National Weather Service Medford

September 2020 Climate Summary

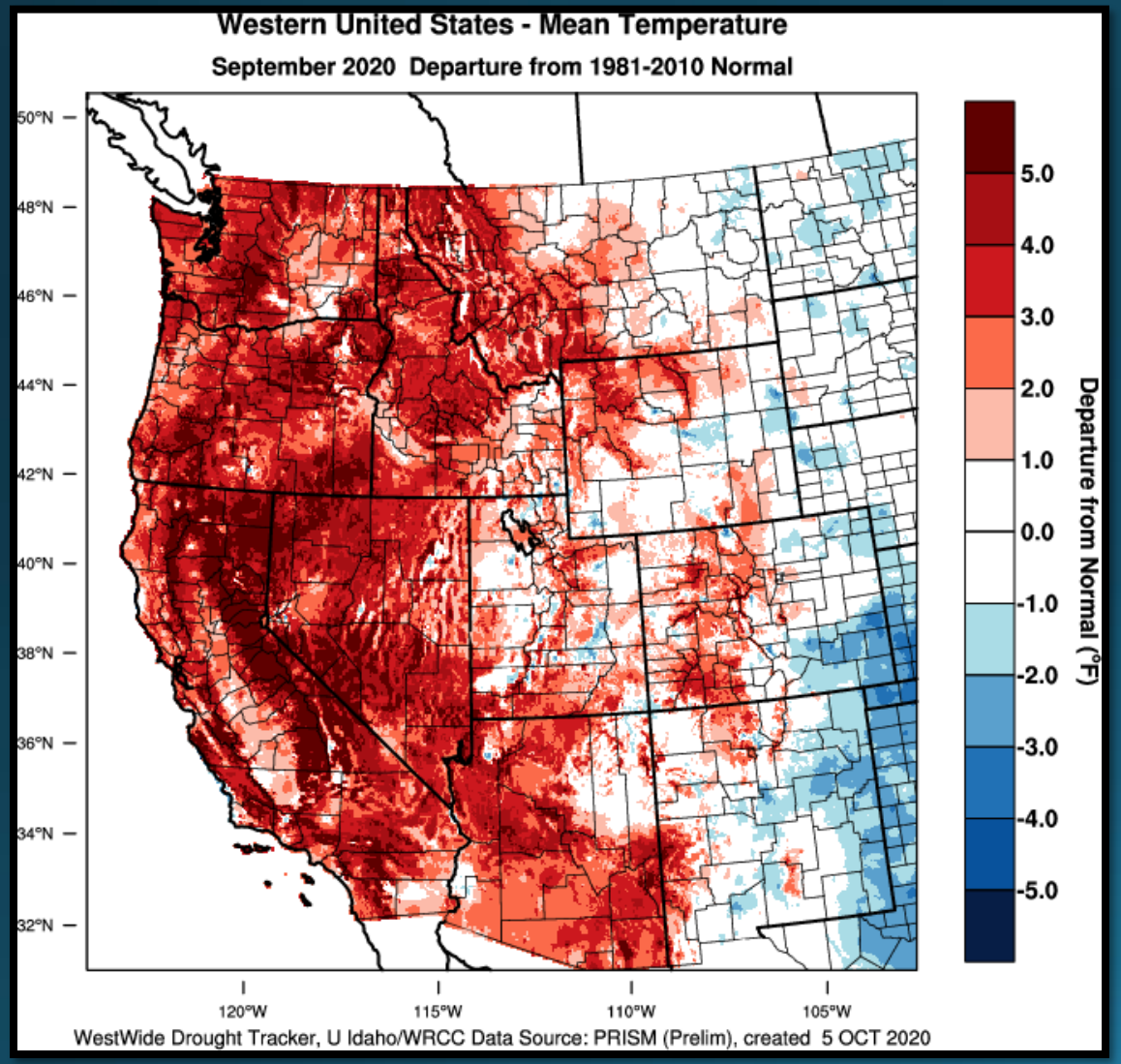
*These data are preliminary and have not undergone final QC by NCEI. Therefore, these data are subject to revision. Final and certified climate data can be accessed at the National Centers for Environmental Information (NCEI).

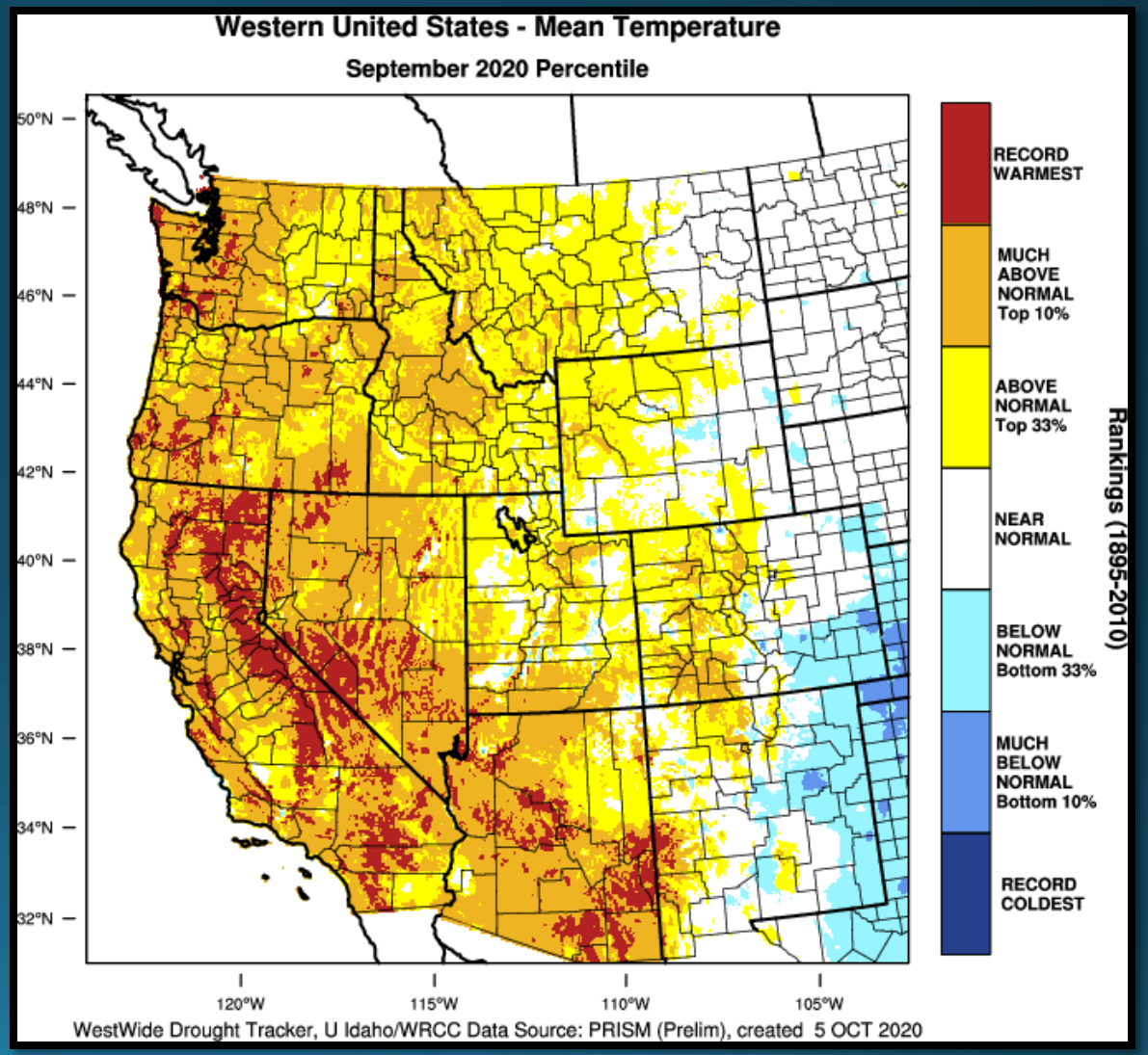
September 2020 Weather Review

September 2020 was a historic month for the Medford forecast area, filled with numerous days of critical fire weather conditions. High pressure aloft and a thermal trough at the surface became the dominant weather drivers for much of the month. Triple digit high temperatures occurred for five of the first seven days of the month. On the 8th, a significant and dangerous fire weather pattern developed over the area. Upper level low pressure slid down the backside of the ridge (inside slider) and settled over the Great Basin area while the thermal trough along the coast strengthened. This pattern resulted in a very strong offshore (easterly wind) event across the forecast area with Red Flag Warnings across the entire CWA. Southeast winds gusted to 41 mph at the Medford Airport and relative humidities bottomed out at 7 percent that afternoon. Multiple wildfires spread rapidly and significantly under this weather pattern, including some in the Rogue Valley. The Almeda Fire started in the northern portions of Ashland and quickly spread to the Talent and Phoenix areas. Thousands of residents were evacuated due to the quickly spreading wildfire and over 2400 homes and 165 commercial properties were lost. This was likely the largest disaster for the Rogue Valley in modern history. Although winds were weaker, gusty winds continued the following day and another fire developed in the north Medford/Central Point area where residents had to evacuate as well. Fortunately, the damage was considerably less and only some outbuildings were damaged. In addition, the Obenchain Fire started to the east of Shady Cove/Eagle Point, forcing evacuations for the residents of Shady Cove. Although the damage was not as extensive as the Almeda Fire, there were about 50 homes impacted by this fire. Several other fires were burning in the forecast area during this time as well. There was the Two Four Two Fire that burned near Chiloquin, the Brattain Fire near Paisley, the Archie Creek Fire near Steamboat, the Theilsen Fire near Diamond Lake, and the Slater Fire that started near the Slater Butte Fire Lookout. Many of these fires resulted in numerous evacuations across the area including residents of Paisley, portions of the Illinois Valley and Happy Camp area. In the following days, critical fire weather conditions moderated but very thick smoke from the numerous fires all along the west coast blanketed the area, resulting in many days of very unhealthy air quality with visibilities down to a quarter mile. Although the air quality was downright miserable, the thick smoke helped to moderate temperatures and keep fire activity down.

Not much change in the weather occurred through mid-month with low pressure remaining offshore and high pressure remaining in control. This finally changed on the 18th when the low pressure moved inland. Although it weakened considerably as it did so, it did bring a threat of thunderstorms to the area, mainly for areas west of the Cascades and north of the Umpqua Divide. While only a trace of precipitation was measured at the Medford Airport, more substantial precipitation fell over the many fires to our north, including the Archie Creek fire. This helped to greatly reduce smoke output while the winds associated with the low pressure system cleared the smoke out of the area and brought much improved air quality. After a few days of quiet weather, a stronger low pressure moved into the Pacific Northwest and the Medford Airport recorded it`s first day of measurable precipitation in 99 days on the 24th. This tied the record for the 7th longest stretch of no measurable precipitation at the Medford Airport. While only 0.05" was recorded at the Airport, other areas west of the Cascades, and more importantly local wildfires, received between 0.50" to 1.50" of rain. This once again greatly helped reduce smoke output resulting in continued good air quality across the area. After a few days of fall-like conditions, the weather pattern took a U-turn back to summer with an extended period of hot temperatures and no chances of precipitation. Temperatures quickly warmed across the area, resulting in record breaking high temperatures for many of our climate sites. Records would likely have been challenged again on the 30th if not for smoke returning to the area and helping to moderate temperatures.

