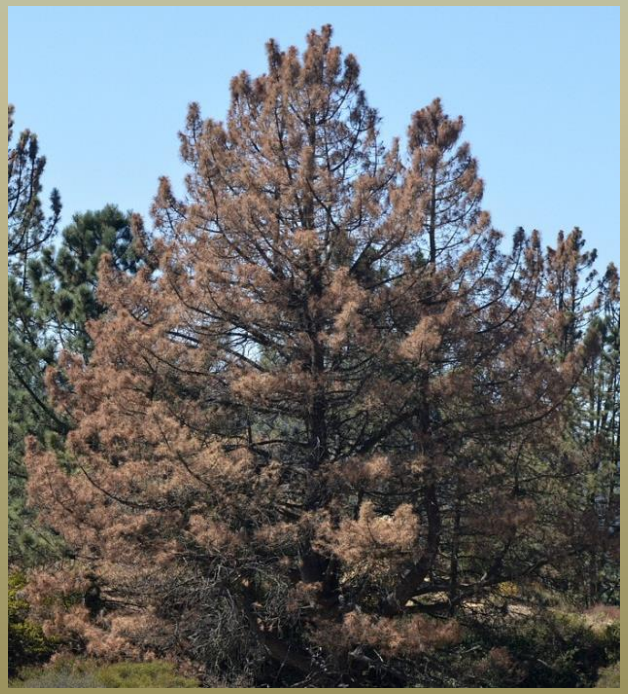
Bug kill in the southern Sierra



- Tree mortality has been steadily increasing across the Sierra and Sequoia NFs over the last several years
- Large stands of dead trees are becoming more prominent

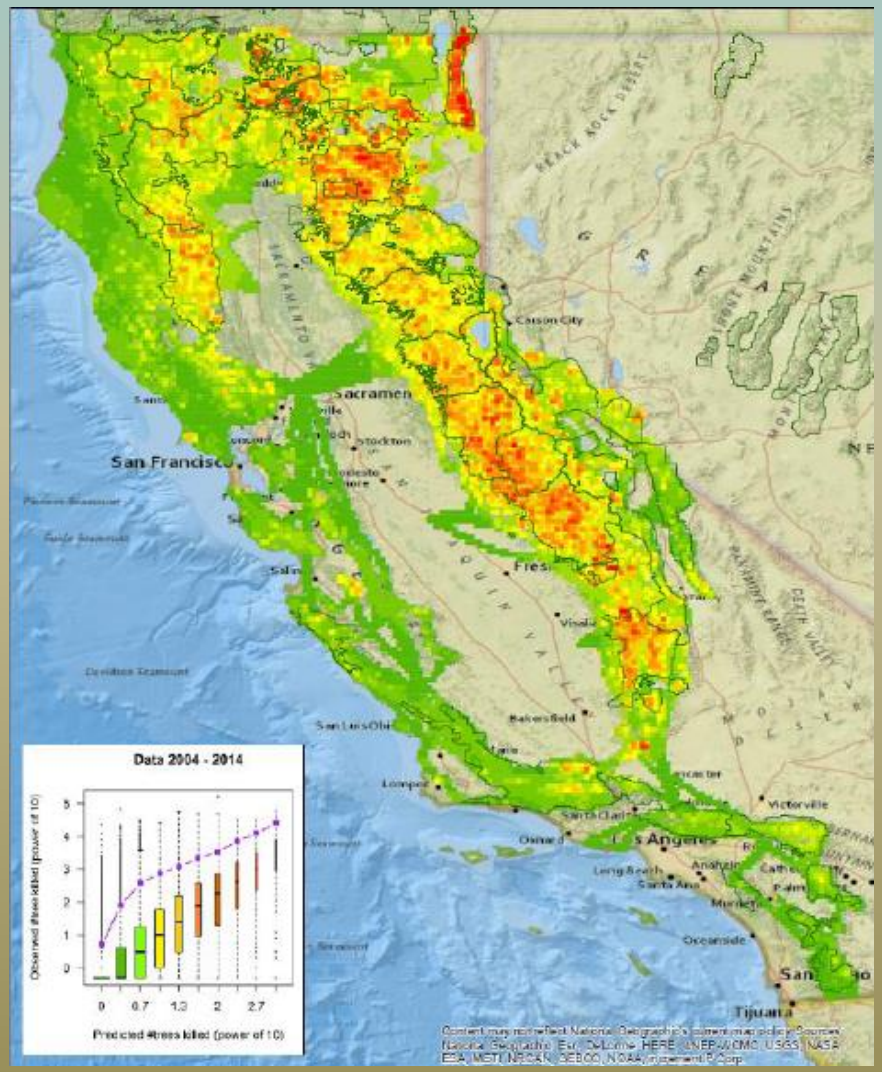


Fuel Conditions



- Native brush is stressed due to long term drought conditions
- The amount of dead fuel is increasing throughout the region

