



Regional Environmental Conditions & Impacts Coordination

NOAA West

Kevin Werner, Timi Vann, Tim Brown, Andrea Bair

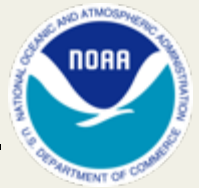
October 19, 2015

Call Agenda



- Project Recap (Kevin Werner)
- El Niño and Regional Climate brief (Kevin Werner)
- Environmental conditions and impacts reporting and discussion:
 - NWS (Andrea Bair)
 - NMFS (Ruth Howell)
 - Regional Media (Timi Vann)
 - Others
- Discussion

Regional Coordination Goals



1. Document and share environmental conditions information and their impacts on human systems at the regional scale.
2. Improve internal awareness of unusual environmental observations across NOAA mission lines.
3. Improve regional communication and coordination:
 - Across NOAA mission lines – e.g., NMFS science centers and region, NWS region, NOS OCM and OCS, NESDIS NCEI, and OAR PMEL and ESRL; and
 - Between NOAA and NOAA-funded regional partners involved in monitoring and communicating changing climate conditions and impacts (e.g., IOOS, Sea Grant, RISA, State Climatologists, Western Regional Climate Center, etc.)
4. Improve external communication of regional impacts from changing climate conditions, including but not limited to El Niño. Target audience is regionally connected elected officials and representative groups (e.g., WGA)

Regional Coordination Action Plan



Monthly webinars

- Brief on regional climate conditions/forecast and discuss deviations from “normal”.
 - NWS, NESDIS and OAR report on terrestrial observations;
 - NMFS and NOS report on coastal and marine observations; and
 - Partner network observations (WRCC, IOOS, RISA, Sea Grant, etc)
- Exchange information on terrestrial and coastal-marine impacts

Monthly communication

- Information will enrich existing products such as the [State of the Climate](#) monthly summaries
- Communication to in-region elected officials (in coordination with NOAA OLIA).
- A NOAA Rotational Assignment (NRAP) has been submitted to recruit communications expertise and additional coordination capacity. Deadline to submit is Oct. 21. Also discussing added capacity via the Western Regional Climate Center.

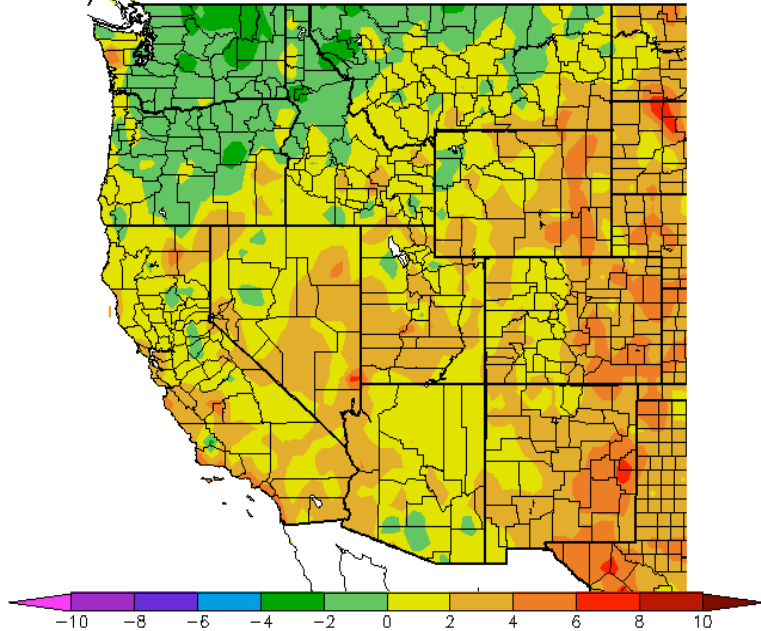
Documentation

- Regionally specific updates and observed changes in the terrestrial and coastal and marine environments (as informally reported) will be summarized in the spring timeframe.
 - The summary will informally characterize changing environmental conditions and impacts over the 2015 Fall and 2016 Winter.
 - The summary will not include attribution of impacts, but could serve to inform a retrospective analysis of the human system impacts of environmental phenomena – including ENSO.

Status of Regional Climate Conditions

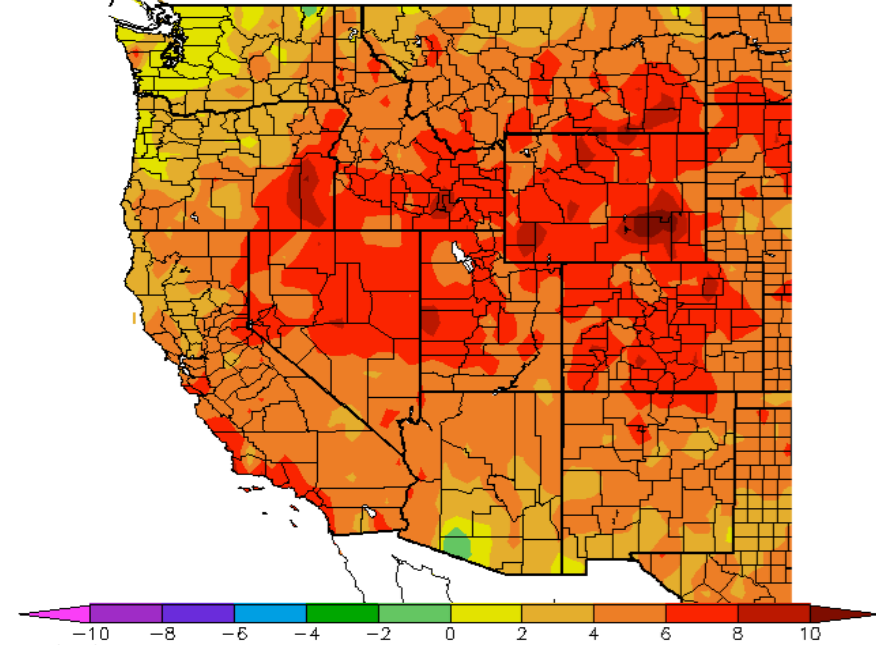


Ave. Temperature dep from Ave (deg F)
8/21/2015 - 9/19/2015



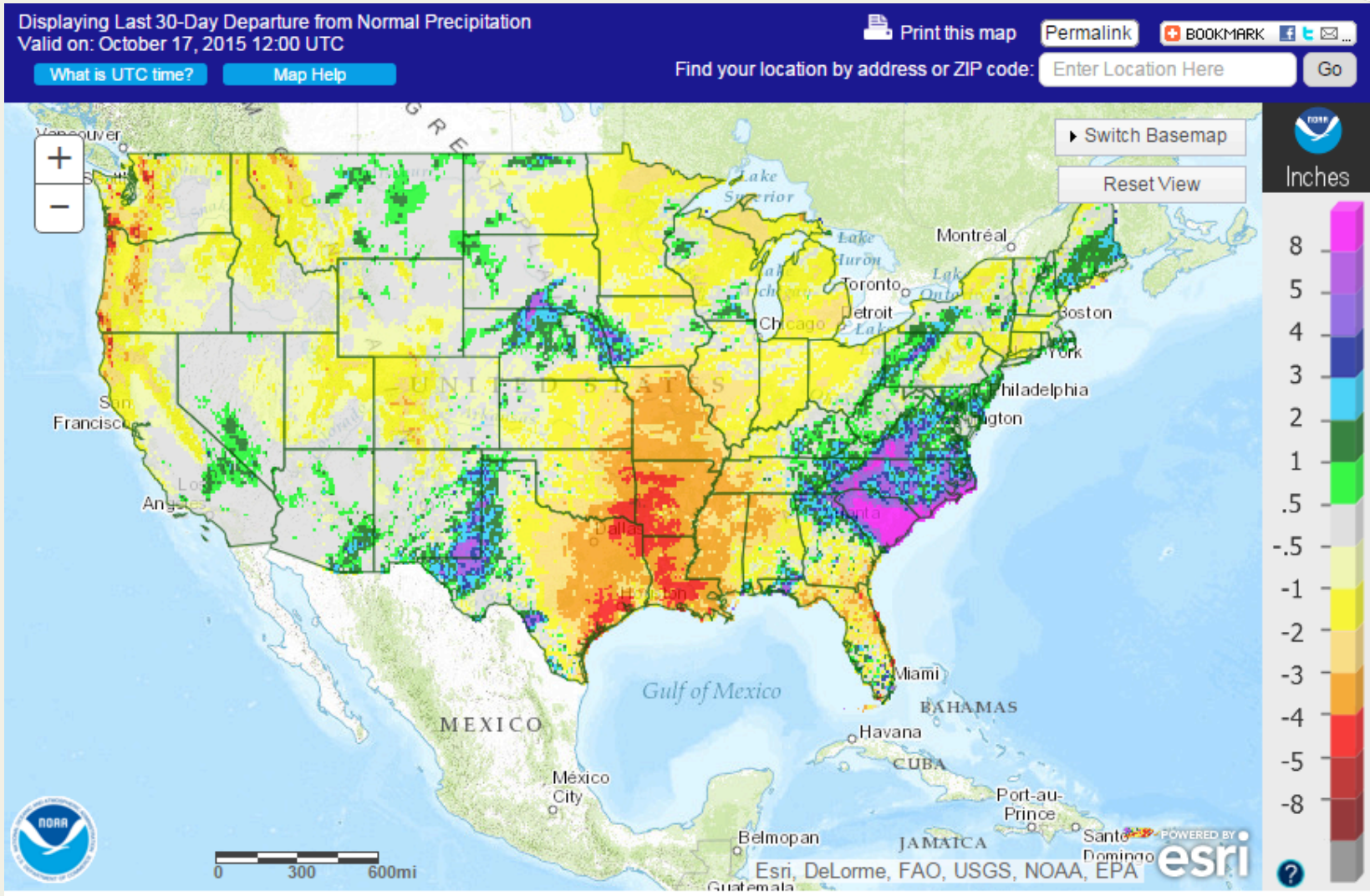
Generated 9/20/2015 at WRCC using provisional data.
NOAA Regional Climate Centers

Ave. Temperature dep from Ave (deg F)
9/17/2015 - 10/16/2015

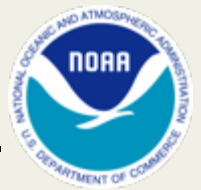


Generated 10/17/2015 at WRCC using provisional data.
NOAA Regional Climate Centers

Status of Regional Climate Conditions



Streamflow



SACRAMENTO RIVER - SHASTA LAKE (SHDC1)

Latitude: 40.72° N Longitude: 122.42° W Elevation: 1070 Feet
 Location: Shasta County in California River Group: Upper Sacramento

