



Regional Environmental Conditions & Impacts Coordination

NOAA West
January 25, 2016

Call Agenda



- Welcome
- Updates (Jan Newton/Pacific Anomalies 2 Workshop Summary)
- El Niño and Regional Climate brief (D. McEvoy)
- Highlights: Regional Monitoring & Reporting Tools
- Environmental conditions and impacts reporting update (T. Vann)
- Communications / “Stories” Update (M. Milstein)
- Discussion

Pacific Anomalies Workshop 2 Report Out



“PAWS2” - Northwest Association of Networked Ocean Observing Systems (NANOOS) Workshop link:
http://www.nanoos.org/resources/anomalies_workshop/workshop2.php

Temperature

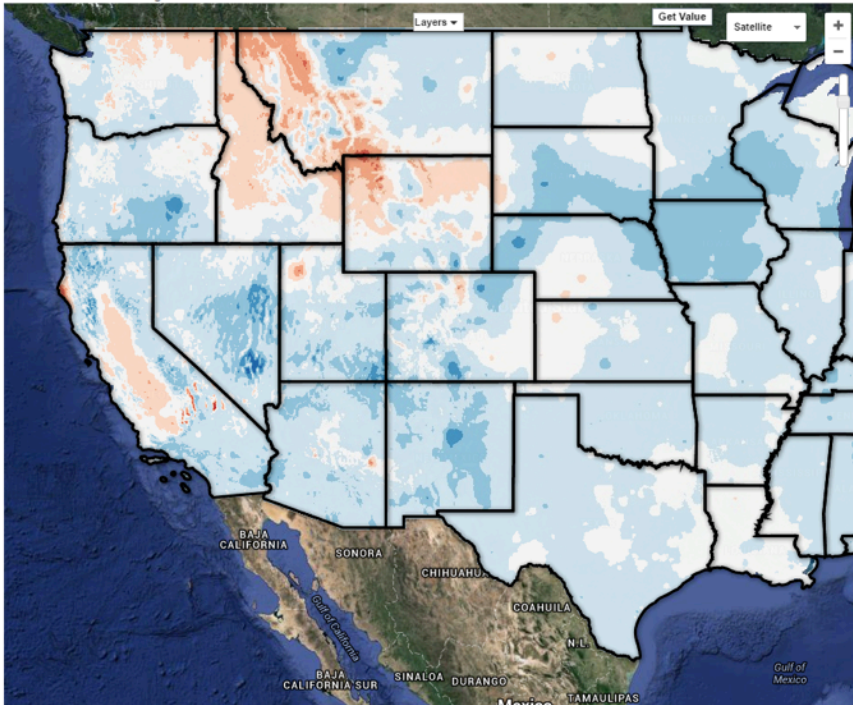


Jan 1 – Jan 21, 2016

Oct 1, 2015 – Jan 21, 2016

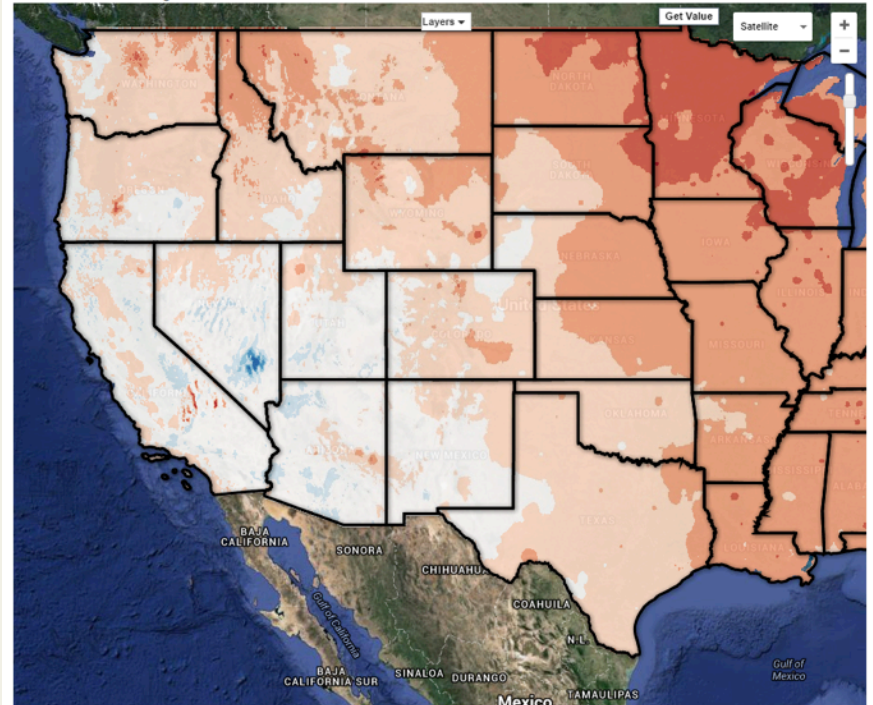
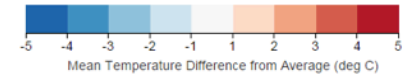
Mean Average Temperature Difference
from Average

Data Source: METDATA/gridMET 4-km dataset (University of Idaho)
from 2016-01-01 to 2016-01-21
Average calculated from 1981-2010



Mean Average Temperature Difference
from Average

Data Source: METDATA/gridMET 4-km dataset (University of Idaho)
from 2015-10-01 to 2016-01-21
Average calculated from 1981-2010



climateengine.org



University of Idaho

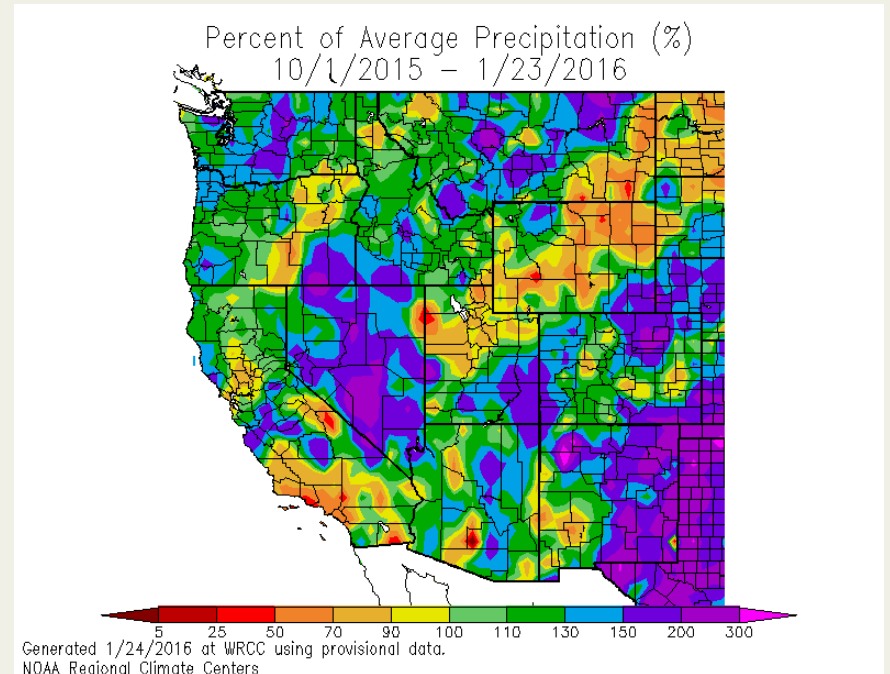
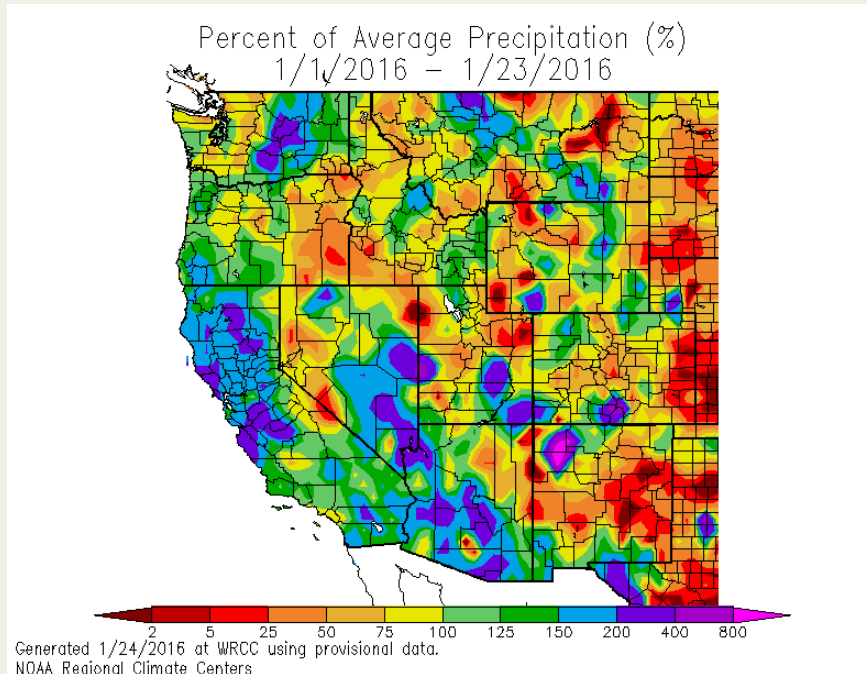
water year to date

