National Weather Service Medford

January 2017 Climate Summary

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

January 2017 Weather Review

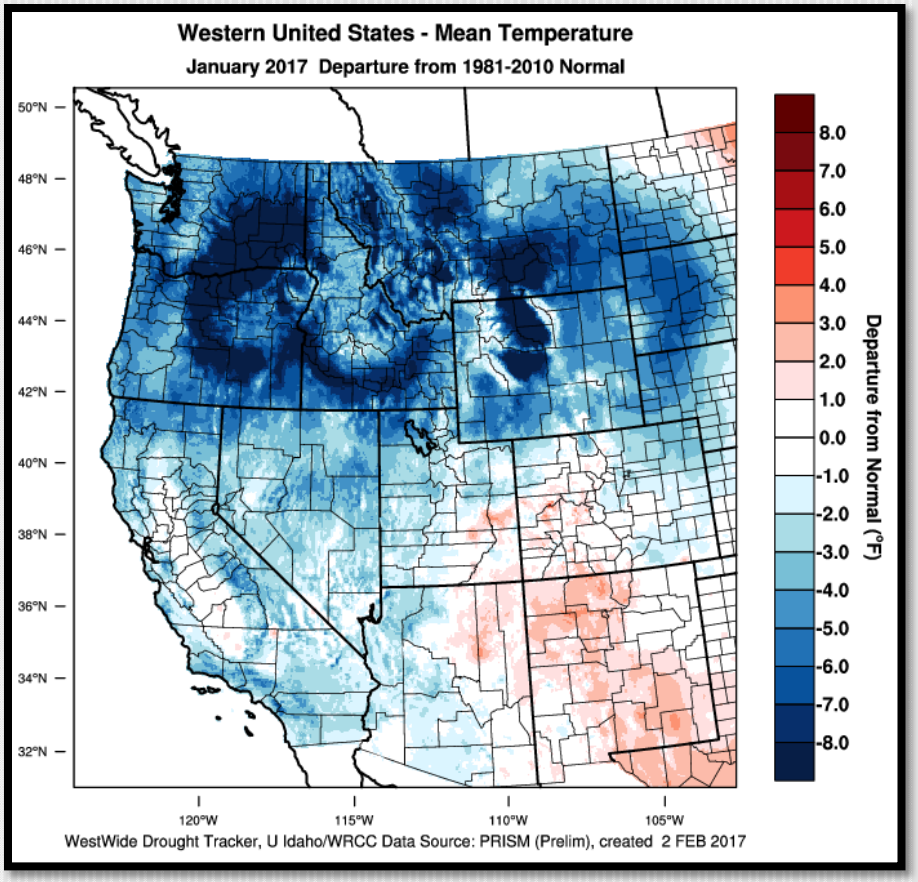
January 2017 continued the active weather pattern that was with us in December, bringing one system after another. During the first week of the month, low elevation snow continued to fall to valley floors, and at times, even down to the beaches. In fact, many people in the valleys west of the Cascades woke up to snow on New Year`s Day. The biggest event to occur during the month was the historic snowstorm that moved through the area on the 3rd. The Medford Airport had to shut down its operations due to a record breaking daily snowfall of 8.3 inches. This snowfall became the 2nd greatest daily snowfall since records began in 1911. Common readings of 6-12 inches of snow were reported around the Rogue Valley. Locations in the Illinois Valley, such as Cave Junction and Kerby, reported up to two feet of snow on that same day! This was all due to a surface low pressure system that moved inland over northern California, which provided ample moisture. This combined with cold air already in place in western valleys, provided all the right ingredients for a major snow event.

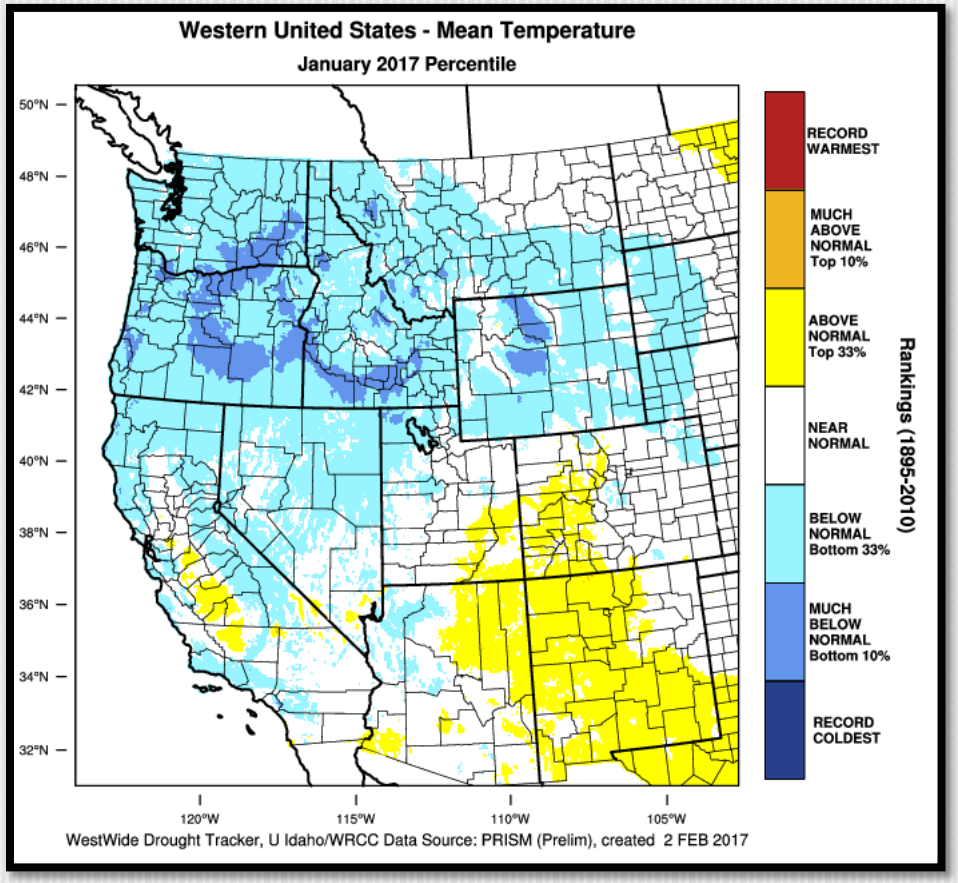
After a very brief break in the weather, a warmer system moved into the area, bringing ample amounts of precipitation to the area. The Illinois Valley received another dumping of snow before transitioning to rain. The Medford airport recorded 2.62 inches of rain in three days with this system. The rain, combined with low elevation snow melt, led to flooding concerns around the area. Many locations experienced similar flooding issues as they did a few weeks prior in December. Once this system passed through, there was another brief reprieve in the active weather, which allowed rivers and flood waters to recede.

