

National Weather Service Medford

January 2021 Climate Summary & February 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 \(NCEI\)](#).



January 2021 Weather Review

The first half of January 2021 was very active. Numerous systems moved through the region, bringing periods of strong winds and much needed mountain snow and valley rain. In addition, numerous very high and long period swell trains moved through the marine waters. This resulted in dangerous beach conditions with consecutive issuances of high surf advisories and warnings. In fact, some coastal locations reported flooding due to these very high surf heights coinciding with king tides on the 12th. At the same time, an atmospheric river (AR) affected the area from the 11th to the 13th and this was one of the wettest systems of the month. Significant rainfall resulted in minor flooding of the Coquille River and over eight inches of rain was recorded at the Red Mound RAWS (located in the higher terrain of the Coastal Range of Curry County). Thankfully, the heavy rain didn't result in any flash flooding on area burn scars. While this AR delivered some much needed rainfall, the warm air mass that accompanied this AR, brought snow levels up fairly high and the mid-elevation snow pack dwindled during this event. This warm air mass also brought the highest temperatures of the month for the area. In fact, Roseburg set two new daily high temperature records on the 12th and 13th, Montague tied a daily high temperature record, with other climate sites experiencing daily highs that fell within the top 10 warmest high temperatures for those dates.

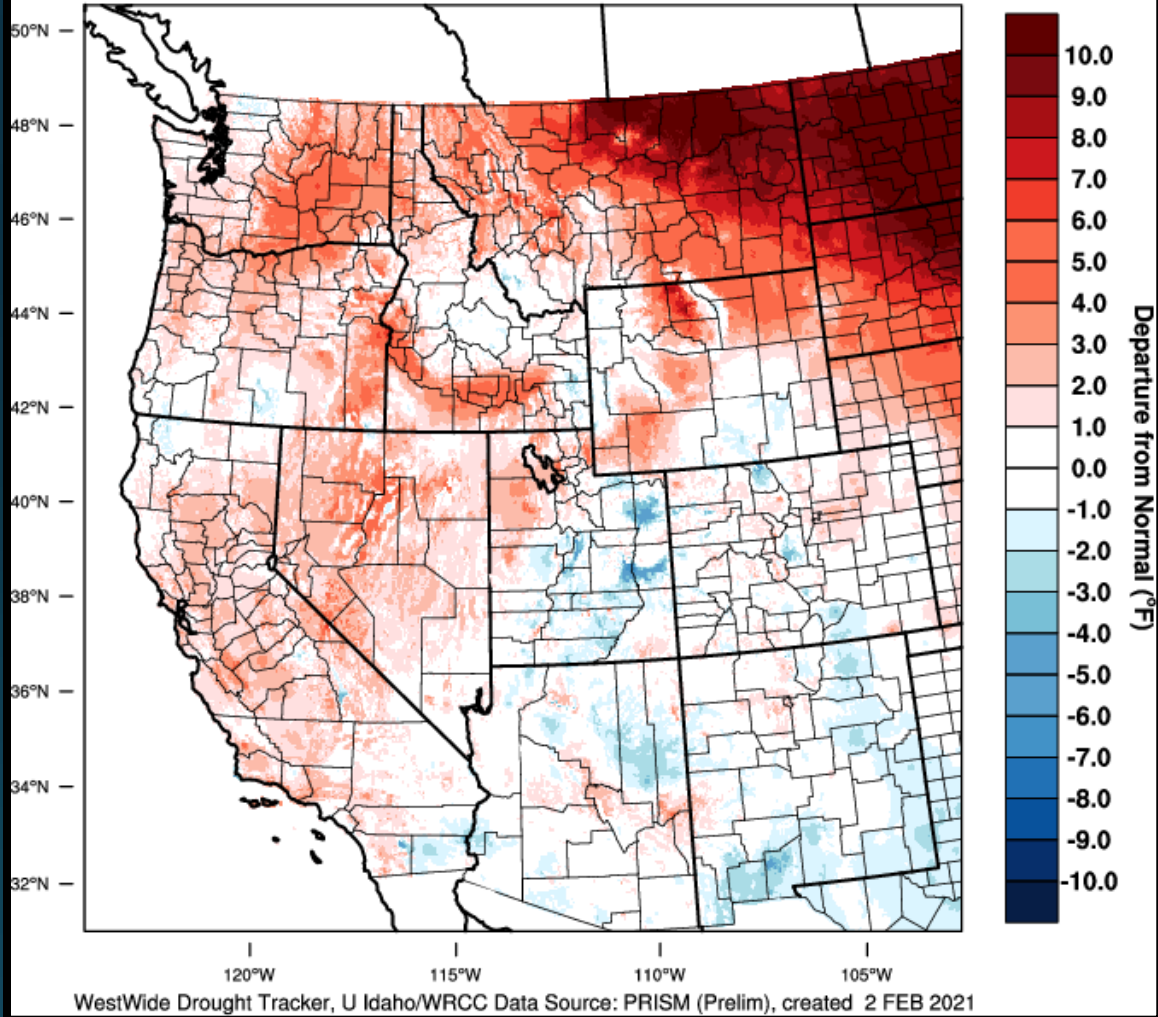
Once that atmospheric river ended, quiet weather followed during the next week. Strong high pressure developed aloft and a thermal trough developed at the surface. This pattern resulted in valley inversions that led to nightly and morning occurrences of valley fog. Low level easterly flow helped to keep the fog from lingering all through the day and most areas saw sunny skies and warm conditions during this time. On the 18th and 19th, a low pressure system slid south along the OR/ID border, then southeast to off the southern coast of California. As this happened, a moderate east wind event developed over the area, resulting in breezy to gusty winds and another round of warm temperatures.

The weather turned active again for the end of the month, and the systems that moved through during this time were much colder. With a more northerly trajectory of storm systems, snow levels were significantly lower and a few rounds of low elevation snow occurred during the last week of the month. Snow fell down to valley floors on the 24th and the Medford Airport recorded 0.1" of snow that day. Snow fell for most of the day in Medford, however the ground was just too warm for any more accumulation. A few days later, a strong southerly flow storm affected the region. This storm brought strong winds and heavy precipitation to the region. The track of this system favored heavy snow in the Mt Shasta City region, and by the end of the storm, snowfall was measured in feet, not inches. Over 2 feet of snow was recorded in Mt Shasta City because of this storm. Also, with the strong winds and lower snow levels, blowing snow led to blizzard conditions in the Weed area of the Shasta Valley. This storm resulted in the closure of Interstate 5 from Ashland south to Redding. The passes along I-5 north of Grants Pass also had to deal with wintry weather from this storm. Heavy snow resulted in the closure of the interstate between Merlin and Canyonville. Snow also impacted some lower elevation locations like Hayes Hill and Camas Mountain. However, downsloping from strong winds in the Rogue Valley kept temperatures too warm for snow and also limited the amount of precipitation that fell during this system. There was a brief break in the weather before another atmospheric river moved into the area on the last day of the month. Although snow levels weren't quite as low with this event, it still brought another round of lower elevation snow and strong winds that continued into the start of February.

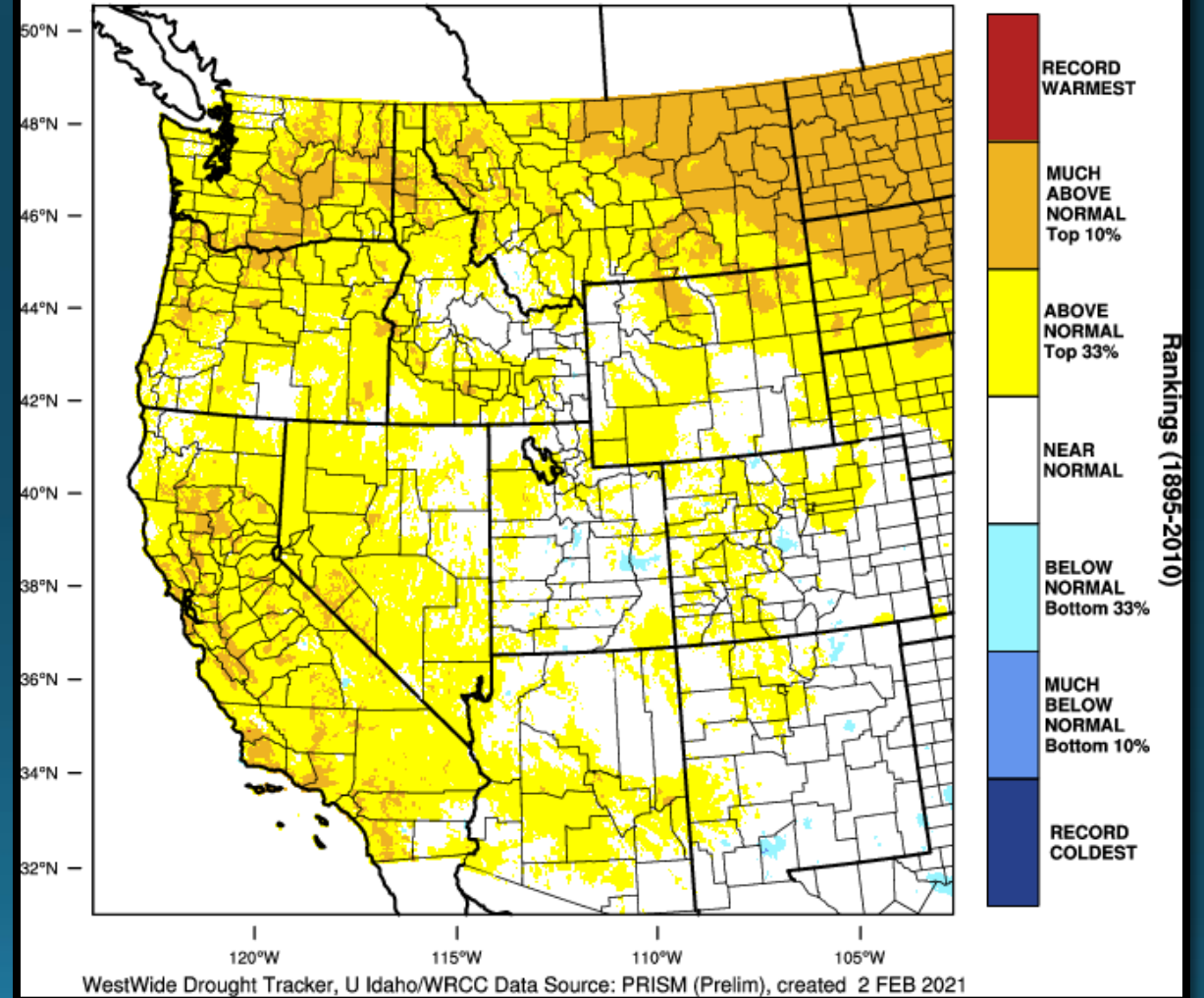


January 2021 Observed Temperatures

Western United States - Mean Temperature
January 2021 Departure from 1981-2010 Normal



