National Weather Service Medford

October 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).

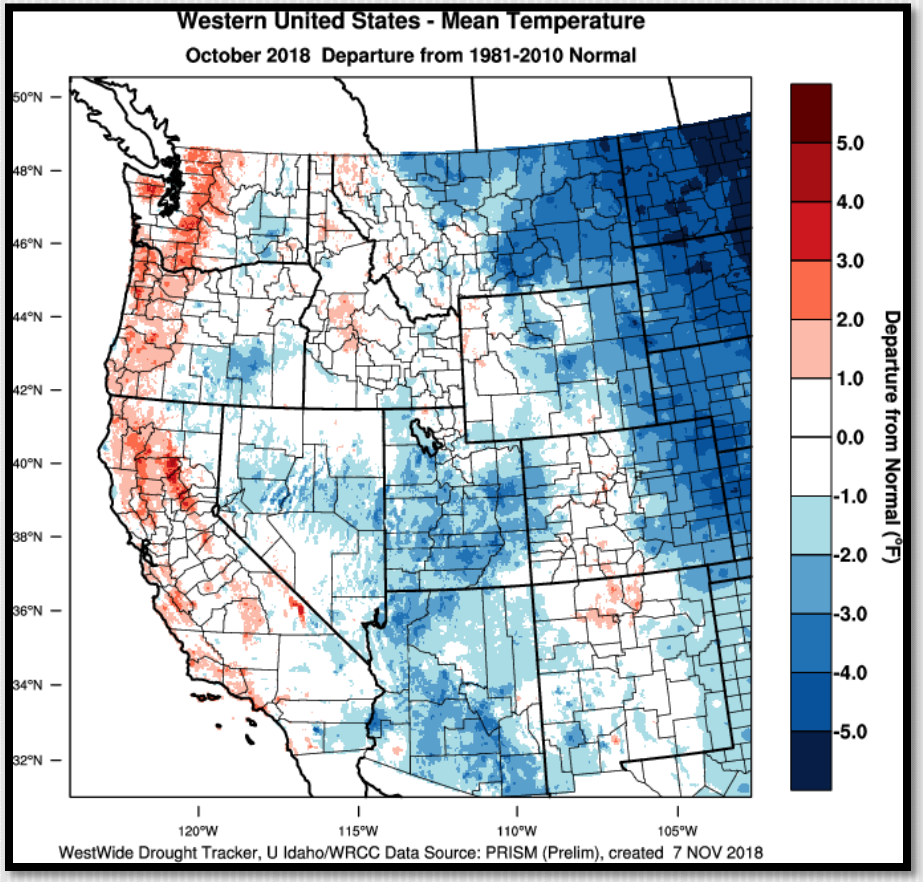
October 2018 Weather Review

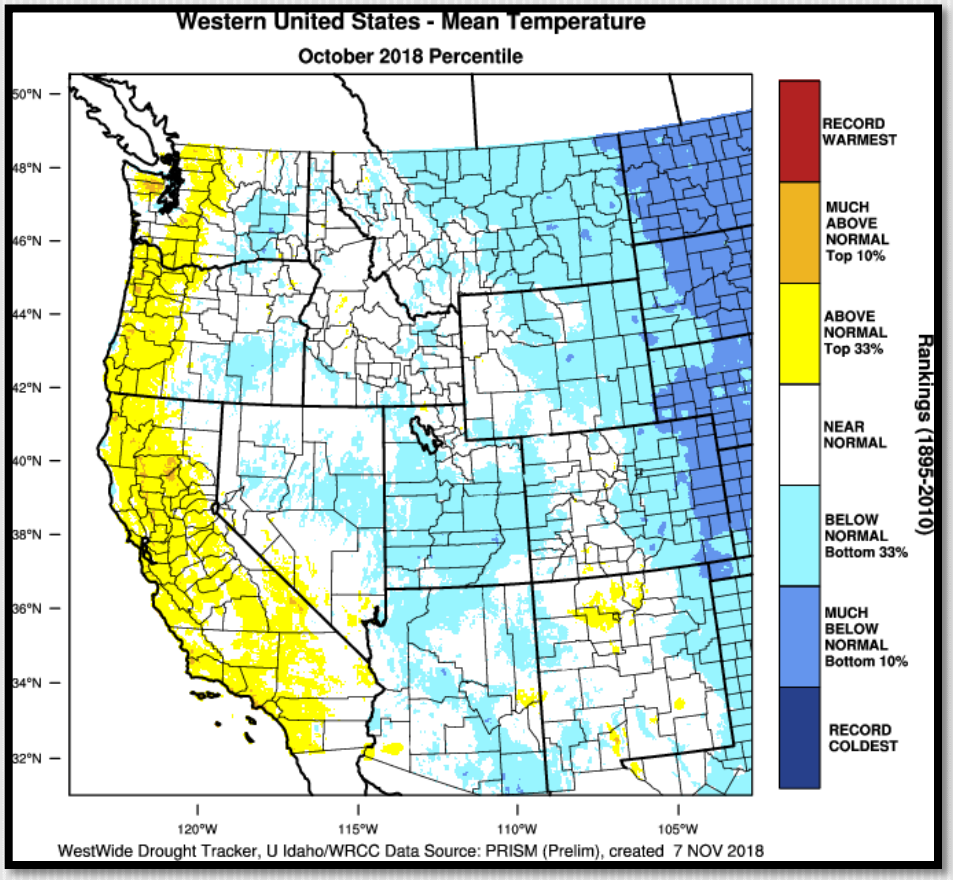
Active weather during the end of September continued for the first week of October, although the first few systems were relatively weak. Only light amounts of precipitation fell during the first few days and temperatures were on the warmer side of normal. On the 5th, a stronger system moved through bringing cooler than normal temperatures, as well as another round of wetting rains and even a dusting of snow in the mountains. The cooler, wetter weather didn't last long however, as a ridge and thermal trough pattern settled over the area.

Gradual warming occurred as a result over the next week, and during the middle portion of the month, temperatures were well above normal and conditions remained dry during this time. The associated surface thermal trough along the coast brought not only much warmer than normal temperatures, but also a flare up in the Klondike Fire. Strong offshore (east to northeast) winds fanned the flames and warm, dry conditions promoted fire growth during the period. Red Flag warnings were in effect for much of the middle of the month due to these conditions. During this warm period, large diurnal temperature ranges occurred making for very warm afternoons west of the Cascades and cold nights east of the Cascades. Both high and low temperature records, west of the Cascades and east of the Cascades respectively, were set during this time.

