National Weather Service Medford

December 2020 Climate Summary & January Outlook

*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).

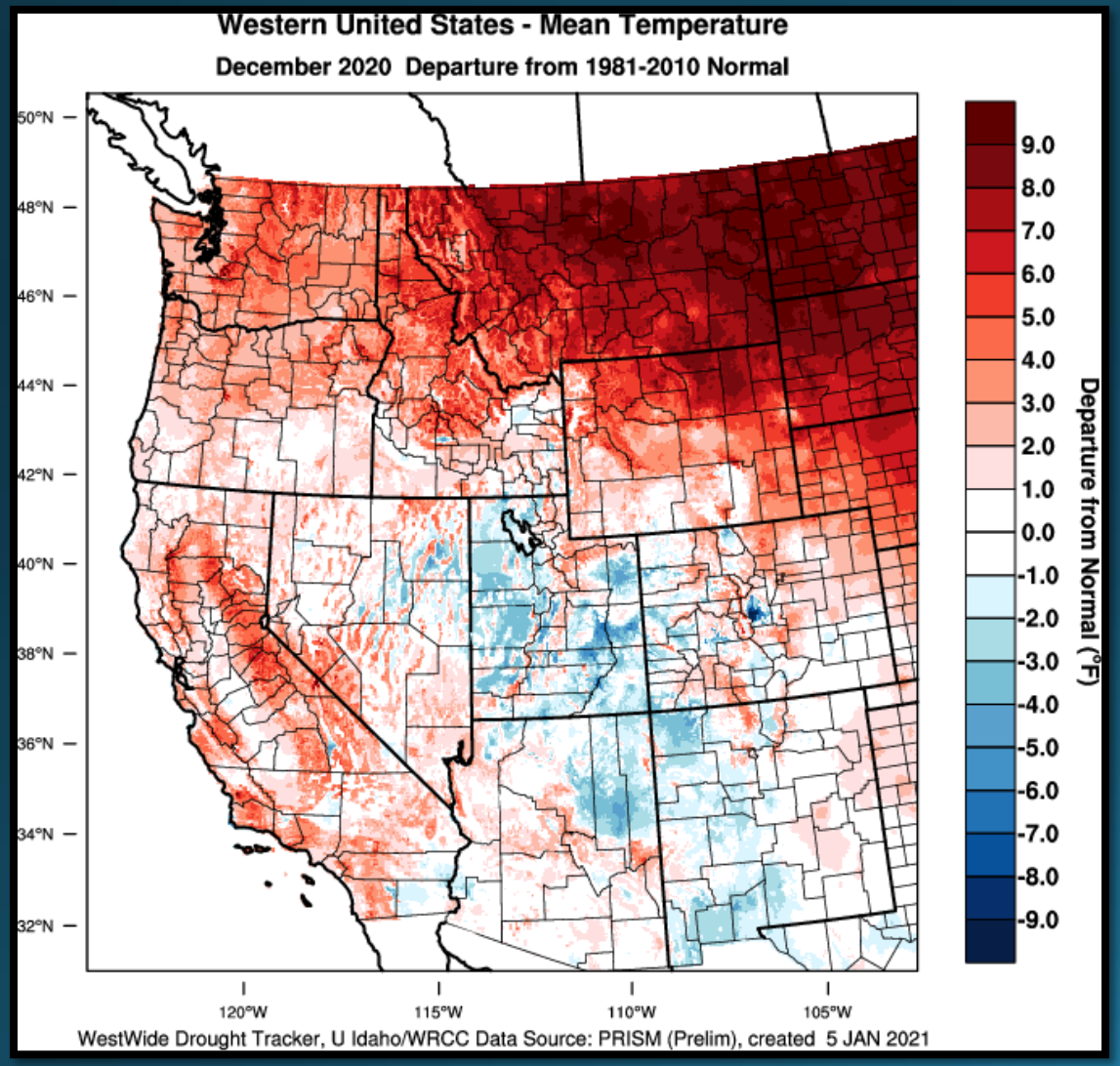
December 2020 Weather Review

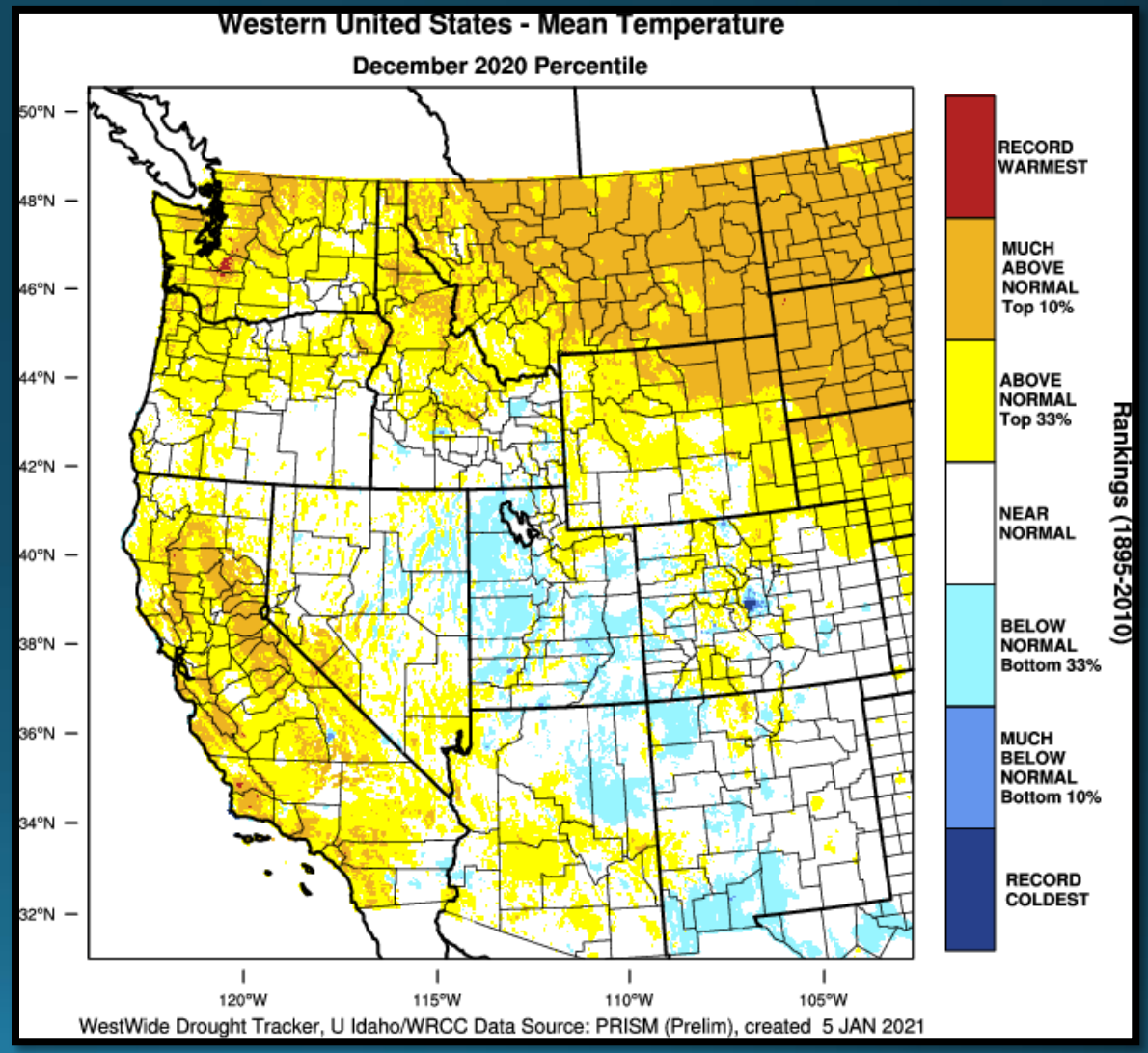
Despite fairly active weather during the month, the Medford NWS forecast area ended up with below normal precipitation and above normal temperatures. The month began with a strong ridge over the region, which led to stagnant conditions in the valleys with fog and low clouds. This pattern continued through roughly the first two weeks of December, although a few weak systems passed through and disrupted the pattern on the 6th and 9th.

The second half of the month became more active as upper level ridging weakened and more systems were able to push into the area. An atmospheric river brought beneficial rainfall to the area on the 13th, followed by a stronger atmospheric river on the 16th. Although no records were set with either of these events, some locations did see some values fall in the top ten daily wettest on both the 13th and 16th.

Active weather continued over the following days up to Christmas. On Christmas Day, a strong low deepened inside of 130W and this brought strong winds to the area. Gusts of 30 to 40 mph were common and gusts to 50 to 60 mph were recorded for the more windy areas (East Side, Shasta Valley, Coast, & higher terrain). In addition, it was a favorable pattern to bring a bout of upslope snow to the Mt Shasta City area. With over a foot of snow falling in the higher terrain during this 24 hour period, this system really helped to build the area snow pack. After a brief break in the weather, another atmospheric river moved into the area, bringing strong winds as well as another round of beneficial rainfall and mountain snowfall.

December 2020 Observed Temperatures





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	47.8	2.5°	55.0	4.0°	40.6	0.9°
Roseburg	43.7	1.6°	50.2	2.5°	37.2	0.8°
Medford	41.1	1.8°	49.1	3.2°	33.2	0.5°
Klamath Falls	31.0	1.4°	41.6	3.2°	20.4	-0.3°
Montague, CA	35.3	0.2°	45.3	1.1°	25.3	-0.7°
Mt. Shasta City, CA	36.1	1.0°	46.2	1.9°	26.0	0.0°
Alturas, CA	30.8	1.3°	44.5	4.3°	17.0	-1.8°

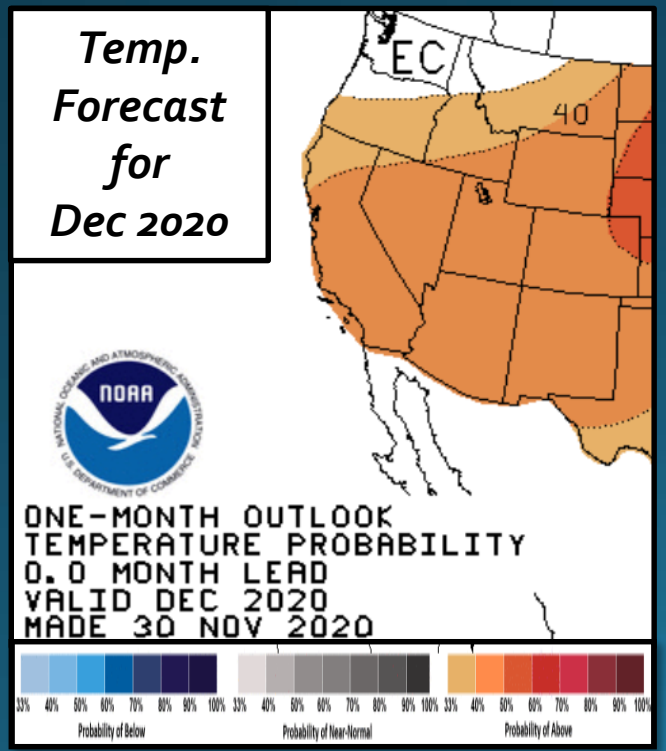
Monthly Max & Min Temperatures

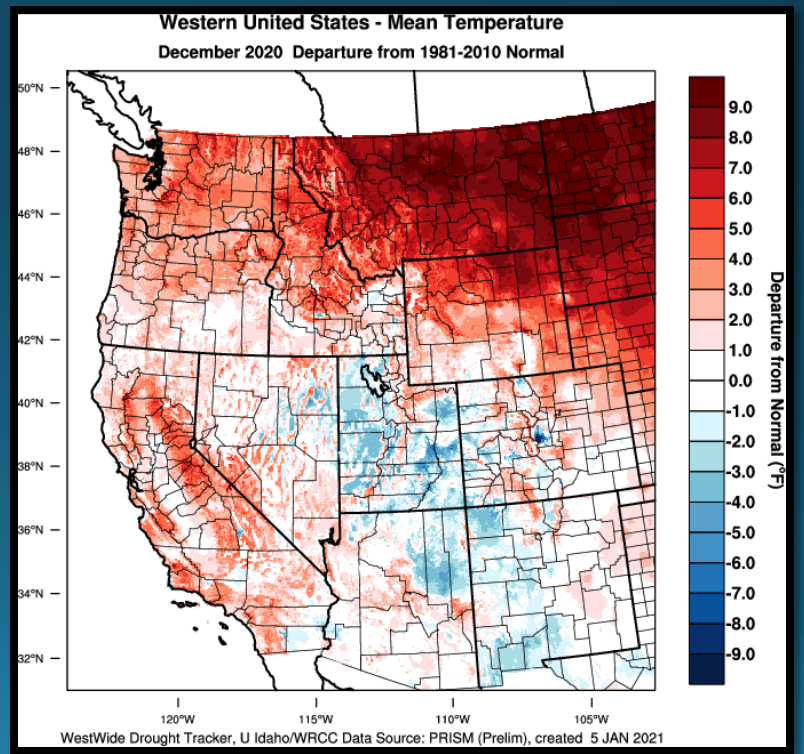
	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	64°	8th	33°	1st
Roseburg	62°	21st	28°	24th
Medford	58°	2nd	23°	29th
Klamath Falls	52°	8th	9°	29th
Montague, CA	53°	3rd & 20th	18°	24th & 29th
Mt. Shasta City, CA	57°	3rd & 7th	18°	23rd
Alturas, CA	61°	8th	5°	23rd & 29th