Predicted Tree Mortality for 2015

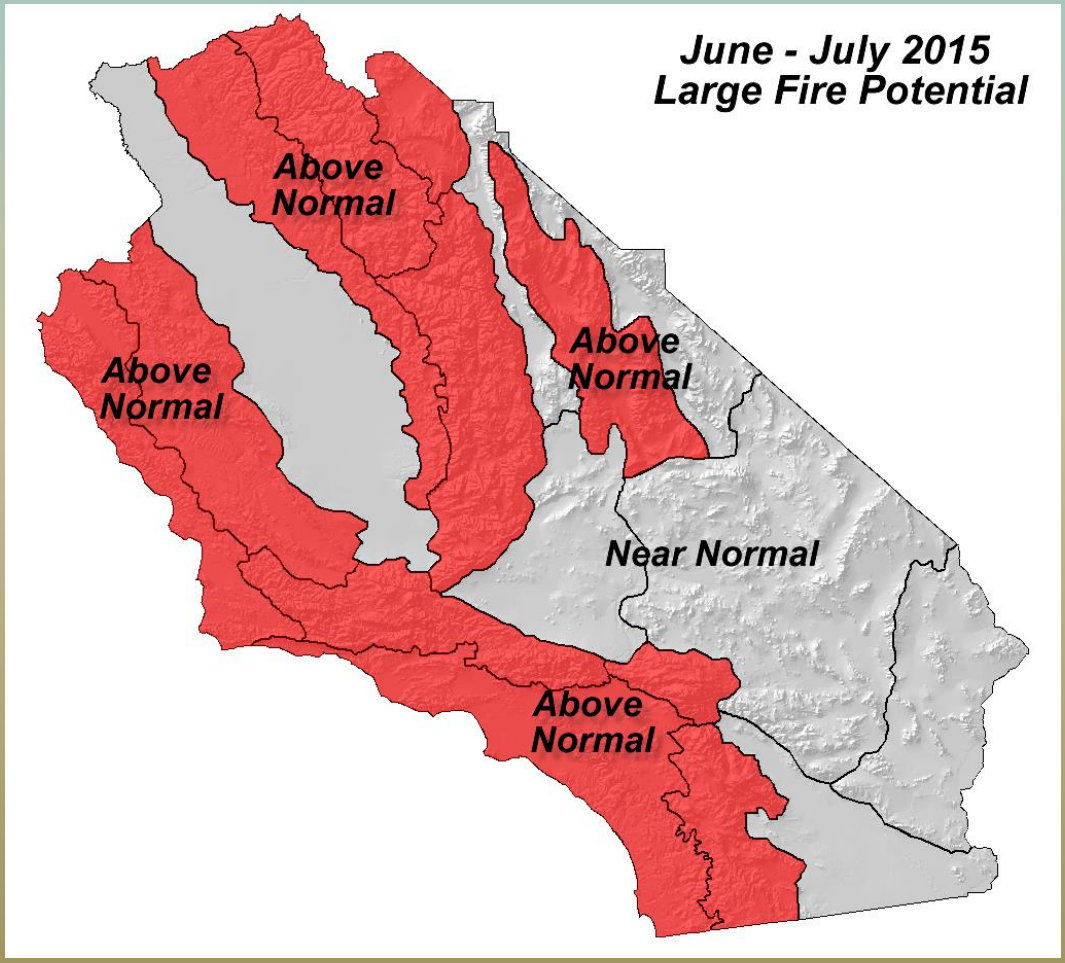


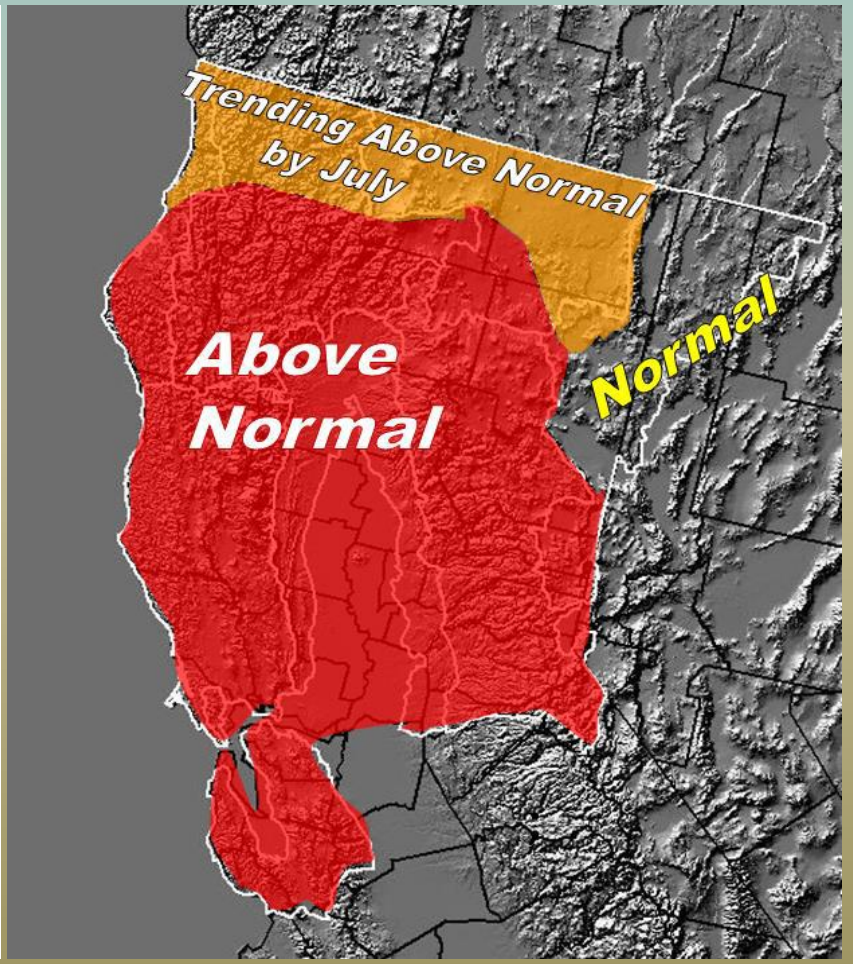
- Over 2 million trees died from bark beetles across 820,000 acres in 2014, which is double the acres with mortality from 2013.
- A dramatic increase in tree mortality is anticipated this year. 13,000,000 (!) trees dying/at risk