After this prolonged period of warm and dry conditions, the weather pattern finally became more active. On the 23rd, a cold front brought much cooler weather, and while inland locations received very little rain, more significant amounts fell over the Klondike wildfire which significantly diminished fire activity. Cooler weather lingered for the remainder of the month as more significant frontal systems followed, bringing considerable rain to coastal areas but not much for inland locations. More significant amounts of precipitation fell inland, mainly west of the Cascades, during the 28th and 29th. The month ended with cooler active weather and very little snow pack.

October 2018 *Observed Temperatures*





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	54.8	***+1.4°***	62.5	***+1.6°***	47.1	***+1.1°***
Roseburg	57.7	***+2.2°***	70.3	***+4.0°***	45.1	***+0.3°***
Medford	56.7	***+0.7°***	70.8	***+0.9°***	42.5	***+0.5°***
Klamath Falls	46.6	***-0.4°***	64.0	***+1.1°***	29.3	***-1.7°***
Montague, CA	52.5	***+0.7°***	69.9	***+2.3°***	35.1	***-0.9°***
Mt. Shasta City, CA	51.6	***+0.4°***	67.0	***+1.0°***	36.3	***-0.2°***
Alturas, CA	46.2	***-0.5°***	64.5	***-0.7°***	28.0	***-0.3°***

Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	78°	14th	40°	3rd
Roseburg	82°	16th & 17th	35°	15th
Medford	85°	20th	34°	16th
Klamath Falls	75°	20th	17°	30th
Montague, CA	80°	20th	23°	15th
Mt. Shasta City, CA	80°	20th	27°	15th
Alturas, CA	75°	20th	14°	30th

	Date	Record *Low*	Old Record/Year
Klamath Falls	15th	19°	21° / 1913
Montague	15th	23°	26° / 2017
Mt. Shasta City	15th	27°	Ties with 1981

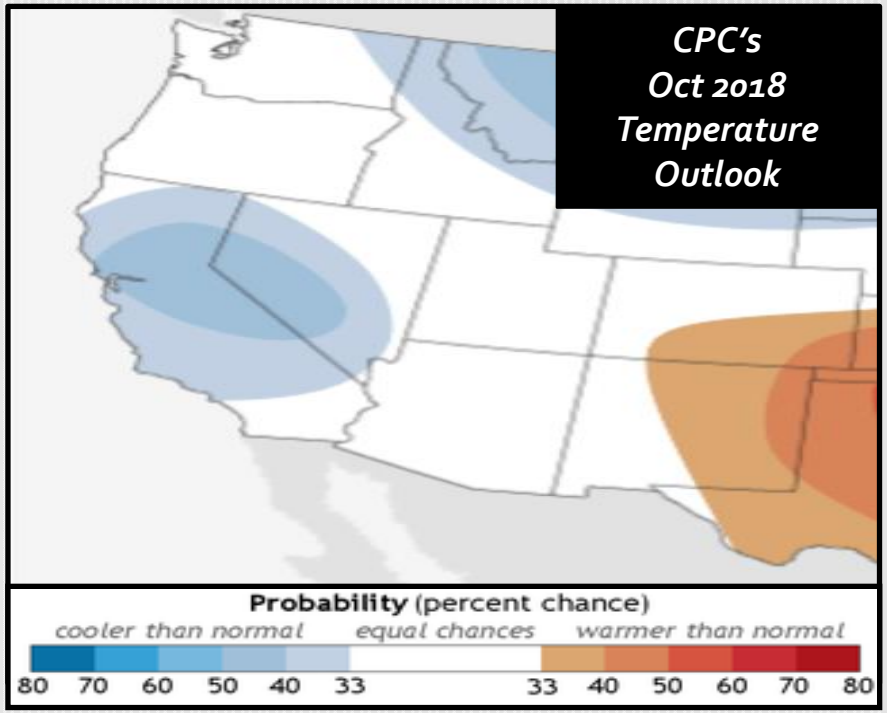
	Date	Record *High*	Old Record/Year
Roseburg	16th	82°	80° / 2003
Medford	21st	85°	83° / 1987

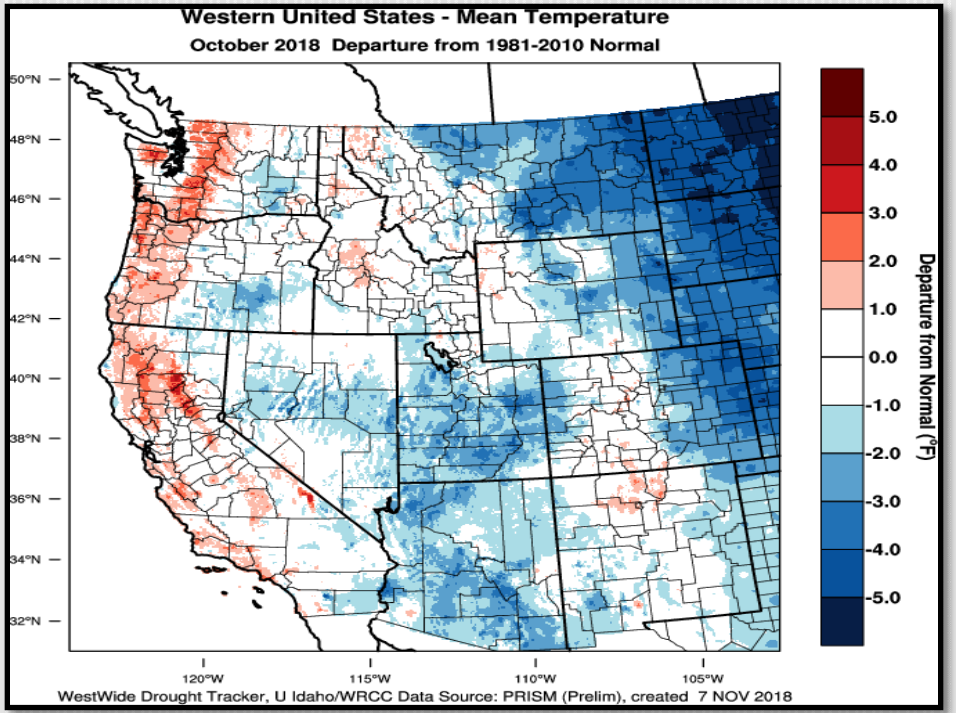
A Look Back at the Oct 2018 Temperature Outlook

- ***Was the forecast anomaly correct?*** CPC's probabilistic forecast ended up being a pretty good forecast for our Medford NWS forecast area in that it did indicate an increased chance of below normal temperatures over NE California and equal chance of above, near, and below normal elsewhere.

