The logo for the Oregon Climate and Health Program is a blue rounded rectangle with a thin orange border at the bottom. The text "Oregon Climate and Health Program" is displayed in white and orange. "Oregon Climate" is in white, "and" is in orange, and "Health Program" is in white. To the right of the text is a silhouette of a family (a man, a woman, and a child) walking towards a bright sun on the horizon, set against a sunset sky.

Oregon Climate and Health Program

El Nino Effects in Oregon
November 3, 2015
Webinar



www.healthoregon.org/climatechange

What's on the Way this Winter?



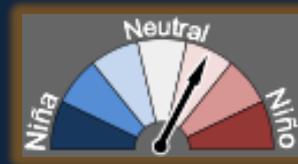
Winter 2015-16 Outlook
Andy Bryant
National Weather Service, Portland

Overview

- Last Winter
- Drought status
- El Niño + the Big Picture
- Winter Outlook
- Be “Weather Ready”



Winter 2014-15 in Review



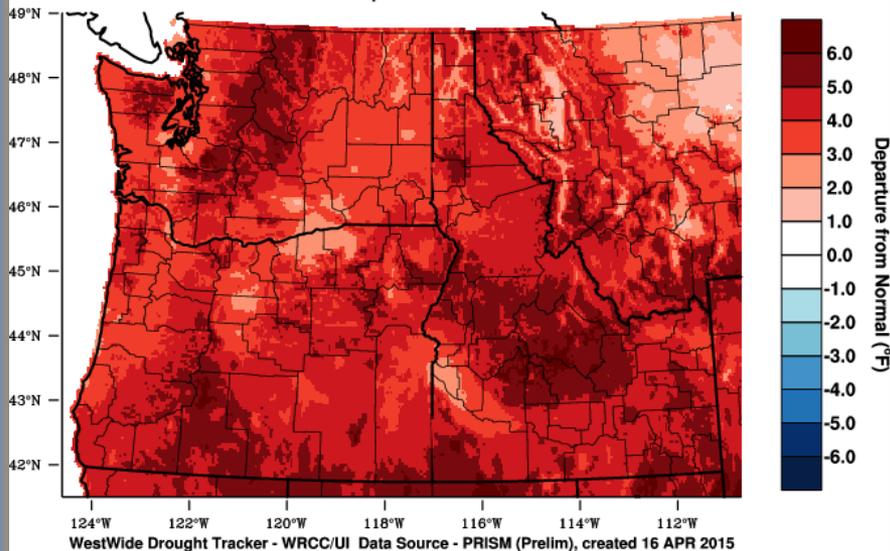
- **Temperature:**
50% chance of above average
- **Precipitation:**
30-40% chance of below average
- **Snowpack:**
Likely below average



Winter 2014-15 in Review

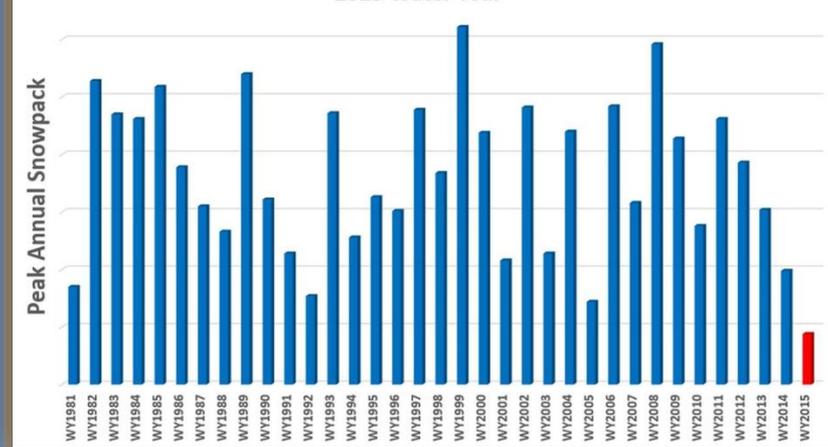
Pacific Northwest - Mean Temperature

October-March 2015 Departure from 1981-2010 Normal



Oregon Snowpack Lowest on Record

2015 Water Year



Portland

Avg. Temp. (°F)

2015	72.2
2009	69.8
2014	69.6
2004	69.5
1967	69.4

~75 years of data

Salem

Avg. Temp. (°F)

2015	71.3
2014	69.4
1958	68.8
1926	68.4
2013	68.4

~120 years of data

Eugene

Avg. Temp. (°F)