Fire Season Highlights

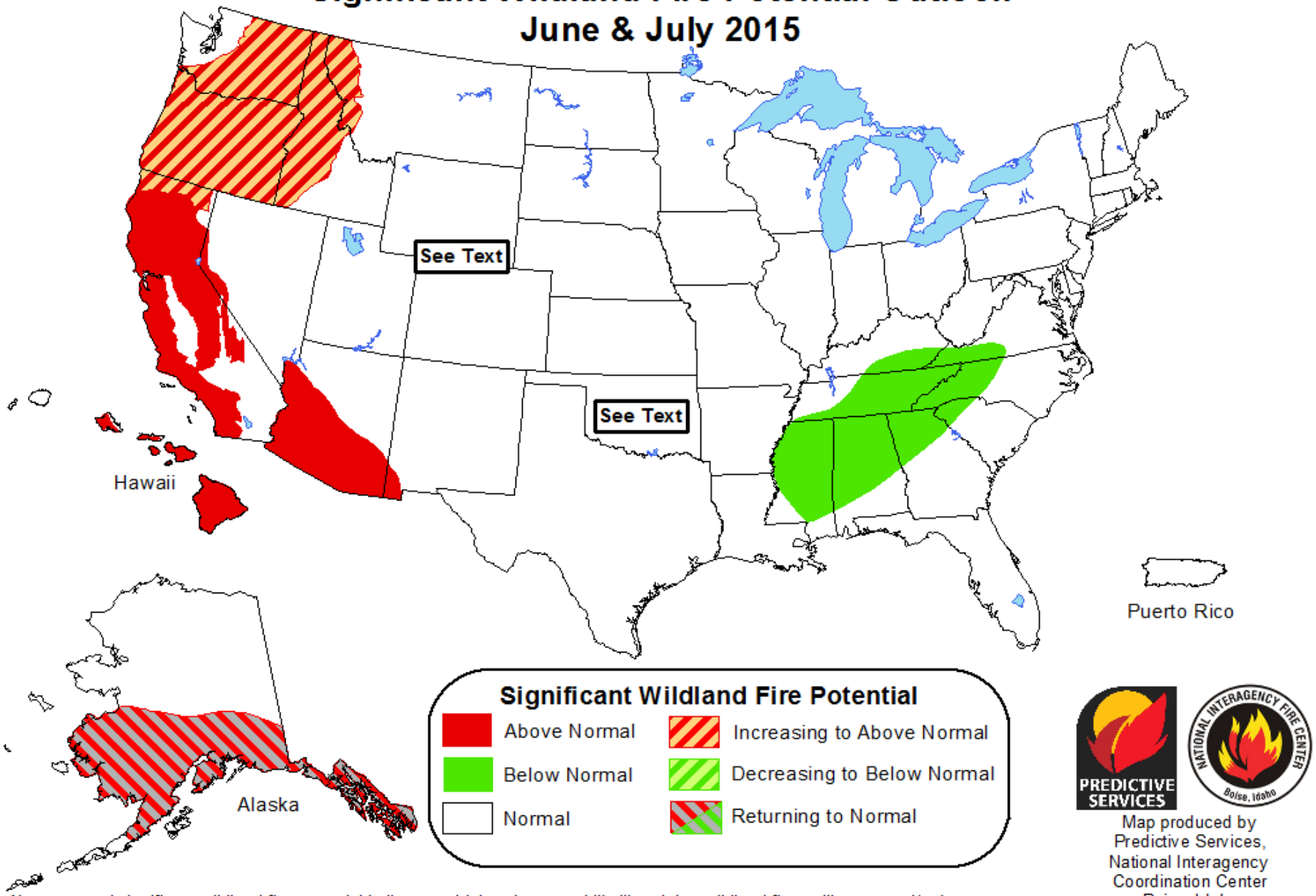
- Temperatures will average above normal through July
- Precipitation will average below normal through July
- Fire season expected to begin earlier than normal.
- Summer Monsoon could be active again this year across the deserts and the Sierra.
- Pacific tropical season has the potential to be very active
