

The Month In Review

November 2021

National Weather Service
Pendleton, Oregon

Photo: First measurable snow of the season in Pendleton, OR

November 2021, Climate Summary

November can be described as a typical transition month from autumn to winter. The most significant weather were high wind events which occurred on the 8th and 9th of the month, and then again on the 15th and the 30th. These wind events produced mostly high wind gusts rather than long sustained high wind periods, and some damage. However, there were also reports of high sustained winds as well. These wind events did spawn Wind Advisories and also High Wind Warnings. Aside from the wind, the month was, overall, a warmer than normal month for the entire forecast area. The Oregon side of the forecast area had mostly drier than normal conditions, while there were areas of WA that had much above normal precipitation for the month. All of the record weather that occurred during the month were record high temperatures. There were also some short periods of fog, and also a very light “first” snowfall event, which did not add up to much. Below are images of typical scenes that were observed during the month: a Fog event, the first snow, and a colorful sunrise.



Dense fog over the city of Pendleton, OR.



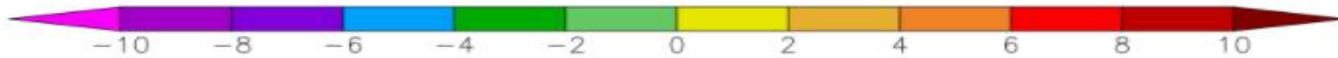
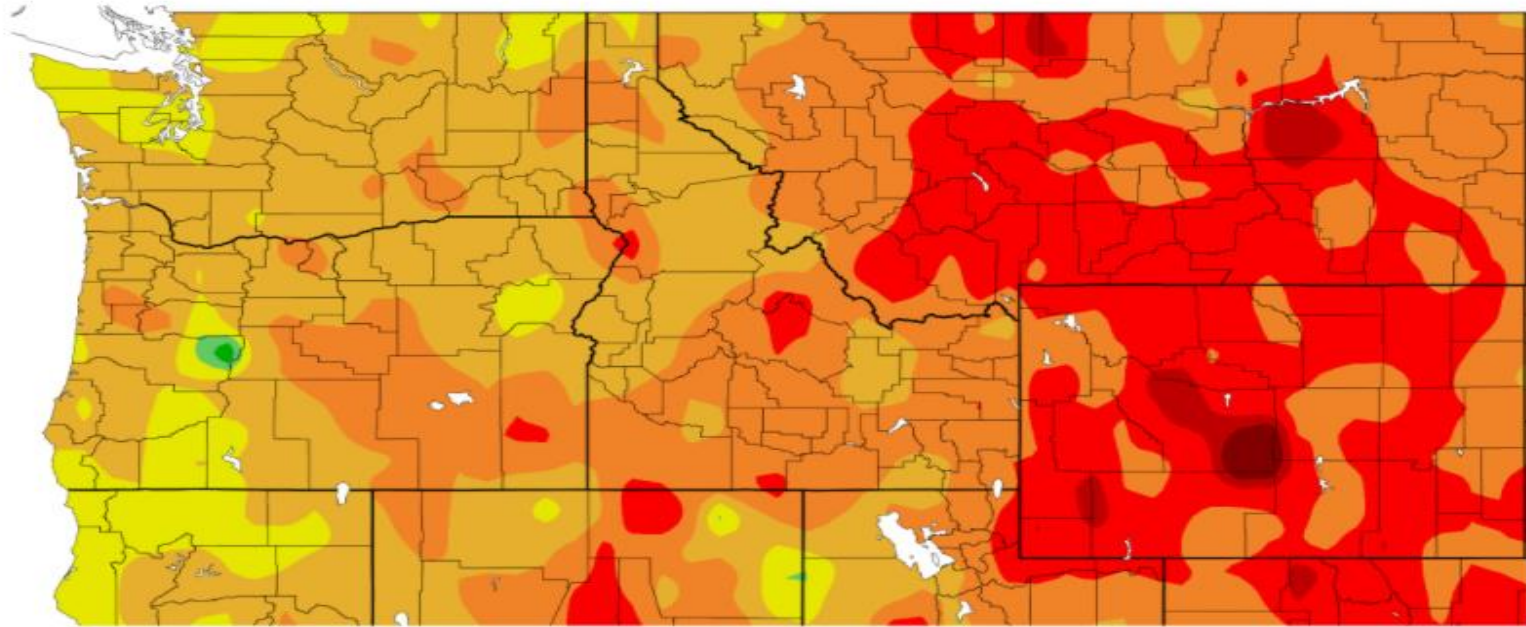
The first measurable snow of the cold season of 2021-2022.



Colorful sunrise among the chaotic sky of stratocumulus and altocumulus clouds.