2015	69.5
1967	68.5
1958	68.1
2014	67.9
1970	67.6

~120 years of data

Meteorological summer = June + July + August

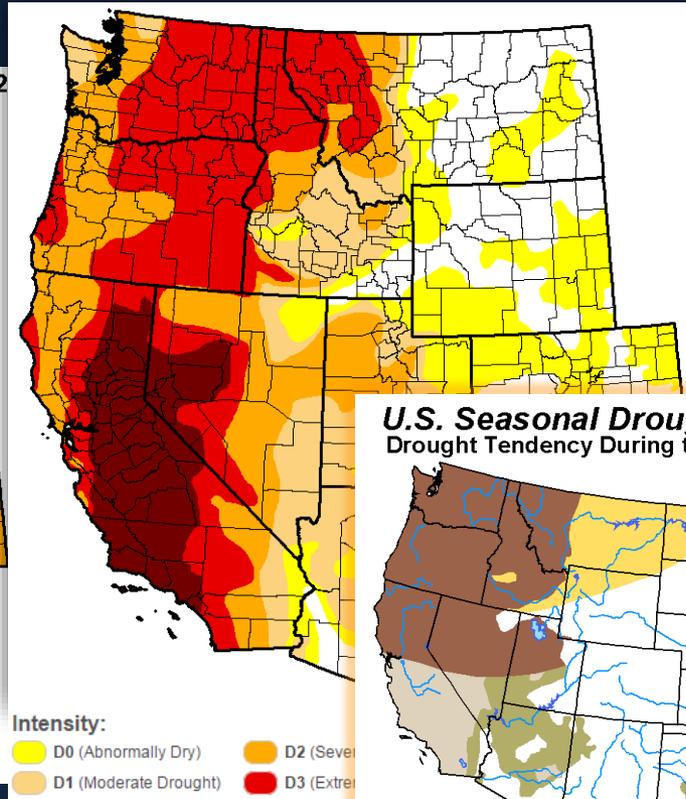
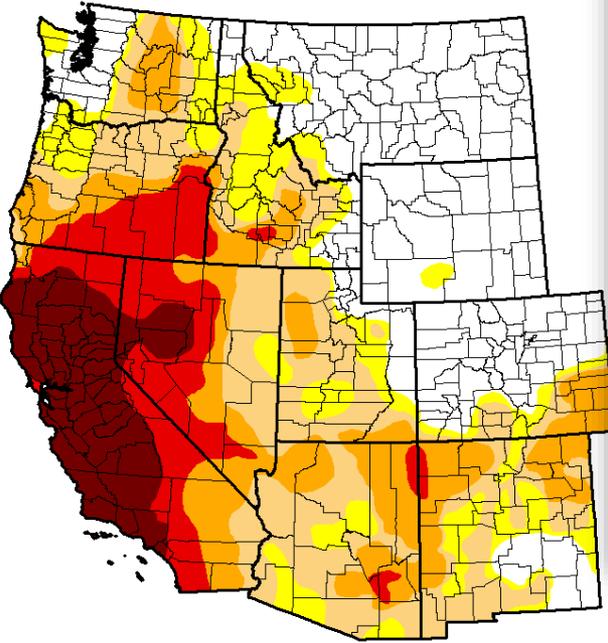
NOAA

Drought Status

Drought Monitor

One year ago...

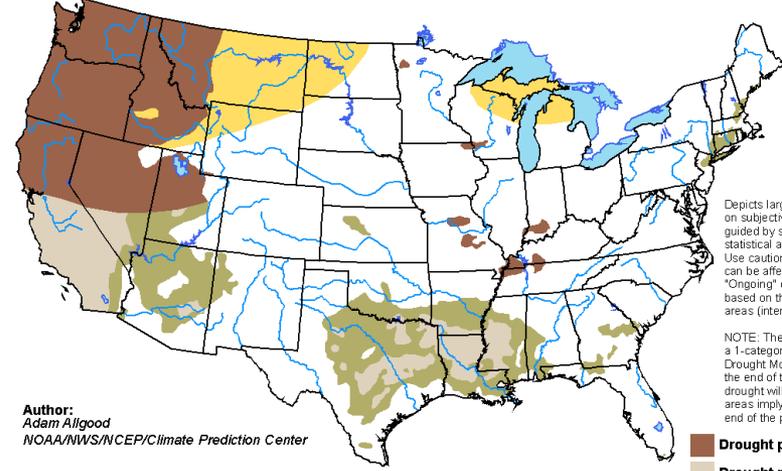
October 21, 2014



Intensity:
 Yellow: D0 (Abnormally Dry)
 Orange: D1 (Moderate Drought)
 Red: D2 (Severe Drought)
 Dark Red: D3 (Extreme Drought)

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for October 15 - January 31, 2016
Released October 15, 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).

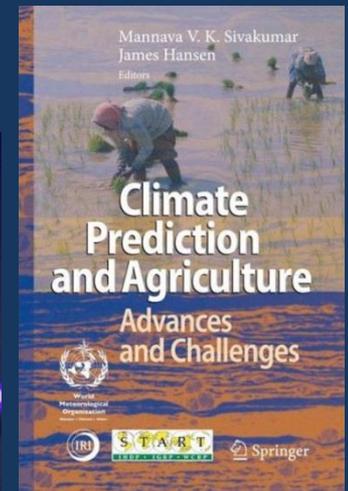
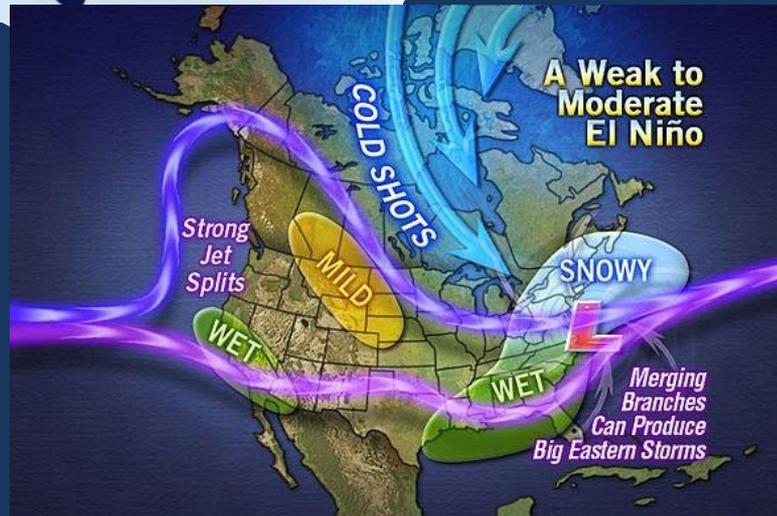
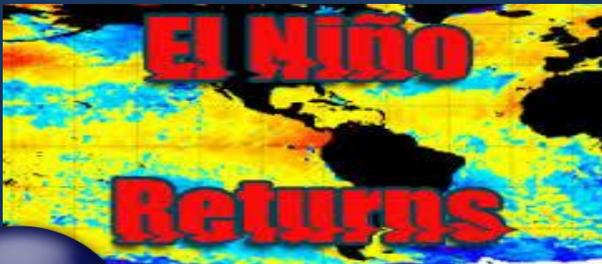
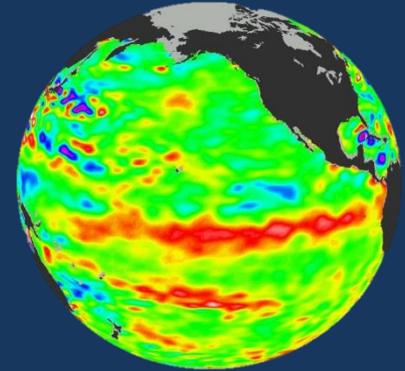
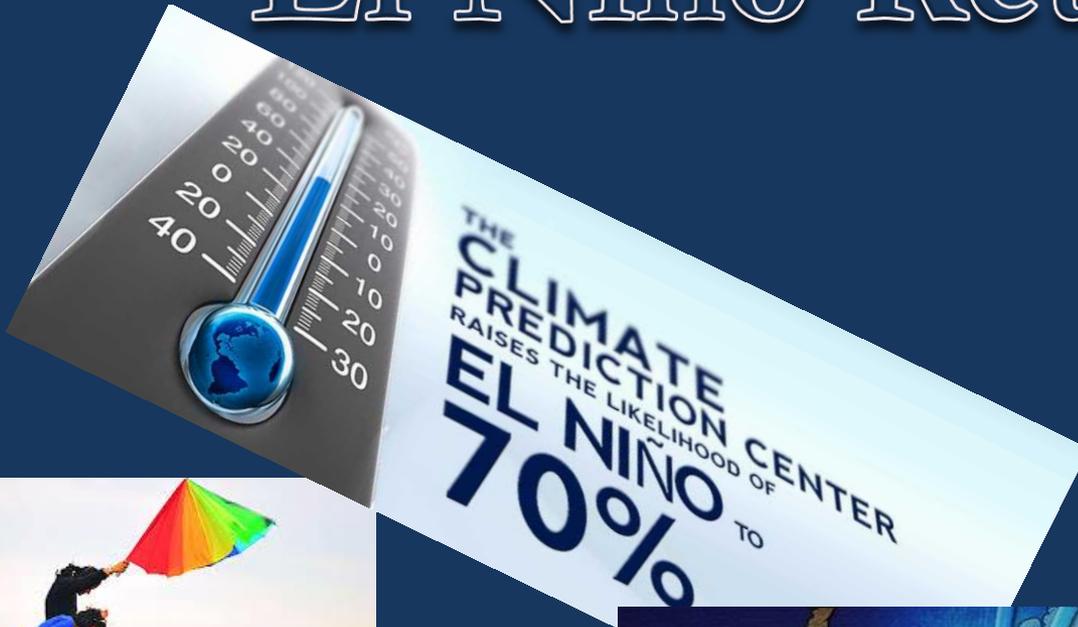
- Drought persists/intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely

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



drought.gov

El Niño Returns





Weather.gov Forecast

[» GO](#)

» Active Weather Alerts

» NOAA Organizations

» Working With NOAA

» Media & Constituents

» NOAA In Your State

» Emergency Information
for NOAA Employees

Related links:

» [AUDIO: News Conference](#)» [VIDEO: Winter Outlook for 2015-2016](#)» [EL Niño Forecast](#)» [ENSO Blog](#)

Media Contact:

» [Maureen O'Leary](#)
301-427-9000 (work)

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Strong El Niño sets the stage for 2015-2016 winter weather

October 15, 2015

Forecasters at [NOAA's Climate Prediction Center](#) issued the [U.S. Winter Outlook](#) today favoring cooler and wetter weather in Southern Tier states with above-average temperatures most likely in the West and across the Northern Tier. This year's El Niño, among the strongest on record, is expected to influence weather and climate patterns this winter by impacting the position of the Pacific jet stream.

"A strong El Niño is in place and should exert a strong influence over our weather this winter," said Mike Halpert, deputy director, NOAA's Climate Prediction Center. "While temperature and precipitation impacts associated with El Niño are favored, El Niño is not the only player. Cold-air outbreaks and snow storms will likely occur at times this winter. However, the frequency, number and intensity of these events cannot be predicted on a seasonal timescale."

Other factors that often play a role in the winter weather include the [Arctic Oscillation](#), which influences the number of arctic air masses that penetrate into the South and [nor'easters](#) on the East Coast, and the [Madden-Julian Oscillation](#), which can impact the number of heavy rain storms in the Pacific Northwest.

The 2015 U.S. Winter Outlook (December through February):

Precipitation Outlook:

- Wetter-than-average conditions most likely in the Southern Tier of the United States, from central and southern California, across Texas, to Florida, and up the East Coast to southern New England. Above-average precipitation is also favored in southeastern Alaska.
- Drier-than-average conditions most likely for Hawaii, central and western Alaska, parts of the Pacific Northwest and northern Rockies, and for areas near the Great Lakes and Ohio Valley.



Temperature - U.S. Winter Outlook: 2015-2016
(Credit: NOAA)



Precipitation - U.S. Winter Outlook: 2015-2016
(Credit: NOAA)