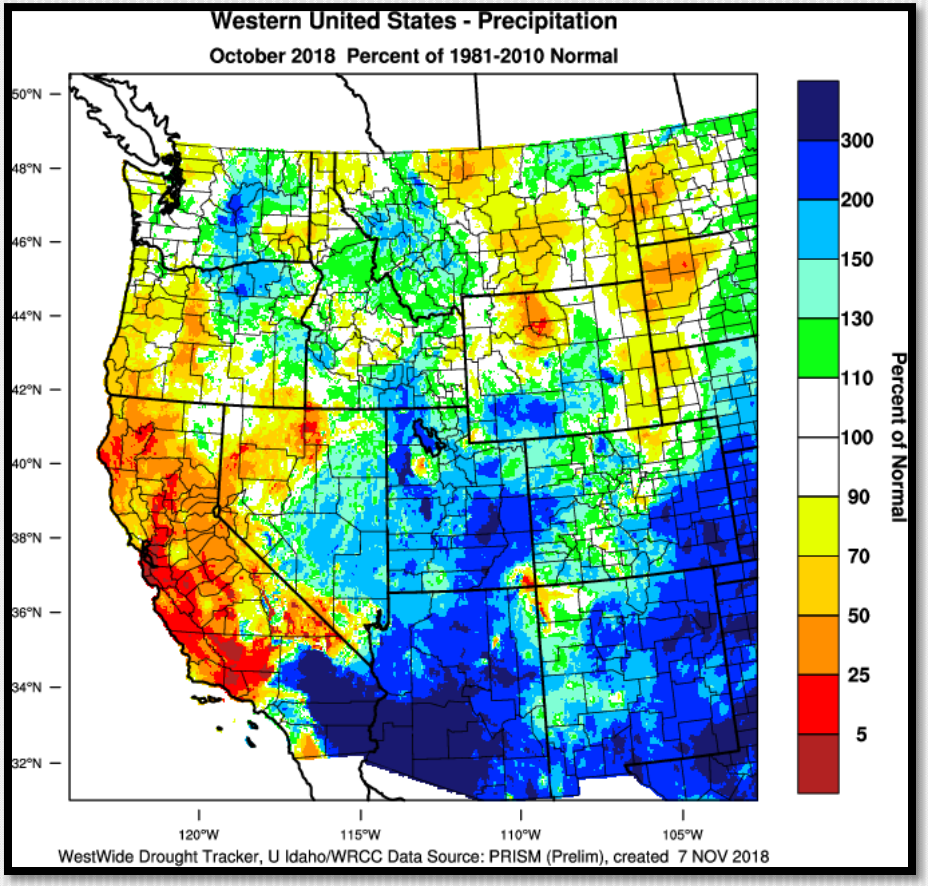
- ***Was the expected impact correct?*** Our localized forecast correctly identified the impact of "frost/freeze" continuing "to end the growing season for most areas away from the coast and Umpqua Basin, though definitive freezing temperatures did not reach some of the said areas until early November.

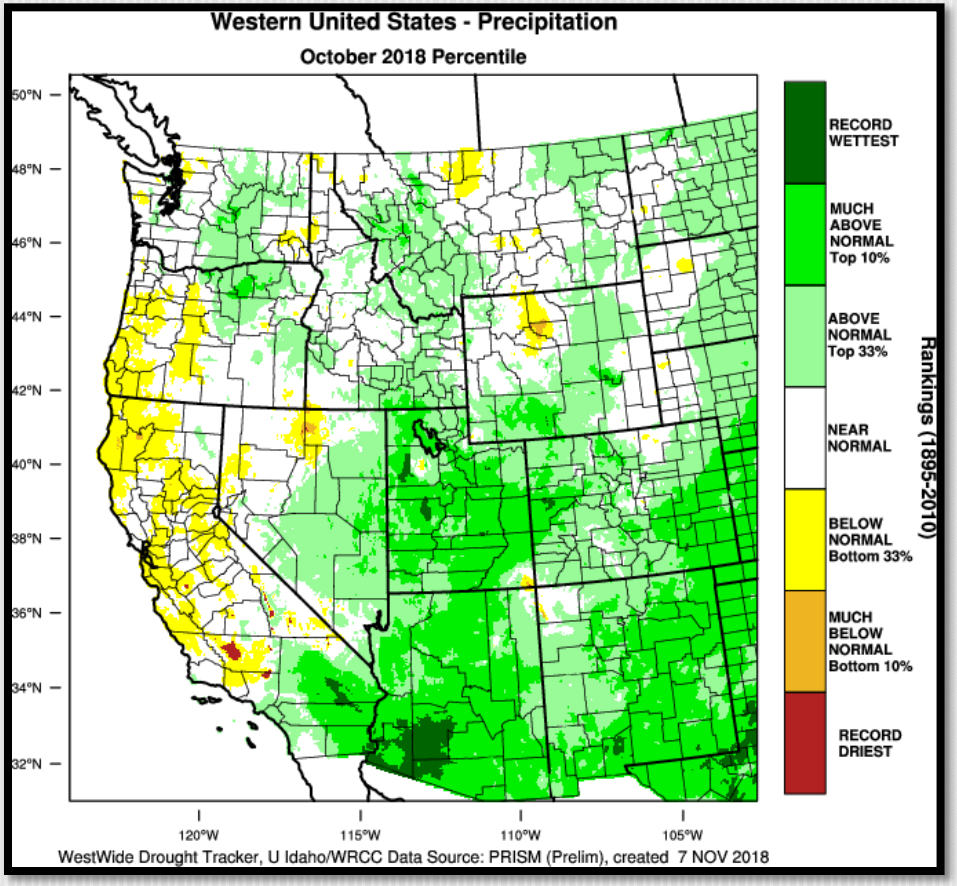
- ***Did our forecast improve upon the CPC forecast?*** Our mid-month forecast was definitely an improvement on CPC's in that we indicated overall temperatures for the month to be 1-3 degrees above normal west of the Cascades, and 0-3 degrees below normal for areas east of the Cascades. We also correctly identified that the 2nd half of the month would be warmer than the 1st half.





