

The Month In Review

August 2020



National Weather Service
Pendleton, Oregon

August 2020, Climate Summary

August 2020 was probably one of the driest months that eastern Oregon has ever experienced in the last several decades. There were a few thunderstorm events which ignited new wildfires due to lightning. In the far northeast Blue Mountains the fuels were wetter due to the high rain and snow amounts from this past winter. This has resulted in less of a drought and therefore less wildfires than in central Oregon and in the Cascade Mountains where the drought is most severe. The temperature departures from normal were mostly above normal, but not as significant as the dryness. In Pendleton, the average temperature for the month was only 1 degree above normal, and there were three days when the maximum temperature was 100+ degrees. However, the persistence of the hot temperatures and very little to no precipitation led to critical fire conditions for most of the forecast area (central Oregon to northeast Oregon to southeast and south-central Washington). Below are some photos of the typical conditions observed during the month.



Evacuations taking place in central Oregon due to the Juniper Ridge Fire.



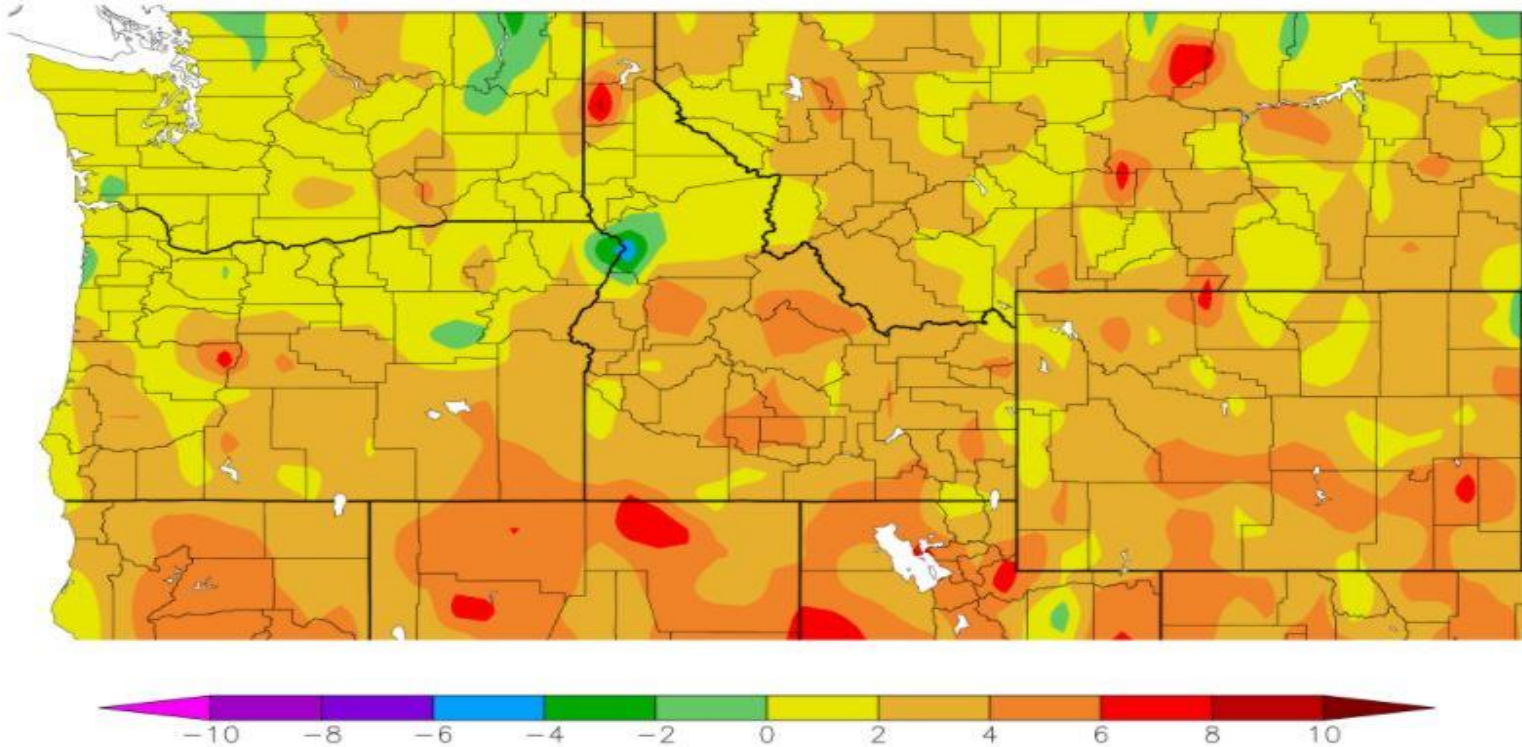
Aerial view of the smoke from a wildfire in the Cascades of Oregon.



Beautiful day in the Blue Mountains of northeast Oregon, which was still green at the end of August. That was the exception.

