

National Weather Service Medford

November 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 \(NCEI\)](#).

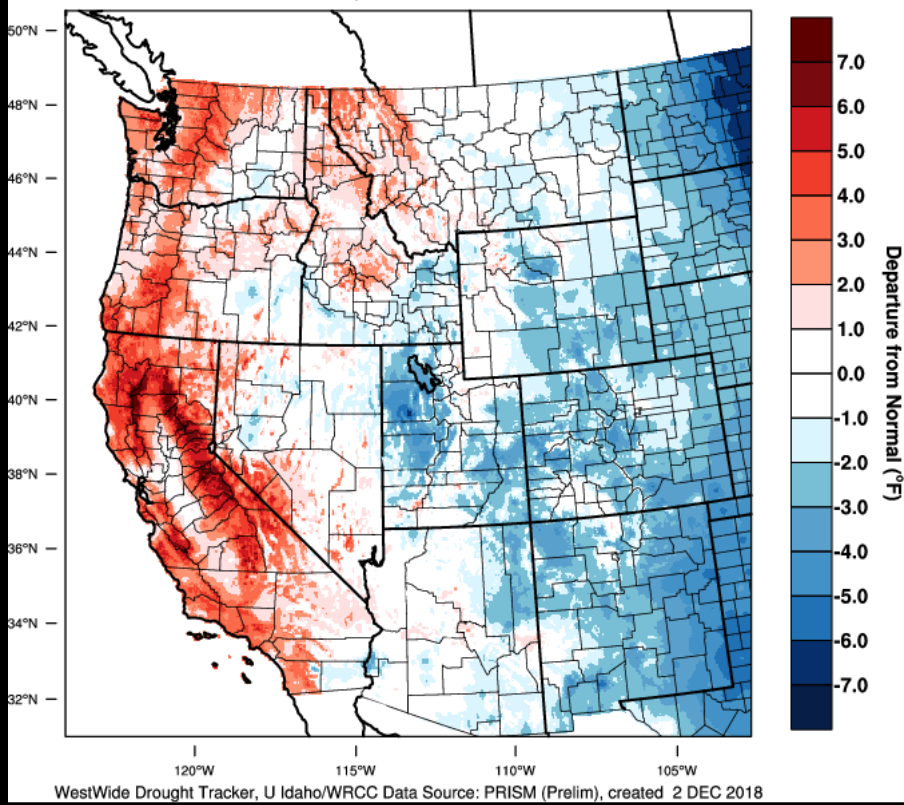
November 2018 Weather Review

Another dry month in the books. Most of the region closed out November with around 50 to 70 percent of normal precipitation for the month. In fact, when looking at the first 20 days of November, it was the driest period on record for the first two-thirds of November across the area. This even included the more typically wet locations along the coast like North Bend and Brookings. With high pressure in control during this time, dry conditions prevailed with cold nights and warm afternoons leading to large diurnal ranges, especially east of the Cascades. Cold surface high pressure over eastern Oregon and central Idaho led to easterly flow across the forecast area. This easterly flow, combined with the lack of moisture, brought the return of fire weather concerns and also spared the Rogue Valley of the day long periods of fog and low clouds. The Umpqua Basin, however, did experience days where fog/low clouds lingered all day. Although nights were quite cold, even record setting in some places, the unusually warm afternoons led to overall above normal temperatures for the month of November.

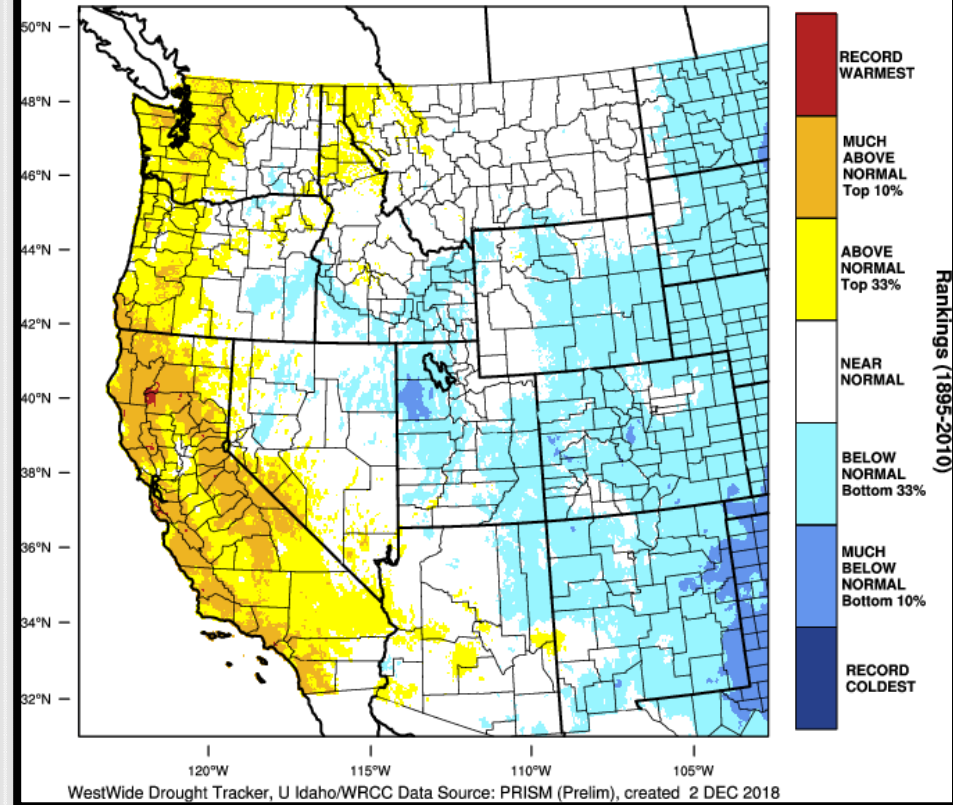
Finally, the pattern became much more active during Thanksgiving week and remained so through the end of the month. Multiple systems moved through the area, bringing much needed valley rain and mountain snow, mainly above 5000 feet.