September 2020 Observed Temperatures





Average Temperatures

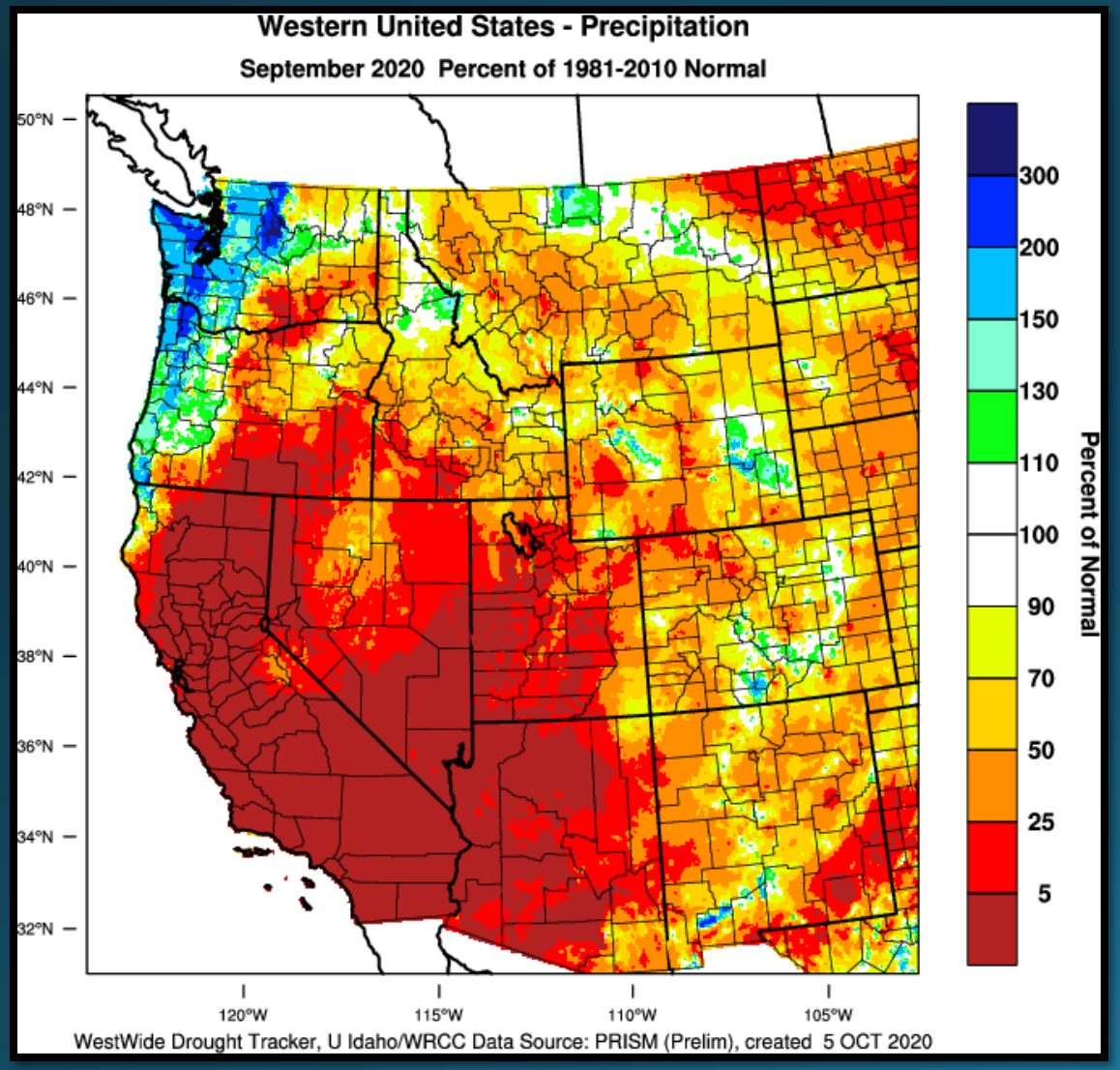
	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	61.8	4.4°	70.3	5.5°	53.3	3.3°
Roseburg	68.5	3.6°	82.2	3.6°	54.8	3.6°
Medford	70.8	4.0°	87.2	3.7°	54.3	4.3°
Klamath Falls	61.9	4.5°	82.9	7.1°	40.8	1.7°
Montague, CA	69.5	7.3°	88.9	7.6°	50.0	6.9°
Mt. Shasta City, CA	65.4	4.9°	84.3	6.3°	46.5	3.5°
Alturas, CA	61.9	5.6°	85.5	7.9°	38.3	3.3°

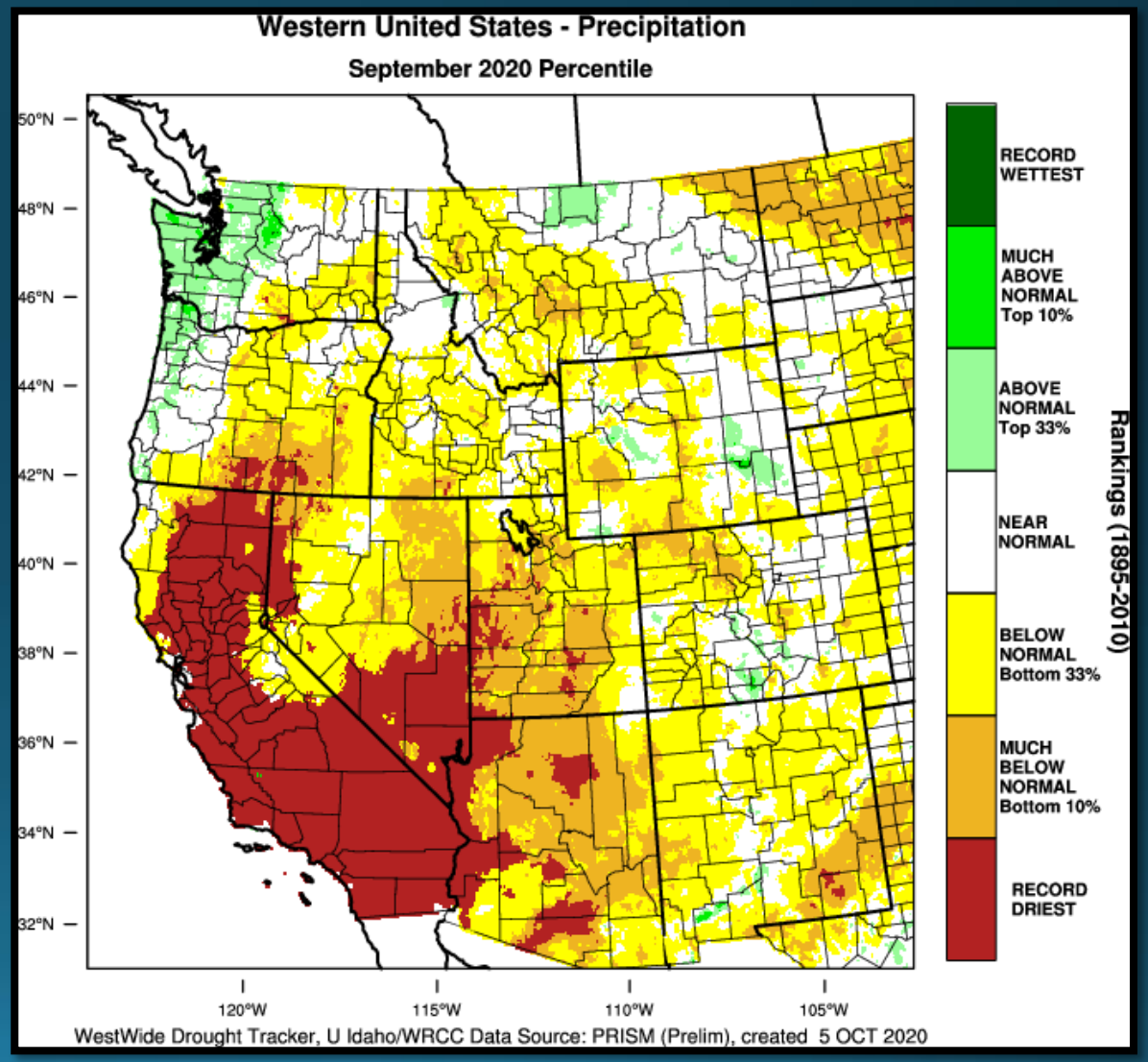
Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	94°	28th	47°	12th
Roseburg	99°	3rd	48°	13th & 28th
Medford	103°	2nd & 3rd	47°	25th & 27th
Klamath Falls	98°	3rd	32°	20th
Montague, CA	105°	3rd	41°	20th
Mt. Shasta City, CA	99°	3rd	39°	28th
Alturas, CA	102°	4th	30°	9th

	Record High	Date	Old Record/Year
Medford	98°	28th	94° / 2003
	98°	29th	96° / 1987
Montague	102°	7th	98° / 1975
North Bend	90°	8th	80° / 1960
	94°	28th	87° / 1920
Roseburg	99°	3rd	97° / 2003
	96°	29th	93° / 2011
Klamath Falls	96°	4th	Ties with 2017
	95°	6th	93° / 1944
Mt Shasta City	93°	6th	Ties with 1962
	98°	7th	93° / 1981
	90°	28th	Ties with 2003

