

National Weather Service Medford

March 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 \(NCEI\)](#).



March 2020 Weather Review

March 2020 was characterized by multiple closed lows that moved into the area from the Gulf of Alaska, and this is evident in the cooler than normal temperatures that were recorded during the month. Although the weather was relatively active, the western half of the forecast area ended the month with below normal precipitation. East of the Cascades, however, one system in particular, delivered a copious amount of precipitation which was enough to boost precipitation totals in that area to near normal and above.

The month began on the heels of a departing low pressure system, then upper level ridging built into the area by the 2nd and this gradually transitioned to zonal flow aloft over the following week. During this period, many areas east of the Cascades and in northern California recorded their warmest temperatures of the month, and a few high temperature records were either tied or broken. While it was warm for areas west of the Cascades during this time as well, the warmest temperatures of the month didn't occur until later.

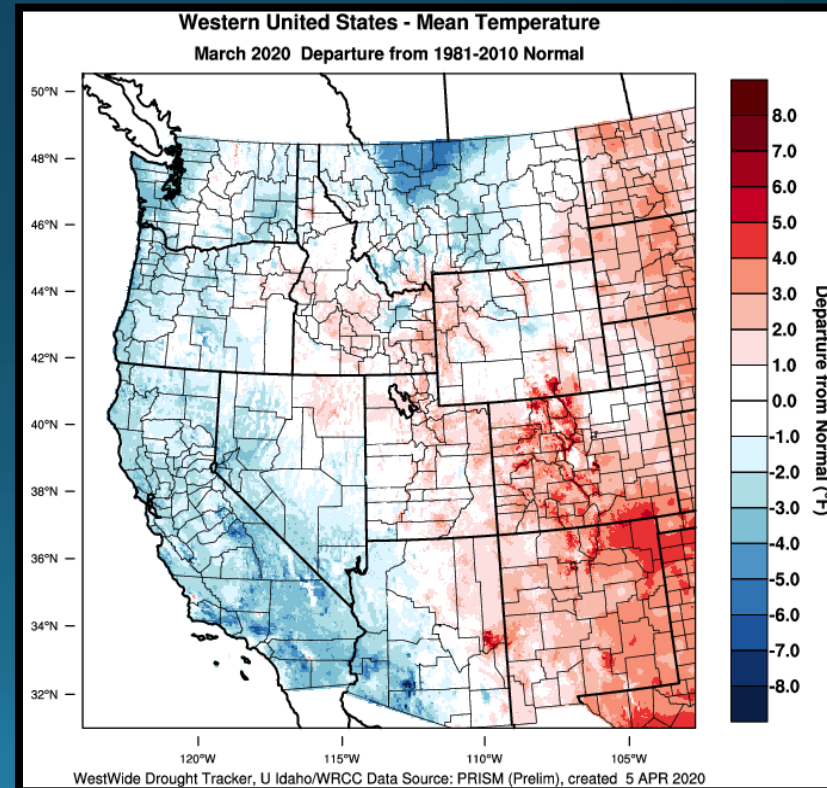
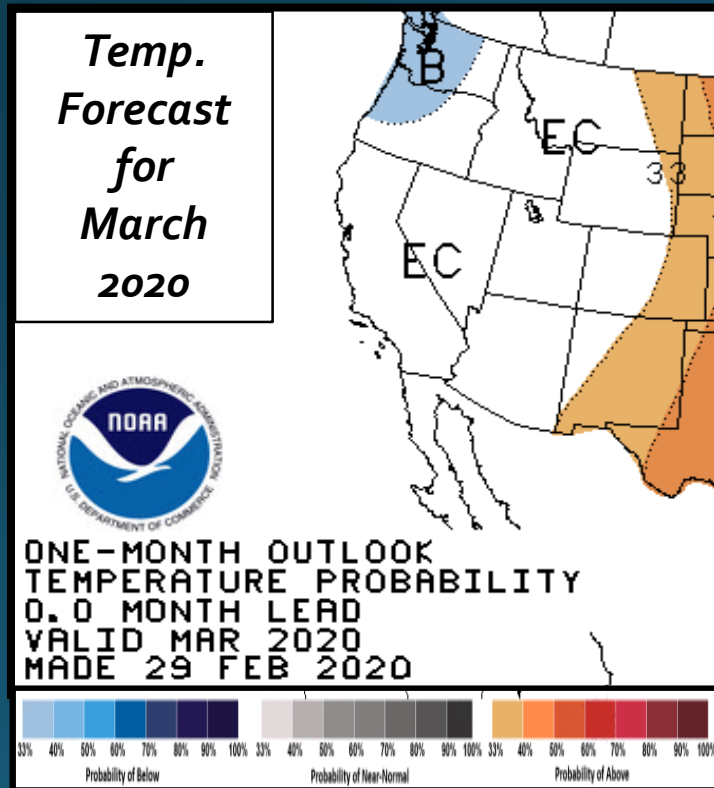
Following this warm period during the first week, the pattern transitioned to more active with a series of upper level closed lows affecting the area. The first low pressure system slid by the area far enough offshore to keep most of the precipitation away, but it did bring temperatures back down to more seasonal values. Another, more persistent, closed low affected the area during the middle of the month. It followed a similar trajectory as the previous low but was much closer to shore. This brought a round of much needed precipitation and mountain snow. Although the Medford area received the lower amount of precipitation with this system, as is typical in a rain shadowed valley, half an inch to an inch of precipitation was common across the rest of the area during the four-day period of the 14th – 18th. Some areas east of the Cascades and in northern California recorded over an inch and a half to almost two inches during this period! As this low finally moved inland, wrap around moisture brought a significant round of rain and snow to southeastern Lake and Modoc counties. One observation from CalFire in Alturas reported 8 to 12 inches of snow on the 18th. Given this amount of snow, it's no surprise that these locations also saw record breaking, if not record shattering, precipitation from this system. As this system lingered, some cold nights were felt across the forecast area and record low temperatures were set during this period for Alturas and Montague.

Once this system finally departed, a brief warm up occurred and this was when locations west of the Cascades experienced their warmest temperatures of the month. Medford hit 70°F on the 22nd and this was the first time since November of 2019. Even Roseburg reached 71°F on the 22nd and this was this first time since late October of 2019. After this period of warm temperatures, more troughs moved through the area bringing additional rounds of beneficial rain and snow. Although the weather was active for the month, it was not enough to make up for the deficit created by the very dry start to fall and the lack of precipitation resulted an increase in drought designations for much of the area .



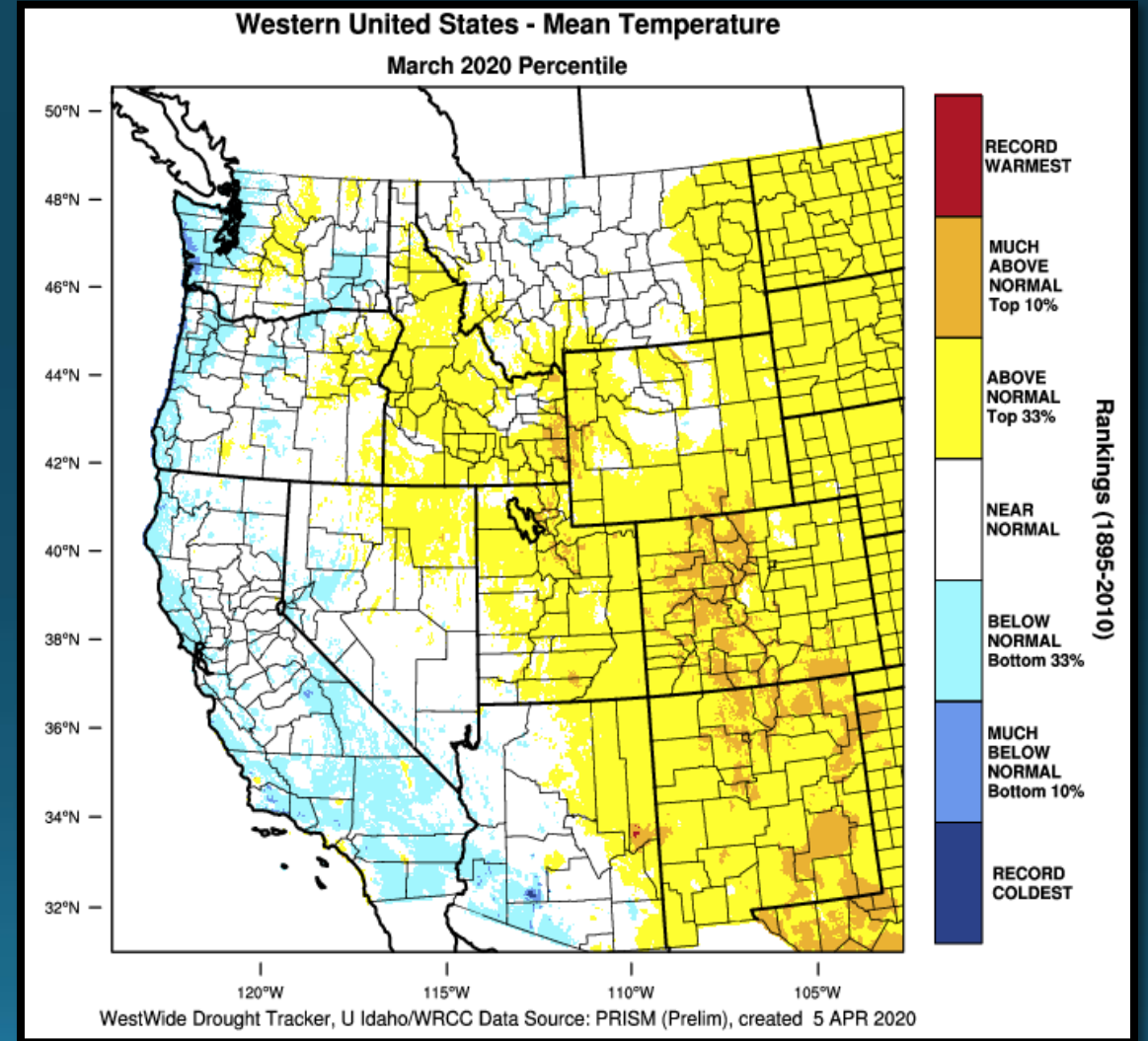
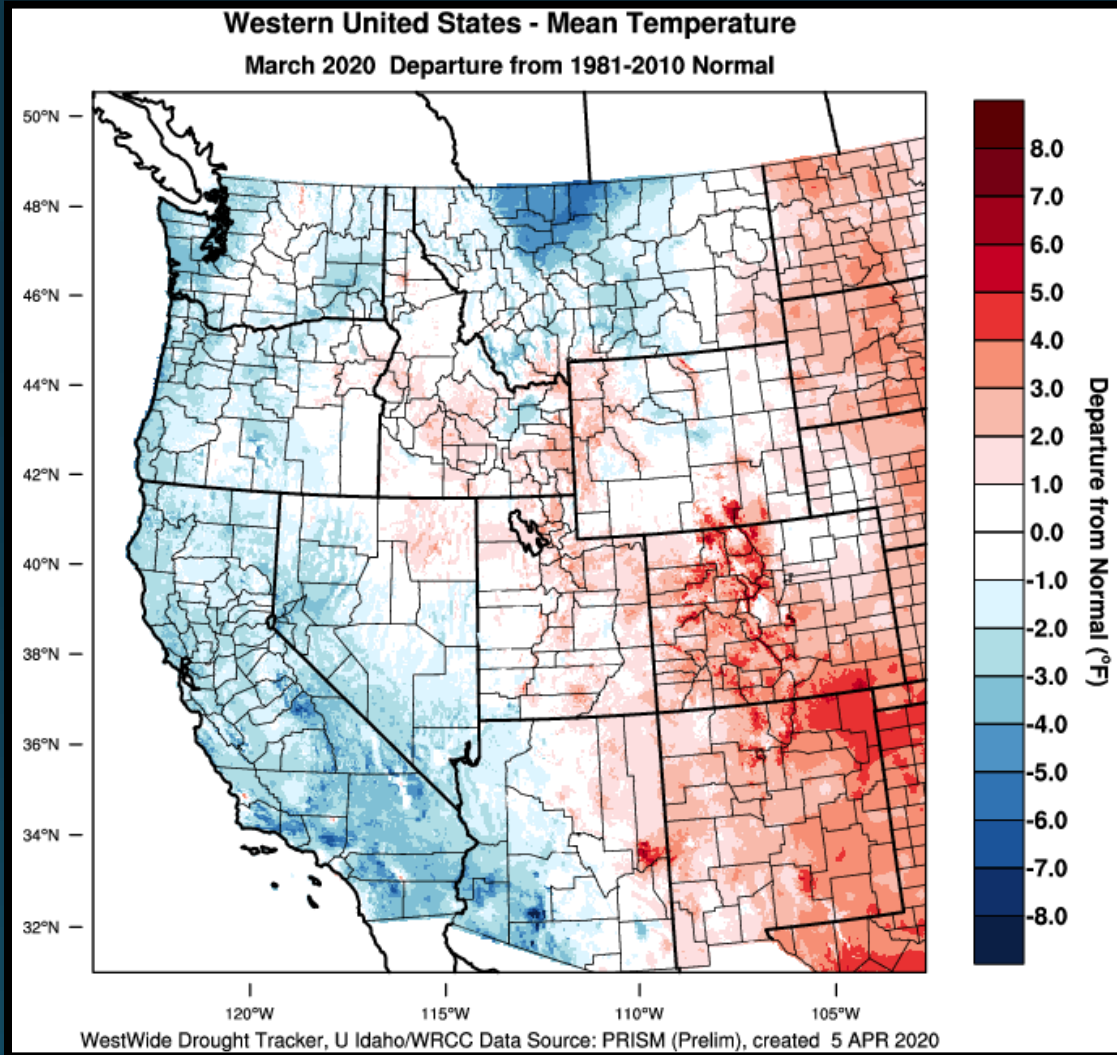
A Look Back at the March 2020 Temp Outlook