November 2018 Observed Temperatures

Western United States - Mean Temperature
November 2018 Departure from 1981-2010 Normal



Western United States - Mean Temperature
November 2018 Percentile



Average Temperatures

	<i>Average (°F)</i>	<i>Departure from Normal</i>	<i>Average Max (°F)</i>	<i>Departure from Normal</i>	<i>Average Min (°F)</i>	<i>Departure from Normal</i>
North Bend	50.7	1.9°	58.2	3.3°	43.2	0.5°
Roseburg	48.2	1.3°	55.6	2.1°	40.7	0.4°
Medford	46.8	2.1°	59.2	6.2°	34.3	-2.1°
Klamath Falls	37.3	1.8°	52.8	6.9°	21.8	-3.2°
Montague, CA	42.9	3.0°	59.0	8.6°	26.8	-2.6°
Mt. Shasta City, CA	43.2	2.6°	55.6	4.3°	30.7	0.9°
Alturas, CA	37.2	1.1°	54.6	5.3°	19.9	-3.0°

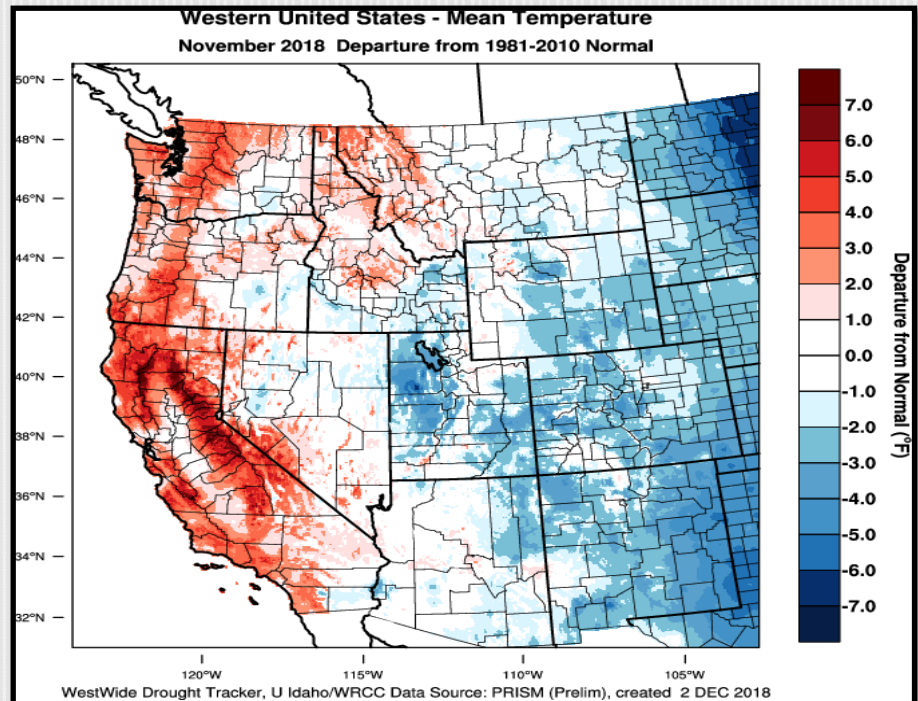
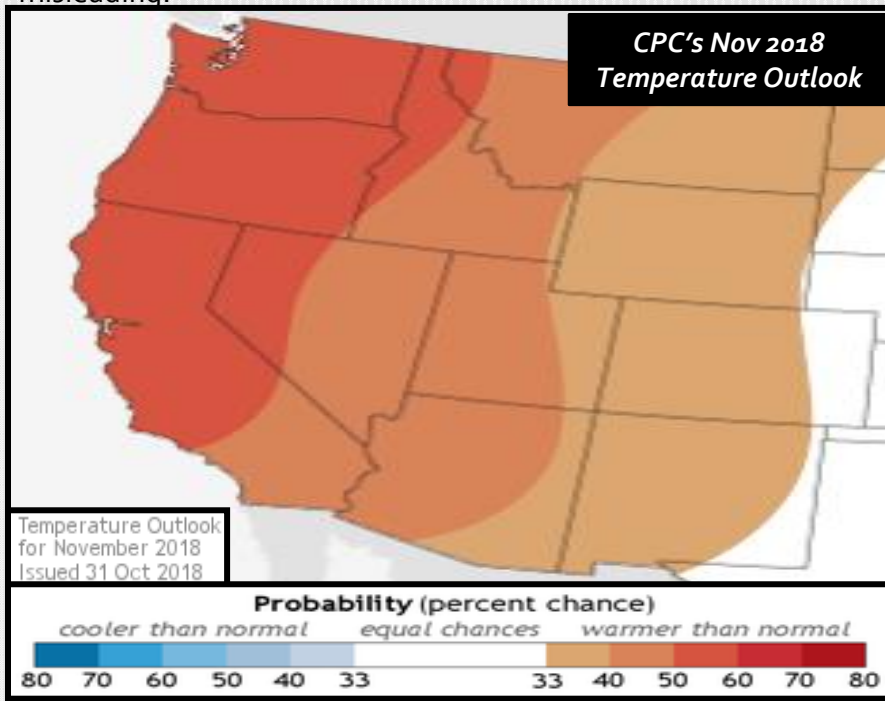
Monthly Max & Min Temperatures

	<i>Max (°F)</i>	<i>Date(s)</i>	<i>Min (°F)</i>	<i>Date(s)</i>
<i>North Bend</i>	<i>67°</i>	<i>11th & 12th</i>	<i>34°</i>	<i>8th</i>
<i>Roseburg</i>	<i>71°</i>	<i>1st</i>	<i>28°</i>	<i>12th</i>
<i>Medford</i>	<i>70°</i>	<i>12th</i>	<i>23°</i>	<i>8th</i>
<i>Klamath Falls</i>	<i>66°</i>	<i>1st</i>	<i>7°</i>	<i>9th</i>
<i>Montague, CA</i>	<i>74°</i>	<i>1st</i>	<i>13°</i>	<i>9th</i>
<i>Mt. Shasta City, CA</i>	<i>69°</i>	<i>1st</i>	<i>19°</i>	<i>11th</i>
<i>Alturas, CA</i>	<i>65°</i>	<i>1st</i>	<i>5°</i>	<i>9th</i>

Record Low Temperatures	Date	Record Low	Old Record/Year
<u>Klamath Falls</u>	9 th	12°	15° / 2012
<u>Alturas</u>	7 th	7°	9° / 2001
<u>Montague</u>	9 th	13°	18° / 1948
	10 th	16°	Ties w/ 1992

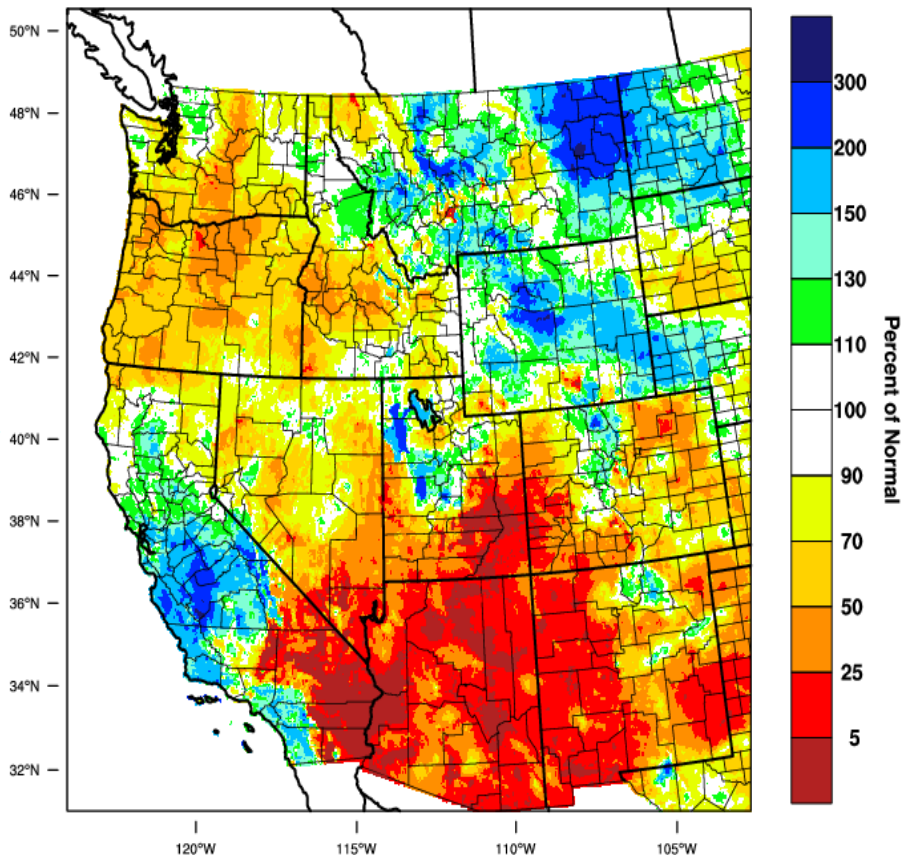
A Look Back at the Nov 2018 Temperature Outlook

