

# The Month In Review

**November 2019**

National Weather Service  
Pendleton, Oregon

# November, 2019 Climate Summary

The month of November had mostly warmer than normal highs and colder than normal lows with drier than normal conditions. There were several episodes of fog or freezing fog. The coldest portion of the month came at the end just before Thanksgiving Day. During that time, there was also a significant snowstorm, which affected mostly central Oregon and the east slopes of the central Oregon Cascades. However, the weather system that brought snow near the Thanksgiving holiday took a track a little further south than expected and thus there was less snow than expected in the winter storm warned areas, in that event. Perhaps the greatest impact that that weather system had were strong winds in the northern CWA that was caused by a push of modified arctic air which pushed down from the northeast, creating strong northeast winds. There were blizzard conditions for a while, as a result, in the Grande Ronde Valley, and also over the Horse Heaven Hills in the Lower Columbia Basin. The images below show a little snow on Thanksgiving Day in Pendleton, rime ice from freezing fog in Pendleton, and a buried car caused by blizzard conditions over the Horse Heaven Hills.



Thanksgiving morning – Pendleton, OR. A quarter to a half inch of snow fell during the morning hours.



Rime Ice in the trees due to freezing fog in Pendleton, OR.

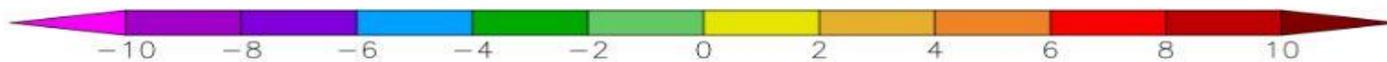
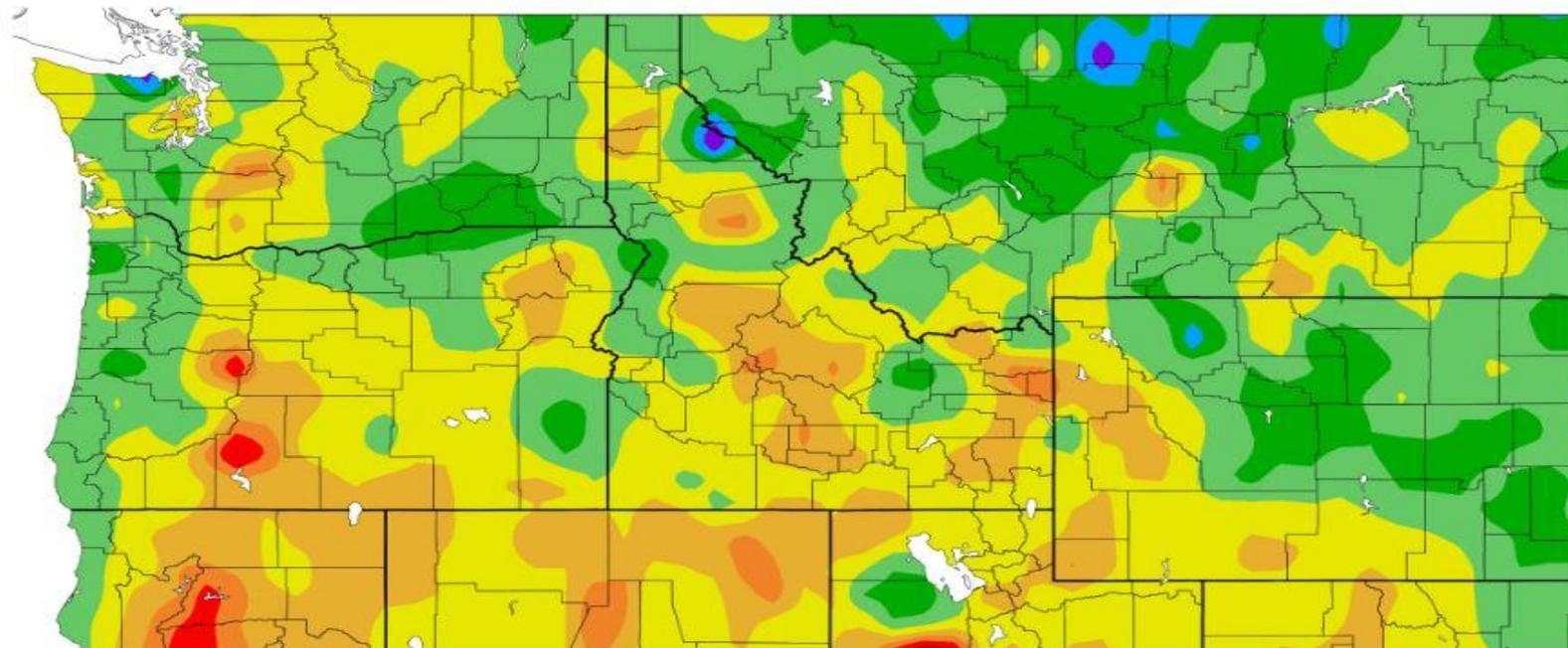


Courtesy of the Tri City Herald

Blizzard conditions from the night before Thanksgiving due to snow and strong winds over the Horse Heaven Hills.