- **What was our localized forecast?** Near to slightly below normal temperatures, most likely between -3°F and $+3^{\circ}\text{F}$ of climatology.
- **Was the forecast anomaly correct?** Yes, mostly- nearly right on. **Actual anomalies across the forecast area were -4°F and $+1^{\circ}\text{F}$.**
- **Was the expected impact correct?** Yes. The main impact noted was "precipitation and snowpack deficiencies this month are likely to increase the areal coverage of "Moderate" drought."
- **Did our forecast improve upon the CPC forecast?** Somewhat. While the CPC forecast was also correct, our localized forecast quantified the temperature anomalies expected.





March 2020 Observed Temperatures





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	45.1	-2.5°	52.0	-1.8°	38.2	-3.3°
Roseburg	48.0	-0.6°	57.9	0.1°	38.0	-1.3°
Medford	46.7	-1.6°	58.6	-0.9°	34.8	-2.3°
Klamath Falls	37.8	-0.7°	50.9	0.3°	24.7	-1.7°
Montague, CA	42.9	-0.1°	57.6	1.3°	28.3	-1.4°
Mt. Shasta City, CA	41.0	-1.3°	51.8	-2.6°	30.2	0.0°
Alturas, CA	36.5	-1.9°	50.7	-1.3°	22.3	-2.5°



Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
<i>North Bend</i>	56°	28th	33°	10th
<i>Roseburg</i>	71°	22nd	31°	13th
<i>Medford</i>	70°	22nd	28°	1st & 2nd
<i>Klamath Falls</i>	65°	5th	15°	26th
<i>Montague, CA</i>	72°	5th	16°	26th
<i>Mt. Shasta City, CA</i>	67°	4th	22°	16th & 19th
<i>Alturas, CA</i>	68°	5th	8°	20th

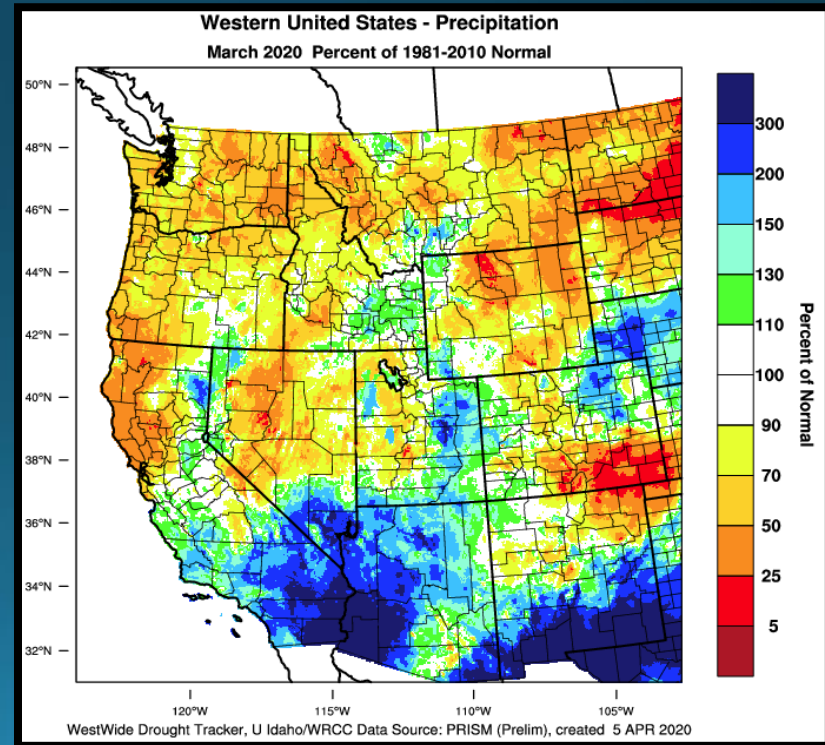
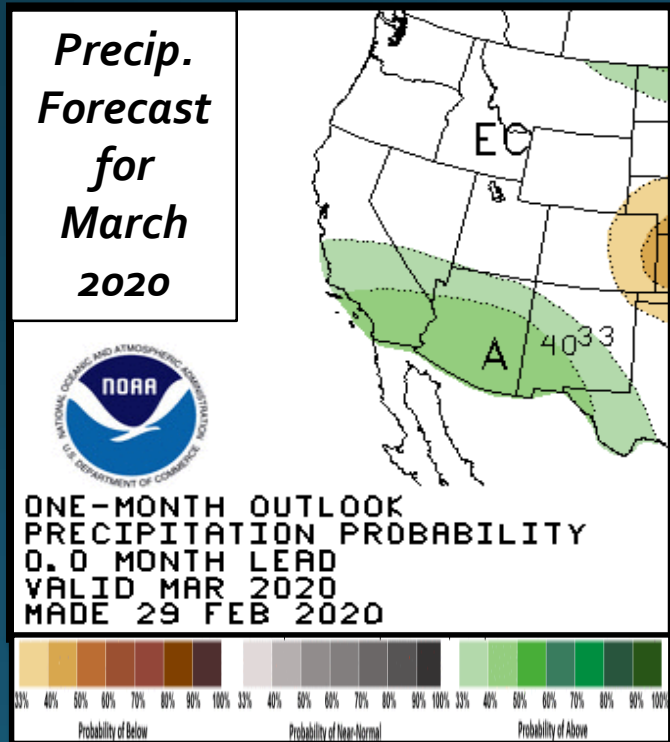
	Date	Record Low	Old Record/Year
<i>Alturas</i>	20 th	8°	12° / 1965
<i>Montague</i>	15 th	19°	Ties w/ 2005
	19 th	19°	Ties w/ 2012
	25 th	20°	21° / 1995
	26 th	16°	21° / 2018

	Date	Record High	Old Record/Year
<i>Alturas</i>	5 th	68°	Ties w/ 1987
<i>Montague</i>	5 th	72°	Ties w/ 1986
<i>Mt Shasta City</i>	4 th	67°	66° / 1954