- **Was the forecast anomaly correct?** Yes. CPC's probabilistic temperature forecast was for a 50-60% chance of above normal temperatures. While avg. temp. was near normal for parts of the east side (see slide 3), the general idea of above average temperatures was well forecast.
- **Was the expected impact correct?** Our localized forecast generally did not discuss temperature related impacts because temperatures were expected to be within 3 degrees either side of the 1981-2010 normals.
- **Did our forecast improve upon the CPC forecast?** Our mid-month forecast provided more detail in the location of where the warmest and least warm anomalies would be, but was a bit misleading in that it indicated that temperatures would end up below normal for the month across the east side. In reality, anomalies there were -1° to $+3^{\circ}\text{F}$, except $+3^{\circ}$ to $+5^{\circ}\text{F}$ across the mountains. Elsewhere, predicted $+1^{\circ}$ to $+3^{\circ}\text{F}$ anomalies were actually 0° to $+5^{\circ}\text{F}$ above normal. Observed temperatures show most valleys had below normal lows and above normal highs, so that made gauging temps this month tougher. Also, the prelim temps from WRC are low resolution, so might have been a bit misleading.



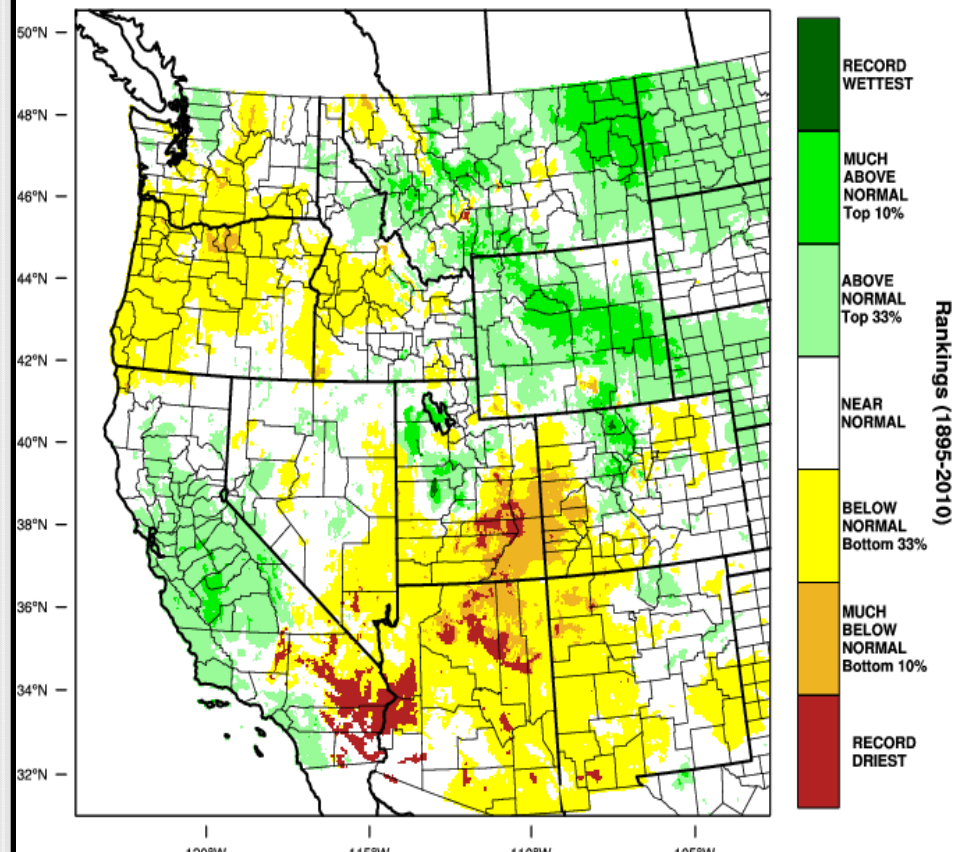
November 2018 *Observed Precipitation*

Western United States - Precipitation
November 2018 Percent of 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 DEC 2018

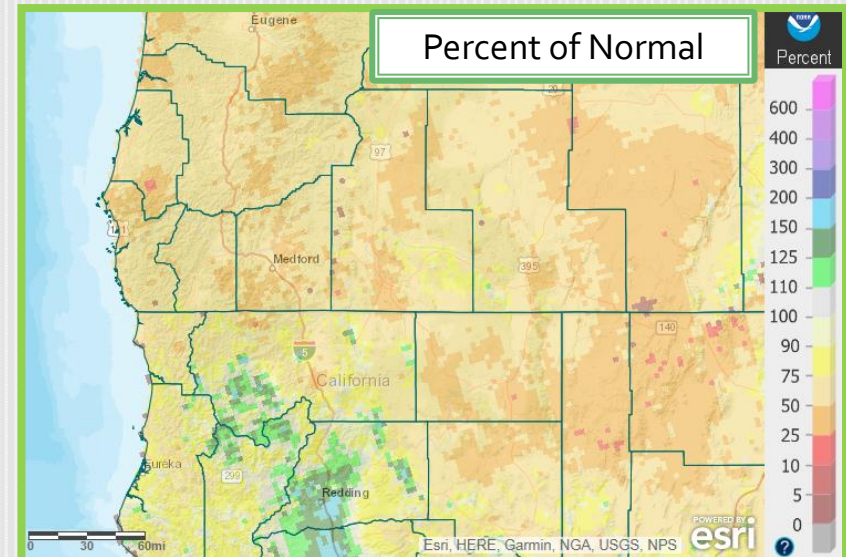
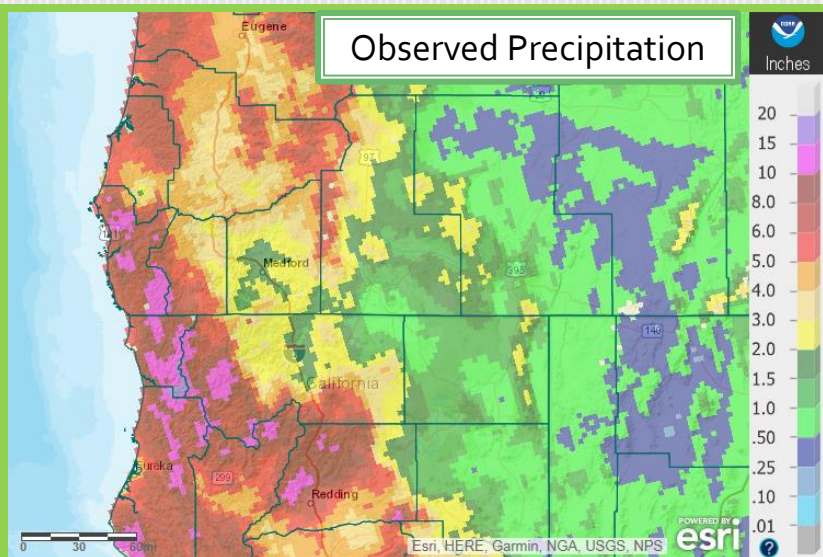
Western United States - Precipitation
November 2018 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 DEC 2018

