

# The Month In Review

**October 2020**

National Weather Service  
Pendleton, Oregon

Photo: First Snow of The Season in the Blue Mountains

# October 2020, Climate Summary

October 2020 was quieter than September, and overall there were fewer storms. There was a cold snap in the middle of the month, which brought some mountain snow to the area for the first time in this coming cold season with record low temperatures. However, the most significant weather event was a High Wind event on the 13<sup>th</sup>, with reports of high sustained winds, and also high wind gusts, which caused some damage. The month began with warm maximum temperatures mostly in the 70s and 80s, which went on until the 9<sup>th</sup>, with some record highs. Then a strong weather system came in and brought some much-needed rainfall, followed by high winds, to the region from the 10<sup>th</sup> to the 13<sup>th</sup>. Pendleton reported 0.39 inches of precipitation from this weather system. After a couple of days, temperatures warmed back into mostly the 60s to 70s, which continued until the 19<sup>th</sup>. Then a strong cold front moved in on the 20<sup>th</sup>, followed by a stronger and colder weather system on the 23<sup>rd</sup> and 24<sup>th</sup>, which brought several days of record low temperatures.



First snow of the season in the northern Blue Mountains at 5000 ft msl, near Tollgate, OR on the 24<sup>th</sup> of the month.



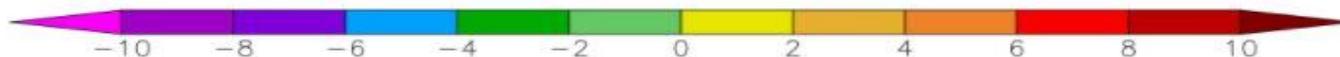
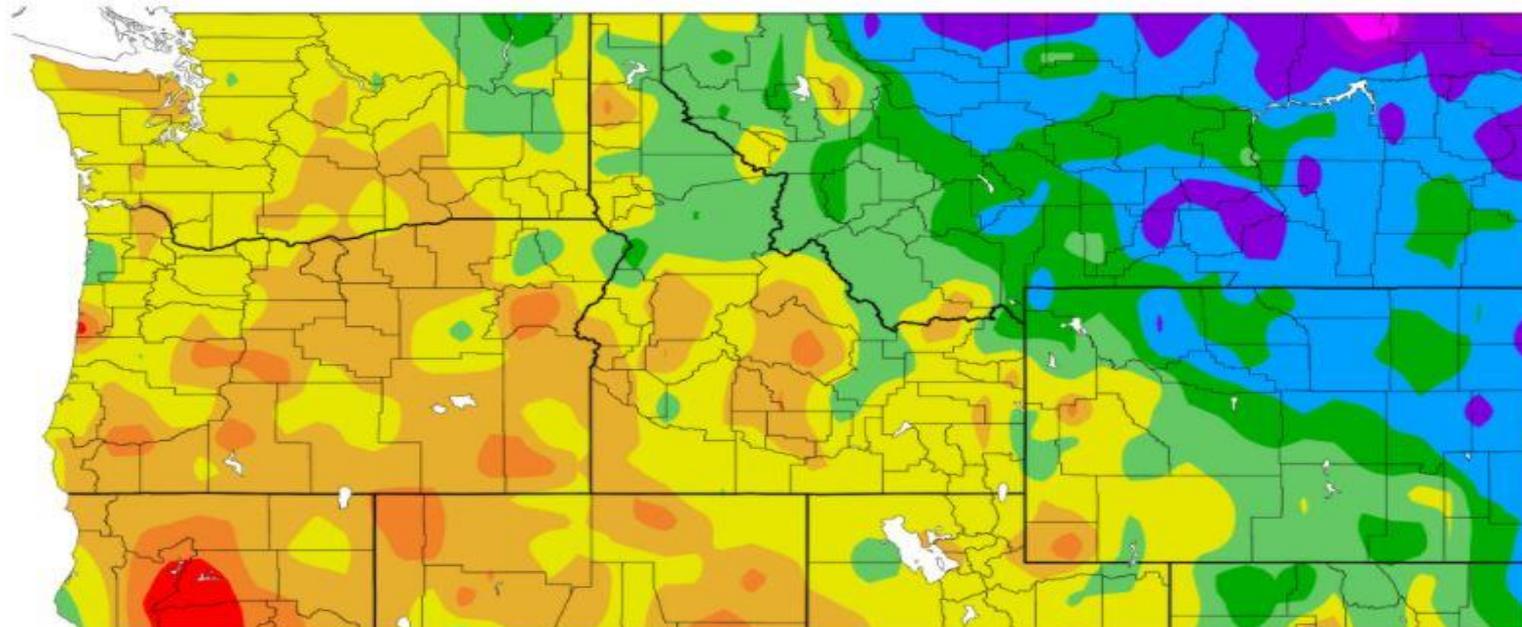
Quiet early morning dawn with interesting contrails in the sky over Pendleton, on the 9<sup>th</sup> of the month.



Deer wandering through town, looking for a place to settle for the coming winter, on the 12<sup>th</sup> of the month.