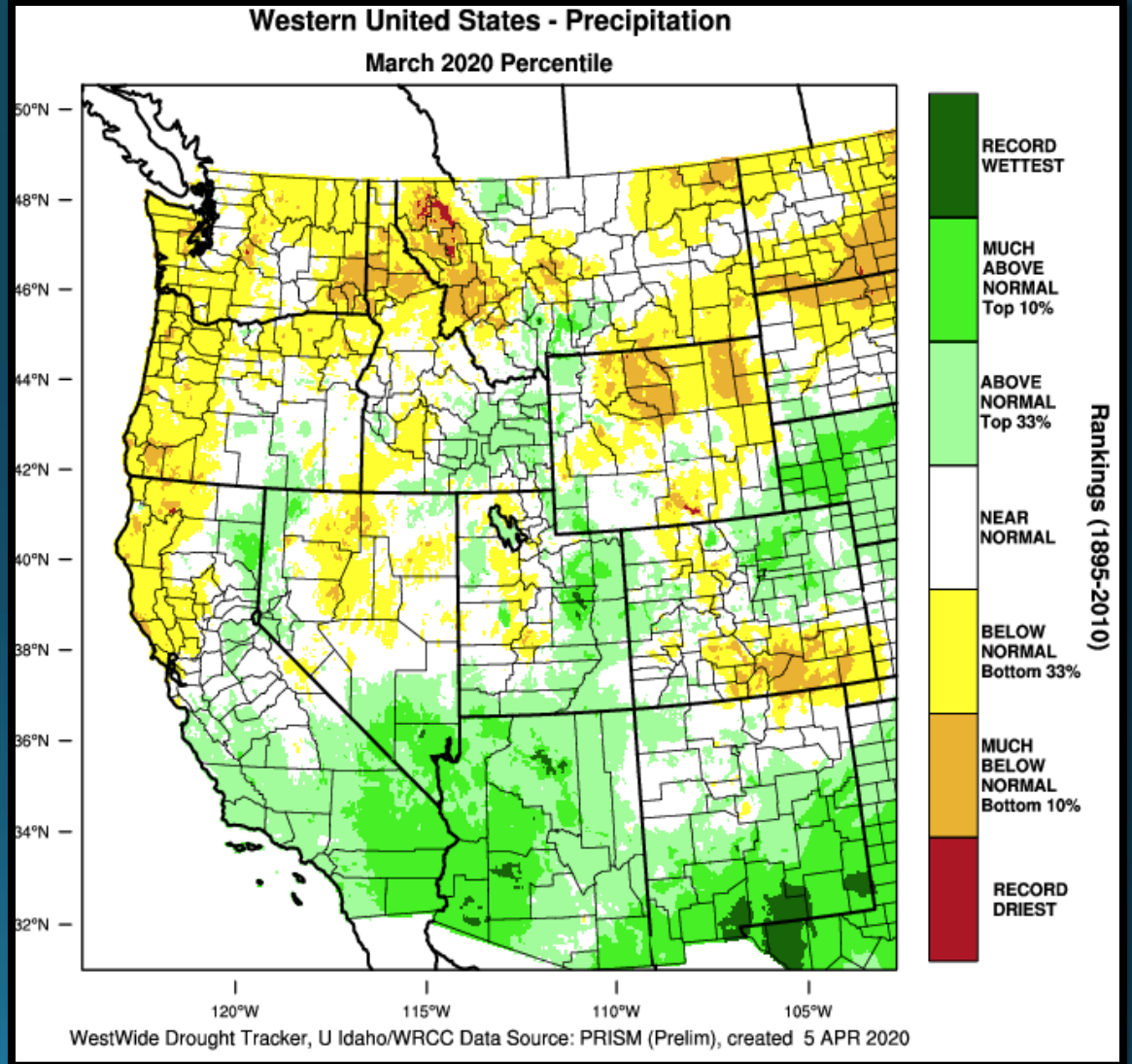
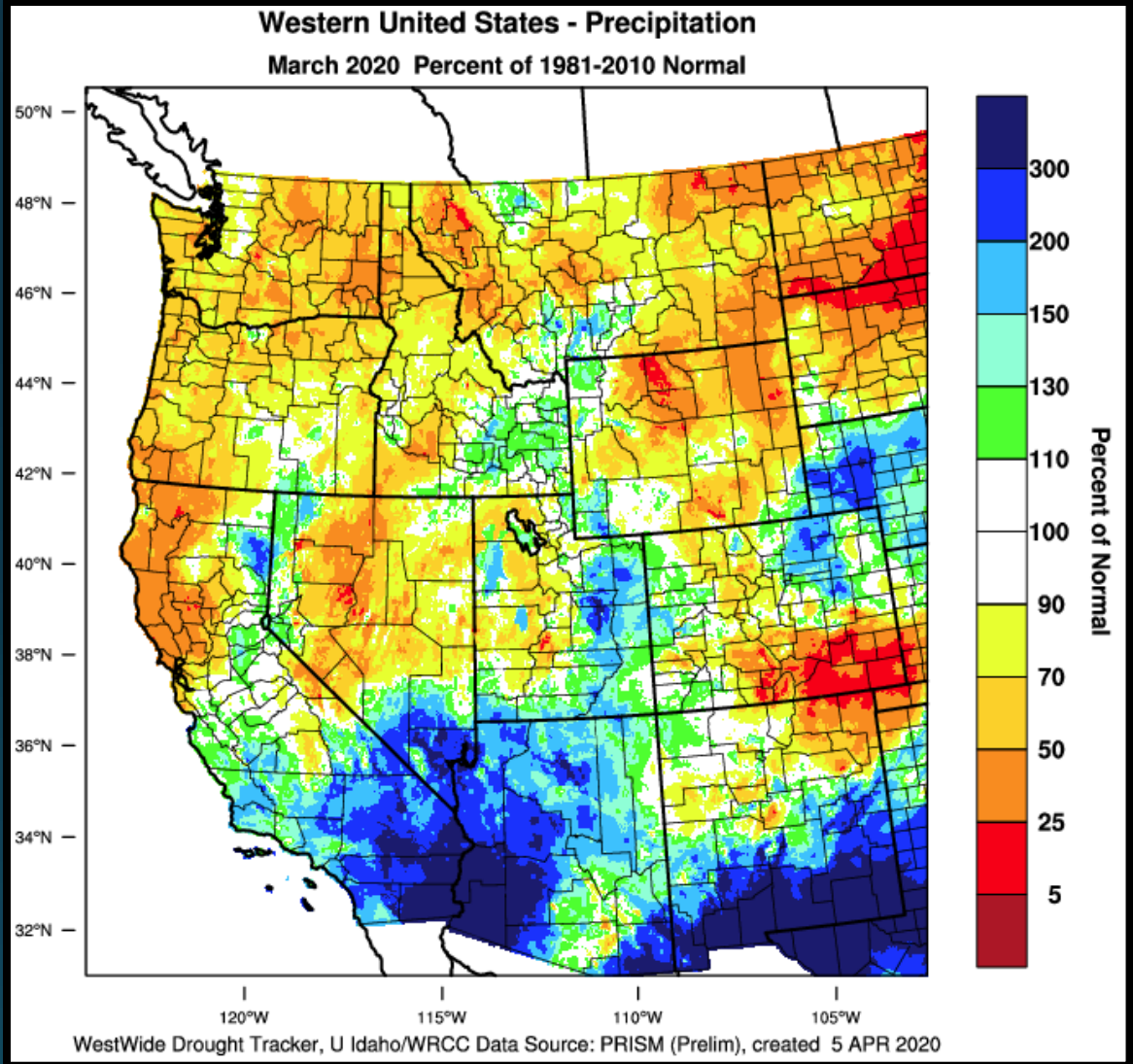
A Look Back at the Mar 2020 Precip Outlook

- **What was our localized forecast?** Our localized *March precipitation* forecast was “*below normal precipitation across the forecast area (in the 25-75% range), except from the Mount Shasta area eastward into Modoc County, where it’s likely to be close to normal (80-120% of normal).* Precipitation most likely to be below normal for Oregon areas from the Cascades westward minus Curry County.”
- **Was the forecast anomaly correct?** *Mostly yes.* Most areas were 25-75% of normal. However, wetter area ended up a bit further east and north of expectations, with Modoc and Lake counties 75-130% of normal.
- **Was the expected impact correct?** *Yes.* While snowpack was virtually unchanged due to cooler than normal temperatures, the main impact noted was “precipitation and snowpack deficiencies this month are likely to increase the areal coverage of “Moderate” drought.”
- **Did our forecast improve upon the CPC forecast?** *Yes.* We accurately indicated precipitation would be below normal and areas where anomalies would be greatest.





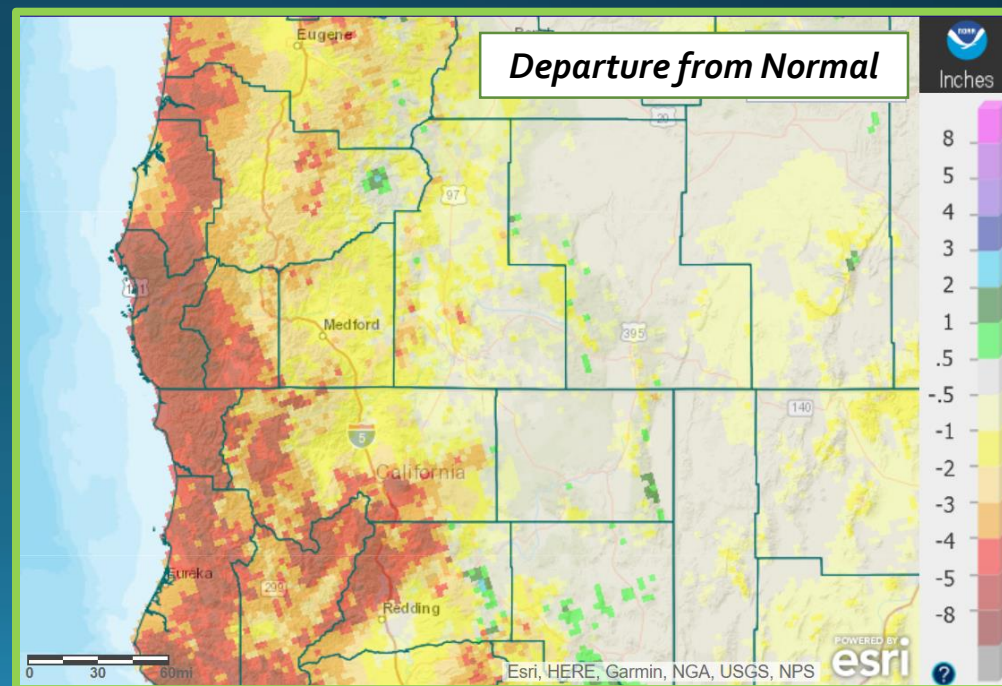
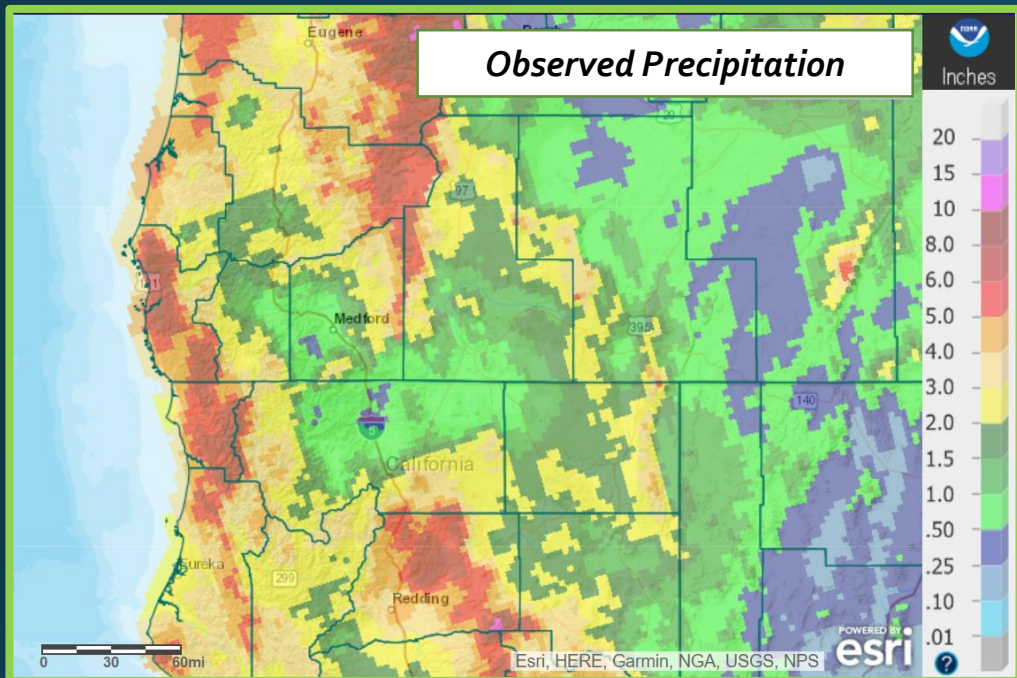
March 2020 Observed Precipitation





Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	3.71"	-4.12"	0.74"	30 th
Roseburg	2.13"	-1.37"	0.41"	31 st
Medford	0.74"	-0.97"	0.12"	15 th
Klamath Falls	0.75"	-0.52"	0.35"	17 th
Montague, CA	0.40"	-1.91"	0.23"	7 th
Mt. Shasta City, CA	2.23"	-3.73"	0.53"	17 th
Alturas, CA	2.10"	0.58"	0.75"	18 th

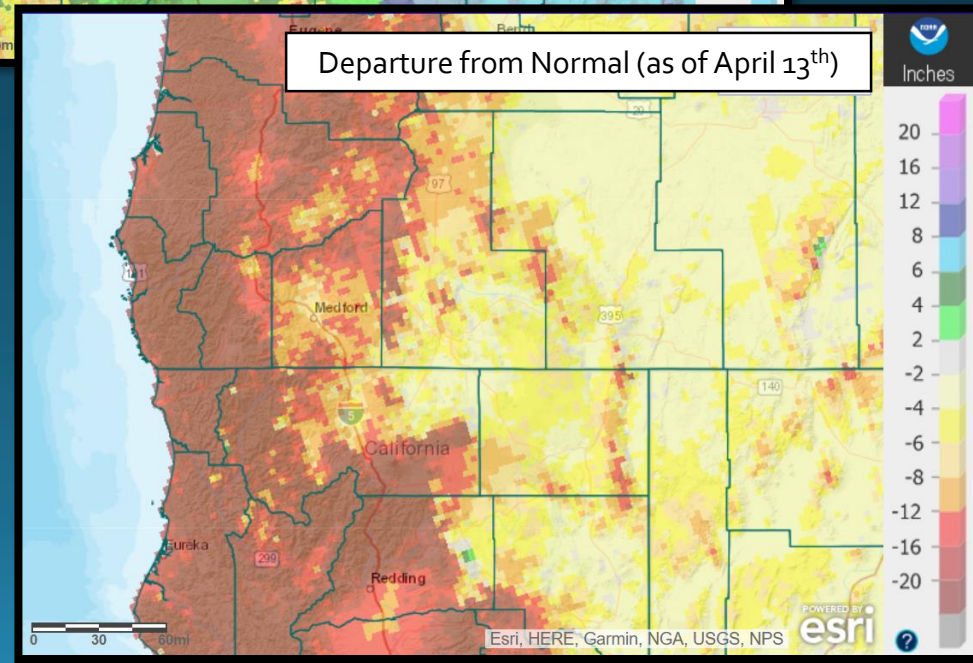
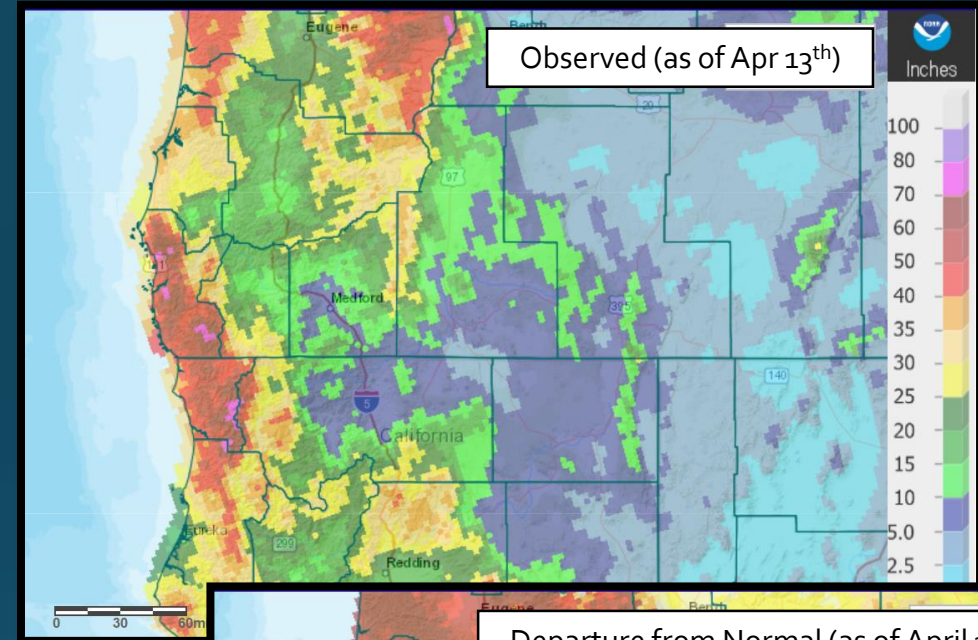
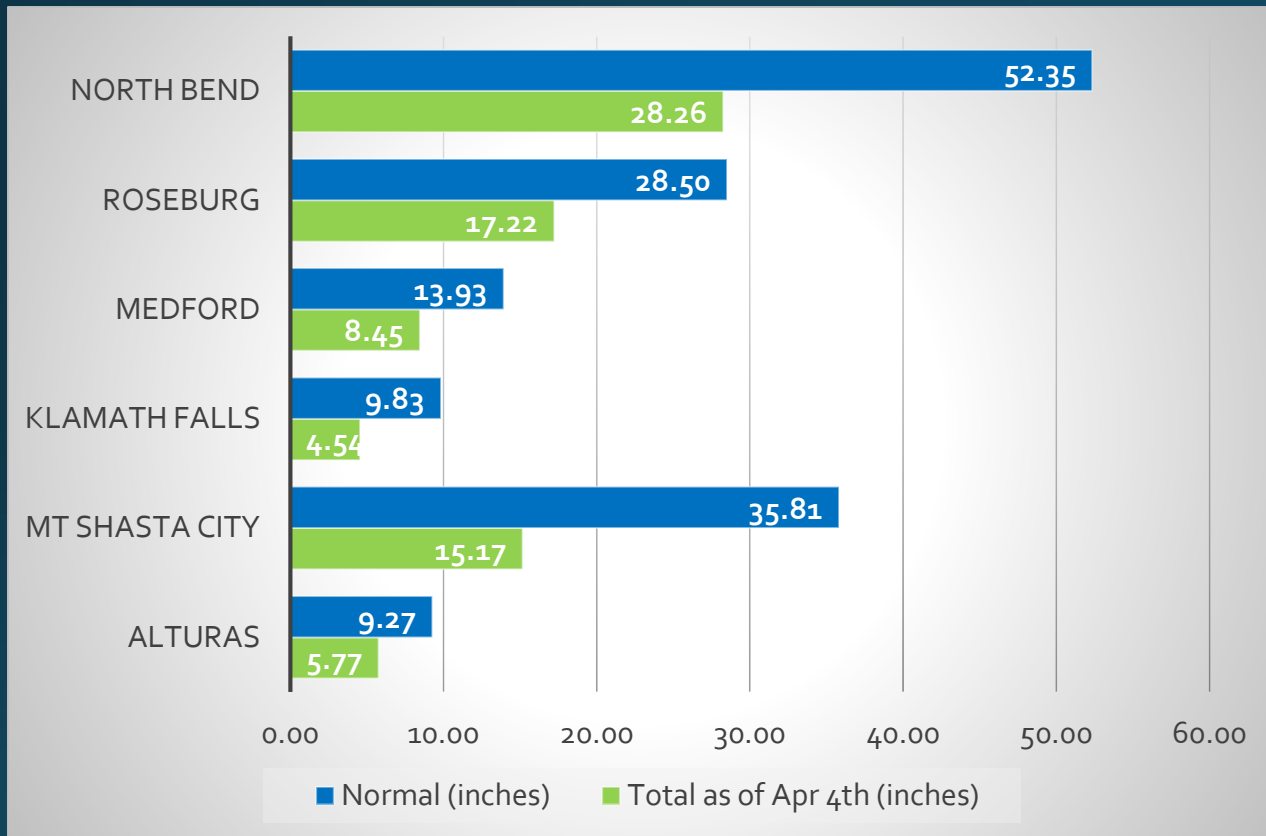


Record Precipitation

	Date / Amount	Old Record / Year
Alturas	17 th / 0.47"	0.30" / 1952
	18 th / 0.75"	0.30" / 1952