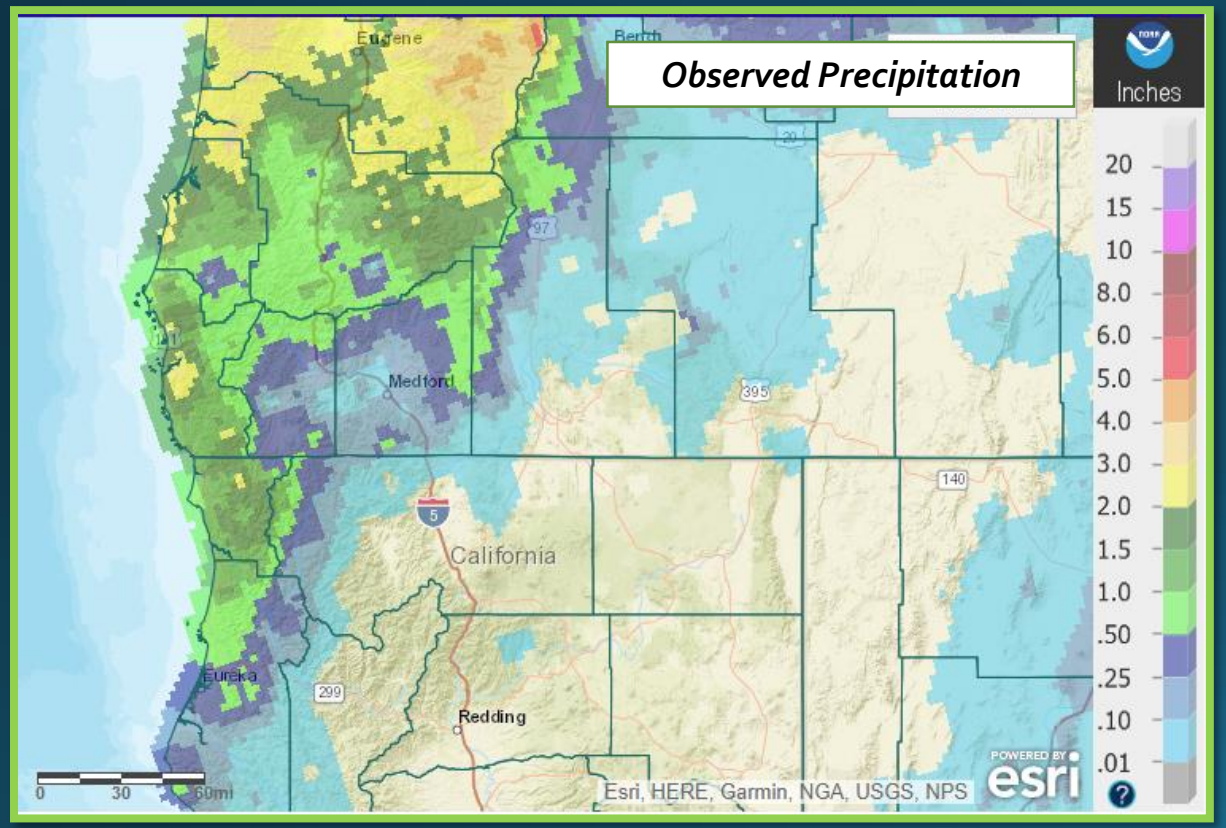
September 2020 Observed Precipitation

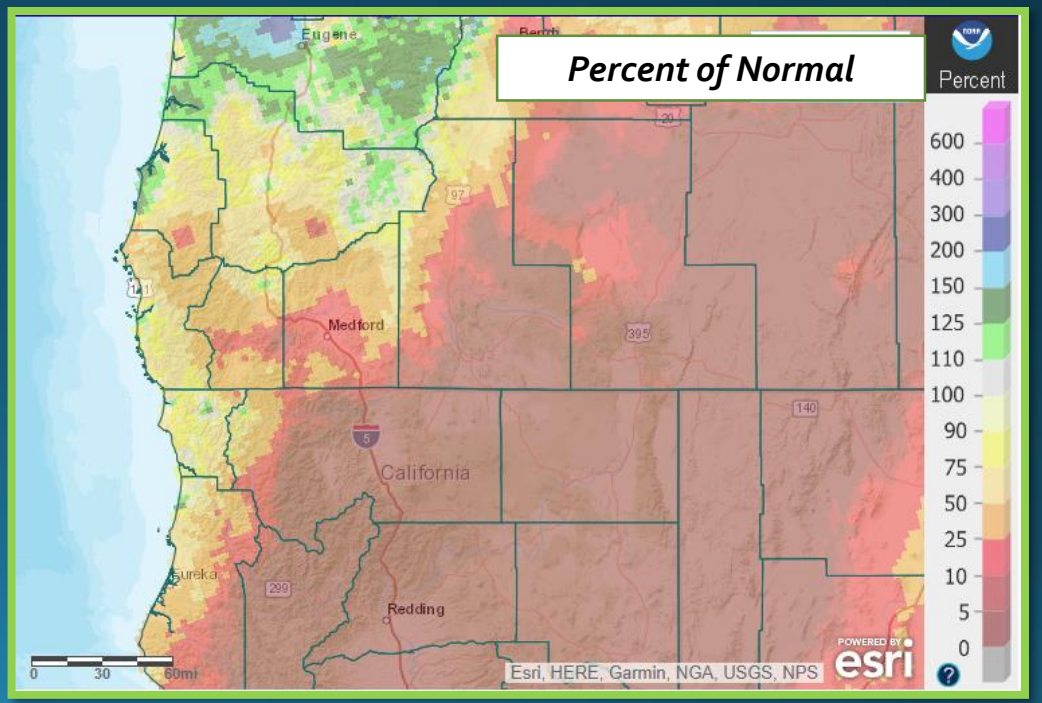




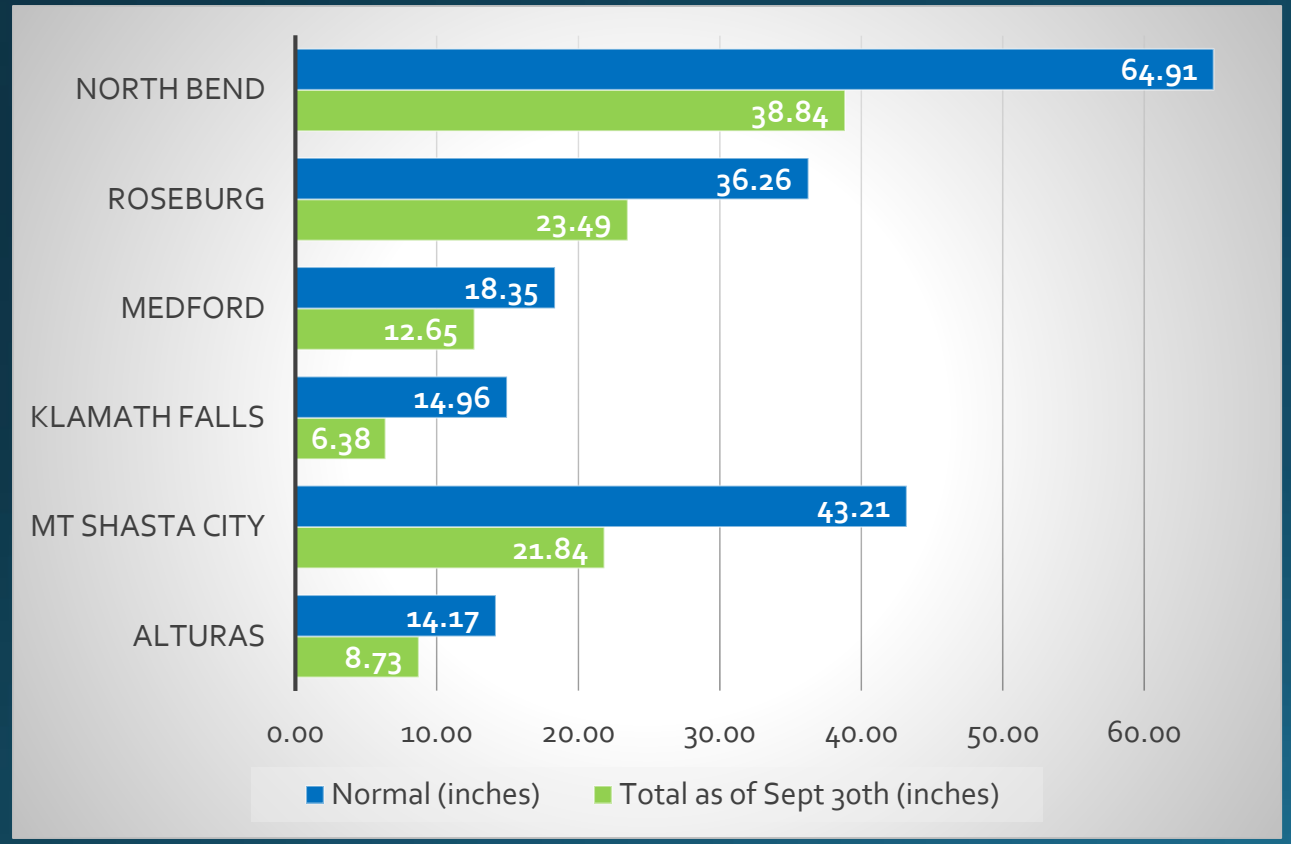
Precipitation

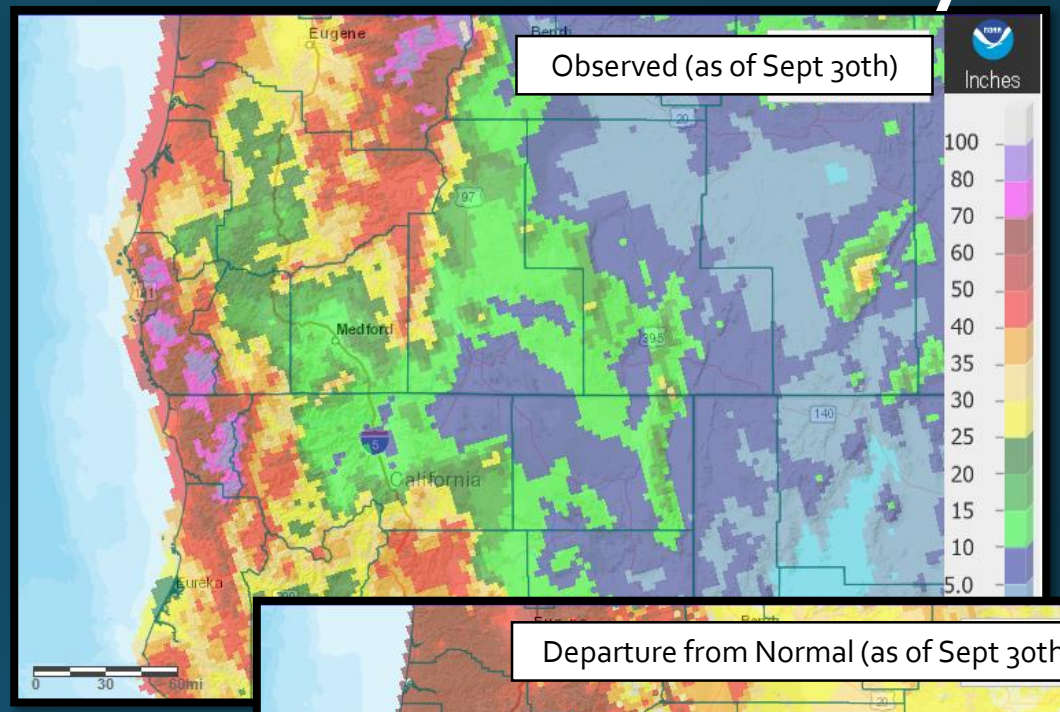
	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	*1.37"*	*-0.21"*	*0.61"*	*18th*
Roseburg	*1.03"*	*0.07"*	*0.54"*	*18th*
Medford	*0.05"*	*-0.52"*	*0.04"*	*24th*
Klamath Falls	*Trace*	*-0.53"*	*Trace*	*25th*
Montague, CA	*Trace*	*-0.64"*	*Trace*	*24th*
Mt. Shasta City, CA	*0.00"*	*-0.67"*	*N/A*	*N/A*
Alturas, CA	*0.00"*	*-0.52"*	*N/A*	*N/A*