Once this break was over, the storm door opened once again, bringing multiple systems more typical for this area with mountain snow and valley rain. These systems also brought strong winds usually expected with winter storms in our area. The Rogue Valley saw strong southeast winds from the 18th through the 22nd with the strongest winds on the 22nd. During the same time frame, the Mount Shasta City area received several FEET of snow with these systems.

After these last series of storms, the weather became dominated by high pressure aloft and thus quieted down for the rest of the month. As is typical of high pressure in the winter, valleys both west and east of the Cascades dealt with stagnant air and morning freezing fog for the last week of January.

January 2017 *Observed Temperatures*





Average Temperatures

	Average (°F)	Departure from Normal	Average Max (°F)	Departure from Normal	Average Min (°F)	Departure from Normal
North Bend	44.0	*-1.8*	50.9	*-0.6*	37.1	*-3.1*
Roseburg	39.7	*-3.4*	46.4	*-3.3*	33.0	*-3.5*
Medford	36.7	*-3.6*	44.9	*-2.9*	28.4	*-4.4*
Klamath Falls	24.0	*-6.2*	33.1	*-6.5*	15.0	*-5.8*
Montague, CA	30.5	*-4.9*	39.6	*-5.0*	21.3	*-4.8*
Mt. Shasta City, CA	32.3	*-3.6*	39.8	*-5.5*	24.7	*-1.7*
Alturas, CA	26.2	*-3.7*	36.4	*-5.2*	16.0	*-2.2*

Record Cold Temperatures

Record Low Minimums (Coldest Nights)	Date/New Record	Old Record/Year	Date/New Record	Old Record/Year
Roseburg	5th / 19°	23°/1949		
Medford	5th / 12°	13°/1913	6th / 6°	9°/1937
Klamath Falls	5th / -19°	-9°/1950	6th / -19°	-8°/1977
Montague, CA	5th / -12°	-8°	6th / -14°*	1949
Mt Shasta City, CA	5th / 7°	Ties w/1977	6th / 3°	-5°/1977
Alturas, CA	6th / -23°	-20°/1949		

**Montague, CA: this is the lowest minimum temperature on record for the whole year.*

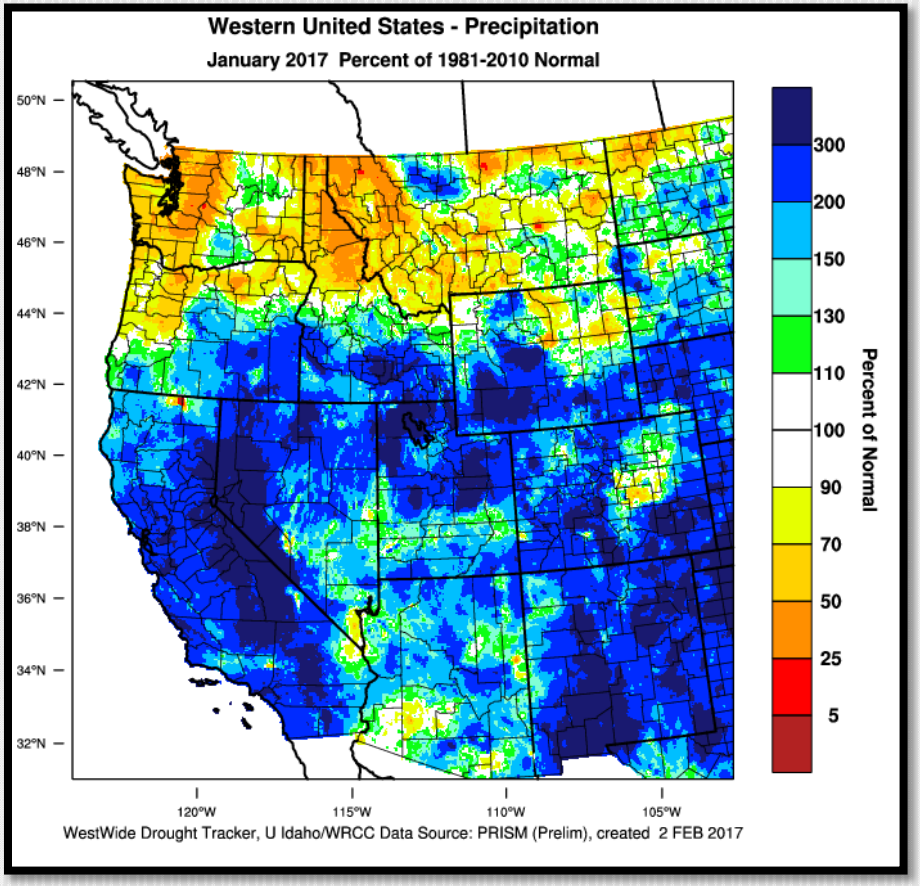
Record Low Maximums (Coldest Days)	Date/New Record	Date/New Record	Date/New Record
Roseburg	4th / 34°	5th / 35°	15th / 37°
Medford	6th / 29°		
Klamath Falls	4th / 18°	5th / 8°	6th / 7°
Montague, CA	5th / 17°	6th / 15°*	27th / 36°
Mt Shasta City, CA	5th / 24°		
Alturas, CA	2nd / 28°	5th / 7°*	6th / 10°