# November 2019, Departure from Normal Average Temperatures

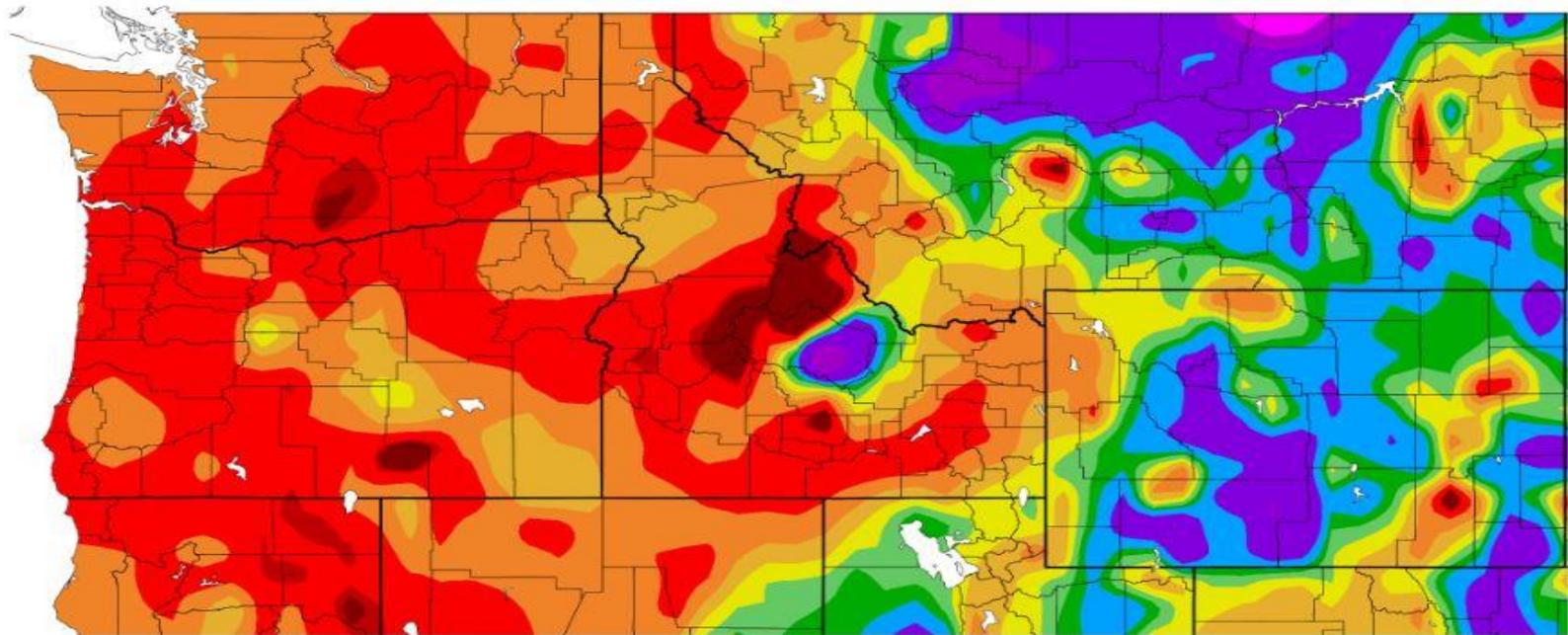
Departure from Normal Temperature (F)  
11/1/2019 – 11/30/2019



The image above shows that the Lower Columbia Basin and adjacent lower valleys had below normal temperatures, likely due to persistent fog/stratus and strong low level inversions. Elsewhere, in the higher terrain, the image shows mostly above normal temperatures for the month.

