National Weather Service Medford

January 2019 Climate Summary

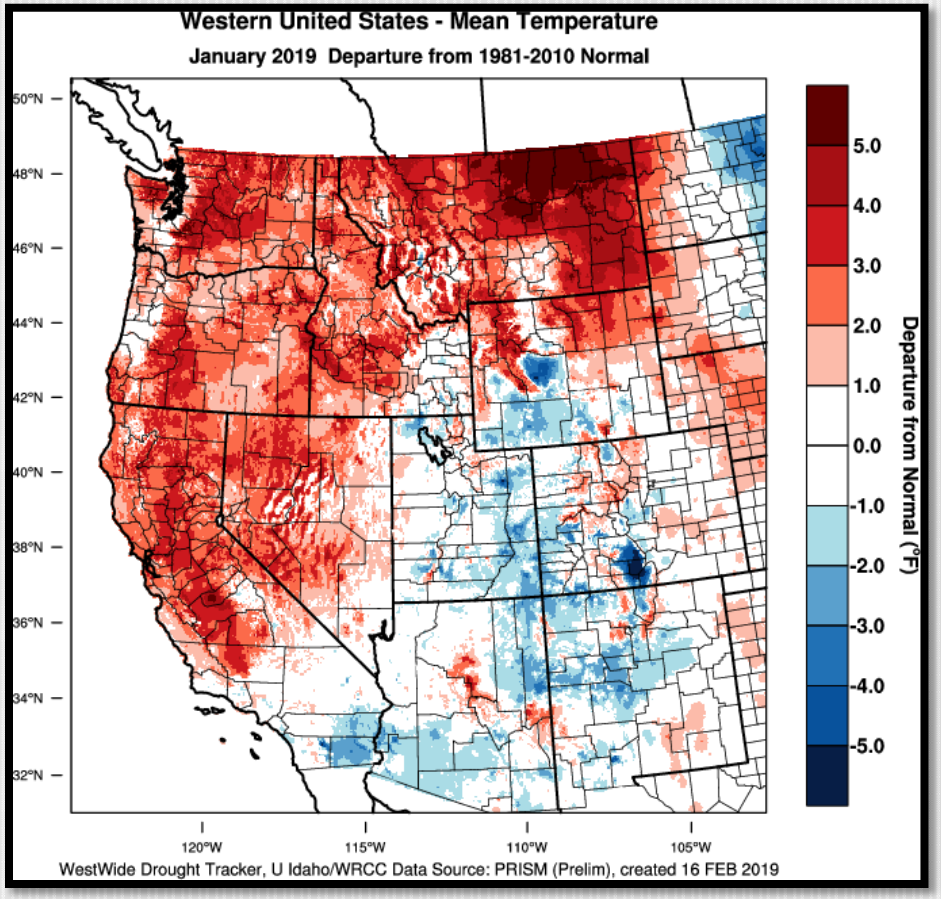
*These data are preliminary and have not undergone final QC by NCEI. Therefore, these data are subject to revision. Final and certified climate data can be accessed at the National Centers for Environmental Information (NCEI).

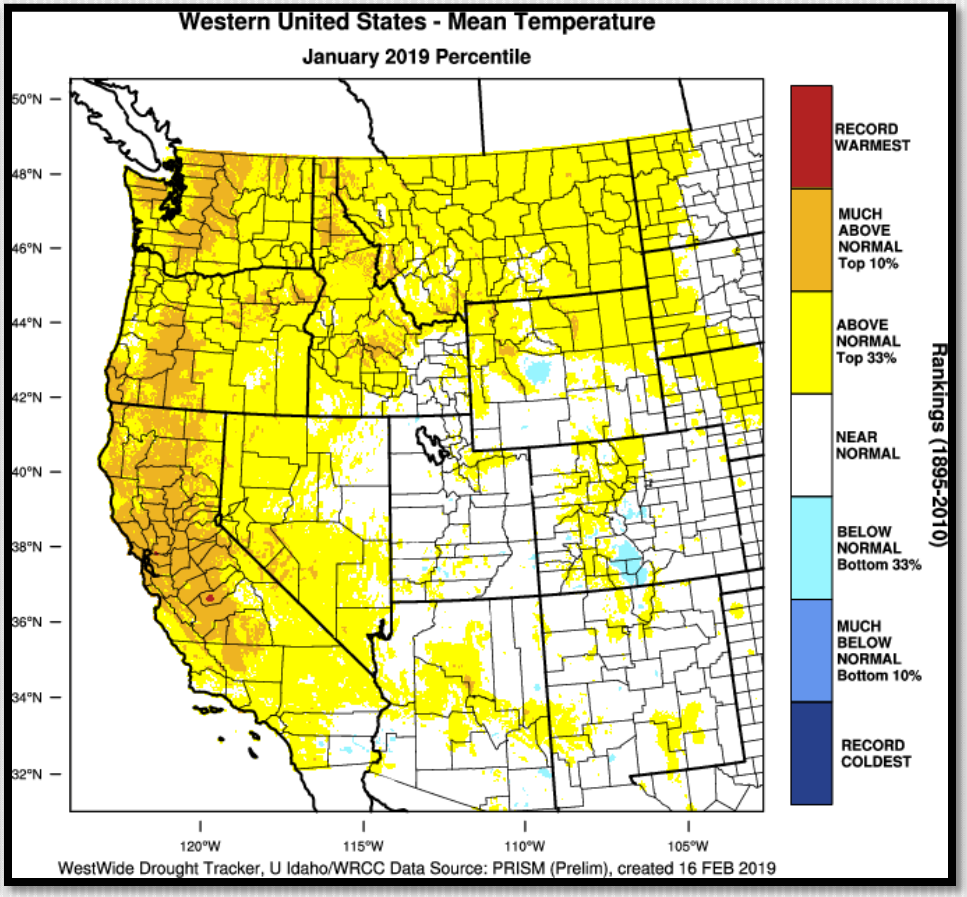
January 2019 Weather Review

The quiet weather experienced during the end of December stayed with us for the first few days of January. It did not last, however, as periods of active weather mixed with dry weather throughout the month. During periods of quiet weather, strong inversions led to dense valley fog and cold nighttime temperatures, with warmer temperatures in the higher elevations. Multiple systems moved through the area during the first week. A strong surface low pressure strengthened inside of 130° W, and this brought strong winds and heavy rain to the area. Although high pressure resumed control after this, breezy southeast winds kept most of the valleys free of fog and stagnant air through the middle of the month.

The next series of storms affected the area just after the middle of the month. Several systems brought strong winds and periods of heavy rain and snow to the area. These storms were the big precipitation producers for the area, bringing the majority of the monthly precipitation during a 5 day period (which greatly helped to reduce the water deficit). Once these systems cleared the area, high pressure built over the Pacific Northwest again. This led to a long period of dry weather with strong inversions, stagnant air and dense valley fog that lingered well into the afternoon for many days. As the month came to a close, air quality improved as a few weak, mostly dry systems moved through, creating enough mixing to ventilate the valleys better.

January 2019 *Observed Temperatures*





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	48.4	2.6°	56.1	4.6°	40.8	0.6°
Roseburg	42.8	-0.3°	48.8	-0.9°	36.8	0.3°
Medford	42.3	2.0°	51.3	3.5°	33.3	0.5°
Klamath Falls	34.9	4.7°	45.1	5.5°	24.7	3.9°
Montague, CA	39.1	3.7°	50.2	5.6°	28.0	1.9°
Mt. Shasta City, CA	39.3	3.4°	48.9	3.6°	29.7	3.3°
Alturas, CA	34.1	4.2°	45.9	4.3°	22.4	4.2°

