

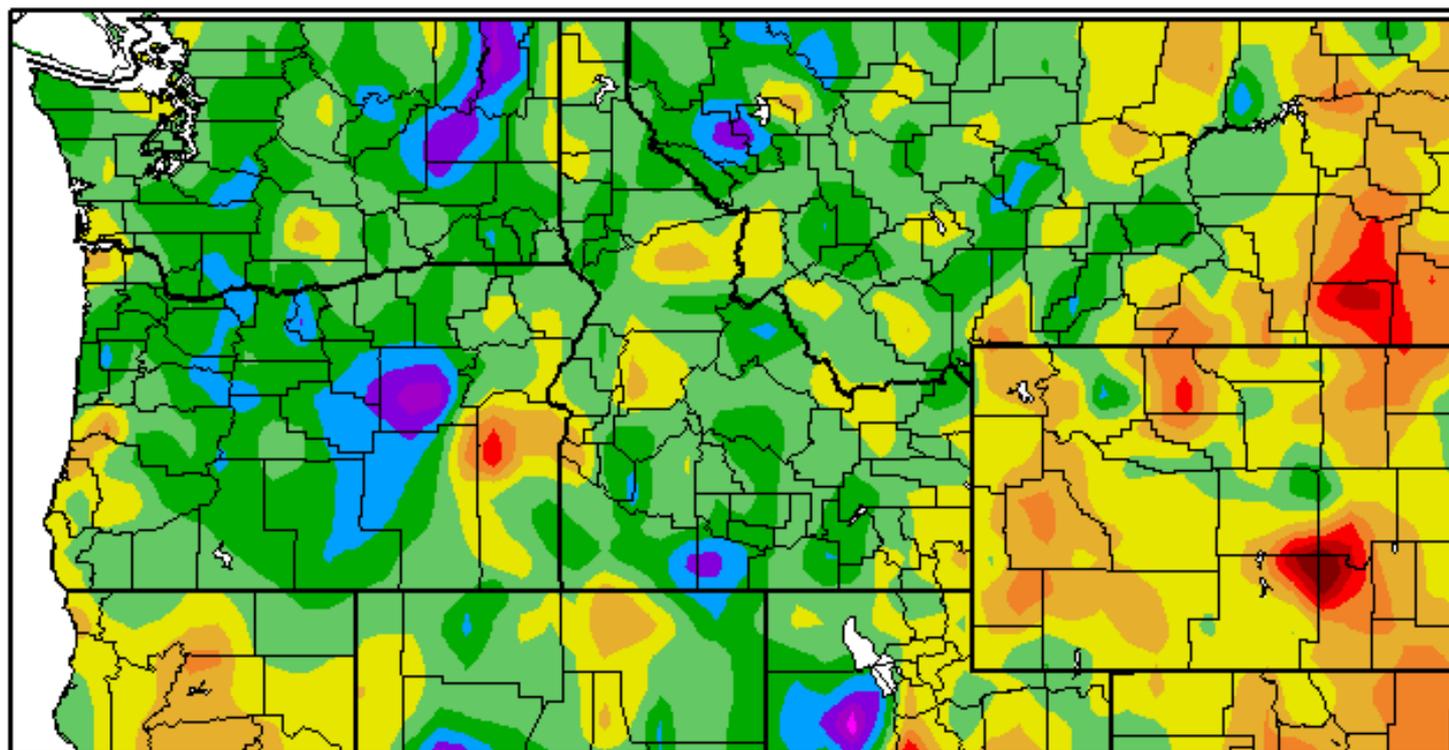


# The Month In Review

September 2016

National Weather Service  
Pendleton, Oregon

# Departure from Normal Temperature (F) 9/1/2016 - 9/30/2016

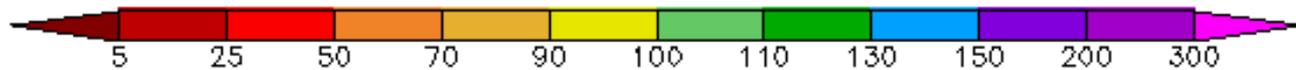
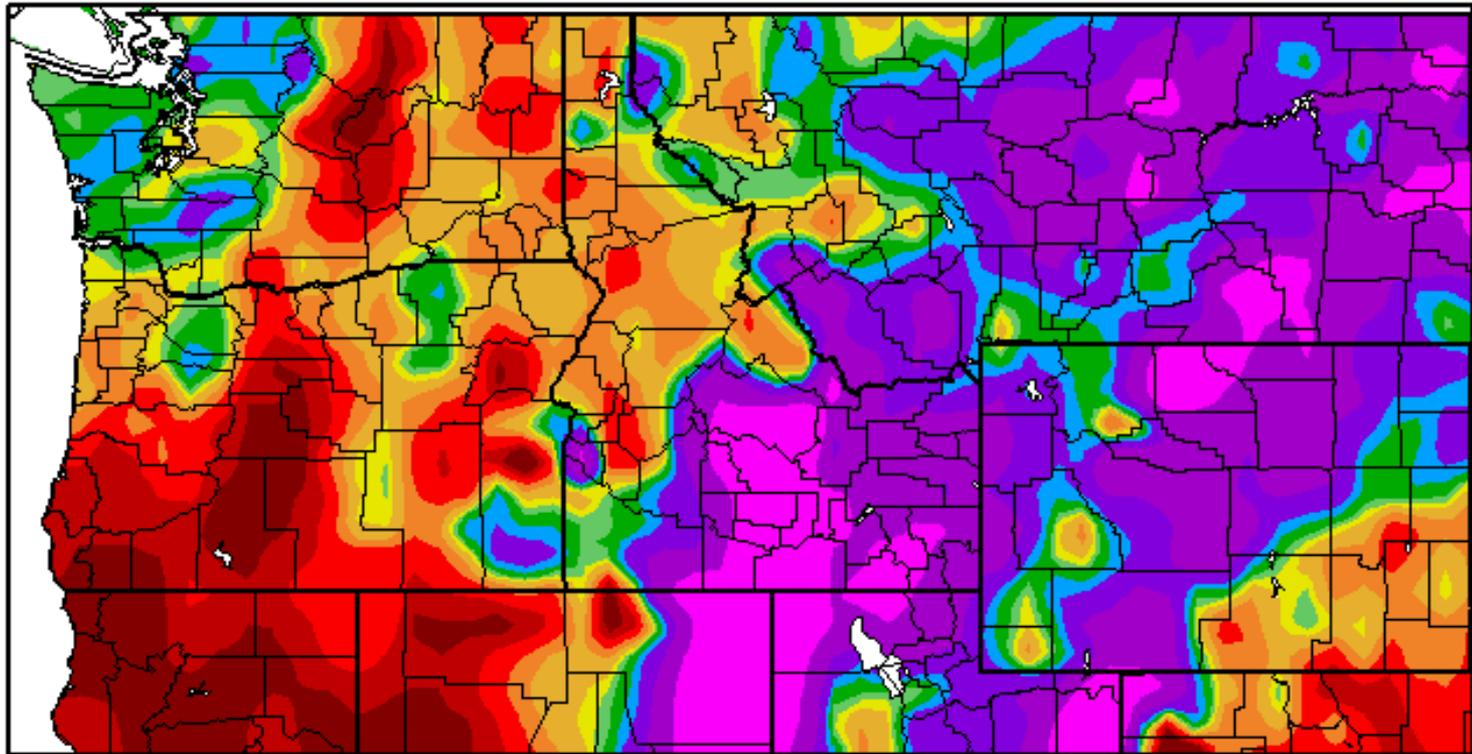