Western United States - Mean Temperature
January 2021 Percentile





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	48.5	2.7°	54.9	3.4°	42.1	1.9°
Roseburg	45.8	2.7°	52.8	3.1°	38.9	2.4°
Medford	42.6	2.3°	50.1	2.3°	35.0	2.2°
Klamath Falls	33.4	3.2°	42.0	2.4°	24.8	4.0°
Montague, CA	37.5	2.1°	45.9	1.3°	29.2	3.1°
Mt. Shasta City, CA	36.3	0.4°	44.2	-1.1°	28.4	2.0°
Alturas, CA	32.8	2.9°	44.0	2.4°	21.6	3.4°



Monthly Max & Min Temperatures

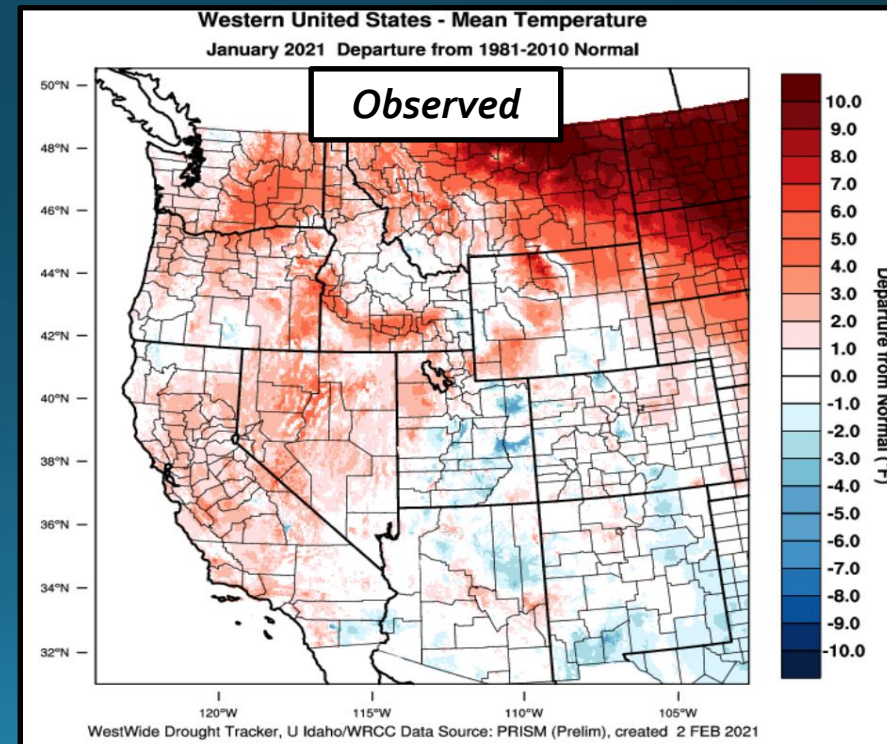
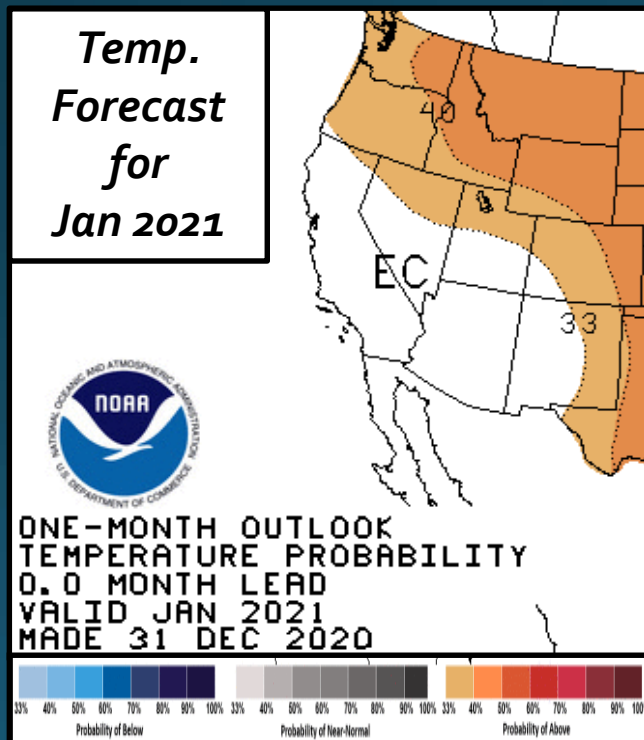
	<i>Max (°F)</i>	<i>Date(s)</i>	<i>Min (°F)</i>	<i>Date(s)</i>
<i>North Bend</i>	<i>63°</i>	<i>12th</i>	<i>32°</i>	<i>20th & 23rd</i>
<i>Roseburg</i>	<i>63°</i>	<i>12th</i>	<i>28°</i>	<i>26th</i>
<i>Medford</i>	<i>63°</i>	<i>13th</i>	<i>26°</i>	<i>20th</i>
<i>Klamath Falls</i>	<i>54°</i>	<i>13th</i>	<i>8°</i>	<i>26th</i>
<i>Montague, CA</i>	<i>61°</i>	<i>13th</i>	<i>18°</i>	<i>20th</i>
<i>Mt. Shasta City, CA</i>	<i>60°</i>	<i>14th</i>	<i>10°</i>	<i>26th</i>
<i>Alturas, CA</i>	<i>56°</i>	<i>14th</i>	<i>4°</i>	<i>26th</i>

	<i>Date</i>	<i>Record High</i>	<i>Old Record/Year</i>
<i>Roseburg</i>	<i>12th</i>	<i>63°</i>	<i>61° / 1945</i>
	<i>13th</i>	<i>62°</i>	<i>59° / 2011</i>
<i>Montague</i>	<i>13th</i>	<i>61°</i>	<i>Ties with 1986</i>