Issuance Time: Sep 30 2015 at 8:15 AM PDT

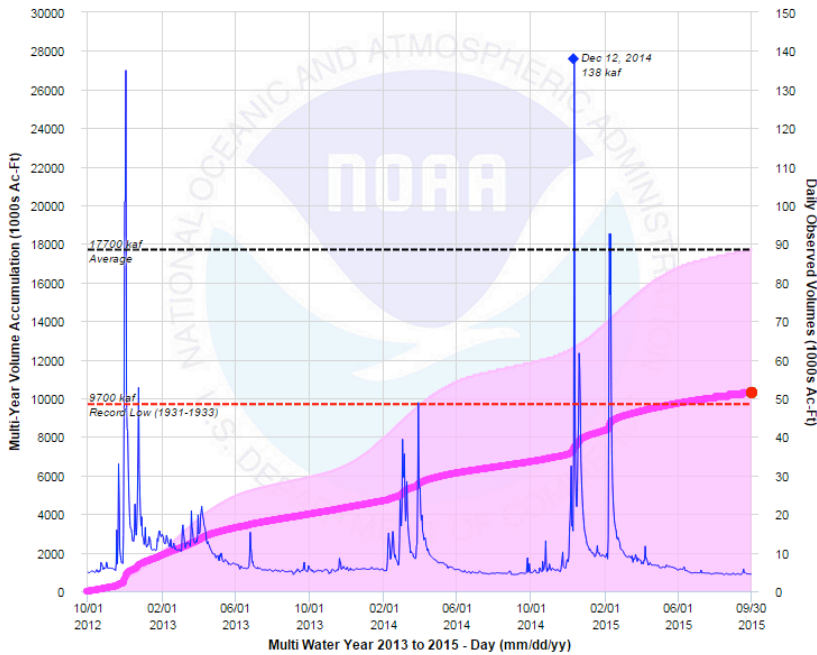
3-Water Year Accum. Volume Plot Ending 2016

CSV Ensemble File Download: Forecast Group | SHDC1

SACRAMENTO - SHASTA (SHDC1) 09/30/2015

Most Probable: 10300 kaf | 58% of Average

Created: 09/30/2015 at 08:12 AM PDT



Observed to Date Percent of Average: 58% (10300 kaf) Water Year to Date Average: 17700 kaf

- 90%: 10300 kaf
- 75%: 10300 kaf
- 50%: 10300 kaf
- 25%: 10300 kaf
- 10%: 10300 kaf
- Min Trace (2003: 10300 kaf)
- Median Trace (1952: 10300 kaf)
- Max Trace (1951: 10300 kaf)
- Volume Med
- Volume Avg
- Traces (1950-2008)
- Record High
- Record Low
- Accum to Date Avg
- Accum to Date Obs
- Daily Obs
- Obs Peak

AMERICAN RIVER - FOLSOM LAKE (FOLC1)

Latitude: 38.71° N Longitude: 121.16° W Elevation: 350 Feet
 Location: Sacramento County in California River Group: Lower Sacramento

Issuance Time: Sep 30 2015 at 8:15 AM PDT

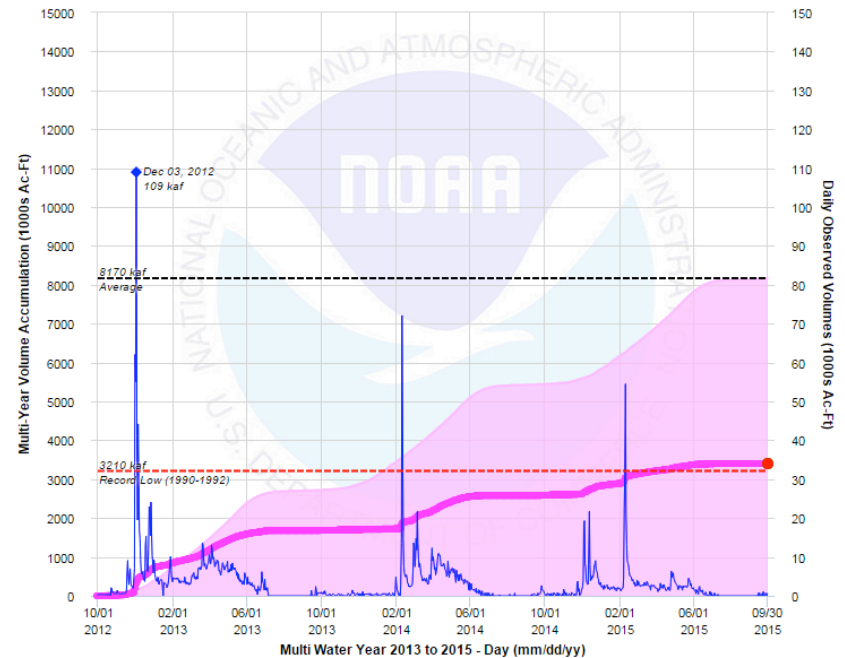
3-Water Year Accum. Volume Plot Ending 2016

CSV Ensemble File Download: Forecast Group | FOLC1

AMERICAN - FOLSOM FNF (FOLC1) 09/30/2015

Most Probable: 3400 kaf | 42% of Average

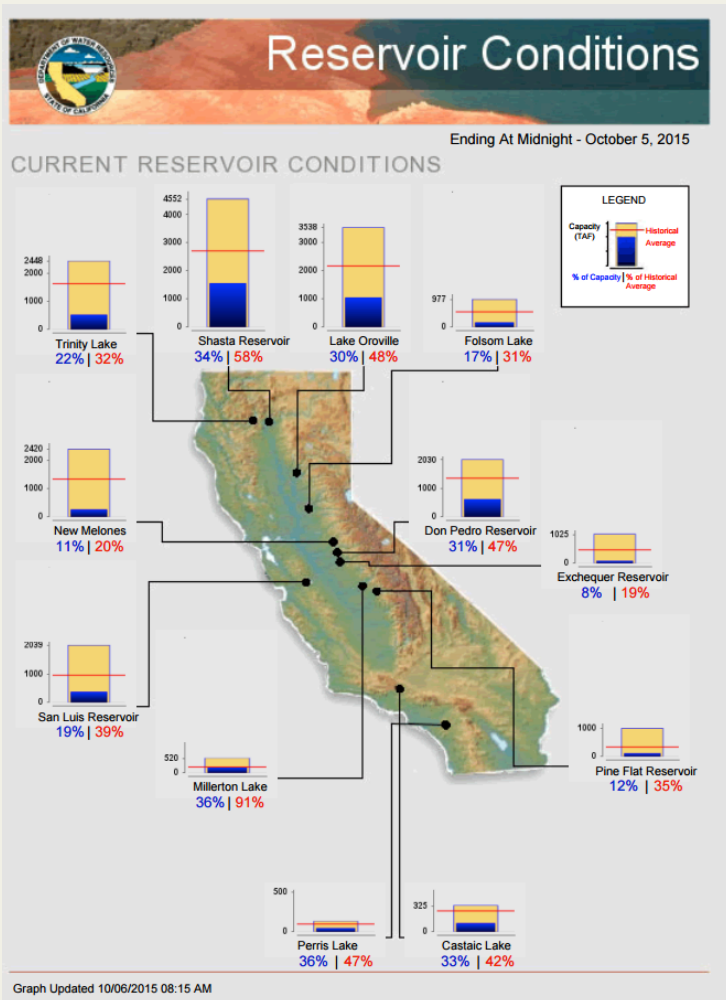
Created: 09/30/2015 at 08:13 AM PDT



Observed to Date Percent of Average: 42% (3400 kaf) Water Year to Date Average: 8170 kaf

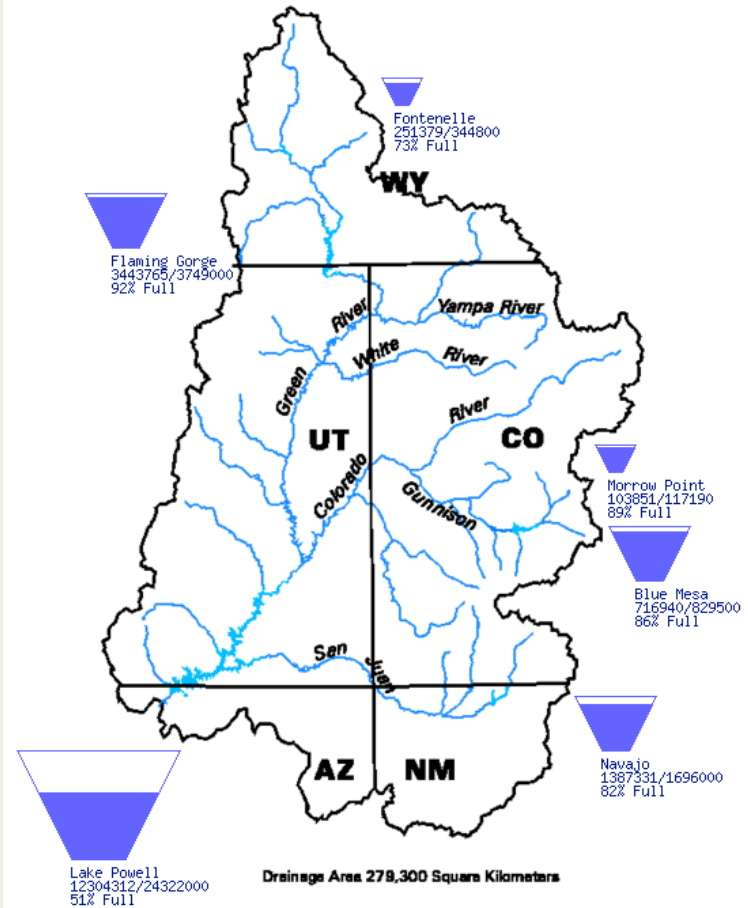
- 90%: 3400 kaf
- 75%: 3400 kaf
- 50%: 3400 kaf
- 25%: 3400 kaf
- 10%: 3400 kaf
- Min Trace (1973: 3400 kaf)
- Median Trace (1980: 3400 kaf)
- Max Trace (1984: 3400 kaf)
- Volume Med
- Volume Avg
- Traces (1950-2008)
- Record High
- Record Low
- Accum to Date Avg
- Accum to Date Obs
- Daily Obs
- Obs Peak