Winter Outlook

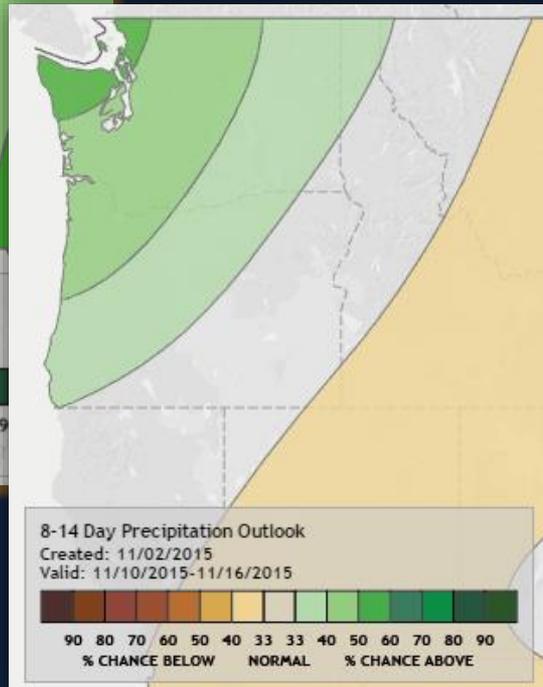
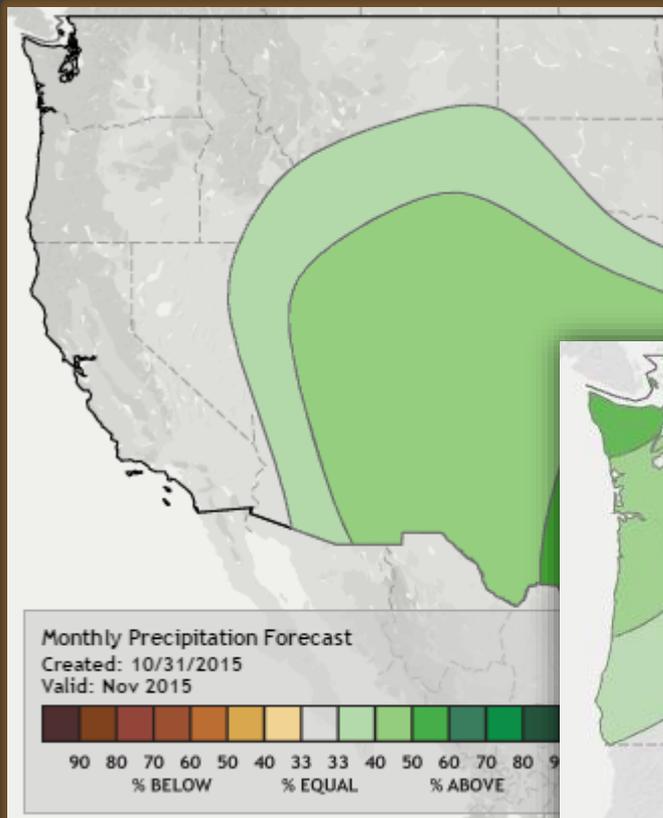
**What's around the corner
this Winter?**