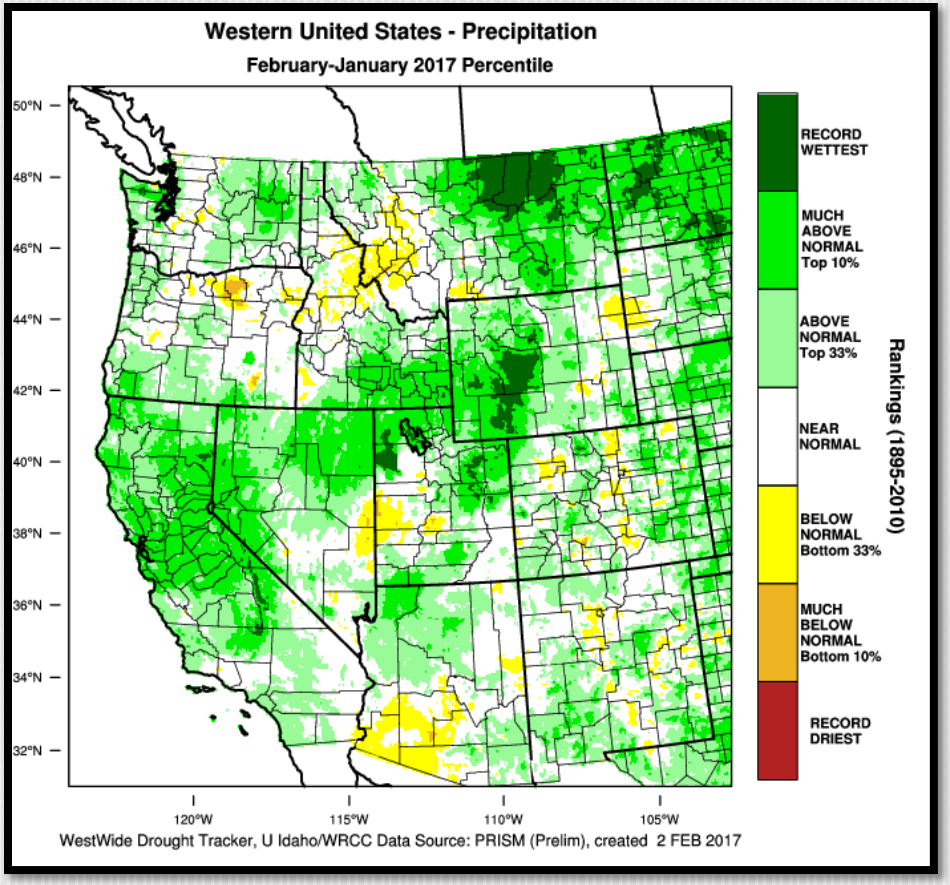
**Montague, CA: this is the lowest maximum temperature on record for the month of January*
**Alturas, CA: this is the lowest maximum temperature on record for the whole year.*

Monthly Max & Min Temperatures

	Max (°F)	Date(s)	Min (°F)	Date(s)
North Bend	61°	18th	28°	5th & 6th
Roseburg	60°	17th	19°	5th
Medford	54°	18th & 27th	6°	6th
Klamath Falls	45°	8th	-19°	5th & 6th
Montague, CA	48°	30th & 31st	-14°	6th
Mt. Shasta City, CA	53°	16th	3°	6th
Alturas, CA	51°	30th	-23°	6th

January 2017 *Observed Precipitation*





Precipitation

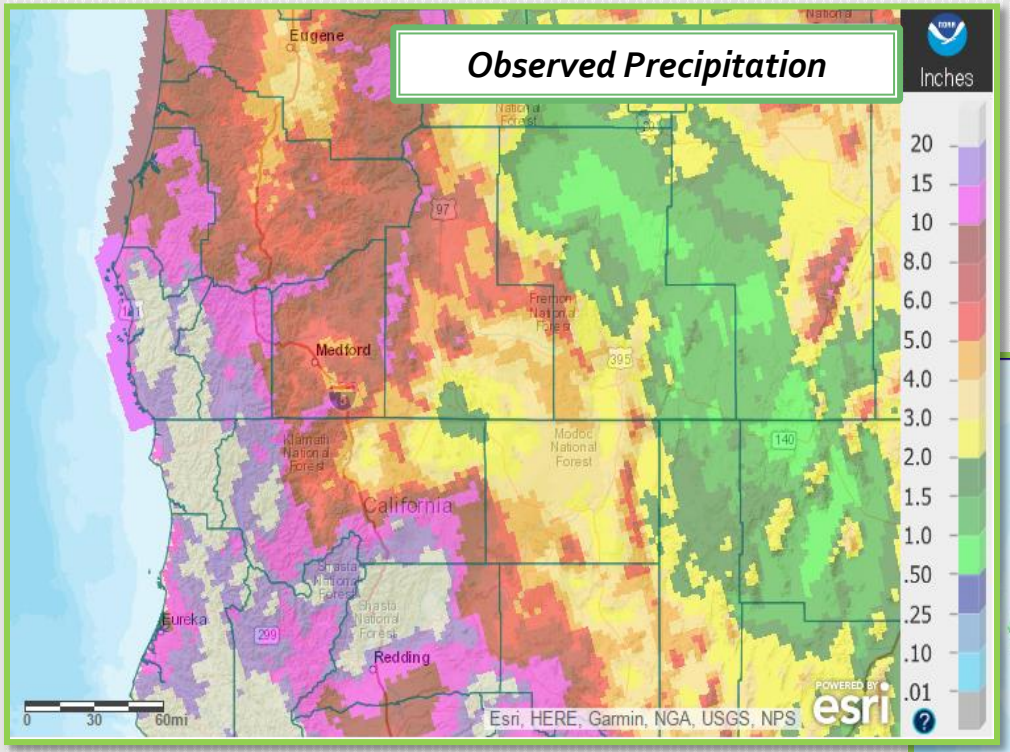
	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	8.88"	-1.31"	1.97"	8th
Roseburg	5.47"	0.38"	1.25"	9th – 10th
Medford	4.89"	2.46"	1.54"	9th – 10th
Klamath Falls	1.35"*	-0.50"*	0.58"	7th – 8th
Montague, CA	1.63"	-0.57"	0.48"	9th – 10th
Mt. Shasta City, CA	11.10"*	4.04"*	2.96"	7th – 8th
Alturas, CA	3.26"	1.61"	0.83"	8th – 9th