	Record High	Date	Old Record/Year
Alturas	61°	8th	60° / 1965

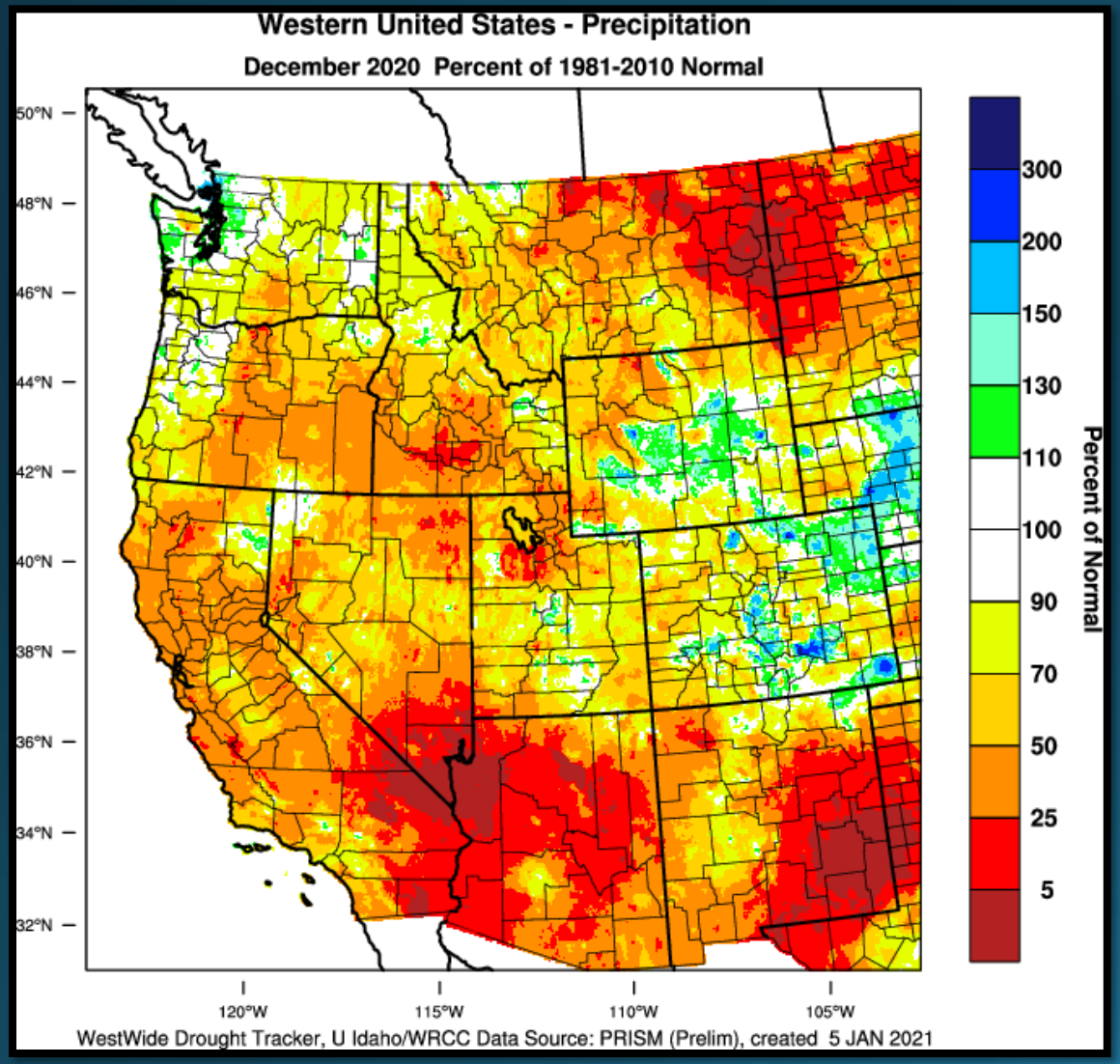
A Look Back at the December 2020 Temperature Outlook

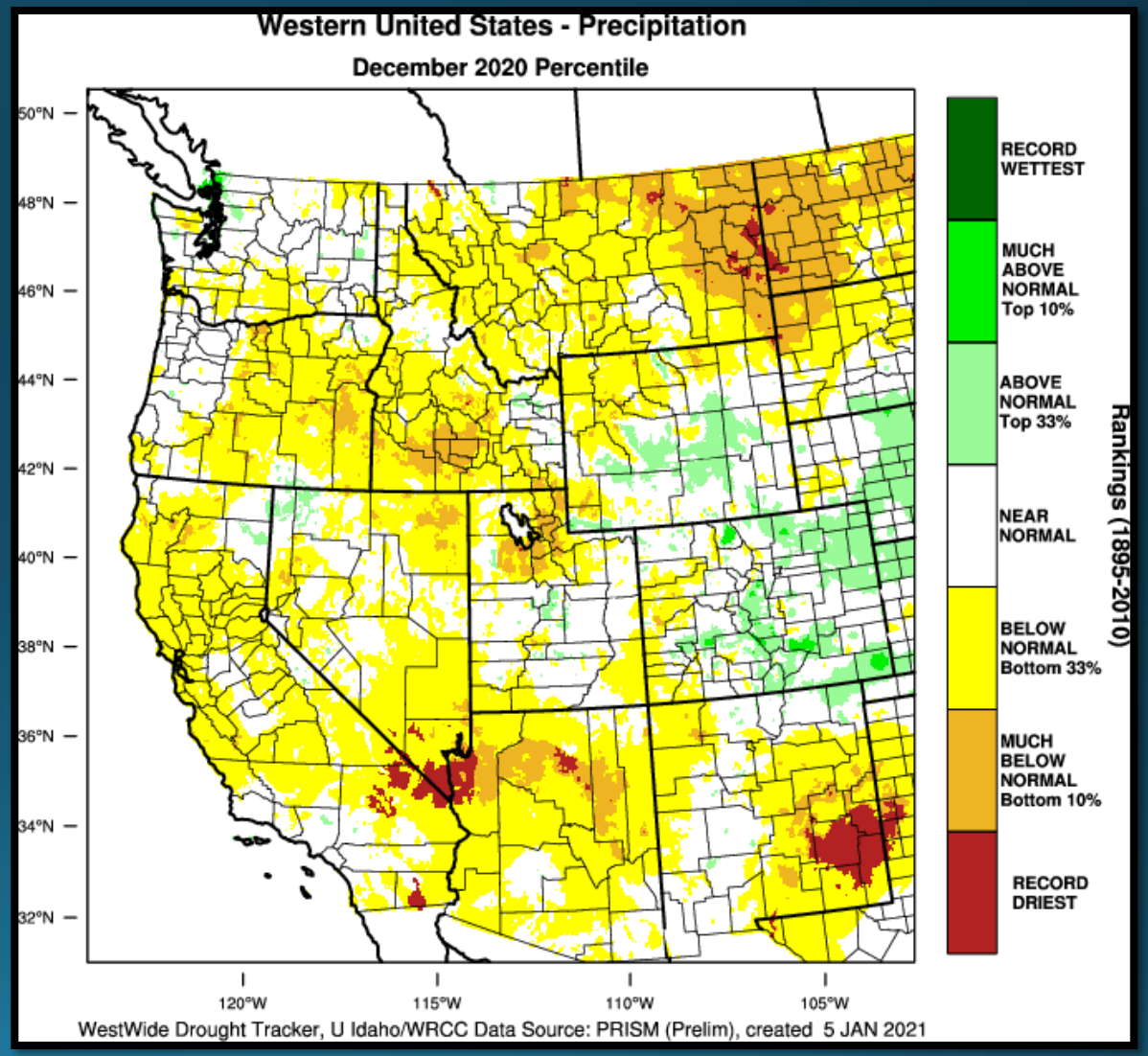
- ***Was the forecast anomaly correct?*** *Yes.* Our localized forecast indicated "an inversion pattern" was "likely to be apparent in temperature anomalies for the month, with ABOVE normal temperatures likely for the mountains and near normal temperatures for the interior valleys. Mountains are most likely to be between +2 and +4°F and valleys -2 and +2°F from 1981-2010 normals." Anomalies for the mountains were 1 to 4°F of normals and valleys were -2 to +2°F from normals.
- ***Was the expected impact correct?*** Yes, mostly. We gained some snowpack mid-late month, but we did not experience lower elevation freezing to frozen precipitation impacts on the west side.
- ***Did our forecast improve upon the CPC forecast?*** Yes, as we were able to provide higher spatial detail. CPC's forecast was also correct.