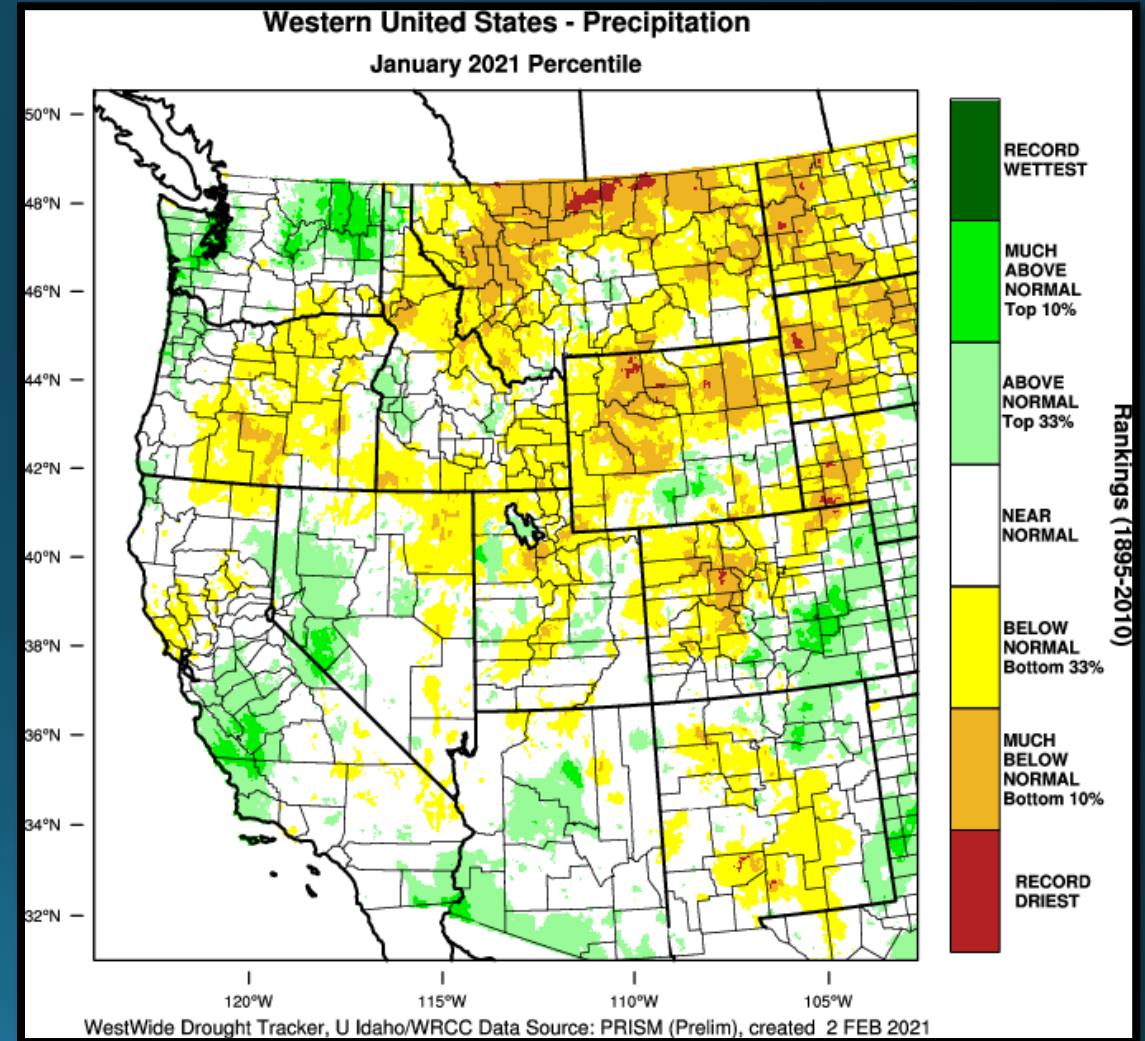
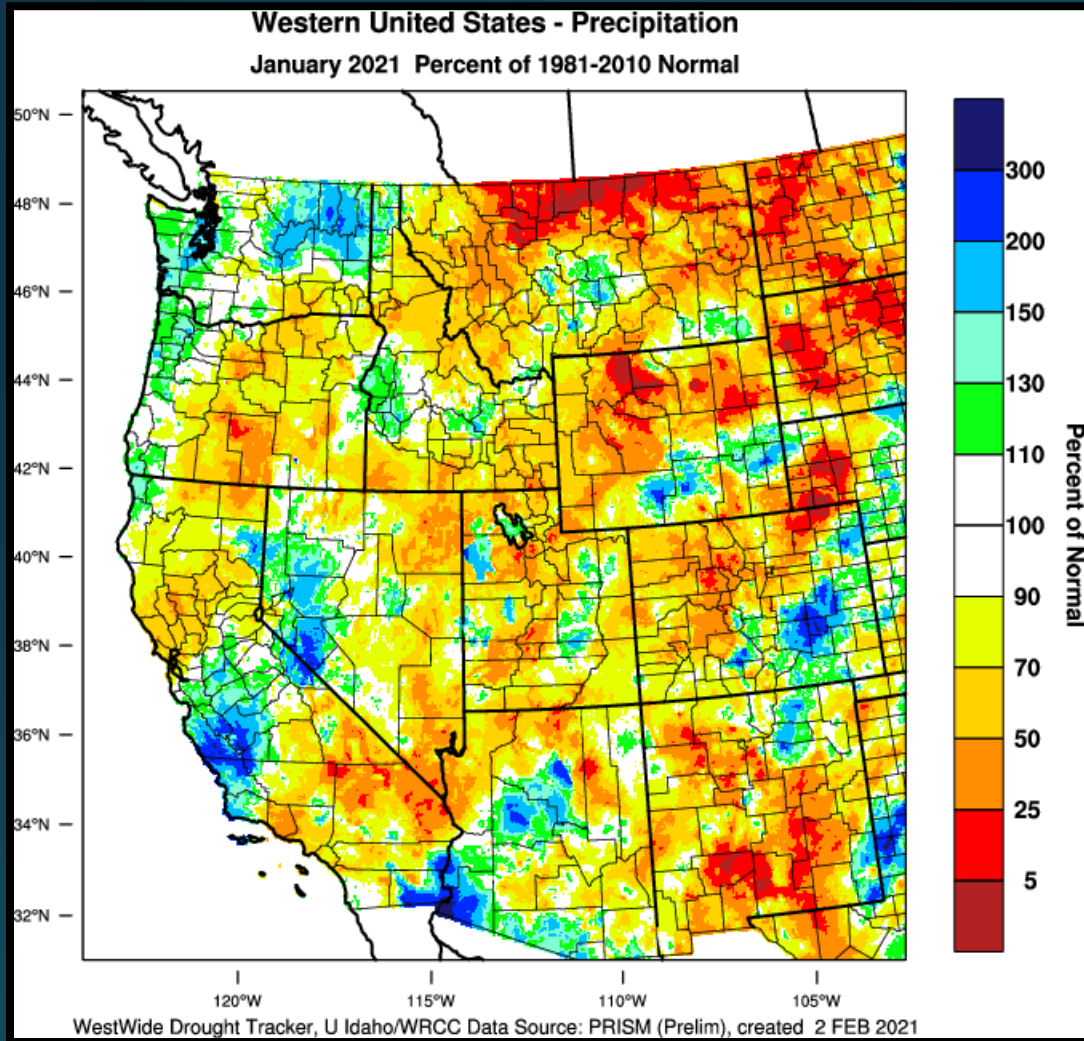
A Look Back at the January 2021 Temperature Outlook

- **Was the forecast anomaly correct?** Partially - Our localized forecast was not written until 1/21/2021. Even then, it appeared temperatures would be +2 to +4F for the month. However, the expected colder weather in the last 10 days or so of the month resulted in temperatures near normal, generally -3 to +3F from the 1981-2010 averages. So, our forecast was a bit too high.
- **Was the expected impact correct?** Generally, yes. The snowpack increased for most of the Cascades westward and there was some improvement in drought conditions, toward less severity, across western portions of the forecast area, especially along and near the coast.
- **Did our forecast improve upon the CPC forecast?** Generally, "No". CPC's forecast was quite good spatially and was issued 3 weeks ahead of our localized update. The only value added was that our outlook said the last week of the month would be colder than normal which was correct.

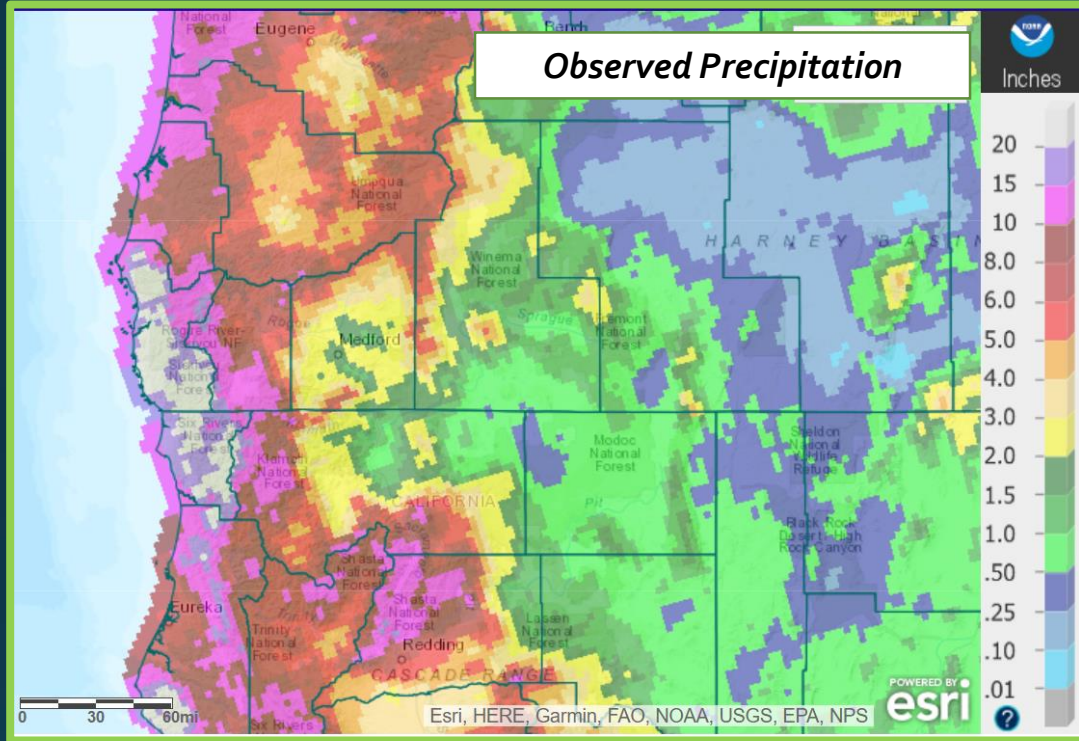




January 2021 Observed Precipitation



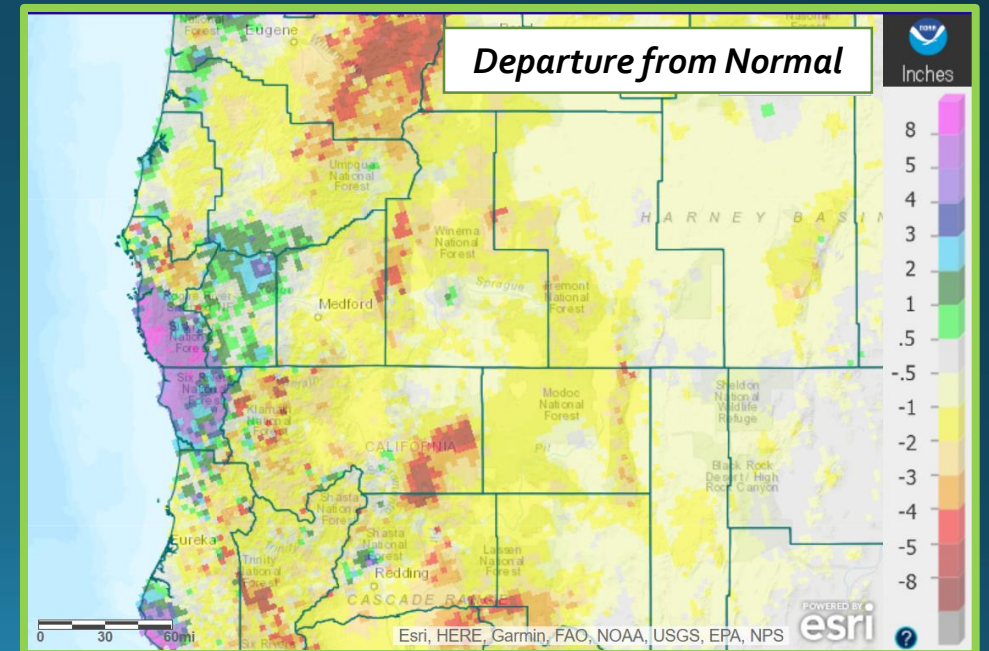
Precipitation



	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	<i>M</i>	<i>N/A</i>	<i>M</i>	<i>M</i>
Roseburg	4.48"	-0.61"	<i>M</i>	<i>M</i>
Medford	1.98"	-0.45"	<i>M</i>	<i>M</i>
Klamath Falls	0.57"	-1.28"	<i>M</i>	<i>M</i>
Montague, CA	1.04"	-1.16"	<i>M</i>	<i>M</i>
Mt. Shasta City, CA	7.86"	+0.80"	<i>M</i>	<i>M</i>
Alturas, CA	0.91"	-0.74"	<i>M</i>	<i>M</i>

