National Weather Service Medford

March 2019 Climate Summary

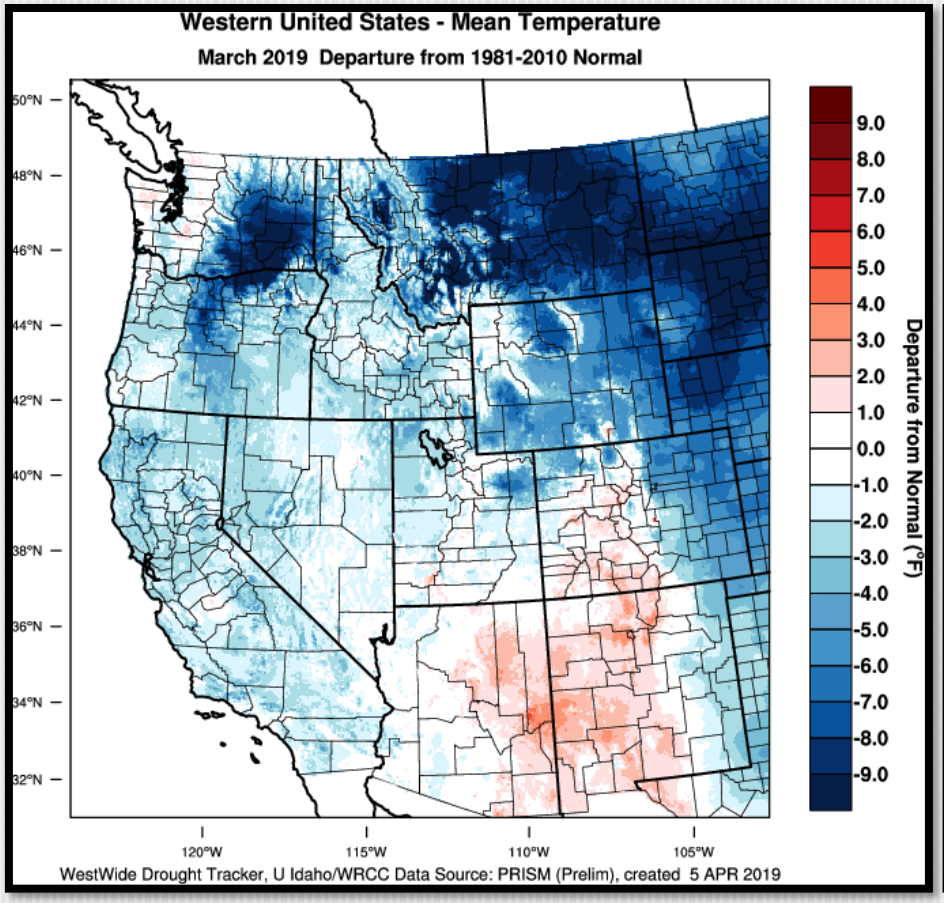
*These data are preliminary and have not undergone final QC by NCEI. Therefore, these data are subject to revision. Final and certified climate data can be accessed at the National Centers for Environmental Information (NCEI).

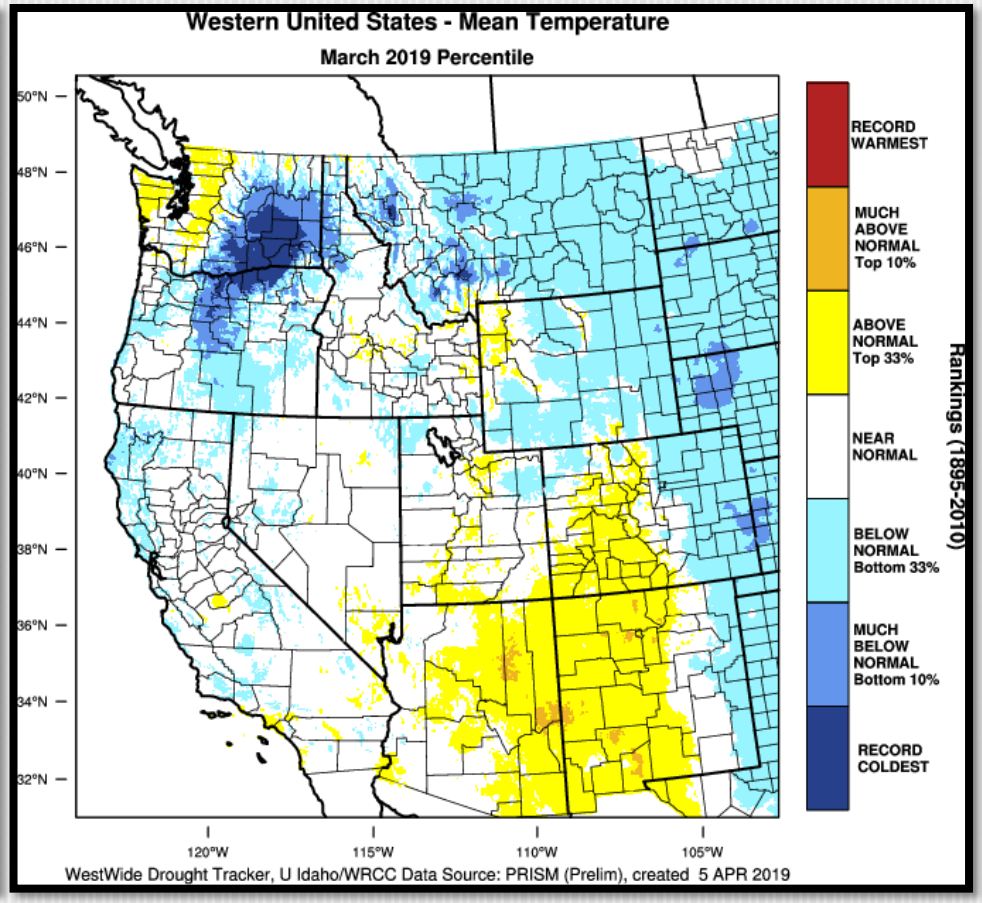
March 2019 Weather Review

After a very active, cold and wet February, March 2019 was comparatively milder and drier. Overall the month was drier than normal with temperatures finishing within 1-2 degrees above/below normal. The first half of the month featured active weather, but with systems far more typical for the area than what was experienced in February. Precipitation remained rain in the valleys and snow in the surrounding mountains, with the majority of the precipitation falling during the first half of the month. Around the middle of the month, conditions turned much warmer and drier and the area had its first taste of Spring. Many locations reported their warmest temperatures of the year so far, and the Medford Airport recorded five consecutive days with temperatures at or above 70 degrees during this stretch.

During the end of the month, the weather turned more active and multiple fronts moved through the area delivering more valley rain and mountain snow. The most notable of these was a strong front that moved through on the 25th which brought strong winds across the forecast area. The forecast area also saw its first round of thunderstorms for the spring season towards the end of March. Eleven lightning strikes were recorded during the last week of the month and none of these storms were severe. Although the month was below normal in terms of precipitation, overall snowpack was above normal and the water year as of the end of March was between 75-100% of normal.

