National Weather Service Medford

March 2021 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 2021 Weather Review

"In like a lamb, out like a lion", so the saying goes for March weather. Well, March 2021 was in like a lamb, and out like a lamb too, although there were a few "lion" systems to move through the area during the month. Overall, the month ended with cooler than normal temperatures and below normal precipitation despite the fairly active weather.

March 2021 started off under high pressure with dry conditions and above normal temperatures. Then a strong trough moved through the region on the 4th and 5th, which brought strong winds and more beneficial rain and snowfall. This system brought the strongest winds of the month for the Rogue Valley with a maximum wind gust of 44 mph on the 4th.

Periods of active weather, followed by brief periods of high pressure continued through much of the month. Another system passed through the region from the 9th through the 11th. This system was weaker than the previous, but still brought gusty winds to the area. Another, much colder, system affected the area on the 14th and 15th. Snow levels initially started out at around 4500 ft, then quickly lowered to 1500 ft behind the front with a few inches recorded in the foothills around Medford and Ashland area. This system brought one of the coldest March air masses that the region had seen since 2012. The high temperature of 46 degrees at Medford on the 15th was the 4th coldest high temperature on record. Temperatures moderated over the next few days as a brief period of high pressure moved through the area.

Another windy system affected the area on the 18th. Precipitation with this system was focused along the coast, especially along the Curry Coast. Downsloping from these strong winds significantly limited precipitation in the Rogue Valley and only 0.01" was recorded with this event. After this system, high pressure developed over the eastern Pacific, leaving the region under northwest flow. Weaker systems moved through the area during the week of the 21st, but precipitation was focused along and west of the Cascades, especially north of the Umpqua Divide.

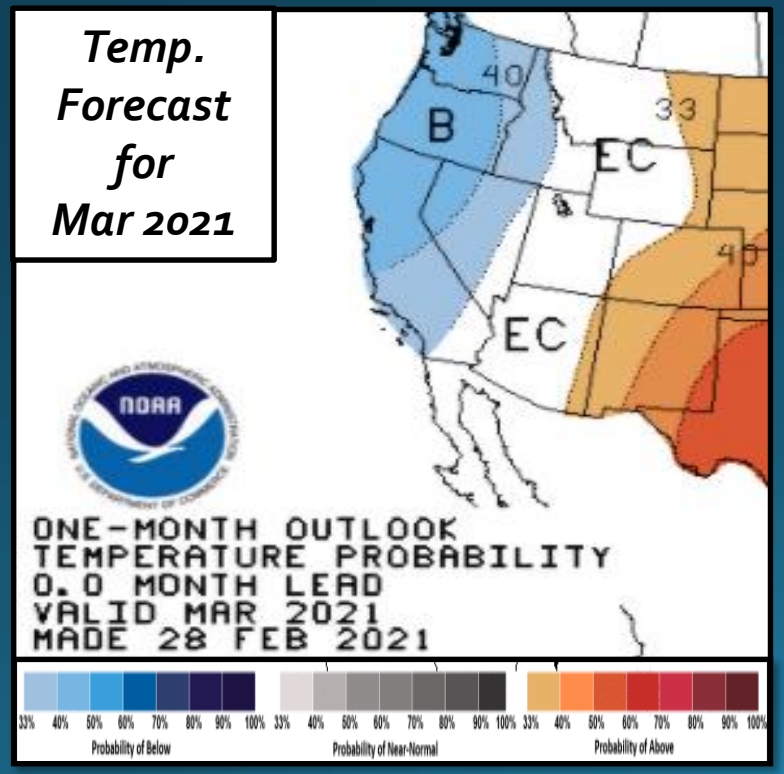
High pressure dominated for the end of the month with a thermal trough at the surface, and this brought above normal afternoon temperatures. However, a cold front pushed through the area on the 29th, and afternoon temperatures dropped by 15 to 20 degrees over a 24 hour period. The month ended on a warm note with the warmest temperatures of the year so far occurring on the last day of the month. 81 degrees was recorded at the Medford Airport, and this was only 5 degrees shy of the record for the day (86 degrees in 1911). This was common across the area with other climate sites also recording high temperatures within 5 to 7 degrees of their daily record.

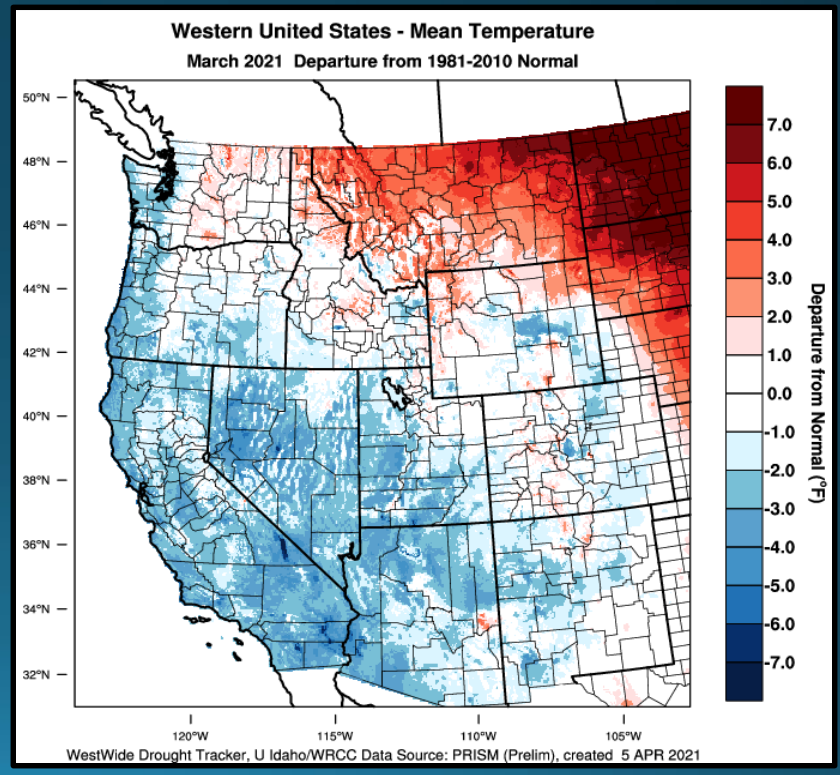
A Look Back at the March 2021 Temp Outlook

(Our Update was Issued March 11th)

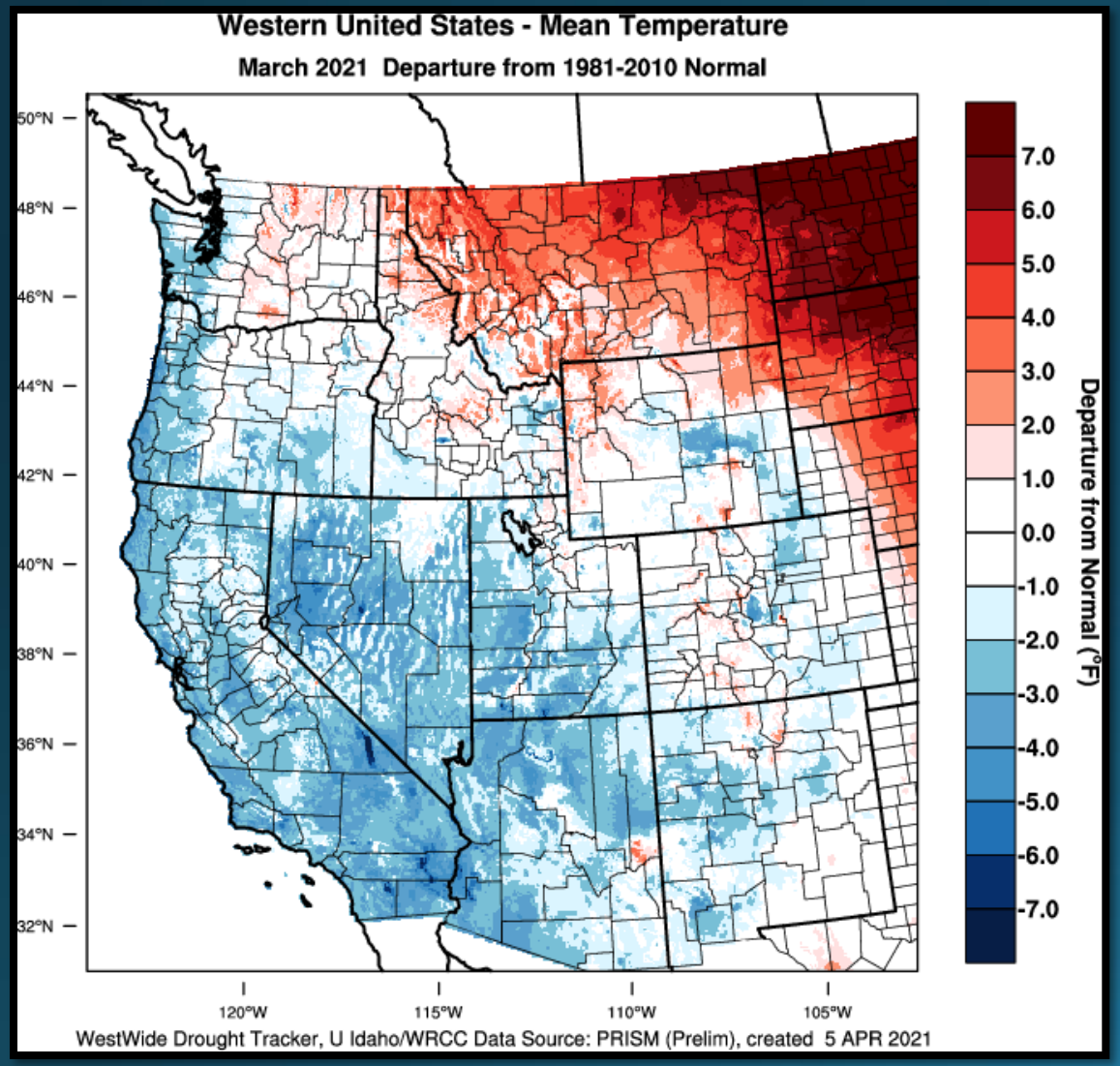
- ***What was our localized forecast?*** *Below normal temperatures, most likely between -6°F and -1°F of climatology.*
- ***Was the forecast anomaly correct?*** ***Yes***, mostly-nearly right on. ***Actual anomalies were mostly 0°F to -5°F.***
- ***Was the expected impact correct?*** ***Yes, but precipitation was lesser than expected, so snowpack did not grow during the second half of the month as much as expected***. Therefore, there was not as much drought improvement west of the Cascades as was anticipated.
- ***Did our forecast improve upon the CPC forecast?*** ***Yes***. CPC had the right idea with increased probabilities for below normal temperatures over the forecast area. We improved upon it by accurately indicating a very high likelihood of below normal temperatures & accurately predicting below normal temperature anomalies.

