



# Regional Environmental Conditions & Impacts Coordination

NOAA West  
November 23, 2015

# Call Agenda

---



- Project Recap & Updates (Kevin Werner)
- El Niño and Regional Climate brief (Dan McEvoy)
- Environmental conditions and impacts reporting and discussion:
  - Media (Timi Vann)
  - NWS
  - NMFS
  - Others
- Discussion

# Regional Coordination Goals

---



1. Document and share environmental conditions information and impacts on human systems and NOAA mission at the regional scale.
2. Improve awareness of environmental observations and human system impacts across NOAA mission lines.
3. Improve regional communication and coordination across NOAA mission lines and between NOAA and NOAA-funded regional partners involved in monitoring and communicating changing climate conditions and impacts.
4. Improve external communication of regional impacts from changing environmental 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).

## 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.

# Implementation Updates

---



## Climate Capacity

- The NOAA West Regional Team is funding dedicated climate expertise for this project through the Western Regional Climate Center.

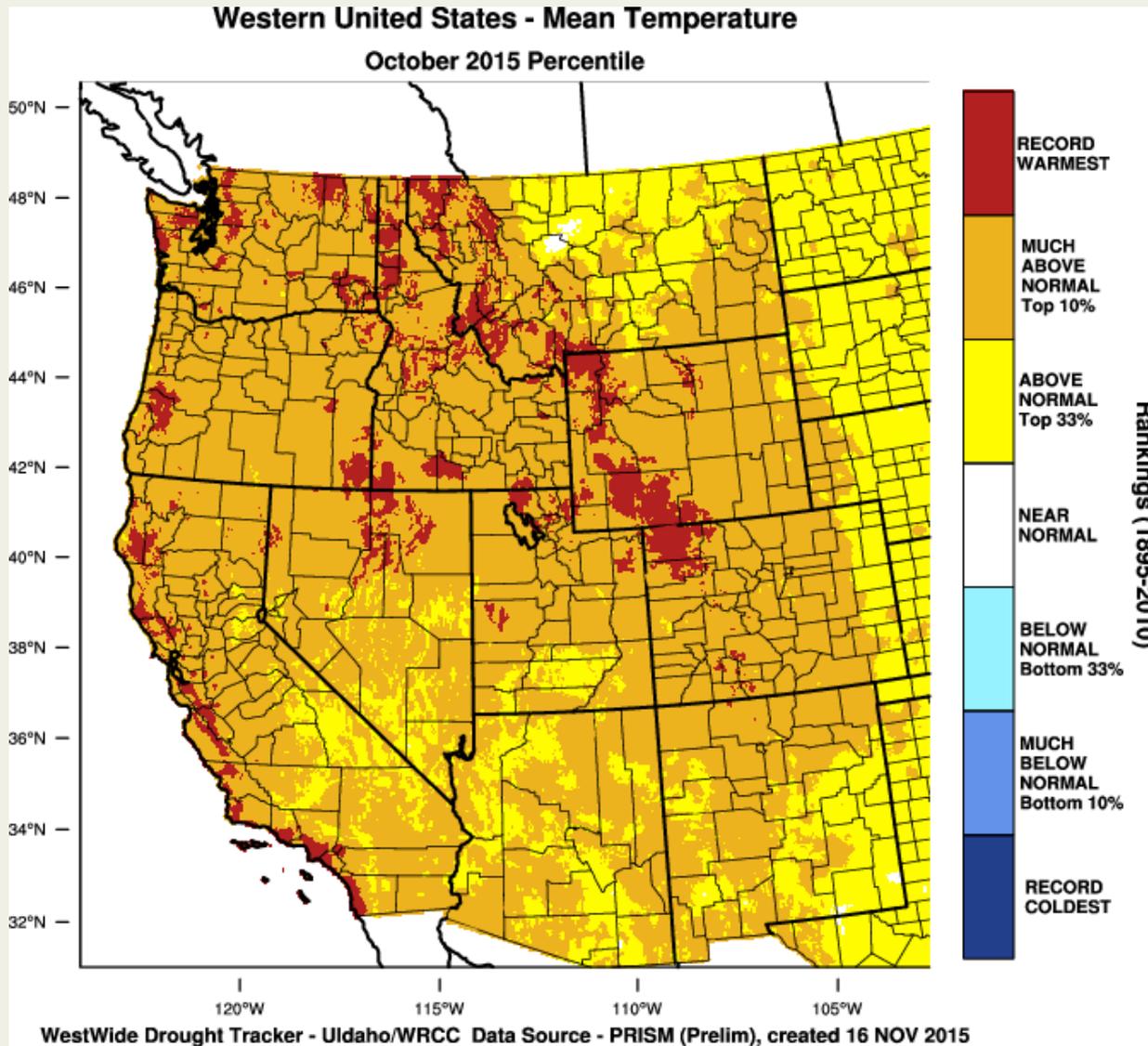
## Communications

- The NOAA West Regional Team received a highly skilled applicant for rotational assignment to help develop and disseminate regional synthesis of impacts information on periodic basis and for the seasonal summary publication. Target audiences: NOAA leadership and in-region elected officials.

## NOAA ENSO Task Team

- Task Team is utilizing this model (focus on sector-specific impacts based information) for other regions as part of the agency response to the current El Niño event.

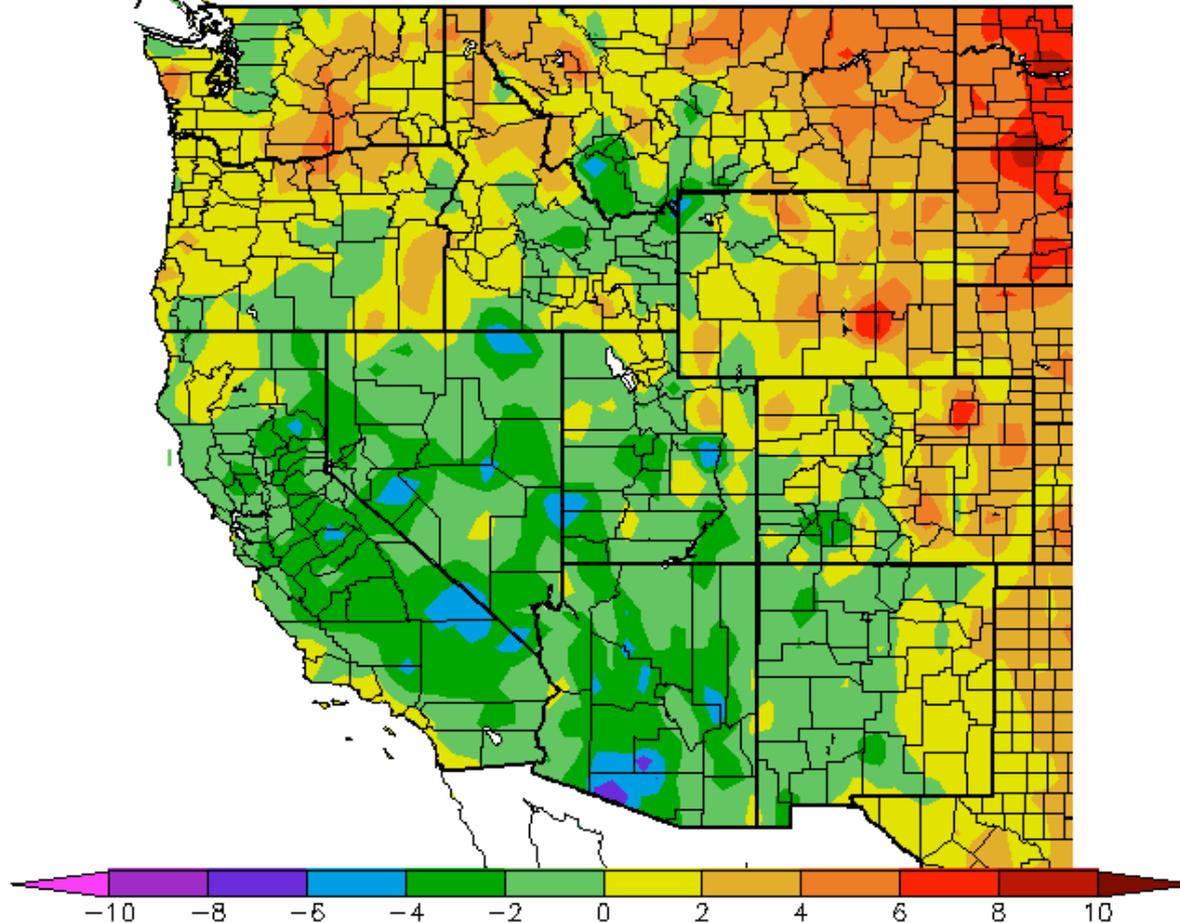
# Temperature



# Temperature



Ave. Temperature dep from Ave (deg F)  
11/1/2015 - 11/21/2015



Generated 11/22/2015 at WRCC using provisional data.  
NOAA Regional Climate Centers