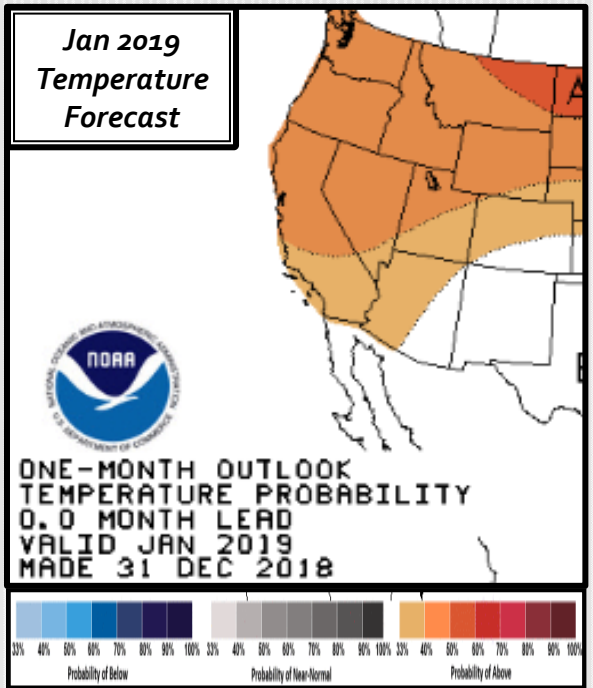
Monthly Max & Min Temperatures

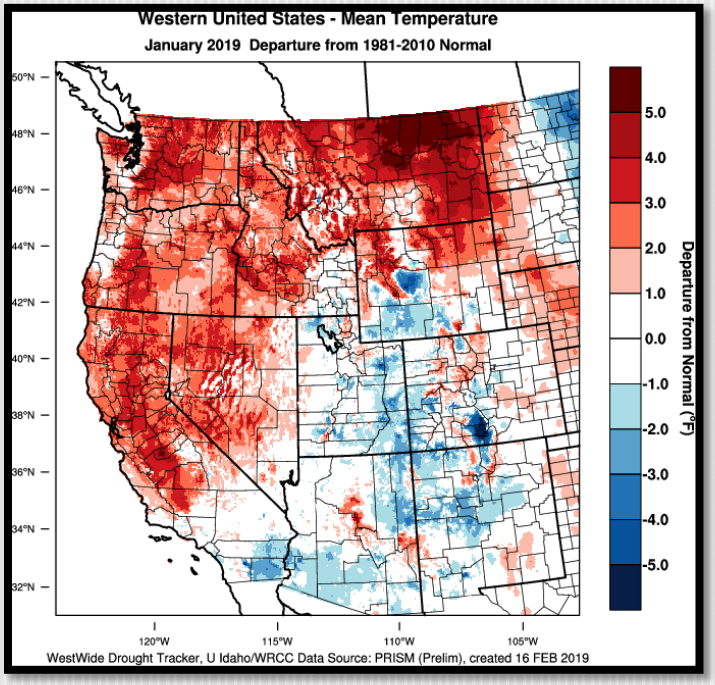
	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	65°	26th	30°	1st
Roseburg	59°	9th	27°	2nd
Medford	65°	12th	25°	2nd & 14th
Klamath Falls	57°	27th	9°	7th
Montague, CA	59°	29th & 31st	17°	2nd
Mt. Shasta City, CA	63°	31st	20°	1st
Alturas, CA	58°	31st	9°	1st

	Date	Record High	Old Record/Year
Medford	12th	65°	Ties with 1986
Klamath Falls	27th	57°	56° / 2015
Montague	29th	59°	58° / 1995
North Bend	14th	63°	Ties with 2018

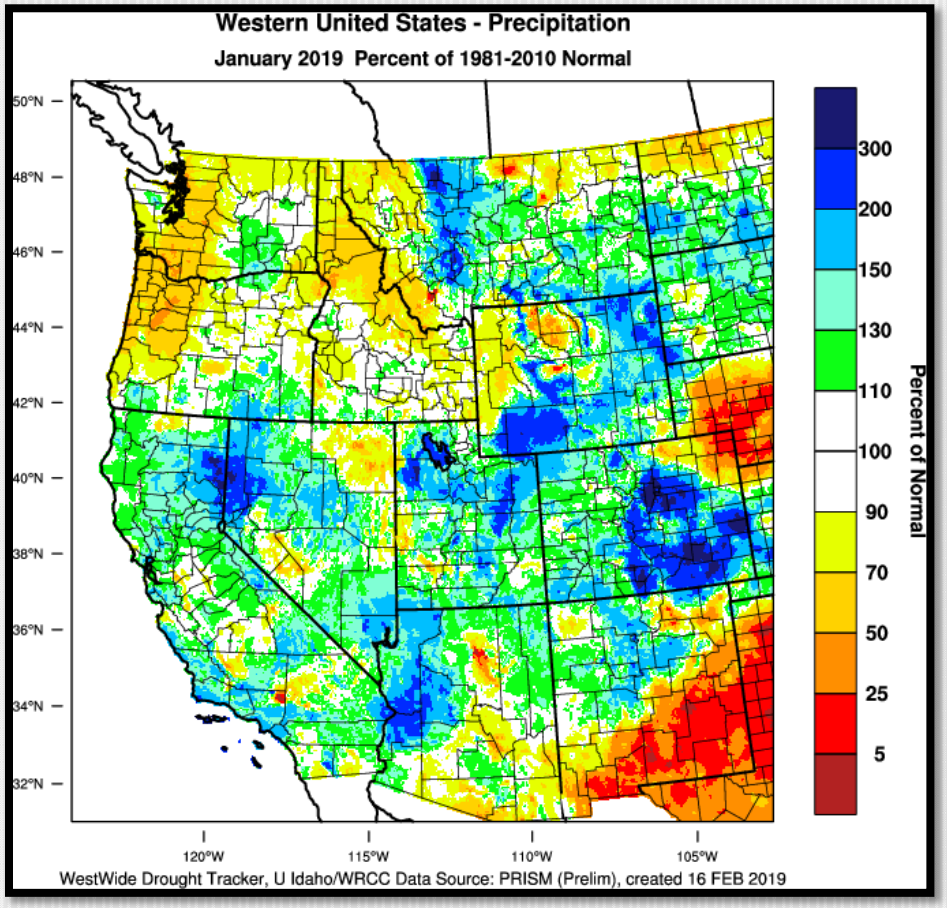
A Look Back at the Jan 2019 Temperature Outlook

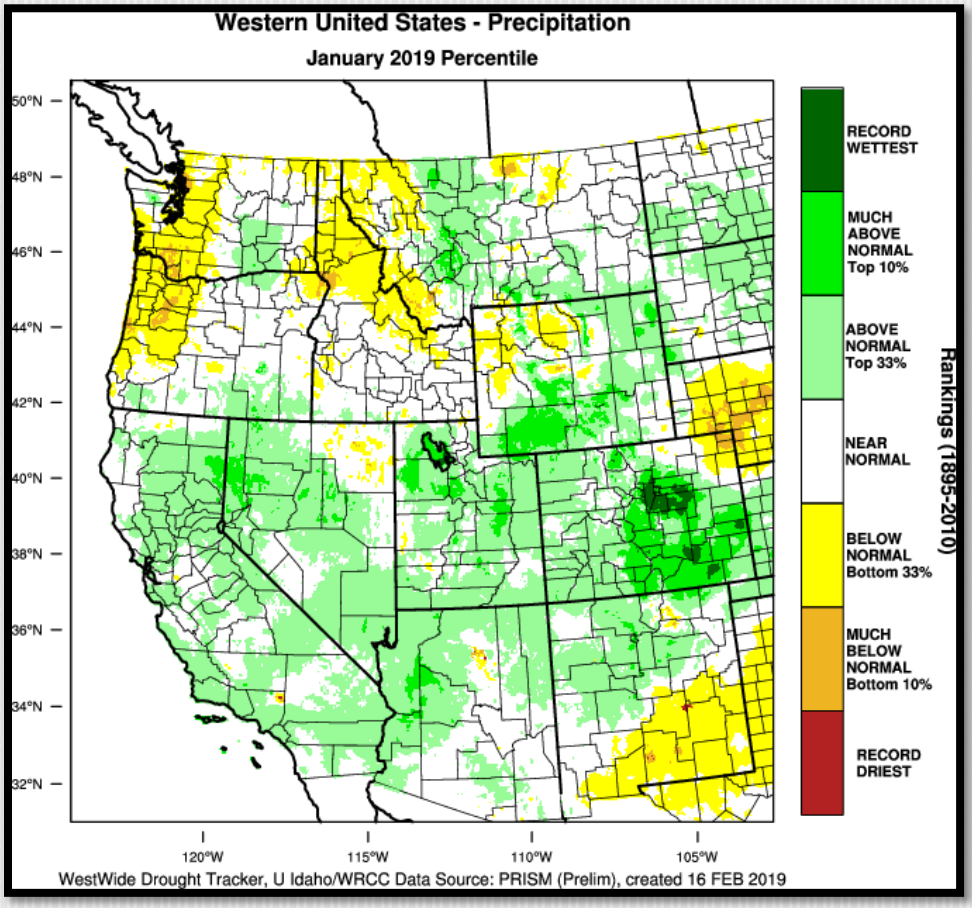
- ***Was the forecast anomaly correct?*** Yes, CPC was correct in indicating increased chances for above normal temperatures.
- ***Was the expected impact correct?*** Impacts based solely on temperature weren't expected for January.
- ***Did our forecast improve upon the CPC forecast?*** From the Jan 2019 Outlook: "*Despite a mostly colder than normal start to the month, our local indicators suggest that average temperatures 1-4 degrees Fahrenheit above normal to be most likely by month's end.*" Although the expected anomaly was closer to 2-6 degrees Fahrenheit above normal, the local forecast was very close. "*With more high pressure expected than normal the rest of this month, temperature anomalies are likely to be greatest across the mountains and lowest across the sheltered interior valleys as inversion conditions become more common".* A closer look at what occurred on a spatial basis (bottom right) shows the interior valleys west of the Cascades were less anomalously warm than surrounding mountains. So yes, more detail was provided by our forecast, therefore improving upon the CPC forecast.