August 2020, Departure from Normal of Average Temperatures

Departure from Normal Temperature (F)
8/1/2020 – 8/31/2020



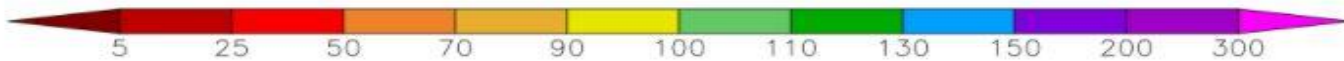
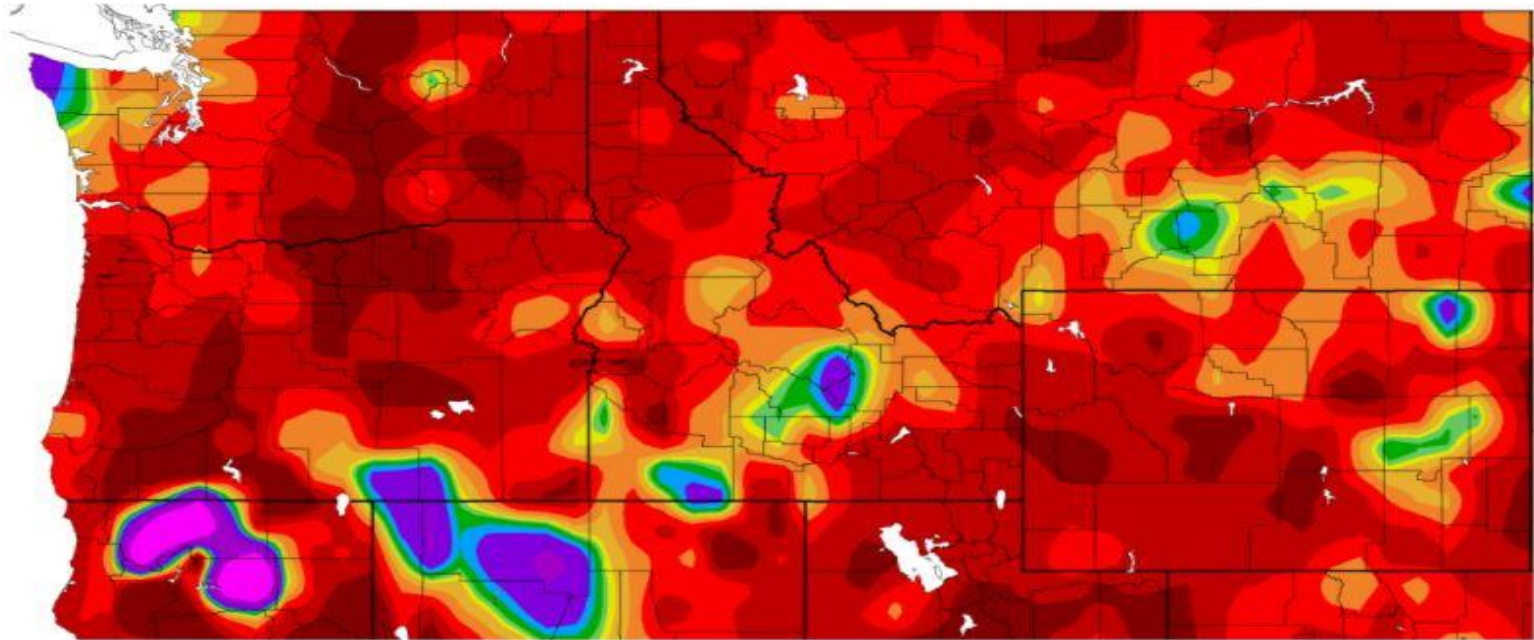
Generated 9/1/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

Just about all of the forecast area (NE Oregon and SE Washington) was above normal by about 2 to 6 degrees, except for a small portion of south-central Grant County, OR, and east-central Wallowa County, OR which were slightly below normal for the month.

August 2020, Percent of Normal of the Average Precipitation

Percent of Normal Precipitation (%)
8/1/2020 – 8/31/2020



Generated 9/1/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

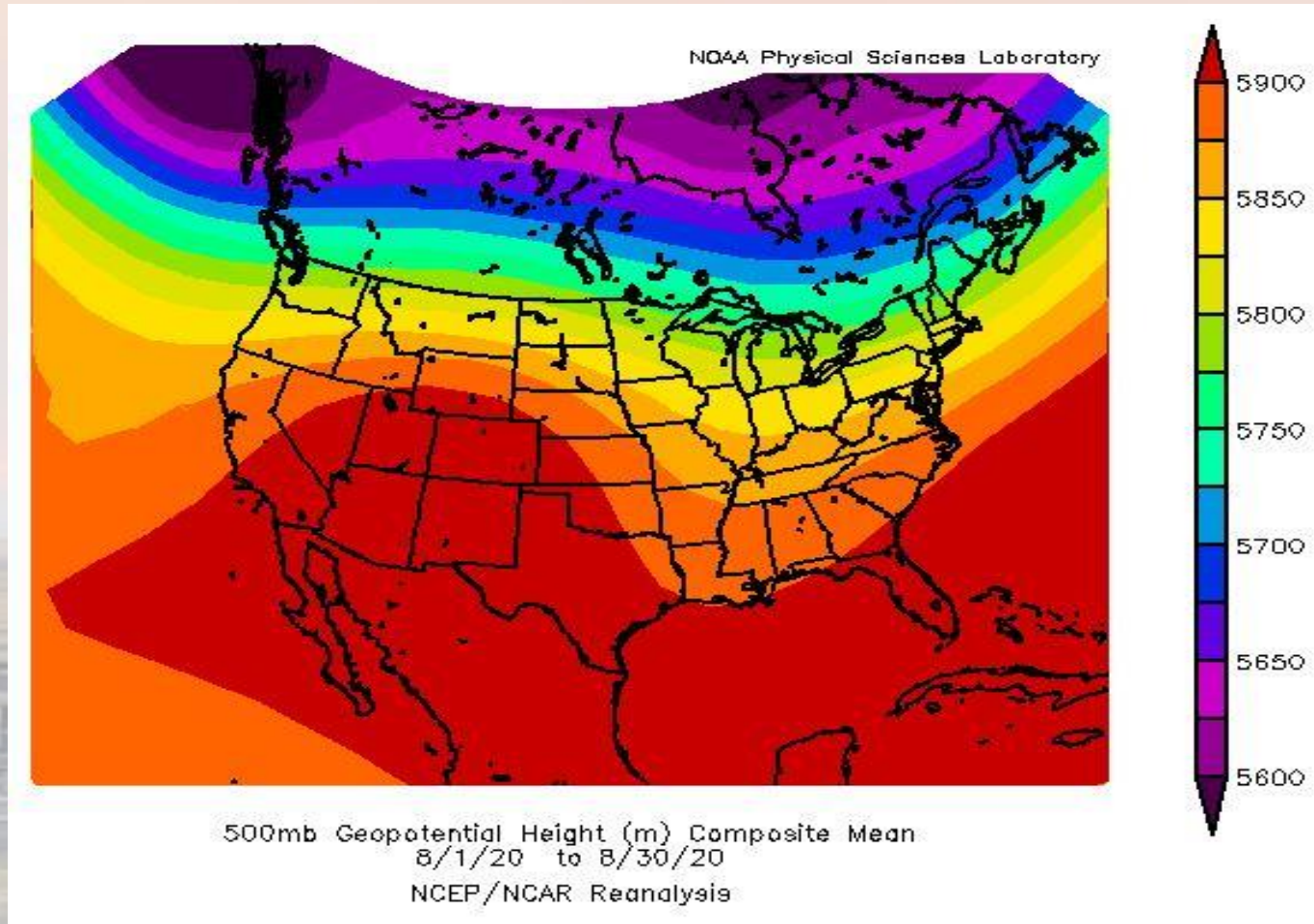
Like July, August was had a percent of normal precipitation that was very low (mostly 5 to 50 percent of normal). There were a couple small areas where the percent was between 50 to 70 percent of normal. The driest locations were the Cascades where most of the wildfires were.