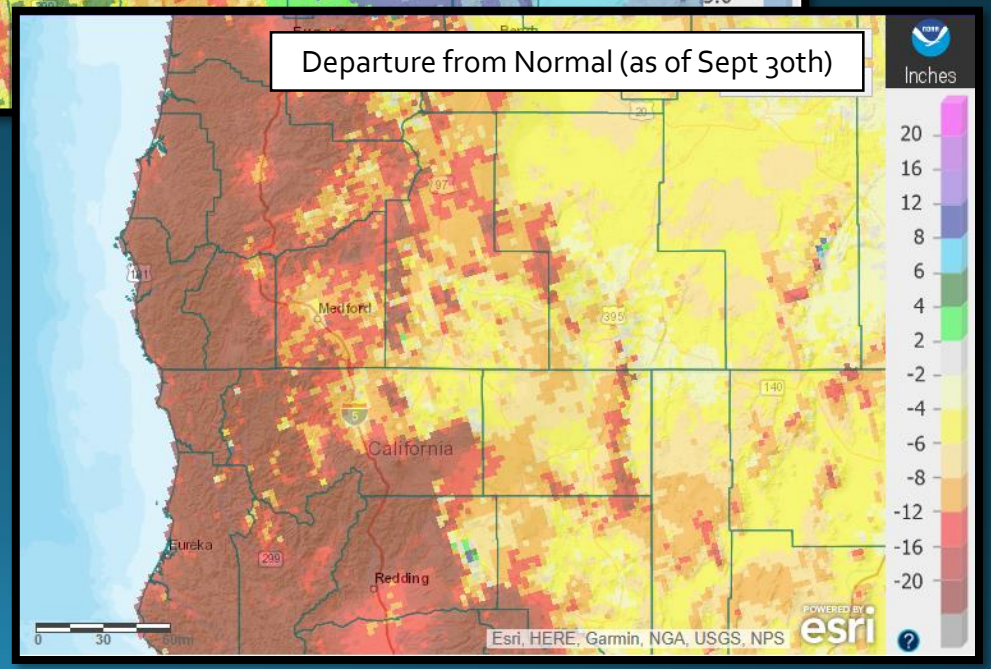




2019-2020 Water Year Summary



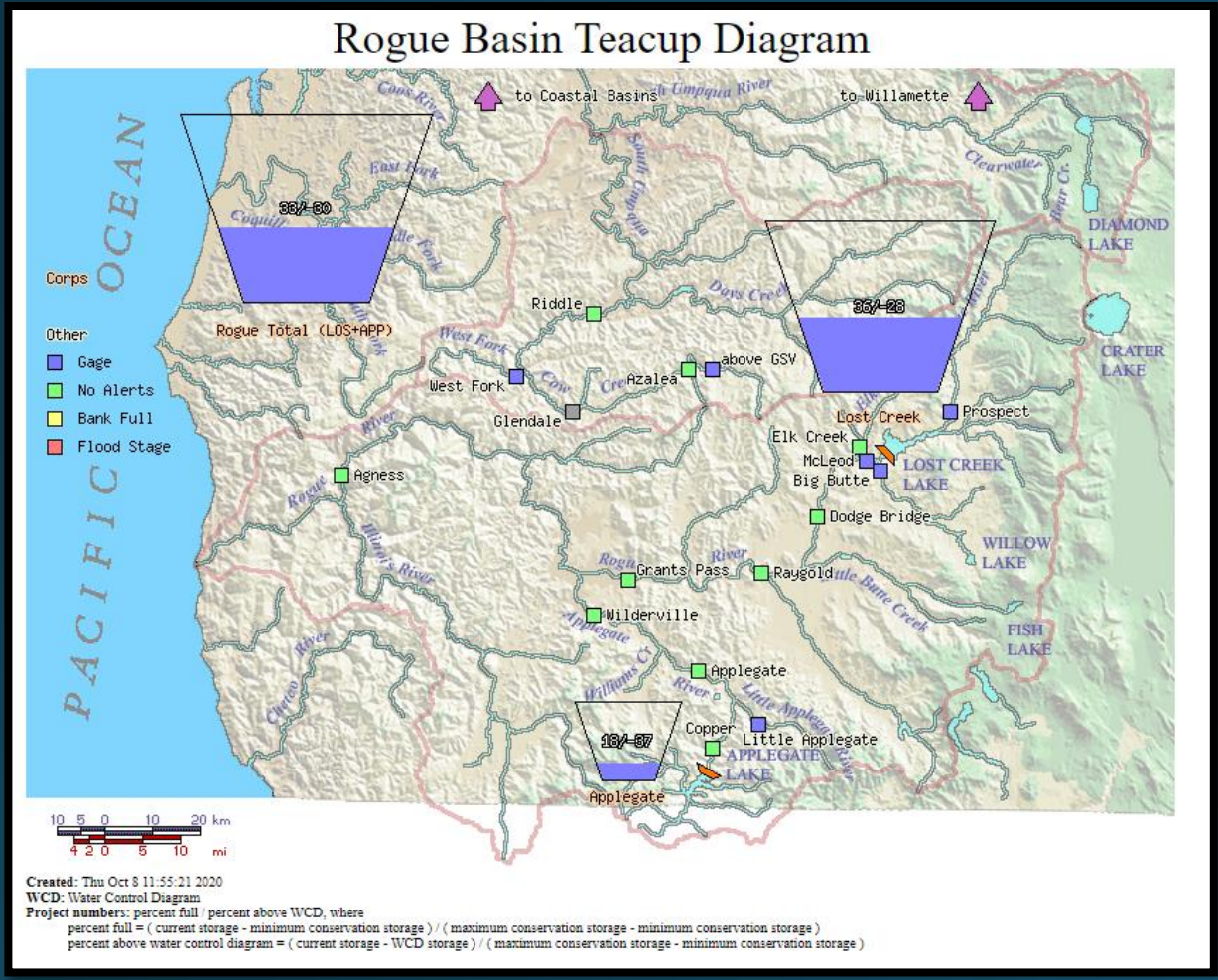


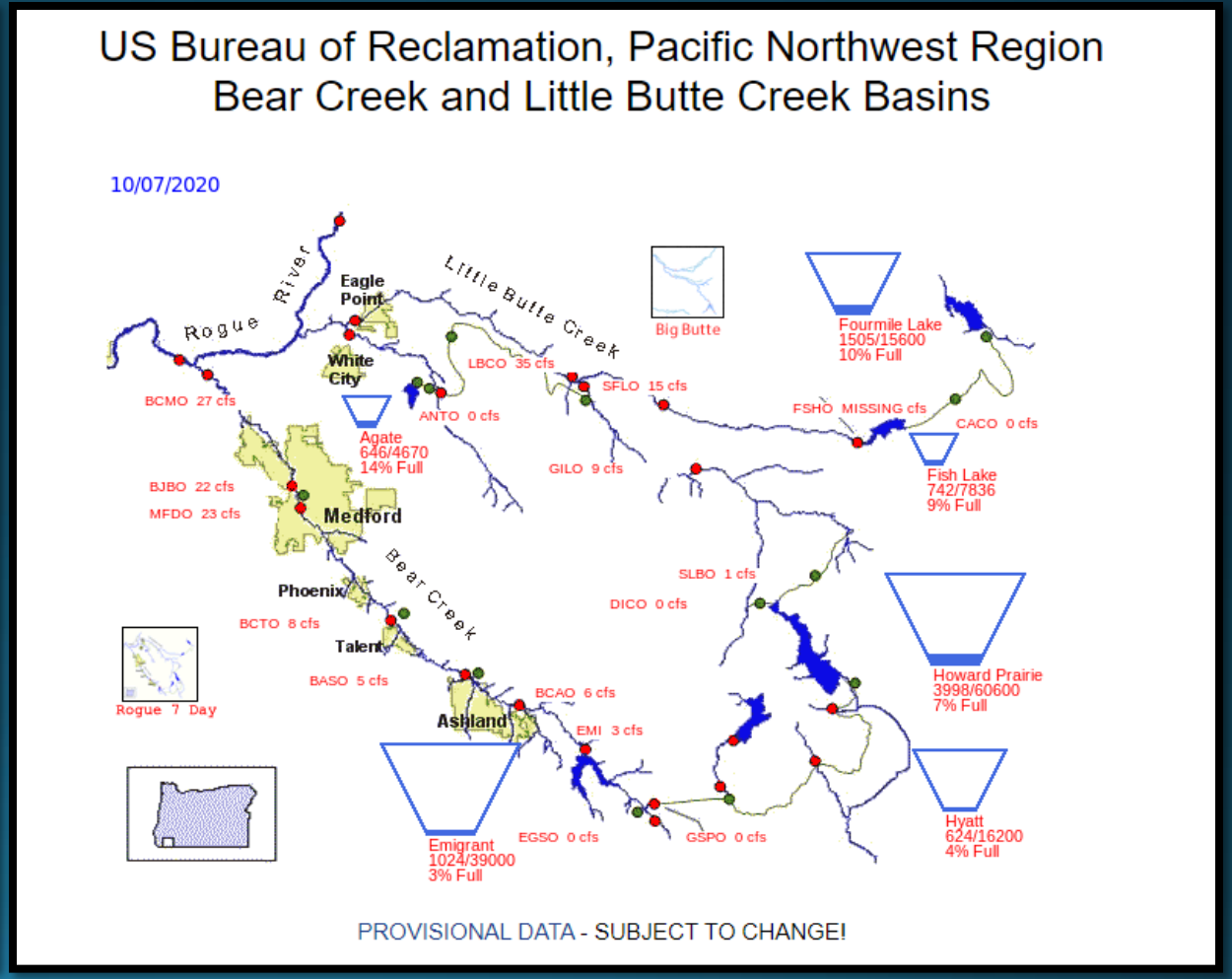


Reservoir Status

Data courtesy of US Army Corps of Engineers

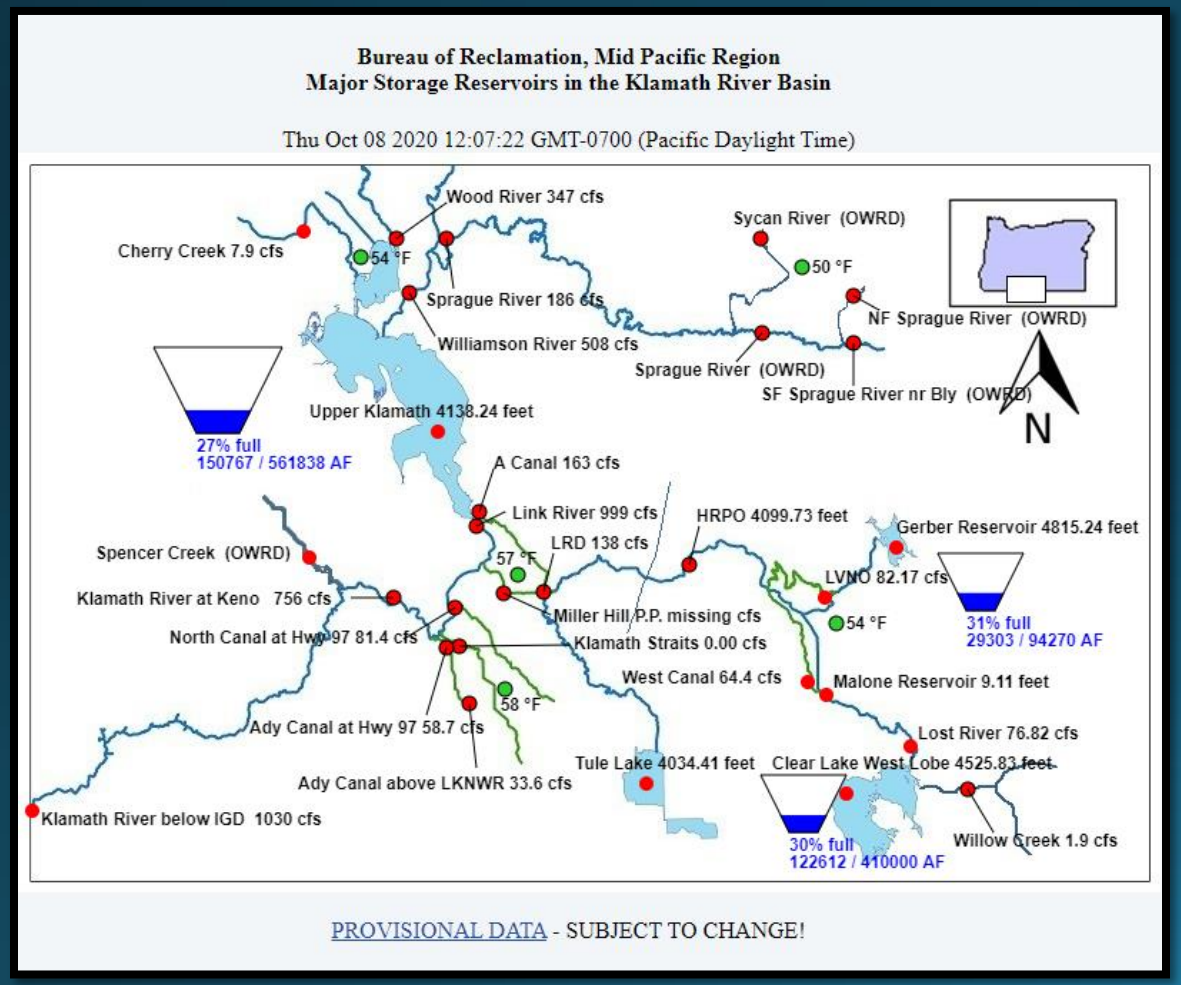
Data courtesy of Bureau of Reclamation

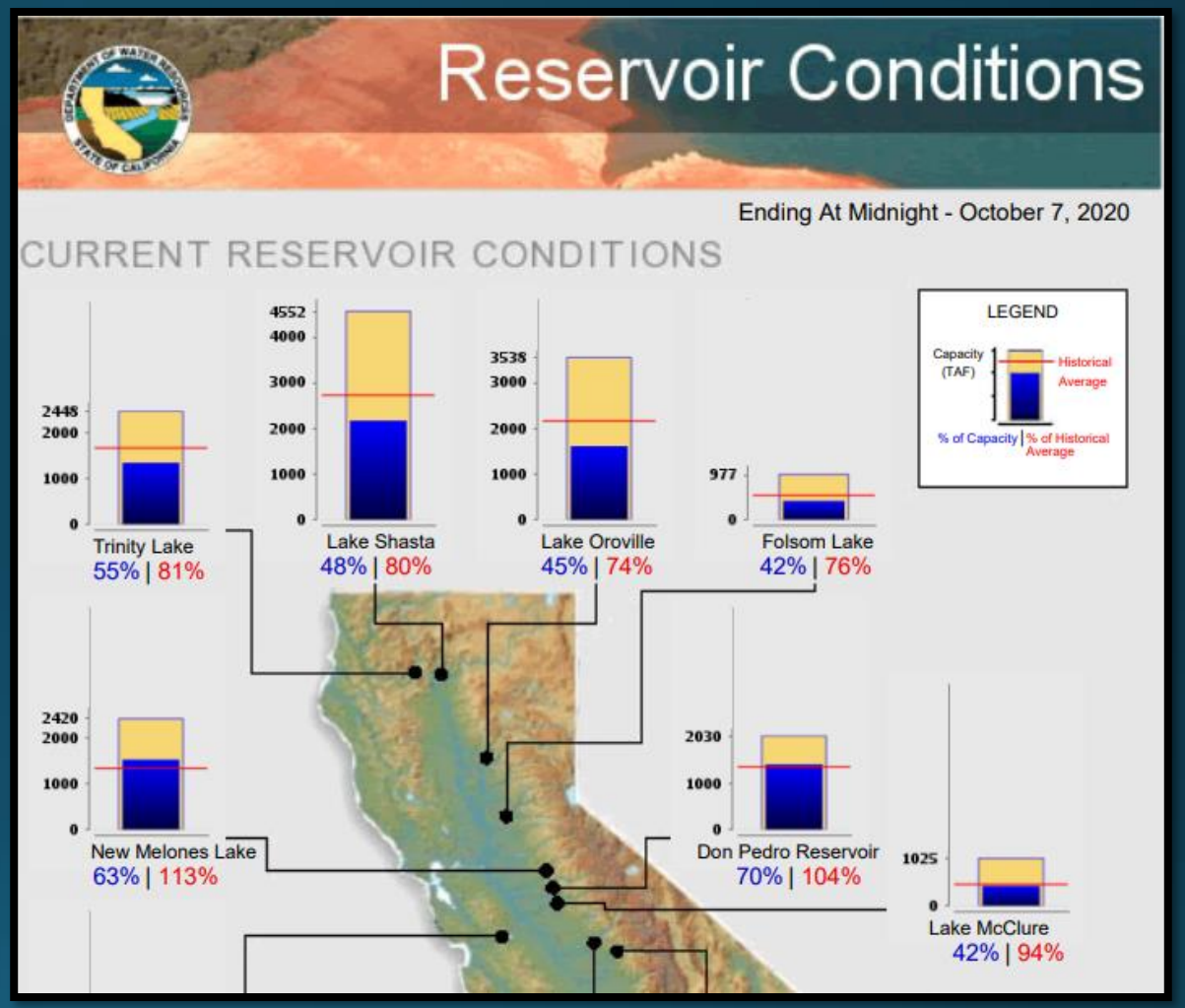




Reservoir Status

Klamath River Basin. Data courtesy of Bureau of Reclamation





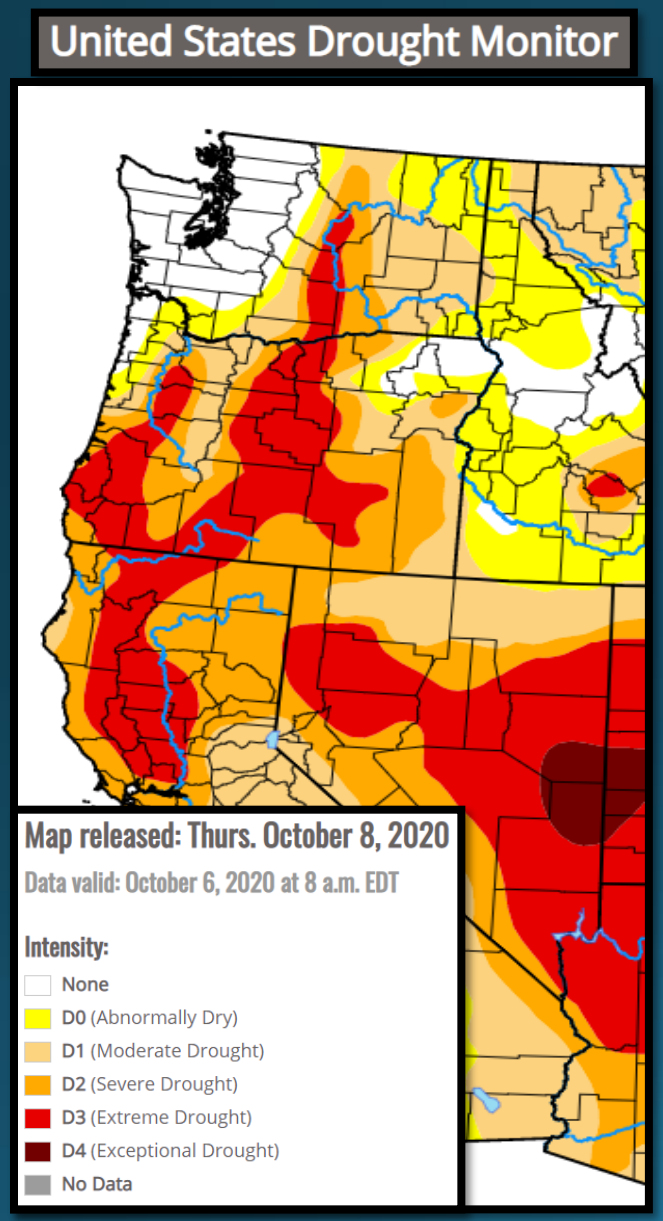
Northern California. California Data Exchange Center