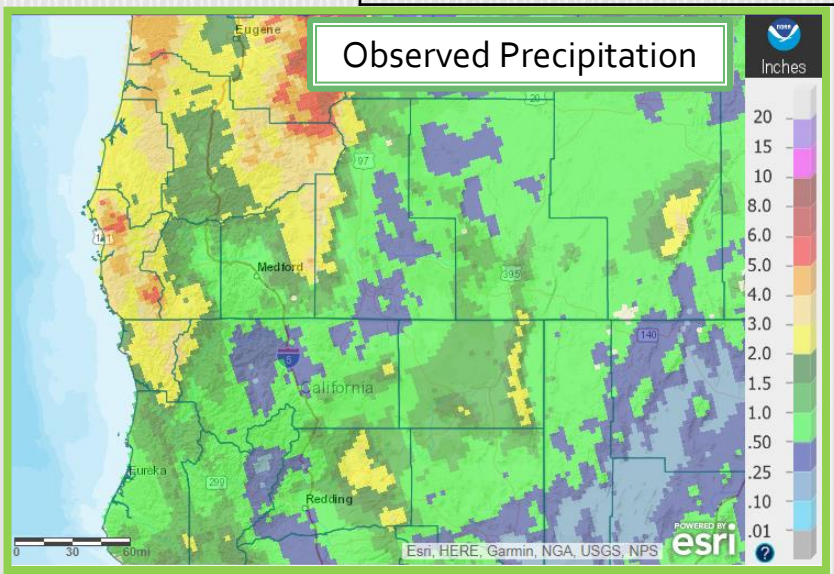
October 2018 *Observed Precipitation*

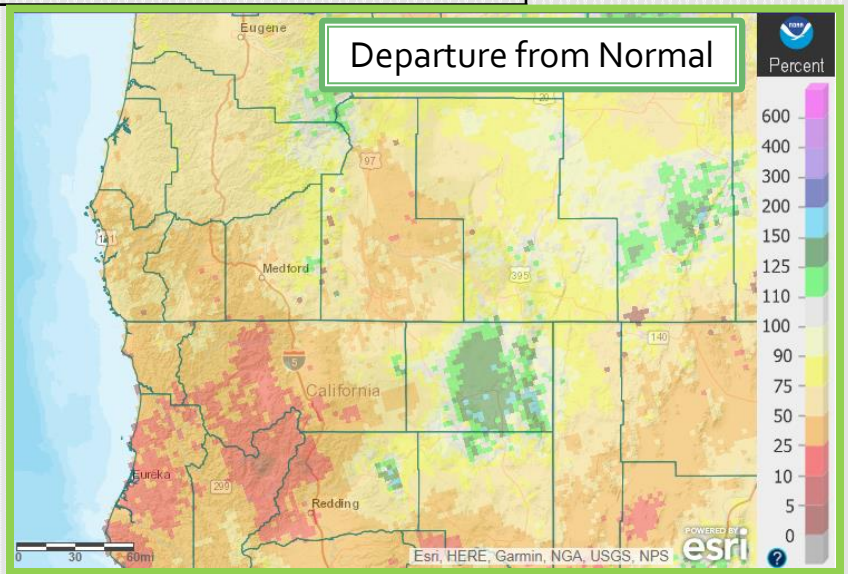




October Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	2.49"	-2.24"	0.78"	5th
Roseburg	1.22"	-1.45"	0.28"	5th
Medford	0.60"	-0.53"	0.31"	5th
Klamath Falls	0.41"	-0.64"	0.17"	3rd
Montague, CA	0.56"	-0.64"	0.26"	3rd
Mt. Shasta City, CA	0.57"	-1.71"	0.19"	4th
Alturas, CA	1.26"	0.25"	0.90"	4th



