National Weather Service Medford

June 2020 Climate Summary & July Outlook

*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).

June 2020 Weather Review

After a soggy finish to May, June began drier and on the warmer side with temperatures a few degrees above seasonal values. This warm and dry streak was short lived, however, as a cold low pressure system settled over the Pacific Northwest. This system brought some much needed rainfall and cool temperatures from the 6th through the 8th. Average temperatures during this time were as much as 10 to 15 degrees below normal, and some records were set because of this system. Medford recorded a daily low maximum temperature on the 7th, as did Alturas and Montague, where the maximum temperatures only reached 58°F, 47°, 55°F respectively. Crater Lake received almost a foot of snow during this time, and set a daily snowfall record with 9" on the 7th.

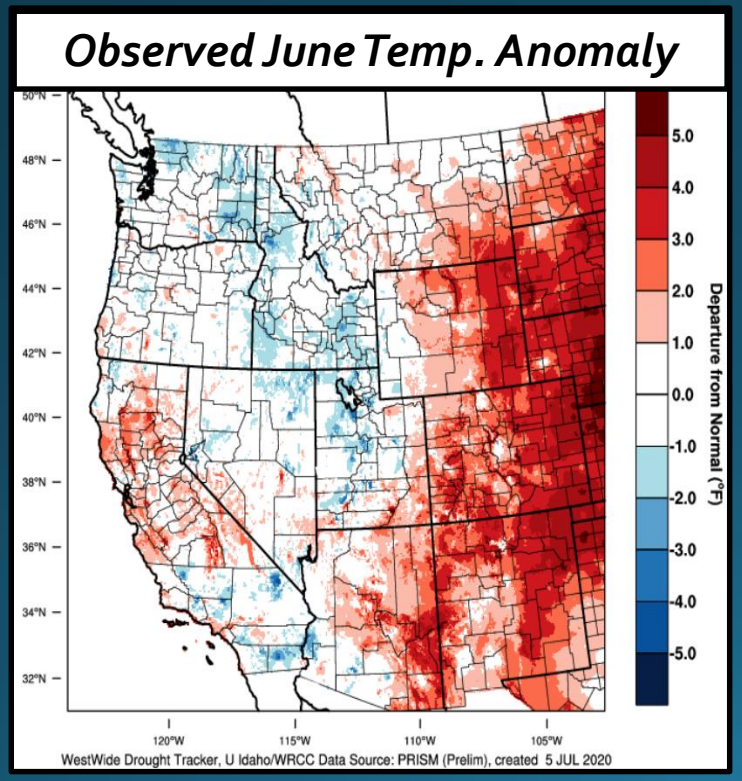
After this unseasonable cold spell, shortwave ridging moved through the area during the 9th – 11th and temperatures rebounded to more seasonable values. At the end of this warm period, a wave of thunderstorms moved from south to north, starting near the Scott Valley and moved through central Jackson County and into eastern Douglas County. These storms produced pea-sized hail, strong gusty winds and heavy rain. One storm moved over the Medford Airport where 0.49" fell within a 17 minute time frame, 0.36" of which fell within 5 minutes! That equates to a rain rate of 4.32"/hour! Gusty winds with this thunderstorm reached 46 mph as the storm rolled over the airport. This was followed by another period of cooler temperatures with precipitation, although not as cool nor as much precipitation as the previous system.

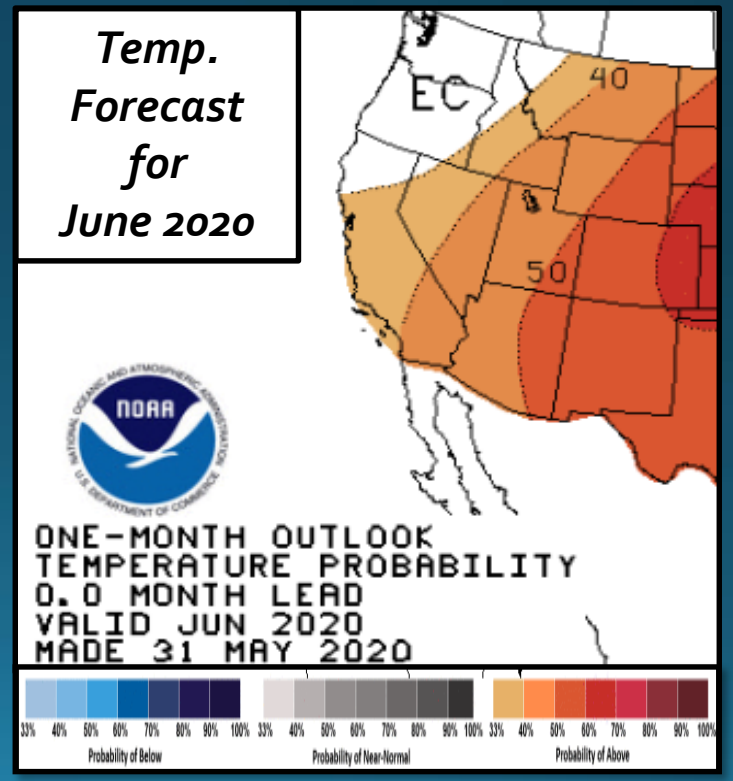
After what seemed like an endless cycle of dry and relatively warm weekdays followed by cool and wet weekends, the pattern changed shortly after midmonth. Zonal flow over the area returned temperatures to more seasonal values and kicked off the start of a dry spell. Rather benign weather persisted through the end of the month. Sunny skies and breezy afternoons brought a more summer like feel to the region for much of the end of the month. The thermal trough limited the extent of the marine layer and most areas were finally cloud free for an extended period. Upper level ridging moved over the area on the 22nd and 23rd and this brought the warmest temperatures of the month. Upper 90s to triple digits were common for west side valleys and the valleys of northern California, prompting a round of heat advisories for those areas.

Otherwise, the weather remained quiet and trended cooler to finish the month. Overall, the month of June featured above normal precipitation for west side valleys and along the coast north of Cape Blanco with below normal values east of the Cascades and south of Cape Blanco. Regarding temperatures, it was more of a mix where the majority of the area was within a degree of normal with isolated areas of both below and above normal temperatures.

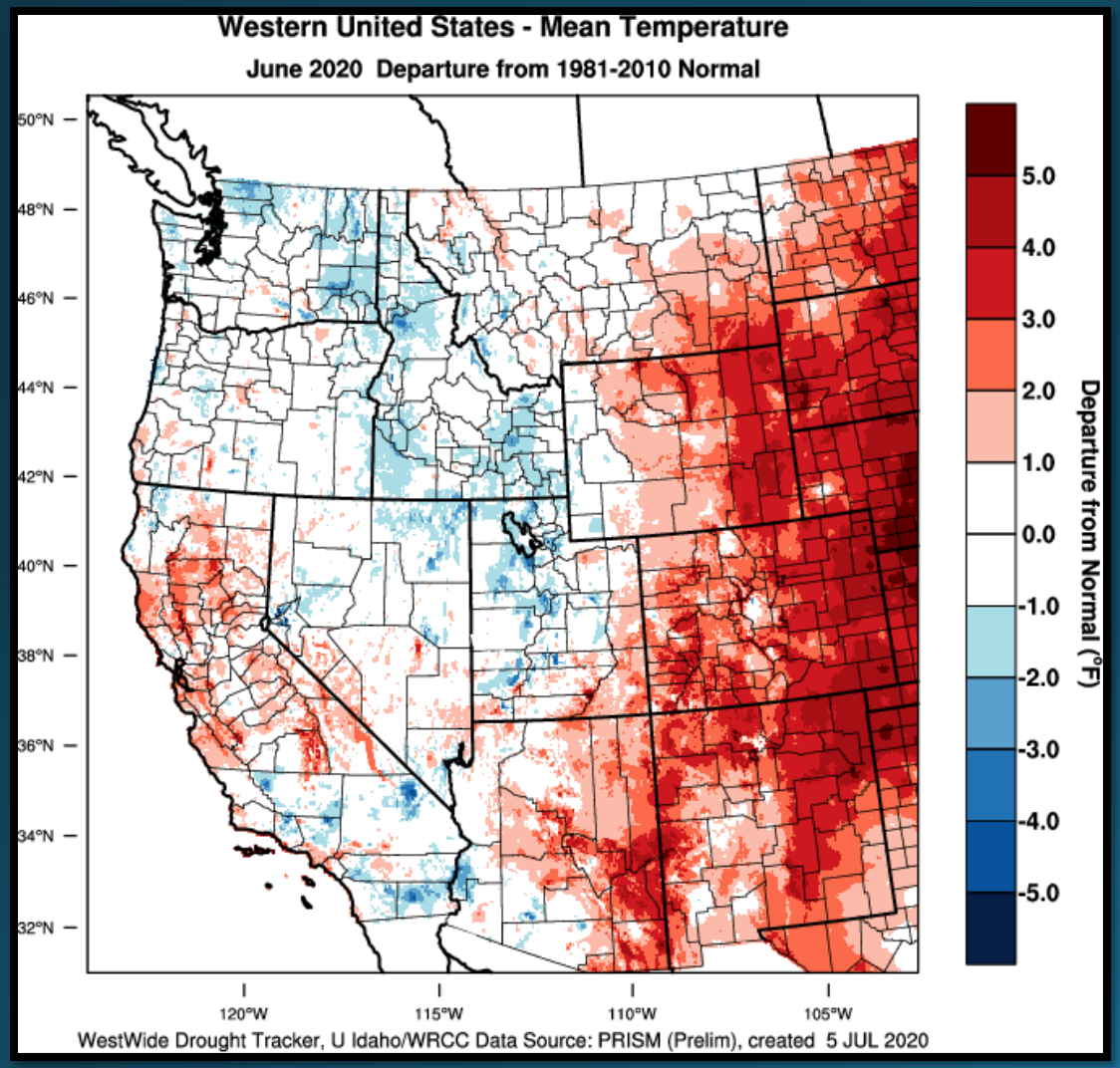
A Look Back at the June 2020 Temp Outlook

