

# **The Month In Review**

**February 2022**

**National Weather Service  
Pendleton, Oregon**

**Photo: Heavy snow covered trees, roads and buildings at Emigrant Springs Park**

# February 2022, Climate Conditions Summary

February of 2022 had a variety of conditions, mostly with temperatures, and not quite as much with precipitation. The month began as dry, which continued beyond the middle of the month, with most locations having no precipitation under a strong high pressure system aloft. There were several days during this period when there were record high temperatures broken, while under the influence of the strong high pressure aloft. Then near the end of the month, there were several days of much below normal temperatures, with record low temperatures having been broken, as an arctic air mass moved into the forecast area. Just before, and during this time when an arctic air mass moved into the forecast area, there was heavy snow in many mountain and high plateau locations. However, most of it preceded the arrival of the arctic cold air. Most of the heavy snow reports were in the northeast OR and southeast WA mountains. However, there were also some reports of heavy snow in the central & east central OR highlands as well. The most impactful snowfall occurred on the 21<sup>st</sup> of the month, when there was a massive freeway carnage due to heavy wet snow on Interstate 84 over the Blue Mountains, causing numerous accidents. Below, and on the next slide are some images of climate conditions during the month.



**Heavy wet snow caused a major pile up of semi trucks and cars in I-84 over the Blue Mountains east of Pendleton, OR**



**Colorful morning clouds just before sunrise over eastern Oregon.**



**Fresh snow covered trees in the sunlight in the Blue Mountains, near Meacham, OR.**

# More Images Representing February 2022 Climate Conditions



**Freeway Carnage Due to Slick Roads on I-84**



**A Late Month Snowfall at the Pendleton NWS**



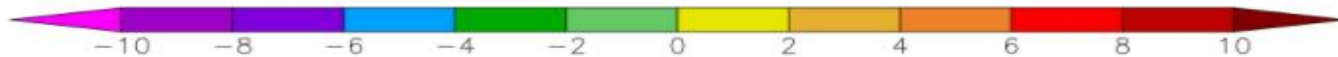
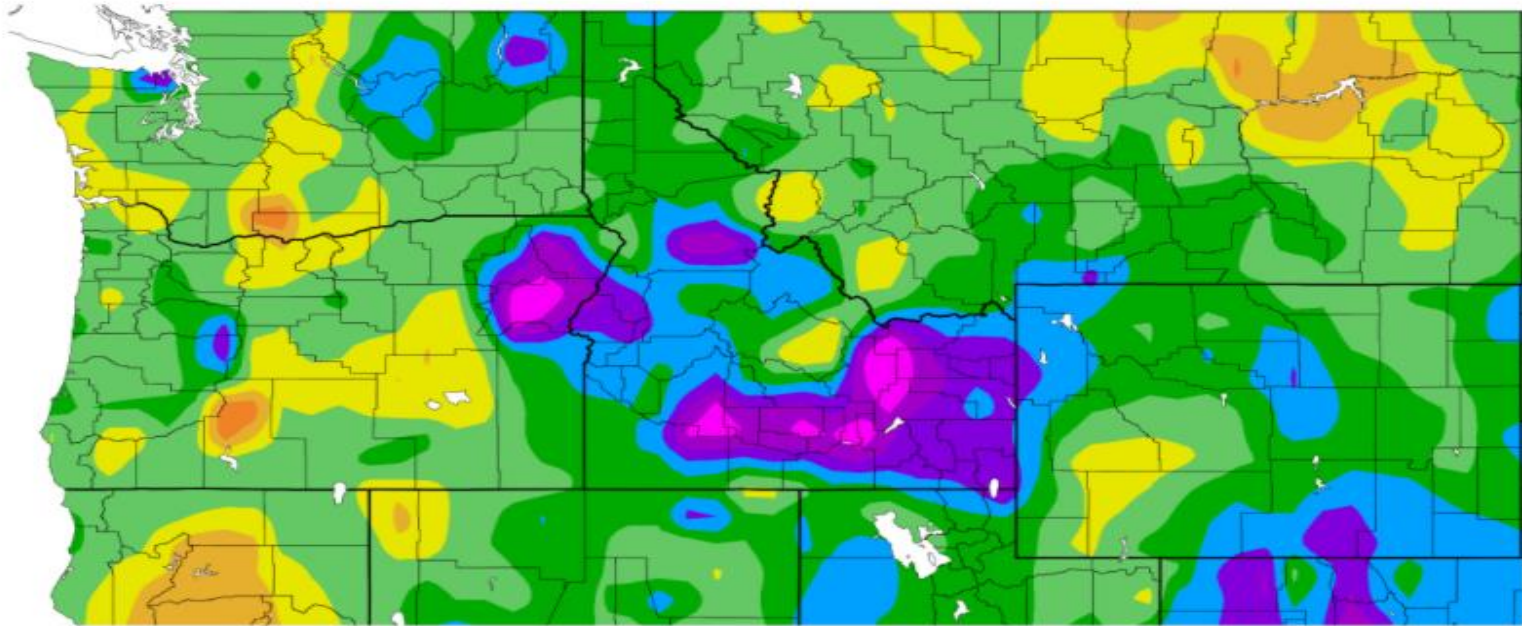
**A More Typical Day in February – Dry & Sunny**