# October 2020, Departure from Normal of Average Temperatures

Departure from Normal Temperature (F)  
10/1/2020 – 10/31/2020



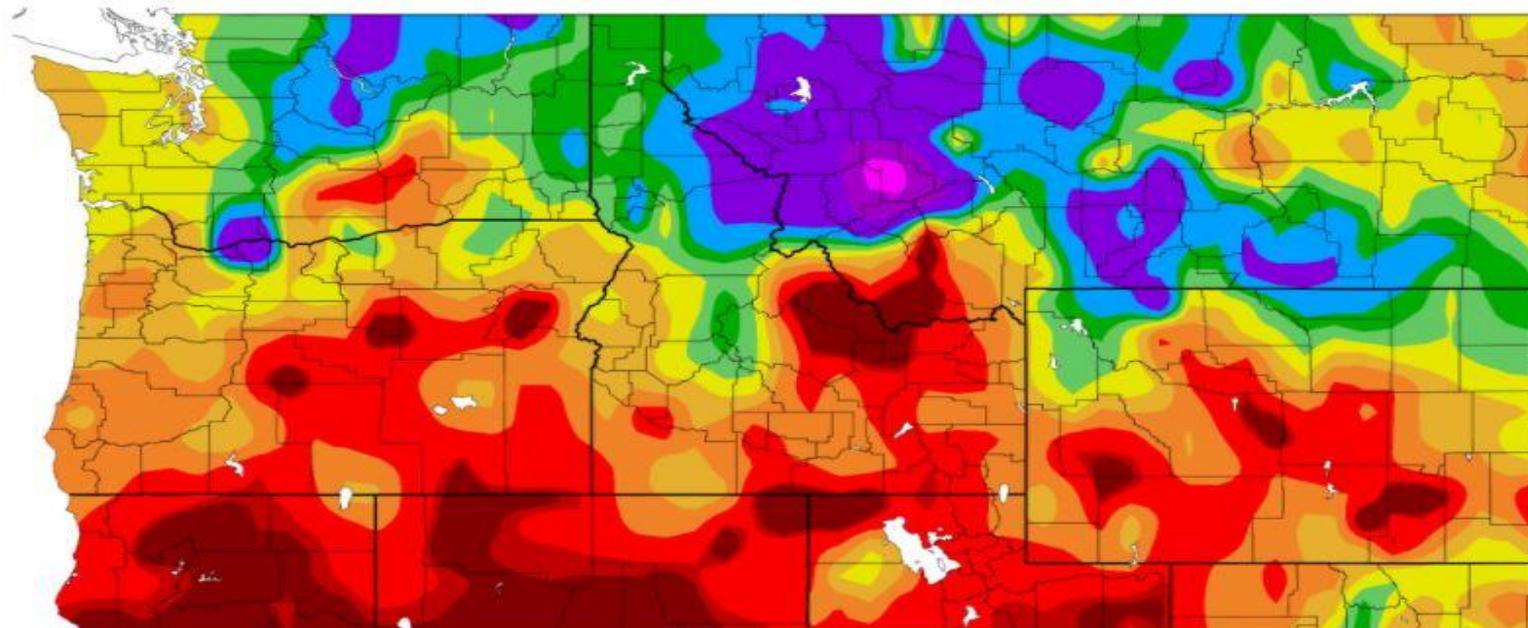
Generated 11/6/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

Most of the forecast area (NE Oregon/SE Washington) had mostly near to slightly above normal temperatures, overall, for October. The warmest locations were over the Columbia Basin as well as central and north central OR. The coldest locations were over the John Day Highlands and over the northern Blue Mountains.

# October 2020, Percent of Normal of the Average Precipitation

Percent of Normal Precipitation (%)  
10/1/2020 – 10/31/2020



Generated 11/6/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

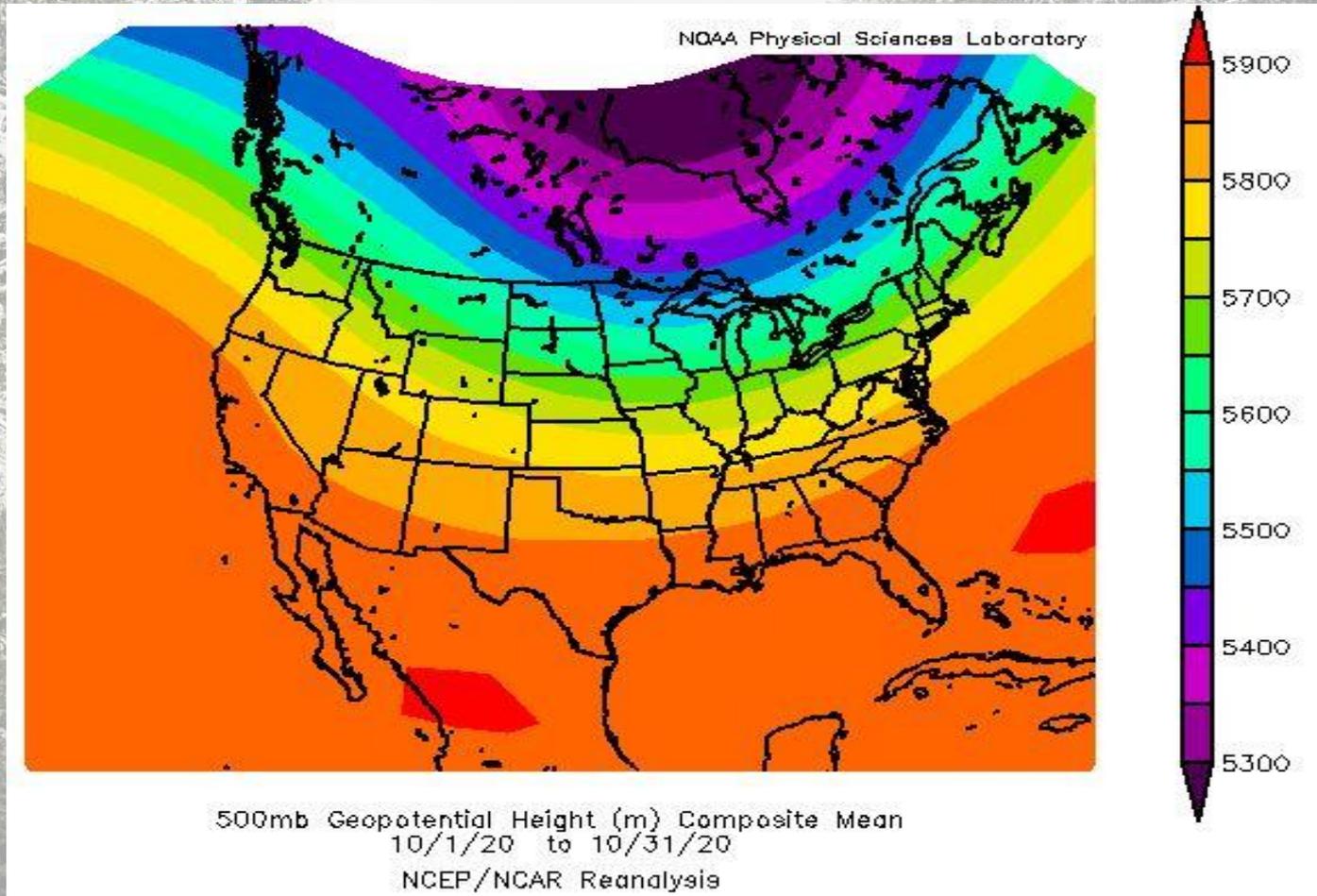
October was drier than normal over central Oregon, across the John Day Highlands, and also in the Yakima Valley/Hanford, WA area. Elsewhere, near to greater than normal precipitation, fell, especially over the Foothills of the Northern Blue Mountains.