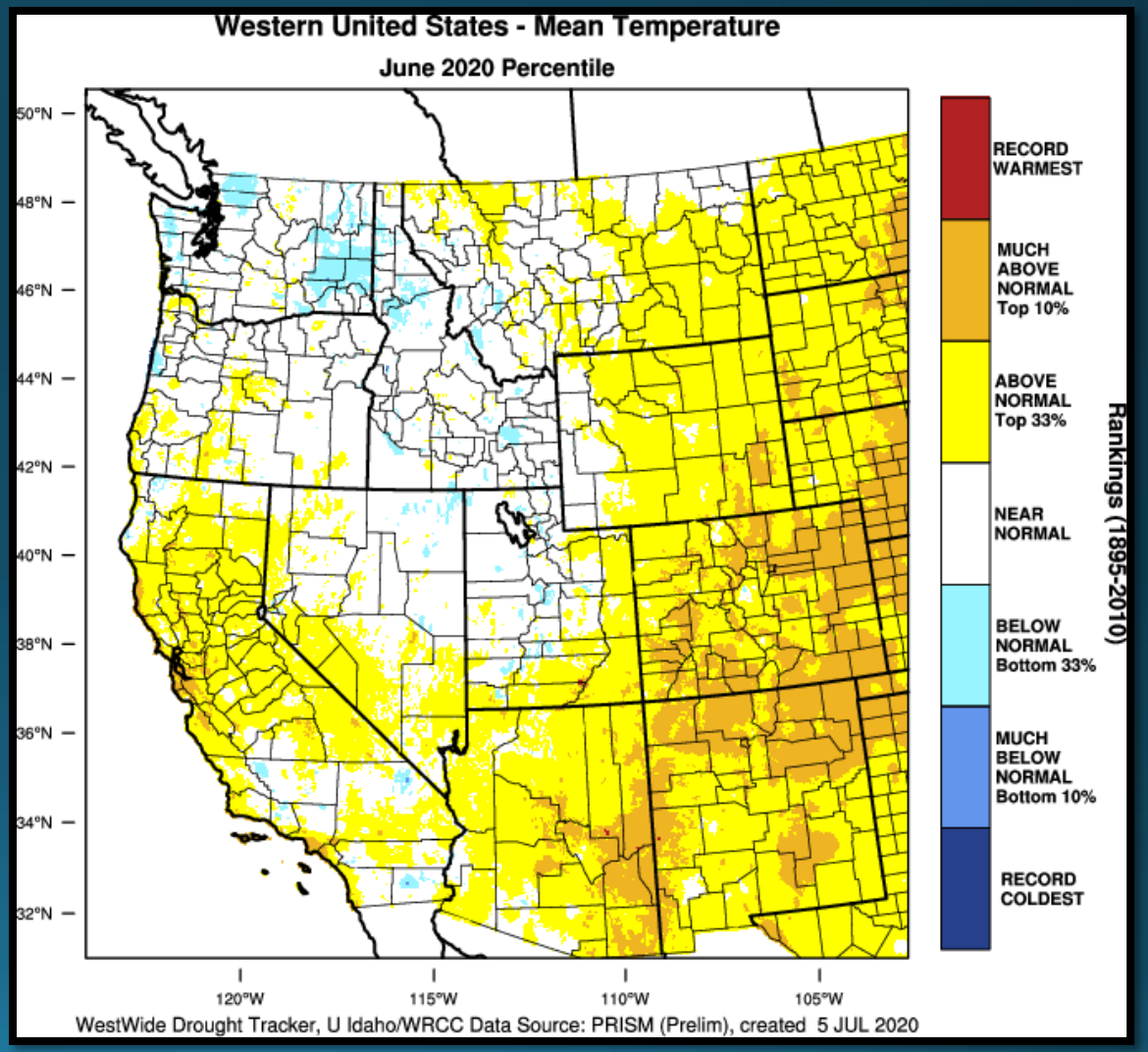
- ***What was our localized forecast?*** Our localized ***June temperature*** forecast was for ***NEAR to ABOVE normal temperatures, most likely between -2°F and +5°F from the 1981-2010 normals***.
- ***Was the forecast anomaly correct? Mostly - Our anomaly forecast was a tad too far on the warm side, by about 1.5°F.*** Actual anomalies across the forecast area were -4°F to +4°F. ***The majority of the forecast area experienced anomalies between -3°F and +3°F.***
- ***Was the expected impact correct? Yes.*** We were correct in indicating that fire danger was likely to remain mostly low to moderate and that drought designation was likely to change very little.
- ***Did our forecast improve upon the CPC forecast? No***. Our localized forecast was slightly on the warm side. Temperatures were right at normal.





June 2020 Observed Temperatures





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	57.8	1.7°	64.2	2.5°	51.4	0.9°
Roseburg	65.6	1.7°	76.9	0.9°	54.3	2.5°
Medford	67.4	0.6°	80.6	-1.0°	54.1	2.1°
Klamath Falls	59.0	0.8°	76.1	2.1°	41.8	-0.5°
Montague, CA	66.2	2.4°	82.8	2.5°	49.6	2.3°
Mt. Shasta City, CA	63.5	2.0°	78.4	1.3°	48.7	2.8°
Alturas, CA	60.0	0.6°	78.4	0.7°	41.7	0.7°

Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	70°	23rd	42°	1st
Roseburg	97°	23rd	47°	7th
Medford	101°	23rd	43°	8th
Klamath Falls	96°	23rd	27°	17th
Montague, CA	103°	23rd	35°	8th
Mt. Shasta City, CA	97°	23rd	37°	8th
Alturas, CA	97°	23rd	28°	17th

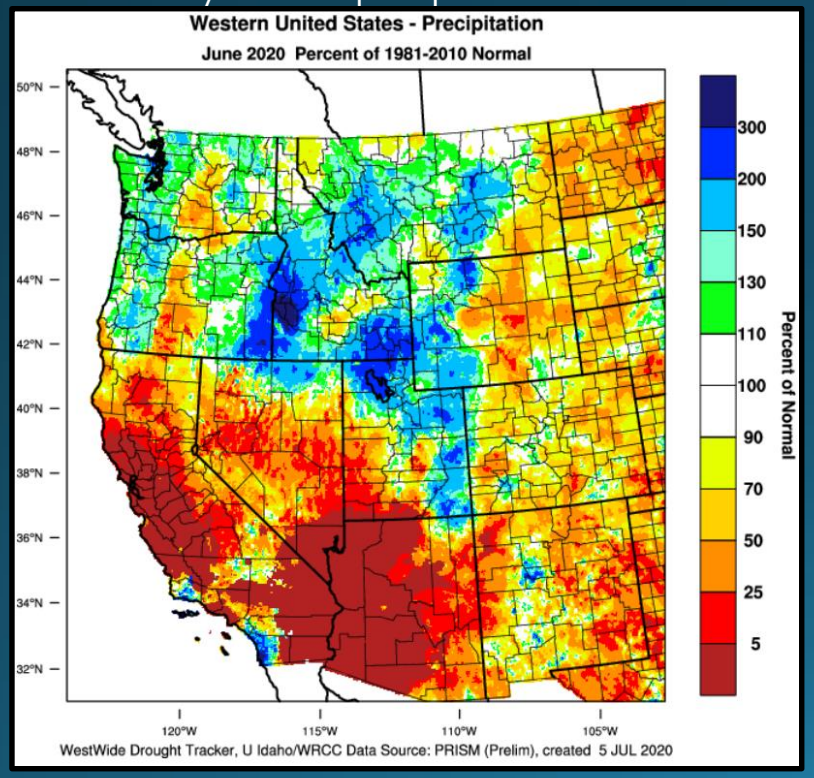
	Date	Record Low Max	Old Record/Year
Alturas	7th	47°	53° / 2005
Medford	7th	58°	59° / 2005
Montague	7th	55°	59° / 2005

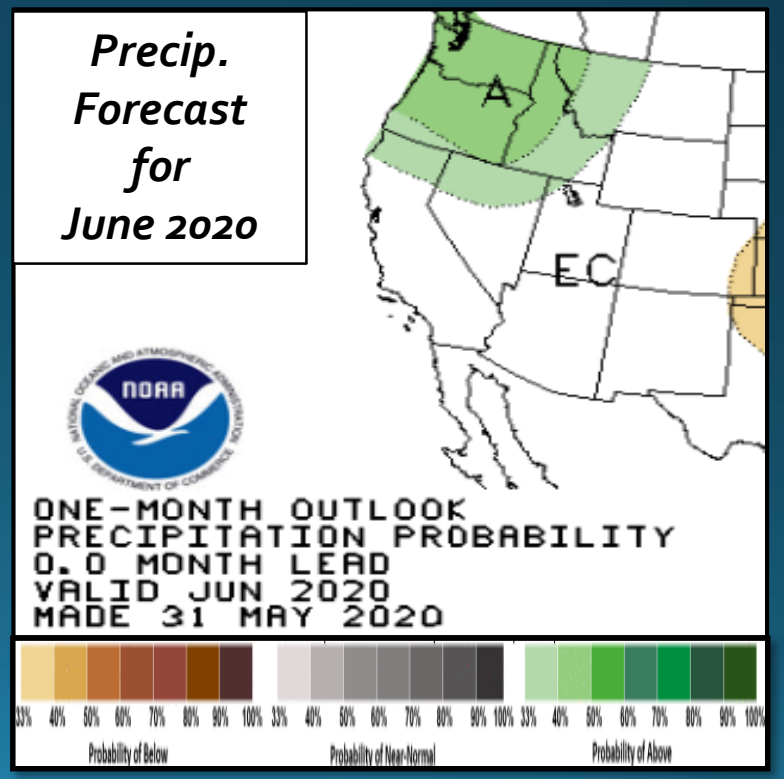
	Date	Record High	Old Record/Year
Roseburg	23rd	97°	94° / 2017
Mt Shasta City	23rd	97°	96° / 1986

