National Weather Service Medford

May 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).

May 2019 Weather Review

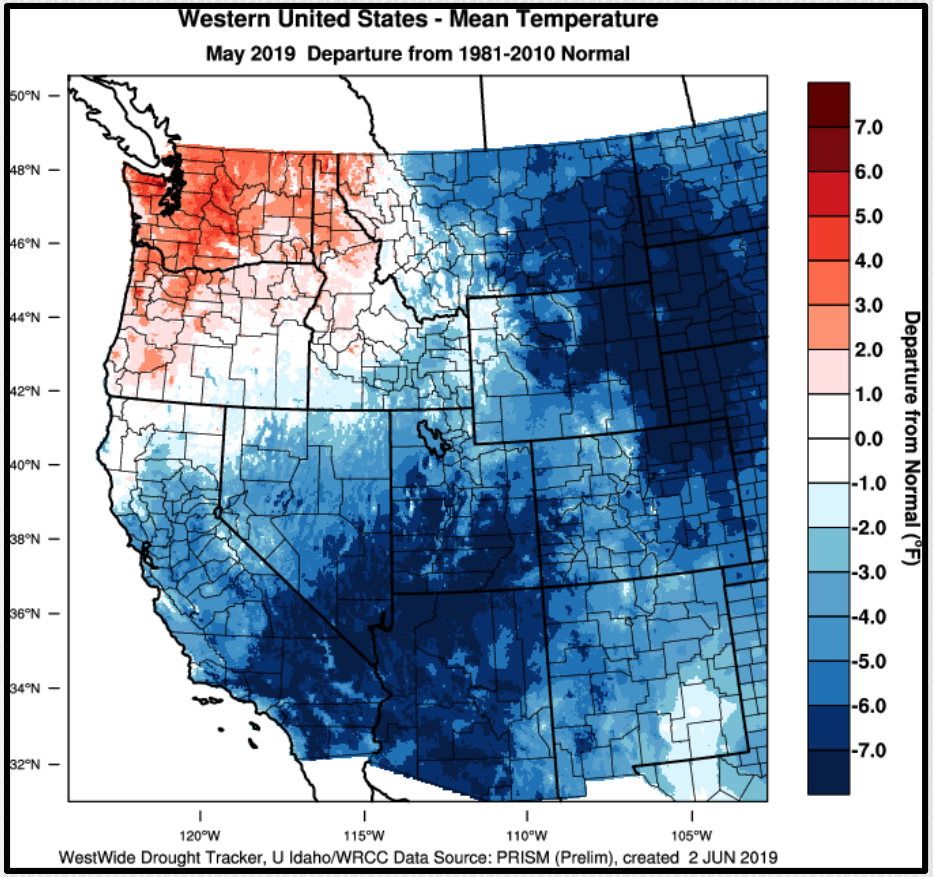
Dramatic swings from warm and dry to cool and wet, then back to warm and dry again were the most notable events of May 2019. The first two weeks of the month were quite warm and very dry. It got so dry that spring fuel conditions were near or at record dryness levels and necessitated the first fire weather watches/red flag warnings of the season. Several wildfires were reported, but none became large incidents. No measurable precipitation was recorded in the Medford area through May 14th.

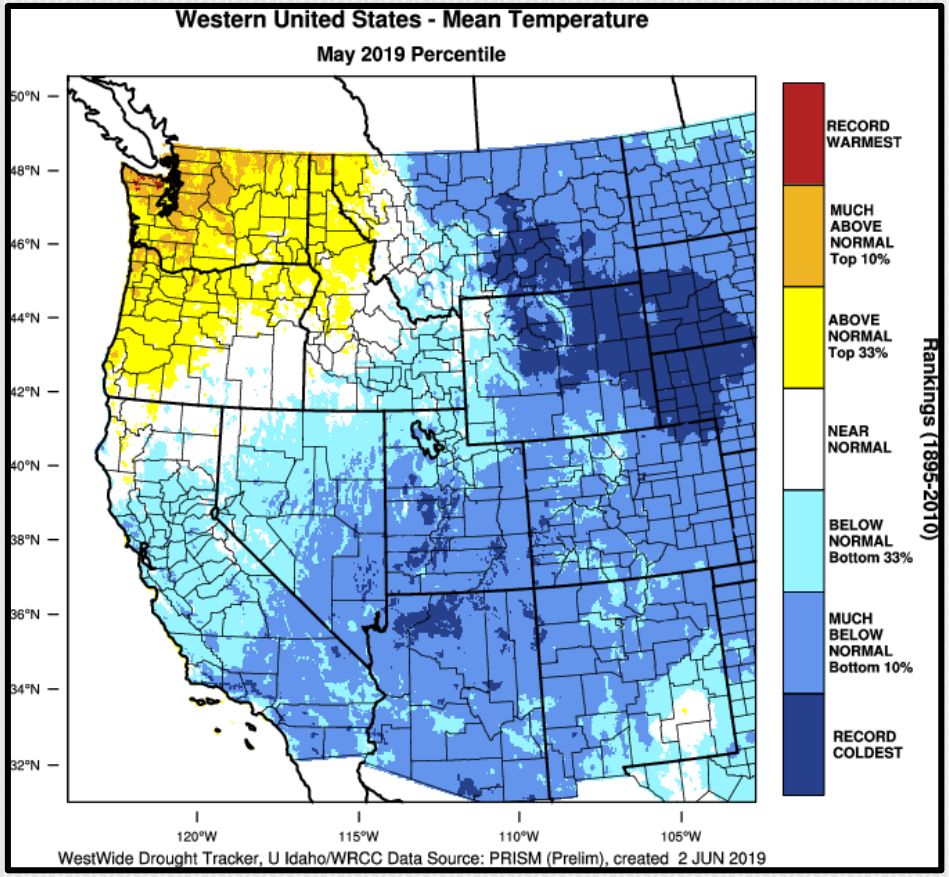
However, the weather pattern changed quickly, with a series of wet frontal systems impacting the region from the 15th to the 21st. This brought 1.26 inches of rain in the 7-day period, which was good for 6th all time (for the week ending May 21st). There was even a period of fog that reduced visibility at the airport to less than ¼ of a mile on both mornings of the 19th and 20th. This is notable since fog this thick is a rare occurrence in late May. Interestingly, lightning was also observed with a thunderstorm on the 19th.

A brief three-day dry break occurred from the 22nd to the 24th, but another wet disturbance moved in on the 25th and 26th, making for a wet start to Memorial Day weekend. While warm, dry weather returned west of the Cascades the last five days of the month, showers and thunderstorms were prevalent each afternoon and evening from the Cascades eastward.

The cool mid-month stretch could not offset the warmth at the beginning and end of the month, so, overall, Medford ended up with above normal temperatures. But, despite looking bleak from a fire weather perspective due to the dry start, the rainfall at mid-month made up for the early-month dryness and precipitation ended up above normal, quelling early season fire concerns.

May 2019 *Observed Temperatures*





Average Temperatures

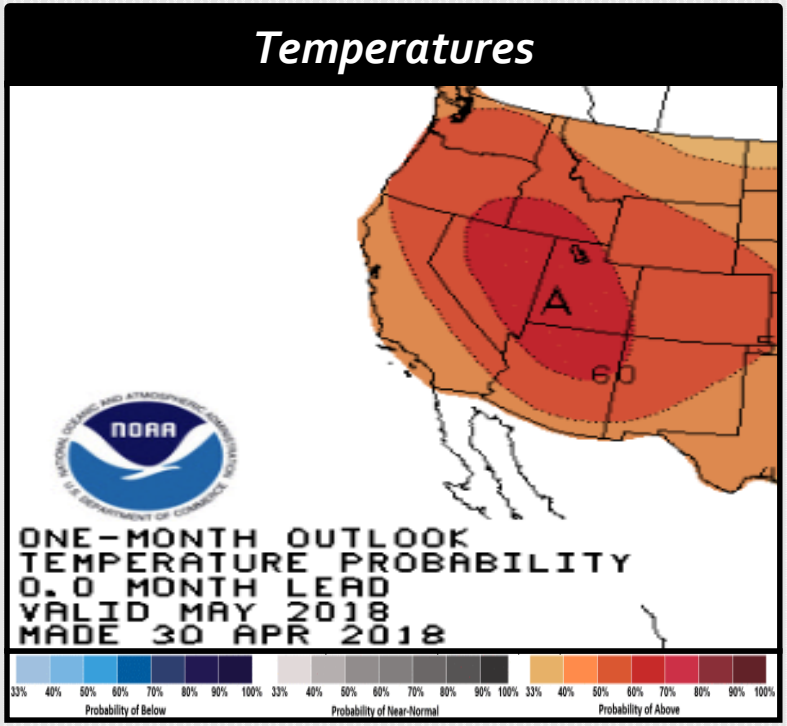
	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	54.4	1.5°	60.1	1.2°	48.7	1.7°
Roseburg	61.4	2.9°	73.9	4.0°	49.0	1.8°
Medford	61.4	1.6°	75.3	2.0°	47.5	1.3°
Klamath Falls	52.0	1.1°	67.0	1.7°	36.9	0.3°
Montague, CA	57.6	1.5°	73.7	2.0°	41.6	1.2°
Mt. Shasta City, CA	54.4	0.0°	68.3	-0.8°	40.6	0.9°
Alturas, CA	52.2	0.5°	67.0	-0.8°	37.4	1.8°

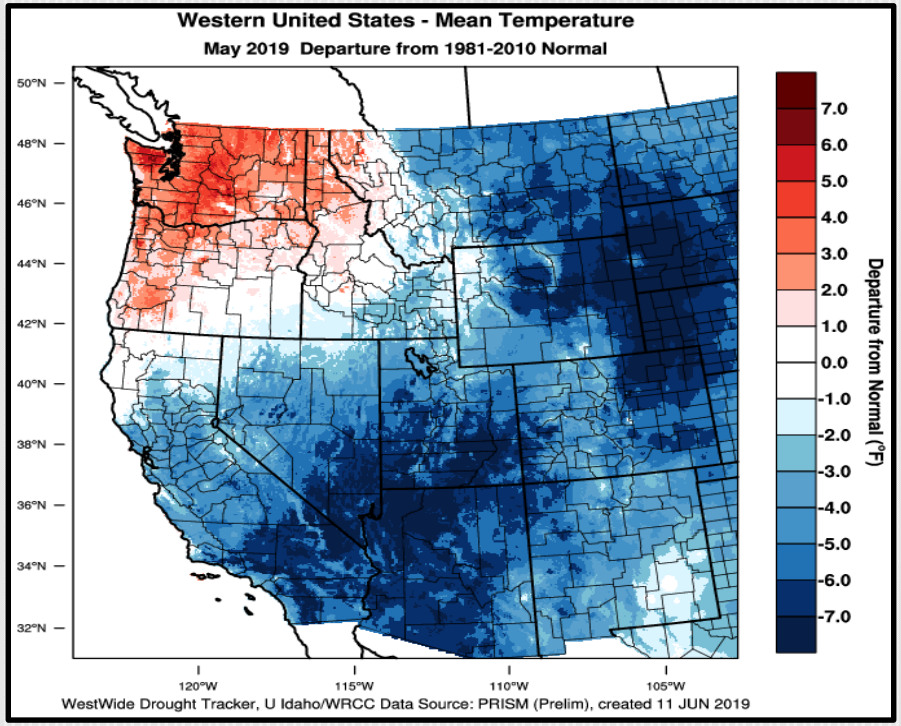
A Look Back at the May 2019 Temperature Outlook

- ***Was the forecast anomaly correct?*** Mostly 'yes' for the Medford Forecast Area. Point data, on the previous slide, indicates temperatures were above normal at our ASOS locations. The graphical analysis is a little 'cool' compared to the point data.

- ***Was the expected impact correct?*** Yes. The expected impact of cooler temperatures during the 2nd half of the month was felt, as indicated.

- ***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 2-6 degree above normal range for the month, except within a couple of degrees of normal for the SE portion of the area. We were a bit on the warm side, as temperatures were generally -2F to+4 degree from normal.





Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	88°	9th	37°	1st
Roseburg	92°	10th	36°	2nd
Medford	89°	11th	37°	1st
Klamath Falls	81°	11th	22°	1st
Montague, CA	88°	11th	25°	1st
Mt. Shasta City, CA	83°	11th	28°	1st
Alturas, CA	82°	12th	21°	1st

Records

DAILY PRECIPITATION RECORDS

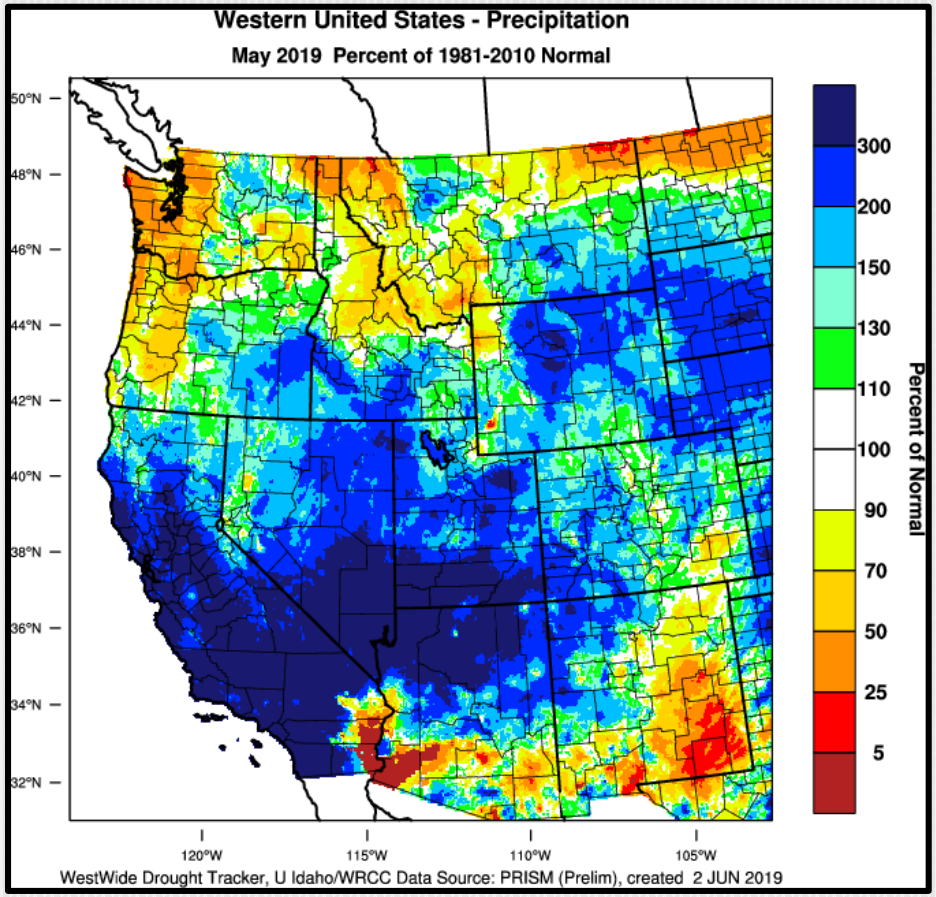
	New Record	Date	Old Record	Year
North Bend	0.93"	15th	0.66"	1994
Mt. Shasta City	2.14"	15th	1.09"	1938
	1.11"	16th	0.71"	1964

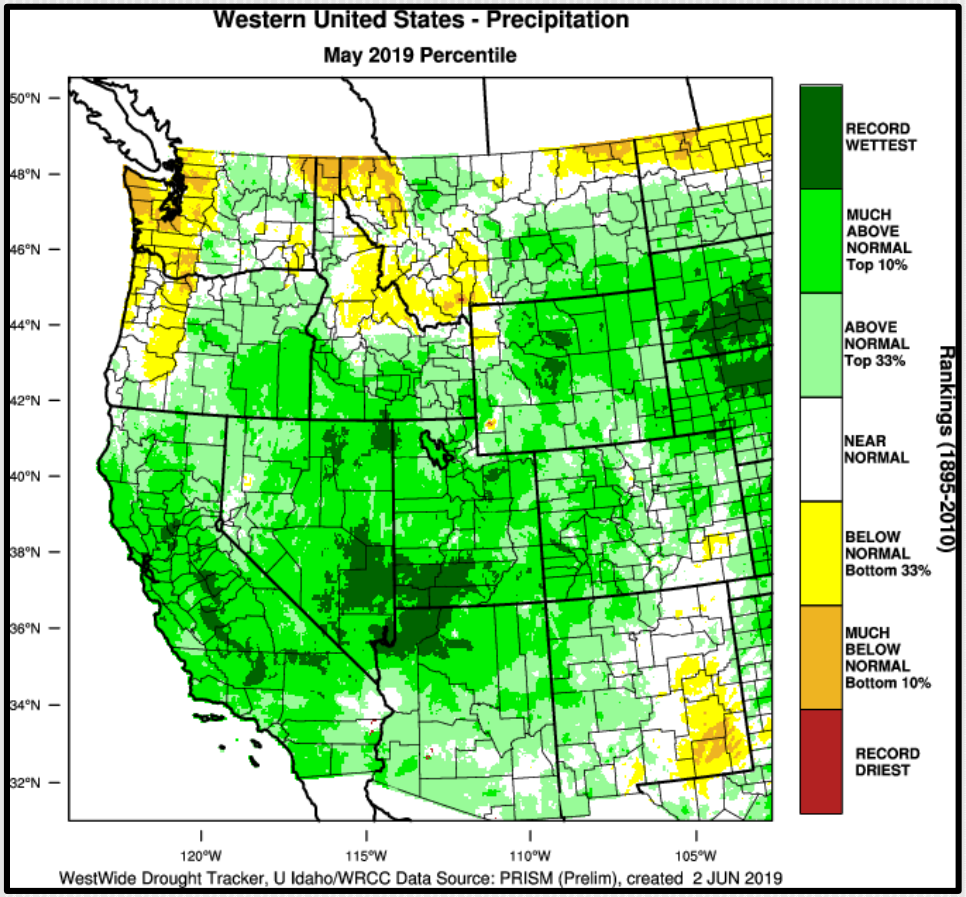
RECORD HIGH TEMPERATURES

	New Record	Date	Old Record	Year
North Bend	88°	9th	74°	1931
Roseburg	91°	9th	86°	1936

No other records were set during the month.

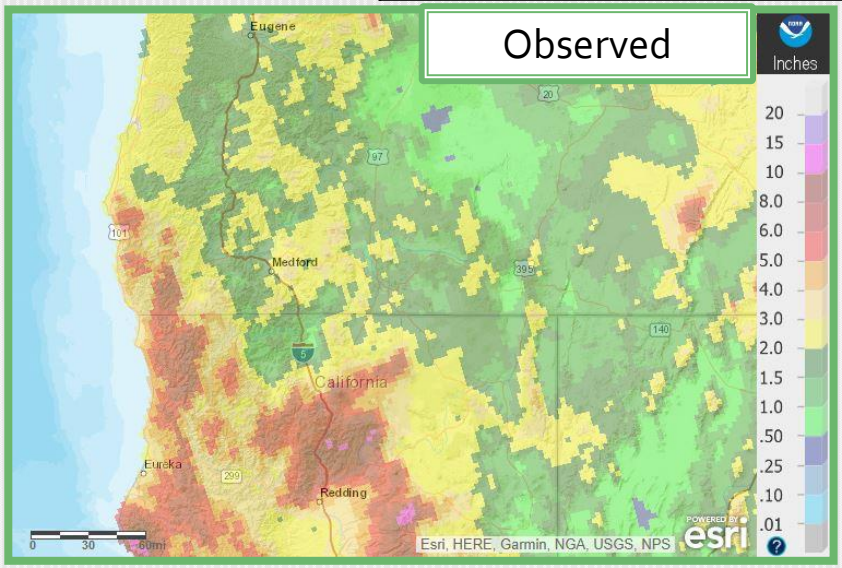
May 2019 *Observed Precipitation*

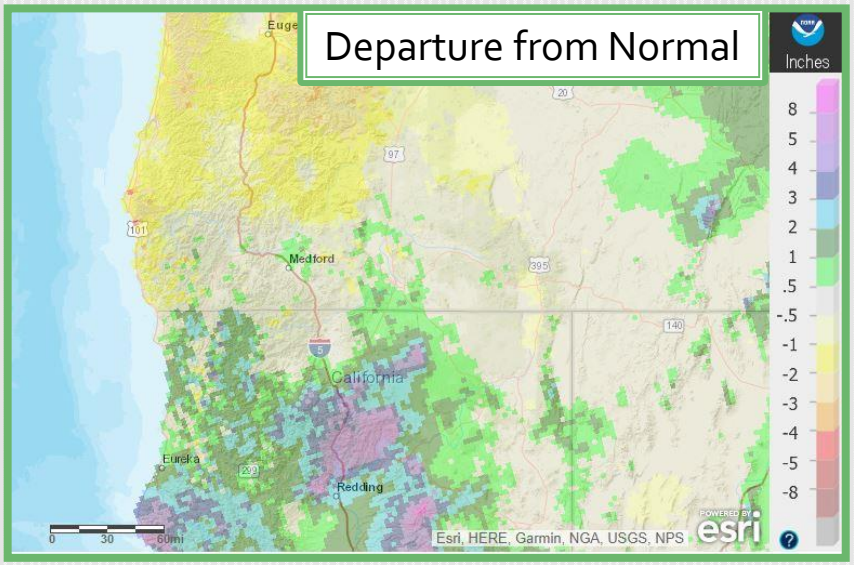




May Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	3.54"	0.15"	0.93"	15th
Roseburg	1.67"	-0.60"	0.48"	25th
Medford	1.91"	0.60"	0.49"	21st
Klamath Falls	1.62"	0.24"	0.61"	25th
Montague, CA	0.96"	-0.46"	0.35"	25th
Mt. Shasta City, CA	5.66"	3.44"	2.14"	15th
Alturas, CA	1.42"	0.06"	0.38"	25th





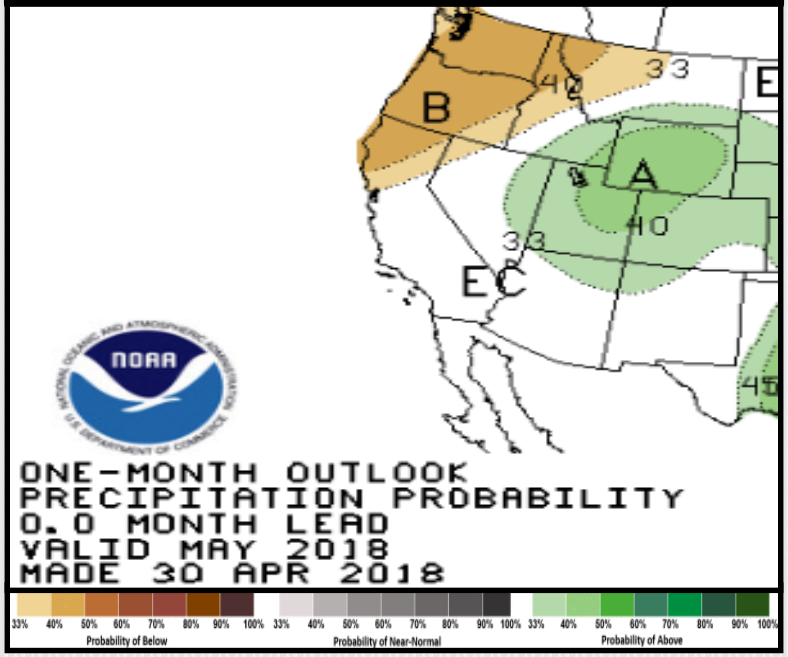
A Look Back at the May 2019 Precipitation Outlook

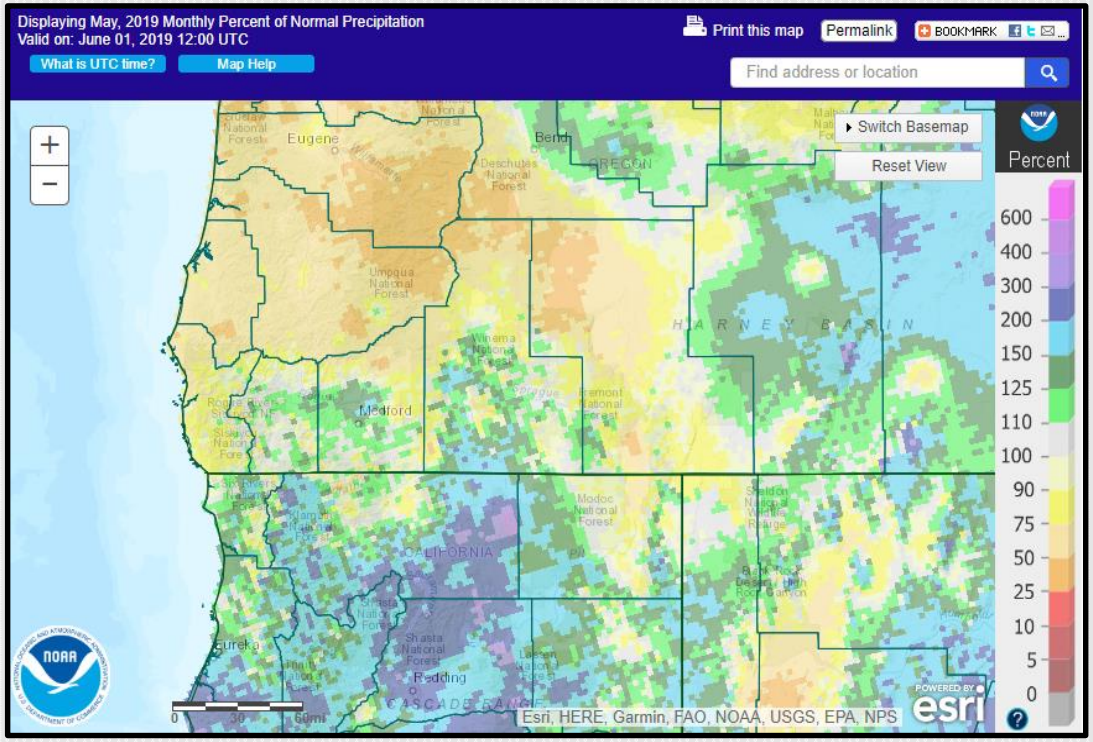
- ***Was the forecast anomaly correct?*** Yes and no. CPC's forecast indicated increased chances for below normal precipitation, but much of the southern portion of the area received above normal precipitation. Also, please note there are differences in what AHPS,on the lower right, indicated, as compared to the WestWide Drought Tracker. We believe that the AHPS data has some inaccuracies over Lake County, and that the PRISM precip map from the WWDT is more accurate.

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

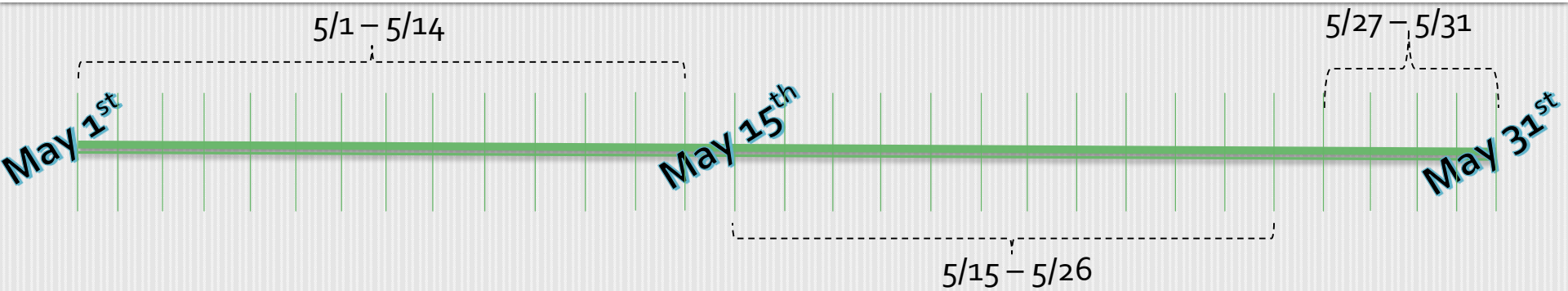
- ***Did our forecast improve upon the CPC forecast?*** Mostly, 'yes'. We indicated that weak to moderate fronts would bring some additional precipitation. However, a frontal system stalled over the area on the 20th and 21st bringing widespread soaking rain east of the coastal ranges, so additional precipitation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

Precipitation





May Significant Weather Events



Early May Wildfire, Mid-Month Cool Down, Weak Tornado

- This first 14 days of the month were very dry and warm. It was notable because of how fast it dried out. Annual fuels cured significantly and with early season fronts moving through, gusty winds and low humidity resulted. Red Flag warnings were issued during this time frame, which is a relatively rare occurrence for early May. Several wildfires were also reported, including the Bray Mill Fire, which scorched more than 400 acres in an area a few miles northeast of Chiloquin in Klamath County on May 1-2.
- Several disturbances moved in during the middle of the month resulting in a wet, cool stretch that helped put off fire season for a while. The rainfall that occurred was significant for mid-May with widespread amounts of 0.50-1.50 inches across the entire forecast area. The Shasta Region had record rainfall on two consecutive days on May 15-16 totaling 3.25 inches.
- Warmth returned at the end of May. Scattered thunderstorms kept many places from near the Cascades south and eastward on the wet side. A weak tornado briefly touched down near Sprague River on May 28, 2019.

Early May Wildfire – Bray Mill

The Bray Mill Fire burns 4 miles NE of Chiloquin, OR, on May 1-2, 2019, in Klamath County. The fire scorched 400+ acres and was fully contained on Friday, May 3. (Photos: USFS)

May 28, 2019 – Weak Tornado near Sprague River

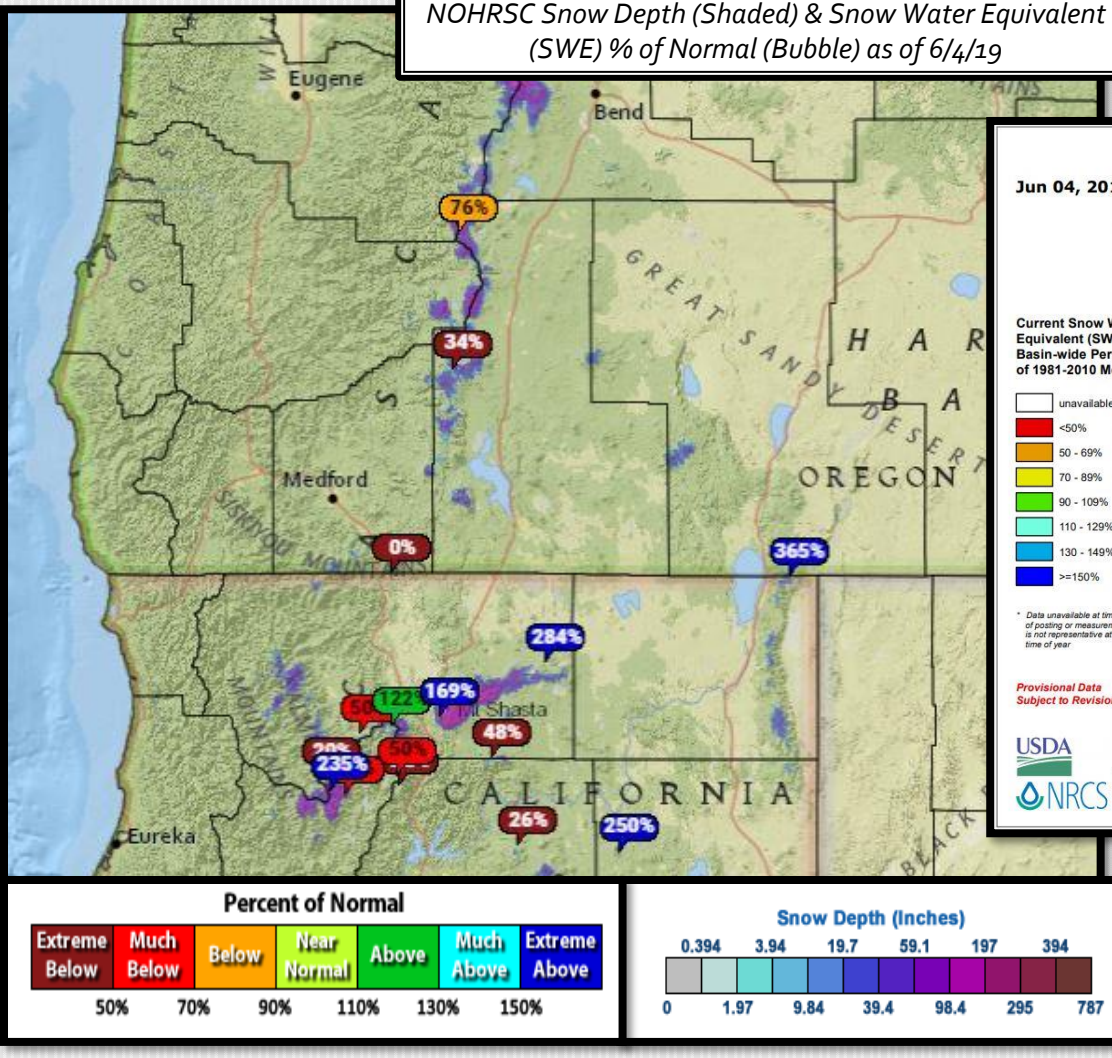
Photos and video from the public shows a low-hanging cloud that exhibits weak rotation and briefly touches the ground near Sprague River on May 28, 2019. Photo and Video Credit: **JonandShauna Parker***)*

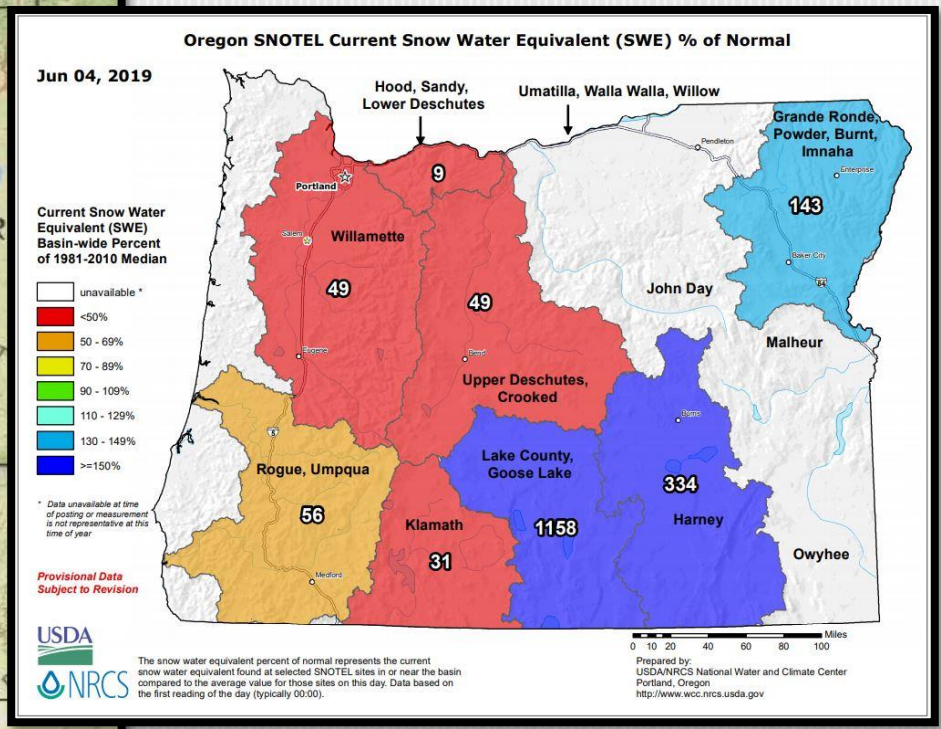
Video here:

https://www.facebook.com/jonandshauna.parker/videos/10214355838514575/

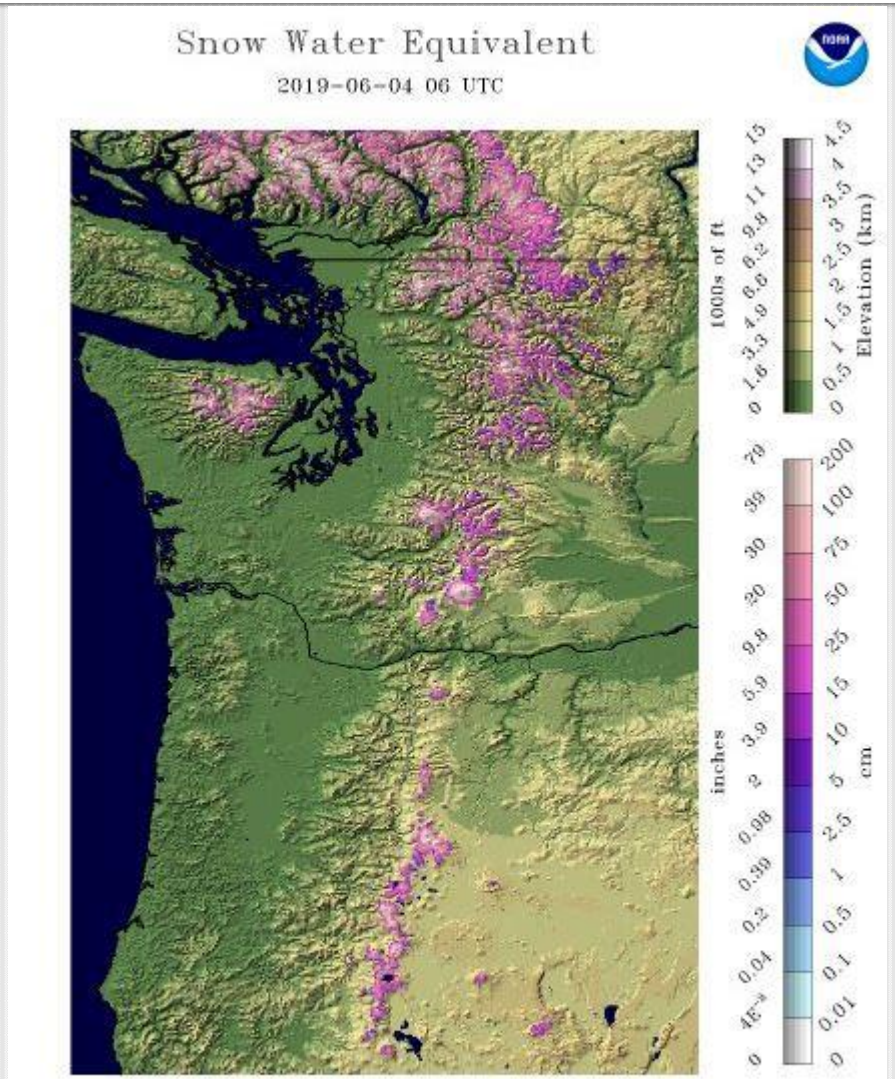
Snowpack Status

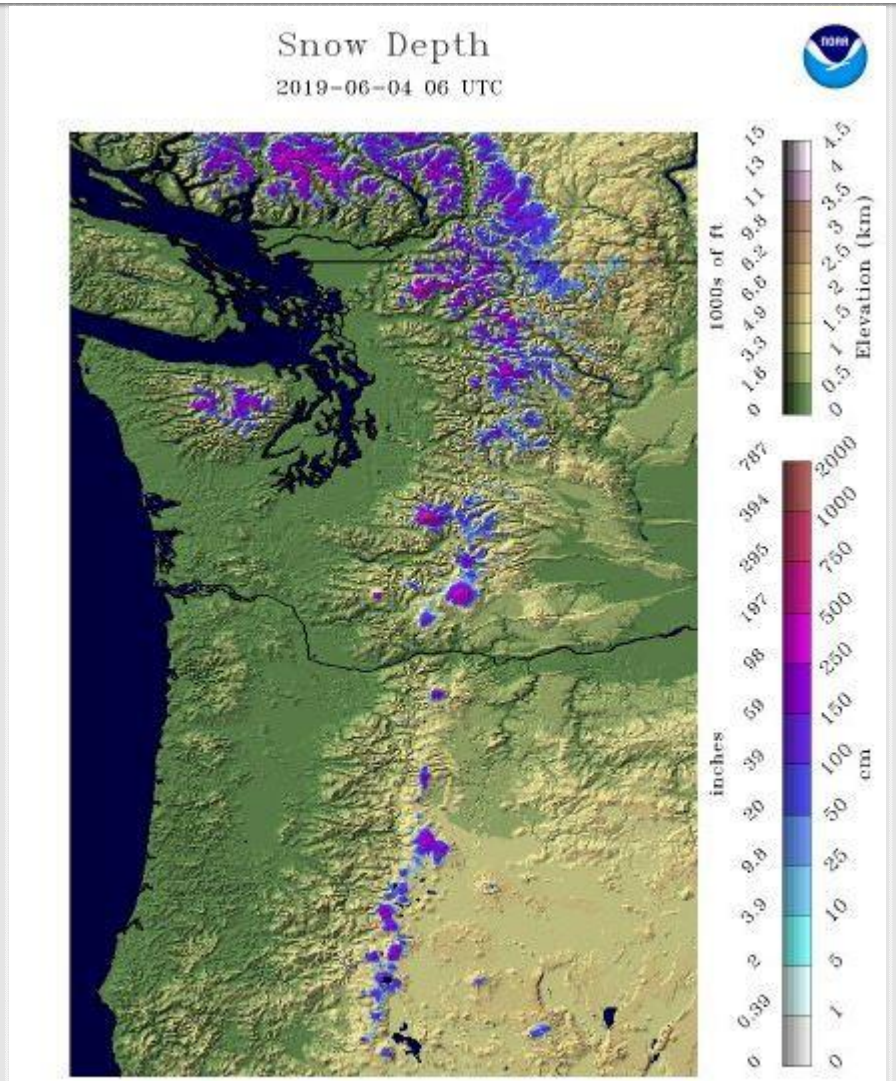
NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 6/4/19



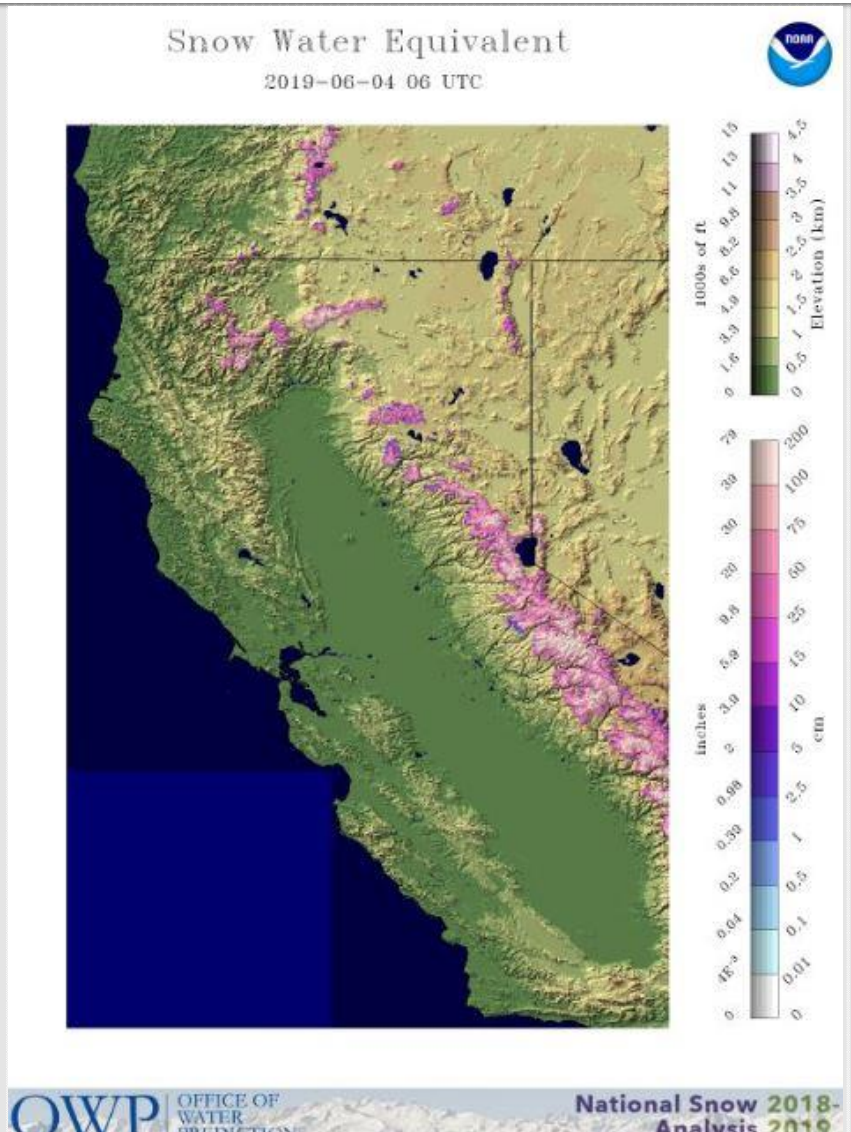


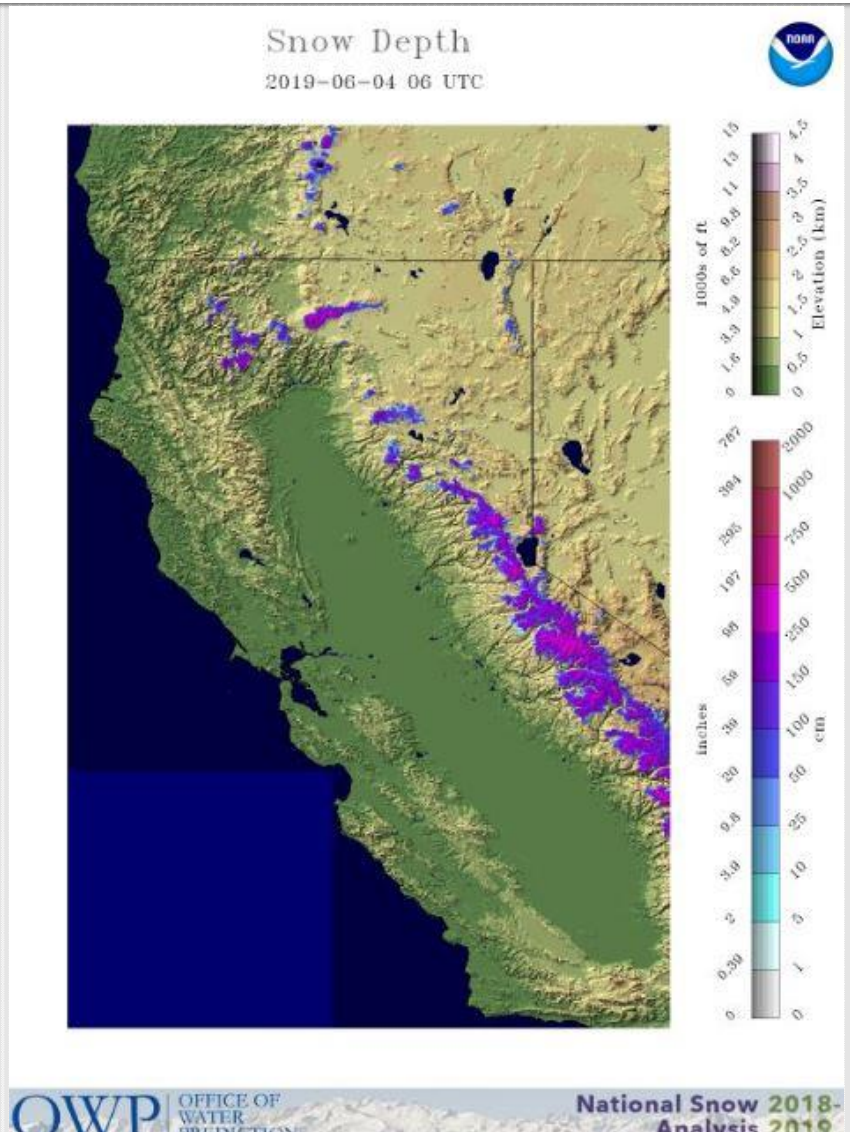
PacNW SWE & Snow Depth as of 6/4/19



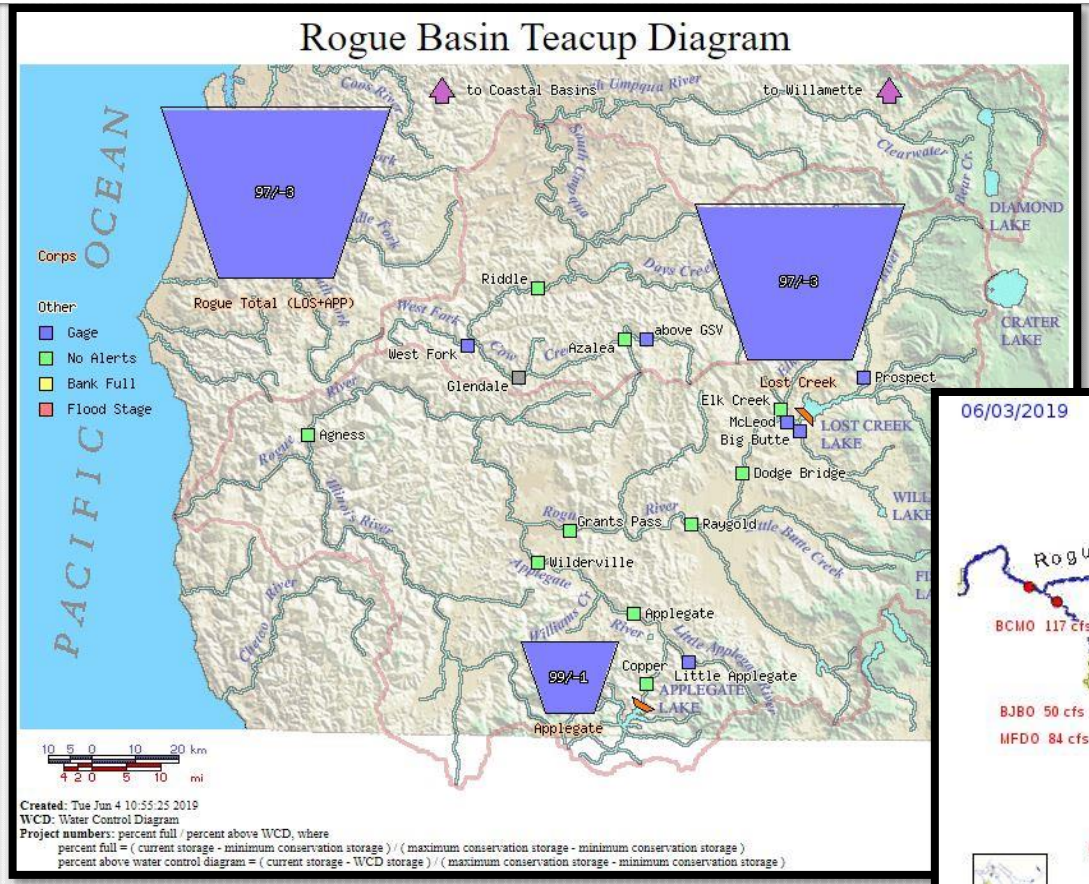


California SWE & Snow Depth as of 6/4/19



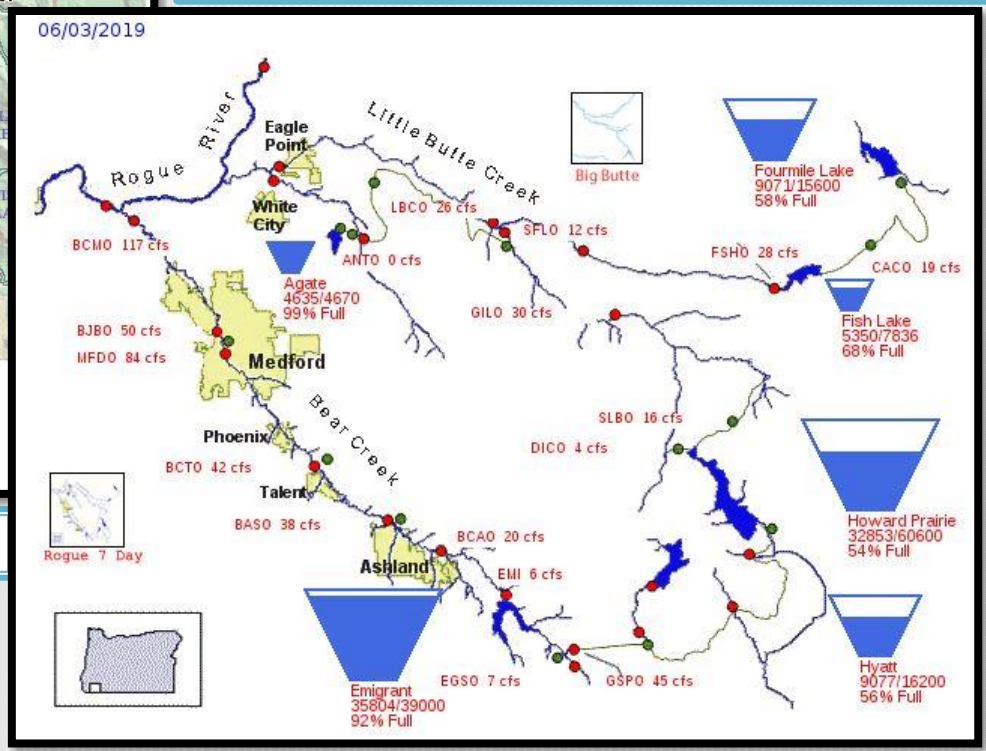


Reservoir Status

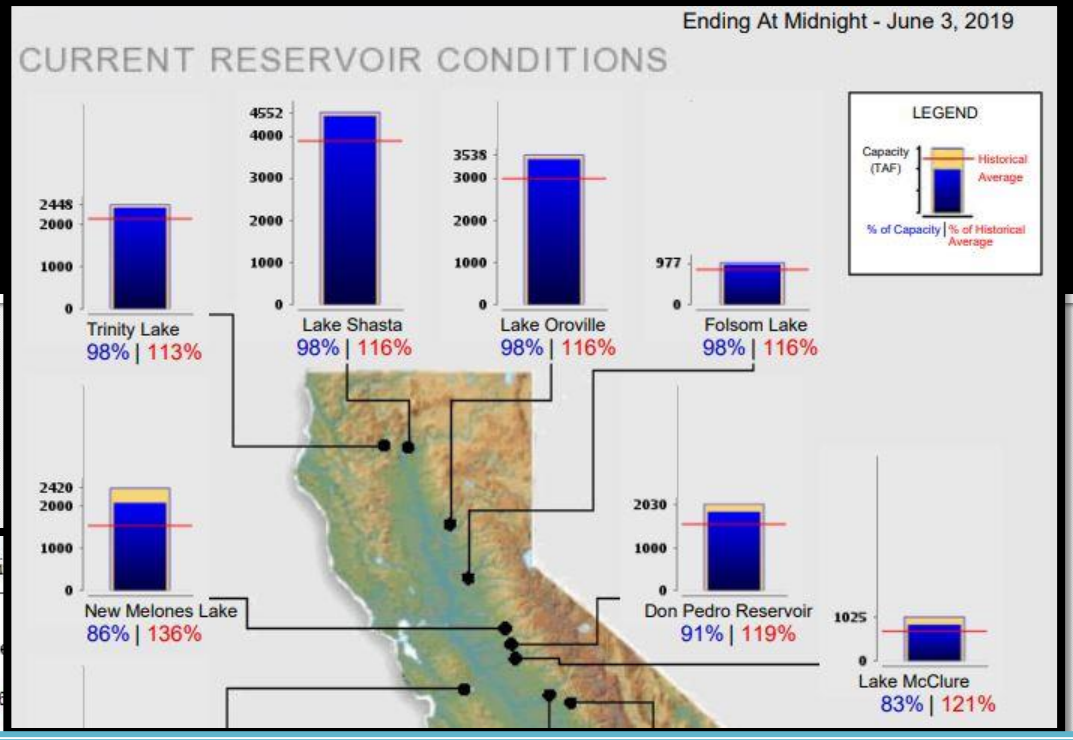


Data above courtesy of US Army Corps of Engineers

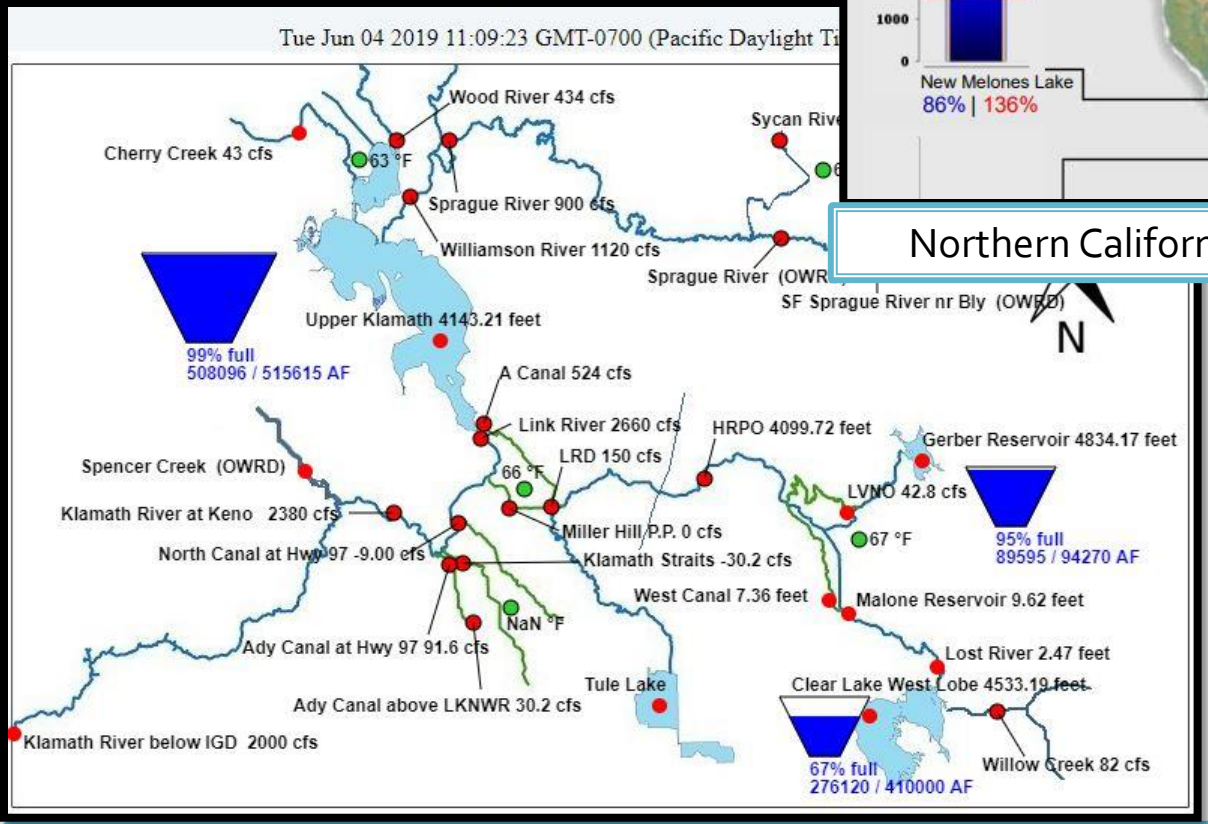
Data below courtesy of Bureau of Reclamation



Reservoir Status



Northern California. [California Data Exchange Center]



Klamath River Basin. Data courtesy of [Bureau of Reclamation]

Crater Lake

Image Courtesy: NPS

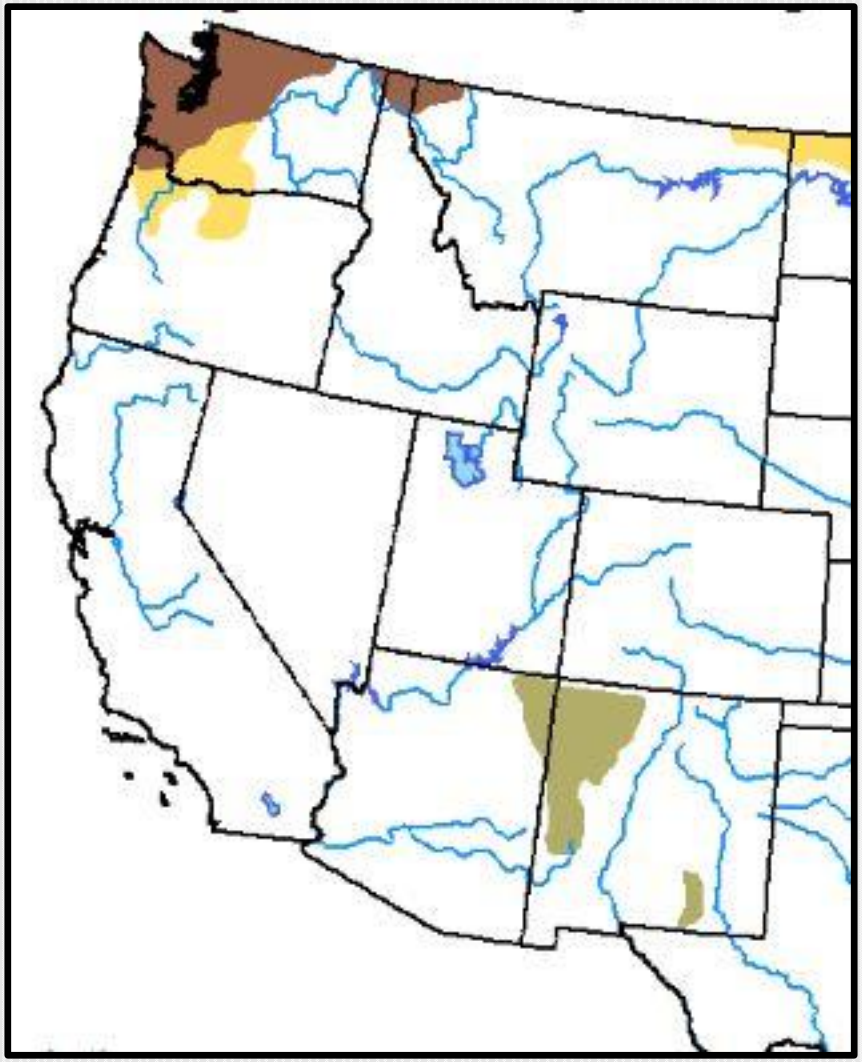
	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 05/31/19	Highest Max/ Lowest Min
May	50.0°	31.1°	3.47″	21.3″	43″	63° on 12th / 22° on 1st,2nd,3rd
Normal (1981-2010)	49.6°	28.4°	3.57″	15.9″	53″	N/A

Drought Outlook: June 2019

Valid for June 2019
Released May 31, 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 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.

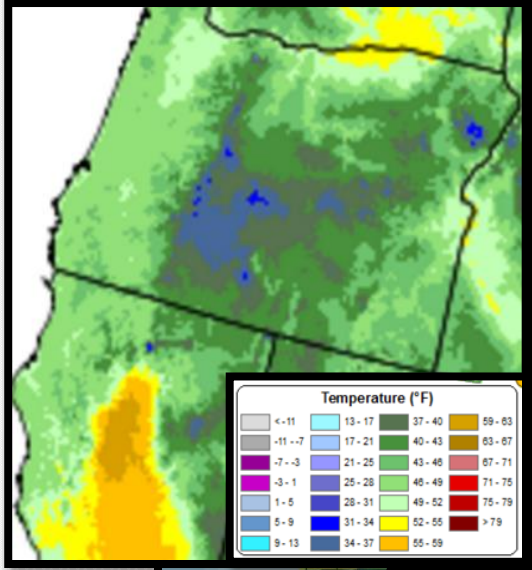
Snow:

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.

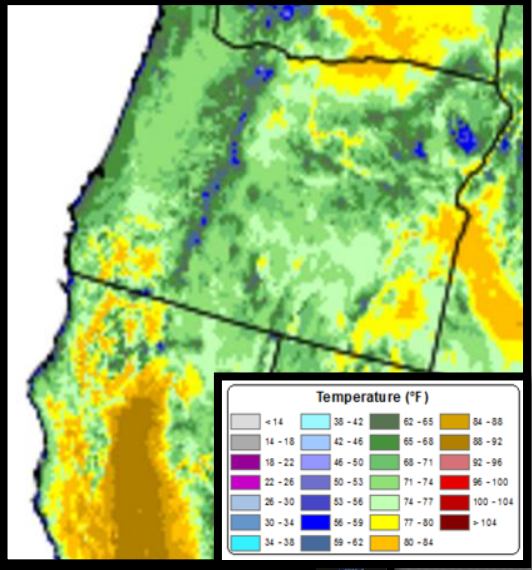
Lightning, 2003-2017 Average:

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.

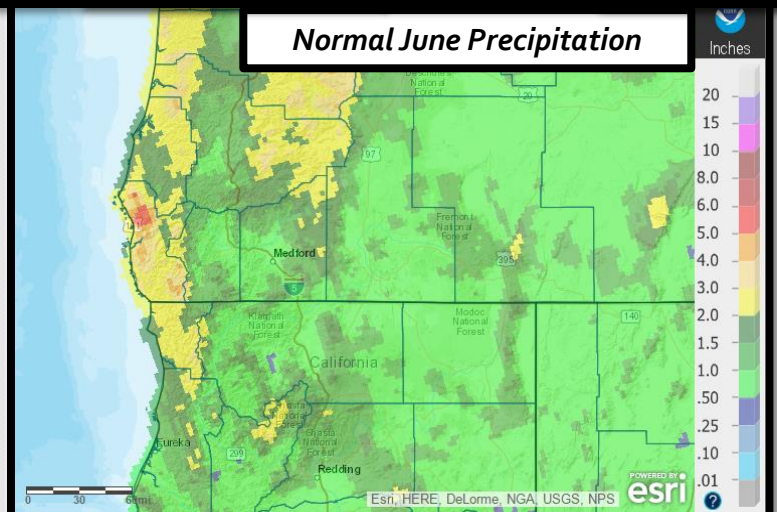
Average Minimum Temperatures



Average Maximum Temperatures



Normal June Precipitation

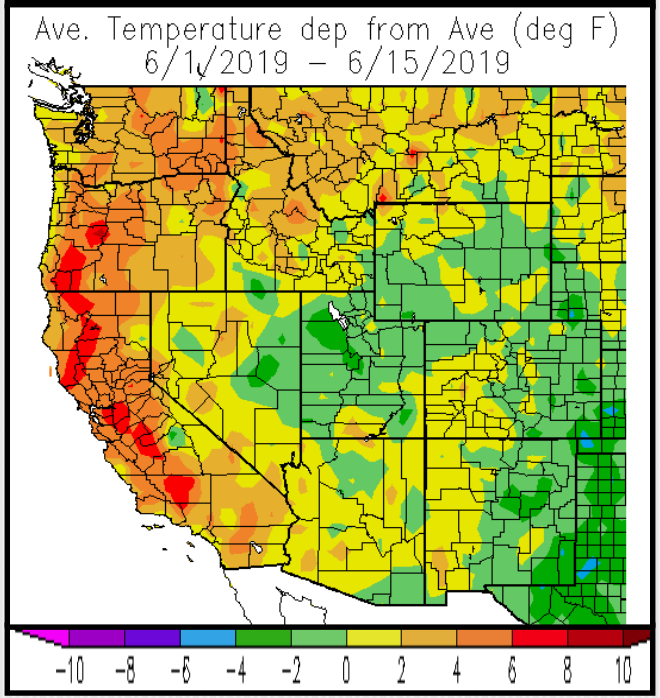


June 1-15th, 2019: Observed

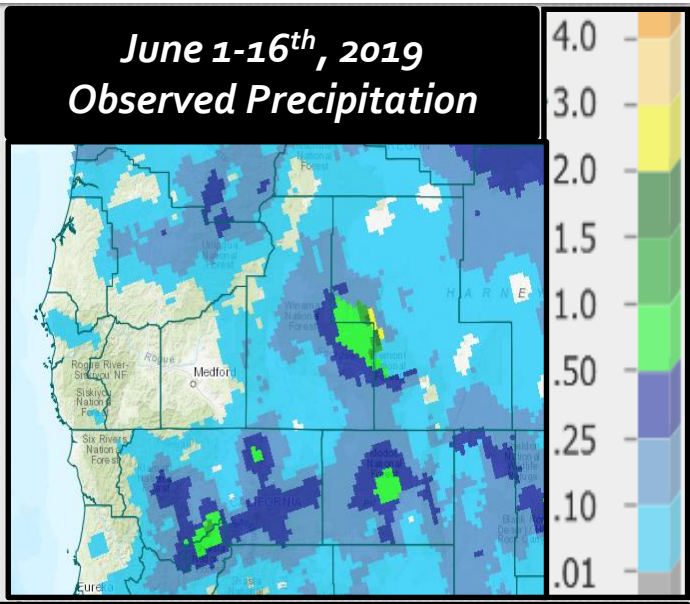
- Average temperatures have been well above normal, thus far, this month. They have ranged from 2-8°F above normal during the first 16 days of June.

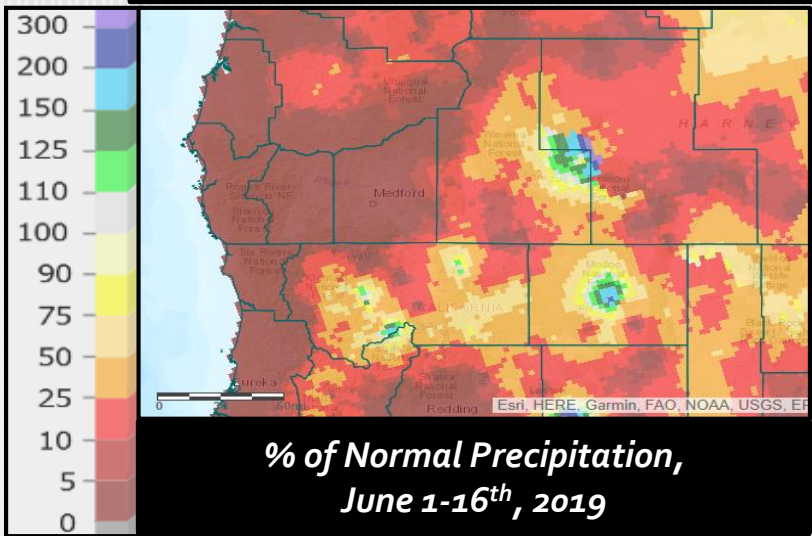
- Most of the rain observed this month has been from showers and thunderstorms, though a weather system June 6-7th resulted in significant wetting rainfall across portions of the forecast area.

June 1-15th, 2019 Temps



June 1-16th, 2019 Observed Precipitation



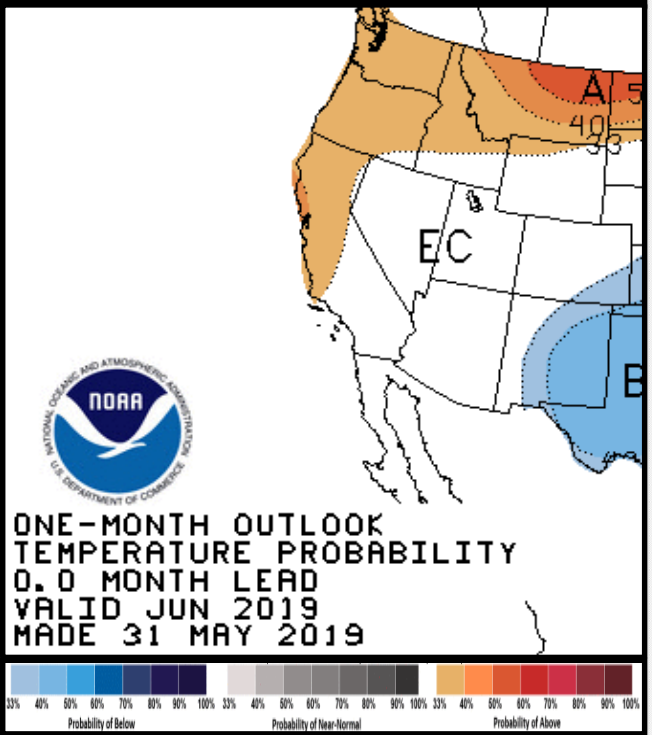


% of Normal Precipitation, June 1-16th, 2019

June 2019 Outlook

The official CPC outlook calls for enhanced probabilities of above normal temperatures (33-40%) and slightly below normal precipitation (33-40%) to equal chances of below, near, and above normal precipitation across the forecast area. Our localized look at CPC's forecast on 6/17/19 indicates a high probability that temperatures will finish the month above normal by 2 to 7 degrees Fahrenheit. Precipitation is likely to end the month below normal for most of the area except for isolated locations east of the Cascades that have already received above normal precipitation- such as the Summer Lake RAWS areas. The east side could see more localized heavy rainfall from convection this month, as well. Above normal temperatures through Wed, the 19th of June are expected to then be generally 0-10 degrees below normal from the 20th through the end of the month. Some rainfall will be possible the week of June 24th-30th, but this is unlikely to be enough to overcome mounting deficits from earlier this month. Gusty, drying northerly winds are expected across the area for much of the remainder of the month.

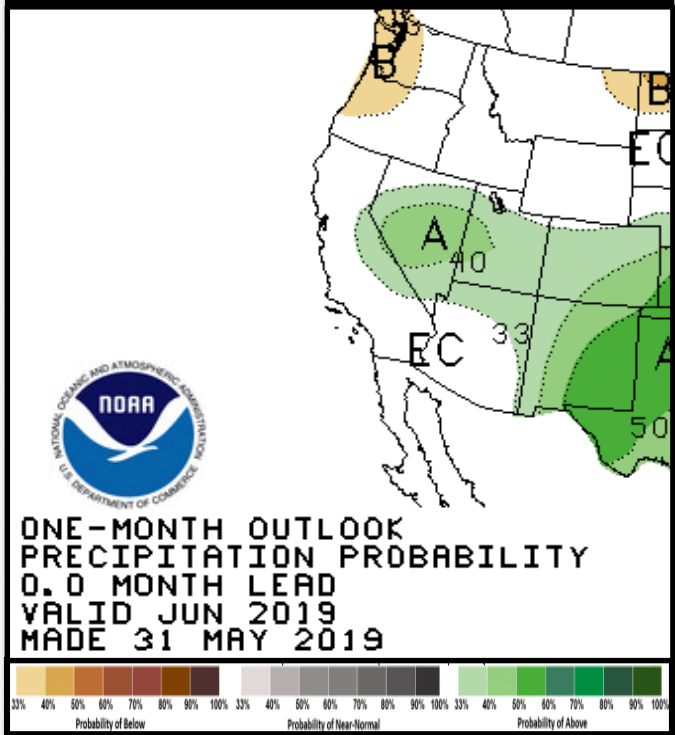
Temperatures



Expected Impact, June 2019:

The first half of June brought with it a significant amount of lightning (over 1,000 CG strikes) across the area that started some wildfires. Live fuels and some lingering moisture in the dry fuels from the 2018-19 Wet Season have generally kept fire spread from being much of a problem this month. The thunderstorms have also caused localized heavy rainfall, gusty winds, and large hail. While we're expecting cooler weather for most of the remainder of the month, gusty northerly winds will continue to dry wildland vegetation further. Thus, the primary impacts of the expected weather for the remainder of June is that fire danger and fire spread potential will increase. Additionally, with lesser than normal precipitation expected to continue for most areas, we're going to see increased irrigation demand. This could end up drawing reservoirs down such that water supply could become an issue in some areas again by summer's end.

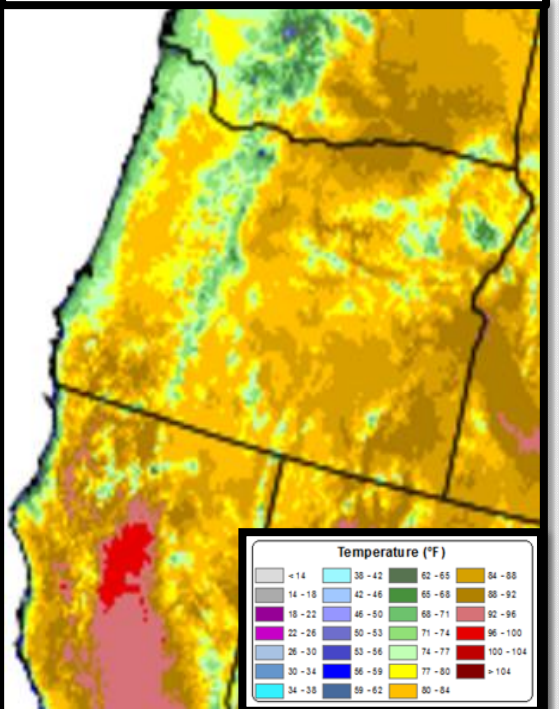
Precipitation



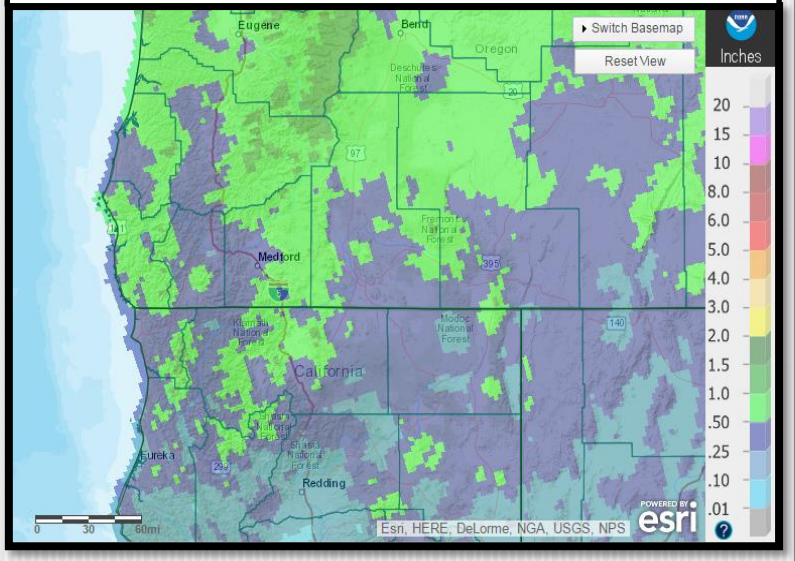
Looking Ahead: Normals for July (1981-2010)

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.

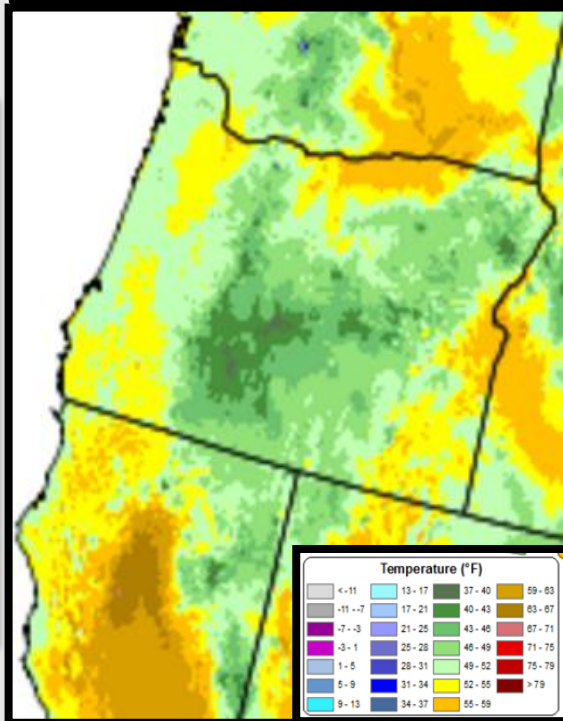
July Avg Maximum Temperatures



July Average Precipitation



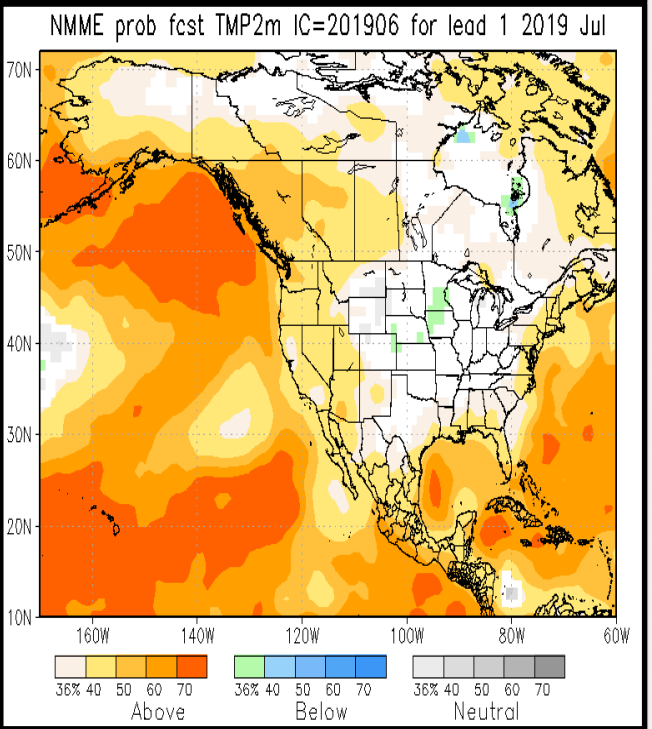
July Avg Minimum Temperatures



July 2019 Outlook

The official CPC outlook for the month of June will be released Thursday, June 20th. Dynamical models are fairly consistent in indicating July 2019 to be near to slightly above normal for temperatures 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 equal chances for below, near, and above normal precipitation. Individual climate models suggest a greater chance for above normal precipitation from about the Cascades eastward and across northern California, and a greater possibility of near normal precipitation west of the Cascades.

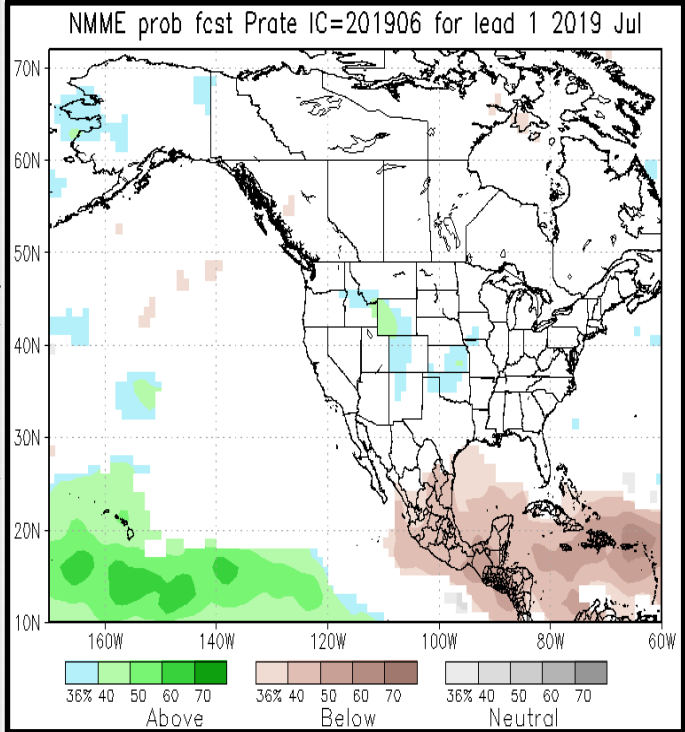
Temperatures



Expected Impact, July 2019:

The expected impact of forecast conditions for July 2019 is to continue seasonal drying of wildland fuels west of the Cascades, but to slow the normal progression of fire season from roughly the Cascades eastward. Lightning in July is critical to fire season severity/ # of wildfires in this area, and a general look at the pattern does suggest the pattern being favorable for normal to above normal lightning activity during the month of July. Where this lightning occurs and with how much rain and how much fuel receptivity is unclear, but guidance suggests most of the activity will be along & east of the Cascades. Given expected fuel conditions, there is increased large wildfire concerns for areas west of the Cascades for the month of July should the lightning be abundant there. Per guidance and climatology, some should.

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*