Generated 10/5/2016 at HPRCC using provisional data.

Regional Climate Centers

# Percent of Normal Precipitation (%)

## 9/1/2016 – 9/30/2016



Generated 10/5/2016 at HPRCC using provisional data.

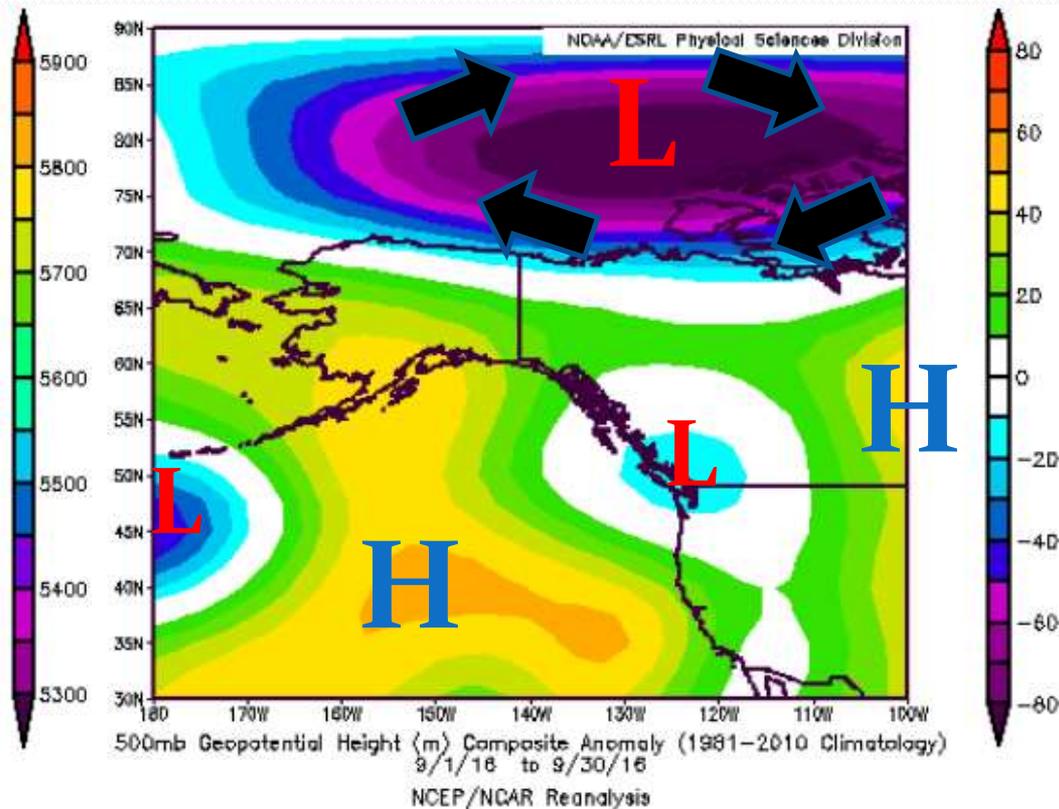
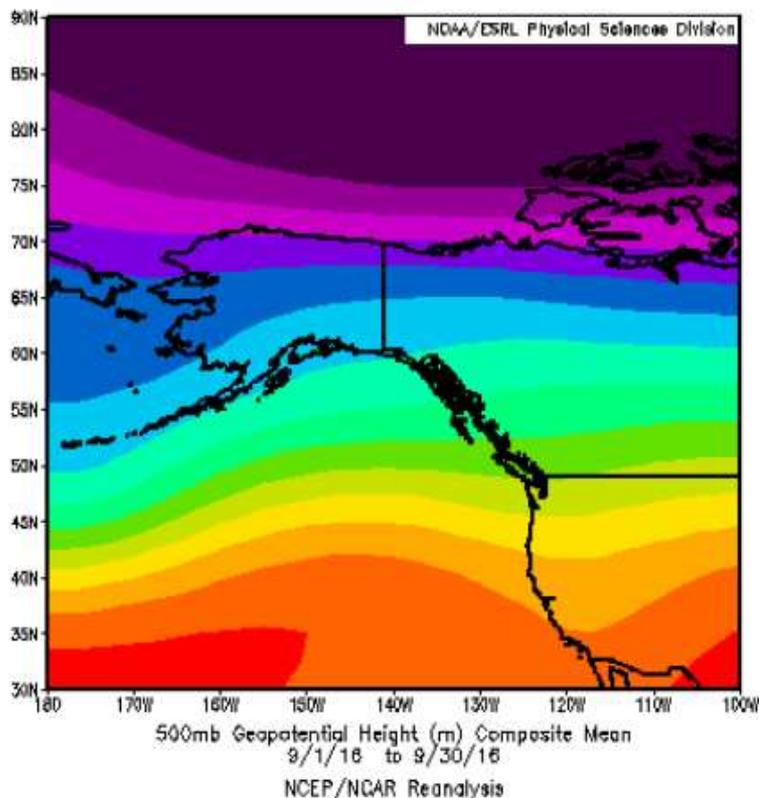
Regional Climate Centers