**Heavy Snow in the Northern Blue Mountains**

# February 2022, Departure from Normal of Average Temperatures

Departure from Normal Temperature (F)  
2/1/2022 – 2/28/2022



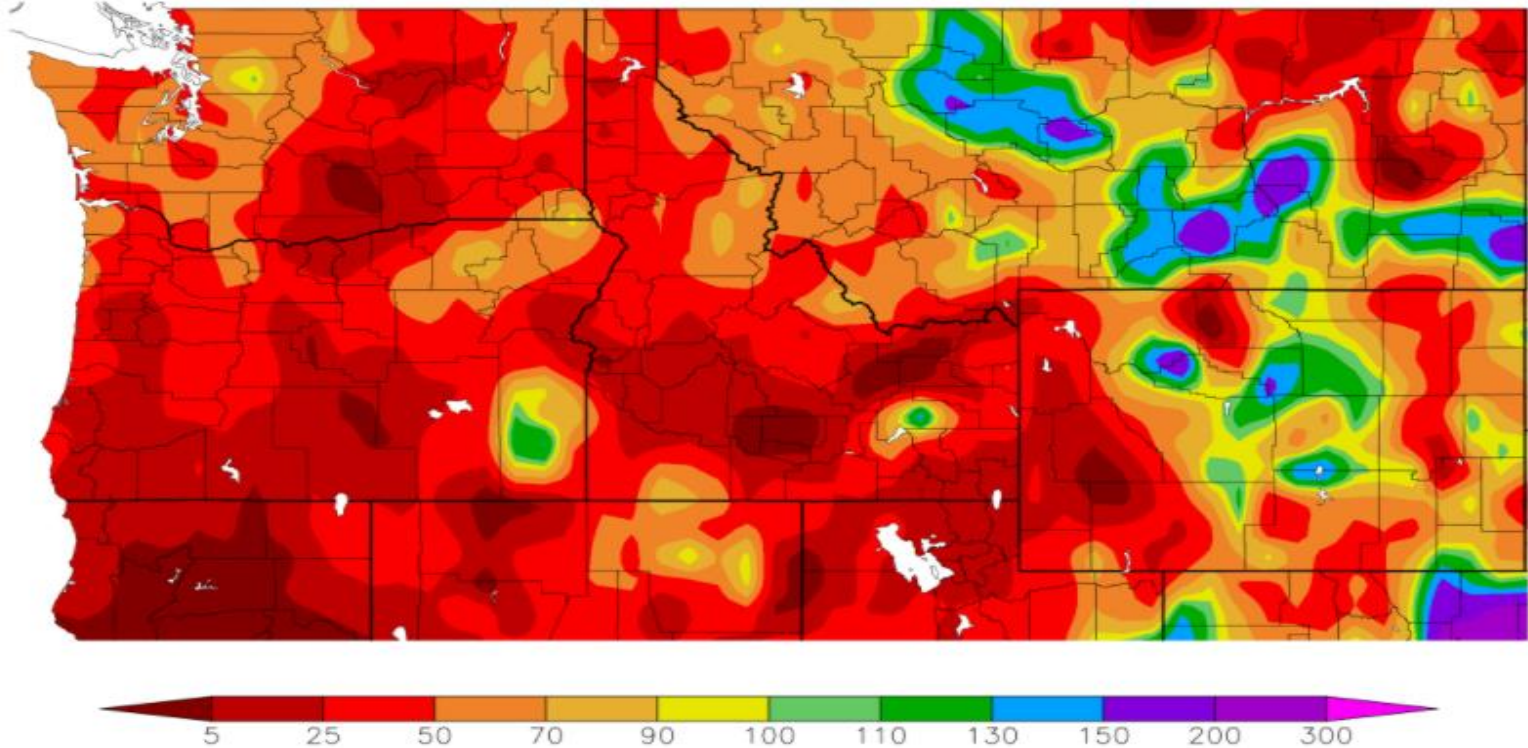
Generated 3/2/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

The departure from normal of the average temperatures ranged were mostly below normal overall. However, this image was heavily influenced by the late month arctic outbreak. Most of the month was actually warmer than normal, as will be shown on the next slide of select cities across the forecast area. The coldest areas were over the northeast OR mountains. The warmest areas were over central and east central OR, as well as the Lower Columbia Basin and the WA Cascades.