Reservoirs

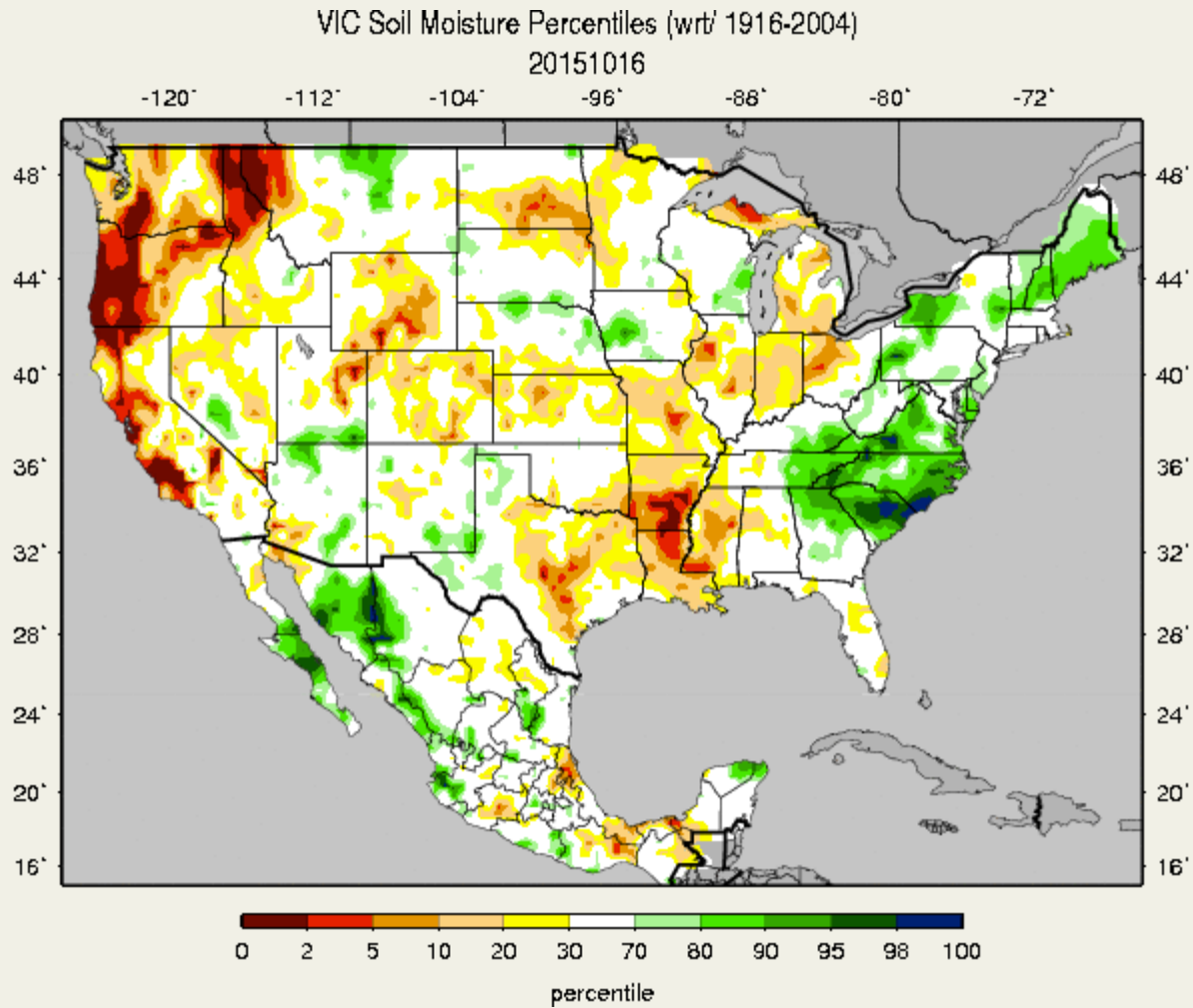
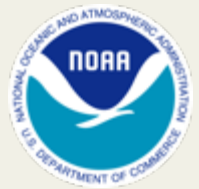


Data Current as of:
10/04/2015

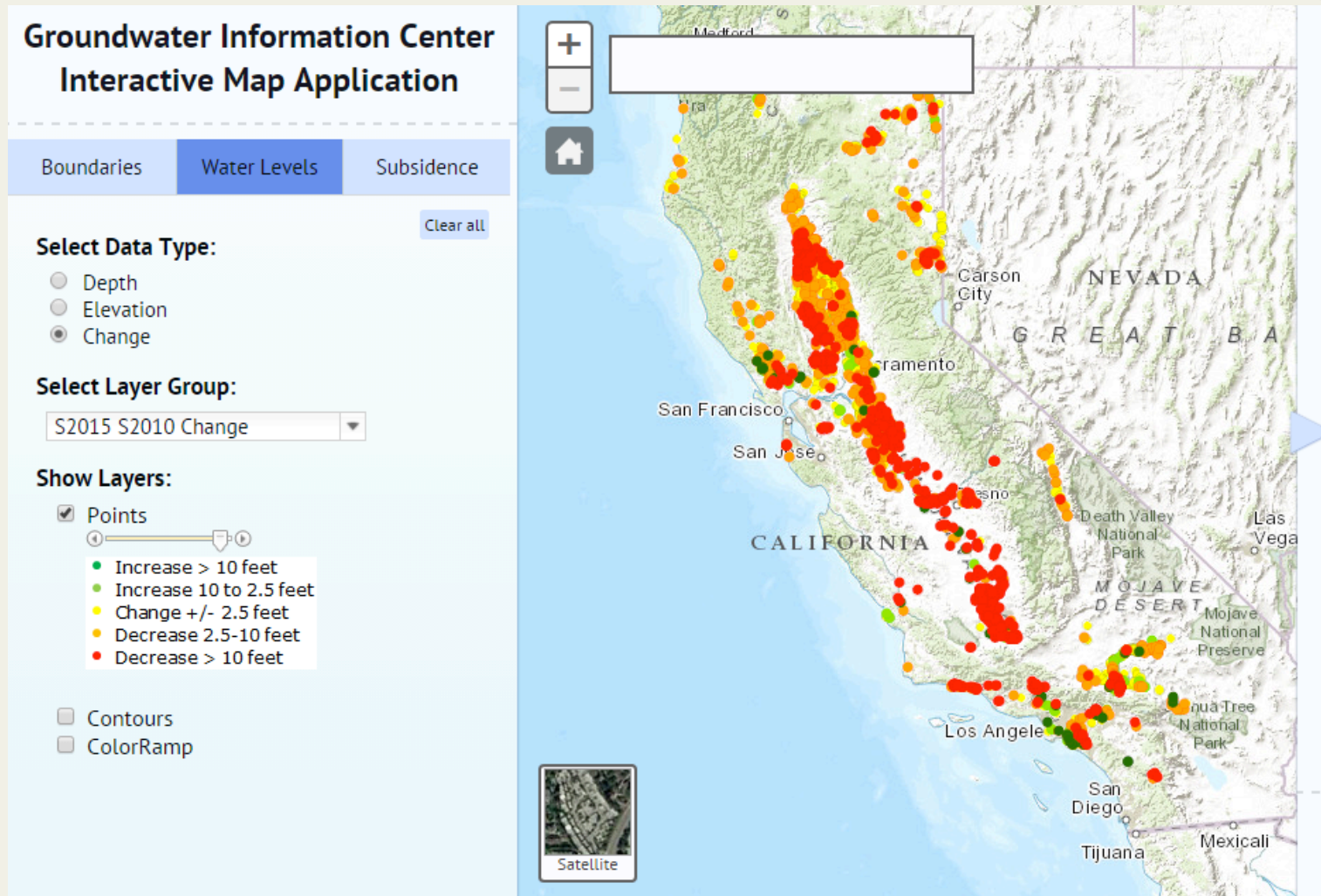
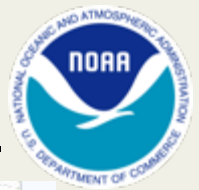
Upper Colorado River Drainage Basin



Soil Moisture



Groundwater



El Niño Status



- ENSO Alert System Status: El Niño Advisory
- El Niño conditions are present
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- There is an approximately 95% chance that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening through spring 2016.*

Credit: CPC

* Note: These statements are updated once a month (2nd Thursday) in association with the ENSO Diagnostics Discussion, which can be found by clicking [here](#).