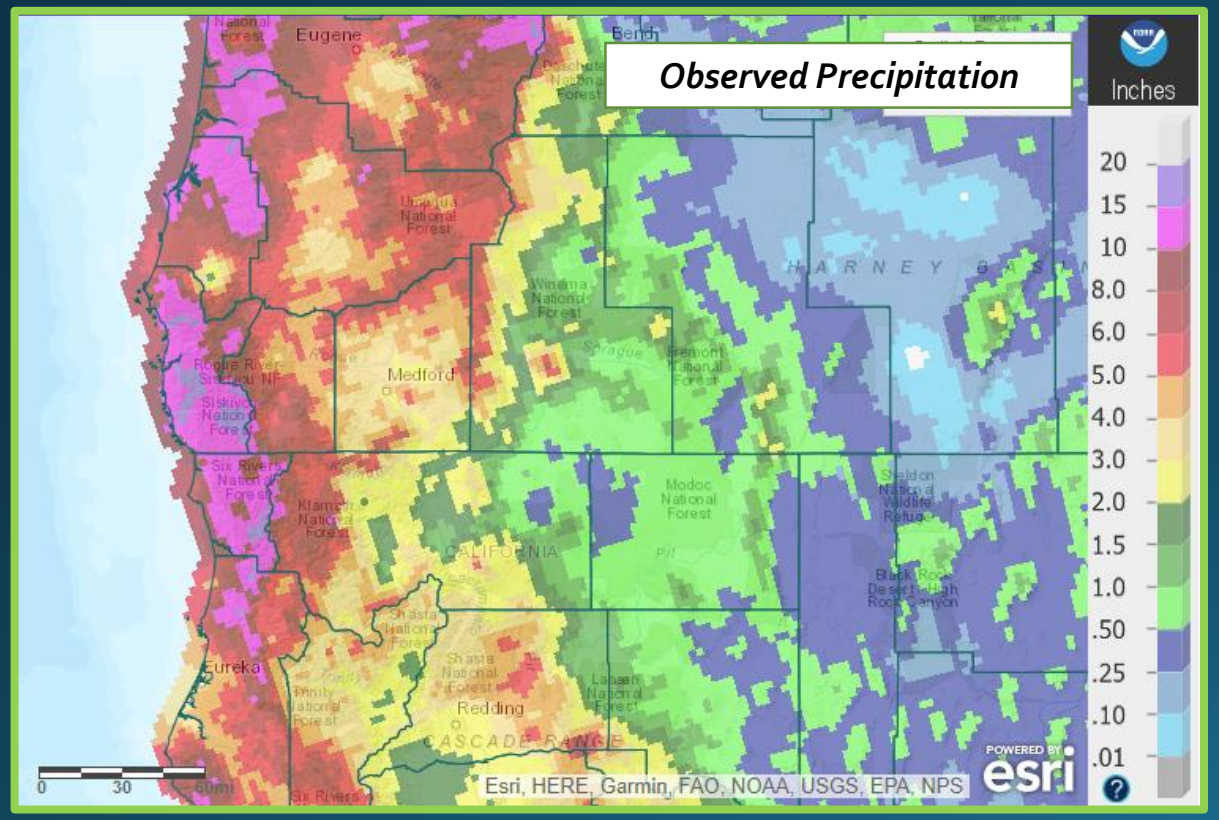
December 2020 Observed Precipitation

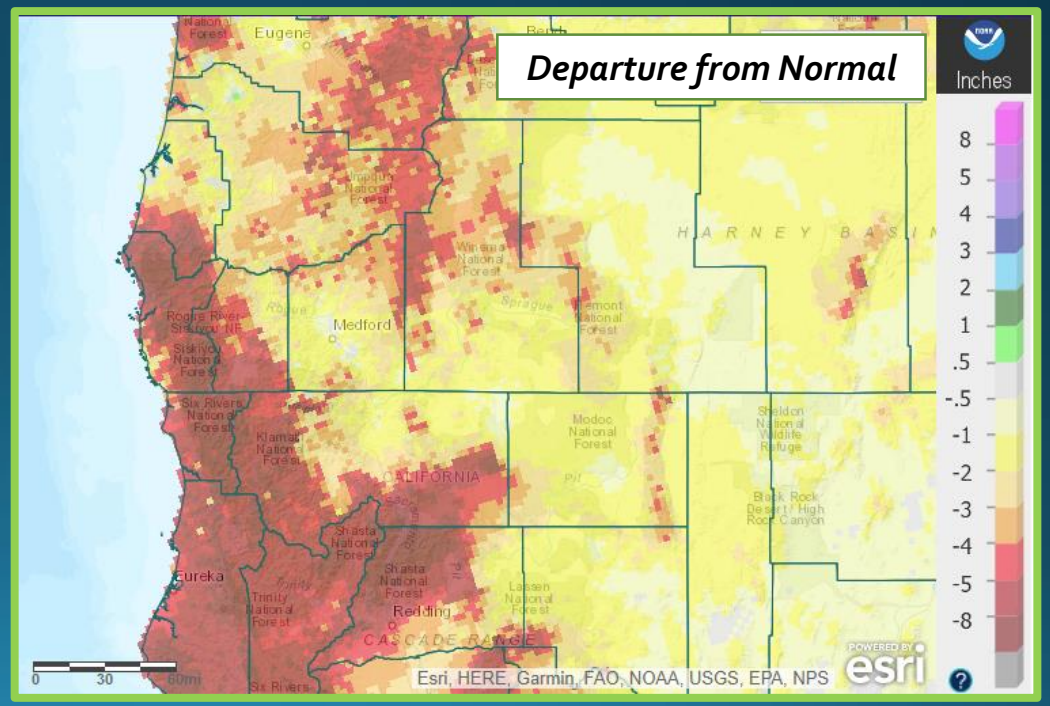




December Precipitation

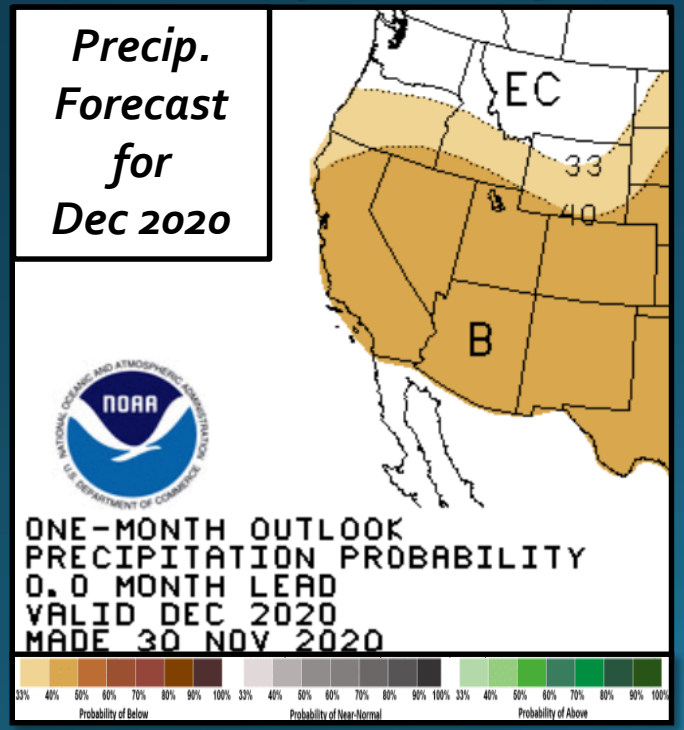
	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	*8.68"*	*-2.45"*	*1.81"*	*19th – 20th*
Roseburg	*4.55"*	*-1.97"*	*1.07"*	*25th – 26th*
Medford	*3.12"*	*-0.37"*	*1.08"*	*16th – 17th*
Klamath Falls	*0.81"*	*-0.64"*	*0.33"*	*16th – 17th*
Montague, CA	*1.72"*	*-0.94"*	*0.81"*	*16th – 17th*
Mt. Shasta City, CA	*1.88"*	*-5.97"*	*1.05"*	*25th – 26th*
Alturas, CA	*0.84"*	*-0.87"*	*0.26"*	*25th – 26th*

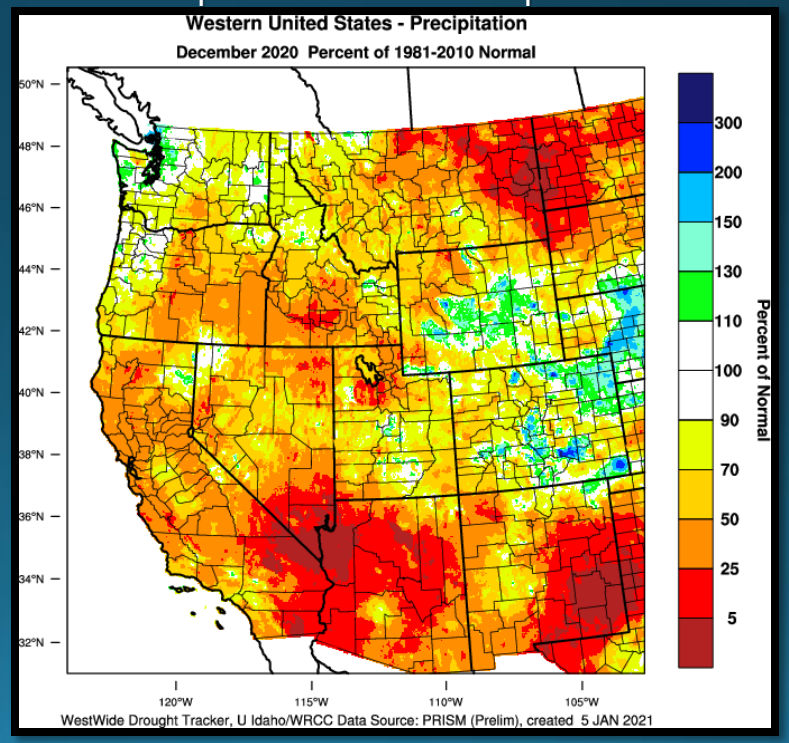




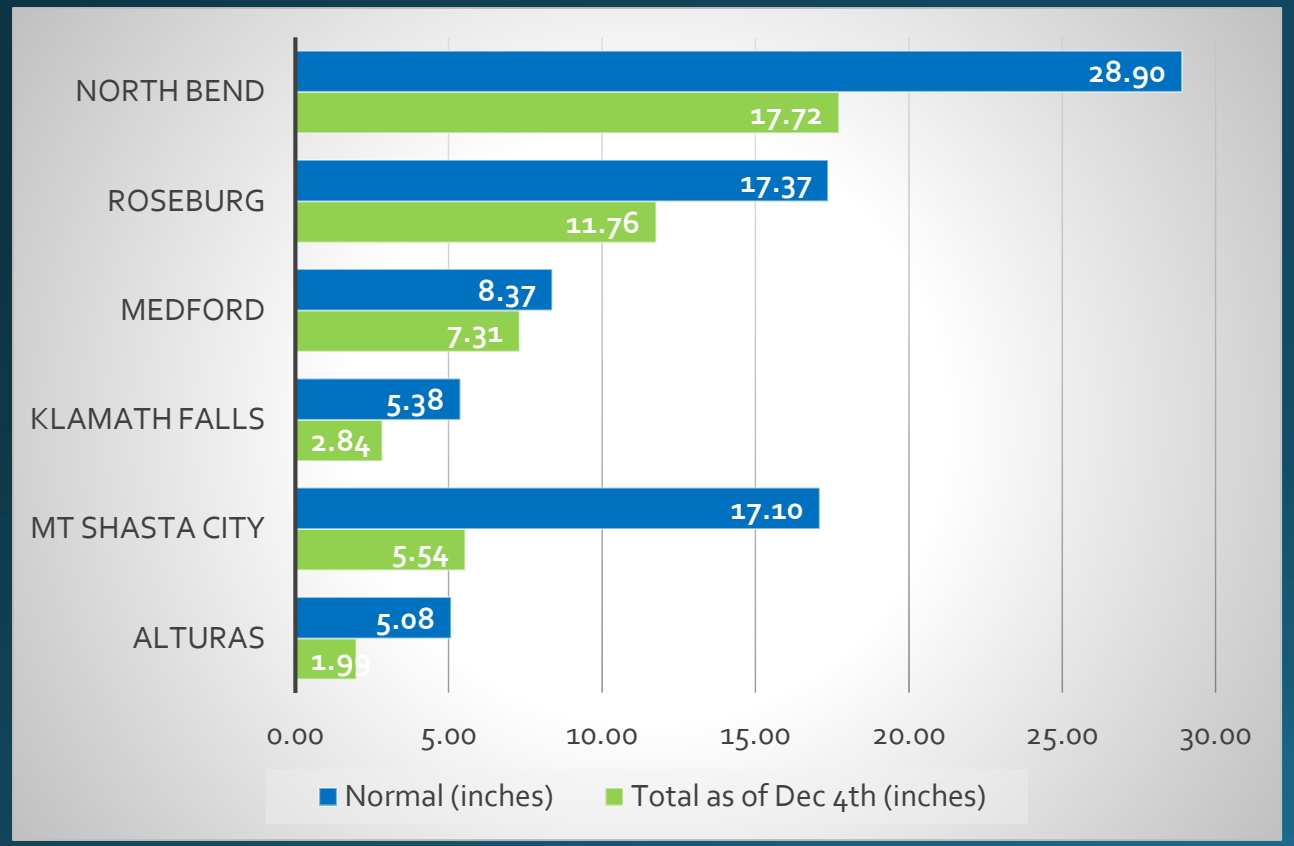
A Look Back at the December 2020 Precipitation Outlook

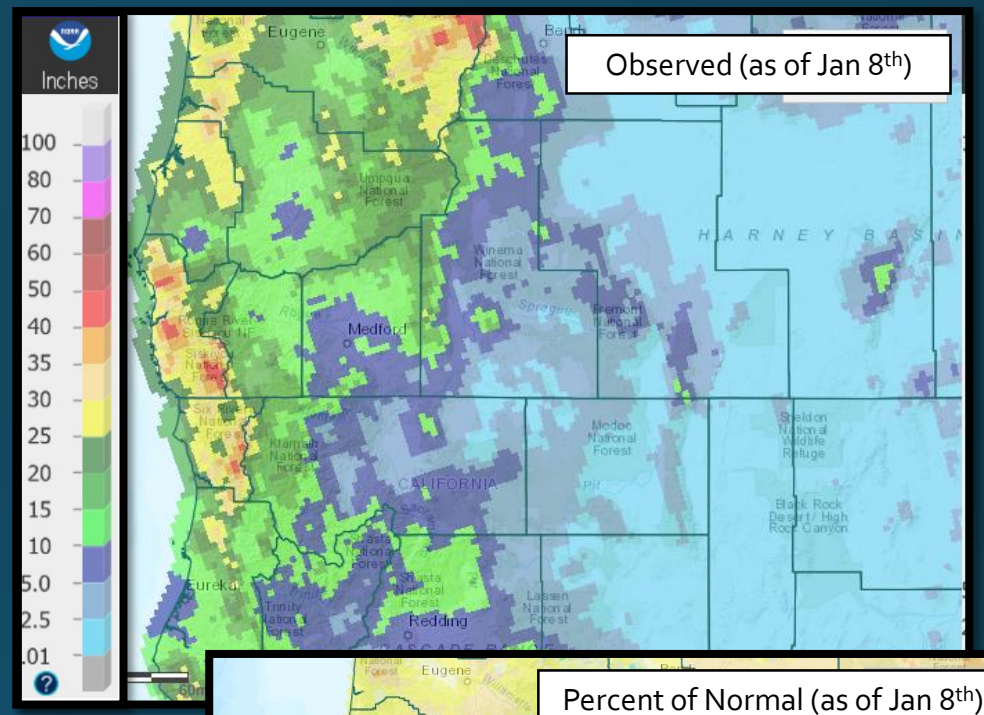
- ***Was the forecast anomaly correct?*** Mostly "Yes". Our localized forecast indicated "a high probability of below normal precipitation, most likely in 20% to 70% range, as compared to 1981-2010 climatology. NW portions, especially eastern Douglas County and the Cascades N of Hwy 140, are expected be the least anomalously dry, and SE portions, especially Modoc County, are likely to be the most anomalously dry. Precipitation was mostly 25 to 90% of normal, but areas west of the Cascades and in SE Modoc and Lake counties were the wettest %-wise.
- ***Was the expected impact correct?*** Yes. Mostly. Snowpack increased mid to late month, but fell behind climatological normals for the season. We did not have lower elevation freezing and frozen precipitation impacts in the west side valleys, however.
- ***Did our forecast improve upon the CPC forecast?*** Slightly, as we were able to provide some temporal skill as to when precipitation would occur.