August 2020, Departures from Normal Averages/Sum for Select Cites

	Max T	Max T D	Min T	Min T D	Ave T	Ave T D	PCPN	PCPN D
Yakima	89.7	2.9	55.2	3.4	72.5	3.2	0.01	-0.26
Kennewick	92.2	2.9	62.1	1.3	77.2	2.2	0.02	-0.16
Walla Walla	88.3	0.2	61.7	1.3	75	0.8	0.04	-0.53
The Dalles	89.5	2.2	60.4	0.9	74.9	1.5	Trace	-0.23
Redmond	88.8	4	48	2.8	68.4	3.4	0.01	-0.49
Pendleton Airport	88.4	1.6	57.2	0.4	72.8	1.0	0.05	-0.33
La Grande	87.3	1.6	49.3	-3	68.3	-0.7	0.04	-0.81

All of the mean temperatures (Max, Min, Avg mean temperatures) were all above normal except for La Grande, which had an above normal mean maximum temperature, but a below normal mean minimum and mean average temperature. Every station in the list had very little precipitation, but all had at least a trace to as much as 0.05 of an inch. However, this is still well below normal for August, by as much as -0.81 of an inch at La Grande, OR and -0.53 of an inch at Walla Walla, WA. Above normal temperatures and below normal precipitation are colored orange, and below normal temperatures are colored blue in the list above.

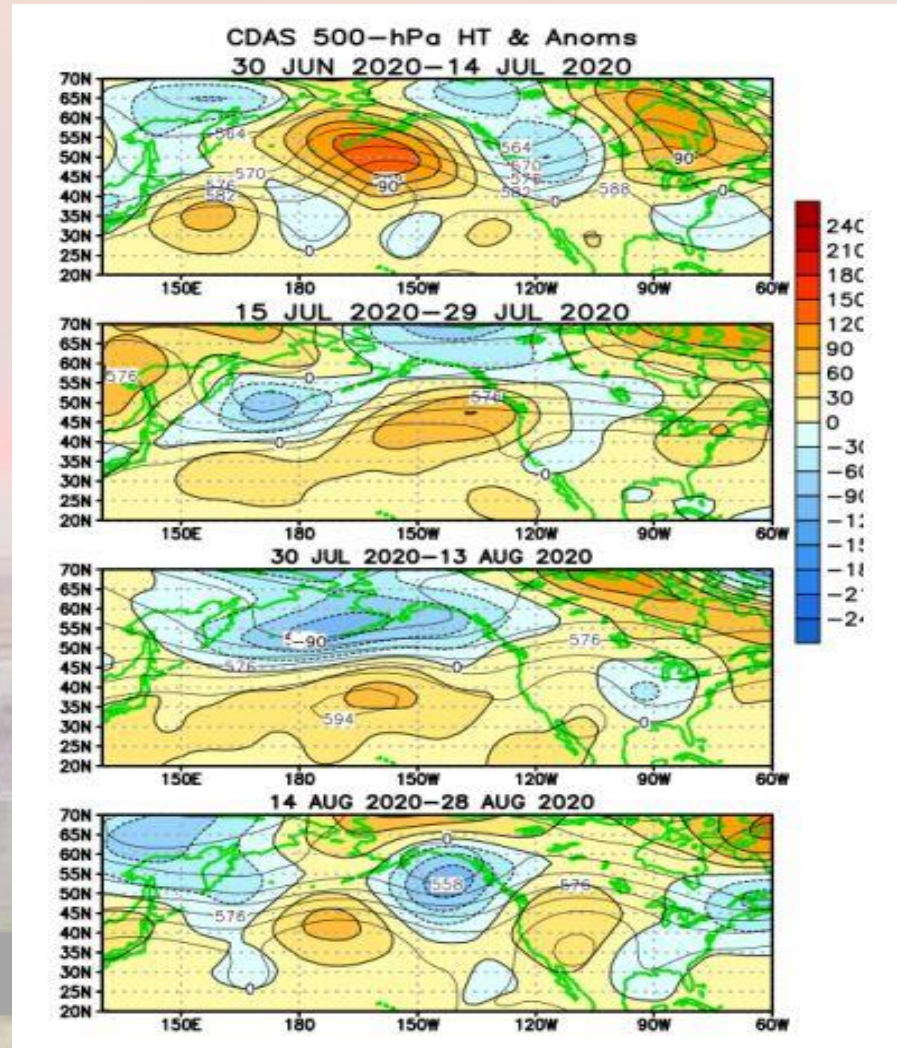
August 2020 Average 500 MB Weather Pattern