Current Story on ENSO Blog



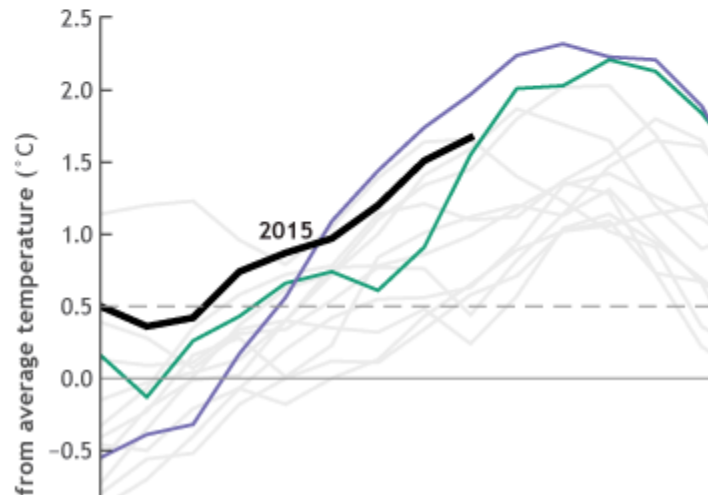
October 2015 El Niño update: Pumpkins

Author: Emily Becker
Thursday, October 8, 2015

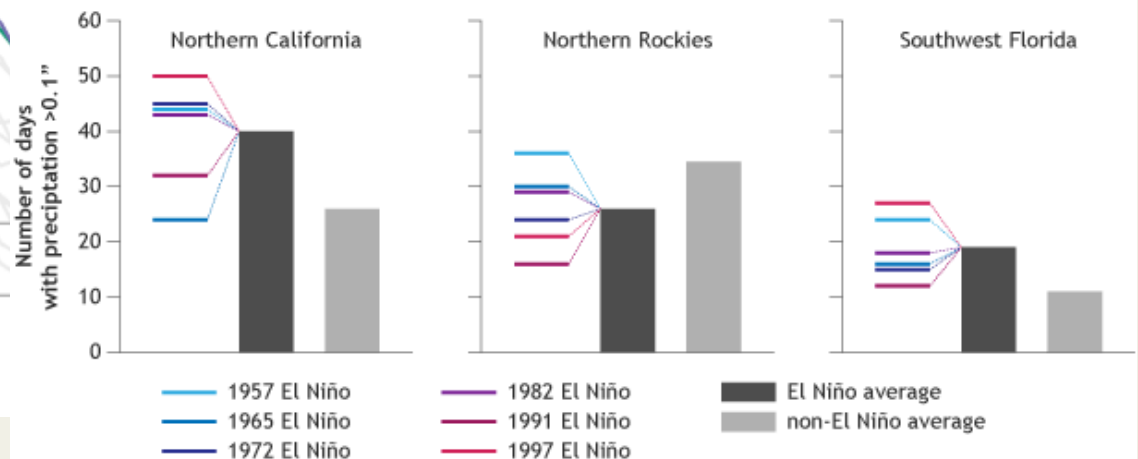
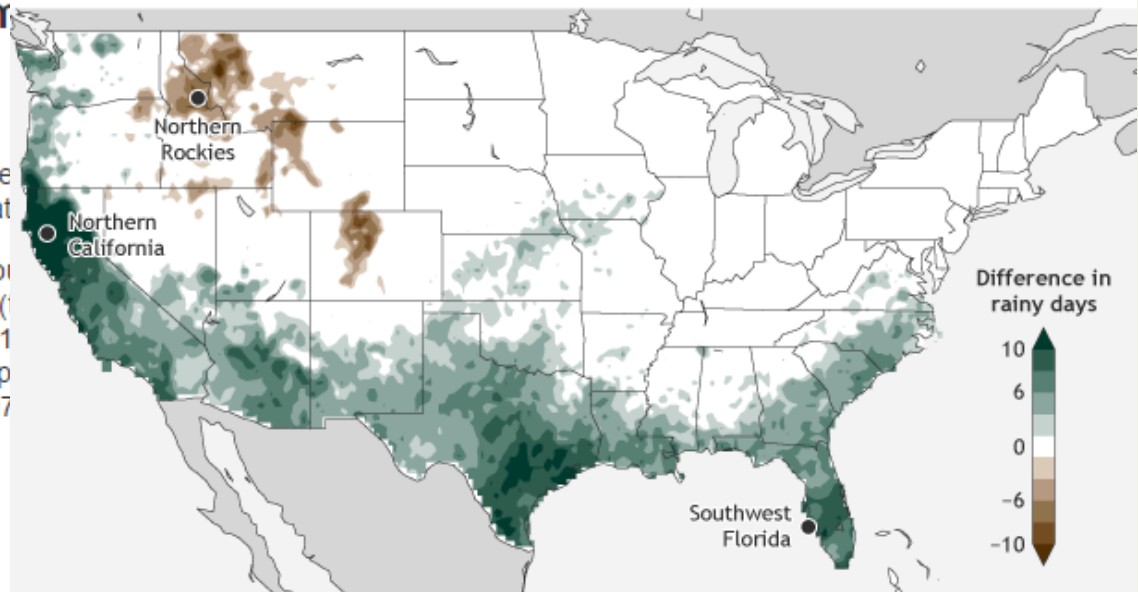
As we approach peak pumpkin spice latte season, we're looking at the 2015 El Niño, expected by forecasters to occur in the late fall.

This El Niño continues to rank among the strongest in our history. In line behind July-September 1987 (1.6°C) and 1997 (1.5°C), the warmer-than-average sea surface temperatures in the Pacific Ocean keep the Niño 3.4 Index (EQSOI) at -2.2. This is second to 1997 El Niños on the list (1972 and 1982, tied at -1.4).

Monthly sea surface temperature Niño 3.4 Index values

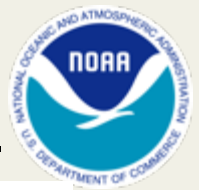


Rainy days in winter for six strong El Niño events compared to all other years since 1950



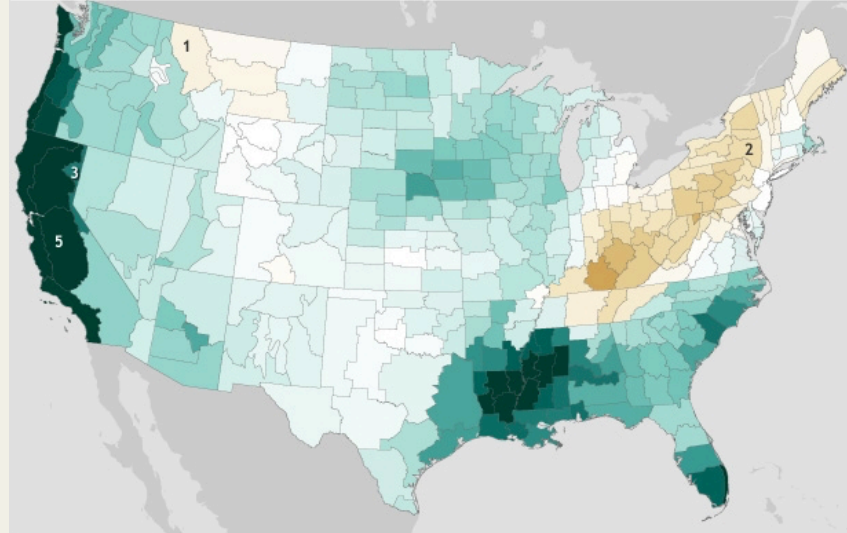
NOAA Climate.gov

Beyond the Data Blog

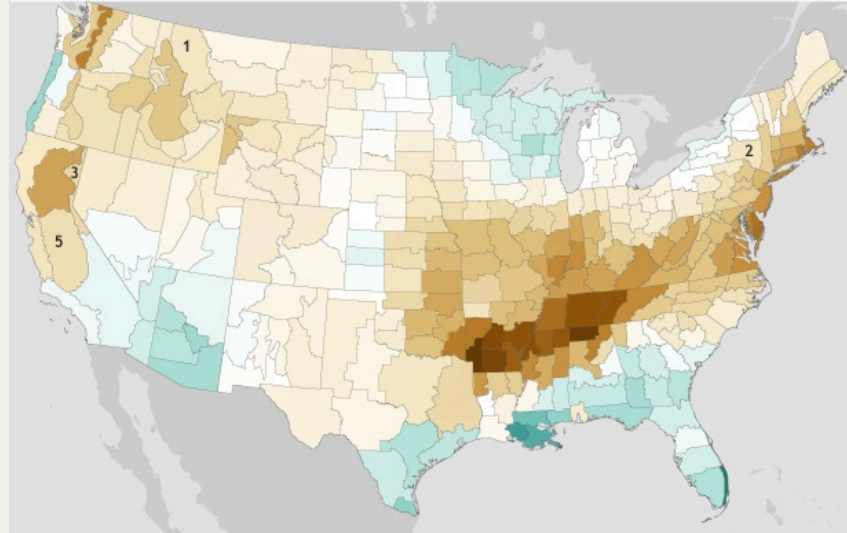


- [NESDIS/NCEI blog](#)
- Deke Arndt 10/1 blog post on “Not what I ordered: how El Nino is like a bad bar tender”

Cold season precipitation anomalies (Oct 1982–Mar 1983)



Cold season precipitation anomalies (Oct 1965–Mar 1966)



Compared to
1951–2010

Difference from average precipitation (inches)

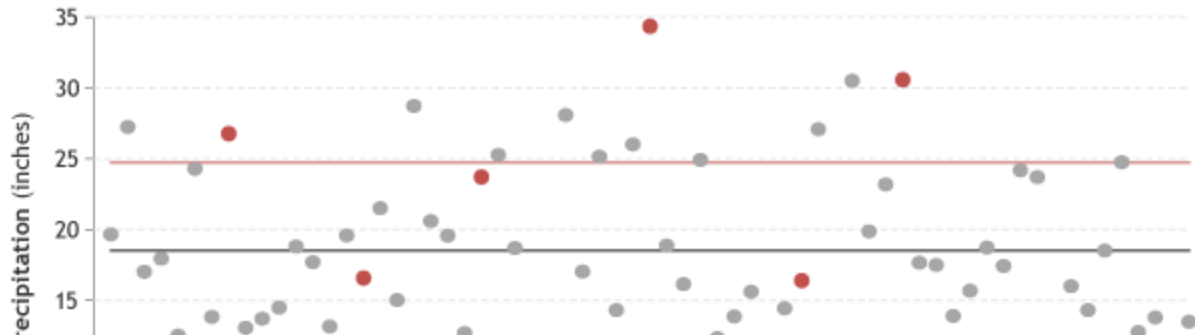


NOAA Climate.gov

Beyond the Data Blog



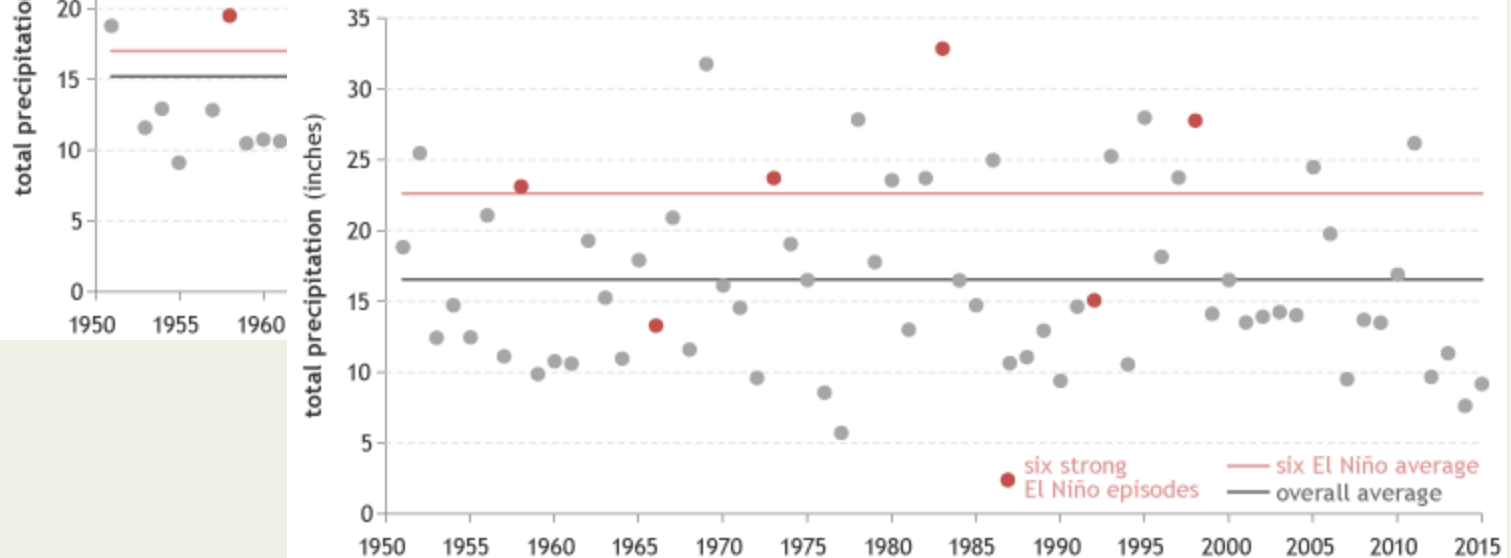
Cold season (Oct-Mar) precipitation for California (statewide)



