National Weather Service Medford

February 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).

February 2018 Weather Review

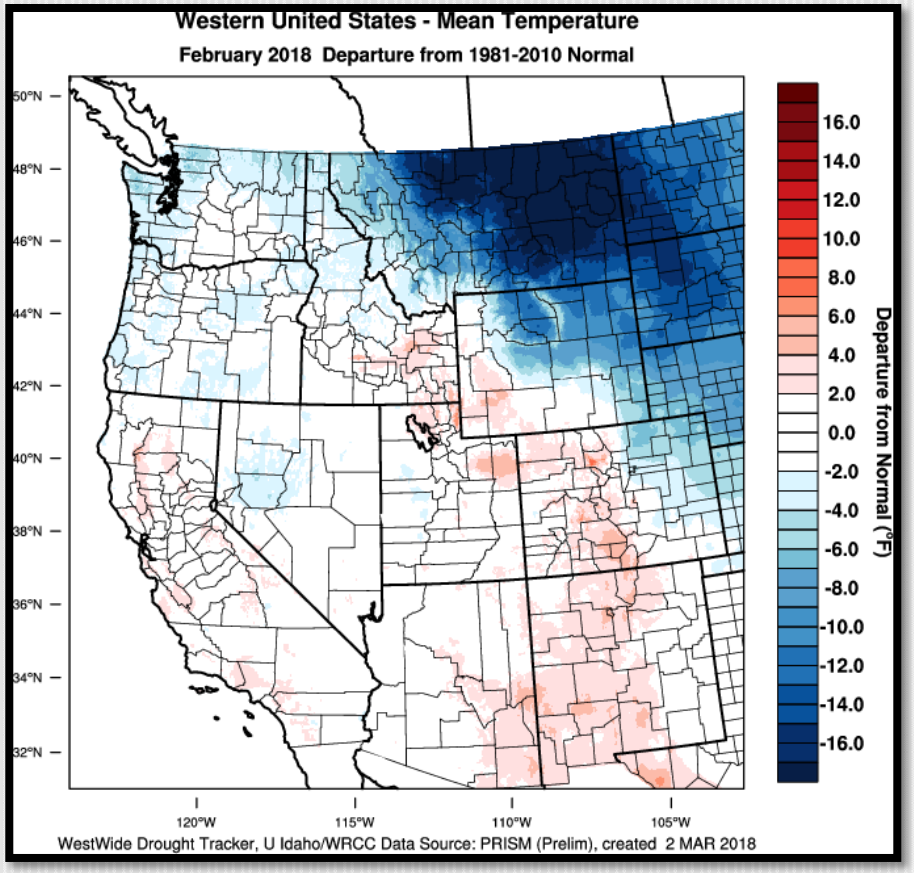
The first half of February 2018 continued the warmer and drier than normal pattern that characterized the majority of the 2017-2018 winter season. An upper level ridge remained over the Pacific Northwest during the first half of the month, leading to record warmth around the area. Eventually, weak systems moved over the ridge bringing precipitation to the coast, but washing out before bringing precipitation inland. However, these weak systems were enough to break down the ridge as it gradually retrograded westward.

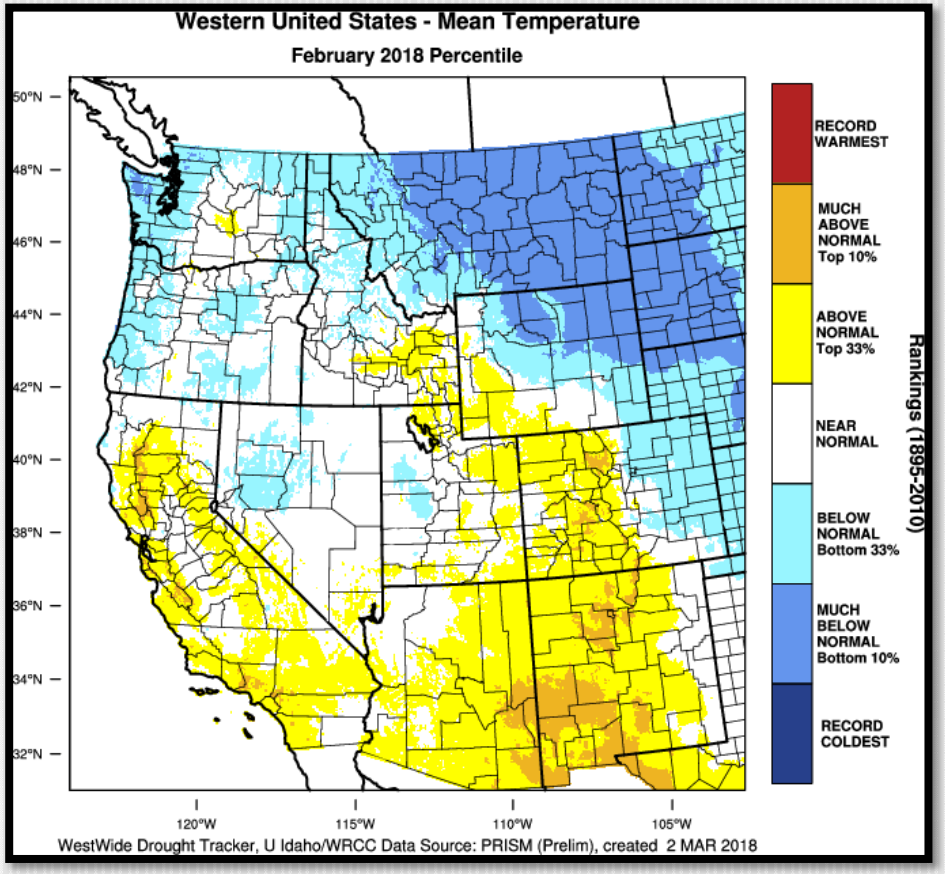
As the ridge retrograded westward, this allowed the storm track to reach the area. The first system to move through on the 11th lowered temperatures to around normal, which felt cool compared to the record warmth experienced during the beginning of the month. This system also brought the first measurable precipitation of the month to many locations inland, even bringing a trace of snowfall to the Rogue Valley. Dry conditions returned as weak ridging moved back into the area, but temperatures remained cooler than normal during this time.

Winter finally decided to make an appearance and remain with us for the last half of the month, bringing some of the coldest temperatures to be felt in February since 2011. A strong front moved through on the 18th and this brought snow levels down to valley floors. Heavy showers behind the front brought snow to area passes with reports of snow all the way down to Coos Bay. Snow levels remained low as another system moved through on the 22nd, delivering more snow to low elevations including Brookings and other locations along the coast. A daily snowfall record for the Medford Airport was set during this event with 3.2 inches, which breaks the old record of 2.5 inches set in 2007. The cold, active weather continued through the end of the month and another round of low elevation snow occurred on the 26th. Yet another strong front moved through the valley on the 28th, and this brought strong winds across the area. Behind this front, a strong upper level trough would settle over the area, bringing numerous showers and low snow levels to start the month of March.

Although the active weather during the last half of the month brought much needed precipitation and improved the area snow pack, the month of February still ended up well below average in terms of precipitation and snow pack. The unusually cold air mass, at least by February standards, offset the record warmth at the beginning of the month, resulting in February temperatures ending at, to just below normal for the month for the vast majority of the forecast area.