# September 2016

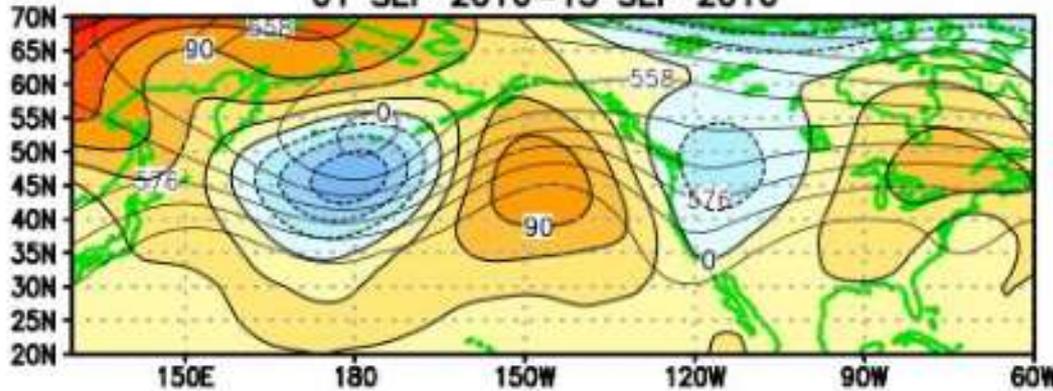
## Synoptic Weather Pattern



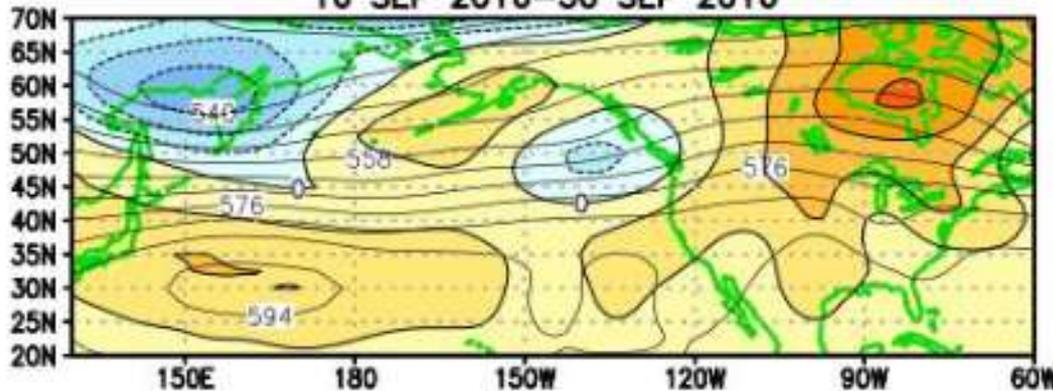
The mean synoptic pattern for the month of September 2016 was characterized by a large ridge of high pressure extending across the western Gulf of Alaska and much of the northeastern Pacific. The Pacific Northwest was under a small area of slightly lower than average heights. A large upper level low pressure system was evident in the mean height fields over the Arctic Ocean and far northern Canada. Overall, conditions ended up near normal for much of the area in September.

# September 2016 Detailed Upper Level Pattern Analysis

01 SEP 2016–15 SEP 2016



16 SEP 2016–30 SEP 2016



- ❖ The first two weeks of the month featured more troughing over the Pacific Northwest, as heights dipped to below normal levels.
- ❖ The next two weeks saw more of a zonal westerly or even southwesterly flow over the Northwest, with 14 day mean heights slightly above normal values.



# Daily Record Highs During September

City	New Record Max T	Previous Max T Record
Monument, OR	96° on 9/26	95° in 1994
Bend, OR	90° on 9/27	89° in 1994
La Grande, OR	89° on 9/29	87° in 2003
Ellensburg, WA	86° on 9/26 (T)	86° in 2003
Satus Pass, WA	86° on 9/27 (T)	86° in 1991



# Daily Record Lows During September

City	New Record Min T	Previous Min T Record
Dayville, OR	35° on 9/13	35° in 2012
Ellensburg, WA	35° on 9/13	35° in 2014
Meacham, OR	25° on 9/14	26° in 1970
Easton, OR	33° on 9/13	33° in 2012
Sisters, OR	28° on 9/05	28° in 1965

\*\*John Day, OR had the 7<sup>th</sup> coolest September on record, with an average temperature of 55.1°. The record coolest September was in 1985, with an average temperature of 52.2\*\*

With temperatures near to slightly below average over much of the region through the month only a few records were set. There were both records for warmer and cooler conditions through the month. The most significant records set were for the lack of precipitation through the month in Central Oregon. More details on the following slides.



# Top 10 Record Warmest Average Minimum Temperature for September

City	Rank	Sept 2016 Avg Min T	Current Sept Avg Min T Record
Hermiston, OR	#4	48.9°	52.3 in 2013
Pasco, WA	#10	47.3°	53.3 in 2013
Easton, WA	#10	42.7°	46.6 in 2014
Prineville, OR	#10	41.7°	48.8 in 2012



# Top 10 Driest Septembers on Record

City	Rank	Sept 2016 Precip Total	Current or previous Sept Min Precip
Bend, OR	#1 (T)	0.00"	0.00" in 2012
Fossil, OR	#1(T)	0.00"	0.00" in 2012
Sisters, OR	#7(T)	Trace	0.00" in 2011
Pelton Dam	#9	0.01"	0.00" in 2011