November 2021, Departure from Normal of Average Temperatures

Departure from Normal Temperature (F)
11/1/2021 – 11/30/2021



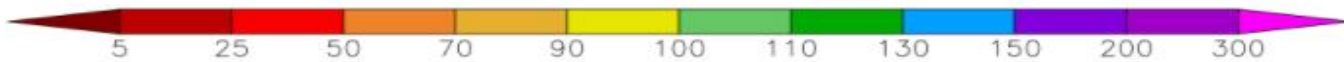
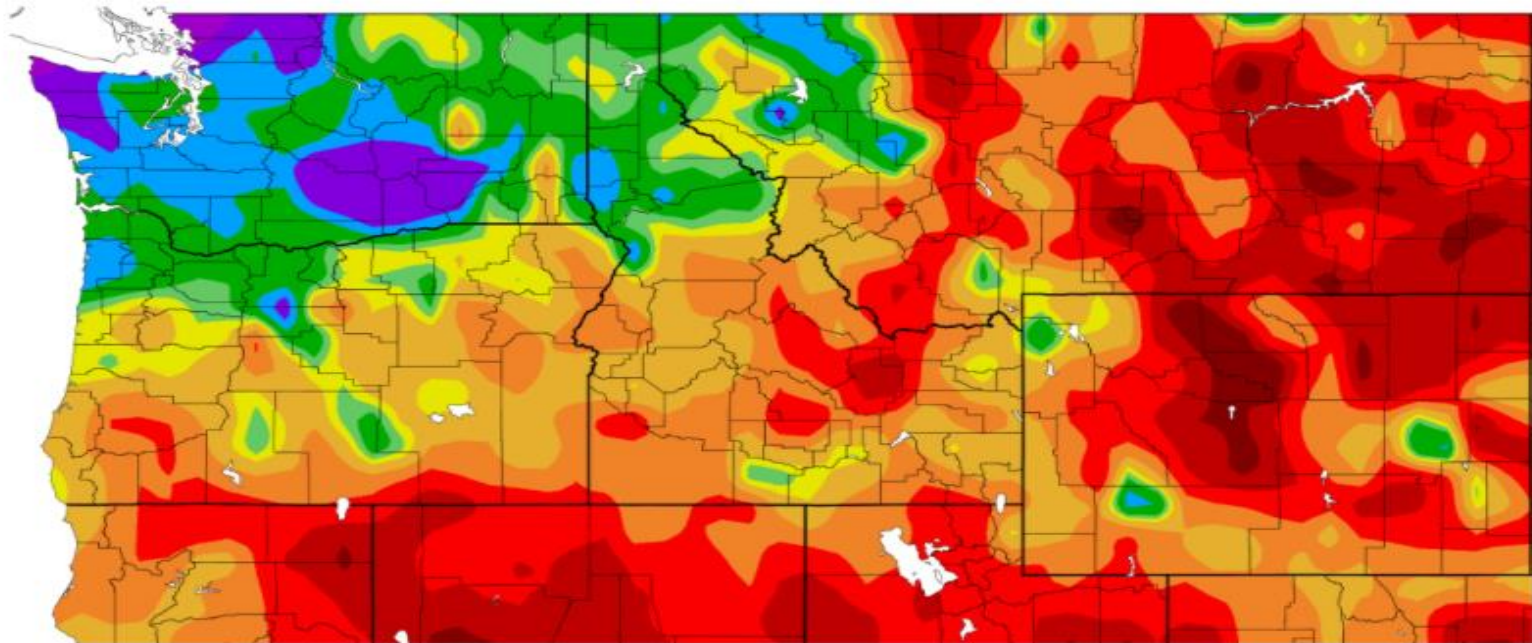
Generated 12/2/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

The departure from normal of the average temperatures were all above normal for the entire forecast area (northeast OR and southeast WA). While it was warmer than normal, it was not extremely warmer than normal at any locations. The departure from normal of the average temperatures ranged from about +2 to +6 degrees overall.

November 2021, Percent of Normal Precipitation

Percent of Normal Precipitation (%)
11/1/2021 – 11/30/2021



Generated 12/2/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

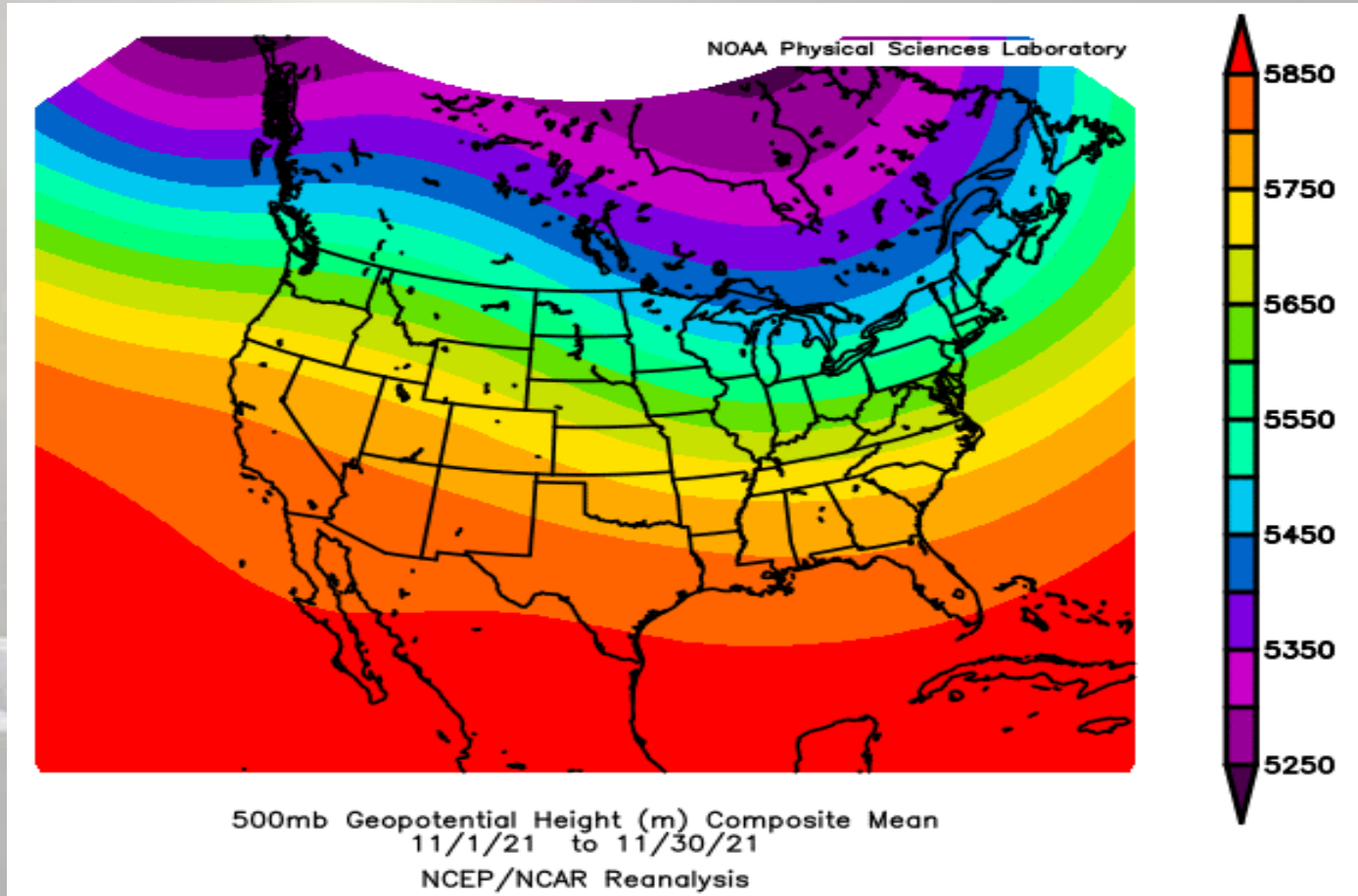
Contrary to the departure from normal temperatures, there was a more significant variation of the distribution of the percent of normal precipitation. On the Oregon side of the forecast area, most areas had below normal precipitation, while on the WA side, there was an area over south central WA which had much above normal percent of precipitation (about 150-200 percent of normal).