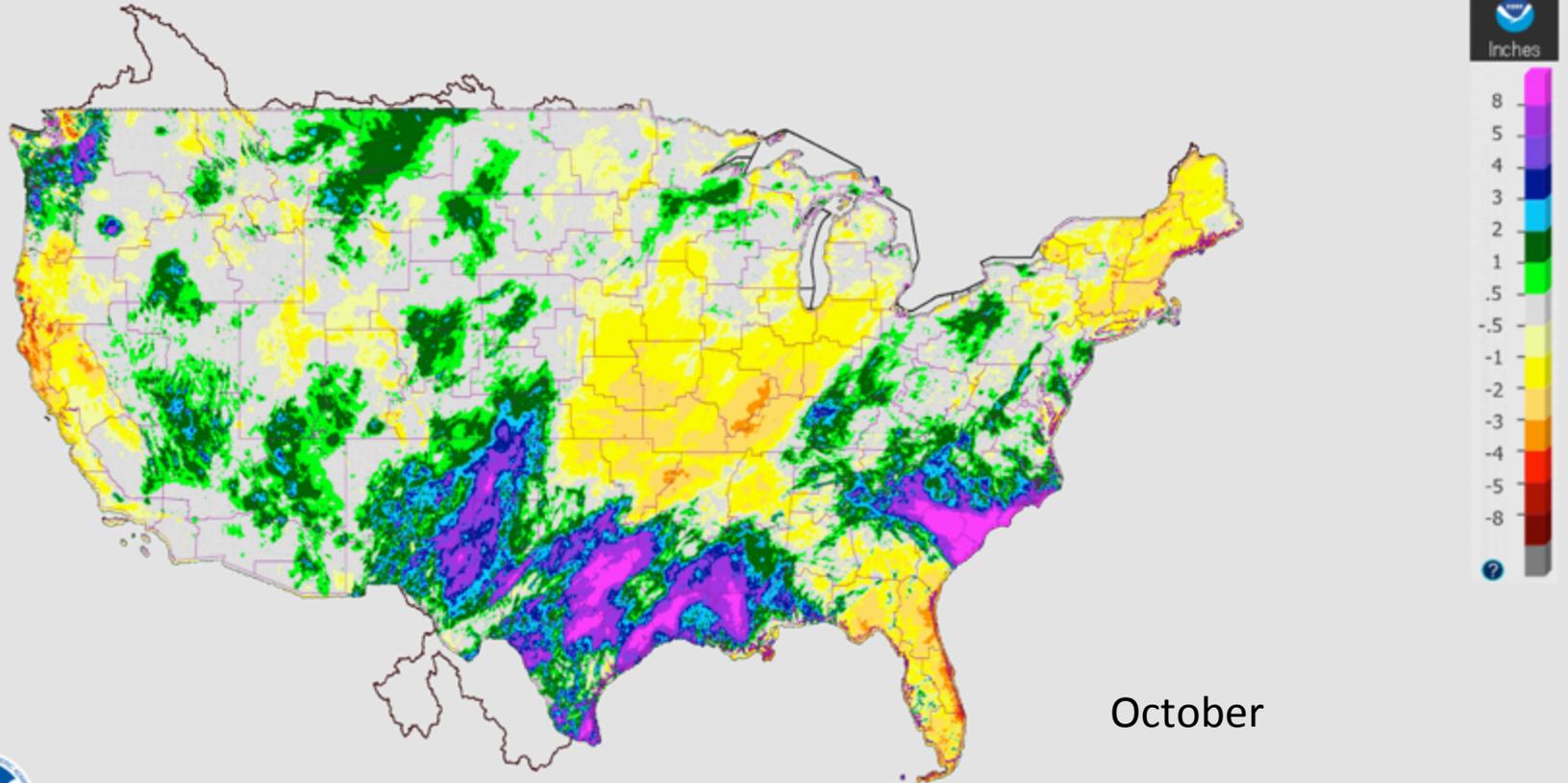
# Precipitation



## October 01, 2015 Monthly Departure Precipitation - Continental United States

Created on: November 20, 2015 - 19:56 UTC

Valid on: November 01, 2015 12:00 UTC



October



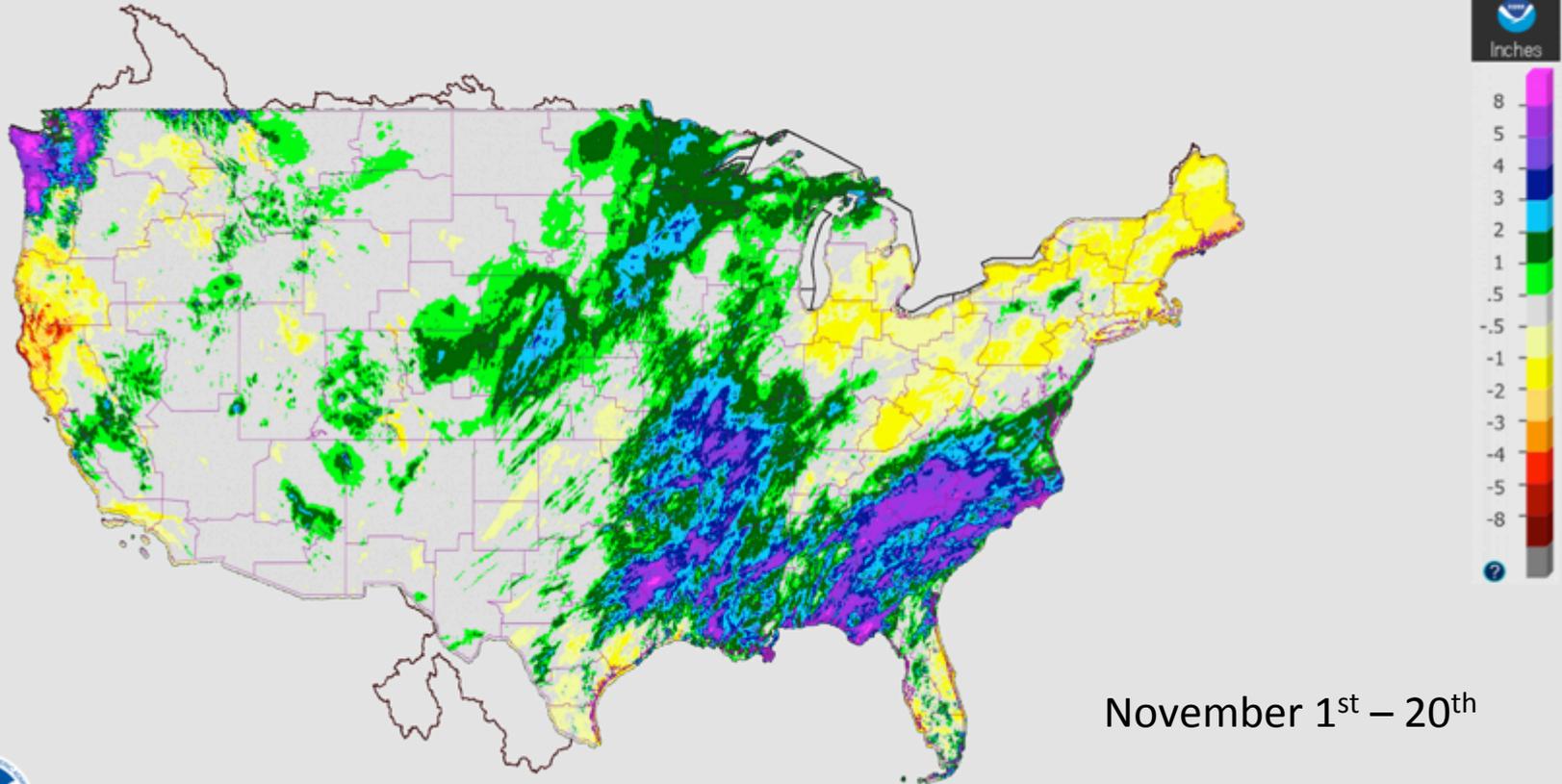
# Precipitation



## November 20, 2015 Month to Date Departure Precipitation - Continental United States

Created on: November 20, 2015 - 20:01 UTC

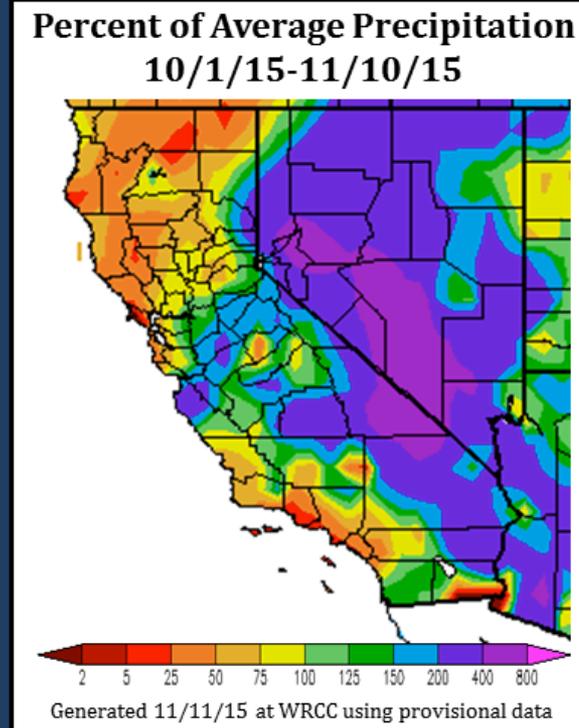
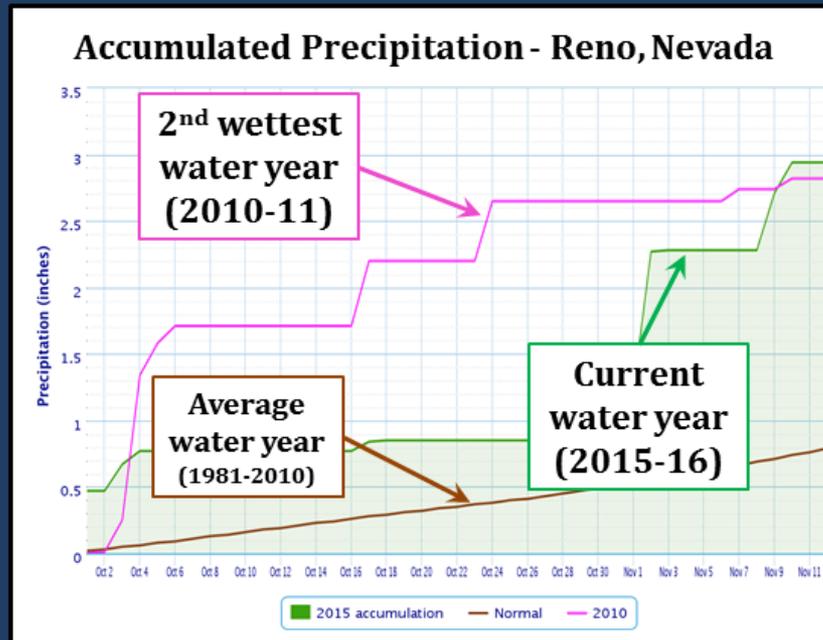
Valid on: November 20, 2015 12:00 UTC