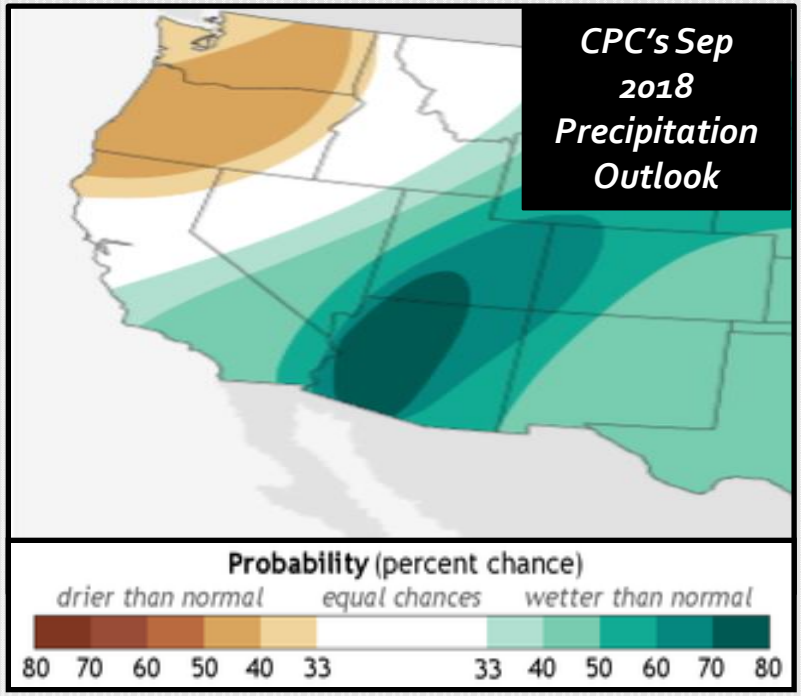


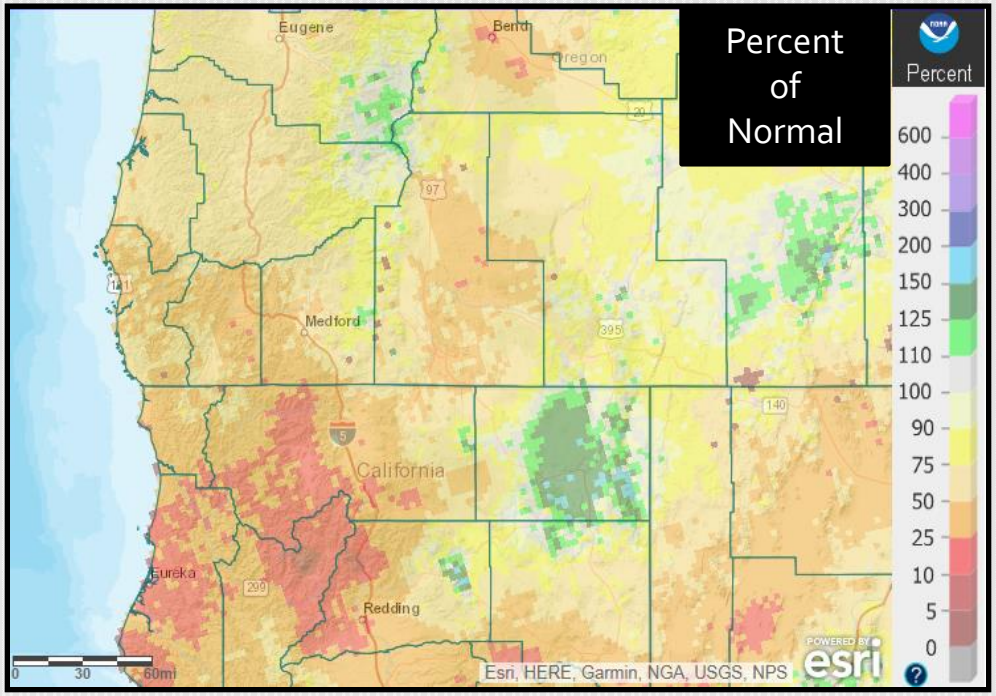
A Look Back at the Oct 2018 Precipitation Outlook

- ***Was the forecast anomaly correct?*** CPC's forecast for increased probabilities of below normal precipitation was generally good. The main area where it was wetter than normal in Modoc County had a lesser increased chance of below normal precipitation.

- ***Was the expected impact correct?*** Yes. We correctly forecast a "dry air mass" maintaining "wildfire concerns through the 23rd, and stream flows" continuing to be below average west of the Cascades". We also correctly identified "rain after the 23rd " diminishing "wildfire concerns".

- ***Did our forecast improve upon the CPC forecast?*** Yes. Our updated forecast did a good job detailing "Precipitation between the 23rd and 31st", and that "areas along and near the coastal ranges" finishing "below normal" for precipitation "as amounts probably will not overcome current deficits." The part of our updated outlook that said "areas along, near, and east of the Cascades should finish the month with near to above normal precipitation" was correct for some locations, but did not work out for much of Klamath and eastern Siskiyou counties.



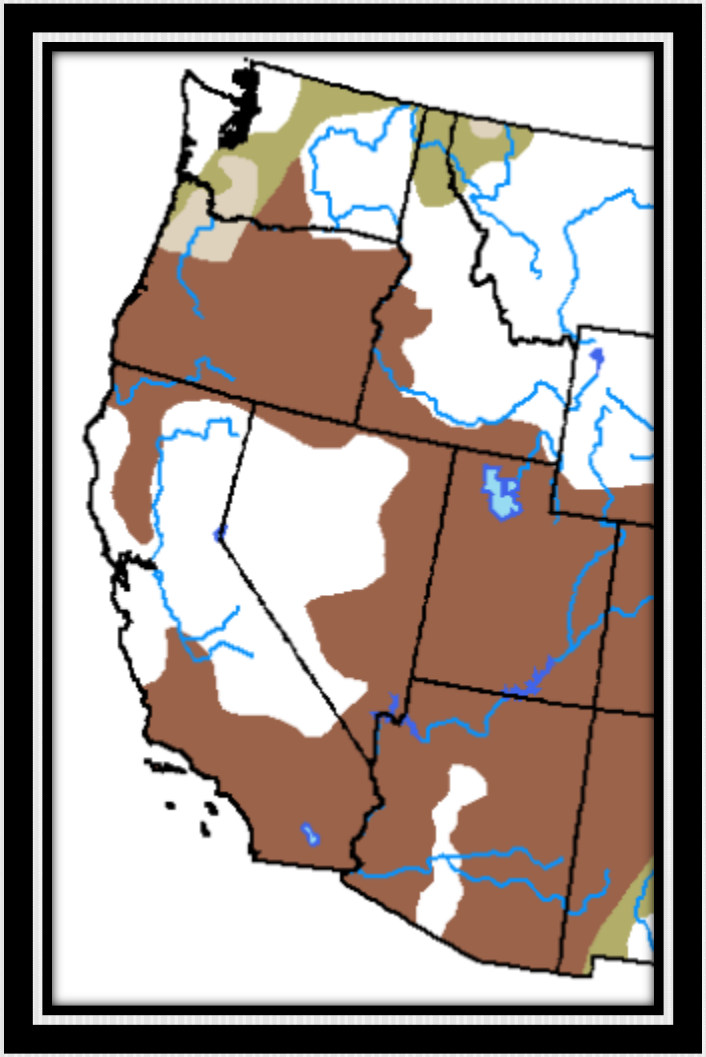


Crater Lake


Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 10/31/18	Highest Max/ Lowest Min
October	*50.9°*	*31.6°*	*3.70″*	*4.3″*	*0″*	*66° on 21st / 18° on 30th*
Normal (1981-2010)	*52.0°*	*30.0°*	*4.42″*	*18.3″*	*7″*	N/A