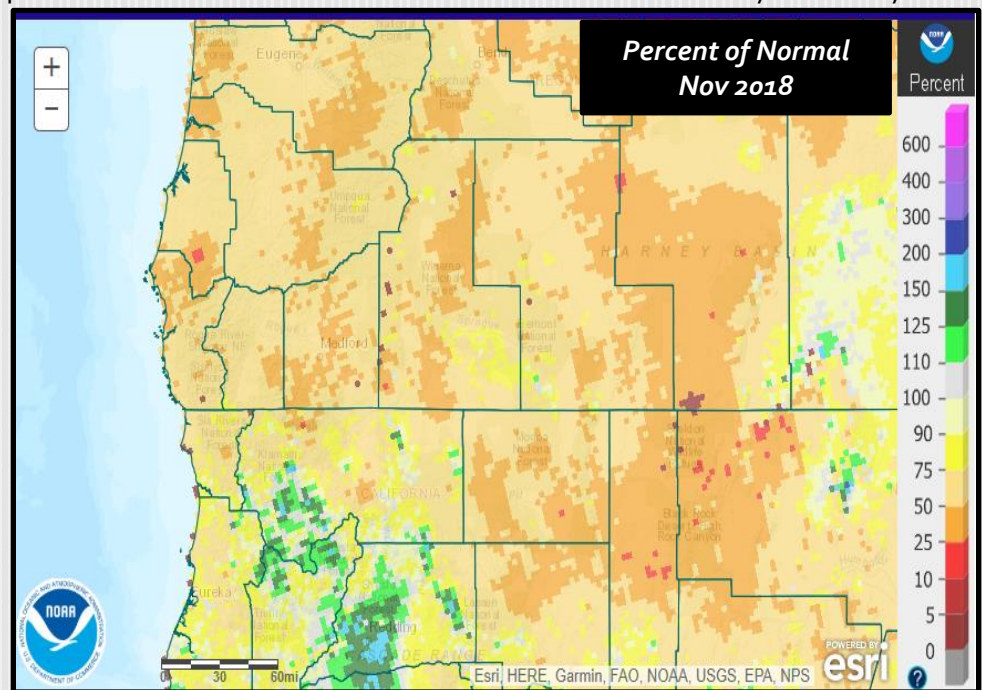
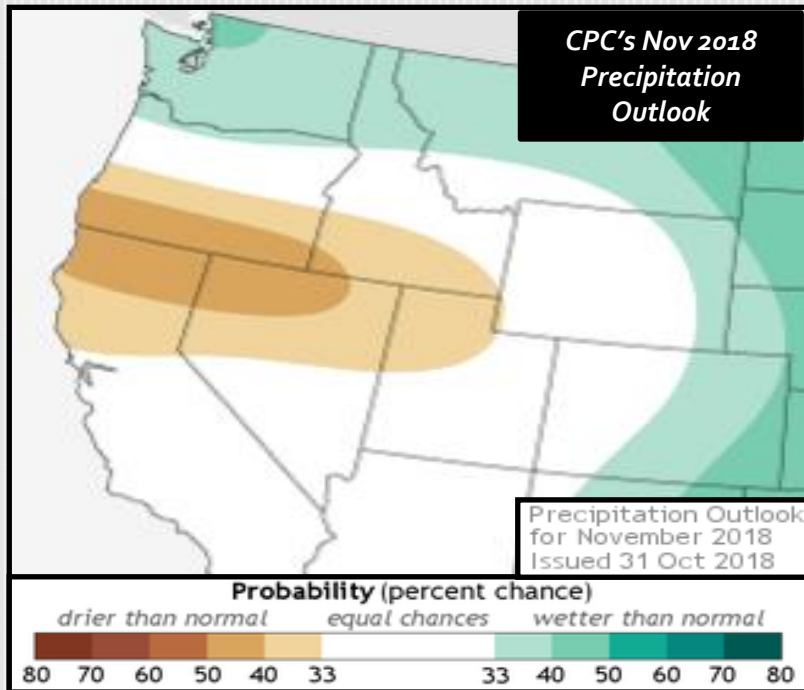
November Precipitation

	<i>Total</i>	<i>Departure from Normal</i>	<i>Greatest 24-hr Total</i>	<i>Date(s)</i>
North Bend	5.92"	-4.31"	1.40"	21 st
Roseburg	3.58"	-2.88"	0.71"	21 st
Medford	1.39"	-1.63"	0.29"	27 th
Klamath Falls	0.90"	-1.29"	0.35"	23 rd
Montague, CA	1.27"	-1.70"	0.44"	27 th
Mt. Shasta City, CA	4.16"	-0.92"	1.40"	29 th
Alturas, CA	0.96"	-0.83"	0.39"	27 th