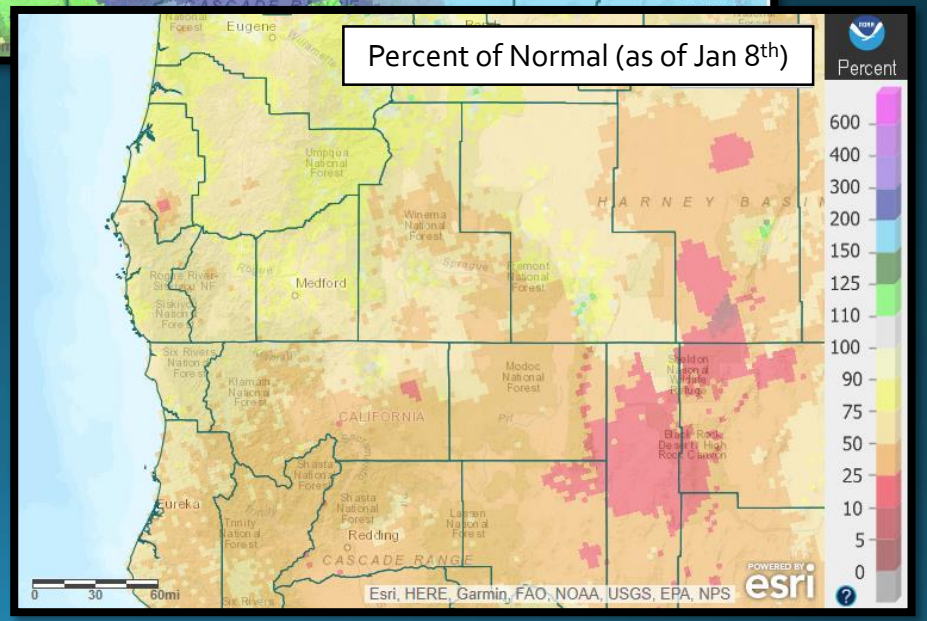




2020-2021 Water Year Status (as of Jan 8th)