March 2019 *Observed Temperatures*





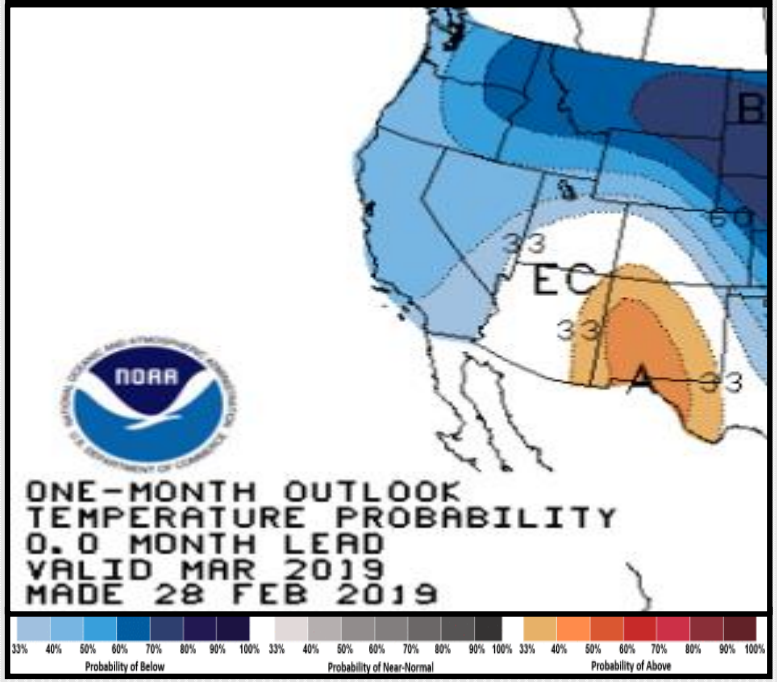
Average Temperatures

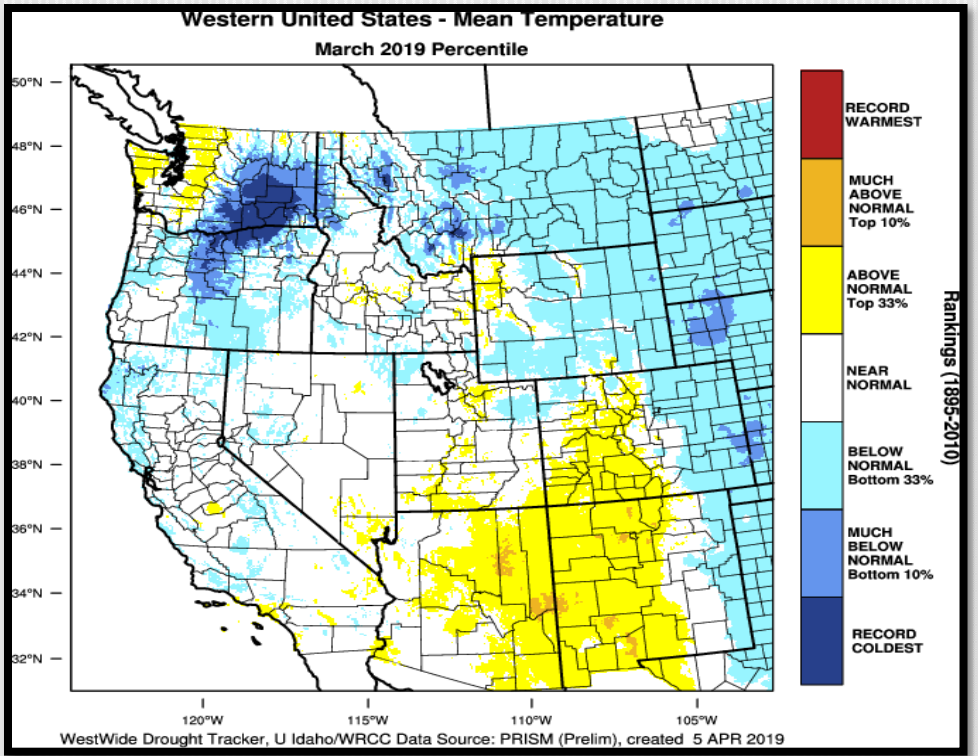
	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	46.4	-1.2°	55.2	1.4°	37.6	-3.9°
Roseburg	47.9	-0.7°	58.6	0.8°	37.2	-2.1°
Medford	47.4	-0.9°	59.5	0.0°	35.3	-1.8°
Klamath Falls	37.8	-0.7°	49.5	-1.1°	26.2	-0.2°
Montague, CA	43.3	0.3°	56.1	-0.2°	30.5	0.8°
Mt. Shasta City, CA	40.0	-2.3°	50.2	-4.2°	29.7	-0.5°
Alturas, CA	37.7	-0.7°	49.4	-2.6°	26.1	1.3°

A Look Back at the March 2019 Temperature Outlook

- ***Was the forecast anomaly correct?*** Yes. CPC's forecast was very good for our forecast area, where temperature anomalies were in the 1 to 5 degree below normal range. For the month of March
- ***Did our forecast improve upon the CPC forecast?*** We did not issue a localized enhancement to the forecast for March 2019.

