The Month In Review

April 2022

National Weather Service
Pendleton, Oregon

Photo: Thunderstorm Shelf Cloud Near Pendleton
Photo by: Rachel Plunkett

April 2022, Climate Conditions Summary

April of 2022 was a cold and wet month, with much below normal temperatures on average. There was a variety of weather during the month, but the most notable weather was the mid month winter storms that brought snow to even the lower elevations of the Lower Columbia Basin and the Blue Mountain Foothills from the 10th to the 16th. There were also thunderstorm events, one of which was on the 30th of the month, in which a thunderstorm spawned a land spout in Oregon on the 30th. The rain/thunderstorm event on the 30th also brought significant rainfall amounts across the forecast area, especially to NE Oregon and SE Washington. Many areas received between a half inch to an inch, including Pendleton, OR and Meacham, OR. Record snowfall amounts were also reported at many low elevation locations, including an all time record of 3.3 inches at the Pendleton Airport (the official NWS Pendleton snowfall total). Pendleton had a total of 2.02 inches of liquid equivalent precipitation, which was 0.81 of an inch above the normal. Typically, a temperature of 80 degrees is first seen during the month of April at the Pendleton Airport, but this year the highest temperature was only 71 degrees on the 24th. Below, and on the next slide, are photos of some climate conditions for April 2022.

Late season snow in Lyle, WA. Photo by: Ron McDonald.

Thunderstorm Shelf Cloud moving into Pendleton, OR. Photo by: Ann Adams.

Land Spout produced by a thunderstorm. Photo by: Jeff Wagner

More Images Representing April 2022 Climate Conditions

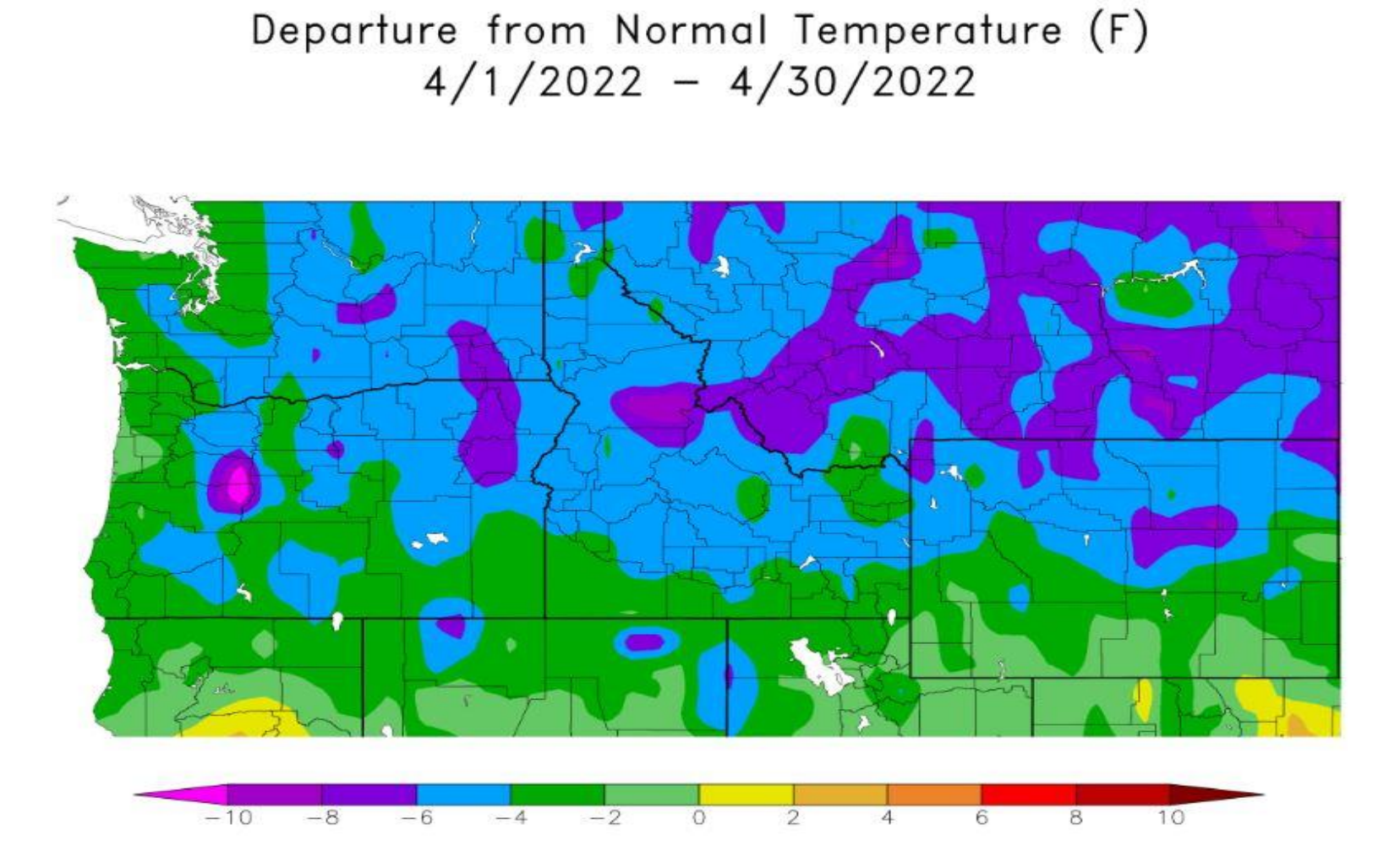
Thunderstorm Shelf Cloud near Pendleton, OR