Record Precipitation

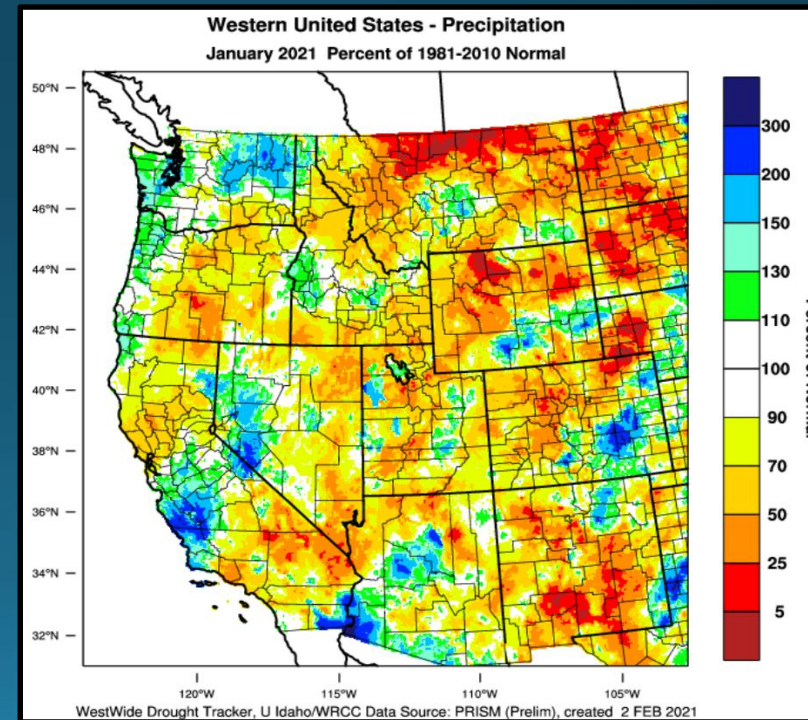
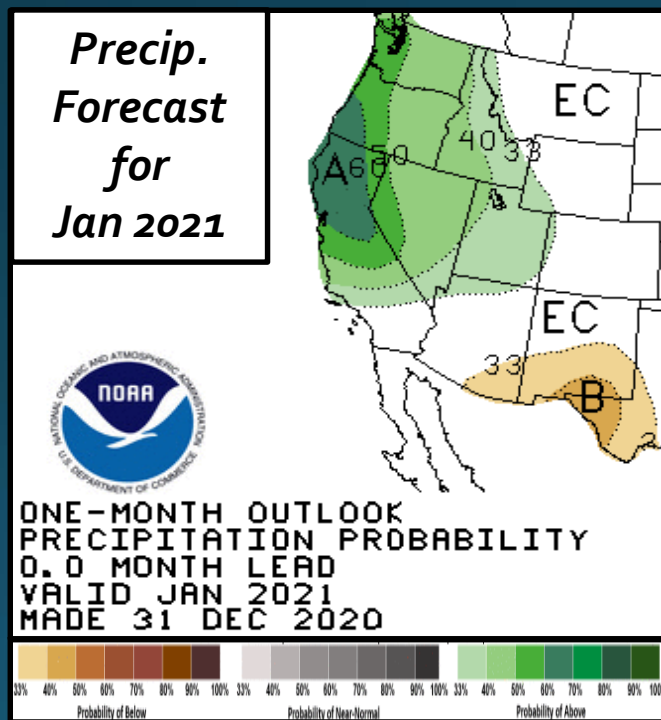
	Date / Amount	Old Record / Year
Alturas	4 th / 0.50"	Ties with 1965





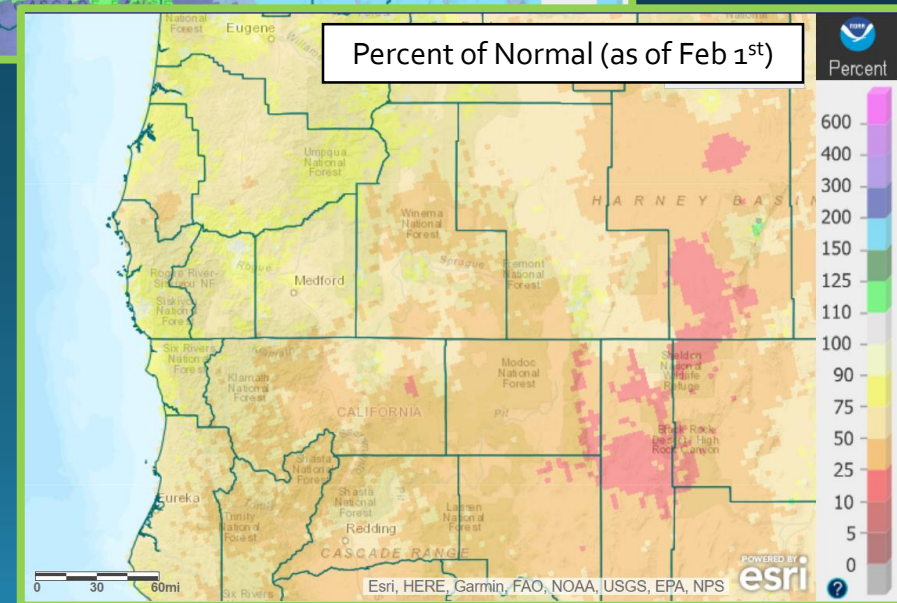
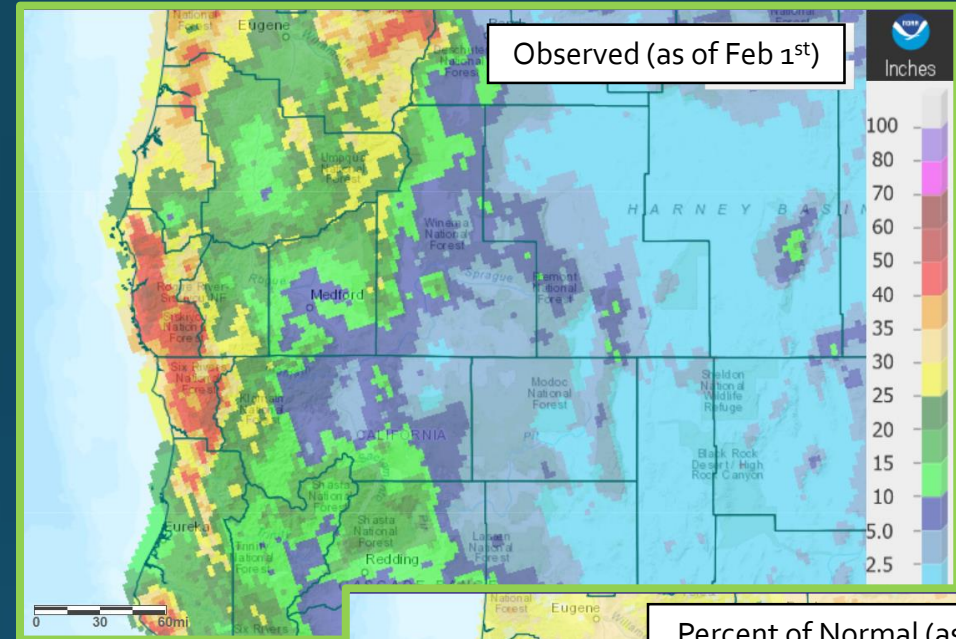
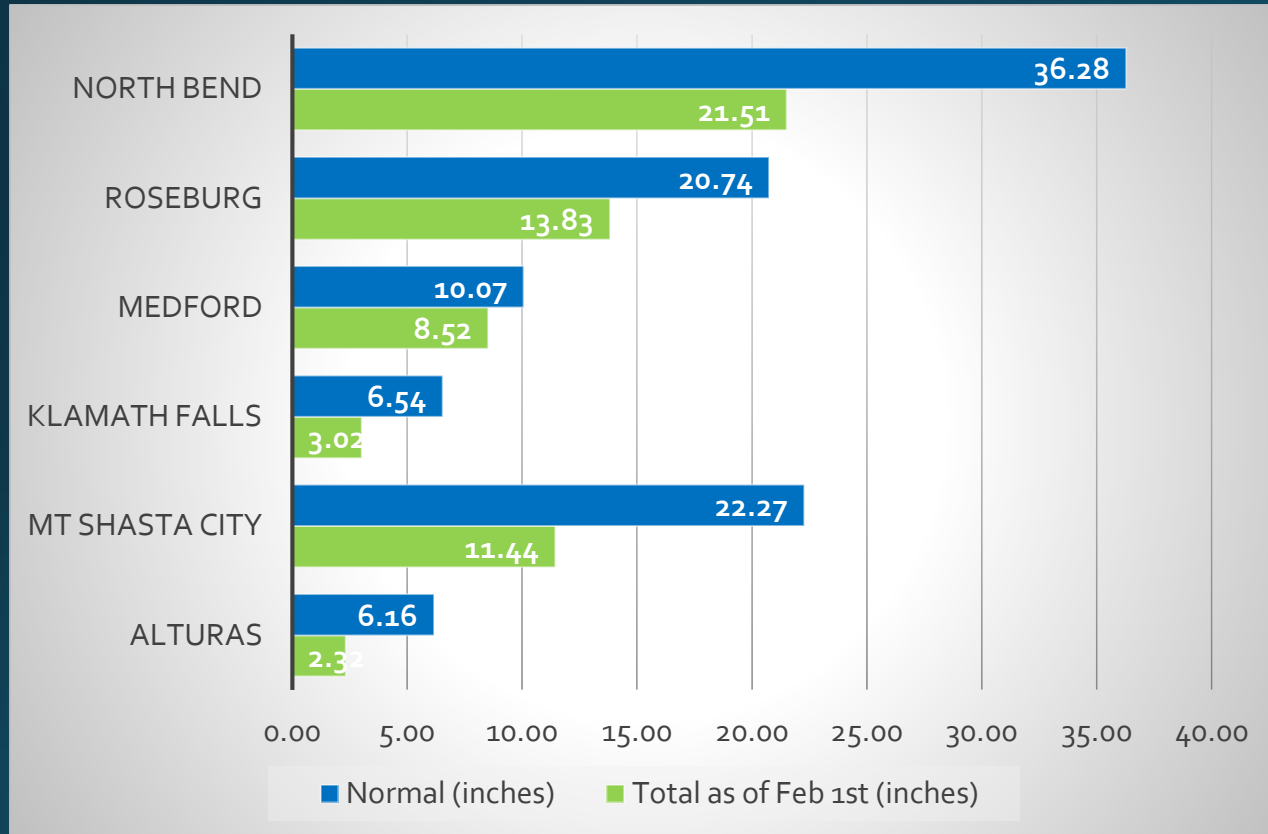
A Look Back at the January 2021 Precipitation Outlook

