

National Weather Service Medford

# February 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 \(NCEI\)](#).

# February 2019 Weather Review

After a dry and relatively warm winter, February 2019 turned out to be very cold and wet, with many locations experiencing one of their top ten coldest and wettest Februarys on record. The cold and wet weather during the month was the result of numerous systems from mainly from the Gulf of Alaska and British Columbia that pivoted into the area around persistent area of troughing that lingered just offshore of the Pacific Northwest. These systems brought plenty of moisture and cooler air into southern Oregon, producing several rounds of low elevation snow and extensive mountain snowpack.

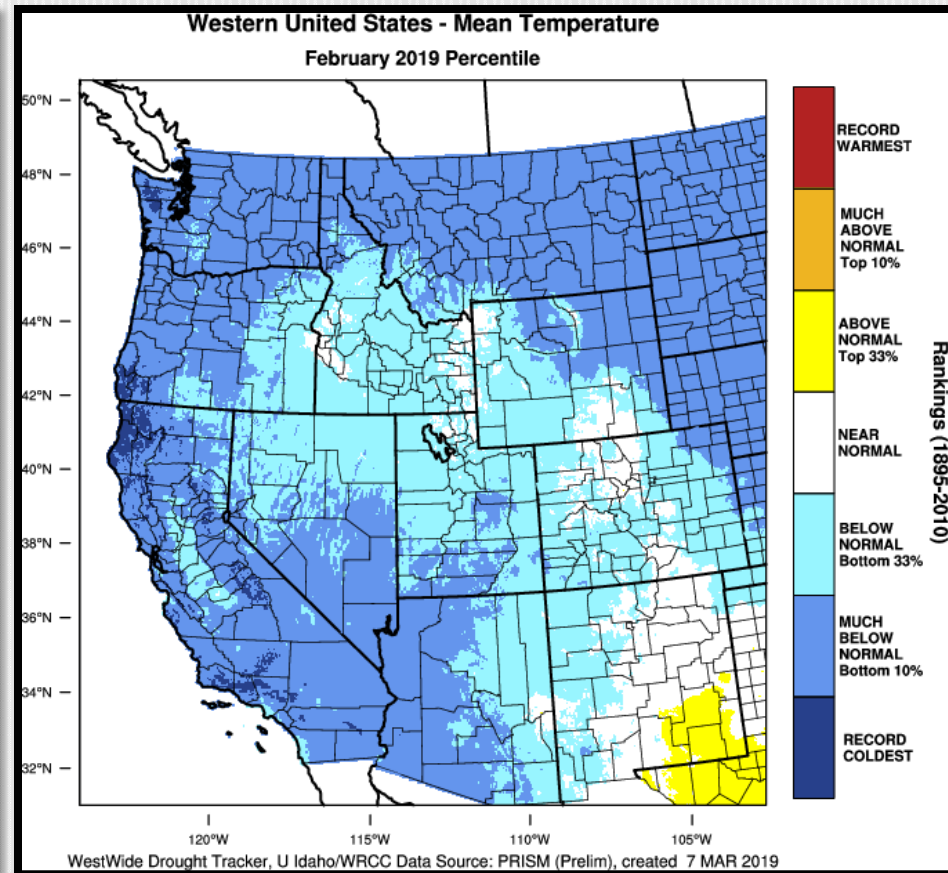
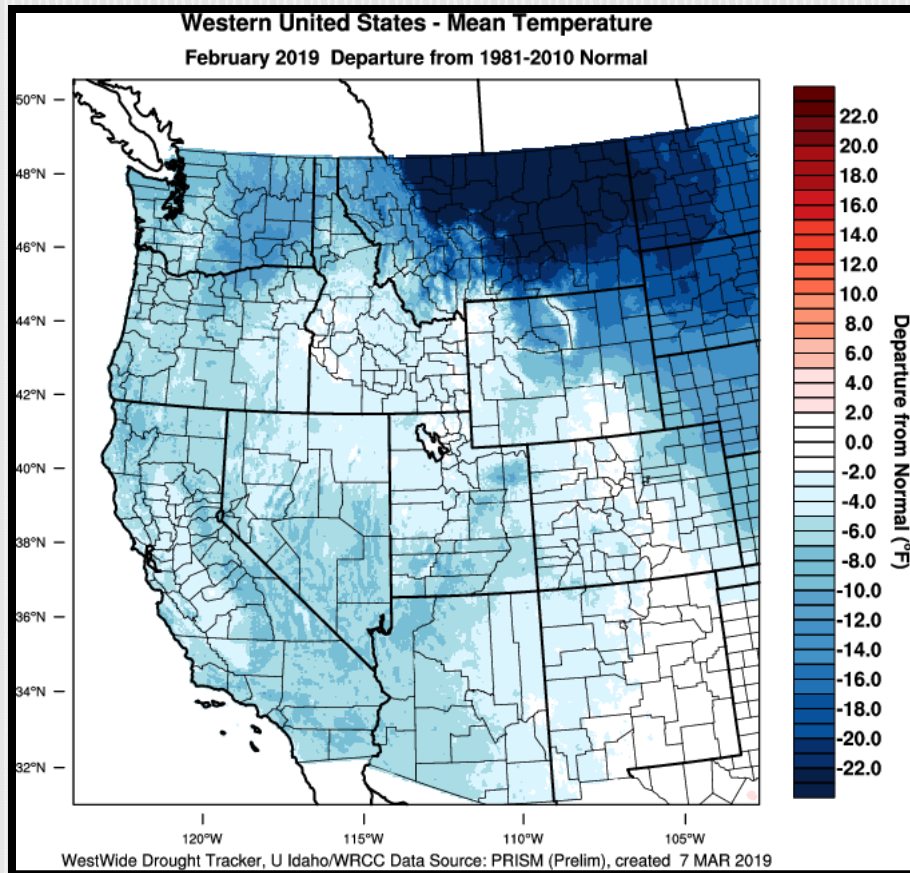
The first system that brought on the cold air, arrived in the form of an arctic front. This front stalled along the coast and brought snow levels down to sea level resulting in widespread snow along the coast. The bulk of the precipitation lingered there, however, and many inland valleys west of the Cascades missed out on snow. This resulted in lower precipitation rates that just weren't fast enough to drag the cold air down low enough to transition the rain to snow. More fronts followed, however, and post-frontal showers finally delivered valley floor snow on the morning of the 10<sup>th</sup>. Meanwhile, with very low snow levels, these systems brought snow to most locations above 2000 feet, which greatly helped to build and increase the mountain snow pack.

The next notable system arrived just before the middle of the month. This system had more of a southerly trajectory, which added strong winds to the mix and favored heavy snowfall in the Shasta Valley. 18-24 inches of snow fell within 24 hours around the Mt Shasta City/Dunsmuir area, and this resulted in extensive closures of I-5 south of the OR/CA border. Snow levels quickly rose just after this for about 24 hours as warmer air moved in, then quickly lowered again during the next 24 hours, bringing another round of snow impacts to area passes. The passes north of Grants Pass were the hardest hit with this next round as a portion of I-5 from Hugo to Canyonville was closed for 3 ½ hours due to snowfall. More systems followed bringing several more rounds of beneficial mountain snow mainly above 3000 feet, with snow levels occasionally dipping as low as 1500 feet.

The most notable of these systems, however, was a persistent and colder than typical atmospheric river that arrived during the last week of the month. Very rich and deep, moist onshore flow persisted for several days, dropping over six inches of rain at the coast and several feet of snow on the mountains. In the Umpqua Basin, 8 to 12 inches of heavy, wet snow fell down to valley floors, resulting in thousands of downed trees with widespread power outages that lasted for days, even weeks for many. Even NWS Medford had to contend with a 4-day communication outage during this event due to an internet line being down during these power outages. There were numerous road closures due to landslides and downed trees across roadways from heavy rain and snow. A portion of Highway 101 about 12 miles north of Brookings was closed due to a portion of the road sliding, making it completely impassible. This weather event resulted in an Emergency Declaration by the governor for multiple counties in southwest Oregon, including: Coos, Curry, Deschutes, Douglas, Jackson, Josephine, Klamath, Lane, Linn, and Marion. Any clean-up/repairs were hindered as the initial front with this system lifted back north. Cold air lingered in valleys longer than was anticipated and this brought another round of valley floor snow which complicated matters further.

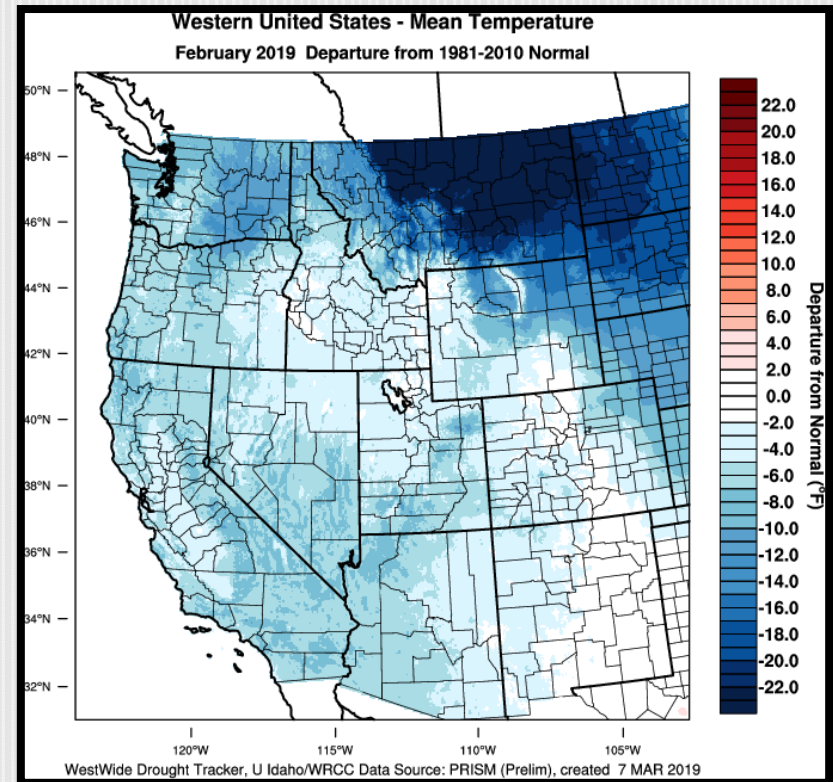
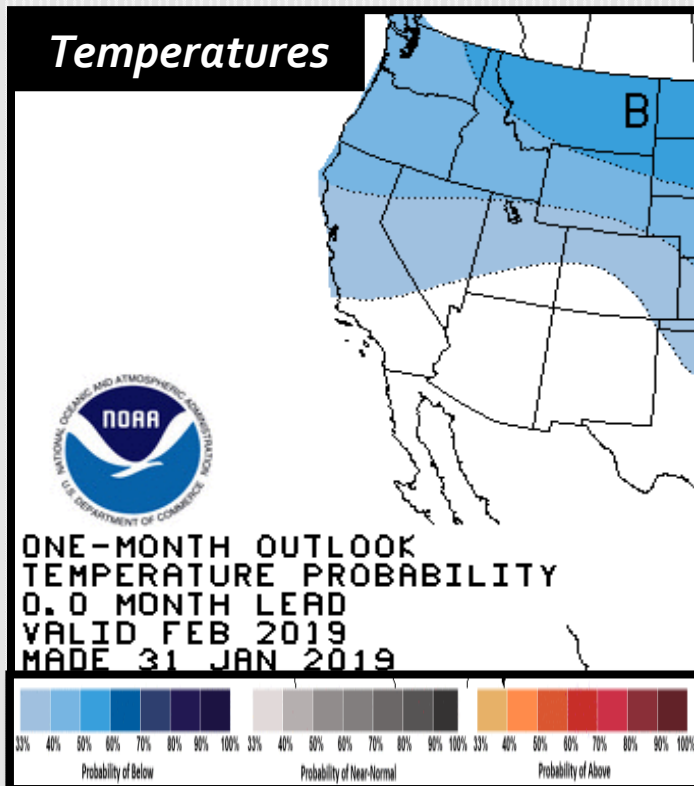
Despite the widespread impacts, the busy weather was very beneficial in terms of water resources. Building mountain snowpack and replenishing ground water sources during the active month brought widespread drought improvements that were recognized by the beginning of March. This left no argument that February 2019 was an active, busy month.

# February 2019 *Observed Temperatures*



# A Look Back at the Feb 2019 Temperature Outlook

- **Was the forecast anomaly correct?** Both CPC and our local forecast indicated that below normal anomalies were expected, so we both got the sign of the anomaly correct. Here at WFO MFR, we expected magnitude of the anomaly to be 0 to 5 degrees below normal, greatest east of the Cascades. Actual observed anomalies were 2 to possibly as much as 10 degrees below normal in the Medford NWS forecast area.
- **Was the expected impact correct?** The answer is 'YES'! The impacts section of the February 2019 outlook focused on cold weather impacts, benefits to snowpack, low elevation snow potential, and benefits to winter recreation. As you'll see in the precipitation section, we did not do as well there.
- **Did our forecast improve upon the CPC forecast?** Our localized added an anticipated anomaly to the CPC forecast so it did improve it by doing that. Overall, CPC had a good temperature forecast, which was reflected in our localized forecast. It was even colder than we anticipated.