Mid April snowfall at the NWS Pendleton, OR

Heavy snow near Meacham, OR on May 11th

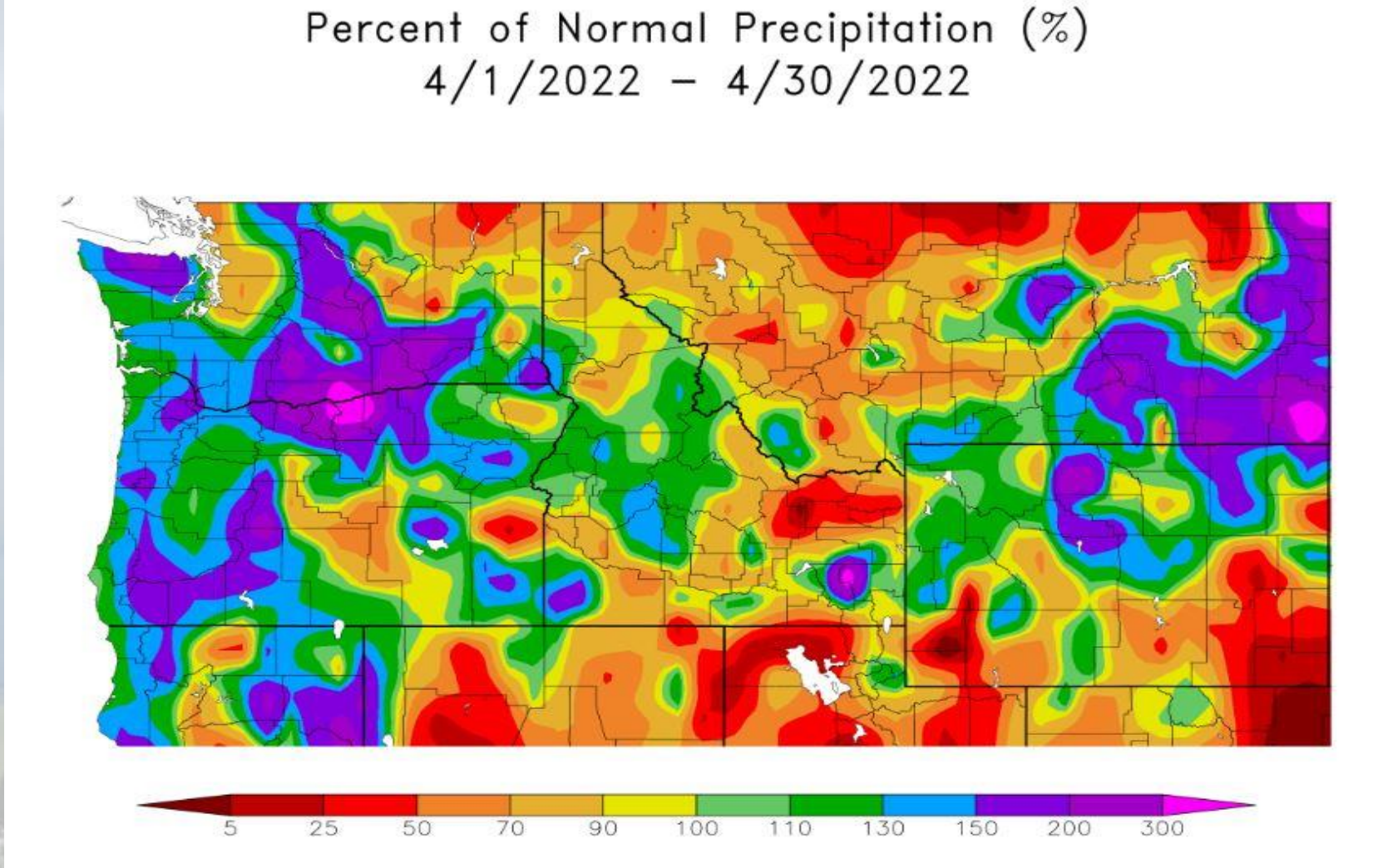
April flowers blooming in Pendleton, OR

April 2022, Departure from Normal of Average Temperatures



The departure from normal of the average temperatures were much below normal for most of the forecast area, by at least -2 to -4 degrees F. The coldest areas were over the Northern Blue Mountains, over an area over northeast Kittitas County, WA, and a few other small areas. These areas had a departure from normal of -6 to -8 degrees F. Elsewhere, most of the forecast area had departures from normal ranging from -4 to -6 degrees F. The warmest areas were along the OR Cascades (-2 to -4 deg F).

April 2022, Percent of Normal of Precipitation



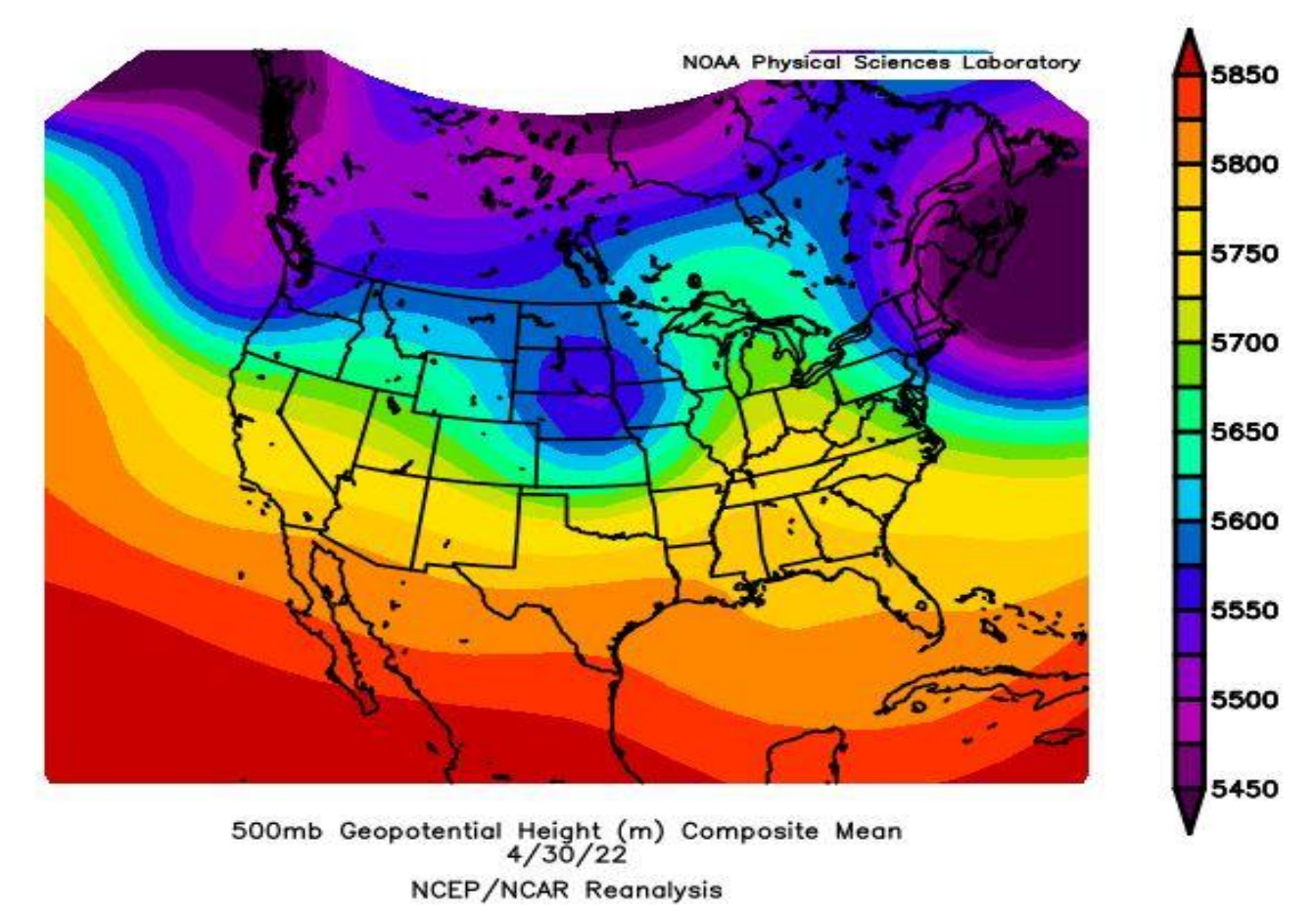
There was a greater diversity of the percent of normal precipitation distribution across the forecast area. The wettest area was over north central OR, central, and south central WA, with a maximum of 150 - 300 percent of normal precipitation. The driest locations were in central OR and Wallowa County, which had a percent of normal between 50 - 90 percent of normal.