- **Was the forecast anomaly correct?** Our localized forecast indicated, "Precipitation most likely 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." This was pretty close to right on, but amounts were a bit lesser from the Oregon Cascades eastward and higher at and near Mount Shasta City.
- **Was the expected impact correct?** Yes. Drought conditions lessened over some of the west side and expected lower elevation snow impacts generally materialized. However, we did not get as much precipitation as was expected from the Cascades eastward.
- **Did our forecast improve upon the CPC forecast?** Yes, however, CPC's forecast was issued 3 weeks prior to ours.



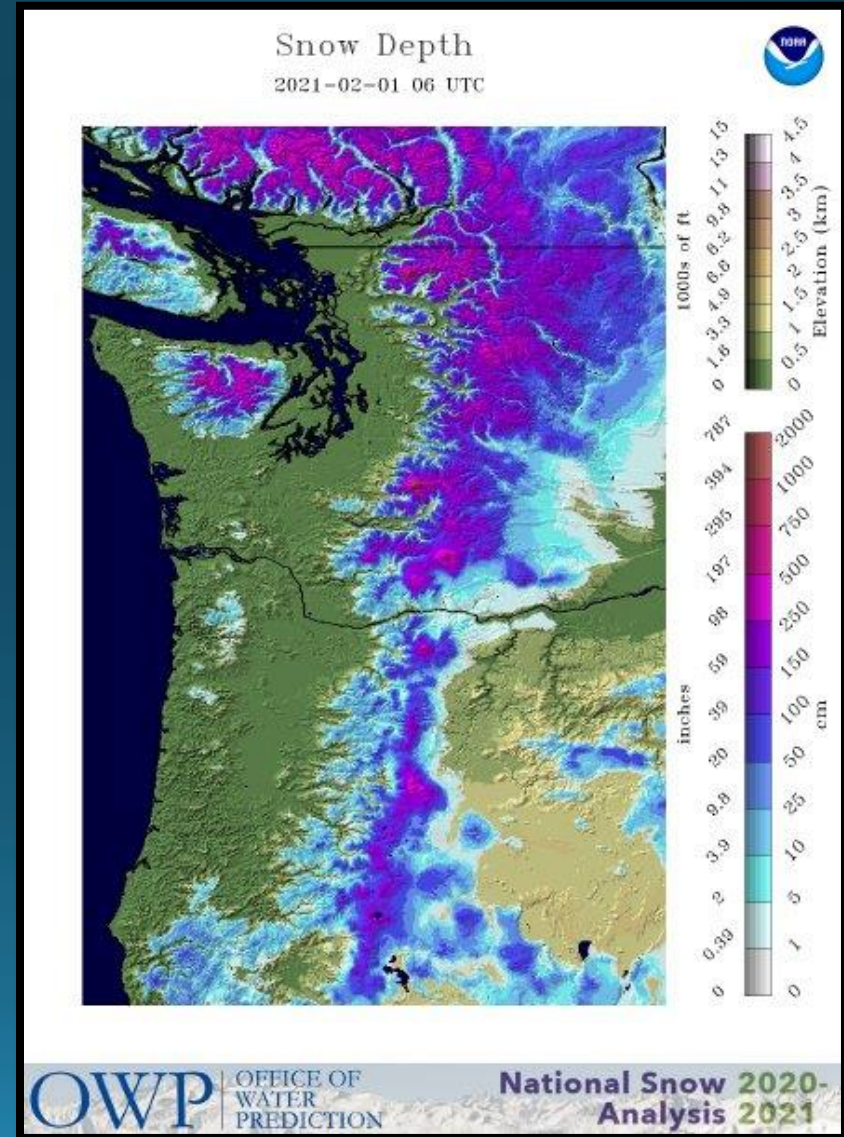
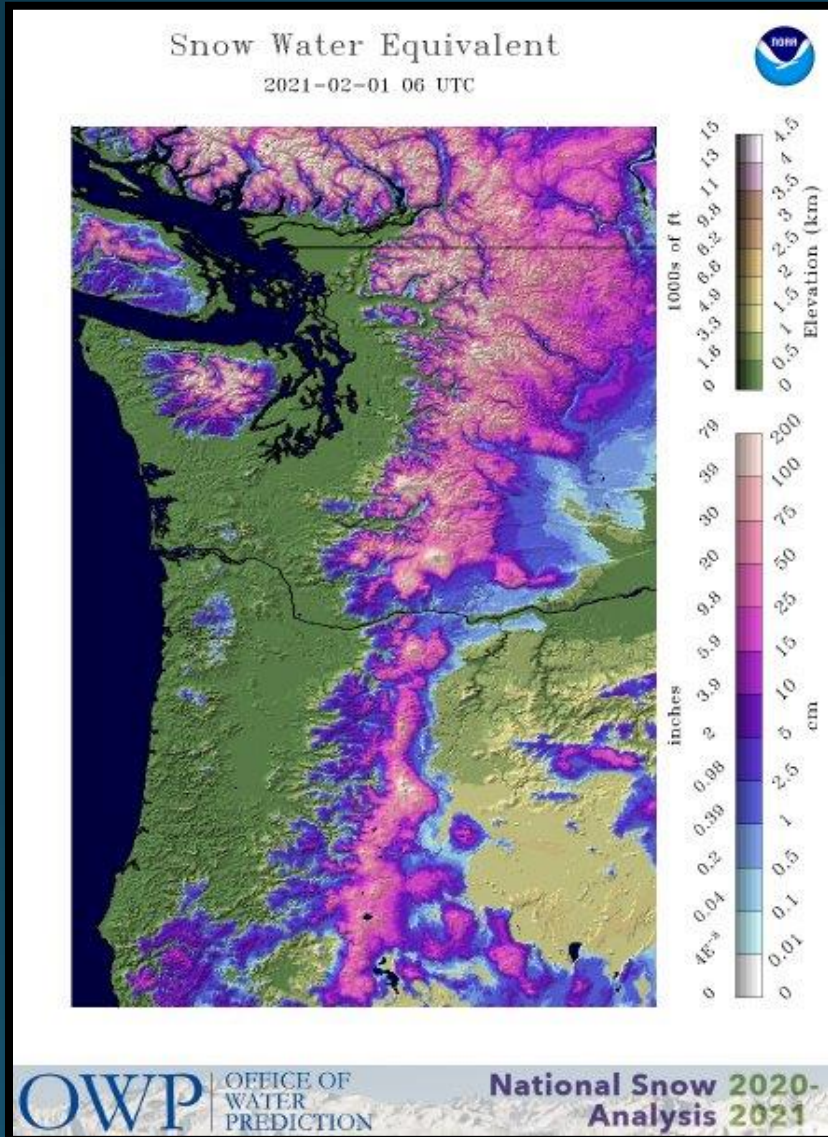


Water Year Status (As of Feb 1st)