Precipitation



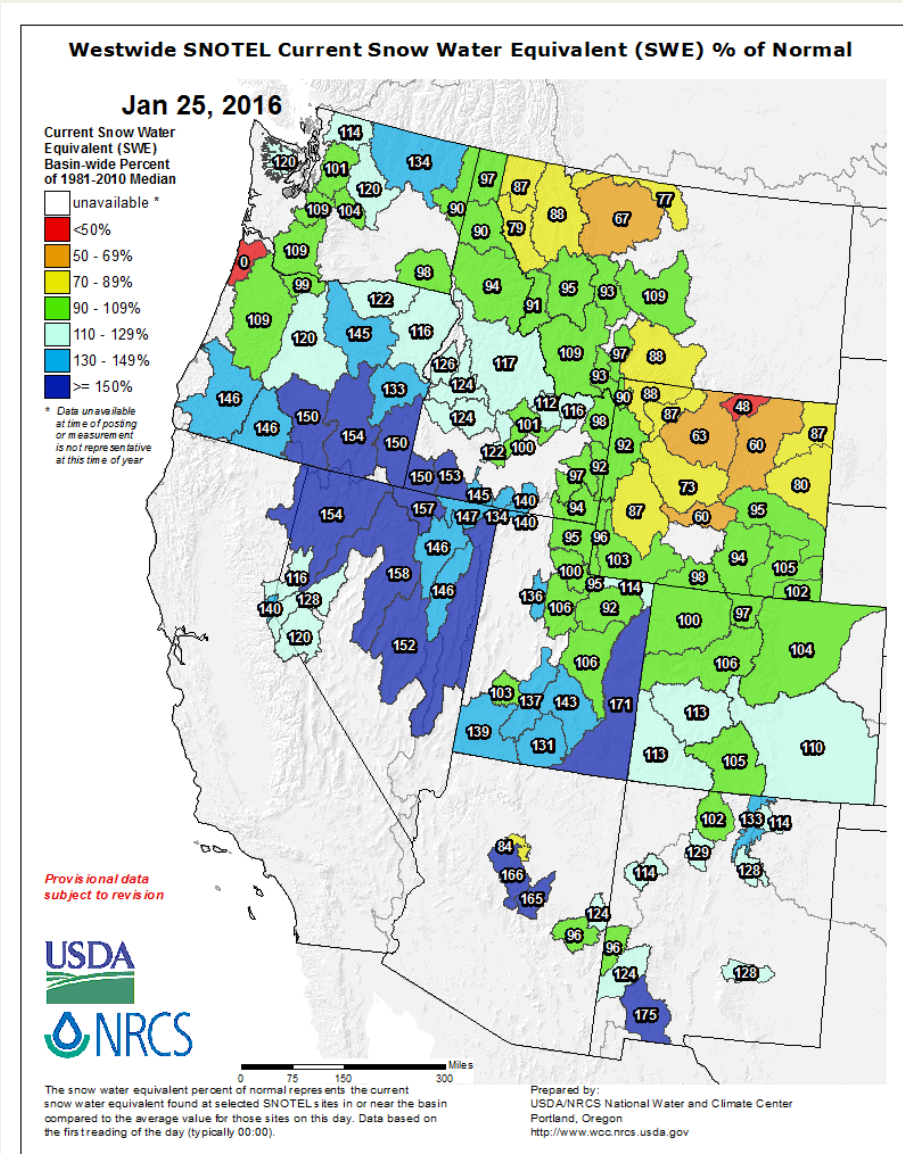
Jan 1 – Jan 23, 2016

Oct 1, 2015 – Jan 23, 2016



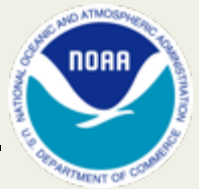
water year to date

Snow Water Equivalent

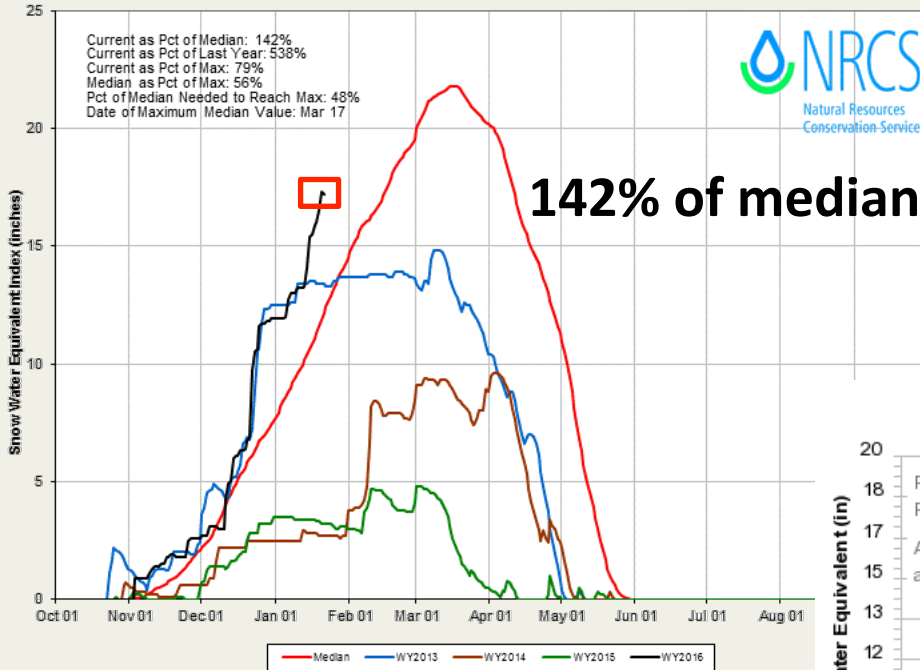


Source: NRCS

Snow Water Equivalent



LAKE TAHOE Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Jan 21, 2016

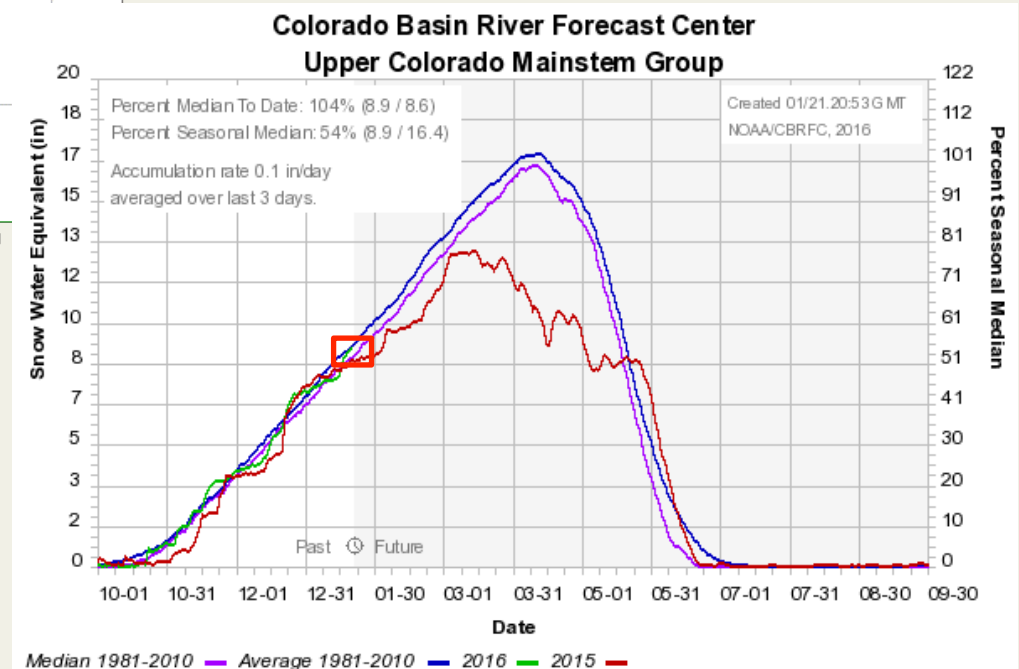


Lake Tahoe Basin

104% of median

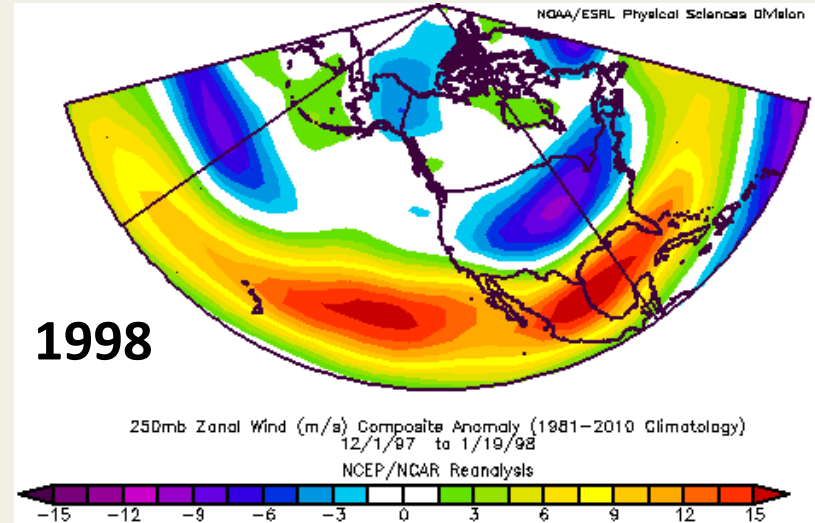
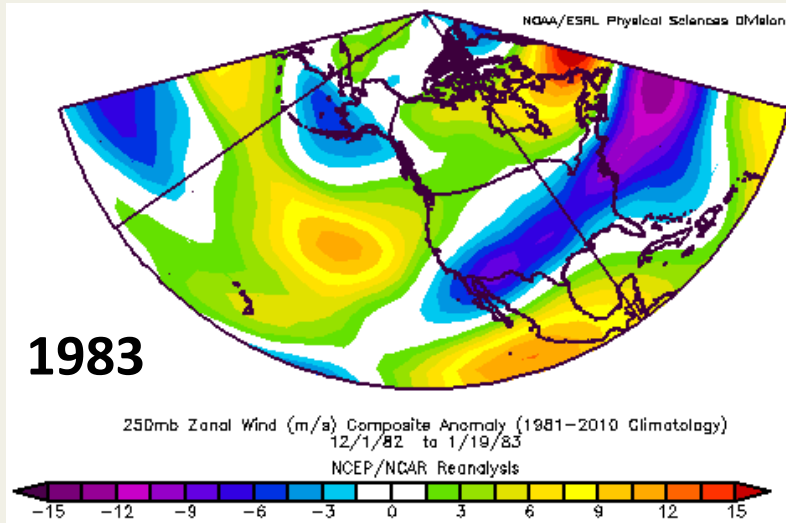
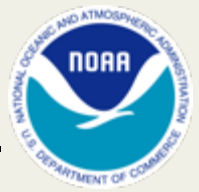
Source: NRCS

Upper CO Basin

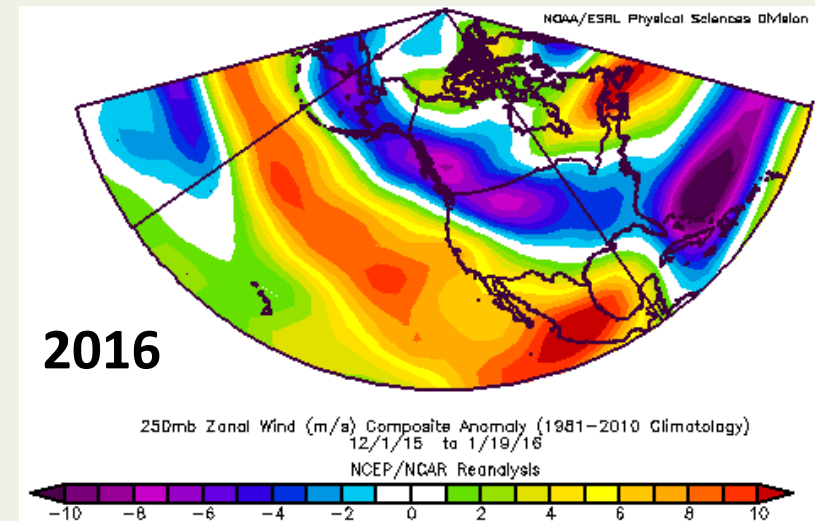


Source: CBRFC

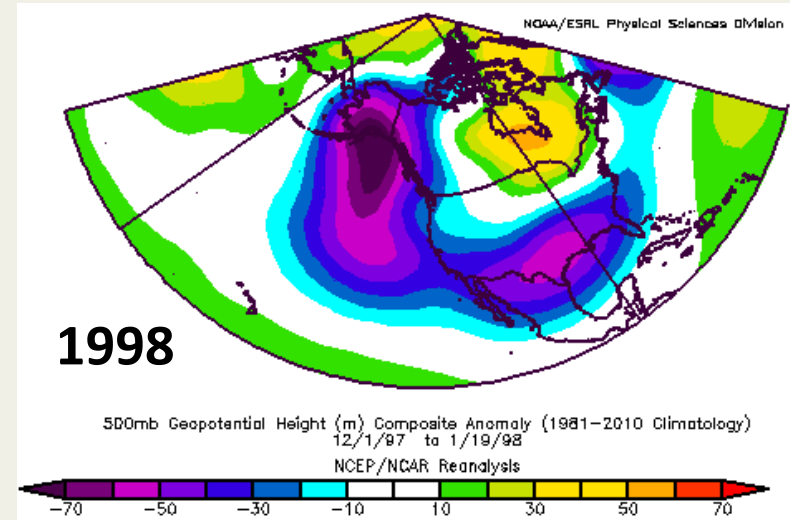
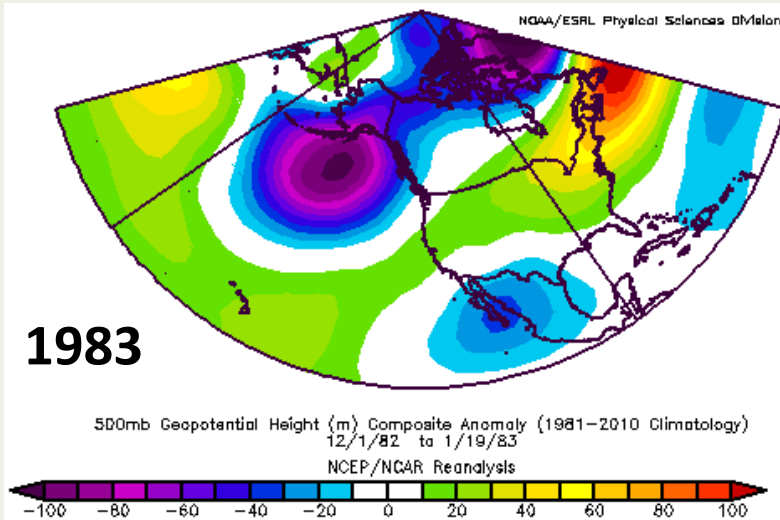
Very Strong El Nino Flow Patterns