November 2021, Departures from Normal Means/Sums for Select Cities

	Max T	Max T D	Min T	Min T D	Ave T	Ave T D	PCPN	PCPN D
Yakima	51.7	3.8	32.0	5.2	41.9	4.6	1.49	0.44
Kennewick	55.1	4.5	39.5	4.0	47.3	4.3	1.73	0.73
Walla Walla	52.5	4.0	37.9	2.7	45.2	3.4	1.99	-0.88
The Dalles	55.2	5.2	40.5	5.2	47.8	5.2	2.47	0.33
Redmond	56.9	8.0	31.2	5.4	44.1	6.7	1.20	0.24
Pendleton Airport	53.7	4.5	35.6	2.2	44.6	3.3	1.35	-0.17
La Grande Airport	50.3	4.1	33.8	3.9	42.1	4.1	1.58	-0.45
John Day	56.4	6.7	35.7	7.6	46.1	7.2	0.75	-0.60

The table above shows that all of the departures from normal means of highs, lows and average temperatures were all above normal. The range of highs was 3.8 degrees to 8.0, the range of lows was 2.2 to 7.6 degrees, and the range of the mean avg. temperatures was from 3.3 to 7.2 degrees. While none of these were very extreme, it does show a consistency that November was indeed a warmer than normal month. There was even split of above vs. below normal of precipitation as shown in the last column, which ranged from -0.88 to +0.73 of an inch.