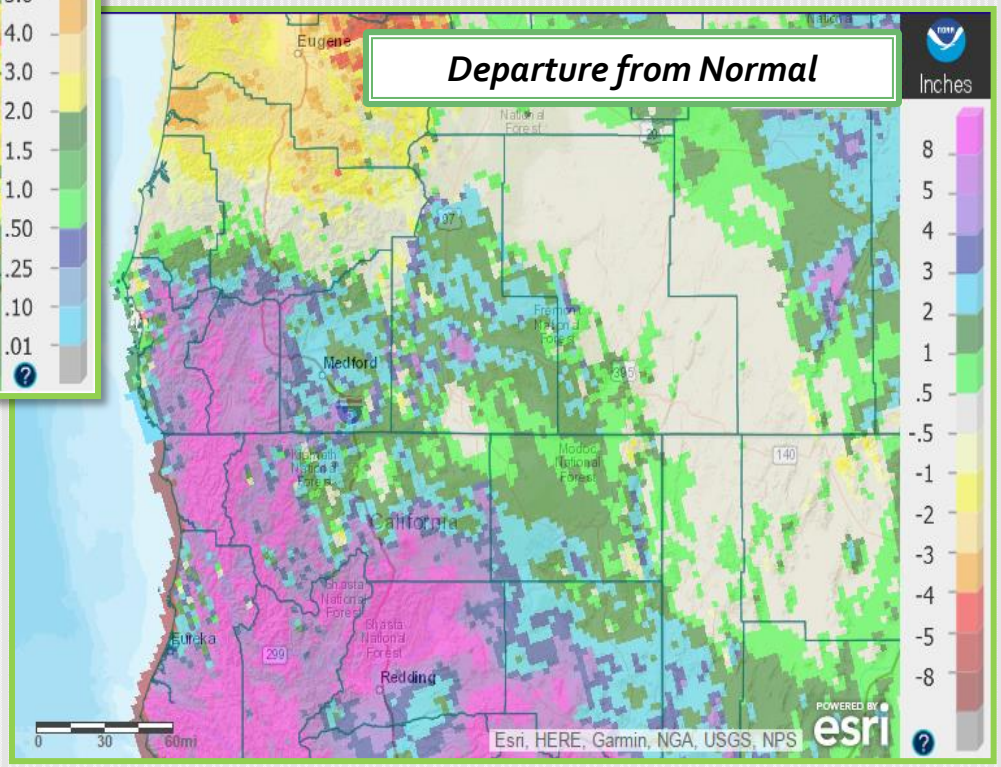
*Indicates values that are missing a few days of precipitation. The sensors at these stations were overwhelmed by heavy snowfall and the heated gauges were unable to function properly. More precipitation fell than indicated and the numbers above should be higher in value. These values should be considered as estimates and should not be considered true/absolute values.

Record Daily Precipitation

	New Record	Date	Old Record	Year
Medford	0.83"	8th	0.71"	2005
Medford	1.00"	9th	0.77"	1995
Alturas, CA	0.80"	8th	0.28"	1990

Precipitation





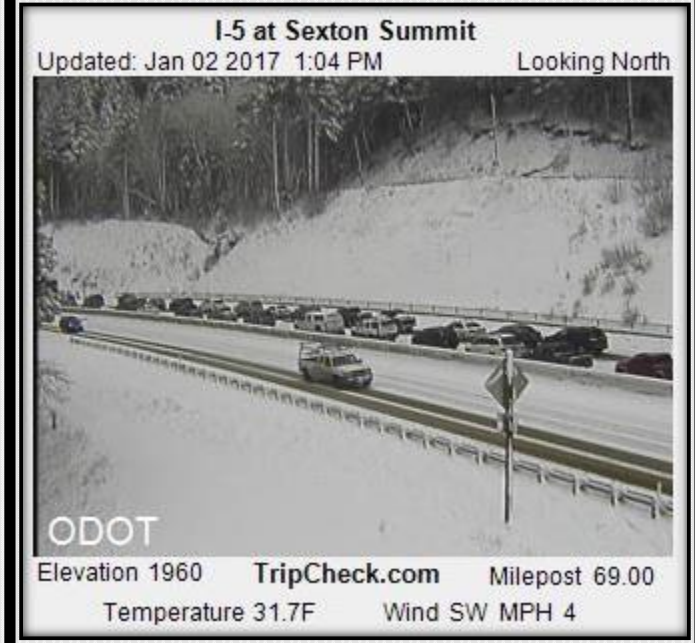
January Significant Weather Events

Historic Snowfall Jan 1-4

Multiple snow storms hit southwest Oregon and northern California Jan 1-4. On Jan 1-2, snow associated with a cold front from the north produced significant impacts on roadways in Josephine County, including the Illinois Valley, Grants Pass and Sexton Summit areas. The Illinois Valley had a widespread 1-2 ft of snow. The parent low associated with this front became positioned off the Oregon coast and a cold air mass remained over the forecast area on Jan 3rd. A surface low, moving into the area from the southwest late on Jan 3rd, brought another round of heavy snow to the previously impacted areas, and dumped 4-9 inches of snow on the Rogue Valley floor. Heavy snow totals were also reported in Siskiyou County, the Siskiyou Mountains, and along and east of the Cascades. This heavy snow resulted in widespread power outages and significant impacts to roads across the area, including the closure of I-5 over Siskiyou Summit. The third event occurred as the upper low moved over the area Jan 4th, producing additional snow across the area, even down to Highway 101 along the coast. Snow covered and slick roads resulted in numerous crashes on area roadways. A cold air mass remained in place through late in the week resulting in many area schools were closed for the first week back after winter break due to the roads remaining snow and ice covered.