November 1<sup>st</sup> – 20<sup>th</sup>



## Water Year: Reno's Wettest Start on Record



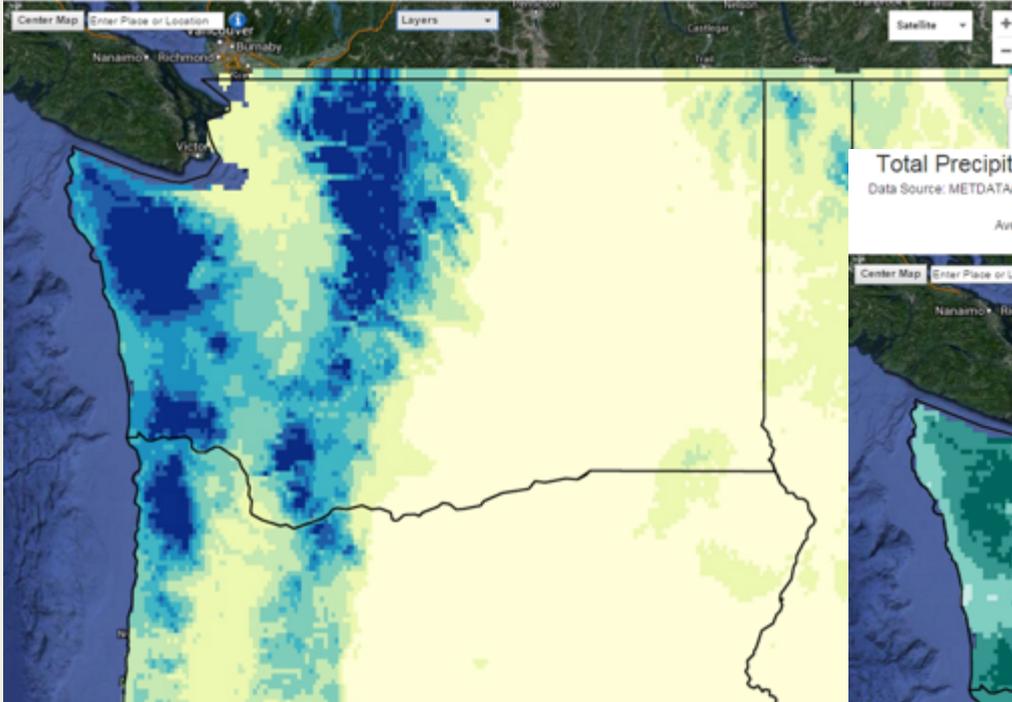
After the most recent storm, Reno is now having it's record wettest start to the water year since records started in 1893! The Sierra on the other hand is only slightly above normal.

# Precipitation



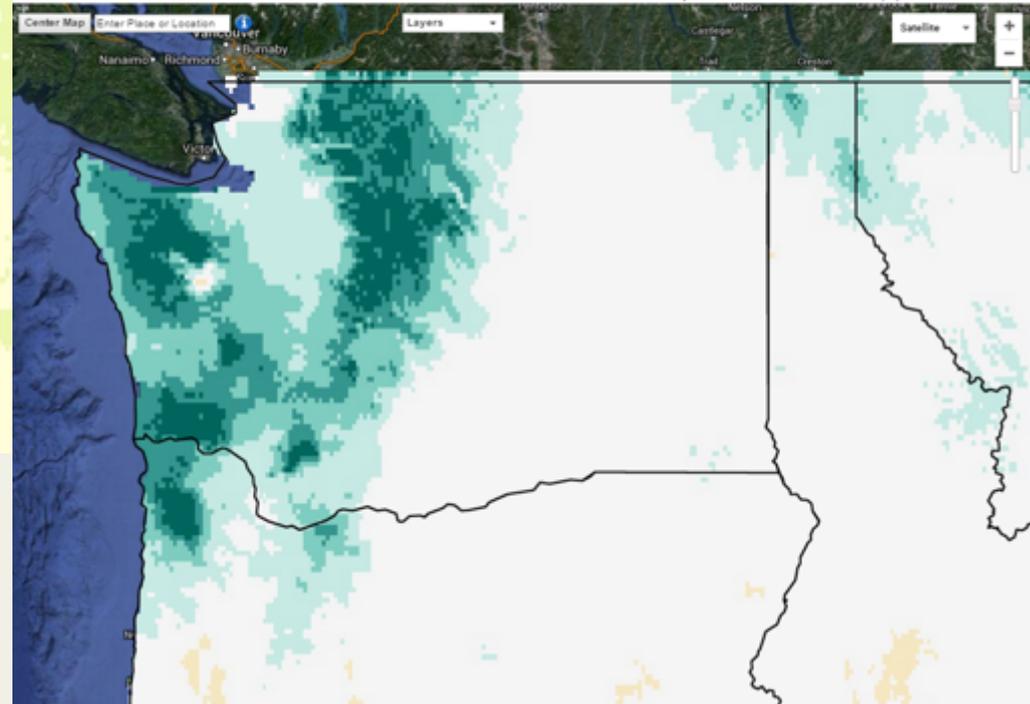
## Total Precipitation

Data Source: METDATAgridMET 4-km dataset (University of Idaho) from 2015-11-01 to 2015-11-21



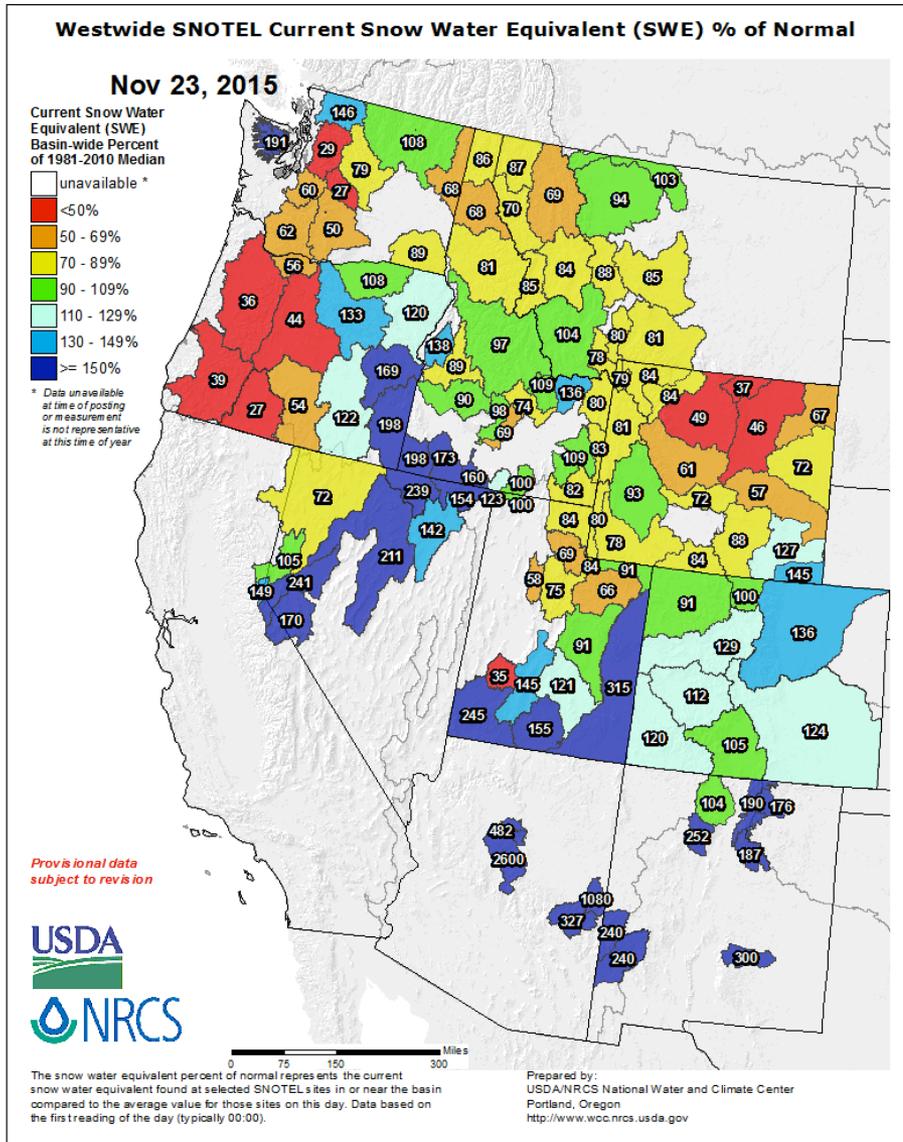
## Total Precipitation Difference from Average

Data Source: METDATAgridMET 4-km dataset (University of Idaho) from 2015-11-01 to 2015-11-21  
Average calculated from 1981-2010