November 2021, Average 500 MB Pattern

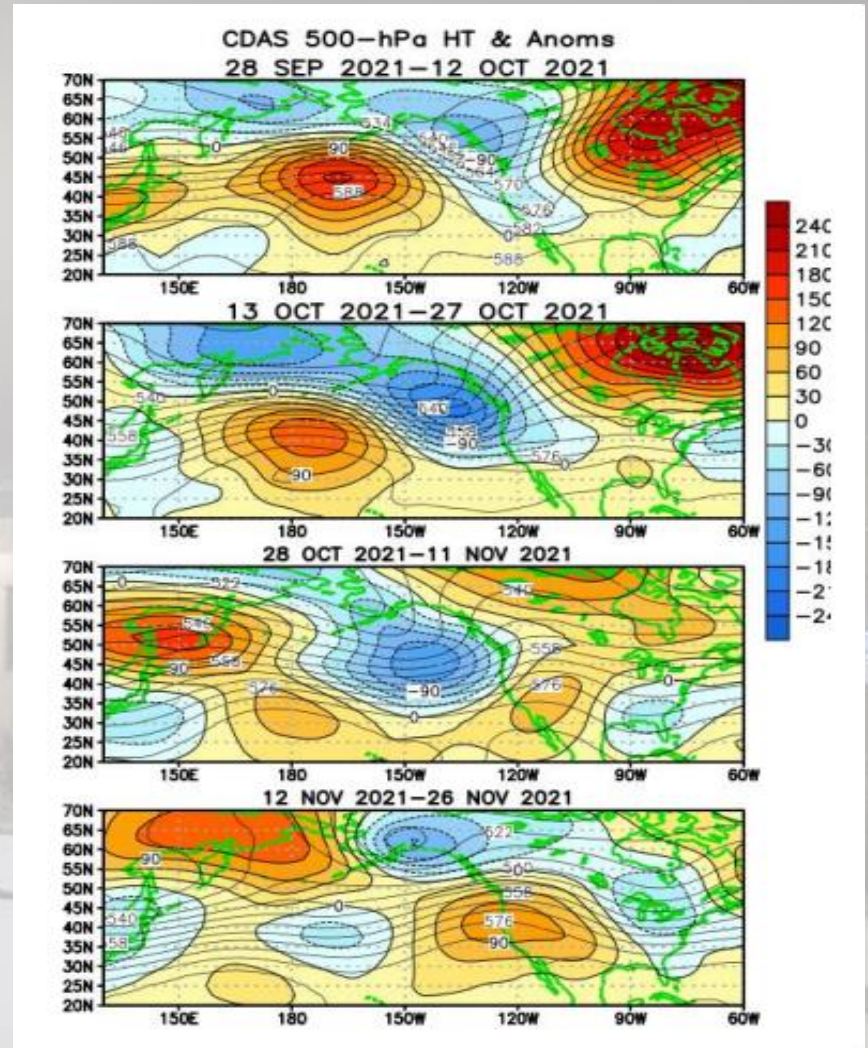


The average 500 MB pattern for November was an upper ridge pattern, albeit a rather very flat broad upper ridge that was almost a zonal flow. However, this was the average for the whole month, and it does not take much of an anomaly to have significant results. In this case, the overall upper ridge pattern resulted in warmer than normal conditions for the month. With this type of flat ridge pattern, the amount of precipitation could go either way, above or below, but in this case, precipitation was near normal, **overall**.

Two Month, Bi-weekly 500 MB Plots for October and November 2021

These are more detailed semi-monthly average 500 mb pattern plots, which was from the following period: 28th Sep 2021 through 26th Nov 2021, (which represents October and November).

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



While the October bi-weekly periods (the top two images) had more of an upper trough along the west coast, the two bi-weekly periods in November (the bottom two images) both shows an upper ridge pattern instead over the west coast. This makes sense since November was a warmer than normal, in which the upper ridge patterns would result in, more so than upper trough patterns.

Significant Weather Events for November 2021

Significant Weather Events				
Event	Date	Report	Where	Source
Non-TSTM Wind Gust	November 8, 2021	M 50 mph	5 SE Milton-Freewater, OR	Mesonet
Non-TSTM Wind Gust	November 8, 2021	M 59 mph	4 SSW Mission, OR	Mesonet
High Sustained Wind	November 8, 2021	M 43 mph	5 ESE Pendleton, OR	Dept Of Highways
Non-TSTM Wind Gust	November 8, 2021	M 65 mph	1 WNW Cayuse, OR	Mesonet
Non-TSTM Wind Gust	November 8, 2021	M 53 mph	4 W Adams, OR	Mesonet
High Sustained Wind	November 8, 2021	M 40 mph	4 ESE Walla Walla, WA	Mesonet
High Sustained Wind	November 8, 2021	M 55 mph	2 E Pilot Rock, OR	Mesonet
High Sustained Wind	November 8, 2021	M 41 mph	6 E Joseph, OR	Mesonet
Non-TSTM Wind Gust	November 8, 2021	M 66 mph	4 SSW Mission, OR	Mesonet
Non-TSTM Wind Gust	November 8, 2021	M 65 mph	4 ESE Walla Walla, WA	Mesonet
Non-TSTM Wind Gust	November 9, 2021	M 60 mph	7 SSW Cayuse, OR	Dept Of Highways
Non-TSTM Wind Gust	November 9, 2021	M 59 mph	1 SSW John Day, OR	AWOS
Non-TSTM Wind Gust	November 9, 2021	M 56 mph	Cove, OR	Public
Non-TSTM Wind Gust	November 9, 2021	U 57 mph	2 E Milton-Freewater, OR	Public
Non-TSTM Wind Gust	November 9, 2021	M 71 mph	1 NW Heppner, OR	Mesonet
Non-TSTM Wind Gust	November 9, 2021	M 61 mph	Imbler, OR	Mesonet
Non-TSTM Wind Gust	November 9, 2021	M 61 mph	6 S Millican, OR	Mesonet
Non-TSTM Wind Gust	November 9, 2021	M 64 mph	Long Creek, OR	Dept Of Highways
Non-TSTM Wind Gust	November 9, 2021	M 58 mph	2 S Joseph, OR	Mesonet
Non-TSTM Wind Gust	November 9, 2021	M 58 mph	Walla Walla, WA	ASOS
Non-TSTM Wind Dmg	November 15, 2021	Signs, Branches Etc.	Grass Valley, OR	Public
Non-TSTM Wind Dmg	November 15, 2021	Large tree on building	Pasco, WA	Broadcast Media
Non-TSTM Wind Dmg	November 15, 2021	2 inch branches broken	2 NW Richland, WA	Trained Spotter
Non-TSTM Wind Gust	November 30, 2021	M 58 mph	Ellensburg, WA	ASOS
Non-TSTM Wind Gust	November 30, 2021	M 49 mph	Pasco, WA	ASOS

The table above shows that all of the significant weather event reports (except for 3 of these reports) were either non-thunderstorm high wind gusts or high sustained winds. The 3 other reports were of non-thunderstorm wind damage, which were of things like broken tree limbs, blown over signs, downed power lines, etc.

Record Weather Event Reports for November 2021

Record Weather Reports					
Event	Date	Where	Previous Record	New Record	Records Began
High Temp	November 14, 2021	The Dalles, OR	68 / 1995	74	1929
High Temp	November 14, 2021	Yakima, WA	66 / 2001	72	1909
High Temp	November 14, 2021	Pasco, WA	70 / 1896	71	1942
High Temp	November 14, 2021	Hermiston, OR	69 / 2001	70	1906
High Temp	November 14, 2021	Ellensburg, WA	62 / 2010	69	1934
High Temp	November 15, 2021	Ellensburg, WA	59 / 2011	64	1934
High Temp	November 15, 2021	Pendleton, OR	71 / 1896	71 - tie	1934
High Temp	November 15, 2021	Yakima, WA	65 / 1998	67	1909
High Temp	November 15, 2021	The Dalles, OR	64 / 2010	66	1929
High Temp	November 27, 2021	Redmond, OR	62 / 1980	64	1941
High Temp	November 28, 2021	Ellensburg, WA	56 / 2014	63	1934
High Temp	November 28, 2021	Pasco, WA	65 / 1973	65 - tie	1942
High Temp	November 28, 2021	Redmond, OR	61 / 2002	68	1941
High Temp	November 28, 2021	Walla Walla, WA	62 / 2014	65	1930
High Temp	November 29, 2021	The Dalles, OR	63 / 2008	64	1929
High Temp	November 29, 2021	Ellensburg, WA	58 / 2009	58	1934
High Temp	November 29, 2021	Yakima, WA	62 / 1995	63	1909
High Temp	November 30, 2021	Ellensburg, WA	55 / 2008	59	1934
High Temp	November 30, 2021	Yakima, WA	59 / 1994	64	1909