# February 2022, Percent of Normal of Precipitation

Percent of Normal Precipitation (%)  
2/1/2022 – 2/28/2022



Generated 3/2/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

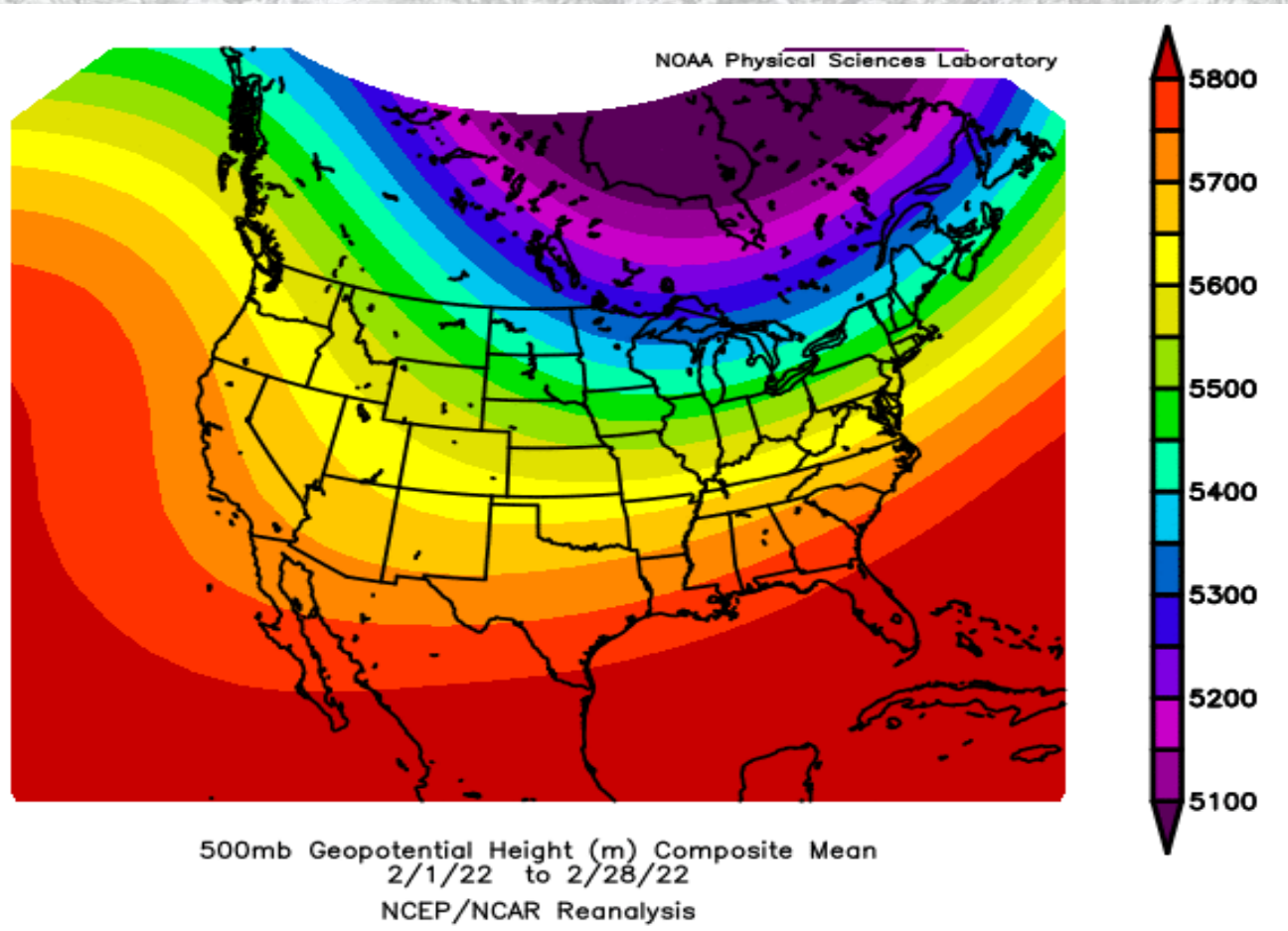
All of the forecast area had below normal precipitation as represented by the percent of normal precipitation in the above image. The driest areas were once again in areas east of the Cascades, especially in the Yakima Valley, WA and over the central OR plateau & highlands. The least driest areas were over the northern Blue Mountains of northeast OR and southeast WA.

## February 2022 Departures from Normal Means/Sums for Select Cities

	Max T	Max T D	Min T	Min T D	Avg	Avg T D	PCPN	PCPN D
<b>Yakima</b>	48.8	2.5	22.6	-3.3	35.7	-0.4	0.07	-0.71
<b>Kennewick</b>	50.7	2.7	28.2	-2.5	39.4	0.1	0.13	-0.65
<b>Walla Walla</b>	47.8	1.8	29.1	-3.1	38.4	-0.7	0.70	-1.06
<b>The Dalles</b>	55.1	6.5	32.6	0.8	43.9	4.0	0.24	-1.53
<b>Redmond</b>	53.0	6.2	20.9	-2.8	36.9	1.7	0.01	-0.64
<b>Pendleton Airport</b>	48.5	1.7	27.1	-3.2	37.8	-0.7	0.91	-0.20
<b>La Grande Airport</b>	41.3	-1.6	22.4	-3.5	31.8	-2.6	0.55	-0.59
<b>John Day</b>	50.8	3.4	27.4	2.6	39.1	3.0	0.27	-0.47

The table above shows that every station listed, except for the La Grande, OR Airport, had a mean average high temperature that was above normal. However, conversely, most of the mean average low temperatures were below normal. This wide gap show that both the warmer than normal first half of the month, and also the much colder than normal end of the month are represented in this table. There was an even split of mean average temperatures for the month (the third column – Avg T). Every station listed above had significantly below normal precipitation, which ranged from -0.20 of an inch at the Pendleton, OR Airport (which is a bit surprising), to -1.53 inches at The Dalles, OR.