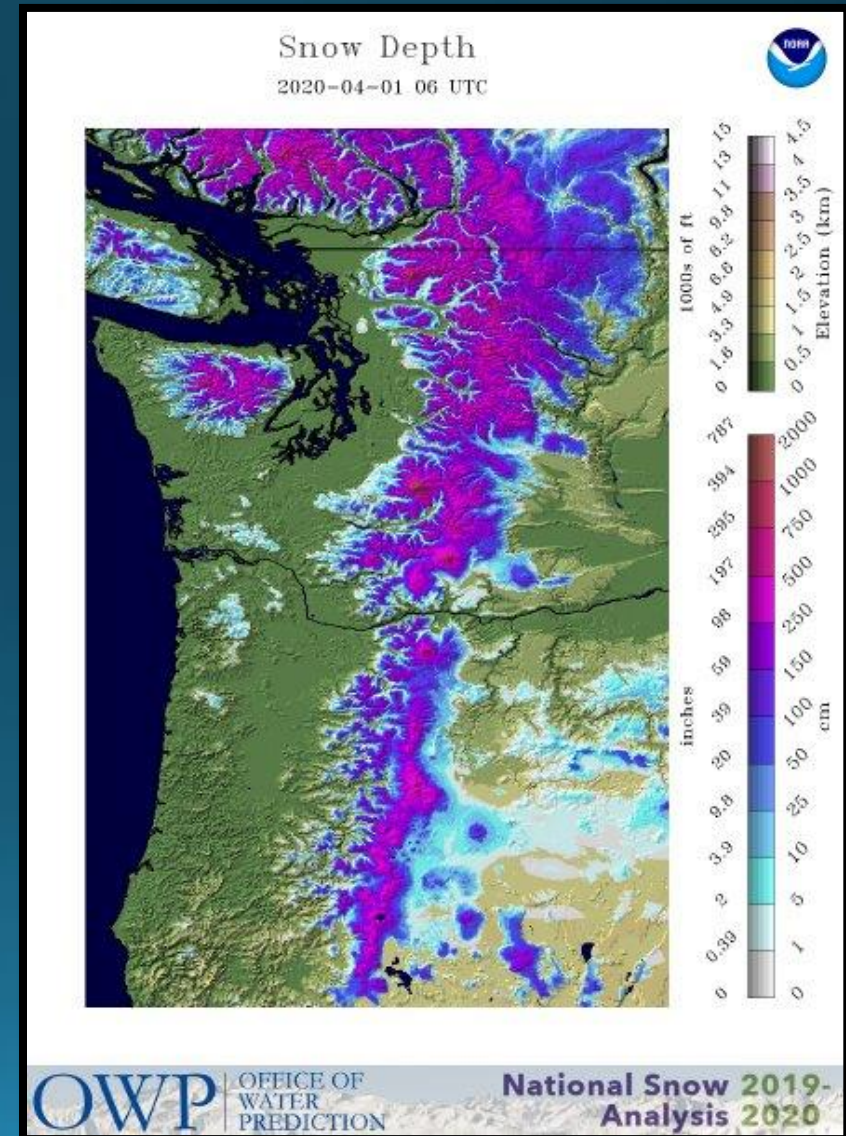
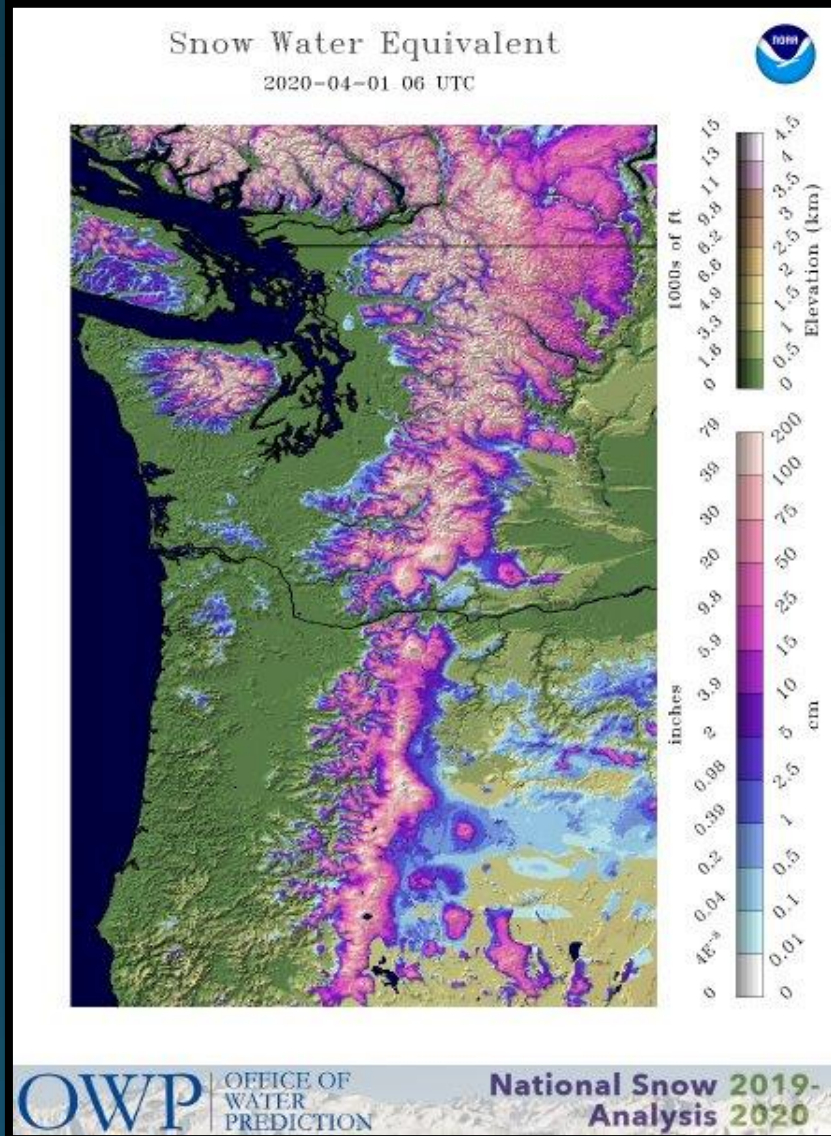


Water Year Status (As of April 4th)

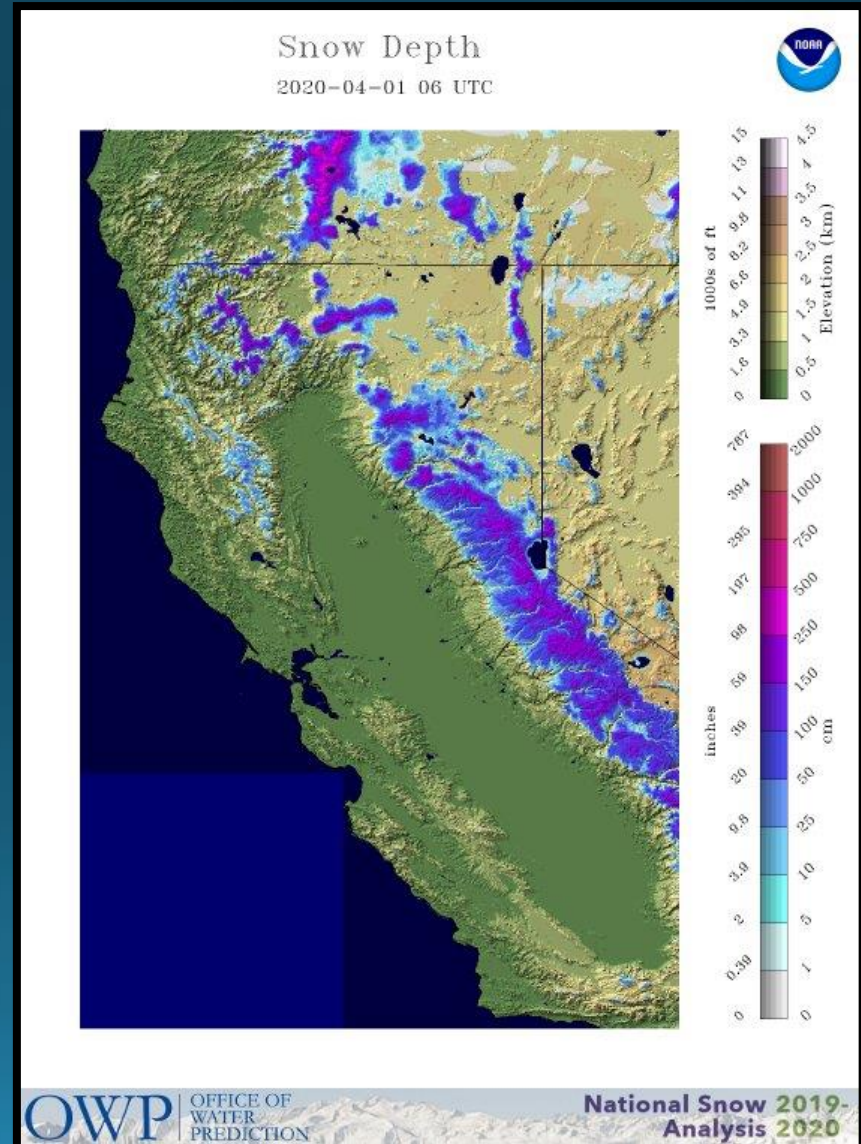
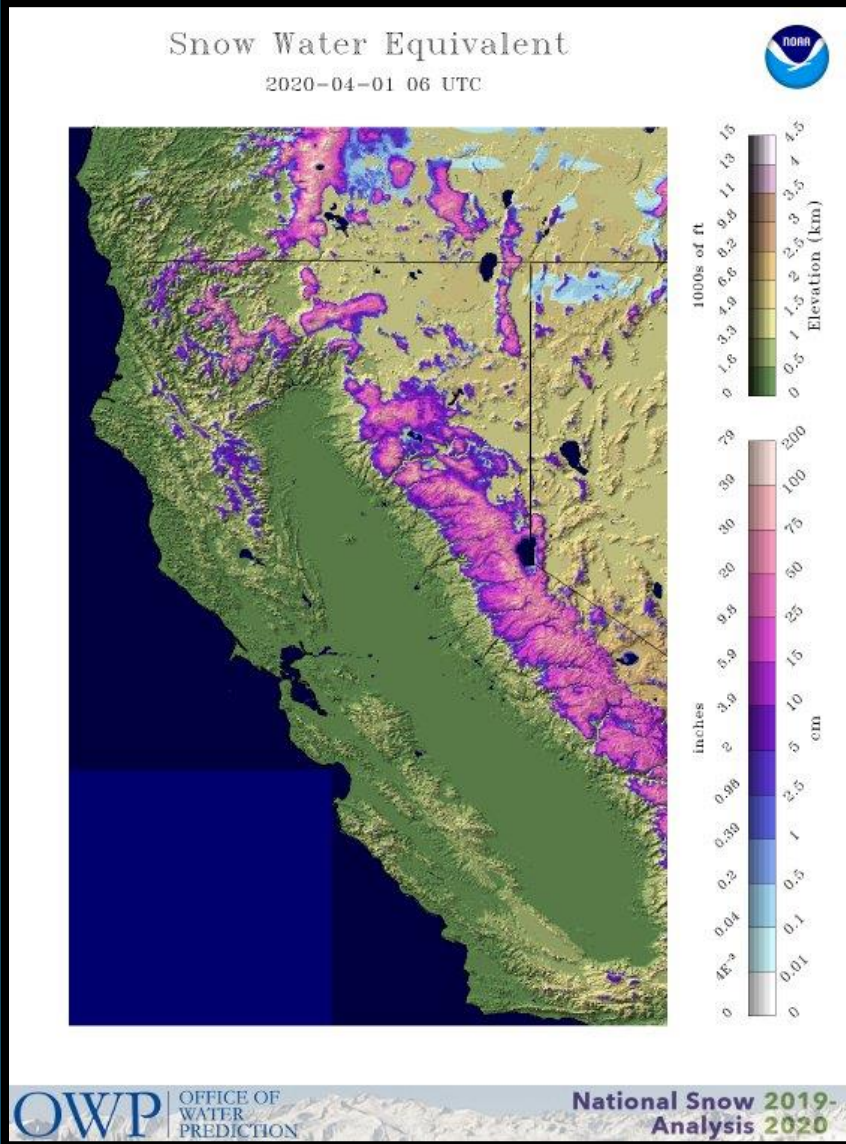