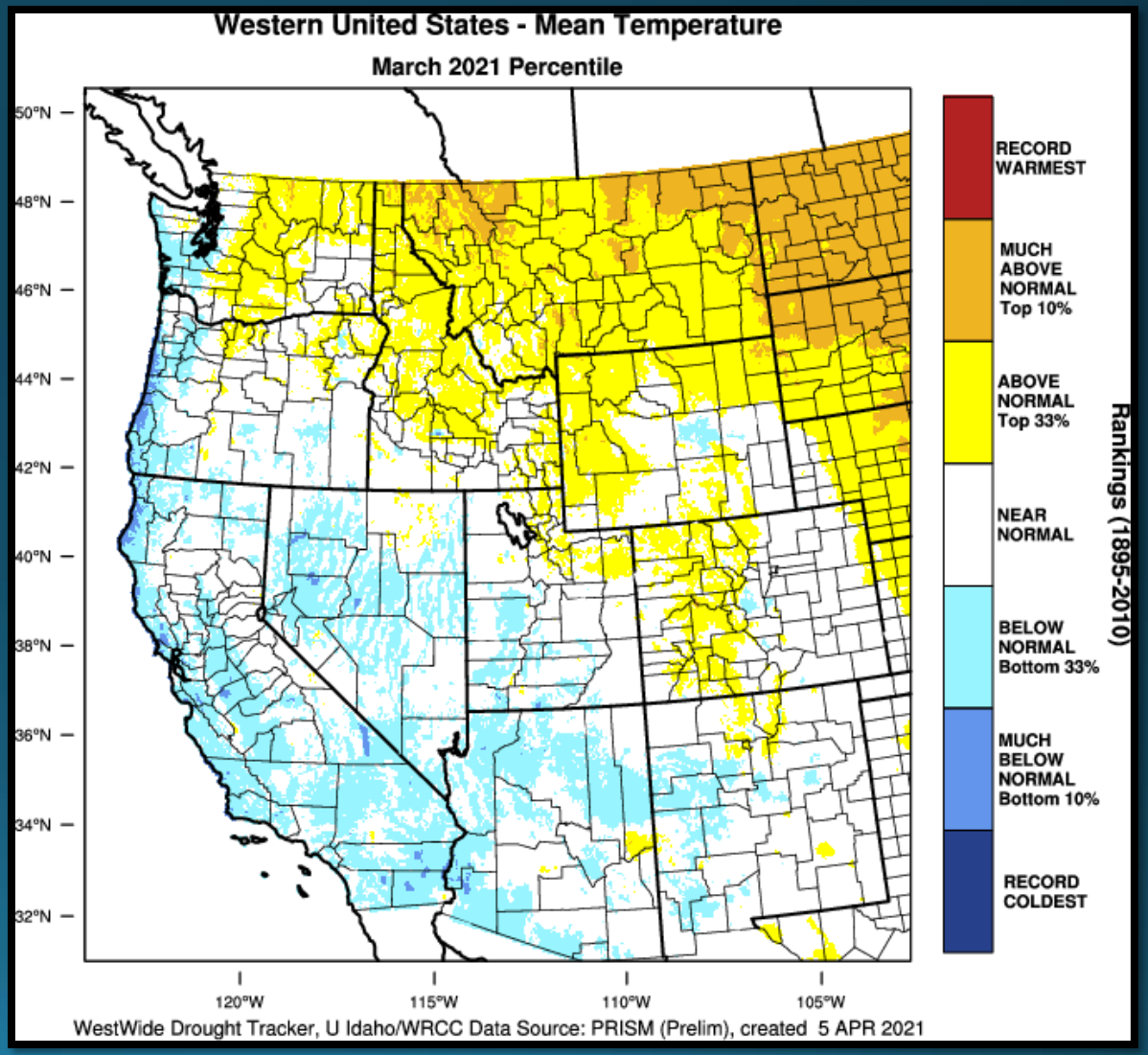
Temp. Forecast for Mar 2021





March 2021 Observed Temperatures





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	45.7	-1.9°	53.2	-0.6°	38.2	-3.3°
Roseburg	47.5	-1.1°	58.7	0.9°	36.4	-2.9°
Medford	47.6	-0.7°	60.4	0.9°	34.9	-2.2°
Klamath Falls	36.6	-1.9°	51.9	1.3°	21.3	-5.1°
Montague, CA	41.3	-1.7°	56.6	0.3°	26.1	-3.6°
Mt. Shasta City, CA	40.9	-1.4°	52.6	-1.8°	29.1	-1.1°
Alturas, CA	36.5	-1.9°	51.8	-0.2°	21.1	-3.7°

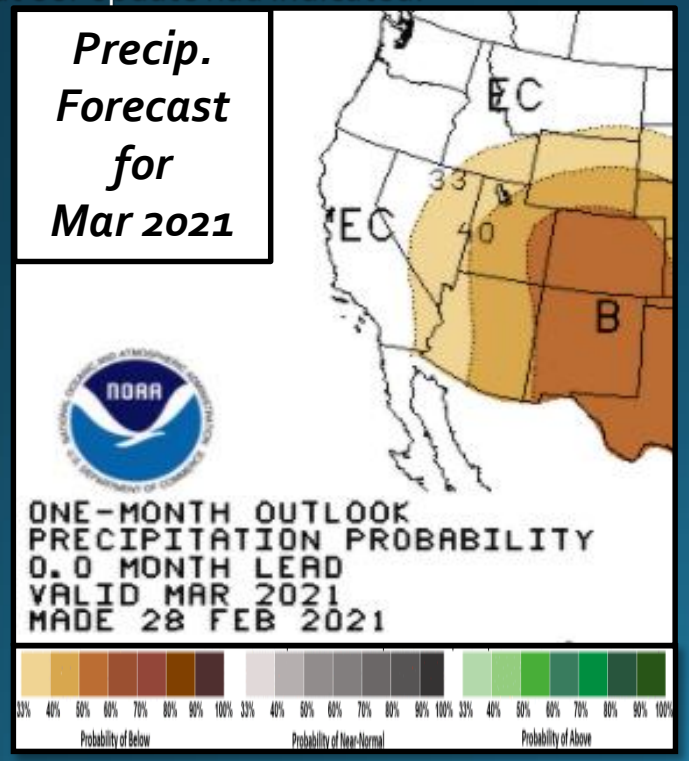
Monthly Max & Min Temperatures

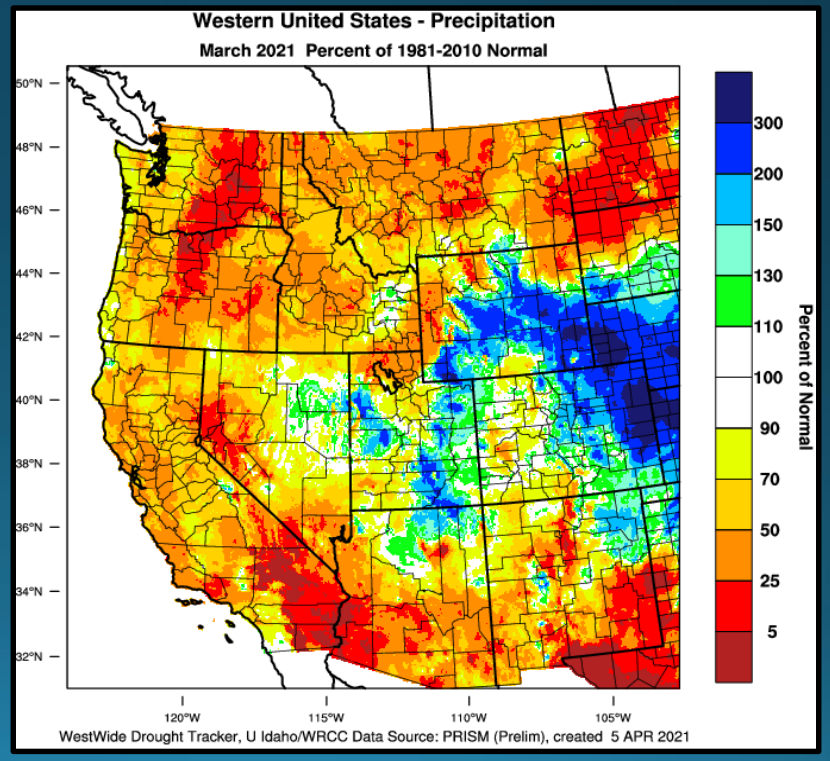
	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	69°	31st	31°	16th
Roseburg	77°	31st	30°	16th
Medford	81°	31st	30°	1st & 23rd
Klamath Falls	71°	31st	14°	21st & 30th
Montague, CA	73°	31st	17°	3rd
Mt. Shasta City, CA	73°	27th	20°	16th
Alturas, CA	68°	31st	6°	16th