# Average Temperatures

	<i>Average (°F)</i>	<i>Departure from Normal</i>	<i>Average Max (°F)</i>	<i>Departure from Normal</i>	<i>Average Min (°F)</i>	<i>Departure from Normal</i>
<i>North Bend</i>	42.0	-4.4°	48.0	-4.7°	36.1	-4.1°
<i>Roseburg</i>	40.5	-4.8°	46.1	-7.4°	34.9	-2.3°
<i>Medford</i>	38.1	-6.1°	44.8	-9.5°	31.5	-2.6°
<i>Klamath Falls</i>	28.6	-5.6°	37.1	-7.7°	20.1	-3.6°
<i>Montague, CA</i>	35.2	-3.9°	43.7	-6.8°	26.7	-1.0°
<i>Mt. Shasta City, CA</i>	31.8	-6.4°	38.1	-10.5°	25.5	-2.4°
<i>Alturas, CA</i>	27.7	-6.2°	36.9	-9.2°	18.4	-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>55°</i>	<i>1<sup>st</sup></i>	<i>28°</i>	<i>10<sup>th</sup></i>
<i>Roseburg</i>	<i>58°</i>	<i>14<sup>th</sup></i>	<i>27°</i>	<i>7<sup>th</sup></i>
<i>Medford</i>	<i>55°</i>	<i>14<sup>th</sup></i>	<i>23°</i>	<i>19<sup>th</sup></i>
<i>Klamath Falls</i>	<i>49°</i>	<i>27<sup>th</sup></i>	<i>1°</i>	<i>10<sup>th</sup></i>
<i>Montague, CA</i>	<i>55°</i>	<i>2<sup>nd</sup> &amp; 27<sup>th</sup></i>	<i>16°</i>	<i>9<sup>th</sup></i>
<i>Mt. Shasta City, CA</i>	<i>47°</i>	<i>1<sup>st</sup></i>	<i>11°</i>	<i>22<sup>nd</sup></i>
<i>Alturas, CA</i>	<i>52°</i>	<i>27<sup>th</sup></i>	<i>-3°</i>	<i>19<sup>th</sup> &amp; 22<sup>nd</sup></i>

# Record Monthly Cold Temperatures

<u>Coldest Daily Average</u>	Average Temp (°F)	Rank
<b>North Bend</b>	42.0°	5 <sup>th</sup>
<b>Roseburg</b>	40.5°	3 <sup>rd</sup>
<b>Medford</b>	38.1°	4 <sup>th</sup>
<b>Klamath Falls</b>	28.6°	11 <sup>th</sup>
<b>Montague, CA</b>	35.2°	2 <sup>nd</sup>
<b>Mt. Shasta City, CA</b>	31.8°	2 <sup>nd</sup>
<b>Alturas, CA</b>	27.7°	1 <sup>st</sup>



<u>Coldest Days</u>	Average Max Temp (°F)	Rank
<b>North Bend</b>	48.0°	2 <sup>nd</sup>
<b>Roseburg</b>	46.1°	1 <sup>st</sup>
<b>Medford</b>	44.8°	1 <sup>st</sup>
<b>Klamath Falls</b>	37.1°	7 <sup>th</sup>
<b>Montague, CA</b>	43.7°	1 <sup>st</sup>
<b>Mt. Shasta City, CA</b>	38.1°	1 <sup>st</sup>
<b>Alturas, CA</b>	36.9°	1 <sup>st</sup>

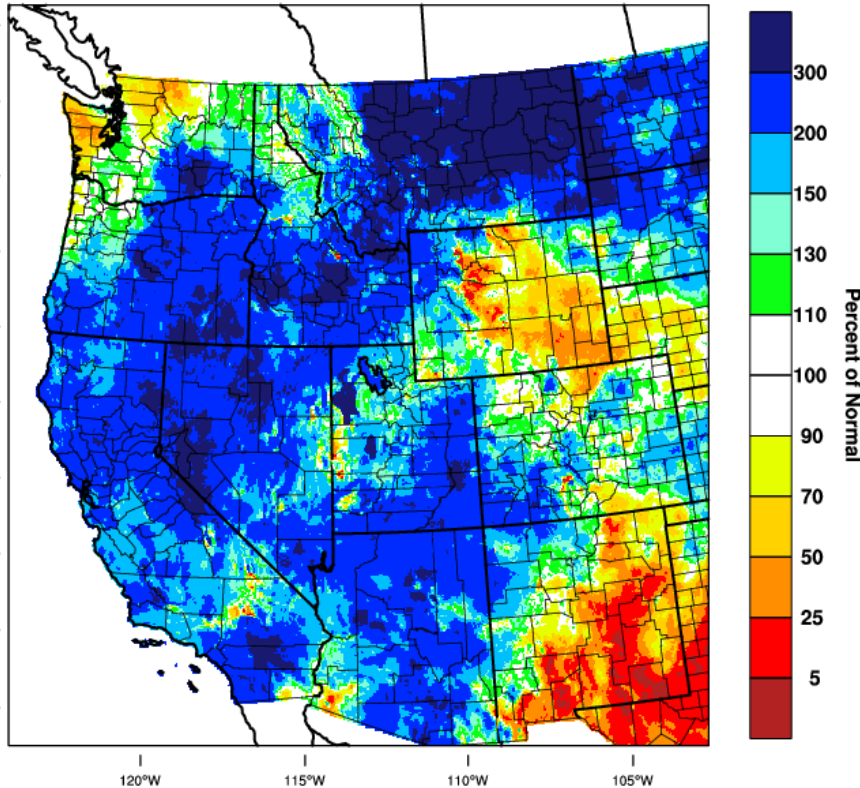
Where	Date	Record Low Max	Old Record/Year
<b>Roseburg</b>	10 <sup>th</sup>	40°	41° / 1933
	20 <sup>th</sup>	42°	43° / 1952
	26 <sup>th</sup>	36°	39° / 1962
	28 <sup>th</sup>	44°	Ties with 2007
<b>Medford</b>	26 <sup>th</sup>	34°	37° / 1962
	27 <sup>th</sup>	38°	Ties with 2007

Where	Date	Record Low Min	Old Record/Year
<b>Montague</b>	21 <sup>st</sup>	17°	Ties with 2006
	22 <sup>nd</sup>	19°	Ties with 2010
<b>Roseburg</b>	22 <sup>nd</sup>	28°	Ties with 2010
<b>Mt Shasta City</b>	22 <sup>nd</sup>	11°	12° / 1920

\*Please note the differences in the "Periods of Records" (POR) for each site that can be found on the last slide. Some of our sites have a relatively short POR compared to others. In Montague, for example, the records only go back to the late 90's, so for this to be the coldest February on record is really only stating that this the coldest February within the last ~30 years. On the other hand, Klamath Falls has a much longer POR so claiming this is one of the coldest Februaries in over 100 years is a bit more significant.

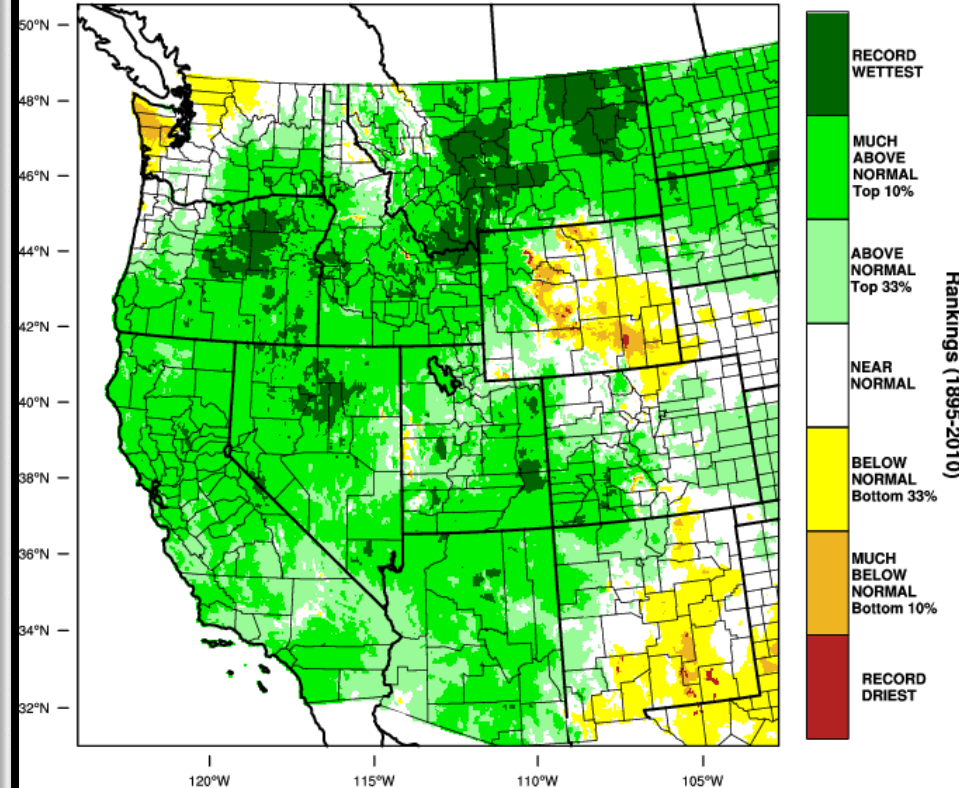
# February 2019 *Observed Precipitation*

Western United States - Precipitation  
February 2019 Percent of 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 MAR 2019

Western United States - Precipitation  
February 2019 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 MAR 2019



# ***Current Snow Depth, Mar 6<sup>th</sup>, 2019***

Mount Bachelor (6300-7300 feet) : 121-142"

Crater Lake Nat. Park HQ (6475ft) : 132"

Four Mile Lake SNOTEL (5970ft) : 85"

Diamond Lake SNOTEL (5280ft) : 58"

Mount Ashland Ski Area (6500ft) : 111-122"

Old Ski Bowl (7600ft) : 186"

Shasta Ski Park (6600ft): : 72-144"

Castle Lake (5870ft) : 149"

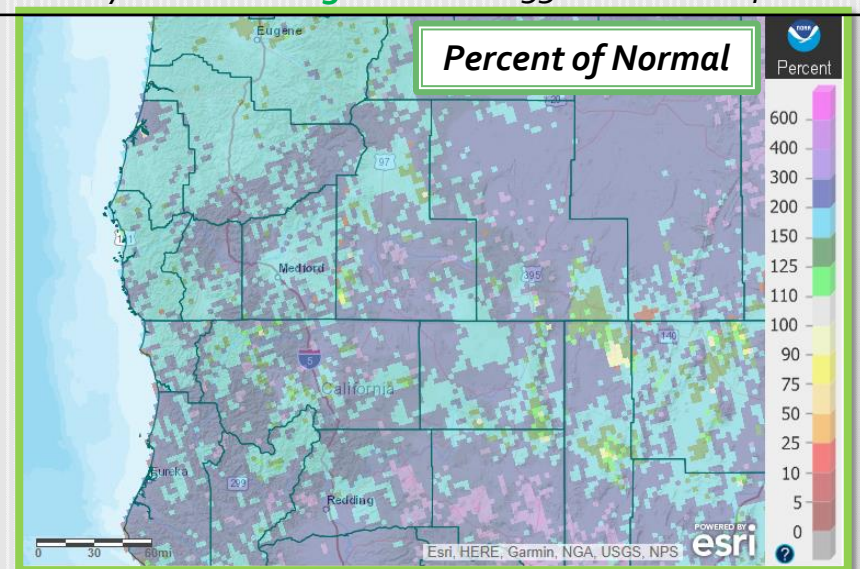
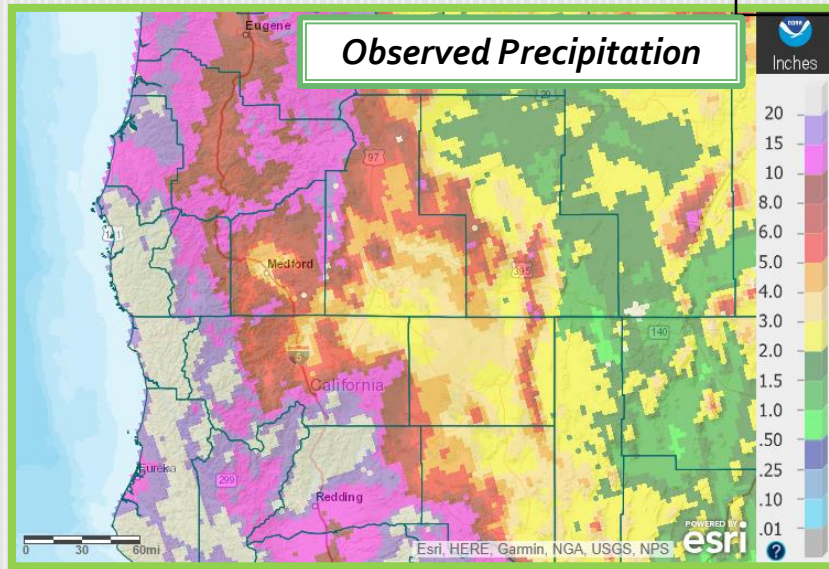
Shasta Nordic Center (5000ft ?) : ???