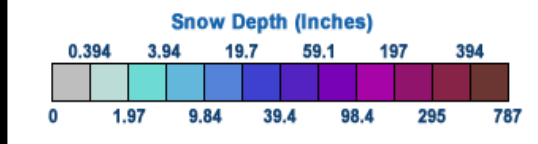
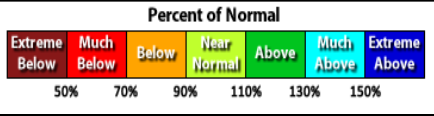
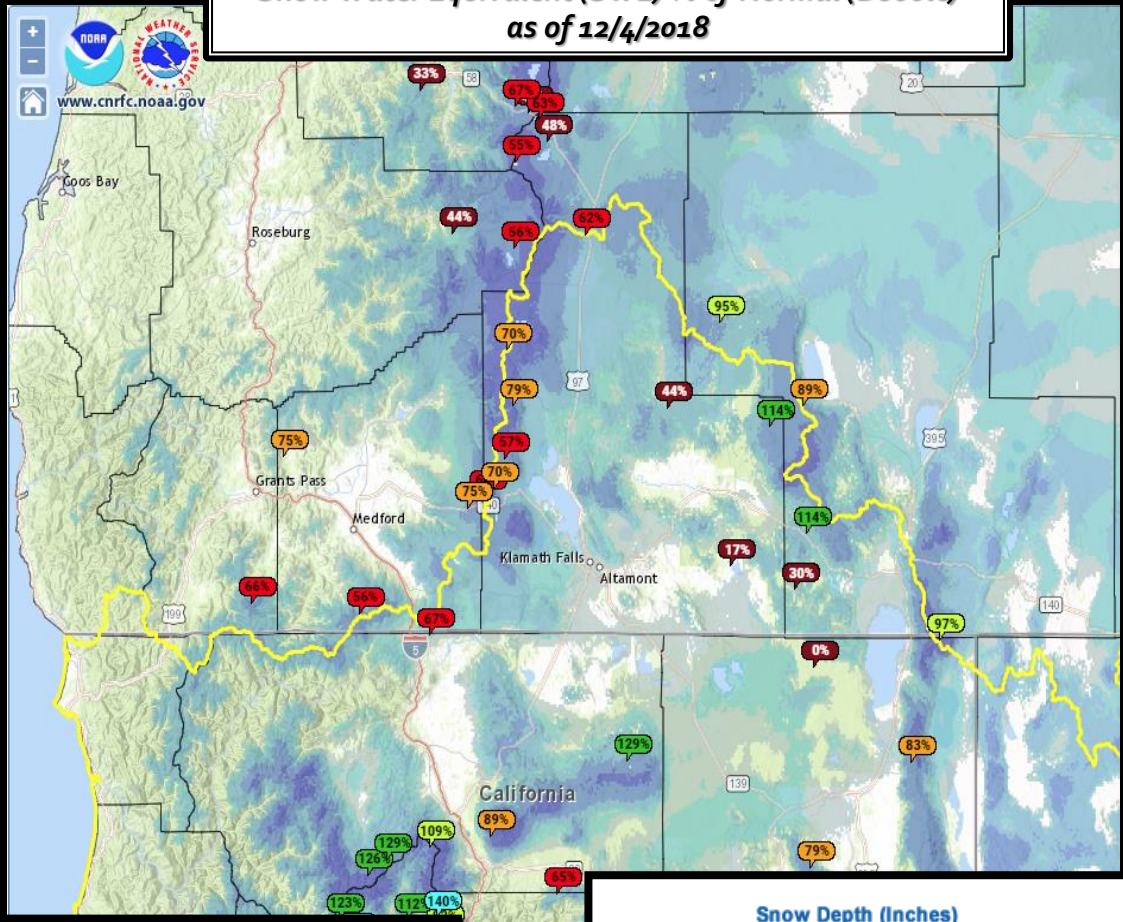
A Look Back at the Oct 2018 Precipitation Outlook

- **Was the forecast anomaly correct?** CPC's forecast for increased probability of below normal precipitation was generally good. A small portion of Siskiyou County did get near to slightly above normal precipitation. It should be noted that there are some pixels of missing data in this analysis, primarily where there are very low %s being indicated. Please note the WestWide Drought Tracker (slide 7) depiction is a bit different.
- **Was the expected impact correct?** Yes. Our mid-month update correctly indicated "periods of high southerly winds and resultant waves during bigger storms (possible 22nd-23rd), snow affecting travel, and possible minor, localized flooding during periods of heavy rain" beginning around the 21st as well as the impacts of "ending fire season and diminishing precipitation and reservoir deficits."
- **Did our forecast improve upon the CPC forecast?** Yes. Our updated forecast did a good job detailing "substantial precipitation from November 21st through the 30th ", and that "precipitation amounts are unlikely to be enough to meet monthly normals". We also correctly indicated that some lower elevations of the east side could end up near normal. We did miss the small wetter areas in Siskiyou County.



