National Weather Service Medford

April 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).

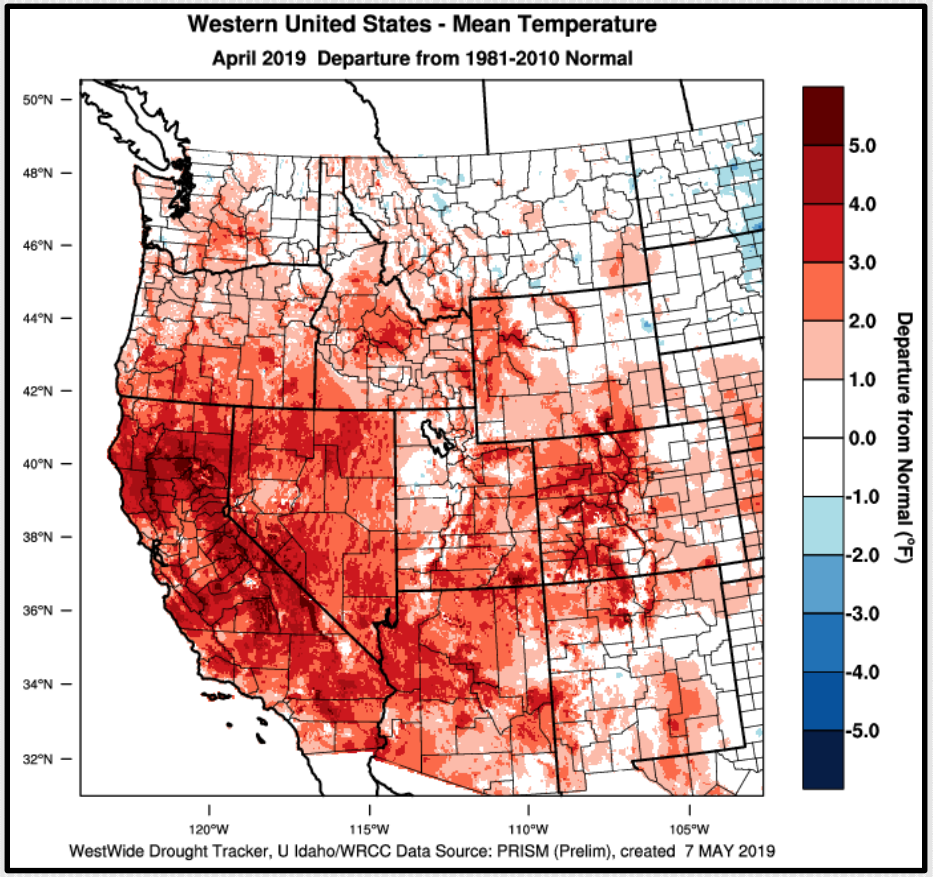
April 2019 Weather Review

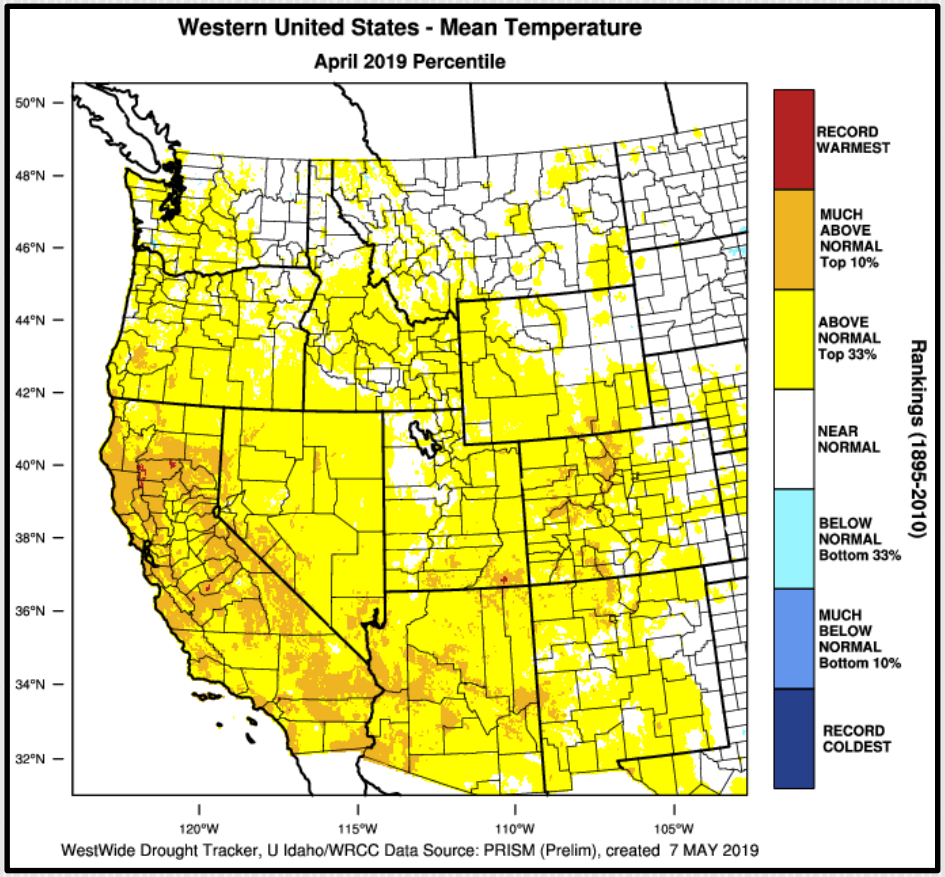
April 2019 started out wet and ended dry, but overall, was warmer than normal with above normal precipitation. Several wet fronts brought periods of moderate to heavy rain to the Medford area during the first 9 days of the month. Additional light to moderate rain fell during the middle of the month filling reservoirs and ending drought concerns. The faucets did shut off after the 20th, however, with no rain reported the last 10 days of the month. Lightning was observed with a thunderstorm on April 4th.

The most notable of the wet frontal systems was an atmospheric river event that occurred April 6th-9th. Ahead of the front, southeast winds at the Medford airport reached 26 mph with gusts of 34 mph on the 6th. But, by far, the most remarkable aspect of this storm was the amount of moisture associated with it for early April. With origins from the tropics, the front brought heavy rainfall from the 6th to the 8th. Two daily rainfall records were broken at Medford on the 7th and 8th with 0.55 and 0.82 inches, respectively. Significant rises occurred on all area rivers, streams and creeks. The Rogue River at Eagle Point reached bankfull on the 8th and 9th with minor flooding occurring at Agness. The heaviest rain fell in southwest Oregon with widespread amounts of 5.00 to 10.00 inches reported at the coast. A storm total of up to 15.50 inches was observed in the Curry County coastal mountains during the 3-day period. Moderate flooding was common on coastal rivers and streams, including the Coquille River at Coquille and the South Fork of the Coquille River at Myrtle Point. Areal flooding of coastal and inland small streams, creeks and pastureland was also prevalent during the event. Landslides and slumps impacted coastal highways and roads, including Highways 38, 42, and 101. Minor flooding occurred in the Umpqua Basin, including at Elk Creek near Drain. East of the Cascades and in northern California, flooding was caused due to rain and snow melt. This affected many rivers and small streams in Lake, Klamath and Modoc Counties, including the Pit and Sprague Rivers. The city of Lakeview saw some of their worst flooding in 20 years on the 8th and 9th as floodwaters from Bullard and Deadman creeks poured through city streets. While the heavy rainfall let up on the 9th, some main stem river flooding continued through the 11th. Overall, the 1.37 inches of rain that fell on the 7th and 8th in Medford was the 4th highest 2-day rainfall ever in April.

After this very wet frontal system, from the 9th to the 20th, the weather pattern was more typical for early Spring in the Medford area with periods of warm and dry weather interspersed with weaker weather systems and additional light to moderate rainfall. During one period of dry weather, Medford warmed up with a high of 85 degrees on April 18th. In the last 10 days of the month, a relatively warm and dry pattern set up bringing above normal temperatures. Even so, the combination of high pressure offshore with a cold trough inland resulted in some clear and chilly nights. Low temperatures of 37 and 39 degrees on the 28th and 29th, respectively, resulted in frost and local freezing conditions in surrounding valley locations in Jackson County.