January 2019 *Observed Precipitation*



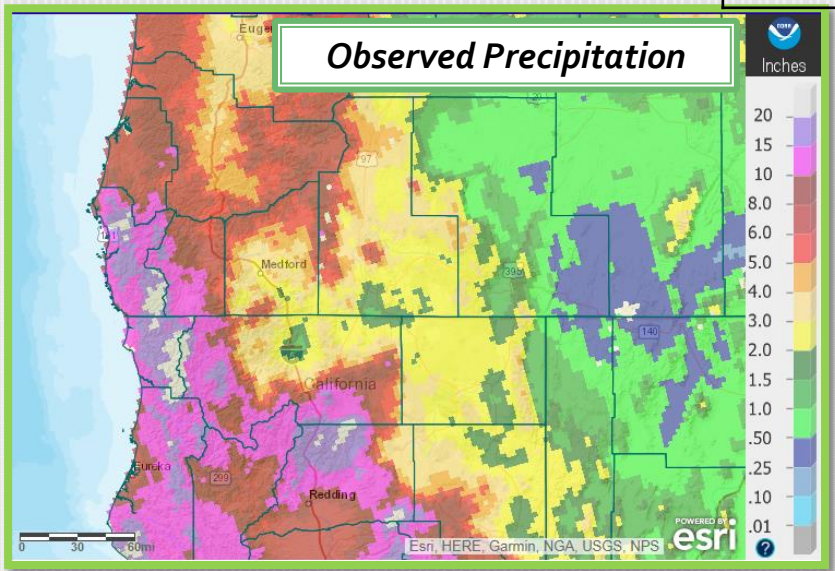


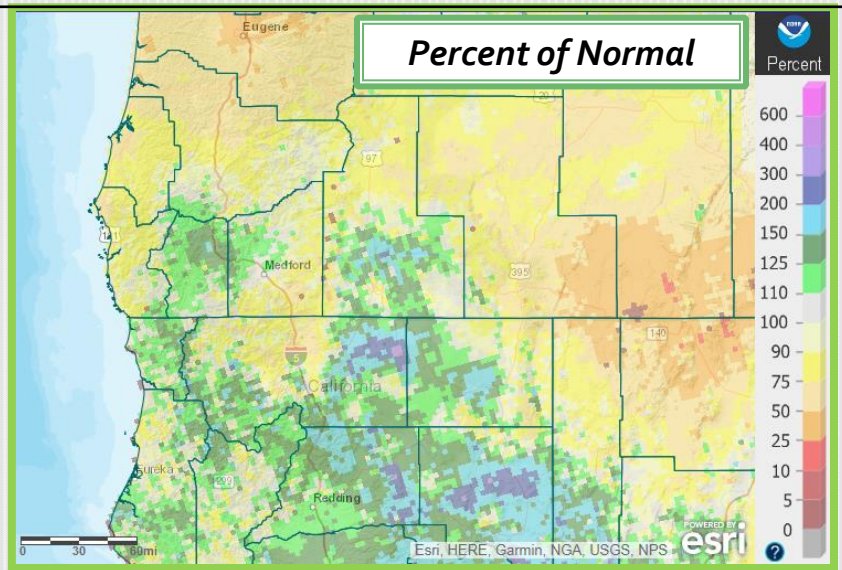
Precipitation

Record Daily Precipitation

	New Record	Date	Old Record	Year
Medford	1.58"	19th	1.40"	1964

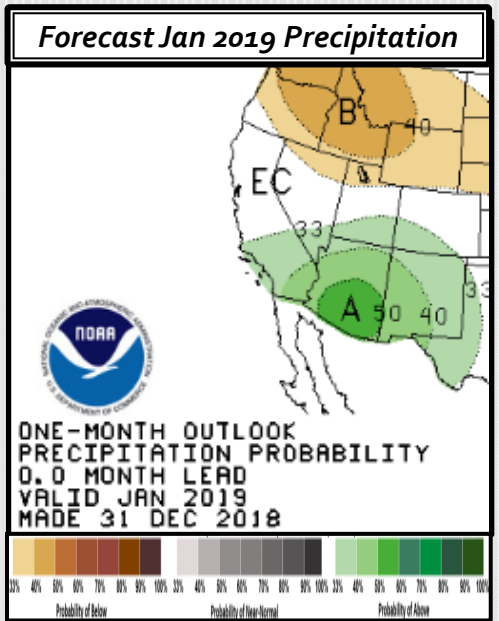
	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	6.23"	-3.96"	1.52"	20th
Roseburg	4.42"	-0.67"	1.24"	19th
Medford	3.36"	0.93"	1.58"	19th
Klamath Falls	1.49"	-0.36"	0.38"	18th
Montague, CA	1.34"	-0.86"	0.29"	18th
Mt. Shasta City, CA	5.52"	-1.54"	1.75"	8th
Alturas, CA	1.99"	0.34"	0.68"	20th

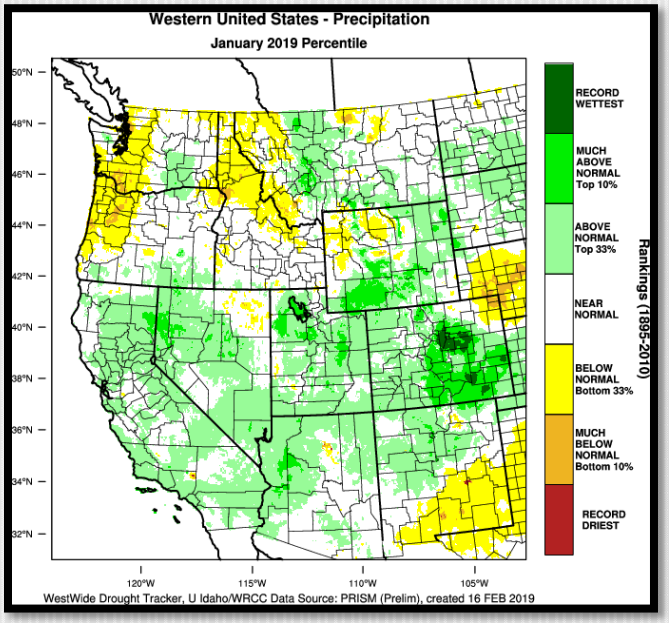




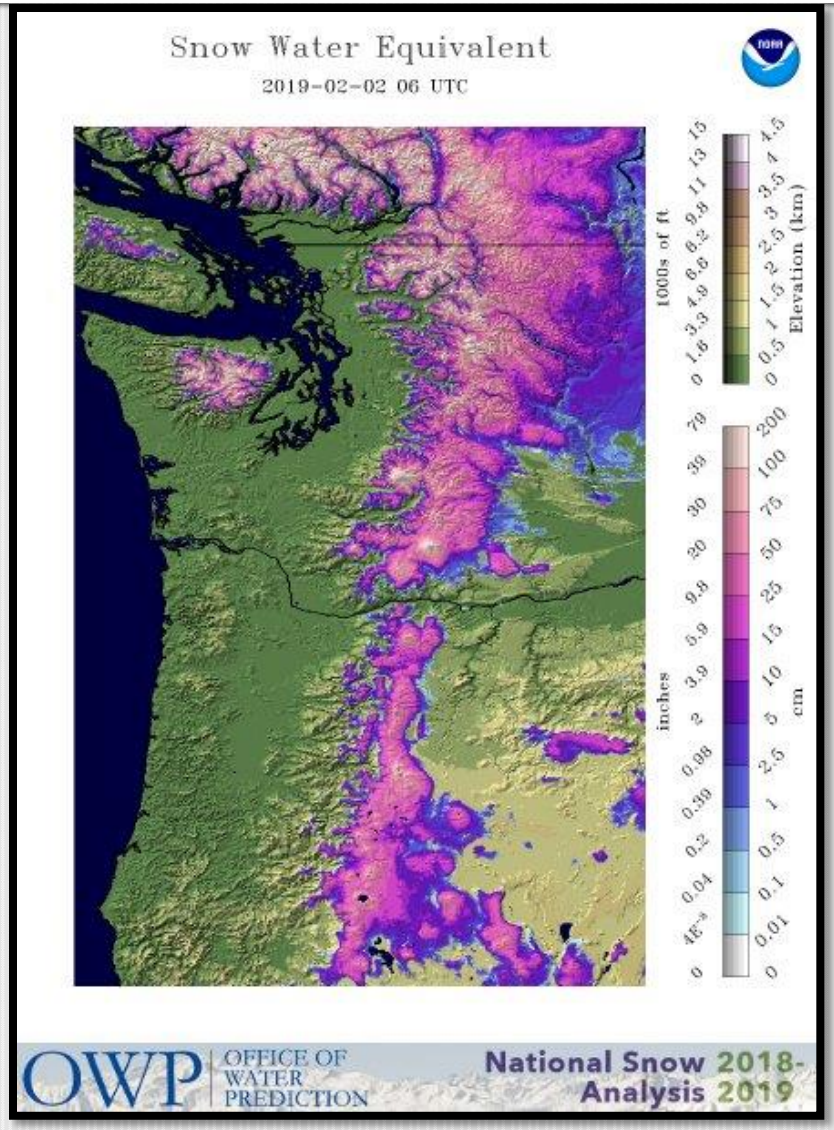
A Look Back at the Jan 2019 Precipitation Outlook