# Precipitation

## Record Daily Precipitation

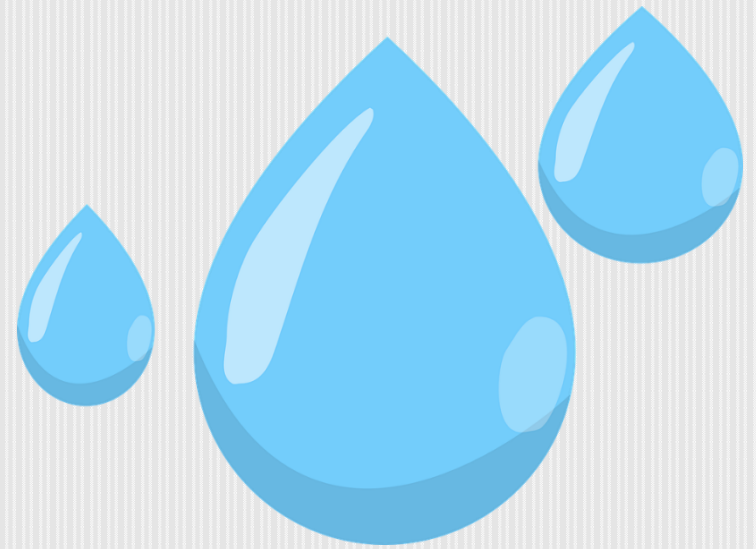
	New Record	Date	Old Record	Year
North Bend	1.45"	23 <sup>rd</sup>	1.16"	2010
	3.53"	24 <sup>th</sup>	2.72"	1958
Klamath Falls	0.83"	14 <sup>th</sup>	0.67"	2000
Mt Shasta City	3.55"	26 <sup>th</sup>	2.06"	2010

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	16.06"	+8.47"	3.53"	24 <sup>th</sup>
Roseburg	8.50"	+4.55"	2.25"	24 <sup>th</sup>
Medford	4.63"	+2.62"	0.91"	25 <sup>th</sup>
Klamath Falls	2.05"	+0.13"	0.83"	14 <sup>th</sup>
Montague, CA	3.74"	+1.73"	1.02"	25 <sup>th</sup>
Mt. Shasta City, CA	15.60"	+8.37"	3.55"	26 <sup>th</sup>
Alturas, CA	2.70"	+1.25"	0.53"	14 <sup>th</sup>



# Record Monthly Precipitation

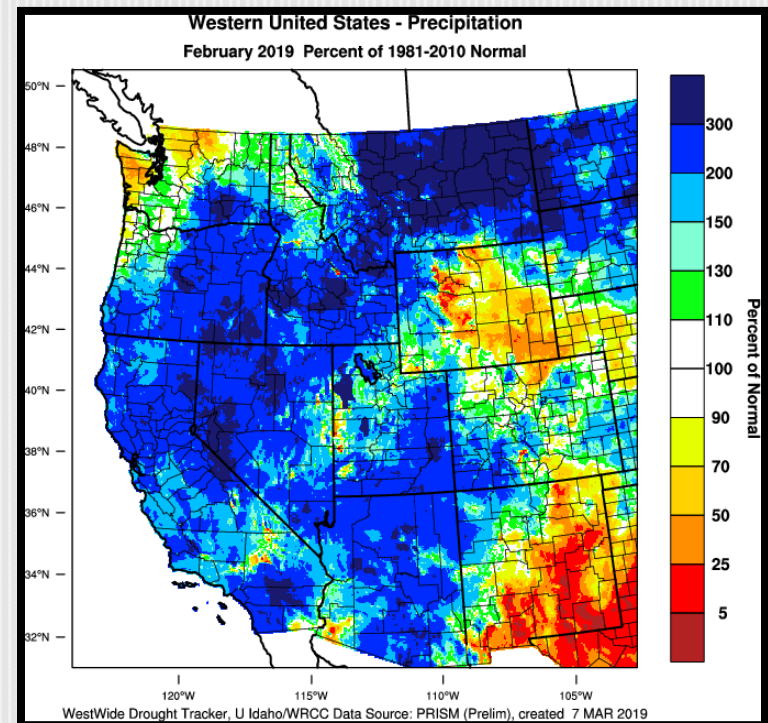
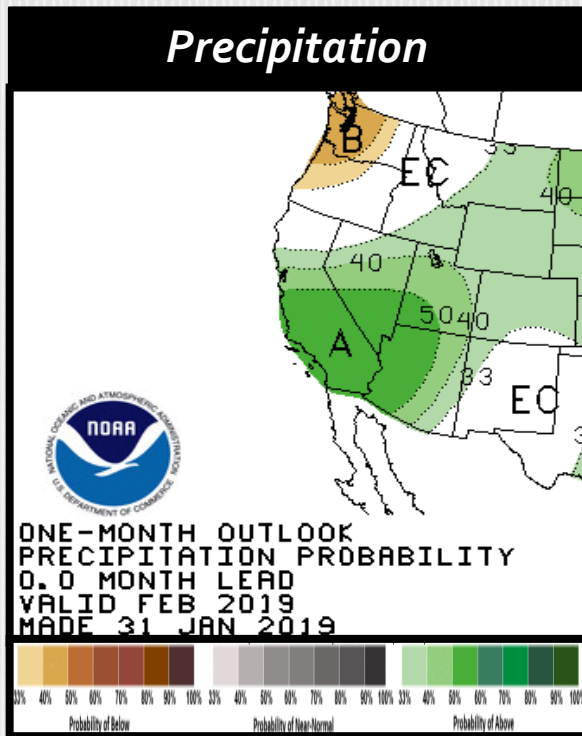
	<i>Total</i>	<i>Rank</i>
<b>North Bend</b>	16.06"	6 <sup>th</sup>
<b>Roseburg</b>	8.50"	5 <sup>th</sup>
<b>Medford</b>	4.63"	7 <sup>th</sup>
<b>Montague, CA</b>	3.74"	1 <sup>st</sup>
<b>Mt. Shasta City, CA</b>	15.60"	2 <sup>nd</sup>
<b>Alturas, CA</b>	2.70"	2 <sup>nd</sup>



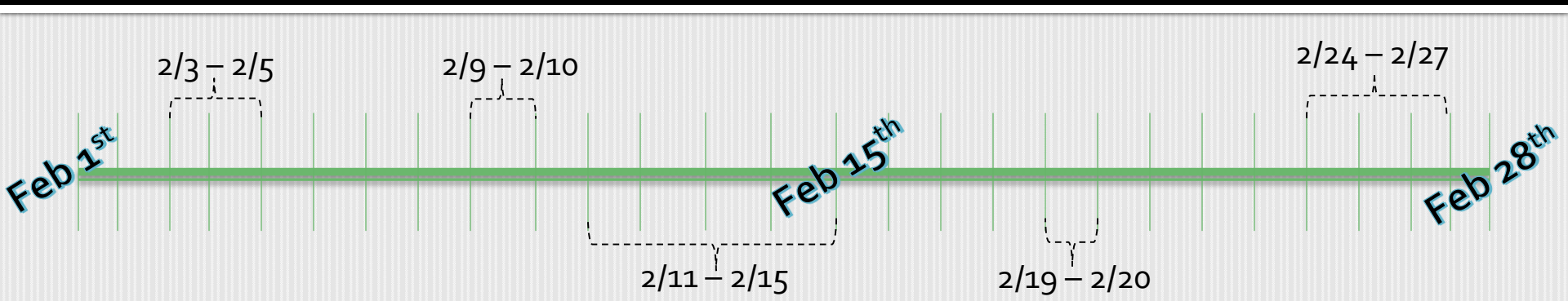
<i>Where</i>	<i>Date</i>	<i>Total Snow</i>	<i>Old Record/Year</i>
<b>Medford</b>	10 <sup>th</sup>	2.0"	0.2" / 1946
	26 <sup>th</sup>	4.1"	0.6" / 2007

# A Look Back at the Feb 2019 Precipitation Outlook

- **Was the forecast anomaly correct?** No. CPC's forecast was technically equal chances, while our localized forecast indicated that their forecast was "too optimistic". Locally, we indicated that precipitation was most likely to be below normal. CPC's forecast was better than ours. Most of the forecast area received 150% to 300% of normal precipitation.
- **Was the expected impact correct?** Partially. We indicated that snowpack would not decrease and that percent of normal snow water equivalent would remain the same. Instead, snowpack increased tremendously in February. We were accurate in indicating significant winter weather impacts, as well as flood potential toward month's end, but there were many more rain and snow impacts than were indicated.
- **Did our forecast improve upon the CPC forecast?** No, except for indicating above normal precipitation early in the month, and the possibility of another precipitation surge at the end of the month. Overall, CPC's precipitation anomaly forecast was better than ours but both forecasts were clearly too dry.



# February Significant Weather Events

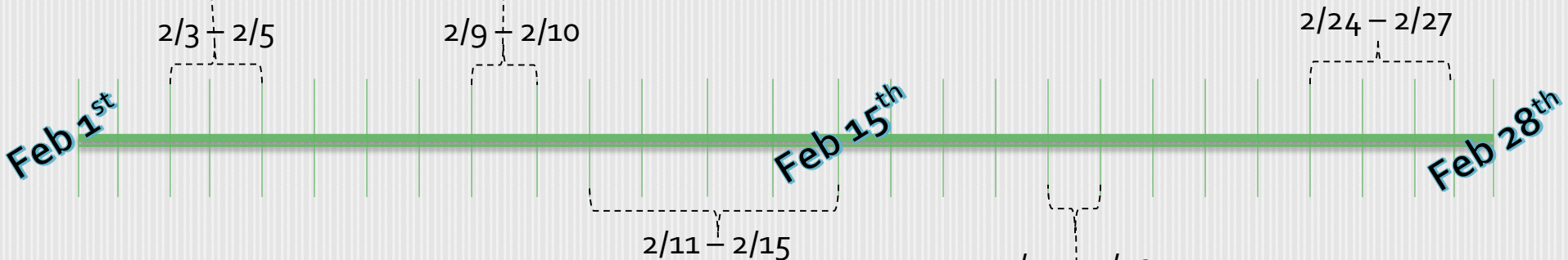


# Storm Timeline

- Arctic Front arrives, bringing cold air that lingered through the month
- Snowfall down to beaches along coast, above 1500 ft away from coast.

- Another front brings ample mountain snow.
- Post-frontal showers bring more widespread showers to interior valleys on the morning of the 10<sup>th</sup>.

- Long duration precipitation event – stalled front brought heavy precipitation to the area over a 5 day period. Heavy rain resulted in numerous land slides along the coast and flooding of main stem rivers, like the Coquille.
- Cold air lingered longer than it was indicated to, resulting in the initial front bringing heavy snow north of the Umpqua Divide. This brought widespread power outages, downed trees, and extensive closures of I-5 north of Grants Pass.
- NWS Medford dealt with a 4-day communications outage during this event resulting from heavy snow taking down internet lines.
- Warm front lifted back north on the 26<sup>th</sup>, but cold air lingered longer than was indicated (again) bringing widespread low elevation snow. 4.1 inches was reports at the Medford Airport.



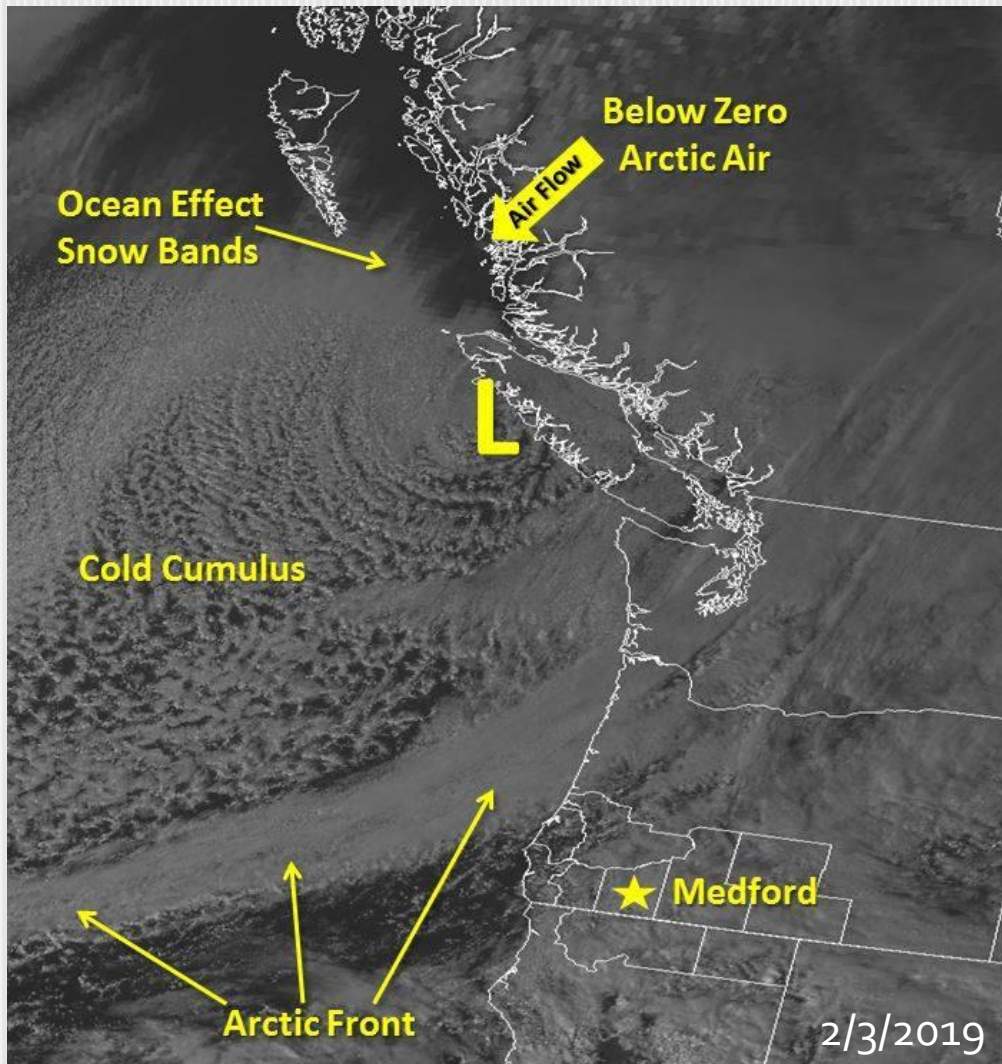
- More of a southerly trajectory system, resulting in roller coast like snow levels.
- Feb 12<sup>th</sup>: 18-24 inches of snow in 24 hours around the Mt. Shasta City area, resulting in extensive closures of I-5 south of OR/CA bordered through Dunsmuir/Redding.
- Feb 15<sup>th</sup>: Another round of snow resulted in closure of I-5 from Hugo to Canyonville for 3.5 hours
- Post-frontal showers brought another round of snow to valley floors on the morning of the 17<sup>th</sup>.