# February 2022, Average 500 MB Pattern

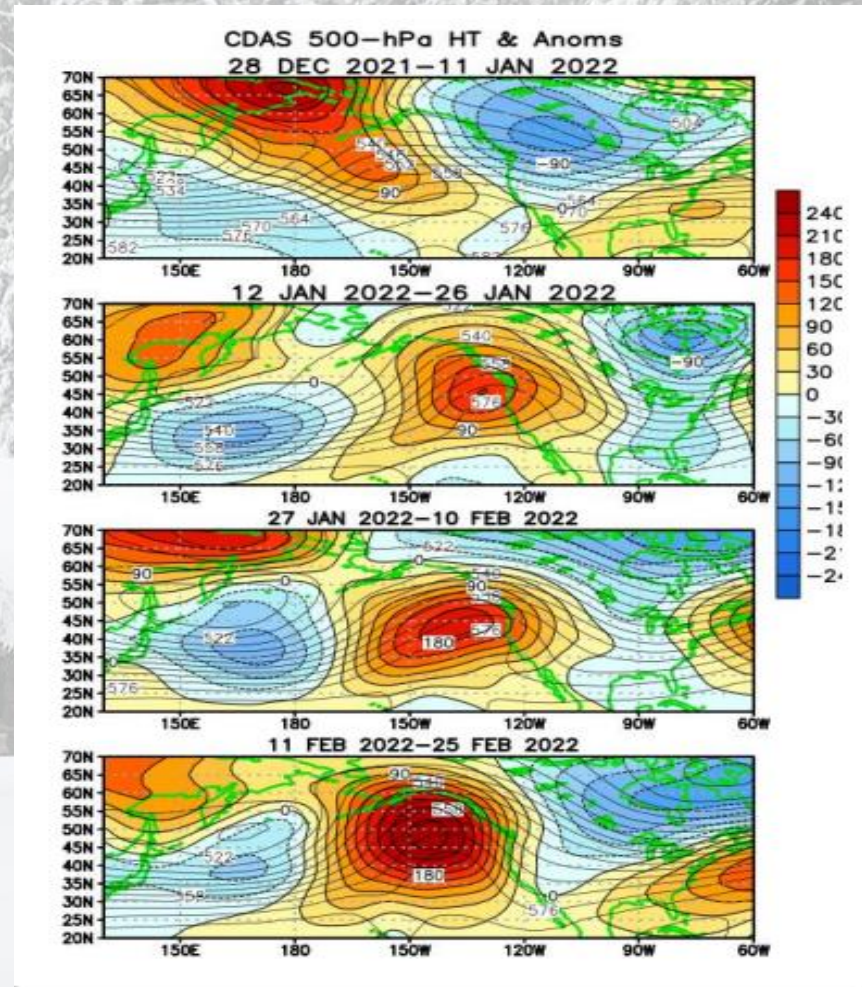


The average 500 MB flow pattern for February was dominantly northwest on the east side of a large upper ridge off the coast. This type of pattern is typically a dry and stable pattern. This strongly represents the first twenty days of the month, which were dry and mostly warmer than normal. Despite this upper flow being from the northwest over the Pacific Northwest, temperatures were mostly warmer than normal because the origin of the air was not over the continental North America, but rather over the relatively warmer waters of the Pacific.

# Two Month, Bi-weekly 500 MB Plots for January & February 2022

These are more detailed bi-weekly average 500 mb pattern plots, which was sampled from the following period: 28<sup>th</sup> Dec 2021 through 25<sup>th</sup> Feb 2022).

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.



During late December and early January, there was an upper trough that dominated the Pacific Northwest, with an upper ridge well off the coast. This resulted in mostly a progressive westerly flow aloft and frequent weather systems. Then the upper ridge off the coast, and a northwest flow over the forecast area, became stronger during the end of January through most of February. This eventually resulted in mostly dry and warmer than normal conditions from late January through most of February, especially once fog season ended by early February in the lower elevation basins and valleys.



# Significant Weather Events for February 2022

Significant Weather Events				
Event	Date	Report	Where	Source
Heavy Snow	February 3, 2022	M 7.0 inches	Ski Bluewood, WA	Public
Heavy Snow	February 3, 2022	M 5.5 inches	5 NNE La Grande, OR	Trained Spotter
Heavy Snow	February 20, 2022	E 6.0 inches	1 WSW Ski Bluewood, WA	Public
Heavy Snow	February 20, 2022	M 6.0 inches	7 SSW Goose Prairie, WA	Mesonet
Snow	February 20, 2022	E 3.5 inches	4 W Meacham, OR	NWS Employee
Heavy Snow	February 20, 2022	M 8.0 inches	5 SW Spout Springs, OR	Mesonet
Heavy Snow	February 20, 2022	M 11.0 inches	9 SW Ski Bluewood, OR	Mesonet
Hail	February 20, 2022	E 0.75 inch	2 NNE Richland, WA	Trained Spotter
Heavy Snow	February 21, 2022	M 6.0 inches	11 WNW Black Butte Ranch, OR	Mesonet
Heavy Snow	February 21, 2022	M 11.0 inches	9 SW Ski Bluewood, OR	Mesonet
Heavy Snow	February 21, 2022	M 9.0 inches	1 WSW Ski Bluewood, WA	Public
Heavy Snow	February 22, 2022	M 3.0 inches	3 NW Bend, OR	Trained Spotter
Heavy Snow	February 22, 2022	E 5.0 inches	Sunriver, OR	Public
Heavy Snow	February 22, 2022	E 5.0 inches	Three Rivers, OR	Public
Heavy Snow	February 22, 2022	M 6.0 inches	Tumalo, OR	Public
Heavy Snow	February 22, 2022	M 4.0 inches	3 NE Fossil, OR	Public
Heavy Snow	February 22, 2022	E 4.5 inches	La Pine, OR	Public

Most of the significant weather events in February occurred during the latter part of the month with heavy snow, which fell just before and during an arctic outbreak near the end of the month. Most of the heavy snow fell over the northeast mountains, but heavy snow was also observed in the central and east central Oregon highlands. There were also two reports of heavy snow on the 3<sup>rd</sup> of February, before a strong upper high pressure system built over the region through the rest of early February to the latter middle part of the month. Then the snow and cold air arrived during part of the latter half of the month (Feb 20<sup>th</sup> – 25<sup>th</sup>). Record cold temperatures occurred during this period as shown on the next slide.