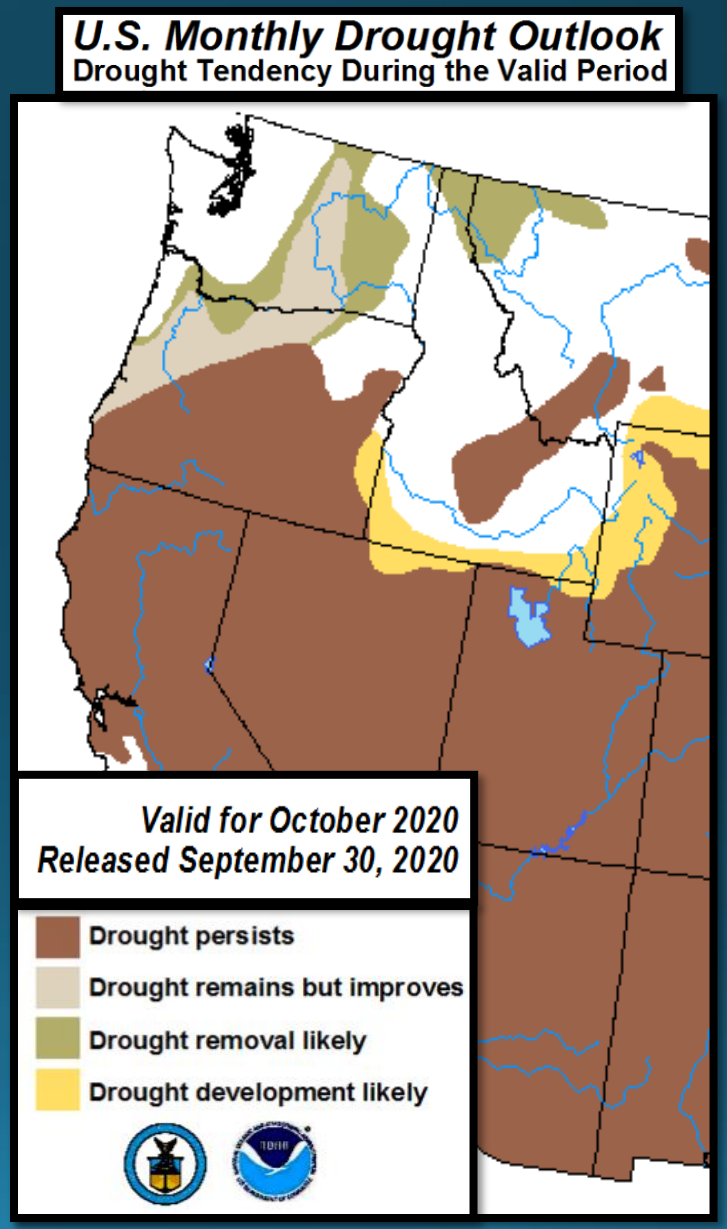
Crater Lake

Image: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 9/30/20	Highest Max/ Lowest Min
September	67.7°	43.9°	1.44"	0.0"	0"	84° on 4th & 5th / 32° on 27th
Normal (1981-2010)	63.1°	36.1°	1.98"	3.3"	1"	N/A

Drought Monitor (Current) & Outlook (October)