February 2018 *Observed Temperatures*

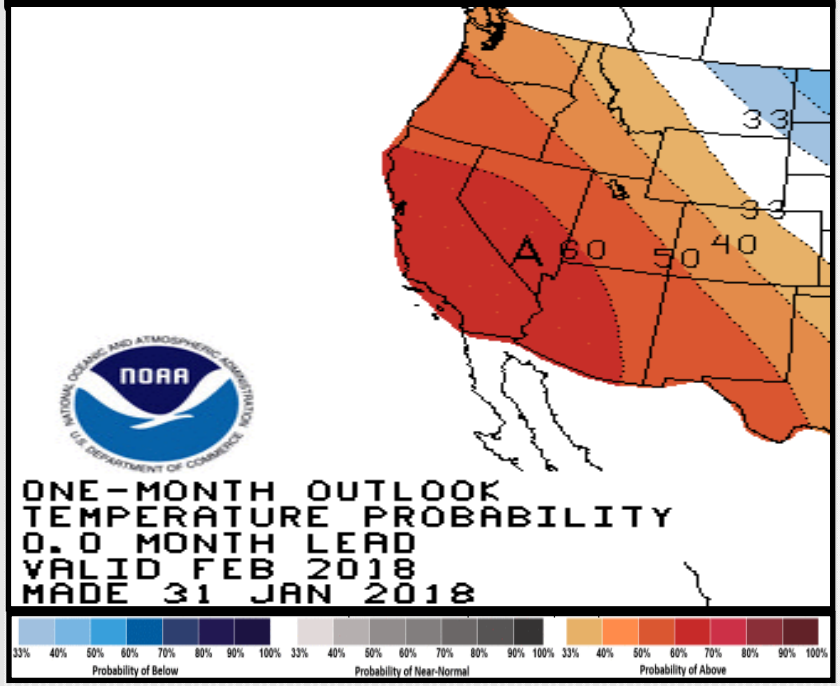


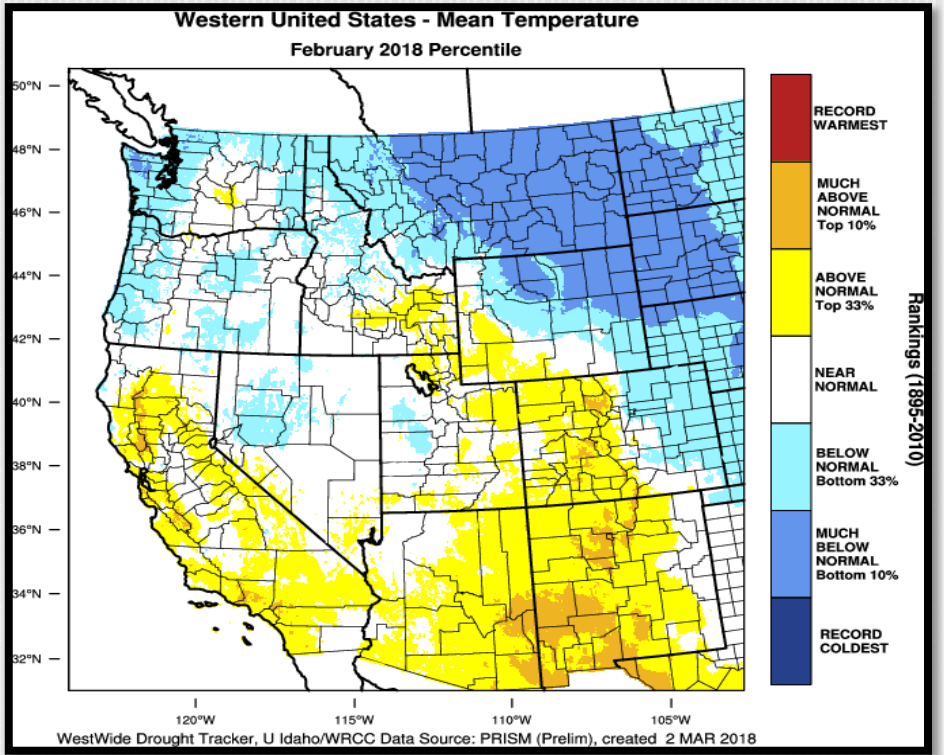


A Look Back at the Feb 2018 Temperature Outlook

- ***Was the forecast anomaly correct?*** Despite a high probability for above average temperatures forecast, most locations experienced average temperatures below normal for February 2018. It should be noted that CPC's forecast is probabilistic, so it's more correct to say their probability forecast leaned too warm for the area. While most of the forecast area ended the month below normal for temperatures, it was only slightly below normal.
- ***Was the expected impact correct?*** The answer is 'yes' for the first half of the month, and 'no' for the 2nd half of the month. The conditions observed early in the month caused both Mount Ashland and the Mount Shasta Ski park to close and the Klamath County Board of Commissioners declared drought conditions. Early month conditions were also favorable for spring activities. While the forecast did accurately indicate inside sliders cooling conditions mid-month and a possible pattern change to beyond the 20th, it did not pick up on the magnitude of the colder weather that was observed.
- ***Did our forecast improve upon the CPC forecast?*** Our localized forecast did improve on providing insight into a trend toward less warmth mid-late month, but did not, otherwise, improve upon the official CPC forecast. Also, CPC did indicate the forecast was weighted toward the more predictable early portion of the month.

Temperatures





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	44.3	-2.1°	51.2	-1.5°	37.4	-2.8°
Roseburg	44.3	-1.0°	53.3	-0.2°	35.3	-1.9°
Medford	41.2	-3.0°	52.3	-2.0°	30.1	-4.0°
Klamath Falls	32.3	-1.9°	46.1	+1.3°	18.5	-5.2°
Montague, CA	36.6	-2.5°	51.4	+0.9°	21.8	-5.9°
Mt. Shasta City, CA	38.6	+0.4°	50.2	+1.6°	26.9	-1.0°
Alturas, CA	31.2	-2.7°	45.9	-0.2°	16.4	-5.4°

Monthly Max & Min Temperatures

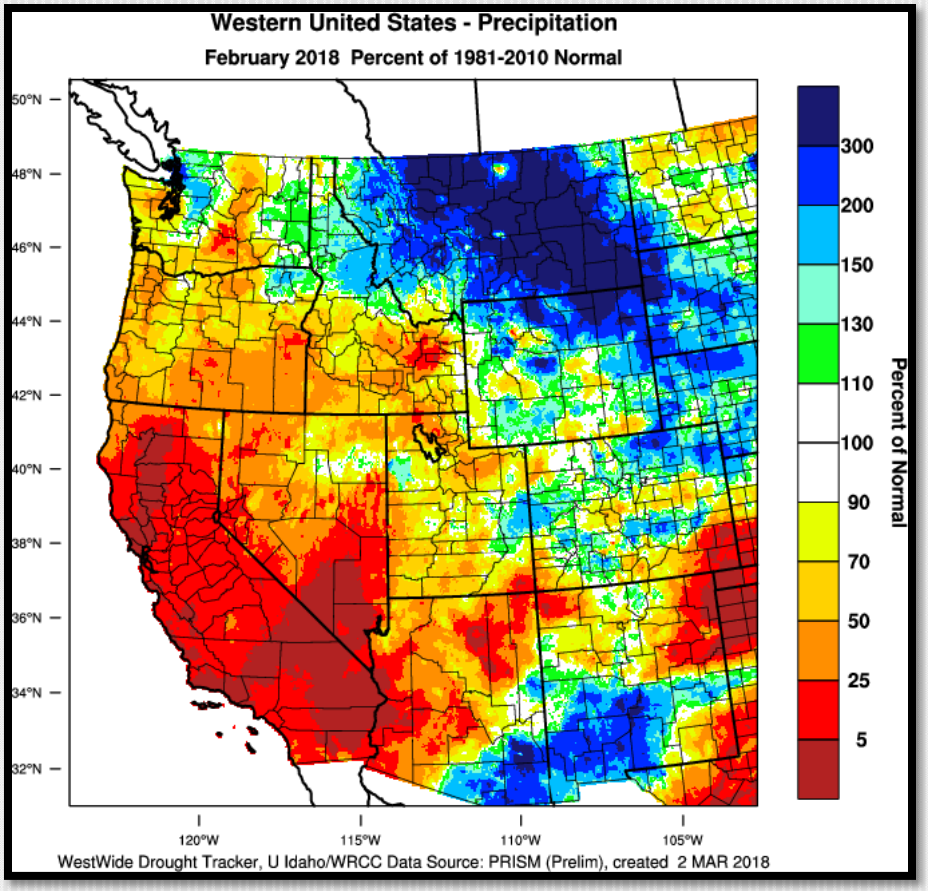
	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	63°	7th	26°	23rd
Roseburg	71°	2nd	23°	23rd
Medford	67°	2nd	20°	23rd
Klamath Falls	64°	8th	3°	27th
Montague, CA	65°	3rd & 9th	11°	20th
Mt. Shasta City, CA	68°	8th	16°	20th
Alturas, CA	65°	8th	0°	20th