# November 2019, Percent of Normal Precipitation

Percent of Normal Precipitation (%)  
11/1/2019 – 11/30/2019



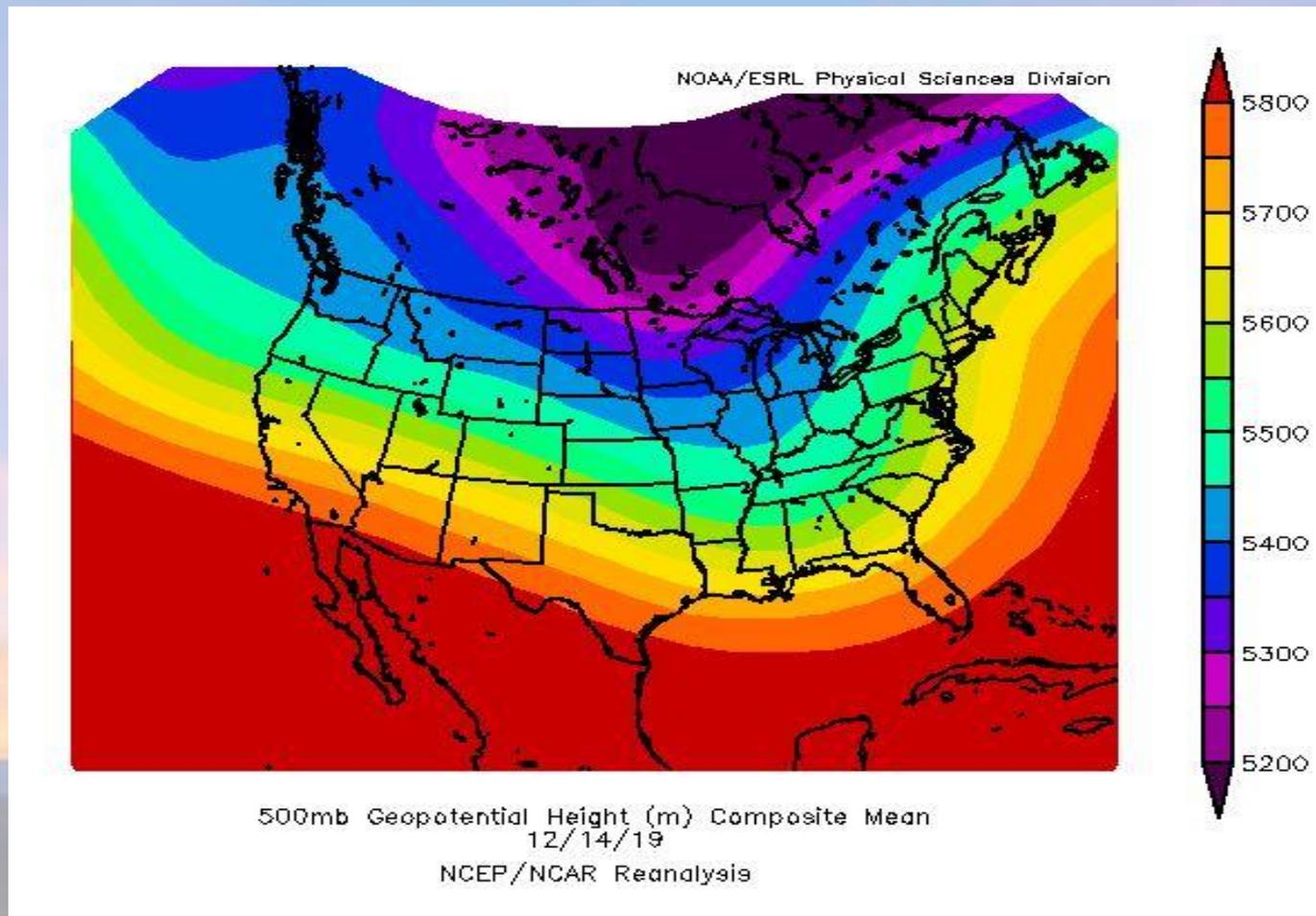
The above image shows that all of the forecast area and the Pacific Northwest had well below normal precipitation for the month (mostly 5% - 50% of normal). This was due to the fact that a high pressure ridge aloft mostly dominated the weather for the month.

# November 2019, Departures from Normal of Averages for Select Cites

	Max T	Max T D	Min T	Min T D	Ave T	Ave T D	PCPN	PCPN D
Yakima	50.3	2.4	23.6	-3.2	36.9	-0.4	0.04	-1.01
Kennewick	49.0	-1.6	31.1	-4.4	40.1	-3.0	0.22	-0.78
Walla Walla	46.3	-2.2	30.8	-4.4	38.5	-3.3	0.57	-2.30
The Dalles	51.9	1.9	31.7	-3.6	41.8	-0.8	0.46	-1.68
Redmond	53.9	5.0	23.5	-2.3	38.7	1.3	0.52	-0.44
Pendleton Airport	49.9	0.7	29.3	-4.1	39.6	-1.7	0.27	-1.25
La Grande	53.4	7.2	27.3	-2.6	40.4	2.4	0.71	-1.32

The data above show that most of the average maximum temperatures were above normal. The average minimum temperatures were all below normal, by as much as -4.4 degrees. The average mean monthly temperatures were mostly below normal, by as much as -3.3 degrees. Precipitation for the month were all well below normal. This is consistent with having an upper ridge over the region most of the time, resulting in mostly warmer than normal maximums, but colder than normal minimums, and dry conditions due to clear skies, with a lack of weather systems with clouds and precipitation.