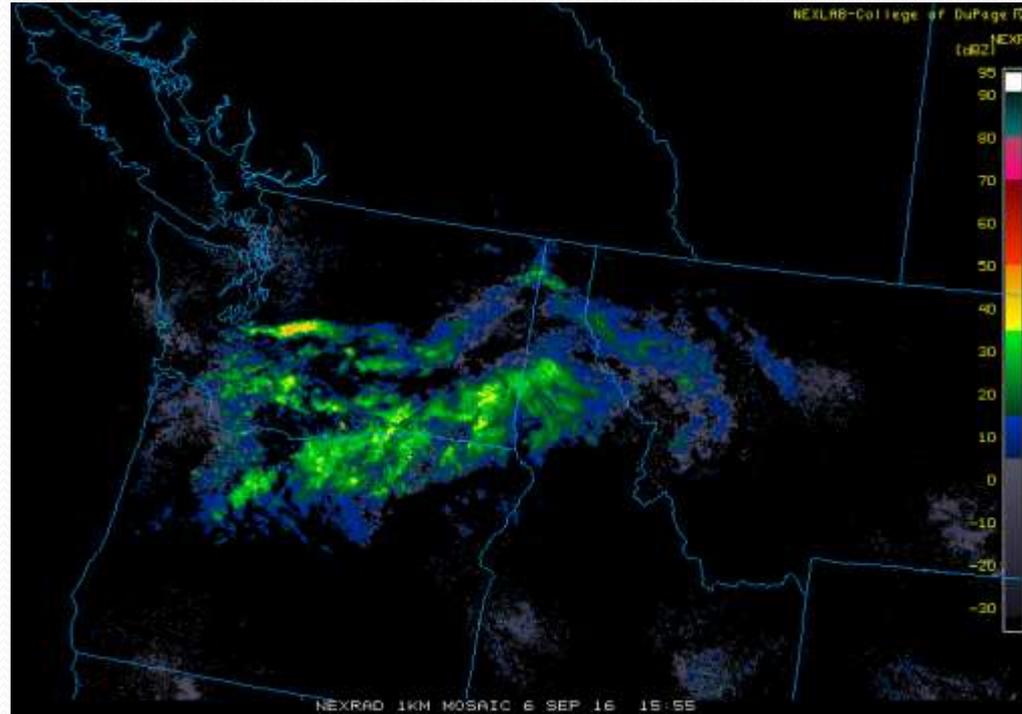
\*\*Hermiston had a top 10 wettest September on record, with 0.45" of precipitation...the current record is 1.72" in September 2013\*\*



# September Significant Weather

# September 6 – 7<sup>th</sup> Rain & Wind

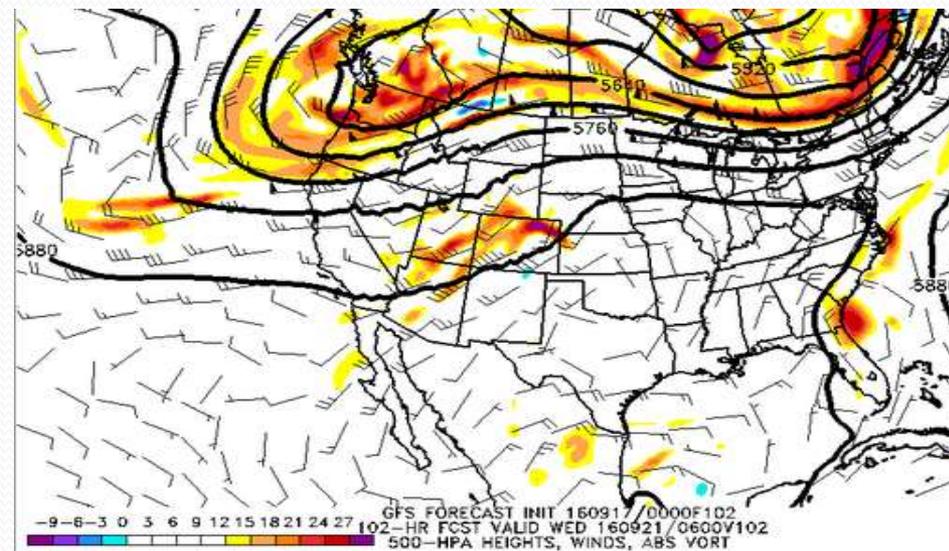
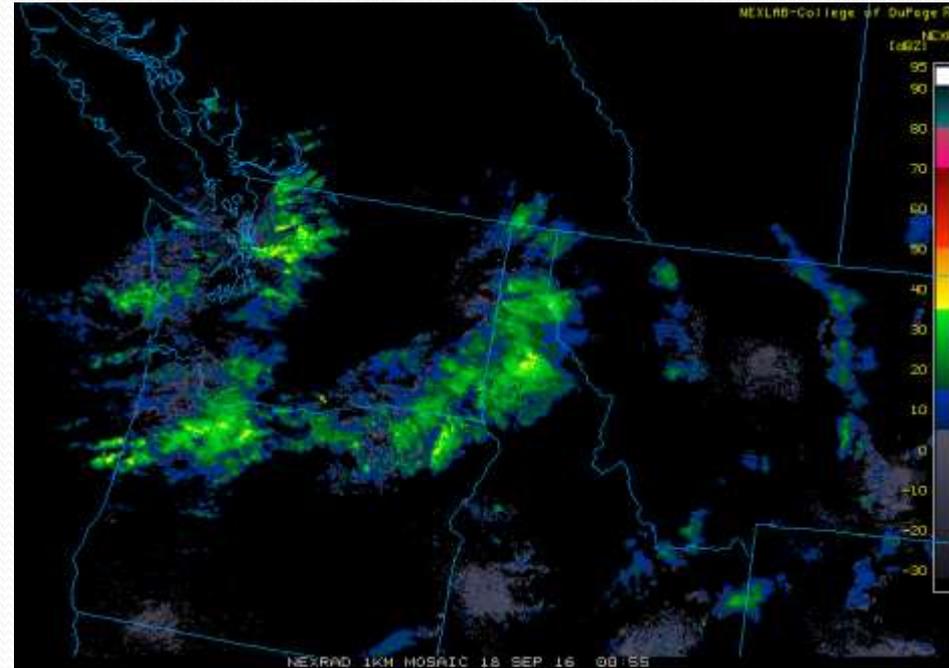
Location	Peak Wind	2 Day Precip
Pendleton, OR	35 MPH	0.33"
Meacham, OR	12 MPH	0.28"
Redmond, OR	26 MPH	0.02"
Pasco, WA	23 MPH	0.23"
Walla Walla, WA	23 MPH	0.17"
Yakima, WA	18 MPH	0.06"
Hermiston, OR	42 MPH	0.36"
Ellensburg, WA	43 MPH	0.05"
The Dalles, OR	31 MPH	0.15"
Easton, WA	N/A	0.31"



A frontal boundary with an associated area of low pressure moved into the area on September 6<sup>th</sup> and 7<sup>th</sup>. This weather system brought periods of rain showers and wind to much of the area...especially northern Oregon and southern Washington. Rain totals ranged from a few hundredths of an inch up to about a third of an inch in some locations.