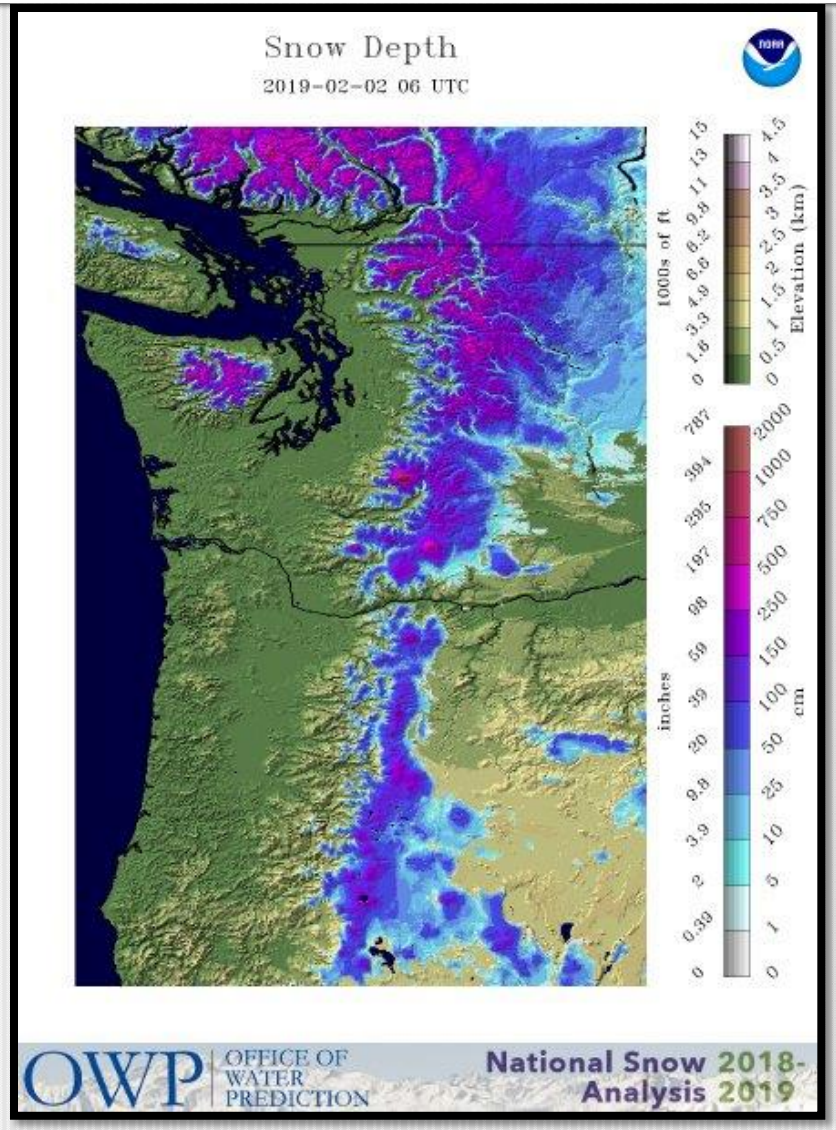
- ***Was the forecast anomaly correct?*** Given that most of the forecast area was covered by equal chances for above, below or normal precipitation, it was difficult for that forecast to be wrong regardless of what occurred. However, the forecast seemed to lean toward to too dry given that eastern portions of the forecast area reported above normal precipitation where the odds were tilted toward drier than normal.
- ***Was the expected impact correct?*** Although the deficits in snowpack and water did improve, deficits did continue as the monthly total precipitation and snowpack finished below normal, as was expected.
- ***Did our forecast improve upon the CPC forecast?*** . Yes, the local forecast was able to provide more detail and improve upon CPC's forecast. From the Jan 2019 Outlook: "*Recent trends and future indicators suggest that the storm track this month will be more focused over California than Oregon, reminiscent of what is most typically expected with El Nino in January. The GEFS, ECMWF, and, to a lesser degree, the CFSv2, indicate a wetter than normal period, especially for Northern California, between the 16th and the 23rd. This may be enough to push some of our Northern California area, especially the Mount Shasta area, to near normal precipitation (80-120%) for the month. For other areas, while some precipitation is expected, we anticipate it will be below normal by month's end (50-80%).*" The expected end of month precipitation percentages were accurately predicted.