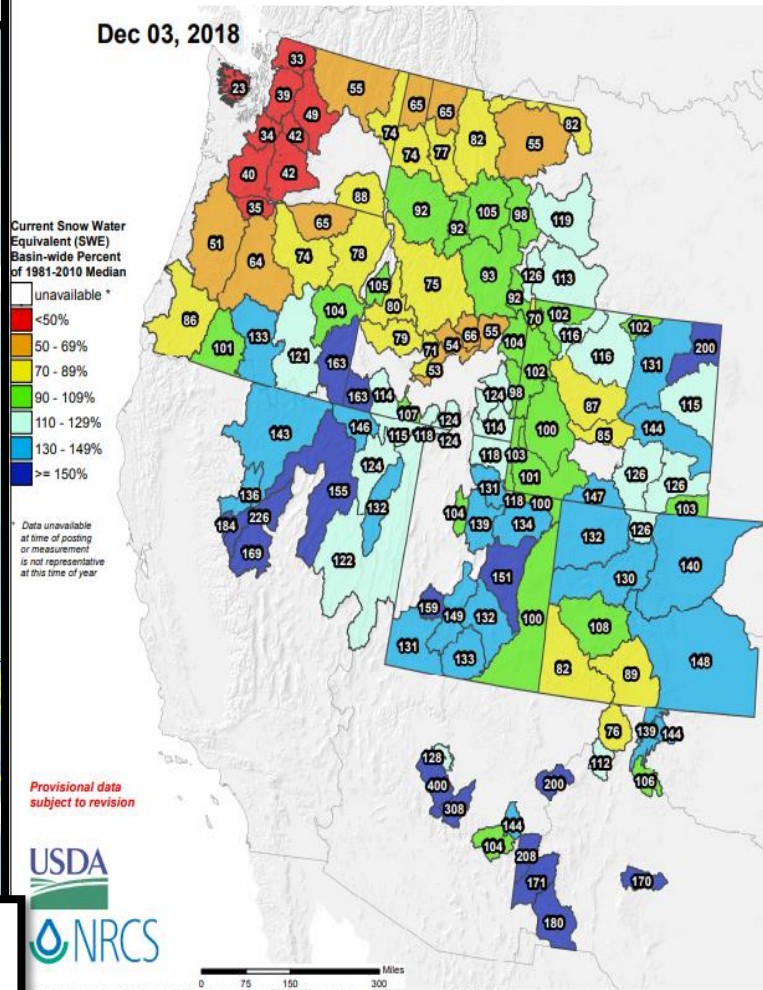
Snowpack Status

NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 12/4/2018



Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Dec 03, 2018



Provisional data
subject to revision



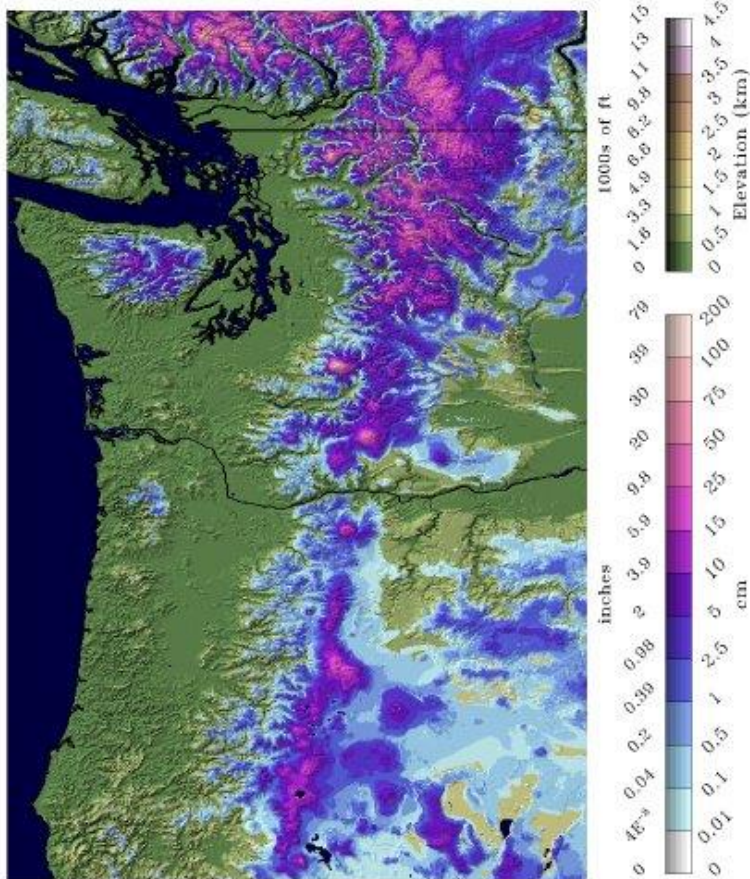
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