- Greatest fire potential will be across the southern and central Sierra as well as the southern portion of the LP
- If fire suppression efforts remain aggressive and number of ignitions are below normal, then significant fire activity will be at a minimum despite very dry fuel conditions.

Large Fire Potential This Summer:





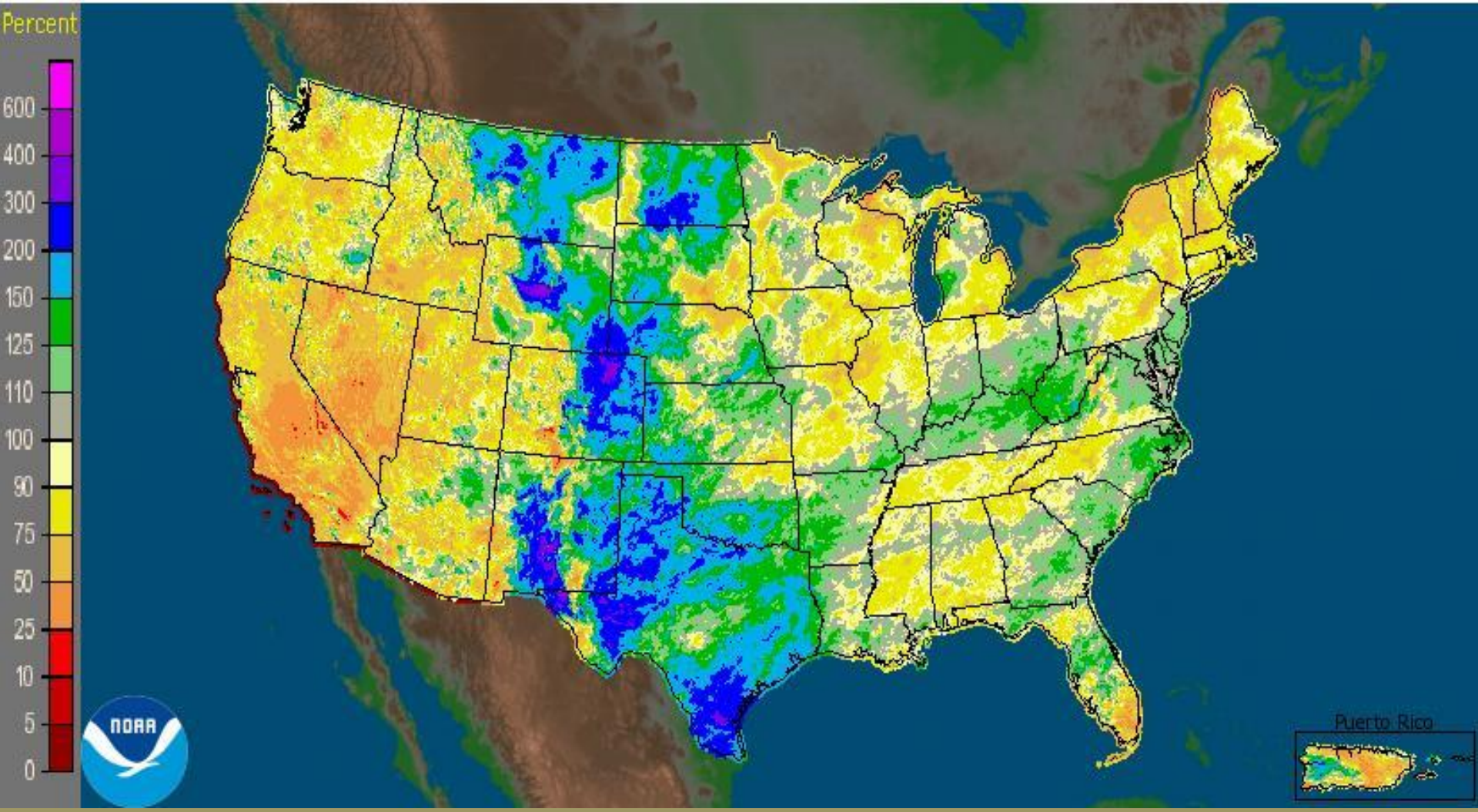
Significant Wildland Fire Potential Outlook
June & July 2015