# November 2019 Average 500 MB Weather Pattern



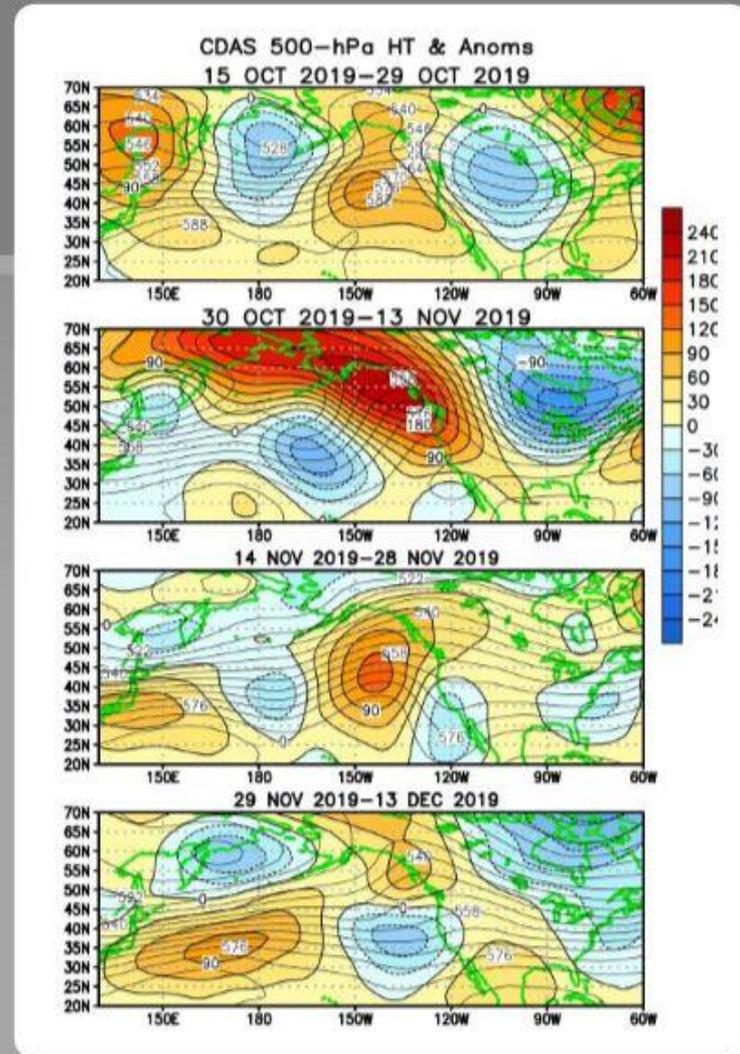
The image above shows an average west to northwest 500 MB flow to a slight ridge pattern, on average, for the month. The month was mostly dominated by high pressure aloft, however, there were also a couple of moderate to significant weather systems, or upper troughs, which when averaged for the month resulted in a mostly zonal westerly flow aloft at 500 MB.

# More Detailed 500 MB Plots for November, 2019

## Atmospheric anomalies over the North Pacific and North America During the Last 60 Days

During late October and the first half of November, an amplified ridge-trough pattern covered the U.S., along with above-average temperatures in the far western U.S. and below-average temperatures in the central and eastern U.S.

In the last half of November and first half of December, mostly above-average temperatures and heights prevailed over the western or central U.S., while below-average heights and temperatures remained over the eastern U.S.



As can be seen in the image to the upper right, the western USA and the Pacific northwest were dominated by a high pressure ridge aloft at 500 mb in each quarter.

# Significant Weather Events/Records for November, 2019

## Significant Weather Events

Event	Date	Report	Where	Misc
Heavy Snow	Nov 26-27	M 4.0 "	5 NNW La Pine, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 6.0 "	Sisters, OR	Dept of Highways
Heavy Snow	Nov 26-27	E 6.5 "	NW Bend, OR	Public
Heavy Snow	Nov 26-27	E 3.5 "	Condon, OR	Public
Heavy Snow	Nov 26-27	M 6.0 "	7 NE Bend, OR	Co-Op Observer
Heavy Snow	Nov 26-27	M 8.0 "	9 WSW La Pine, OR	Co-Op Observer
Heavy Snow	Nov 26-27	M 6.0 "	5 NNW La Pine, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 3.0 "	Fossil, OR	Public
Heavy Snow	Nov 26-27	M 7.5 "	5 NW Terrebonne, OR	Public
Heavy Snow	Nov 26-27	E 3.0 "	SSW Condon, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 3.0 "	W Mayville, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 4.0 "	Condon, OR	Public
Heavy Snow	Nov 26-27	M 6.0 "	2 NNW Redmond, OR	CoCoRaHs
Heavy Snow	Nov 26-27	E 4.0 "	5 S Fossil, OR	Public
Heavy Snow	Nov 26-27	E 6.0 "	8 NW Terrebonne, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 3.0 "	3 NW Union, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 8.0 "	13 SW Mitchell, OR	Meso-net
Heavy Snow	Nov 26-27	E 10.0 "	14 SE Mitchell, OR	Meso-net
Heavy Snow	Nov 26-27	E 4.0 "	5 WSW Shaniko, OR	Dept of Highways
Heavy Snow	Nov 26-27	E 4.0 "	8 NE Warm Springs, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 4.0 "	6 W Condon, OR	Trained Spotter
Heavy Snow	Nov 26-27	E 4.0 "	11 W Antelope, OR	Dept of Highways
Heavy Snow	Nov 26-27	M 6.5 "	Madras, OR	Public
None TS Wind Dmg	Nov 27	Fallen Trees/Power Out	Selah, WA	News Paper Report
Blizzard	Nov 27	6 Vehicles Stranded	10 S Benton City, WA - in the Horse Heaven Hills	Law Enforcement

## Record Weather Reports

Event	Date	Where	Previous Record	New Record	Records Began
High Max Temp	Nov 9, 2019	Redmond, OR	70 / 2016	72	1941