**Seasonal Precipitation
Seasonal Temperatures
Mountain Snowpack
Low-elevation Snow
Flood Potential**

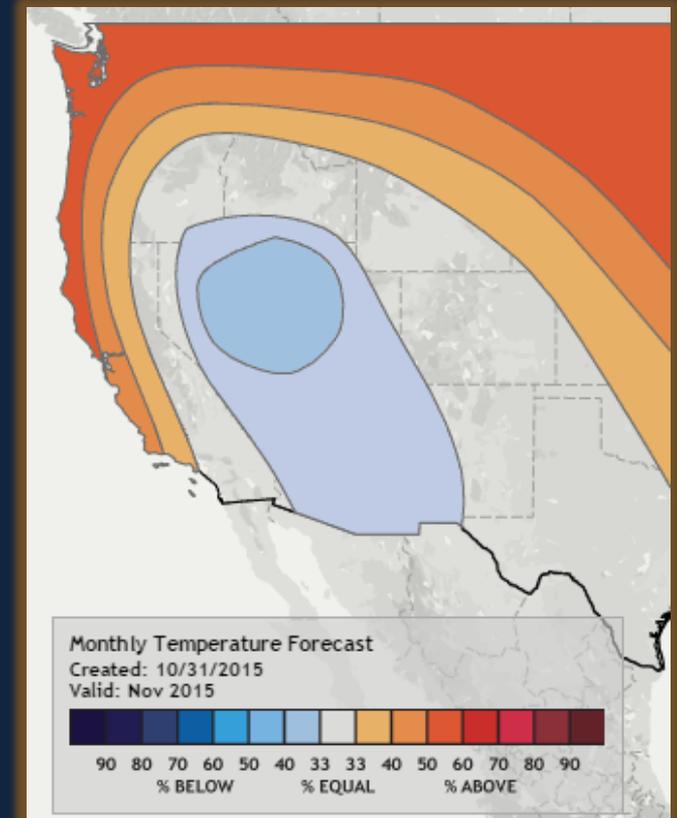


November Outlook

Precipitation

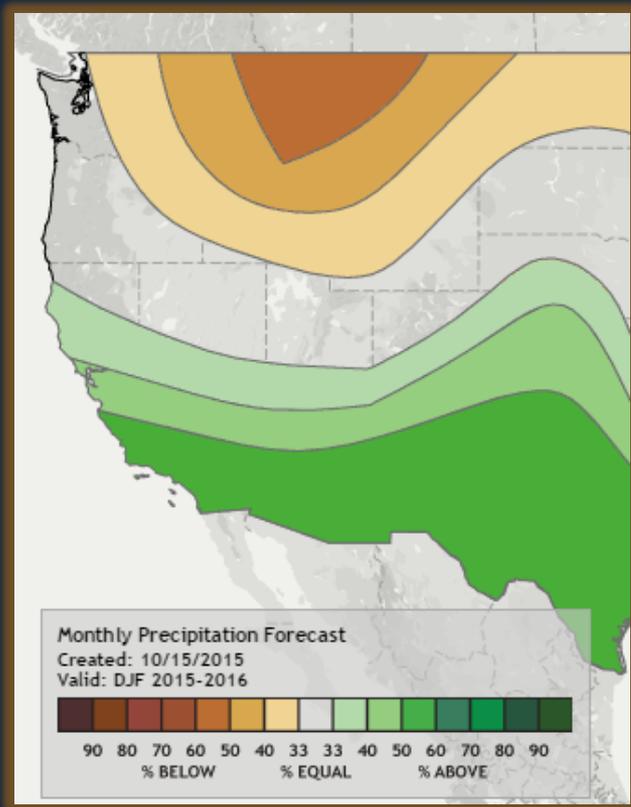


Temperature

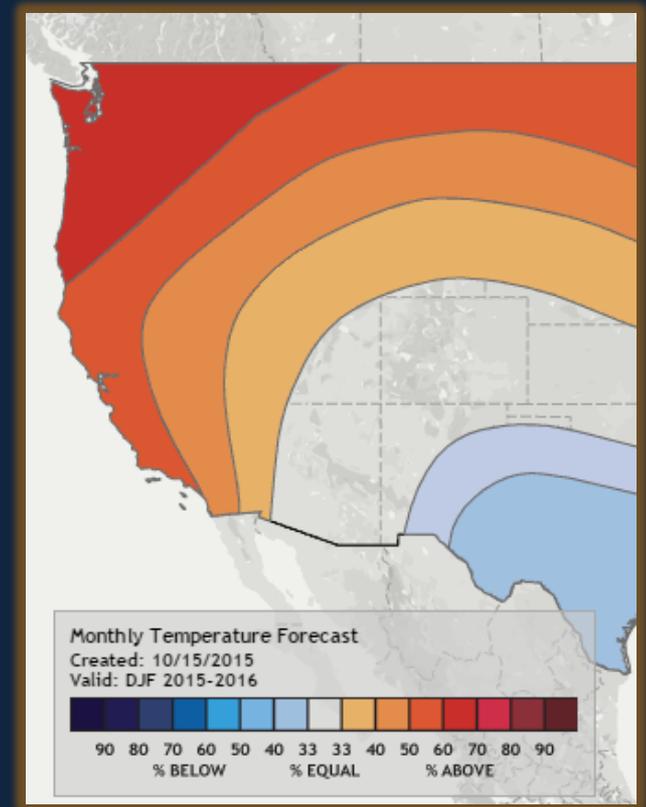


Winter Outlook

Precipitation



Temperature



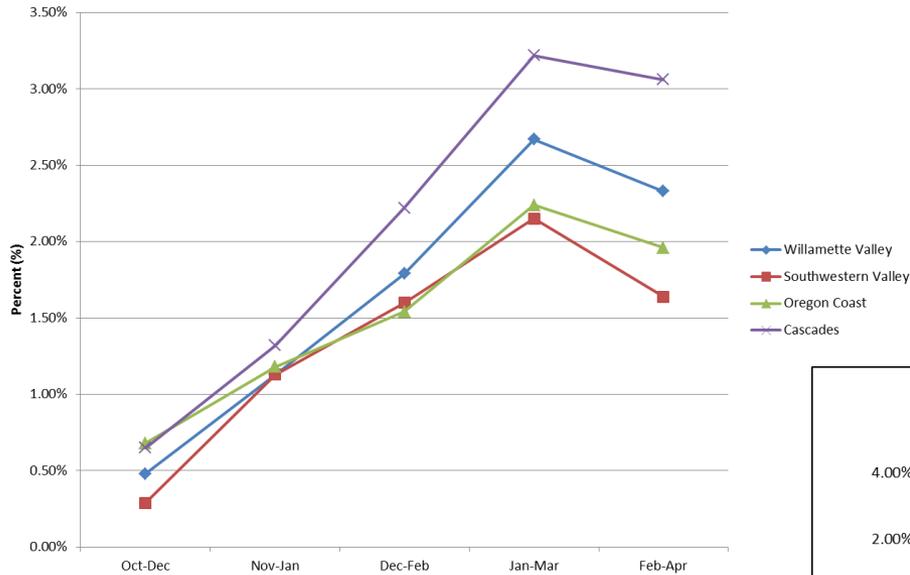
DECEMBER
JANUARY
FEBRUARY



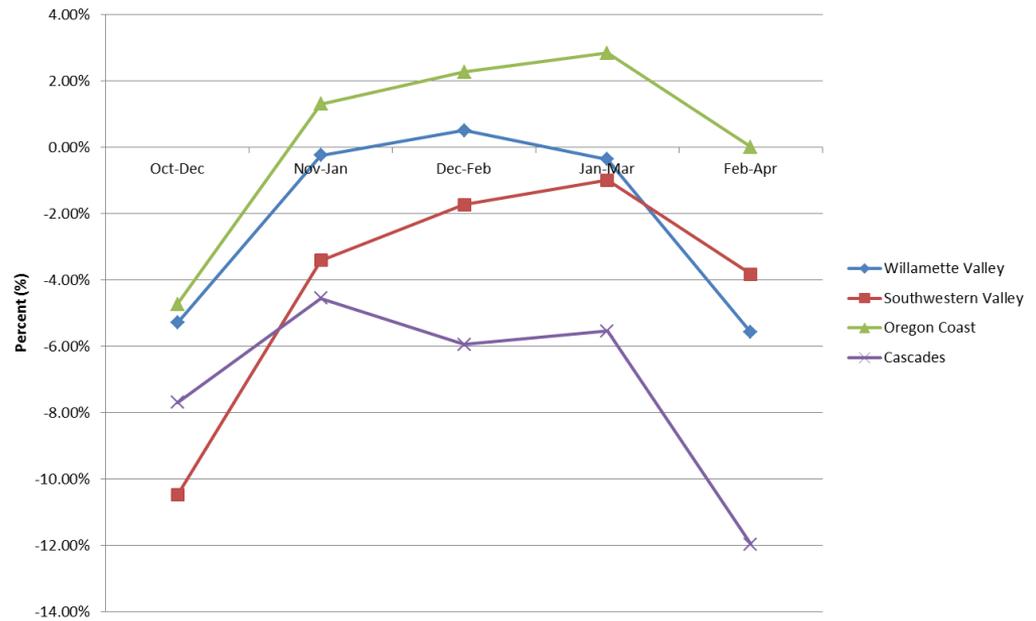
Seasonal above-average temperatures likely will lead to below-average mountain snowpack.