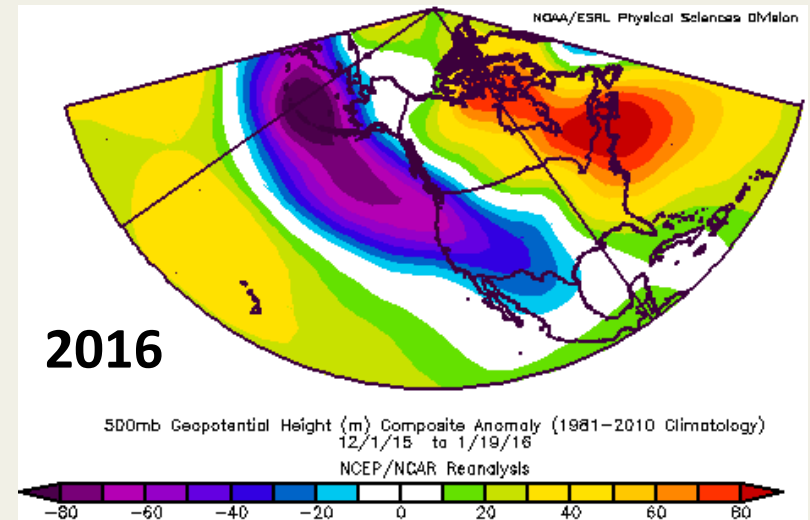
- 250 mb zonal wind anomalies
- West to east jet stream level winds
- December 1 – January 19 mean



Very Strong El Nino Flow Patterns



- 500 mb geopotential height anomalies
- Mid-troposphere high and low pressure
- December 1 – January 19 mean



El Nino Status

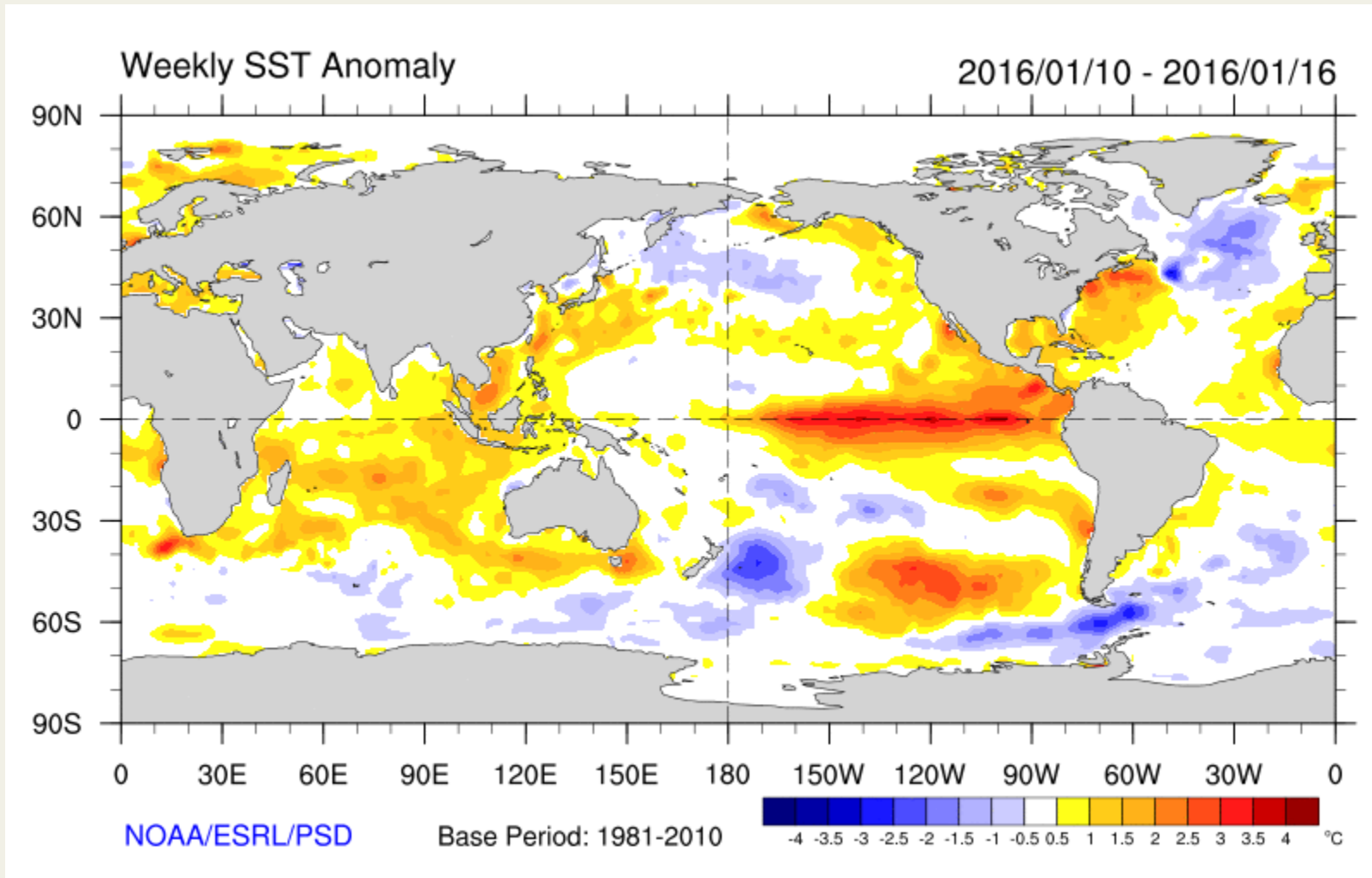


- ENSO Alert System Status: El Niño Advisory
- El Niño conditions are present
- Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean.
- A strong El Niño is expected to gradually weaken through spring 2016, and to transition to ENSO-neutral during late spring or early summer 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 Sea Surface Temperatures



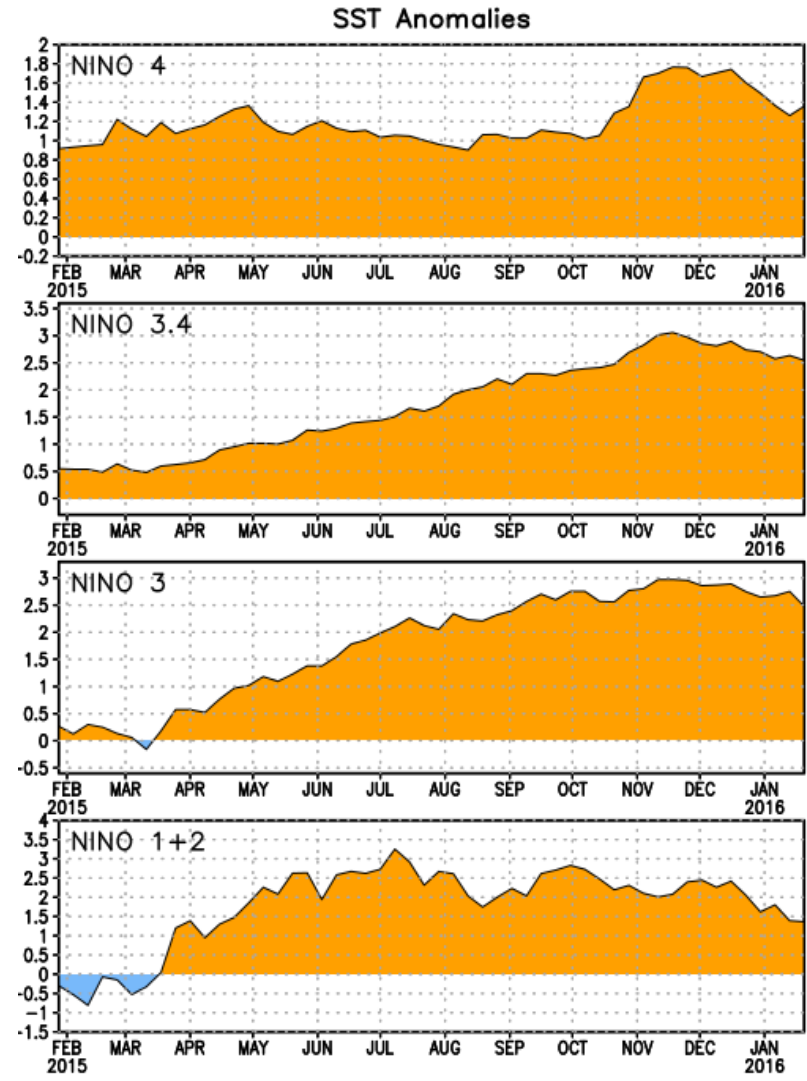
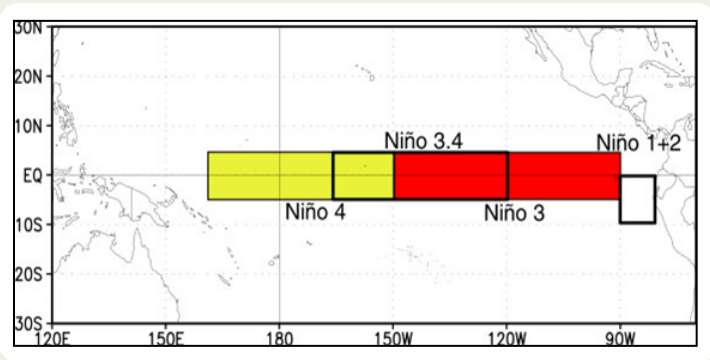
Source: NOAA/ESRL