<http://clim-engine.appspot.com/>

# Snow Water Equivalent

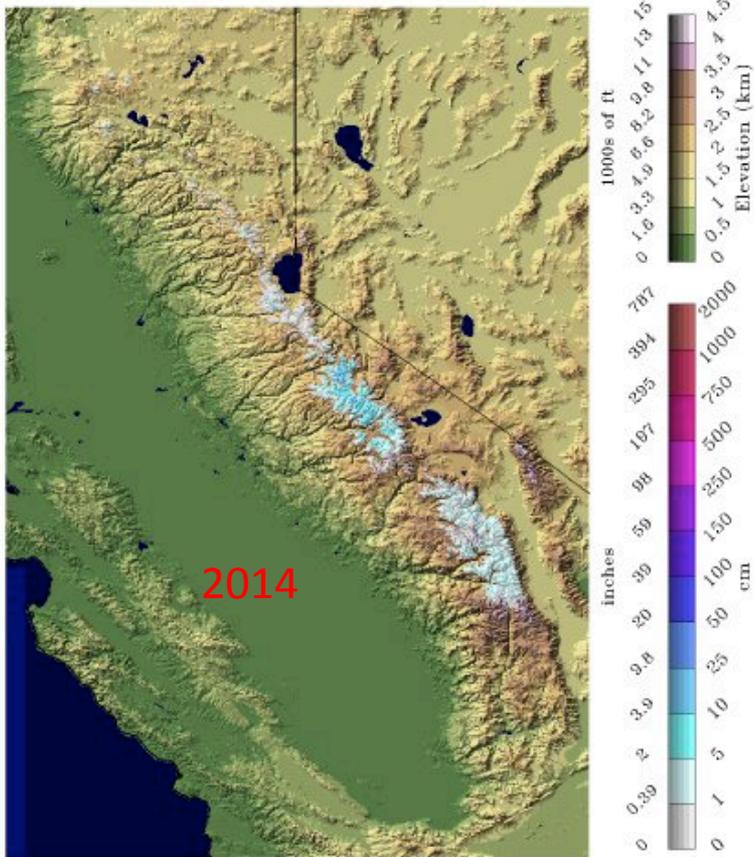


Source: NRCS

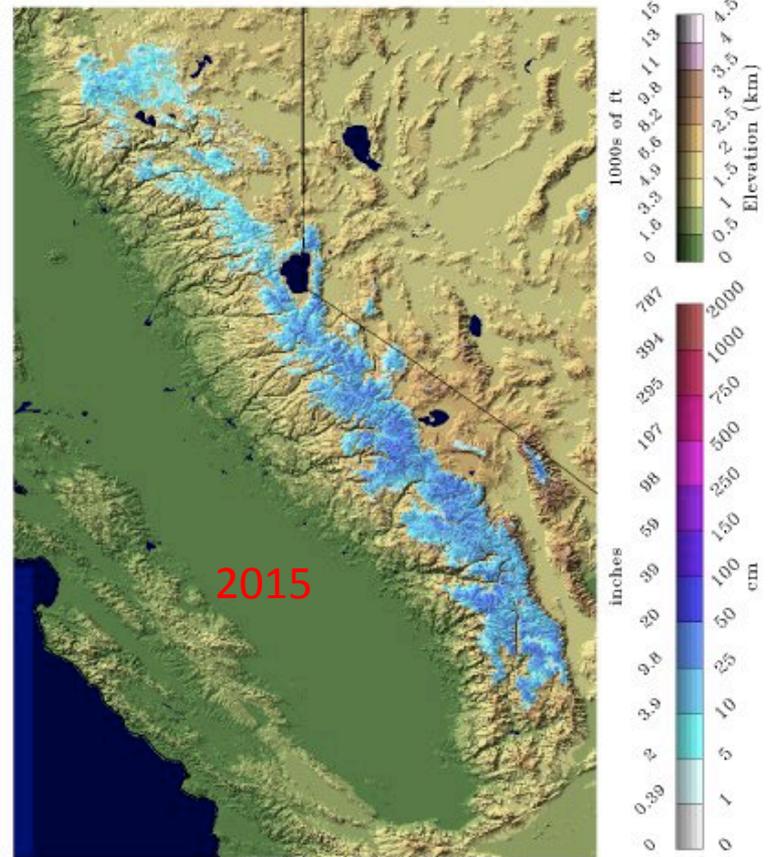
# Snow



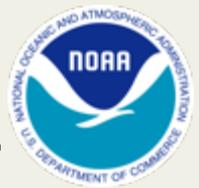
Snow Depth  
2014-11-23 06 UTC



Snow Depth  
2015-11-23 06 UTC

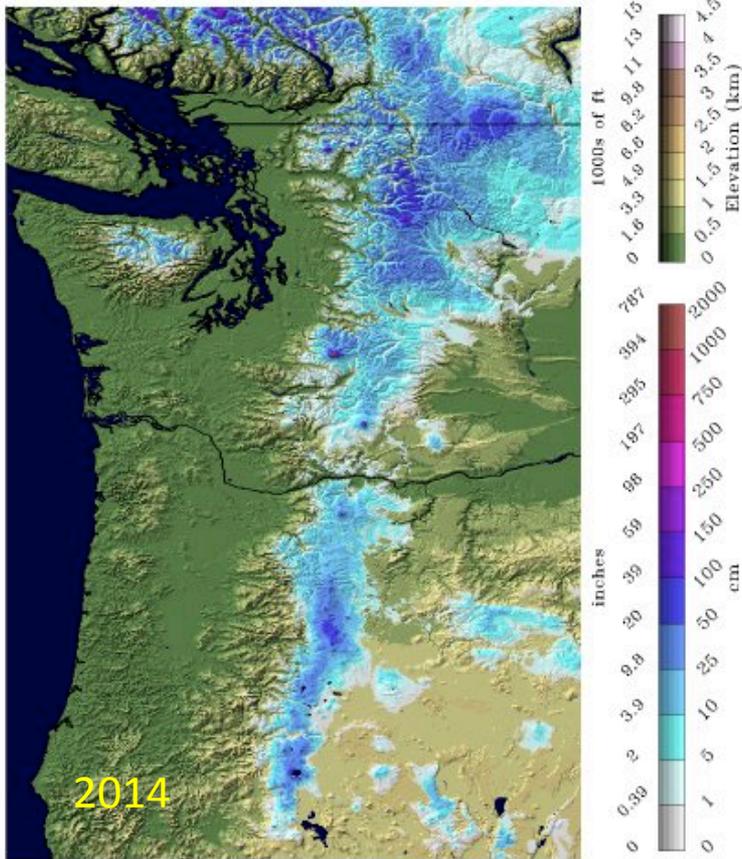


# Snow



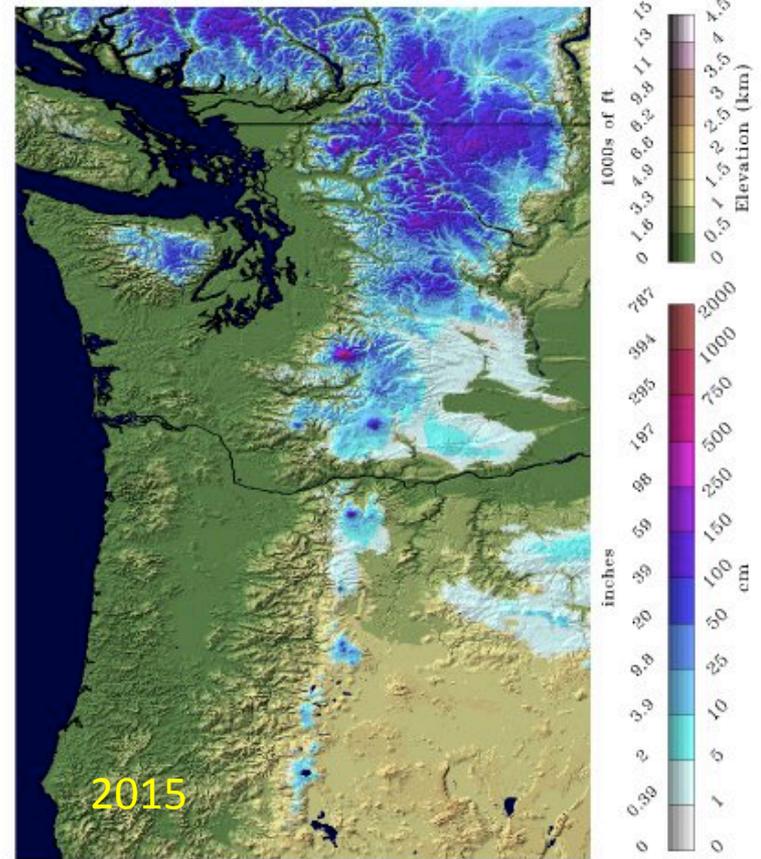
## Snow Depth

2014-11-23 06 UTC



## Snow Depth

2015-11-23 06 UTC



# El Nino Status

---

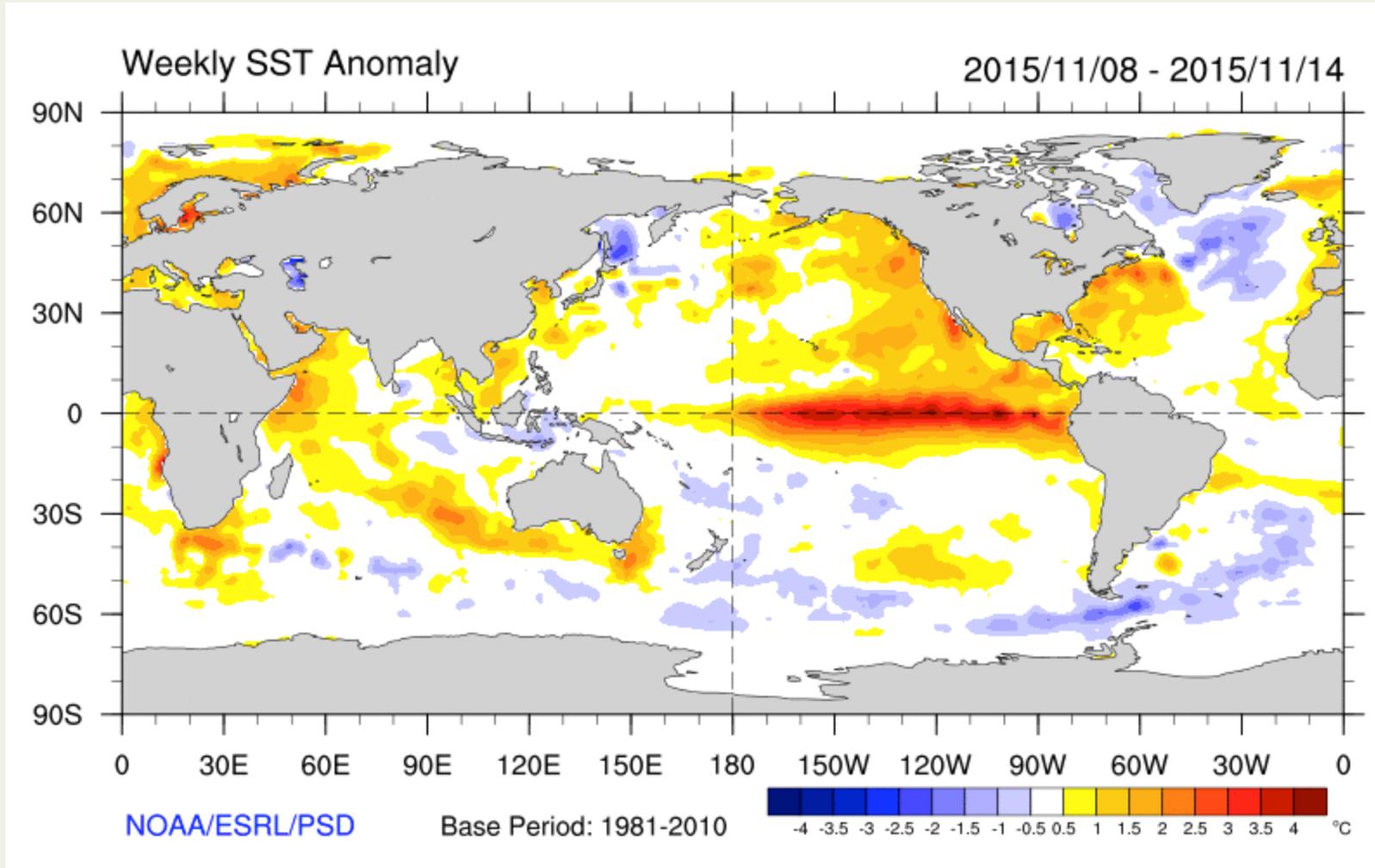


- ENSO Alert System Status: El Niño Advisory
- El Niño conditions are present