The average 500 MB pattern was an overall broad upper ridge, with the ridge axis to the east over the Rocky Mountains, which resulted in mostly a southwest flow aloft over the forecast area. This helped to keep temperatures above normal, with a few significant very hot spells. However, but more importantly, it kept the forecast area very dry with little to no precipitation across the region. There was a thunderstorm event about mid month which ignited many new fire starts, some of which smoldered until it became very hot and dry again after a brief cool down for a couple days during the middle of the month.

More Detailed 500 MB Plots for August 2020

These are more detailed semi-monthly average 500 mb pattern plots, which were from the following periods: June 30 - July 14, then July 15 - 29, then July 30 - August 13, then August 14 - 28. 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.



During the first half of July there was an overall upper trough over the Pacific Northwest, then from mid July to around the first of August the flow became a dry zonal westerly flow. For all of August the average 500 mb pattern was an upper ridge over the region which kept conditions hot and dry, except for a brief cool down for a couple days during the middle of August.

Significant Weather Events for August 2020

Significant Weather Events				
Event	Date	Report	Where	Source
TS Wnd Damage	August 5, 2020	Tree down on vehicle	La Grande, OR	Public
TS Wind Gust	August 16, 2020	M 57 mph	5 S Fossil, OR	Meso Net
TS Wind Gust	August 16, 2020	M 58 mph	9 E Dufur, OR	Meso Net
TS Wind Gust	August 16, 2020	M 57 mph	2 NNW Maupin, OR	Meso Net
TS Wind Gust	August 16, 2020	M 54 mph	Dallesport, WA (DLS)	ASOS
TS Wind Gust	August 16, 2020	M 58 mph	9 E Bingen, WA	Meso Net
TS Wind Gust	August 16, 2020	M 61 mph	17 NNW W. Richland, WA	Public
TS Wind Gust	August 16, 2020	M 58 mph	14 NNW W. Richland, WA	Public
Non-TS Wind Gust	August 16, 2020	M 58 mph	4 NNW Chenoweth, OR	Meso Net
TS Wind Gust	August 16, 2020	M 56 mph	4 NW W. Richland, WA	Meso Net
TS Wind Gust	August 17, 2020	M 51 mph	6 SW Gateway, OR	Trained Spotter
TS Wind Damage	August 17, 2020	Tree down across road	2 NNE Ione, OR	Trained Spotter
TS Wind Gust	August 17, 2020	M 61 mph	1 ENE Pasco, WA	Meso Net
TS Wind Gust	August 17, 2020	M 54 mph	Imbler, OR	Meso Net
TS Wind Gust	August 17, 2020	M 52 mph	Pasco Airport, WA (PSC)	ASOS
TS Wind Damage	August 17, 2020	Power Line Down on road	6 NNW Madras, OR	Trained Spotter
TS Wind Gust	August 17, 2020	M 65 mph, Tree Down	6 SW Gateway, OR	Trained Spotter
TS Wind Damage	August 17, 2020	Roof torn off car port	7 NW Gateway, OR	Media
Large Hail	August 19, 2020	E 0.75 inch	Enterprise, OR	Trained Spotter

There were several significant thunderstorm events during August. The largest one was on August 16th – 17th, with mostly strong to severe thunderstorm wind gusts. There was a thunderstorm event with large hail on the 19th, and another thunderstorm event on the 5th, which toppled over a tree onto a vehicle.

Record Weather Reports for August 2020

Record Weather Reports					
Event	Date	Where	Previous Record	New Record	Records Began
Low Temp	August 14, 2020	La Grande, OR	41 / 1995	41 (tied)	1887
Low Temp	August 14, 2020	Walla Walla, WA	53 / 1984	53 (tied)	1948
High Temp	August 15, 2020	Meacham, OR	92 / 2003	93	1929
High Temp	August 15, 2020	Redmond, OR	102 / 1967	103	1941
High Temp	August 16, 2020	Meacham, OR	96 / 2008	99	1929
High Temp	August 16, 2020	Yakima, WA	101 / 2008	102	1909
High Temp	August 17, 2020	Long Creek, OR	99 / 2008	103	1908
High Temp	August 17, 2020	McNary Dam, OR	97 / 2010	98	1954
High Temp	August 17, 2020	Hanford, WA	108 / 2008	109	1945
High Temp	August 17, 2020	Pasco, WA	104 / 2010	106	1942
High Minimum	August 18, 2020	Hermiston, OR	71 / 2004	73	1906
High Minimum	August 18, 2020	Pendleton, OR	69 / 1967	72	1934
High Minimum	August 18, 2020	Redmond, OR	62 / 1977	62 (tied)	1949
High Minimum	August 18, 2020	Hanford, WA	73 / 2016	74	1945
High Minimum	August 18, 2020	Pasco, WA	69 / 2010	73	1942
High Minimum	August 18, 2020	Walla Walla, WA	73 / 2010	79	1949
High Minimum	August 18, 2020	Bend City, OR	61 / 1931	70	1901
High Minimum	August 18, 2020	7 NE Bend, OR	63 / 1992	67	1990
High Minimum	August 18, 2020	Long Creek, OR	58 / 2004	69	1908
High Minimum	August 18, 2020	McNary Dam, OR	67 / 2016	67 (tied)	1954
High Minimum	August 18, 2020	Ice Harbor Dam, WA	70 / 1967	70 (tied)	1957