Temperatures

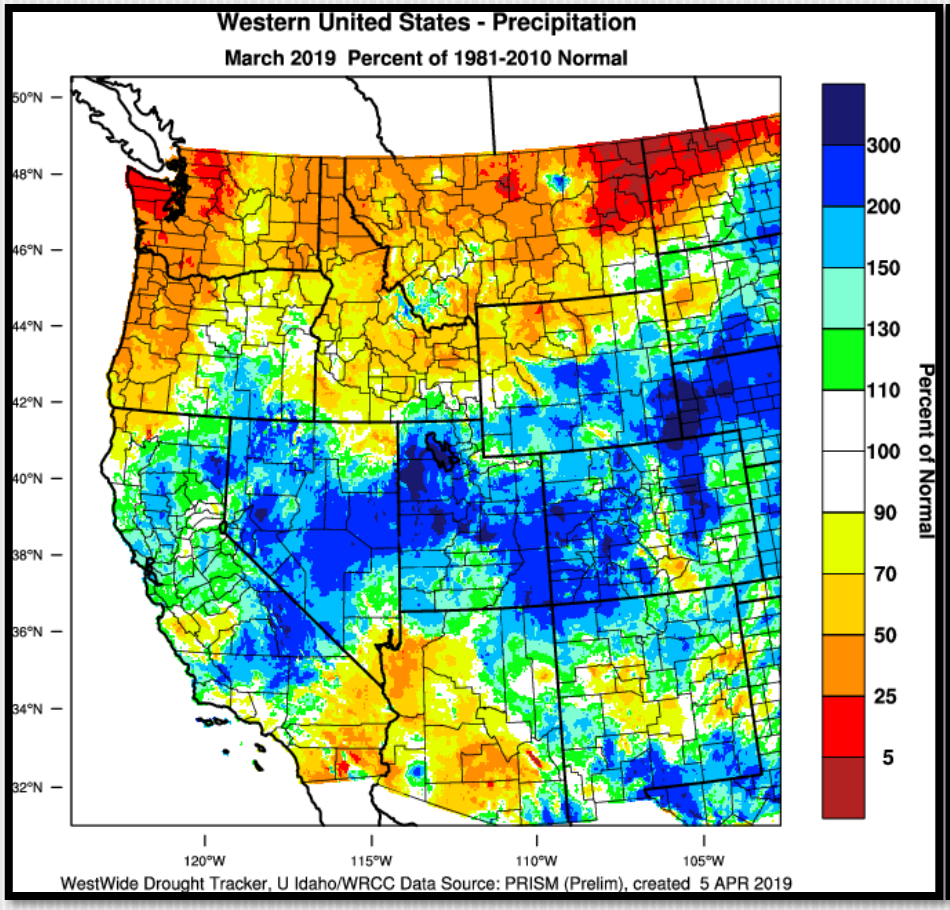


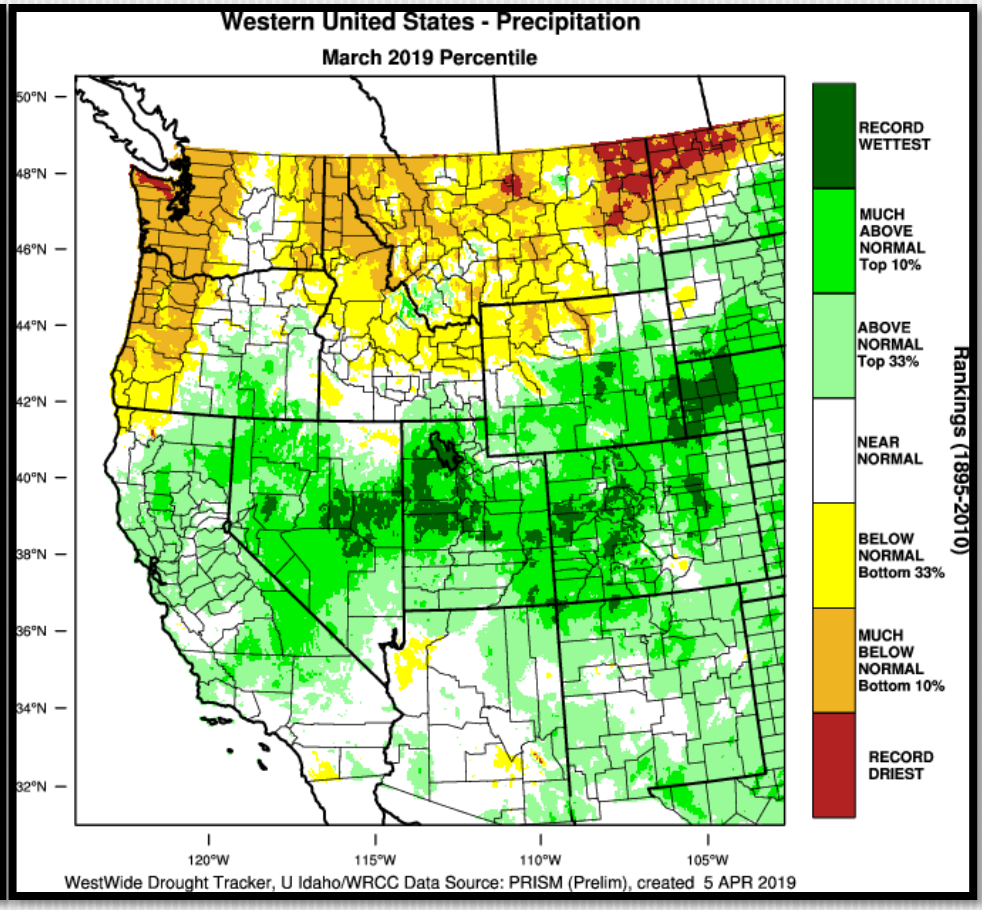


Monthly Max/Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	72°	18th	28°	4th
Roseburg	78°	18th & 19th	29°	5th & 11th
Medford	76°	18th & 19th	28°	14th
Klamath Falls	69°	19th	19°	14th
Montague, CA	71°	18th	22°	14th & 16th
Mt. Shasta City, CA	67°	18th & 19th	22°	14th
Alturas, CA	67°	19th	15°	14th

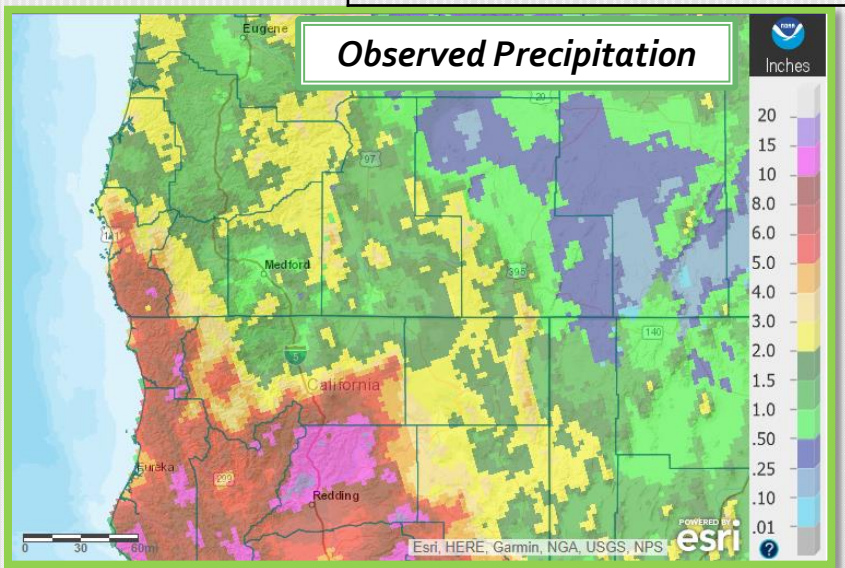
March 2019 *Observed Precipitation*

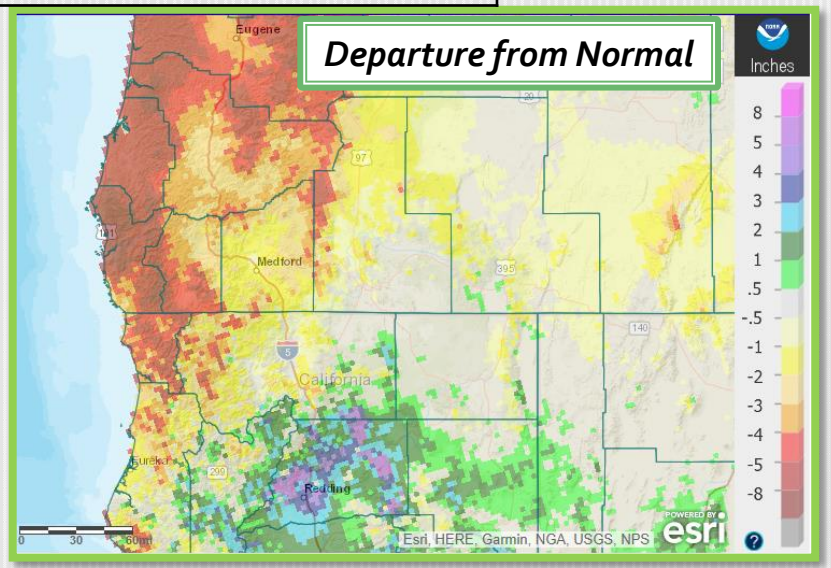




Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	3.35"	-4.48"	0.73"	12th
Roseburg	1.40"	-2.10"	0.53"	6th
Medford	0.94"	-0.77"	0.22"	23rd
Klamath Falls	0.82"	-0.45"	0.24"	27th
Montague, CA	0.98"	-1.33"	0.30"	27th
Mt. Shasta City, CA	5.69"	-0.27"	1.40"	6th
Alturas, CA	1.71"	0.19"	0.29"	23rd