April 2022 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	56.7	-7.1	31.2	-3.2	44.0	-5.1	0.57	0.02
Kennewick	60.5	-5.8	38.5	-3.8	49.5	-4.8	1.89	1.33
Walla Walla	55.2	-7.3	36.6	-5.4	45.9	-6.3	2.75	0.83
The Dalles	61.2	-3.2	40.2	-1.3	50.7	-2.2	1.98	1.19
Redmond	56.5	-3.1	27.4	-1.7	41.9	-2.5	0.56	-0.17
Pendleton Airport	56.2	-5.9	35.0	-4.2	45.6	-5.1	2.02	0.82
La Grande Airport	52.9	-5.4	29.3	-5.8	41.1	-5.6	1.40	-0.18
John Day	57.0	-3.4	34.5	1.6	45.8	-0.9	1.46	0.07

The table above shows that every average temperature departures from normal were all below normal, except for the average minimum temperature for John day, OR, which was 1.6 degrees above normal. The coolest average maximum was at Walla Walla, WA, the coolest average minimum was at the La Grande Airport, and the coolest mean average was also at Walla Walla, WA. All precipitation departures from normal were above normal, except for Redmond, OR and at La Grande, OR. The greatest absolute value of precipitation departures was at Kennewick, WA.

April 2022, Average 500 MB Pattern

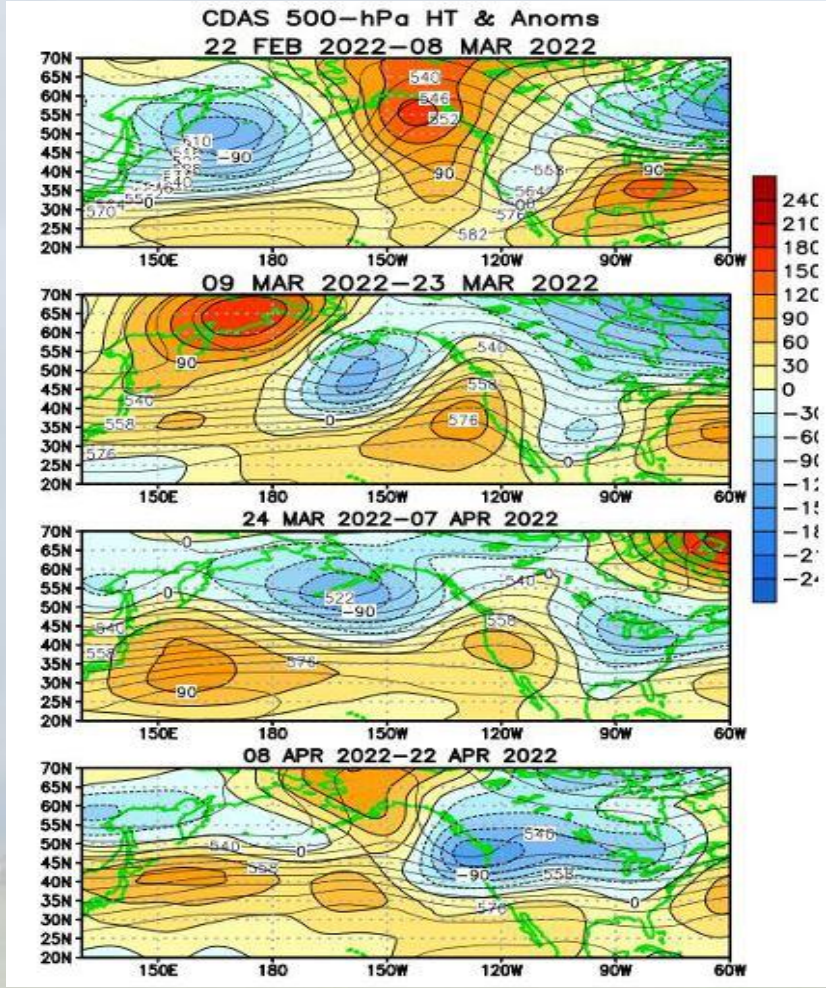


The average 500 MB flow pattern for April over the Pacific Northwest was an upper trough pattern, with the mean trough axis off the coast. This provided a southwest flow, which enabled abundant moisture to flow into the forecast area, but it also resulted in the much cooler than normal conditions due to the presence of the upper trough, more cloud cover with frequent weather systems, and lower heights and thicknesses under the mean upper trough.

Two Month, Bi-weekly 500 MB Plots for March & April 2022

These are more detailed bi-weekly average 500 mb pattern plots, which was sampled from the following period: 22nd of Feb through the 22nd of April 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 the period from late February through early April (the top three images) the overall pattern was an upper ridge pattern, with differing positions of the ridge axis. This resulted in warmer than normal conditions, overall, through early April. However, then there was a shift in the pattern from early April to the latter half of April, with a strong upper trough that developed and persisted for most of the rest of April. This upper trough provided the cold air masses that moved across the forecast area, and also frequent weather systems, which caused more clouds and precipitation that resulted in cooler conditions.

Significant Weather Events for April 2022

Significant Weather Events				
Event	**Date**	**Report**	**Where**	**Source**
Heavy Snow	April 4, 2022	E 13.0 inches	6 SE Blewett Pass, WA	Mesonet
Heavy Snow	April 4, 2022	E 14.0 inches	16 SW Tampico, WA	Mesonet
Heavy Snow	April 4, 2022	E 12.0 inches	ESE Goose Prairie, WA	Trained Spotter
Heavy Snow	April 5, 2022	E 8.0 inches	17 WNW Pine Grove, OR	Mesonet
Heavy Snow	April 5, 2022	E 18.0 inches	10 W Rimrock, WA	Dept of Highways
Heavy Snow	April 5, 2022	M 11.5 inches	2 SSE Snoqualmie Pass, WA	COCORAHS
Non-TSTM Wind Gust	April 8, 2022	M 49 mph	4 ENE Thorp, WA	Trained Spotter
Non-TSTM Wind Gust	April 8, 2022	M 71 mph	Ellensburg, WA	ASOS
Heavy Snow	April 10, 2022	E 10.0 inches	Tollgate, OR	Dept of Highways
Heavy Snow	April 11, 2022	E 8.0 inches	17 WNW Pine Grove, OR	Mesonet
Heavy Snow	April 11, 2022	E 8.0 inches	1 NNW Glenwood, WA	Trained Spotter
Heavy Snow	April 11, 2022	E 6.0 inches	3 SSE White Swan, WA	Trained Spotter
Heavy Snow	April 11, 2022	M 10.0 inches	1 NW White Salmon, WA	COCORAHS
Heavy Snow	April 11, 2022	M 12.0 inches	4 NE White Salmon, WA	COCORAHS
Heavy Snow	April 11, 2022	M 10.5 inches	WNW White Salmon, WA	COCORAHS
Heavy Snow	April 11, 2022	E 7.0 inches	10 ENE Goldendale, WA	Trained Spotter
Heavy Snow	April 11, 2022	E 15.0 inches	9 NNE Dallesport, WA	Trained Spotter
Heavy Snow	April 11, 2022	M 12.6 inches	1 S Snowden, WA	Co-Op Observer
Heavy Snow	April 11, 2022	E 7.0 inches	11 SSW John Day, OR	Mesonet
Heavy Snow	April 11, 2022	E 8.0 inches	13 SW Mitchell, OR	Mesonet
Snow	April 12, 2022	M 1.9 inches	Pendleton, OR	Official NWS Obs
Heavy Snow	April 12, 2022	E 9.0 inches	WSW Dale, OR	Dept of Highways
Heavy Snow	April 12, 2022	E 9.0 inches	8 NNW Ukiah, OR	Dept of Highways
Heavy Snow	April 12, 2022	E 10.0 inches	5 SW Spout Springs, OR	Mesonet
Heavy Snow	April 12, 2022	E 12.0 inches	9 SW Ski Bluewood, OR	Mesonet
Heavy Snow	April 12, 2022	E 13.0 inches	Meacham, OR	Dept of Highways
Heavy Snow	April 12, 2022	E 5.5 inches	Kittitas, WA	Public