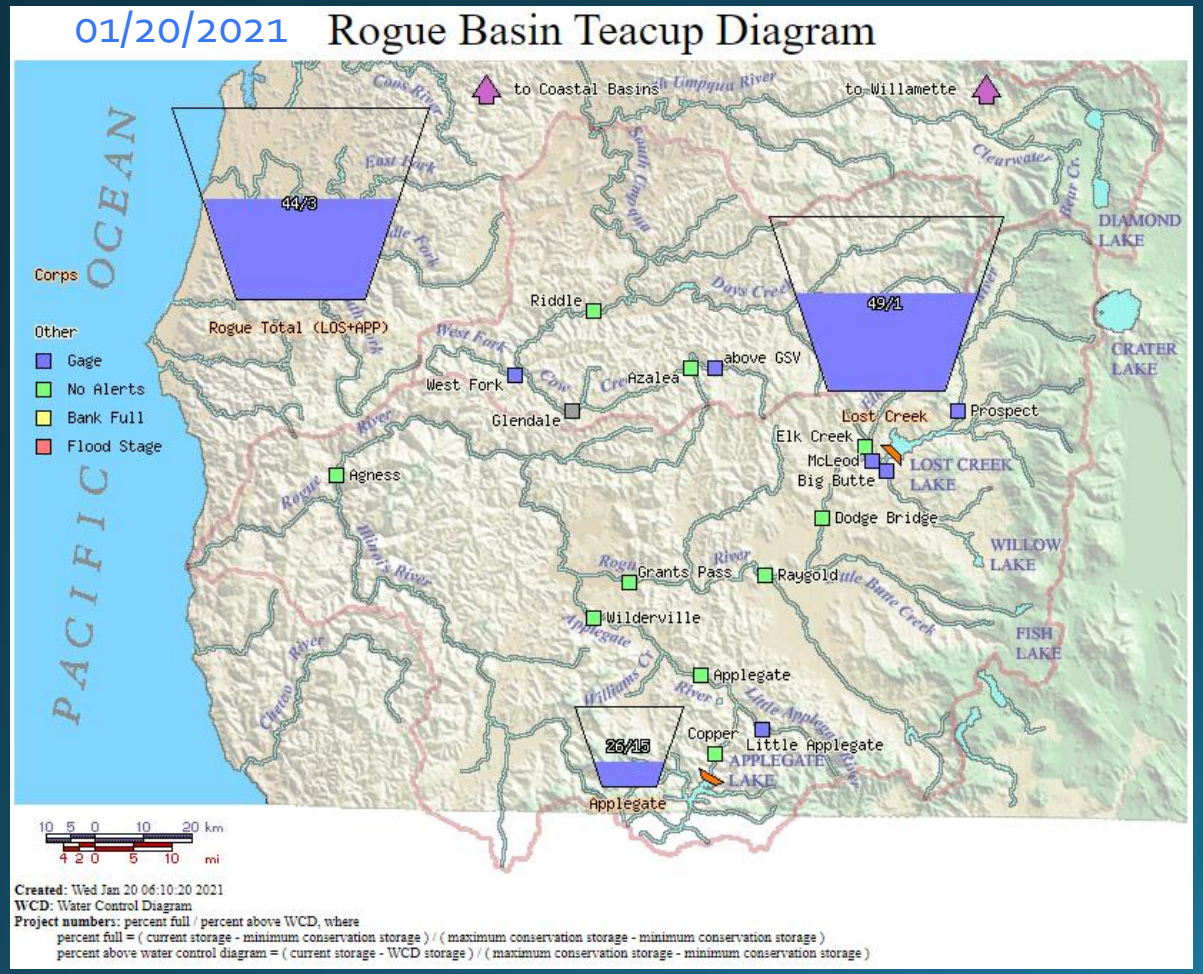


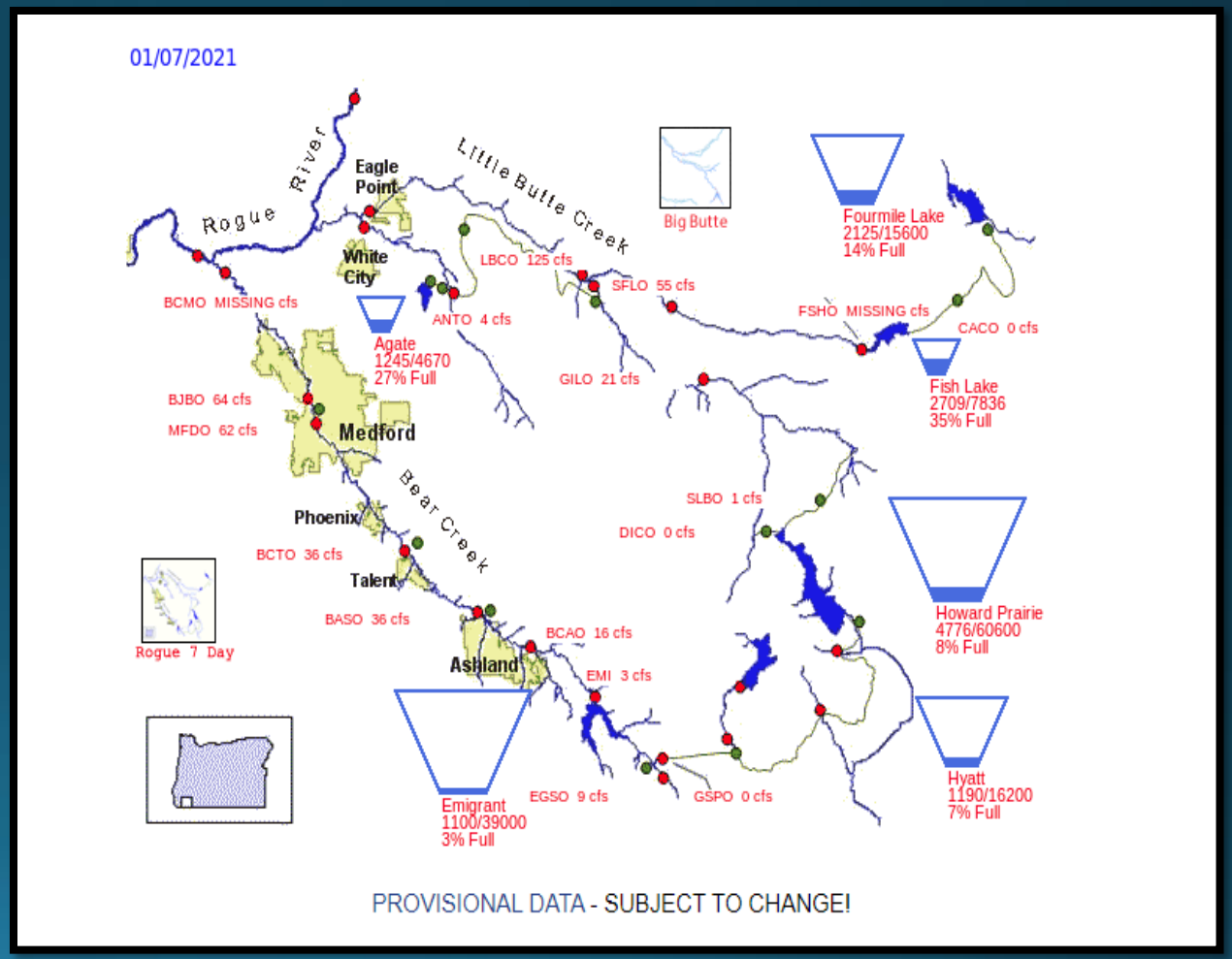


Reservoir Status

Data courtesy of US Army Corps of Engineers

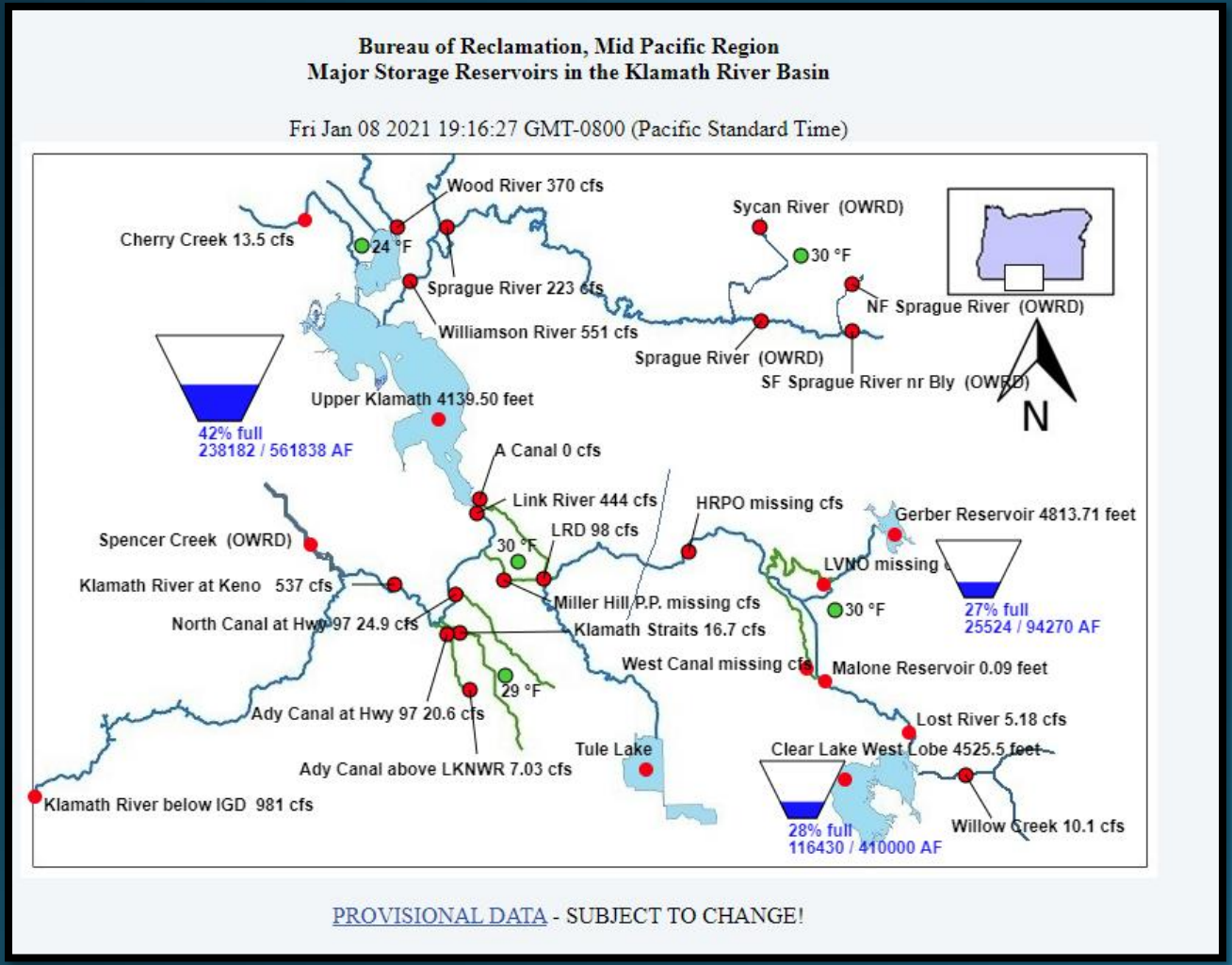
Data courtesy of Bureau of Reclamation

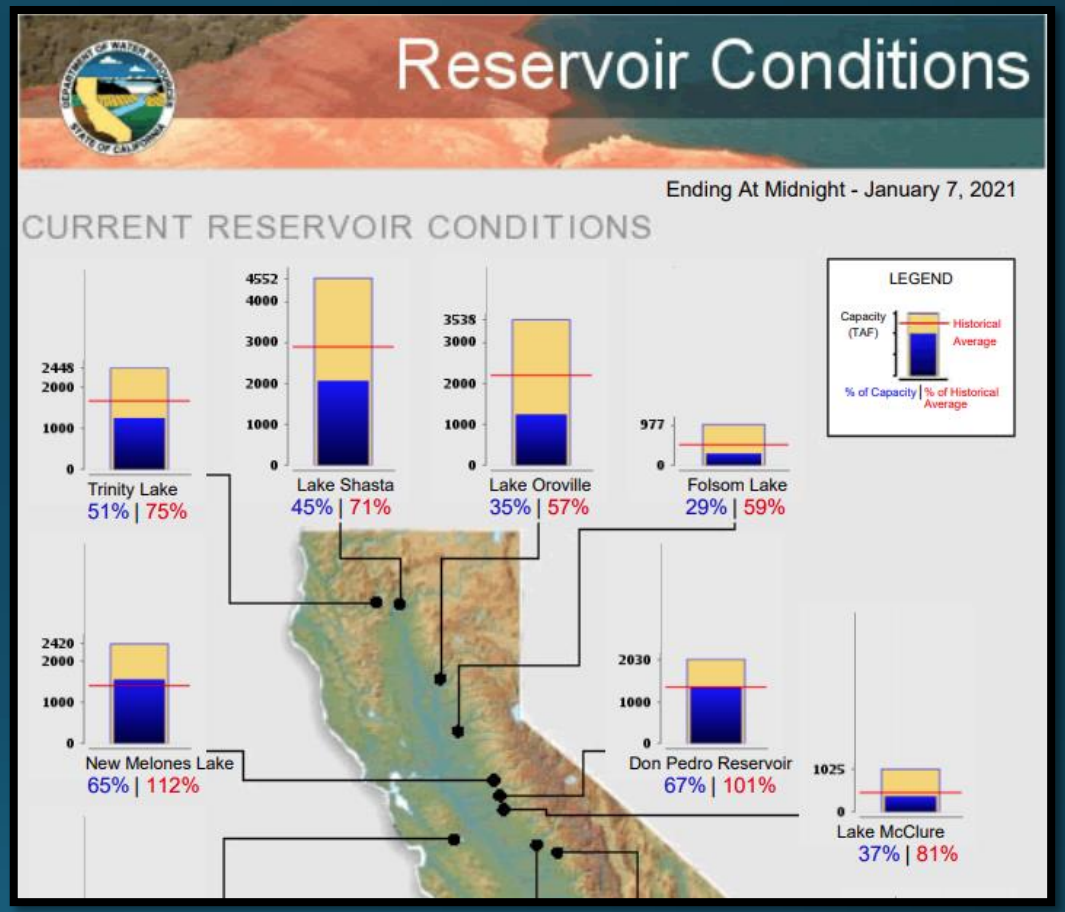




Reservoir Status

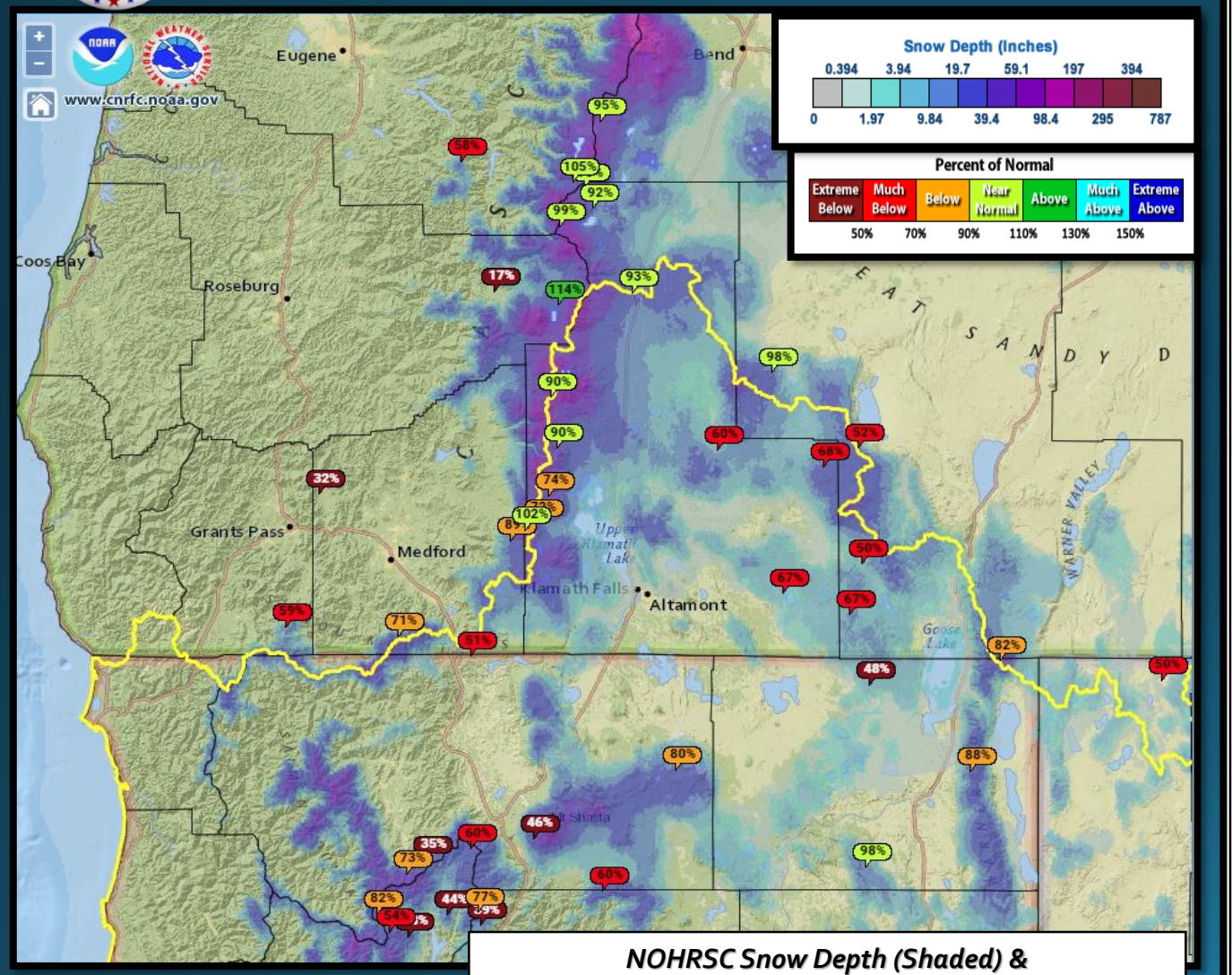
Klamath River Basin. Data courtesy of Bureau of Reclamation