# October 2020, Departures from Normal Averages/Sums for Select Cites

	Max T	Max T D	Min T	Min T D	Ave T	Ave T D	PCPN	PCPN D
Yakima	66.9	3.0	36.0	1.9	51.1	2.1	0.20	-0.34
Kennewick	68.3	2.5	45.5	3.4	56.9	3.0	0.27	-0.33
Walla Walla	64.5	1.0	43.9	0.8	54.2	0.9	1.56	-0.12
The Dalles	69.3	3.6	45.3	3.0	57.3	3.3	0.65	-0.34
Redmond	70.5	7.0	32.1	0.8	51.3	3.9	0.13	-0.52
Pendleton Airport	66.3	2.6	41.9	1.8	54.1	2.2	1.01	0.00
La Grande	63.5	1.2	33.2	-2.0	48.3	-0.4	0.03	-1.26

**All of the mean temperatures (Max, Min, Avg mean temperatures) were above normal except for La Grande, which had a below normal mean minimum and mean average. All other stations had above normal temperatures, overall. Precipitation amounts varied considerably between stations, but most of them had a below normal differences of -0.12 to -0.52. The outliers were at the Pendleton Airport which had exactly normal precipitation, and La Grande, which had much below normal precipitation, by -1.26 inches.**

# October 2020 Average 500 MB Weather Pattern

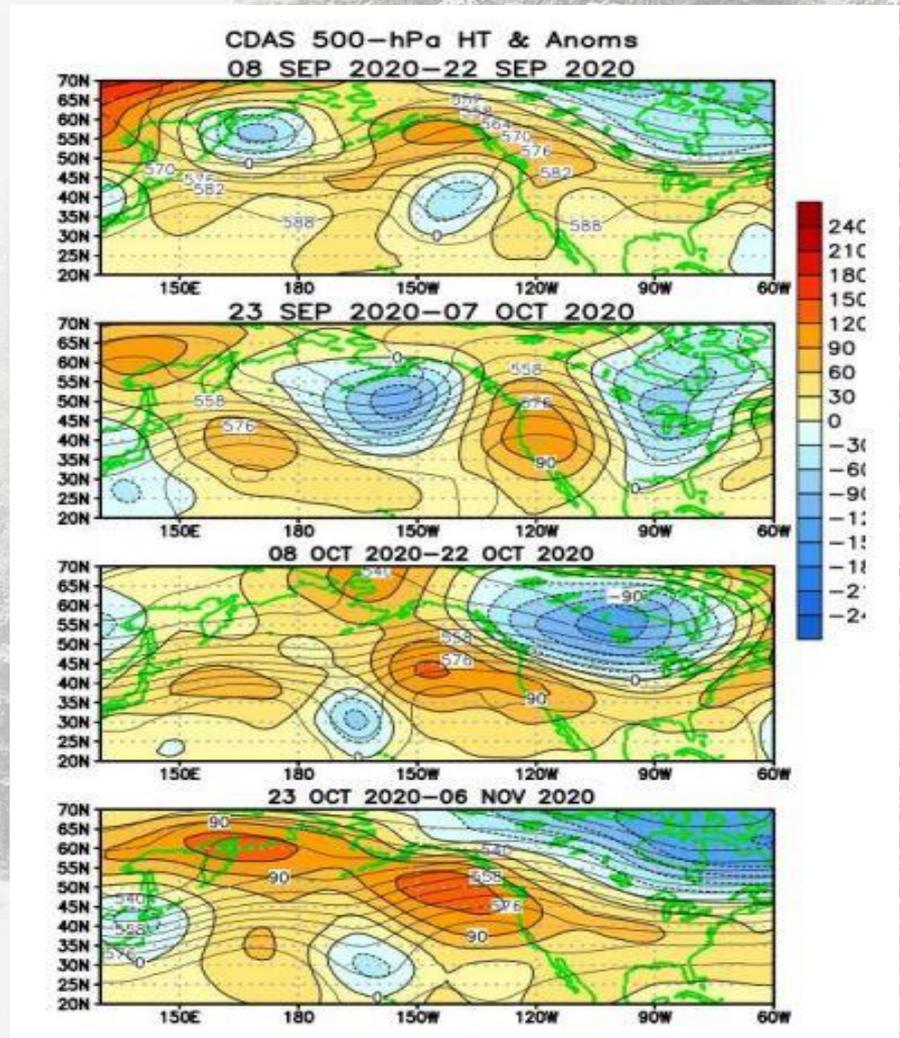


The average 500 MB pattern was an overall broad upper ridge again in October. However, the pattern resembled more of a northwest flow on the east side of an offshore upper ridge. This northwest flow resulted in colder temperatures at times, with not as great of a departure from normal as September was. Also, this type of pattern resulted in a significant arctic-like cold fronts which brought modified arctic air into the region in the middle to the end of the month.

# More Detailed 500 MB Plots for October 2020

These are more detailed semi-monthly average 500 mb pattern plots, which were from the following periods: Sept 8<sup>th</sup> – November 6<sup>th</sup>.

The land boundaries are shown in green. Yellow and orange colors represent areas of high pressure at 500 mb and the cooler shades of blue color show areas of low pressure at 500 mb.



An upper high pressure ridge prevailed during each period, except for the third image which showed colder air invading the Pacific Northwest from October 8<sup>th</sup> through the 22<sup>nd</sup>. This accounts for the warmer than average September, while most of October was dominated by a northwest flow aloft. This resulted in a period of colder arctic-like air in the middle of the month.

# Significant Weather Events for October 2020

Significant Weather Events				
Event	Date	Report	Where	Source
High Sustained Winds	October 13, 2020	E 39 mph	2 SE Kennewick, WA	Trained Spotter
None TS Wind Gust	October 13, 2020	M 75 mph	13 WNW Bickleton, WA	Meso-net
None TS Wind Gust	October 13, 2020	M 62 mph	1 SW Kahlotus, WA	Meso-net
None TS Wind Gust	October 13, 2020	M 70 mph	8 NW West Richland, WA	Meso-net
None TS Wind Gust	October 13, 2020	M 61 mph	5 ENE Maryhill, WA	Meso-net
None TS Wind Dmg	October 13, 2020	Power outages	Toppenish, WA	Newspaper