# November, 2019 Observed Monthly Max & Min Temperatures

Location	Highest Maximum Temperature	Lowest Minimum Temperature
Pendleton, OR	63	12
Redmond, OR	73	-6
Pasco, WA	68	14
Yakima, WA	69	5
Walla Walla, WA	62	17
Bend, OR	72	9
Ellensburg, WA	65	7
Hermiston, OR	68	7
John Day, OR	68	4
La Grande, OR	62	9
The Dalles, OR	66	13
MT Adams RS, WA	60	8

**There were two stations which had a monthly maximum of greater than 70 degrees, while all other stations had maximums in the 60s. Lows were cold (likely due to clear skies most of the time) with readings ranging from -6 at Redmond, OR to 17 at Walla Walla, WA.**

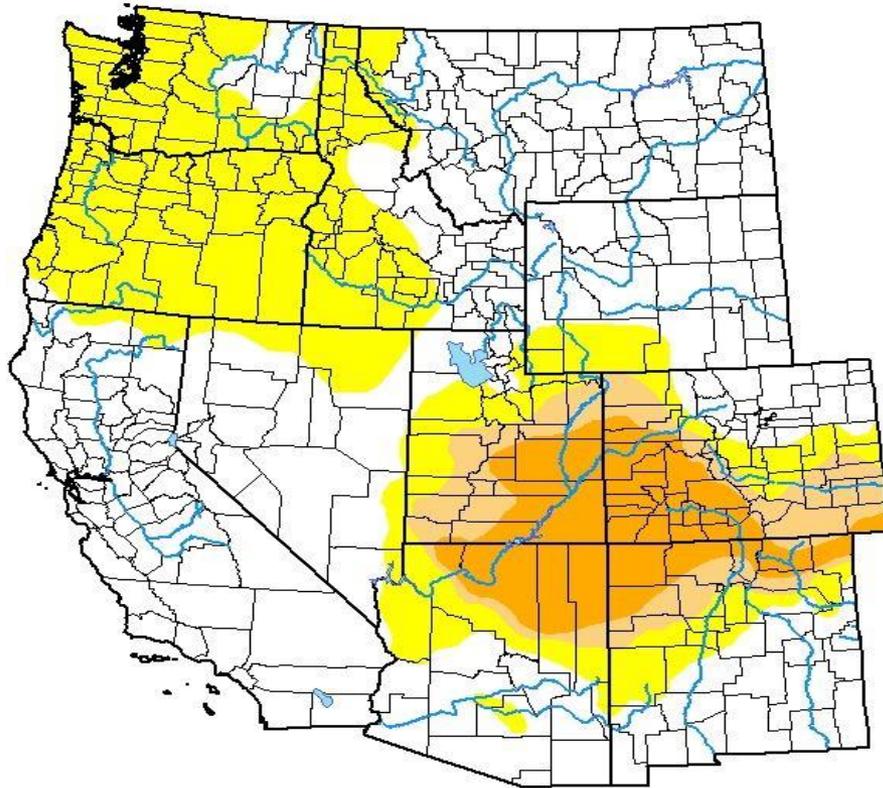
# November 2019, Monthly Total Precipitation and Snowfall Totals

Location	Total Monthly Precip	Total Snowfall
Pendleton, OR	0.27	0.3
Redmond, OR	0.52	5.0
Pasco, WA	0.18	0
Yakima, WA	0.04	0
Walla Walla, WA	0.57	0
Bend, OR	0.49	6.6
Ellensburg, WA	0.10	0
Hermiston, OR	M	M
John Day, OR	0.17	0.8
La Grande, OR	0.71	1.0
The Dalles, OR	0.46	M
Mt Adams RS, WA	0.73	1.0

**Every station had less than an inch of liquid equivalent precipitation - even the Mt. Adams R. S. These are low numbers for November. Snowfall was reported at 6 stations in the list, with 4 stations having zero snow. Two stations had missing data due to bad data.**

# November, 2019 - Drought Monitor

## U.S. Drought Monitor West



**December 10, 2019**

(Released Thursday, Dec. 12, 2019)

Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	57.21	42.79	14.59	8.59	0.00	0.00
<b>Last Week</b> <i>12-03-2019</i>	46.52	53.48	17.44	9.08	0.00	0.00
<b>3 Months Ago</b> <i>09-10-2019</i>	62.33	37.67	16.52	2.50	0.00	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	28.03	71.97	53.25	27.22	8.35	2.88
<b>Start of Water Year</b> <i>10-01-2019</i>	68.40	31.60	16.32	3.16	0.00	0.00
<b>One Year Ago</b> <i>12-11-2018</i>	25.30	74.70	54.93	28.40	9.51	2.97