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- El Niño will likely peak during the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during the late spring or early summer 2016.\*

Credit: CPC

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

# Current Sea Surface Temperatures



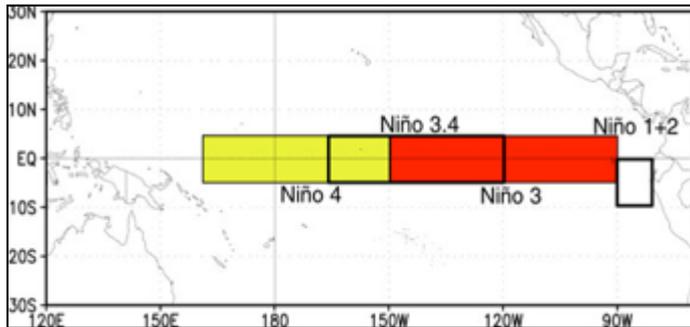
Source: NOAA/ESRL

# Niño Region SST Departures (°C) Recent Evolution

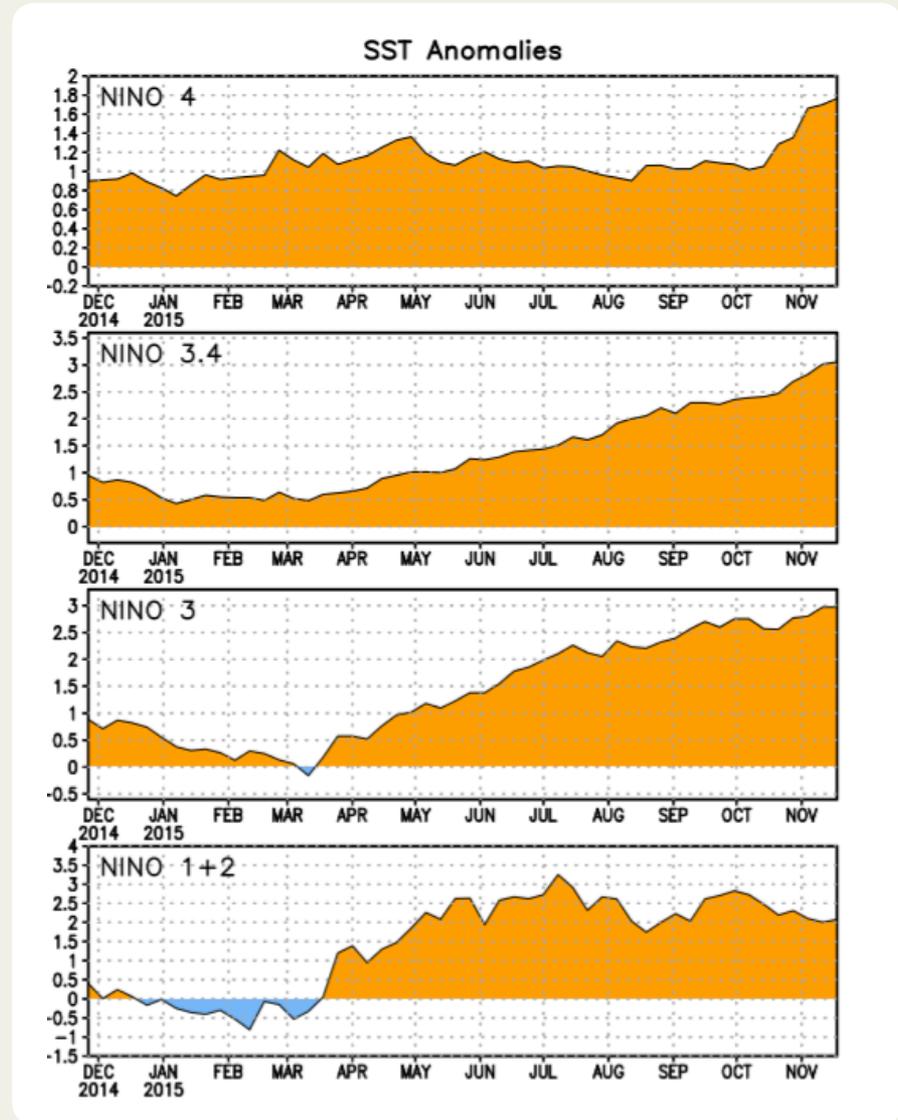


The latest weekly SST departures are:

Niño 4	1.8°C
Niño 3.4	3.1°C*
Niño 3	3.0°C
Niño 1+2	2.1°C



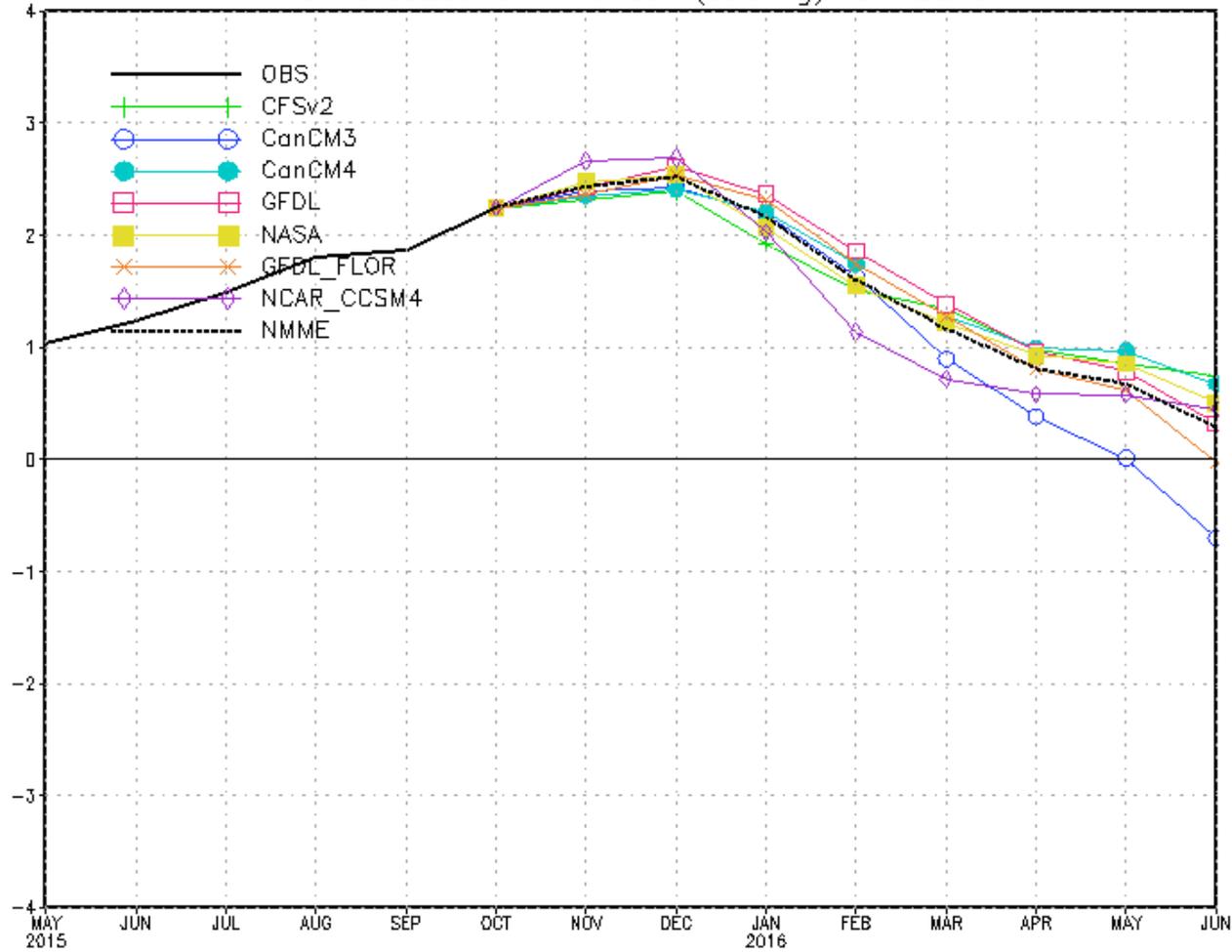
\*Record Niño 3.4 weekly value



# ENSO Forecasts



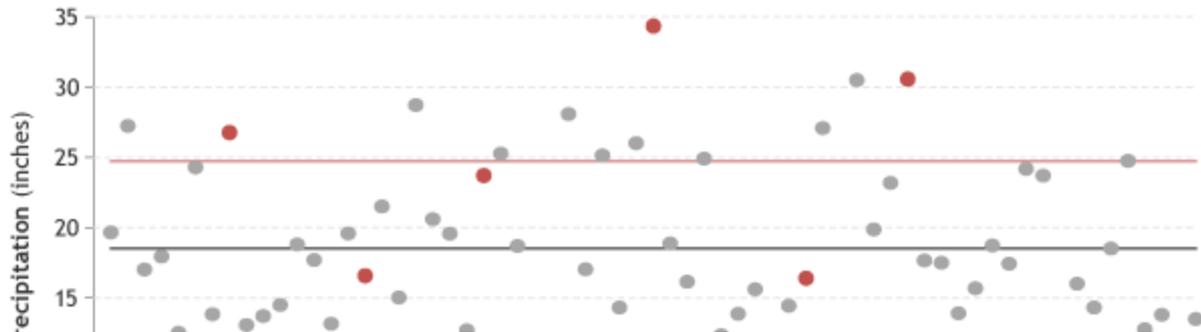
NMME Forecast for Nino 3.4 (scaling) IC= 201511