All of the record reports during August were temperatures, that were mostly either high maximums or high minimums from August 14th to August 16th, during a heat wave that brought 100+ degree temperatures to many locations.

August 2020 Observed Monthly Max & Min Temperatures

Location	Highest Maximum Temperature	Lowest Minimum Temperature
Pendleton, OR	103	45
Redmond, OR	103	37
Pasco, WA	106	48
Yakima, WA	102	42
Walla Walla, WA	103	53
Bend, OR	99	39
Ellensburg, WA	103	47
Hermiston, OR	103	44
John Day, OR	99	37
La Grande, OR	102	36
The Dalles, OR	102	53
MT Adams RS, WA	96	39

Every station in the list had a monthly maximum temperature of 100 or higher, except for Bend, OR, John Day, OR, and the Mt. Adams Ranger Station (which is not a surprise given the elevation). However, In August, it can still get quite chilly at night. These stations all had monthly lowest minimum temperatures In the 30s and 40s, except for The Dalles, OR, and Walla Walla, WA, which both had a lowest minimum of 53.

August 2020, Monthly Precipitation and Snowfall/Hail Totals

Location	Total Monthly Precip (inches)	Total Snowfall/Hail (inches)
Pendleton, OR	0.05	0
Redmond, OR	0.01	0
Pasco, WA	0.17	0
Yakima, WA	0.01	0
Walla Walla, WA	0.04	0
Bend, OR	0.00	0
Ellensburg, WA	T	M
Hermiston, OR	T	0
John Day, OR (RAWS)	0.13	M
La Grande, OR	0.04	M
The Dalles, OR	T	M
Mt Adams RS, WA	0.00	0

Precipitation amounts were very light to none for all stations. Only Pasco, WA and John Day, OR had more than a tenth of an inch for the month. None of these reporting stations observed snow or hail. There were 3 stations which reported only a trace for the month, and 2 of the stations listed reported 0.00 of an inch of precipitation for the month, including the higher elevation station, the Mt. Adams Ranger Station in the Washington Cascades.

August 2020 - Drought Monitor

U.S. Drought Monitor West

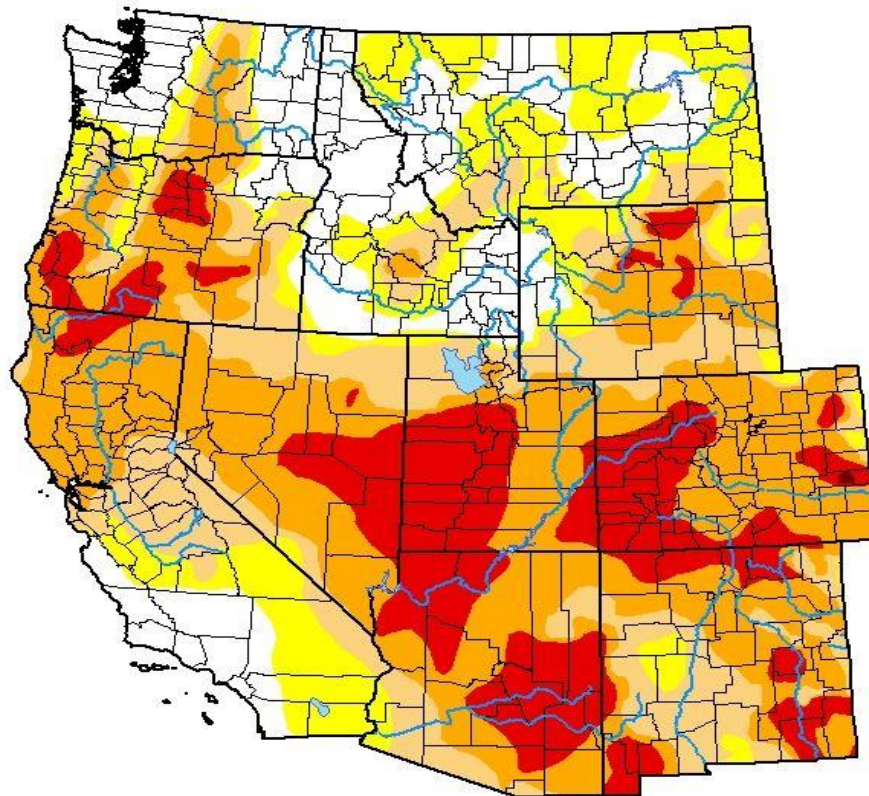
August 25, 2020

(Released Thursday, Aug. 27, 2020)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	17.08	82.92	66.93	48.09	16.88	0.03
Last Week <i>08-18-2020</i>	18.84	81.16	65.56	40.92	9.10	0.00
3 Months Ago <i>05-26-2020</i>	41.59	58.41	39.36	16.58	2.96	0.00
Start of Calendar Year <i>12-31-2019</i>	59.17	40.83	18.17	7.12	0.00	0.00
Start of Water Year <i>10-01-2019</i>	68.40	31.60	16.32	3.16	0.00	0.00
One Year Ago <i>08-27-2019</i>	71.53	28.47	10.10	1.07	0.00	0.00