Most of the significant weather events were either heavy snow events or strong non-thunderstorm wind gust events. These occurred on April 4th-5th, the 8th, the 10th - 14th, and then one more strong non-thunderstorm wind gust event on the 20th. There was a thunderstorm event on the 30th of the month as well, but there were no severe warnings issued, or reports of severe thunderstorm criteria being met with it.

Significant Weather Events for April 2022 (Continued)

Significant Weather Events				
Event	**Date**	**Report**	**Where**	**Source**
Snow	April 12, 2022	E 3.0 inches	Ellensburg, WA	Trained Spotter
Heavy Snow	April 12, 2022	E 10.0 inches	5 NNW La Pine, OR	Trained Spotter
Heavy Snow	April 12, 2022	M 8.0 inches	1 SW Flora, OR	COCORAHS
Snow	April 12, 2022	M 2.5 inches	5 NNE La Grande, OR	Trained Spotter
Heavy Snow	April 14, 2022	M 5.3 inches	9 NW Seneca, OR	Trained Spotter
Heavy Snow	April 14, 2022	M 5.5 inches	2 SSW Camp Sherman, OR	Trained Spotter
Heavy Snow	April 14, 2022	M 3.0 inches	Prosser, WA	Public
Heavy Snow	April 14, 2022	M 5.0 inches	Ellensburg, WA	Public
Heavy Snow	April 14, 2022	M 5.0 inches	W Trout Lake, WA	Trained Spotter
Heavy Snow	April 14, 2022	M 4.5 inches	La Pine, OR	Trained Spotter
Non-TSTM Wind Gust	April 20, 2022	M 62 mph	1 N Lexington, OR	AWOS
Non-TSTM Wind Gust	April 20, 2022	E 52 mph	Hermiston, OR	ASOS
Non-TSTM Wind Gust	April 20, 2022	M 58 mph	1 NNW Pendleton, OR	ASOS
Non-TSTM Wind Gust	April 20, 2022	E 53 mph	Mission, OR	Dept of Highways
Non-TSTM Wind Gust	April 20, 2022	E 55 mph	Walla Walla, WA	ASOS

Significant weather events were either heavy snow events or non-thunderstorm wind events.

Record Weather Events for April 2022

Record Weather Reports					
Event	**Date**	**Where**	**Previous Record**	**New Record**	**Records Began**
Low Temperature	April 6, 2022	Redmond, OR	16 / 2012	16 (tie)	1941
Maximum Rainfall	April 11, 2022	Dallesport, WA	0.26 / 2001	0.63 inch	1948
Maximum Snowfall	April 11, 2022	Pendleton, OR	0.0 / 2000	1.9 inches	1934
Low Temperature	April 14, 2022	Walla Walla, WA	31 / 1999	31 (tie)	1949
Low Temperature	April 15, 2022	Yakima, WA	22 / 1955	21	1909
Low Temperature	April 15, 2022	Walla Walla, WA	30 / 1967	30 (tie)	1949
Low Temperature	April 15, 2022	Redmond, OR	17 / 1955	17 (tie)	1941
Maximum Snowfall	April 15, 2022	Pendleton, OR	T / 2004, 2013	0.4 inch	1934
Low Temperature	April 17, 2022	Yakima, WA	21 / 1964	21 (tie)	1909
Maximum Rainfall	April 30, 2022	Hermiston, OR	0.48 / 1992	0.50 inch	1906

Record weather events were mostly either record low temperatures or maximum rainfall or snowfall. These occurred throughout the month from the 6th to the 30th. However, most of the records occurred during the middle of the month between the 11th to the 17th of the month.

April 2022 Observed Monthly Max & Min Temperatures

Location	Highest Maximum	Lowest Minimum
Pendleton, OR	71	27
Redmond, OR	77	16
Pasco, WA	73	26
Yakima, WA	69	21
Walla Walla, WA	69	29
Bend, OR	76	22
Ellensburg, WA	67	22
Hermiston, OR	72	24
John Day, OR	83	27
La Grande, OR	70	21
The Dalles, OR	77	31
Meacham, OR	69	10
MT Adams RS, WA	65	24