# Record Weather Event Reports for February 2022

Record Weather Reports					
Event	Date	Where	Previous Record	New Record	Records Began
High Temp	February 5, 2022	Dallesport, WA	60 / 2018	60 (Tie)	1929
High Temp	February 6, 2022	Redmond, OR	66 / 1987	66 (Tie)	1941
High Temp	February 9, 2022	Redmond, OR	65 / 2016	67	1941
High Temp	February 9, 2022	Ellensburg, WA	54 / 2003	61	1934
High Temp	February 9, 2022	Yakima, WA	60 / 1951	62	1909
High Temp	February 10, 2022	Ellensburg, WA	58 / 2015	63	1934
High Temp	February 10, 2022	Dallesport, WA	65 / 1977	70	1929
High Temp	February 11, 2022	Ellensburg, WA	52 / 2015	54	1934
High Temp	February 11, 2022	Dallesport, WA	62 / 1988	66	1929
High Temp	February 13, 2022	Redmond, OR	63 / 2015	68	1941
Low Temp	February 22, 2022	Walla Walla, WA	18 / 2019	10	1930
Low Temp	February 22, 2022	Dallesport, WA	19 / 1993	19 (Tie)	1929
Low Temp	February 23, 2022	Dallesport, WA	13 / 2018	13 (Tie)	1929
Low Temp	February 23, 2022	Ellensburg, WA	10 / 2018	7	1934
Low Temp	February 23, 2022	Hermiston, OR	10 / 2018	7	1906
Low Temp	February 23, 2022	Pasco, WA	11 / 2018	9	1942
Low Temp	February 23, 2022	Redmond, OR	-5 / 2018	-6	1941
Low Temp	February 23, 2022	Walla Walla, WA	19 / 2018	9	1930
Low Temp	February 23, 2022	Yakima, WA	8 / 2019	6	1909
Low Temp	February 23, 2022	Pendleton, OR	7 / 1894	4	1934
Low Temp	February 24, 2022	Meacham, OR	-6 / 2003	-13	1929
Low Temp	February 24, 2022	Pendleton, OR	10 / 1993	10 (Tie)	1934
Low Temp	February 25, 2022	Meacham, OR	-15 / 2011	-21	1929

There were two distinct periods of record temperature reports during February. The first was a period of record high temperatures from February 5<sup>th</sup> through the 13<sup>th</sup> during a period in which a strong high pressure system aloft existed. Then from February 22<sup>nd</sup> through the 25<sup>th</sup>, there were many record low temperatures that occurred as a result of an arctic outbreak, which also brought heavy snow just before and with the arctic cold air.

# February 2022, Observed Monthly Max & Min Temperatures

Location	Highest Maximum	Lowest Minimum
Pendleton, OR	69	4
Redmond, OR	74	-6
Pasco, WA	69	9
Yakima, WA	70	6
Walla Walla, WA	67	9
Bend, OR	72	-7
Ellensburg, WA	63	7
Hermiston, OR	71	7
John Day, OR	64	8
La Grande, OR	60	1
The Dalles, OR	70	13
Meacham, OR	58	-21
MT Adams RS, WA	M (missing observations)	M (missing observations)

The highest maximum temperatures ranged from 58 degrees at Meacham, OR to 74 degrees at Redmond, OR. The lowest minimum temperatures ranged from -21 degrees at Meacham, OR to 9 degrees above zero at both Walla Walla, WA and Pasco, WA. This was a rather sharp contrast between the highest maximum and the lowest minimum temperatures, as a result of strong upper high pressure and then an arctic outbreak.

# February 2022 Observed Total Precipitation and Total Snowfall/Hail

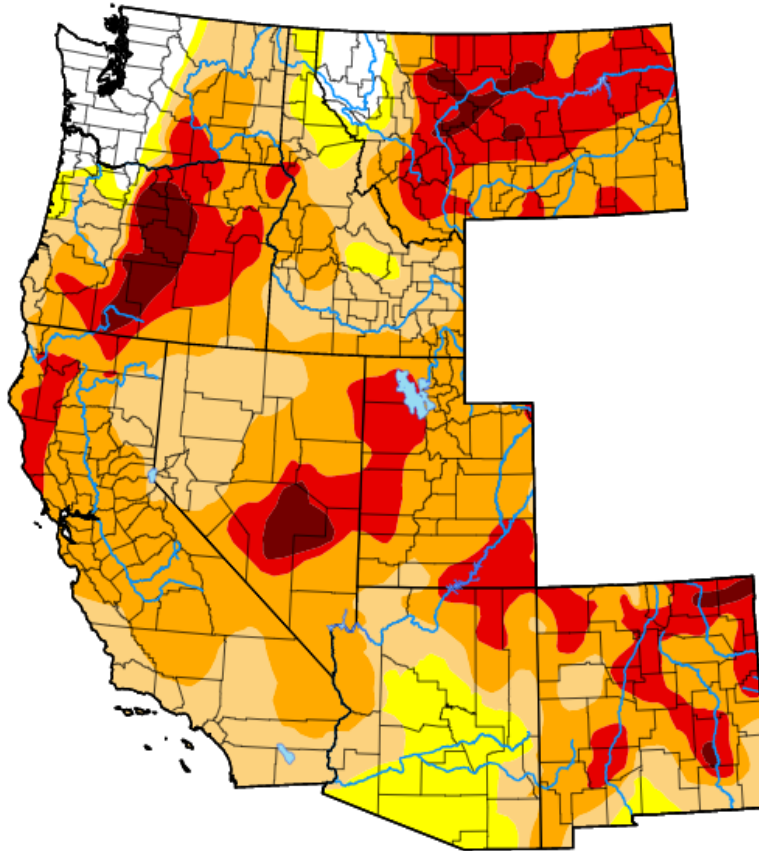
Location	Total Precipitation (inches)	Total Snow/Hail (inches)
Pendleton, OR	0.91	3.3
Redmond, OR	0.01	M
Pasco, WA	0.16	M
Yakima, WA	0.07	M
Walla Walla, WA	0.70	M
Bend, OR	0.50	2.5
Ellensburg, WA	0.28	M
Hermiston, OR	0.13	M
John Day, OR	0.27	M
La Grande, OR	0.55	M
The Dalles, OR	0.24	M
Meacham, OR	3.47	M
MT Adams RS, WA	M (missing observations)	M (missing observations)

Precipitation amounts ranged from a minimum of 0.01 inch at Redmond, OR to a maximum of 3.47 inches at Meacham, OR. This shows that there was a wide range of the distribution of precipitation (dry vs. wet) over the forecast area. The only available snow reports were 2.5 inches at Bend, OR and 3.3 inches at Pendleton, OR. The rest of the stations listed above had missing snow reports.