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:

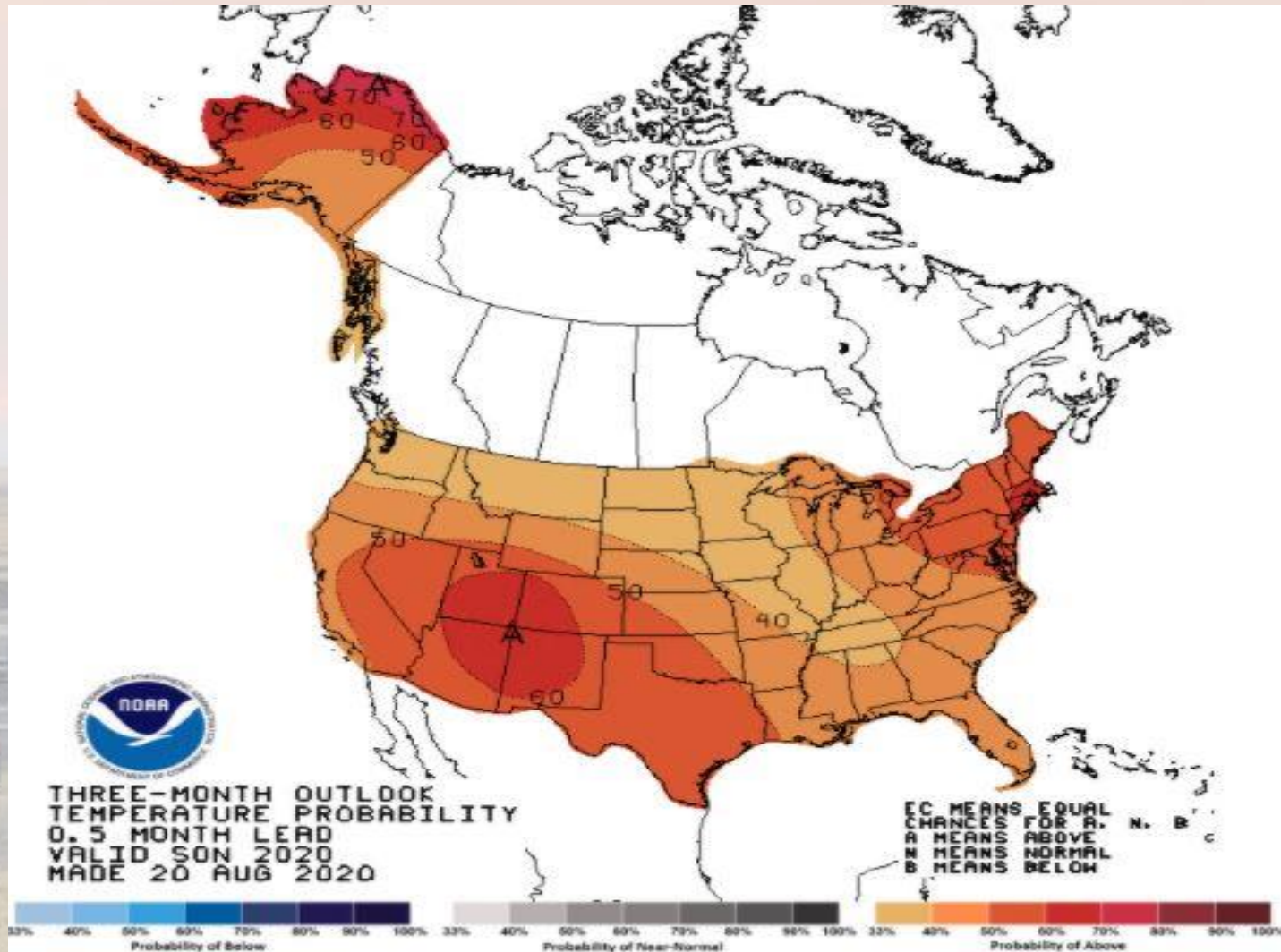
David Simeral
Western Regional Climate Center