Winter Outlook

El Niño Temperature Departure from Three-Monthly Mean for Climate Regions

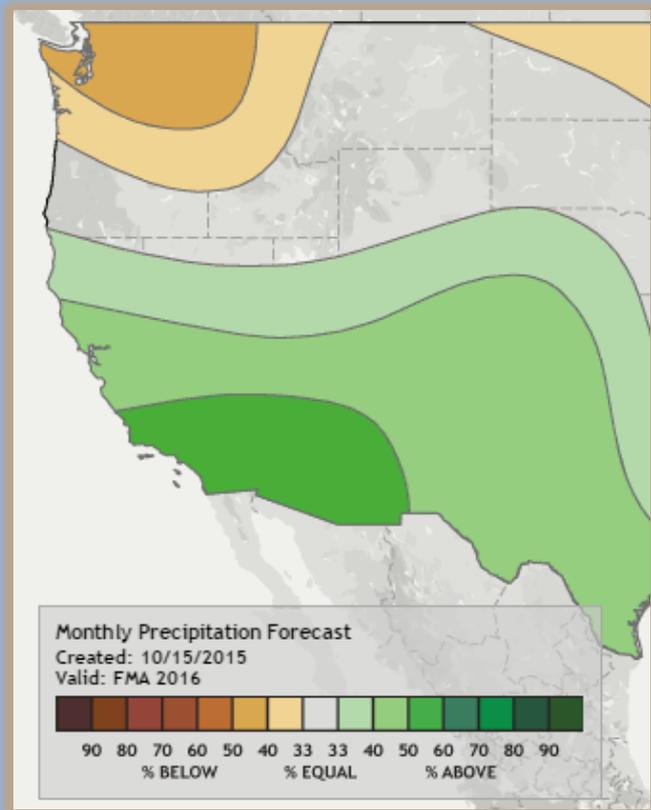


El Niño - Precipitation Departure from Three-Monthly Mean for Climate Regions



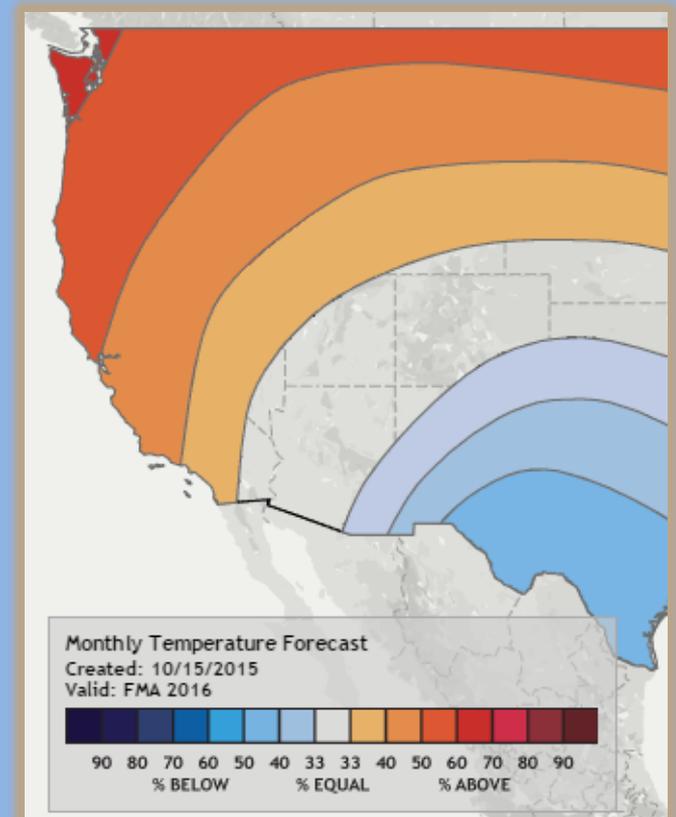
Early Spring Outlook

Precipitation



FEBRUARY
MARCH
APRIL

Temperature



NCEI El Niño page

http://www.ncdc.noaa.gov/monitoring-references/dyk/el_nino-2015-2016

Temperatures Oct - Mar

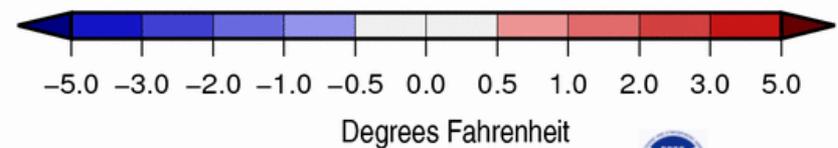
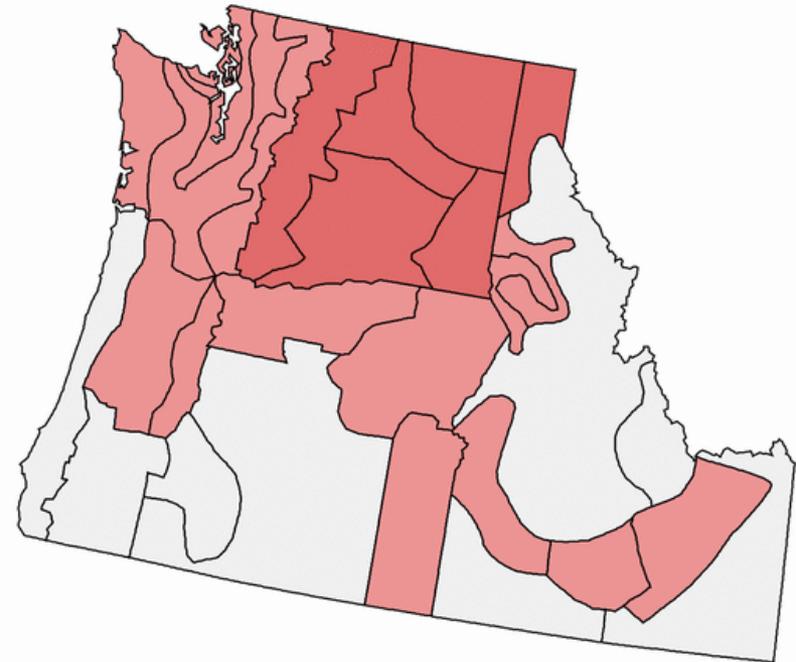
Average of Strong El Niño cases near average for Coastal climate division and above-average for Willamette Valley

Strong El Niño Mean Temperature Departure from Average

Northwest Climate Region

Composite: October–March 1957–58, 1965–66, 1972–73, 1982–83, 1991–92, 1997–98

Average Period: 1981–2010



Data Source: nClimDiv

Created by: National Centers for Environmental Information



Low Elevation Snow

Strong El Niño winter snowfall totals in Portland:

1957-58 Trace

1965-66 0.6"

1972-73 6.5"

1982-83 Trace

1992-93 14.1" (Dec 4.6", Jan 2.9", Feb 6.6")

1998-99 2.0"

**Zero snow more often during El Niño than
ENSO-Neutral or La Niña**



Floods

Major flooding is unlikely. Historically, widespread and high-impact flooding occurs most often during La Niña conditions.