There were record reports which occurred on the 14th, 15th, and the 27th – 30th. All of these records were record high temperatures, which spanned mainly the second half of the month. The highest record maximum temperature was 71 degrees at Pendleton, OR on the 15th, and the lowest record high temperature of 55 degrees was at Ellensburg, WA on the 30th. However, there is a climatological difference in the normal for Pendleton, OR, vs Ellensburg, WA, as well as a 15 day period span, of which these records occurred on, which may both have had enough of an impact to create this difference of 71 vs. 55 deg.

November 2021, Observed Monthly Max & Min

Location	Highest Maximum	Lowest Minimum
Pendleton, OR	71	25
Redmond, OR	69	16
Pasco, WA	71	23
Yakima, WA	72	22
Walla Walla, WA	69	28
Bend, OR	66	17
Ellensburg, WA	69	21
Hermiston, OR	71	24
John Day, OR	69	22
La Grande, OR	63	19
The Dalles, OR	74	30
Meacham, OR	60	16
MT Adams RS, WA	55	23

The highest maximum temperatures ranged from 55 degrees at the Mt Adams Ranger Station to 74 degrees at The Dalles, OR. The lowest minimum temperatures ranged from 16 at Meacham, and Redmond, OR to 30 degrees at The Dalles, OR. While these temperatures were not that much out of the ordinary, they were a bit on the warm side for what they could be in November. They could be much colder, as has been the case within the past 10 - 15 years.

November 2021, Observed Total Precipitation and Total Snowfall/Hail

Location	Total Precipitation (inches)	Total Snow/Hail (inches)
Pendleton, OR	1.35	0.2
Redmond, OR	1.20	M
Pasco, WA	1.46	M
Yakima, WA	1.49	M
Walla Walla, WA	1.99	M
Bend, OR	1.13	0.0
Ellensburg, WA	1.85	M
Hermiston, OR	1.15	M
John Day, OR	0.75	M
La Grande, OR	1.58	M
The Dalles, OR	2.47	M
Meacham, OR	4.63	M
MT Adams RS, WA	5.19	0.2

Some precipitation amounts were significant, while others were not. Most were between 1 - 2 inches total for the month. However, there were a couple stations which had greater than 4 inches (Meacham, OR, and the Mt. Adams Ranger Station, which reported 4.63 and 5.19 inches respectively). The lowest was at John Day, OR which only reported 0.75 inches. Both Pendleton and the Mt. Adams R.S. both had only 0.2 of an inch of snow for the month.

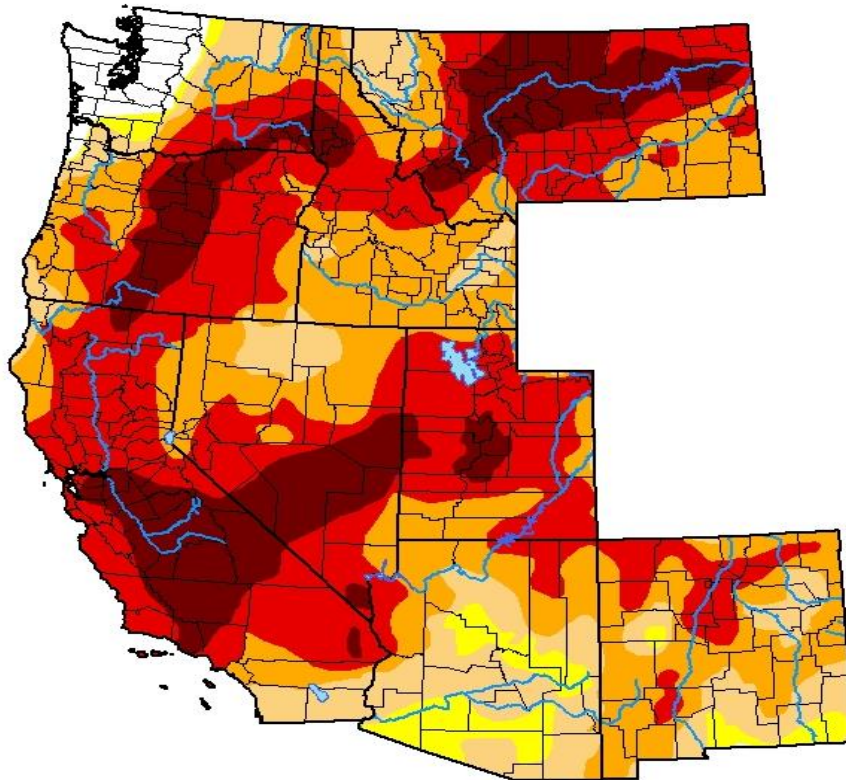
November 2021 - Drought Monitor - West

U.S. Drought Monitor West

November 30, 2021

(Released Thursday, Dec. 2, 2021)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.54	97.46	93.58	79.56	49.92	16.28
Last Week <i>11-23-2021</i>	2.54	97.46	92.89	77.91	49.35	16.28
3 Months Ago <i>08-31-2021</i>	1.67	98.33	94.97	83.13	60.51	22.81
Start of Calendar Year <i>12-29-2020</i>	13.52	86.48	75.49	63.25	45.40	23.76
Start of Water Year <i>09-28-2021</i>	1.32	98.68	93.35	81.07	58.72	21.77
One Year Ago <i>12-01-2020</i>	14.05	85.95	71.78	57.92	43.37	23.78