PacNW SWE & Snow Depth as of 4/1/20

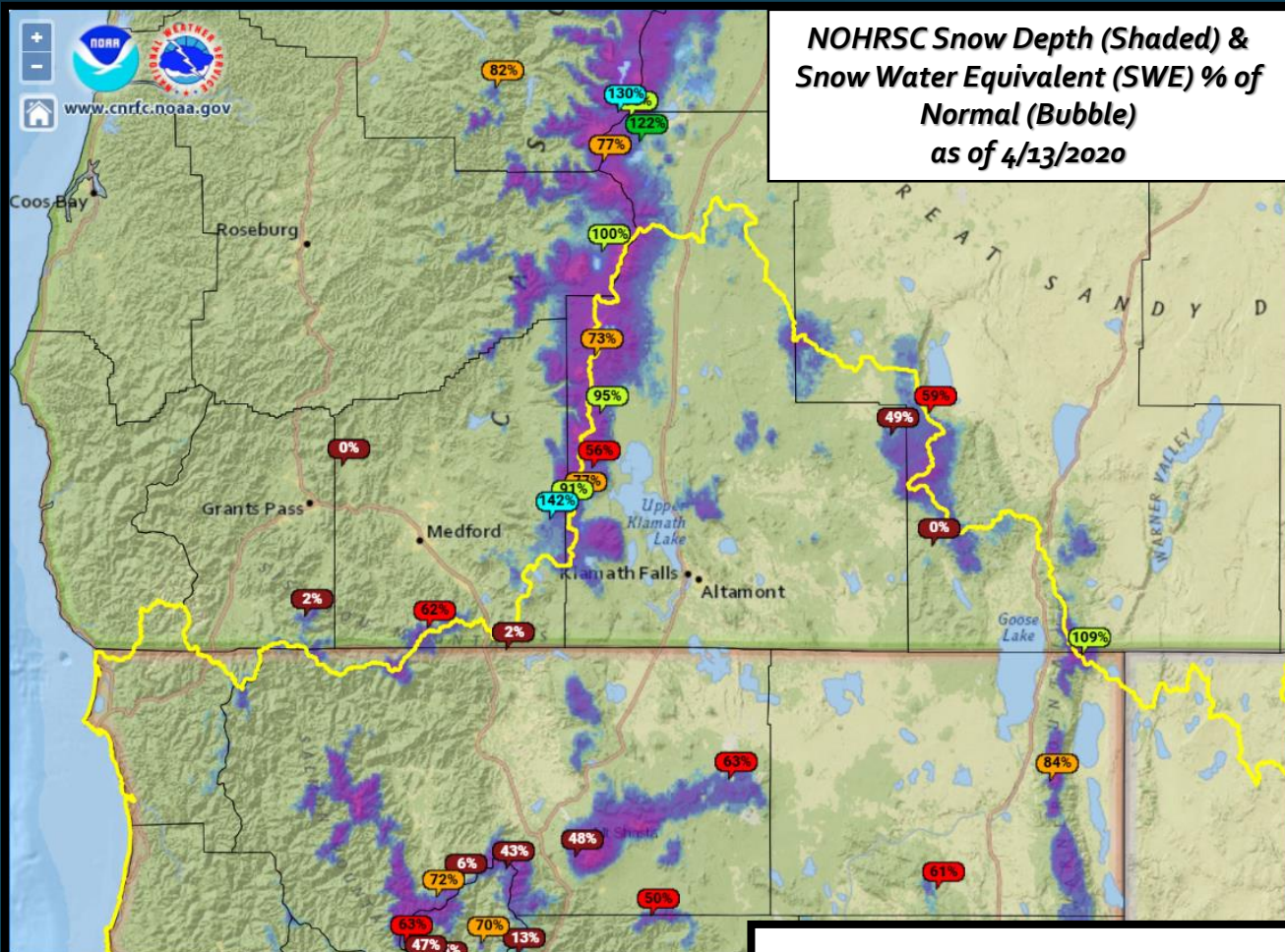


California SWE & Snow Depth as of 4/1/20

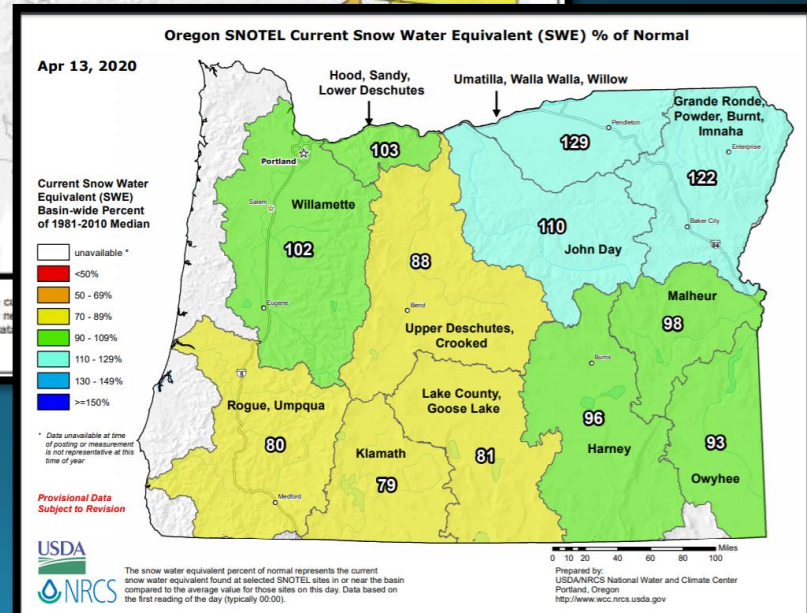
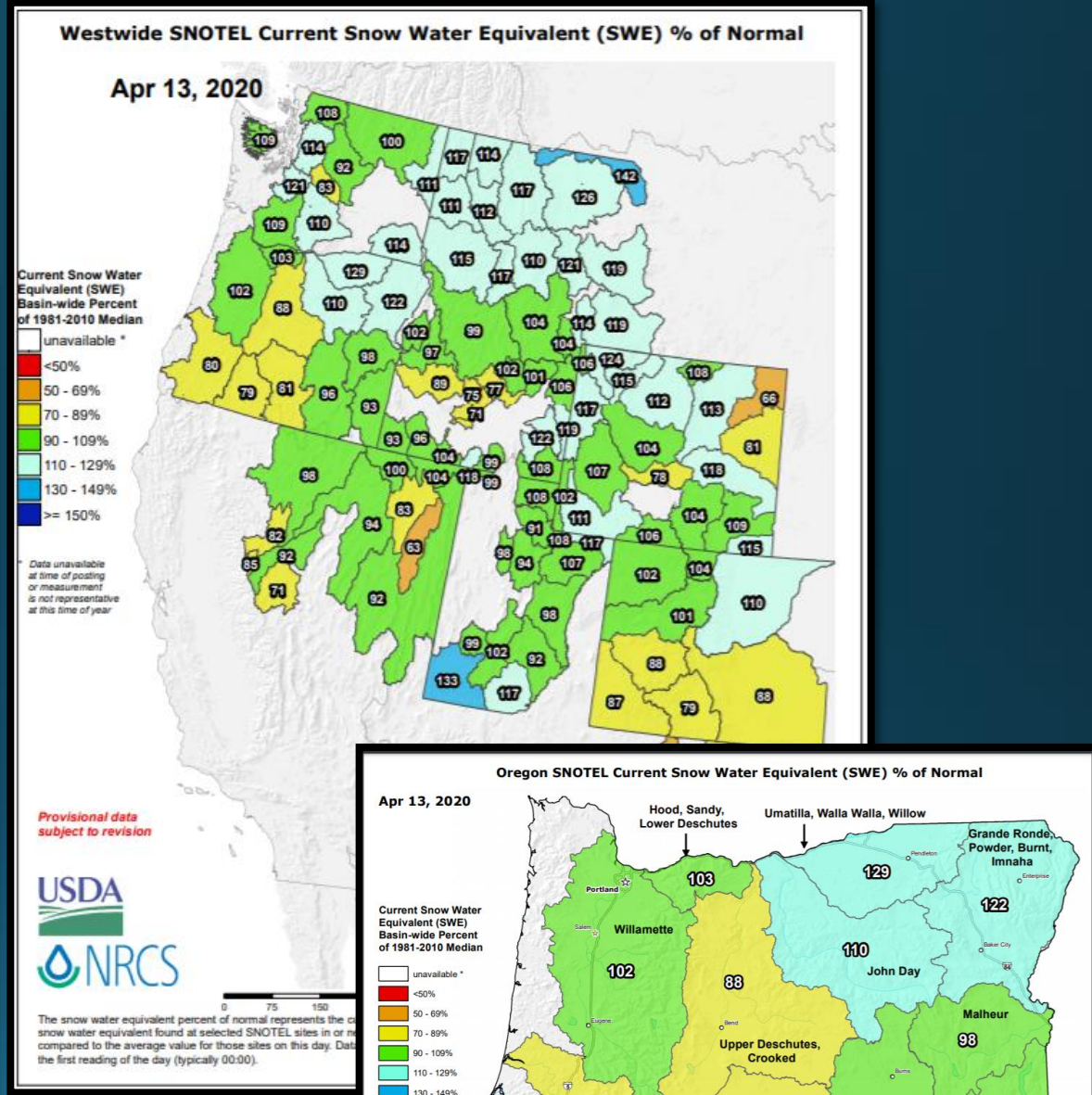
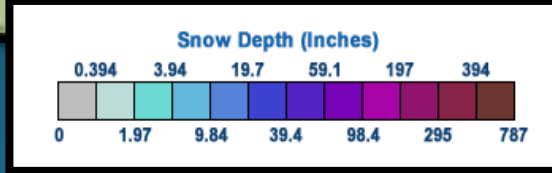
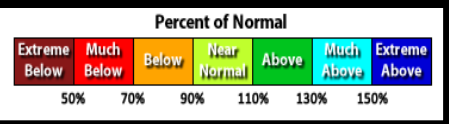




Snowpack Status



NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 4/13/2020



Crater Lake

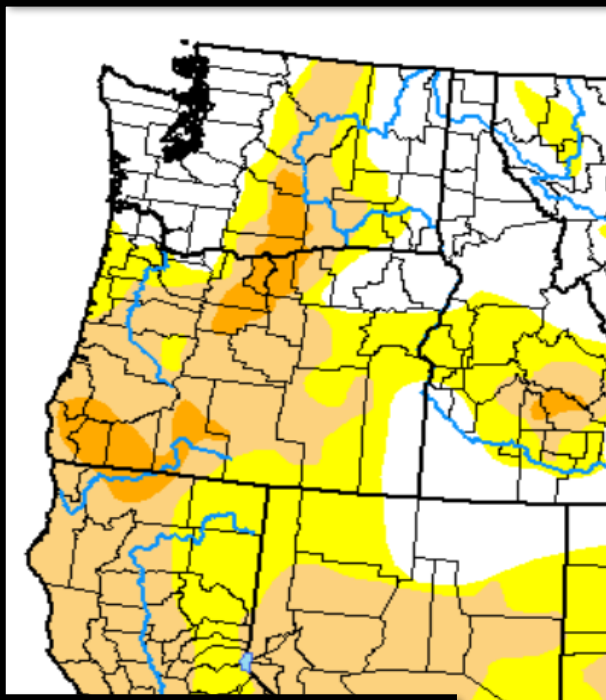
Image Courtesy: NPS



	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 03/31/20	Highest Max/ Lowest Min
March	35.7°	19.1°	6.90"	60.6"	88"	51° on 4 th & 12 th / 7° on 26 th & 27 th
Normal (1981-2010)	37.3°	19.4°	7.53"	73.2"	113.6"	N/A