Northern California. California Data Exchange Center

Snowpack Status

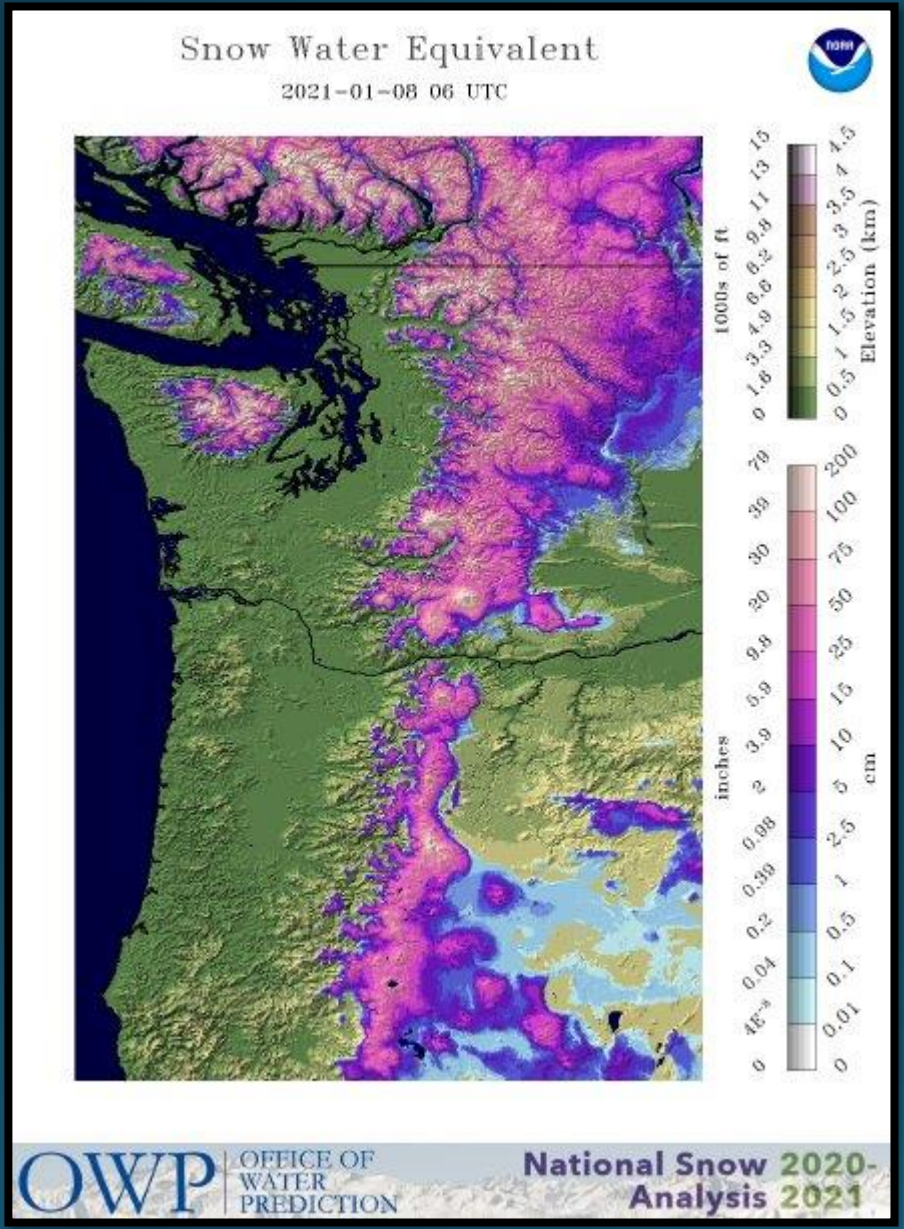


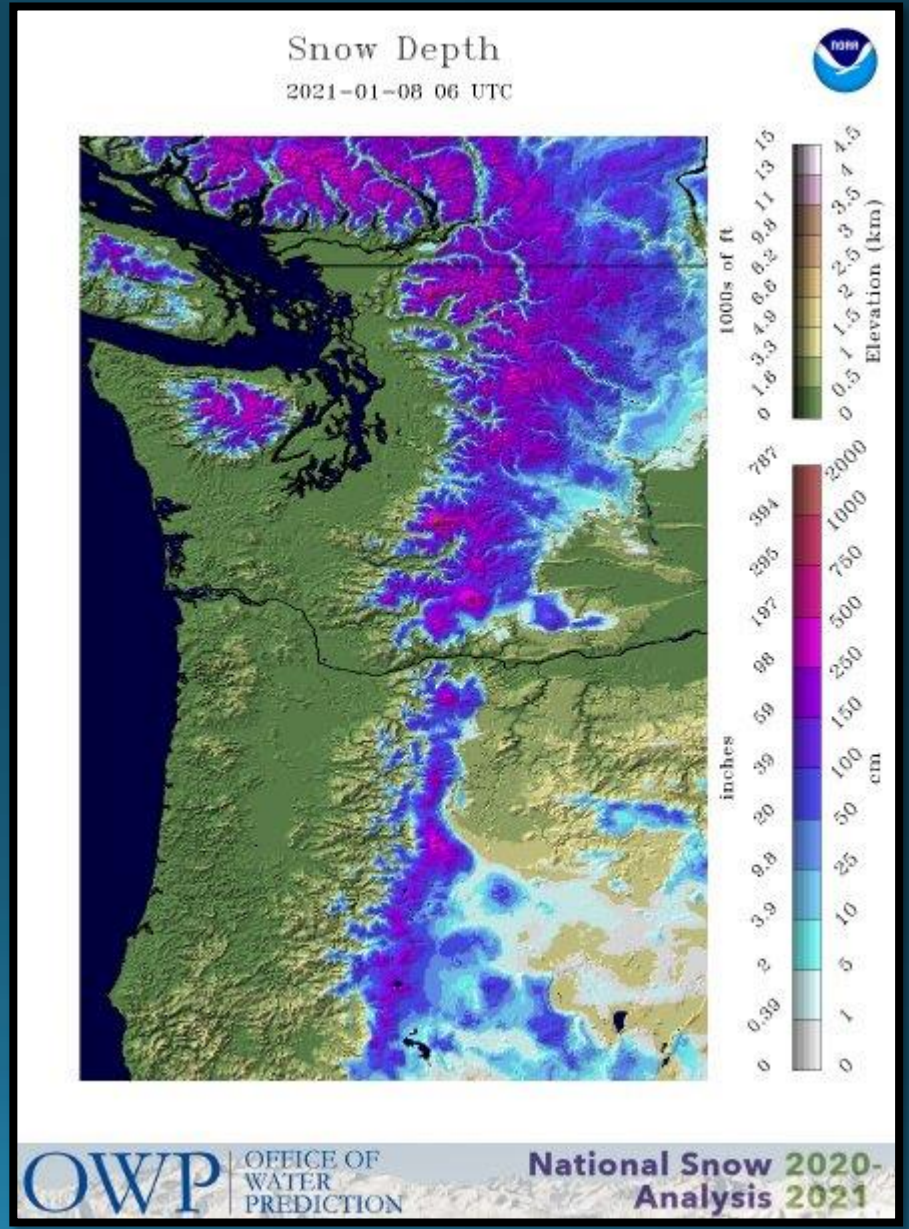
NOHRSC Snow Depth (Shaded) &
Snow Water Equivalent (SWE) % of Normal (Bubble)
as of 1/8/2021