Impacts:

- 2nd – I-5 northbound in SW OR from milepost 66 to 88 between Grants Pass and Roseburg was closed from approximately 12:35 PM to 2:15 PM PST. Many people stopped to put on chains, then crashes involving these stopped vehicles occurred.
- Schools across the area closed for the whole first week back after Winter break, 1/3-1/6.
- 3rd – I-5 at Siskiyou Summit was closed at 5:51 pm with traffic being held at Ashland (southbound) and Yreka (northbound).
- MFR Airport was closed.
- Numerous accidents .
- Power outages due to heavy snow on trees.



Snowfall Reports from Jan 3rd

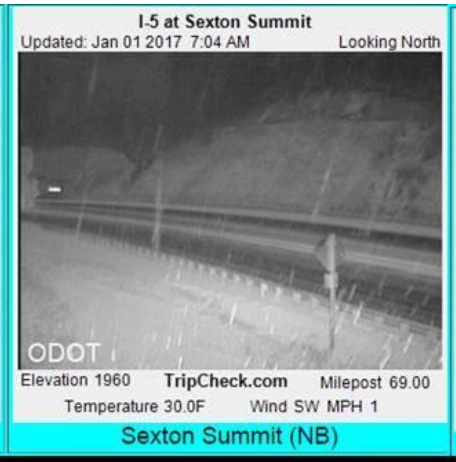
Public Information Statement
National Weather Service Medford OR
1043 AM PST Wed Jan 4 2017

...Snowfall Reports...

Location	Amount	Time/Date
...California...		
...Modoc County...		
Canby	11.0 in	0500 PM 01/03
20 W Willow Ranch	10.0 in	0500 AM 01/04
9 E Alturas	6.5 in	0700 AM 01/04
Juniper Creek	3.8 in	0652 AM 01/04
8 E Adin	3.0 in	0700 AM 01/04
1 S Adin	3.0 in	0930 AM 01/04
19 WNW Willow Ranch	2.0 in	0700 AM 01/04
5 SW Lake City	2.0 in	0500 AM 01/04
6 E New Pine Creek	2.0 in	0700 AM 01/04
...Siskiyou County...		
2 MILES WEST OF WEED	19.0 in	0648 AM 01/04
.9 MILES NW OF TOWN CENTER	15.0 in	0600 AM 01/04
TENNANT	14.0 in	0800 AM 01/04
Yreka	13.0 in	0900 PM 01/03
2 S Greenview	13.0 in	0905 PM 01/03
1 WNW Yreka	10.0 in	0806 PM 01/03
7 SSE Hilt	8.5 in	0800 PM 01/03
3 WSW Montague	6.0 in	0604 PM 01/03
Montague	4.0 in	0330 PM 01/03
15 WSW Tionesta	3.5 in	0700 AM 01/04
11 SW Tennant	2.4 in	0700 AM 01/04
...Oregon...		
...Coos County...		
1 MI NE. Lakeside	5.3 in	0800 AM 01/04
1 MI S COOS BAY ON HWY 101	3.0 in	0748 AM 01/04
4 MILES NE OF BANDON	1.5 in	0640 AM 01/04
1 NW Coos Bay	1.0 in	0607 AM 01/04
6 NNE Bandon	1.0 in	0424 AM 01/04
...Douglas County...		
1 WNW Roseburg	3.0 in	0700 AM 01/04
4 WNW Sutherlin	3.0 in	0700 AM 01/04
13 ESE Sutherlin	2.0 in	1000 PM 01/03
...Jackson County...		
Medford, Or	8.3 in	0353 AM 01/04
1 WNW Ashland	7.0 in	0730 AM 01/04
Rogue River	5.7 in	0700 AM 01/04
5 NNW Gold Hill	14.1 in	0700 AM 01/04
12 SW Ashland	1.0 in	0700 AM 01/04
1 NE Howard Prairie	1.0 in	0700 AM 01/04
4 SW Medford	9.0 in	1000 PM 01/03
4 E Medford	8.0 in	1000 PM 01/03
3 E Medford	8.0 in	1116 PM 01/03
IN TOWN SE	8.0 in	0800 AM 01/04
1 WSW Central Point	7.0 in	1130 PM 01/03
2 MI. S. OF ASHLAND AIRPORT	6.0 in	0700 AM 01/04
Butte Falls	6.0 in	0800 AM 01/04
6 N Rogue River	6.0 in	1000 PM 01/03
2 SSW Medford	5.3 in	0853 PM 01/03
3 NE Applegate	5.0 in	0834 PM 01/03
3 ESE Ashland	5.0 in	0600 PM 01/03
2 N Medford	4.5 in	0730 PM 01/03
1 ESE Central Point	4.0 in	0855 PM 01/03
JUST S OF ROXY ANN MTN	4.0 in	0600 PM 01/03
Talent	3.7 in	0801 PM 01/03
5 N Eagle Point	3.5 in	0855 PM 01/03
2 N Medford	3.5 in	0800 PM 01/03
IN TOWN SE	3.5 in	0631 PM 01/03
1 W Central Point	0.0 in	0945 PM 01/03
5 MI NE Medford	9.3 in	0926 AM 01/04
3 MI E. Jacksonville	9.0 in	0800 AM 01/04
...Josephine County...		
1 N Wolf Creek	4.0 in	0600 AM 01/04
1 W Williams	9.0 in	1000 PM 01/03
3 ESE Grants Pass	7.0 in	1039 PM 01/03
5 SW Merlin	7.0 in	0936 PM 01/03
4 SSW Sunny Valley	24.0 in	0400 PM 01/03
Cave Junction	24.0 in	0400 PM 01/03
Kerby	24.0 in	0500 PM 01/03
2 SSW Cave Junction	20.0 in	0500 PM 01/03
17 W. Grants Pass	2.0 in	0430 PM 01/03
4 WSW Wilderville	18.0 in	0500 PM 01/03
4 SW Merlin	15.0 in	0500 PM 01/03
1.5 W WILLIAMS	14.0 in	0800 AM 01/04
3 WSW Wilderville	14.0 in	0600 PM 01/03
MURPHY	10.5 in	0800 AM 01/04
Selma	10.0 in	0127 PM 01/03