2/19 – 2/20

Another front brings ample mountain snow and snow down to elevations above 1500 feet.



# The system that started it all...2/3 – 2/5



- Brought the cold air to the area, which lingered through the majority of the month.
- Arctic Front stalled along the coast & did not deliver snow to interior valleys. This was likely due to precipitation rates not being high enough to bring down the cold air to transition rain to snow.
- Coastal locations reported snow with this system, but away from the coast it was mainly for elevations above 1500 feet.

**US97 at Green Springs Interchange**  
Updated: Feb 04 2019 3:42 AM Looking North



Elevation 4244 TripCheck.com Milepost 277.00

# Morning update Feb 4<sup>th</sup>, 430am

Snow has been observed from the coast to areas east of the Cascades this morning. Most of the forecast is on track.

Many in Medford of course are wondering, "what about the Rogue Valley snow?"

Precipitation rates have been too light to bring down the cold air aloft, and that results in both rain at the start and then not much in the way of snow accumulation so far. Widespread snow accumulation chances still continue through 10am, but we're revising our snow forecasts to a half inch on the Rogue Valley floor this morning, with higher amounts above 1500 feet. Some snow showers are still expected this afternoon.

**I-5 at Barton Rd**  
Updated: Feb 04 2019 3:21 AM Looking North



Elevation 1494 TripCheck.com Milepost 83.50  
Temperature 33.3F

**ORE42 at Coquille**  
Updated: Feb 04 2019 12:51 AM Looking North



Elevation 22 TripCheck.com Milepost 10.85

**ORE238 at Jacksonville Hill**  
Updated: Feb 04 2019 4:09 AM Looking East



Elevation 2170 TripCheck.com Milepost 30.50  
Temperature 33.4F Wind NE MPH 3



Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.

# 2/3 - 2/4 Snowfall

## Public Information Statement

National Weather Service Medford OR  
205 PM PST Mon Feb 4 2019

### ...SNOWFALL REPORTS...

Location	Amount	Time/Date
...California...		
...Modoc County...		
5 SW Lake City	6.0 in	0100 PM 02/04
6 E New Pine Creek	5.0 in	1100 AM 02/04
20 W Willow Ranch	4.0 in	0100 PM 02/04
8 E Adin	4.0 in	0100 PM 02/04
19 WNW Willow Ranch	3.0 in	1000 AM 02/04
9 E Alturas	0.5 in	0700 AM 02/04
...Siskiyou County...		
3 SSW Weed	2.5 in	0700 AM 02/04
Copco No 1 Dam	2.0 in	0800 AM 02/04
5 N Weed	0.8 in	0800 AM 02/04
Etna 3.9 NNW	0.5 in	0700 AM 02/04
5 W Dunsmuir	0.4 in	1100 AM 02/04
...Oregon...		
...Coos County...		
Coos Bay	2.0 in	0800 AM 02/04
...Curry County...		
3 NE Harbor	0.4 in	0700 AM 02/04
3 NNW Brookings	0.2 in	0800 AM 02/04
...Douglas County...		
10 W Steamboat	0.8 in	0830 AM 02/04
4 W Tiller	0.8 in	0700 AM 02/04
Canyonville 2s	0.4 in	0800 AM 02/04
7 SE Sutherlin	0.3 in	0700 AM 02/04
13 ESE Sutherlin	0.2 in	0631 AM 02/04

### ...Jackson County...

1 NE Howard Prairie	3.0 in	0600 AM 02/04
3 W Phoenix	1.1 in	0800 AM 02/04
1 WNW Ashland	1.0 in	0700 AM 02/04
2 WSW Phoenix	1.0 in	0700 AM 02/04
5 NNW Gold Hill	0.2 in	0700 AM 02/04
1 NE Applegate	0.2 in	0700 AM 02/04
5 SE Ruch	0.1 in	0700 AM 02/04
3 W Phoenix	T in	0750 AM 02/04
3 W Phoenix	T in	0600 AM 02/04

### ...Josephine County...

10 SSW Williams	3.0 in	0600 AM 02/04
1 SW Obrien	1.1 in	0700 AM 02/04
Cave Junction	0.8 in	0800 AM 02/04
2 ENE Murphy	0.2 in	0830 AM 02/04

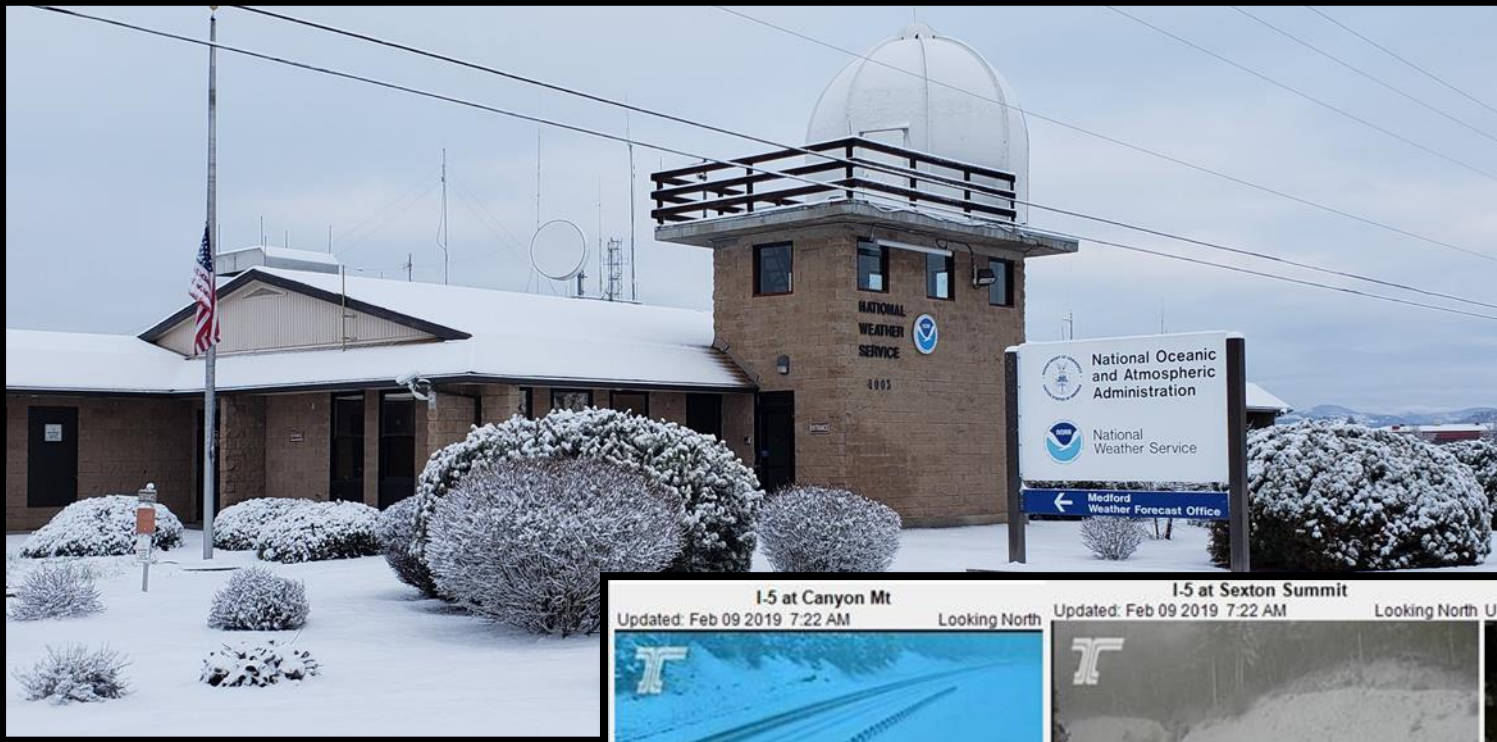
### ...Klamath County...

Crater Lake	9.2 in	1200 PM 02/04
9 WSW Crescent Lake	6.0 in	0500 AM 02/04
1 WNW Crater Lake	5.9 in	0100 PM 02/04
17 NNE Bly	5.0 in	1000 AM 02/04
1 SSW Olene	5.0 in	0800 AM 02/04
Crater Lake National Park Hq	4.5 in	0800 AM 02/04
3 SSE Altamont	4.2 in	0700 AM 02/04
8 ENE Lorella	4.0 in	0800 AM 02/04
1 NE Altamont	3.3 in	0900 AM 02/04
2 SW Crater Lake	3.0 in	0100 PM 02/04
13 S Crater Lake	3.0 in	0800 AM 02/04
Altamont	2.5 in	0800 AM 02/04
Keno	1.5 in	0700 AM 02/04
Klamath Falls	1.3 in	0800 AM 02/04

### ...Lake County...

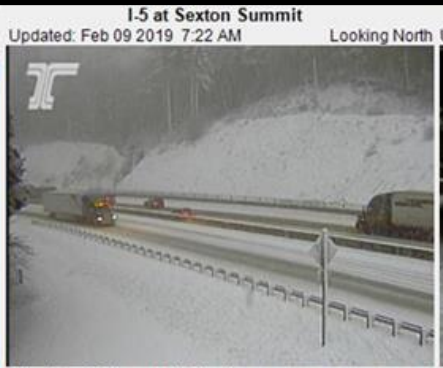
13 W Paisley	6.0 in	0900 AM 02/04
12 ESE Bly	4.0 in	1100 AM 02/04
13 SW Silver Lake	2.0 in	0100 PM 02/04
21 SE Bly	2.0 in	1000 AM 02/04

2/9 - 2/10



I-5 at Canyon Mt  
Updated: Feb 09 2019 7:22 AM Looking North

Elevation 2015 TripCheck.com Milepost 90.10  
Temperature 33.1F Wind W MPH 0



I-5 at Sexton Summit  
Updated: Feb 09 2019 7:22 AM Looking North

Elevation 1936 TripCheck.com Milepost 69.00  
Temperature 32.4F Wind N MPH 3



ORE238 at Jacksonville Hill  
Updated: Feb 09 2019 7:21 AM Looking West

Elevation 2170 TripCheck.com Milepost 30.50  
Temperature 33.8F Wind NE MPH 4



ORE140 at Lake of the Woods  
Updated: Feb 09 2019 7:25 AM Looking West

Elevation 4957 TripCheck.com Milepost 37.00  
Temperature 24.1F Wind NW MPH 3



I-5 at Siskiyou MP.2  
Updated: Feb 09 2019 7:26 AM Looking North

Elevation 3329 TripCheck.com Milepost 0.20



ORE138 at ORE230 Diamond Lake  
Updated: Feb 09 2019 7:27 AM Looking North

Elevation 5285 TripCheck.com Milepost 83.00  
Temperature 23.7F Wind SW MPH 0

# 2/9 - 2/10 Snowfall Reports

## ...Josephine County...

1 W Williams	6.0 in	0831 AM 02/10	Trained Spotter
5 NNE Selma	5.0 in	0905 AM 02/10	Trained Spotter
1 W Wilderville	4.5 in	0700 AM 02/10	COCORAHS
2 W Wilderville	4.1 in	0700 AM 02/10	COCORAHS
Cave Junction	4.0 in	0800 AM 02/10	COCORAHS
2 WSW Obrien	4.0 in	0620 AM 02/10	Trained Spotter
3 ESE Grants Pass	3.3 in	0554 AM 02/10	Trained Spotter
5 NW Wilderville	2.7 in	0700 AM 02/10	COCORAHS
6 SE Selma	2.6 in	0900 AM 02/10	Trained Spotter
1 SW Provolt	2.5 in	0810 AM 02/10	COCORAHS
2 W Merlin	2.0 in	0829 AM 02/10	Trained Spotter
1 SSE Murphy	2.0 in	0827 AM 02/10	Trained Spotter
4 N Grants Pass	2.0 in	0814 AM 02/10	Trained Spotter
1 NNW Merlin	2.0 in	0800 AM 02/10	COCORAHS
2 N Provolt	2.0 in	0752 AM 02/10	Trained Spotter

## ...Klamath County...

4 WSW Klamath Falls	5.0 in	0830 AM 02/10	Trained Spotter
Altamont	3.6 in	0800 AM 02/10	COCORAHS
Crater Lake National Park Hq	2.1 in	0800 AM 02/10	COOP
Keno	2.0 in	0700 AM 02/10	COOP
1 SSW Olene	1.9 in	0800 AM 02/10	COCORAHS

Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.

## ...SNOWFALL REPORTS...

Location	Amount	Time/Date	Provider
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### ...California...