Drought Monitor (Current) & Outlook (April)

United States Drought Monitor



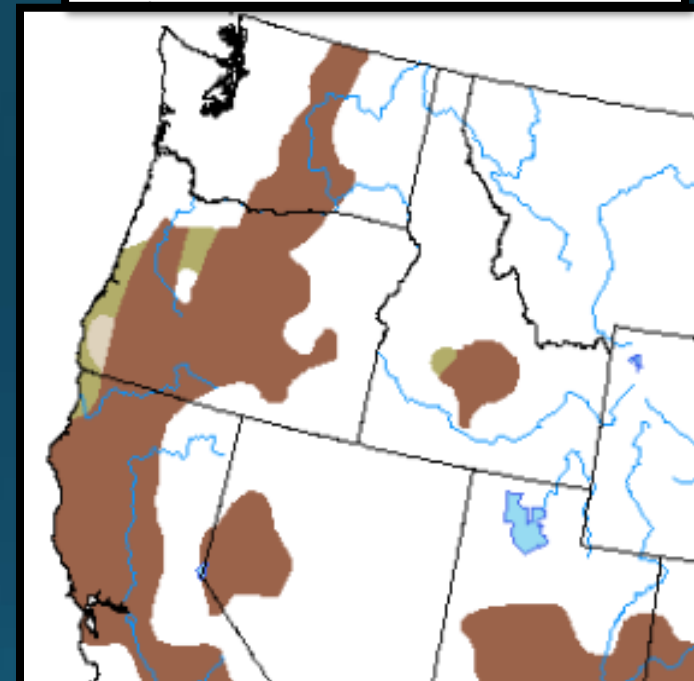
Map released: Thurs. April 9, 2020

Data valid: April 7, 2020 at 8 a.m. EDT

Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period



Valid for April 2020
Released March 31, 2020

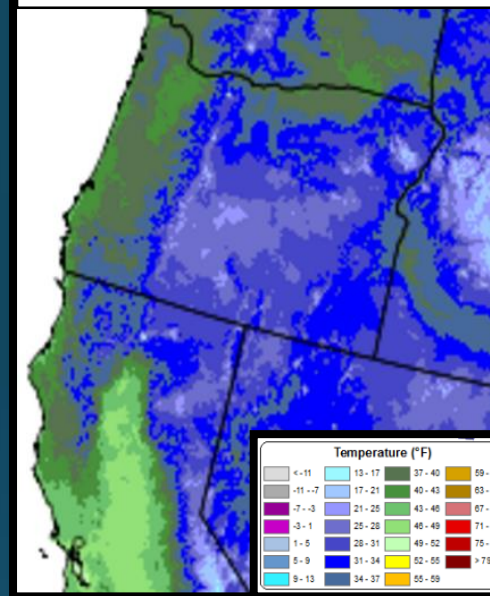
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



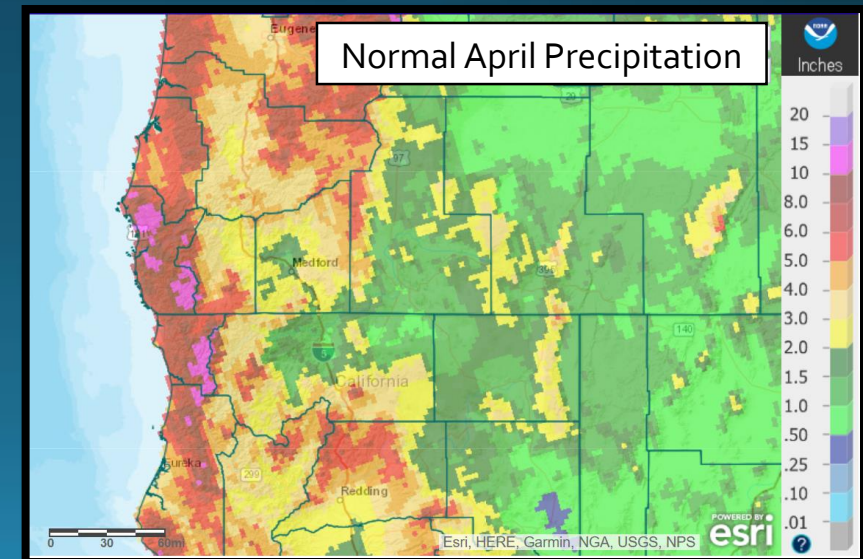
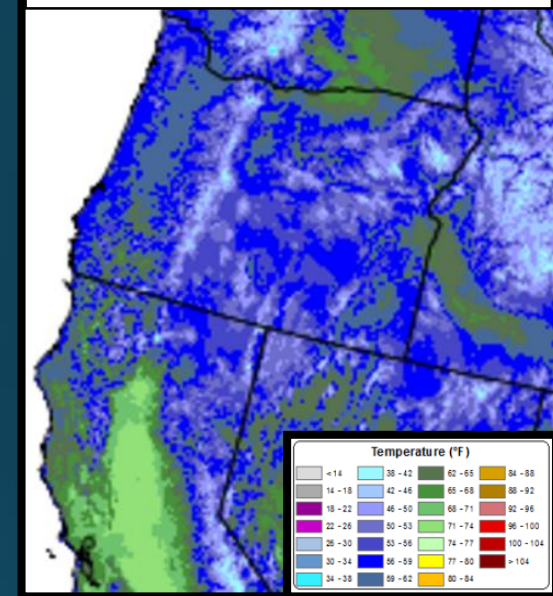
Looking Ahead: Normals for April (1981-2010)

- Temperatures:** Along the coast, lows are typically in 40s with highs in the upper 50s to lower 60s. Valleys west of the Cascades usually experiences average lows in the mid 30s to mid 40s and highs 55 to 65 degrees . Lows in the upper teens to mid 20s occur across the higher, more typically snow packed mountains, with lows in the 20s to lower 30s for the valleys east of the Cascades. Highs in the higher terrain are typically in the upper 30s to mid 40s, while across the valleys east of the Cascades, highs are typically in the upper 40s to upper 50s.
- Precipitation:** Curry County usually gets 6 to 15 inches of water. South and southwest flow favored areas of west of the Cascades, the Mount Shasta area, and the Cascades and Siskiyou typically get 4 to 8 inches. The remainder of the West Side has a wide range in normals, from as low as 0.50 to 4 inches. East of the Cascades, the drier portions of Lake County can expect 0.50" to an inch, while the remainder of the East Side gets 1 to 4 inches of water, with up to around 5 inches in the some of the mountains.
- Snow:** With peak snow water equivalent normally having occurred in mid-March, we expect the snowpack to begin melting off in April. In some years the snowpack peaks in April. Also, we do often get snow in April that slows the melting process. The snowpack typically melts off much faster on southerly aspects than northerly ones due to exposure and related temperatures. Crater Lake NP HQ normal snowfall for April is 46.7 inches.

Average Minimum Temperatures



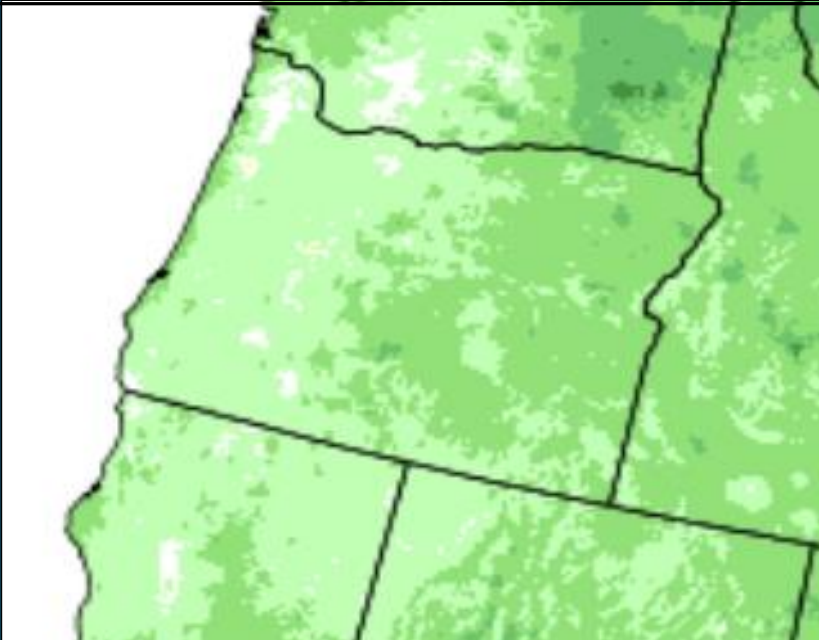
Average Maximum Temperatures



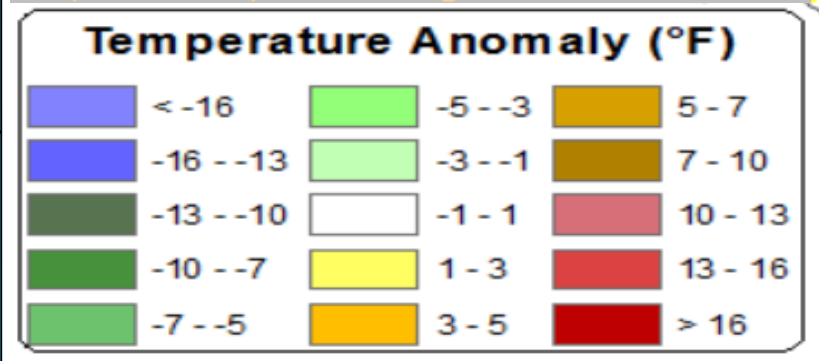
April 2020, Observed (April 1-13th)