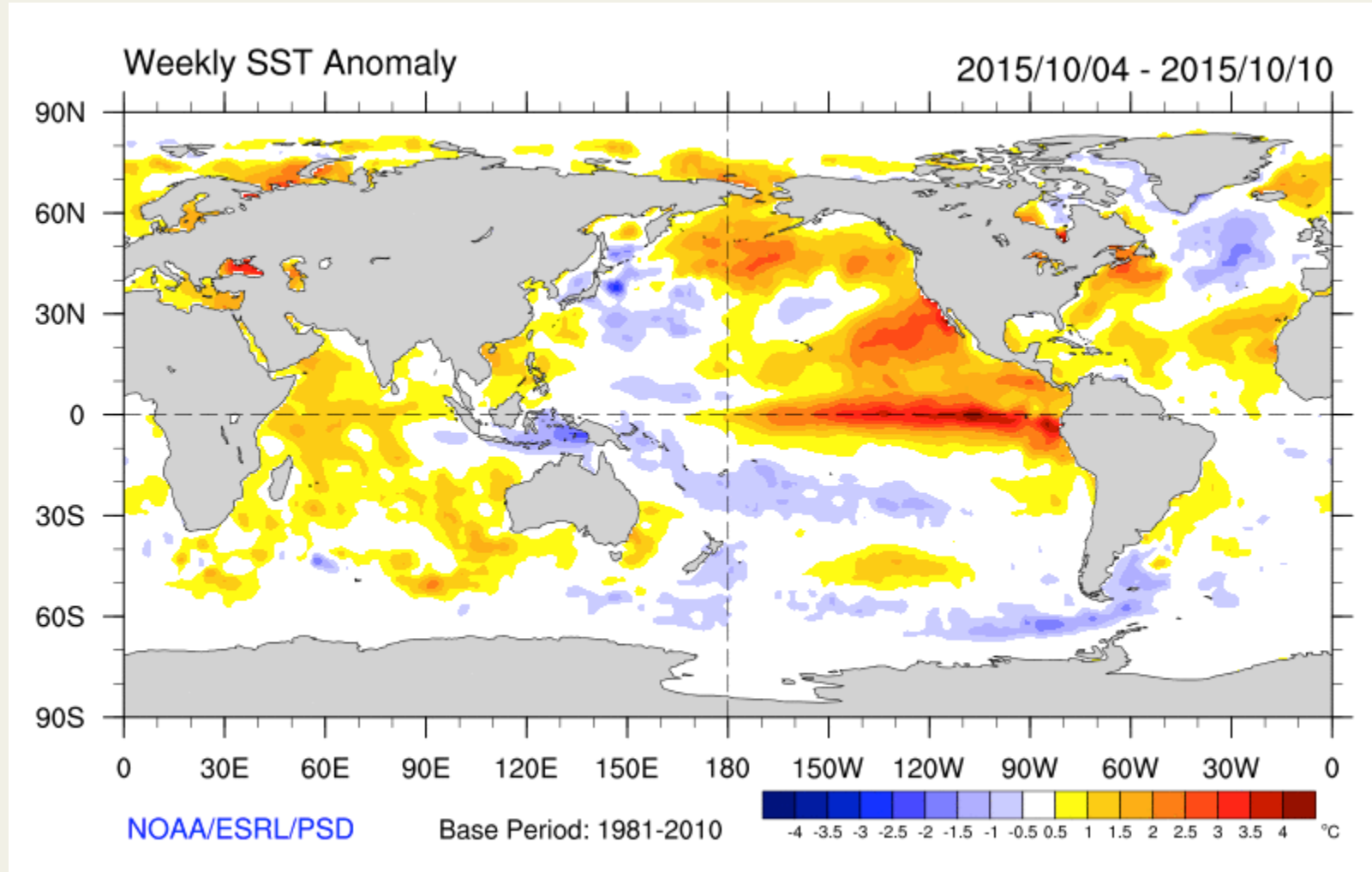
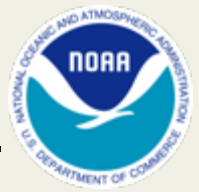
Cold season (Oct-Mar) precipitation for California Climate Division 3 (Northeast Interior Basin)



Cold season (Oct-Mar) precipitation for California Climate Division 5 (San Joaquin)

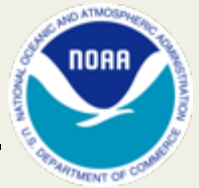


Current Sea Surface Temperatures

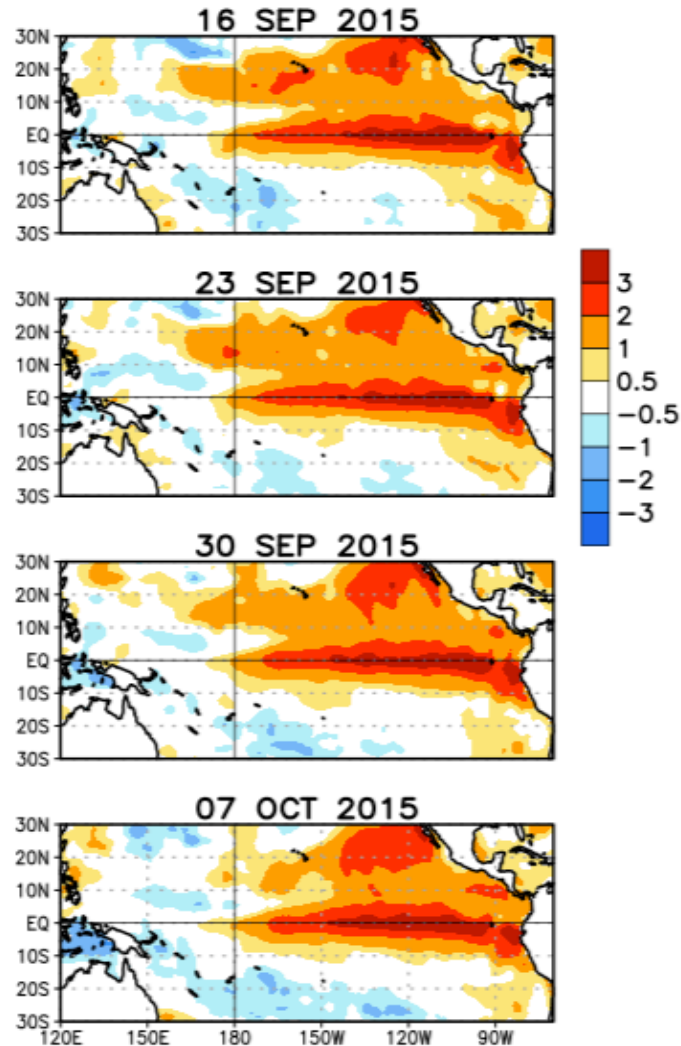


Source: NOAA/ESRL

Current Sea Surface Temperatures



Weekly SST Anomalies (DEG C)



Source: NOAA/CPC

Niño Region SST Departures (°C) Recent Evolution



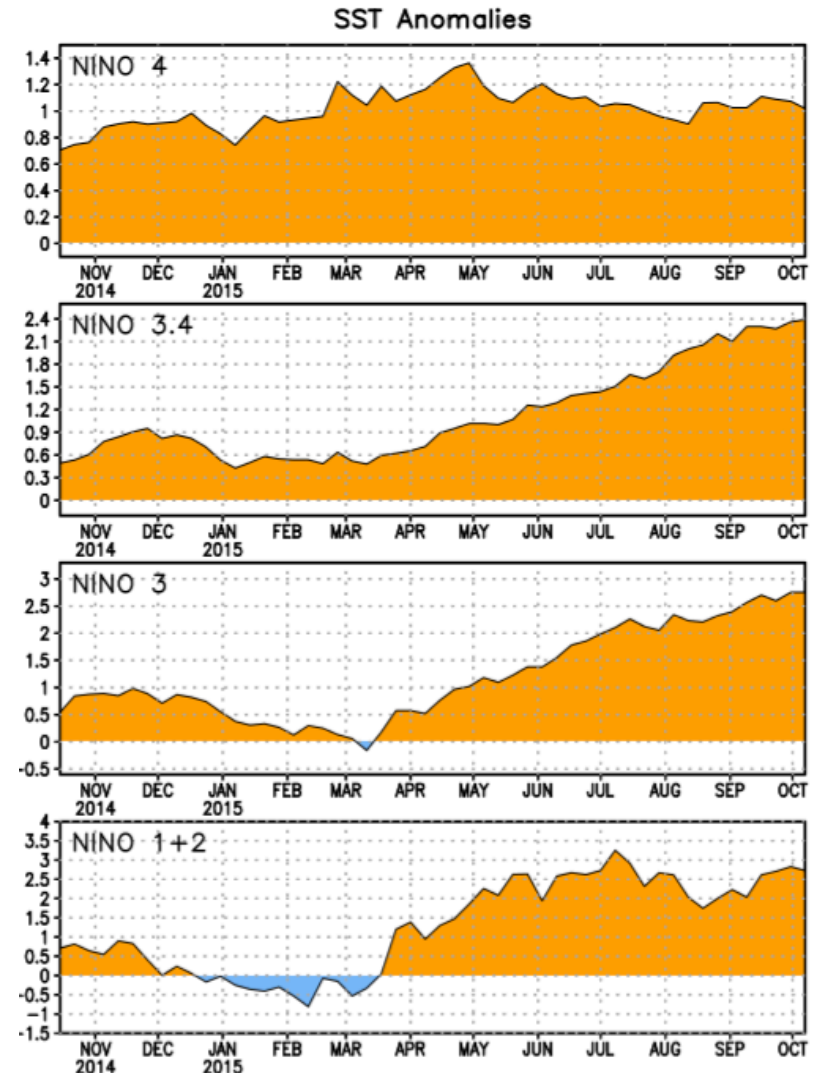
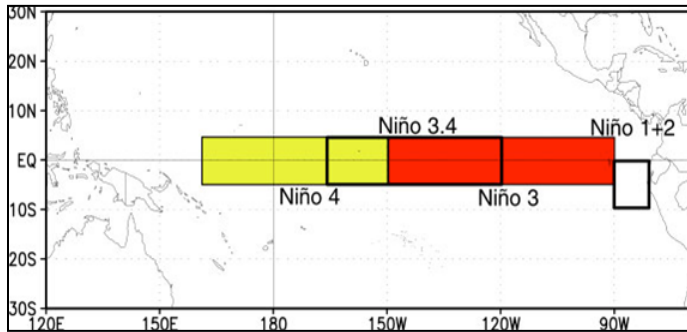
The latest weekly SST departures are:

Niño 4 1.0°C

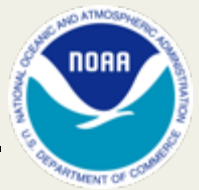
Niño 3.4 2.4°C

Niño 3 2.8°C

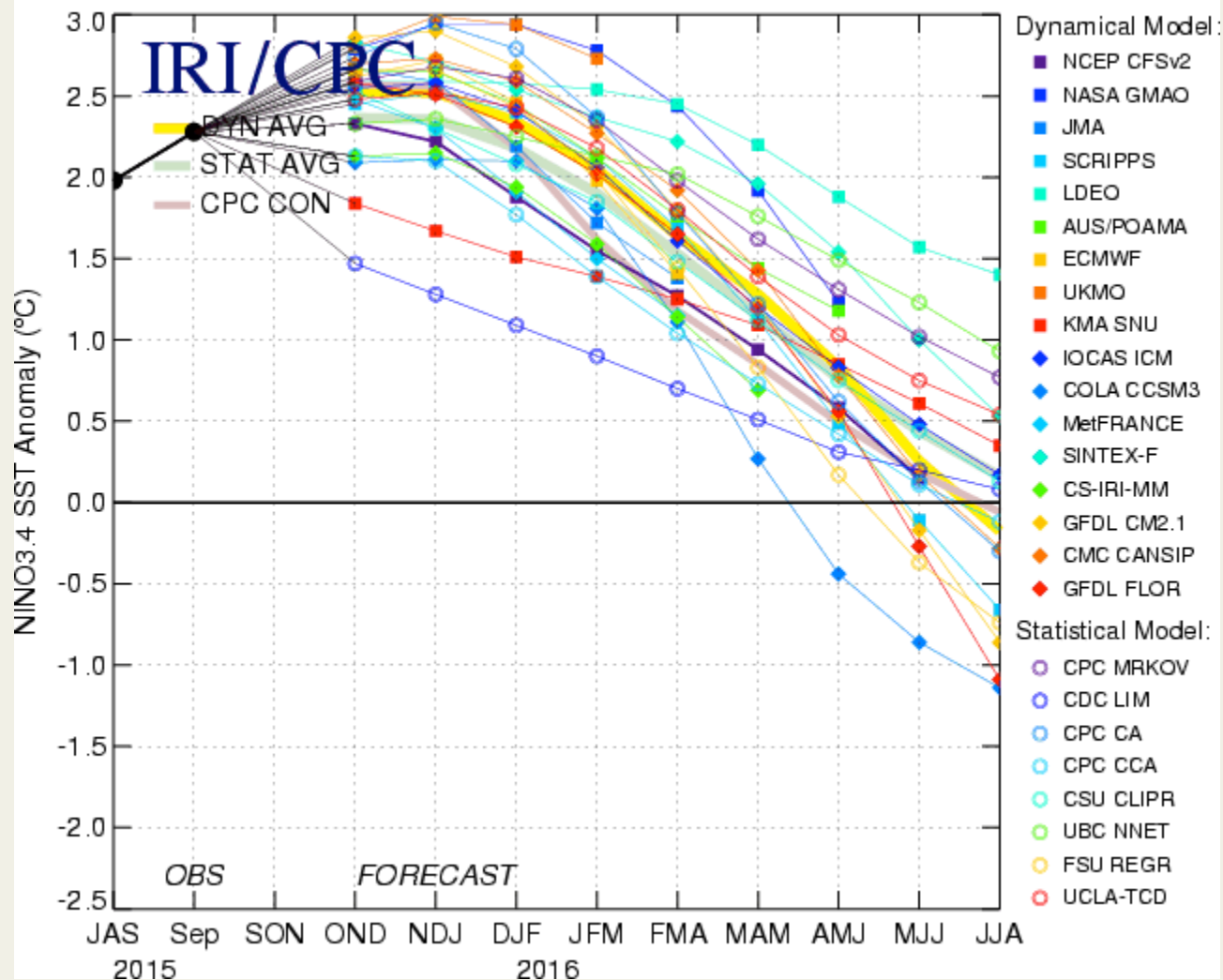
Niño 1+2 2.7°C



ENSO Forecasts

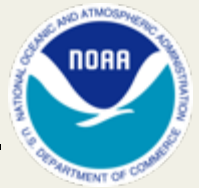


Mid-Oct 2015 Plume of Model ENSO Predictions



Source: NOAA/CPC and the International Research Institute

Diagnostic Discussion – October



EL NIÑO/SOUTHERN OSCILLATION (ENSO)

DIAGNOSTIC DISCUSSION

issued by

CLIMATE PREDICTION CENTER/NCEP/NWS

and the International Research Institute for Climate and Society

8 October 2015

ENSO Alert System Status: El Niño Advisory

Synopsis: There is an approximately 95% chance that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening through spring 2016.

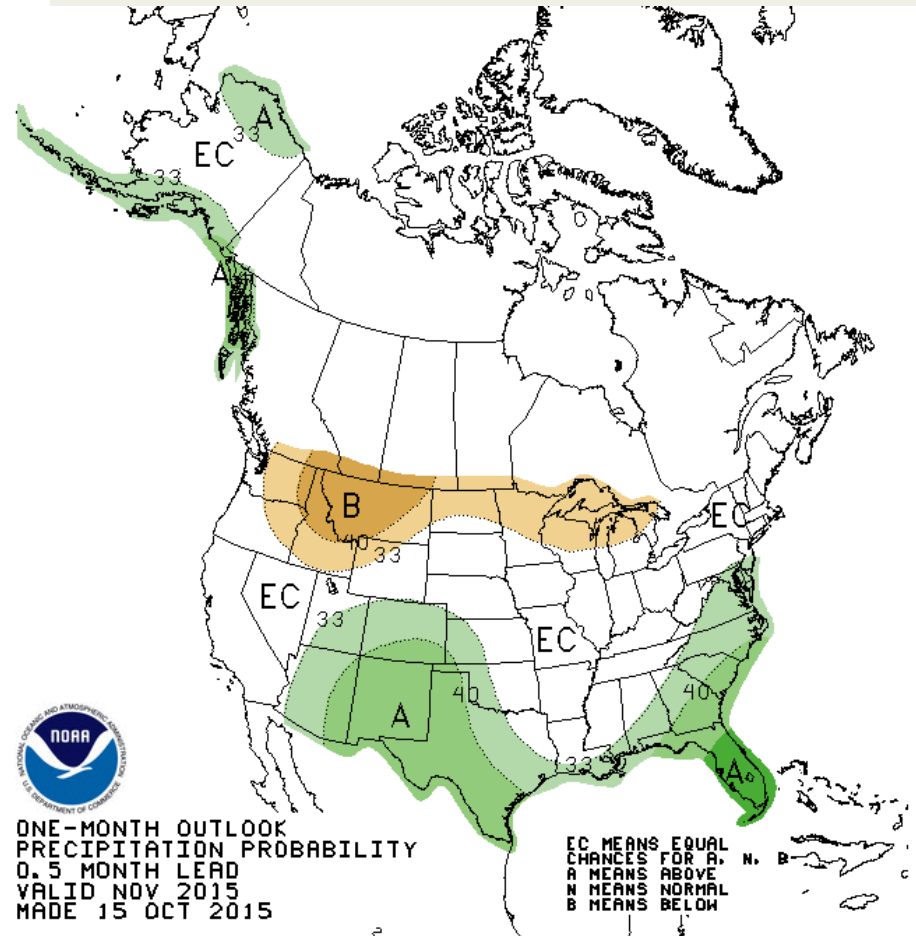
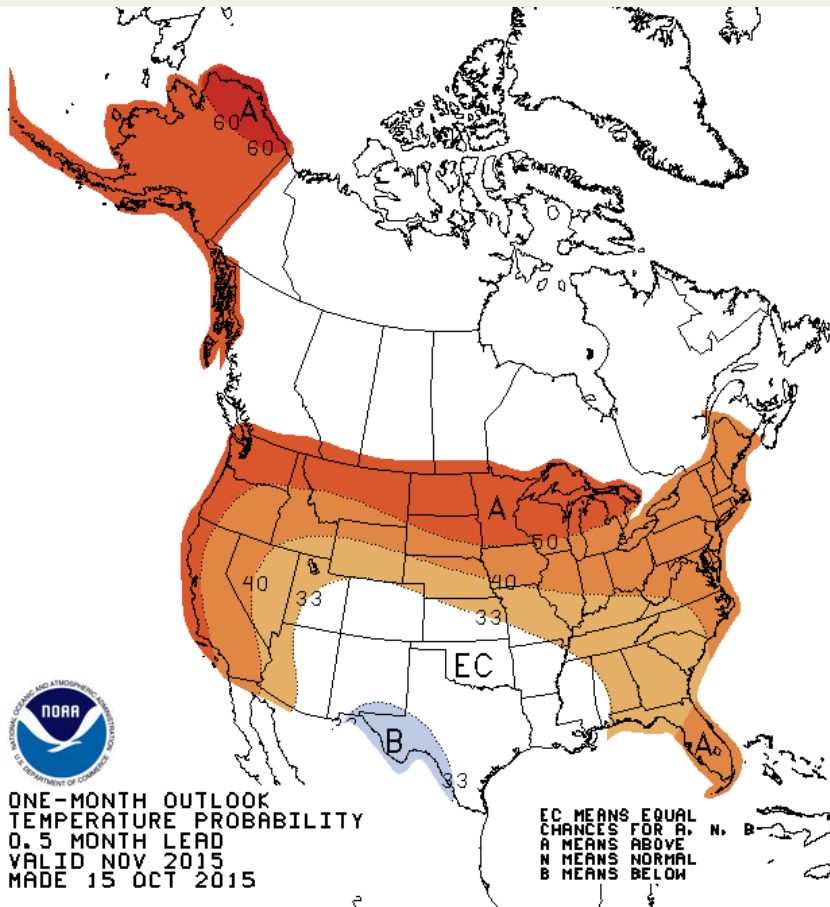
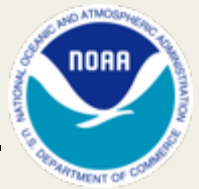
During September, sea surface temperature (SST) anomalies were well above average across the central and eastern Pacific Ocean (Fig. 1). The Niño indices generally increased, although the far western Niño-4 index was nearly unchanged (Fig. 2). Also, relative to last month, the strength of the positive subsurface temperature anomalies decreased slightly in the central and eastern Pacific (Fig. 3), but the largest departures remained above 6°C (Fig. 4). The atmosphere was well coupled with the ocean, with significant low-level westerly wind anomalies and upper-level easterly wind anomalies persisting from the western to the east-central tropical Pacific. Also, the traditional and equatorial Southern Oscillation Index (SOI) values became more negative (stronger), consistent with enhanced convection over the central and eastern equatorial Pacific and suppressed convection over Indonesia (Fig. 5). Collectively, these atmospheric and oceanic anomalies reflect a strong El Niño.

All models surveyed predict El Niño to continue into the Northern Hemisphere spring 2016, and all multi-model averages predict a peak in late fall/early winter (Fig. 6). The forecaster consensus unanimously favors a strong El Niño, with peak 3-month SST departures in the Niño 3.4 region near or exceeding +2.0°C. Overall, there is an approximately 95% chance that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening through spring 2016 (click [CPC/IRI consensus forecast](#) for the chance of each outcome for each 3-month period).