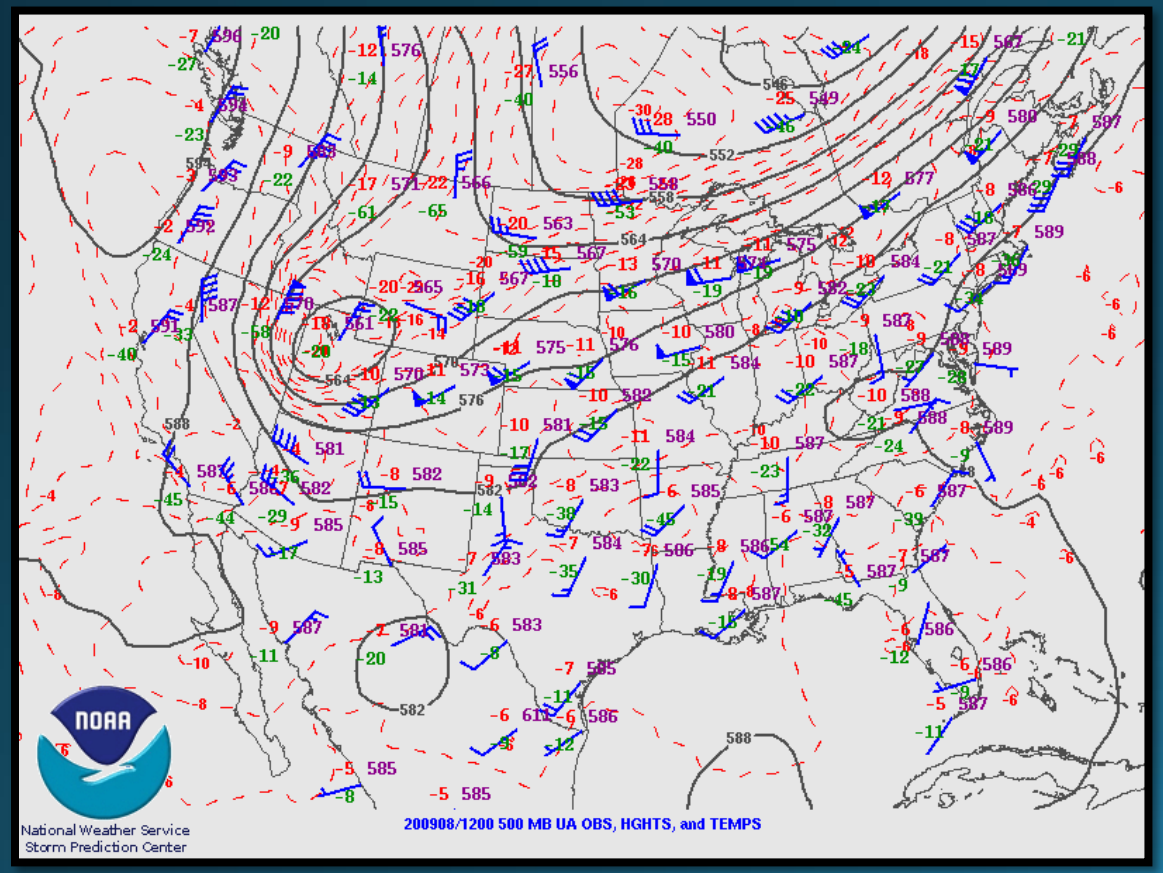


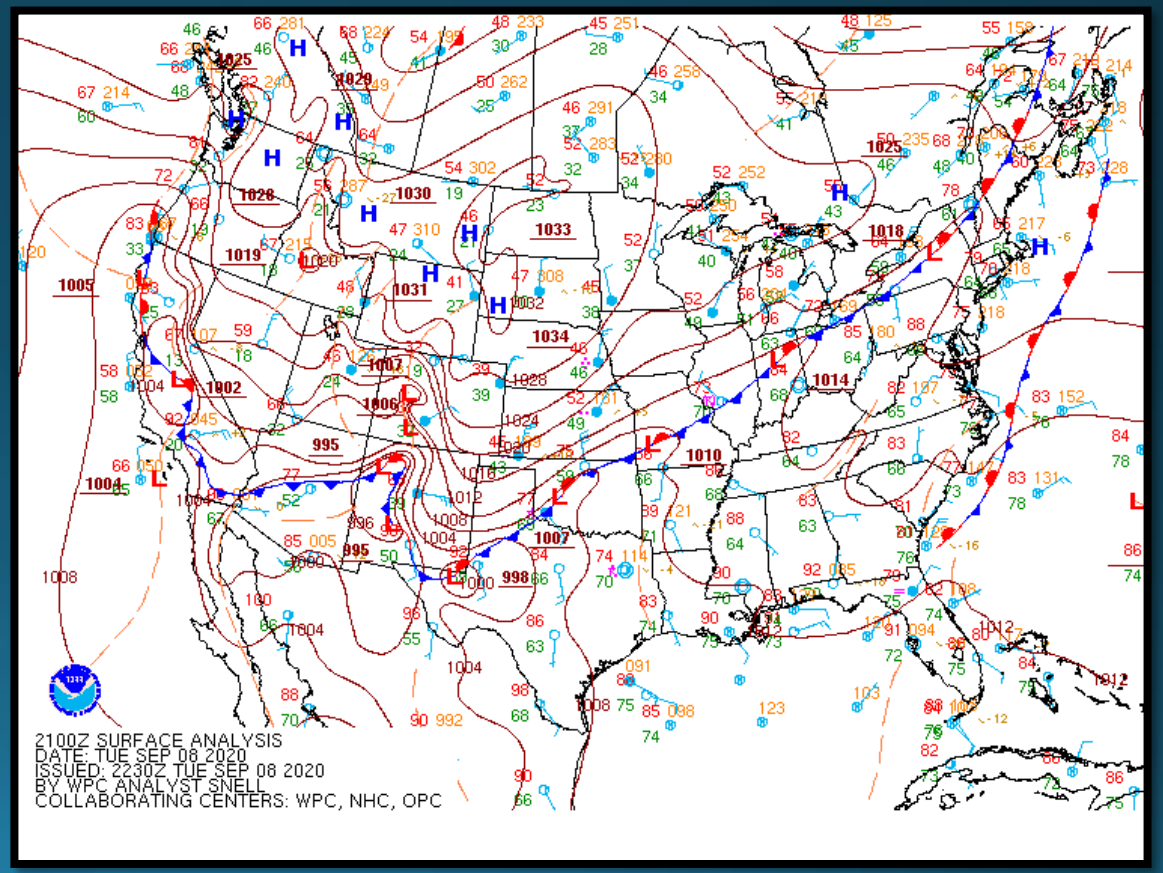


Notable Weather Events

Historic East Wind Event – September 7th – 9th

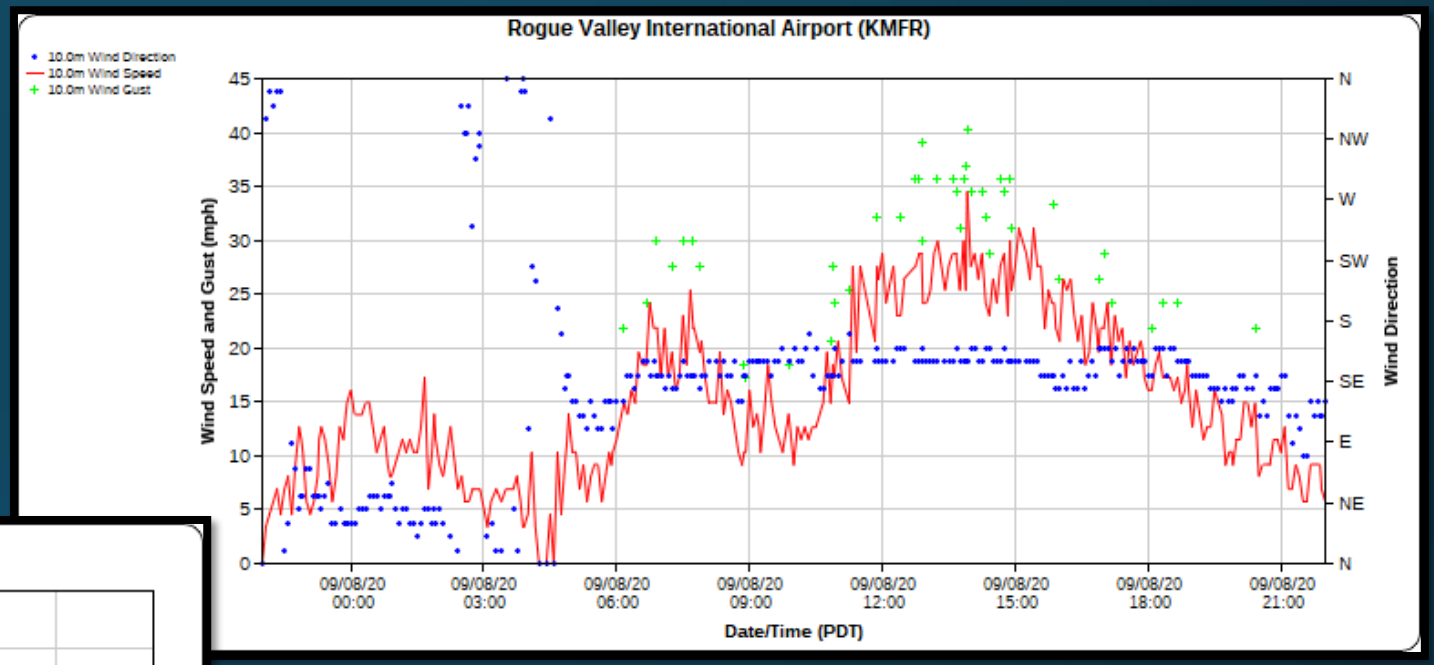
From September 7th – 9th, a significant fire weather pattern developed over the Pacific Northwest. Aloft, high pressure was located over the eastern Pacific and an area of low pressure moved from north to south over Idaho into the Great Basin area (pictured left). At the surface, a thermal trough was already in place along the coast (pictured right). As colder air associated with this low pressure moved south, the thermal trough strengthened even more, resulting in a very tight pressure gradient across the area. This pressure gradient resulted in very strong easterly winds which in turn brought an extremely dry air mass to the area. This primed the environment for dangerous fire weather conditions. Strong winds with very low relative humidities resulted in the rapid spread of numerous wildfires that were started across the region during this time. To make matters worse, areas of severe to extreme drought had