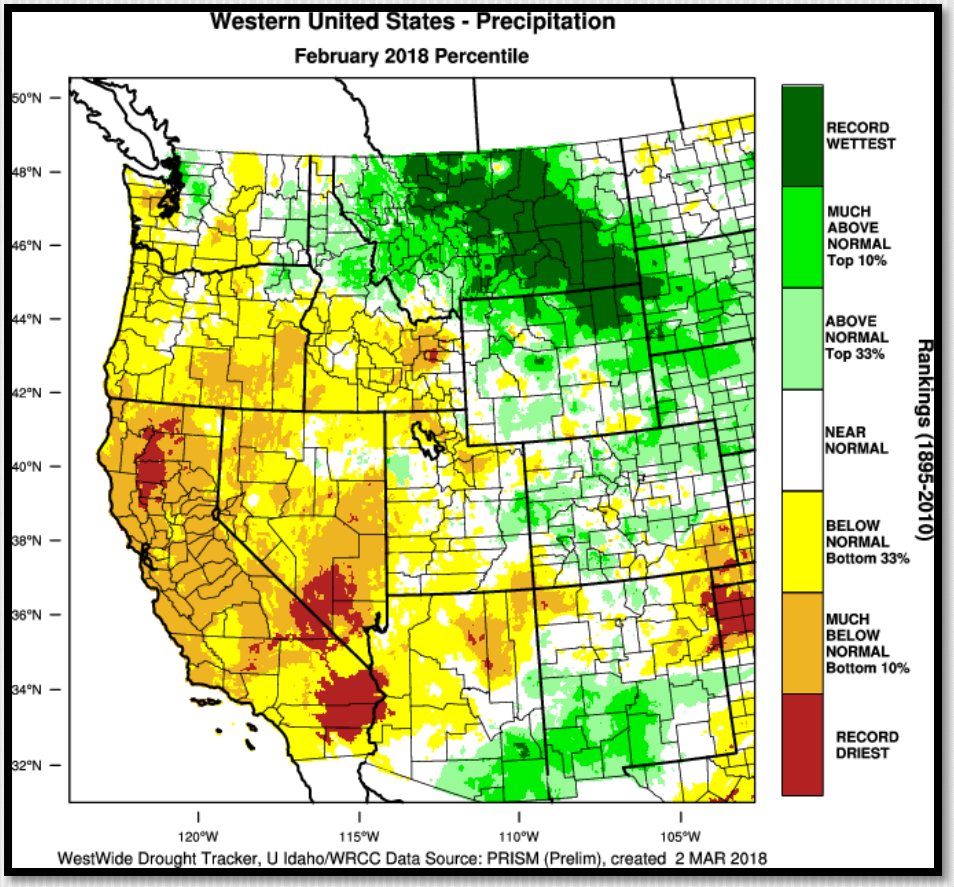
Record Temperatures

Where	Date	Record High	Old Record/Year
Roseburg	2nd	71°	67° / 1935
	3rd	64°	Ties with 2006
	7th	65°	Ties with 1958
Medford	3rd	65°	Ties with 2005
Klamath Falls	2nd	62°	55° / 1976
	4th	61°	57° / 2007
	7th	60°	56° / 1991
	8th	64°	Ties with 2016
Montague	2nd	62°	60° / 1984
Mt Shasta City	1st	60°	Ties w/1934

Where	Date	Record Low	Old Record/Year
Roseburg	13th	25°	Ties with 1949
	23rd	23°	24° / 1960
Klamath Falls	27th	3°	5° / 2011

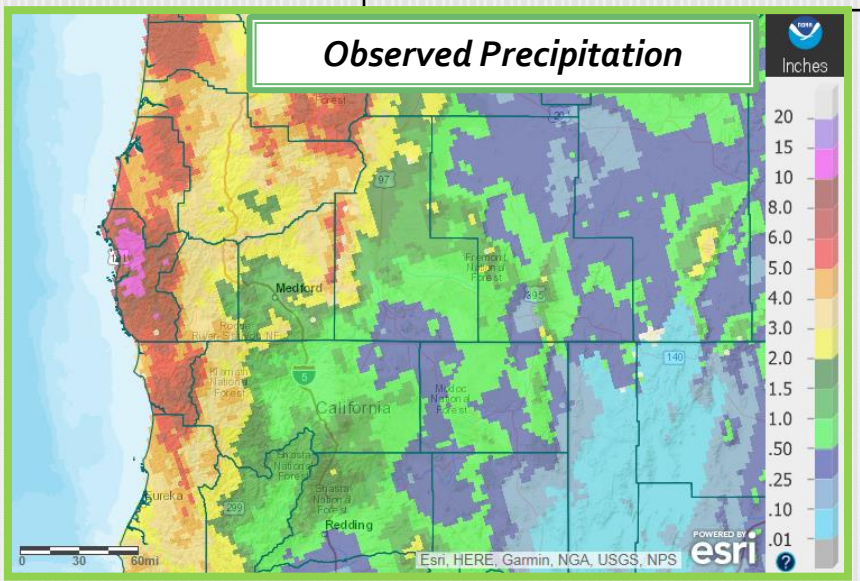
February 2018 *Observed Precipitation*

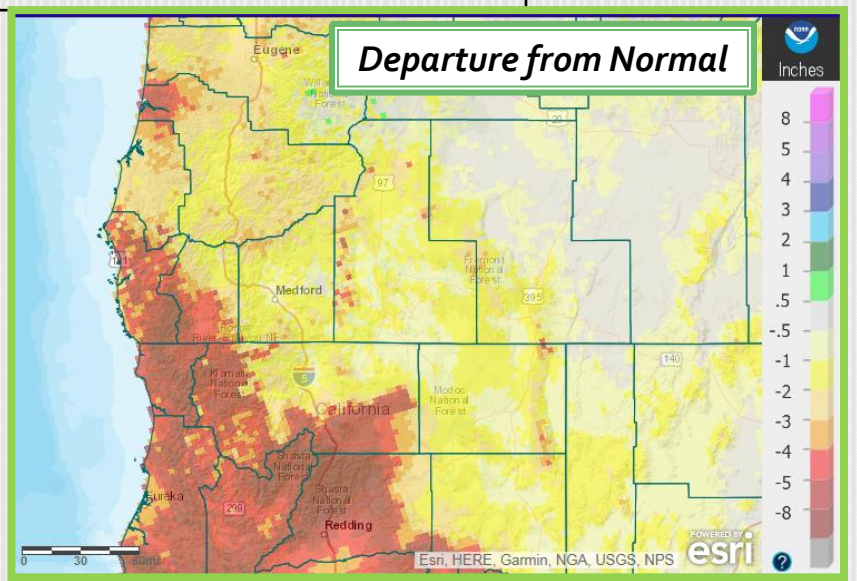




Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	4.27"	-3.32"	1.26"	28th
Roseburg	2.52"	-1.43"	0.74"	25th
Medford	1.05"	-0.96"	0.33"	25th
Klamath Falls	0.25"	-1.67"	0.07"	25th
Montague, CA	0.27"	-1.74"	0.11"	22nd
Mt. Shasta City, CA	0.78"	-6.45"	0.40"	28th
Alturas, CA	0.39"	-1.06"	0.14"	22nd



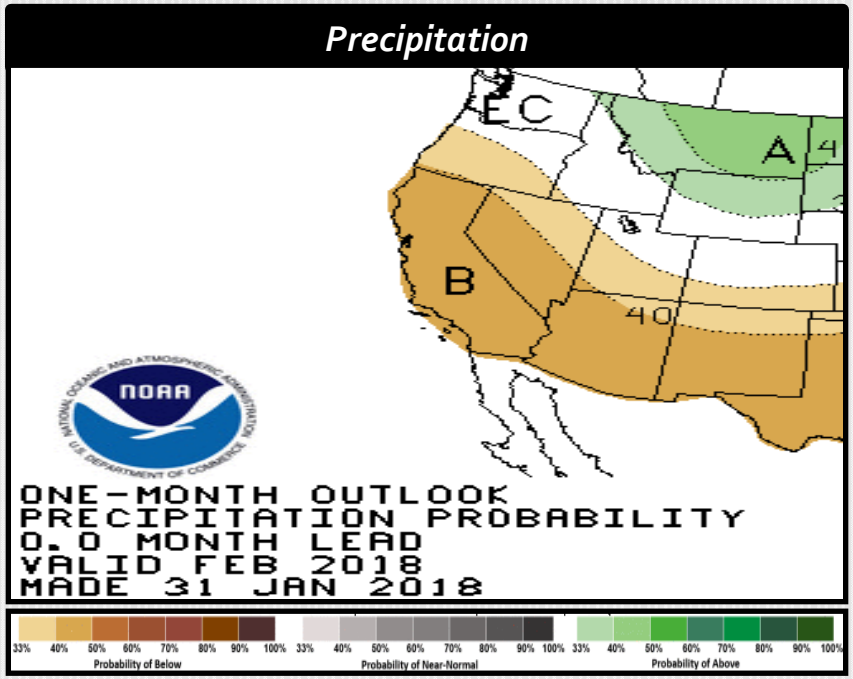


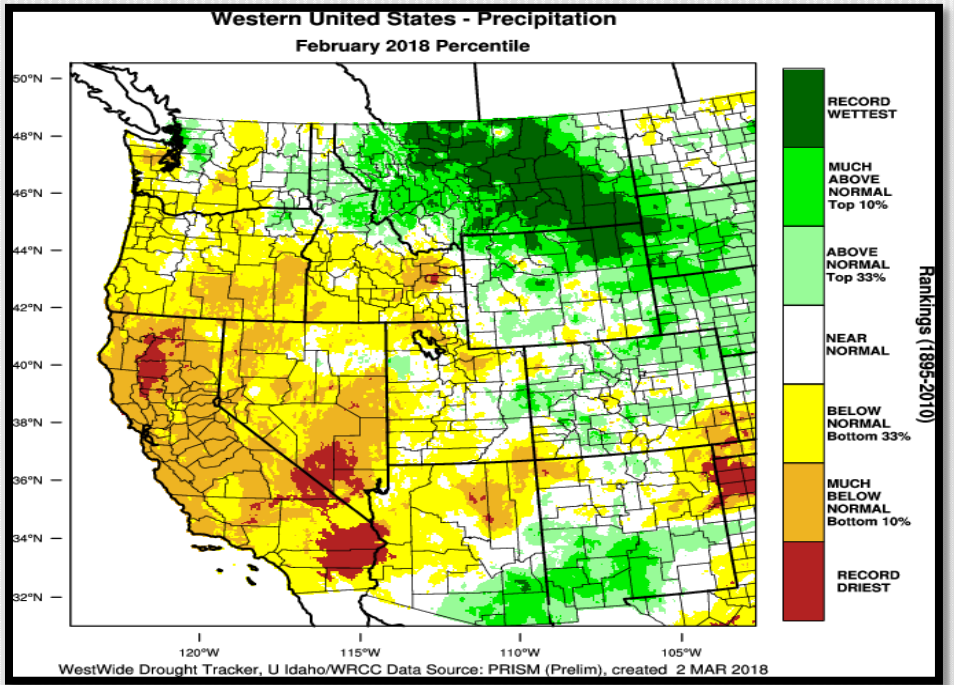
A Look Back at the Feb 2018 Precipitation Outlook