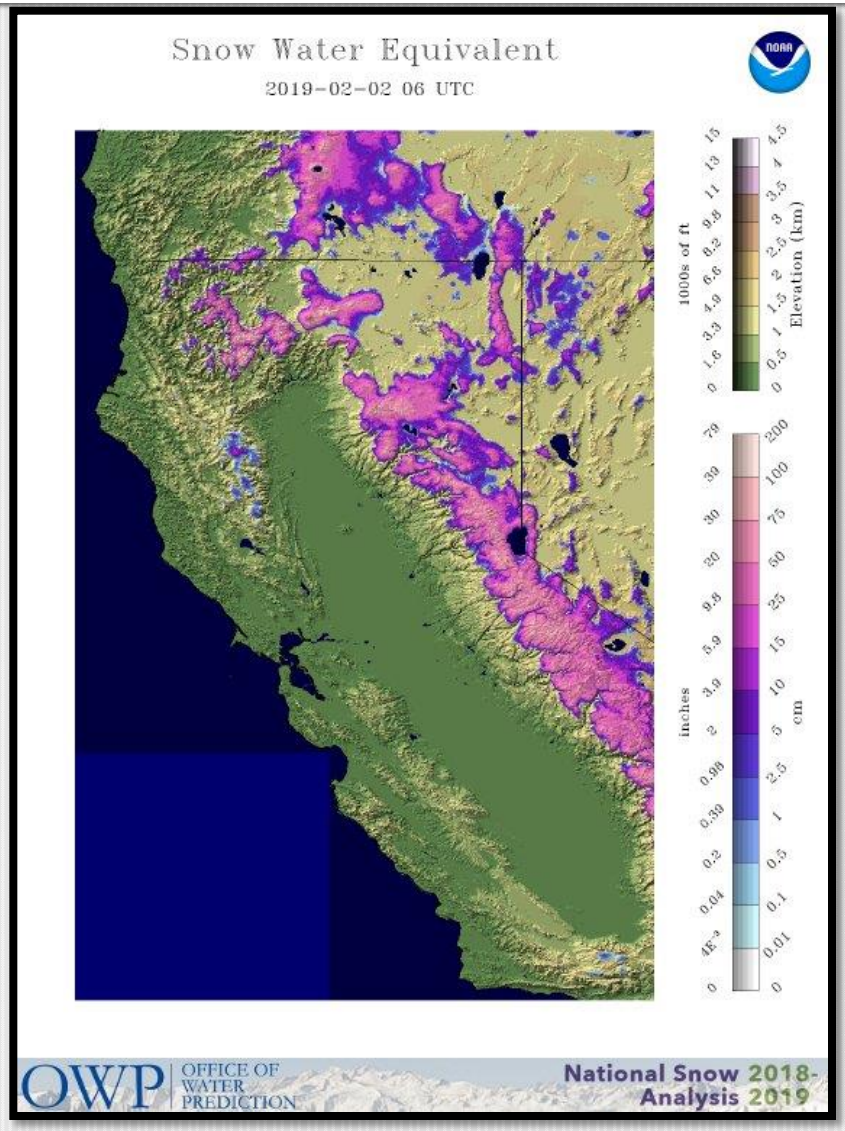


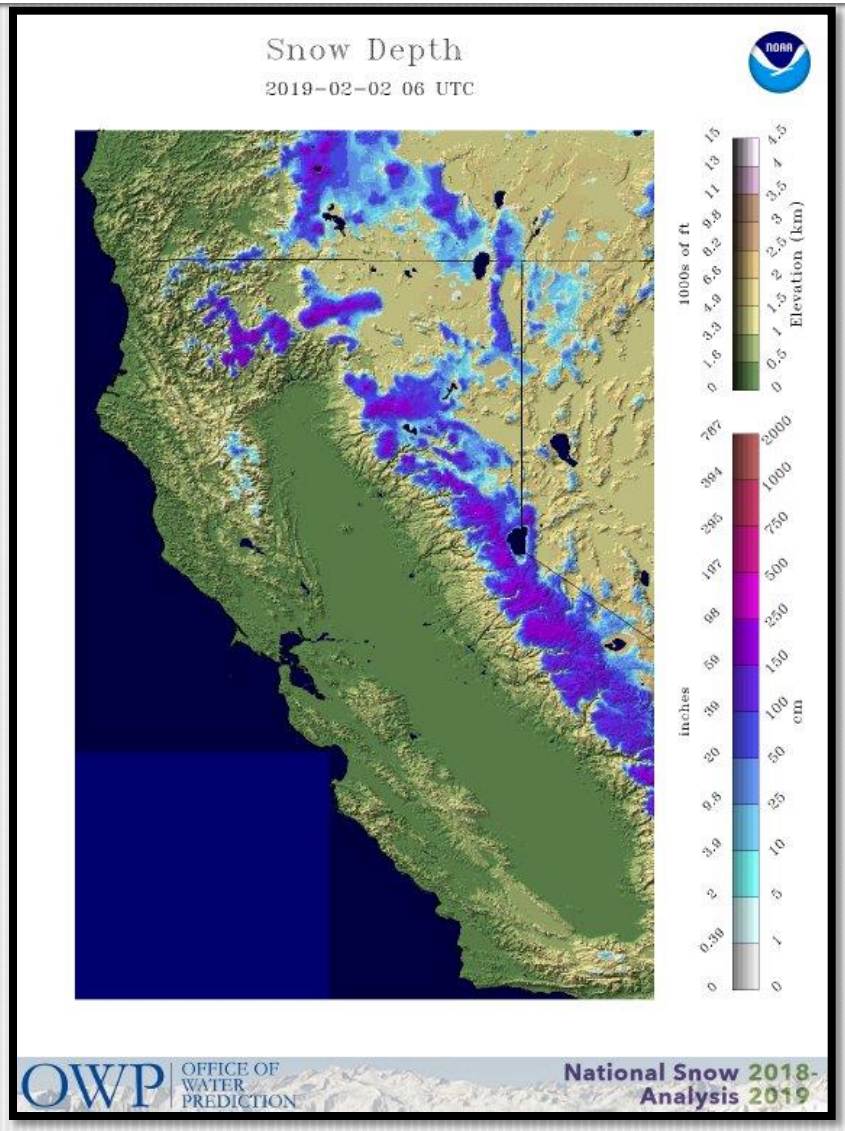
PacNW SWE & Snow Depth as of 2/2/19



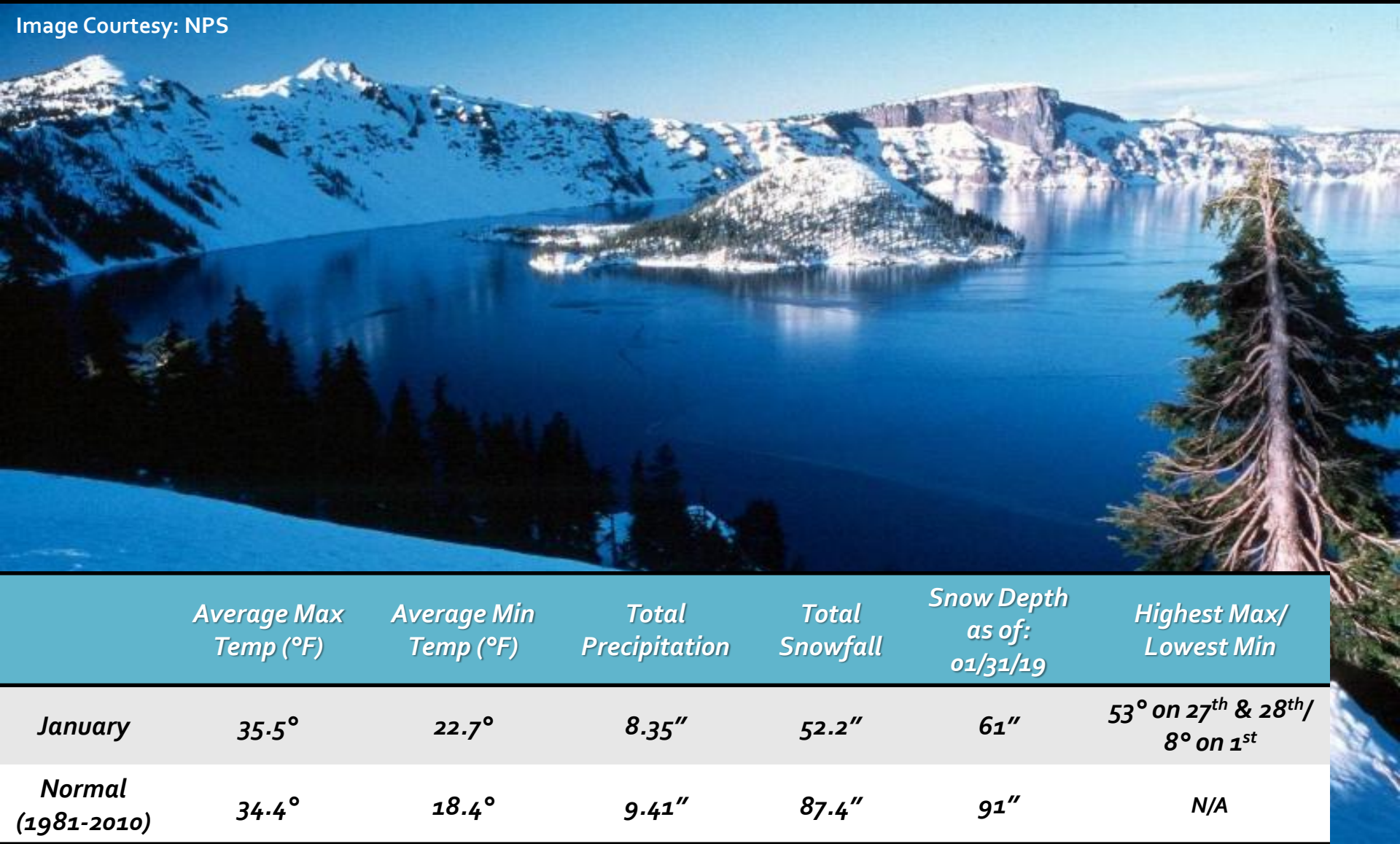


California SWE & Snow Depth as of 2/2/19



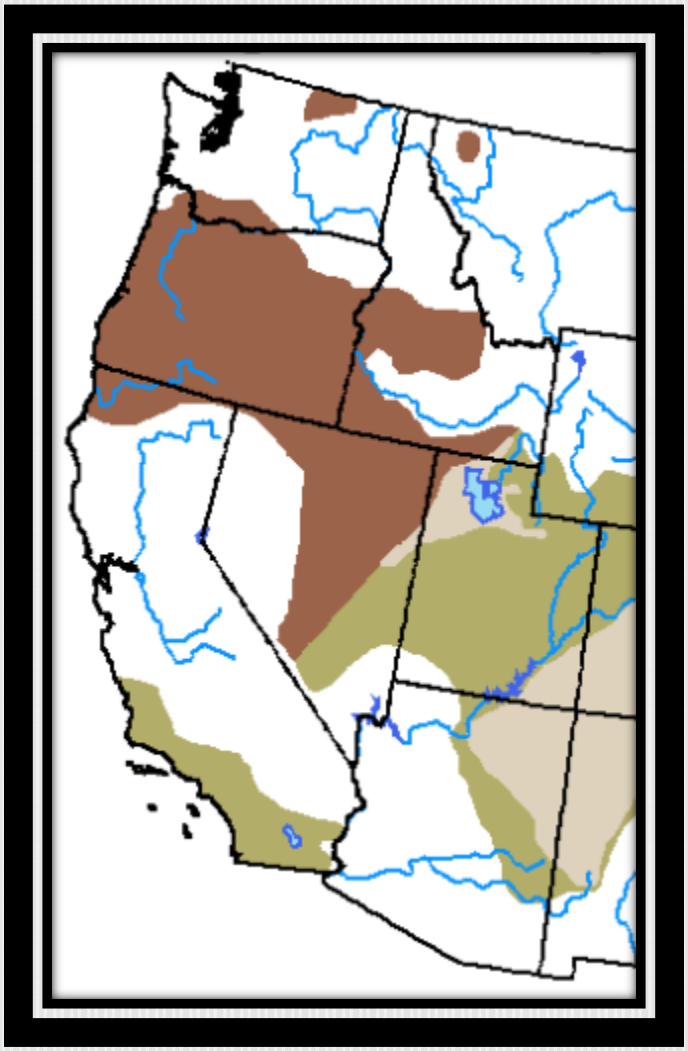


Crater Lake



	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 01/31/19	Highest Max/ Lowest Min
January	35.5°	22.7°	8.35"	52.2"	61"	53° on 27th & 28th/ 8° on 1st
Normal (1981-2010)	34.4°	18.4°	9.41"	87.4"	91"	N/A

Drought Outlook: February



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

Valid for February 2019
Released January 31, 2019

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

Looking Ahead: Normals for February (1981-2010)

Per the 1981-2010 climate normals, February is a very notable month, as temperatures begin their climb out of the winter minimums that are typical of December and January. As a whole, while the monthly average temperatures along the coast nudge upward only a degree or less from January to February, temperatures inland rise 3-5 degrees, with high temperatures showing the most appreciable rise when compared to January.

Minimum Temps: Lows on the East Side, in the Cascades, Siskiyous, and Trinity Alps are typically in the upper teens and 20s, except for the upper reaches of Mount Shasta, where it's colder. Lows are typically in the 30s for the interior West Side, while upper 30s and 40s are most common along and near the coast.

Maximum Temps: Highs at lower elevations on the East Side are typically in the 40s. In the Cascades, Siskiyous, Trinity Alps, and mountains east of the Cascades, daily maximums are typically in the 30s. Highs on the West Side and along and near the coast are typically in the 45 to 55 degree range, on average, though it is a bit cooler in some West Side mountainous area..