# Updated ENSO tools



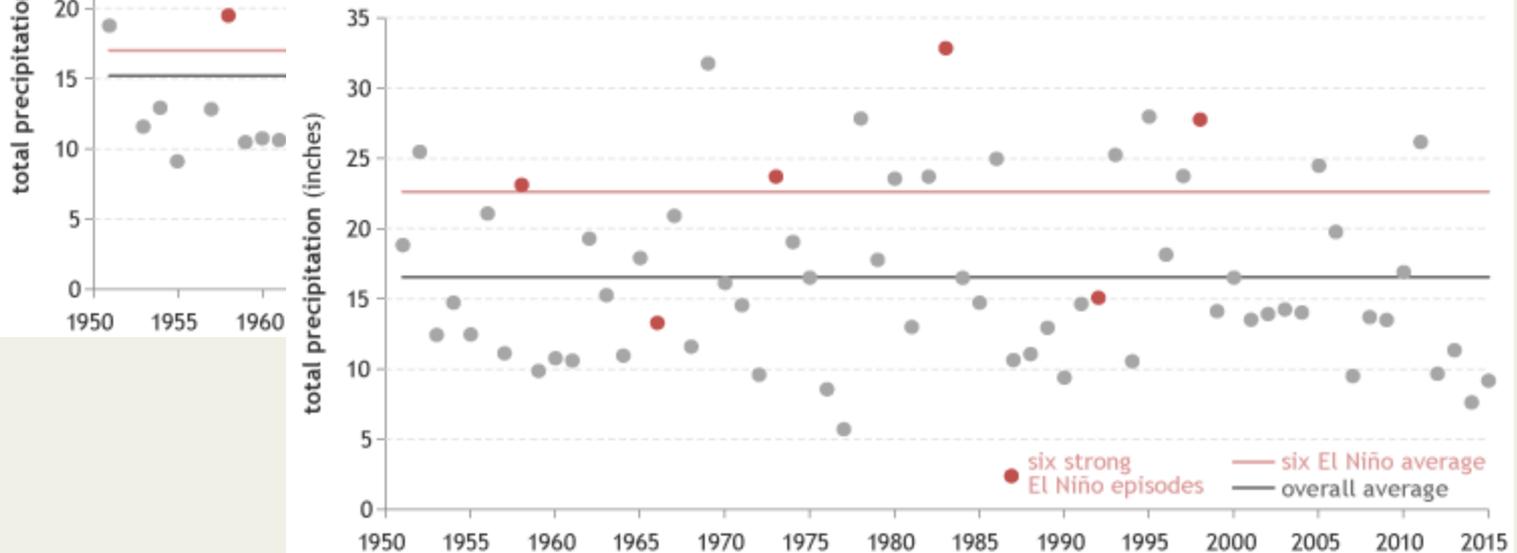
Cold season (Oct-Mar) precipitation for California (statewide)



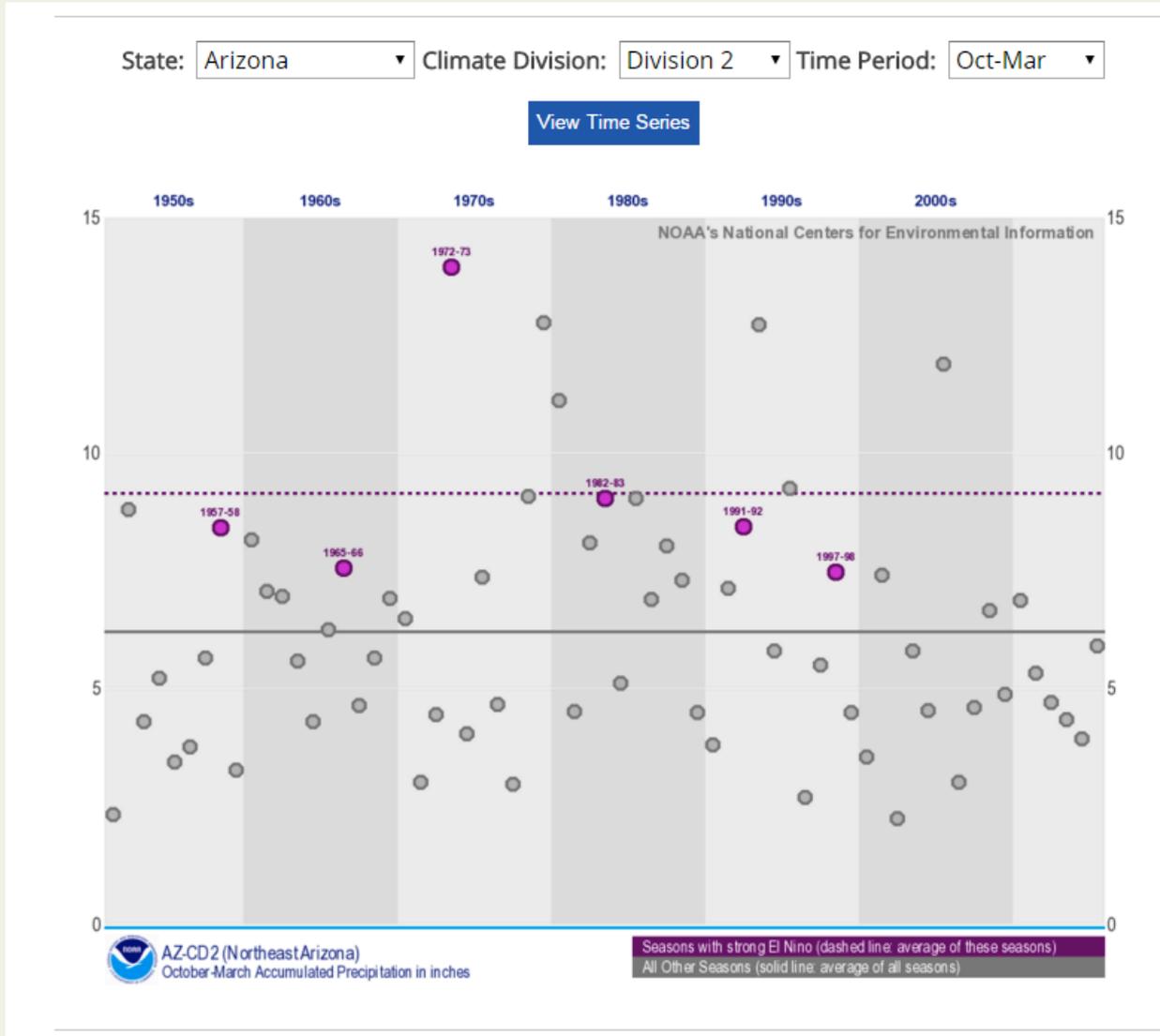
Cold season (Oct-Mar) precipitation for California Climate Division 3 (Northeast Interior Basin)