- ***Was the forecast anomaly correct?*** Yes. CPC's forecast indicated increased chances of below average precipitation across the forecast area. Our localized outlook agreed with this forecast. It should be noted that CPC's probabilistic forecast only indicated slightly tilted odds (34-43%) of below average precipitation, whereas our more deterministic forecast focused on higher expectations of drier than normal conditions.

- ***Was the expected impact correct?*** Yes, mostly. However, snowfall was enough for Mount Ashland Ski Area and the Mount Shasta Ski Park to reopen on Feb 23rd-24th. Winter recreation was, therefore, able to rebound and the snowpack improved mid-late month. Therefore, drought concerns were effectively put on hold and are now dependent on how precipitation and snowpack progress March-May 2018.

- ***Did our forecast improve upon the CPC forecast?*** Our forecast did improve CPCs forecast because we were able to provide more detail regarding the evolution of the weather pattern toward one more favorable to precipitation and snowfall across the forecast area. Specifically, we correctly indicated "inside slider type low pressure systems" and "a possibility of light precipitation over northern and western portions of the forecast area between Feb 9th and 14th, and "the MJO moving from phase 1 to 3" possibly resulting in a turn toward wetter conditions beyond the 20th of the month."



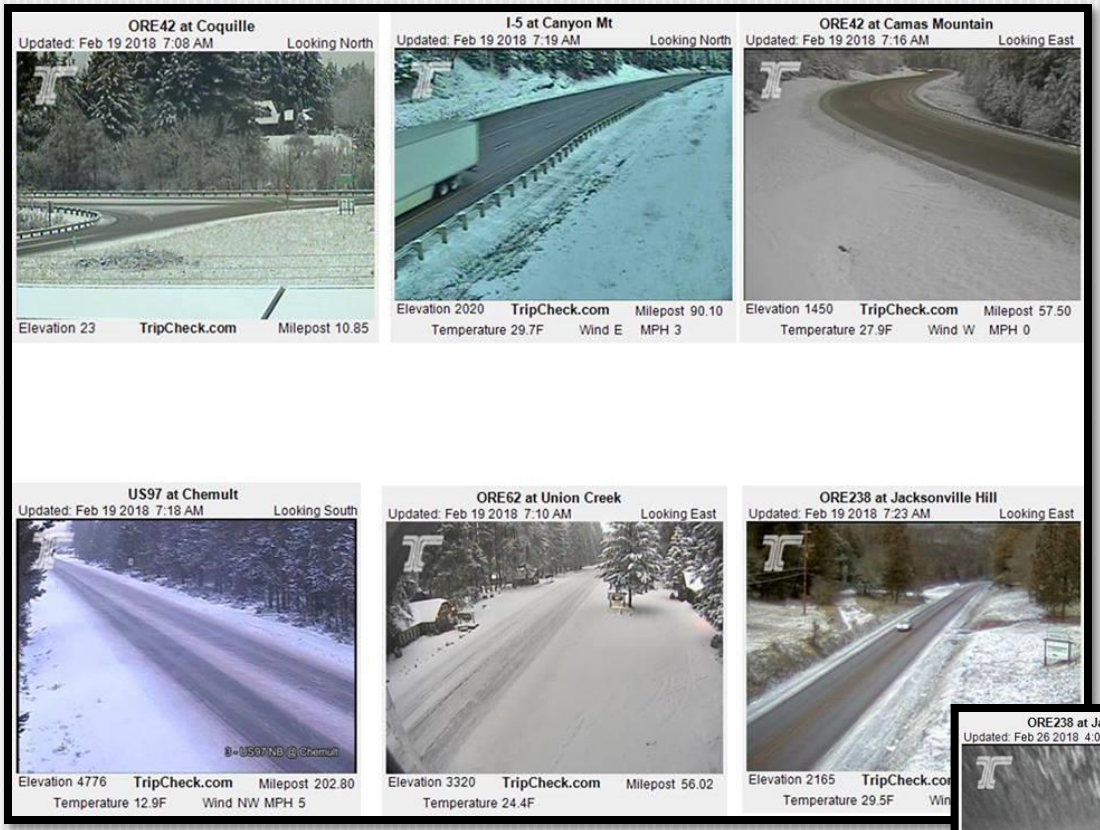


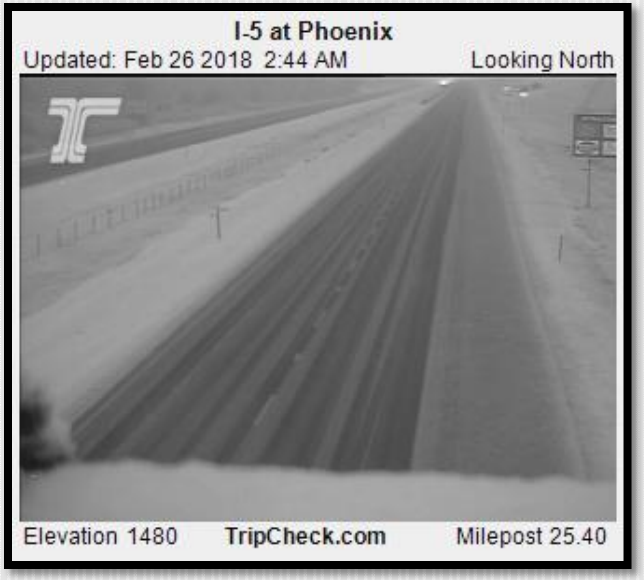
February Significant Weather Events

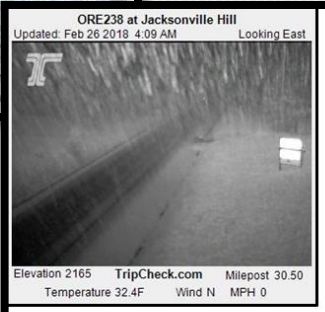
Multiple Rounds of Low Elevation Snow: February 19th – 26th

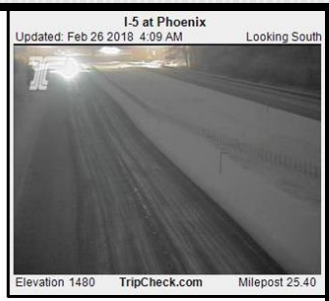
3.2 inches on the ground at the NWS Medford Office on February 22nd, 2018. Photo Credit: NWS Meteorologist, Marc Spilde

Some of the coldest air to be felt in February, settled over the area during the last half of the month. This brought snow levels down to valley floors and even down to Coastal locations at times. With very active weather in place, many lower elevations saw impacts from accumulating snowfall. Snowfall affected the lower of the area passes during this time and numerous schools were cancelled and /or delayed. A daily snowfall record was broken at the Medford Airport on the 22nd. 3.2 inches of snow fell that day, breaking the old record of 2.5 inches in 2007.