# February 2022 - Drought Monitor - West

West

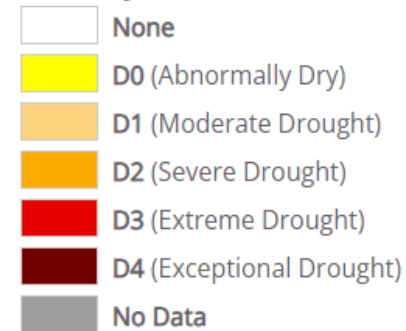
[Home](#) > [View](#)



Map released: Thurs. February 24, 2022

Data valid: February 22, 2022 at 7 a.m. EST

## Intensity



## Authors

United States and Puerto Rico Author(s):

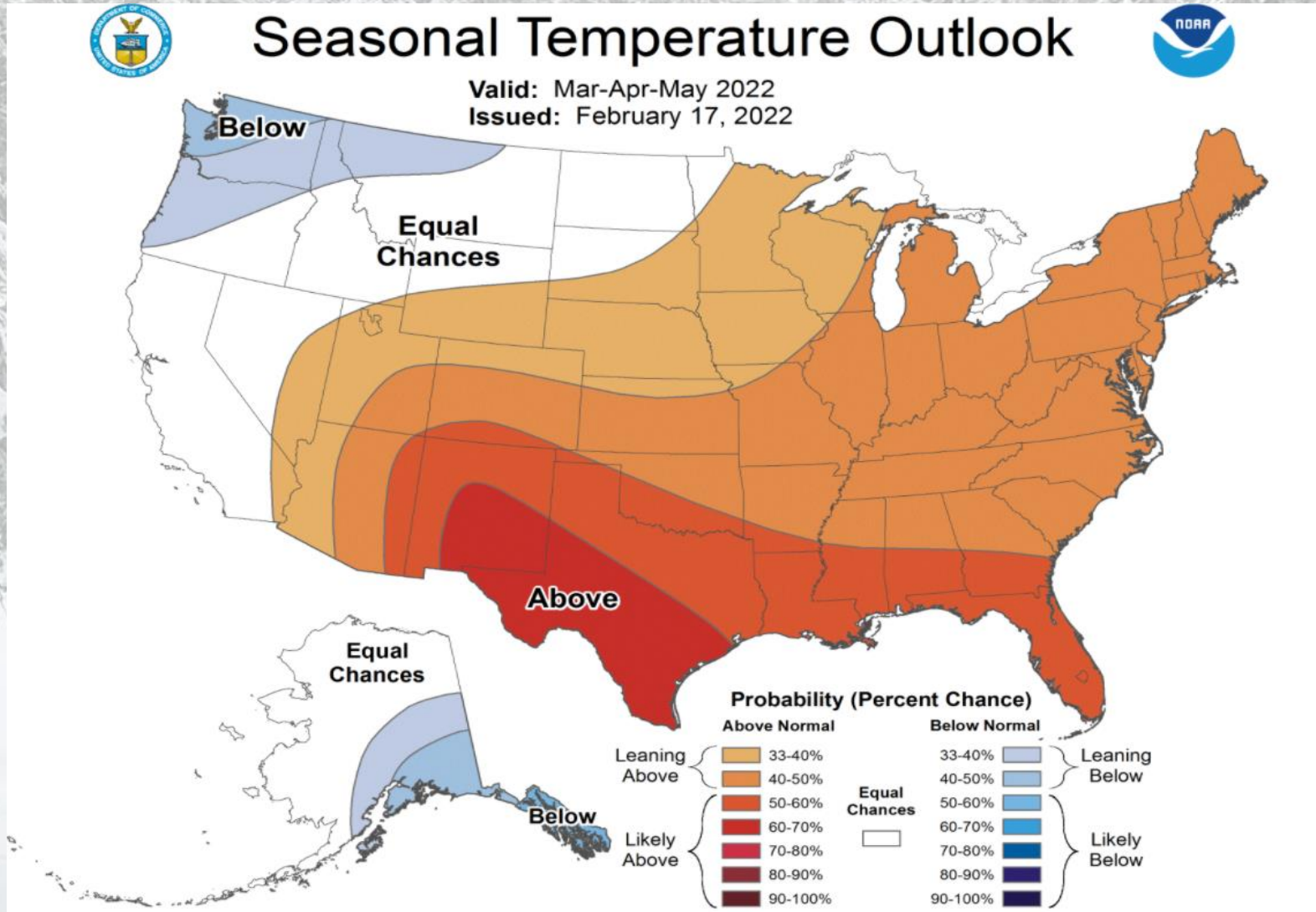
[Brad Pugh](#), NOAA/CPC

Pacific Islands and Virgin Islands Author(s):