1982-83 was the only strong El Niño case that had significant flooding.



Winter Outlook Summary

Temperatures
Precipitation
Mountain Snowpack
Low-elevation Snow
Flooding



But wait...
There's more!



Be “Weather Ready”



Some NWS resources
to help you
stay informed
this winter



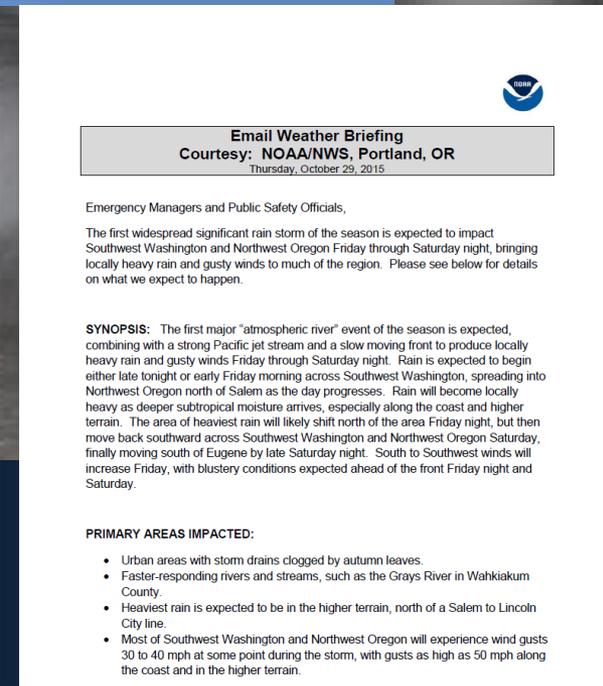
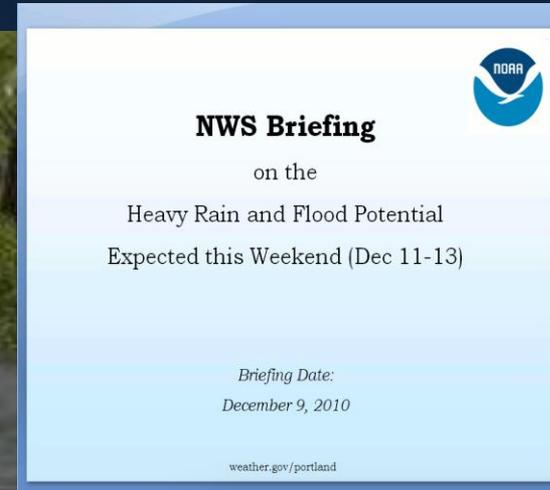
Weather-Ready Nation

National Oceanic and Atmospheric Administration

High-Impact Weather Briefings

Event-Driven Weather Briefings

- For Key Decision Makers
- Email or webinar
- Leading up to anticipated 'high-impact' weather events
- Notification of webinars via email
- Telephone briefings too!



NWS Chat

- NWSChat – www.nwschat.weather.gov
 - Register as a partner
 - Instant Messaging With Forecasters on Duty
 - Efficient information exchange
 - All in Chat Room see the information
- nwschat.weather.gov/live

The screenshot shows the NOAA's National Weather Service NWSChat website. The top navigation bar includes links for Home, Reset Password, Documentation, Contacts, Online Tools, and NWS Toolbox. A prominent warning reads "EXPERIMENTAL, NON-OPERATIONAL". The main content area is a registration form with two sections: "1. Agree to Terms" with a checkbox, and "2. Requested NWSChat Username (must be lowercase)". Below this are input fields for Prefix/Affiliation, First Name, and Middle Initial (optional). A "Map Panel" is visible, showing a satellite view of the United States and a map of Europe and Africa. The chat interface at the bottom shows a message log with timestamps and usernames, and a list of 17 people currently in the chat room.



iNWS

- **Watches/Warnings/Advisories**
- **Text message and/or email**
- **Tailor to your needs**
 - *Area of concern*
 - *Event messages*
- **Best of all—It's Free!**
- **Register and/or login at:**
inws.wrh.noaa.gov/user/register

Home My Alerts News FAQ About Login Register

 **iNWS - Interactive NWS**
National Weather Service Mobile Decision Support Services (MDSS)

iNWS MOBILE ALERTING
Receive customized text message and e-mail alerts for National Weather Service products that you care about.



Welcome.
InteractiveNWS (iNWS) is the home of new mobile and desktop innovations of the National Weather Service. This application suite allows NWS partners to receive National Weather Service products in new and innovative ways, such as text messaging and mobile-enabled webpages. iNWS strives to fulfill our mission of protecting life and property by using new technology to reach out to our customers.