	Date	Record Low	Old Record/Year
Alturas	16th	6°F	12°F / 1955
Montague	16th	18°F	Ties w/ 1955
	21st	20°F	Ties w/ 1955

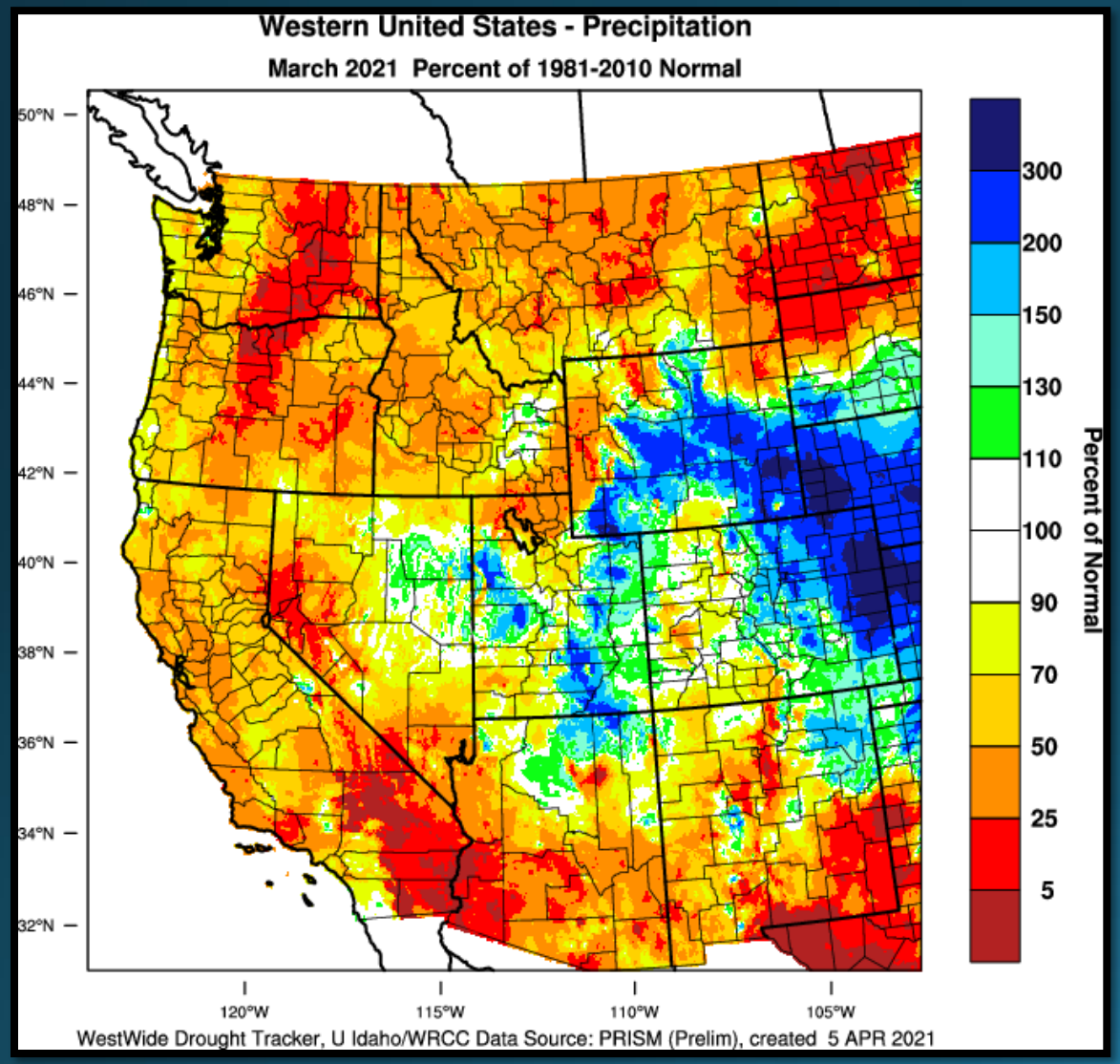
A Look Back at the Mar 2021 Precip Outlook
(Our Update was Issued March 11th)

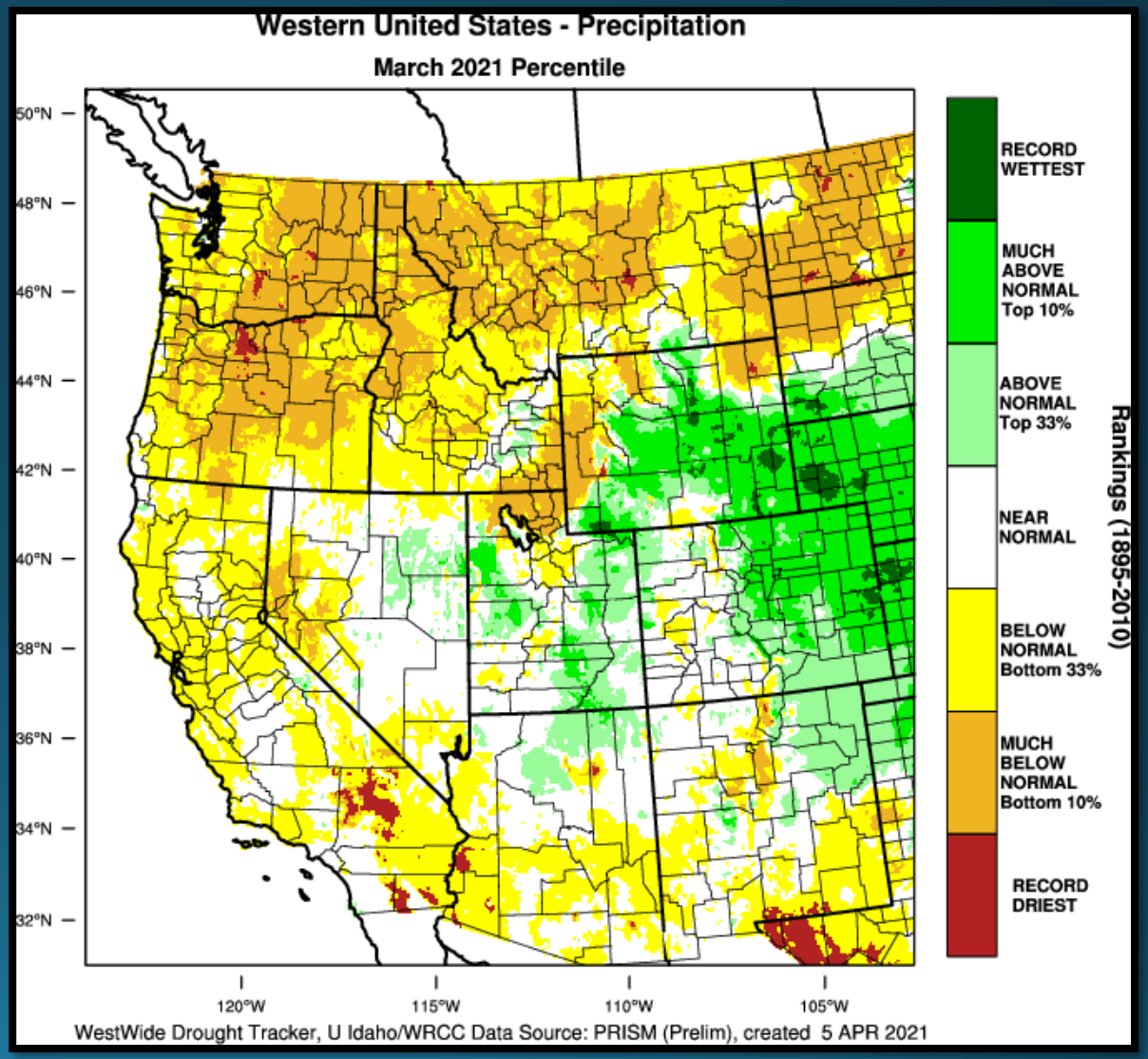
- ***What was our localized forecast?*** Our localized ***March precipitation*** forecast was "100-200% of normal from the Cascades westward, to 50-100% across most areas east of the Cascades".
- ***Was the forecast anomaly correct?*** ***Mostly "no"***. Precipitation anomalies were generally 25-90% of normal. Anomalies were near 100% for portions of Coos and Curry counties sow the forecast was good there, and about half of the east side was >50% of normal, which was also in the predicted range.
- ***Was the expected impact correct?*** ***Yes and no***. The US Drought Monitor shows that there was no official change in drought designation over most of the area, but there was a little improvement west of the Cascades. This was anticipated, but precipitation was not as much as expected for the 2nd half of the month, so drought improvement was not as much as was forecast as our March 11th update indicated.
- ***Did our forecast improve upon the CPC forecast?*** ***No***. CPC's EC forecast was arguably better, primarily because the 2nd half of March was not wetter than normal on the west side, which is what our update had indicated.