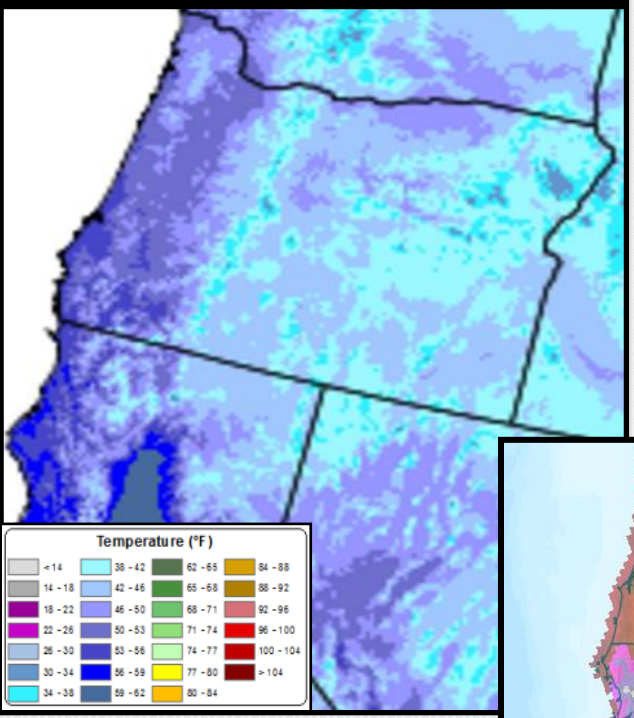
Precipitation: For most of the forecast area, February is certainly still a wet month, but not as wet as November through January and, in some areas, March. Interestingly, however, data indicates that February is the second wettest month of the year for Klamath Falls and Mount Shasta City and is the third wettest for other locations near those two cities. The combination of this wetness and the cool conditions of late winter mean that mountain snowfall is still typically very significant across the area. Mountain snowpack typically continues to grow through mid-March.

As for rainfall and snow water equivalent amounts, the lower elevations east of the Cascades receive at least 1"-3" of water, except in the northeastern half of Lake County, where amounts are a half inch to one inch. Higher elevations east of the Cascades and the Chemult area typically get 2"-6" of water. The Cascades, much of the Siskiyous, and Trinity Alps get 5"-10" of water, although portions of Mount Shasta get a little more. The West Side sees a wide spread in precipitation, with 2"-6" over much of the Interior West Side, with a bit less for Medford and in parts of the Shasta Valley. Douglas, southwestern Josephine, western Siskiyou, Coos, and Curry Counties get 5"-15", on average, although some locations in the Coast Range typically get over 20" of water during the month of February.

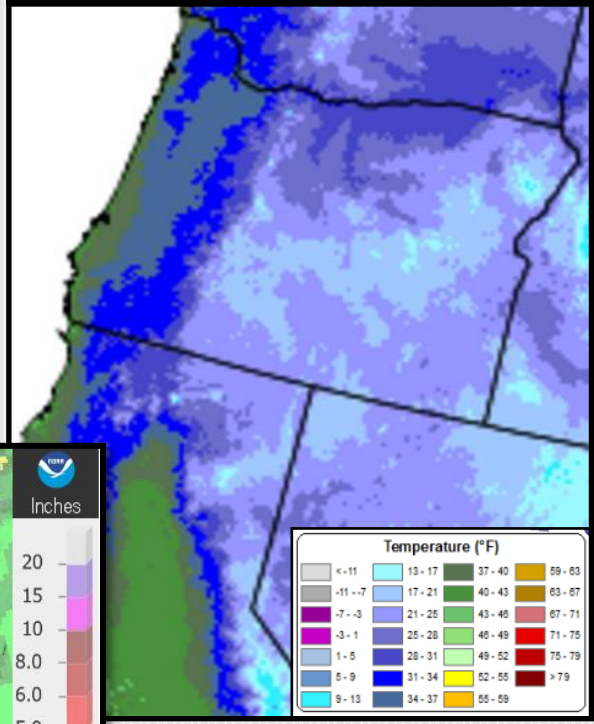
Much of this water typically falls as snow above about 5,000-6,000 feet MSL. For instance, the 1981-2010 average February snowfall for Crater Lake National Park Headquarters is 71.3". The average snow depth there is usually 88 inches on February 1st and 106 inches on the last day of the month.

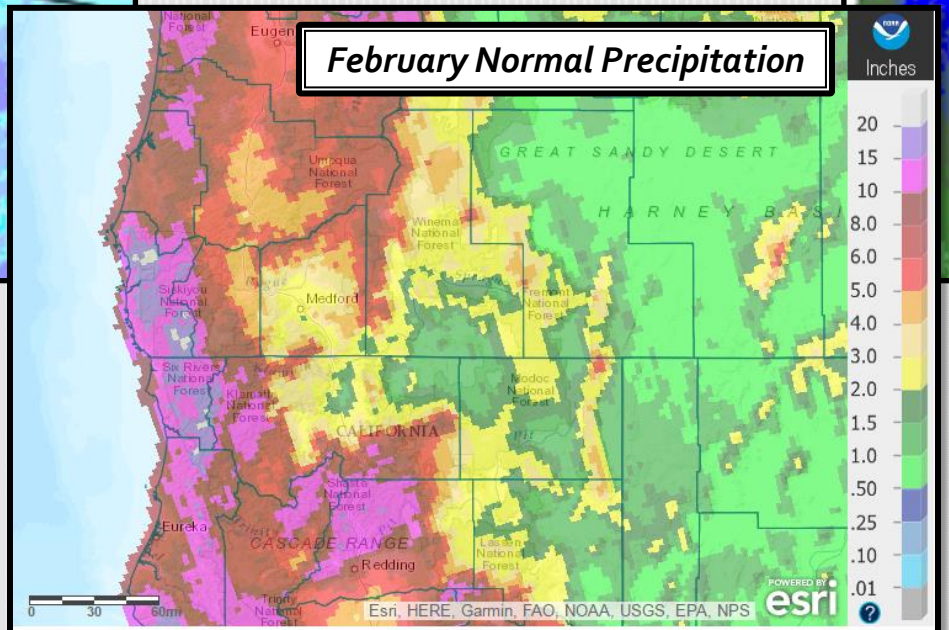
Normals for February (1981-2010)

Average Maximum Temperatures



Average Minimum Temperatures



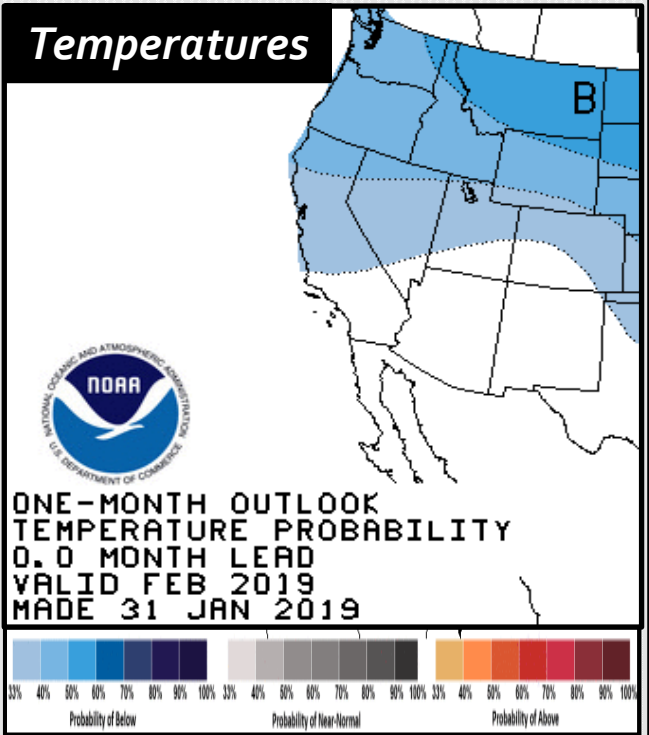


February 2019 Outlook

(Written February 1st)

The official CPC forecast for February 2019 predicts significantly increased chances for below normal temperatures (40-50%) and near normal precipitation, except for much of Douglas and Coos counties, where odds are slightly increased for below normal precipitation (33-40%). This also means that the chance of above normal temperatures, according to CPC, is only 16-25%. This is a HUGE change from the Feb 2019 outlook issued in mid-January. Based on the latest GEFS, CFSv2, and trends in these models, near to below normal temperatures appear most likely (0 to 5 degrees below normal). Temperatures are likely to be coldest compared to normal over interior areas, especially east of the Cascades. Local knowledge suggests that CPC's precipitation forecast is likely too optimistic, in that it appears precipitation is most likely to be below normal. This is because the northerly and easterly flow that will bring us much of the colder than normal air usually contains less moisture and because the GEFS and other model guidance also suggest drier than normal conditions. It should be noted, however, that we're expecting above normal precipitation amounts for the first week of the month in most areas except far northern Douglas County, and above normal precipitation across northern California through the 9th. The MJO bears watching for late Feb/early Mar, as the long range Euro model suggests very wet is possible.