None TS Wind Dmg	October 13, 2020	Power outages	Sunnyside, WA	Newspaper
None TS Wind Gust	October 13, 2020	M 75 mph	13 WNW Bickleton, WA	Meso-net
High Sustained Winds	October 13, 2020	E 39 to 46 mph, Tree down	2 SE Kennewick, WA	Trained Spotter

There were a couple weather events which brought some rain and mountain snow to the forecast area and region. However, the most significant event was a High Wind event on October 13, 2020. There were reports of sustained winds in excess of around 40 mph, and many reports of wind gusts in excess of 60 mph (as high as 75 mph). There were also reports of wind damage on the 13<sup>th</sup>. Other events included a strong arctic-like cold front that brought record setting low temperatures to the region and forecast area for about seven days in the middle to the end of the month.

# Record Weather Reports for October 2020

Record Weather Reports					
Event	Date	Where	Previous Record	New Record	Records Began
High Temp	October 1, 2020	Redmond, OR	91 / 2001	91 (tie)	1941
High Temp	October 2, 2020	Redmond, OR	90 / 1963	90 (tie)	1941
High Temp	October 6, 2020	Meacham, OR	78 / 2003	82	1929
High Temp	October 6, 2020	Pendleton, OR Airport	86 / 2014	87	1934
High Temp	October 6, 2020	Walla Walla, WA	86 / 2014	86 (tie)	1930
Low Temp	October 22, 2020	Pendleton, OR Airport	28 / 1934	27	1934
Low Temp	October 22, 2020	Walla Walla, WA	30 / 1984	30 (tie)	1930
Low Temp	October 23, 2020	John Day, OR (city)	22 / 1980	21	1891
Low Temp	October 23, 2020	La Grande, OR (city)	21 / 1984	19	1887
Low Temp	October 23, 2020	Long Creek, OR	20 / 1984	19	1908
Low Temp	October 23, 2020	Pendleton, OR Airport	29 / 2008	26	1934
Low Temp	October 23, 2020	The Dalles, OR	27 / 1981	27 (tie)	1929
Low Temp	October 23, 2020	Walla Walla, WA	32 / 2008	28	1930
Low Temp	October 23, 2020	Yakima, WA	24 / 2002	23	1909
Low Temp	October 24, 2020	John Day, OR (city)	21 / 1972	21 (tie)	1891
Low Temp	October 25, 2020	Heppner, OR	22 / 1919	14	1889
Low Temp	October 25, 2020	John Day, OR (city)	20 / 1971	20 (tie)	1891
Low Temp	October 25, 2020	Pendleton, OR Airport	27 / 2002	19	1934
Low Temp	October 25, 2020	Walla Walla, WA	29 / 2002	22	1930
Low Temp	October 27, 2020	John Day, OR (city)	18 / 2011	15	1891
Low Temp	October 27, 2020	Pelton Dam, OR	22 / 1996	21	1958
Low Temp	October 27, 2020	Redmond, OR	15 / 1963	15 (tie)	1941
Low Temp	October 27, 2020	The Dalles, OR	27 / 2007	24	1929
Low Temp	October 27, 2020	Yakima, WA	19 / 2002	17	1909
High Temp	October 29, 2020	Pendleton, OR Airport	72 / 1944	74	1934
High Temp	October 29, 2020	Redmond, OR	78 / 1965	79	1941
High Temp	October 29, 2020	The Dalles, OR	71 / 2012	73	1929
High Temp	October 29, 2020	Walla Walla, WA	69 / 2012	72	1930

Most of the record events were reports of record low temperatures from October 22<sup>nd</sup> to the 27<sup>th</sup>, with a significant cold snap. There were also record high temperatures set at the beginning and at the end of the month.