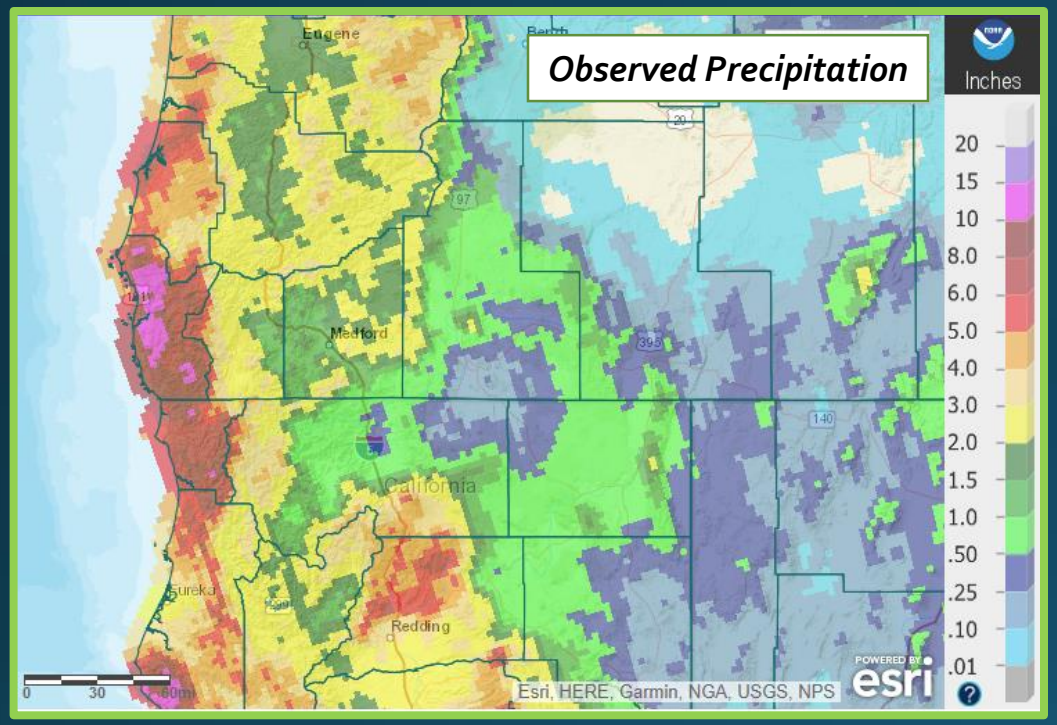
March 2021 Observed Precipitation

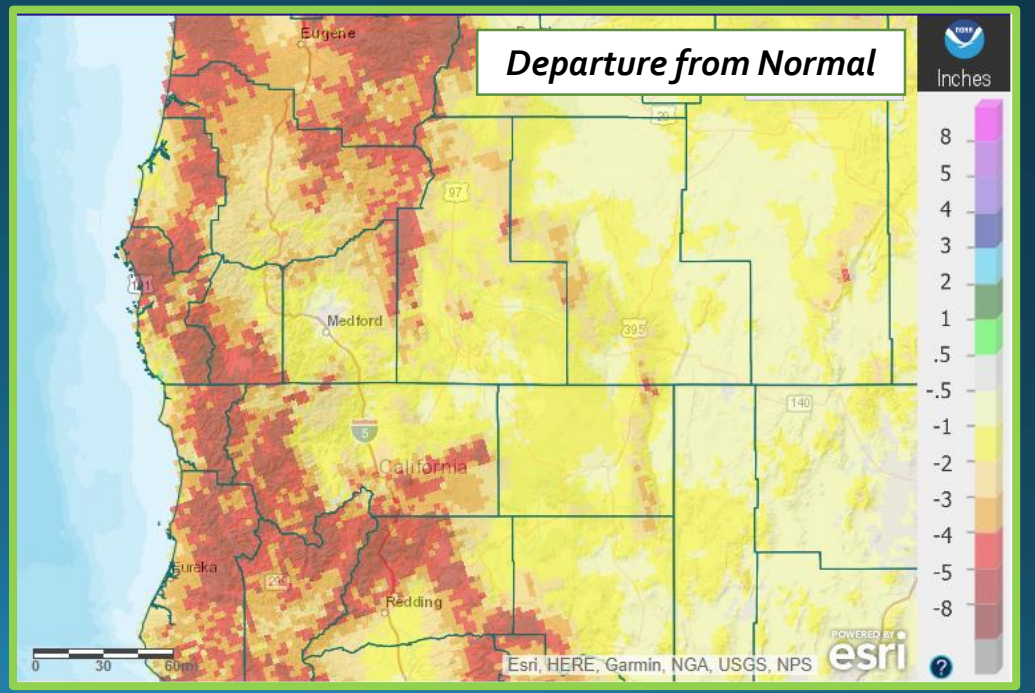




Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	5.50"	-2.33"	1.27"	14th – 15th
Roseburg	1.65"	-1.85"	0.58"	5th
Medford	1.47"	-0.24"	0.81"	5th – 6th
Klamath Falls	0.15"	-1.12"	0.11"	14th – 15th
Montague, CA	0.27"	-2.04"	0.22"	14th – 15th
Mt. Shasta City, CA	3.57"	-2.39"	1.08"	9th – 10th
Alturas, CA	0.94"	-0.58"	0.39"	14th – 15th