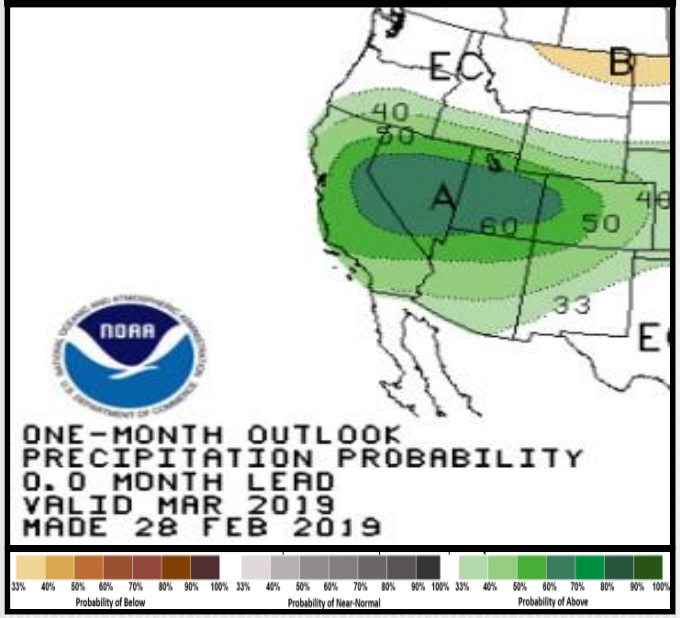


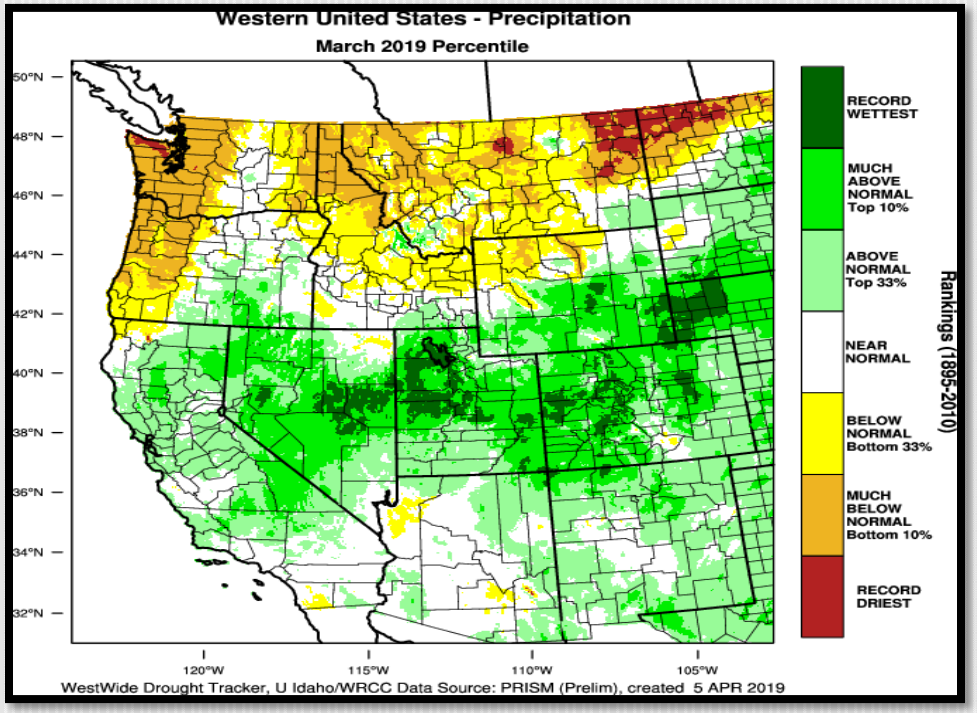
A Look Back at the March 2019 Precipitation Outlook

- ***Was the forecast anomaly correct?*** CPC's probabilistic forecast did very well in highlighting the above average precipitation area ahead of time. The forecast was too optimistic over NW portions of the forecast area, but was not incorrect. The had simply indicated that chances for above average precipitation were increased over most of the area. Spatially, their forecast did well.

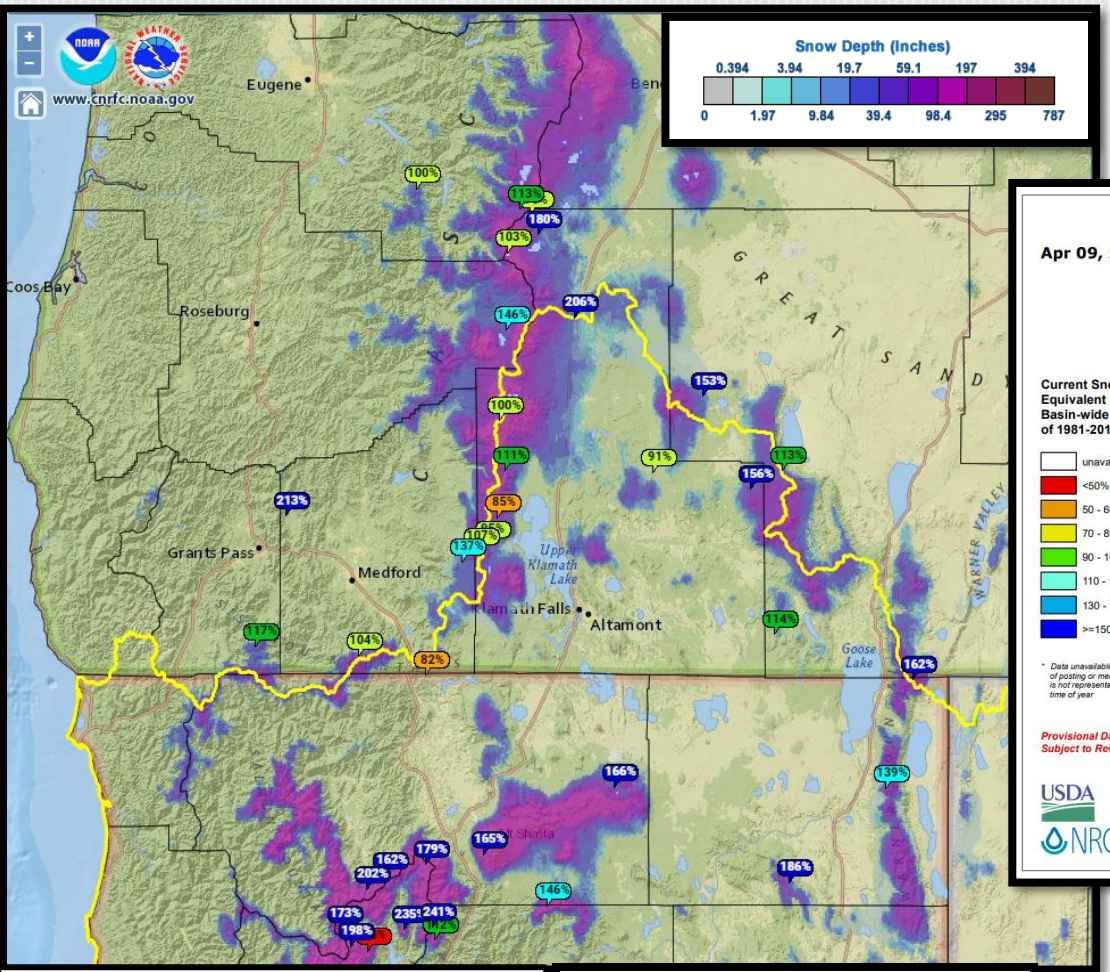
- ***Did our forecast improve upon the CPC forecast?*** We did not issue a localized enhancement to the CPC forecast for March 2019.