	Date	Record Low	Old Record/Year
Klamath Falls	17th	27°	31° / 2014

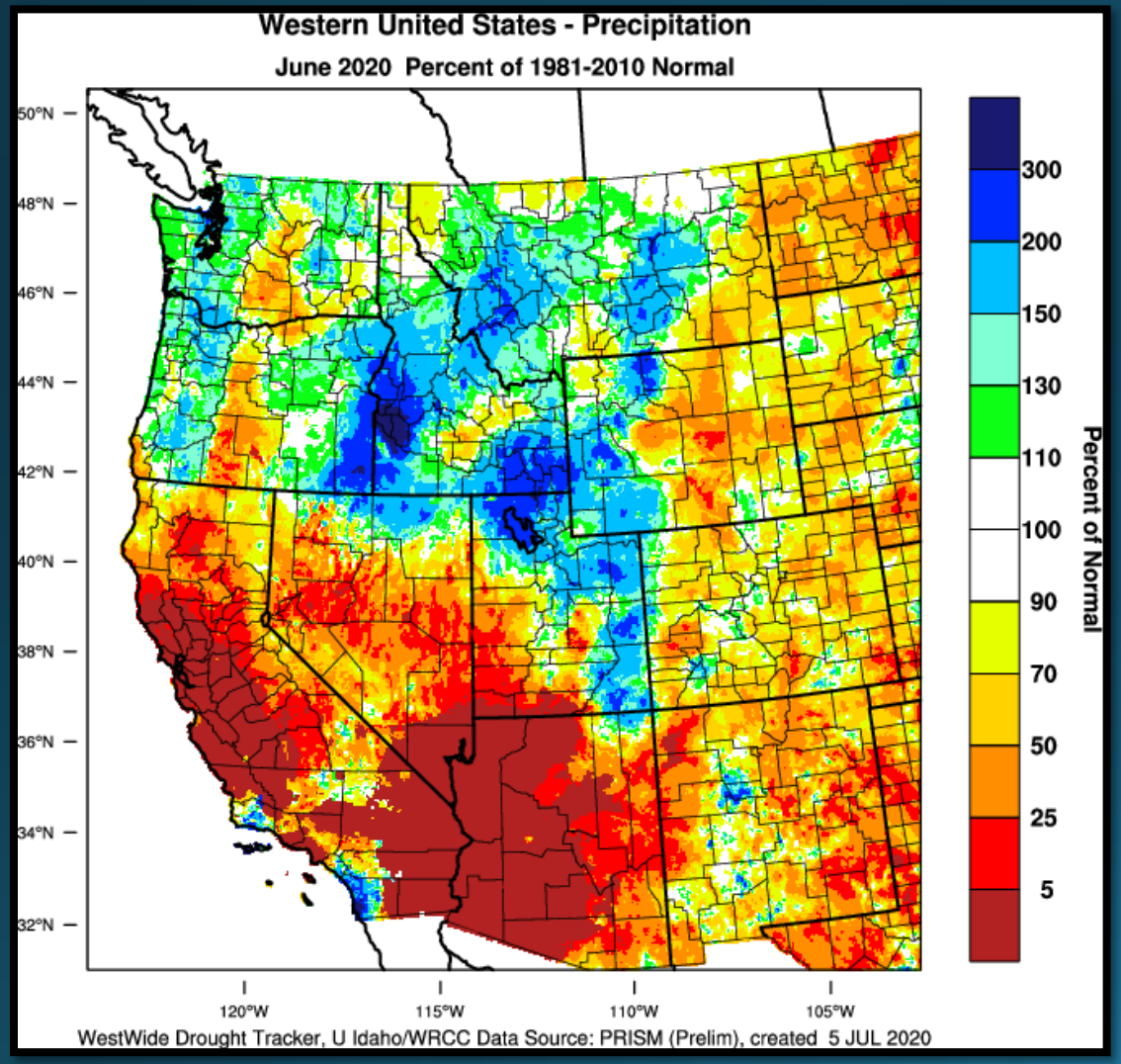
A Look Back at the June 2020 Precip Outlook

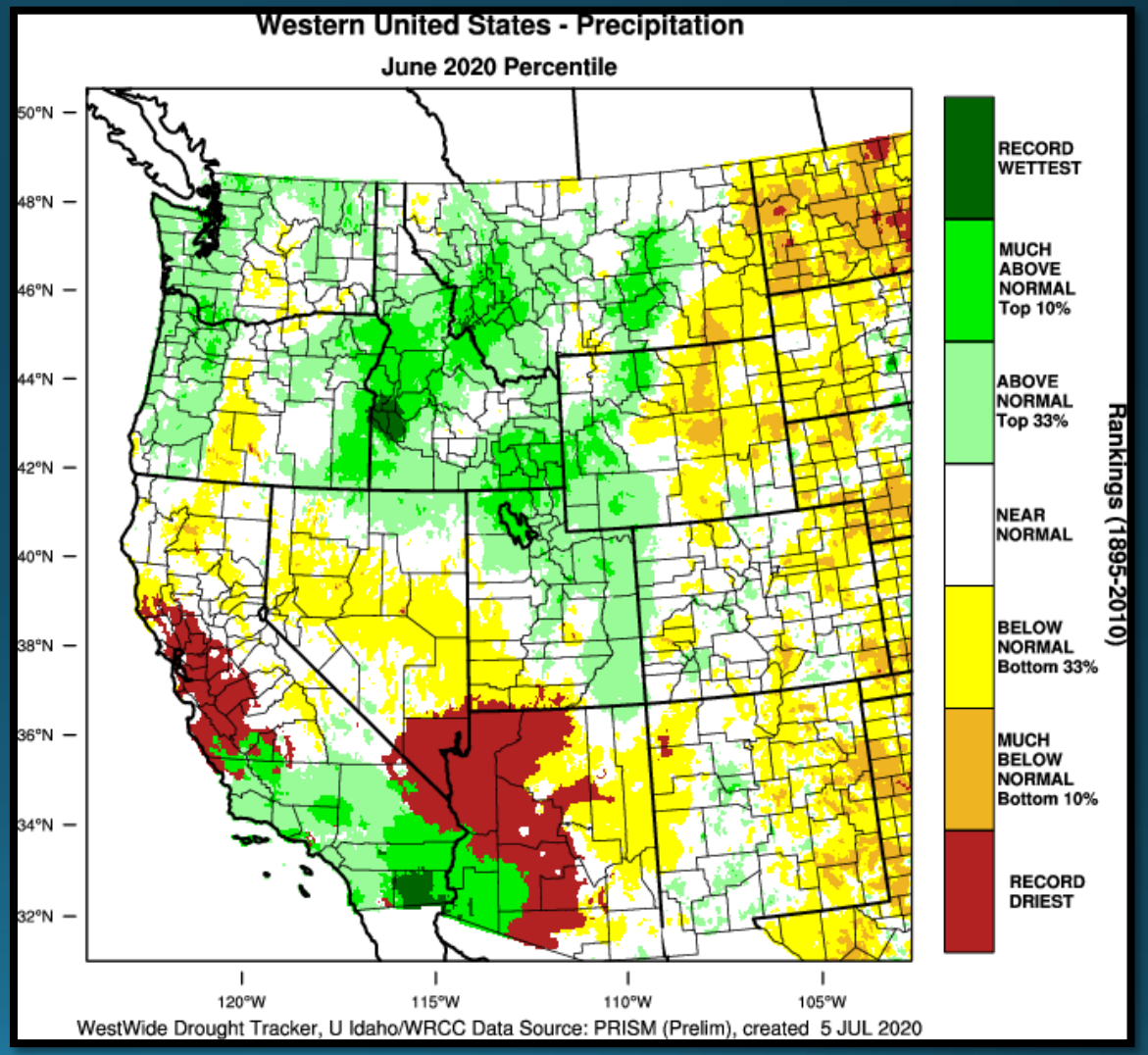
- ***What was our localized forecast?*** Our localized ***June precipitation*** forecast was for **NEAR to ABOVE *normal precipitation, most likely in the 70-130% range.*** Precipitation was forecast to most likely to be above normal for June in areas favored by southwest flow from along and near the Cascades west and in California. Expected convective precipitation was expected to favor the Marble, Scott, Siskiyou, and Oregon Cascade mountains.
- ***Was the forecast anomaly correct?*** ***Yes and No, because the actual range was much greater than expected.*** Most areas were 25% and 200% of normal.
- ***Was the expected impact correct?*** ***Yes.*** Expectations for fire danger and drought were right on, as well as the timing and expectation of heat and thunderstorms. End of month thunderstorms were lesser than expected, only affecting Modoc and Lake counties in terms of small lightning started wildfires.
- ***Did our forecast improve upon the CPC forecast?*** ***Yes, generally.*** What this month revealed is the unique challenges of forecasting precipitation anomalies when normal precipitation amounts are very low and precipitation is convective- it doesn't take much to be above normal and it's localized. We added spatial value.