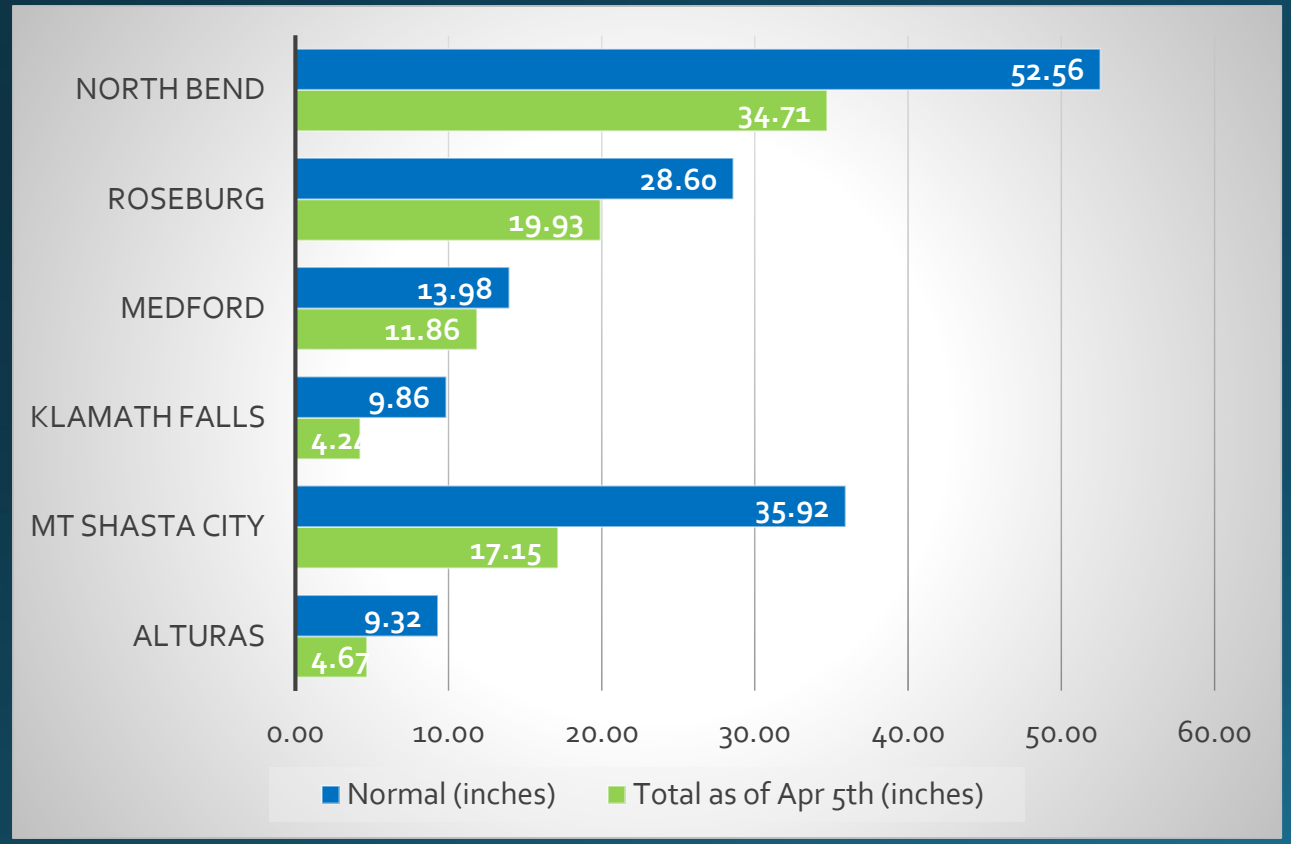


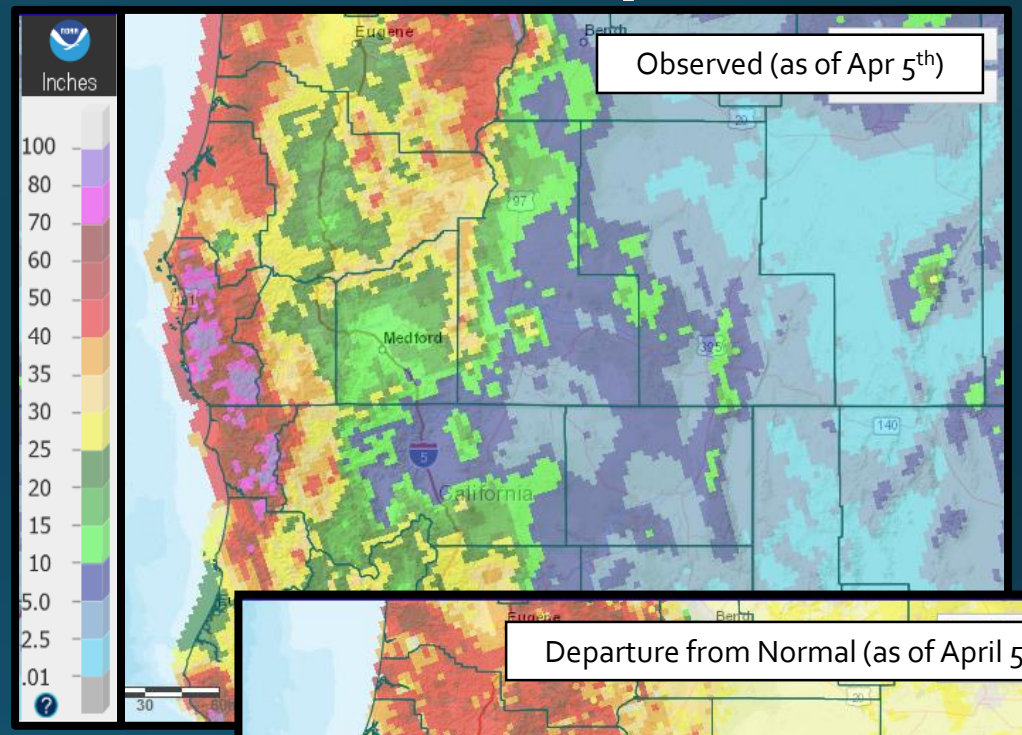


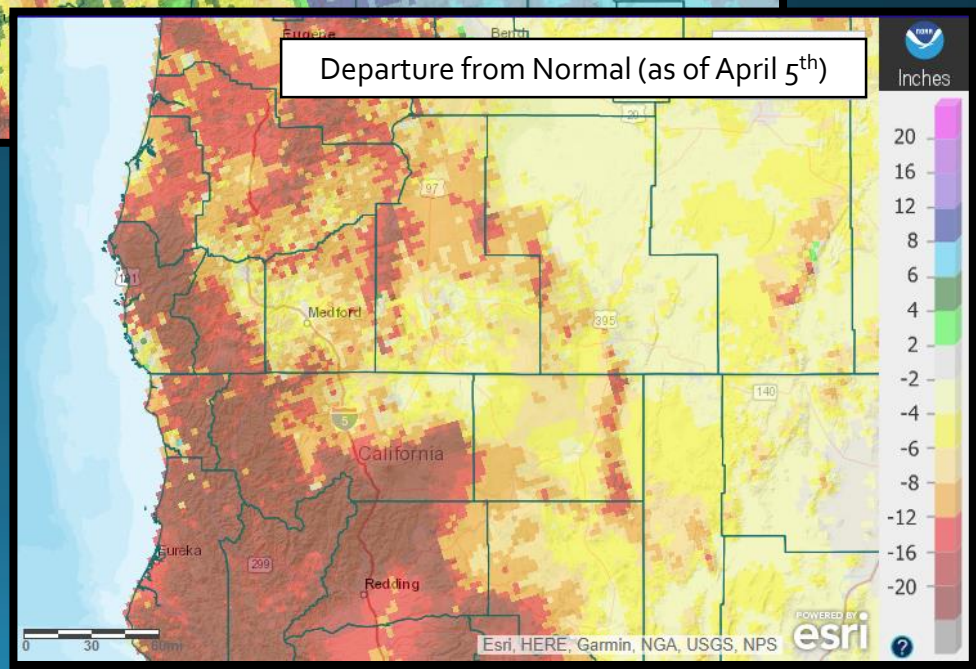
Record Precipitation

	Date / Amount	Old Record / Year
Alturas	15th / 0.38"	Ties w/ 1980

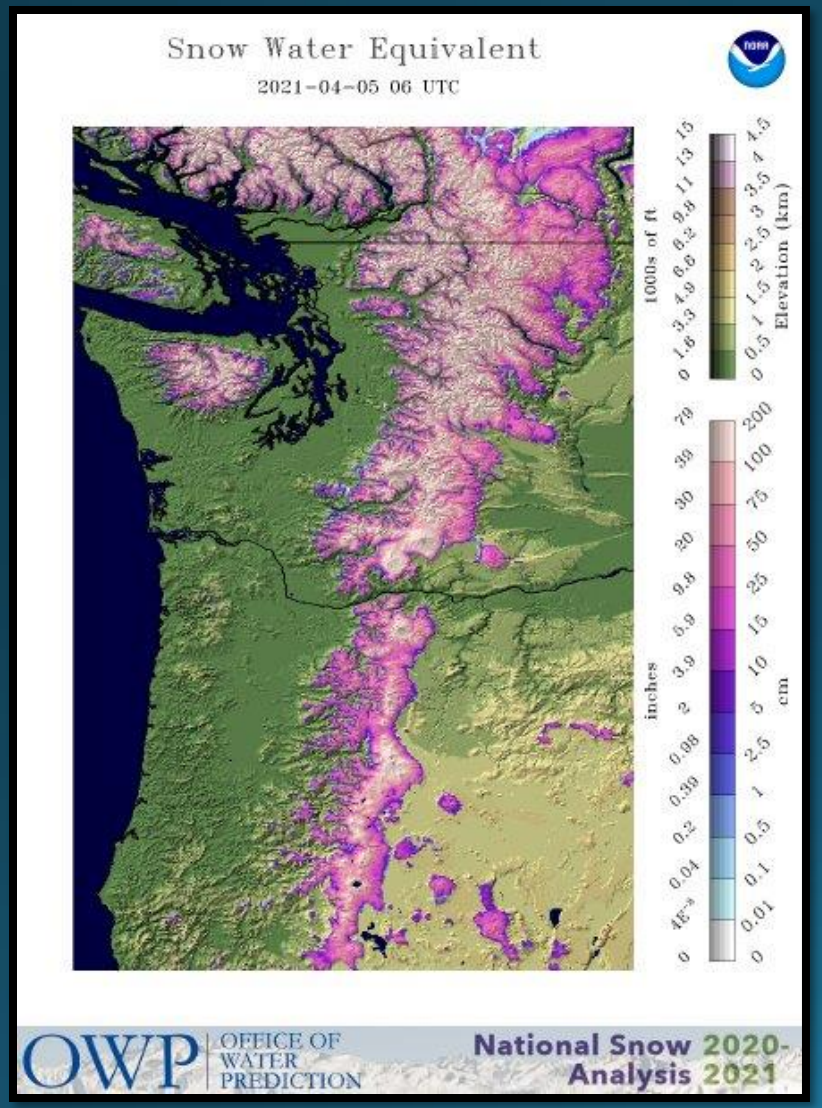
Water Year Status (As of April 5th)