Drought Outlook: November



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

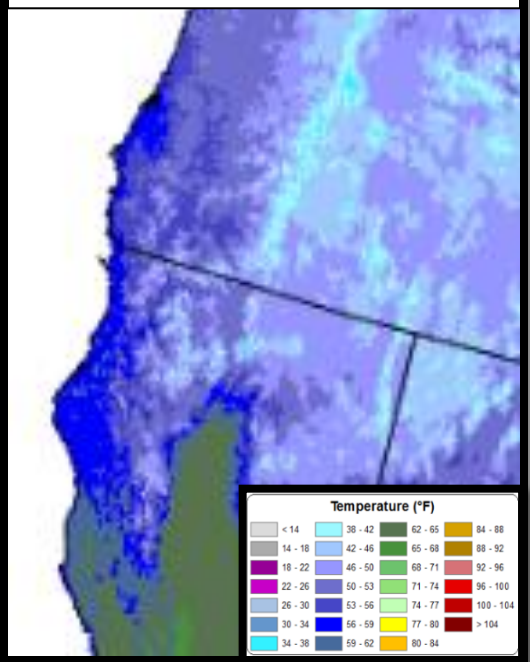
Valid for November 2018
Released October 31, 2018

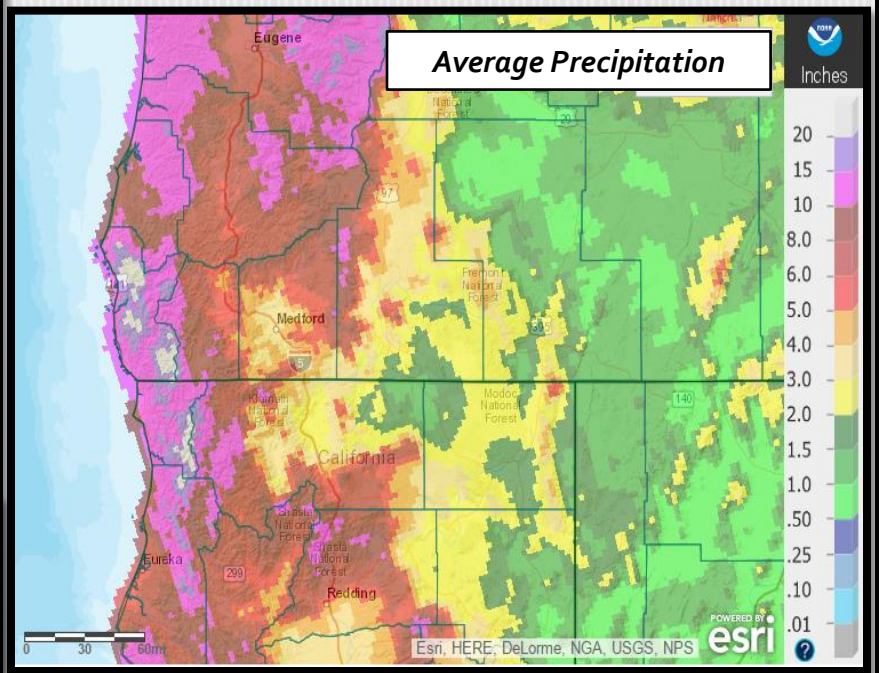
http://www.cpc.ncep.noaa.gov/products/expert_assessment/month_drought.png

Looking Ahead: Normals for November (1981-2010)

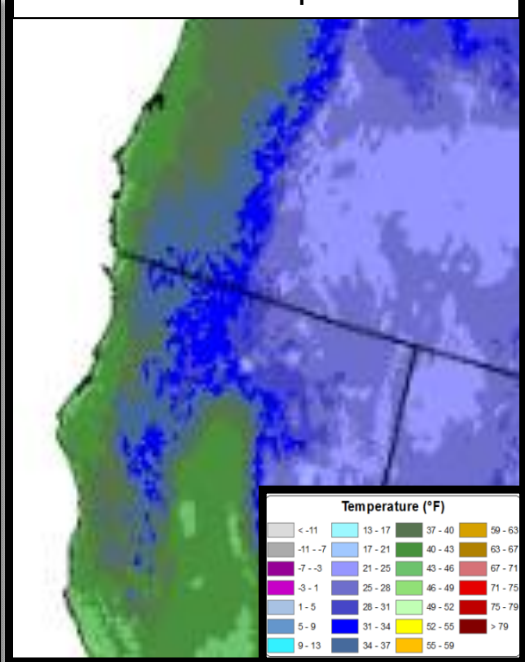
November is a key month for the wet season, resulting in, on average, the second greatest single month precipitation totals across the area. Typically, this is the month when snowpack starts to build in the mountains. The historical average snow depth (1931-2000) at Crater Lake NP Headquarters is 7 inches on the Nov 1st and grows to 29 inches by the 30th. More appreciable snowpack is typical above 7,000 feet in the Cascades. Daily high temperatures are typically in the 30s to lower 40s in the mountains, in the 40s for valleys east of the Cascades, and in the 50 to 60 degree range in the valleys west of the Cascades. Daily low temperatures are in the 20s east of the Cascades, in the 30s and 40s from the Cascades westward, and in the lower 50s along the immediate coast. Precipitation is usually an inch or more for most of the forecast area, with 8 inches or more for all mountainous areas from the Cascades westward. Valleys west of the Cascades generally get 2-8 inches of water, while the valleys east of the Cascades get 1-3 inches. The Cascades typically receive 8 inches or more of water, with 10 to 20+ inches in the Coastal Mountains.