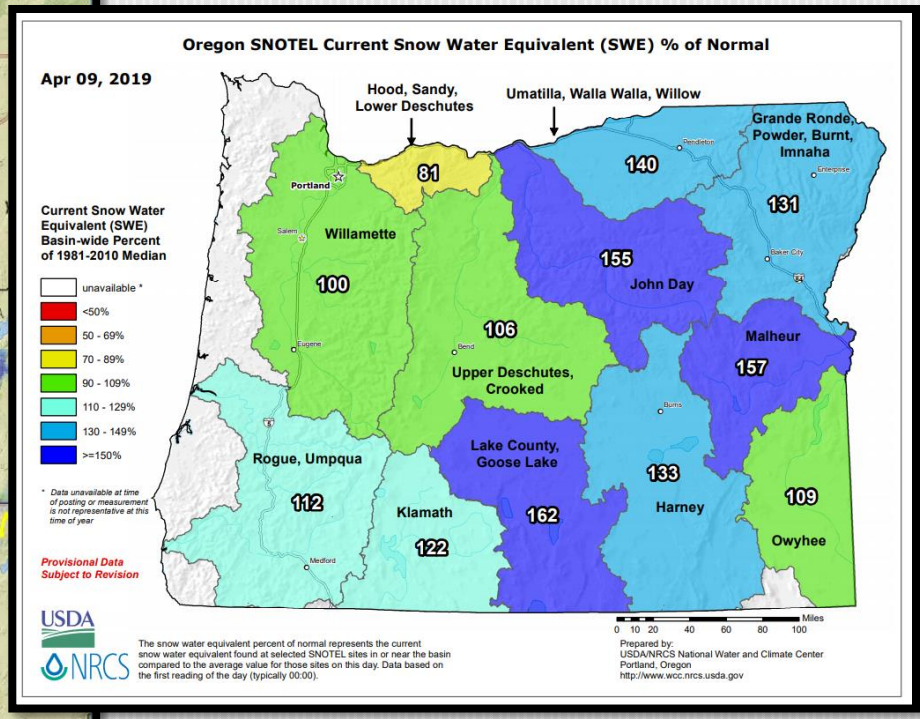
Precipitation



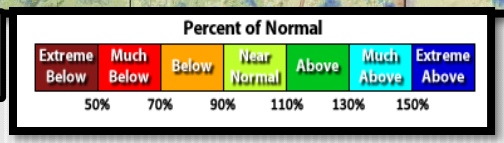


Snowpack Status

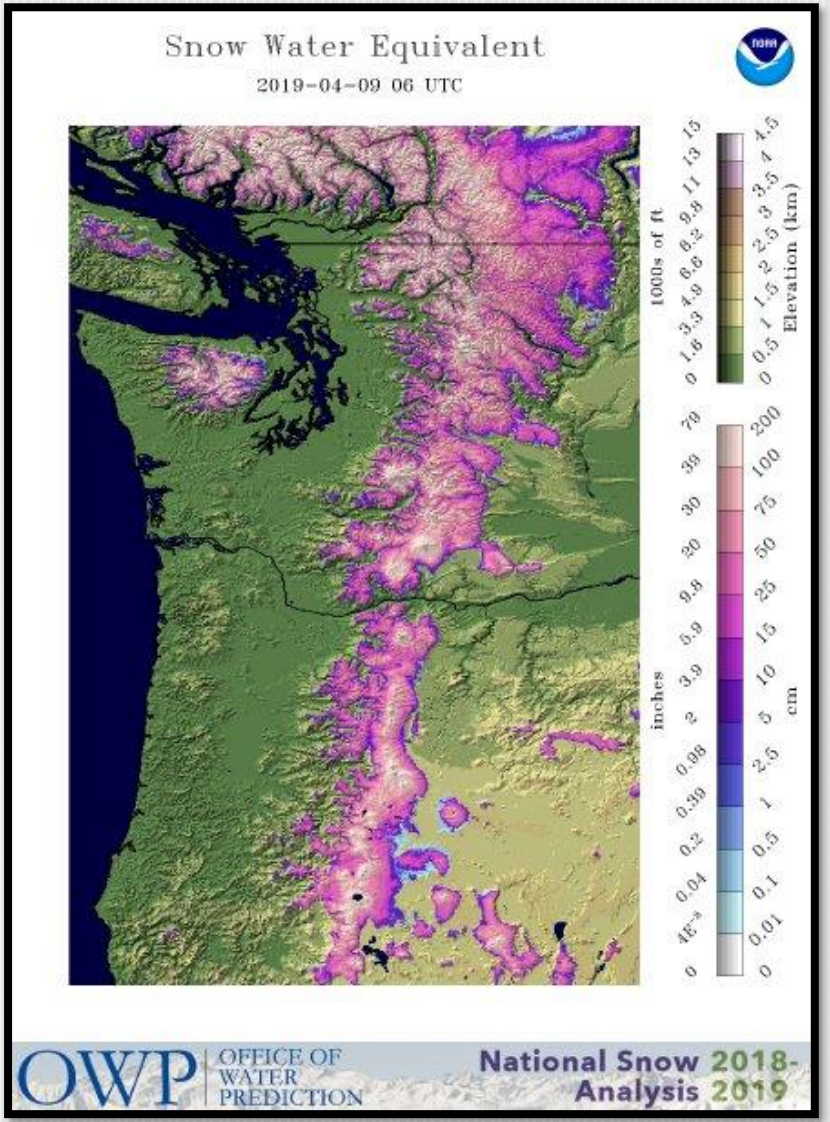


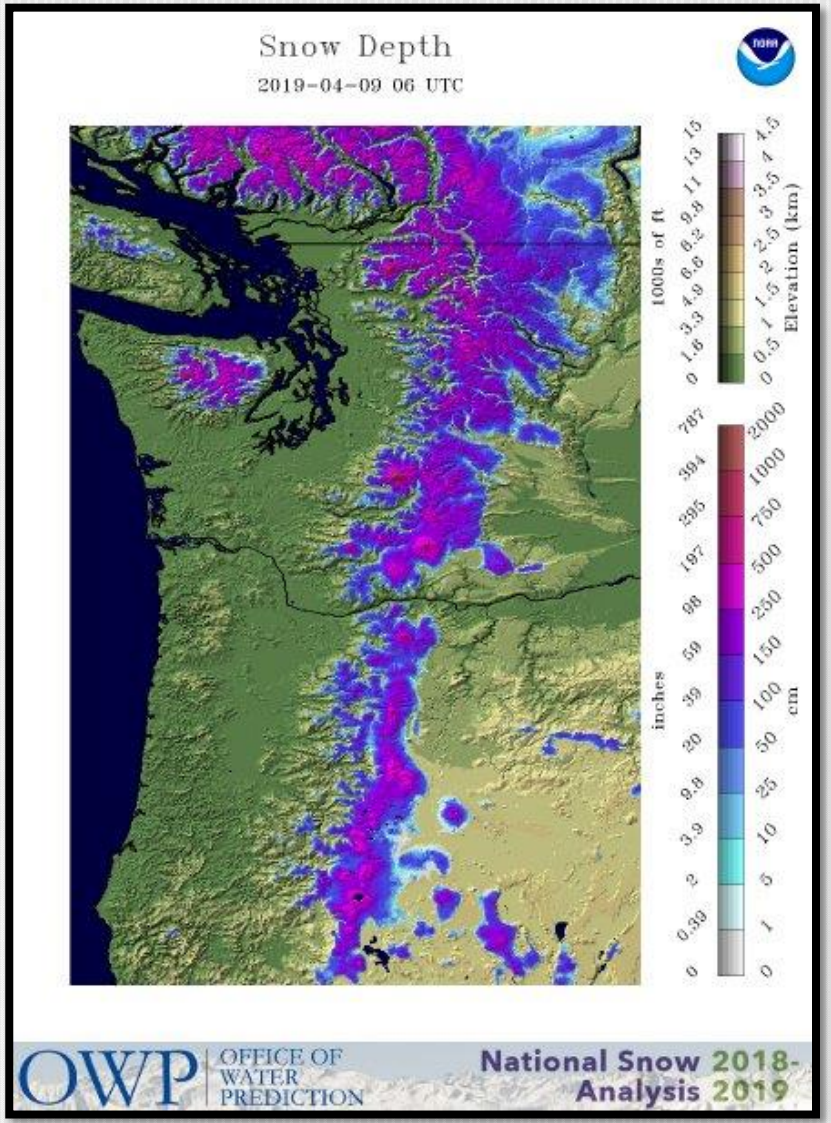


Shaded: NOHRSC Snow Depth 4/9/2019
Bubble: Current SWE % of Normal 4/9/2019

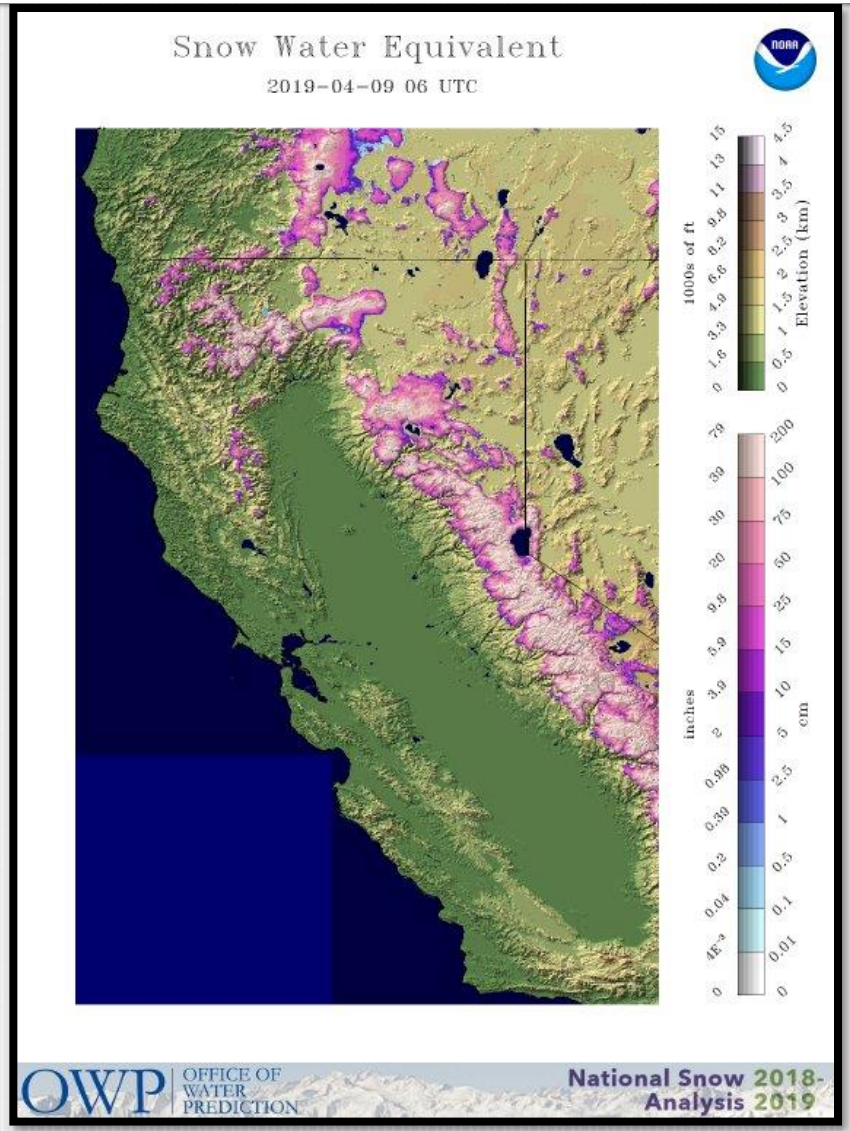


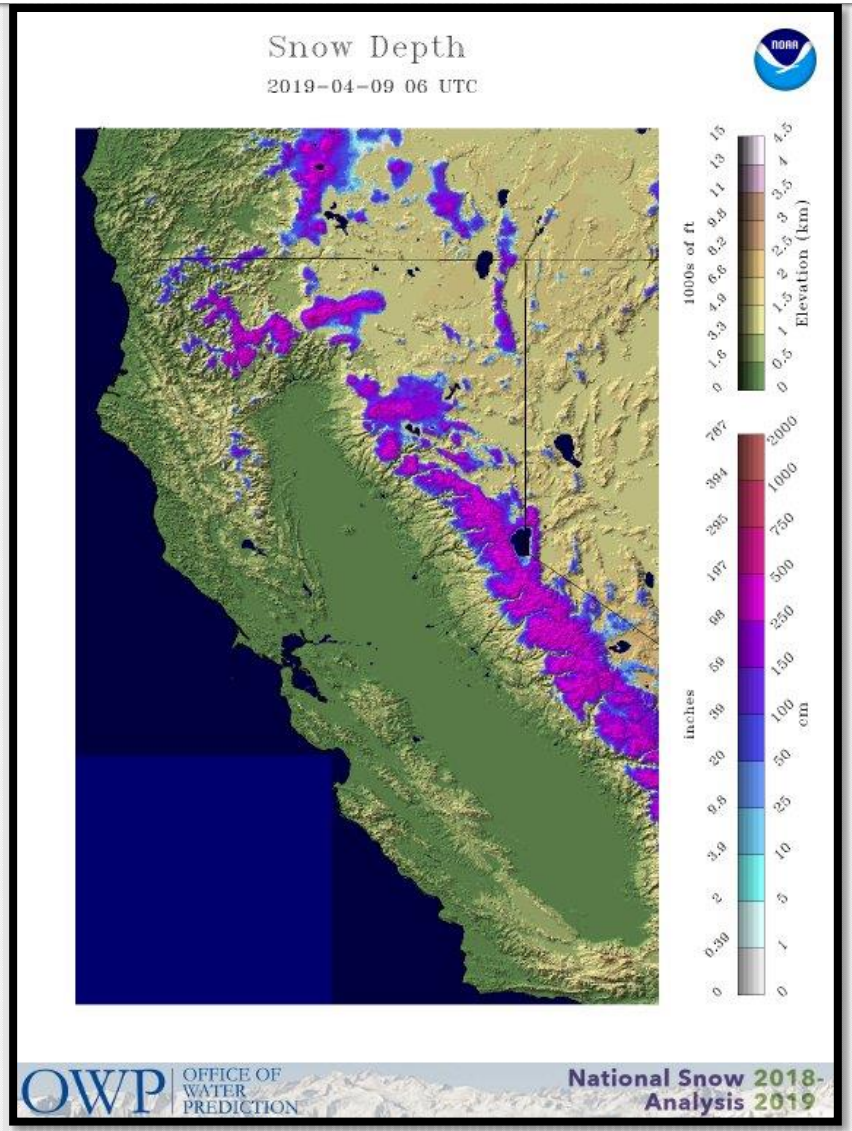