developed prior to this pattern set up and very hot temperatures preceded this event, resulting in extremely dry vegetation. This critical pattern continued through the 9th before the atmosphere finally moderated.

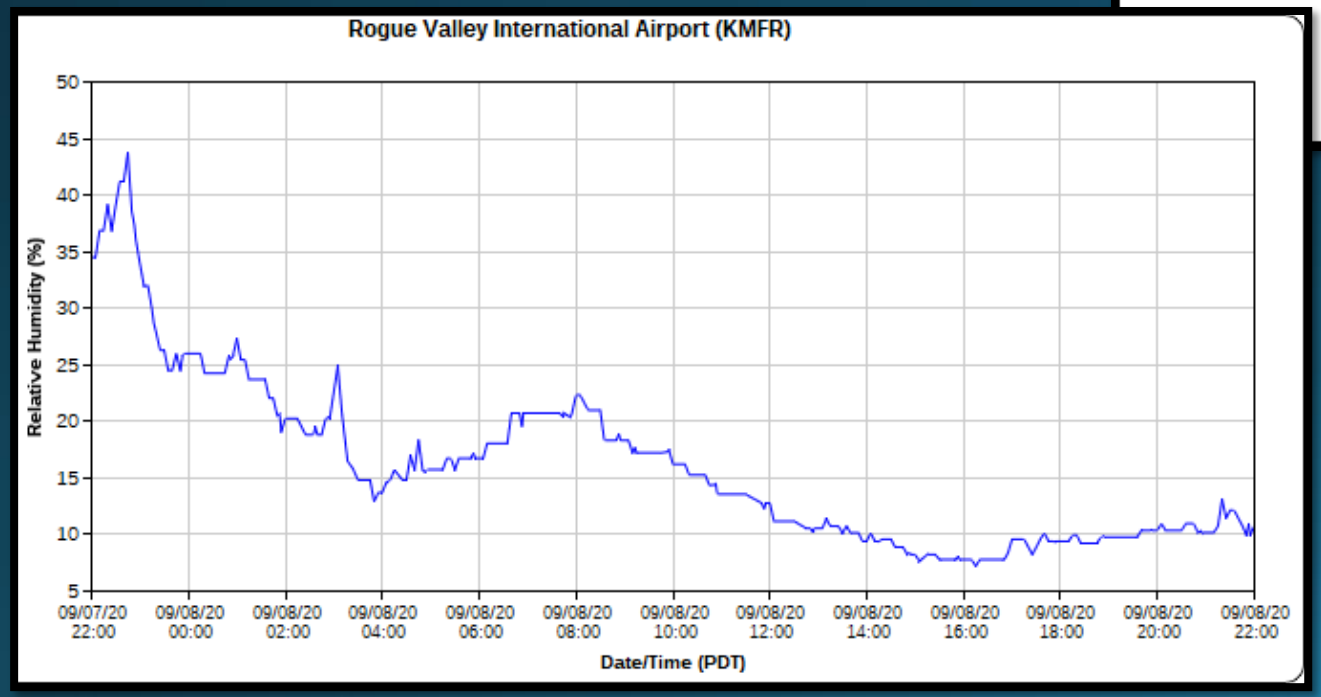




Historic East Wind Event – September 8th

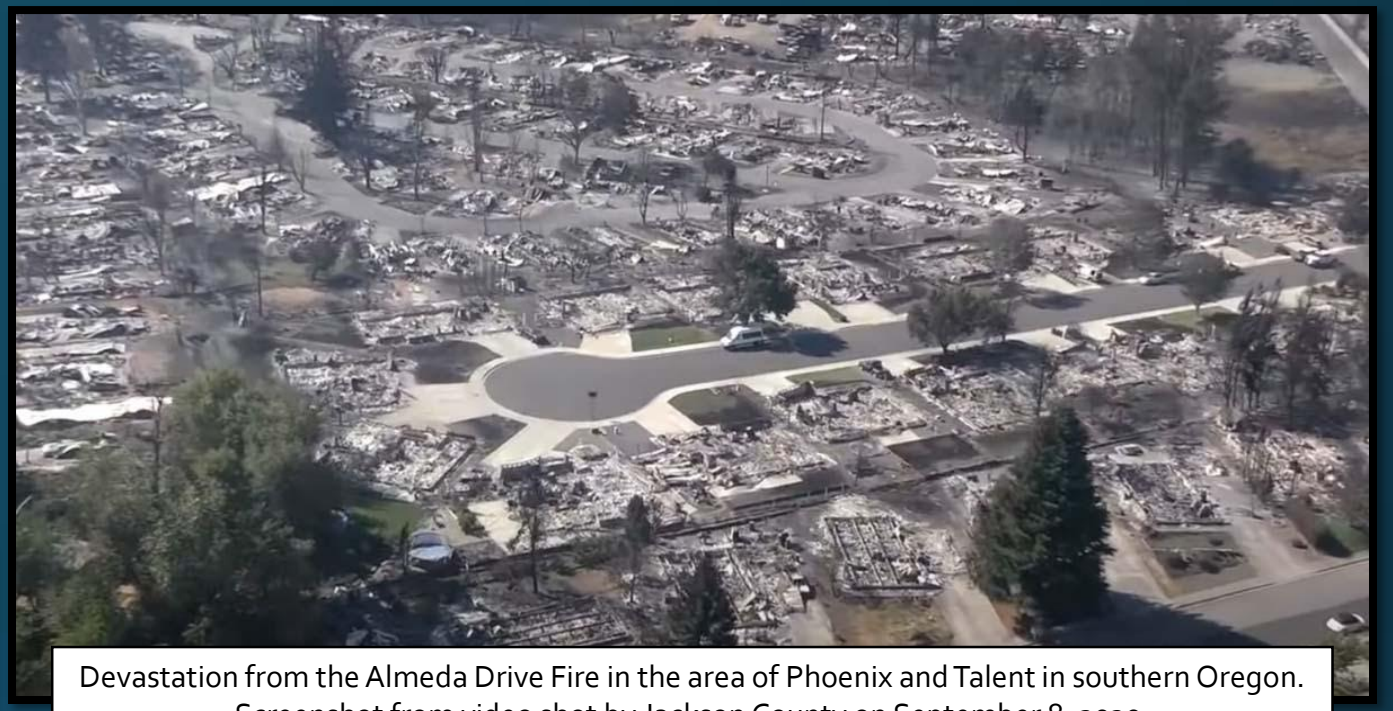
Data showing how dry and windy conditions were on September 8th. These charts are for the Medford Airport where relative humidities (below) bottomed out around 7% and southeast winds were sustained at 25 to 30 mph with gusts to 40 mph that afternoon.





These dry conditions were quite common across the area. However, winds were even stronger at higher elevations. Slater Butte RAWS, for example, near where the Slater Fire starter, was reporting sustained winds of 30 to 40 mph with gusts of 55 to 60 mph. This RAWS site is located about 4600 ft.

Almeda Drive Fire

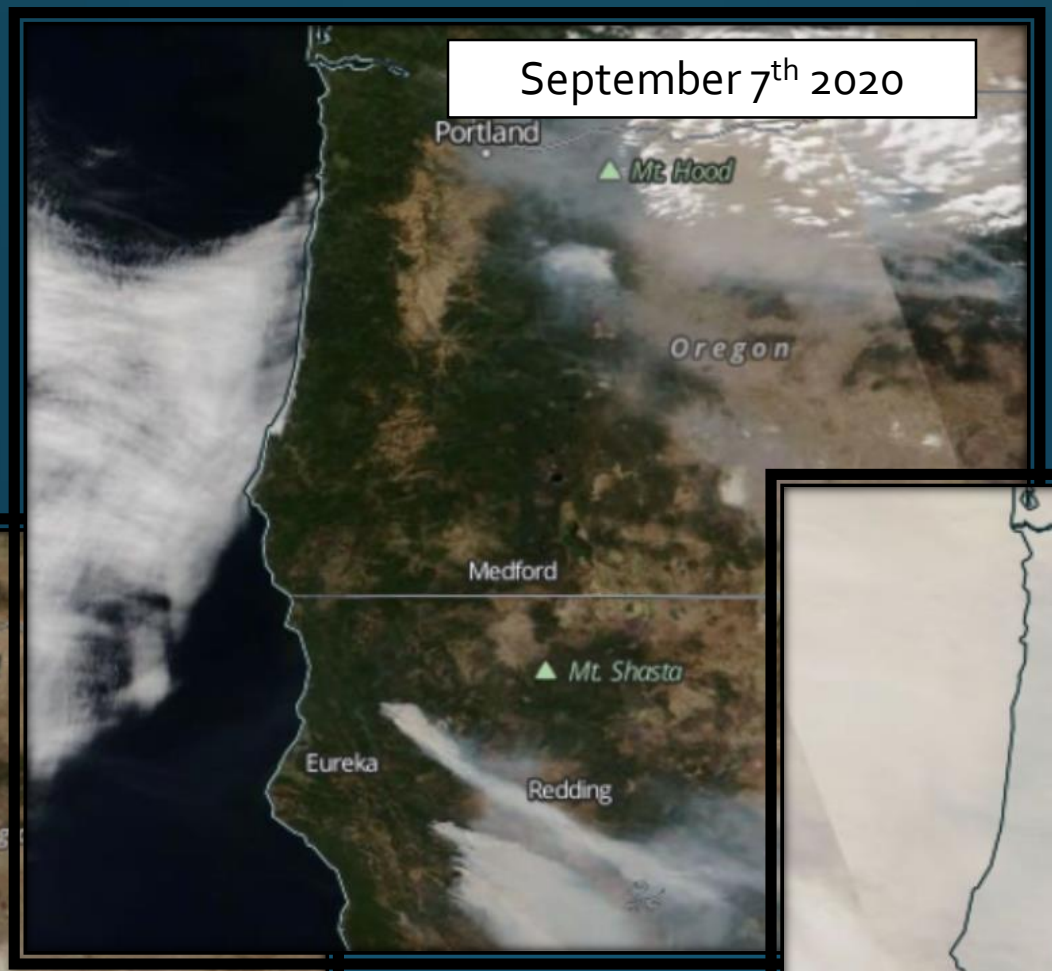


Devastation from the Almeda Drive Fire in the area of Phoenix and Talent in southern Oregon. Screenshot from video shot by Jackson County on September 8, 2020.