Maximum Temperatures



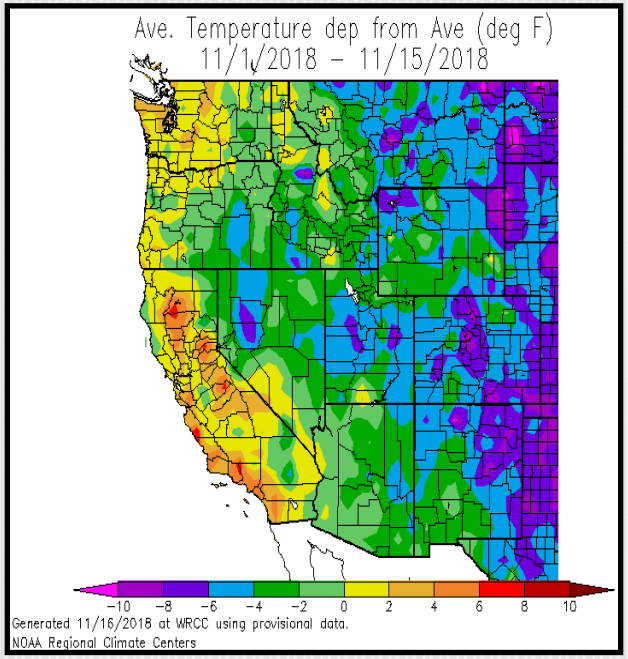


Minimum Temperatures

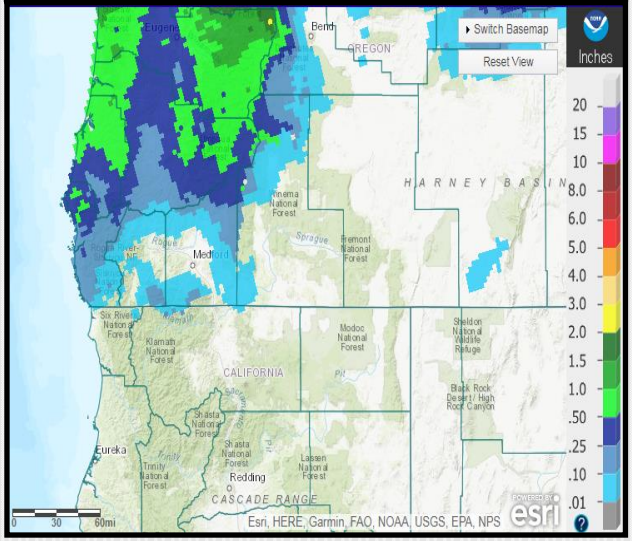


Observed Weather: Nov 1st-15th, 2018

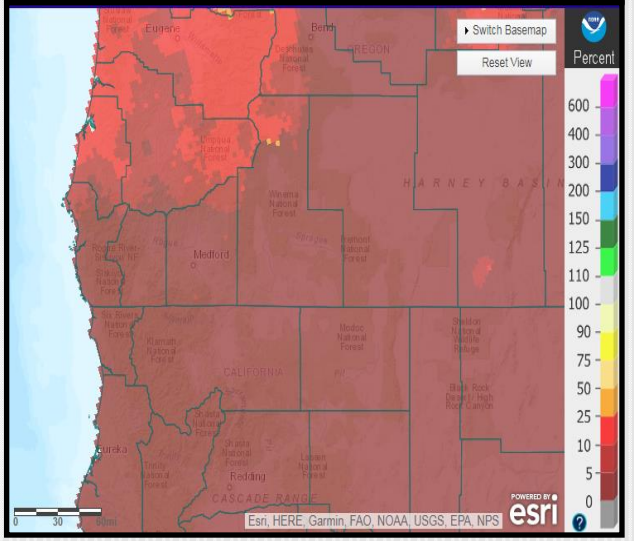
Temperatures for the first half of November have been colder than normal for most of the eastern half of the forecast area and slightly above normal for portions of the west side. This only tells part of the story. Persistent high pressure over and centered northwest through northeast of the area has resulted in strong inversion conditions, and we've had at least a couple of east wind events. This and very little to no precipitation has resulted in a very dry air mass across the area. Overnight lows have been generally below normal across the valleys and, it's generally been warmer across the mountains and higher terrain of the west side. The dry air has also resulted in above normal daily maximum temperatures for most of the area this month. Precipitation, thus far, this month has been less than 25% of normal for just about all locations. For areas that have had no measurable precipitation, this is or has tied the driest first half of November on record. Of note, for areas than have had precipitation, it is not the driest on record, but is one of 10 driest 1st halves of November on record.



1981-2010 Observed Precipitation In Inches, Nov 1-15, 2018



Observed Precipitation % of Normal, Nov 1-15, 2018

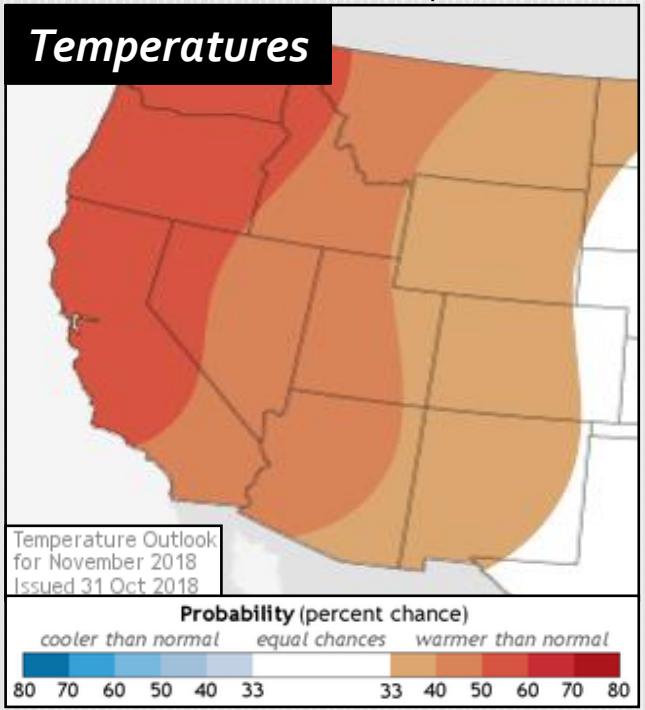


November 2018 Outlook

(Updated Nov 17th)

The official CPC forecast for November 2018 predicts greatly increased chances (50-60%) of above normal temperatures and enhanced chances (40-50%) of below normal precipitation. Based on observations from the first half of the month and expectations from the GEFS for the 2nd half of the month, we expect that temperatures are more likely than not to end up 1 to 3 degrees *below* normal for average temperatures in much of Klamath, Lake, and Modoc counties. For the remainder of the forecast area temperatures are likely to finish the month slightly above normal, with monthly anomalies of 0 to +3F expected. While substantial precipitation is expected from November 21st through the 30th precipitation amounts are unlikely to be enough to meet monthly normals. Models do indicate that the Curry Coastal Mountains will see 5 to 15 inches of rain through month's end. It is within the realm of possibility that some of the normally drier valley locations of the east side favored by a southwest flow could be near normal for precipitation by month's end. One to three feet of snow is expected to accumulate in the mountains through month's end, but amounts are also expected to be lesser than long term averages for both SWE and snow depth.