# October 2020, Observed Monthly Max & Min Temperatures

Location	Highest Maximum Temperature	Lowest Minimum Temperature
Pendleton, OR	87	19
Redmond, OR	91	9
Pasco, WA	90	17
Yakima, WA	86	15
Walla Walla, WA	86	22
Bend, OR	86	11
Ellensburg, WA	88	23
Hermiston, OR	87	20
John Day, OR	90	16
La Grande, OR	82	14
The Dalles, OR	88	22
MT Adams RS, WA	83	18

Every station in the list had a monthly maximum temperature of greater than 80, but less than 91. This is not unusual even for October to have a warm spell with max temperature readings in the 80s to lower 90s. Minimum temperatures for the month were mostly in the teens and 20s, with only one station having a minimum in the single digits (Redmond, OR), with a monthly low of 9 deg. These minimums are also typical.

# October 2020, Monthly Precipitation and Snowfall/Hail Totals

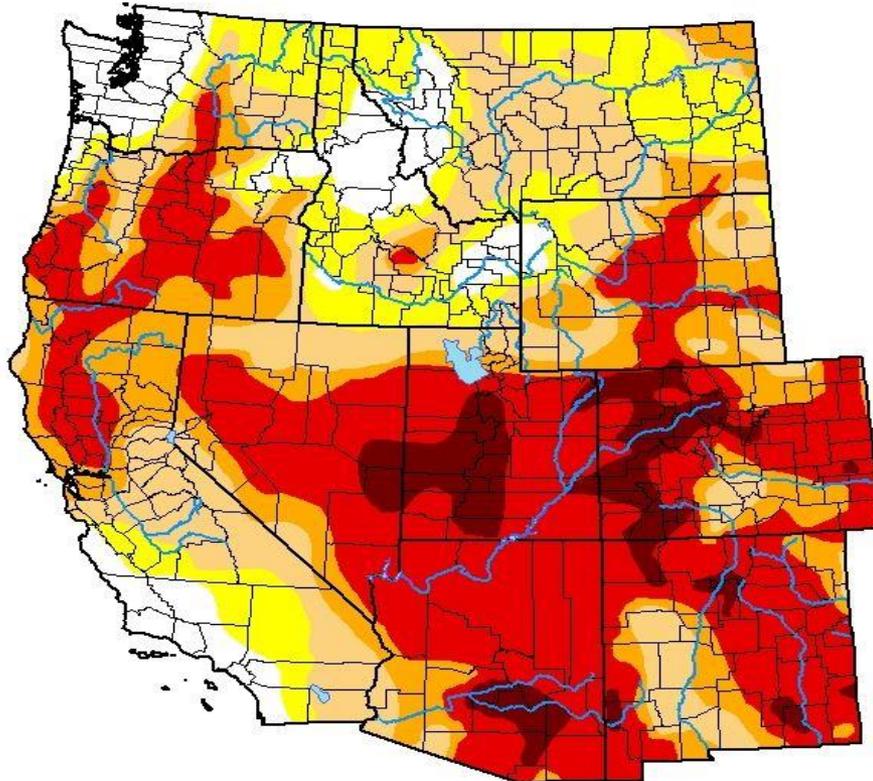
Location	Total Monthly Precip (inches)	Total Snowfall/Hail (inches)
Pendleton, OR	1.01	T (graupel/hail)
Redmond, OR	0.13	M
Pasco, WA	0.26	M
Yakima, WA	0.20	M
Walla Walla, WA	1.56	M
Bend, OR	0.19	M
Ellensburg, WA	0.80	M
Hermiston, OR	0.56	M
John Day, OR (RAWS)	0.03	M
La Grande, OR	0.03	M
The Dalles, OR	0.65	M
Mt Adams RS, WA	0.21	0.0

Precipitation amounts were mostly light and below normal. The highest monthly precipitation amounts were at two of the Blue Mountain Foothills stations (Pendleton and Walla Walla). The least amounts of precipitation were at John Day, OR and La Grande, OR. Even the Mt. Adams Ranger Station only had 0.21 inches of precipitation in October, thus continuing the drought in the Cascades. All stations had 0 or missing snow amounts, except for Pendleton, which reported a trace, which was a graupel and hail mix, rather than snow, but is reported as snow.