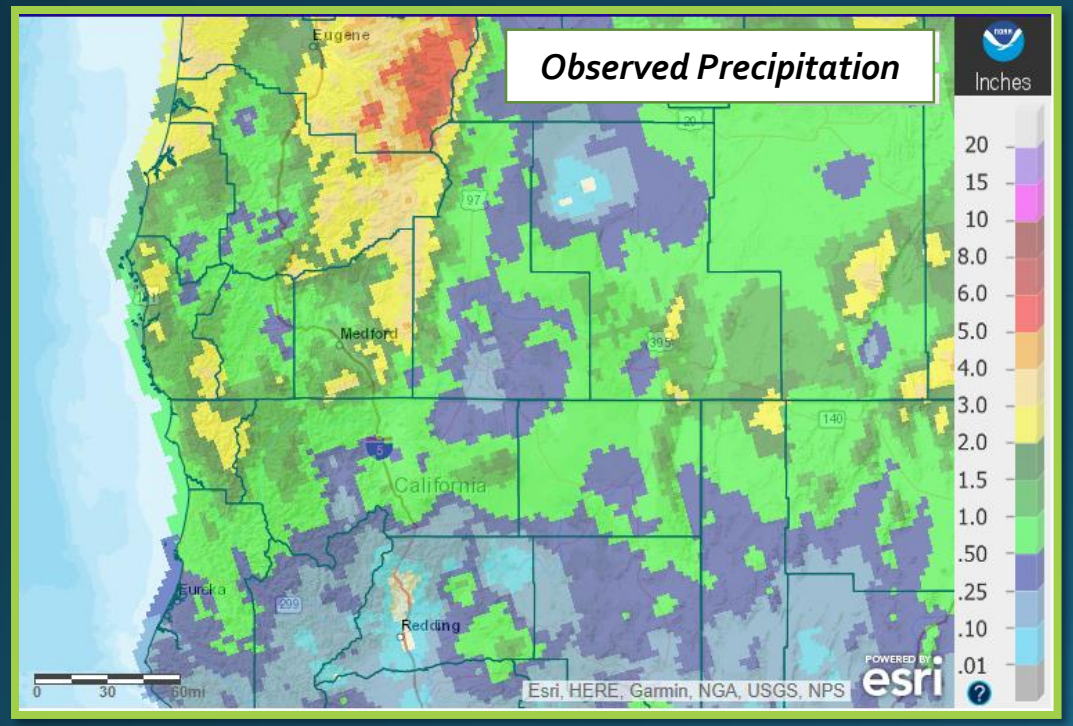
June 2020 Observed Precipitation

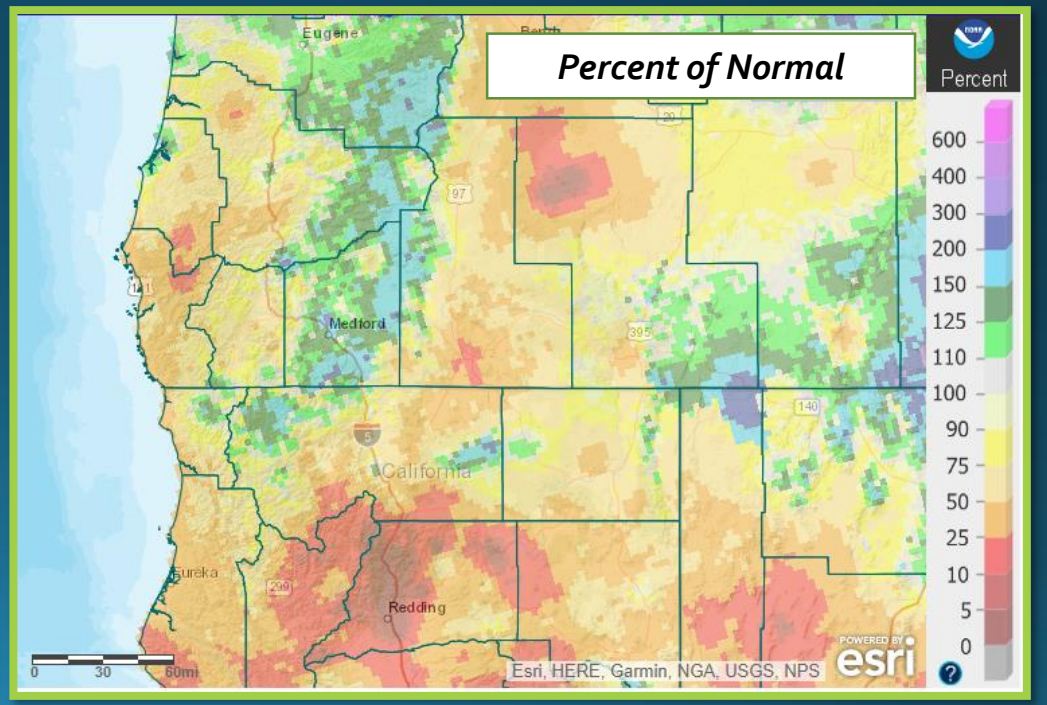




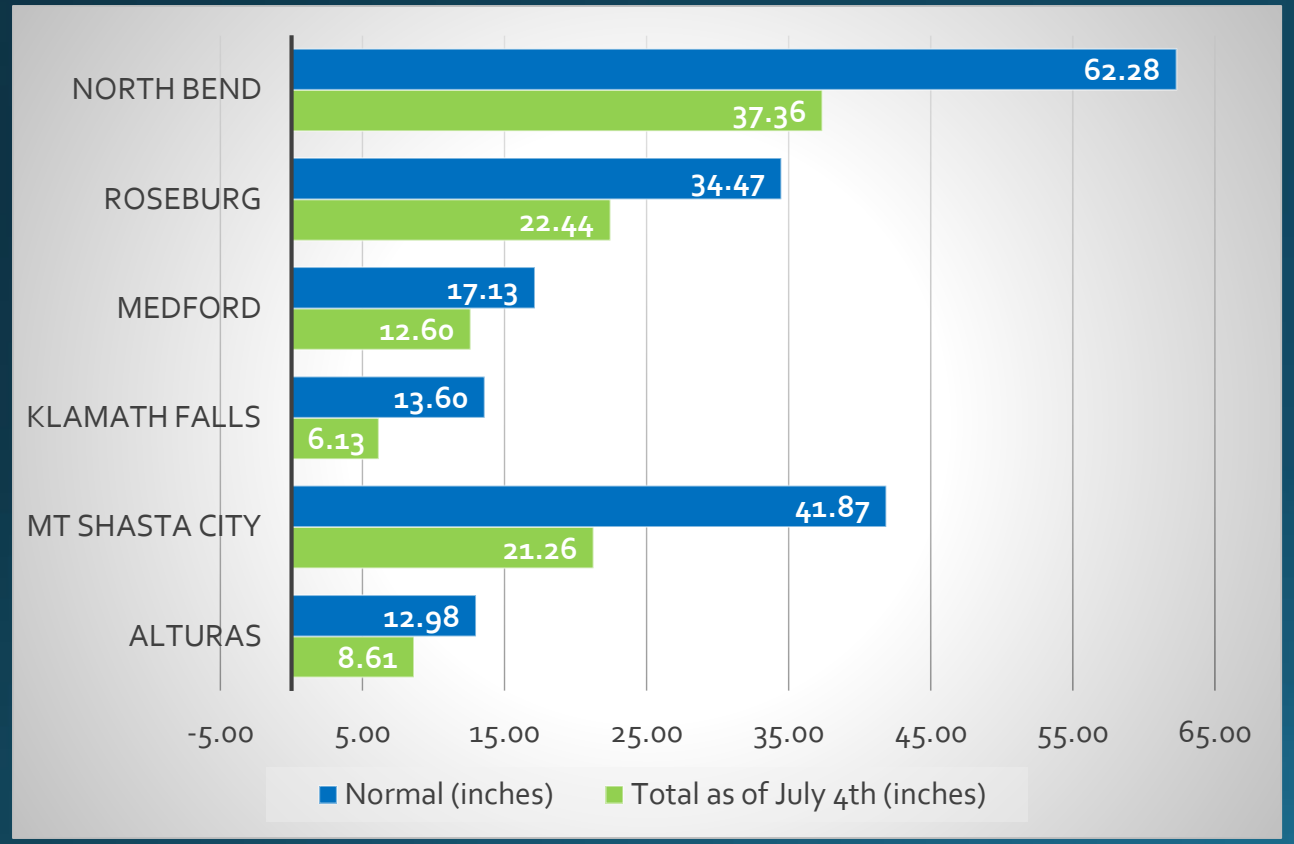
Precipitation

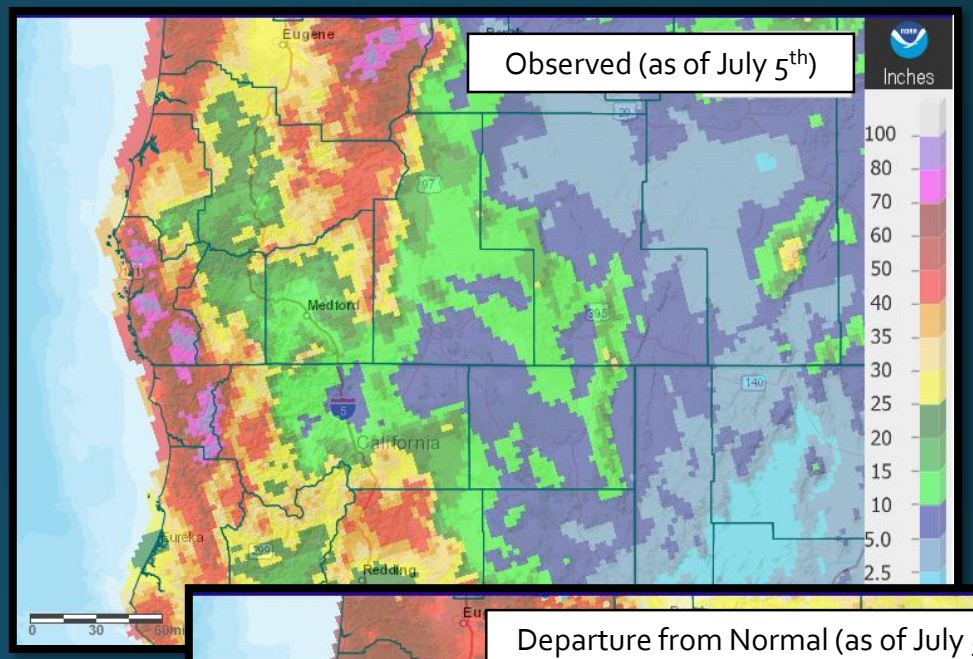
	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	*1.99"*	*0.04"*	*M*	*M*
Roseburg	*0.98"*	*-0.15"*	*0.39"*	*6th*