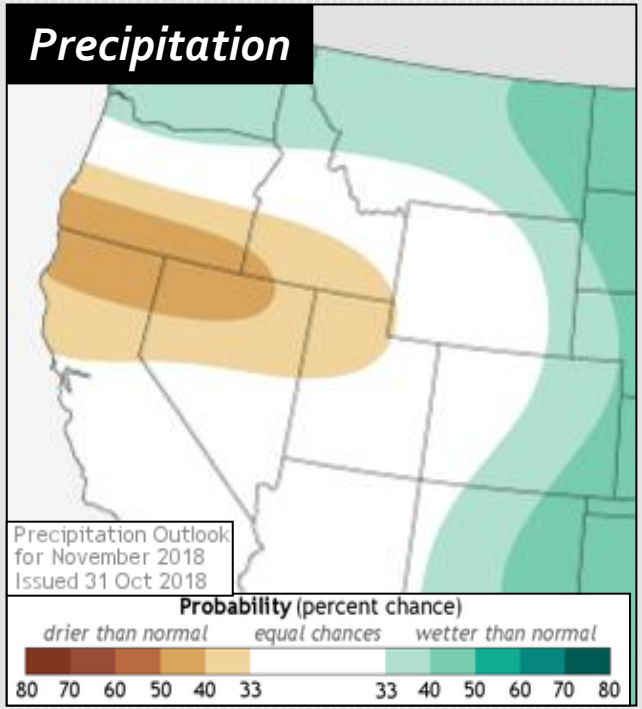
Temperatures



Expected Impacts, Nov 2018:

After a highly anomalously dry start to the month that brought with it some small wildfires, conditions are expected to become more typical of November from the 21st onward. Impacts under such a pattern are 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. Other expected impacts are positive: ending fire season and diminishing precipitation and reservoir deficits.

Precipitation

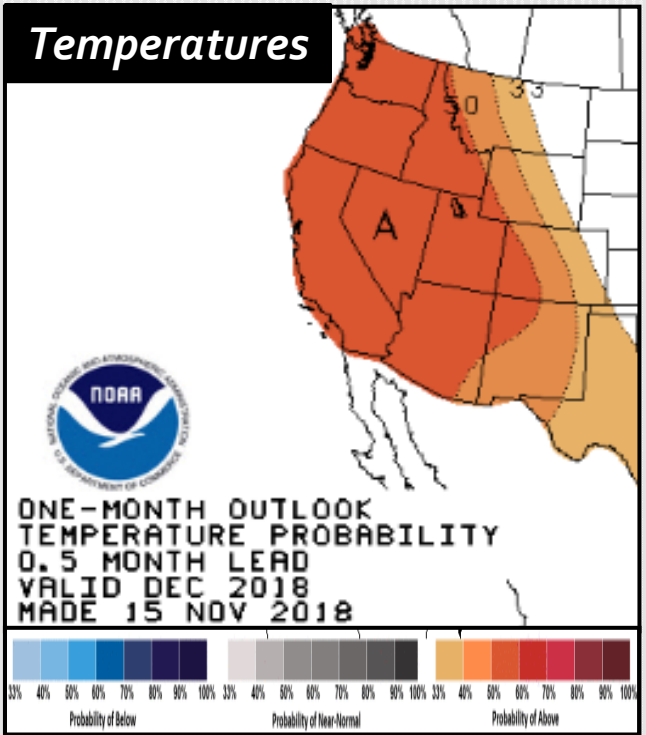


December 2018 Outlook

(Updated Nov 17th)

The official CPC forecast for December 2018 predicts greatly increased chances for above normal temperatures (50-60%) and equal chances of below, near, and above normal temperatures. Virtually all of the models available to us, as well as long term trends, indicate temperatures are likely to be above normal for the month of December, least over southern portions of the forecast area, and greatest over northeast portions of the area and those that get downslope warming under southerly flow such as the Rogue Valley. Anomalies do not appear as if they will be extreme, rather generally on the order of 0 to 3 degrees Fahrenheit. The CFSv2, NMME, IMME, and CanSIPS all indicate increased chances for above average precipitation across most of the forecast area, greatest in California and, to a lesser degree, west of the Cascades. Thus, our local expectations are for above average precipitation for our California areas and other SW flow favored areas, meaning Curry County and the Siskiyous southward. Lesser, but still enhanced confidence exists for above average precipitation for the rest of the area. Snow levels are likely to be higher than the 1981-2010 normal , but snow water equivalent should be near normal above 6kft by month's end, with snow depth near to slightly below normal by the end of the month due to the slow start in November. Confidence is moderate in this forecast

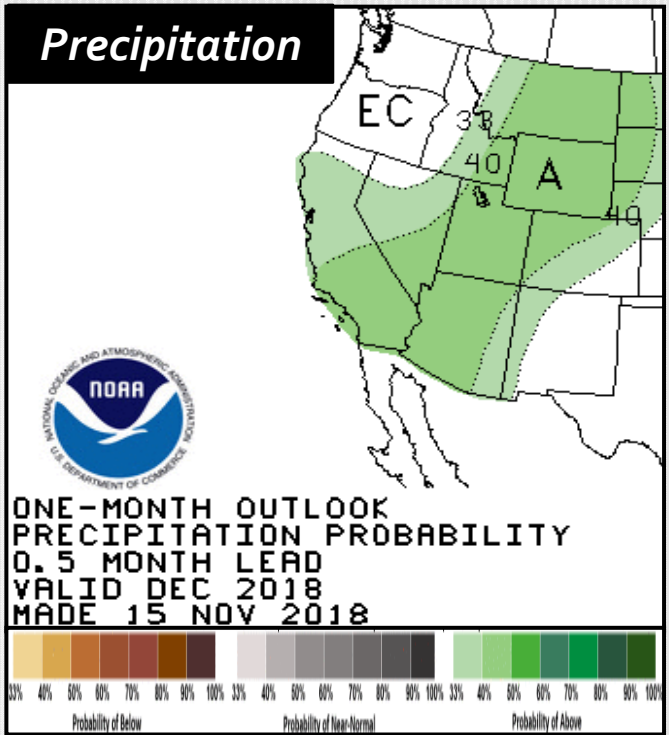
Temperatures



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. With warmer temps, but not extreme, snow will build up high and run-off will increase, so some drought relief is expected. Impacting winds are likely as well as waves in the coastal waters, typical of Dec. Warmer and wetter means the chances extreme single events are increased.

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 October 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 October 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*