### ...Modoc County...

9 E Alturas	4.5 in	0700 AM 02/10	COCORAHS
5 SW Lake City	3.0 in	0100 PM 02/10	MESOWEST

### ...Siskiyou County...

10 E Orleans	6.0 in	0700 AM 02/10	COCORAHS
3 SSW Weed	4.5 in	0700 AM 02/10	COCORAHS
Dorris	2.0 in	0700 AM 02/10	COCORAHS
Yreka	1.6 in	0600 AM 02/10	COCORAHS

### ...Oregon...

### ...Curry County...

6 E Gold Beach	10.3 in	0829 AM 02/10	Trained Spotter
3 NNW Brookings	4.6 in	0800 AM 02/10	COCORAHS
3 NE Harbor	1.6 in	0700 AM 02/10	COCORAHS
Gold Beach	T in	0556 AM 02/10	Trained Spotter

### ...Douglas County...

4 W Tiller	2.1 in	0700 AM 02/10	COCORAHS
Canyonville 2s	0.3 in	0800 AM 02/10	COOP
1 WNW Roseburg	T in	0700 AM 02/10	COCORAHS
4 WNW Sutherlin	T in	0700 AM 02/10	COCORAHS
10 W Steamboat	T in	0700 AM 02/10	COCORAHS
1 SW Winston	T in	0700 AM 02/10	COCORAHS

### ...Jackson County...

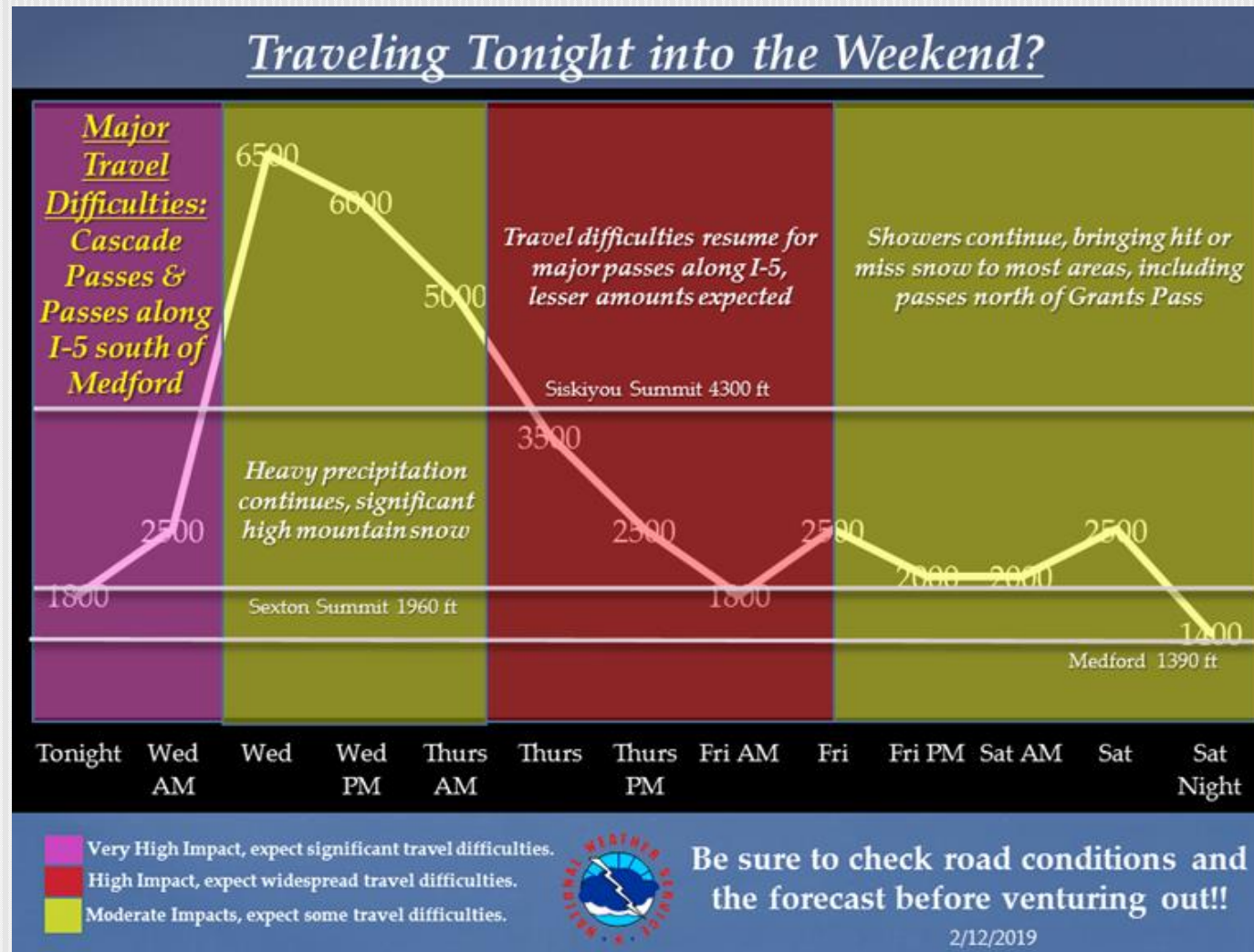
5 NNW Gold Hill	4.9 in	0700 AM 02/10	COCORAHS
1 NE Applegate	4.5 in	0700 AM 02/10	COCORAHS
1 ENE Medford	3.3 in	0700 AM 02/10	COCORAHS
Jacksonville	3.1 in	0800 AM 02/10	COCORAHS
Medford	3.0 in	0700 AM 02/10	COCORAHS
1 WSW Central Point	3.0 in	0654 AM 02/10	NMS Employee
4 NNW Rogue River	2.5 in	0700 AM 02/10	COCORAHS
Jacksonville	2.2 in	0800 AM 02/10	COCORAHS
5 SE Ruch	2.2 in	0700 AM 02/10	COCORAHS
Medford Int. Airport	2.0 in	1000 AM 02/10	NMS
Ruch	2.0 in	0940 AM 02/10	COOP
Gold Hill	2.0 in	0934 AM 02/10	Public
1 SSW Trail	2.0 in	0900 AM 02/10	Public
1 SE Ashland	2.0 in	0800 AM 02/10	COCORAHS
4 N Eagle Point	2.0 in	0748 AM 02/10	Trained Spotter
1 WNW Ashland	2.0 in	0730 AM 02/10	COCORAHS
Gold Hill 0.2 WSW	2.0 in	0700 AM 02/10	COCORAHS
Rogue River	1.9 in	0700 AM 02/10	COCORAHS
3 SW Medford	1.8 in	0812 AM 02/10	Public
3 W Phoenix	1.8 in	0800 AM 02/10	COCORAHS
3 W Phoenix	1.5 in	0740 AM 02/10	COCORAHS
1 ESE Ashland	1.4 in	0800 AM 02/10	COCORAHS
4 N Eagle Point	1.4 in	0744 AM 02/10	Trained Spotter
Ashland	1.3 in	0800 AM 02/10	COCORAHS
3 W Phoenix	1.3 in	0600 AM 02/10	COCORAHS
2 WSW Phoenix	1.0 in	0700 AM 02/10	COCORAHS

### ...Josephine County...

1 W Williams	6.0 in	0831 AM 02/10	Trained Spotter
5 NNE Selma	5.0 in	0905 AM 02/10	Trained Spotter
1 W Wilderville	4.5 in	0700 AM 02/10	COCORAHS
2 W Wilderville	4.1 in	0700 AM 02/10	COCORAHS
Cave Junction	4.0 in	0800 AM 02/10	COCORAHS
2 WSW Obrien	4.0 in	0620 AM 02/10	Trained Spotter
3 ESE Grants Pass	3.3 in	0554 AM 02/10	Trained Spotter
5 NW Wilderville	2.7 in	0700 AM 02/10	COCORAHS
6 SE Selma	2.6 in	0900 AM 02/10	Trained Spotter
1 SW Provolt	2.5 in	0810 AM 02/10	COCORAHS
2 W Merlin	2.0 in	0829 AM 02/10	Trained Spotter
1 SSE Murphy	2.0 in	0827 AM 02/10	Trained Spotter
4 N Grants Pass	2.0 in	0814 AM 02/10	Trained Spotter
1 NNW Merlin	2.0 in	0800 AM 02/10	COCORAHS
2 N Provolt	2.0 in	0752 AM 02/10	Trained Spotter

# 2/11 – 2/15

- 2/12: 18 – 24 inches in 24 hours to the Mt. Shasta City area.
- More of a southerly trajectory system resulted in roller coaster style snow levels and stronger winds.
- Extensive I-5 closures.



Public Information Statement  
National Weather Service Medford OR  
949 AM PST Wed Feb 13 2019

...24 HOUR SNOWFALL REPORTS...

Location	Amount	Time/Date	Provider
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...California...

...Modoc County...

19 WNW Willow Ranch	4.0 in	0900 AM 02/13	MESOWEST
20 W Willow Ranch	2.0 in	0900 AM 02/13	MESOWEST
9 E Alturas	1.2 in	0700 AM 02/13	COCORAHS
8 E Adin	1.0 in	0800 AM 02/13	MESOWEST

...Siskiyou County...

Mc Cloud	24.3 in	0800 AM 02/13	COOP
2 SSE Mount Shasta	24.0 in	0717 AM 02/13	Trained Spotter
Dunsmuir	18.0 in	0739 AM 02/13	Public
Mount Shasta	12.0 in	0400 AM 02/13	Trained Spotter
Yreka	7.2 in	0800 AM 02/13	COOP
Dorris	6.0 in	0551 AM 02/13	Trained Spotter
5 W Dunsmuir	3.1 in	0900 AM 02/13	MESOWEST
Happy Camp Rs	3.0 in	0800 AM 02/13	COOP
Fort Jones Rs	2.5 in	0800 AM 02/13	COOP

...Oregon...

...Jackson County...

1 NE Howard Prairie	11.0 in	0600 AM 02/13	MESOWEST
Gold Hill	3.0 in	0557 AM 02/13	Public
Jacksonville	2.0 in	0730 AM 02/13	COCORAHS
4 NNW Rogue River	2.0 in	0700 AM 02/13	COCORAHS
Rogue River	1.8 in	0700 AM 02/13	COCORAHS
5 SE Ruch	1.7 in	0700 AM 02/13	COCORAHS
5 NNW Gold Hill	1.5 in	0700 AM 02/13	COCORAHS
2 WSW Phoenix	1.3 in	0700 AM 02/13	COCORAHS
Jacksonville	1.0 in	0800 AM 02/13	COCORAHS
3 W Phoenix	1.0 in	0745 AM 02/13	COCORAHS
3 W Phoenix	1.0 in	0600 AM 02/13	COCORAHS
3 W Phoenix	0.2 in	0745 AM 02/13	COCORAHS
1 NE Applegate	0.1 in	0700 AM 02/13	COCORAHS

...Josephine County...

10 SSW Williams	7.0 in	0900 AM 02/13	MESOWEST
2 SSW Obrien	5.0 in	0625 AM 02/13	Trained Spotter
6 SE Selma	4.0 in	0941 AM 02/13	Trained Spotter
2 WSW Obrien	4.0 in	0535 AM 02/13	Trained Spotter
5 NNE Selma	2.8 in	0830 AM 02/13	Trained Spotter
Cave Junction	2.3 in	0800 AM 02/13	COCORAHS
1 W Wilderville	2.2 in	0700 AM 02/13	COCORAHS
2 W Merlin	1.0 in	0800 AM 02/13	Trained Spotter
Selma	1.0 in	0747 AM 02/13	Trained Spotter
5 NW Wilderville	0.6 in	0700 AM 02/13	COCORAHS
1 NNW Merlin	0.5 in	0800 AM 02/13	COCORAHS
3 ESE Grants Pass	0.5 in	0748 AM 02/13	Trained Spotter
2 ENE Murphy	0.3 in	0830 AM 02/13	COCORAHS

...Klamath County...

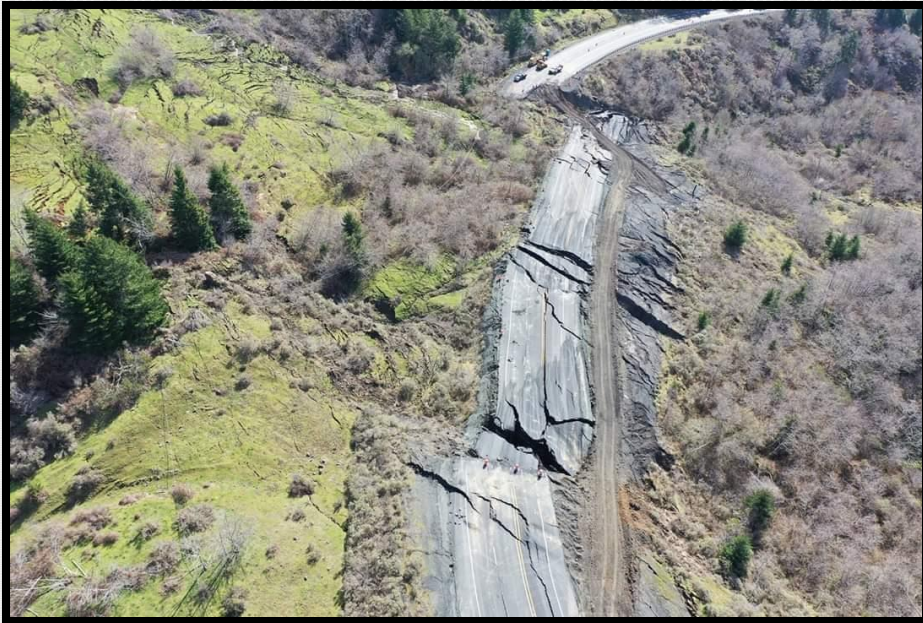
Crater Lake National Park Hq	16.9 in	0800 AM 02/13	COOP
2 SW Crater Lake	12.0 in	0700 AM 02/13	MESOWEST
16 W Chiloquin	10.0 in	0900 AM 02/13	MESOWEST
15 NNE Howard Prairie	8.0 in	0917 AM 02/13	Public
Keno	8.0 in	0700 AM 02/13	COOP
Klamath Falls	7.5 in	0700 AM 02/13	COCORAHS
4 WSW Klamath Falls	7.0 in	0845 AM 02/13	Trained Spotter
Klamath Falls	6.3 in	0800 AM 02/13	COCORAHS
1 NE Altamont	6.0 in	0900 AM 02/13	COCORAHS
17 NNE Bly	6.0 in	0900 AM 02/13	MESOWEST
8 ENE Lorella	5.0 in	0900 AM 02/13	MESOWEST
Altamont	4.5 in	0800 AM 02/13	COCORAHS
1 SSW Olene	2.5 in	0800 AM 02/13	COCORAHS
1 WNW Crater Lake	1.5 in	0900 AM 02/13	MESOWEST

...Lake County...