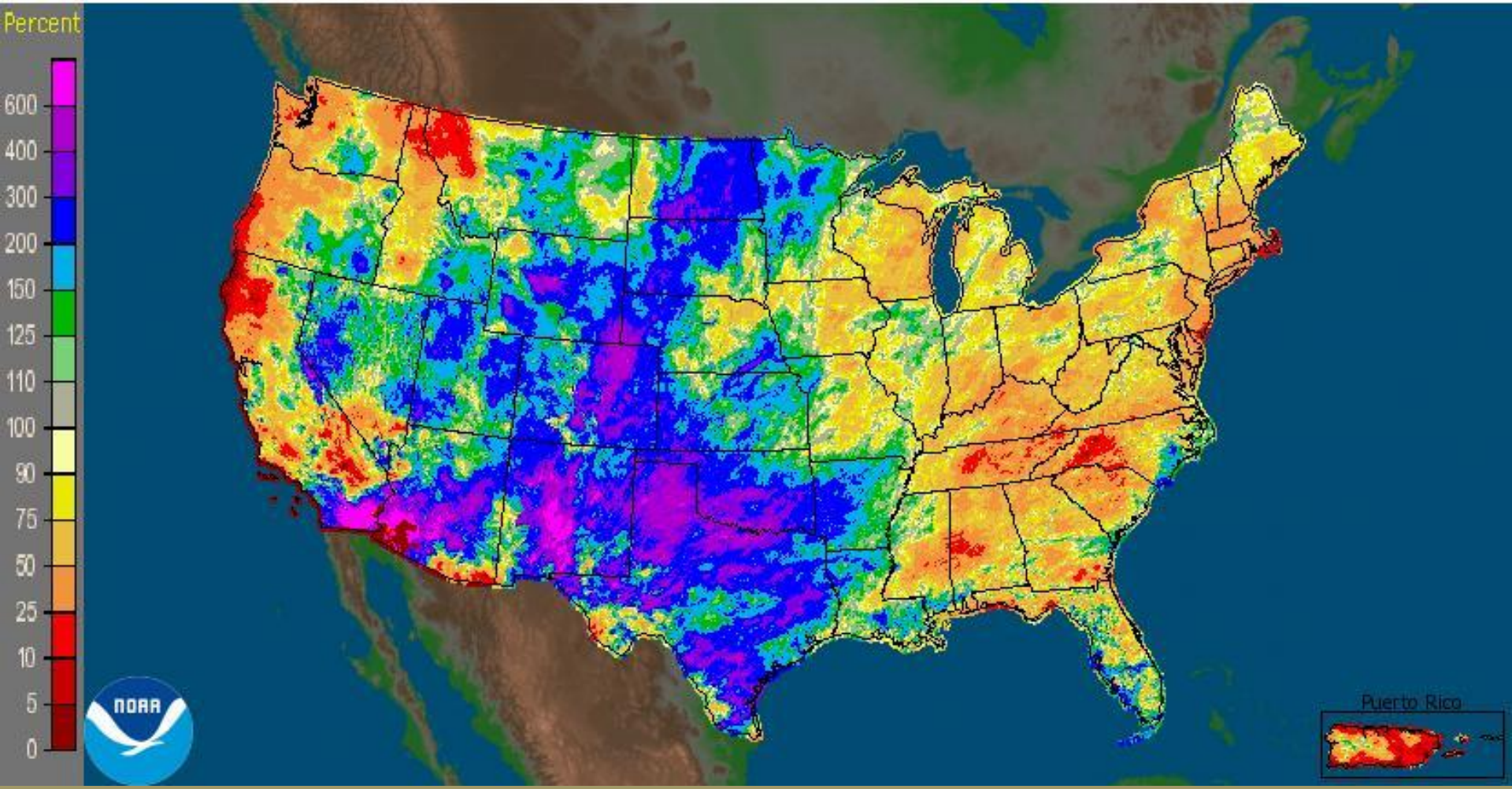
Above normal significant wildland fire potential indicates a higher than usual likelihood that wildland fires will occur and/or become significant events. Wildland fires are still expected to occur during forecasted normal conditions as would usually be expected during the outlook period. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.