April 2019 *Observed Temperatures*



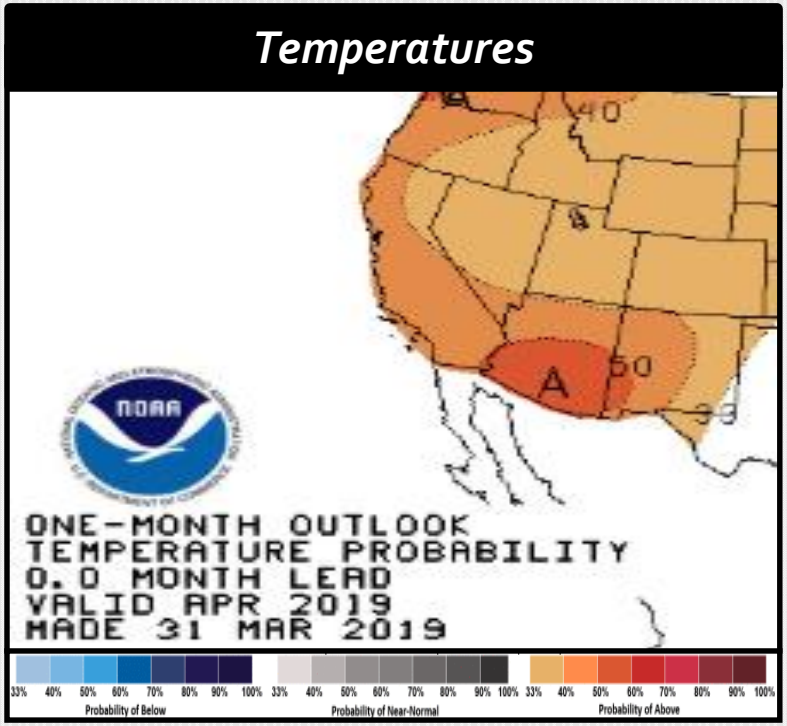


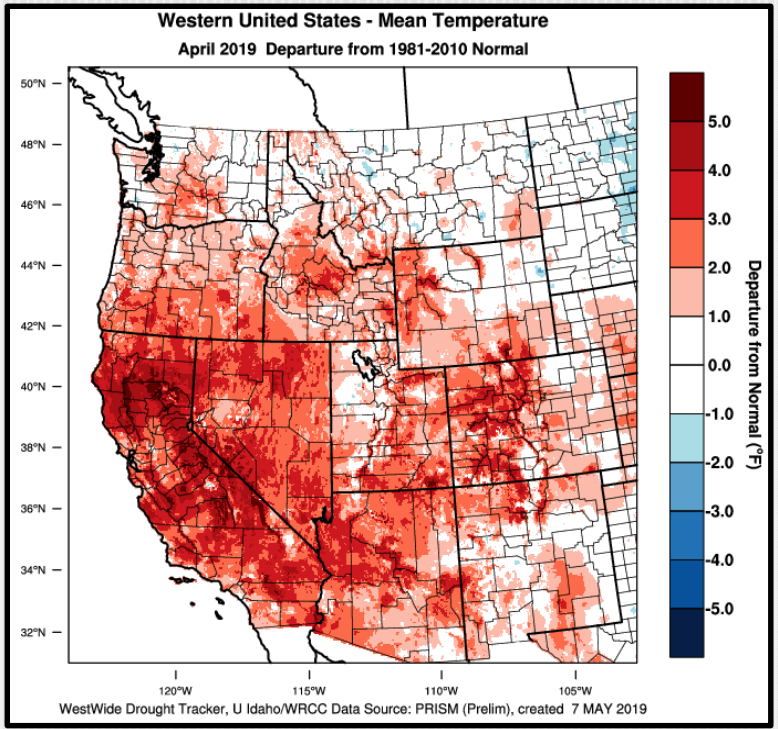
Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	51.8	2.6°	57.5	2.2°	46.1	3.0°
Roseburg	56.2	4.0°	65.7	3.3°	46.8	4.8°
Medford	55.9	3.1°	66.9	2.0°	45.0	4.2°
Klamath Falls	47.0	3.9°	59.6	3.1°	34.3	4.6°
Montague, CA	52.4	5.3°	65.7	4.8°	39.1	5.9°
Mt. Shasta City, CA	50.3	3.1°	61.7	0.8°	39.0	5.6°
Alturas, CA	47.9	4.7°	60.9	3.1°	34.8	6.1°

A Look Back at the April 2019 Temperature Outlook

- ***Was the forecast anomaly correct?*** Yes. CPC's forecast was correct in indicating temperatures were most likely to be above normal.
- ***Was the expected impact correct?*** Yes. The expected impact of above normal temperatures accelerating green-up for the second part of April verified well. Additionally, frost and freeze impacts were observed for the 2nd half of the month, as was predicted, with impacts also accurately depicted to be for the interior west side eastward. A significant increase in pollen also occurred.
- ***Did our "Localized Forecast" improve upon the CPC forecast?*** Yes. It should be noted that we had an advantage in that almost half of the month was over by the time we did our "Localized Forecast". We indicated temperatures were most likely to end up in the 3-6 degree above normal range for the April 2019. The PRISM graphic indicates temperatures were 2-6 degrees above normal for most areas while point data suggests the graphical map might be reading a bit low, as anomalies of 2-6 degrees were indicated at the key ASOS locations. We'll be checking with the WestWideDroughtTracker about the observed differences.





Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	66°	18th	38°	29th & 30th
Roseburg	85°	18th	37°	15th & 28th
Medford	85°	18th	37°	28th
Klamath Falls	76°	25th	24°	13th
Montague, CA	83°	25th	31°	13th
Mt. Shasta City, CA	82°	25th	32°	13th & 15th
Alturas, CA	78°	25th	26°	13th & 30th

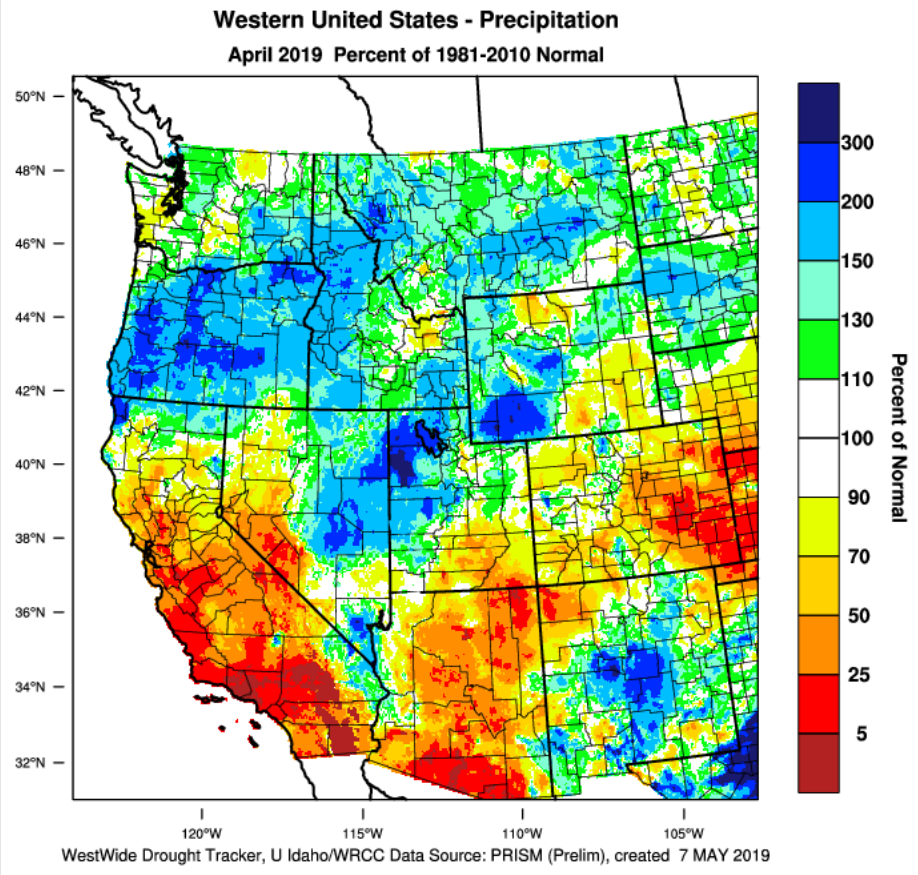
Records

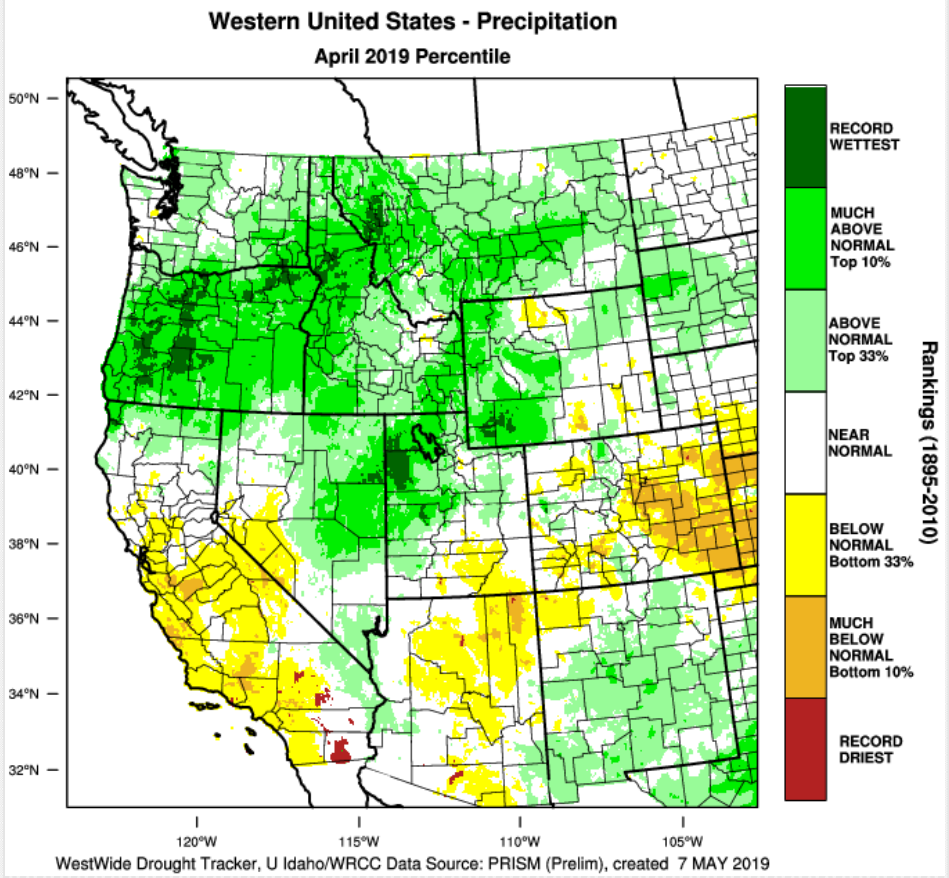
DAILY PRECIPITATION RECORDS

	New Record	Date	Old Record	Year
North Bend	3.17"	7th	1.57"	1945
Roseburg	1.98"	7th	1.17"	1984
	0.92"	8th	0.55"	1972
Medford	0.55"	7th	0.36"	1935
	0.82"	8th	0.41"	1995
Alturas	1.01"	8th	0.79"	1986