Niño Region SST Departures (°C) Recent Evolution

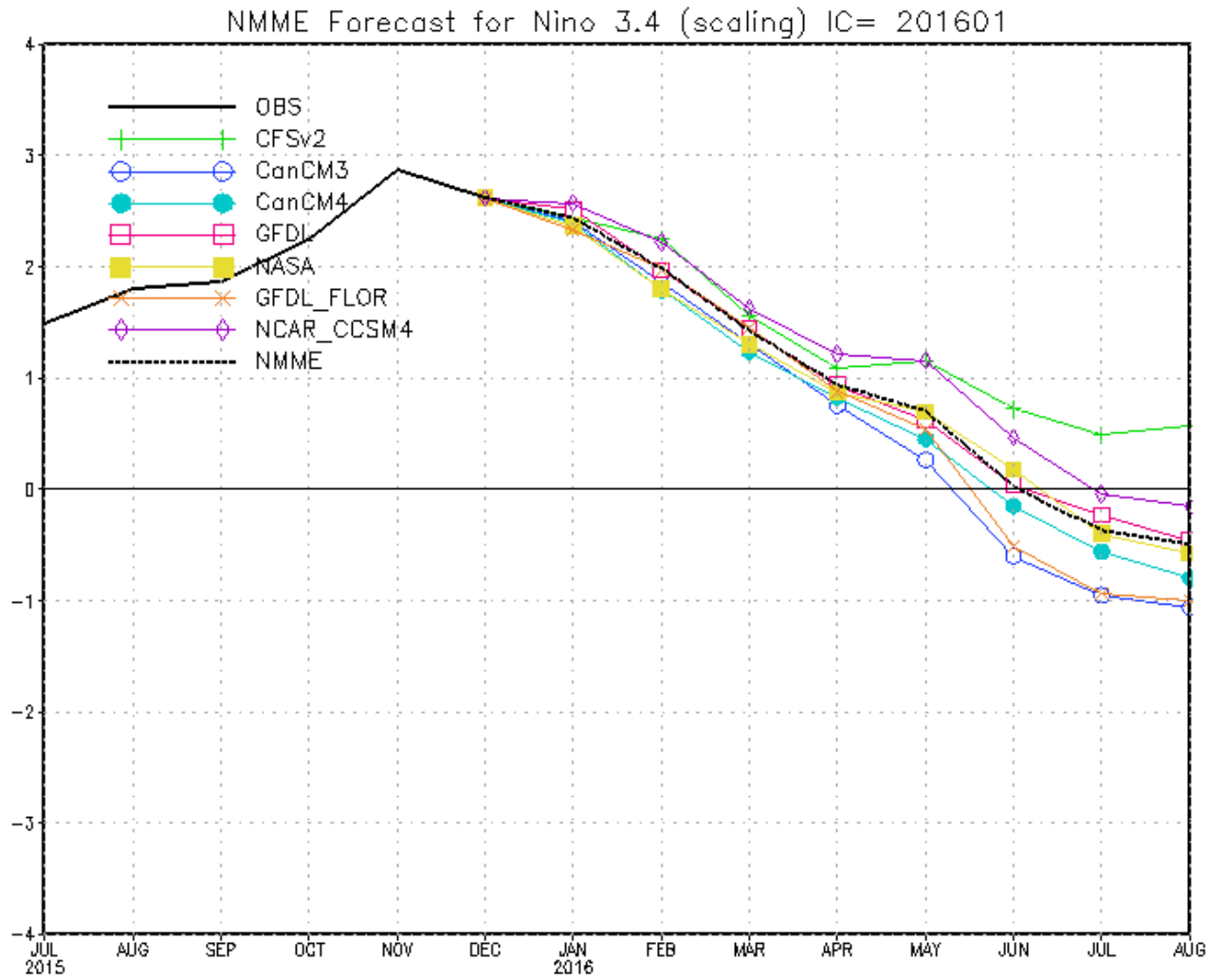


The latest weekly SST departures are:

| | |
|----------|-------|
| Niño 4 | 1.4°C |
| Niño 3.4 | 2.5°C |
| Niño 3 | 2.5°C |
| Niño 1+2 | 1.4°C |



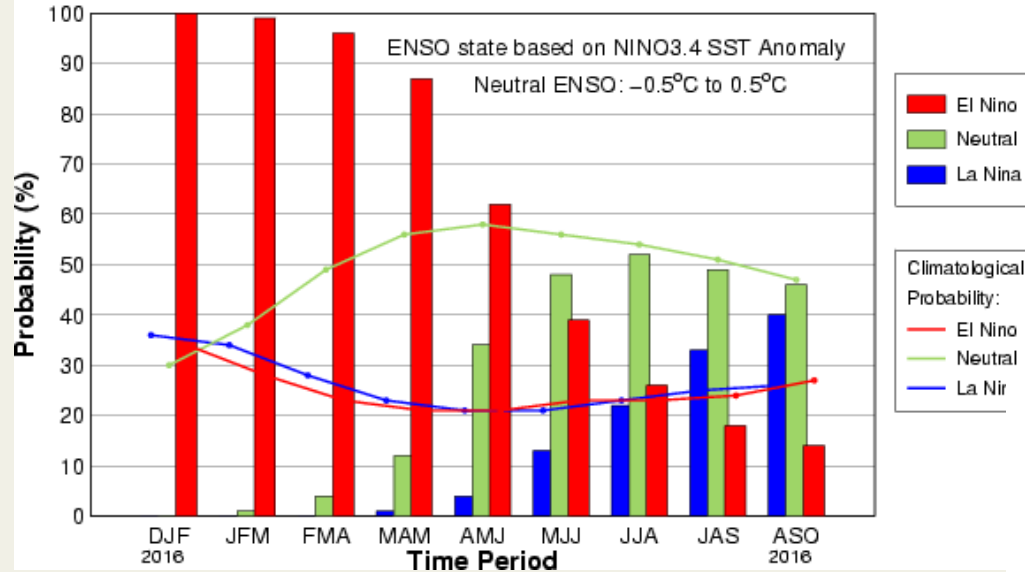
ENSO Forecasts



ENSO Forecasts



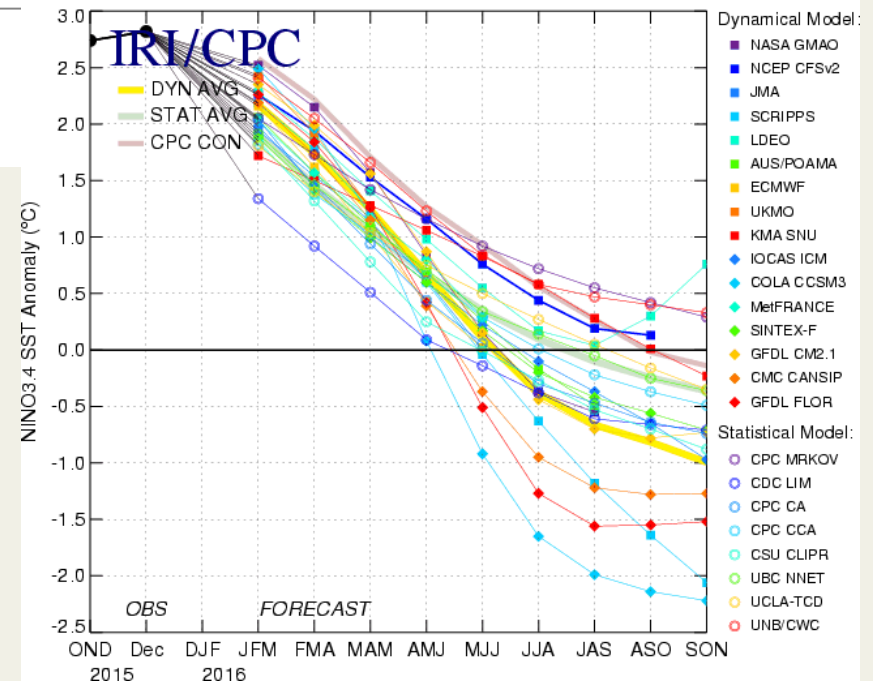
Early-Jan CPC/IRI Consensus Probabilistic ENSO Forecast



CPC/IRI El Nino forecast:

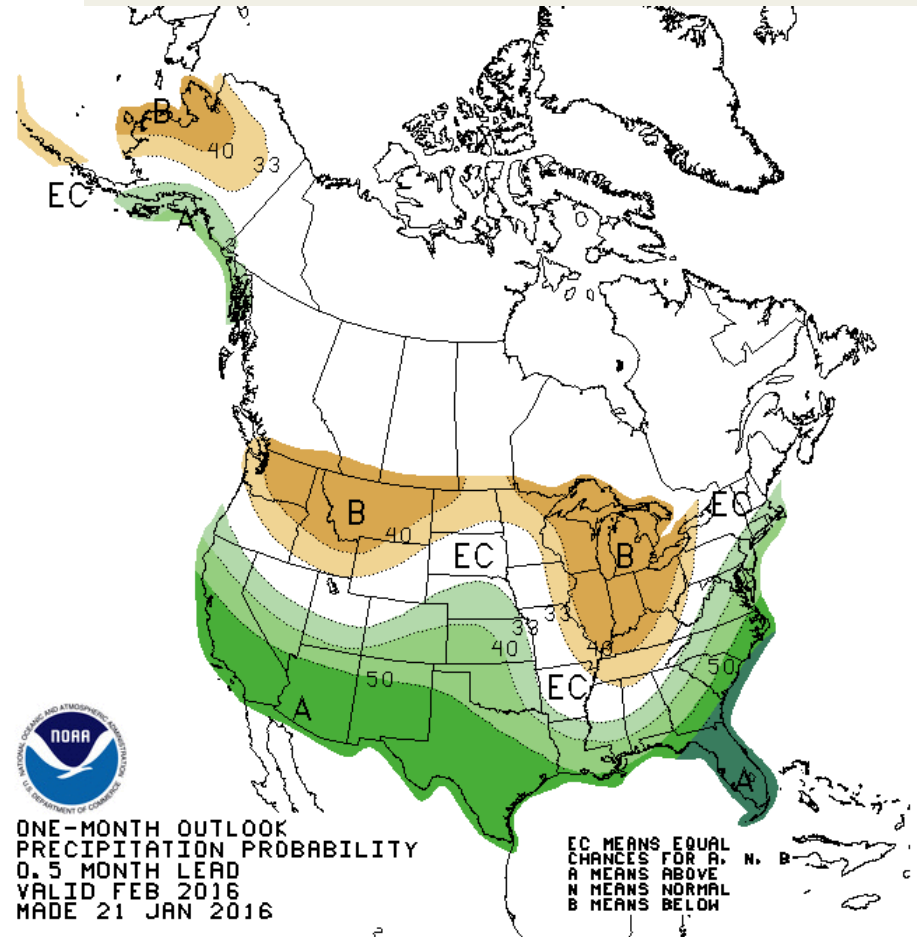
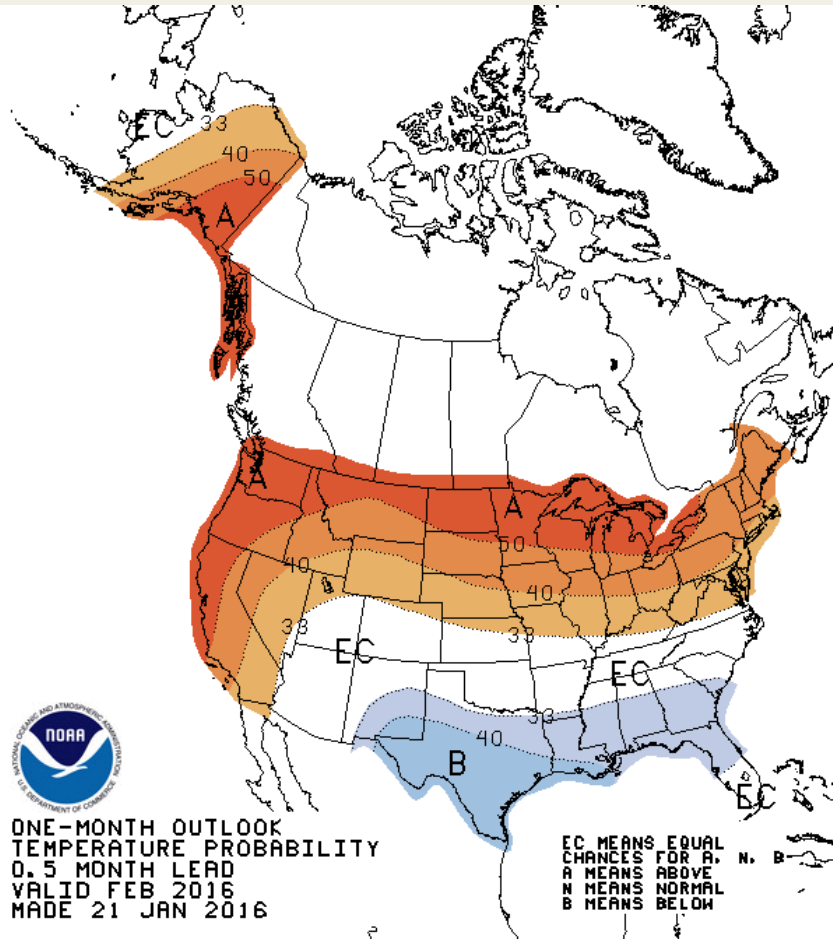
NMME models + other dynamical models + statistical models