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

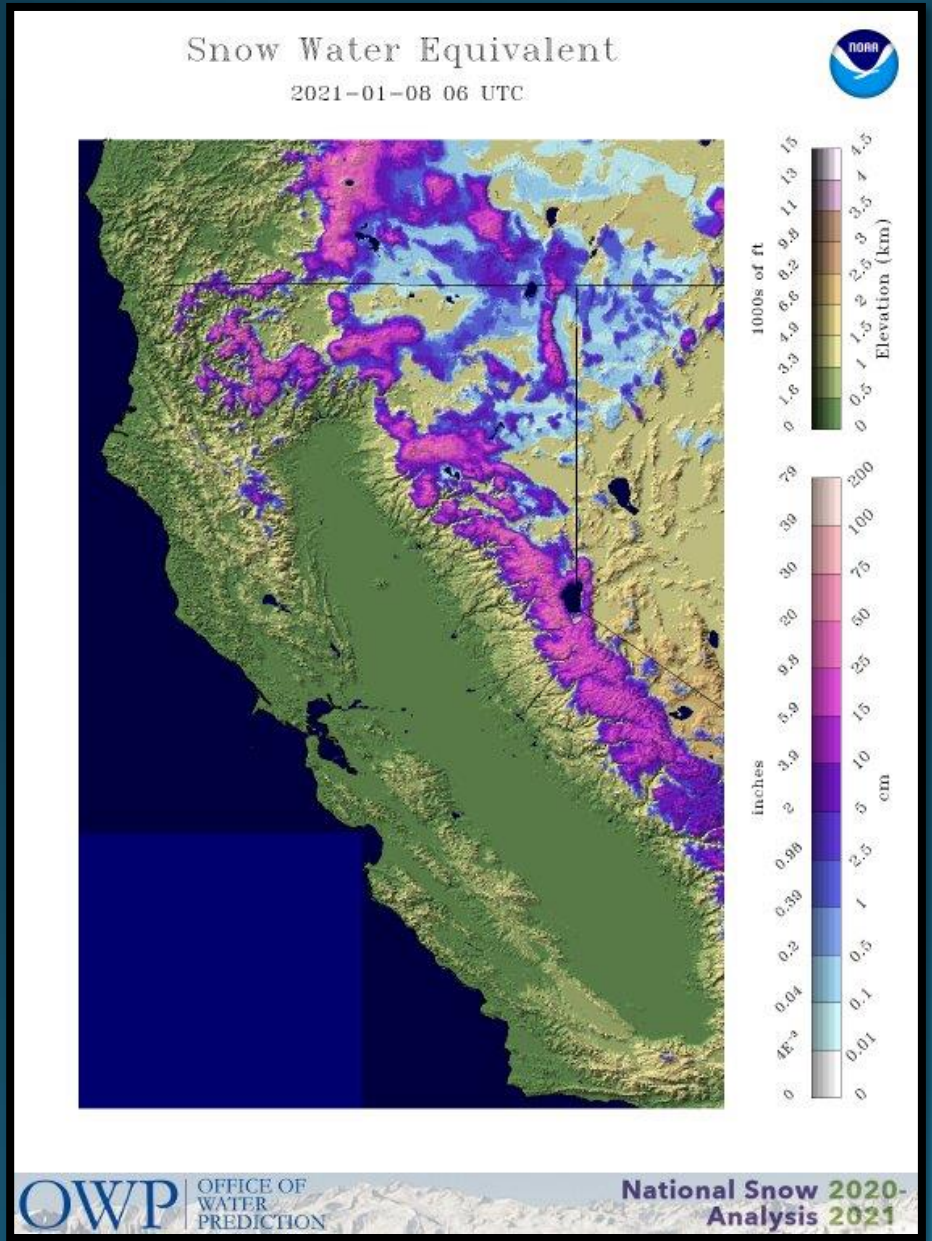
Not Available

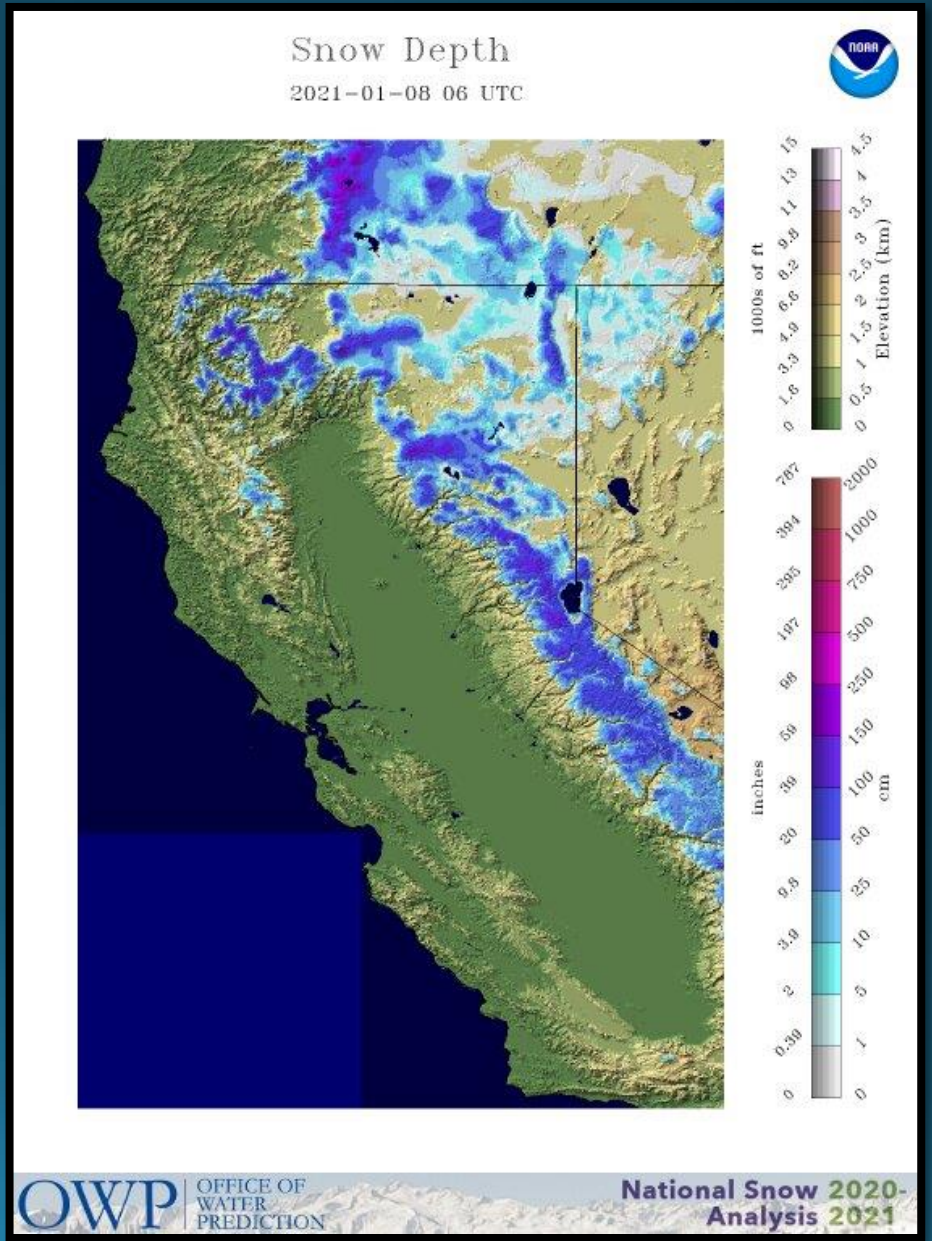
PacNW SWE & SD as of 1/8/2021





California SWE & SD as of 1/8/20



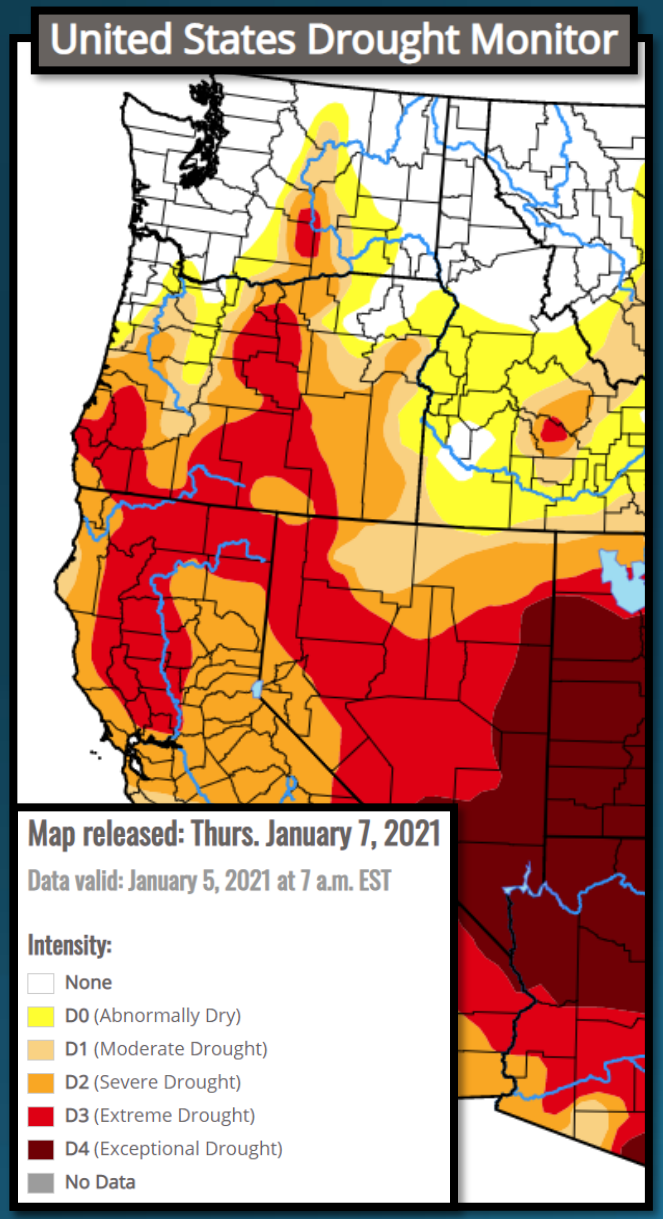


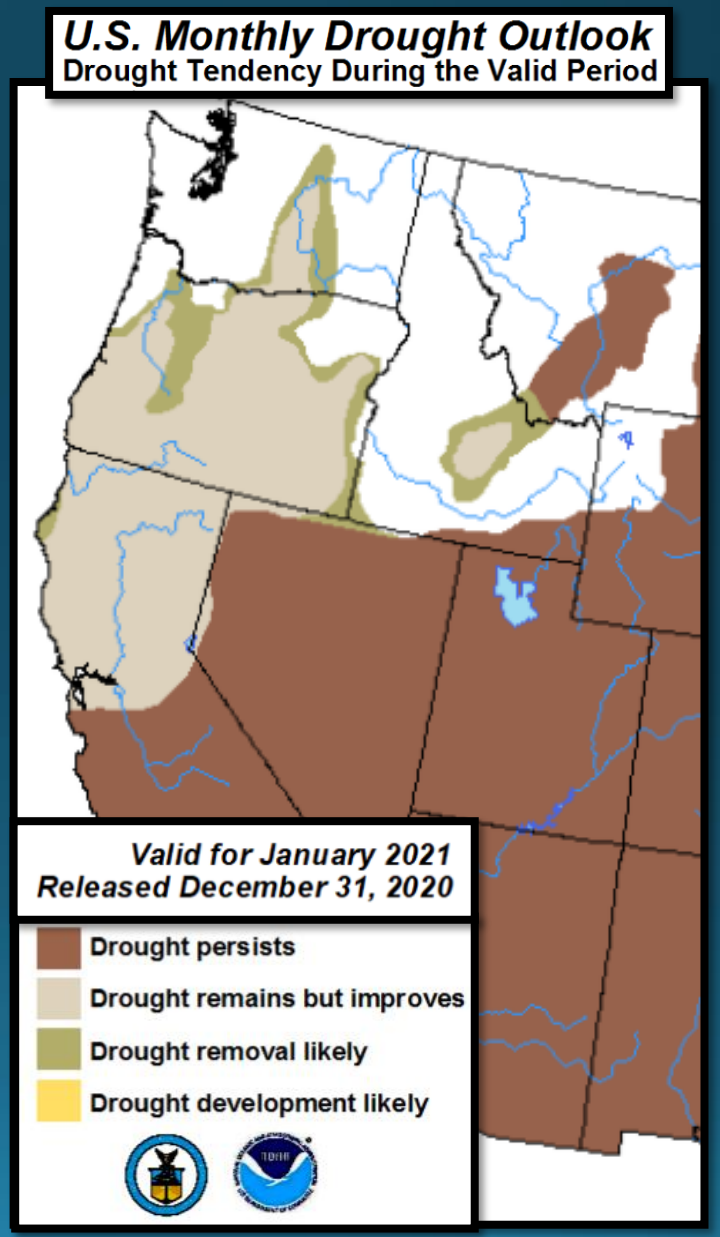
Crater Lake

Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 12/31/20	Highest Max/ Lowest Min
December	35.9°	19.8°	8.37"	*54.9"*	*60"*	56° on 9th / 11° on 23rd
Normal (1981-2010)	33.6°	18.0°	11.56"	91.1"	64"	N/A

Drought Monitor (Current) & Outlook (January)



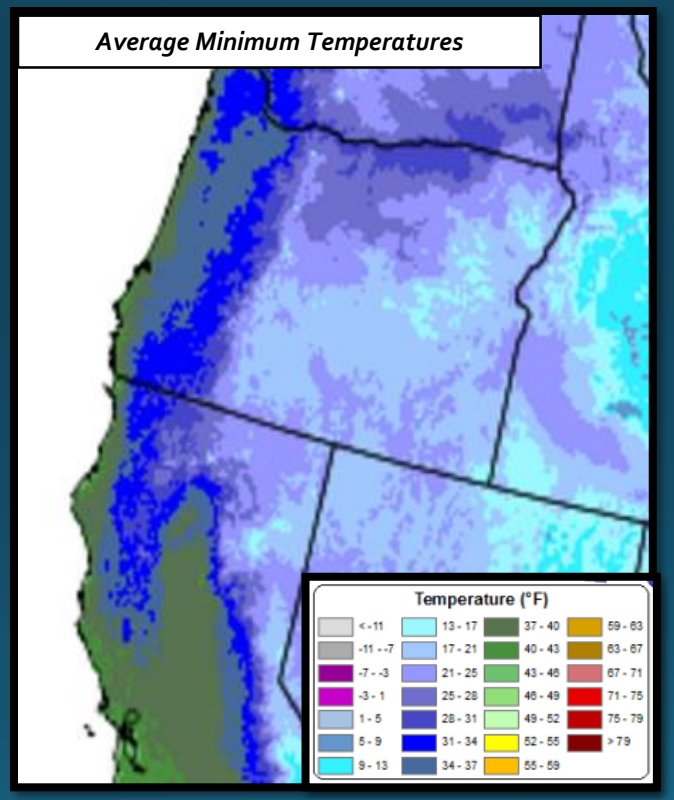


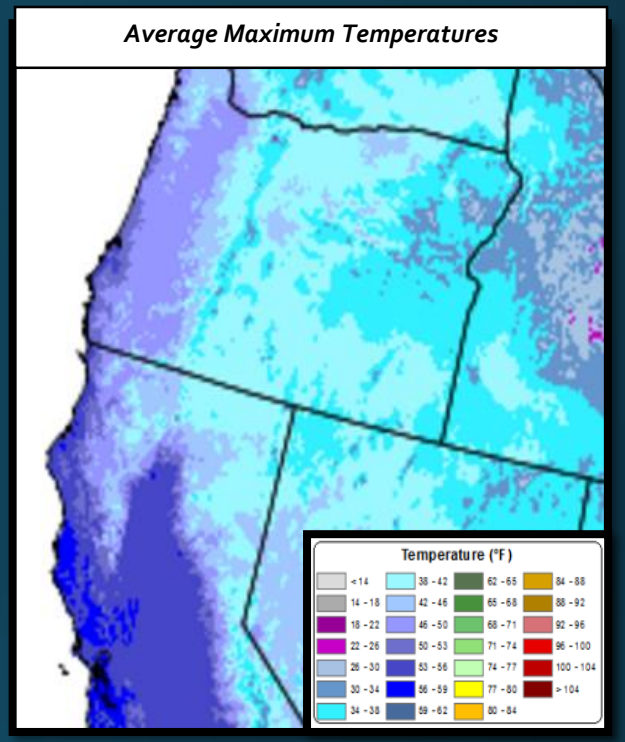
Looking Ahead: Normals for January (1981-2010)

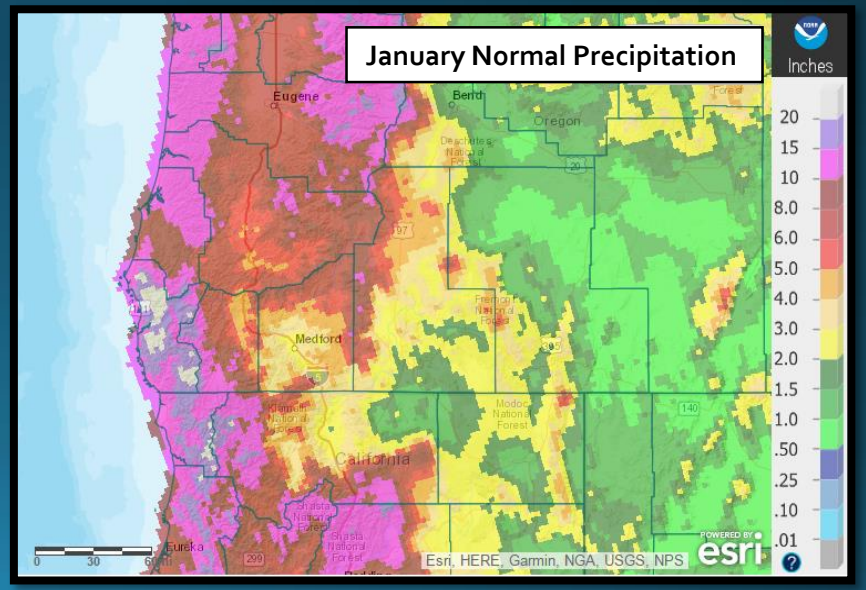
January is, on average, the second coldest and third wettest month of the year for southwestern Oregon and far northern California. Much of the lower terrain of Lake County, the Tule Lake Basin, and parts of the Sprague and Pitt River Basins average 1/2 inch to 2 inches of water, while higher elevations east of the Cascades receive 2-6 inches of water. The Cascades and Mount Shasta receive an average of 5-15 inches. The drier valleys west of the Cascades 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 gets 5-15 inches, except for the wettest portions of Curry County and far western Siskiyou County, which average 15-20+ inches.

Much of this water typically falls as snow above about 4,000 feet MSL. For instance, the 1981-2010 average snowfall for Crater Lake National Park Headquarters is 85.4 inches. Snow depth there averages 68 inches on January 1st and 87 inches on January 31st based on the same average period.