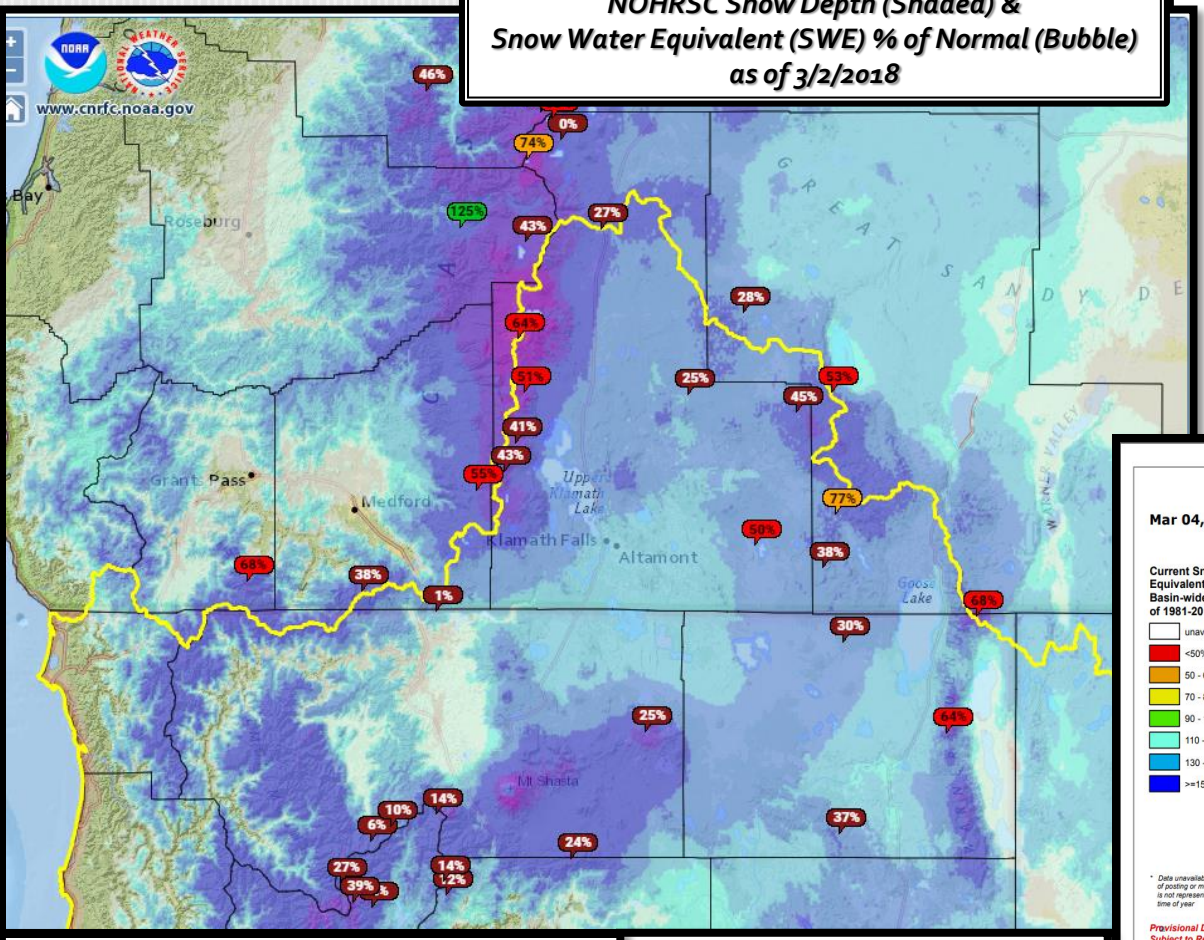


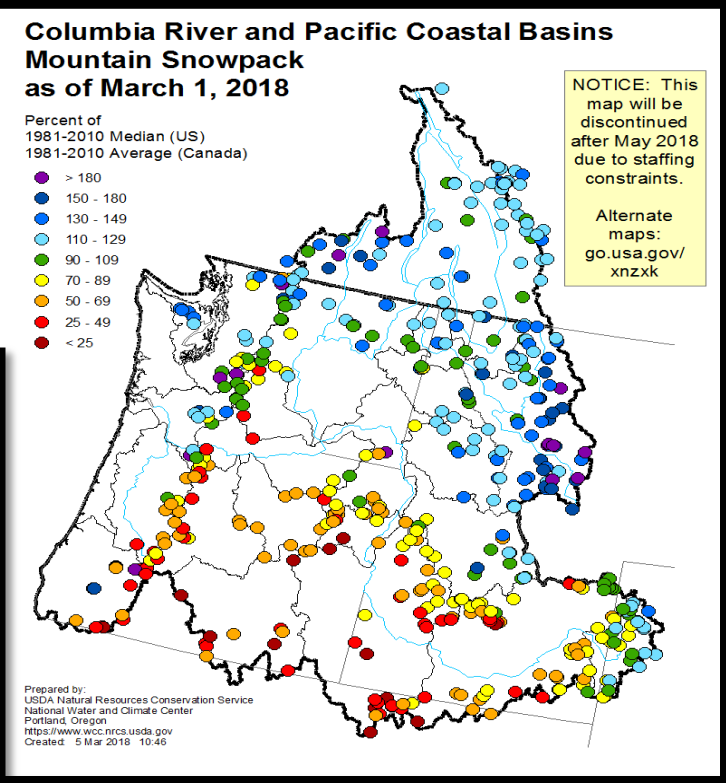


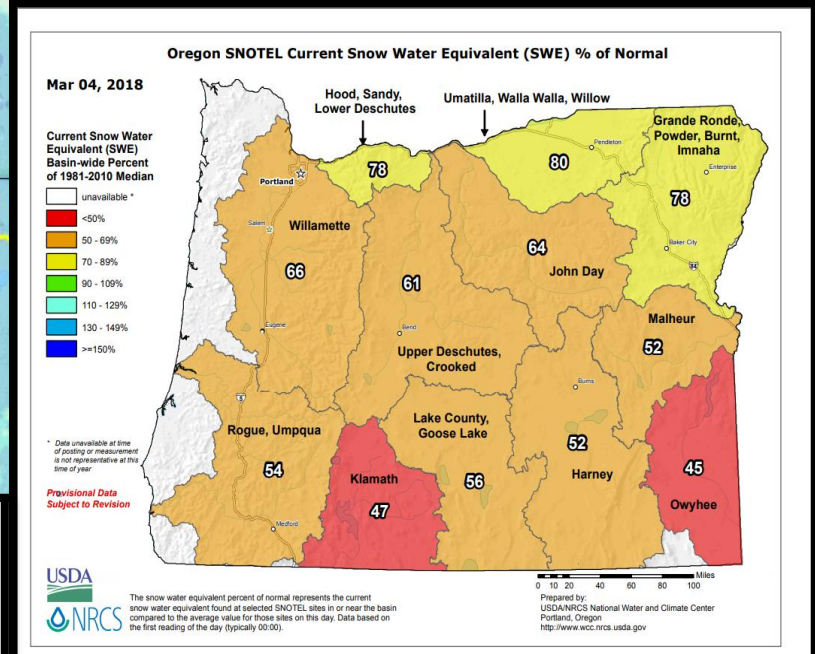
Conditions expected to improve in most areas by 9 AM PST.

If traveling this morning, slow down and allow extra space between vehicles.