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

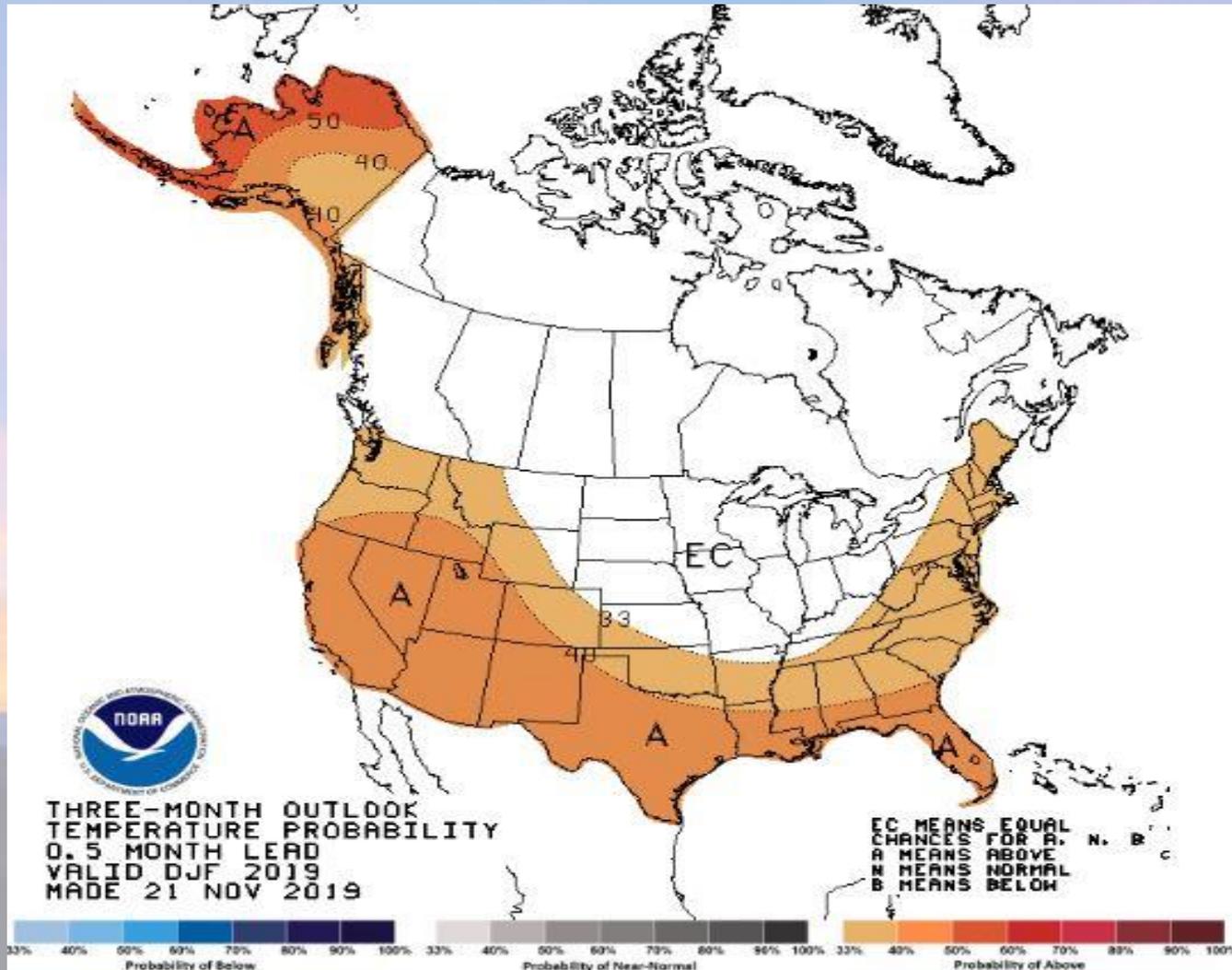
Deborah Bathke  
National Drought Mitigation Center