Observations are collected from a variety of sources with varying equipment and exposures. Also, please note that not all observations were taken at the same time. These are NOT storm total snowfall observations. Not all data listed are considered official.

...Klamath County...		
15 NNE Howard Prairie	6.0 in	0600 AM 01/04
18 NNE Howard Prairie	5.0 in	0700 AM 01/04
11 SE Crater Lake	5.0 in	0700 AM 01/04
16 W Chiloquin	3.0 in	0500 AM 01/04
9 WSW Sprague River	3.0 in	0600 AM 01/04
Crescent Lake	3.0 in	0500 AM 01/04
16 NNE Sprague River	3.0 in	0600 AM 01/04
9 WSW Crescent Lake	3.0 in	0700 AM 01/04
13 S Crater Lake	3.0 in	0700 AM 01/04
Crater Lake	2.2 in	0600 AM 01/04
8 ENE Lorella	2.0 in	0700 AM 01/04
Odell Lake-east	14.5 in	0800 AM 01/04
Keno	14.5 in	0700 AM 01/04
17 NNE Bly	1.0 in	0700 AM 01/04
1 WNW Klamath Falls	3.8 in	0400 PM 01/03
Bly	26.0 in	0802 PM 01/03
1 WNW Klamath Falls	14.0 in	0223 AM 01/04
1 WNW Klamath Falls	12.5 in	1219 AM 01/04
6 MILES WEST OF KLAMATH FALL	12.0 in	0806 AM 01/04
Klamath Falls	10.0 in	1000 PM 01/03
...Lake County...		
21 SE Bly	3.0 in	0700 AM 01/04
13 SW Silver Lake	3.0 in	0700 AM 01/04
13 W Paisley	11.0 in	0700 AM 01/04
12 ESE Bly	1.0 in	0600 AM 01/04
9 SSE Summer Lake	8.0 in	1030 PM 01/03
MP 72 ON HWY 31	15.0 in	1010 AM 01/04



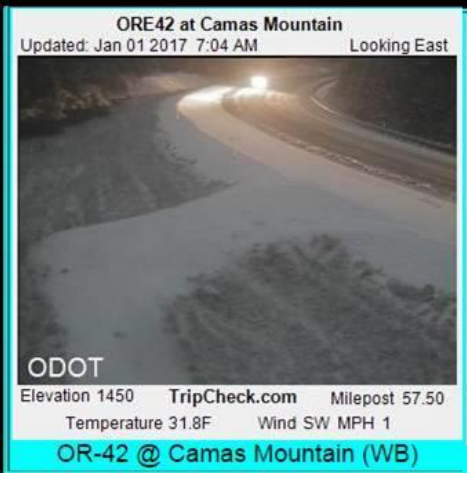


Photo Credit: Brad Schaaf, NWS Meteorologist. Taken at NWS Medford on Jan 3rd.

Photo Credit: Shad Keene, NWS Meteorologist on Jan 4th.

Photo Credit: Ryan Sandler, Warning Coordination Meteorologist. Ruler shows almost 11" on Jan 3rd.