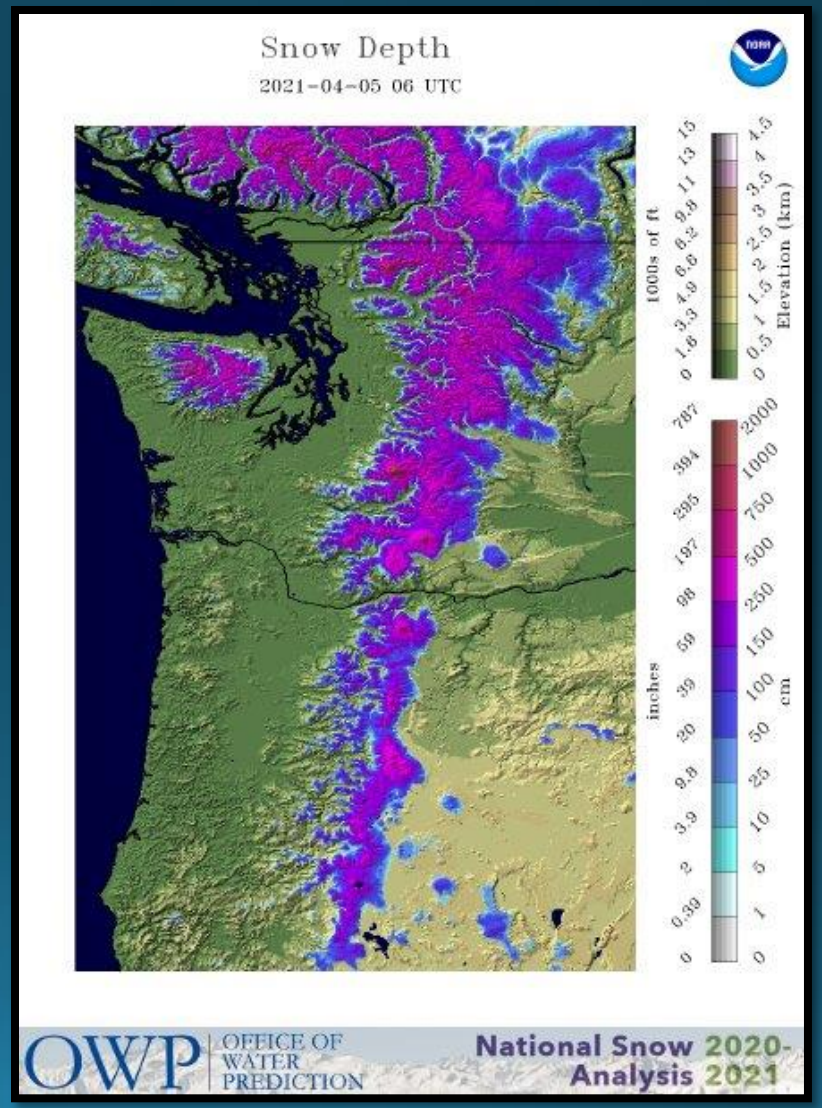




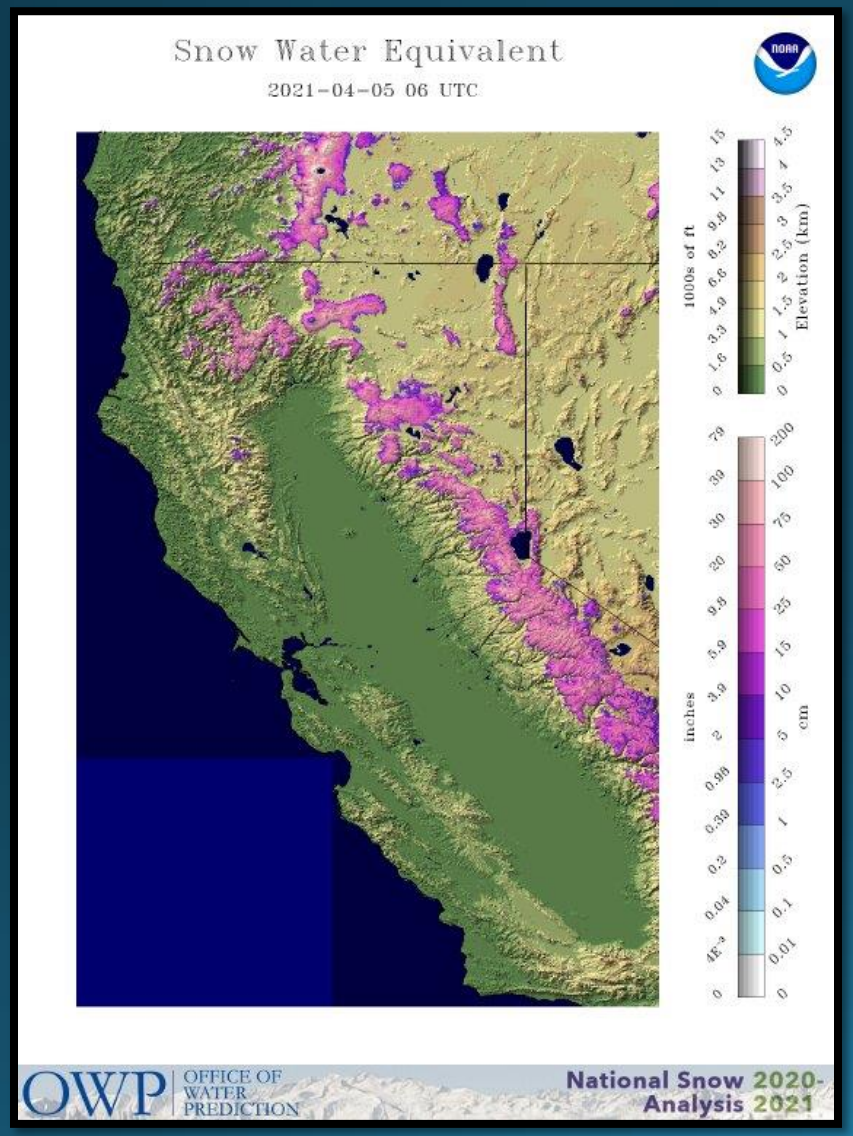


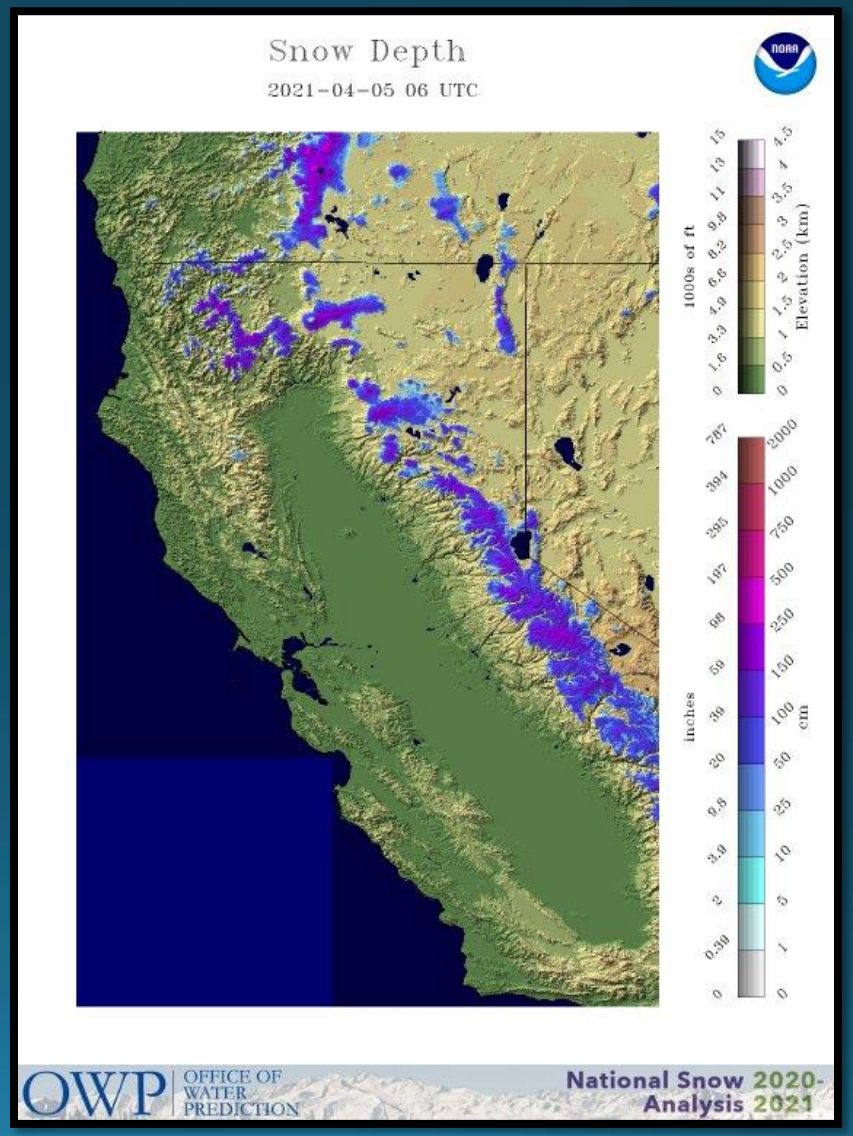
PacNW SWE & Snow Depth as of 4/5/21



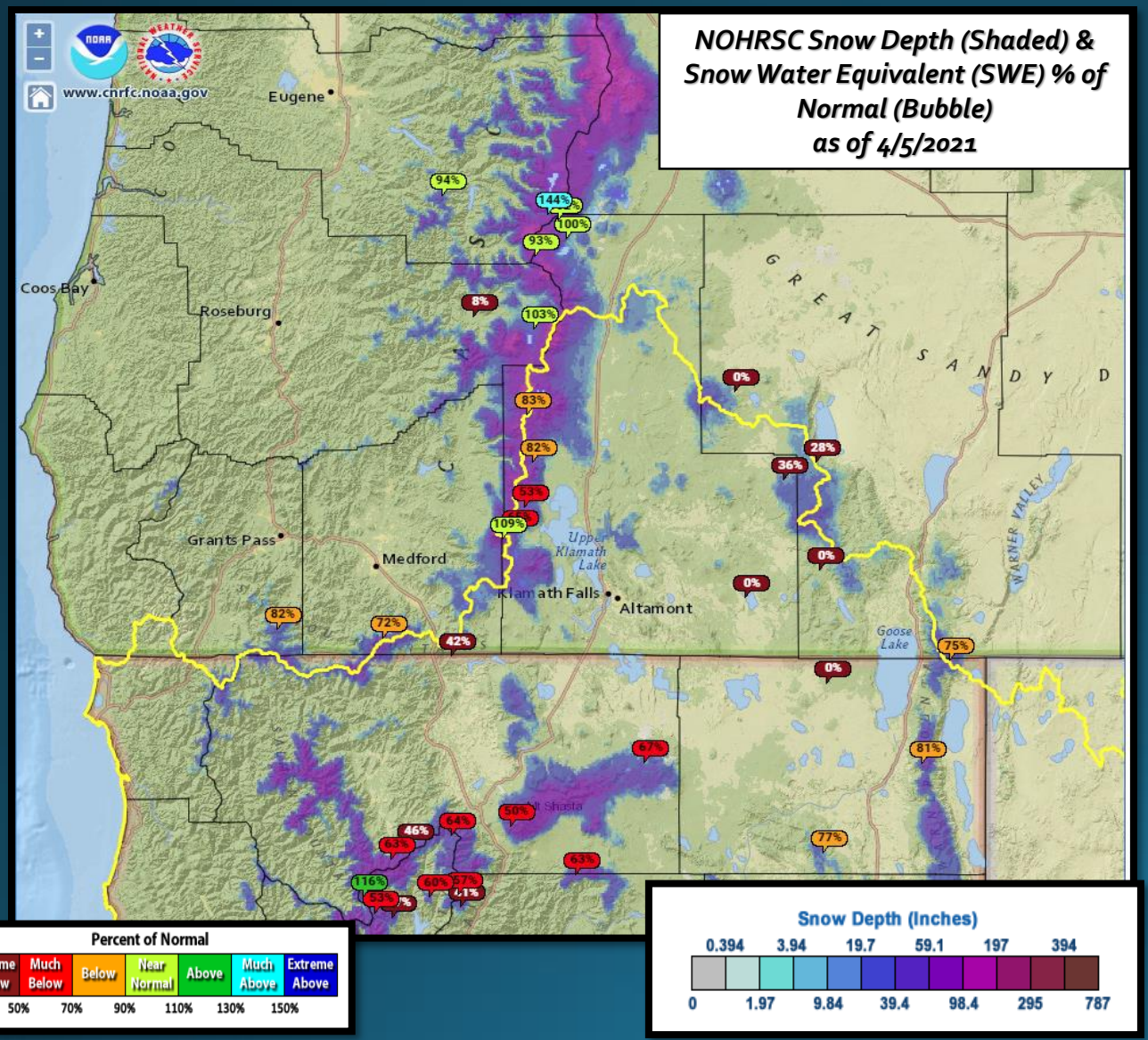


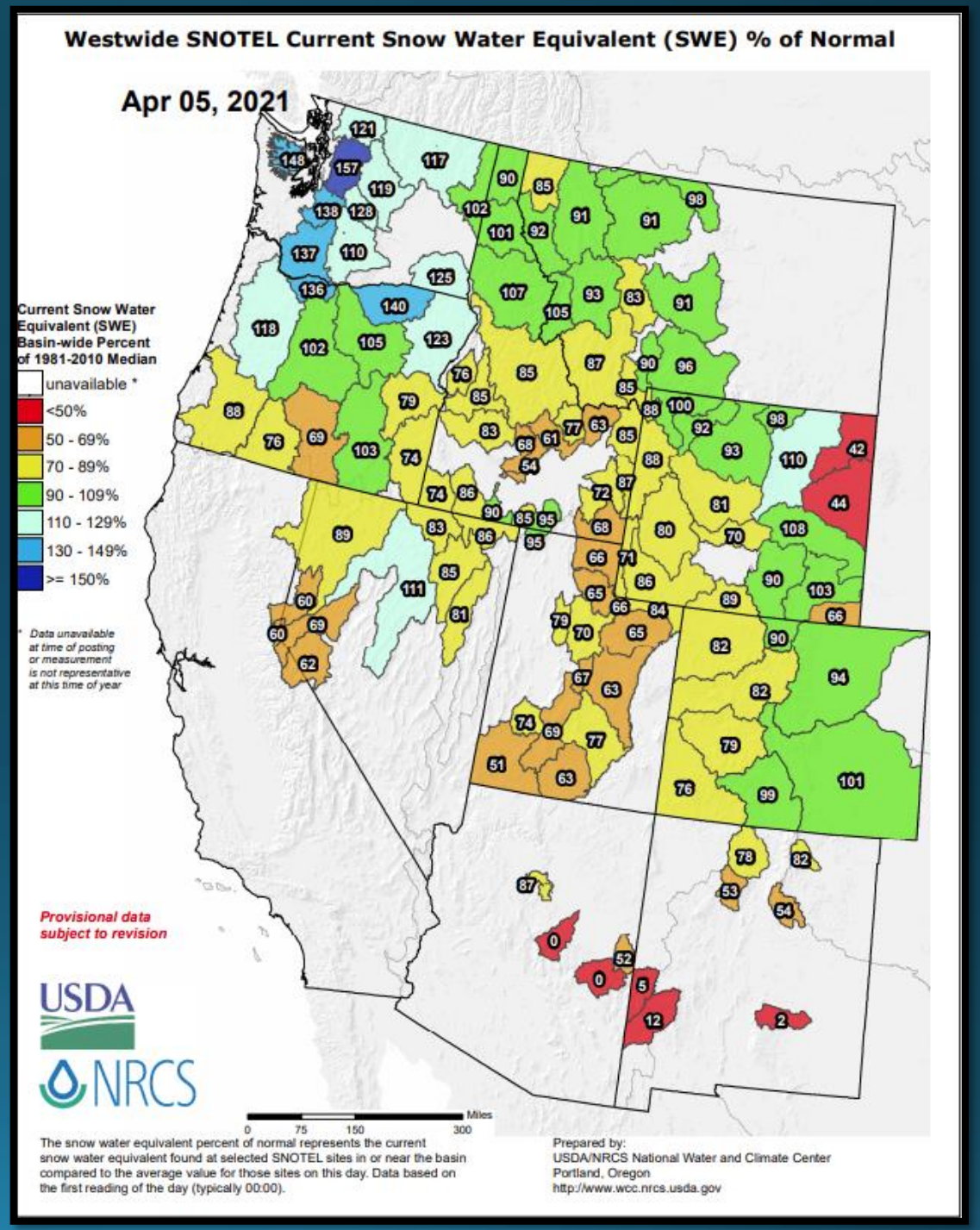
California SWE & Snow Depth as of 4/5/21





Snowpack Status