PacNW SWE & SD as of 12/1/18

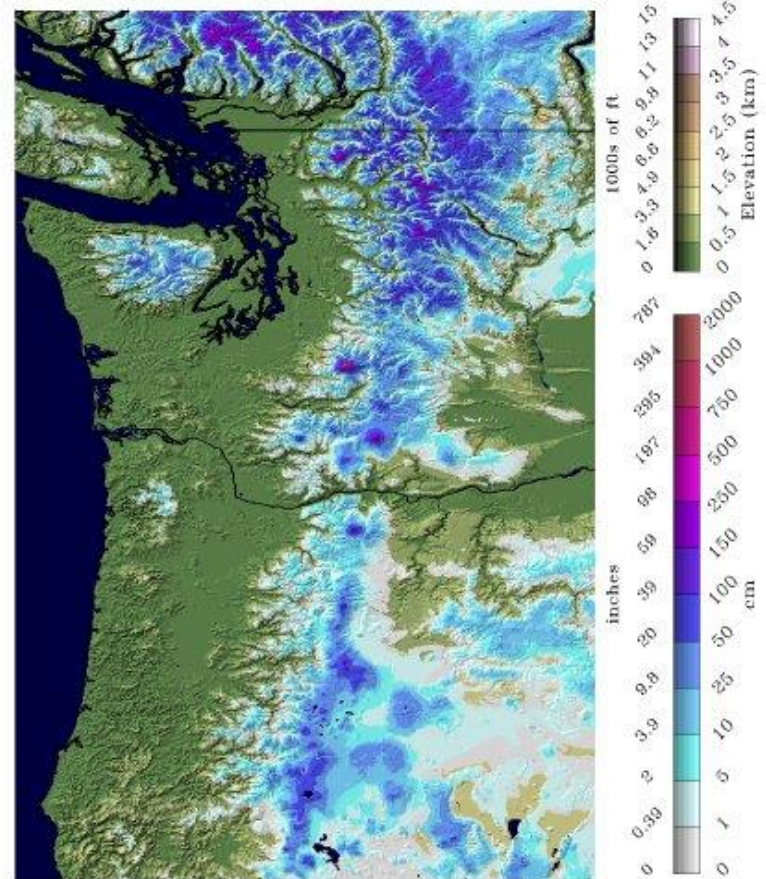
Snow Water Equivalent

2018-12-01 06 UTC



Snow Depth

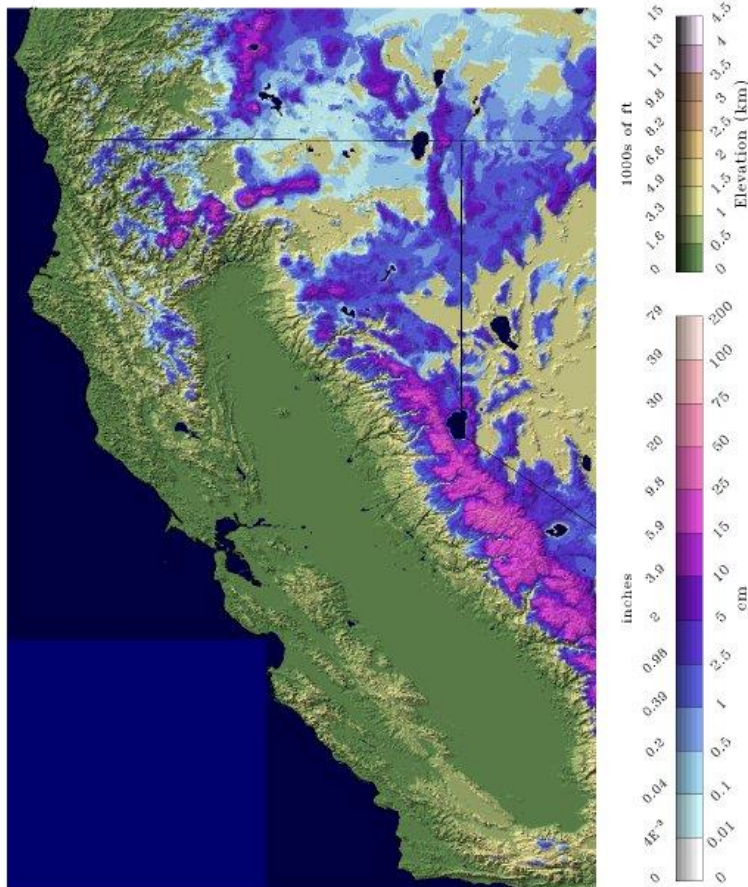
2018-12-01 06 UTC



California SWE & SD as of 12/1/18

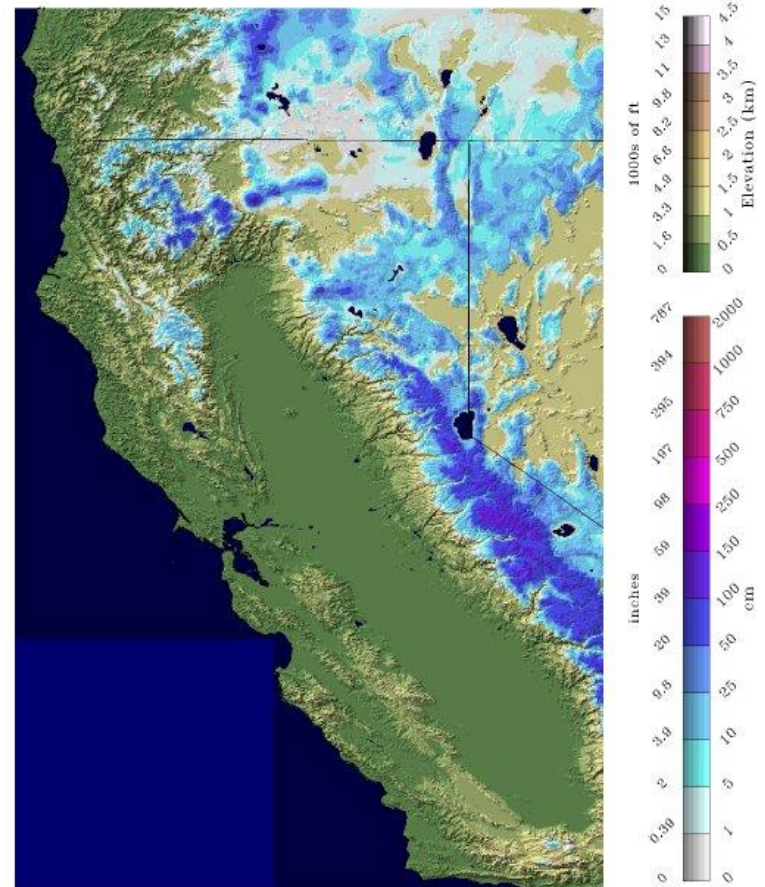
Snow Water Equivalent

2018-12-01 06 UTC



Snow Depth

2018-12-01 06 UTC



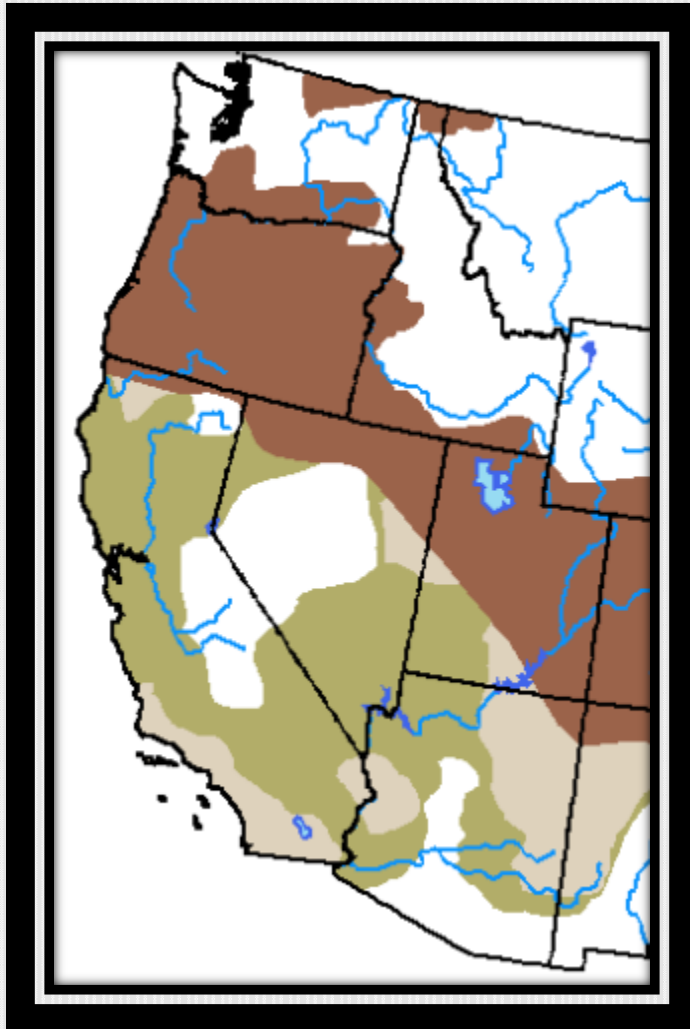
Crater Lake

Image Courtesy: NPS



	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 11/30/18	Highest Max/ Lowest Min
<i>November</i>	42.2°	25.0°	7.99"	29.4"	21"	54° on 10 th & 16 th / 19° on 8 th , 10 th , & 24 th
<i>Normal (1981-2010)</i>	38.0°	22.0°	10.25"	71.1"	28"	N/A

Drought Outlook: December



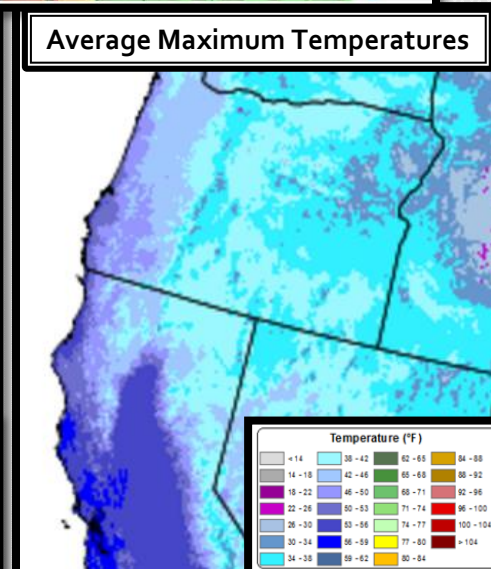
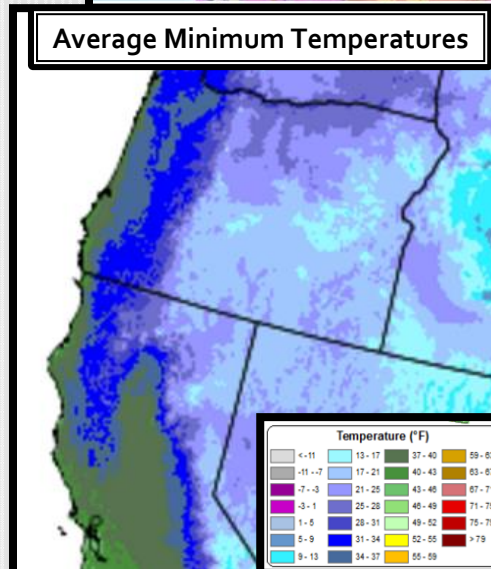
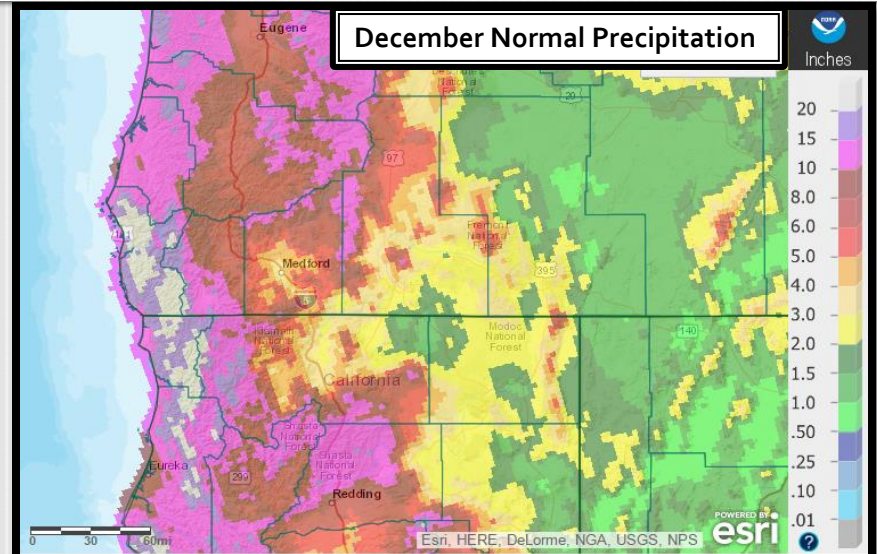
***Valid for December 2018
Released November 30, 2018***