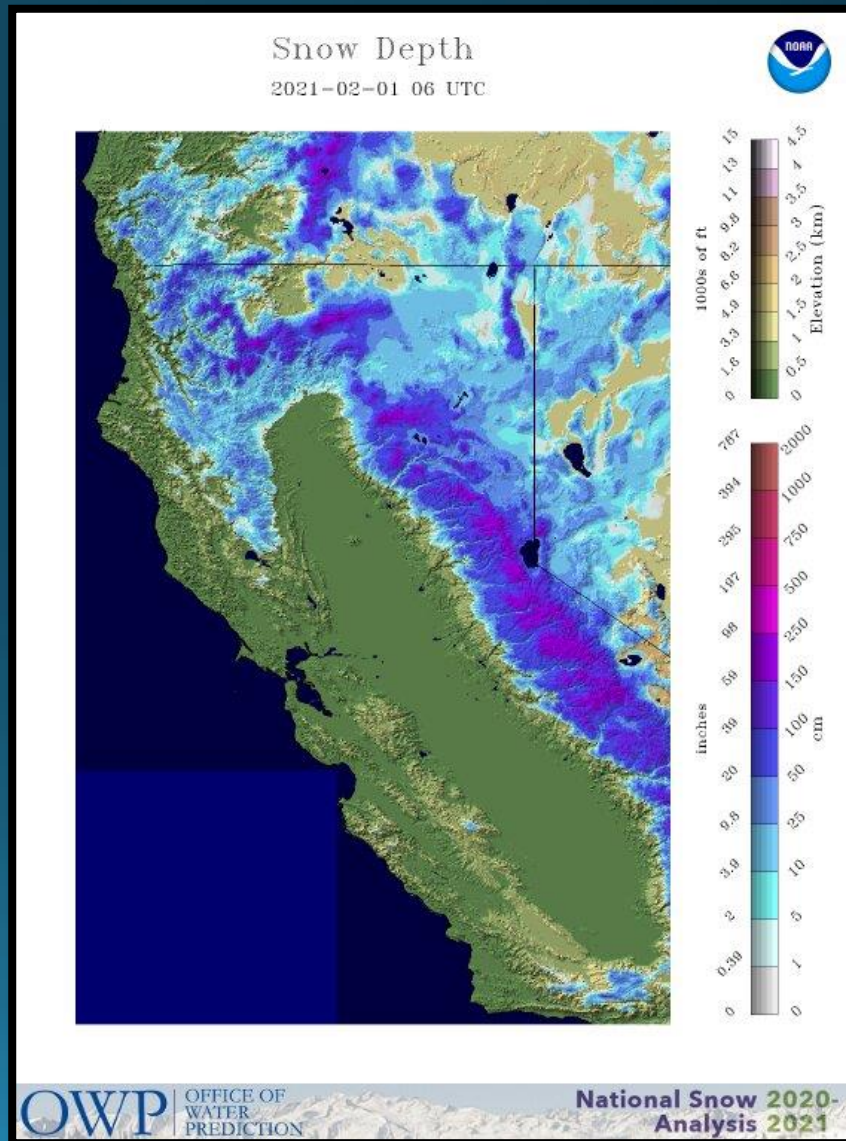
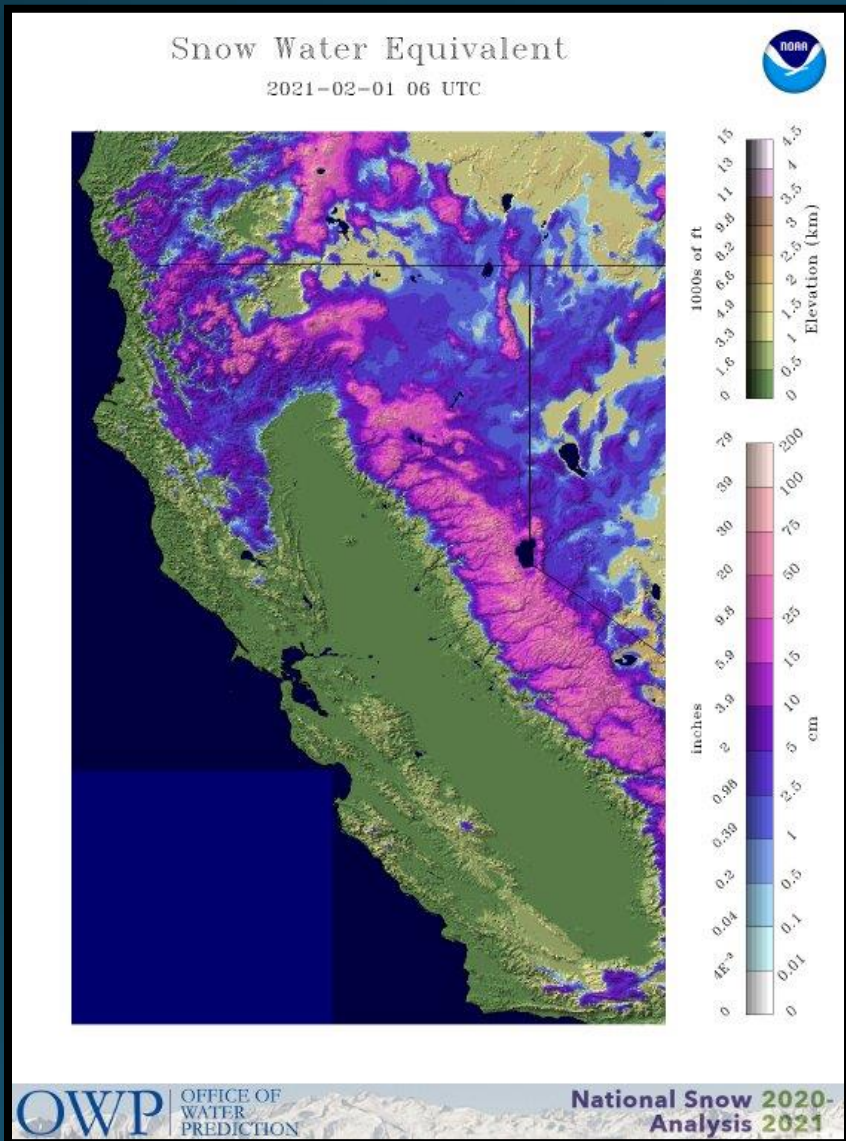