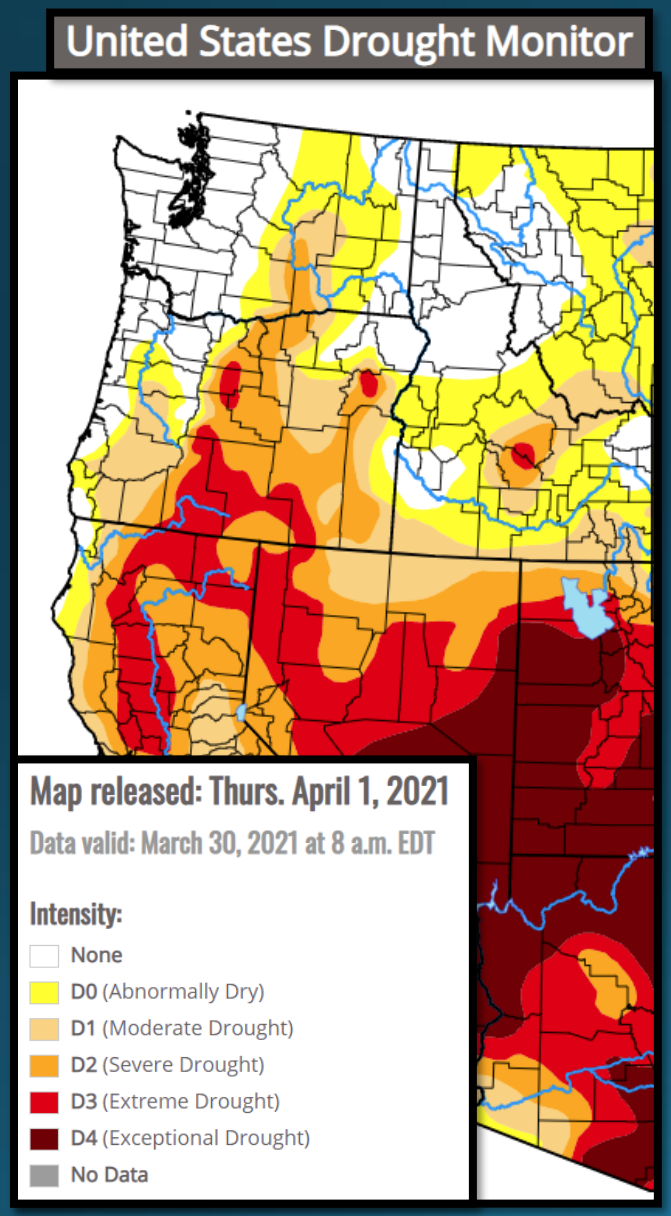


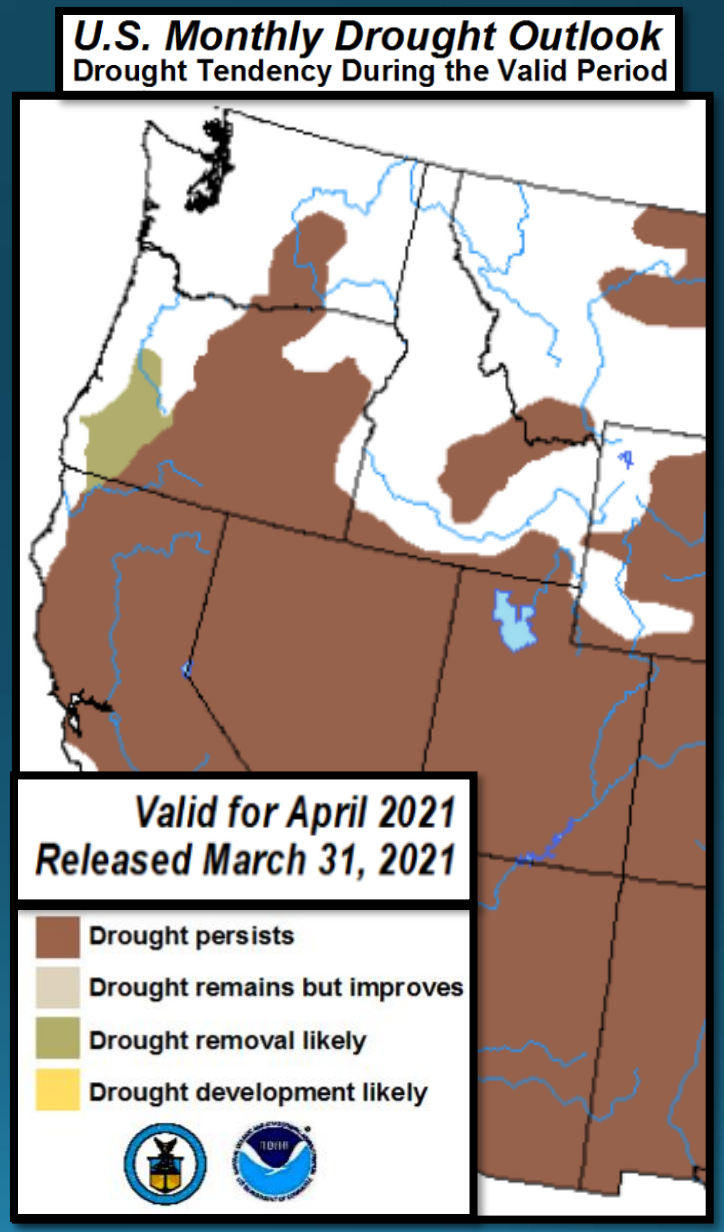
Crater Lake

Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 03/31/21	Highest Max/ Lowest Min
March	36.6°	18.3°	3.52"	32.4"	99"	55° on 28th / 8° on 16th & 17th
Normal (1981-2010)	37.3°	19.4°	7.53"	73.2"	121"	N/A