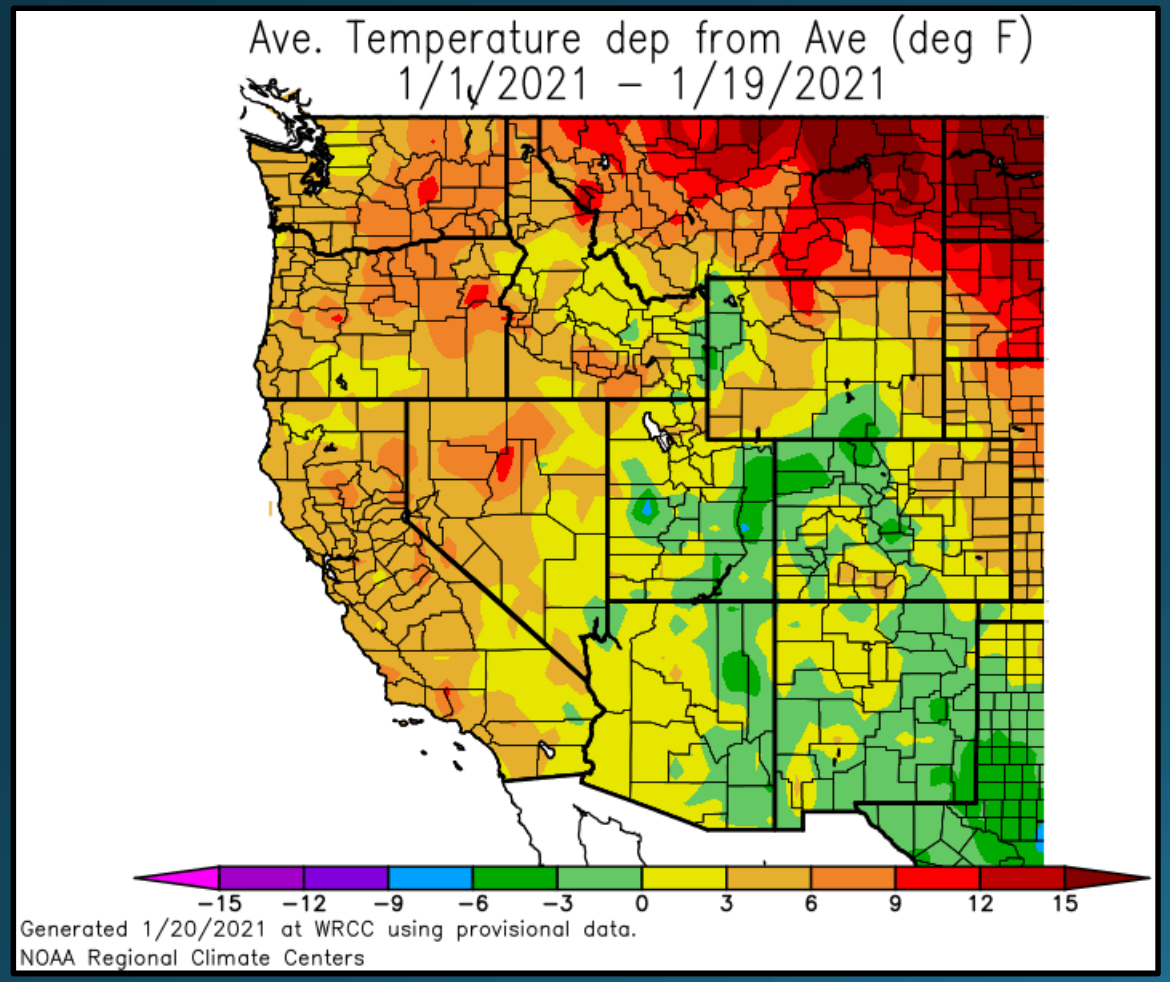
Average daily high temperatures are 30 to near 40 degrees in the mountains above 5000 feet and east of the Cascades and in the mid 40s to mid 50s west of the Cascades. Daily low temperatures are in the mid teens in the coldest locations east of the Cascades and on Mount Shasta, to the upper 20s in and near the Cascades. From the Cascades west to the coast, lower 30s to mid 40s are most typical from east to west.

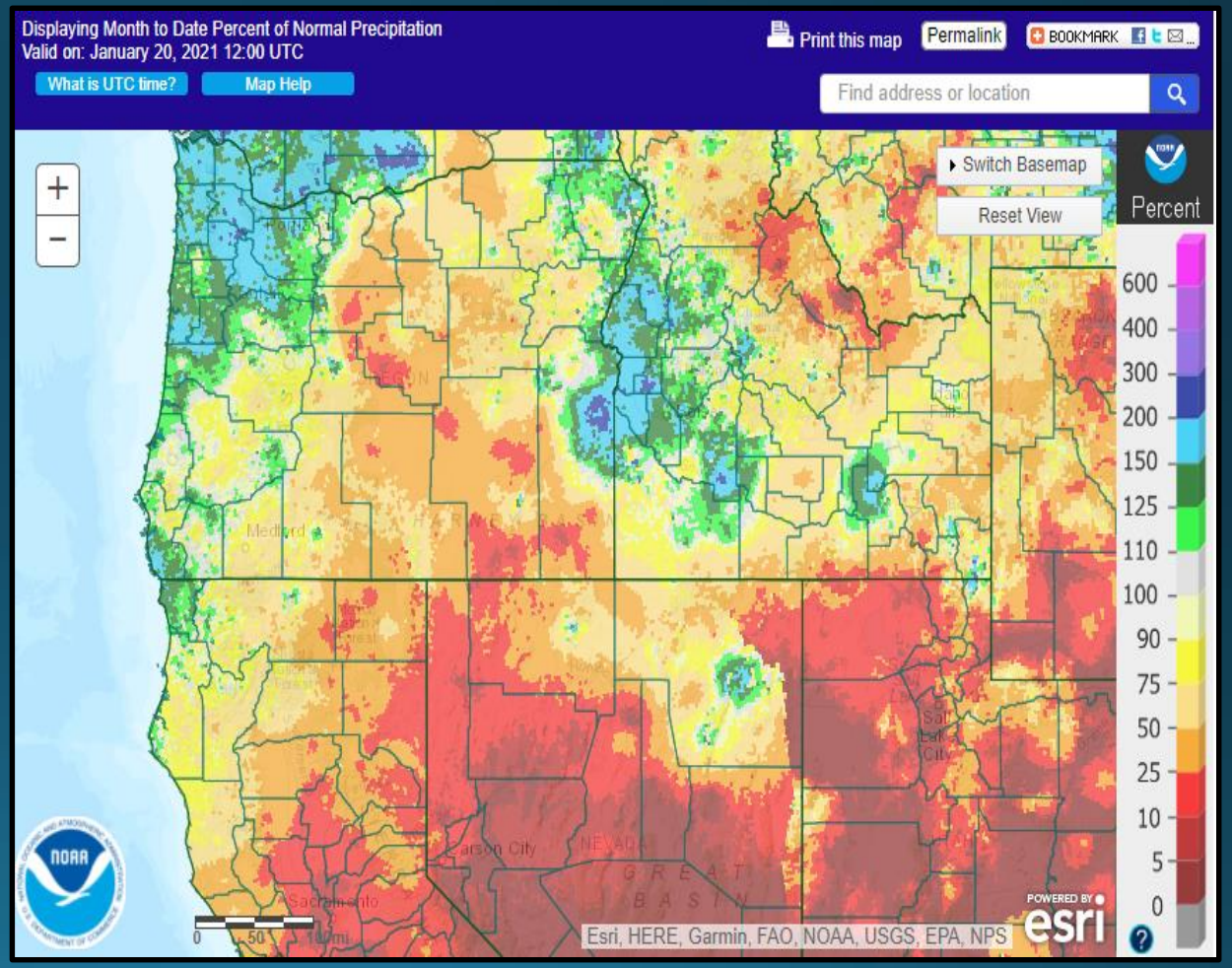






January 2021, Thus Far (as of 01/20/21)





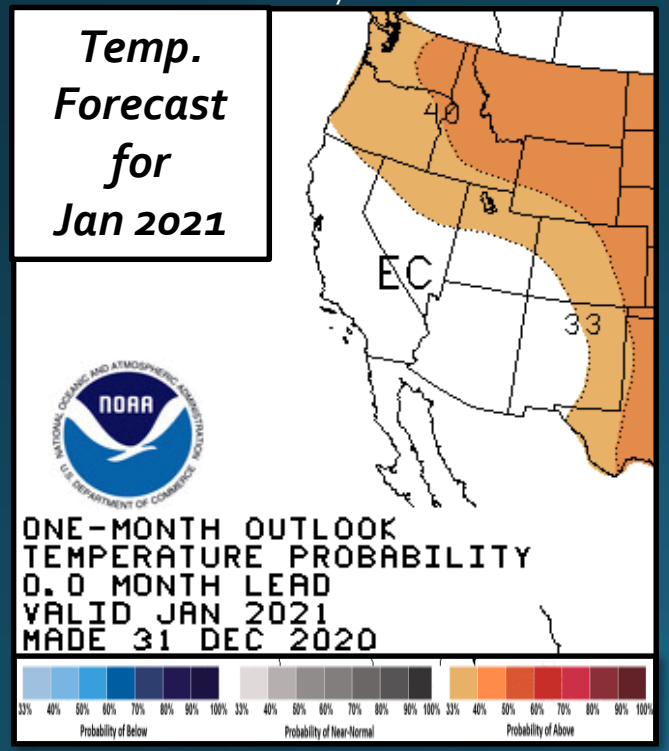
January-Feb 2021 Outlook *(Written 01/21/21)*

The official Climate Prediction Center forecast for January 2021 predicts increased probabilities for above normal temperatures (33-40%) over most of the Medford NWS FCWA and above normal precipitation (44-69%) across the Medford NWS forecast area.

- ***Downscaled January Temperature Forecast:*** ***Temperatures are very likely to finish the month above normal, generally in the +2°F to +4°F from 1981-2010 normals***. However, colder than normal conditions are expected for the last week of the month.
- ***Downscaled January Precipitation Forecast:*** Precipitation is most likely to end the month above normal along and near the Coast Range and in Siskiyou County from about the Marble Mountains westward. The remainder of the area from the Cascades westward is likely to end the month 75-100% of normal for precipitation, but the East Side and Mt Shasta area will likely end the month mostly 50-80% of normal.

Summary: Since January 2021 has mostly already happened, this summary will discuss conditions expected through the month of February. While CPC's precipitation forecast may have been a bit optimistic for January 2021 for our area, it's generally on the right track, as it appears that the wetter than normal weather is most likely to occur during the last week of this month and continue into February 2021. Altogether, a colder and wetter pattern is expected to move in with troughing across the PacNW for the remainder of this month, continuing into February and colder than normal temperatures are expected. The wettest period is likely to be the last few days of January into the first week of February. Then the wetter anomalies are expected to drift northward away from the Mount Shasta area again as the colder than normal temperatures center more on our Great Basin area east of the Cascades.

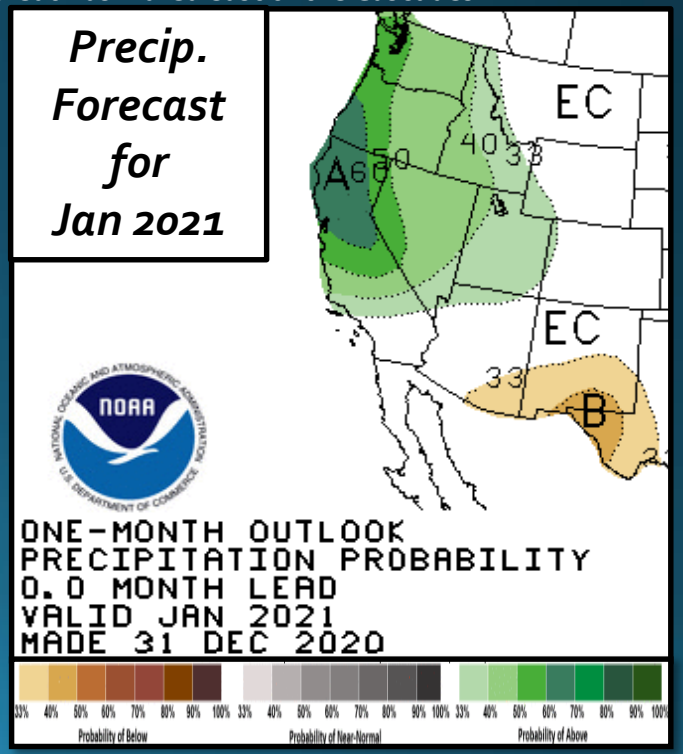
Temp. Forecast for Jan 2021



Expected Impact, January-Feb 2021:

Overall, January has brought some lessening of drought conditions across the forecast area, and this is expected to spread to most of the forecast area during the month of February, though the Mount Shasta area may continue to be below normal for precipitation for the month of February. However, for the last week of this month into the first half of February there are likely to be a few low pressure systems that will bring low elevation snow impacts, especially to the Mount Shasta area. The first week of February could also yield impacts for the Sexton Summit area. Cold and wet anomalies are expected to recede northward over the course 2nd half of February.

Precip. Forecast for Jan 2021



*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 might have records dating 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 might 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: 01/1902 – Present**
- **Roseburg: 04/1900 – Present**
  - *Missing:*
    - *05/1900-01/1901*
    - *03/1901-06/1902*
    - *08/1902-12/1930*
    - *10/1965-06/1997*
- **Medford: 03/11/1911 – Present**
- **Klamath Falls: 12/1897 – Present**
- **Montague, CA: 07/1948 – Present**
  - *Missing:*
    - *08-09/1952*
    - *02/1953-06/2000*
- **Mount Shasta City, CA: 04/1948 – Present**
- **Alturas, CA: 05/1935 – Present**