PacNW SWE & Snow Depth as of 4/9/2019





California SWE & Snow Depth as of 4/9/2019



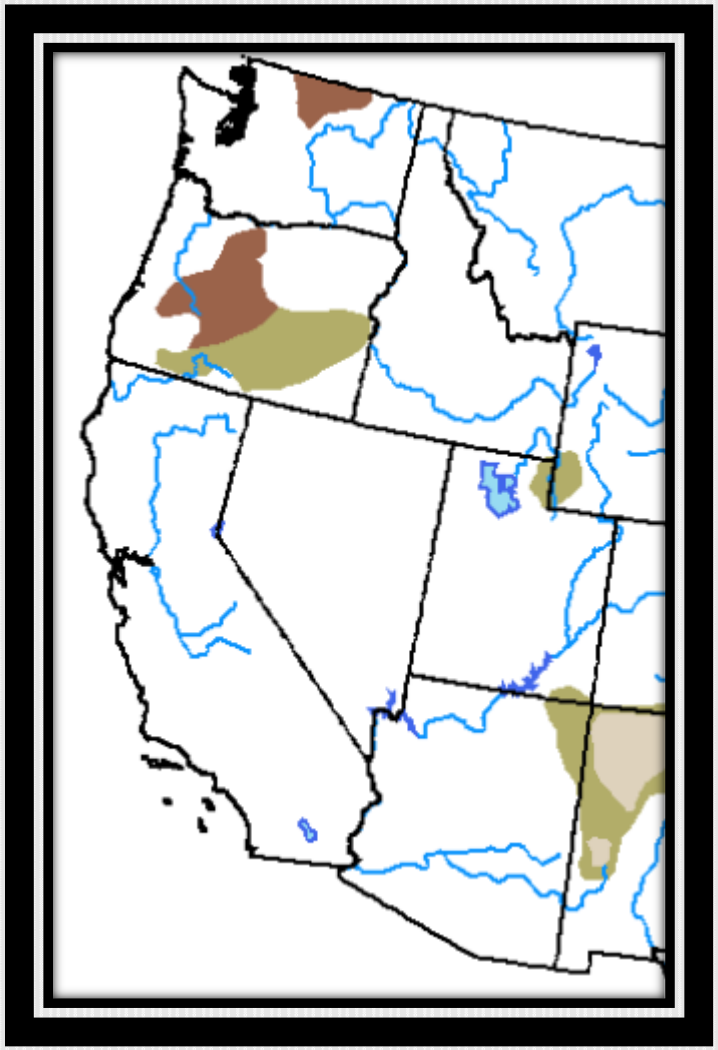


Crater Lake

Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 03/31/19	Highest Max/ Lowest Min
March	33.4°	17.4°	4.69"	46.2"	113"	49° on 20th / 5° on 1st
Normal (1981-2010)	37.3°	19.4°	7.53"	73.2"	113.6"	N/A