Map produced by
Predictive Services,
National Interagency
Coordination Center
Boise, Idaho
Issued April 1, 2015
Next issuance May 1, 2015

CONUS + Puerto Rico: Current 180-Day Percent of Normal Precipitation
Valid at 5/20/2015 1200 UTC- Created 5/21/15 0:35 UTC



CONUS + Puerto Rico: Current 30-Day Percent of Normal Precipitation
Valid at 5/20/2015 1200 UTC- Created 5/21/15 0:31 UTC



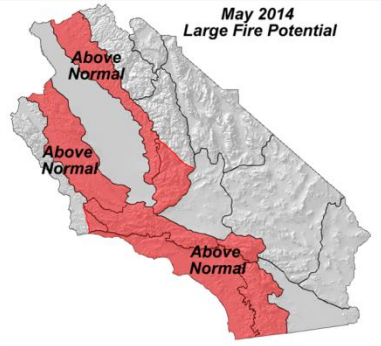
Monthly/Seasonal Outlook

http://gacc.nifc.gov/oscc/predictive/outlooks/myfiles/assessment.pdf

MONTHLY/SEASONAL OUTLOOK

PREDICTIVE SERVICES

VALID: MAY THROUGH AUGUST 2014



Overview:

- *Above normal large fire potential will continue in over the interior Central Coast Region, the Sierra Foothills and most of Southern CA.*
- *Large fire potential returning to above normal in June for most other areas.*
- *Severe and exceptional drought conditions to continue unabated.*
- *Near to slightly above normal temperatures. Possibility of above average "monsoonal" precipitation this summer across the eastern deserts*

WEATHER DISCUSSION

After a terribly dry start to the year, precipitation during the past 6-8 weeks has been closer to normal over the state. The strong ridge which was parked off the coast dissipated, which allowed a few troughs to finally reach the state. This emergence of a wetter weather pattern may be related to the development of a negative Pacific North American Pattern (PNA) in February. Through much of the winter, the PNA as well as the Pacific Decadal Oscillation (PDO) was strongly positive, which typically results in an increase in ridging across the west as well as long-wave blocking patterns across the Continental U.S. The blocking pattern of December-February resulted in record dry conditions across California while much of the rest of the country dealt with an onslaught of Polar Vortexes.

Fortunately for water interests across the state, this pattern has been broken and a transition to a positive ENSO (El Niño) may be underway. At the current time, the Oceanic Niño Index (ONI) is currently negative, but sea-surface temperatures across the Equatorial Pacific indicate rapid warming is continuing. Most of this warming is occurring far

Contact: Riverside.FWX@fire.ca.gov Webpage: http://gacc.nifc.gov/oscc/predictive/weather/index.htm

The End