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

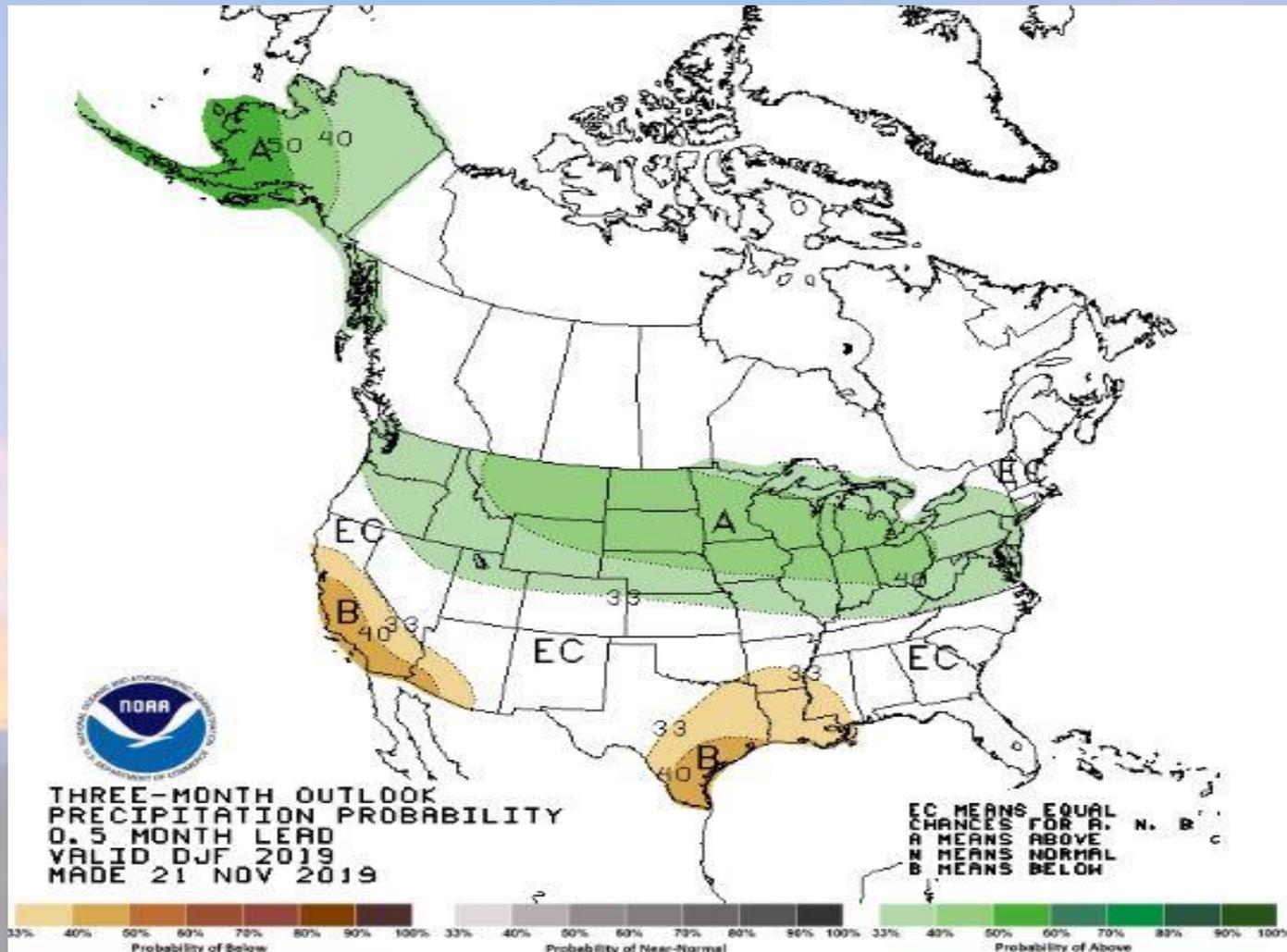
At the end of November/beginning of December, all of the forecast area and most of the Pacific Northwest was classified as category “D0” drought conditions, which means “Abnormally Dry”. This is the lowest indicator of drought conditions before neutral or “none” (no drought).

# USA Three Month Temperature Outlook



The temperature outlook for the next three months (December, January & February) shows about a 33 % percent greater chance of having above normal temperatures for the three month period on average for the entire forecast area.

# USA Three Month Precipitation Outlook

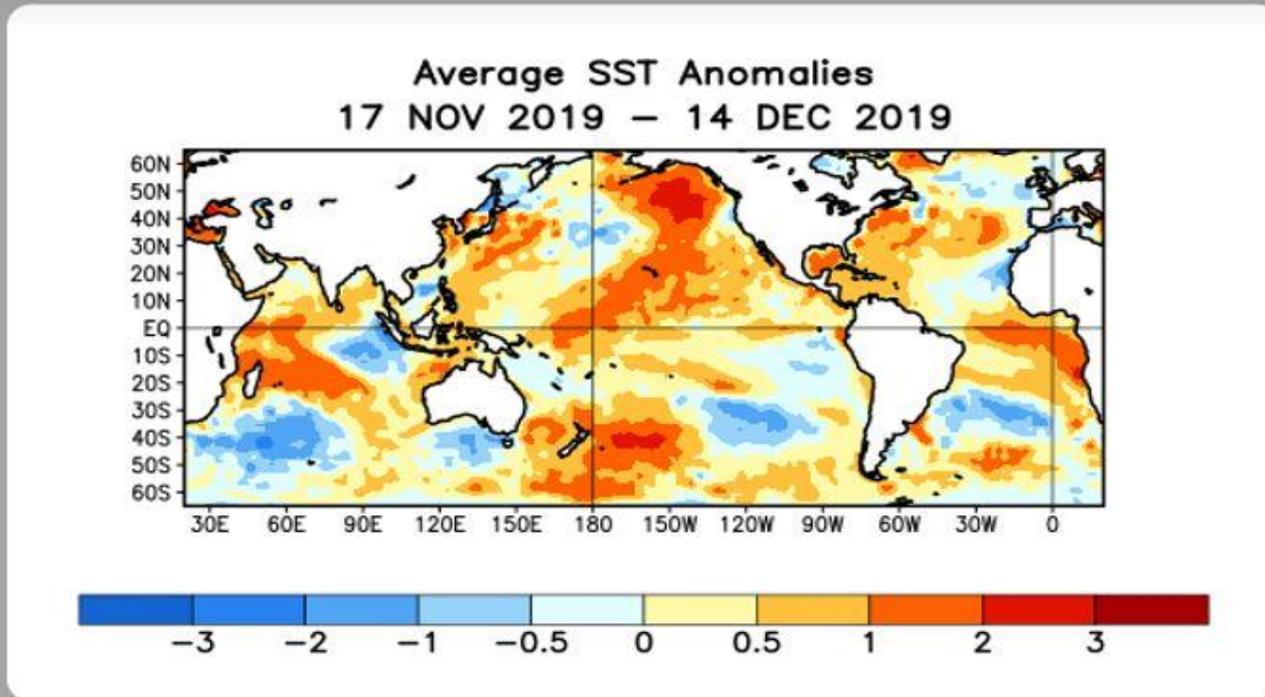


The precipitation outlook for the next three months shows between an equal chance to about a 33 % greater chance of having above normal precipitation for the next three months (December, January & February) over the forecast area.