[Ahira Sanchez-Lugo](#), NOAA/NCEI

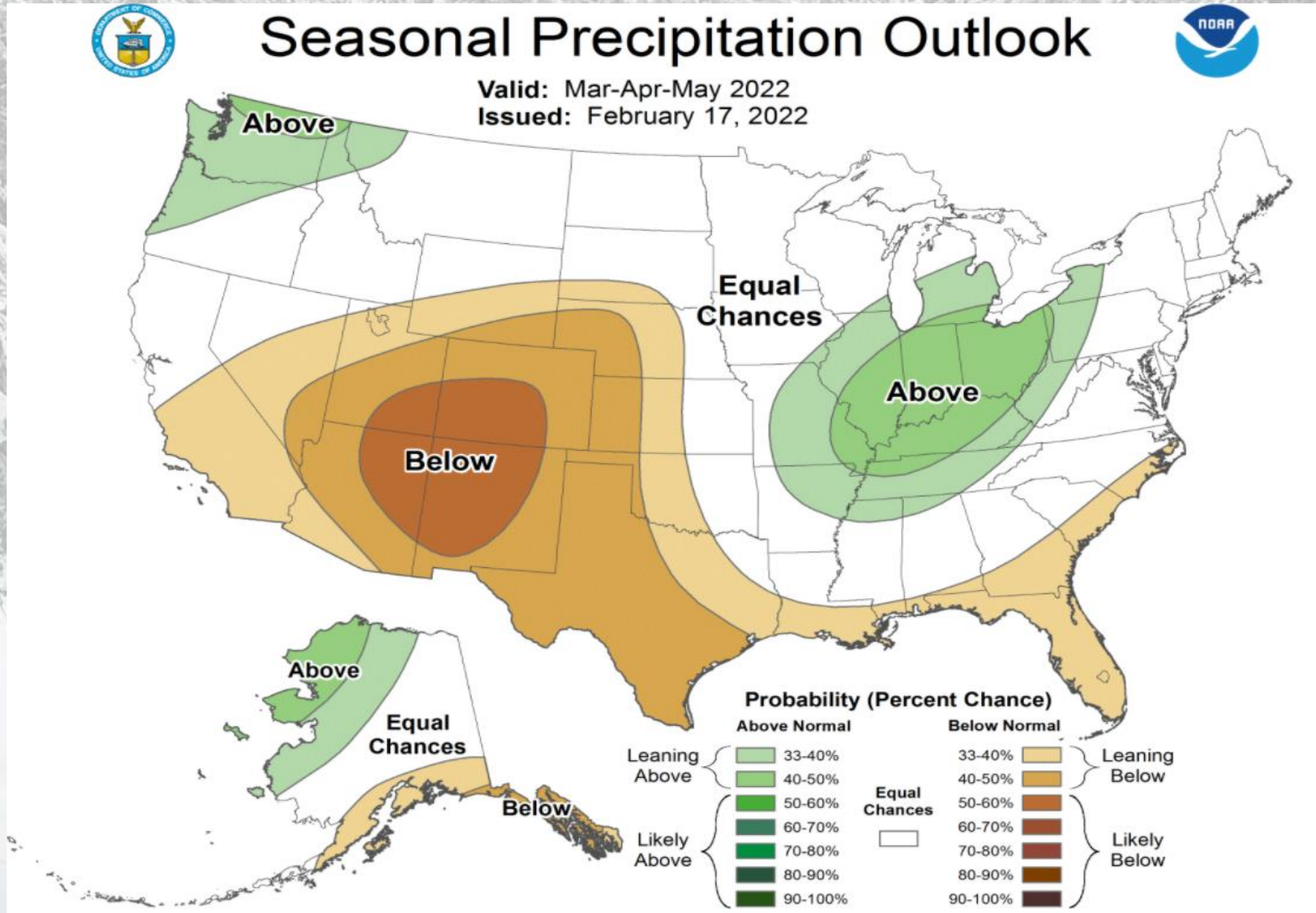
There was an “Exceptional” (D4) drought just east of mainly the OR Cascades, and then a rather large area of an “Extreme” (D3) drought surrounding the D4 drought area. The rest of the forecast area had mostly “Severe” (D2) drought conditions. Compared to January, there was not much change in Oregon, however, the portion of the forecast area in Washington had a little relief in the drought conditions, with slightly less areas of the higher drought categories than in January.

# USA Three Month Temperature Outlook



The temperature outlook for the next 3 months (March - May) is for a greater chance of near to below normal temperatures for the Pacific Northwest. This is still consistent with the on-going La Nina event during this winter.

# USA Three Month Precipitation Outlook

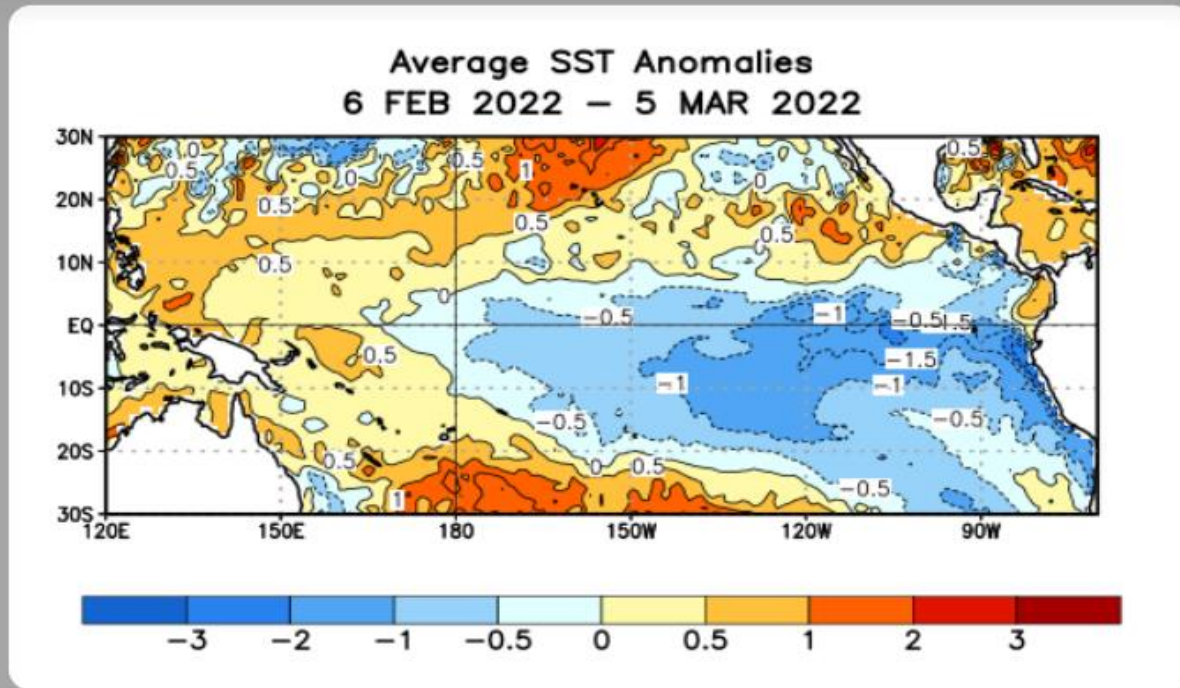


The precipitation outlook for the next 3 months (March - May) is for a greater chance of near to above normal precipitation over the Pacific Northwest. This is also consistent with the on-going La Nina event this winter.