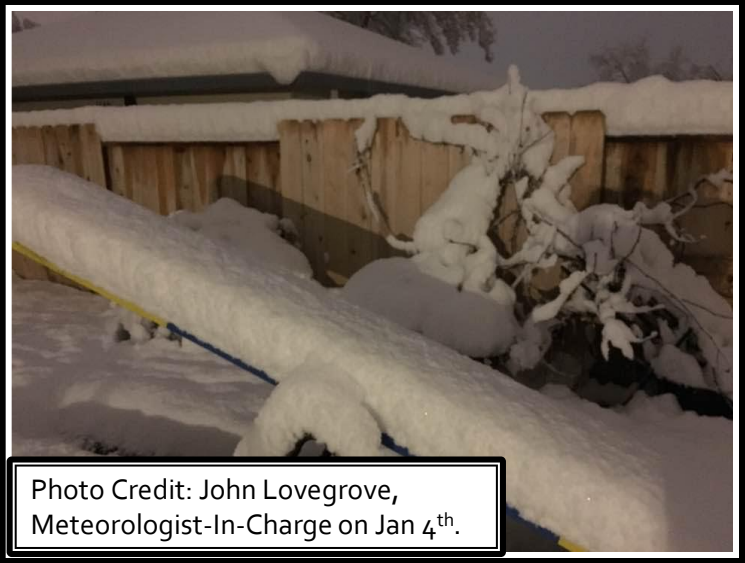
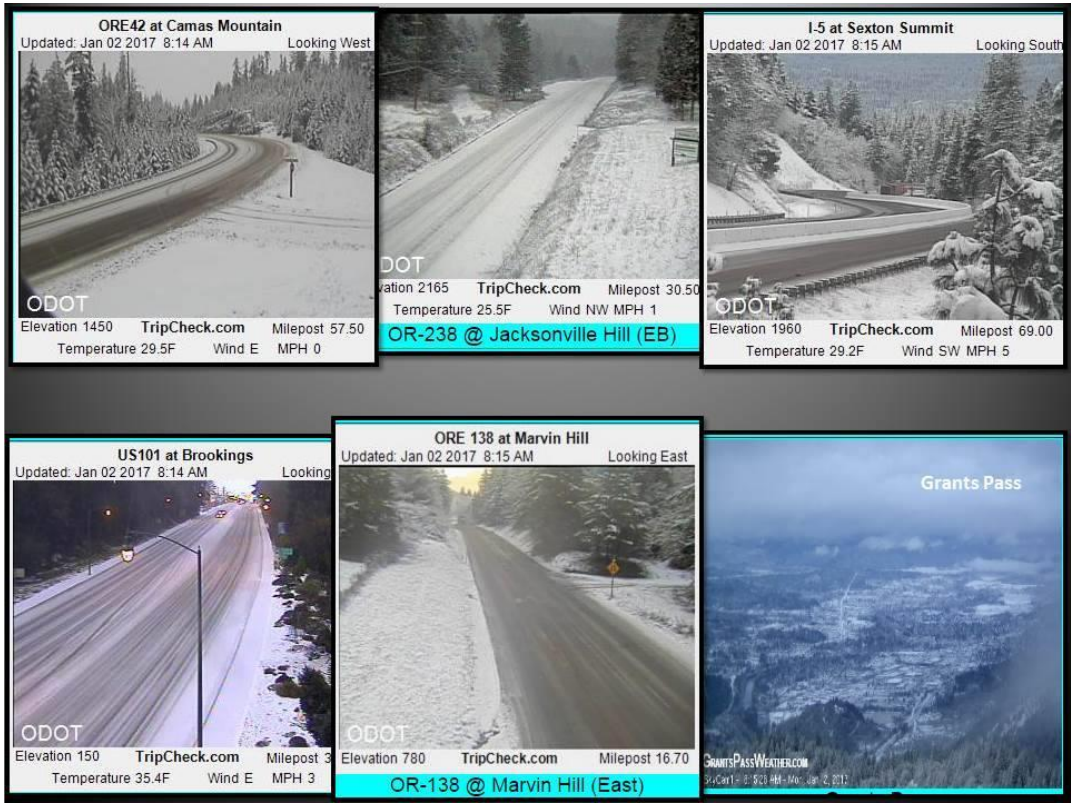
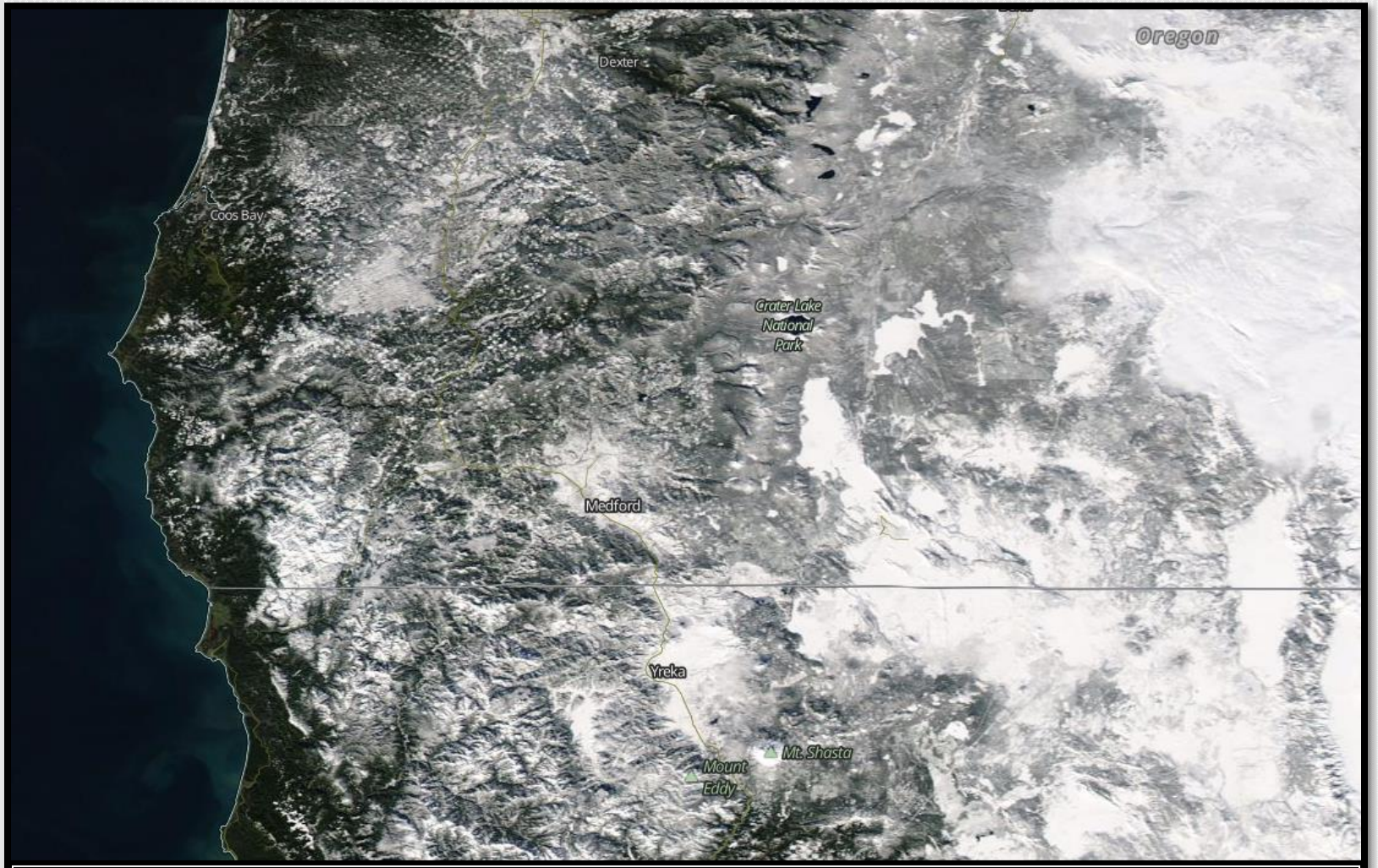


Photo Credit: John Lovegrove, Meteorologist-In-Charge on Jan 4th.