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:

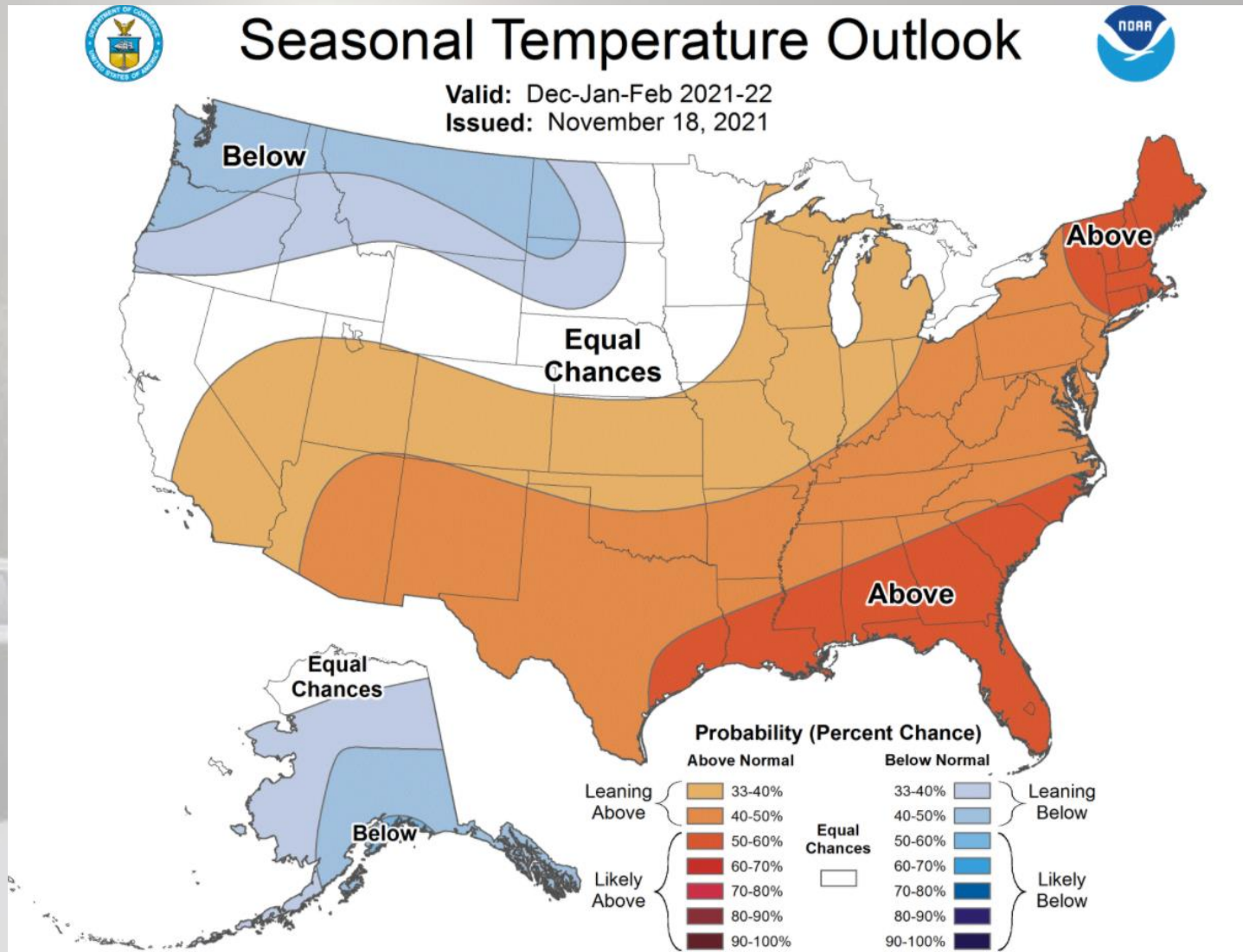
Richard Heim
NCEI/NOAA



droughtmonitor.unl.edu

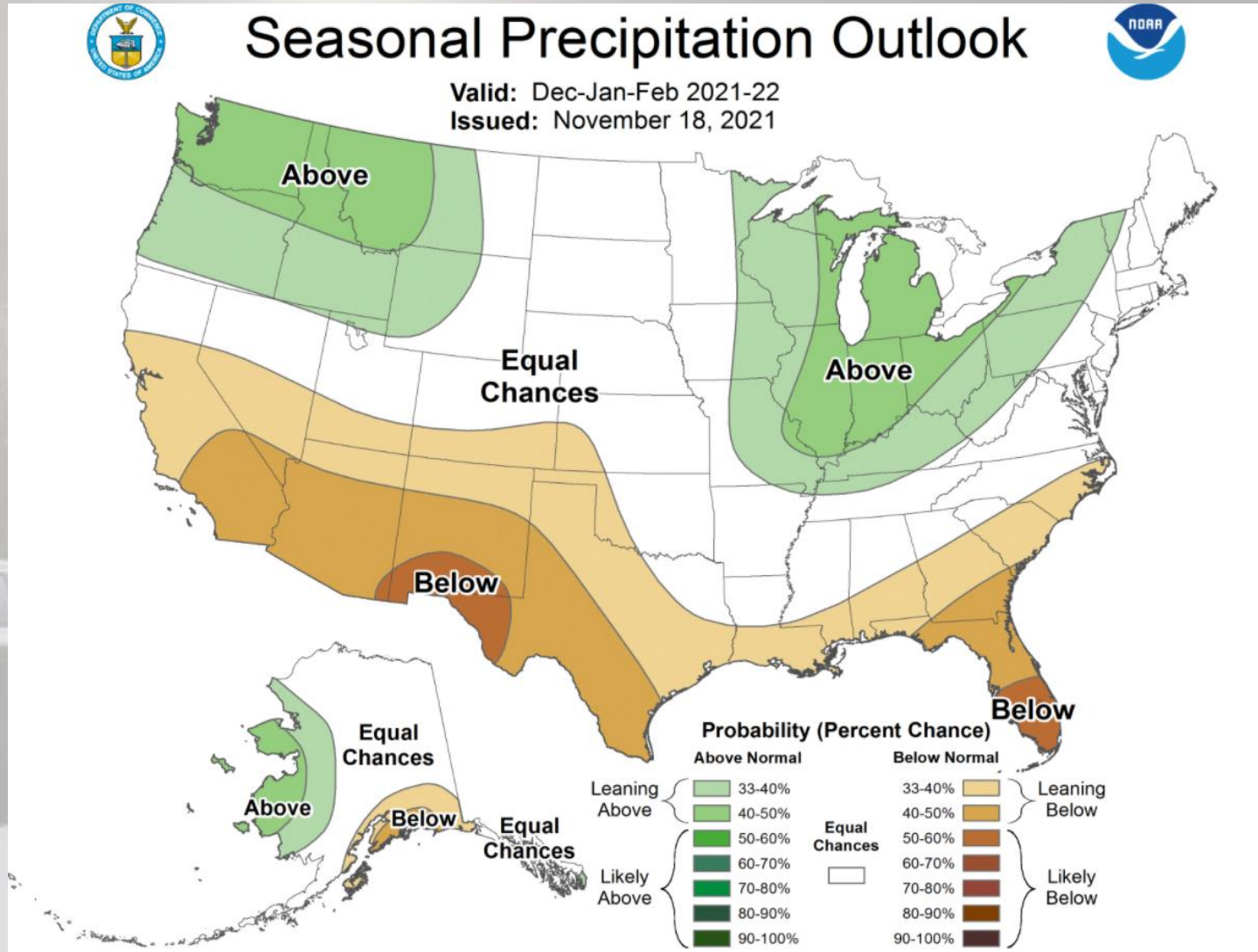
As of November 30th, there was still and “Exceptional” Drought (“D4”) that existed from valleys and plateaus east of the Oregon Cascades northeast across the Lower Columbia Basin into the Northwest Blue Mountains of WA. Elsewhere, drought conditions were mostly in the “Extreme” category (“D3”). Only the extreme northwest corner of the forecast area (extreme NW Kittitas County, WA) had drought conditions that were at or close to a category of “none”.