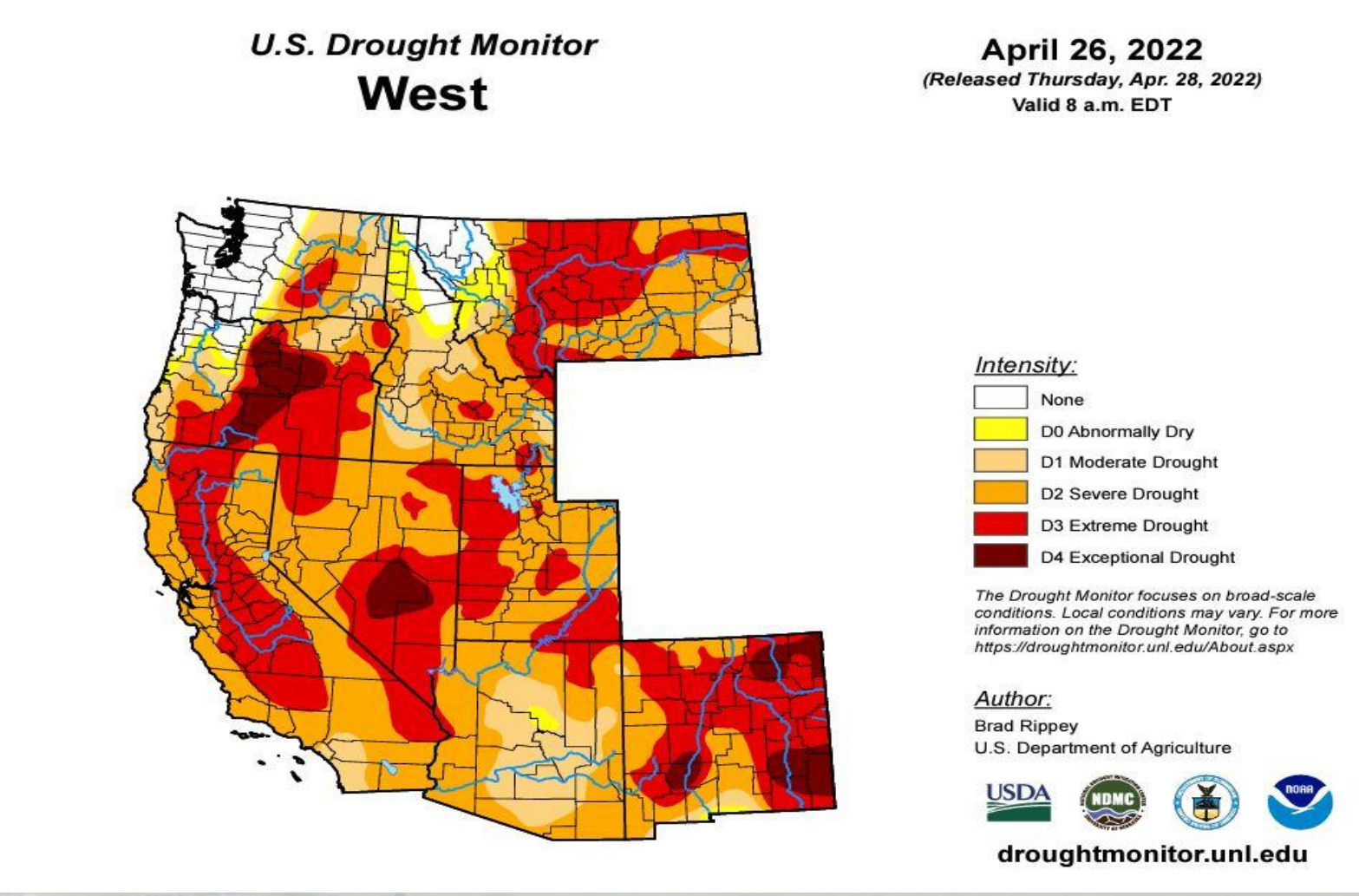
The highest maximum temperatures were all either in the 60s or the 70s. However there was one station which did have a report of over 80 degrees. The range was from 65 at the Mt. Adams Ranger Station to 83 at John day, OR. The lowest minimums ranged from 10 degrees at Meacham, OR to 31 at The Dalles, OR.

April 2022 Observed Total Precipitation and Total Snowfall/Hail

Location	Total Precipitation (inches)	Total Snow/Hail (inches)
Pendleton, OR	2.02	3.3
Redmond, OR	0.56	M
Pasco, WA	1.93	M
Yakima, WA	0.57	M
Walla Walla, WA	2.75	M
Bend, OR	0.62	2.0
Ellensburg, WA	1.16	M
Hermiston, OR	1.94	M
John Day, OR	1.46	M
La Grande, OR	1.40	M
The Dalles, OR	1.98	M
Meacham, OR	5.04	M
MT Adams RS, WA	4.85	14.5

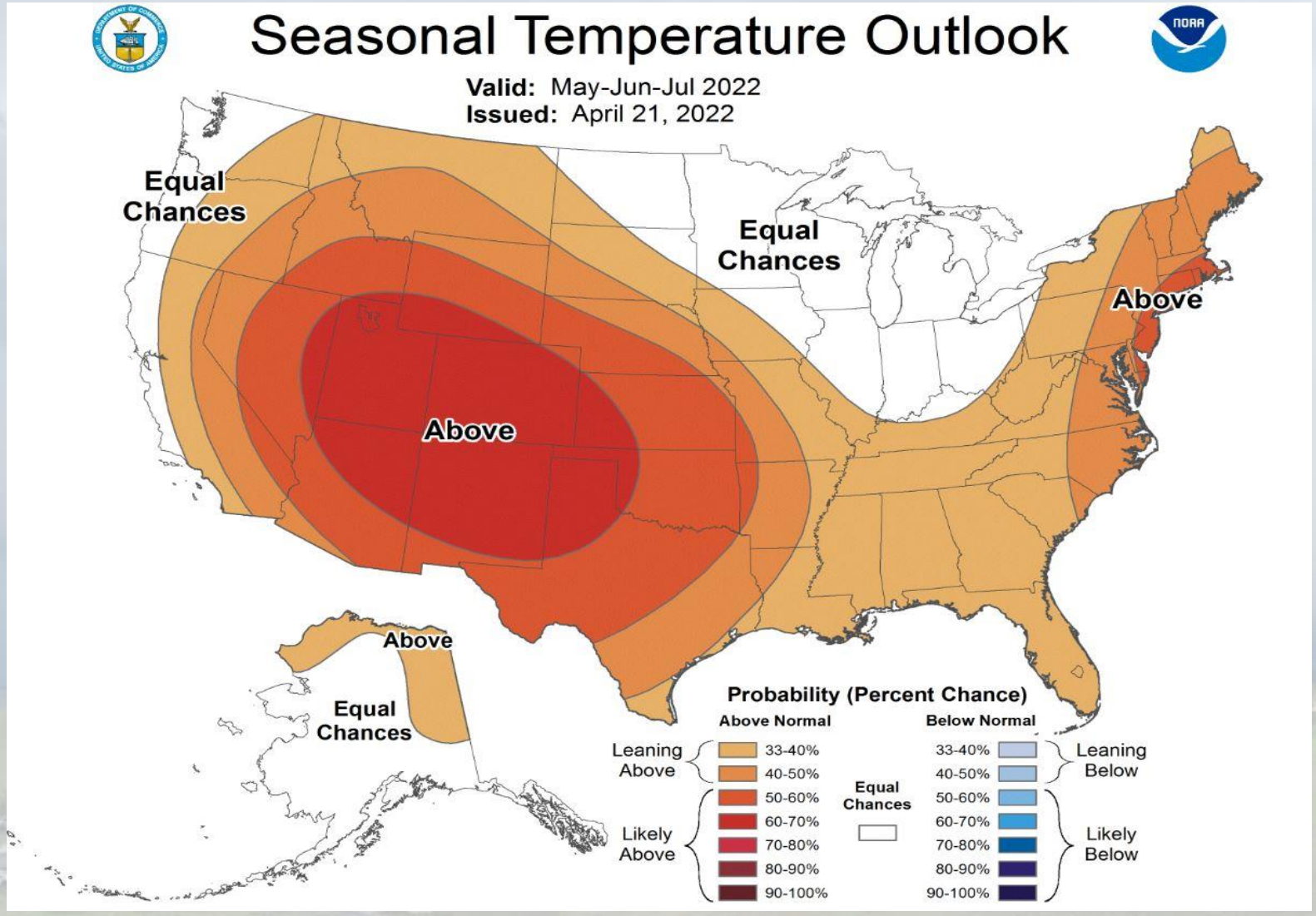
Precipitation QPF amounts ranged from a minimum of 0.56 of an inch at Redmond, OR to a maximum of 5.04 inches at Meacham, OR. However, most precipitation amounts were between one to just over two inches. The only 3 snowfall reports were 2.0 inches at Bend, OR, 3.3 inches at Pendleton, OR, and 14.5 inches at the Mt. Adams Ranger Station.