Across the United States, temperature and precipitation impacts from El Niño are likely to be seen during the upcoming months (the [3-month seasonal outlook](#) will be updated on Thursday October 15th). Outlooks generally favor below-average temperatures and above-median precipitation across the southern tier of the United States, and above-average temperatures and below-median precipitation over the northern tier of the United States.

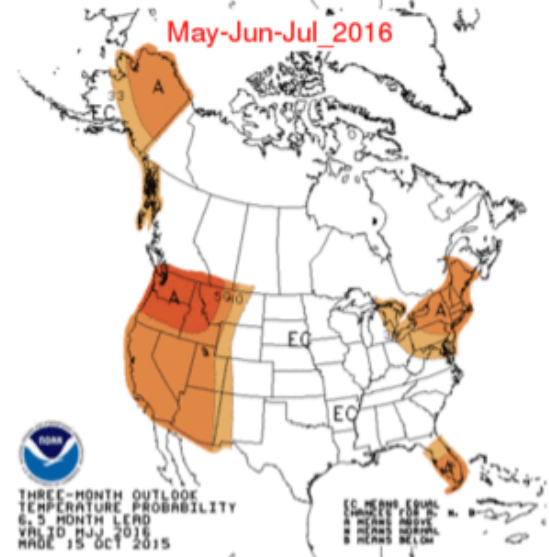
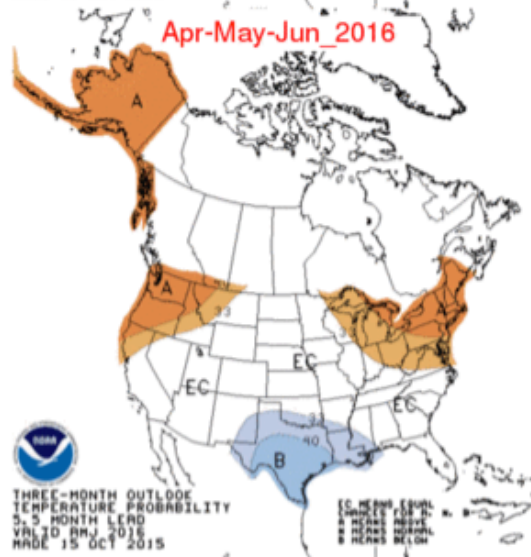
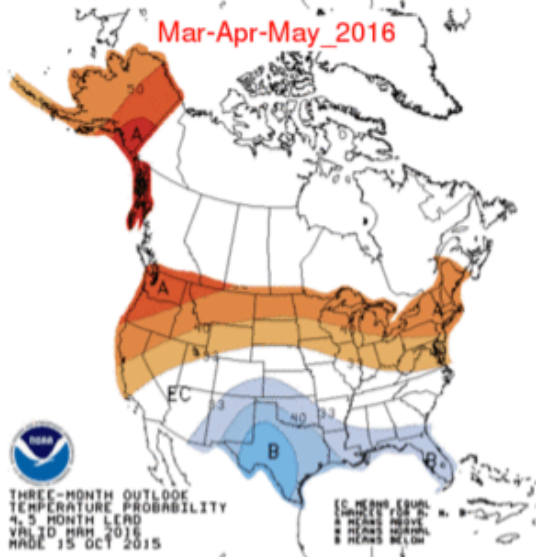
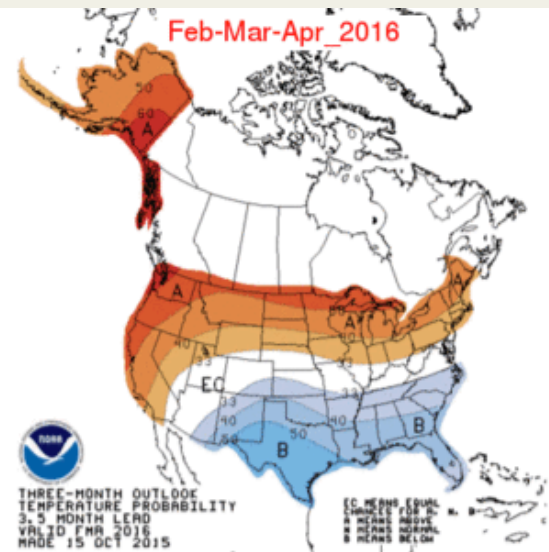
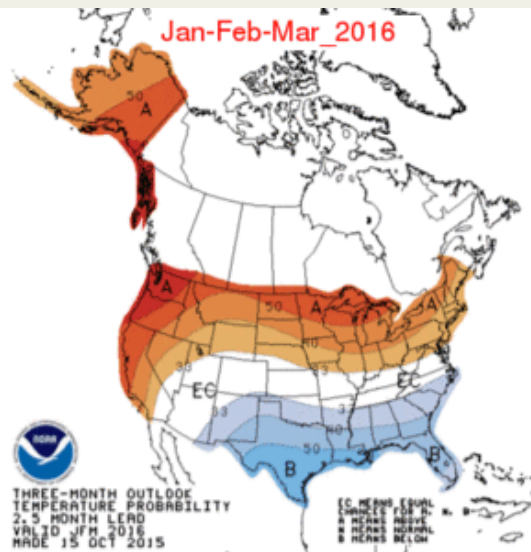
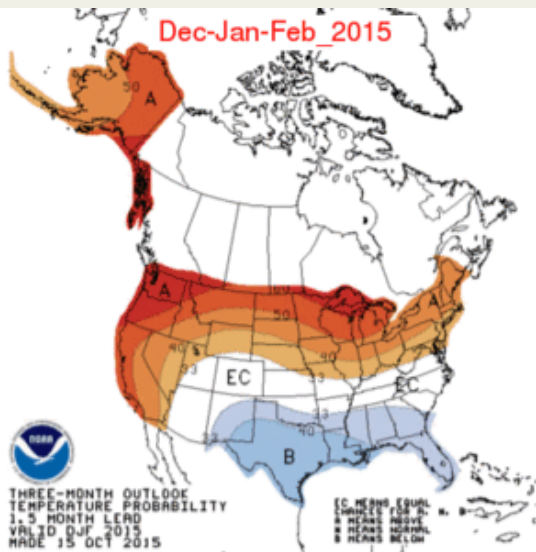
This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts are also updated monthly in the [Forecast Forum](#) of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an [ENSO blog](#). The next ENSO Diagnostics Discussion is scheduled for 12 November 2015. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.enso-update@noaa.gov.

November U.S. Forecasts

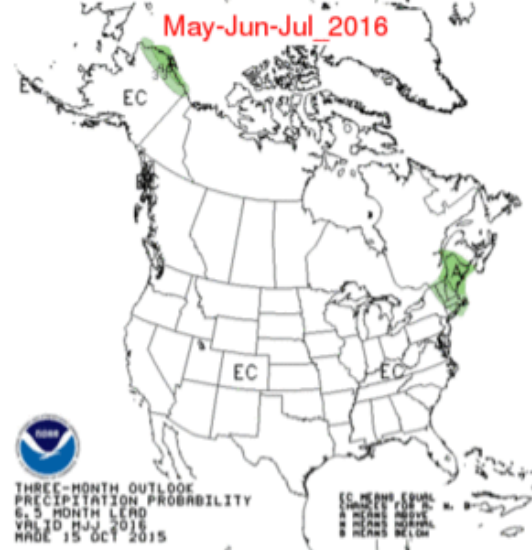
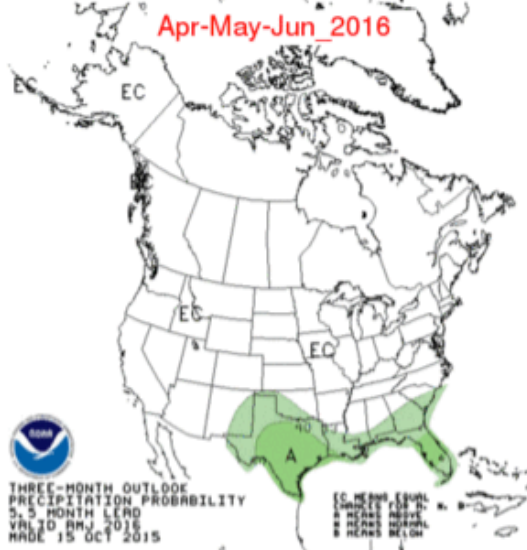
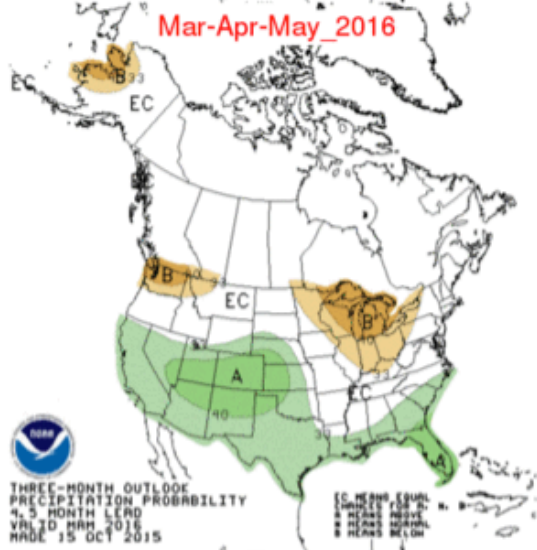
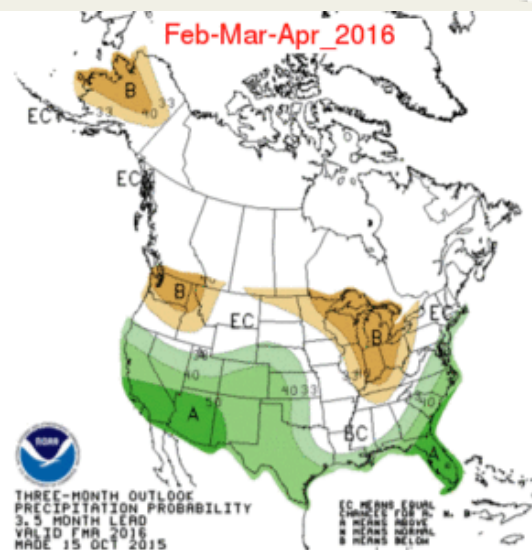
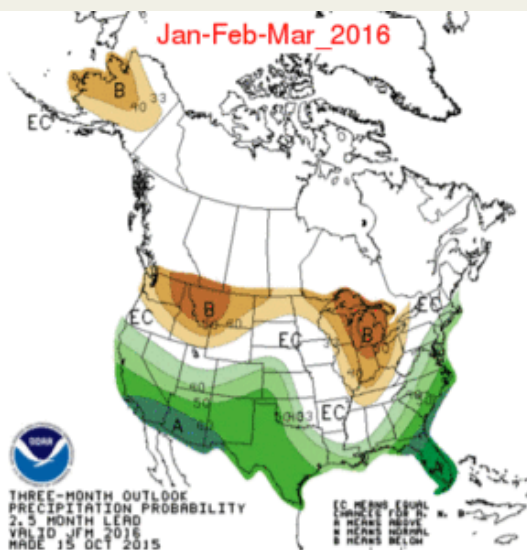
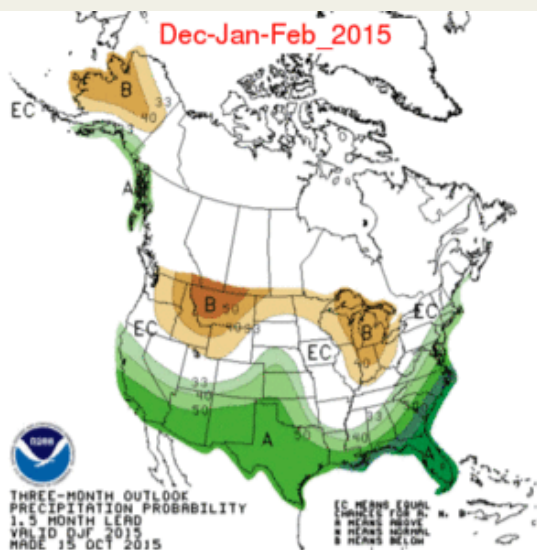