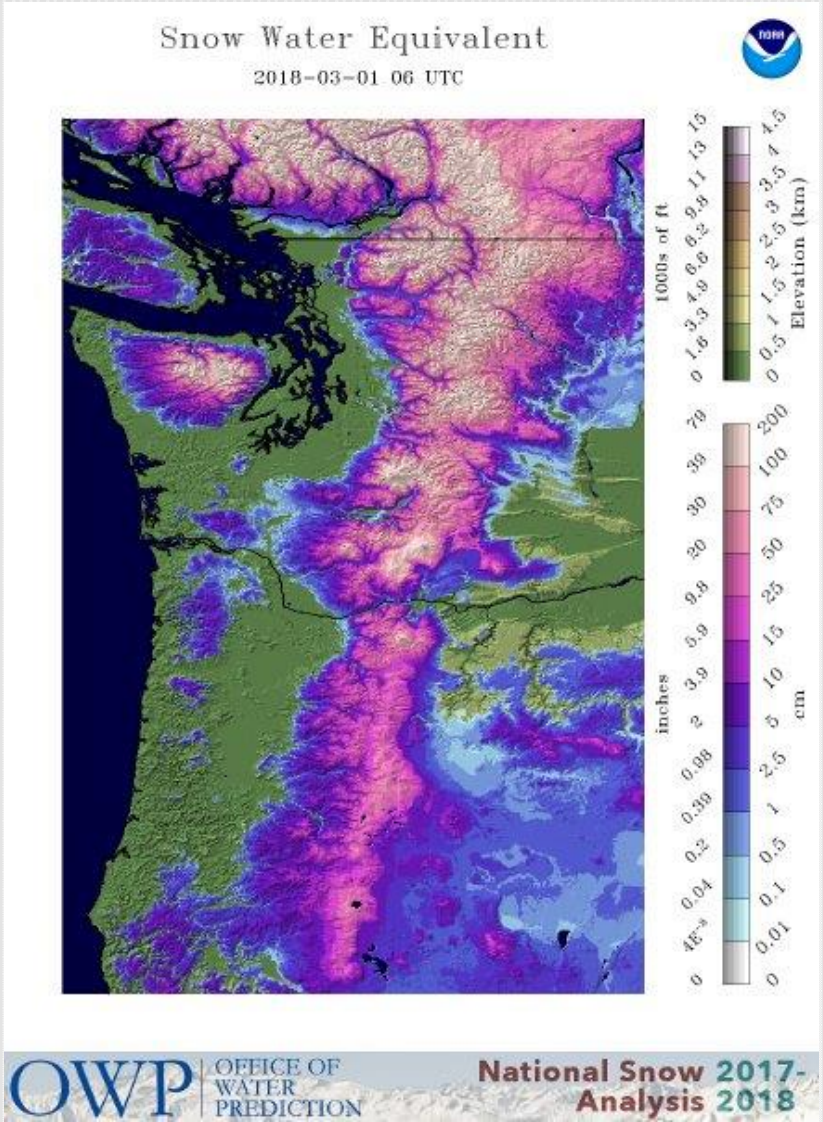
Snowpack Status

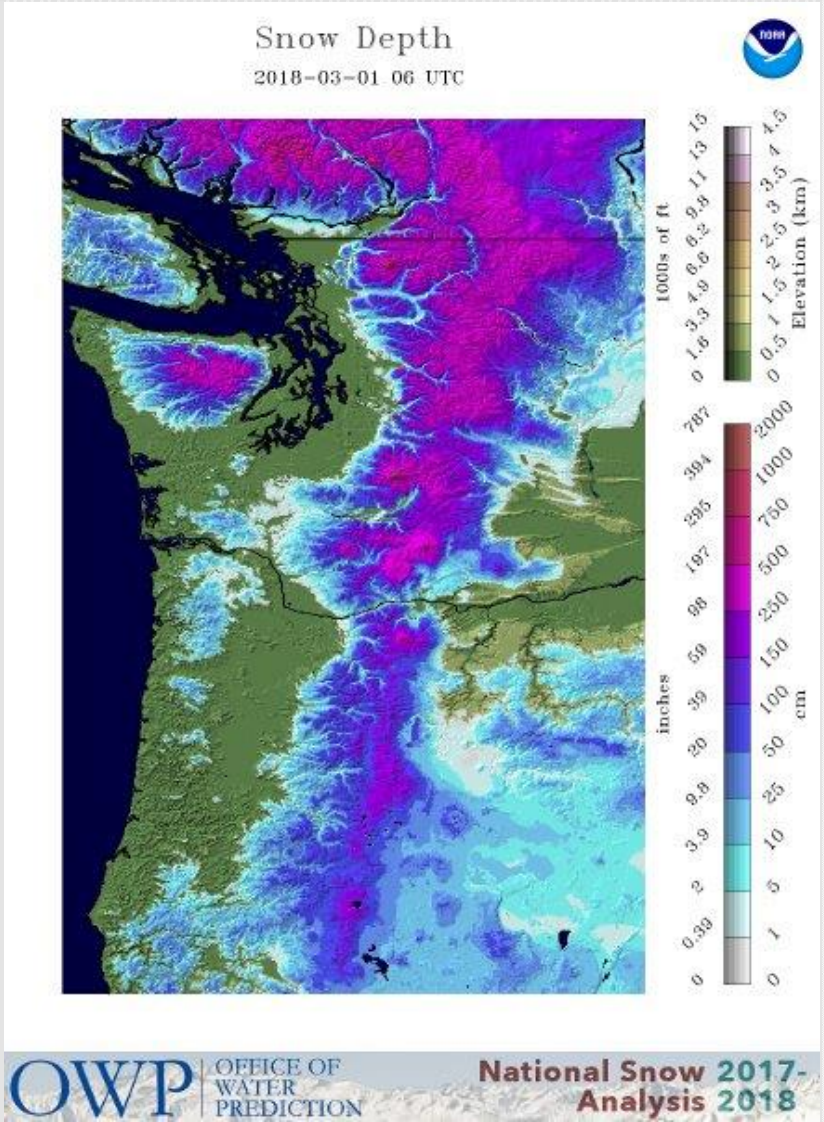




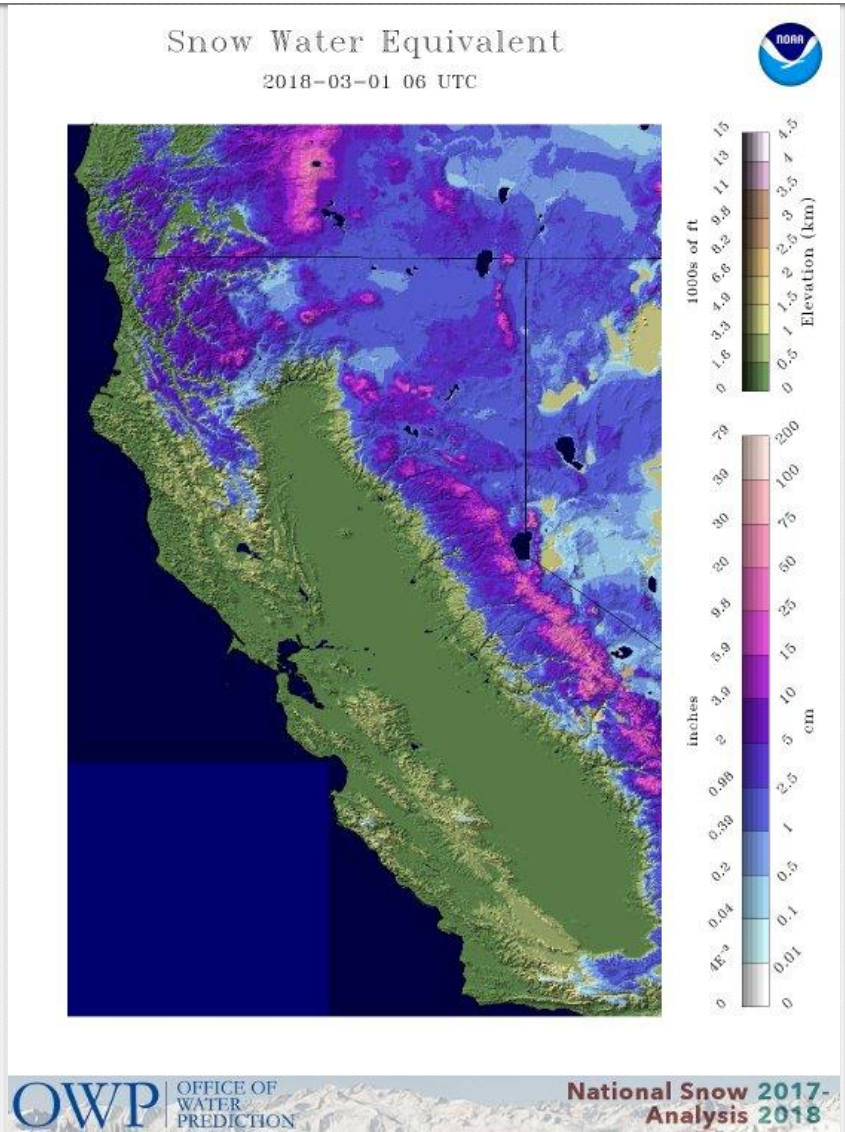


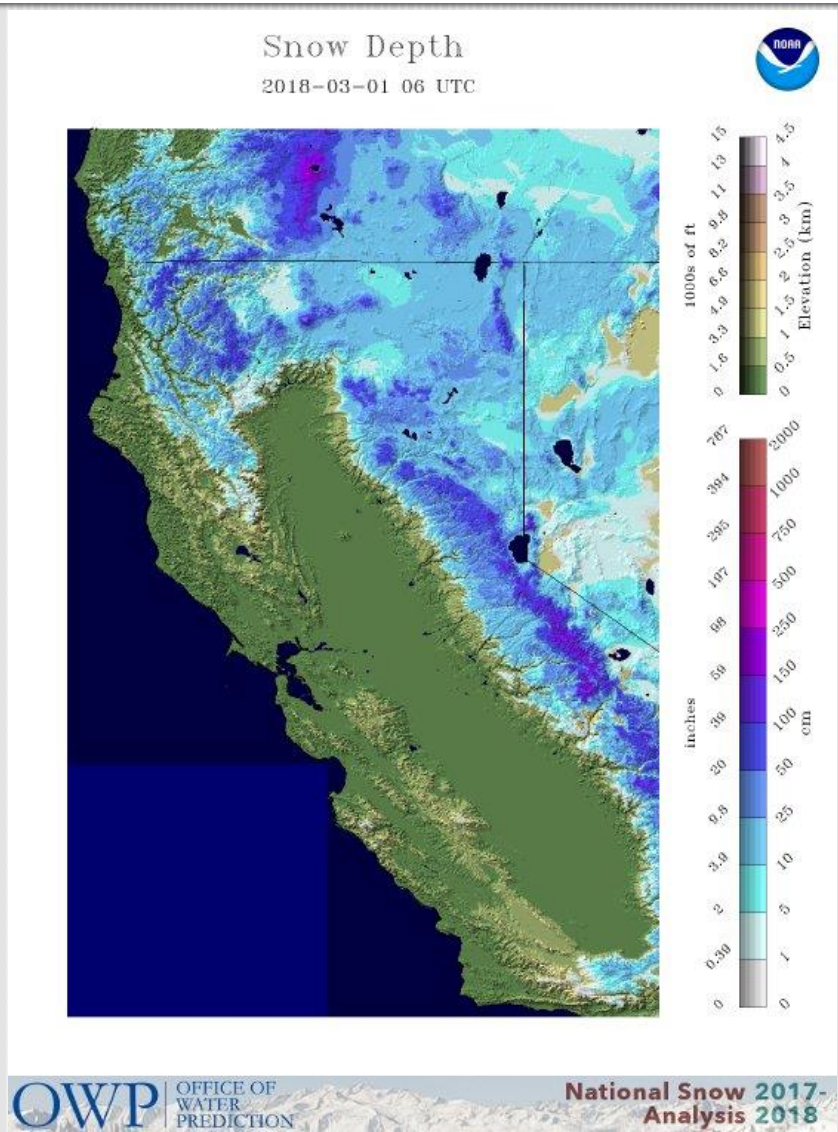
PacNW SWE & Snow Depth as of 3/1/2018



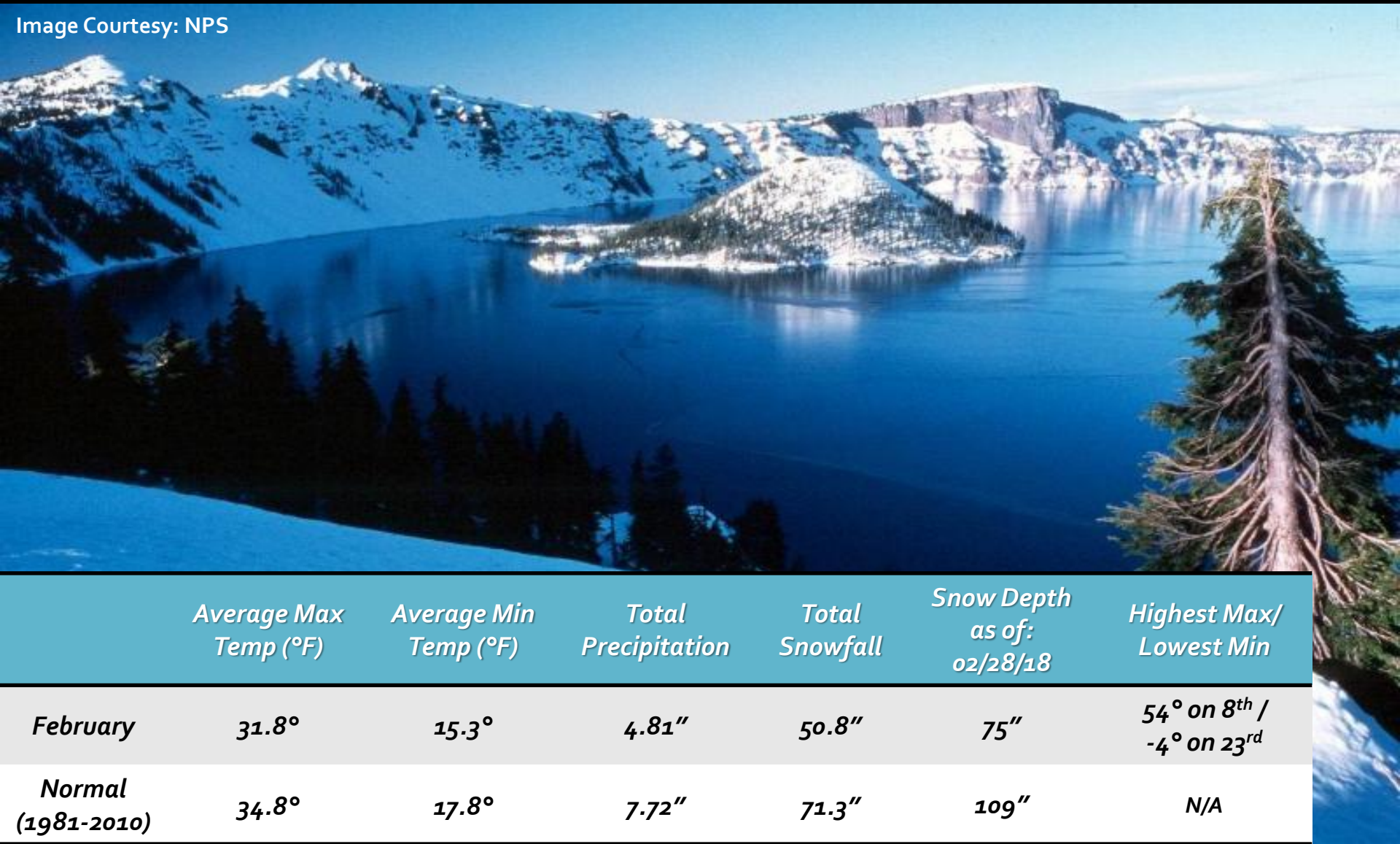


California SWE & Snow Depth as of 3/1/2018



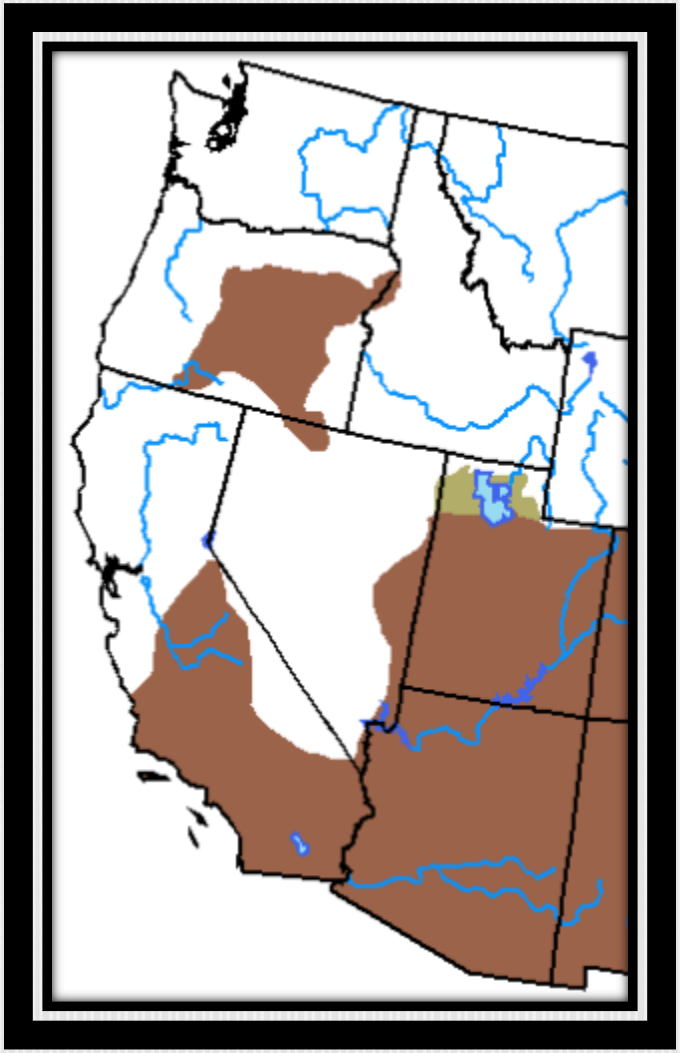


Crater Lake



	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 02/28/18	Highest Max/ Lowest Min
February	31.8°	15.3°	4.81"	50.8"	75"	54° on 8th / -4° on 23rd
Normal (1981-2010)	34.8°	17.8°	7.72"	71.3"	109"	N/A

Drought Outlook: March



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