# October 2020 - Drought Monitor

## U.S. Drought Monitor West

**November 3, 2020**  
(Released Thursday, Nov. 5, 2020)  
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	8.52	91.48	77.86	57.63	40.57	6.35
<b>Last Week</b> 10-27-2020	8.02	91.98	77.68	57.88	40.66	6.10
<b>3 Months Ago</b> 08-04-2020	23.29	76.71	62.55	32.65	6.98	0.00
<b>Start of Calendar Year</b> 12-31-2019	59.17	40.83	18.17	7.12	0.00	0.00
<b>Start of Water Year</b> 09-29-2020	8.51	91.49	76.07	54.55	33.11	2.31
<b>One Year Ago</b> 11-05-2019	62.16	37.84	21.73	9.81	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme 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:

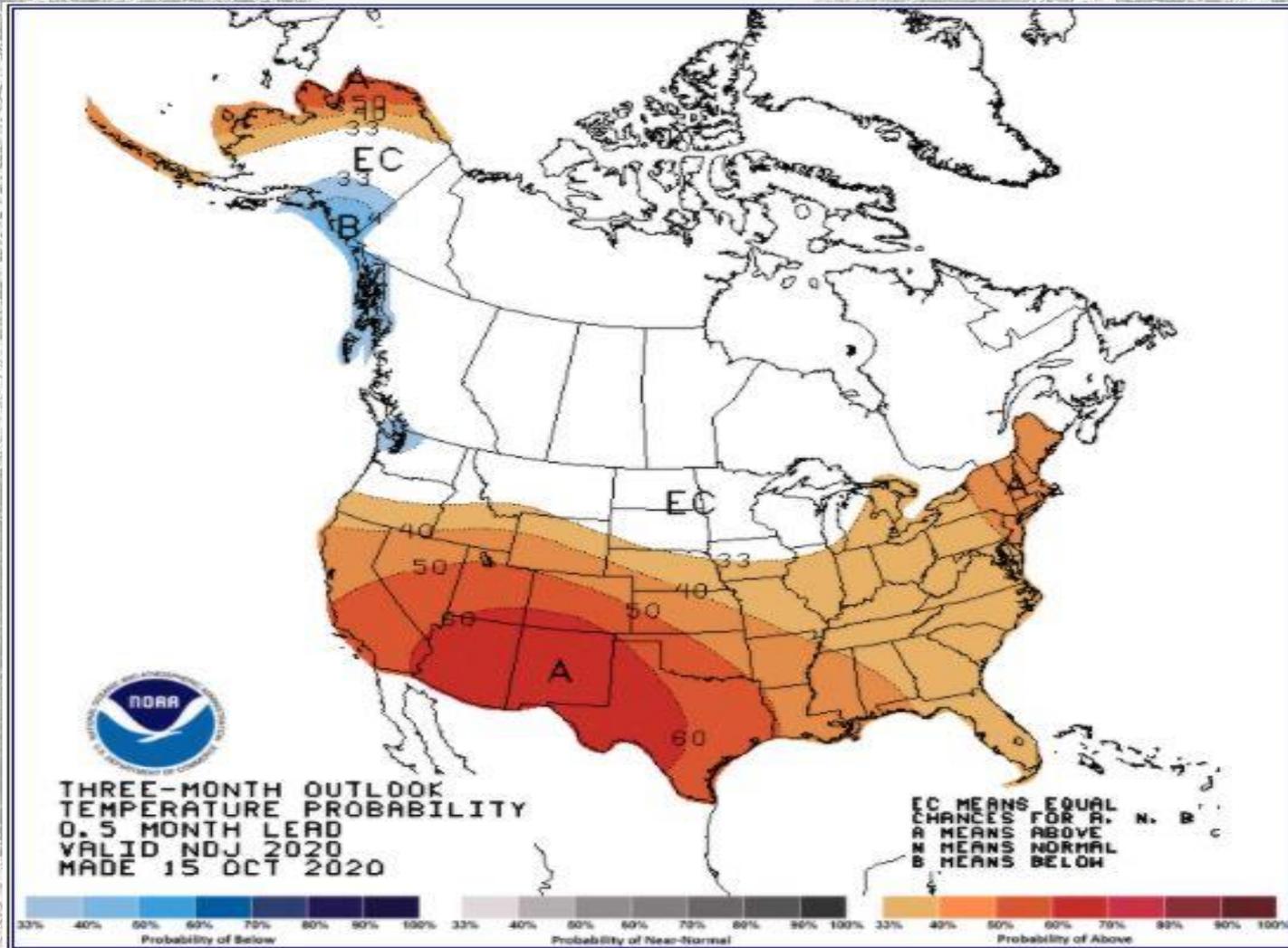
David Miskus  
NOAA/NWS/NCEP/CPC



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

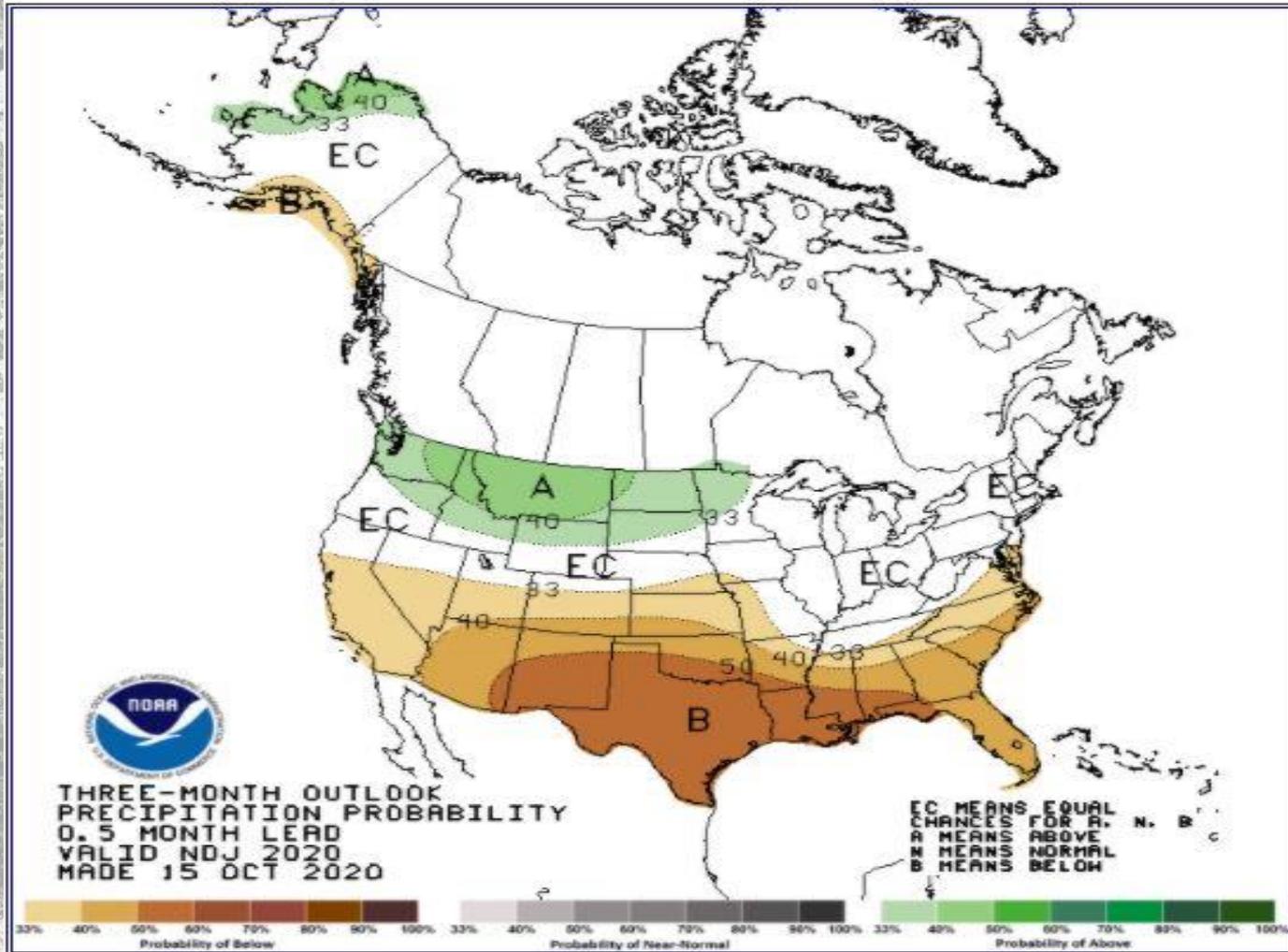