droughtmonitor.unl.edu

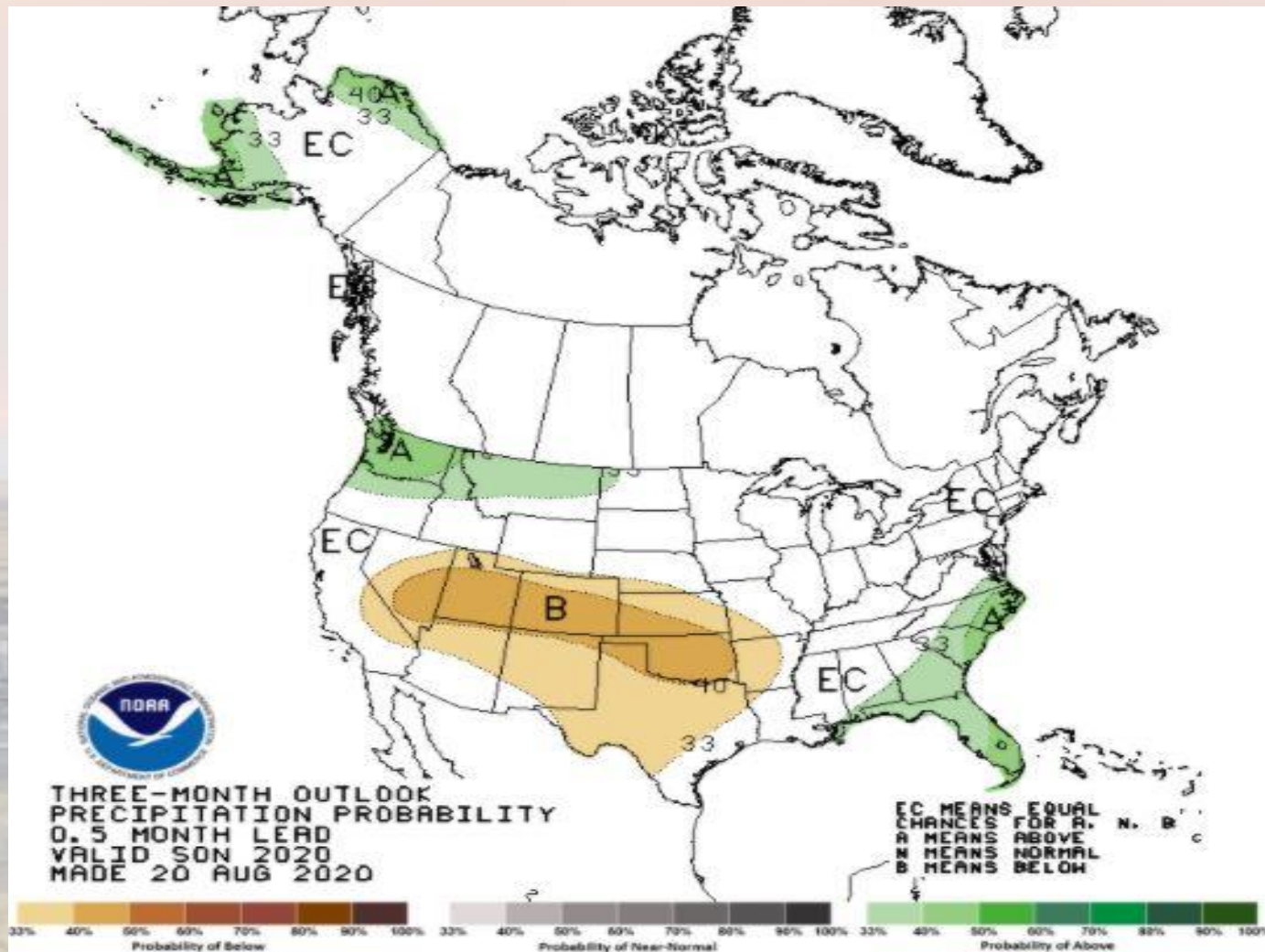
As of August 25th, there was an “Extreme Drought” (D3) over north-central Oregon, which is where most of the wildfire activity was. Elsewhere, drought conditions ranged from “Abnormally Dry” (D0) to “Severe Drought” (D2). The exception of over far northeast Oregon and far southeast Washington where there were no drought conditions (classified as “None”).

USA Three Month Temperature Outlook



The temperature outlook for the next 3 months (September – November) are above normal with about a 30 - 50 percent chance. The warmest will be in the southern forecast area.