Medford	*1.20"*	*0.58"*	*0.50"*	*11th*
Klamath Falls	*0.18"*	*-0.86"*	*0.07"*	*16th*
Montague, CA	*0.72"*	*0.01"*	*0.46"*	*12th*
Mt. Shasta City, CA	*0.70"*	*-0.50"*	*0.42"*	*13th*
Alturas, CA	*0.48"*	*-0.42"*	*0.33"*	*7th*

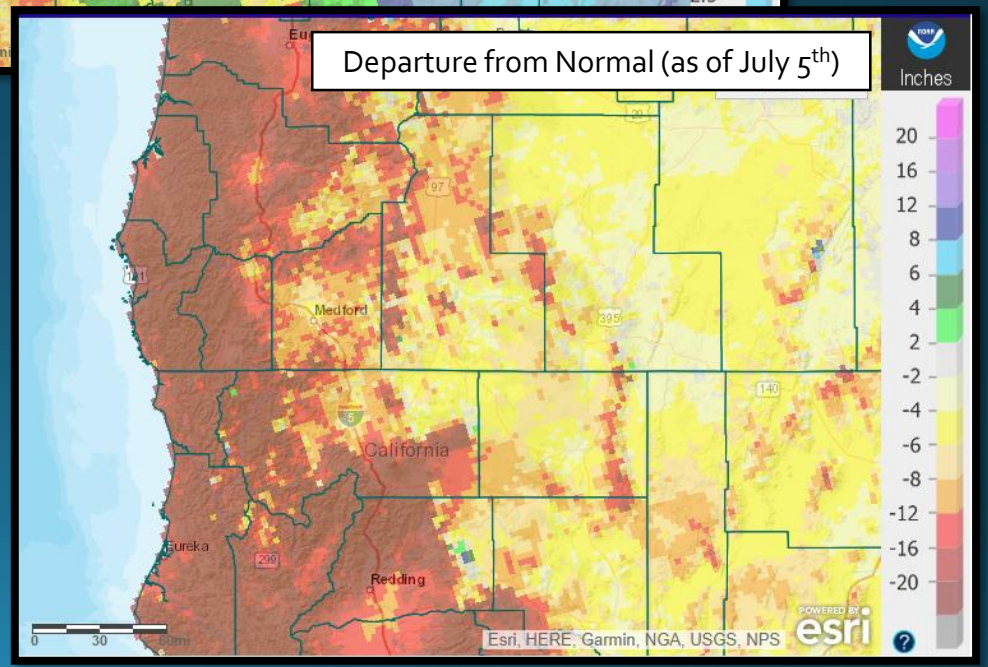




Water Year Status (As of July 5th)