No Temperature Records Were Set During the Month

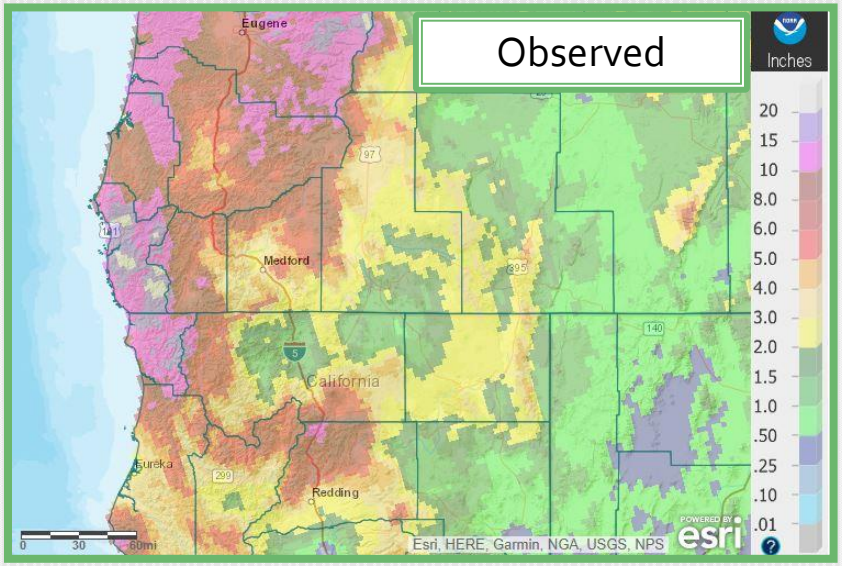
April 2019 *Observed Precipitation*

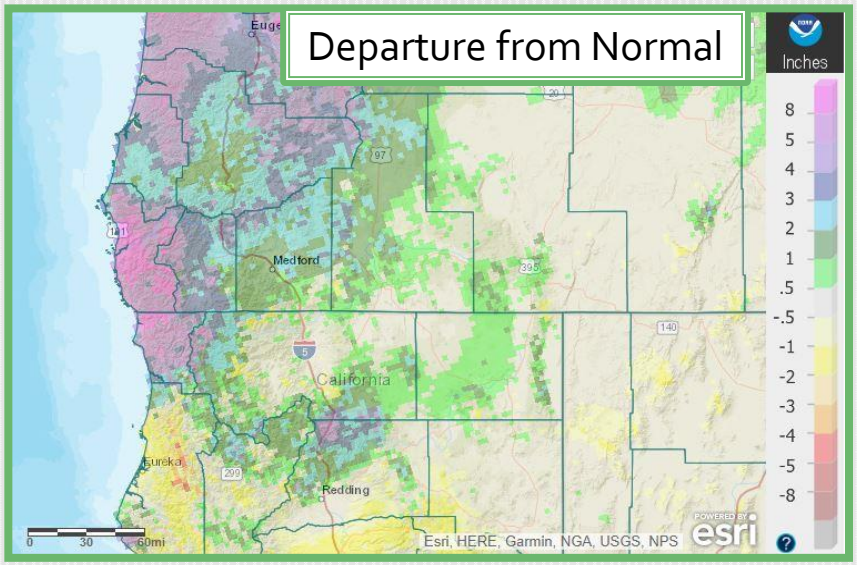




April Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	9.13″	3.96″	3.17″	7th
Roseburg	4.94″	2.12″	1.98″	7th
Medford	3.01″	1.63″	0.82″	8th
Klamath Falls	1.64″	0.27″	0.49″	2nd
Montague, CA	1.29″	-0.27″	0.38″	8th
Mt. Shasta City, CA	3.53″	0.60″	1.04″	4th
Alturas, CA	2.24″	0.68″	1.01″	8th



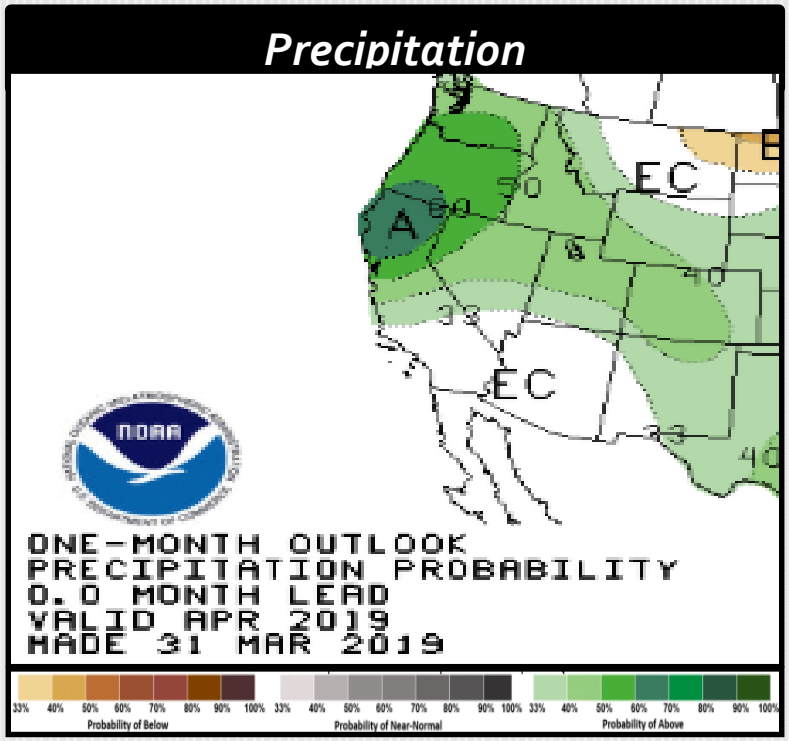


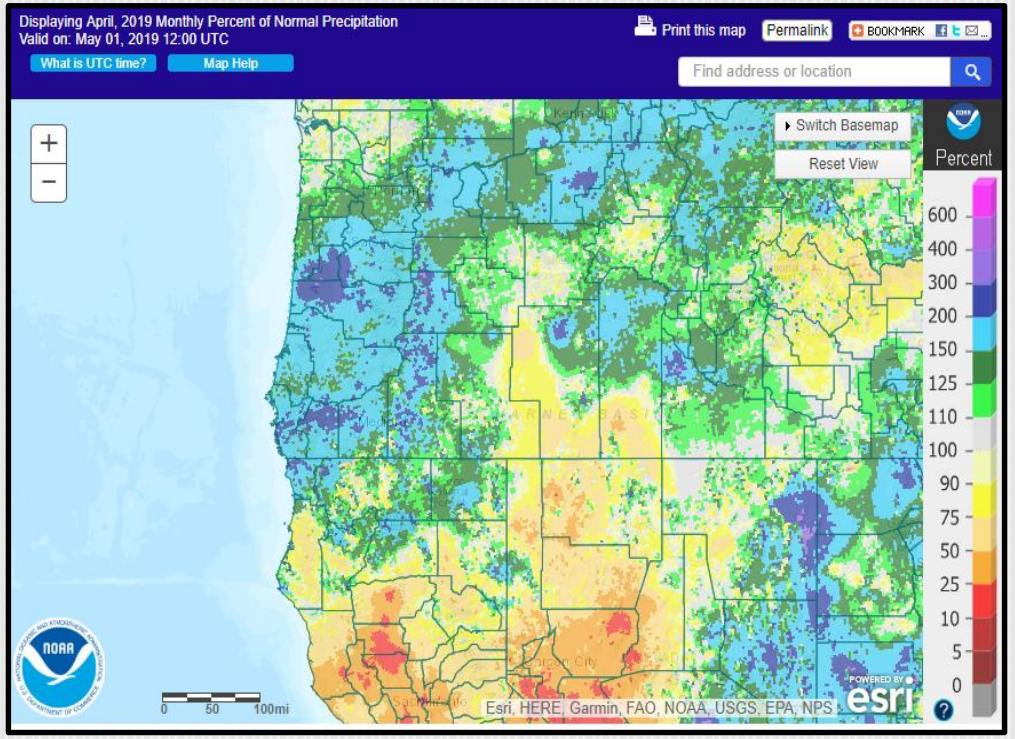
A Look Back at the April 2019 Precipitation Outlook

- ***Was the forecast anomaly correct?*** Yes. CPC's forecast indicated greatly increased chances for above average precipitation and it mostly verified. Once again, there are some magnitude and spatial differences in the two observed precipitation graphics we use, with the PRISM dataset indicating above average precipitation occurred in all areas except southwestern Siskiyou County. There are several other slightly below normal holes on the AHPS graphic. The PRISM usually is the most accurate.

- ***Was the expected impact correct?*** Yes. Reservoirs continued to fill in the latter half of April.

- ***Did our forecast improve upon the CPC forecast?*** Mostly, 'yes'. We indicated that weak to moderate fronts would bring some additional precipitation. However, a frontal system stalled over the area on the 20th and 21st bringing widespread soaking rain east of the coastal ranges, so additional precipitation was more there. We were able to identify where precipitation was going to be lesser than normal.





April Significant Weather Events

Major Atmospheric River Event

- A major atmospheric river (AR) event took place April 6-9th, 2019. ARs, like this one, are responsible for most of the extreme precipitation and flooding events across the West and produce 25-50% of the water supply in key areas of the West (CW3E). Many areas along the coast had 5-10 inches of rain with some locations in the coast ranges of Curry County exceeding 15 inches. This one was unique in that it produced Top-5 (2-3 day) April rainfall records for some locations in our area and was also responsible for widespread flooding that doesn't usually occur this late in the season. The following slides show some photos and impacts from this AR.