Mid-Jan 2016 Plume of Model ENSO Predictions



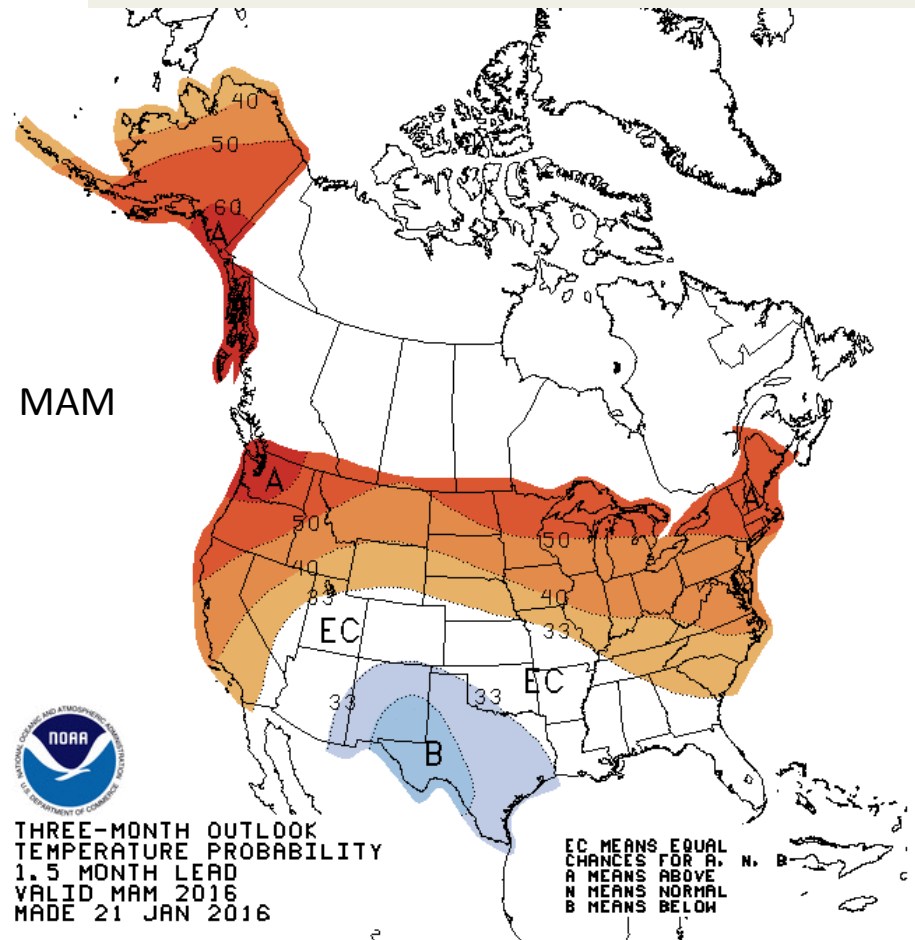
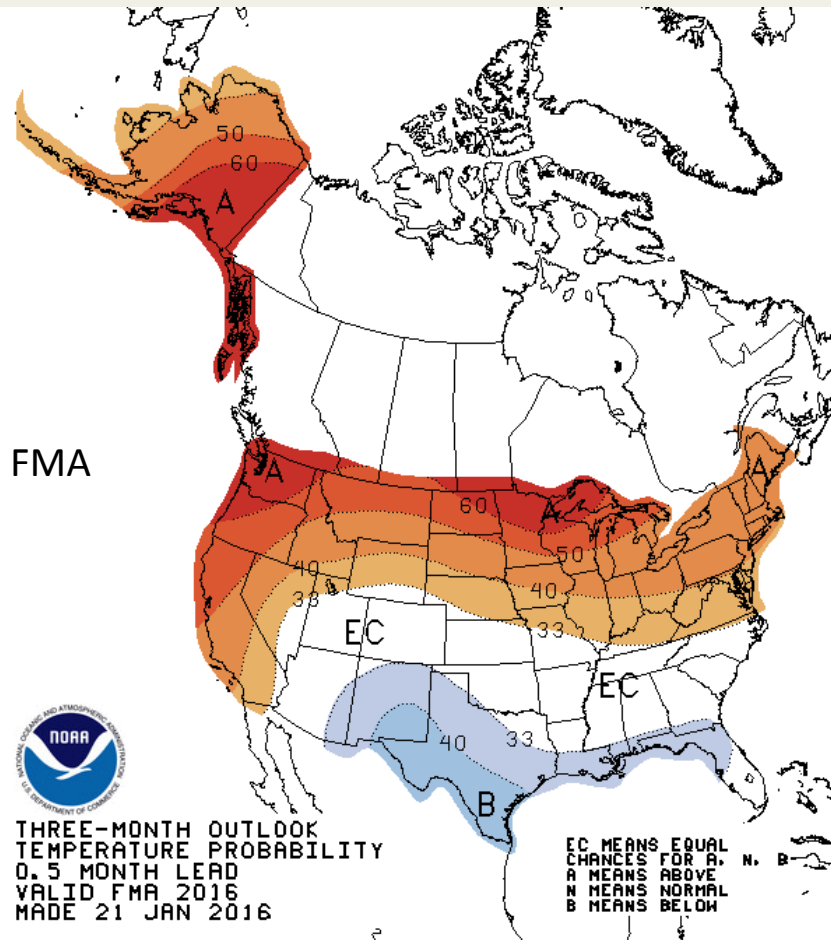
Source: CPC/IRI

February U.S. Forecasts

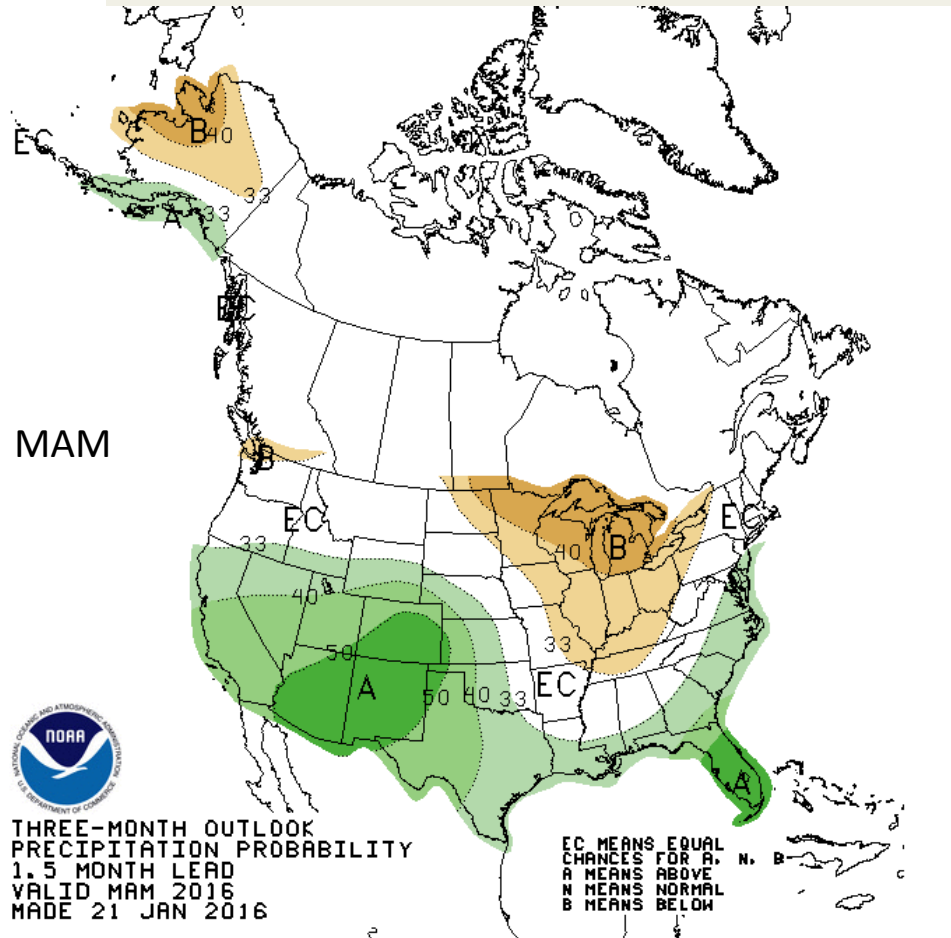
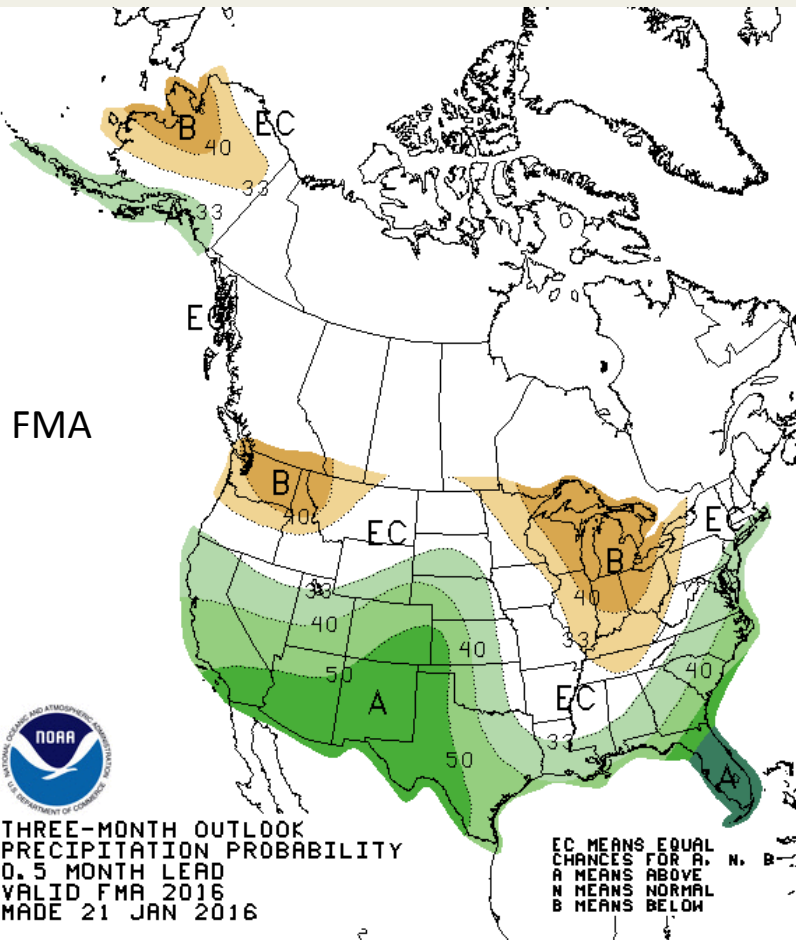
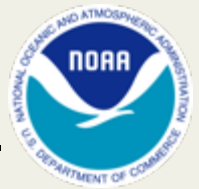