Looking Ahead: Normals for December (1981-2010)

December is typically the wettest month of the year, collectively, for southwest Oregon and far northern California. The driest locations of Lake County average only a half inch to an inch of water. Most valleys east of the Cascades typically receive 1-4 inches of water, while the mountains east of the Cascades typically see 3-9 inches of water. For the Cascades and Mount Shasta area, typical December totals are 8-15 inches. The drier West Side Valleys, like the Bear Creek drainage of the Rogue Valley and the Shasta and Scott Valleys in California, usually receive 2-5 inches. The remainder of the West Side receives 5-15 inches, although the wettest portions of the Umpqua Basin, the Coast and the Coast Range get 15-20+ inches during an average December.

Much of this water often falls as snow above 4,500 feet MSL. For instance, the 1981-2010 average December snowfall for Crater Lake National Park Headquarters is 92.6". Snow depth there usually is 35.4" on December 1st and 67.5" on December 31st based on the same average period.

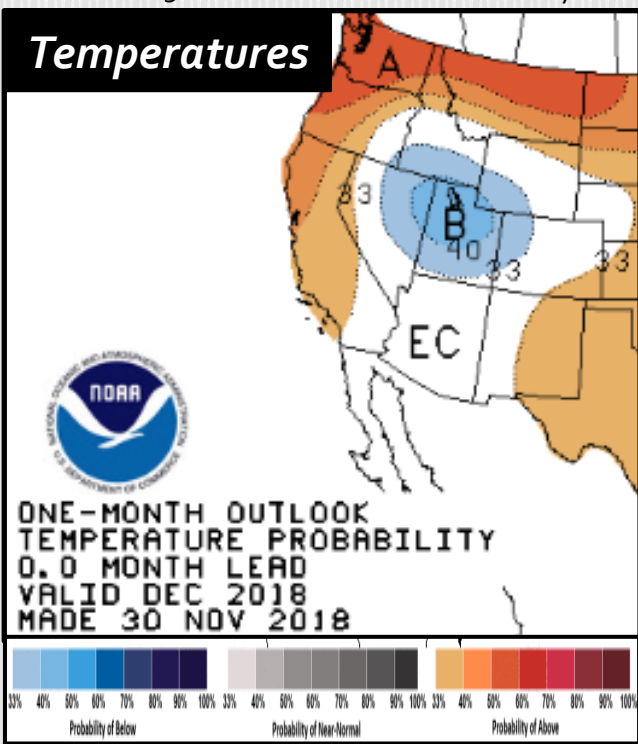
Typical daily high temperatures are 30°F to near 40°F in the mountains above 5000 feet and across the East Side and in the mid 40s to mid 50s west of the Cascades. Normal low temperatures are in the mid teens in the coldest locations on the East Side and on Mount Shasta to the upper 20s in and near the Cascades. West of the Cascades to the coast lower 30s to mid 40s are most typical from east to west.



December 2018 Outlook

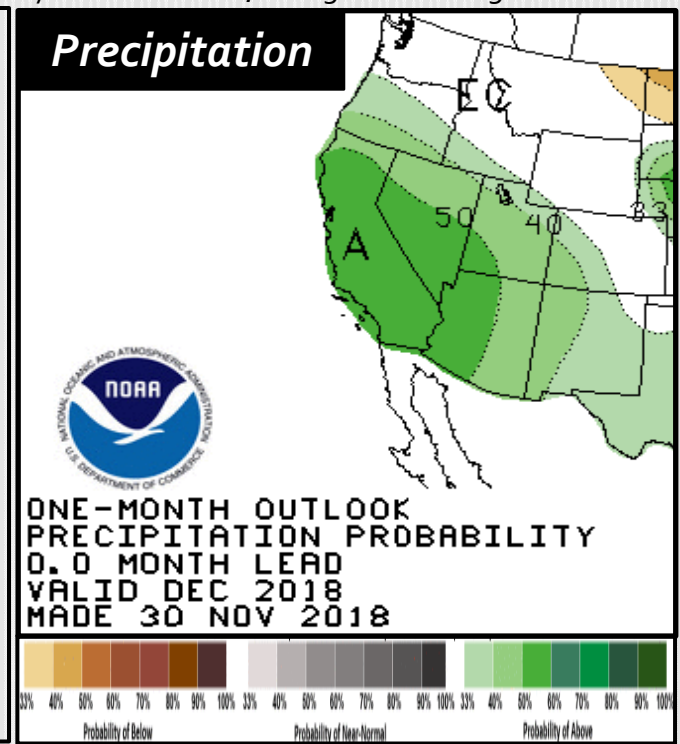
(Updated December 6th)

The official CPC forecast for December 2018 predicts greatly increased chances for above normal temperatures (33-50%) and substantially increased chances of above normal precipitation (approx. 35-55%). Of note, the end of month update made by CPC expanded the chances of above normal precipitation northward into all of the Medford area from California. Based on the latest indications from the models, this forecast looks generally good and on track. Temperatures are least likely to be above normal (0 to +2F) across Curry County and our California areas due to consistently wet weather, while areas that get warming due to down sloping in a southwest to westerly flow (mainly areas to the lee of the Cascades and Siskiyou) are likely to be warmest (+2° to +4°F) anomalies. We expect precipitation should be near to above normal, greatest across our California area and Curry and Josephine counties. Snow levels are likely to be higher than the 1981-2010 normal, but snow water equivalent should be near normal to above normal above 6kft by month's end from about Mt McLoughlin southward. Regarding specifics, model guidance has varied quite a bit as to when the wettest portion of the month will be. An active MJO moving into phase 3 around December 9th increases the chance of very wet weather/major storm activity from approximately the 11th to 21st, though it is not a guarantee.



Expected Impact, Dec 2018:

December is typically the wettest month for our area and a wetter and warmer than normal Dec forecast means that flooding is expected, though the slow start to the water year means it's likely to be driven by precipitation rates rather than long term wetness- so more flashy, unless it were to be rain on snow at month's end. With warmer temps, but not extreme, snow will build up high and run-off will increase, so drought relief is expected. Impacting winds are likely, as well as large waves in the coastal waters, typical of Dec. Warmer and wetter means the chances of precip extremes in single events is increased. Altogether, this Dec should be beneficial.



*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 November 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 November 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