USA Three Month Temperature Outlook



The temperature outlook for the next 3 months (December – February) is for a greater chance of near to below normal temperatures over the Pacific Northwest. This is consistent with the ongoing La Nina event that has begun, and is expected to persist through the winter.

USA Three Month Precipitation Outlook

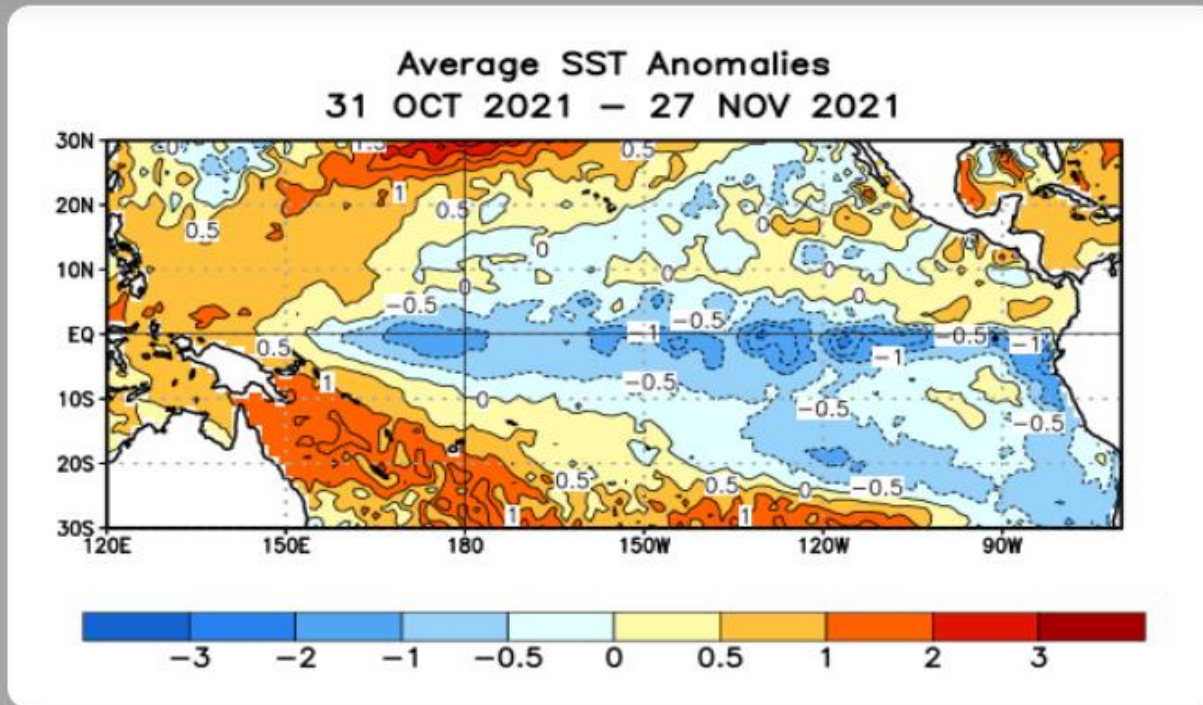


The Pacific Northwest is expected to have a greater chance of above normal precipitation during the next three months (December - February). This is also consistent with the ongoing La Nina event that has began, and is expected to persist through the winter.