Valid for March 2018
Released February 28, 2018

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

Looking Ahead: Normals for March (1981-2010)

Temperatures:

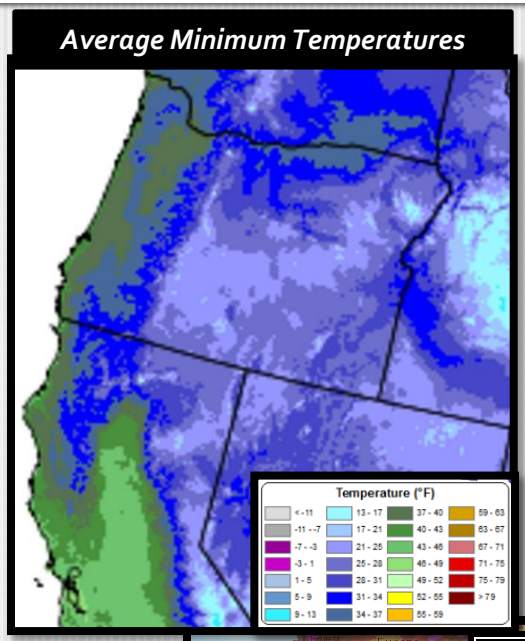
Along the coast, lows are typically in 40s with highs in the 50s to near 60F. The Interior West Side usually experiences average lows in the lower 30s to lower 40s and highs in the 50s to near 60 in the lower valleys. Lows in the upper teens to mid 20s occur across the higher, most typically snow packed mountains, and the East Side. Highs in those mountains and across the East Side are typically in the mid 30s to the lower 50s.