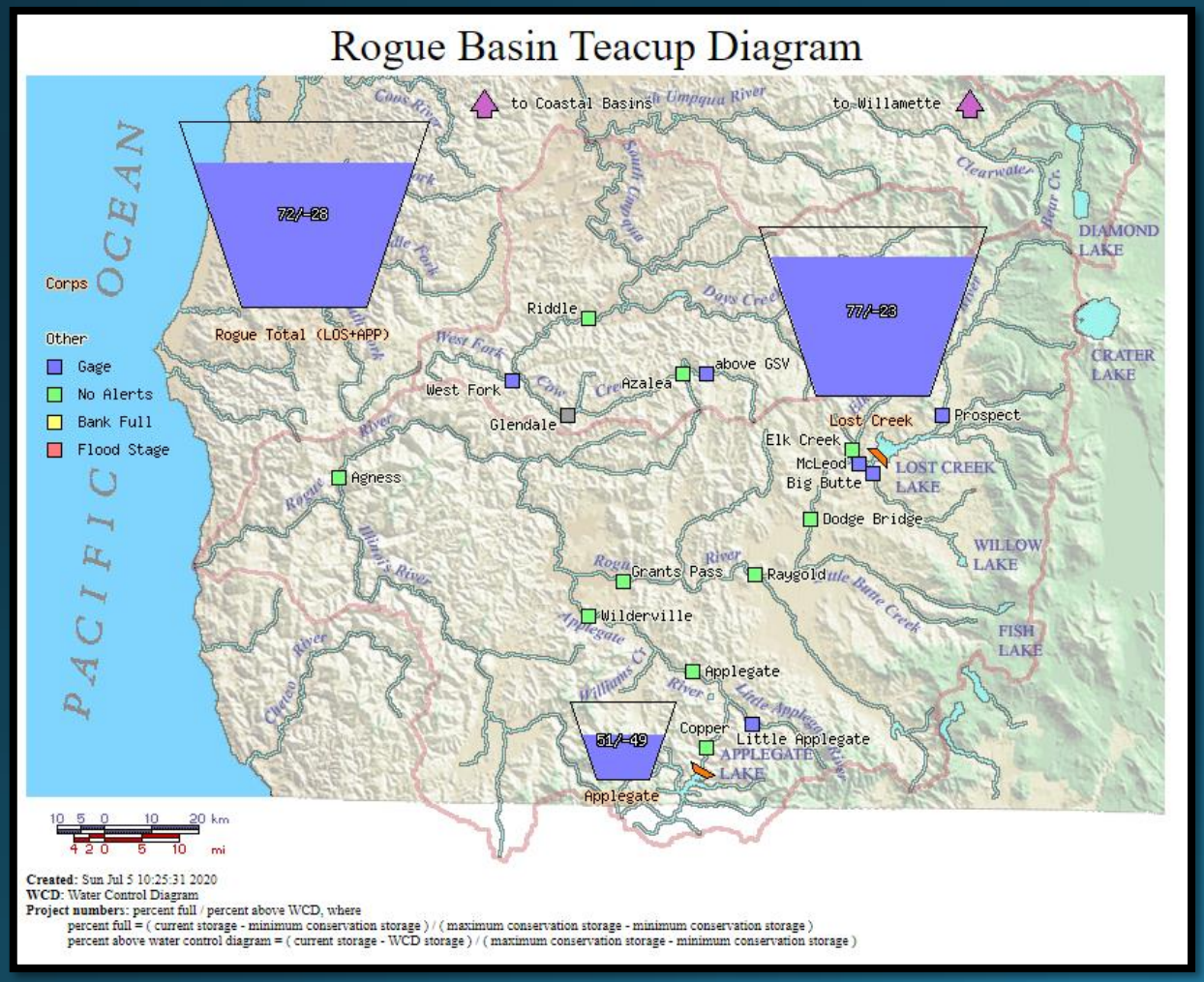




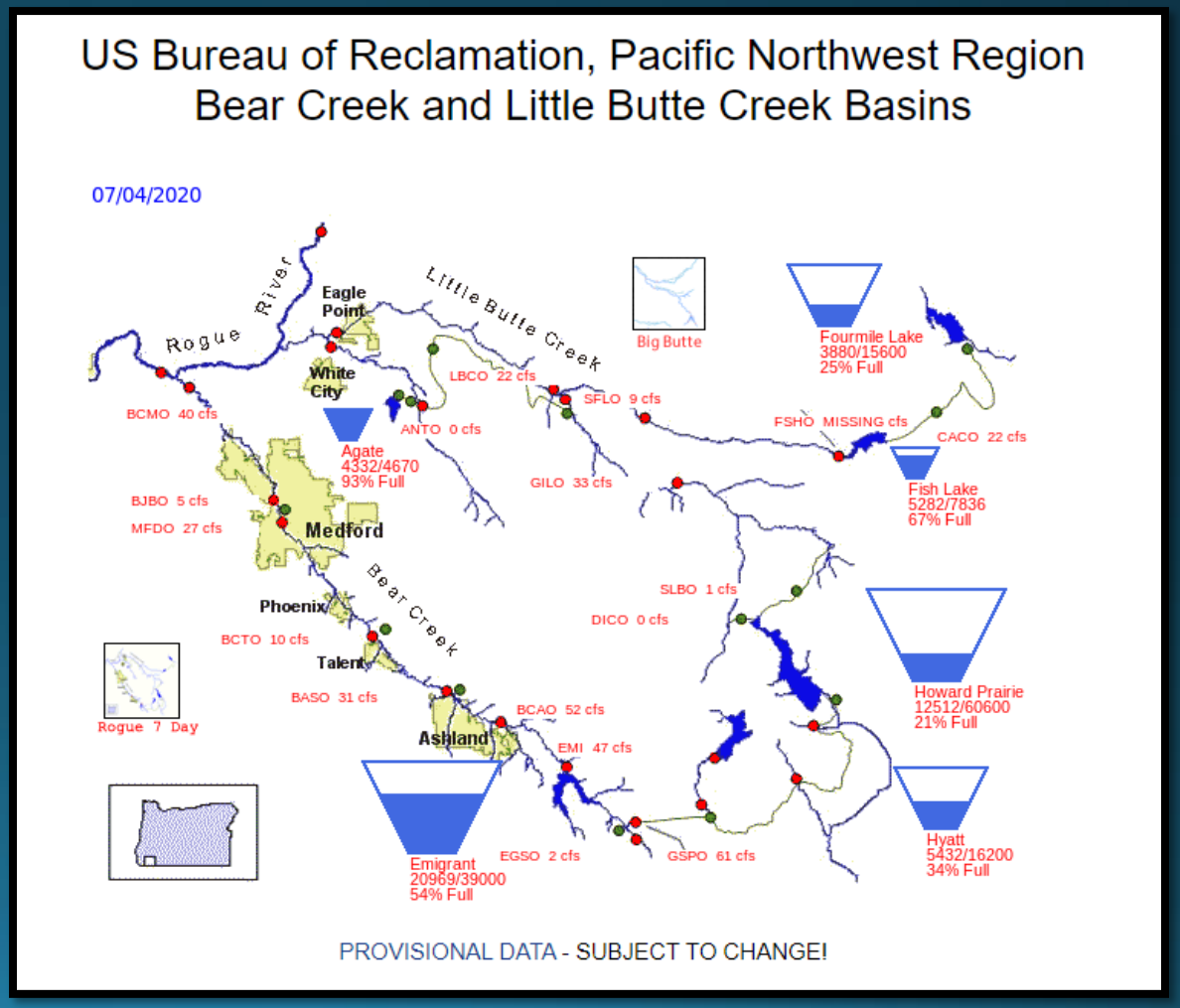


Reservoir Status

Data courtesy of US Army Corps of Engineers

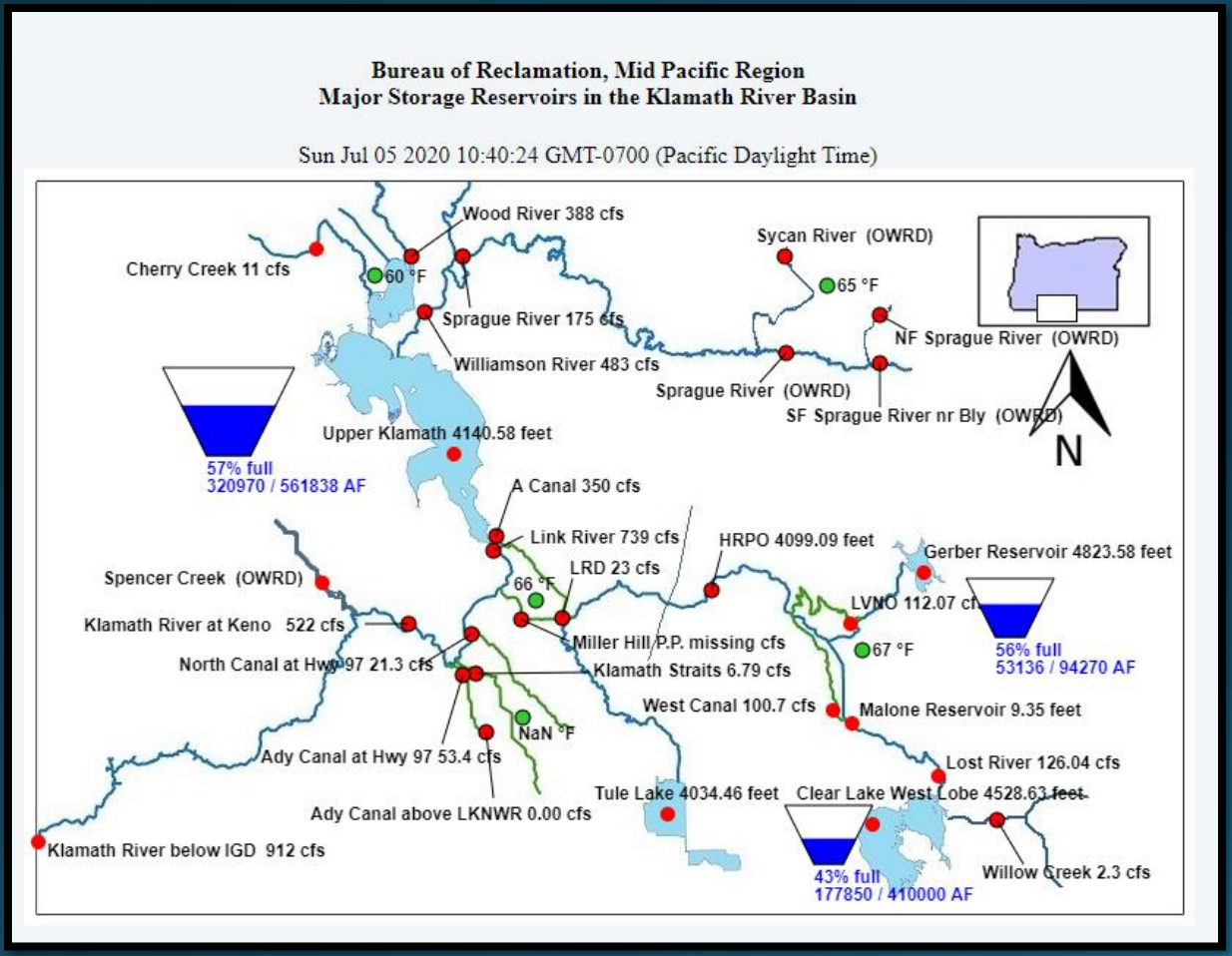


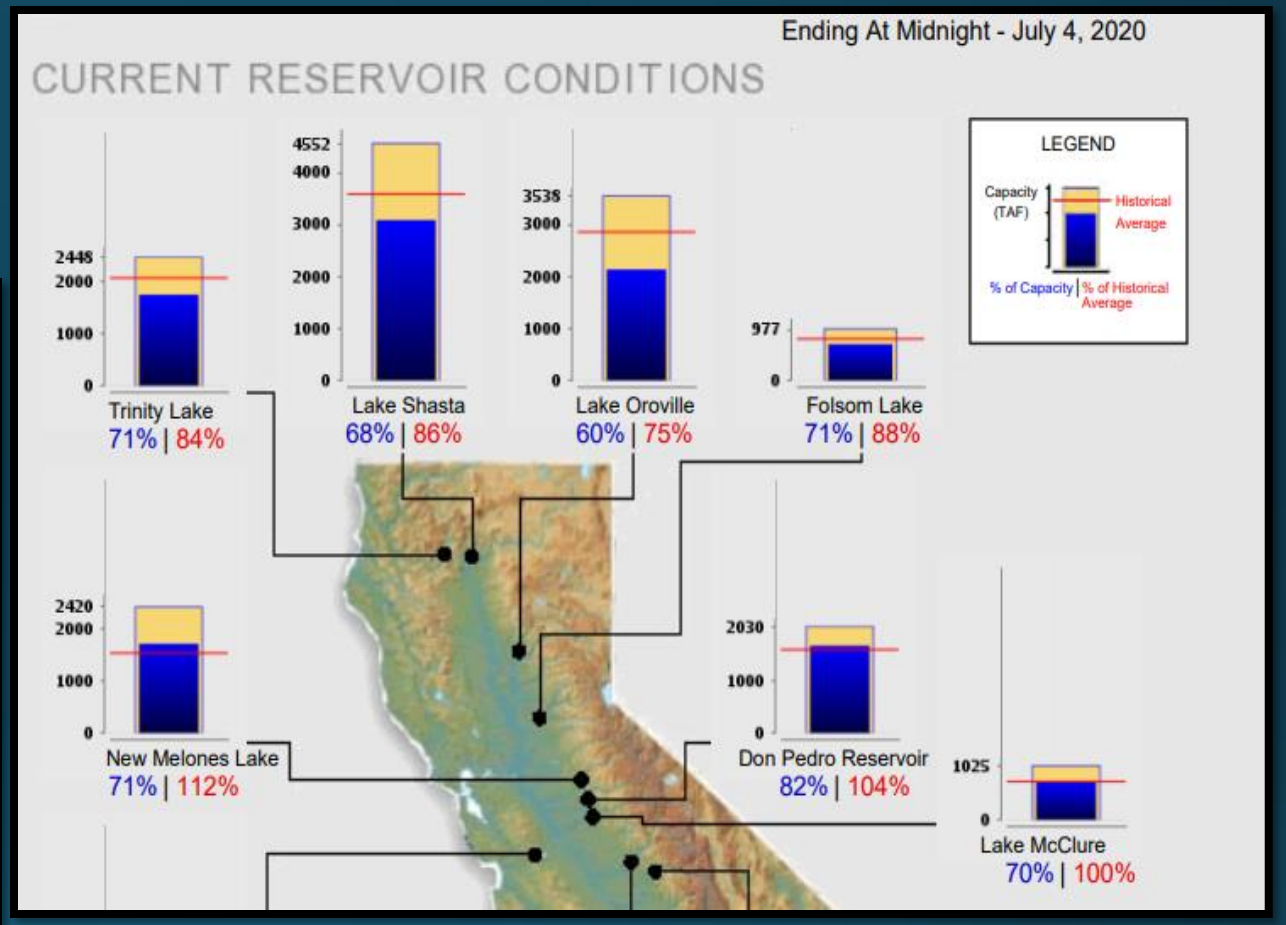
Data courtesy of Bureau of Reclamation



Reservoir Status

Klamath River Basin. Data courtesy of Bureau of Reclamation