# September 17 – 18<sup>th</sup> Rain & Wind

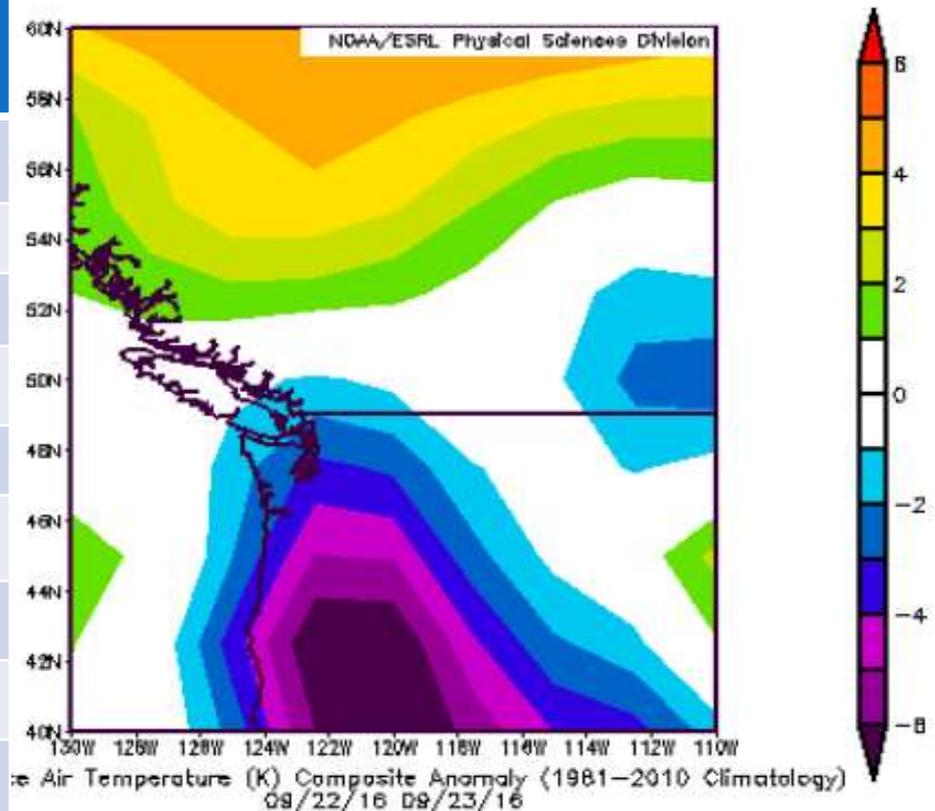
Location	Peak Wind	Total Precip
Pendleton, OR	32 MPH	0.14"
Meacham, OR	15 MPH	0.52"
Redmond, OR	32 MPH	Trace
Pasco, WA	37 MPH	Trace
Walla Walla, WA	31 MPH	0.37"
Yakima, WA	33 MPH	Trace
Hermiston, OR	34 MPH	0.04"
Ellensburg, WA	38 MPH	Trace
The Dalles, OR	43 MPH	0.05"
Easton, WA	N/A	0.75"



An upper level trough moved into the Pacific Northwest on September 17<sup>th</sup> and 18<sup>th</sup> bringing periods of rain showers and windy conditions to the area. The rain was showery in nature, dropping up to three-quarters of an inch along the East Slopes of the Washington Cascades.

# September 22 – 23<sup>rd</sup> Rain & Cooler

Location	Coollest Temp	Precip Amounts
Pendleton, OR	47°	0.19"
Meacham, OR	28°	0.26"
Redmond, OR	28°	0.02"
Pasco, WA	42°	Trace
Walla Walla	49°	0.05"
Yakima, WA	43°	Trace
Hermiston, OR	46°	Trace
Ellensburg, WA	42°	Trace
The Dalles, OR	52°	Trace
Dayville, OR	38°	0.07"
Bend, OR	37°	0.00"
Heppner, OR	41°	0.00"
La Grande, OR	46°	0.00"
Madras, OR	31°	0.00"

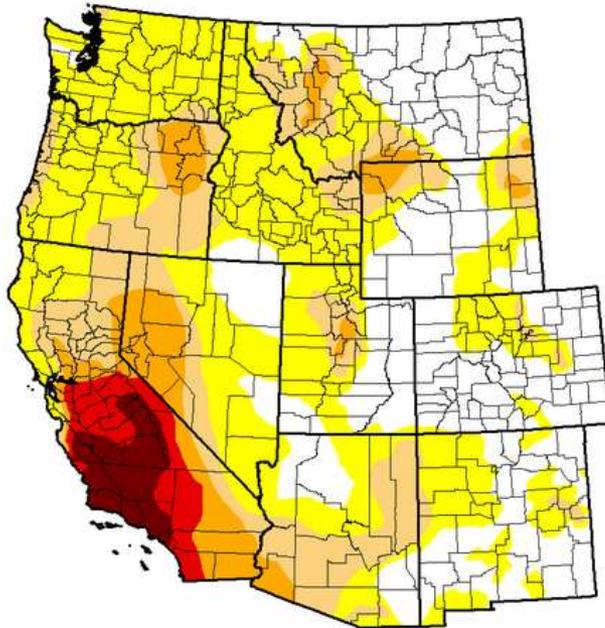


# Drought Lingers

## U.S. Drought Monitor West

October 4, 2016  
(Released Thursday October 6, 2016)  
Valid 8 a.m. EDT

Statistics type: Traditional Percent Area Export table: [PNG](#) [CSV](#) [XLS](#)



Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current <a href="#">2016-10-04</a>	31.30	68.70	30.14	13.10	5.73	2.81
Last Week <a href="#">2016-09-27</a>	27.78	72.22	30.95	13.45	5.77	2.81
3 Months Ago <a href="#">2016-07-05</a>	34.60	65.40	28.08	11.08	5.80	2.81
Start of Calendar Year <a href="#">2015-12-29</a>	33.17	66.83	45.07	29.30	15.92	6.85
Start of Water Year <a href="#">2016-09-27</a>	27.78	72.22	30.95	13.45	5.77	2.81
One Year Ago <a href="#">2015-10-06</a>	25.71	74.29	57.06	42.43	26.44	7.62

Estimated Population in Drought Areas: **43,483,471**

[View More Statistics](#)

### Intensity:

■ D0 (Abnormally Dry)    
 ■ D2 (Severe Drought)    
 ■ D4 (Exceptional Drought)  
■ D1 (Moderate Drought)    
 ■ D3 (Extreme Drought)

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

### Author(s):

Brian Fuchs, National Drought Mitigation Center

Download: [PNG](#) [PDF](#) [JPG](#)

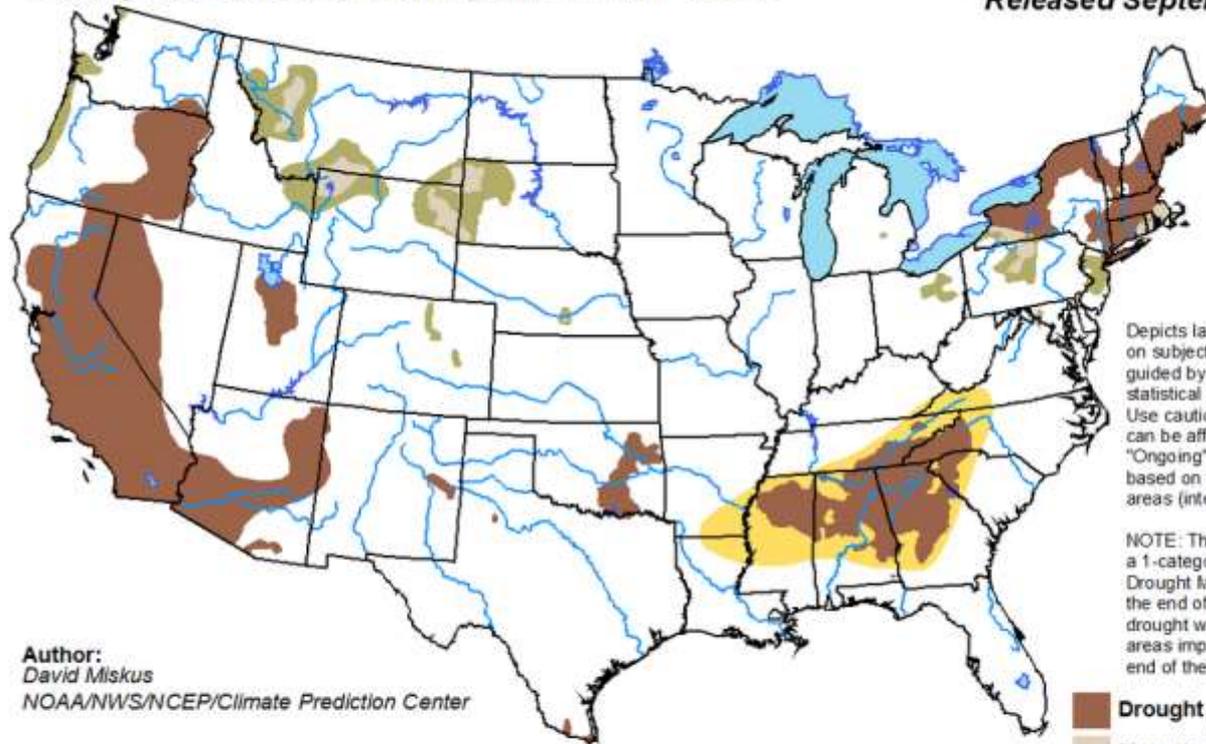


The latest drought monitor shows some minor degradation in the drought conditions, with all of Oregon and Washington now back in the D0, or abnormally dry category. Much of Eastern Oregon is now back in the D1, or moderate drought category. A small portion of Northeast Oregon is now experiencing a D2, or severe drought.

# October Drought Outlook

## U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for October 2016  
Released September 30, 2016



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).

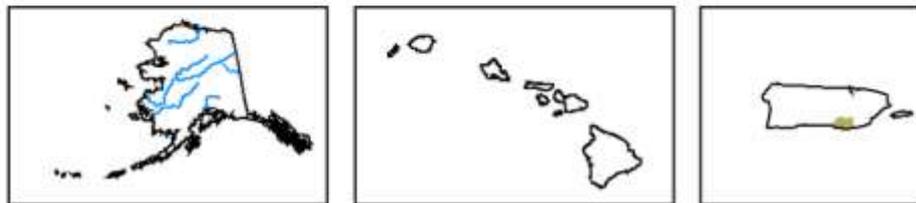
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:  
David Miskus  
NOAA/NWS/NCEP/Climate Prediction Center