Source: NOAA/CPC

U.S. Temperature Forecasts



U.S. Precipitation Forecasts



Resources

- CPC (cpc.noaa.gov)
- Western Region El Nino Impacts and outlook (WRCC)
- [Resources folder](#) on [WRECIC project google drive](#)



El Niño Impacts and Outlook

Western Region September 2015

Typical El Niño Winter Weather Pattern

NOAA climate.gov

El Niño and the West

A strong El Niño is predicted during winter 2015/16.

El Niño is a warming of the Pacific Ocean that occurs along the equator between South America and the Date Line and can influence the storm track over the West. El Niño conditions do not "cause" individual storms but rather influence their frequency and characteristics.

El Niño is typically associated with wetter than normal conditions along the southern third of California eastward following the U.S.-Mexico border and drier than normal conditions in the Inland Northwest and northern Rockies.

El Niño is not usually a good predictor of winter precipitation for northern California and the northern Great Basin, though model simulations suggest a very strong El Niño may drive above normal precipitation in this area and further north.

Climate Outlook and El Niño Connections

Winter Temperature and Precipitation Outlook

Temperature

Precipitation

Climate Prediction Center Outlooks
Produced August 20, 2015 for Dec-Jan-Feb 2015/16
Numbers indicate percent chance of temperature in warmest one-third and of precipitation in wettest one-third.
CPC // http://www.cpc.ncep.noaa.gov/products/predictions/long_range/

Past Strong El Niño Events

Event since 1950	Year (Oct-Mar)	Maximum ONI Value
1	1957/1958	1.7
2	1965/1966	1.8
3	1972/1973	2.0
4	1982/1983	2.1
5	1991/1992	1.8
6	1997/1998	2.3
7 (TBD)	2015/2016	2.3 (predicted)

Above: El Niño events with an Oceanic Niño Index (ONI), an indicator based on equatorial SSTs, peaking at ≥ 1.5 .
Below: 92% of 26 dynamical and statistical climate models favor a strong El Niño, with most peaking during the late fall or early winter of 2015/16.

El Niño Strength 2015/16

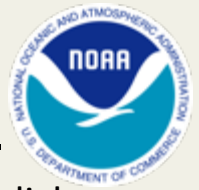
Potential El Niño Event Intensity

Data source: ONI, Aug 20, 2015
<http://www.cpc.ncep.noaa.gov/products/forecast/forecast.html>

The official NOAA outlooks for Dec-Jan-Feb temperature and precipitation for the West reflect the development of a strong El Niño during this period. Above normal temperatures and below normal precipitation are anticipated in the Pacific Northwest and northern Rockies. There is a 50% chance that winter precipitation totals will be in the top 33% of historic values across far southern California, Arizona, and New Mexico. The forecast is less confident moving northward. These outlooks are likely to change as we track the progress of El Niño and other climate variables in the coming months. This El Niño event is forecast to rival previous strong El Niño events, such as 1982/83 and 1997/98. During those events, above normal precipitation extended northward into northern California, the Great Basin, and the coastal Pacific Northwest. However, no two years are identical even when a strong El Niño is present. There are other sources of variability and uncertainty that can impact this winter's weather. These include background warming of the ocean and atmosphere, unique ocean temperature patterns, and other atmospheric patterns besides El Niño.

Contacts: Kelly Redmond (Kelly.Redmond@dri.edu)
Nina Oakley (Nina.Oakley@dri.edu)

Regional Impacts - September



Goal: Document information on regional anomalies and impacts. To insert a regional impact, click on the [Google Doc](#).

Reports:

- NWS (Andrea Bair)
- NMFS (Michael Milstein)
- Regional (Timi Vann)
- Others – Open floor

NWS – Andrea Bair



NMFS – Michael Milstein



- Declared unusual mortality event for Guadalupe fur seals which Ruth mentioned last meeting but which was officially declared since.
- NMFS preparing an announcement about >40 marine mammals and seabirds detected with domoic acid poisoning through the Wildlife Algal-toxin Research and Response Network (WARRN-West) coast wide surveillance network.
- http://www.nwfsc.noaa.gov/news/features/el_nino/index.cfm

Regional Impacts Summary – 9/21 to 10/19



Conditions noted in the Google spreadsheet:

1. Warm water & “The Blob”
2. El Niño
3. Drought

Impacts noted in the Google spreadsheet:

1. Marine ecosystem
 - Species shifts & distribution
 - Invasive Species
 - “Unusual Mortality Event”
 - Coral bleaching
2. Agritourism
3. Wildfire, forestry
4. Water supply/reservoir management
5. Policy



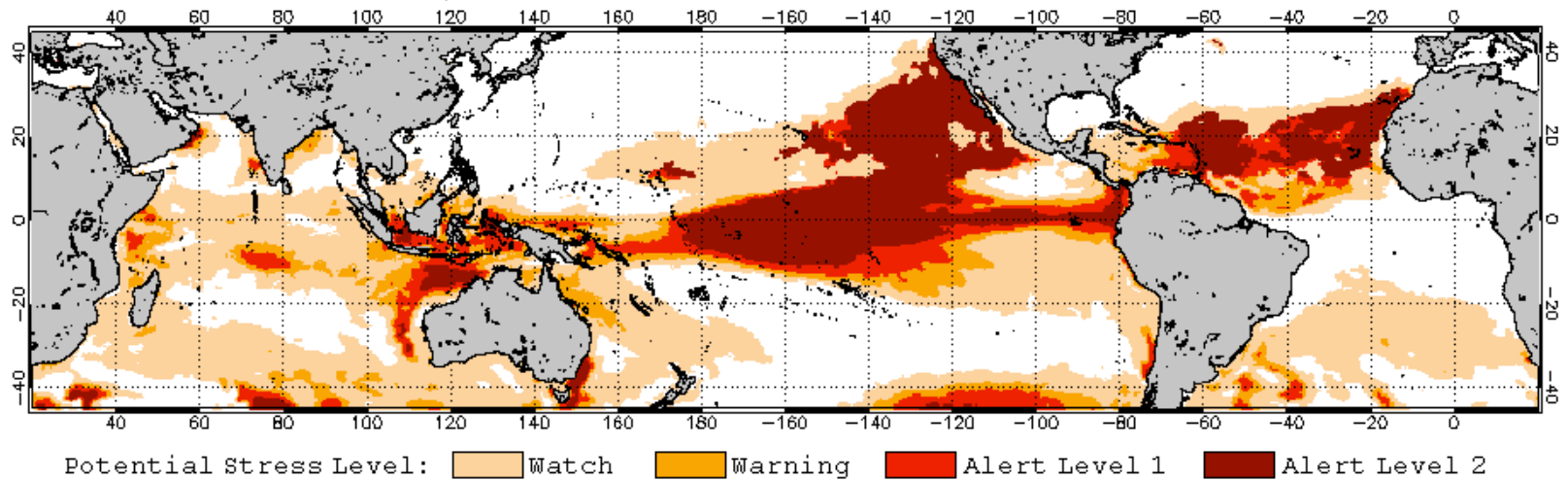
COLUMBIA RIVER — Salmon fishermen in the Columbia River's Buoy 10 fishery this week encountered Humpback whales. They have been sighted within the Columbia River in recent days. Daily Astorian



Unusual Mortality Event – Guadalupe Sea Lions in Rehab. Credit: Pacific Marine Mammal Center


2015 Oct 13 NOAA Coral Reef Watch 60% Probability Coral Bleaching Thermal Stress for Oct–Jan 2016

Experimental, v3.0, CFSv2-based, 28-member Ensemble Forecast



NOAA Coral Reef Watch's most recent Four-Month Coral Bleaching Thermal Stress Outlook
http://coralreefwatch.noaa.gov/satellite/analyses_guidance/enso_bleaching_97-99_ag_20140507.php

Yellow bellied sea snake



REPORT THIS SEA SNAKE

RECENT SIGHTINGS OF THE YELLOW BELLIED SEA SNAKE (*PELAMIS PLATURUS*) HAVE BEEN REPORTED AND SCIENTISTS NEED YOUR HELP TO CONFIRM THIS VERY RARE OCCURENCE HERE IN CALIFORNIA.

This species is highly venomous, do not attempt to handle or interact with the snake if you see one. Do take as many photos as possible, with a cell phone, camera, what ever you have avialble to you. Do try and get accurate location information. IDEALLY GPS data would be the best possible option, but any and all location information is greatly appreciated.

Your data will be used to confirm this El Nino year as the first time in 30 years this fascinating animal has been in our waters. The information you provide could be published in scientific journals, in which your sighting will be mentioned as well as your name if you desire.

Email: Eric@discoball.com



Bark beetles burrow inside the bark of Torrey pines at Torrey Pines State Natural Reserve in San Diego. The severe drought has made the trees vulnerable to the beetles. J. Katarzyna Woronowicz Special to The Bee.

<http://www.sacbee.com/news/politics-government/capitol-alert/article39618351.html#storylink=cpy>

Recent sightings of *Pelamis Platurus*, a highly venomous tropical sea snake, in Ventura Co. CA. Poster on website for Heal the Bay, www.healthebay.org

Other Reports



Announcements



1. Next WRECIC call: Week of November 23 (some time adjustment may be made)
2. Public webinar on Western Impacts of El Niño held this morning. The presentation is posted to:
<https://toolkit.climate.gov/content/stakeholder-briefing-western-impacts-el-ni%C3%B1o>

Open Discussion