April 2022 - Drought Monitor - West



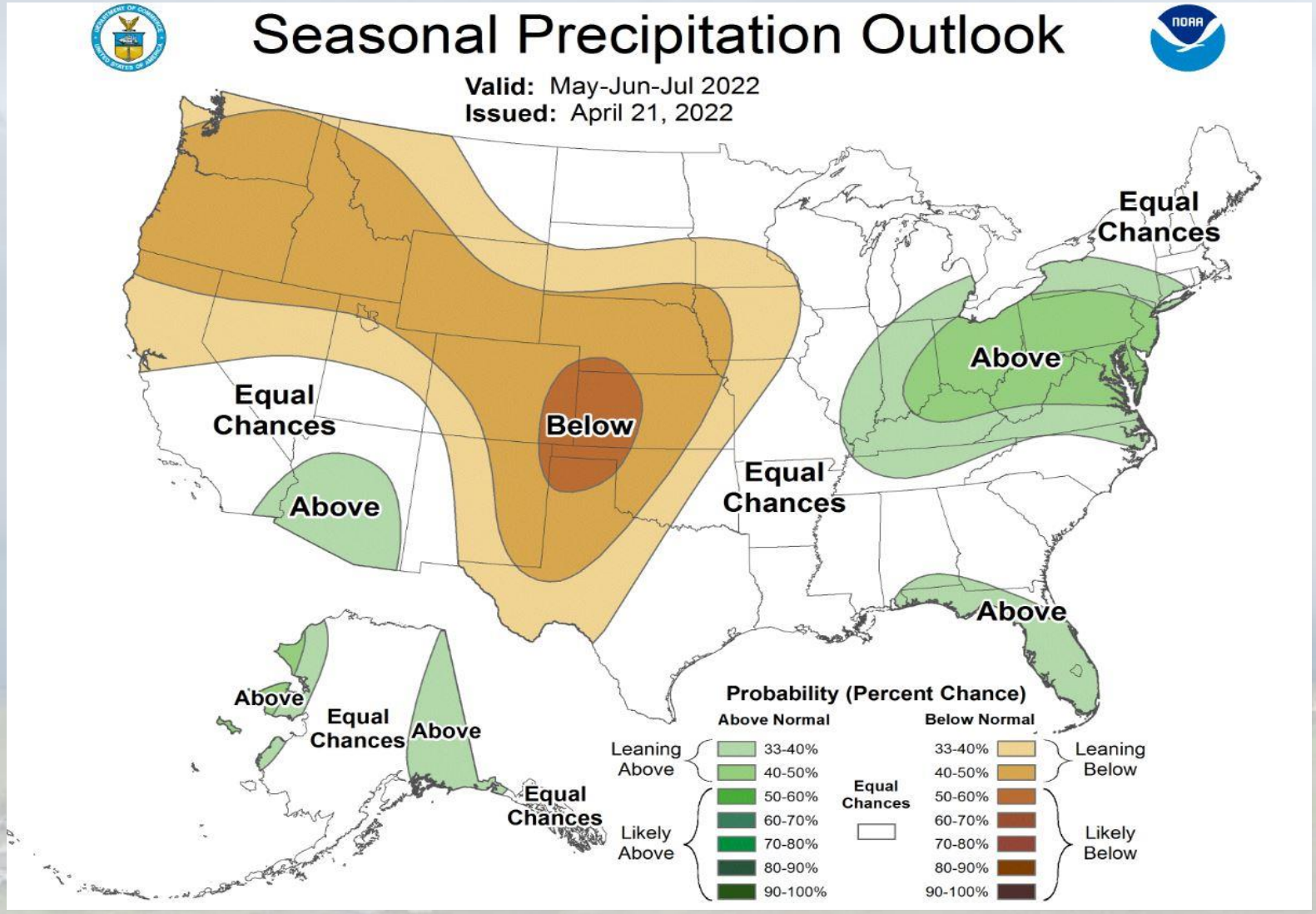
There continued to be an “Exceptional” (D4) drought just east of the OR Cascades, and an area of “Extreme” drought conditions (D3) extending from south central WA to central WA over the valleys east of the Cascades, and Wallowa County, OR. The rest of the forecast area had mostly “Moderate” to “Severe” drought conditions (D1 to D2). The least drought areas were over the Lower Columbia Basin and the Foothills of the Northern Blue Mountains, as well as along the crest of the WA Cascades.

USA Three Month Temperature Outlook



The temperature outlook for the next 3 months (May - July) is for a greater chance of near to above normal temperatures for the Pacific Northwest. Though this is not normally consistent with a La Nina event, there may be more variability during the changing seasons (Spring/Fall).