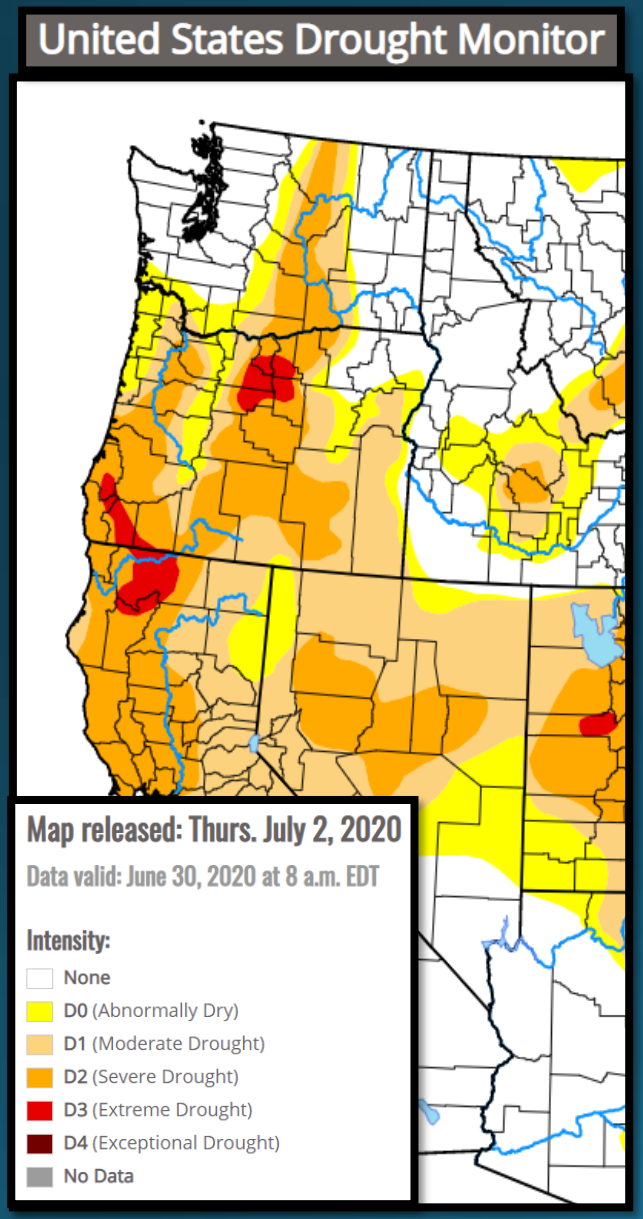
Northern California. California Data Exchange Center

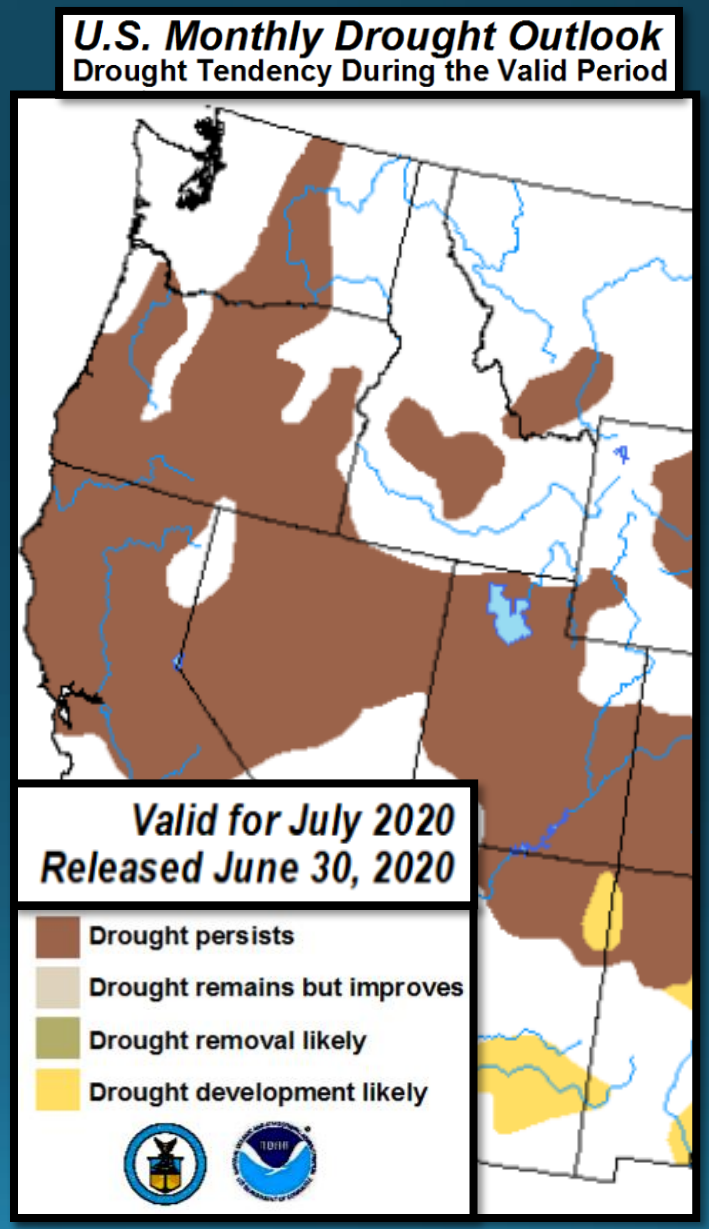
Crater Lake

Image: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 6/30/20	Highest Max/ Lowest Min
June	57.3	36.6°	3.22"	12.8"	0"	80° on 24th / 23° on 8th
Normal (1981-2010)	57.9°	33.2°	2.28"	4.1"	6"	N/A

Drought Monitor (Current) & Outlook (July)