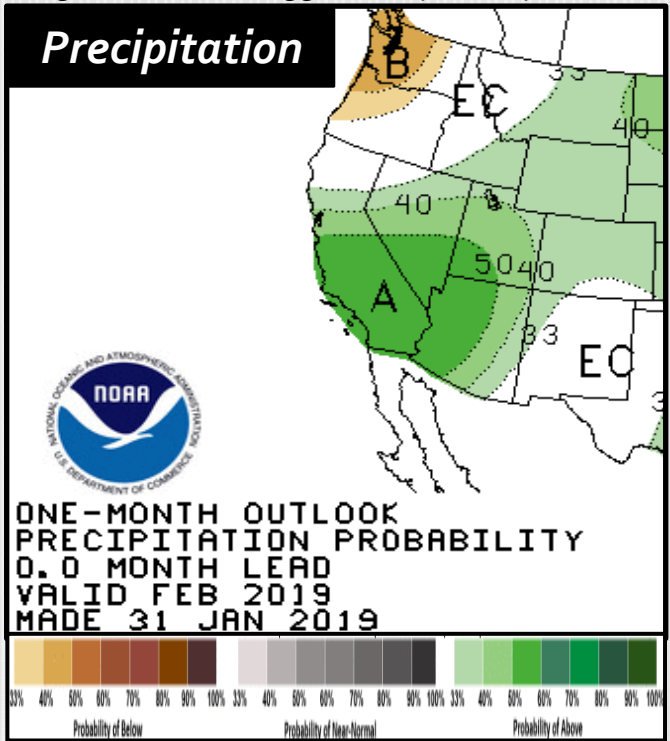
Temperatures



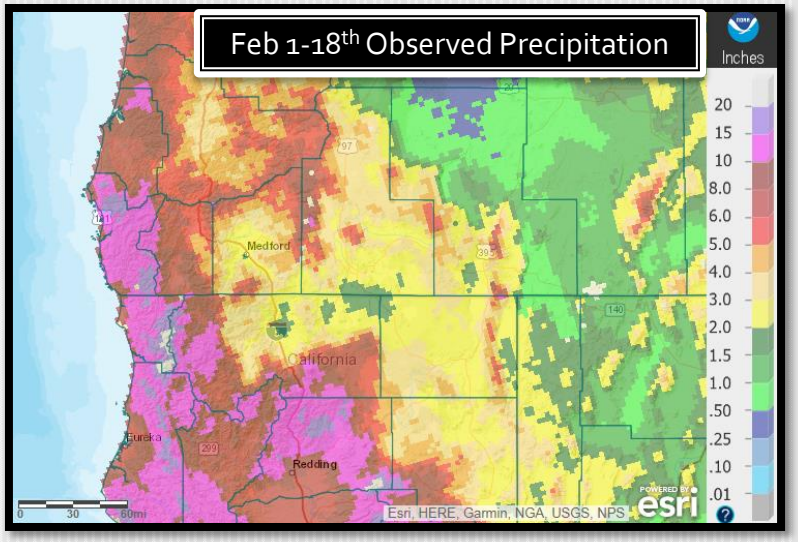
Expected Impact, Feb 2019:

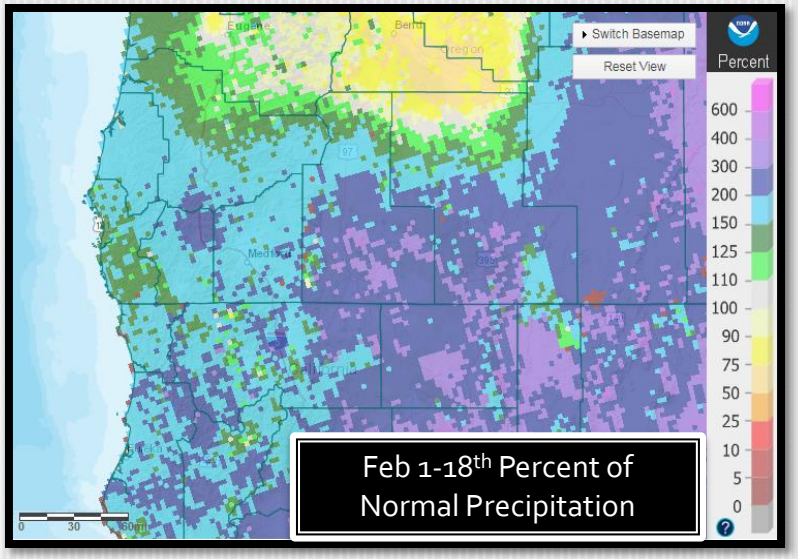
Cold weather impacts are expected across the forecast area through mid-month, with uncertainty for later in Feb. This means low elevation snow is likely to cause travel problems, but the cold and wet weather early in the month is beneficial to our snowpack. Overall, below normal precipitation for the month, but colder temperatures mean that the snowpack is most likely to remain where it is now in terms of % of normal SWE. Other concerns are for people, pets, livestock, and water pipes due to cold air. Winter recreation should generally benefit from the forecast, especially mid-month. Flooding is unlikely this month, unless the MJO pulse at months end does bring a big storm series.