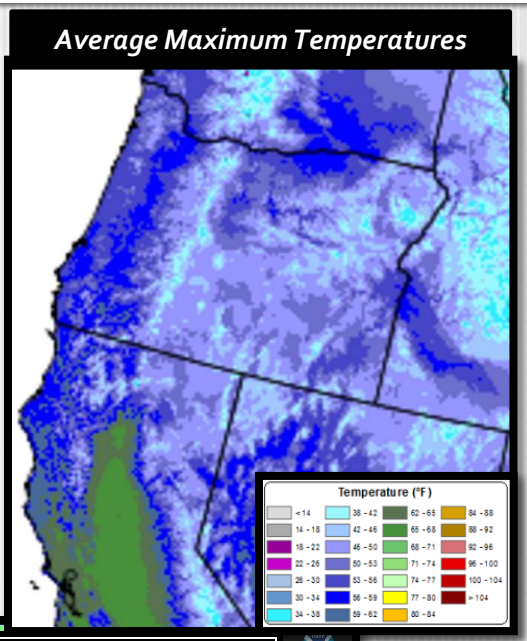
Precipitation:

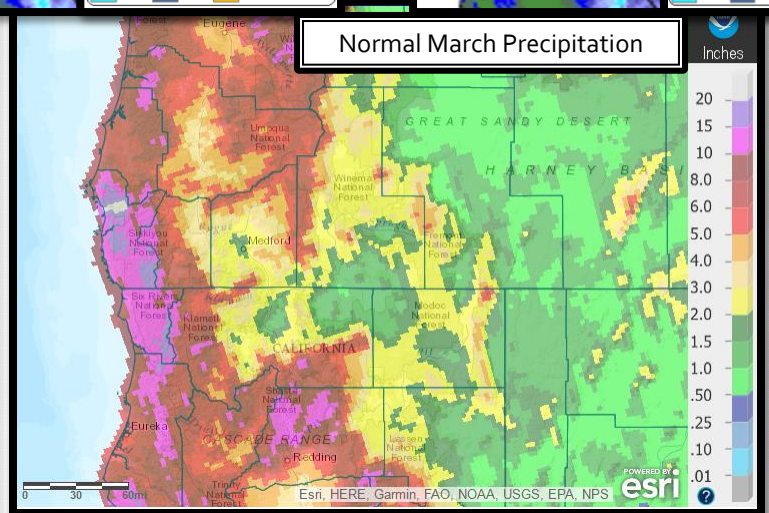
On the high side for March, Curry County usually gets 10 to 20 inches of water. South and southwest flow favored areas of west of the Cascades, the Mount Shasta area, and the Cascade and Siskiyou Mountains typically receive 5 to 10 inches. The remainder of the West Side has a wide range in normals, ranging from 1 to 5 inches. East of the Cascades, the drier portions of Lake County typically receive about a half an inch, while the rest of the area gets 1 to 3 inches of water, except up to around 5 inches in the some of the mountains.

Snow:

Peak snowpack, in terms of snow water equivalent, for the forecast area occurs in the mid-March to mid-April time frame. Thus, in early March, we usually continue to add more water to the snowpack than is lost from melting and sublimation and, sometimes, this lasts through mid-April. Our maritime snowpack usually yields depths of 5-10 feet above 6000 feet elevation in mid-March. Crate Lake's snowpack has historically peaked around 125 inches on March 31st. Average March snowfall for Crater Lake Park Headquarters is 73 inches.



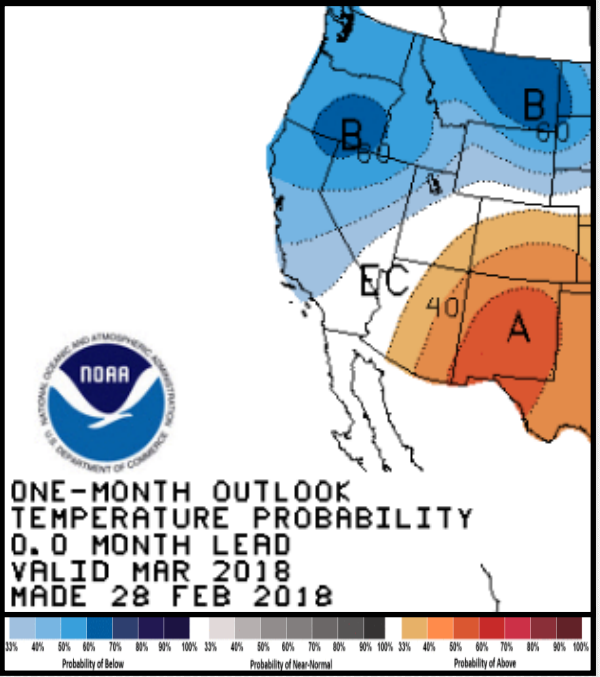




March 2018 Outlook

The official CPC forecast calls for increased probabilities of below normal temperatures (50-65%) and above average precipitation (45-55%). These probabilities mean that CPC has fairly high confidence that the month of March will end up colder and wetter than the 1981-2010 averages. Locally, we think that the month will end up slightly colder than normal (1-5 degrees) with precipitation above normal for most locations, though portions of Coos, Douglas, and Jackson counties that see lee side downslope flow warming and precipitation reductions under a southeast to southwest flow could end up closer to normal for temperatures and near to below normal for precipitation. Confidence is high in above average precipitation anomalies across southern and western Siskiyou, Curry, and Josephine counties due to a predominate southwest flow. Confidence is moderate in above average precipitation for the Oregon Cascades, Modoc County, and Lake Counties. The first week of March has resulted in temperatures around 5 degrees below average with precipitation above normal across S, SW, and SE portions of the area. Models indicate that near normal conditions from about the 7th-12th will give way to colder and wetter conditions in the March 13th-20th time frame. Thereafter, signals are mixed, but colder than normal temperatures are expected to linger, and then moderate toward month's end. This month's localization of the CPC forecast is largely based on GEFS model consensus, as well as the NMME, CanSIPS, and CFSv2 models. The MJO in phase 3 early in the month also lends support to the precipitation forecast.

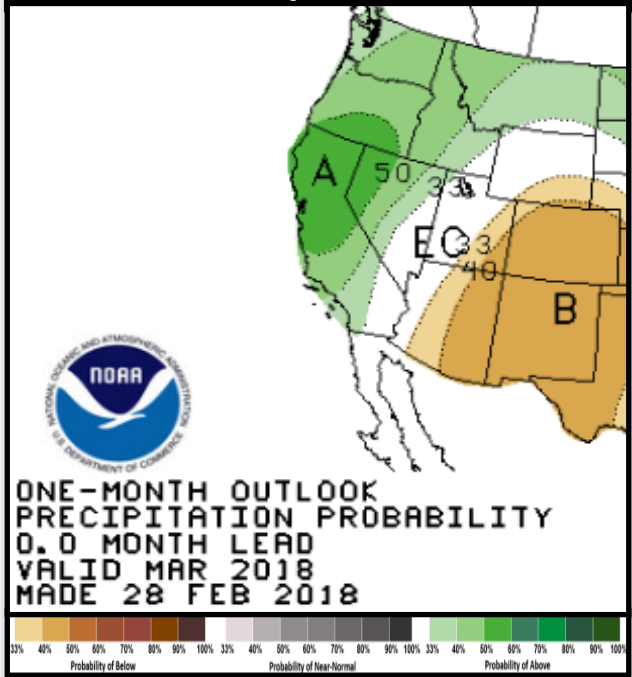
Temperatures



Expected Impact, March 2018:

We're expecting a "marvelous March"- one in which we grow our snowpack, reduce seasonal precipitation deficits across most of the forecast area, and have temperatures cold enough to retain much of the precipitation that falls. While it is very unlikely that any of the area will reach normal snow water equivalent by month's end, we do expect that the amount of precipitation received along with cooler than normal temperatures will prevent any additional drought designation this month. Most of the forecast area has enough holdover water from the 2016-17 Wet Season, along with what we've had and are expecting, to prevent water shortages this summer. However, some areas east of the Cascades likely do not. Winter travel conditions will occur, at times, along with gusty winds and occasionally low snow levels. Flooding is not anticipated this month. Therefore, overall, the primary impacts of the expected March weather are generally positive.

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 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: 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*