Source: NOAA/CPC

U.S. Temperature Forecasts



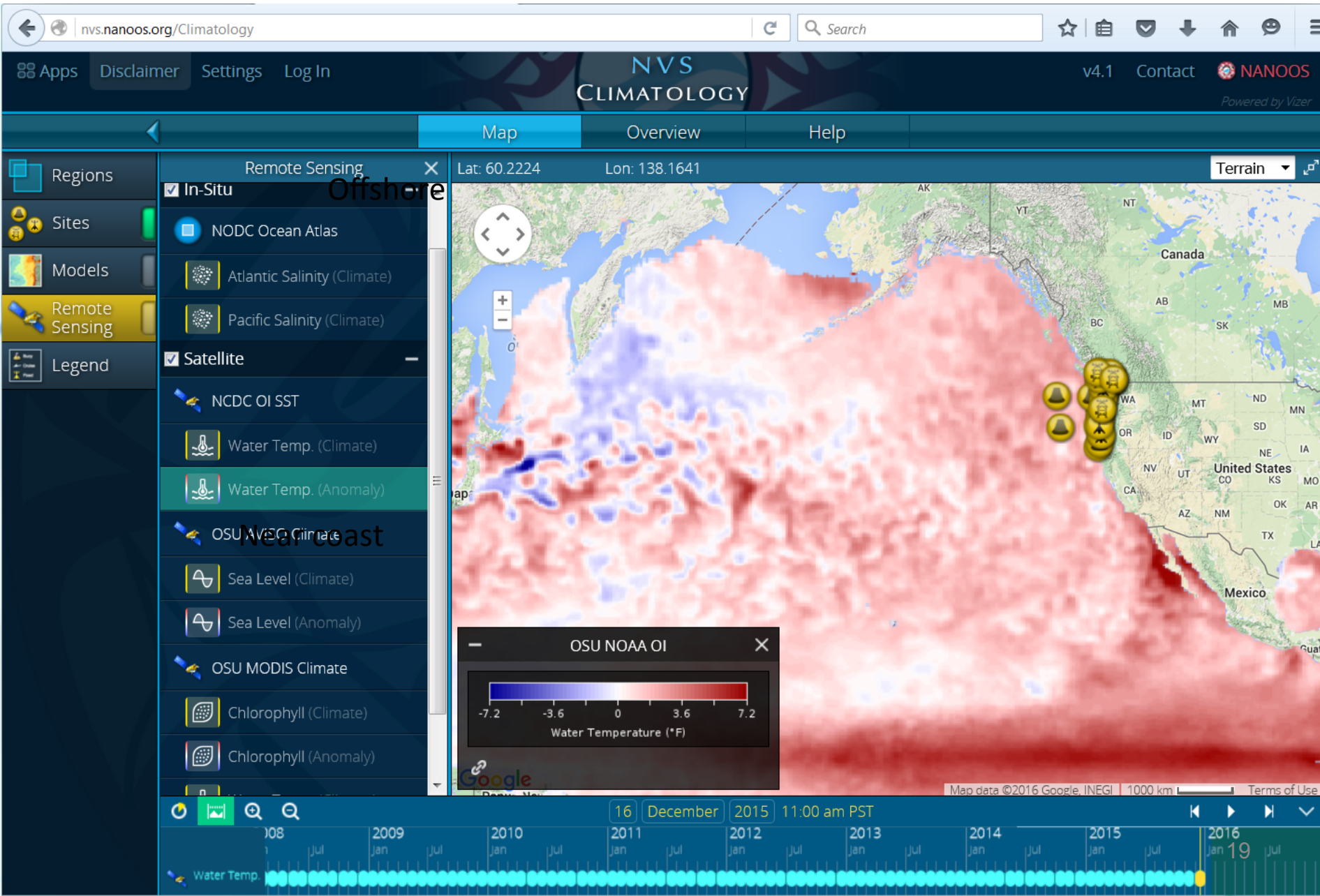
U.S. Precipitation Forecasts



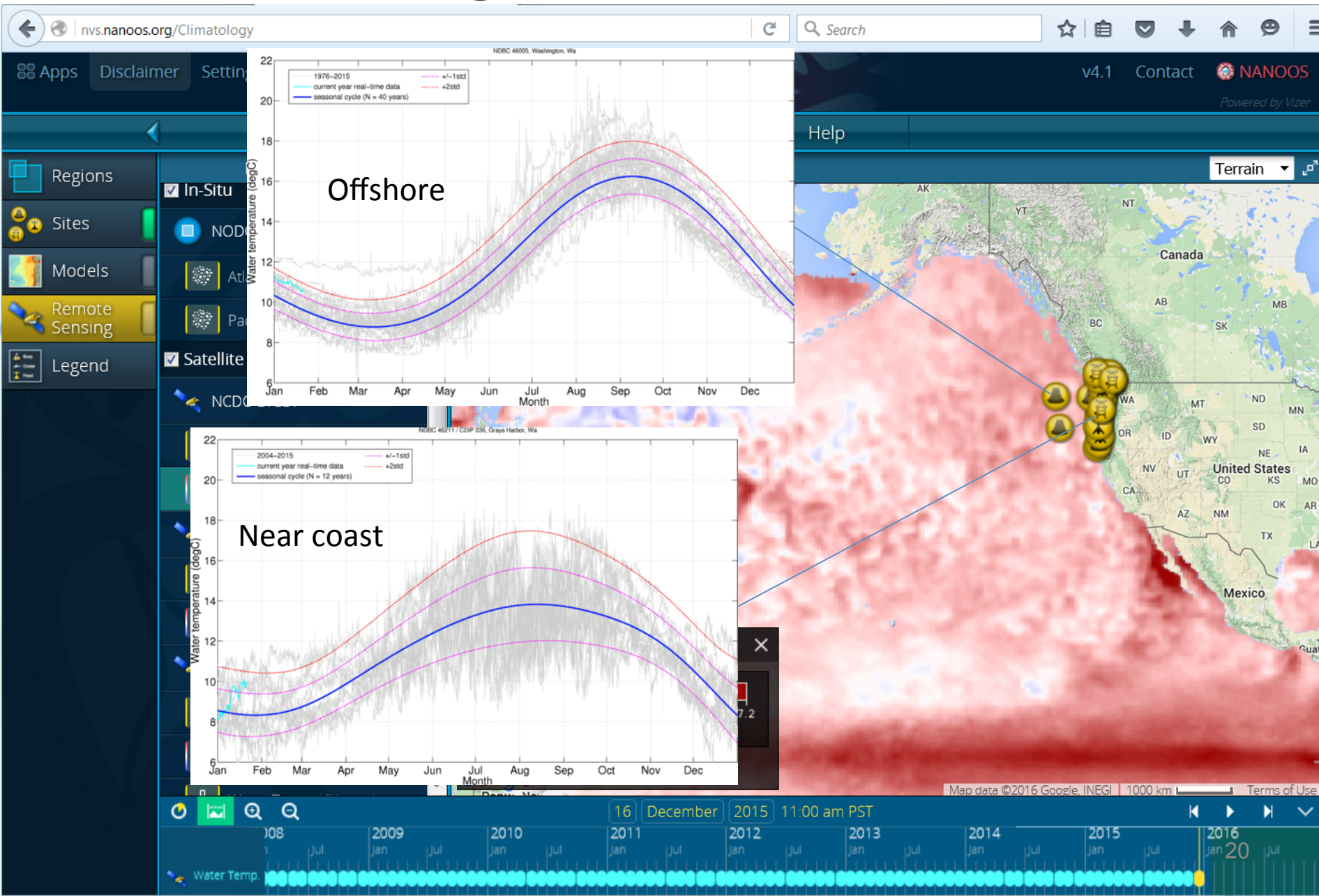
Contributions from NANOOS re PNW coastal conditions



Tracking Pacific anomalies

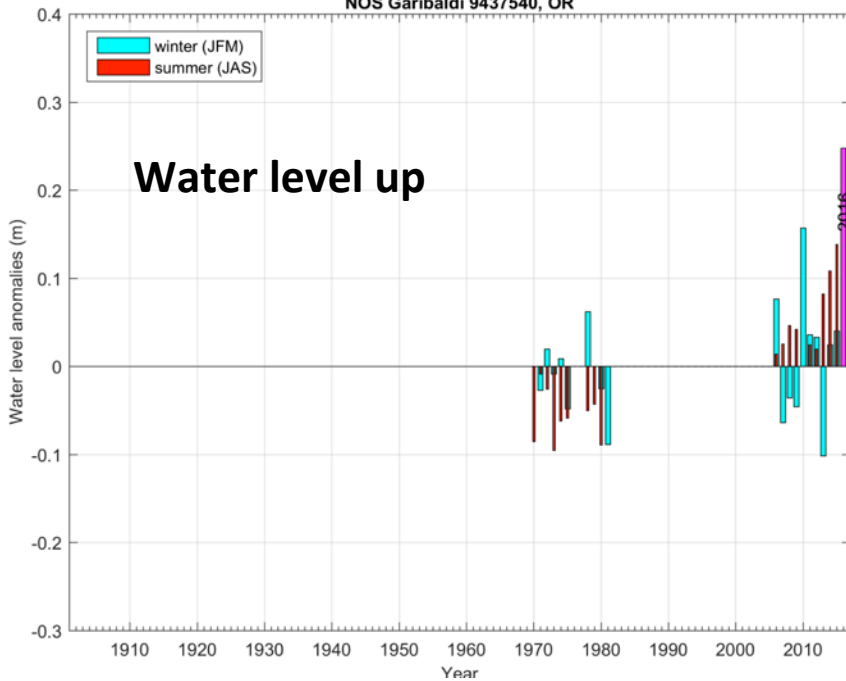


Tracking Pacific anomalies

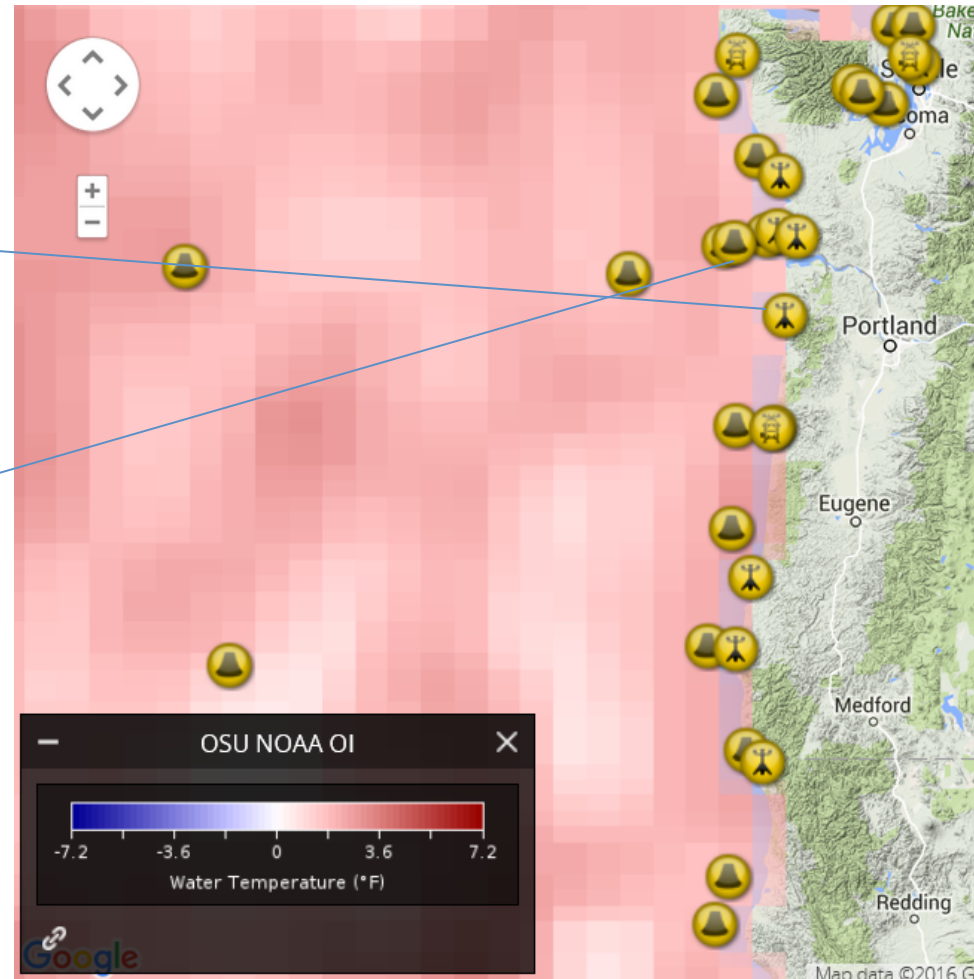
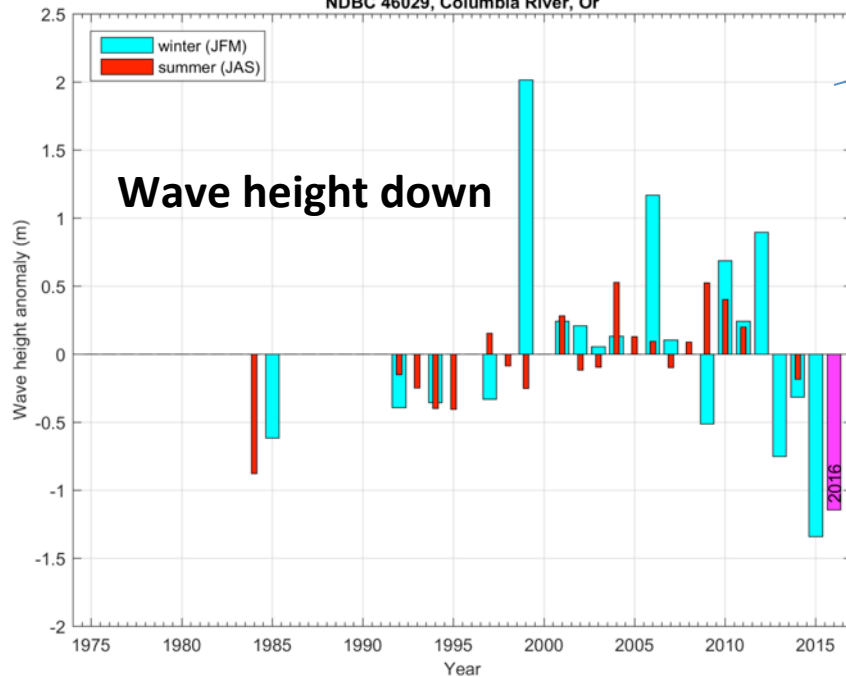