As of November 3<sup>rd</sup>, there continued to be an “Extreme Drought” (D3) over the Cascades and in south-central Oregon. Elsewhere, drought conditions ranged from “None” (D0) in the northeast mountains, to “Severe Drought” (D3) in other areas that were already in an extreme drought. This reiterates the abundant precipitation in the NE Oregon mountains, with much less elsewhere.

# USA Three Month Temperature Outlook



The temperature outlook for the next 3 months (November - January) are near to slightly above normal over NE Oregon and SE Washington.

# USA Three Month Precipitation Outlook

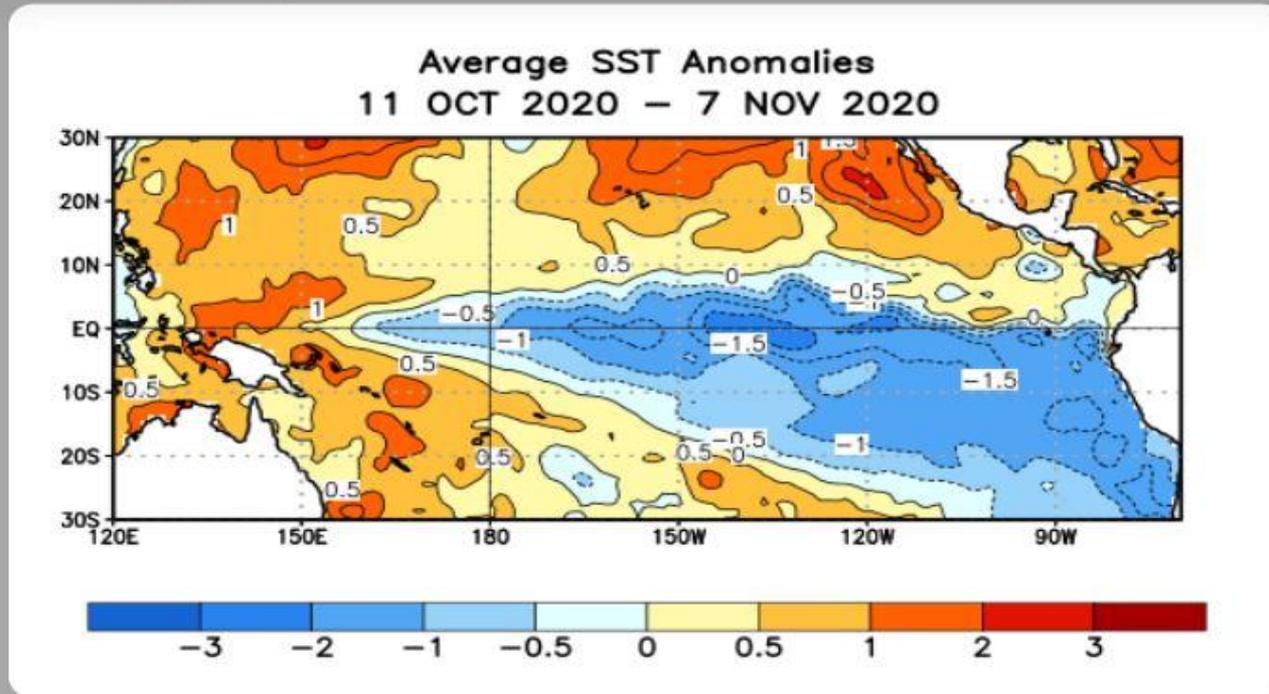


The precipitation outlook for the next 3 months (November – January) shows the Pacific northwest having mostly a 33 – 40 percent greater chance of being above normal, with a small portion of central Oregon having an equal chance.