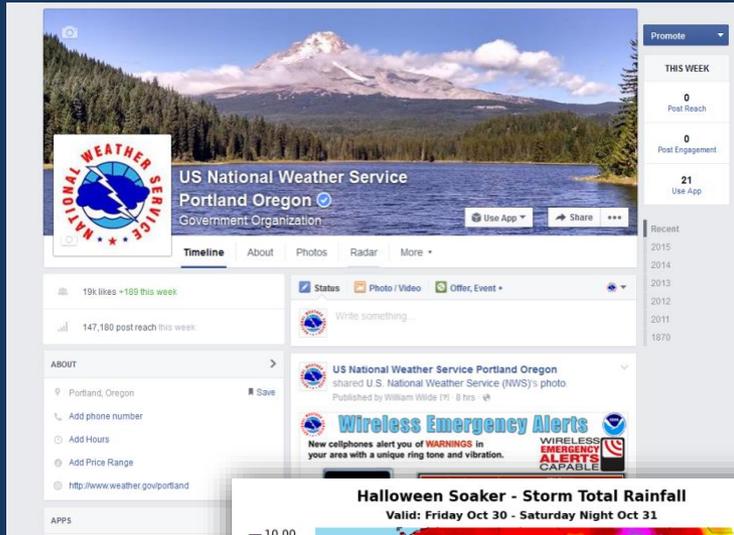
Recent News.
[New iNWS Terms of Use Are In Effect](#)
[Text Message Alerts Unlocked for All iNWS Users](#)
[New Version of the iNWS Web Page Released](#)
[All Advisories, Watches and Warnings Restored to iNWS Text Message Alerts](#)
[iNWS Text Message Alerts Limited to Warning Products](#)

iNWS is an experimental service intended for NWS core partners, including emergency managers, community leaders and other government agencies only. You are encouraged to complete a [short survey](#) on iNWS. See the iNWS [Service Description Document](#) for more information.

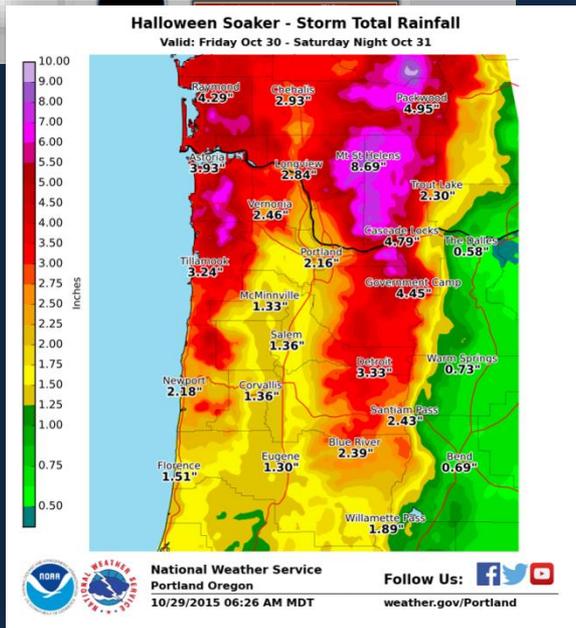
DOC - NOAA - National Weather Service - iNWS Version 4 - Switch to Mobile Version
[Privacy Policy](#) | [Terms of Use](#) | [FOIA](#) | [Information Quality](#) | [Disclaimer](#) | [Glossary](#) | [Texting While Driving](#)



Social Media



- Public posts of local weather / conditions / impacts
- Interactive forum
 - Photos and Video
 - Exchange Information
- Situational Awareness



NWS on the Web

National Weather Service Forecast Office
Portland, OR

Home News Organization Frequently Asked Questions Search

Get Local Forecast for:
Enter location... go

Text Only (cell)

Current Warnings
Local
National
Storm Reports
Mt St. Helens
Tsunami

Current Conditions
Observations
Buoys | Tide
Satellite | Radar
AHPs: Rivers
Snow Data
Upper Air
CoCoRaHS
Cams | Roads
Air Quality...
OR | WA | CA

Forecasts
Activity Planner
Digital / Gridded
Discussion/Text
QPF & Rain
Aviation
Marine
Fire Weather
Canada / Int'l

Experimental...
Wx Point Matrix:
Marine | Fire
Precip Estimates

Climate...
Local
National
Nowcast

Point and Click Left Hand Menu
Winter Weather
Map FAQs | Glossary

Read watches, warnings & advisories
Zoom Out
Small Craft Advisory

Last map update: Oct, 29th 2008 at 10:52:43 am PDT

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Click Images For More Information
KPDX Current 31 Day Period
Observed Normals Records
80

weather.gov

- www.nwrfc.noaa.gov
- Climate.gov
- www.cpc.ncep.noaa.gov



mobile.weather.gov

- Simplified view for mobile device browsers
- Bookmark locations of interest
- Radar, satellite, river data, and more...

The screenshot shows the mobile weather page for Portland International Airport OR. At the top is the National Weather Service logo and name. Below is a location selector for 'Portland International Airport OR'. The 'Current Conditions' section shows 'Portland Intl Arpt' with coordinates (45.58 N, -122.6 W) and elevation (39 ft), last updated on Jul 17 2012 at 15:53:00. The current condition is 'Mostly Cloudy' at 79°F, with a wind speed of 'N 3 MPH'. A 'Quick Forecast' section shows the time as 2:08 pm PDT on Jul 17, with periods 1-3 of 15. It features three forecast cards: 'Late Afternoon' with a 40% chance of thunderstorms and a high of 82°F; 'Tonight' with a 40% chance of thunderstorms and a low of 61°F; and 'Wednesday' with a 20% chance of slight showers and a high of 78°F. At the bottom are links for 'Full Forecast', 'Radar', 'Satellite', and 'Forecast Discussion'.

National Weather Service

Portland International Airport OR

Current Conditions

Portland Intl Arpt
Lat: 45.58 N Lon: -122.6 W Elev: 39 ft
Last Updated: Jul 17 2012 15:53:00

Mostly Cloudy
79°F

Wind Speed
N 3 MPH

Quick Forecast
2:08 pm PDT Jul 17
Periods 1-3 of 15

Late Afternoon
40%
Chance Thunderstorms
Hi 82°F

Tonight
40%
Chance Thunderstorms
Lo 61°F

Wednesday
20%
Slight Chc Showers
Hi 78°F

Full Forecast

Radar

Satellite

Forecast Discussion



Thanks! Questions?



NWS Portland

Andy Bryant

Andy.Bryant@noaa.gov

Tyree Wilde

Tyree.Wilde@noaa.gov

24/7/365 phone:

503-326-2356

(unlisted)



Weather-Ready Nation

National Oceanic and Atmospheric Administration