12 ESE Bly	4.0 in	0100 AM 02/13	MESOWEST
13 W Paisley	2.0 in	0900 AM 02/13	MESOWEST

Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.

# 2/24 – 2/27 – Atmospheric River



Hooskanaden Slide on Hwy 101 between Gold Beach and Brookings. Photo retrieved from KDRV:  
<https://www.kdrv.com/content/news/Highway-101-Still-Closed-North-of-Brookings-Due-to-Sinking-Roadway-506385031.html>

NATIONAL WEATHER SERVICE, MEDFORD, OR

## Attention: Heavy Rain Flooding Possible

All areas west of the Cascades below 3000 ft. except for the Rogue and Shasta Valleys.  
Saturday through Monday night



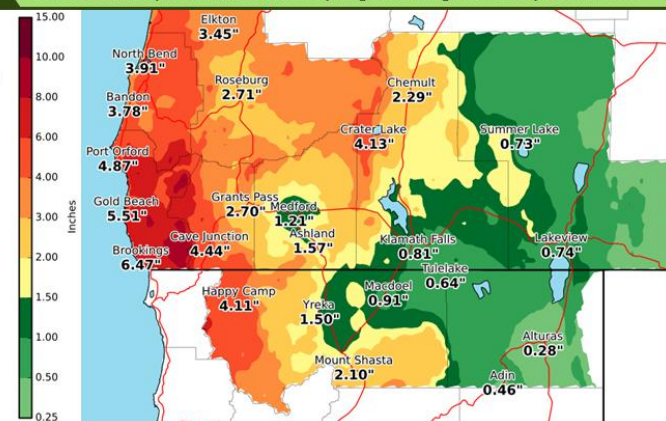
Rapid river rises expected, flooding possible—especially for small streams and creeks, but also for some main stem rivers.

Urban areas may see water pond on roadways.

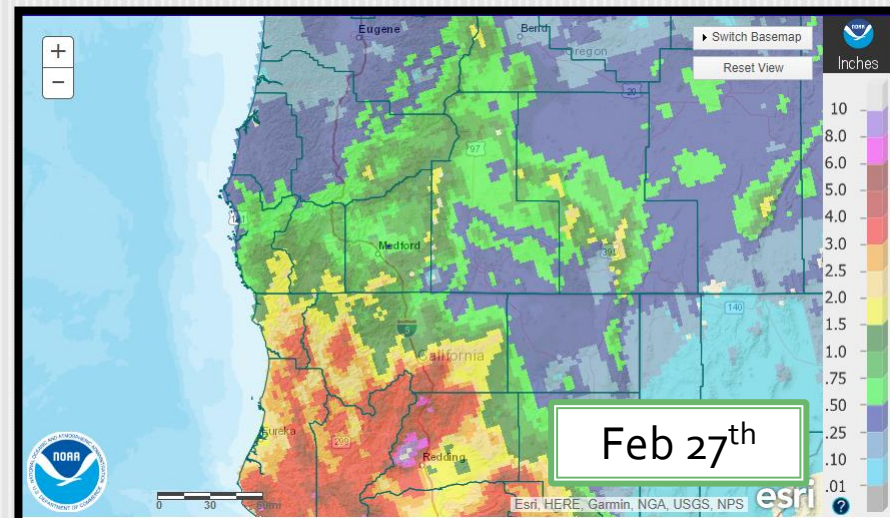
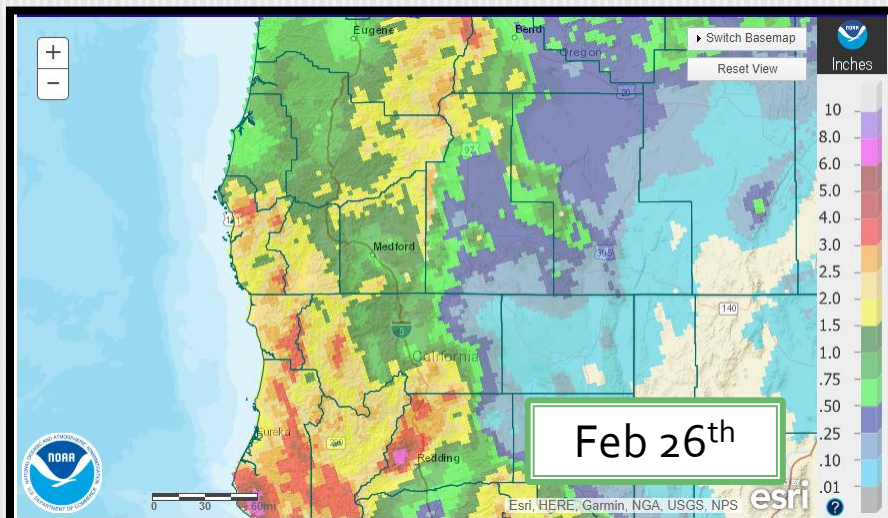
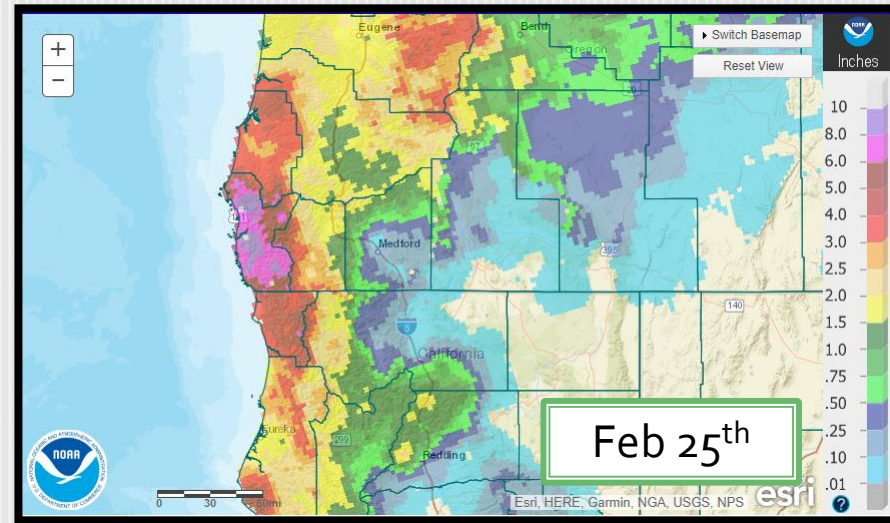
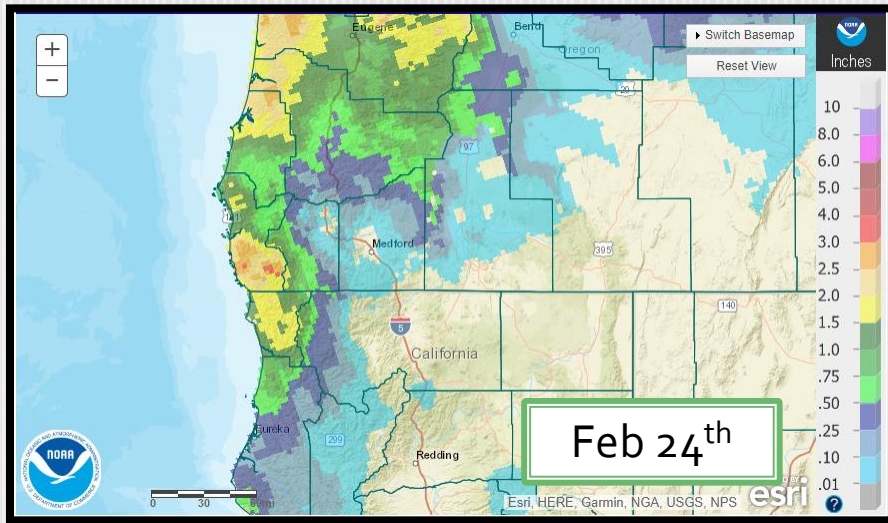
Debris flows possible, especially on the Klondike and Chetco Bar Burn Scars.

**If you come across a flooded roadway, turn around. Don't drown.**

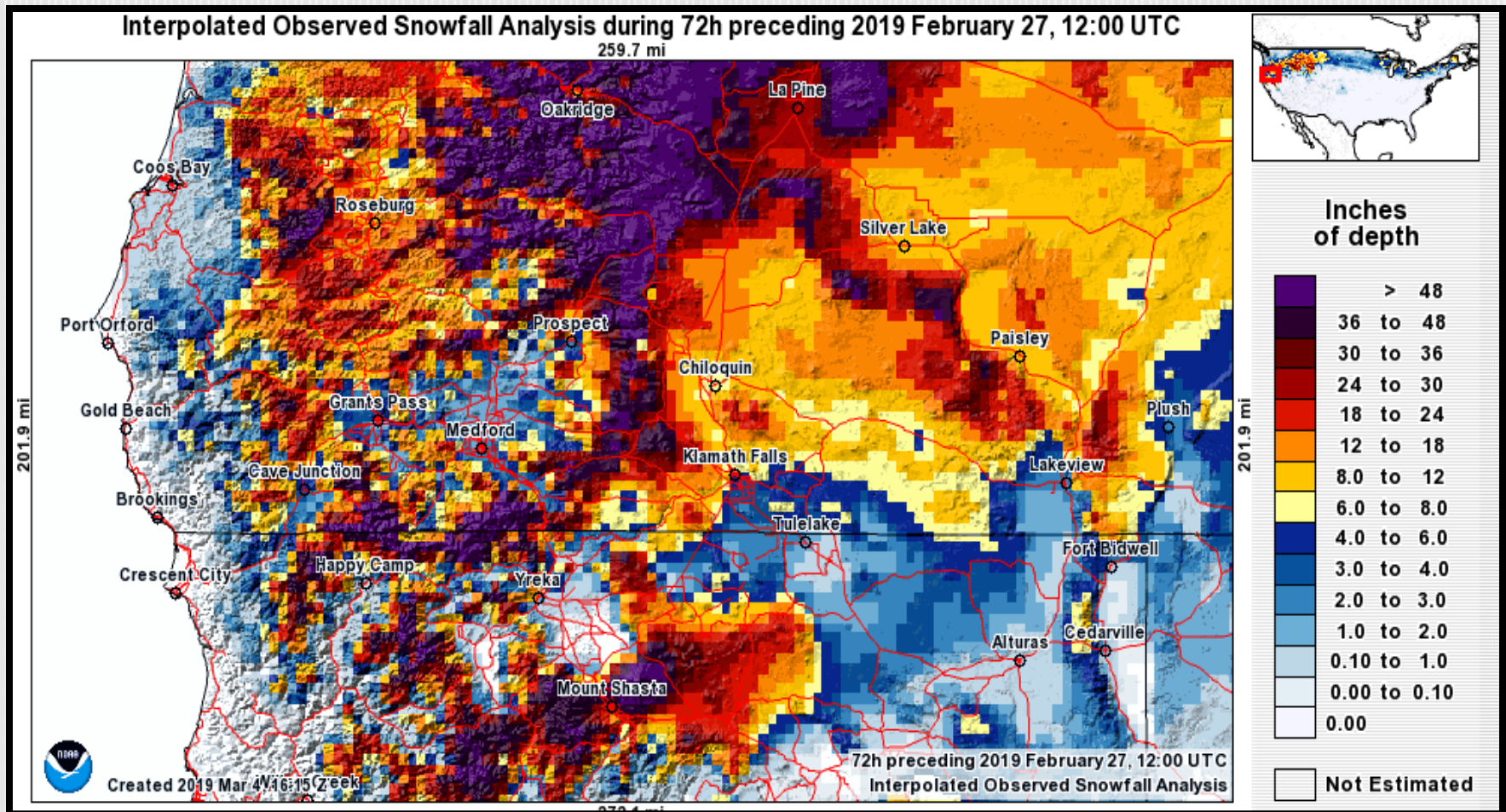
Forecast Precipitation from Friday Night through Monday Afternoon



# Observed Heavy Rainfall 2/24 – 2/27



# Stalled Atmospheric River + Low Snow Levels = Significant Snow Accumulations





# Significant snow in Douglas County

Public Information Statement  
National Weather Service Medford OR  
505 PM PST Mon Feb 25 2019



Widespread downed trees and heavy wet snow resulted in significant power outages for Douglas County. Pictured here is Hwy 138 east of Glide at MP 26 on Feb 26<sup>th</sup> 2019. Photo retrieved from KDRV: <https://www.kdrv.com/content/news/Freeway-Closures--506327031.html>

## ...48 HOUR SNOWFALL REPORTS...

Location	Amount	Time/Date
4 NW Green	15.5 in	0800 AM 02/25
10 SSW Williams	14.0 in	0200 AM 02/25
3 WSW Roseburg	12.0 in	1139 AM 02/25
5 W Dunsmuir	10.8 in	0200 PM 02/25
1 WNW Crater Lake	8.8 in	0200 PM 02/25
6 NE Camas Valley	6.0 in	1130 AM 02/25
5 E Winchester	6.0 in	1000 AM 02/25
13 ESE Sutherlin	5.0 in	1141 AM 02/25
17 NNE Bly	4.0 in	0200 AM 02/25
13 SW Silver Lake	3.0 in	0200 AM 02/25
7 NE Camas Valley	3.0 in	0618 PM 02/24
1 SE Roseburg	2.3 in	0613 PM 02/24
Toketee Falls	2.0 in	0700 PM 02/24
8 E Adin	1.0 in	0100 PM 02/25
6 E Gold Beach	1.0 in	0900 AM 02/25
1 NE Altamont	0.6 in	0900 AM 02/25
Klamath Falls	0.5 in	0800 AM 02/25
Altamont	0.4 in	0800 AM 02/25
Riddle	0.3 in	0700 PM 02/24
9 E Alturas	0.2 in	0700 AM 02/25

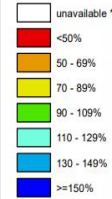
Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.