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



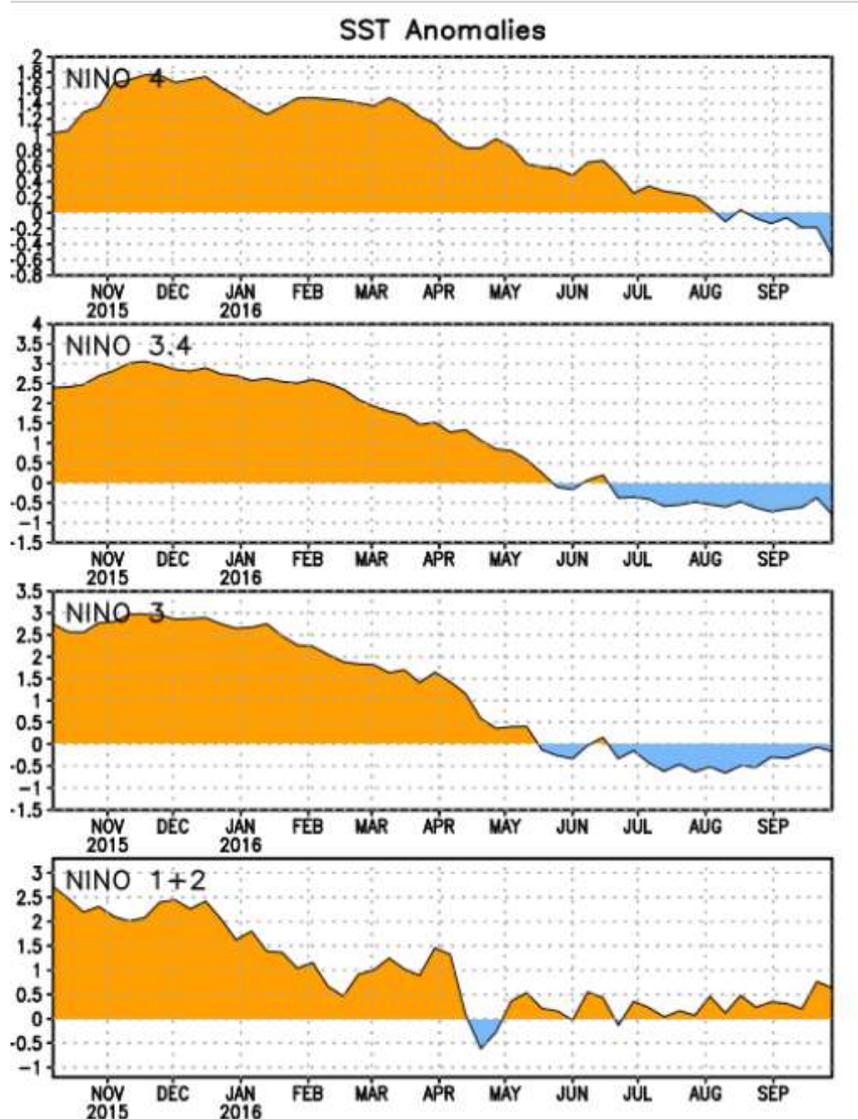
<http://go.usa.gov/3eZGd>



The monthly drought outlook for October from CPC indicates drought persisting across eastern Oregon, with drought removal likely along the Oregon coast. Several periods of rainfall are looking more likely mid to late month and this could reduce drought.