Rain/Flood Impacts: April 6-9th, 2019

At right: Josephine Co. officials work to free a stranded truck & travel trailer - Rogue River floodwaters at Ennis Riffle boat ramp. (Photo: KTVL)

Below: Crews clean up a landslide that temporarily closed Highway 38 between Elkton and Drain. (Photo: ODOT)

At left: Crews clear debris from the Coquille River during high flows beneath Highway 42 at Coquille. (Photo: ODOT)

Rain/Flood Impacts: April 6-9th, 2019

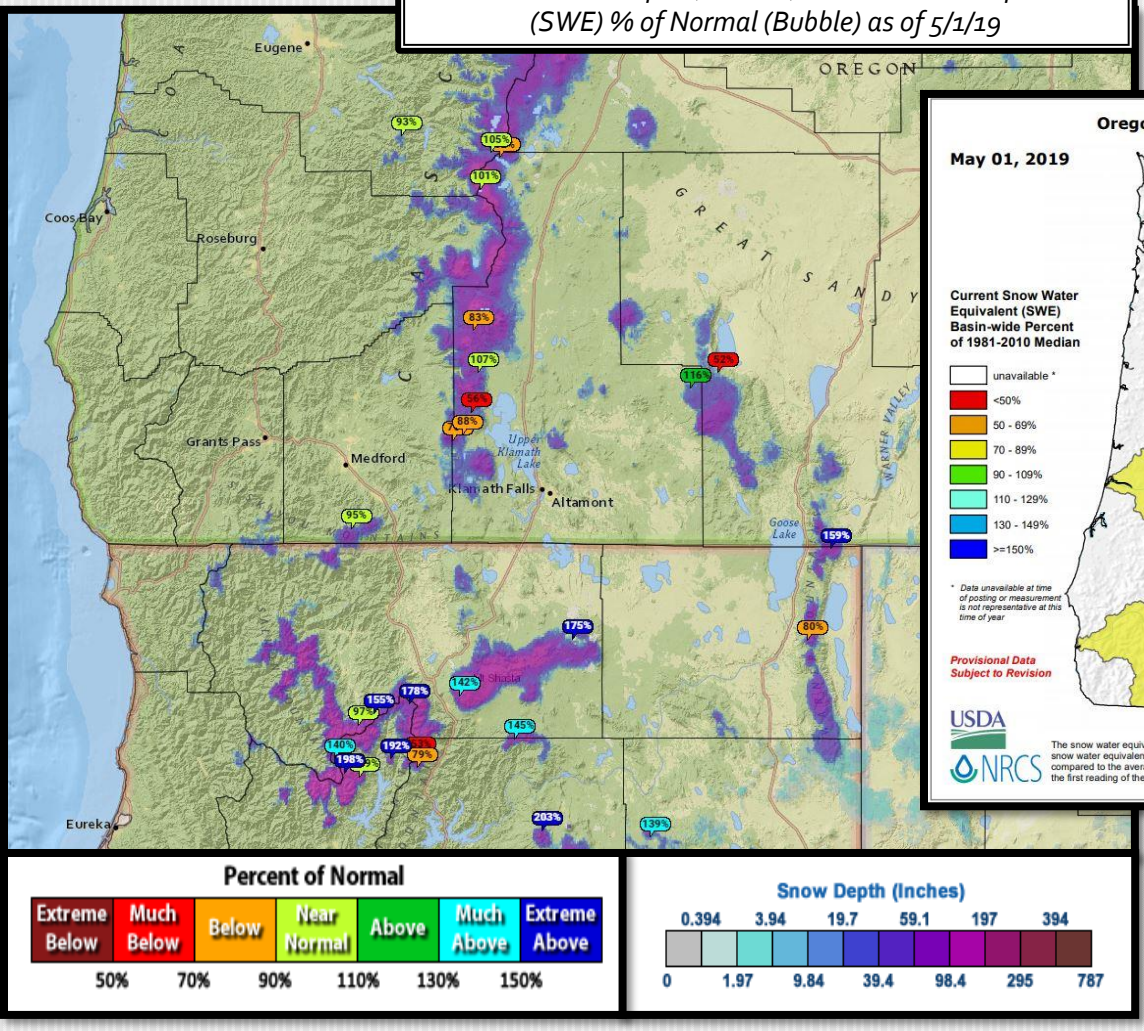
At right: Portions of Highway 42s between Coquille and Bandon collapsed due to heavy rainfall and runoff leading to a car accident. (Photo: OSP)

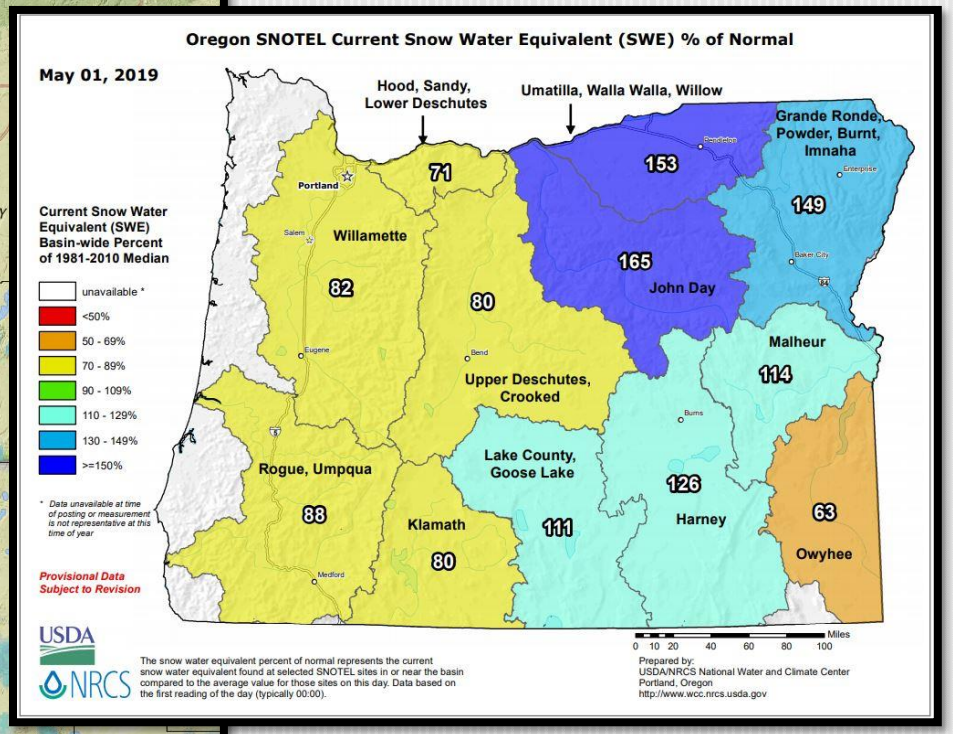
Below: Crews inspect a landslide along Crate Road in Curry County (Photo: Curry County Roads Dept.)

At left: Gaping hole opens up beneath Highway 42s east of Bandon. (Photo: ODOT)

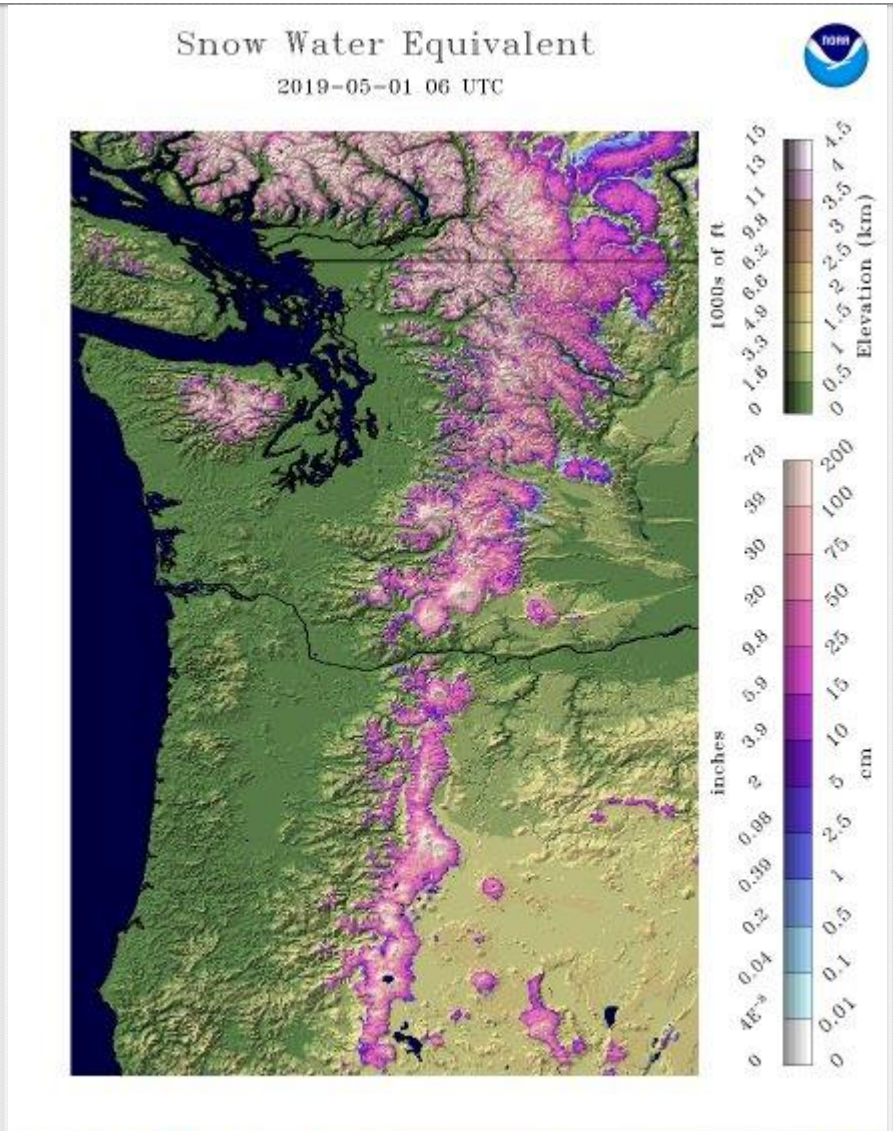
Snowpack Status

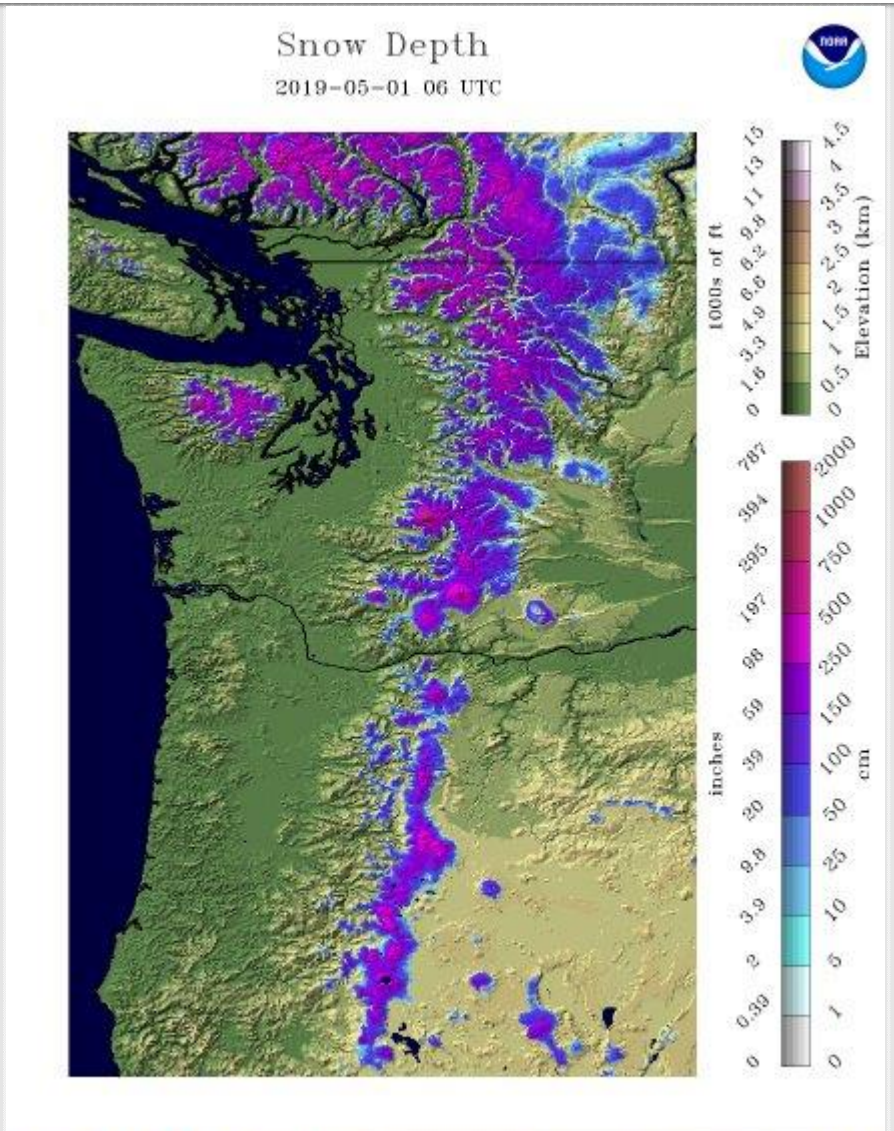
NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 5/1/19



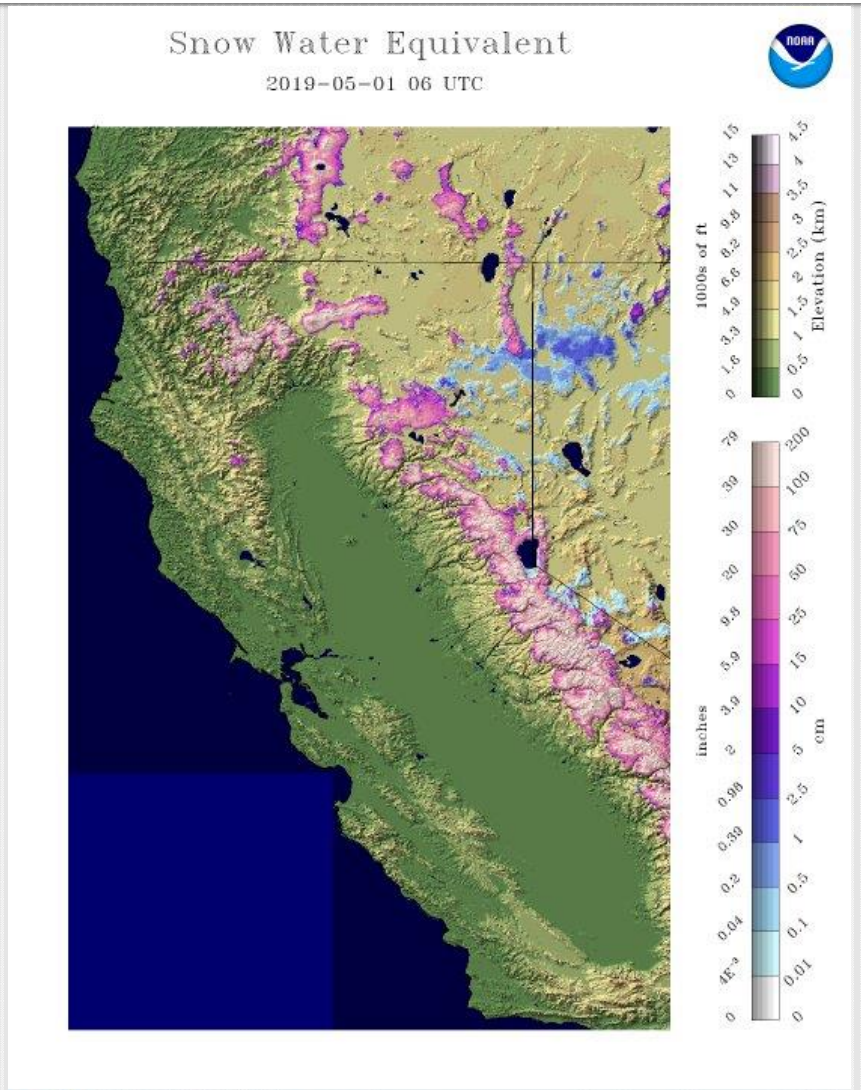


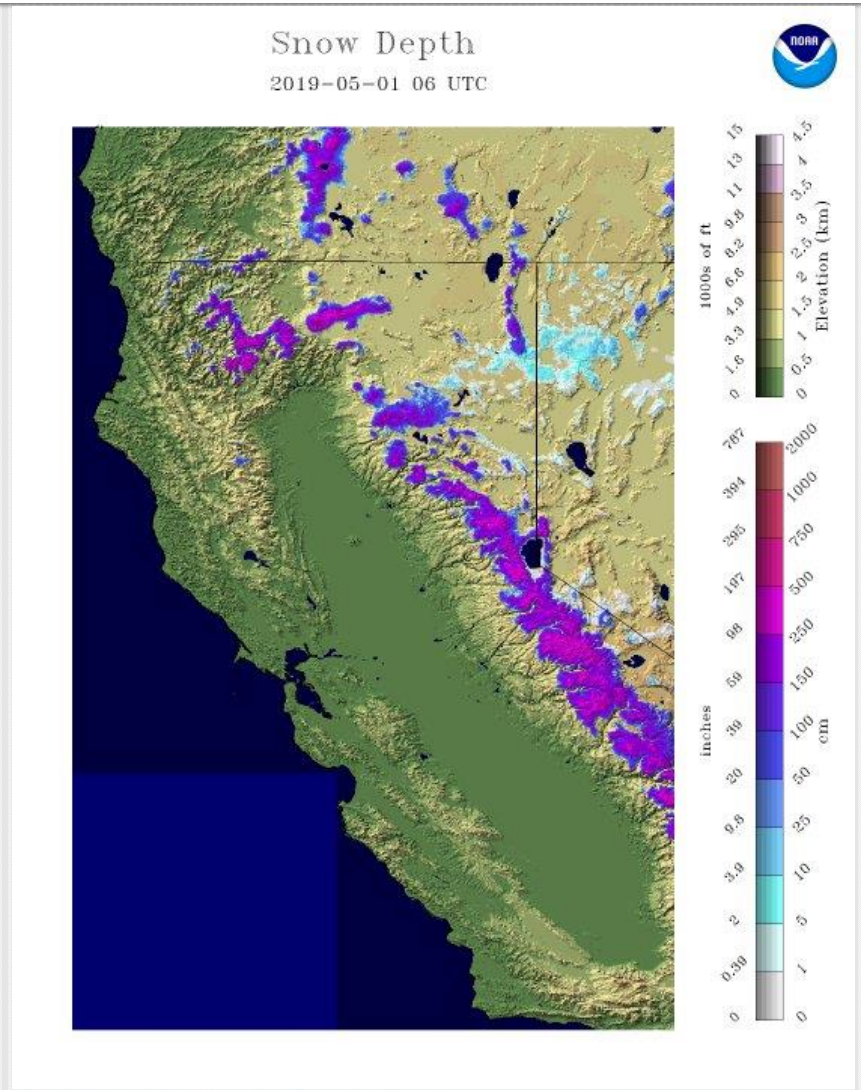
PacNW SWE & Snow Depth as of 5/1/19



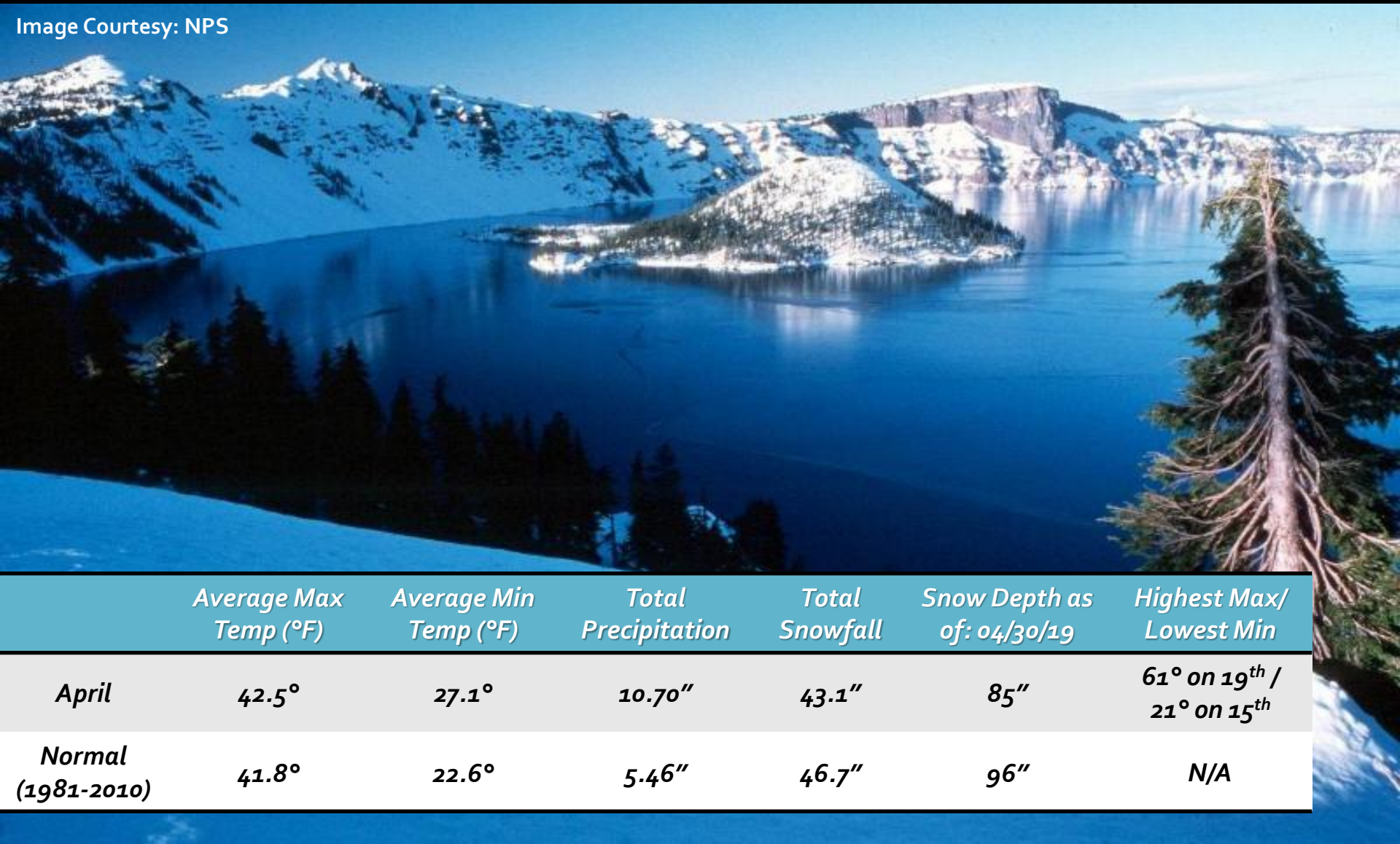


California SWE & Snow Depth as of 5/1/19





Crater Lake



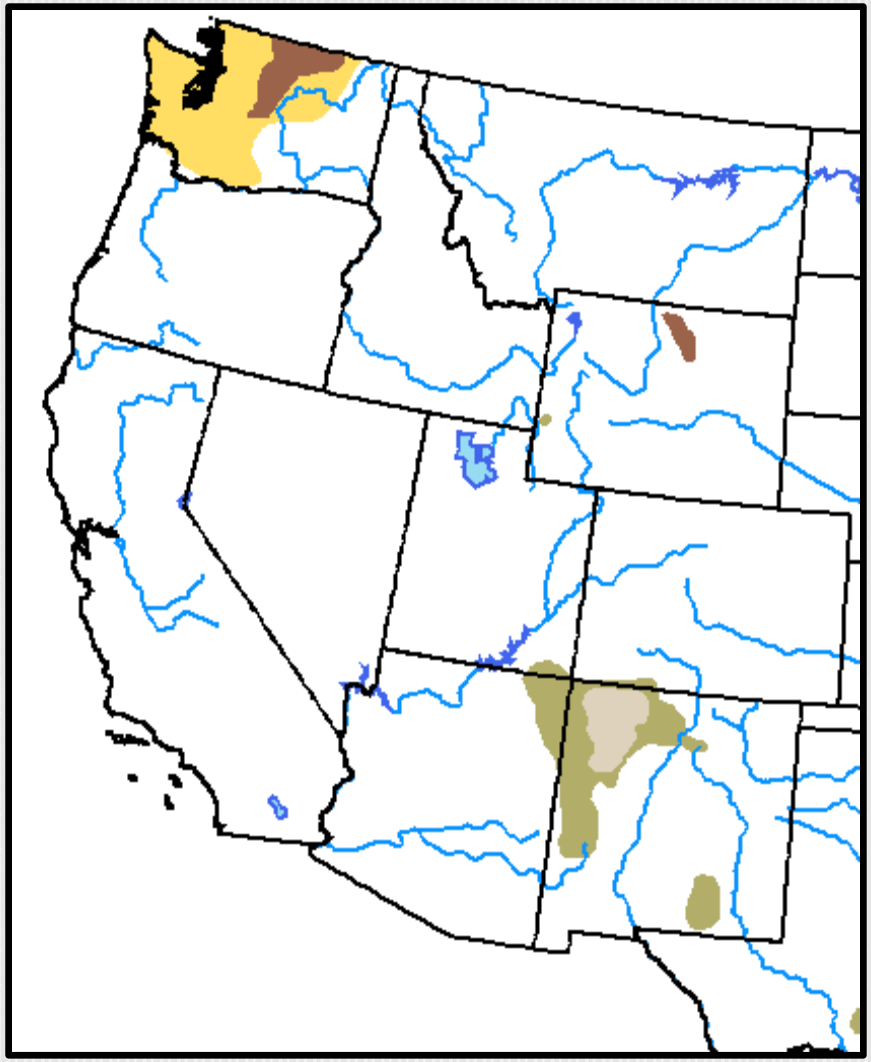
	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 04/30/19	Highest Max/ Lowest Min
April	42.5°	27.1°	10.70"	43.1"	85"	61° on 19th / 21° on 15th
Normal (1981-2010)	41.8°	22.6°	5.46"	46.7"	96"	N/A

Drought Outlook: May 2019

Valid for May 2019
Released April 30, 2019

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

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



Looking Ahead: Normals for May (1981-2010)

Temperatures:

Along the coast, lows are typically in upper 40s to lower 50s with highs in the upper 50s to mid 60s. The Interior West Side valleys usually experiences average lows in the 40s to 50s and highs in the lower 60s to mid 70s. Lows are typically in the 30s across the higher mountains west of the Cascades and the majority of the East Side. Highs across even the higher elevations are typically in the 40s and 50s, while across the valleys east of the Cascades highs are typically 60-70 degrees.

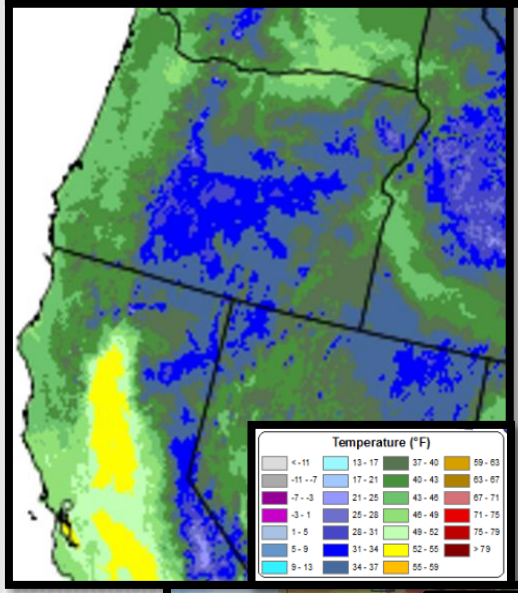
Precipitation:

Curry County usually gets 4 to 10 inches of water. South and southwest flow favored areas west of the Cascades, the Mount Shasta area, and the Cascades and Siskiyous typically get 2 to 5 inches. The remainder of the West Side has a wide range in normals, from as low as 0.50 up to 2 inches. East of the Cascades, the drier portions of Lake County can expect 0.50 to 1.5 inches, while most of the rest of the East Side gets 1 to 3 inches of water, though some of the mountains typically see up to around 4 inches.

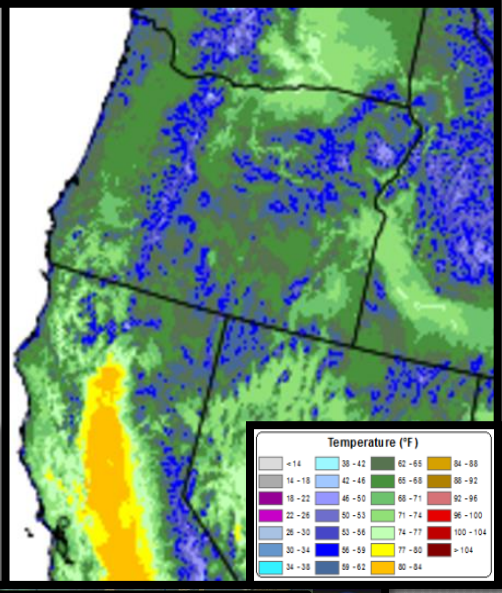
Snow:

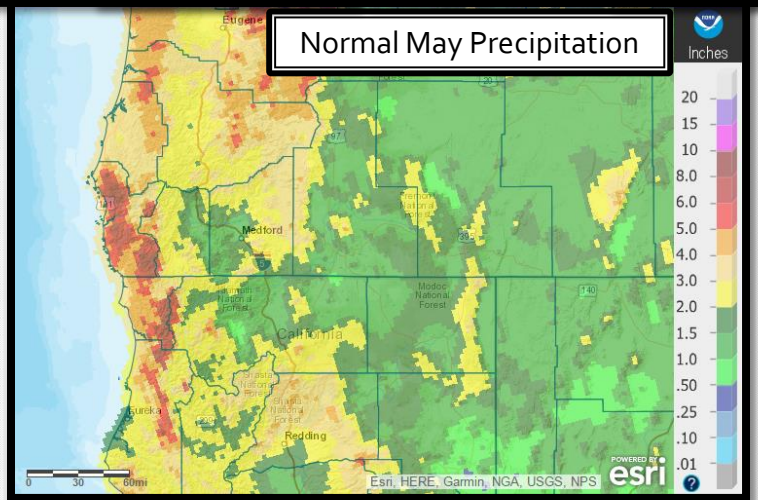
With peak snow water equivalent normally having occurred in mid-March, we expect the snowpack to be melting off. However, in some years the snowpack peaks in April. Also, we do sometimes get mountain snow in May that slows the melting process. The snowpack typically melts off much faster on southerly slopes than northerly slopes due to exposure and related temperatures. Snowpack at and above 7000 feet usually remains through the month of May, though it is melting much of the time. Snowfall drops precipitously at Crater Lake NP HQ in May, to 15.9 inches per the 1981-2010 normal period.

Minimum Temperatures



Maximum Temperatures

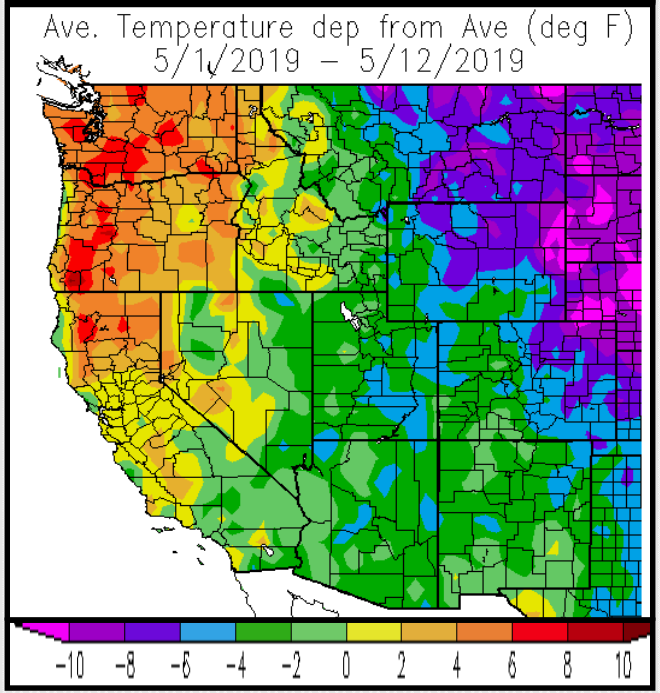




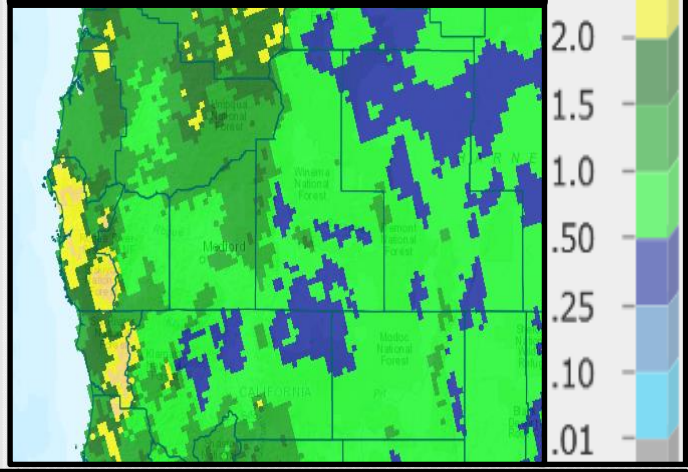
May 1-12th, 2019: Observed

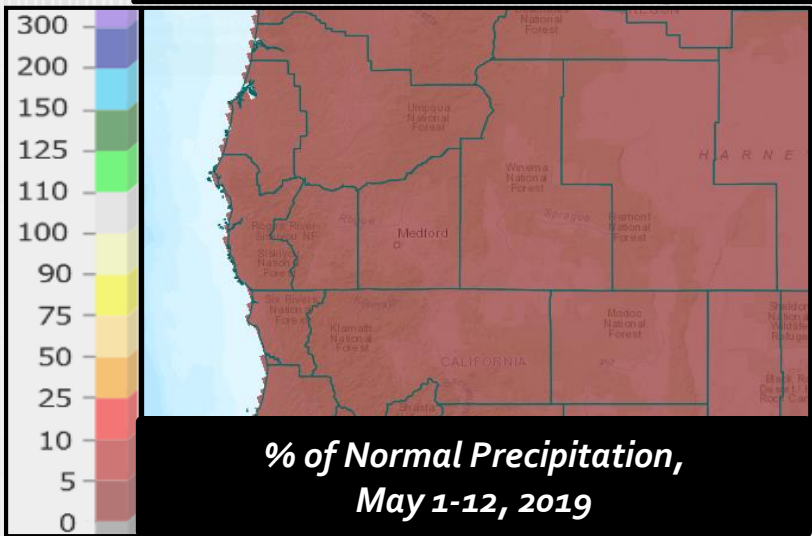
- Average temperatures have been well above normal, thus far, this month. They have ranged from 2-12°F above normal during the first 12 days of May.
- Most areas have not observed any rain, at all, thus far this month.

May 1-12, 2019 Temperatures



May 1-12, 2019 Normal Precipitation



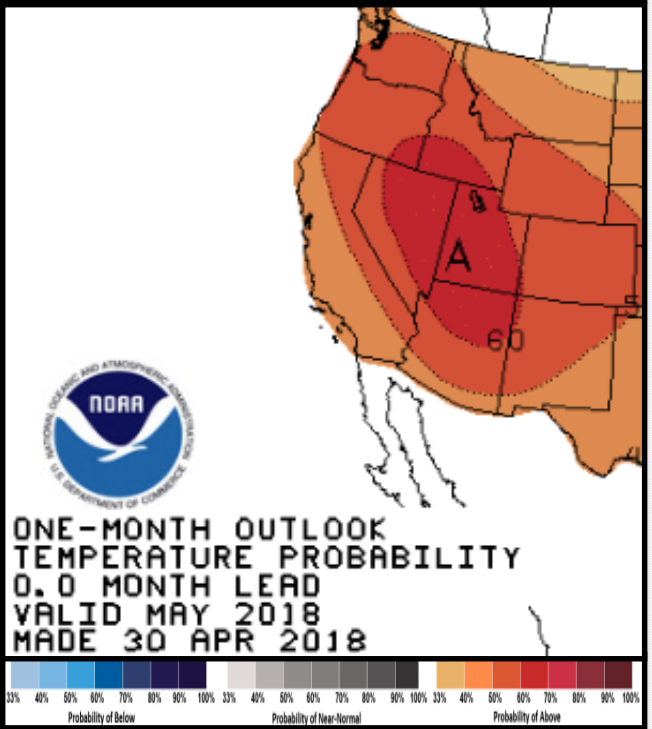


% of Normal Precipitation, May 1-12, 2019

May 2019 Outlook

The official CPC outlook calls for enhanced probabilities of above normal temperatures (50-60%) and below normal precipitation (35-45%) across the forecast area. Our localized look at CPC's forecast on 5/14/19 mostly agrees with their forecast. However, it should be noted that the 2nd half of May is expected to be very different than the 1st half, with temperatures likely to be near to below normal and precipitation to be near to above normal. Troughing along the west coast is expected to drop 500MB heights to normal on the 14th, and then to below normal through the 26th as two major shortwave troughs move through. Wednesday the 15th and Sunday the 19th currently appear to be the 2 wettest days. Friday, the 17th and Monday and Tuesday the 20th and 21st look to be the coolest days with average temperatures expected by the GEFS to be 10-20 degrees below normal. Since southeast parts of the area look to be coolest during the cool spell, temperatures could finish within a couple of degrees of normal there. Meanwhile, west of there, temperatures are likely to finish the month 2-6 degrees above normal. Precipitation is expected to end up 50-75% of normal despite the wetter 2nd half of the month.

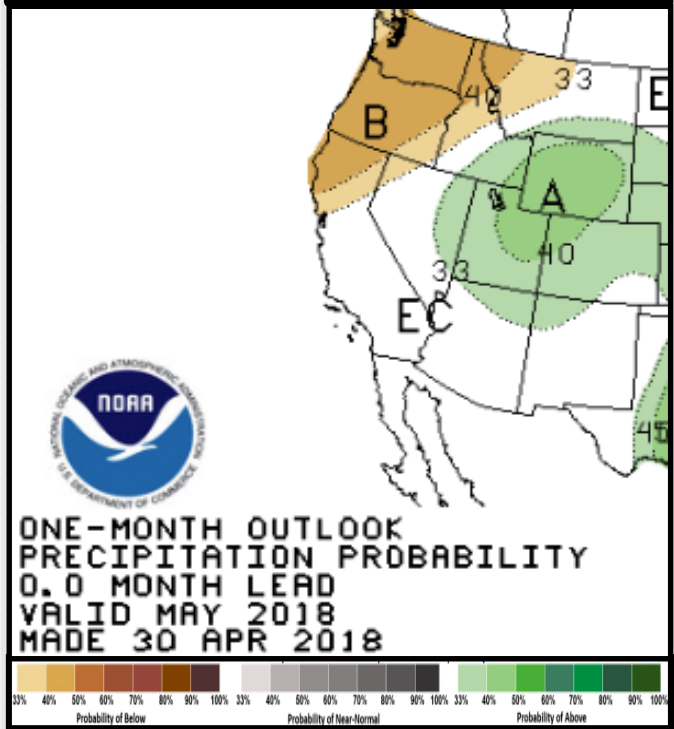
Temperatures



Expected Impact, May 2019:

The 1st half of May's very warm and very dry weather brought some large wildfires for May, occurring primarily where the snow melted rapidly and left dead, dry vegetation exposed. Snowpack declined rapidly, increasing concerns for an active fire season. The second half of this month is likely to diminish the rate of snow melt and add some water to the area, diminishing immediate fire concerns, but is unlikely to keep precip. From being below normal for the month. There will be some frost risk for areas west of the Cascades, mainly the Rogue, Applegate, Shasta, and Illinois valleys between the 17th and 23rd, while some freezing conditions are likely for that period for the agricultural areas east of the Cascades. With the weather transition expected, there will be periods of gusty winds. Altogether, the conditions expected will take us into June 2019 ready to start fire season, weather dependent.

Precipitation



Looking Ahead: Normals for June (1981-2010)

Temperatures:

Along the coast lows are around 50 with highs in the 60s. Inland, valley high temperatures are usually in the 70s to mid 80s. Nights are typically cool, with average minimum temperatures in the 30s and 40s in the valleys east of the Cascades, and in the 40s to near 50 in the valleys west of the Cascades. The higher mountains typically experience highs in the 50s and 60s, with lows in the 30s to lower 40s.

Precipitation:

June is a dry season month, so it typically features limited precipitation. Precipitation often comes in the form of showers and thunderstorms, but a frontal systems do still occur, though much less frequently than in the wetter months of the year. Nearly half of the forecast area receives, on average, and inch or less of precipitation in June. The mountains get 1 to 3 inches of water in June, except in portions of the Cascades and Coast Range, where 3 to as much as 6 inches occurs, on average. West of the Coast Range and in eastern Douglas County normal precipitation is 2 to 4 inches.

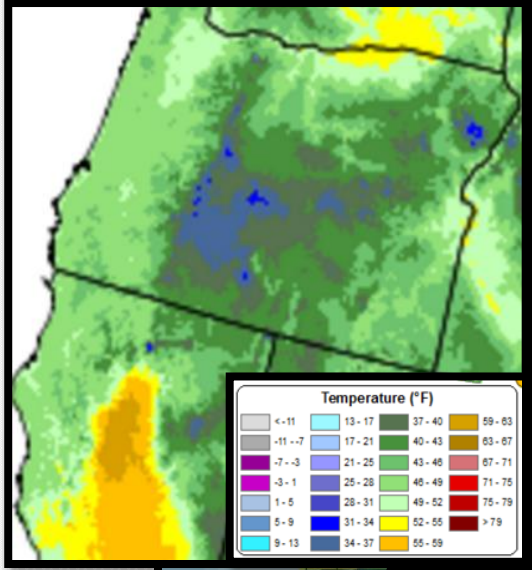
Snow:

Crater Lake NP HQ's average June snowfall is 4.1 inches, per the 1981-2010 normal period. Average snow depth there for the 1931-2000 time period is 51 inches on June 1st, and 6 inches on June 30th.

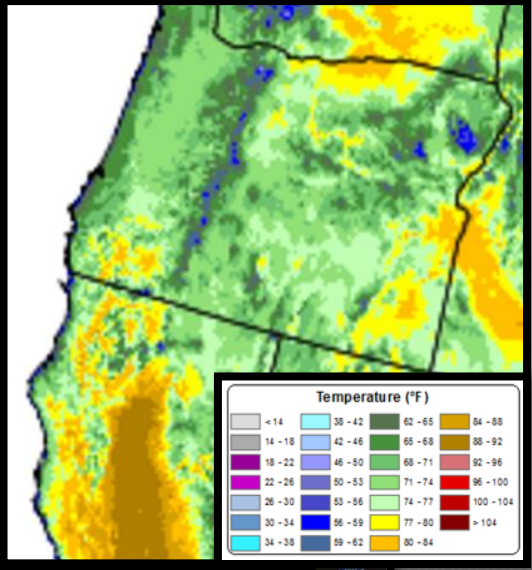
Lightning, 2003-2017 Average:

The average number of cloud to ground lightning strikes in the Medford County Warning Area during the month of June from 2003 to 2017 was 3,080. For comparison, the average for May in 2,466 and 4,196 for July.

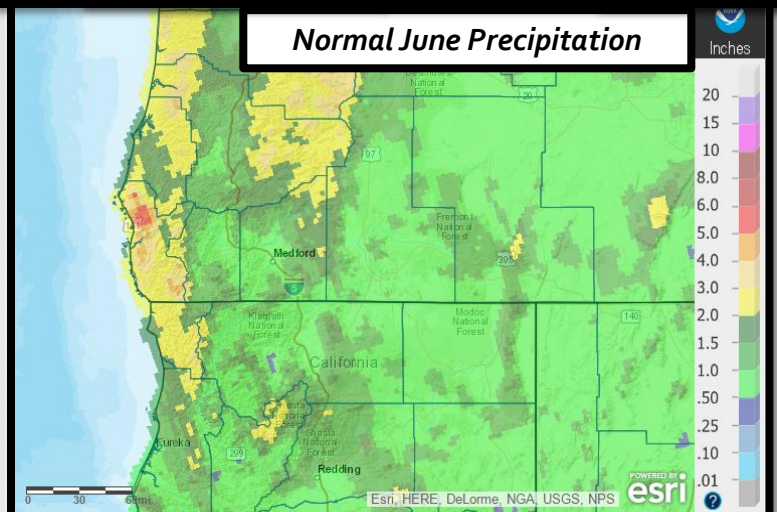
Average Minimum Temperatures



Average Maximum Temperatures



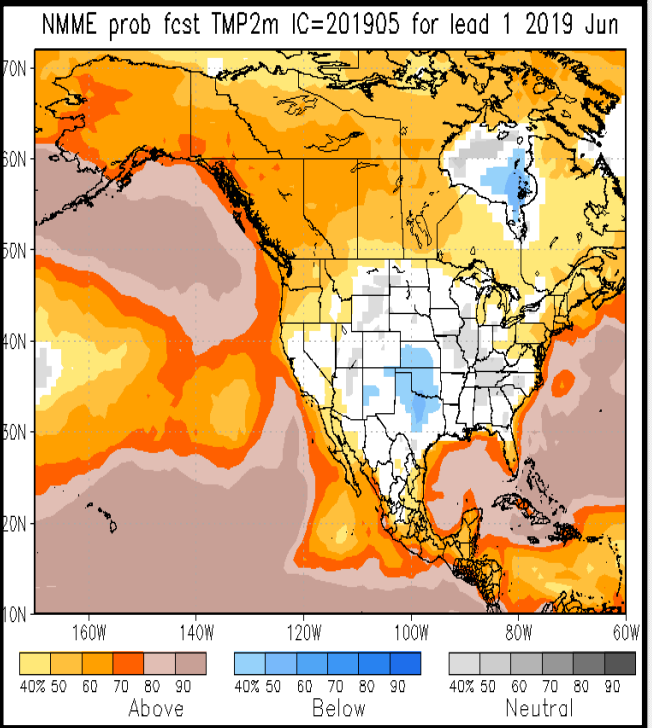
Normal June Precipitation



June 2019 Outlook

The official CPC outlook for the month of June will be released Thursday, May 17th. Dynamical models are fairly consistent in indicating June 2019 to be near to slightly above normal across the forecast area, with the NW portion of the area most likely to be above normal for temperatures, while SE sections of the area could be below, near, or above normal for temperatures. For precipitation model consensus indicates an increased probability of above normal precipitation from the Cascade Mountains eastward and generally near normal elsewhere.

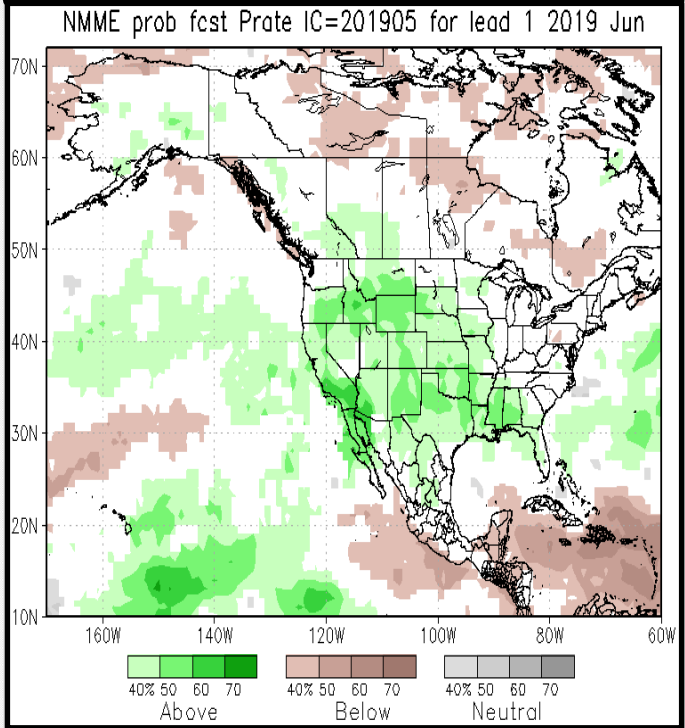
Temperatures



Expected Impact, June 2019:

The expected impact of the forecast weather conditions for June 2019 is to slow the onset of fire season. Since warming and drying beyond climo look to be over NW sections, the biggest concern for grass and brush fires will be Douglas County, while concern will be least from the Cascades eastward, where a prolonged period of green-up appears likely. The expected conditions should be favorable for local outdoor events and commerce. Frost and freeze is not expected to be a concern and water supplies are expected to remain good.

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*