Current conditions: Coastal processes

NOS Garibaldi 9437540, OR



NDBC 46029, Columbia River, Or



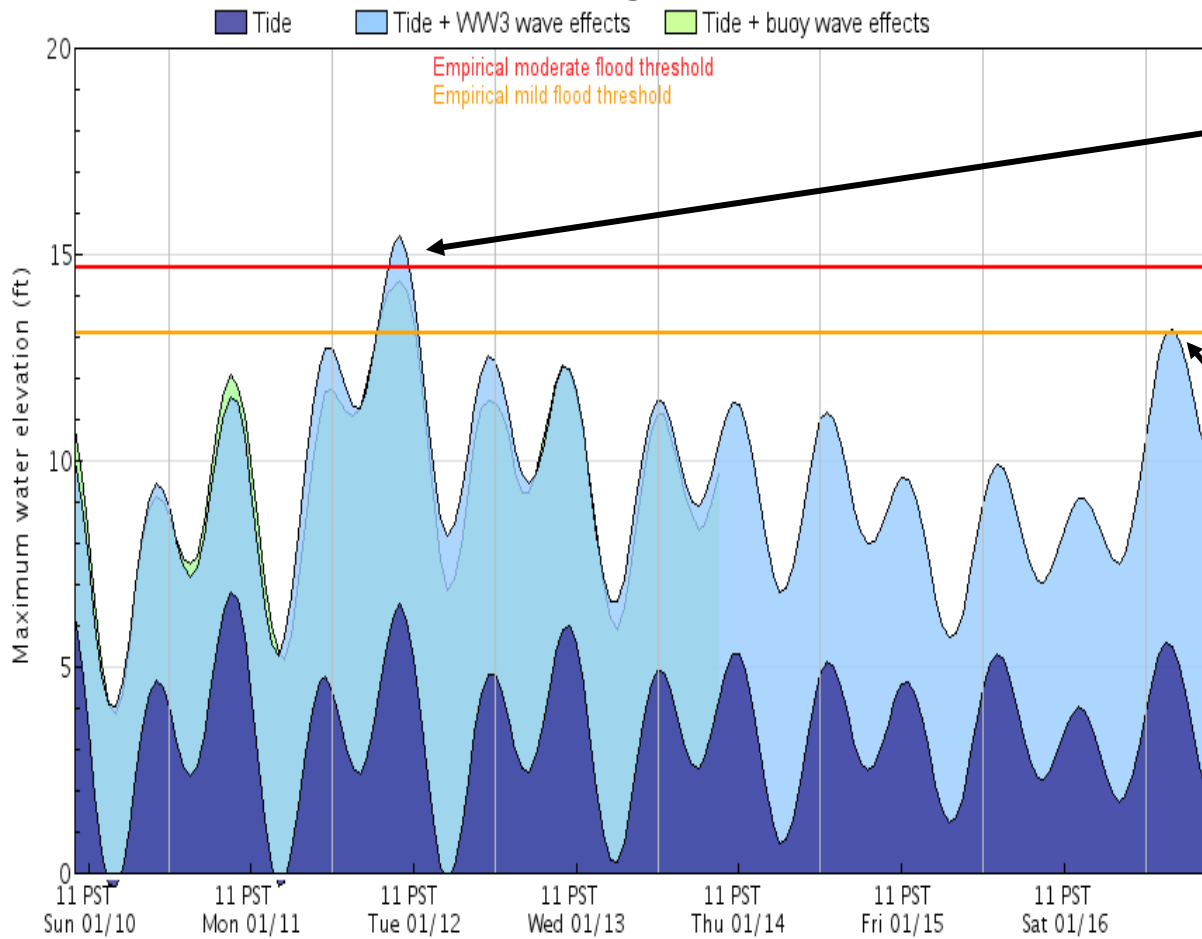
Contributions from SCCOOS



CDIP/SIO

Water level elevation (relative to MLLW) forecasts use Stockdon (2006), are HIGHLY experimental, and should not be used as your primary forecast information.

Potential Flooding Index - Cardiff



Cardiff, CA has been the test location for the coastal flooding index tool. Highway 1, various restaurants, and parking lots are extremely close to the ocean creating a need for a flooding forecast.

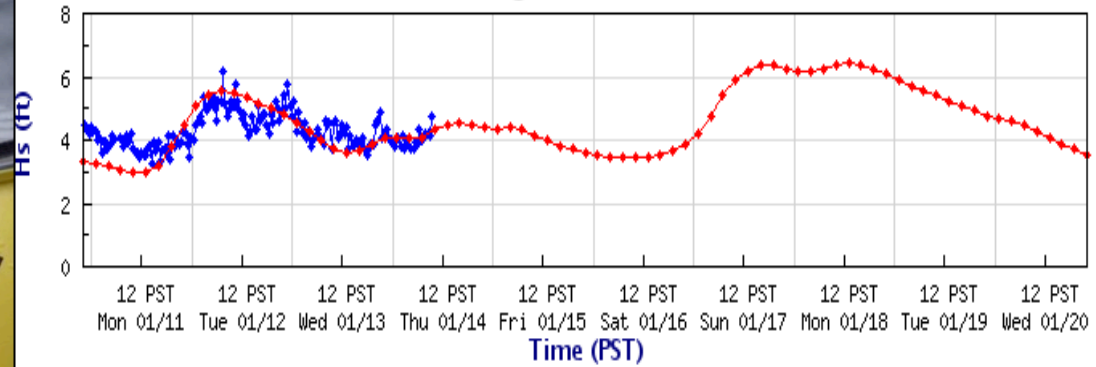
sccoos.org/data/flooding-storm-surge-models/



Torrey Pines Outer, CA Conditions + Forecast

Observations: CDIP buoy 100
Forecast: NOAA WW3 46225

Wave height - Station 100



Coastal Data Information Program (CDIP)

Wave buoys monitor:

- Wave height
- Peak period
- Direction
- Sea surface temperature

| Date (PST) | Hs (ft) | Tp (s) | Dp (deg) | Ta (s) | SST (F) |
|------------------|---------|--------|----------|--------|---------|
| 2016-01-14 09:25 | 4.72 | 12.50 | 266 | 7.70 | 61.5 |
| 2016-01-14 08:55 | 4.13 | 13.33 | 280 | 7.27 | 61.3 |
| 2016-01-14 08:25 | 4.20 | 13.33 | 270 | 7.58 | 61.3 |

Track wave events²⁴ at

If you have storm photos, please send to stormphoto@sccoos.org

1. Make your safety the highest priority
2. Turn on location services on your smartphone
3. Send the photo as an email with a brief description of the flooding event



La Jolla Shores, January 7th, 2016, photo being taken by City Lifeguards.



Seaside Reef, CA, parking lot photo taken by Shane Albrent, Cardiff²⁵ resident on December 12th, 2015.

Contributions from CeNCOOS



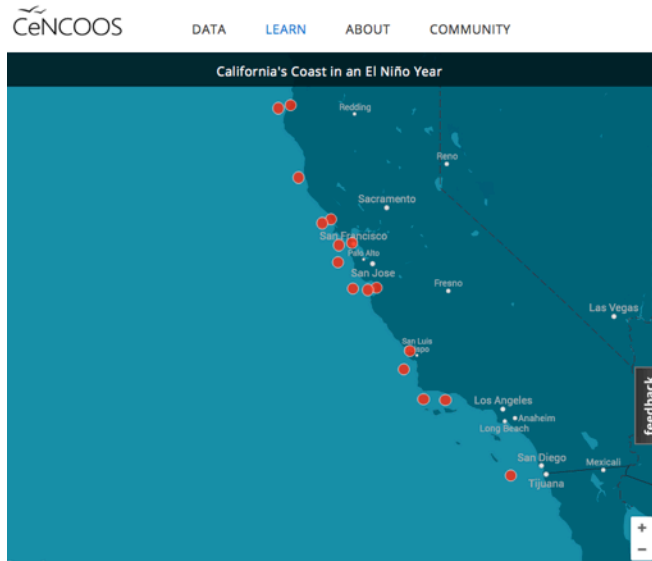
Western Regional Environmental Conditions and Impacts Coordination: regionally relevant tools that may be available for monitoring, reporting and/or interpreting El Niño and its impacts on our region

CeNCOOS: Central and Northern California Ocean Observing System

1. El Nino Page (new Jan. 2016)

2. Oyster Conditions Dashboard

3. Harmful Algal Bloom Nowcast and Forecast



CeNCOOS News

Oyster Conditions Dashboard Released

Thursday, Sep 24th, 2015

CeNCOOS is proud to announce the release of our new Humboldt Bay Oyster Conditions dashboard. The culmination of months of work between CeNCOOS developers, Humboldt Bay scientists, and shellfish growers, the product provides easy access to ocean information for the region's mariculture industry.

[VIEW THE DASHBOARD](#)

This effort builds off a similar product developed by Humboldt State University (HSU) that sunsetted in 2013. The new dashboard gives users access to real-time, historical, and some forecasts of relevant ocean parameters. The product integrates visualizations of the local upwelling index, water temperature, pH, chlorophyll, and experimental harmful algal bloom forecasts.

These parameters provide farmers with information on:

- Food availability
- Low pH events that can potentially be harmful to juvenile oysters

Dashboard interface showing various data visualizations and a map of the Humboldt Bay area.

CeNCOOS

Harmful Algal Bloom Model

Home > Data > Technologies > Models

LATEST CONDITIONS FORECAST CONDITIONS PREVIOUS CONDITIONS

Experimental Data - Use Cautiously

Pseudo-nitzschia Particulate Domoic Acid Cellular Domoic Acid

2016-01-23 pseudo-nitzschia probability

Map showing probability of harmful algal bloom (HAB) conditions along the coast, with a color scale from 0.5 to 1.0.