Drought Outlook: April



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

Valid for April 2019
Released March 31, 2019

http://www.cpc.ncep.noaa.gov/products/expert_assessment/month_drought.png

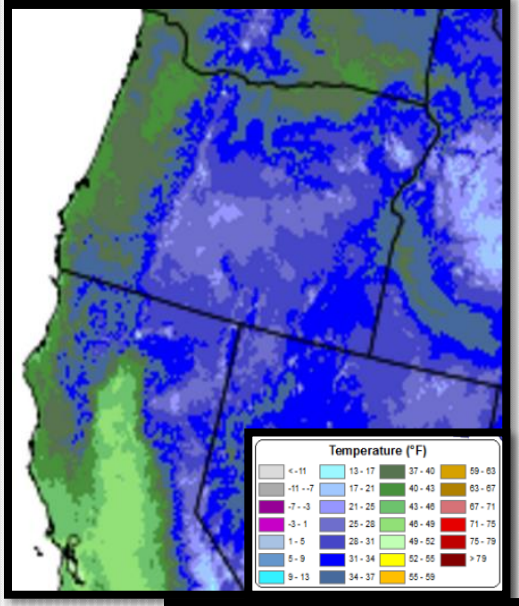
Looking Ahead: Normals for April (1981-2010)

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.

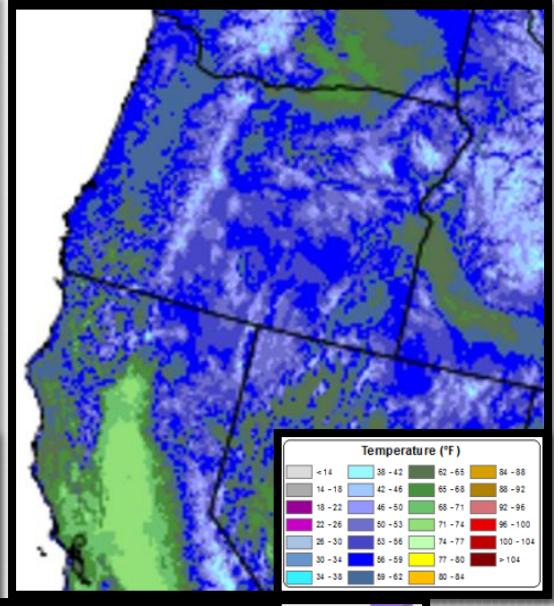
Precipitation: Curry County usually gets 6 to 15 inches of water. South and southwest flow favored areas of west of the Cascades, the Mount Shasta area, and the Cascades and Siskiyous typically get 4 to 8 inches. The remainder of the West Side has a wide range in normals, from as low as 0.50 to 4 inches. 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.

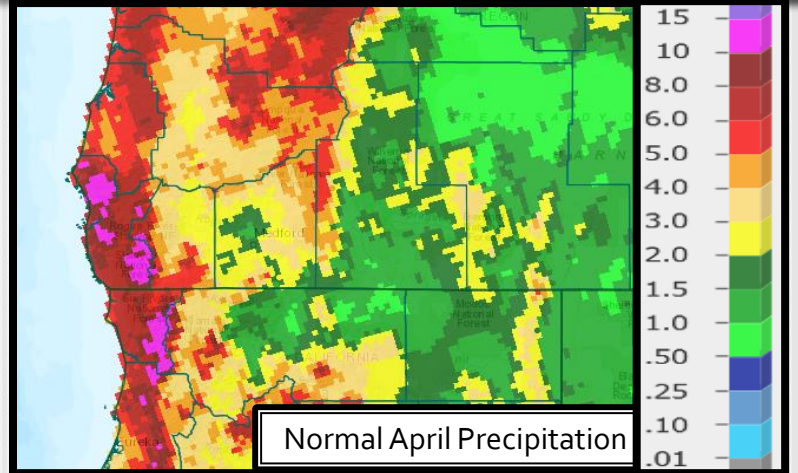
Snow: With peak snow water equivalent normally having occurred in mid-March, we expect the snowpack to begin melting off in April. In some years the snowpack peaks in April. Also, we do often get snow in April that slows the melting process. The snowpack typically melts off much faster on southerly aspects 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