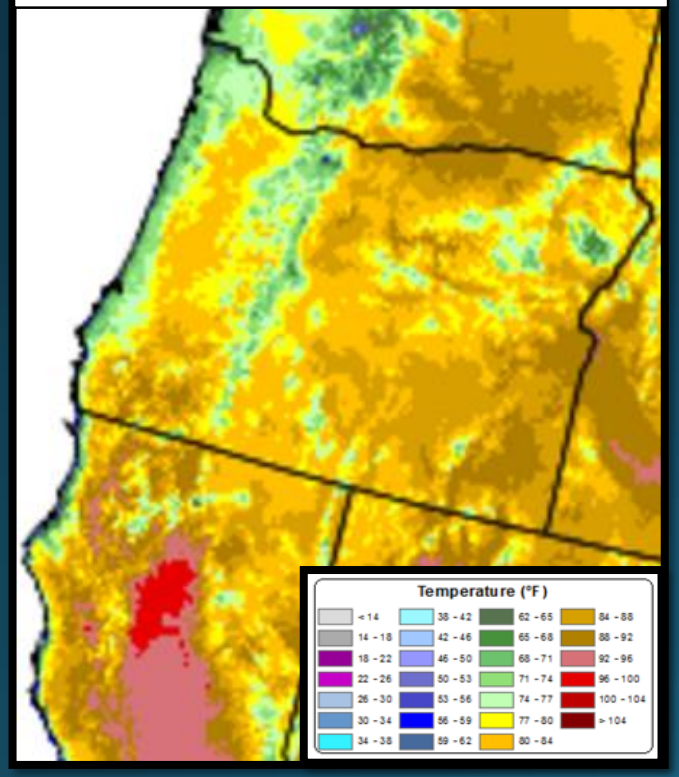




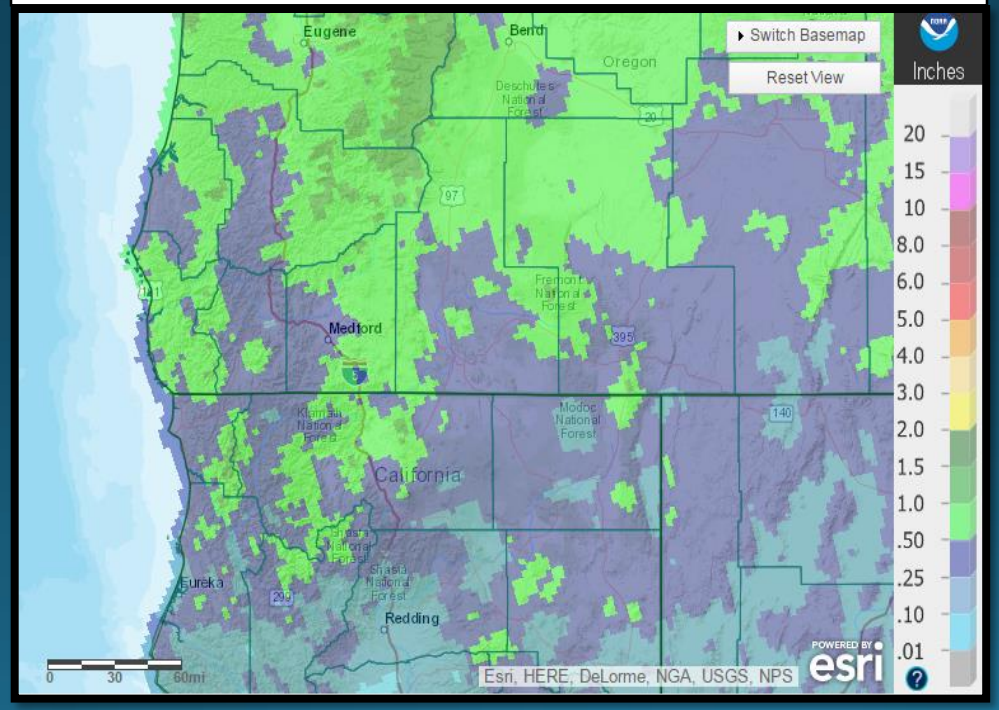
Looking Ahead: Normals for July (1981-2010)

Typically, July, along with August, is one of the two driest and warmest dry season months. High temperatures are very warm to occasionally hot, low temperatures are cool to occasionally warm, and precipitation is minimal, yet locally intense, usually coming in the form of monsoonal showers and thunderstorms. Nearly all of the forecast area receives, on average, an inch or less of precipitation in July. Valley high temperatures are usually in the 80s to lower 90s. Nights are usually cool, with average minimum temperatures in the 40s for valleys east of the Cascades, and 50s in valleys west of the Cascades.

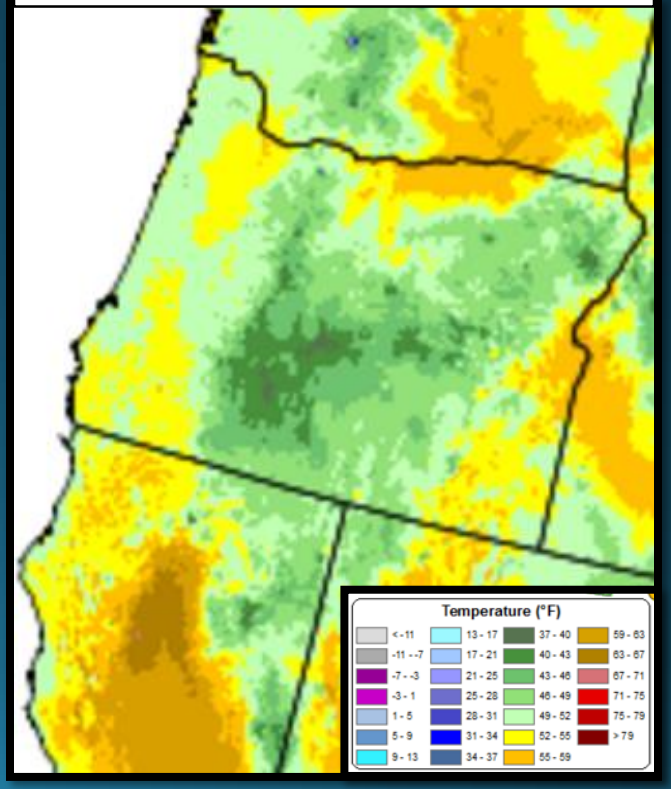
July Avg Maximum Temperatures



July Average Precipitation



July Avg Minimum Temperatures



July 2020 Outlook

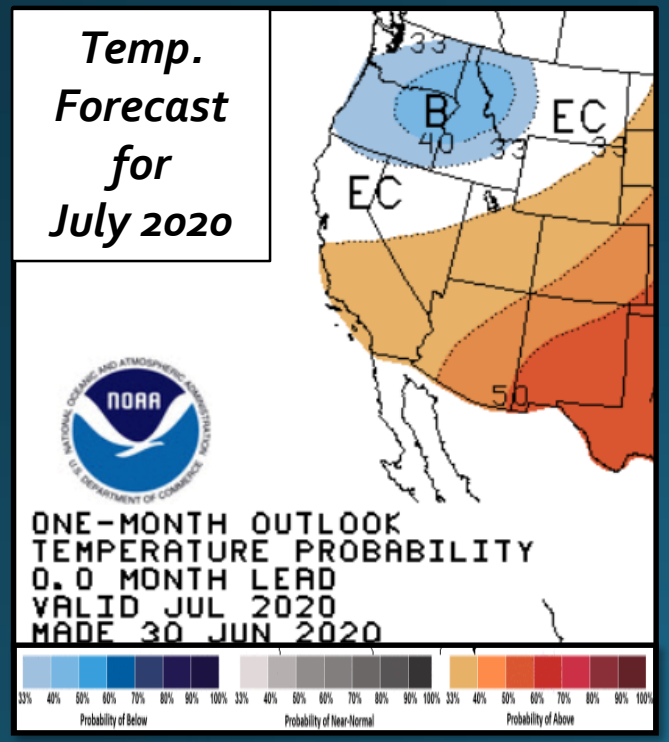
(Written July 7th)

The official Climate Prediction Center forecast for July 2020 predicts increased chances of below normal temperatures mainly for our Oregon areas, equal chances of below, near, and above normal temperatures for our California areas, and equal chances of above, near, and below normal precipitation across the Medford NWS forecast area.

- Our localized ***July temperature*** forecast is for ***NEAR normal temperatures, most likely between -4°F and +4°F from the 1981-2010 normals***.
- Our localized ***July precipitation*** forecast is for **below normal precipitation south of the Umpqua Divide west of the Cascades, near normal north and west of the Umpqua Divide, and equal chances elsewhere.** July is one of the three driest moths for precipitation, but what we get outside of the marine layer is usually convective with high PWATs, so it's usually boom or bust. Guidance suggests thunderstorms possible in the 3rd to 4th weeks of the month east of the Cascades that could bring locally heavy rainfall.

Summary: According to the Western Region Climate Center, the 1st week of July was 0°F to 8°F below normal for temps with little to no precipitation. A series of troughs are expected to affect the PacNW through the month, but the trend from mid-late July will be for the four corners high to expand north and westward, at times, and the trough over the PacNW to retrograde NW-ward and weaken. Thus, we're expecting an upward trend in temperatures based on both climo and anomalies from mid-late month. However, the GEFS still leans colder than normal for the month and recent runs of the ECE warmer. Mid to late month guidance suggests periods of anomalous easterly and southerly flow that could bring monsoonal thunderstorms, esp. from the Cascades eastward, between the 19th and 31st.

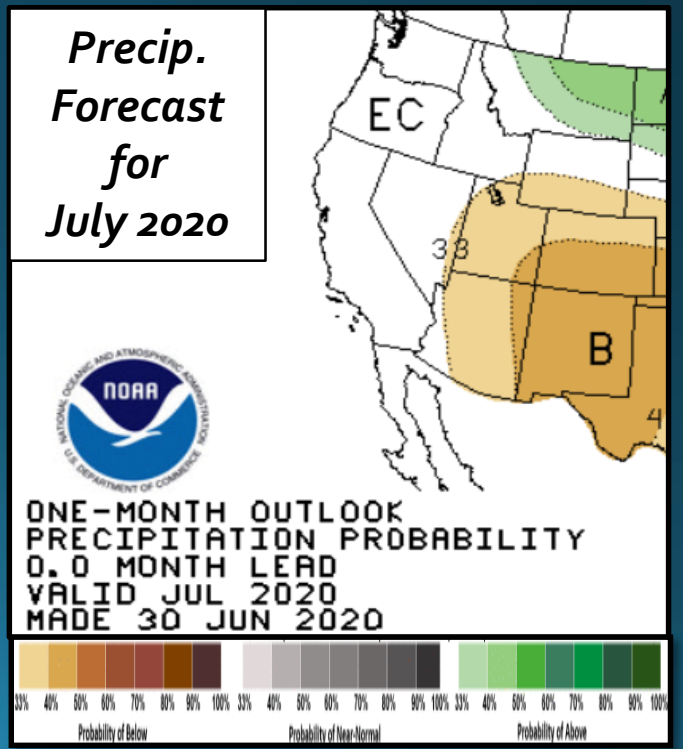
Temp. Forecast for July 2020



Expected Impact, July 2020:

Overall expectations for July 2020 are for fairly typical conditions. However, long term precipitation deficits and above normal temperatures plus climatology suggest fire danger is likely to increase to "High" except in Coos and Douglas counties. This and the expectation for anomalous easterly and southerly flow mid-late month increase wildfire concerns for the area, as warming, drying, and then lightning are common in July under such a pattern. Thus, primary impacts are ongoing drought as water supplies diminish with the dry season, wind, hail, rain, and lightning impacts from thunderstorms, and wildfire risk and related smoke impacts later this month. Thunderstorms are inherently difficult to predict, as is lightning amount and related precipitation, but it's often during big lightning events on the fringe of precipitation shields of thunderstorms where most problematic wildfires tend to start and grow.

Precip. Forecast for July 2020



*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**