# Average Sea Surface Temperature (SST) Anomalies for October 2020

## SST Departures (°C) in the Tropical Pacific During the Last Four Weeks

During the last four weeks, equatorial SSTs were below average from just west of the Date Line to the eastern Pacific Ocean, and were above average in the far western Pacific Ocean.



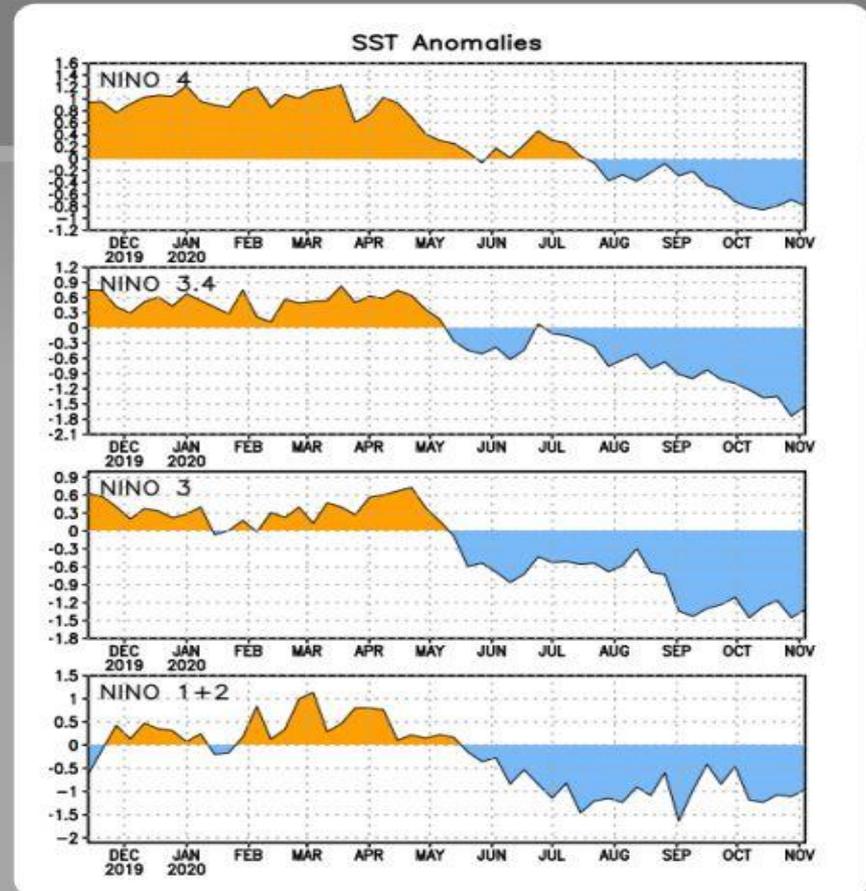
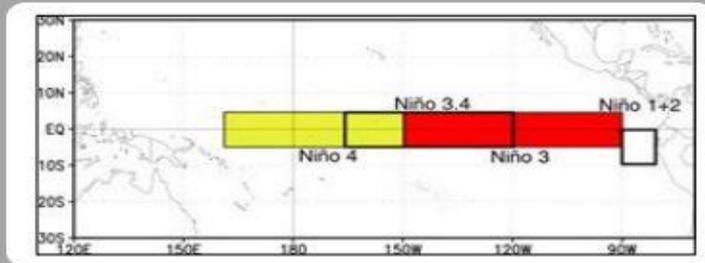
SSTs were below average again in October over the central and eastern tropical Pacific by about -0.5 degrees to -2 degrees. These last few months of below normal SSTs are consistent with an expected La Nina event which is likely to continue this autumn, and persist through the 2020 – 2021 winter.

# 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	-0.8°C
Niño 3.4	-1.5°C
Niño 3	-1.3°C
Niño 1+2	-1.0°C



All Niño Regions are showing below normal SST's again during this past month. This continued cooling during the past 5 - 6 months is consistent with the expected La Nina event which will occur from now though the winter of 2020-2021. In fact, there is a La Nina Advisory in effect for this fall and winter.

# Current ENSO (El Nino Southern Oscillation) Alert System Status

## Summary

ENSO Alert System Status: **La Niña Advisory**

La Niña conditions are present.\*

Equatorial sea surface temperatures (SSTs) are below average from the west-central to eastern Pacific Ocean.

The tropical atmospheric circulation is consistent with La Niña.

La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~85% chance) and into spring 2021 (~60% chance during February-April).\*

The current ENSO status is: “**La Nina Advisory**”, which is in effect from now through the winter of 2020-2021. The chances for a La Nina event is about 85 percent through January, and then about a 60 percent chance from February through April of 2021.



**Thank You!**