USA Three Month Precipitation Outlook

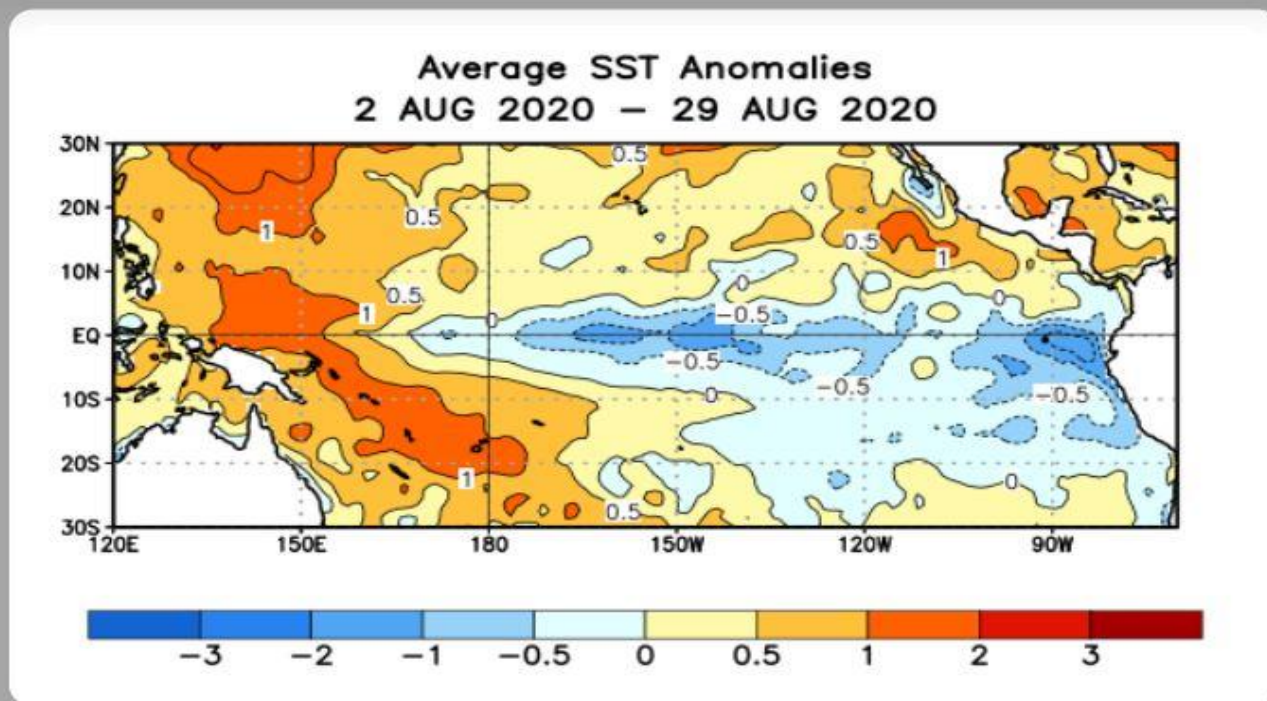


The precipitation outlook for the next 3 months (September – November) look to be above normal over northern areas of the forecast area, and equal chances over the southern most areas of the forecast area (Northeast Oregon and Southeast Washington).

Average Sea Surface Temperature (SST) Anomalies for August 2020

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

During the last four weeks, equatorial SSTs were mostly below average from the Date Line to the eastern Pacific, and were above average in the western Pacific.



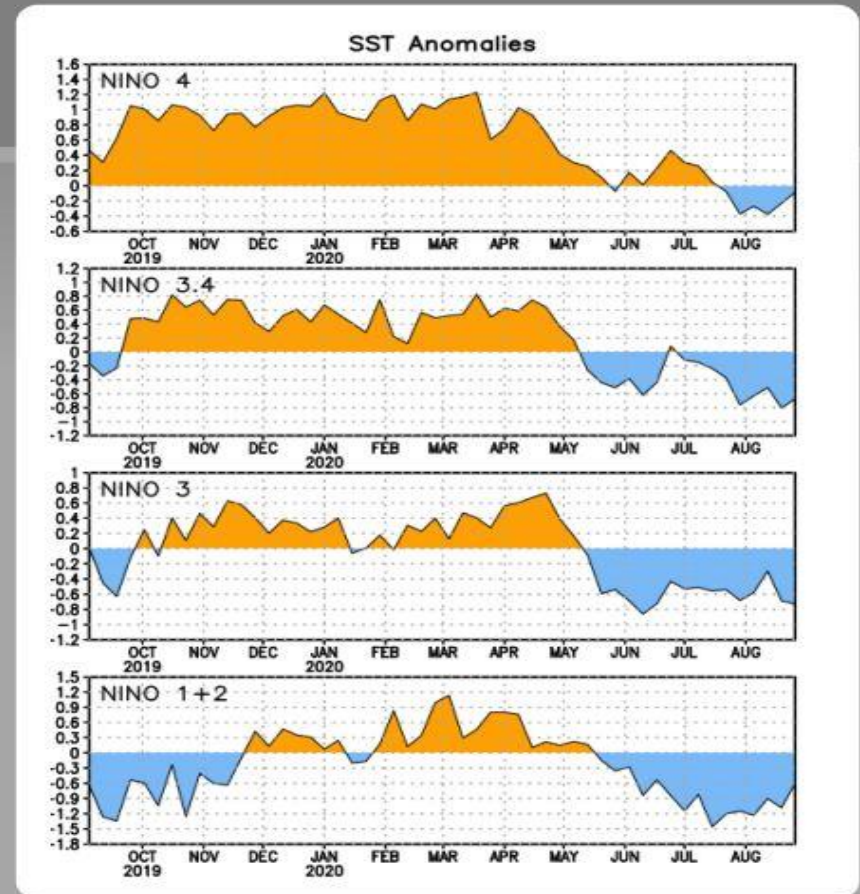
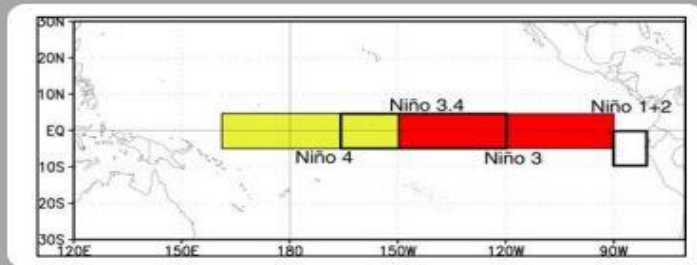
SSTs were below average again in August over the central and eastern Pacific by about -0.5 degrees to -2 degrees. These last few months of below normal SSTs are consistent with an expected La Nina event which is likely to develop this autumn and persist through the 2020 – 2021 winter.

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	-0.1°C
Niño 3.4	-0.7°C
Niño 3	-0.7°C
Niño 1+2	-0.6°C



All Niño Regions are showing below normal SST's again at this time. This continued cooling during the past 3 – 4 months is consistent with the possibility of a La Nina event which may occur from this autumn through the winter. In fact, there is a La Nina Watch still in effect.

Current ENSO (El Nino Southern Oscillation) Alert System Status

Goodbye ENSO Neutral and Hello ENSO La Nina

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

ENSO-neutral conditions are present.*

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

The tropical atmospheric circulation is consistent with ENSO-neutral.

There is a ~60% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~55% chance).*

The current ENSO status is still: La Nina Watch, but currently still neutral. ENSO conditions are now present with near to below normal SSTs across the eastern and central Pacific Ocean. The chances for a La Nina event is now 60 percent (up from 55 percent last month) in the Northern Hemisphere developing this autumn and continuing through the 2020 – 2021 winter.



Thank You!