Predicted "nowcasts" of harmful algal bloom (HAB) conditions are created through a combination of 1) sophisticated circulation models that predict the ocean physics, 2) satellite remote-sensing data of the ocean "color" and chlorophyll patterns, and 3) statistical models for predicting bloom and toxin likelihoods. These

Regional Impacts Summary – 12/18 to 01/22



Reporting Status:

- 156 entries since July 1, 2015
- Last reporting period: 31 environmental conditions & human system/NOAA mission impacts collected from 19 sources (media, Regional IOOS, NWS Regional Operations Center)

Reminder: To insert a regional impact, click on the [Google Doc](#), or email Timi Vann or Michael Milstein

Environmental Conditions Capture:

- High waves
- Elevated sea levels
- Precipitation (El Niño & Extreme Weather)
- Warm Pacific Ocean water & “The Blob”
- Snowpack levels
- Drought

Human System & NOAA Mission Impacts:

- Coastal flooding
- Coastal erosion
- Mudflows; destabilized bluffs & cliffs
- Surface transportation impacts
- Improved reservoir levels
- Marine species displacement
- Low salmon returns; small fish
- Loss of farm jobs (17,000) in CA

Headlines



CALIFORNIA:
Strongest El Niño storm yet slams state

California has 'a shot out of the drought' if El Niño rain persists

Drought Update: California hits above average snowpack but has nearly a billion stressed trees

Bay Area, You've Got Another Date With a Storm

Thanks El Niño! 44-foot rise of Folsom Lake offers hope for California's worst ever drought

FORESTS:
Calif. drought threatens 58M trees

Most Central Coast reservoirs see increase in water level from week's storms

Snowpack brings hope for drought-stricken Southwest

Drought-ravaged Folsom Lake rises 28.5 feet in just one month

CALIFORNIA:
Snowpack higher than average for first time in years

Record rainfall: Wettest December, wettest month ever in Portland in 75 years

Channel Island temporarily closed to public following damage from high surf

Rainstorms, tides and El Niño are reshaping Monterey Bay beaches

DROUGHT:
Calif. could see mudflows on parched land

Yellow-bellied sea snake found on Coronado beach

Monster waves batter California coast as latest El Niño storm passes through

Endangered sea turtle seen off Point Reyes, thousands of miles from home

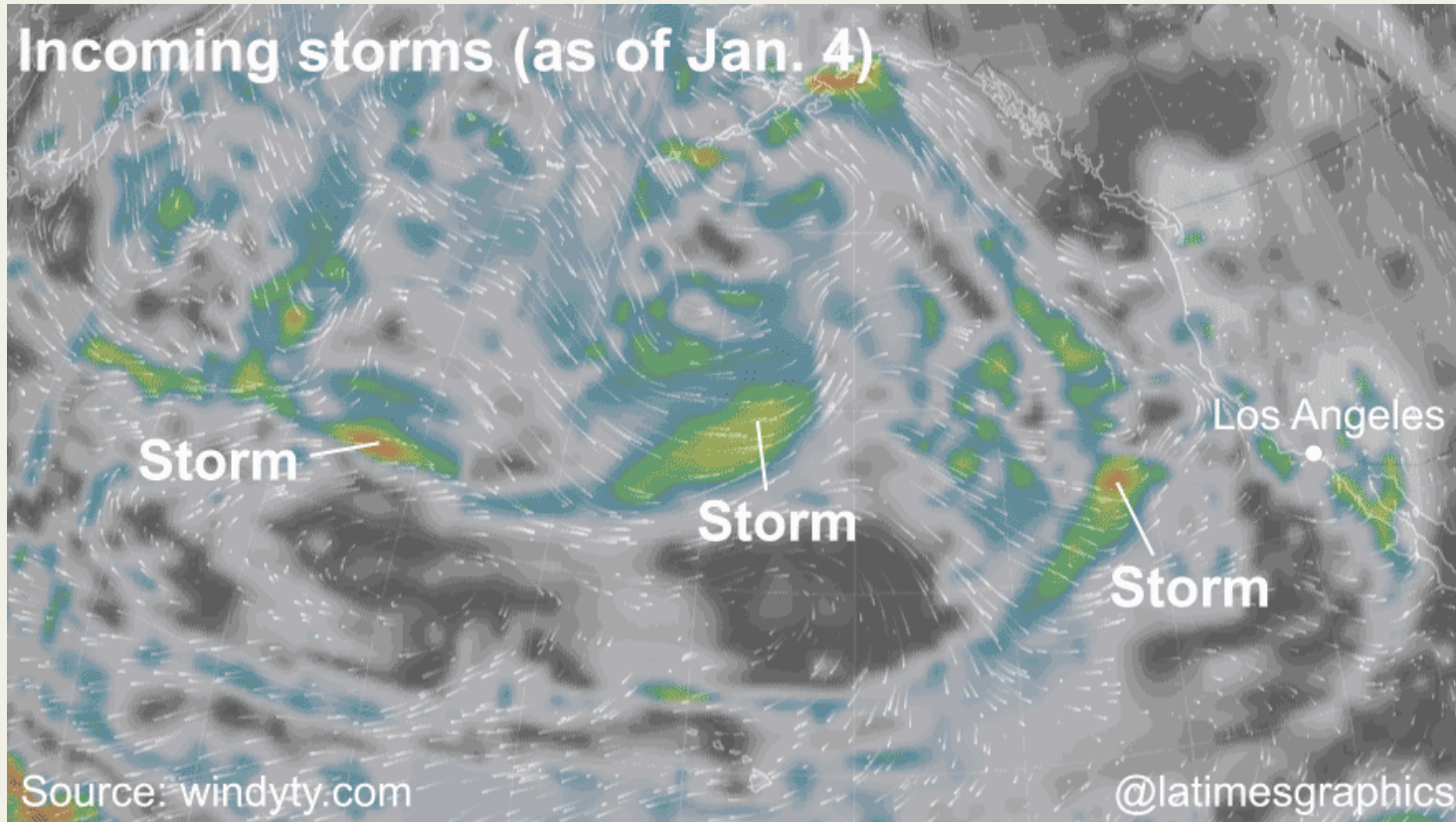
Limited crab fishing opened in southern California waters

Something wrong in the wild: Sea lion pups washing ashore because ocean can't support them

Officials seeing low salmon returns, small fish

In warming ocean, record number of seals and sea lions sicken and starve

Impacts in Pictures



Impacts in Pictures



Jan. 4: Slide in Monte Rio, CA



Jan. 4: Heavy surf at Ventura Pier

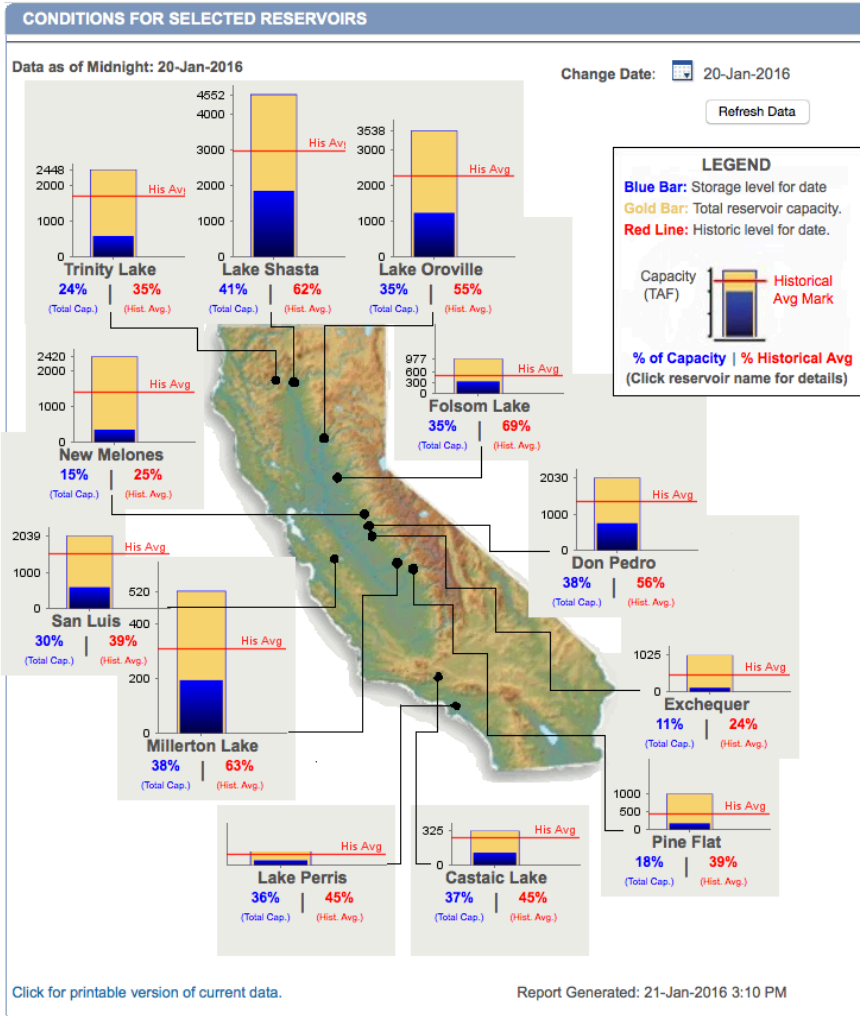


Jan. 5: Motorists crawl along Interstate 280 in San Jose, CA



Jan. 11: Record rainfall impacted the Pacific Northwest.

Impacts in Pictures



Jan. 20: View of Lake Oroville. California's second-largest reservoir water level dropped to 649 feet on Dec. 9 but with recent storms are now at 694 feet.



Jan. 20: Aerial view of Folsom Lake. Recent storms helped increase the level by 45 feet since Dec. 4th.

Impacts in Pictures



Dec. 20: Volunteers with Surfrider Foundation discovered a second poisonous sea snake washed up in Southern California.



Jan. 12: A yellow-bellied sea snake washed up on a beach in Coronado, CA. This is the third found on a Southern California beach since October. Prior to 2015, the last time a yellow-bellied sea snake had been seen in California was in 1972.



Jan. 20: A sickly northern fur seal pup at the front door of an ironworks shop in an industrial area, Hayward, CA.



Dec. 31: An olive ridley sea turtle off Point Reyes National Seashore. This species is normally found nesting thousands of miles south of Marin at this time of year.

Telling Regional Stories - Update



Regular bulletin updating conditions and impacts

What it is:

- Stories of impacts, especially those affecting people and NOAA mission.
- Way to provide weather and climate context for stories about impacts affecting people and NOAA mission.
- Monthly status of select regional climate conditions and predictions.
- Way to highlight monitoring and research efforts of NOAA and our partner network.

What it isn't:

- Scientific assessment of cause and effect. We are not attributing impacts to specific causes; these stories may help inform future lines of inquiry and research.
- Not a forecast or “outlook” product.

What will we do with these?

- Utilize collected stories to help develop a retrospective season-end (July to April) report.
- Communicate impacts of changing environmental conditions within the region via compelling “special interest” stories.
- Broadly share stories.

Telling Regional Stories - Update



Bulletin ideas:

- Fisheries impacts: Low coho returns in PNW, “missing hake”, low pollock recruitment.
- High waves, storm impacts: Coastal erosion, flooding, effects on marine transportation
- Select stories from the recent Pacific Anomalies Workshop
- Update on blob conditions, harmful algal bloom
- Collapse of California kelp forests
- Early snow boosts western ski areas

Help us identify and explain other impacts – send your story ideas! We seek to include stories that span the region – the 11 Western States (not just the West Coast).

Announcements & Open Discussion



1. Next WRECIC call: **Monday February 29, 1pm – 2pm (Pacific)**. This change is made due to the federal holiday (15 Feb) and Ocean Sciences (22 Feb).
2. Open Discussion or Parting Comments