USA Three Month Precipitation Outlook

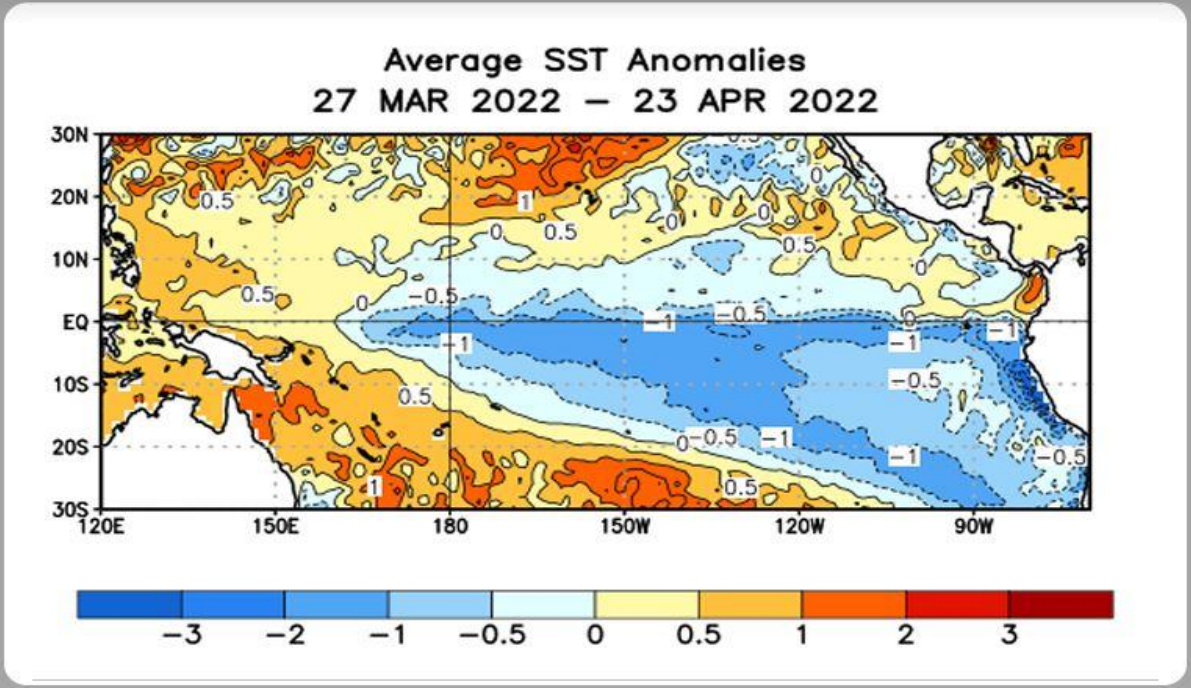


The precipitation outlook for the next 3 months (May - July) is for a greater chance of below normal precipitation. As with temperatures, these may not always be consistent with a La Nina event during the highly variable weather with the changing of the seasons (Spring/Fall).

Sea Surface Temperature (SST) Anomalies for April 2022

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.



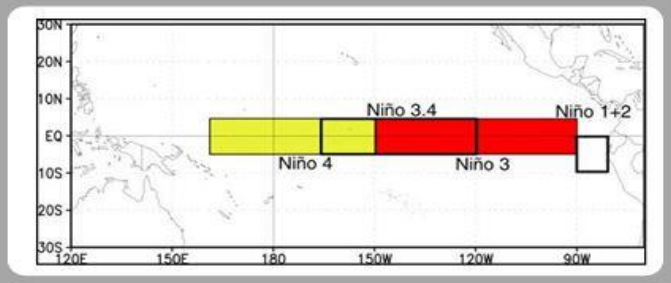
SSTs were again below average over the central and eastern equatorial Pacific from late March through late April, by as much as -1 to -2 degrees C. This is about the same as was the case in late February through late March, and this is still consistent with a La Nina event, which continues across the northern hemisphere. There was less coverage area of warmer than normal SSTs just off the coasts of Mexico, Central and northern South America than last month. Also the coolest waters have shifted southward.

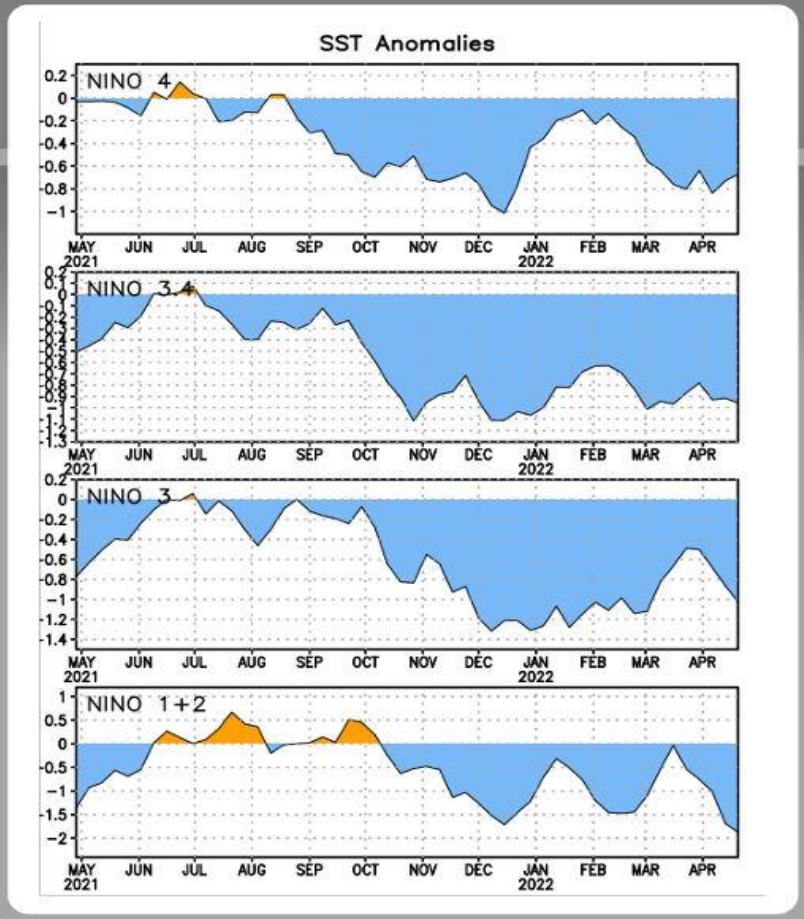
ENSO NINO Regions SST Anomalies for Each Nino Region

Niño Region SST Departures (°C) Recent Evolution

The latest weekly SST departures are:

Niño 4	-0.7°C
Niño 3.4	-1.0°C
Niño 3	-1.0°C
Niño 1+2	-1.9°C





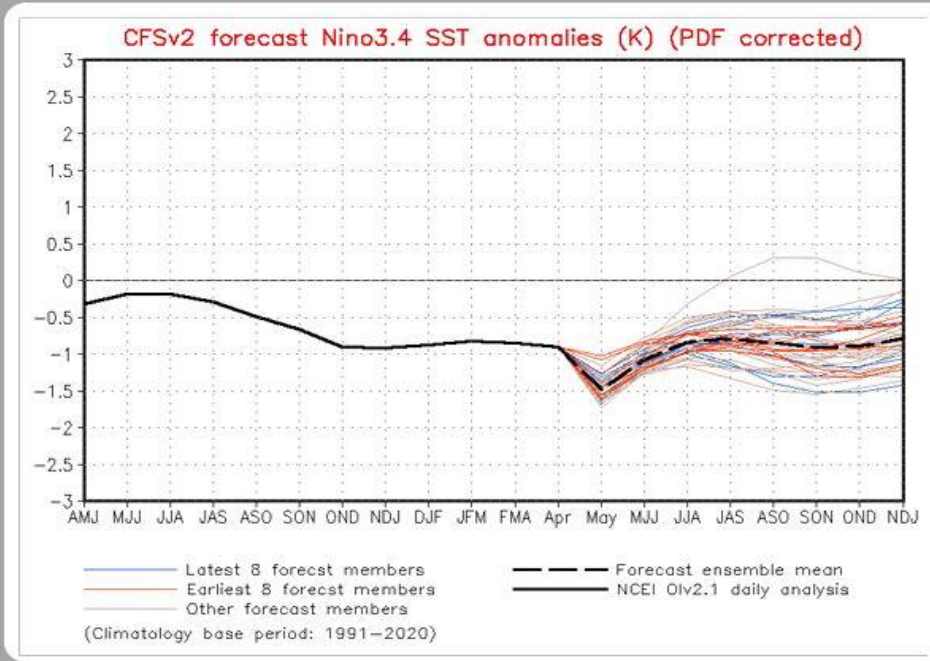
All Nino Regions continued to have SST anomalies less than zero degrees C, all of which were significantly less than zero degrees C. Nino regions 3.4 and 4 did not have much of a change from last month. However, Nino Regions 1 + 2, and 3 both had significantly cooler anomalies than from last month. This is consistent with a slight increase in strength of the current ongoing La Nina event that continues from the fall and winter months.