PacNW SWE & Snow Depth as of 2/1/21

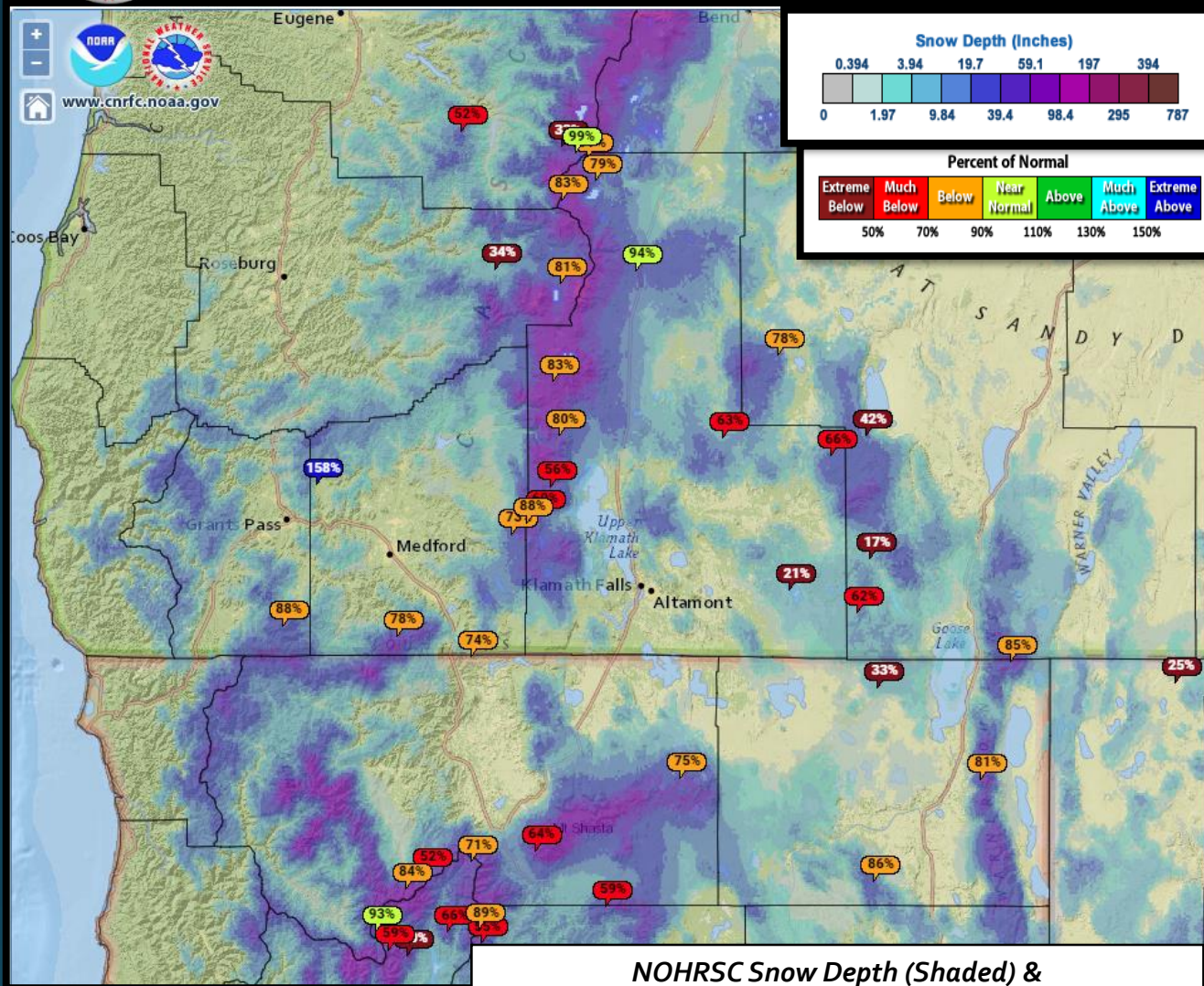


California SWE & Snow Depth as of 2/1/21

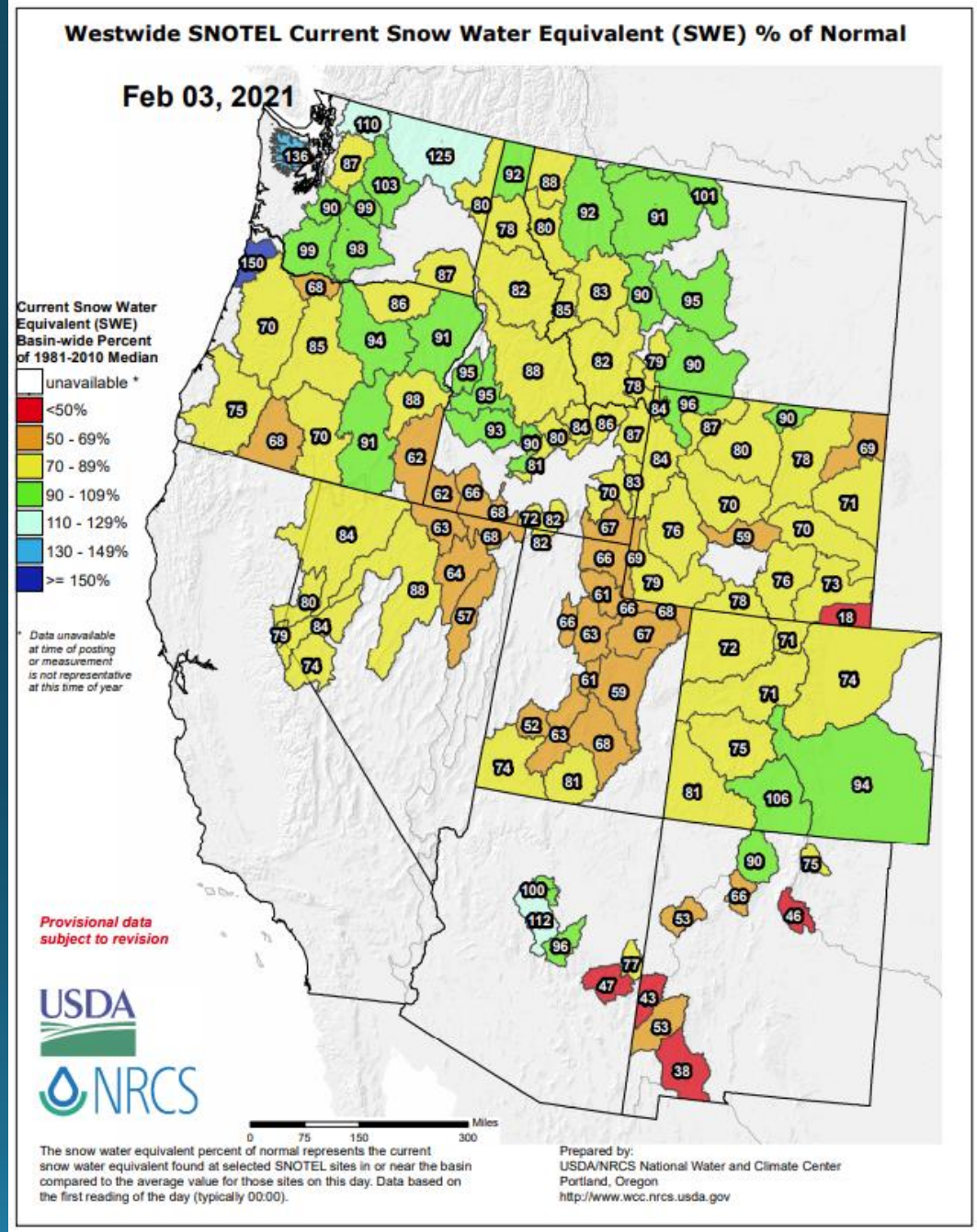




Snowpack Status



NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 2/3/2021



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).

Crater Lake

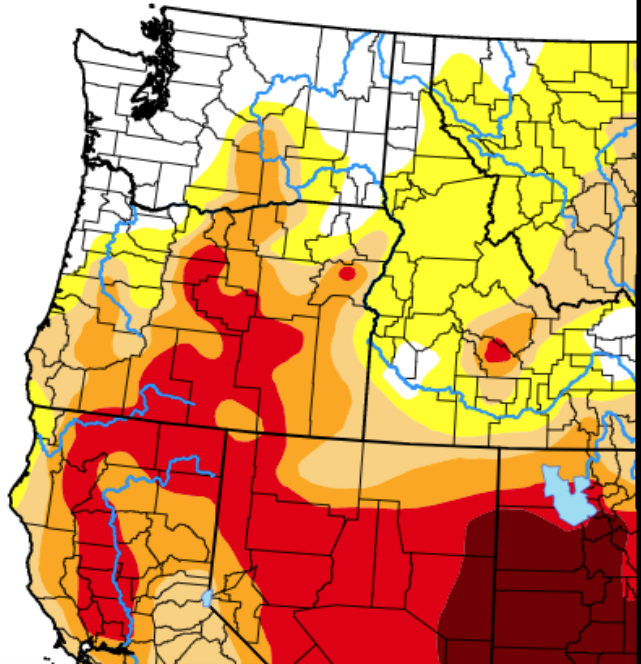
Image Courtesy: NPS



	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 01/31/21	Highest Max/ Lowest Min
January	33.4°	20.5°	8.17"	55.3"	72"	55° on 15 th / 4° on 26 th
Normal (1981-2010)	34.4°	18.4°	9.41"	87.4"	91"	N/A

Drought Monitor (Current) & Outlook (Feb)

United States Drought Monitor



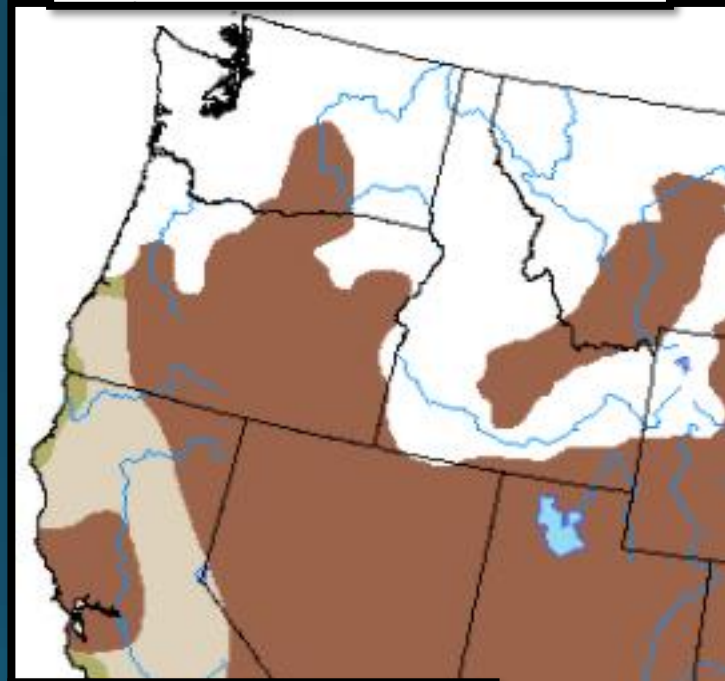
Map released: Thurs. February 4, 2021

Data valid: February 2, 2021 at 7 a.m. EST

Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

U.S. Monthly Drought Outlook
Drought Tendency During the Valid Period



Valid for February 2021
Released January 31, 2021

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely





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, Siskiyou, 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.