# Sea Surface Temperature (SST) analysis for November, 2019

## Global SST Departures (°C) During the Last Four Weeks

During the last four weeks, equatorial SSTs were above average across most of the Pacific, the Atlantic Ocean, and the western Indian Ocean. SSTs were below average near Indonesia and in a small region of the eastern Pacific.



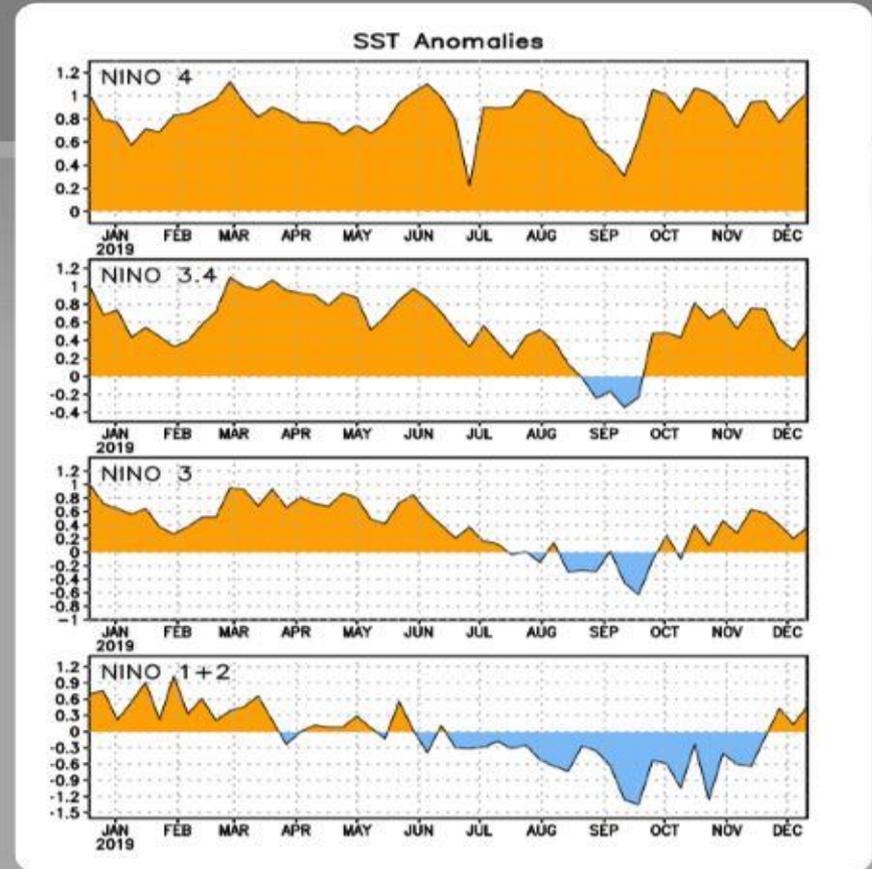
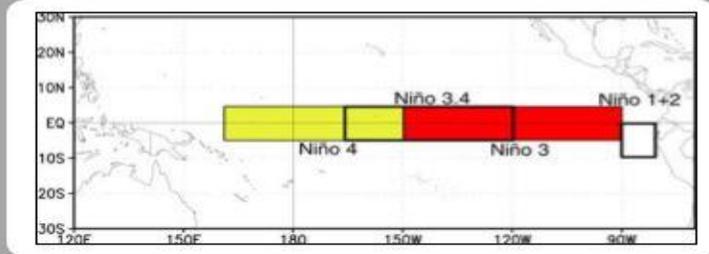
This indicates that the tropical Pacific had mostly near to above normal sea surface temperatures. This increase from last month does not necessarily mean that El-Nino conditions are returning, but that there is just a temporary warming of the tropical Pacific. If this continues for more months, then El-Nino conditions may be indicated to return.

# El Nino/ La Nina Regions, Showing SST Anomalies for Each Nino Region

## Niño Region SST Departures (°C) Recent Evolution

The latest weekly SST departures are:

Niño 4	1.0°C
Niño 3.4	0.5°C
Niño 3	0.4°C
Niño 1+2	0.5°C



The above images show that Niño regions 3.4 and 4 had mostly all positive (warmer than normal) SST's, while Niño 1 + 2, and 3 have some below normal SSTs for November. Despite the previous slide, this image indicates that El-Niño conditions continue to decline due to the cooling in the Eastern Pacific (Niño regions 1 + 2 and 3). The image to the left shows where (longitudinally) the Niño regions are.



**Thank You!**