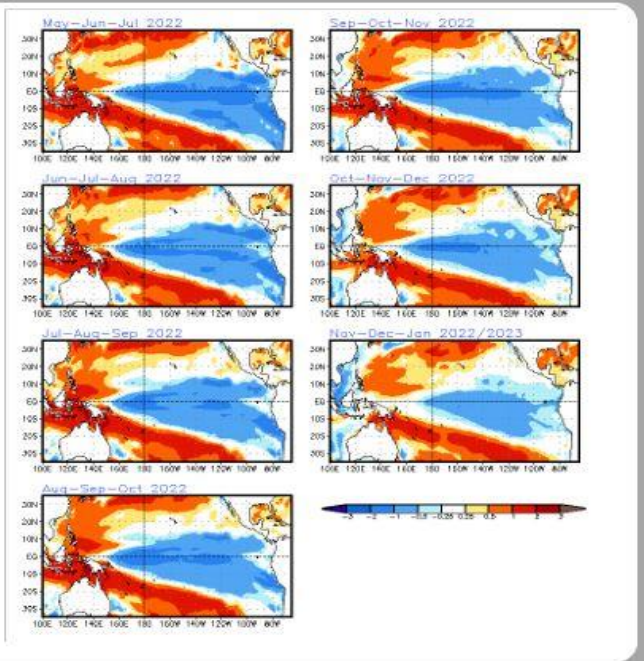
Sea Surface Temperature (SST) NCEP CFS.v2 Ensemble Mean Outlook

SST Outlook: NCEP CFS.v2 Forecast (PDF corrected)

Issued: 25 April 2022

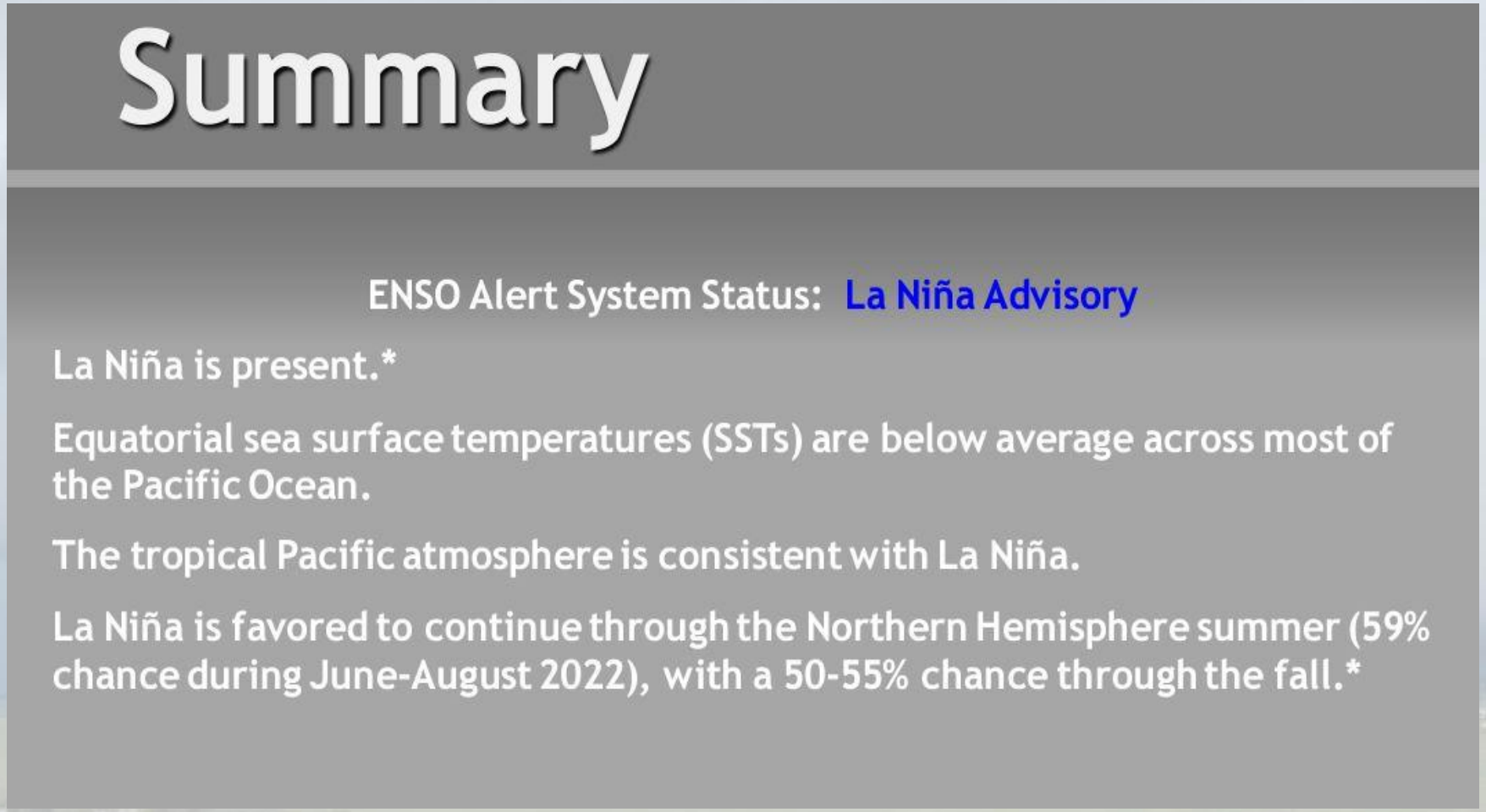
The CFS.v2 ensemble mean (black dashed line) predicts La Niña to continue through the end of the year.





The SST CFS.v2 ensemble mean outlook shows that SSTs are forecast to cool between April and May, resulting in a temporary increase in the strength of the La Nina event. The ensemble probabilities then show that SSTs are expected to remain below the zero line through January, indicating that the current La Nina event will continue through the rest of the year.

Current ENSO (El Nino Southern Oscillation) Alert System Status



The current ENSO Alert System Status is still **"La Nina Advisory"**. La Nina conditions are now favored to continue over the Northern Hemisphere summer with about a 59 percent chance from June - August, and then a 50 to 55 percent chance through the fall. This month, there is no longer an expectation that the current La Nina will transition back to ENSO neutral conditions before the end of the year.


NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
NATIONAL WEATHER SERVICE
Thank You!