Drought Monitor (Current) & Outlook (April)

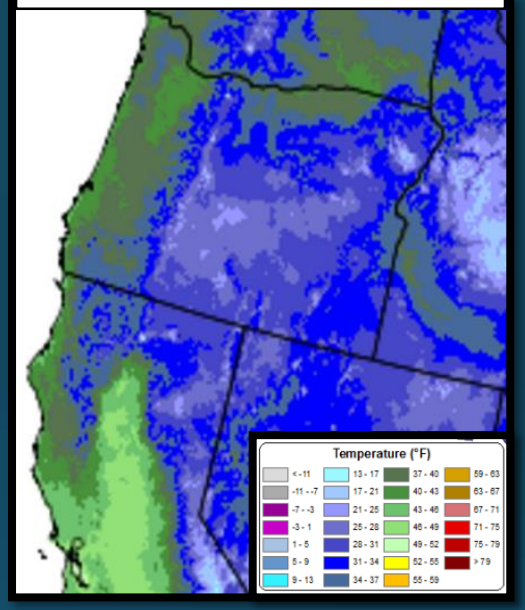




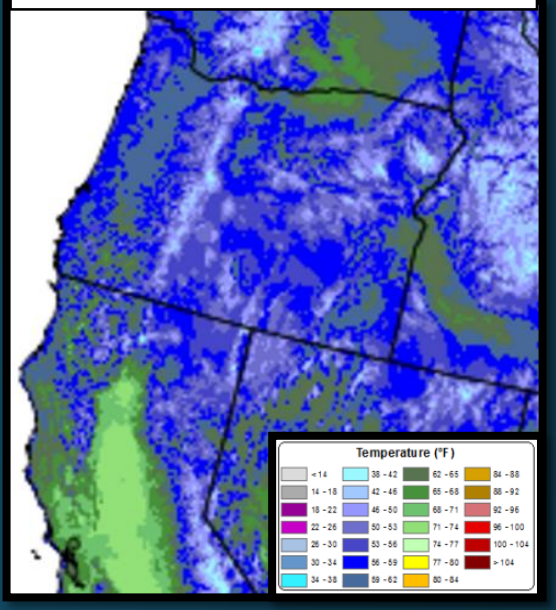
Looking Ahead: Normals for April (1981-2010)

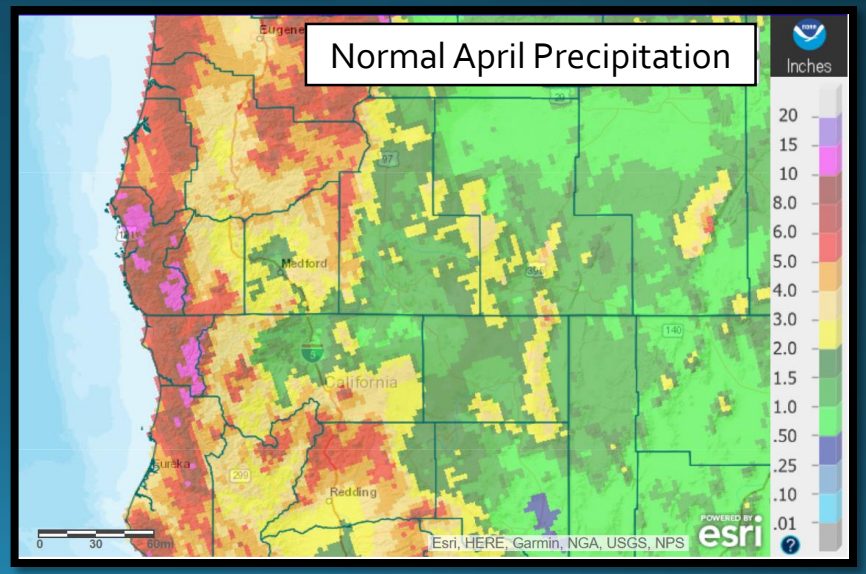
- ***Temperatures:*** Along the coast, lows are typically in 40s with highs in the upper 50s to lower 60s. Valleys west of the Cascades usually experiences average lows in the mid 30s to mid 40s and highs 55 to 65 degrees . Lows in the upper teens to mid 20s occur across the higher, more typically snow 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 Siskiyous 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





Updated April 2021 Outlook

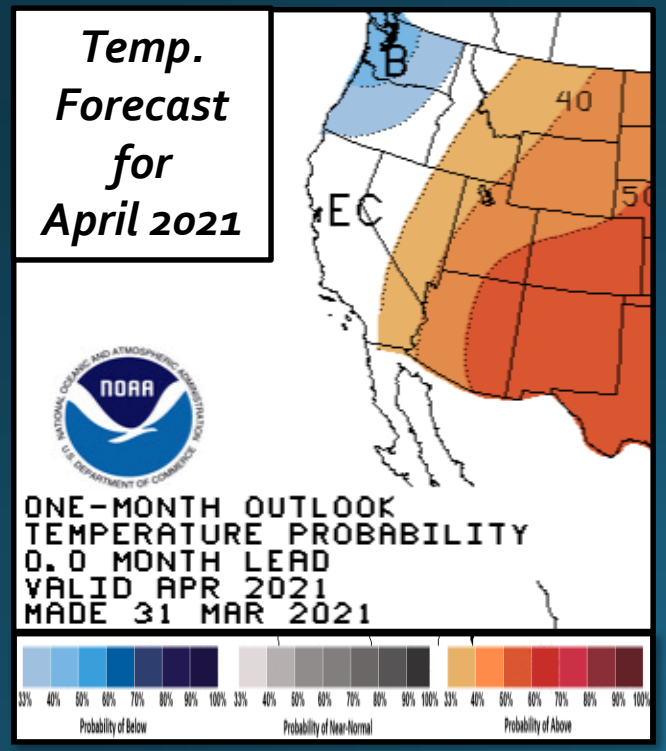
(Written April 9th)

The official Climate Prediction Center forecast for April 2021 predicts increased probabilities for below normal temperatures over northwest portions of the forecast area and EC for temperatures elsewhere and equal chances of above, near, and below normal precipitation across the Medford NWS forecast area.

- Our localized ***April temperature*** forecast is for ***below normal temperatures along the immediate coast, but above normal temperatures elsewhere. Most likely anomalies will be 0°F to -3°F along the immediate coast and 0°F to +7 °F from the 1981-2010 normal elsewhere***
- We have high confidence in our localized ***April precipitation*** forecast for ***below normal precipitation across the forecast area (in the 0-50% range). Southwest flow in the last 10 days of the month could bring some shower and thunderstorm activity, and some weather systems are most likely to affect mainly the western portion of the area by month's end.***

Summary: Anomalously strong high pressure has brought very dry air across the forecast area for the first nine days of the month and the general expectation is for this to continue for approximately another 10 days. Northerly winds along and near the coast has caused upwelling of cold water across the coastal waters. While periods of downslope warming will yield some warm days along the coast, it should generally be colder than normal there. Expect large diurnal temperature ranges elsewhere. A dry east wind event is most likely during the week of April 12th. Increasing west to southwest flow for the last 10 days of the month is most likely to result in at least some precipitation, but breezy to windy south winds, at times, too.

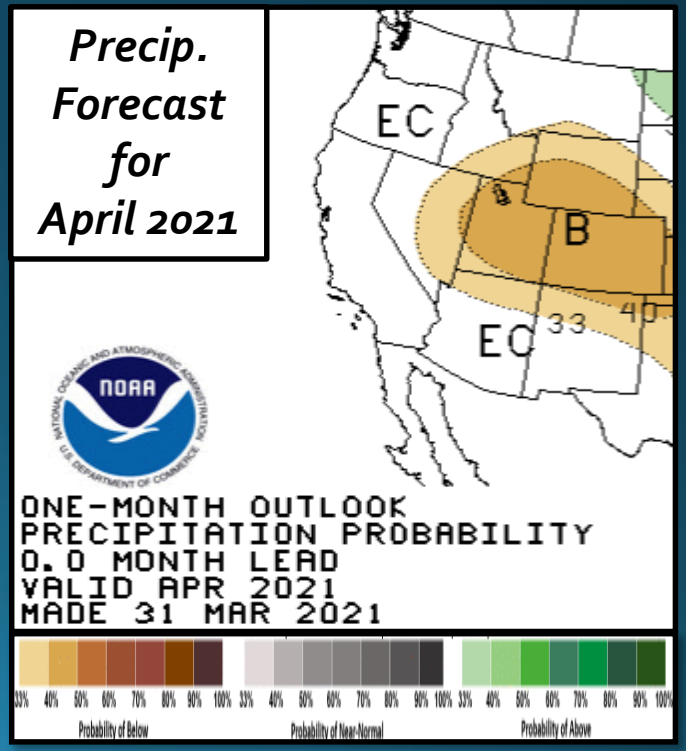
Temp. Forecast for April 2021



Expected Impact, April 2021:

Frost and freeze impacts are expected through at least the 20th of the month due to the very dry air mass and strong radiative cooling under high pressure. Warm daytime temperatures are likely to also cause vegetation to continue to bloom and green-up west of the Cascades, making it vulnerable to the cold nights-mornings. Additionally, worsening drought conditions are expected due to strong evaporative demand and well below normal precipitation. This dryness will continue to result in increased fire danger and, likely, more fires for more acres than is normal for this month, especially in pre-green-up areas. Breezy to windy conditions at times will also exacerbate drying and increase the probability of fire spread. Declining snowpack % of normal SWE is also expected. Some precipitation toward the end of the month could help to moderate conditions then.

Precip. Forecast for April 2021



*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**