# Neutral ENSO Favored

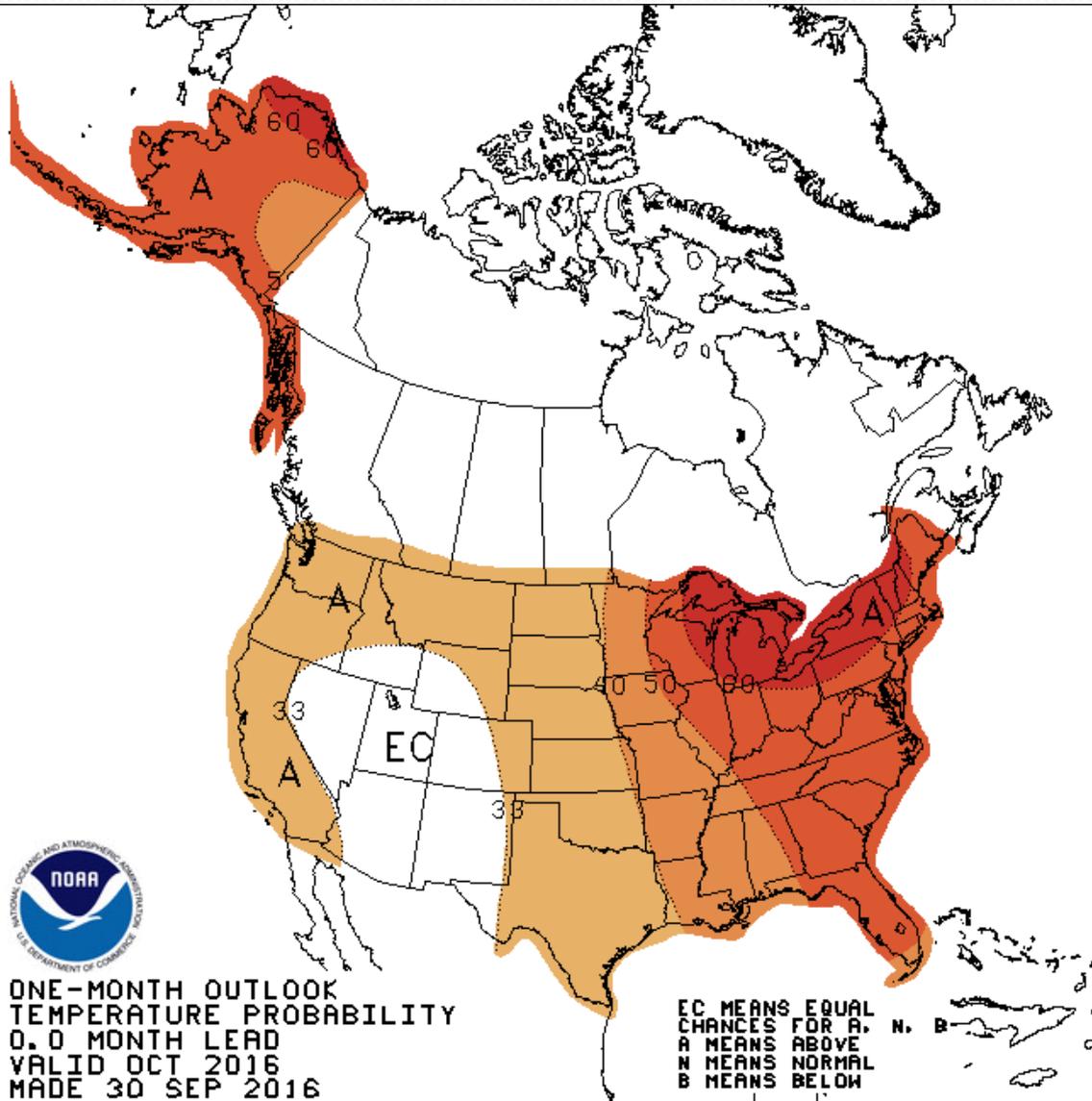


- ❖ Currently, cooler than average sea surface temperatures were observed in the Niño 3 and 3.4 regions. Niño 1+2 continues to have warmer than average sea surface temperatures.
- ❖ The La Niña watch has now been cancelled. ENSO neutral conditions are slightly favored through the upcoming winter months.
- ❖ This probability of La Niña development is now lower than last month's update, around 40 percent through the winter months.



# October Outlook

# October Temperature Outlook



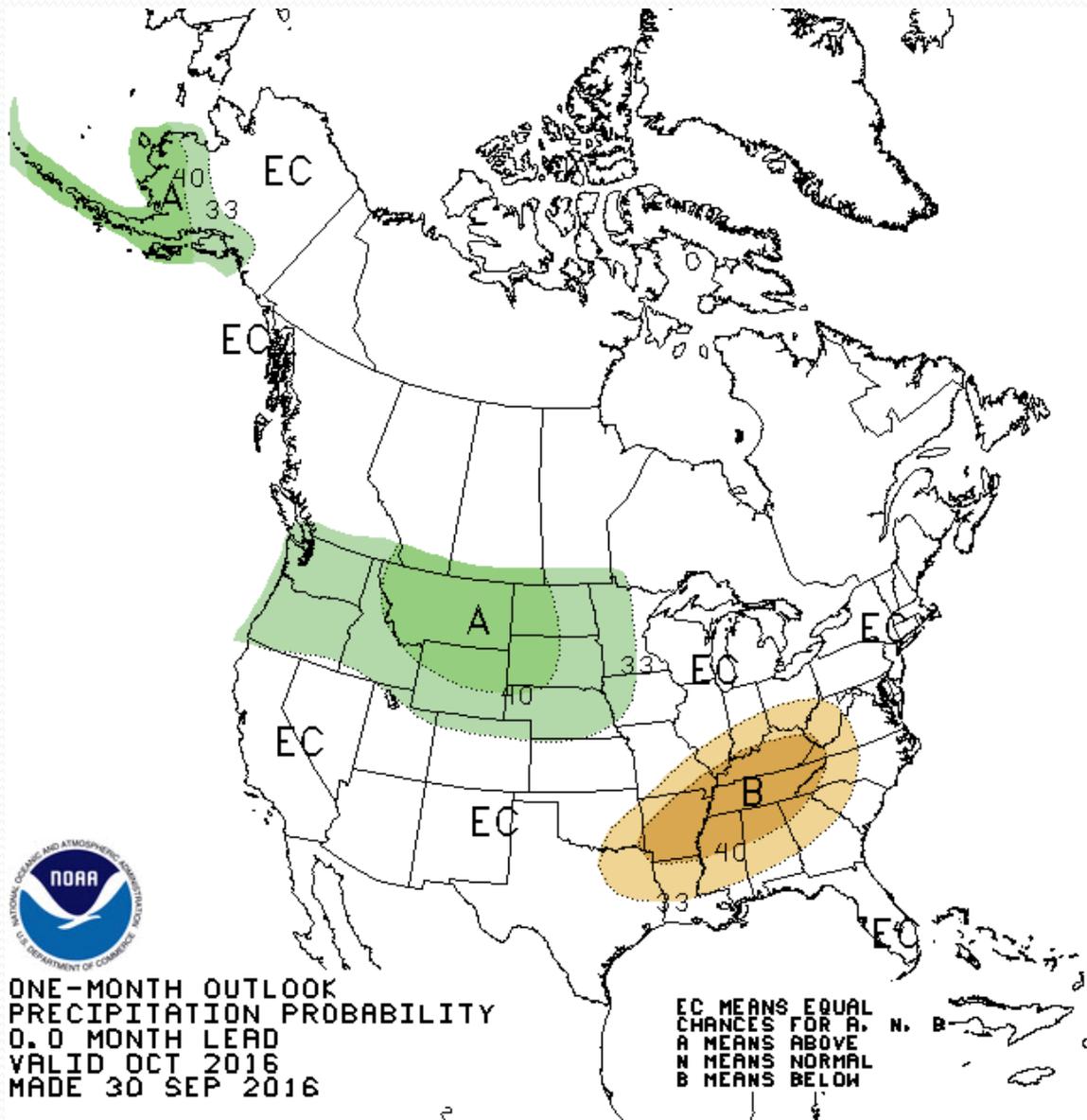
This graphic is issued by the Climate Prediction Center or CPC and is the Temperature Outlook for the month of October. The cool colors indicate a greater chance of below normal temperatures and the warm colors represent a greater chance of above normal temperatures. The time period for the normals runs from 1981-2010. Most of the Inland Pacific Northwest has the odds tilted slightly (34 - 39 percent) toward above average temperatures in October.



ONE-MONTH OUTLOOK  
TEMPERATURE PROBABILITY  
0.0 MONTH LEAD  
VALID OCT 2016  
MADE 30 SEP 2016

EC MEANS EQUAL  
CHANCES FOR A, N, B  
A MEANS ABOVE  
N MEANS NORMAL  
B MEANS BELOW

# October Precipitation Outlook



This graphic is CPC's Precipitation Outlook for the month of October. The green colors represent a greater chance of above normal precipitation, and the brown colors represent a greater chance of below normal precipitation. Much of eastern Washington and eastern Oregon have higher probabilities for above average precipitation totals in October. The middle and end of the month are looking particularly wet at this time.



ONE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0.0 MONTH LEAD  
VALID OCT 2016  
MADE 30 SEP 2016



Thank You!