# Snowpack Status

## Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Mar 07, 2019

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median

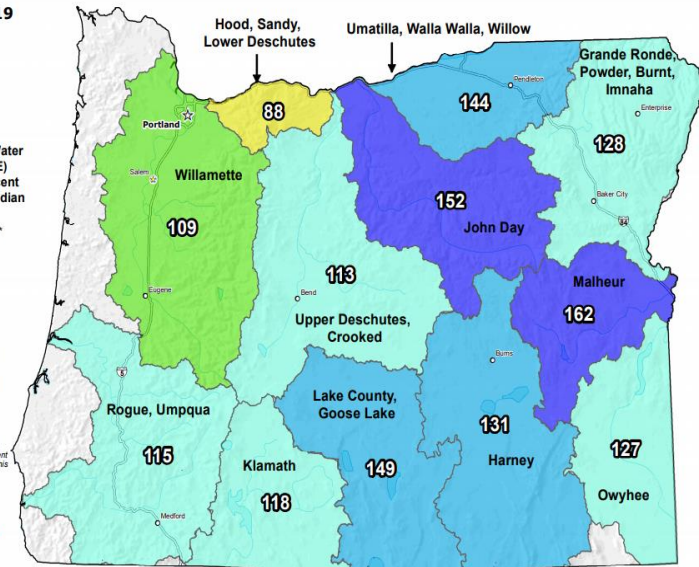


\* Data unavailable at time of posting or measurement is not representative at this time of year.

Provisional Data Subject to Revision



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).



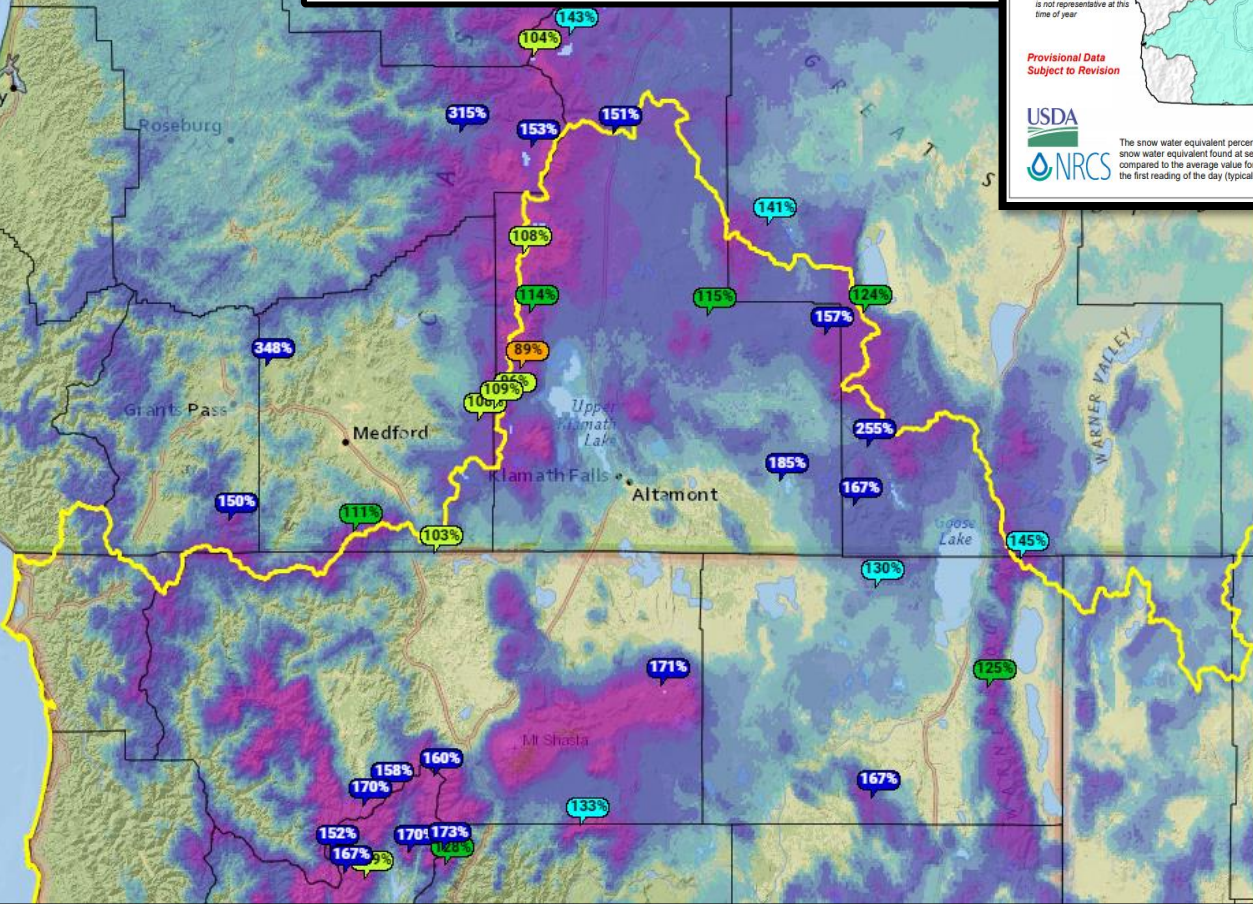
0 10 20 40 60 80 100 Miles

Prepared by: USDA/NRCS National Water and Climate Center Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

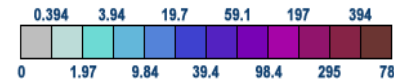
## NOHRSC Snow Depth (Shaded) & Snow Water Equivalent (SWE) % of Normal (Bubble) as of 3/7/2019



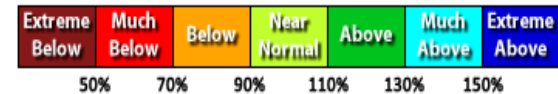
www.nrcfc.noaa.gov



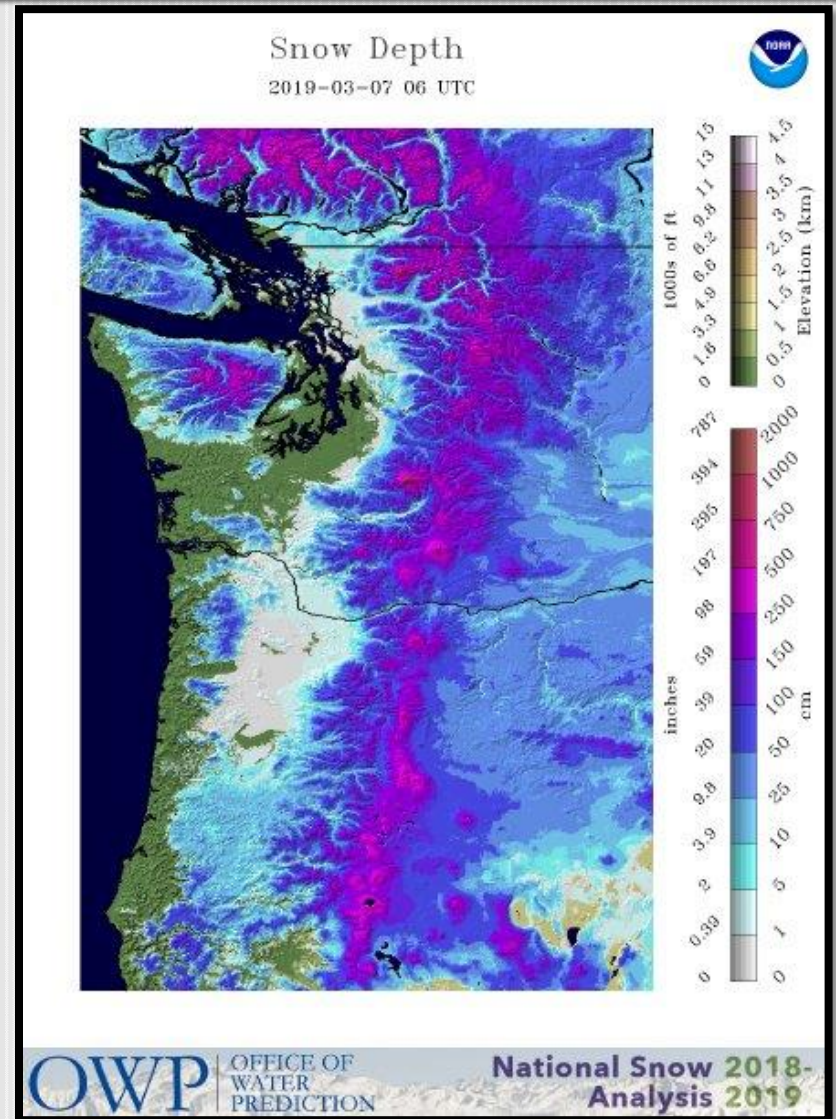
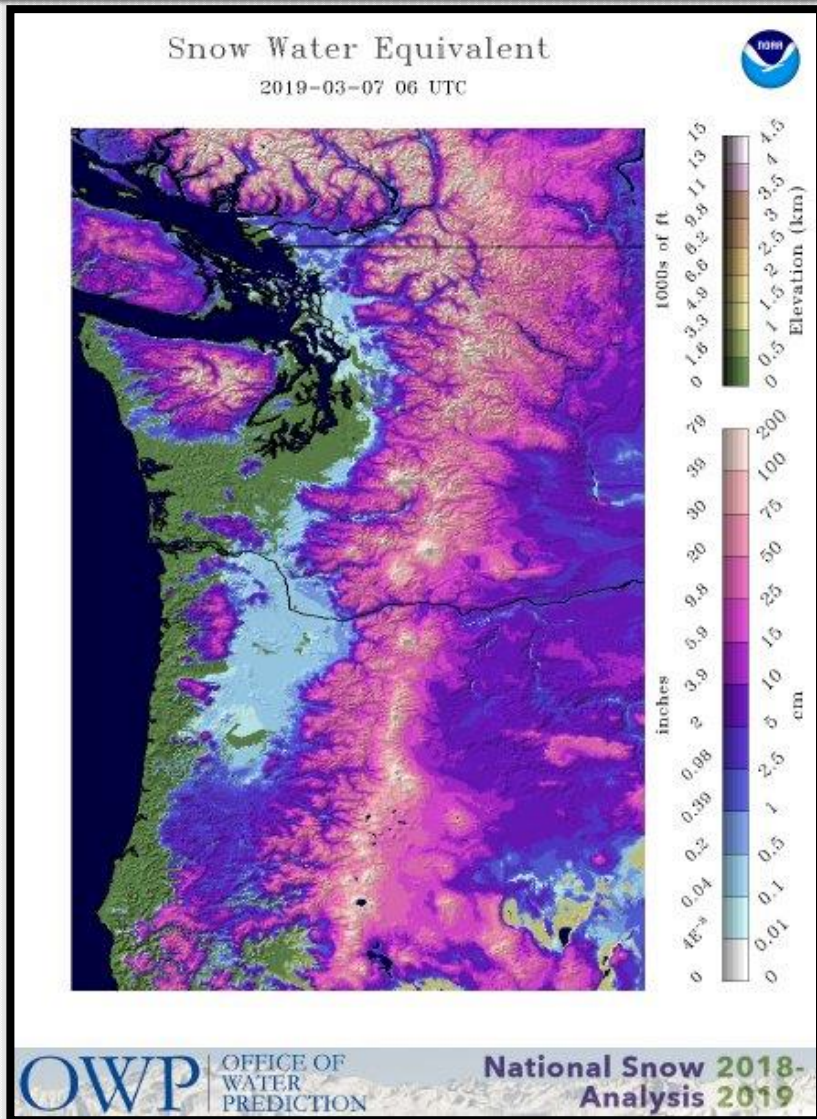
### Snow Depth (Inches)



### Percent of Normal



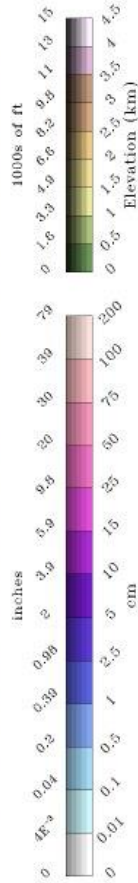
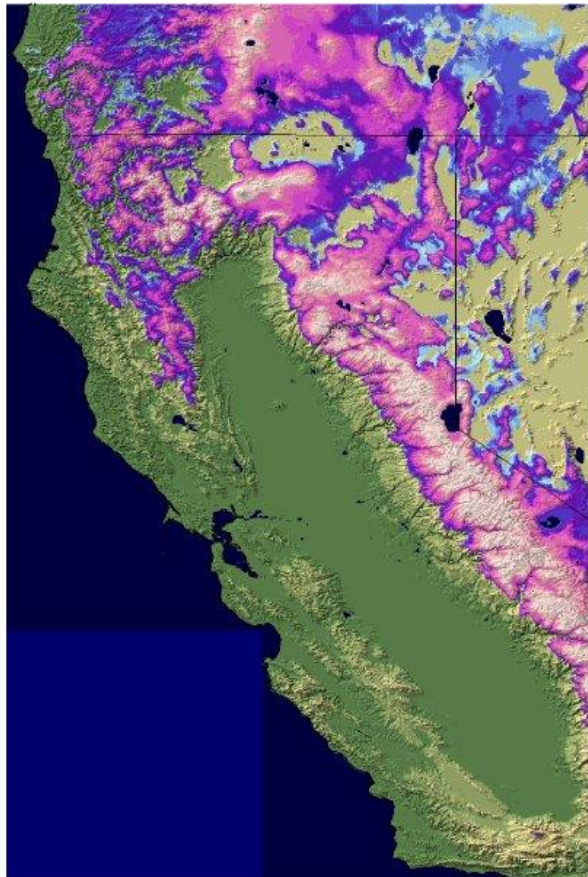
# PacNW SWE & Snow Depth as of 3/7/2019