Sea Surface Temperature (SST) Anomalies for November 2021

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

In the last four weeks, equatorial SSTs were below average across most of the Pacific Ocean, and were above average in the far western Pacific Ocean.



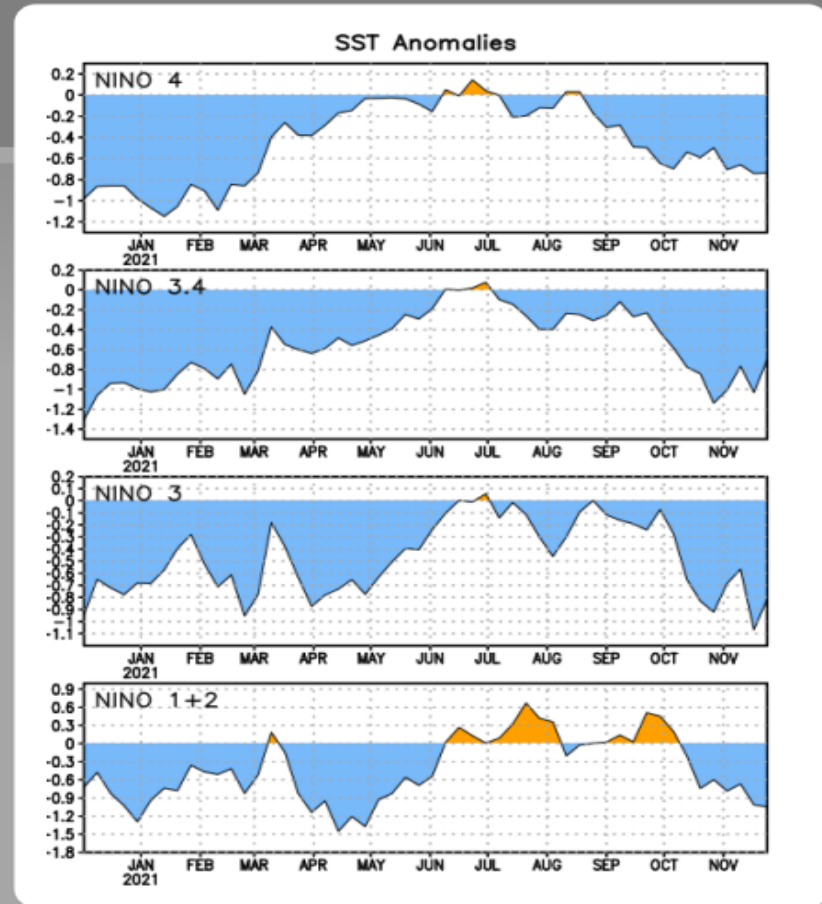
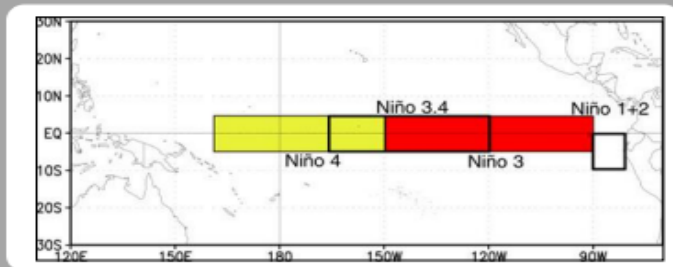
Equatorial SSTs were mostly below average from the 31st of October to the 27th of November, with the anomalies being as much as -0.5 to -3.0 degrees C. There were still some warmer than normal anomalies along the Central American coast, north of the equator, however, ENSO conditions are mostly dependent on SST's anomalies AT the equatorial areas of the Pacific.

ENSO NINO Regions SST Anomalies for Each Nino Region

Niño Region SST Departures (°C) Recent Evolution

The latest weekly SST departures are:

Niño 4	-0.7°C
Niño 3.4	-0.7°C
Niño 3	-0.8°C
Niño 1+2	-1.0°C



All Niño Region departures from normal SST's continued to cool during the month of November. The greatest ("coolest") anomalies were in Niño Regions 3, and 3.4, again this month. Niño region 1 + 2, and region 4 showed greater cooling, but the least "cooler" anomalies. Niño regions 3 and 3.4 have the greatest impact on the western USA.

Current ENSO (El Nino Southern Oscillation) Alert System Status

Summary

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

La Niña is present.*

Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean.

The tropical Pacific atmosphere is consistent with La Niña conditions.

La Niña is likely to continue through the Northern Hemisphere winter 2021-22 (~90% chance) and into spring 2022 (~50% chance during March-May).*

The current ENSO Alert System Status is **“La Nina Advisory”**. La Nina conditions remain in place, and are expected to continue (about a 90% chance) through the winter into the spring of 2022 (a 50% chance from March – May). The La Nina event this year is stronger than last year. As such, this winter may have a greater chance to be colder and wetter (and snowier) than last year.



Thank You!