Picture of the Almeda Drive Fire looking over the town of Phoenix during the evening of the 8th

On the late morning of Tuesday, September 8th, what came to be known as the Almeda Drive Fire started in Ashland near Interstate 5. By day's end, this fire which spread north along Interstate 5 into the Talent and Phoenix areas, had become the worst weather-related natural disaster to ever occur across southern Oregon's populated Rogue Valley. Thousands of residents were evacuated due to the quickly spreading wildfire and over 2400 homes and 165 commercial properties were lost.

Satellite view of the area the day prior to the east wind event (top). Bottom left shows numerous, large wildfires during strong east winds. Bottom right shows smoke filled skies as winds aloft shifted and brought smoke inland.



Satellite imagery courtesy:

NASA WORLDVIEW

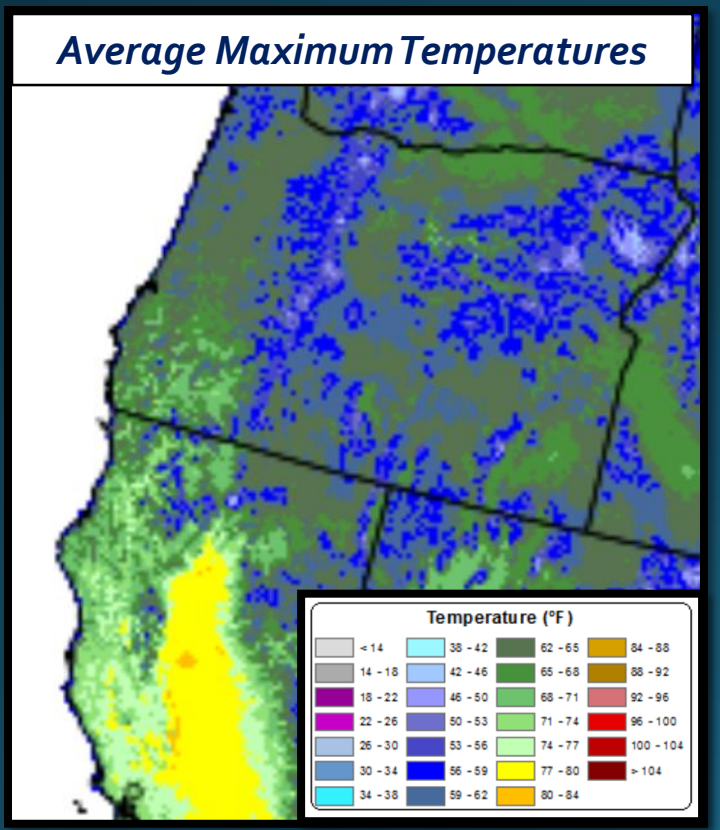
Acreage Burned by Wildfires in Medford Forecast Area

- Almeda - 3200
- Obenchain – 32,671 (as of 9/30/2020)
- Archie Creek – 131,542 (as of 10/20/2020)
- Theilsen – 9,975 (as of 10/10/2020)
- Two Four Two – 14,473 (as of 9/22/2020)
- Brattain – 50,951 (as of 9/28/2020)
- Slater/Devil – 156,648 (as of 10/22/2020)

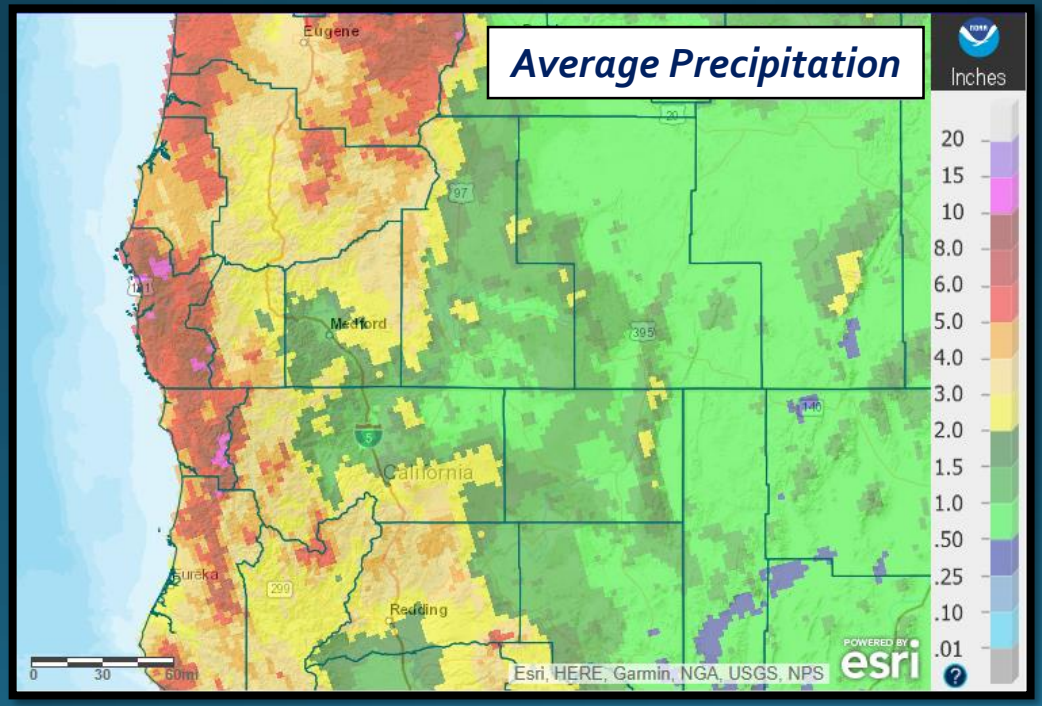
Looking Ahead: Normals for October (1981-2010)

October is the first month of the water year because it is the month when the weather usually turns definitively cooler and wetter for our forecast area. If fire season hasn't already ended, it almost certainly will end this month. Average low temperatures are in the 20s and 30s east of the Cascades, and in the upper 30s to 40s west of them. Average high temperatures are mainly in the 50s in the mountains, though colder on the peaks, where snow usually begins to accumulate. Most east side valley highs are in the 60s while, on the west side, 60s and lower 70s are normal. 5-10 inches of precipitation is normal for Curry County & in the higher terrain of far western Siskiyou County, and 10-15" in the Curry mountains. Elsewhere, amounts vary greatly, with 0.5"-3" east of the Cascades, and 1" to 5" across much of the rest of the area.

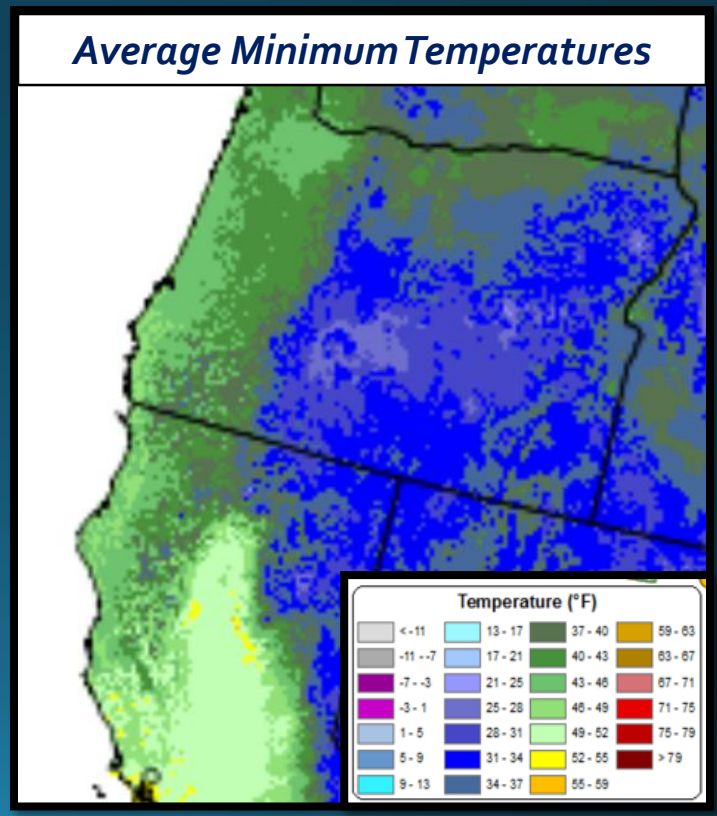
Average Maximum Temperatures



Average Precipitation



Average Minimum Temperatures



*A note about Period of Record (POR)

When looking at record setting events, it's important to consider the length and completeness of the site's period of record (POR). For example, a site might have records dating back to the early 1900's, but if there is a significant portion of the record missing, it's possible that the POR is not encompassing another significant event that might have surpassed the event in question. Therefore, "record setting" should be considered relative to the completeness/length of POR. To help keep records in context, the POR for each climate site is listed below:

- **North Bend: 01/1902 – Present**
- **Roseburg: 04/1900 – Present**
  - *Missing:*
    - *05/1900-01/1901*
    - *03/1901-06/1902*
    - *08/1902-12/1930*
    - *10/1965-06/1997*
- **Medford: 03/11/1911 – Present**
- **Klamath Falls: 12/1897 – Present**
- **Montague, CA: 07/1948 – Present**
  - *Missing:*
    - *08-09/1952*
    - *02/1953-06/2000*
- **Mount Shasta City, CA: 04/1948 – Present**
- **Alturas, CA: 05/1935 – Present**