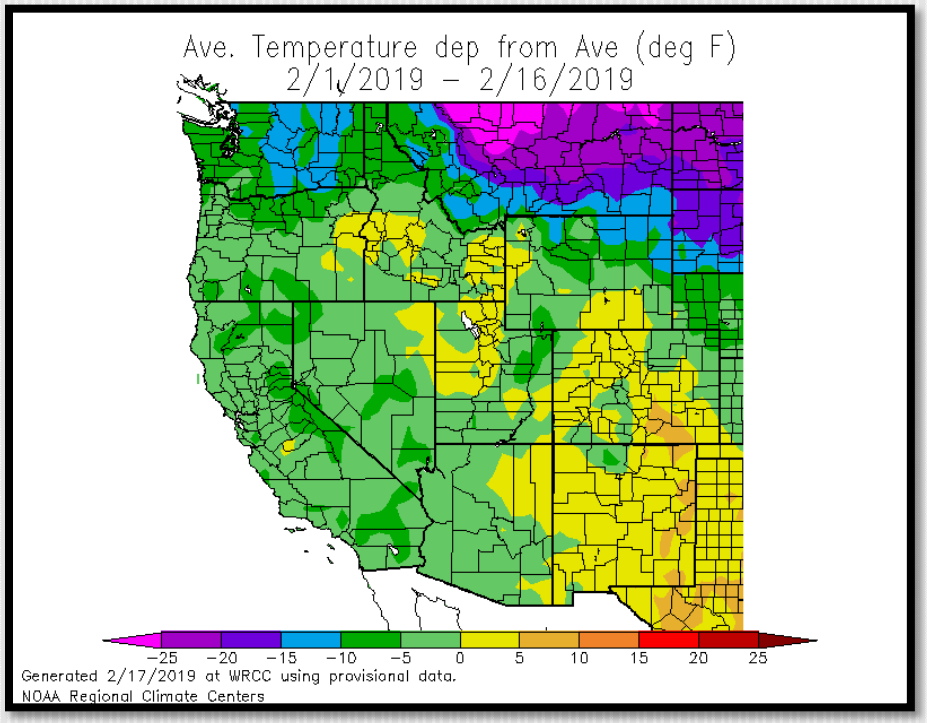
Precipitation



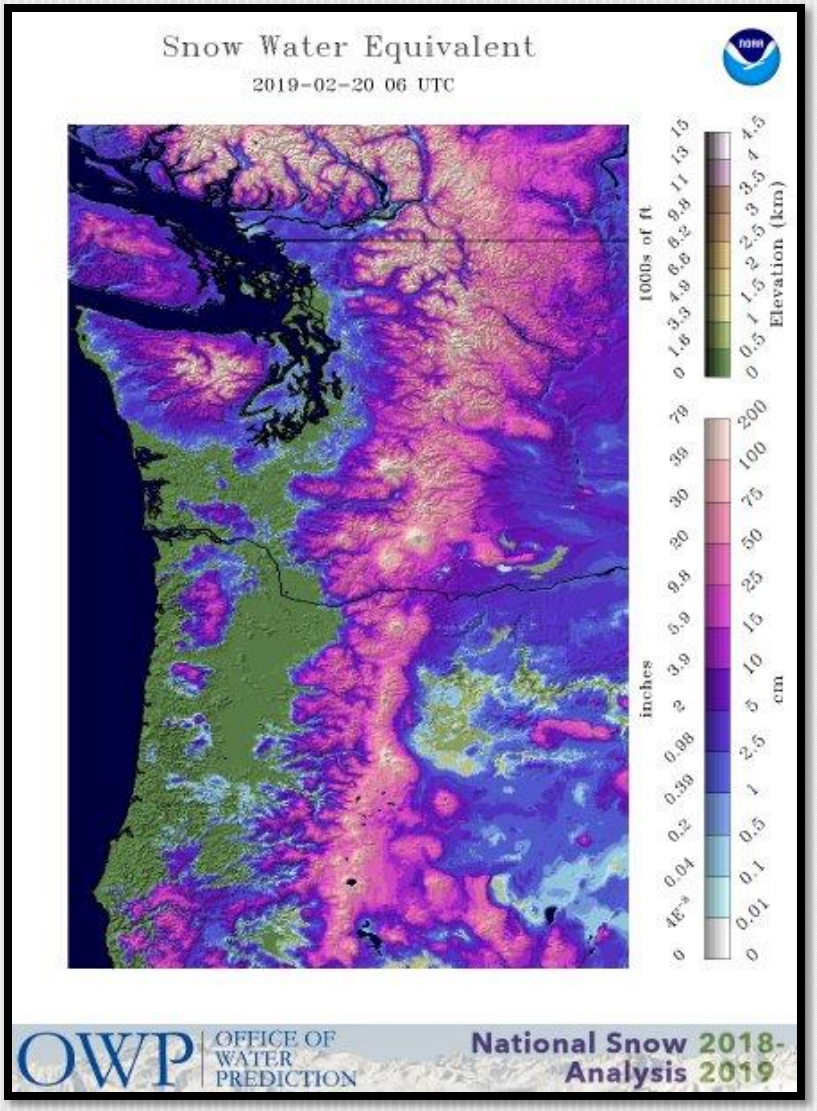
February 1-18th, 2019: Observed

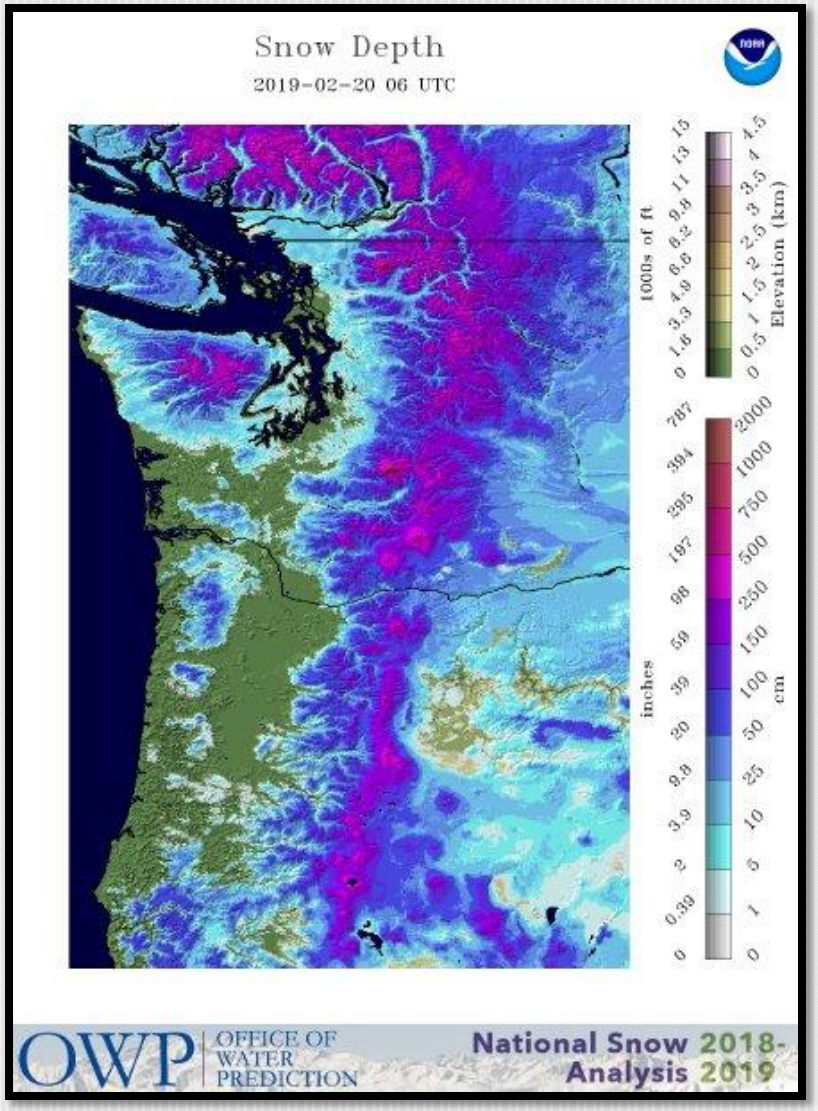




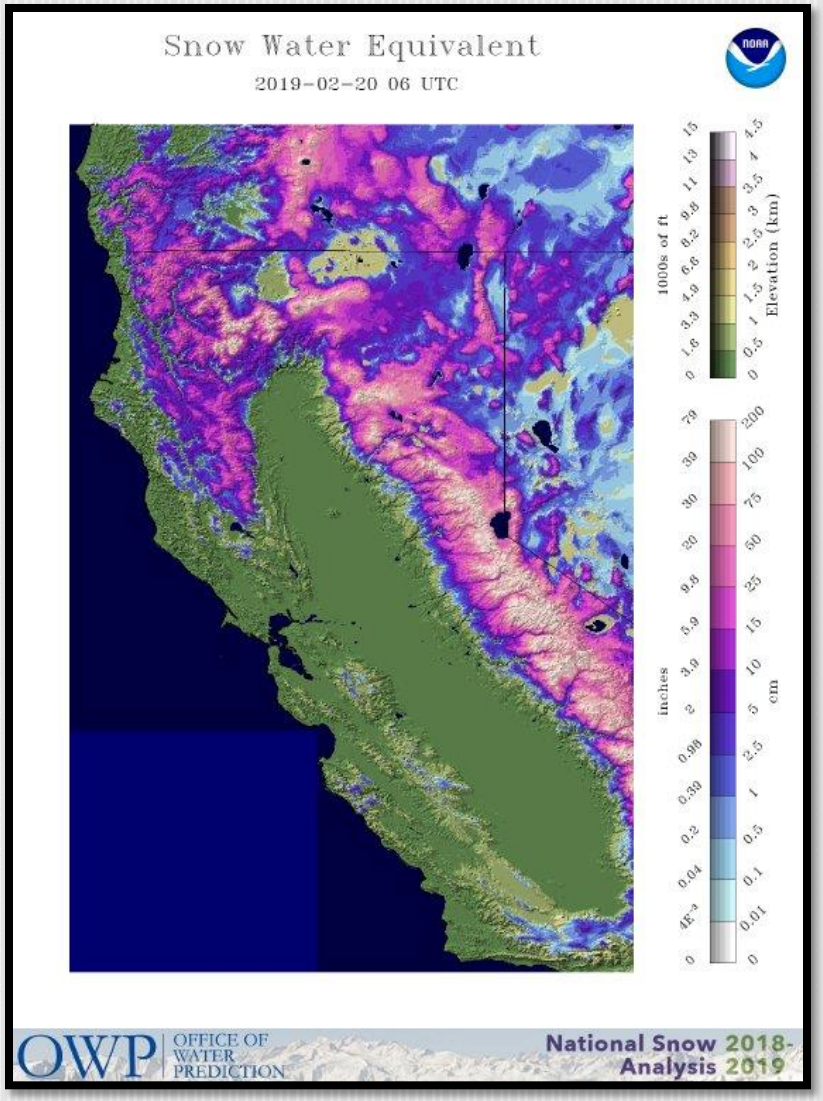


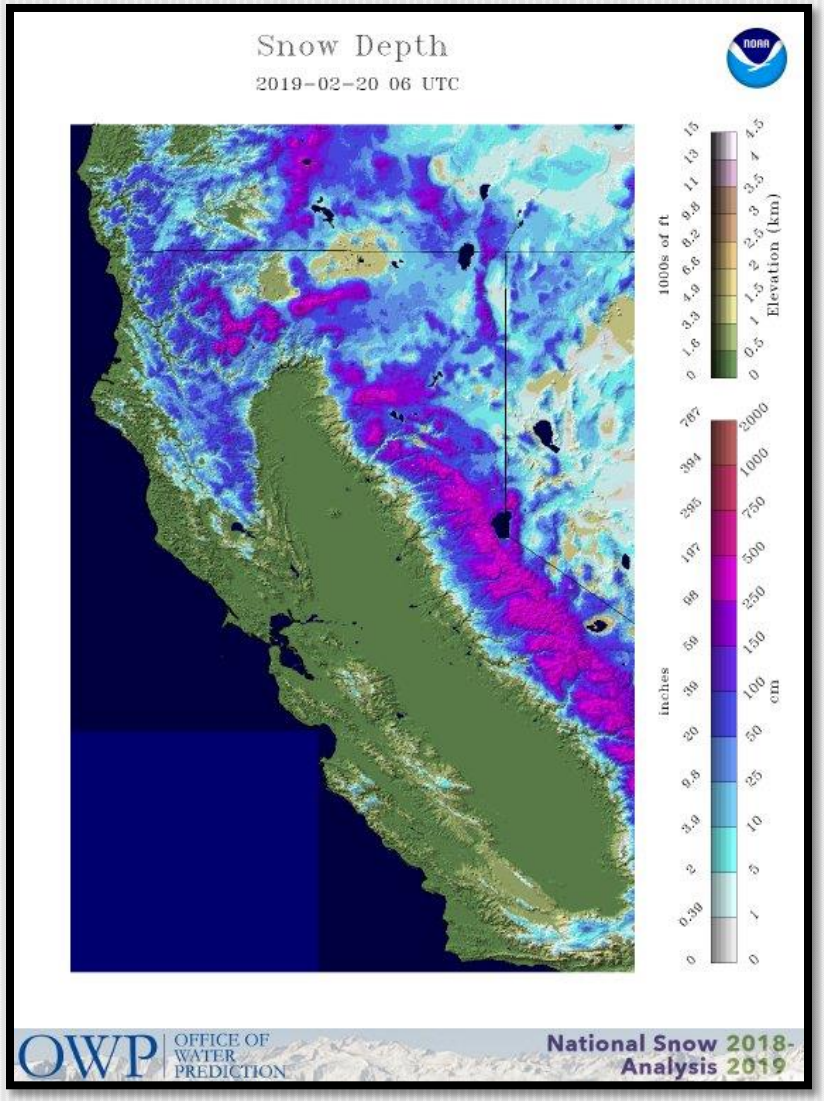
PacNW SWE & Snow Depth as of 2/20/19





California SWE & Snow Depth as of 2/20/19





*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*