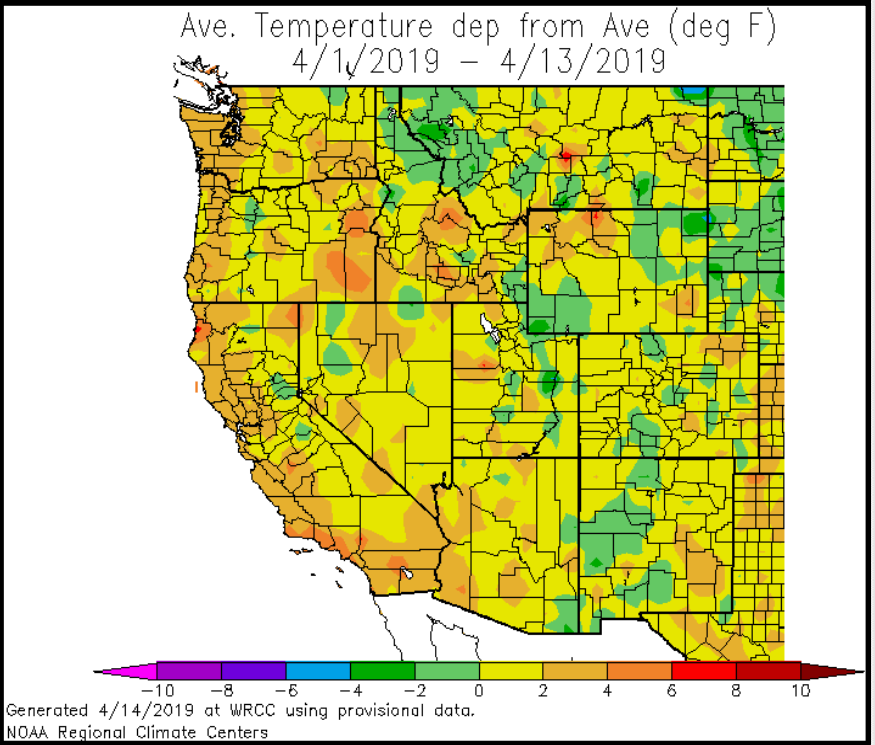


Normal April Precipitation

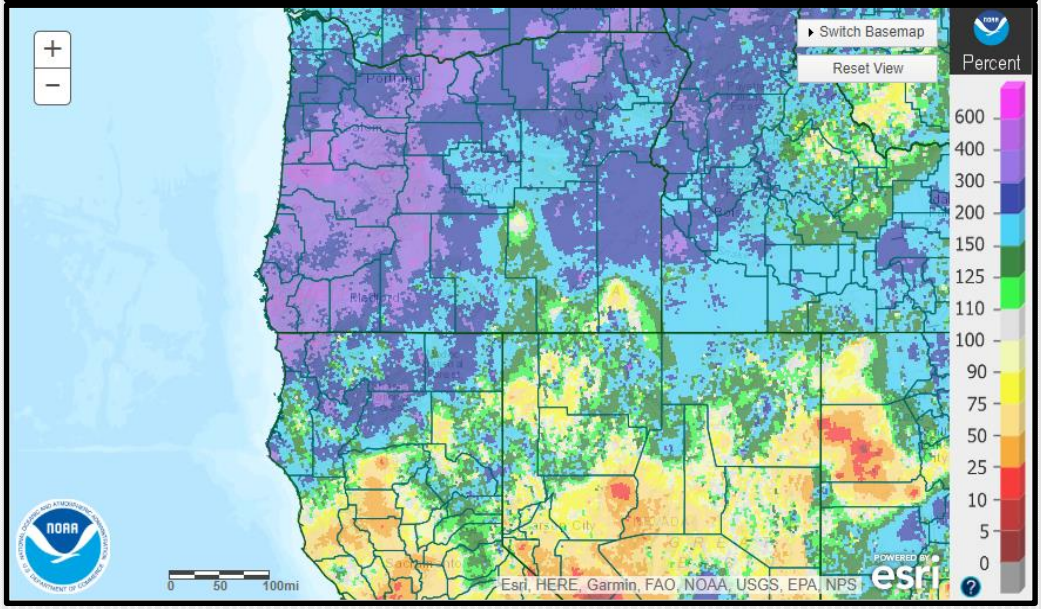
Observed Conditions: April 1-14th, 2019

The first half of April has been very wet across the Medford NWS forecast area. Simply put, locations that are 200% of normal or higher for precipitation for the month to date will finish the month at or above normal for precipitation. That's because, climatologically, we expect less precipitation during the 2nd half of April than we do in the 1st half as we transition out of the Wet Season into the Dry season. Areas that have received less than 200% of normal precipitation, thus far, could still finish the month at or below normal for precipitation. Average temperatures have been near to <5 degrees above normal, so far, this month. Interestingly, due to the much wetter than normal pattern, low temperatures have been generally 4-10 degrees above normal this month, with highs mostly 0-6 degrees below normal. It's likely that, with relatively drier west to northwest flow conditions expected the remainder of this month, we'll see the highs trend higher as compared to climatology and the lows are likely to be cooler than climatology, especially east of the Cascades.

Observed Temperatures



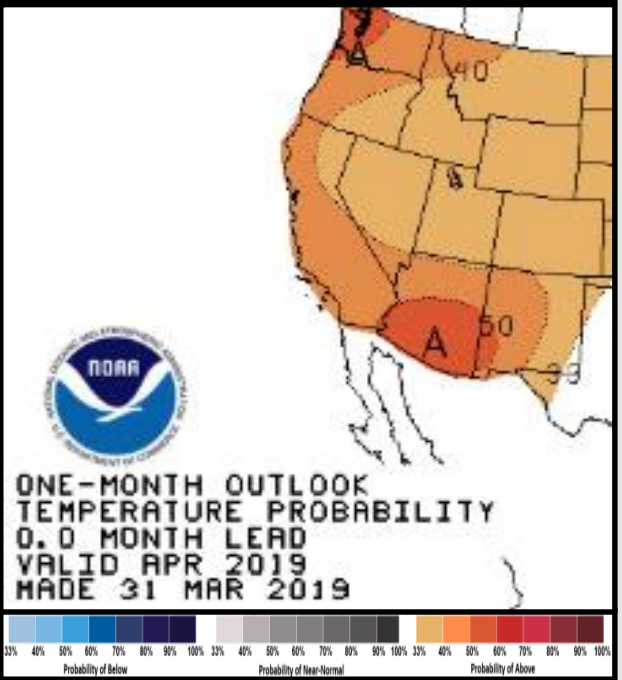
Observed Precipitation: April 1 – the morning of April 15th



April 2019 Outlook

The official CPC forecast for temperatures for the month of April is for increased chances for above average temperatures (40-50%) and greatly increased chances for above average precipitation. Altogether, this forecast looks to be on track. The very anomalous wetness during the first portion of this month guarantees that the NW half of the forecast area will finish above normal for precipitation. Please see the preceding slide for more information about the first half of the month. While we do expect additional precipitation, generally under a west to northwesterly flow, through month's end, there are still some small portions of the area that could end up below normal for precipitation, but likely in the 60-90% range, for April. These areas are central Siskiyou County and portions of the east side, particularly SE Modoc and Lake counties. For the 2nd half of this month, we're expecting valley rain and higher mountain snow for the 15th, followed by some lingering showers on the 16th. A brief, but pronounced warm-up to around 10 degrees above normal is expected to peak on April 18th. Thereafter, model guidance suggests weak to moderate fronts arriving on a west to northwest flow that will cause temperatures to shift between above and below normal, but generally with a lean to above normal being the more dominant condition. Temperatures for the month are likely to end up in the 3 to 6 degree above normal range for most locations. With it not being as wet, diurnal temperature ranges will increase for the2nd half of this month.

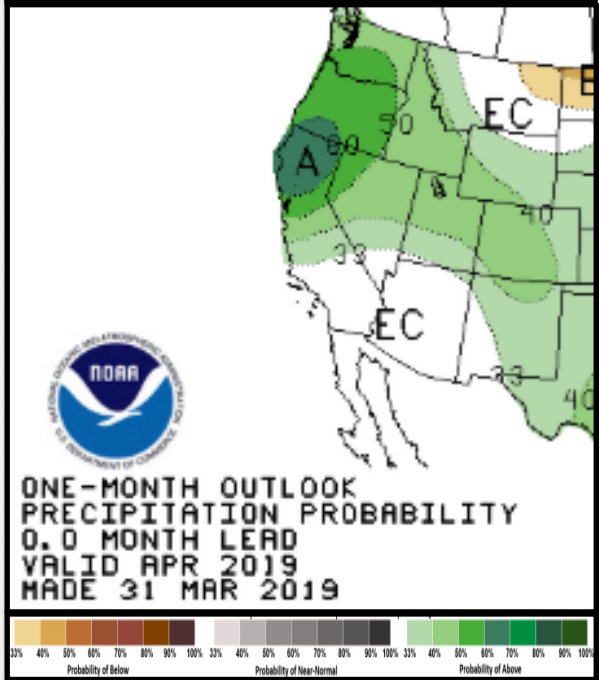
Temperatures



Expected Impact, April 2019:

Well above average precipitation brought quite a bit of flooding across the area the 2nd week of this month, but also served to guarantee the fill of many reservoirs across the area. Additionally, the wetness further helped alleviate groundwater deficits that had developed over the course of a couple years. The area is now drought free and additional precipitation will continue to help. With snowpack above normal run-off is looking good for the spring. The above normal temperatures are likely to accelerate green-up the 2nd half of April. However, with above normal snowpack in the mountains and drier conditions expected for the 2nd half of April, some frost and freeze impacts should be expected for fruit trees and early plantings. Expect these mainly from the interior west side eastward. Other negative impacts that will be possible the remainder of this month are increased pollen counts for allergy sufferers and the possibility of blight due to warm temperatures.

Precipitation



*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: 1/1/1902 – Present**
- **Roseburg: 4/1/1900 – Present**
  - *Missing:*
    - *05/1900-01/1901*
    - *03/1901-06/1902*
    - *08/1902-12/1930*
    - *10/1965-06/1997*
- **Medford: 3/11/1911 – Present**
- **Klamath Falls: 12/1/1897 – Present**
- **Montague, CA: 7/1/1948 – Present**
  - *Missing:*
    - *08-09/1952*
    - *02/1953-06/2000*
- **Mount Shasta City, CA: 4/15/1948 – Present**
  - *Missing:*
    - *10/1984-01/1985*
    - *10/1985-03/1986*
    - *09/1986-07/1997*
- **Alturas, CA: 6/1/1998 – Present**
  - *Missing:*
    - *08/1998*