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

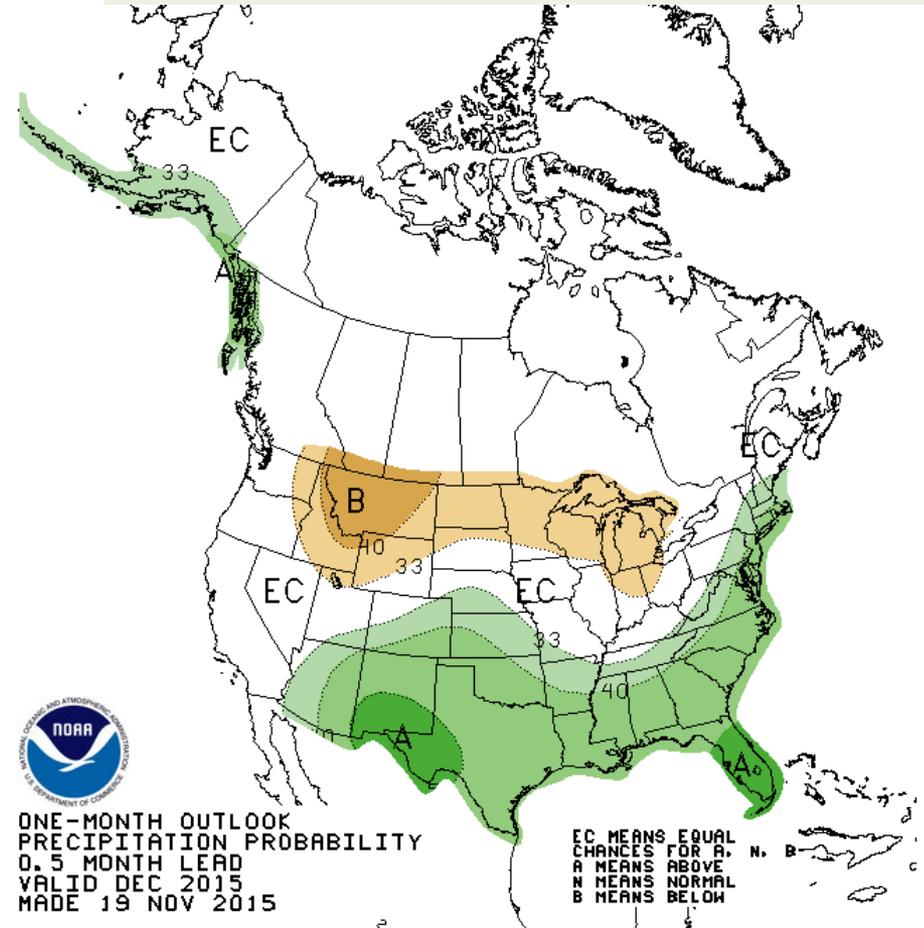
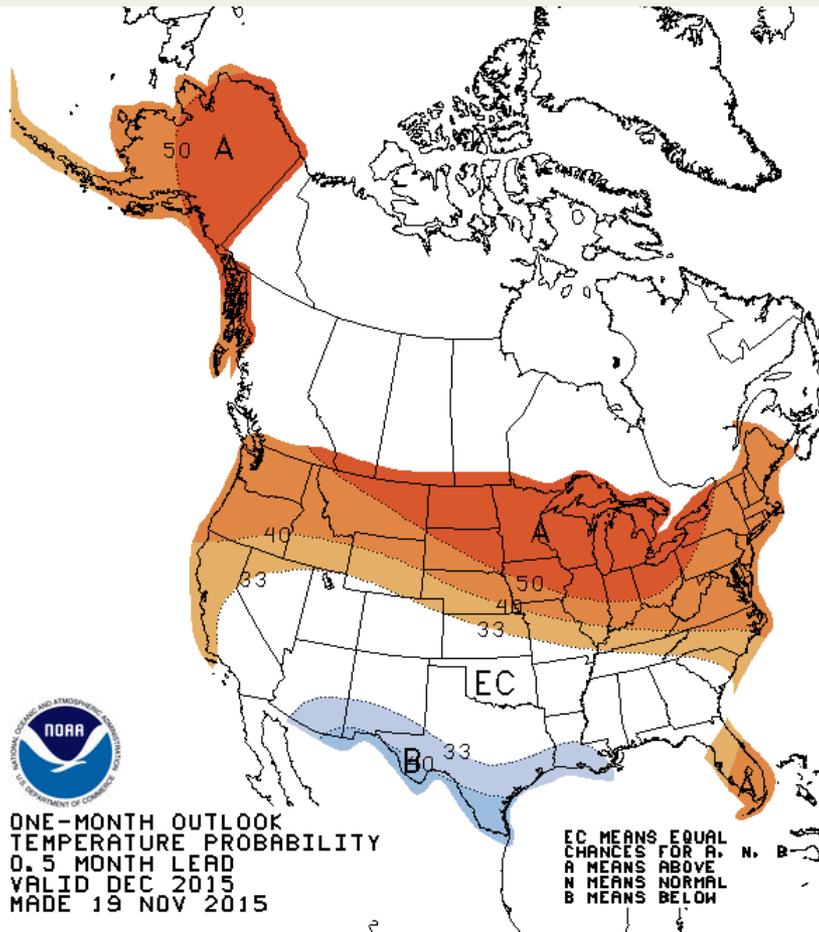


# Updated ENSO tools



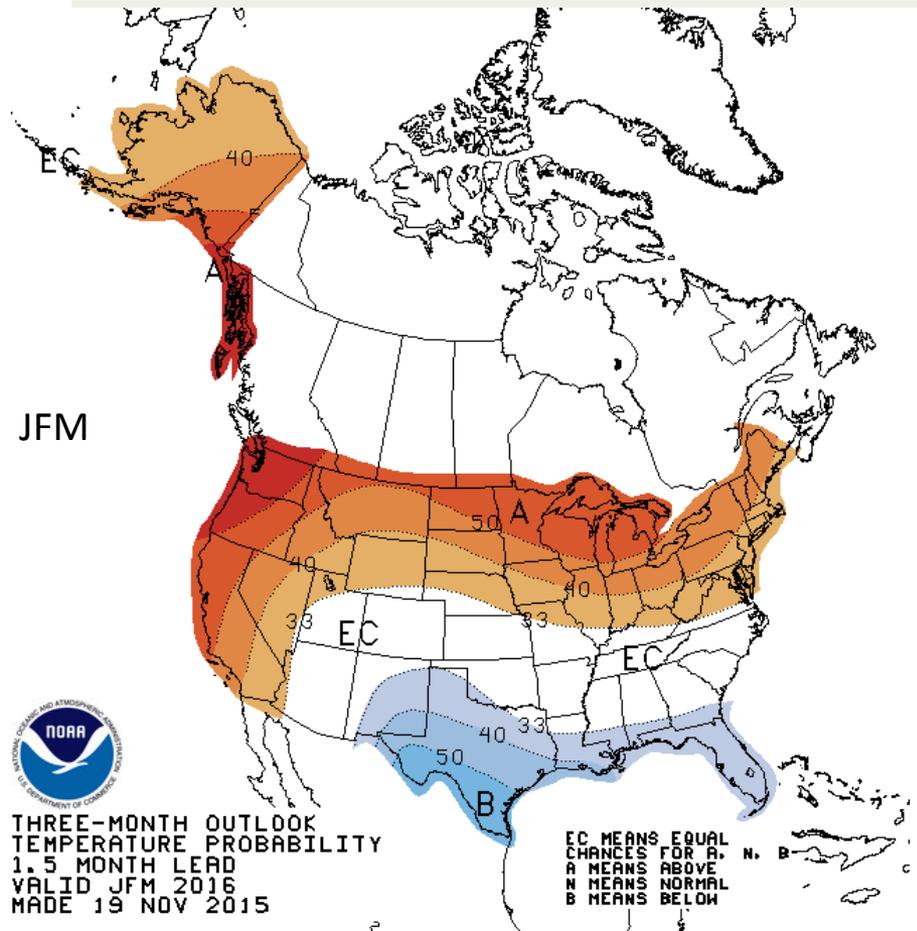
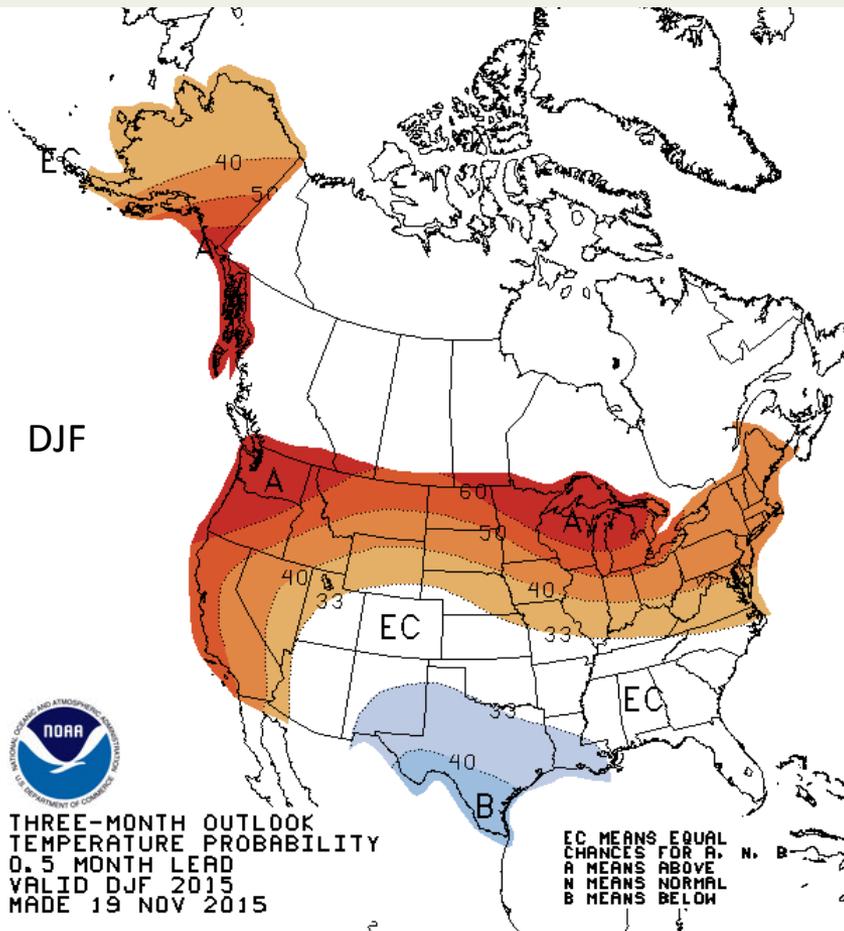
Source: [www.ncdc.noaa.gov/monitoring-references/dyk/elniño-2015-2016](http://www.ncdc.noaa.gov/monitoring-references/dyk/elniño-2015-2016)