# Sea Surface Temperature (SST) Anomalies for February 2022

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

In the last four weeks, equatorial SSTs were below average across the east-central and eastern Pacific Ocean and were above average in the western Pacific Ocean.



SSTs were again mostly below average over the central and eastern equatorial Pacific from early February through early March by as much as -3 to -4 degrees C. The coolest waters were over the eastern most equatorial Pacific, which was a slight shift eastward from the January coolest equatorial SST anomalies. There continued to be areas of warmer than normal SSTs off the coast of Mexico and central America. These SST anomalies are still consistent with the ongoing La Nina event this winter.

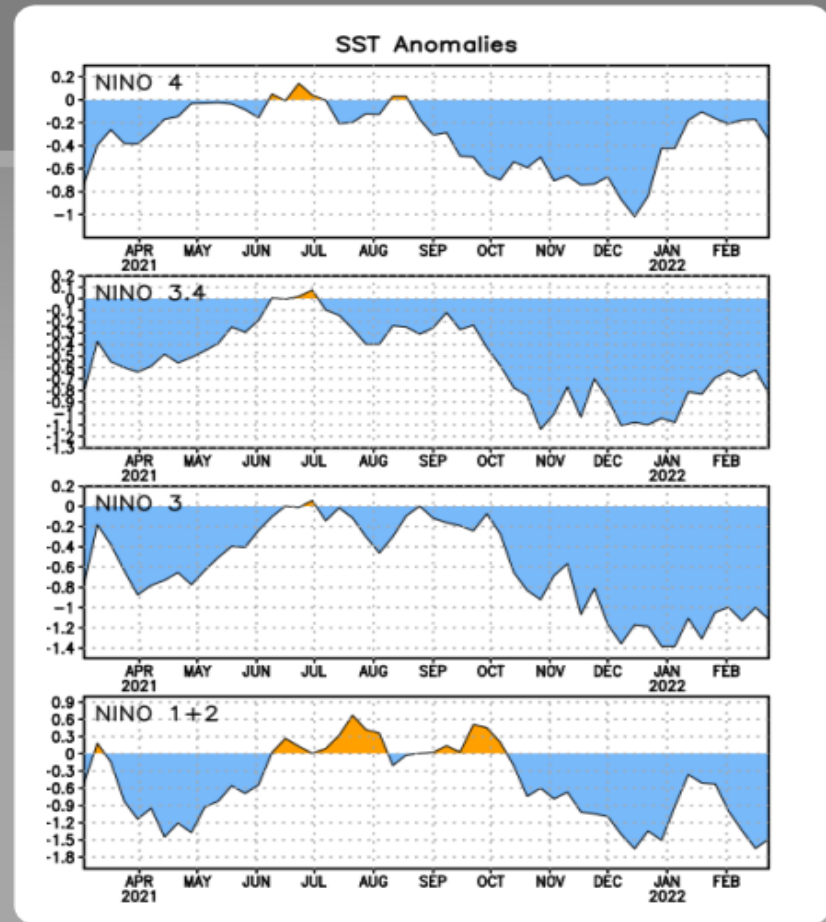
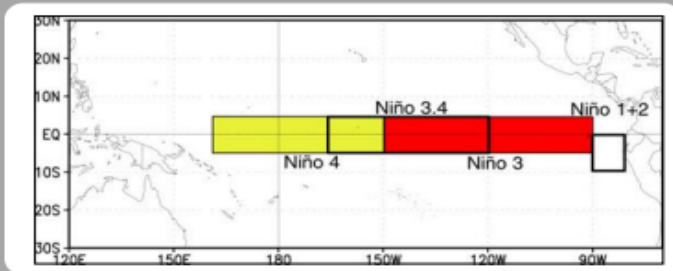


# ENSO NINO Regions SST Anomalies for Each Nino Region

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

The latest weekly SST departures are:

Niño 4	-0.4°C
Niño 3.4	-0.8°C
Niño 3	-1.1°C
Niño 1+2	-1.5°C



All Niño Regions had some warming during February from January, especially Niño Regions 1 + 2, and 4. This was followed by Niño Region 3.4, with less warming and then Niño Region 3, with the least amount of warming. These warming trends are indicative of La Niña beginning to transition to ENSO neutral conditions, which was expected by late winter or early spring.

# Current ENSO (El Niño 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 east-central and eastern Pacific Ocean.

The tropical Pacific atmosphere is consistent with La Niña.

La Niña is likely to continue into the Northern Hemisphere spring (77% chance during March-May 2022) and then transition to ENSO-neutral (56% chance during May-July 2022).\*

\* Note: These statements are updated once a month (2<sup>nd</sup> Thursday of each month) in association with the ENSO Diagnostics Discussion, which can be found by clicking [here](#).

The current ENSO Alert System Status is still “**La Nina Advisory**”. La Nina conditions are favored to continue through the spring, with a 77% chance from March – May 2022. Then they are expected to transition to ENSO-neutral conditions, with a 56% chance during the period May through July 2022. The timing of the transition to ENSO neutral conditions are later than previously expected, and now extends into the summer (July) of 2022.



**Thank You!**