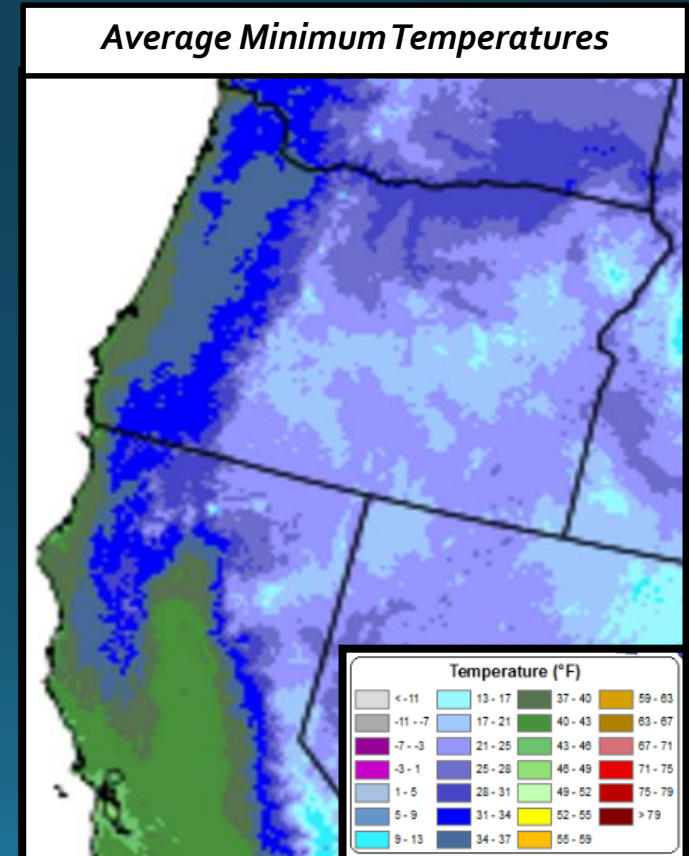
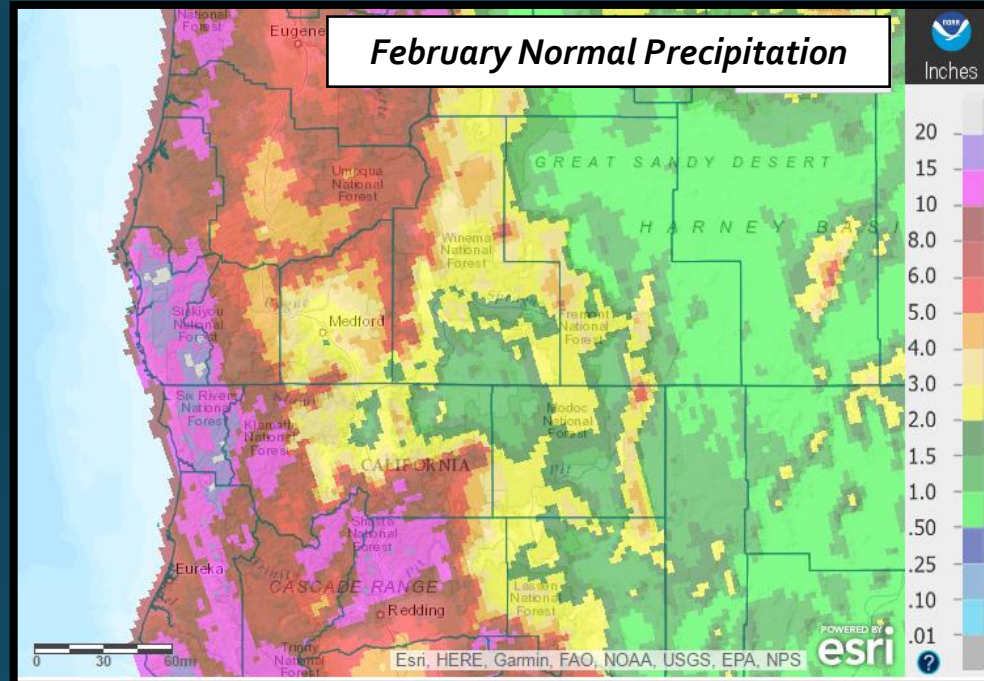
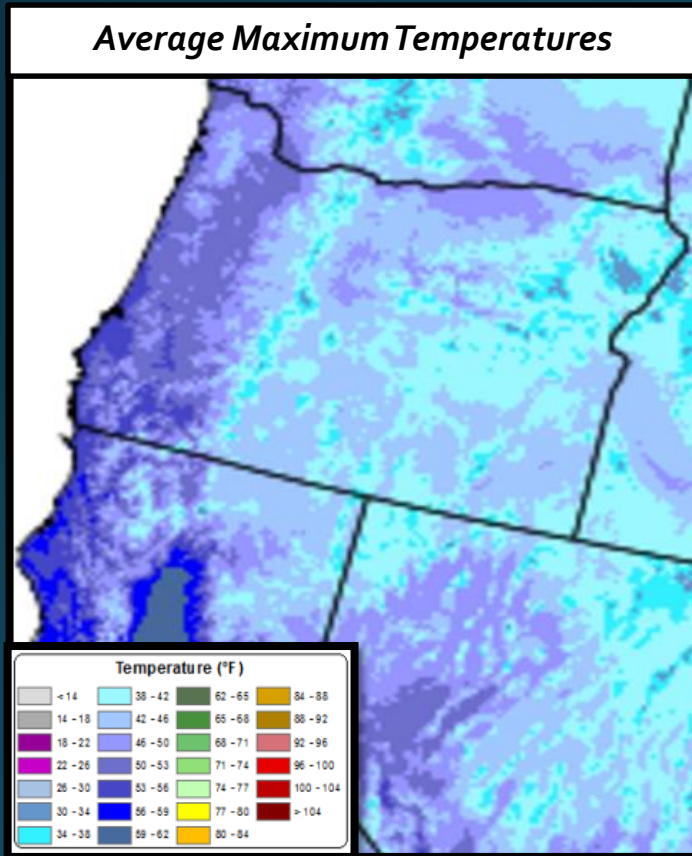
Maximum Temps: Highs at lower elevations on the East Side are typically in the 40s. In the Cascades, Siskiyou, Trinity Alps, and mountains east of the Cascades, daily maximums are typically in the 30s. Highs on the West Side and along and near the coast are typically in the 45 to 55 degree range, on 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 Siskiyou, 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)





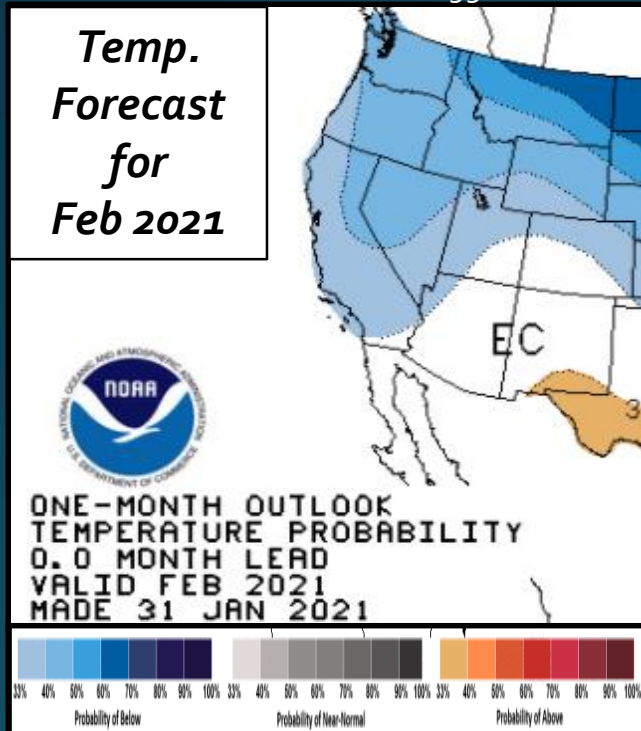
February 2021 Outlook

(Written February 3rd)

The official Climate Prediction Center forecast for February 2021 predicts increased probabilities for below normal temperatures (34-50%) and mostly increased probabilities for below normal precipitation (33-40%) for the Medford NWS forecast area.

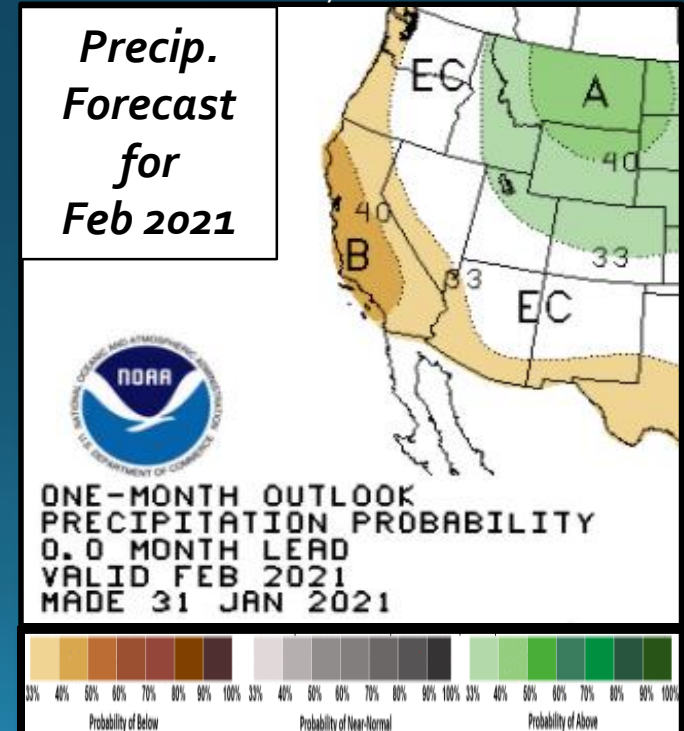
- **More Detailed February Temperature Forecast:** *Temperatures are expected to finish the month near to slightly below normal, generally in the -4°F to +3°F from 1981-2010 normals.* Current forecasts suggest the month will begin colder than normal, warm up to above normal around mid-month, and then probably dip toward the end of the month, but there is a lot of uncertainty for the 2nd half of the month.
- **More Detailed February Precipitation Forecast:** Precipitation is most likely to be near to below normal based on the latest ensemble guidance- most likely 50-100% of normal. The highest percentage of precipitation compared to normal is most likely to be in the Oregon Cascades.

Summary: Although the month is likely to begin wintry, precipitation is expected to be below normal for the first half to two-thirds of the month. Ensemble model trends over the last few days indicate more of a delay to a wetter pattern for the 2nd half of the month, with some question about how far south the storm track will dip into the PacNW. This means that, while we'll probably see some NW flow storm activity, we're more likely to be on the southern end of the storm track most of the month. After a drier than normal start to the month, it will be tough to recover to normal. Polar vortex forecasts suggest the colder, wintry weather is most likely to focus north and east of us. However, there is much uncertainty for the latter half of the month.



Expected Impact, February 2021:

While colder than normal temperatures are good for snowpack retention, precipitation deficits for the month would mean no improvement to a worsening of drought conditions. Colder than normal temperatures are likely in the valleys due to less storm activity than normal. Inversions in the mountains should be expected, at times, but we should also expect periodic intrusions of colder air from the northwest through east, at times. Some low elevation snow is likely under the expected general flow. The latter half of the month is a bit of a wildcard, as storms could under cut the ridging in the Gulf of Alaska, possibly bringing a good storm track. However, high pressure may hold on more, keeping storms weak and further north. Expect some mild, sunny days due to higher solar insolation during periods of high pressure.





*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: 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