# California SWE & Snow Depth as of 3/7/2019

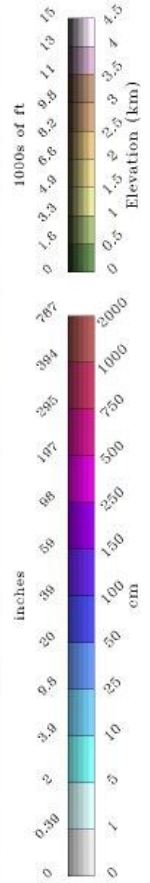
## Snow Water Equivalent

2019-03-07 06 UTC



## Snow Depth

2019-03-07 06 UTC



# Crater Lake

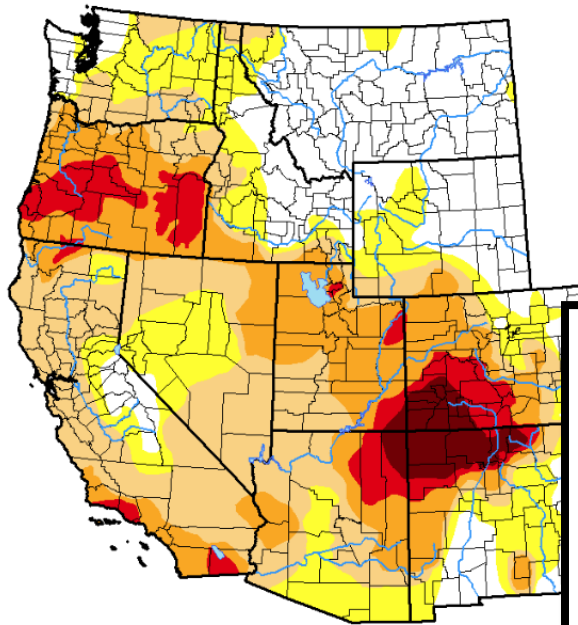
Image Courtesy: NPS



	<i>Average Max Temp (°F)</i>	<i>Average Min Temp (°F)</i>	<i>Total Precipitation</i>	<i>Total Snowfall</i>	<i>Snow Depth as of: 02/28/18</i>	<i>Highest Max/ Lowest Min</i>
<i>February</i>	<i>24.7°</i>	<i>13.5°</i>	<i>14.91"</i>	<i>157.1"</i>	<i>132"</i>	<i>49° on 1<sup>st</sup> / 1° on 22<sup>nd</sup></i>
<i>Normal (1981-2010)</i>	<i>34.8°</i>	<i>17.8°</i>	<i>7.72"</i>	<i>71.3"</i>	<i>109"</i>	<i>N/A</i>

# Drought Improvement

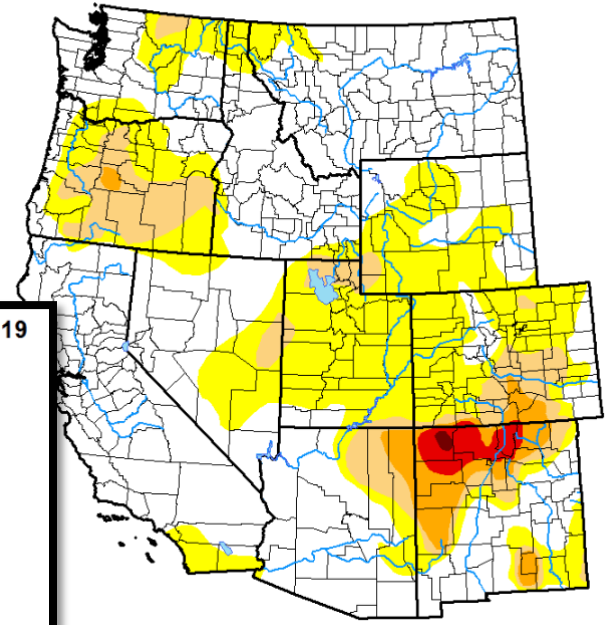
December 4, 2018



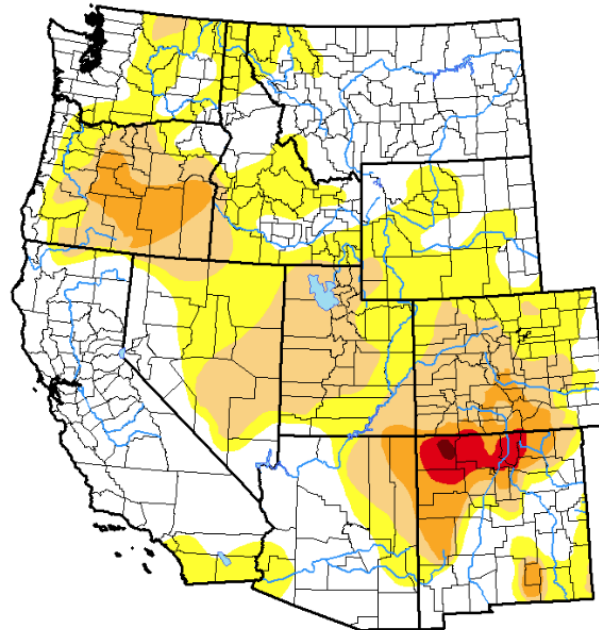
Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

March 12, 2019



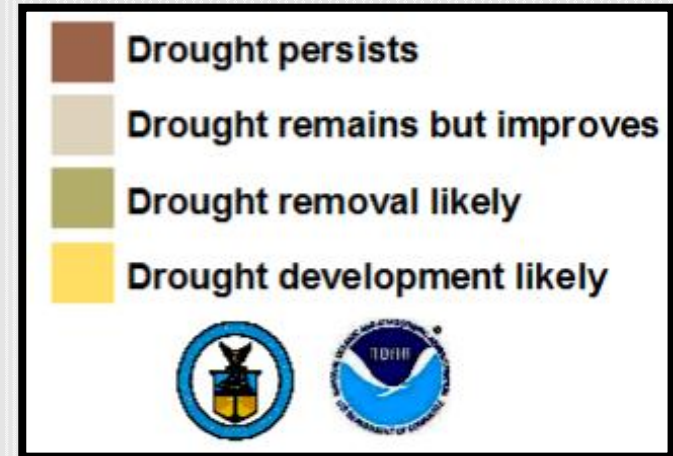
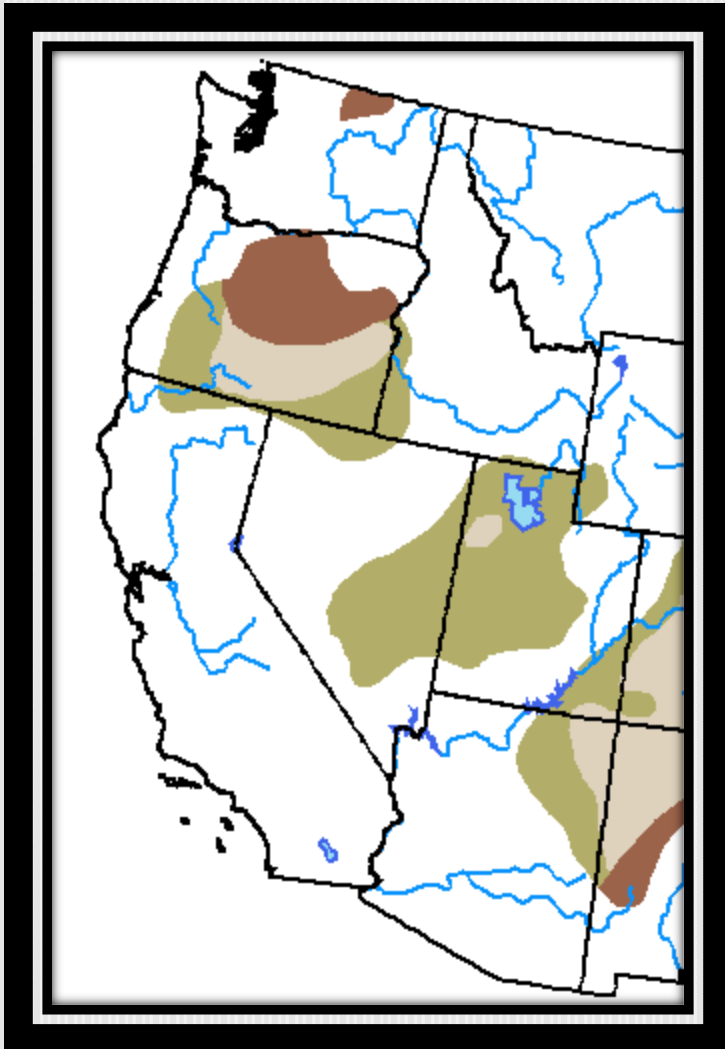
March 5, 2019



Data Retrieved from:

<https://droughtmonitor.unl.edu>

# Drought Outlook: March



***Valid for March 2019  
Released February 28, 2019***

# Normals for March (1981-2010)

## Temperatures:

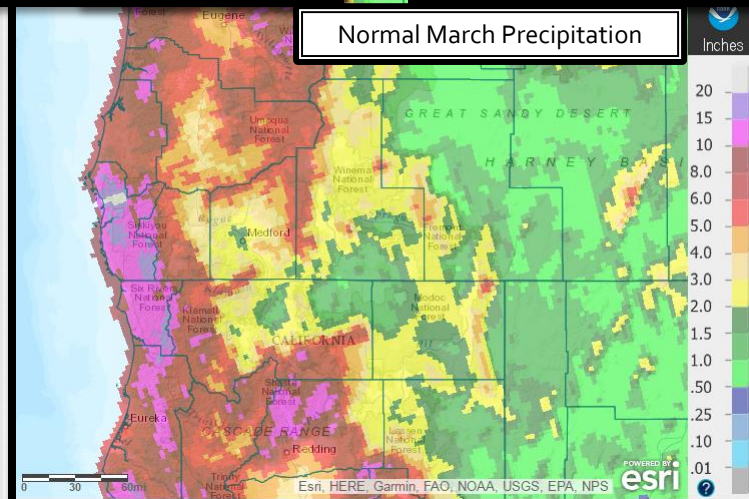
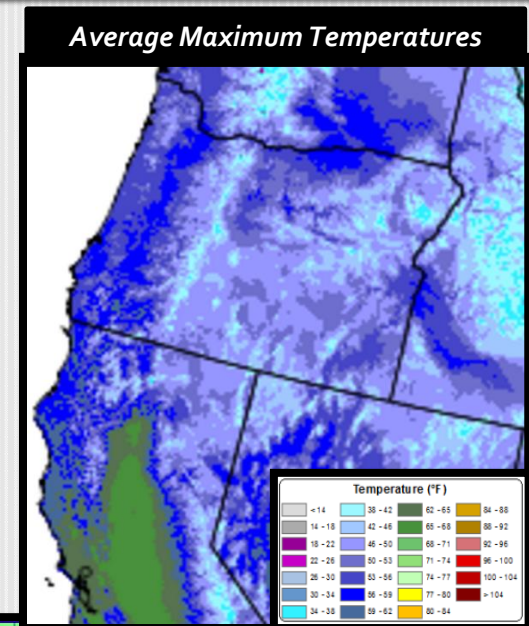
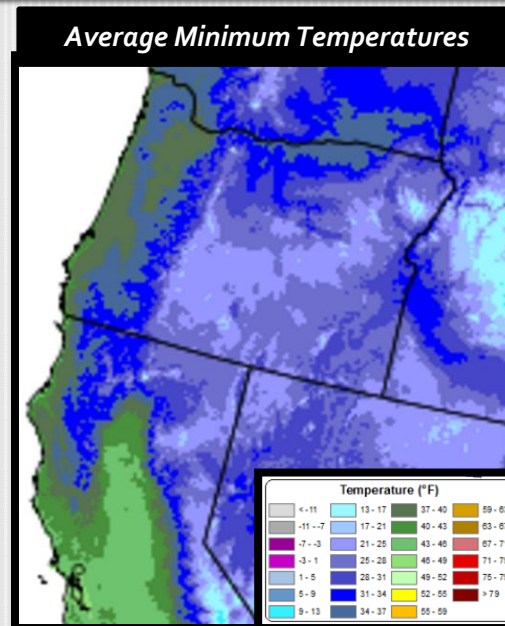
Along the coast, lows are typically in 40s with highs in the 50s to near 60F. The Interior West Side usually experiences average lows in the lower 30s to lower 40s and highs in the 50s to near 60 in the lower valleys. Lows in the upper teens to mid 20s occur across the higher, most typically snow packed 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. Crater Lake's snowpack has historically peaked around 125 inches on March 31<sup>st</sup>. Average March snowfall for Crater Lake Park Headquarters is 73 inches.





# \*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