# December U.S. Forecasts

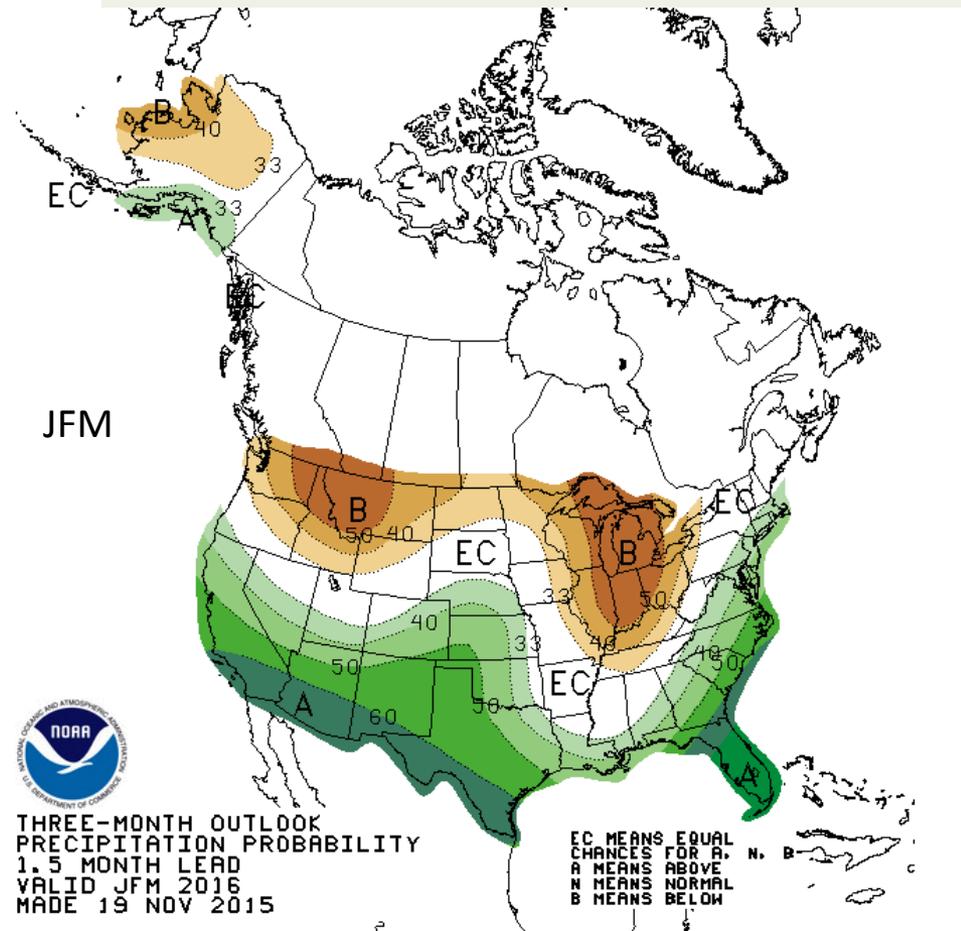
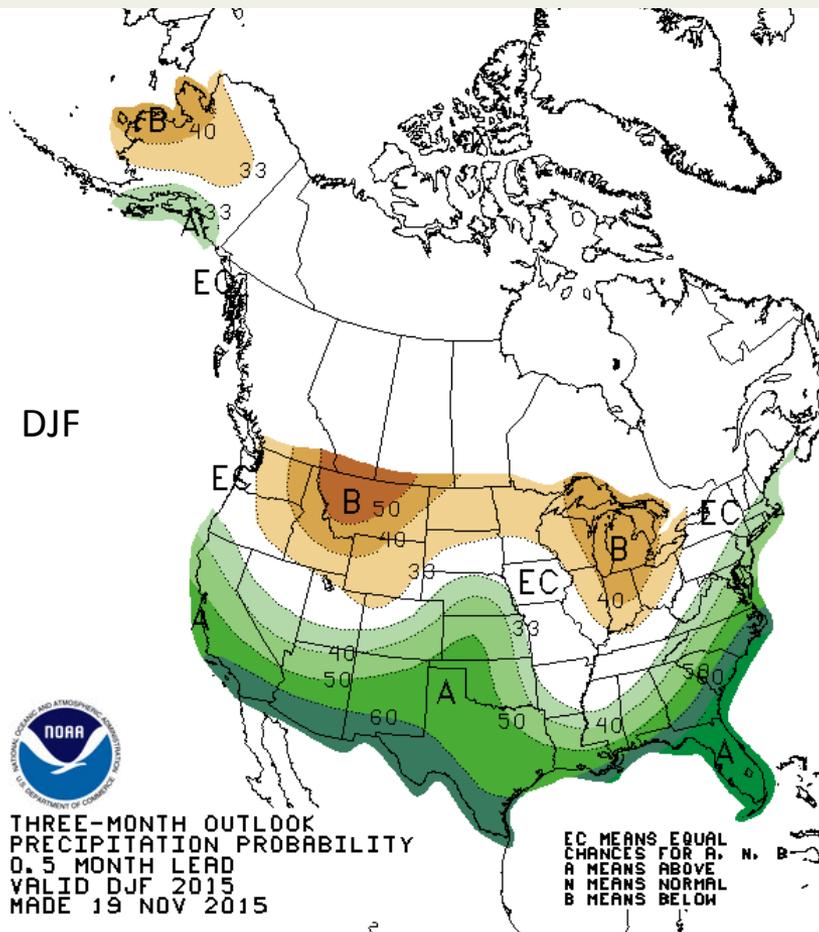


Source: NOAA/CPC

# U.S. Temperature Forecasts



# U.S. Precipitation Forecasts



Source: NOAA/CPC

# Regional Impacts Summary – 10/20 to 11/20

---



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

## Reports:

- Regional (Timi Vann)
- NWS
- NMFS
- Others – Open floor

# Regional Impacts Summary – 10/20 to 11/20

---



## Reporting Status:

- 97 entries since July 1, 2015
- Last reporting period: 29 conditions & impacts collected from 10 media sources
- Primary source is E&E Newswire. After these entries, NMFS media clips are reviewed for conditions and impacts reporting gaps.

## Conditions noted in the Google spreadsheet:

1. Warm water & “The Blob”
2. El Niño
3. Floods
4. Drought
5. Snow

---

## Marine ecosystem:

- Poor endangered fisheries returns
- Record toxic algal bloom-marine food web impacts
- Shifts in species distribution

## Terrestrial ecosystem:

- Tree mortality state of emergency/wildfire risk
- Shifts in species distribution

## Extreme Weather:

- Floods: Death Valley (wettest Oct. on record)
- Winds: 3 deaths in WA from severe windstorm; Power outage to 300,000

## Tribal Communities:

- Quinault fisheries closure
- Quileute Reservation cut off by flooding

## Policy:

- Litigation (ESA listed fisheries & water deliveries)
- Executive Order for collection of stormwater (CA)

## Municipalities:

- Local state of emergency/Flood preparations (CA)

## Recreation:

- Warm rivers (-) impacts to fisheries & tourism (MT)
- Early snow (Sierra Nevada) positive for ski regions

# What this looks like - Marine Ecosystem Impacts



**Domoic acid detected in marine wildlife from the Pacific Northwest to Southern California during a record-setting bloom of toxic algae in the North Pacific in the summer of 2015**



Following a harmful algal bloom of unprecedented geographic extent the Wildlife Algaltoxin Research and Response Network (WARRRN) observed a record number of animals spanning the US West Coast with detectable levels of domoic acid, a neurotoxin produced by the algae. The toxin was detected in three seabirds, and 36 marine mammals including whales, dolphins, porpoises, seals, and sea lions. Red images represent potentially lethal levels of domoic acid and orange images represent low levels of toxin. Animals exhibiting seizures (a characteristic sign of domoic acid poisoning) are noted with a halo on the map.

**Footnote:** Domoic acid is rapidly eliminated from the body so toxin levels detected in stranded or sick animals may not accurately represent the magnitude of the initial exposure. Samples were collected from dead and stranded marine mammals by the West Coast Marine Mammal Stranding Network.



NOAA researchers pour a sample of sea water containing a brownish toxic algae into a jar aboard a research vessel off the Washington coast. NOAA Fisheries via AP



A fishing boat sits loaded with crab pots waiting to go out at Fisherman's Wharf in San Francisco. Crab pots are sitting empty on docks, boats are idled and fishermen are anxiously waiting for authorities to open the lucrative Dungeness crab season. (AP Photo/Eric Risberg, File) (Eric Risberg/AP)

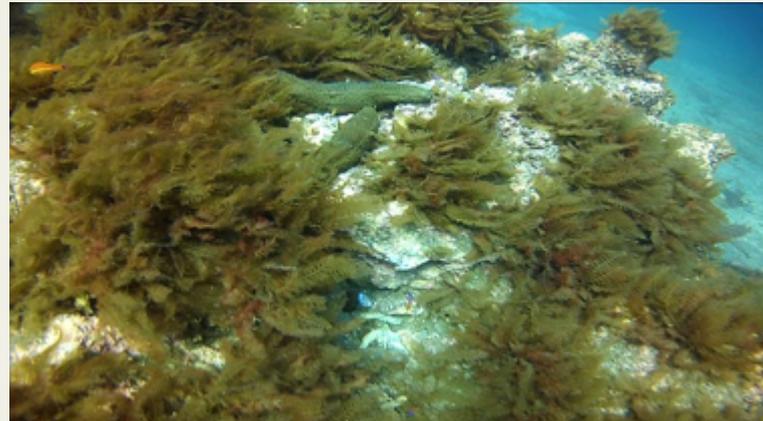
# What this looks like - Marine Ecosystem Impacts



Ryder DeVoe ,17, holds up a Wahoo fish he caught with a spear gun while free diving off the coast of San Diego, California October 19, 2015



Rare, Tropical Sea Turtle Found Swimming In San Joaquin River. Source: YouTube/EliteEdges.com



Invasive Weed Threatens Kelp Forests Off San Diego Coast. an Diego's iconic kelp forests are facing a threat from warm ocean temperatures and an invasive species called "devil weed." <http://www.kpbs.org/news/2015/nov/02/invasive-weed-threatens-kelp-forests-san-diego-coa/>

# What this looks like – Extreme Weather Impacts



Flooding in Death Valley: A 100-yard-long section of newly paved Highway 267 in Grapevine Canyon, a two-lane road designed to withstand severe flooding, was lifted up by roiling floodwaters and then slammed down on boulders in Death Valley National Park. Brian van der Brug / Los Angeles Times



Heavy rain around La Push, Washington cut off the Quileute Indian Reservation.



A tree fell on a Metro bus in King Co. WA. Across the state,, three people died and several hundred thousand lost power in a windstorm, causing major river flooding, highway mudslides and road closures. (Photo courtesy of the King County Sheriff's Office). <http://www.seattletimes.com/seattle-news/weather/wind-storm/>



Photographer Travis Geske, left, and California Highway Patrol Officer Edward Stewart rescue TV cameraman Monte Duarte, who was sinking in the mud during a mudslide caused by heavy rains in California (Francine Orr / Los Angeles Times)

# Announcements & Open Discussion

---



1. Next WRECIC call: Monday December 21, 1pm PT
2. Open Discussion: