National Weather Service Medford

May 2018 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 2018 Weather Review

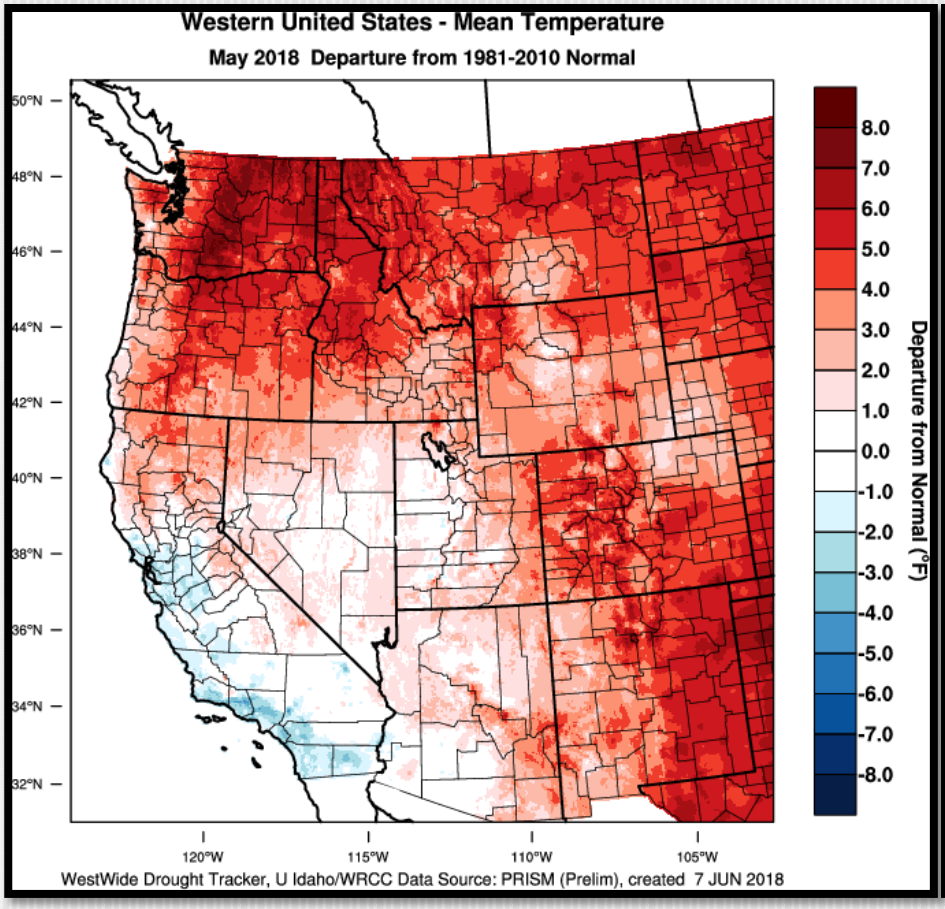
Although the month featured the usual mix of spring weather, overall May 2018 ended up warmer and drier than normal for the majority of the forecast area. Cool temperatures at the very beginning of the month, quickly transitioned to warmer than normal and dry conditions. After a week of heating, an upper low moved over the area and this generated nocturnal thunderstorms that moved north through the Rogue Valley and along the western foothills of the Cascades. Afternoon thunderstorms continued during the following days, but remained in northern California and east of the Cascades.

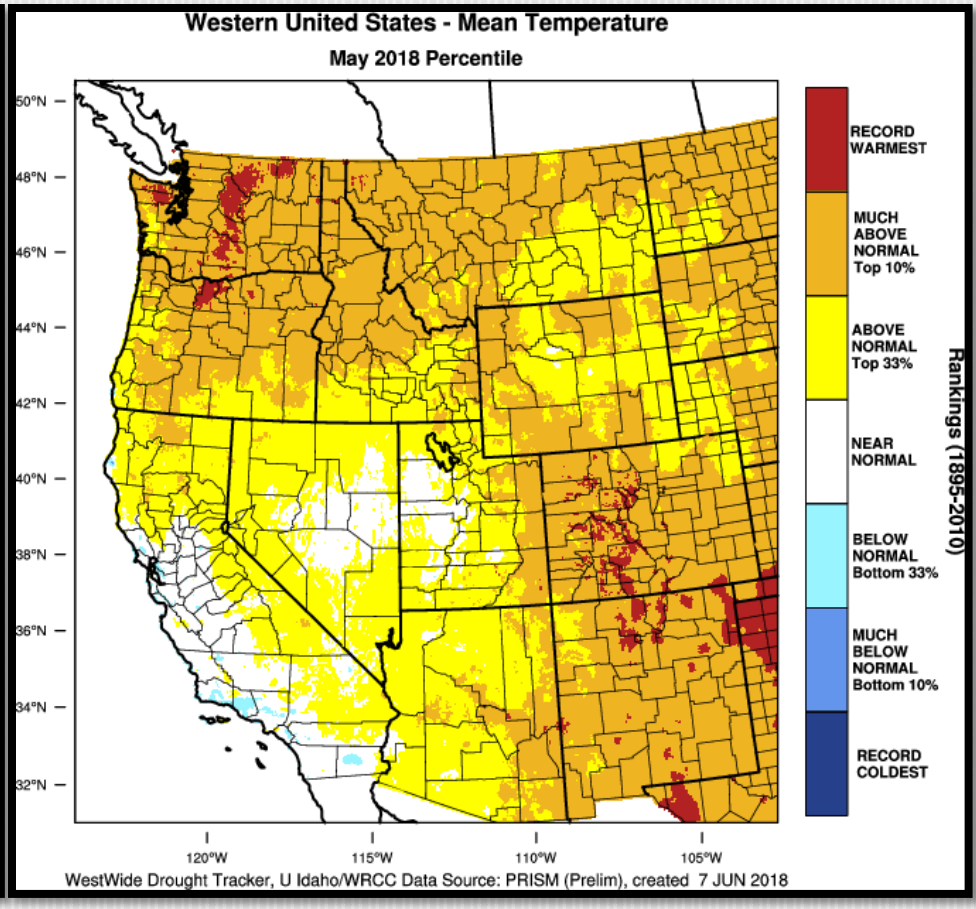
After this period of cooler, showery conditions, high pressure briefly resumed control bringing the return of warm afternoons and dry conditions. A cutoff low brought unsettled weather to the area around the middle of the month. Thunderstorms during this pattern brought more than two thirds of the month's total precipitation for the Rogue Valley and other locations west of the Cascades. A cluster of thunderstorms moved into the Applegate Valley area, and delivered enough precipitation to warrant an areal flood advisory due to heavy rainfall. Locations east of the Cascades received ample amounts of precipitation as well, however, the more impressive amounts arrived toward the end of the month. During the next week, high pressure resumed control once again with warmer and drier conditions persisting. During this time, Medford reached the first 90 degree day of 2018 on May 22nd.

After this period of warmth, another cutoff low pressure moved through the area, bringing another round of showers and thunderstorms. Record precipitable water values were observed on the KMFR upper air soundings during this time, and copious amounts of rain fell east of the Cascades from the 23rd through the 26th in the form of showers and thunderstorms. One thunderstorm warranted a severe thunderstorm warning in Lake County. It moved from south to north through Adel, Plush and the Oregon Sunstone Collection Area. One inch hail was reported in the Spectrum Mines area, just northwest of the Sunstone Collection area. Significant amounts of rain fell during this time, and some locations east of the Cascades ended the month over a half inch above normal.

Once the low pressure finally kicked east away from the forecast area, brief ridging took over before another weak upper trough moved through to cool temperatures once again.

May 2018 *Observed Temperatures*



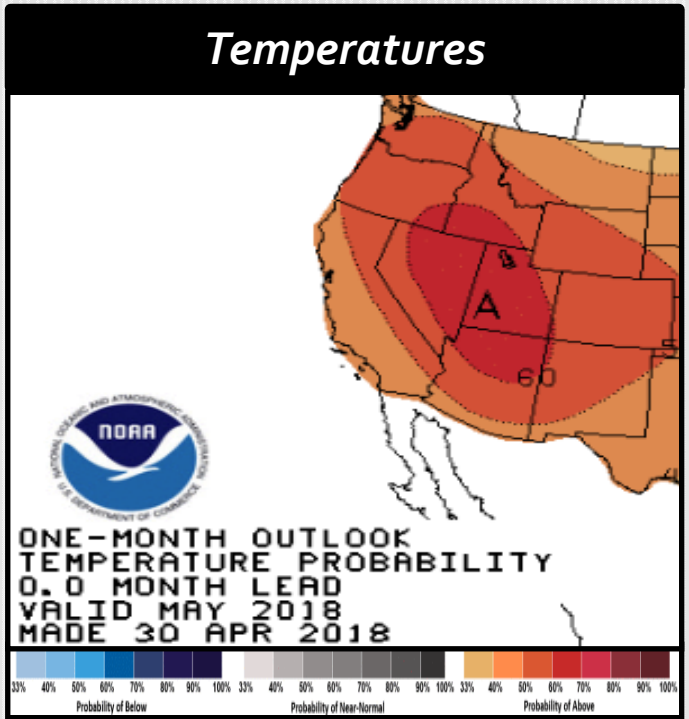


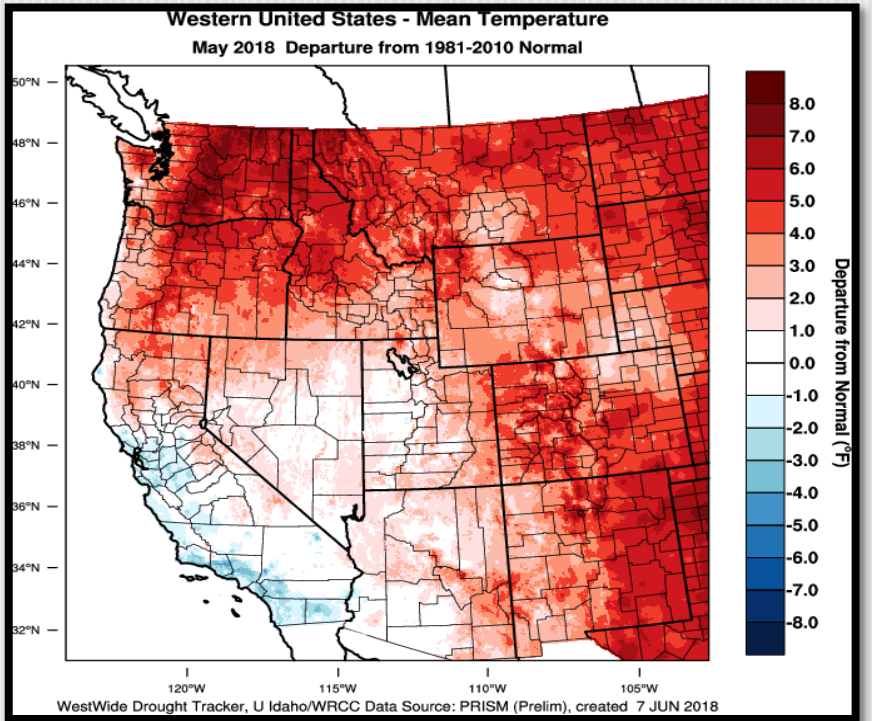
Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	55.2	***+2.3°***	60.6	***+1.7°***	49.8	***+2.8°***
Roseburg	62.1	***+3.6°***	73.8	***+3.9°***	50.5	***+3.3°***
Medford	63.5	***+3.7°***	77.2	***+3.9°***	49.7	***+3.5°***
Klamath Falls	55.5	***+4.6°***	71.4	***+6.1°***	39.6	***+3.0°***
Montague, CA	60.1	***+4.0°***	76.5	***+4.8°***	43.8	***+3.4°***
Mt. Shasta City, CA	58.5	***+4.1°***	73.1	***+4.0°***	44.0	***+4.3°***
Alturas, CA	55.9	***+4.2°***	71.2	***+3.4°***	40.6	***+5.0°***

A Look Back at the May 2018 Temperature Outlook

- ***Was the forecast anomaly correct?*** Yes. CPC's forecast was correct in indicating temperatures were most likely to be above normal across the forecast area. The localized outlook indicated temperature anomalies were likely to be 3-7 degrees above the 1981-2010 averages. Positive temperature anomalies of 2-6 degrees were observed, except in Coos, Curry and western Douglas counties, where anomalies were less than 2 degrees above normal.
- ***Was the expected impact correct?*** Yes. The growing season did, generally, get off to a head start. Fire season began June 1st for some of the area and June 8th for the remainder of the area. The snowpack was mostly gone below 7kft by May's end. While fire season did not begin, officially, in May, there were a few problem fires across the area later in the month that required sizeable early suppression efforts.
- ***Did our forecast improve upon the CPC forecast?*** Yes, very much so. We correctly indicated the highest positive temperature anomalies would be across Oregon portions of the area. We also indicated we were "very confident" that temperatures would be above normal. Also, expected anomalies were pretty close to what was observed. One exception is that anomalies were lesser in the coastal areas.

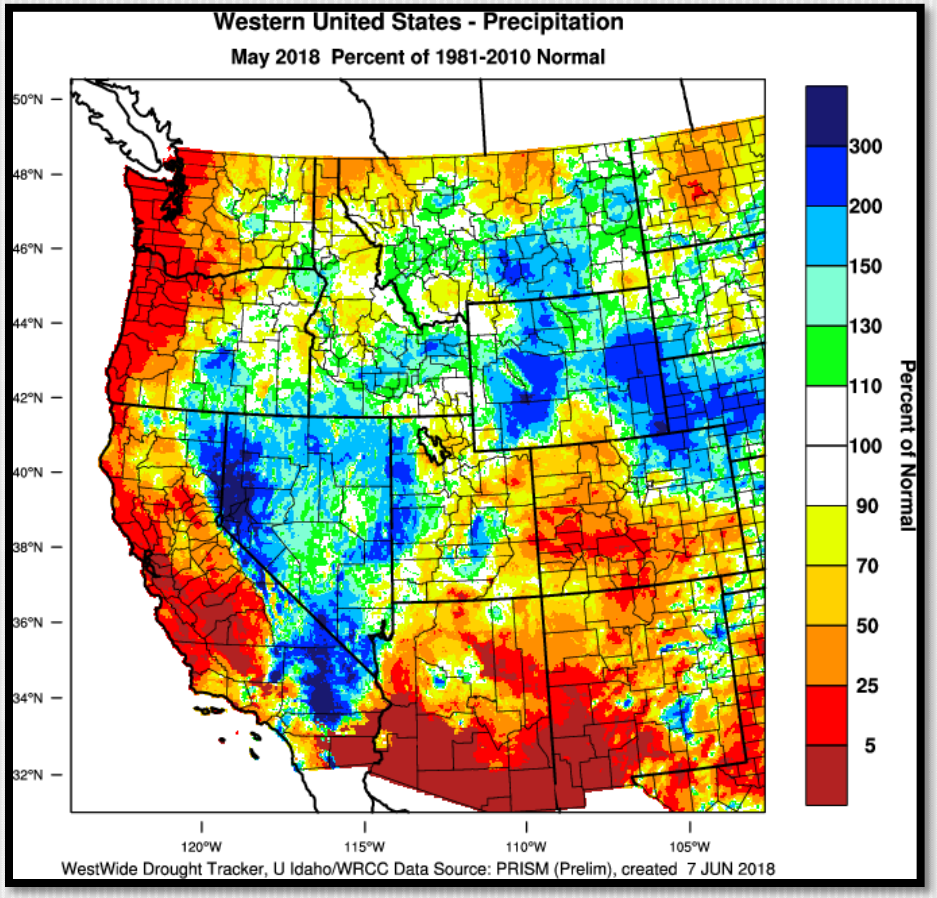


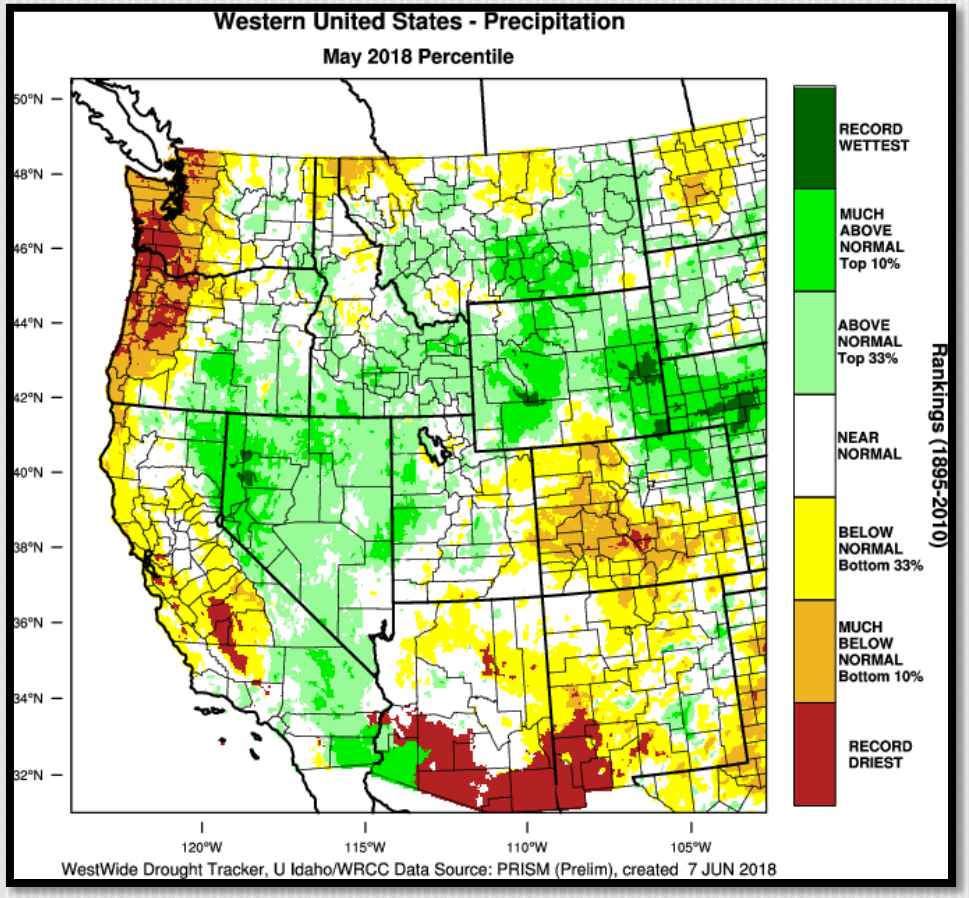


Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	69°	8th	41°	2nd
Roseburg	88°	13th & 22nd	41°	2nd
Medford	90°	22nd	37°	2nd
Klamath Falls	81°	28th	28°	1st
Montague, CA	87°	22nd	29°	1st
Mt. Shasta City, CA	84°	29th	34°	1st & 2nd
Alturas, CA	82°	29th	31°	2nd & 3rd

May 2018 *Observed Precipitation*



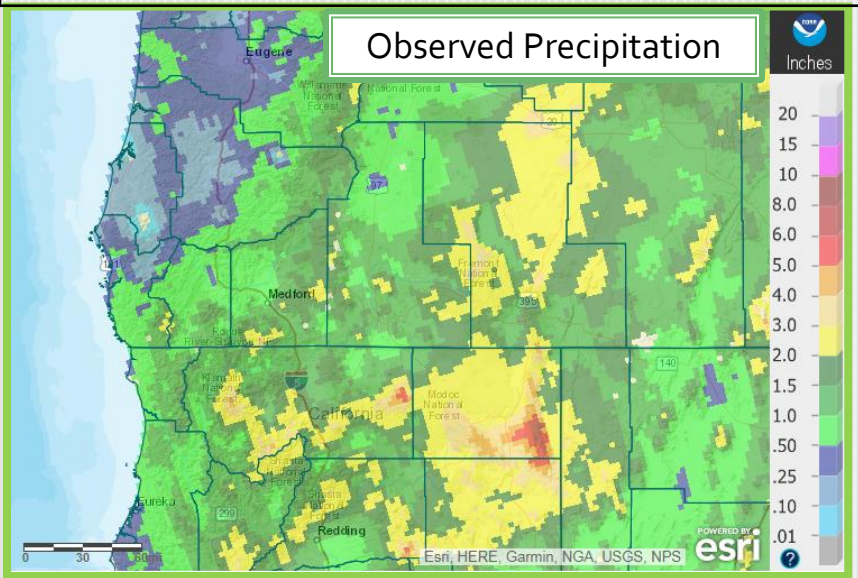


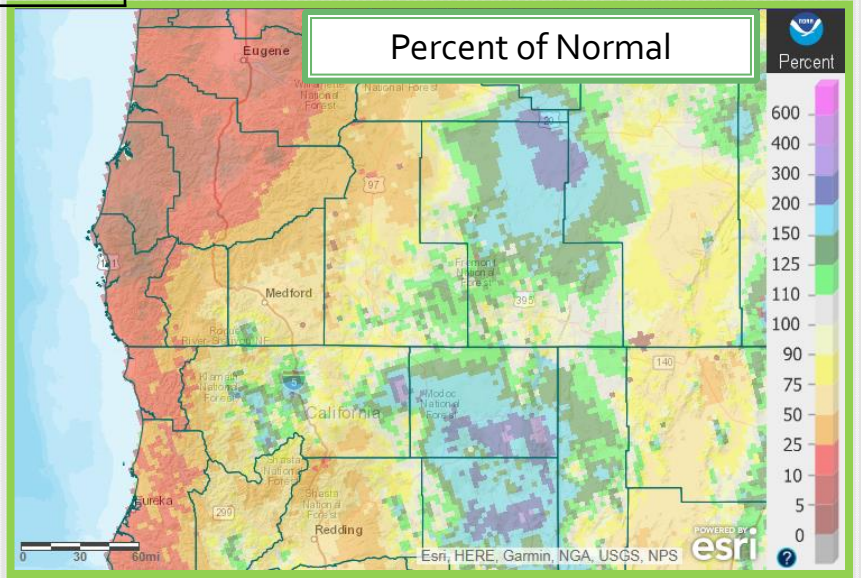
May Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	M	-3.39"	M	M
Roseburg	0.27"	-2.00"	0.25"	6th
Medford	0.74"	-0.57"	0.29"	15th
Klamath Falls	1.40"	+0.02"	0.61"	25th
Montague, CA	1.24"	-0.18"	0.58"	25th
Mt. Shasta City, CA	2.07"	-0.15"	0.78"	15th
Alturas, CA	2.05"	+0.69"	0.66"	25th

Record Daily Precipitation

	New Record	Date	Old Record	Year
Alturas	0.66"	25th	0.21"	2011
Klamath Falls	0.61"	25th	0.58"	1993
Montague	0.58"	25th	0.51"	2011



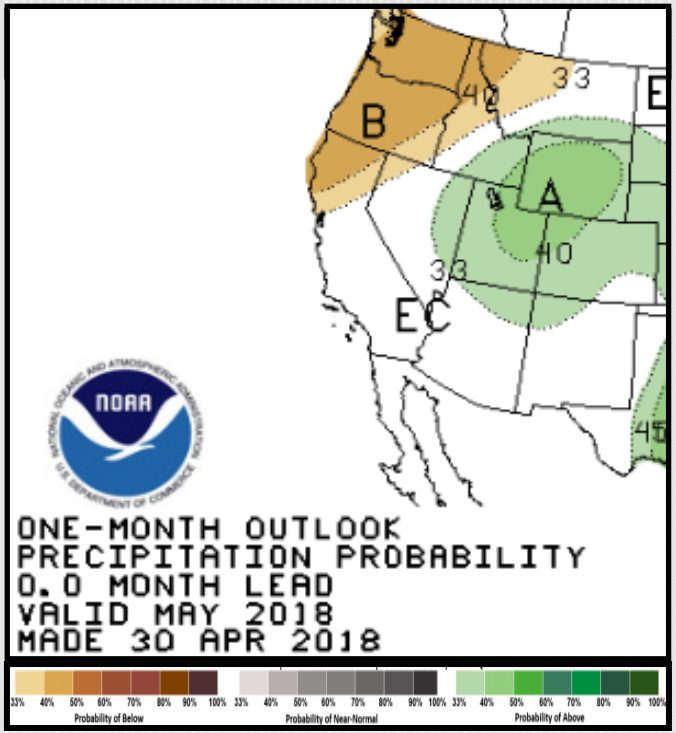


A Look Back at the May 2018 Precipitation Outlook

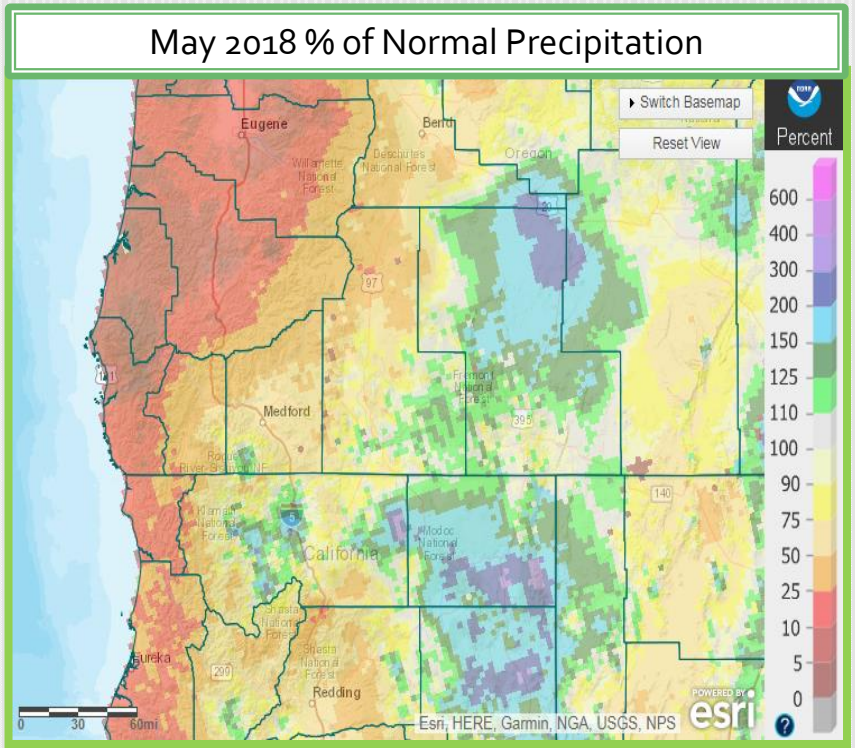
- ***Was the forecast anomaly correct?*** "Yes" for most areas from the Cascades westward in Oregon and "no" for most areas east of the Cascades and in about half of Northern California. CPC's forecast indicated increased chances for below average precipitation. Our localized forecast did better for areas east of the Cascades. More on this, below.

- ***Was the expected impact correct?*** Yes. The impacts stated were correct both spatially and temporally.

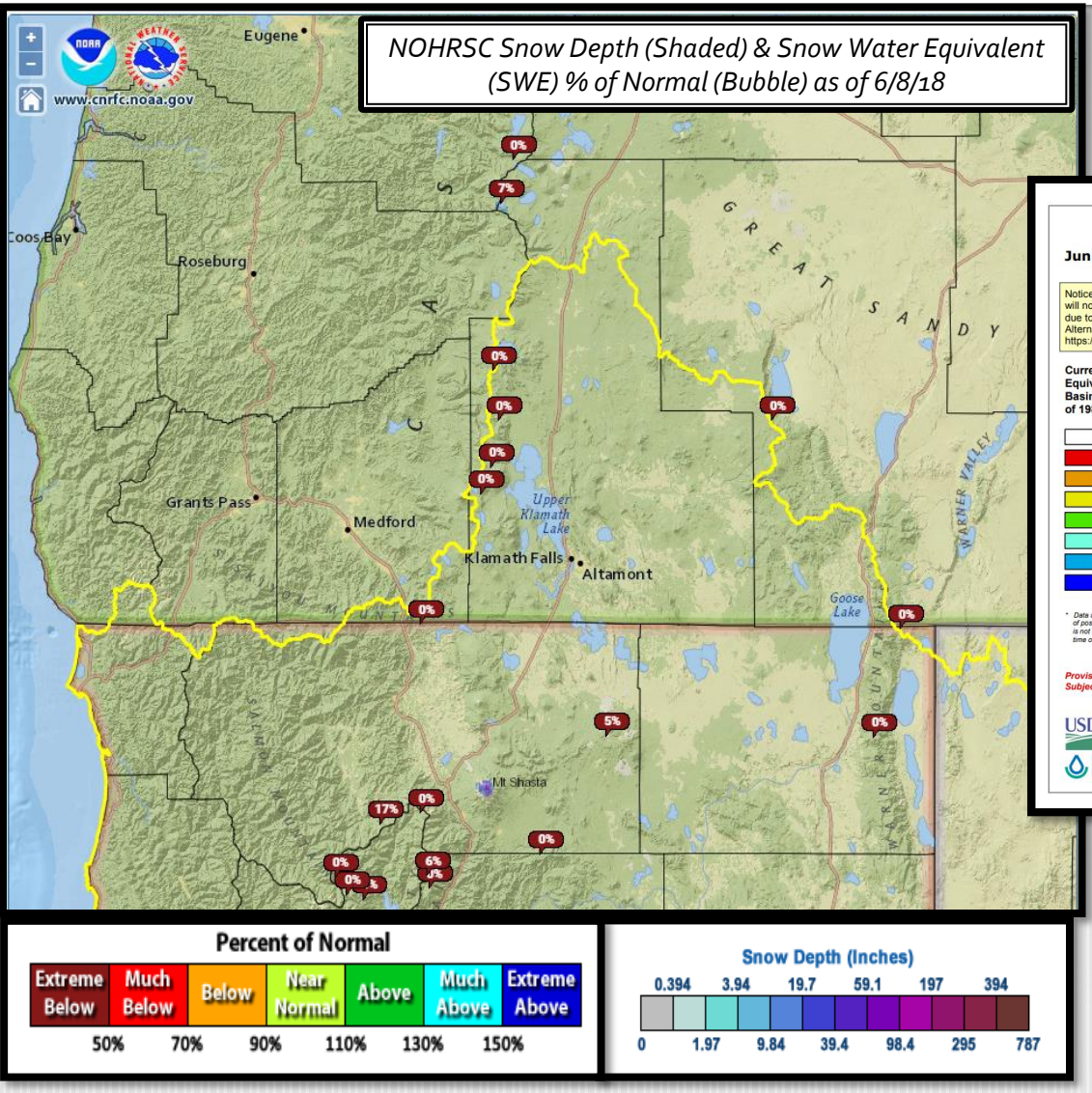
- ***Did our forecast improve upon the CPC forecast?*** Yes. The localized enhancement to the CPC forecast correctly identified "significant precipitation from near the Cascades and Marble Mountains eastward from about May 15th-25th", as well as "near to above normal precipitation for some areas east of the Cascades, with the greatest probability in Modoc and Lake Counties". The above normal area was less patchy than expected, and both the Applegate Valley area and the Marble Mountains to Shasta Valley saw more precipitation than was expected.

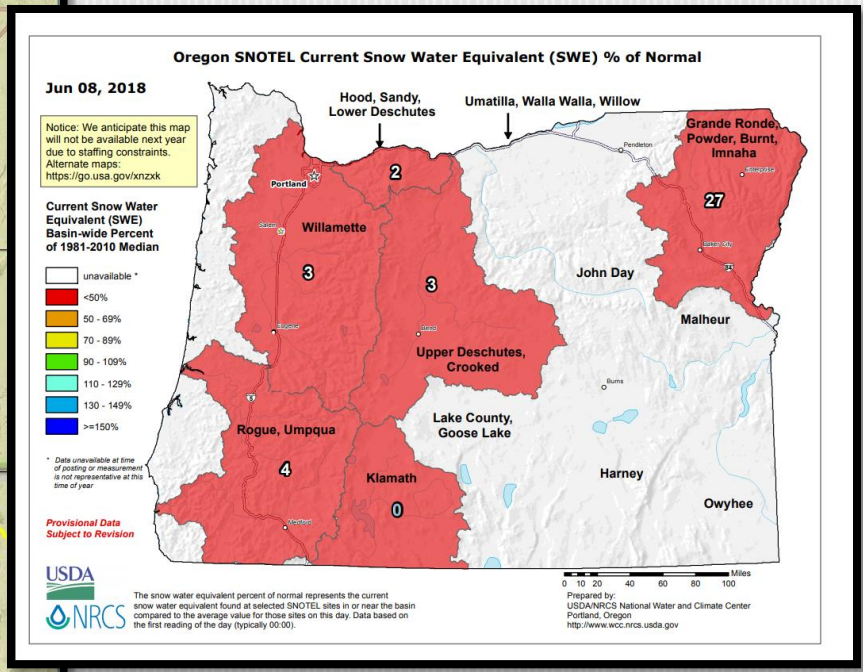


May 2018 % of Normal Precipitation

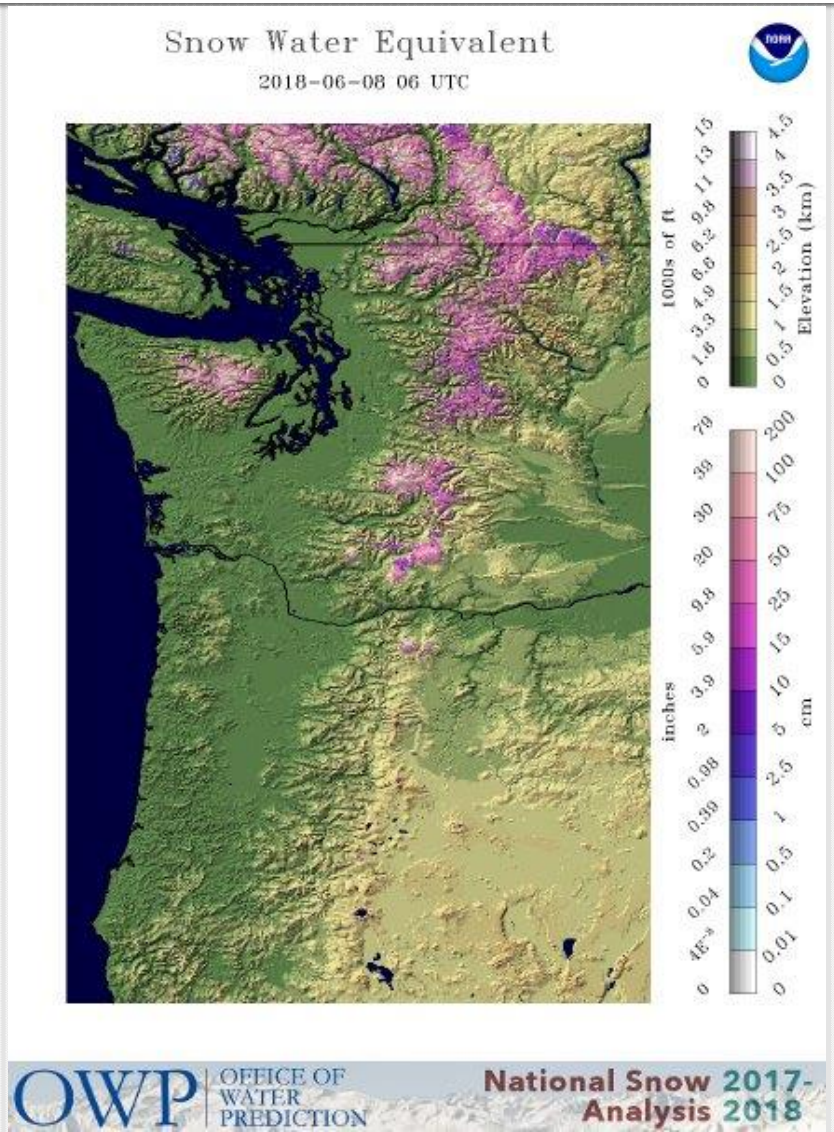


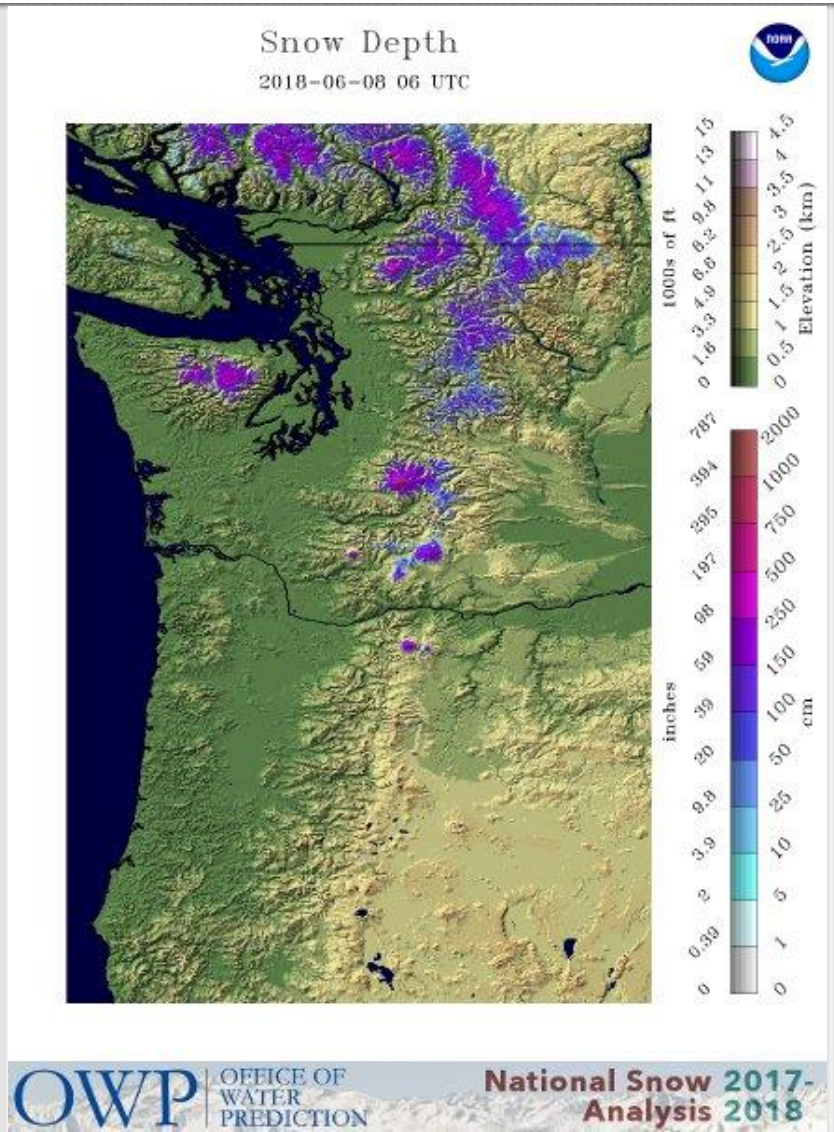
Snowpack Status



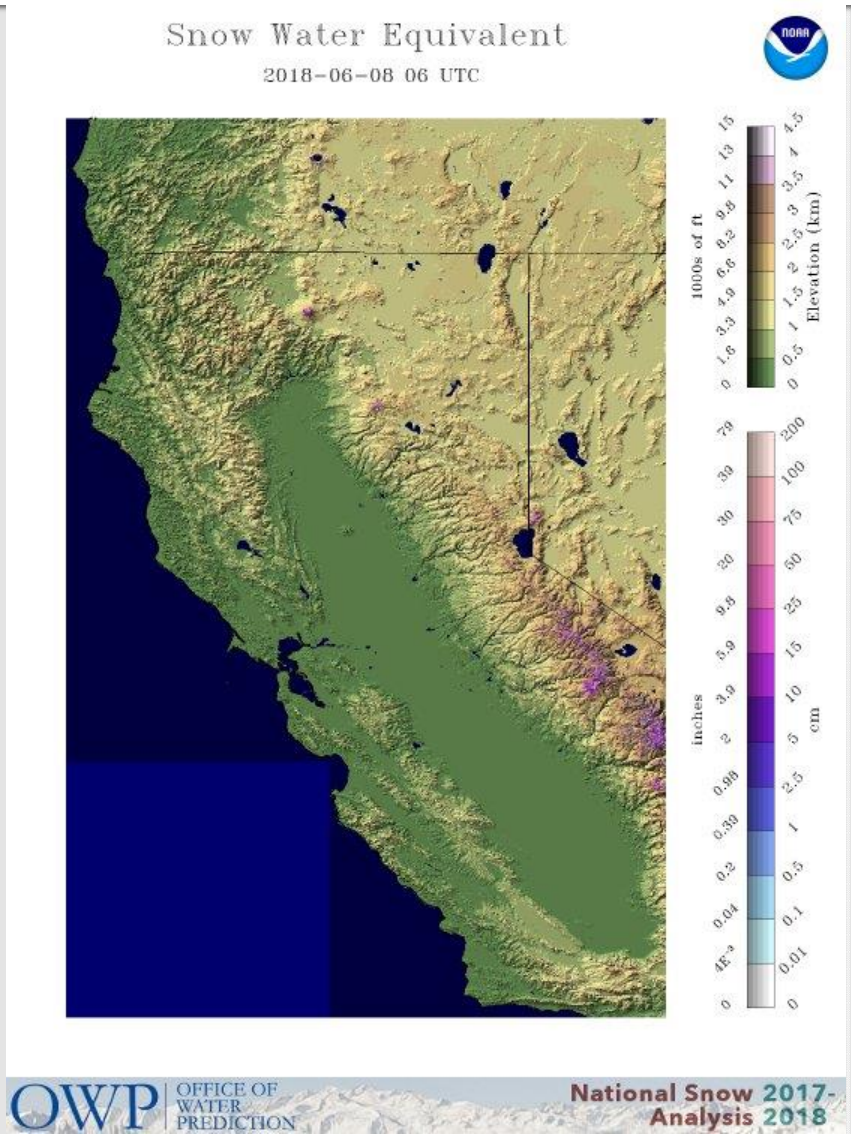


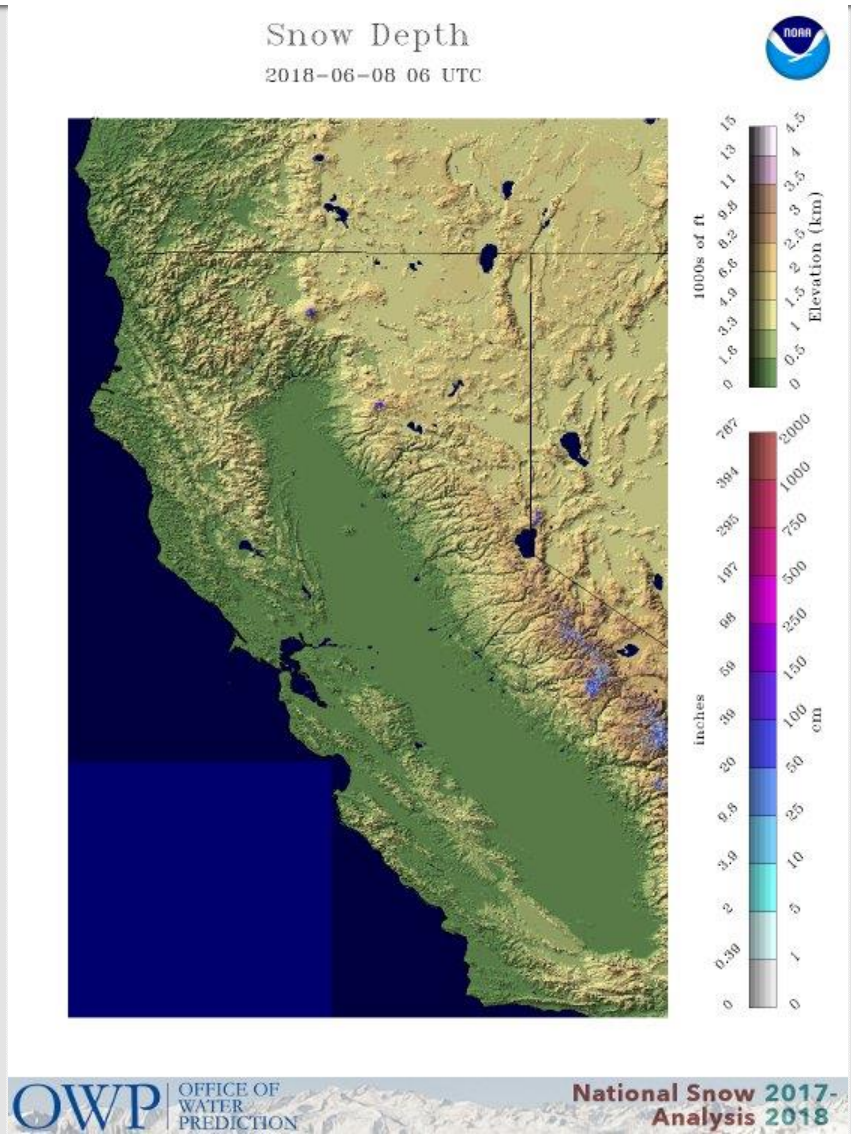
PacNW SWE & Snow Depth as of 6/8/18





California SWE & Snow Depth as of 6/8/18





Crater Lake

Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 05/31/18	Highest Max/ Lowest Min
May	53.9°	32.4°	1.60"	Trace	1"	64° on 29th / 22° on 1st
Normal (1981-2010)	49.2°	28.4°	3.57"	15.9"	53"	N/A

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.

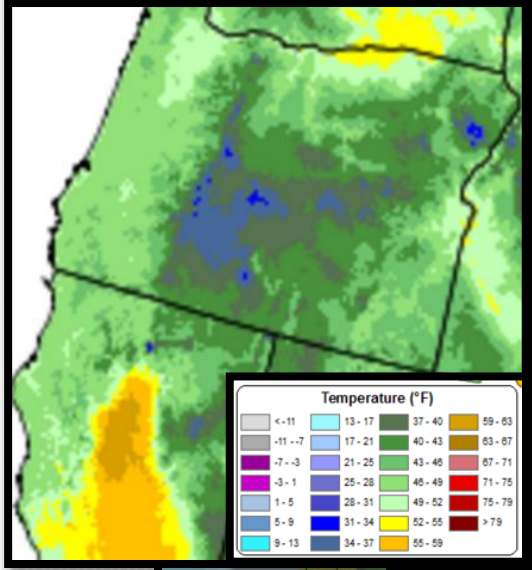
Snow:

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.

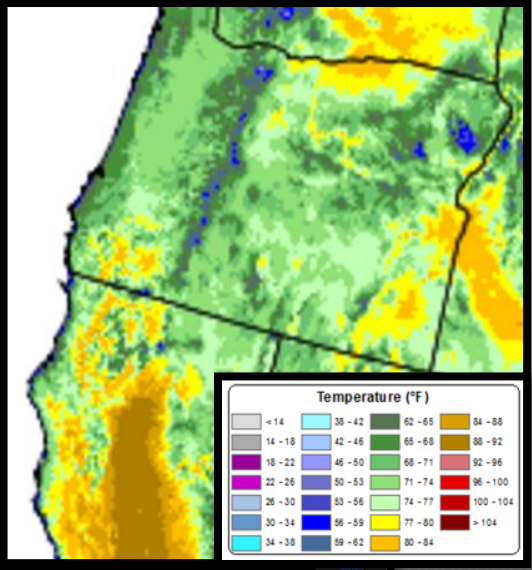
Lightning, 2003-2017 Average:

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.

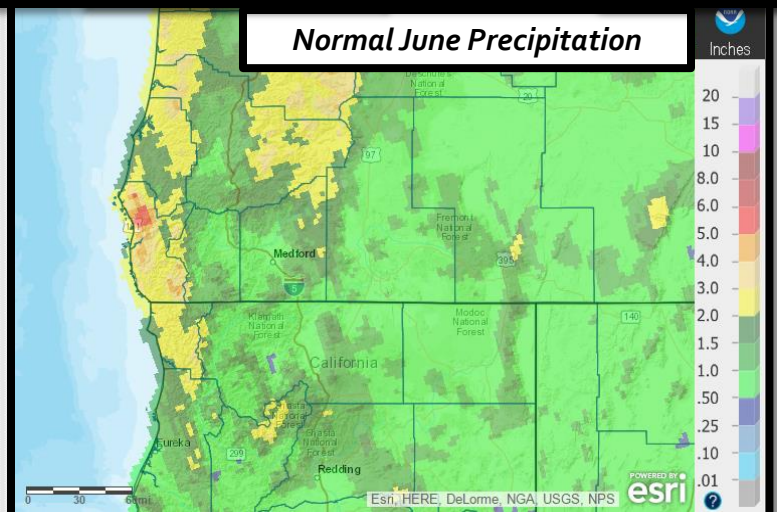
Average Minimum Temperatures



Average Maximum Temperatures



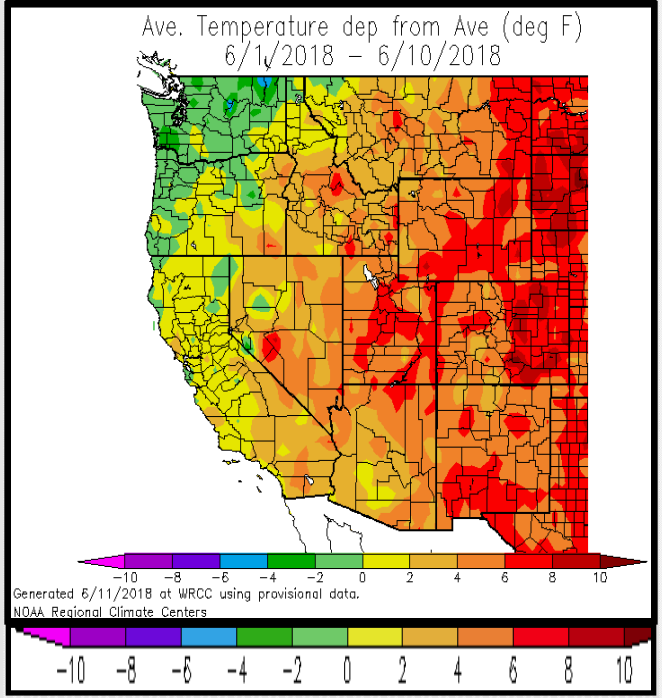
Normal June Precipitation



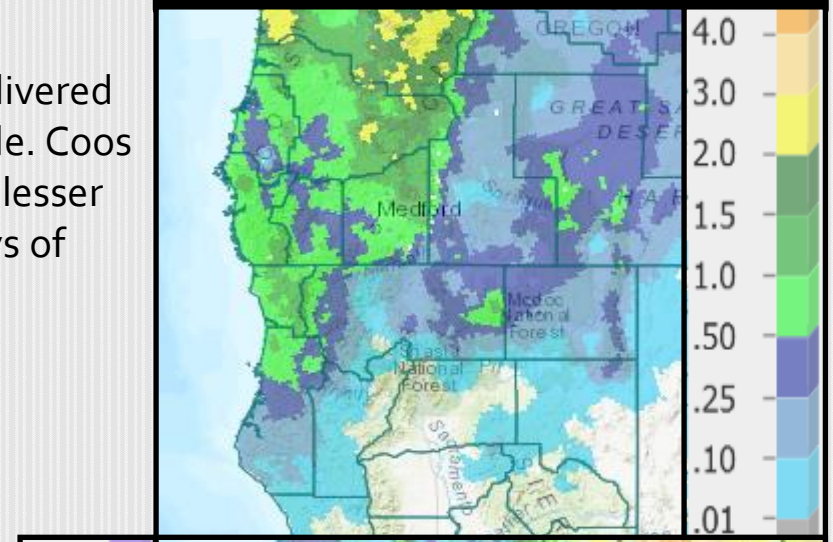
June 1-10th, 2018: Observed

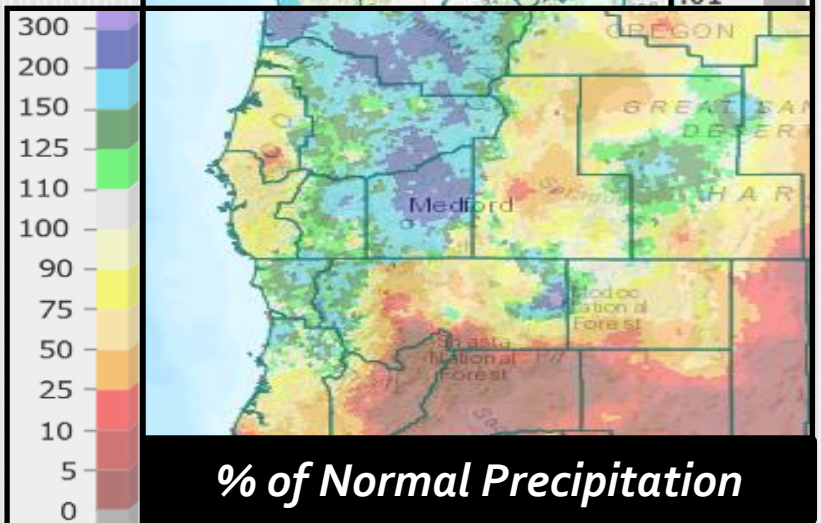
- Average temperatures have ranged from 2°F below normal to 3°F above normal during the first 10 days of June.
- A frontal system and upper level low early this month delivered strong precipitation totals to mainly the interior West Side. Coos and Curry county, NorCal, and some of the east side saw lesser amounts when compared to the normal for the 1st 10 days of June.

June 1-10, 2018 Temperatures



June 1-10, 2018 Precipitation



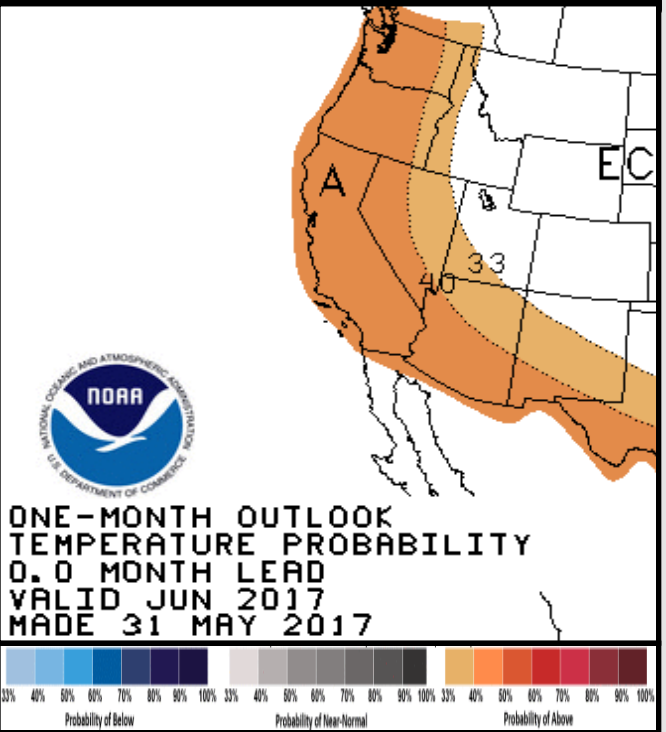


% of Normal Precipitation

Outlook for June 2018

The official Climate Prediction Center forecast for June 2018 is increased chances of above normal temperatures (40-50%) and below normal precipitation (34-45%). This forecast looks on track as of June 9th. Current indications are that inland temperatures are likely to end the month around 3-7 degrees above normal. The coolest period of the month is likely to be the short lived anomalously cold trough that occurred June 9th-10th. The hottest period of the month, per the GEFS, the ECMWF, and WPC, is expected June 19th-24th. While there is some uncertainty regarding the timing and magnitude of this heat, it appears temperatures are likely to be 10 to 20 degrees above normal. This means we're likely to see valley highs in the 90s and, possibly the first 100s of the year. For the month, confidence is highest for above normal temperatures east of the Cascades, and lowest along the coast due to upwelling. Precipitation is likely to be closest to normal over the East Side and the most below normal along and near the coast, but probably below normal for all areas. Since showers and thunderstorms usually follow our heat waves, there are thunderstorm concerns for June 22nd through approximately June 27th. Guidance (GEFS) shows lowering heights and a trough of low pressure developing near the West Coast June 22nd-30th supporting this convective forecast.

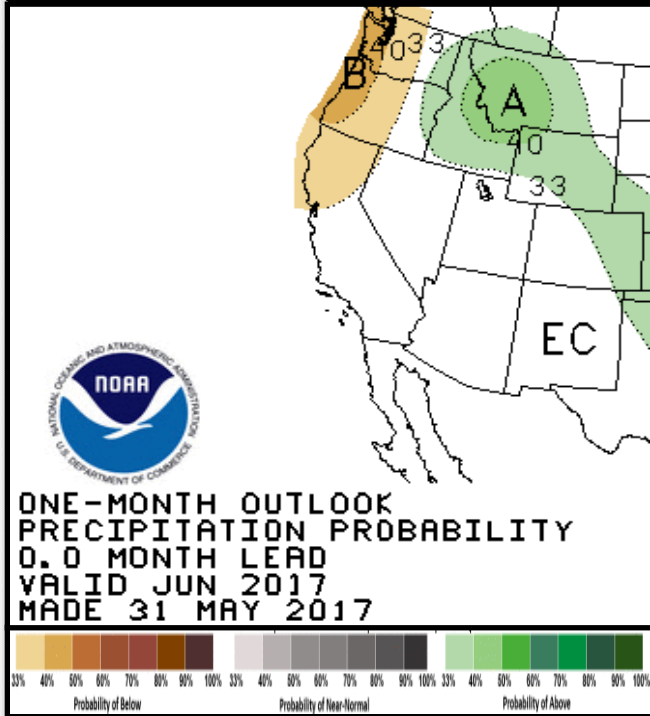
Temperatures



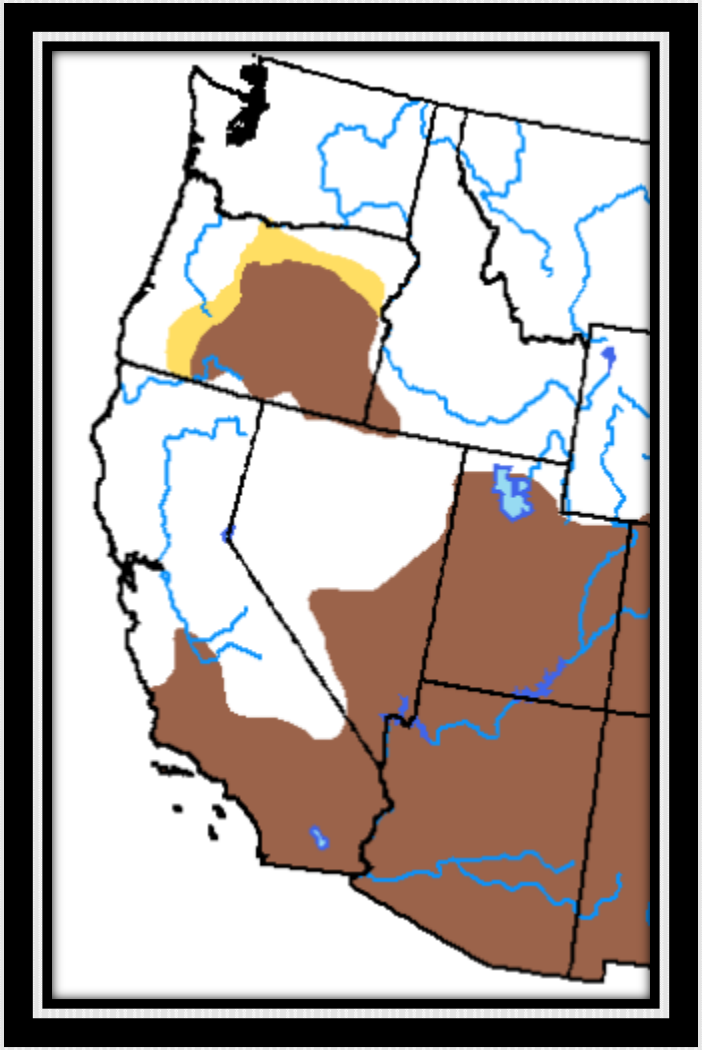
Expected Impact, June 2018:

Since the snowpack is pretty much gone a month early and the 2018 Fire Season is underway, primary concerns this month revolve around the magnitude of the heat, resultant drying, and fire potential. We expect that, as is normal, drying will continue this month and that fire concerns will increase. If we reach 90s in the valleys the 19th-24th, the expected impact is likely to be minimal. If we do reach into the 100s, we will see more significant impacts on the vegetation and early significant demands on the already somewhat short water supply, so water supply concerns for late summer would increase. The GEFS, GFS, and CFSv2 do indicate cooling with a trough of low pressure possible the last week of the month that bears some watching. This would bring some relief, actually quite typical of what usually happens after an early season heat wave.

Precipitation



Drought Outlook: June



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

Valid for June 2018
Released May 31, 2018

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

*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: 1/1/1948 – Present**
  - *Missing:*
    - *08-10/1970*
    - *1971-10/1997*
- **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*