Daily Mean Temperature Anomaly: 01 Apr 2020 - 13 Apr 2020

Period ending 7 AM EST 13 Apr 2020
Base period: 1981-2010

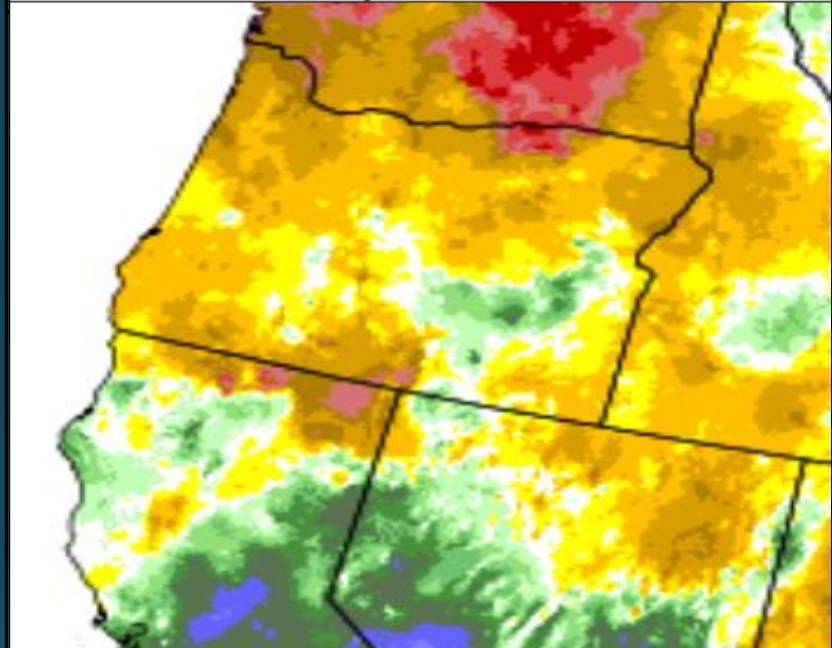


<http://www.prism.oregonstate.edu/mtd/>

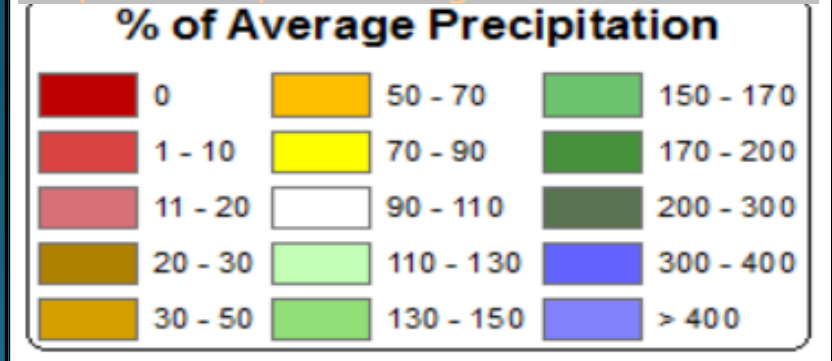


Total Precipitation Anomaly: 01 Apr 2020 - 13 Apr 2020

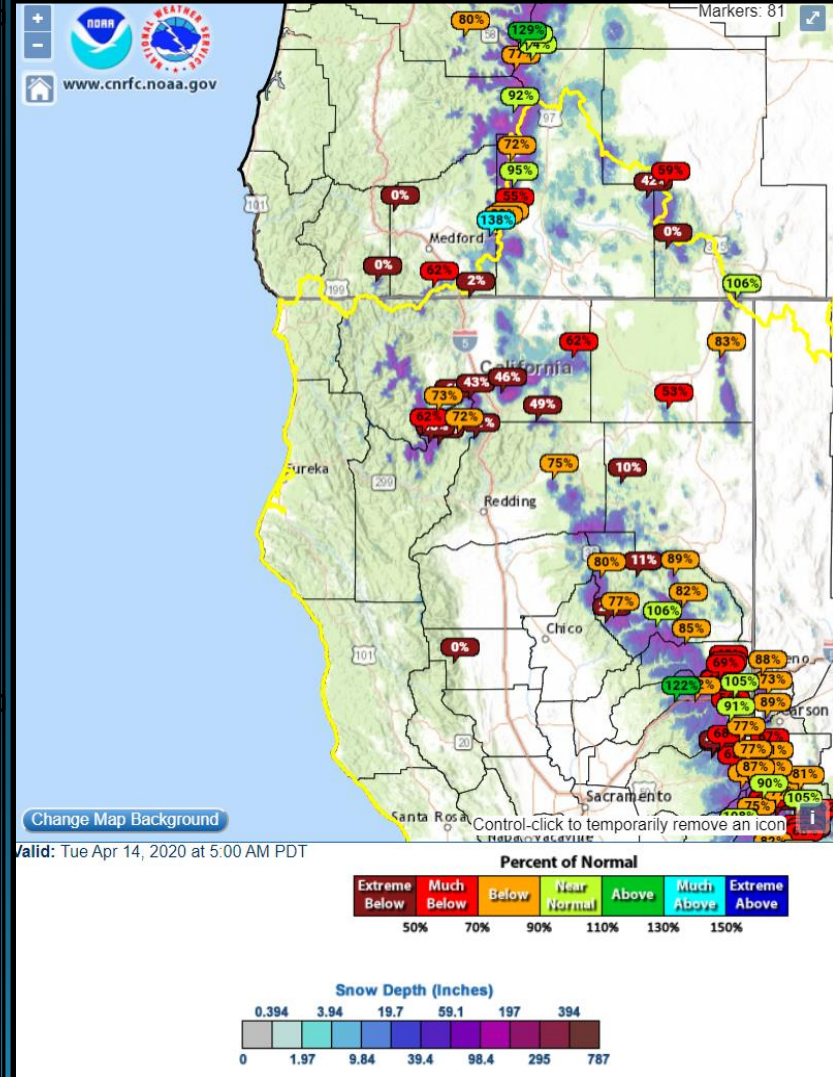
Period ending 7 AM EST 13 Apr 2020
Base period: 1981-2010



<http://www.prism.oregonstate.edu/mtd/>



Snow Water Equivalent w/Depth As of 5 AM PDT April 14, 2020





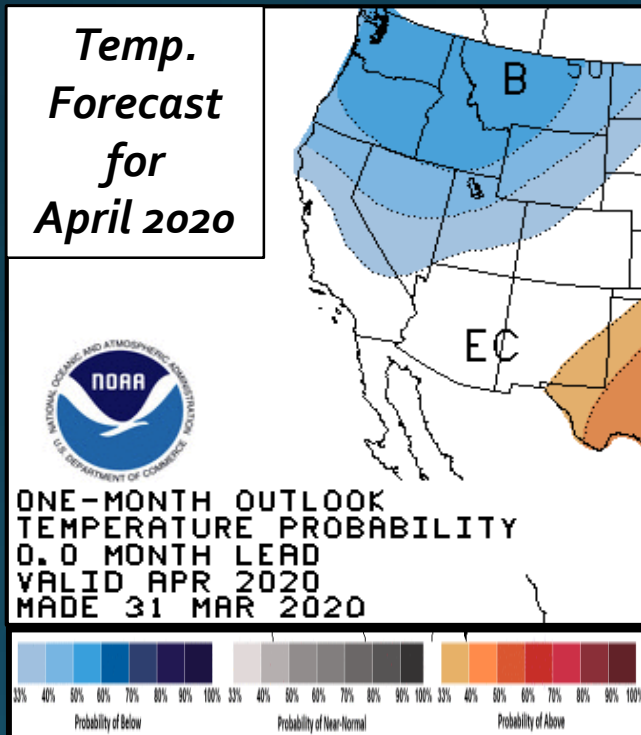
April 2020 Outlook

(Written April 14th)

The official Climate Prediction Center forecast for April 2020 predicts increased probabilities for below normal temperatures and above normal precipitation across the Medford NWS forecast area.

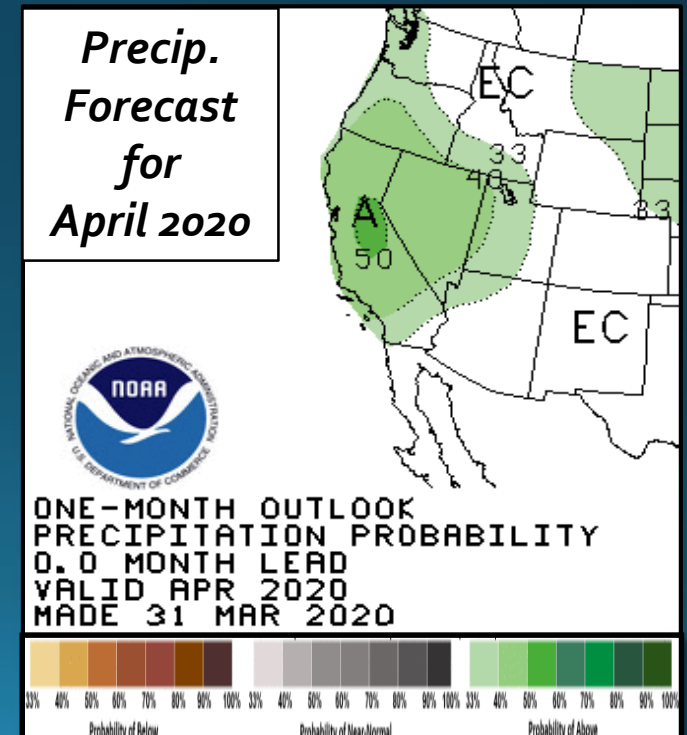
- Our localized **April temperature** forecast is for **near normal temperatures, most likely between -3°F and +3°F from the 1981-2010 normals.**
- Our localized **April precipitation** forecast is for **below normal precipitation across the forecast area (in the 25-75% range).** Siskiyou County is likely to be the wettest compared to climatology and does stand a chance of seeing local areas of 75-125% of normal precipitation.

Summary: The overall pattern of blocking high pressure in the Gulf of Alaska and storminess going into California when it does occur is expected to change between the 18th and the end of the month. The ridge is likely to be undercut by low pressure that will initially bring showers and possible thunderstorms to NorCal shifting northeastward. Beginning the 20th-21st and likely lasting through the end of the month, ensembles suggest a SW through NW flow over the area bringing unsettled weather for 2-3 day periods at least every 3 days. While correlations are only weak this time of the year, the MJO moving from phases 8, 1, 2, and 3 during this time period, supports what the ensembles are predicting, so we anticipate the unusually dry conditions we're experiencing as of mid-month to moderate some through month's end.



Expected Impact, April 2020:

Frost and freeze impacts are expected at times, for areas west of Mount Shasta and the Upper Klamath due to drier than normal low level conditions increasing chances for enhanced radiational cooling on clear nights. From the 17th through the end of the month, isolated hail and gusty winds from thunderstorms could result in minor damage and brief road hazards. Snow impacts are possible, mostly above 4kft, between the 20th and the 30th. Increasing precipitation deficits are of growing concern for agricultural interests and even municipal water supplies as we head toward the 2020 Dry Season. Moderate to severe drought designation over the area is likely to persist and might even be expanded before April 22nd. If May and/or June are cool and wet, drought impacts would be lesser. However, current indications are that the rest of Spring 2020 will be warmer than normal.





*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 may have records 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 may 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**