Aqua MODIS Jan 5 2017



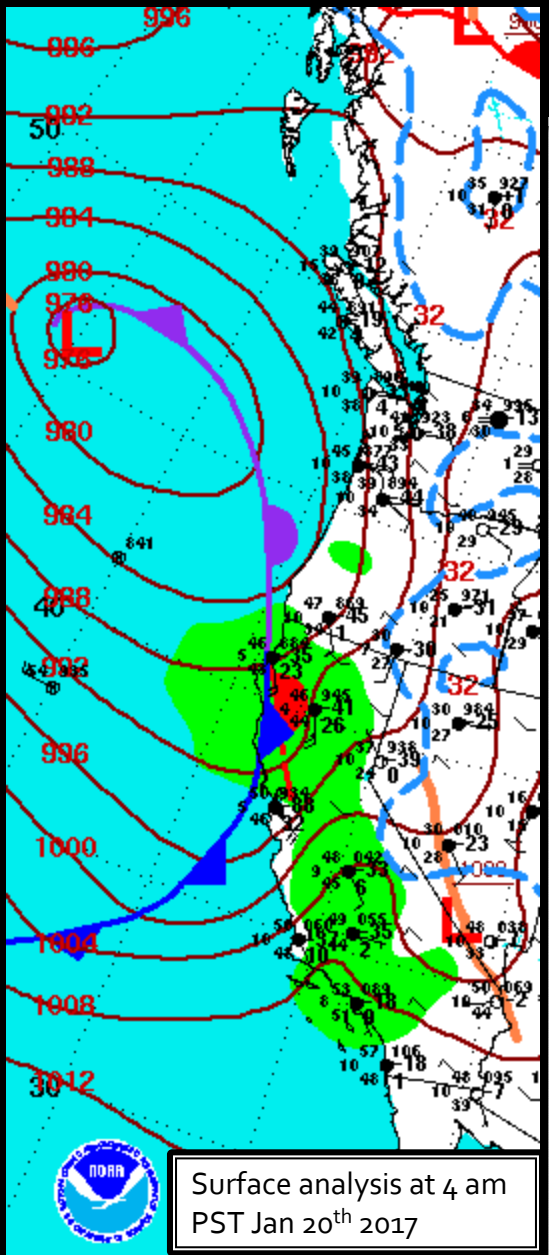
It's not often you get a clear shot from space of the entire forecast area covered in snow.

Heavy Rain on Low Elevation Snow Jan 7-9

Multiple snow storms hit southwest Oregon and Northern California Jan 1-4, followed by an atmospheric river that brought heavy rain on Jan 7-9. Before the transition to rain, snow and freezing rain fell in many western valleys as precipitation began. This produced several winter weather impacts, followed by river and urban flooding as heavy rain combined with melting residual snow. Additionally, rockslides occurred in western Siskiyou county and 3 mudslides impacted Josephine county near Grants Pass and affected 2 homes. An avalanche occurred inside the Crater Lake National Park about half a mile west of the park entrance on Hwy 62 near Munson Valley. Another rock slide occurred on Hwy 46, the road to Oregon Caves National Monument. Along with all the slides, standing water on roadways was a common occurrence across the area. This was in part due to storm drainages being blocked by the snow that was still on the ground from the previous snow storms.

This was a common sight across the forecast area. Pictured right: urban flooding on Elmhurst St in Medford, photo by Connie Clarstrom, NWS Meteorologist. Pictured left: Street view of same location from Google Maps.

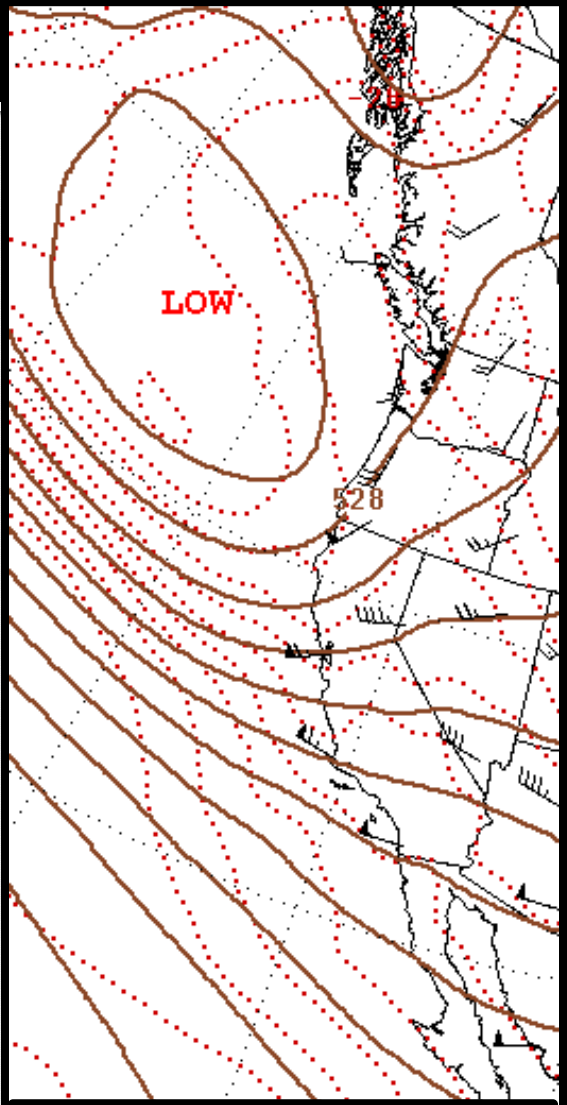
FEET of Snow in Shasta Valley Jan 18-22



Surface analysis at 4 am PST Jan 20th 2017

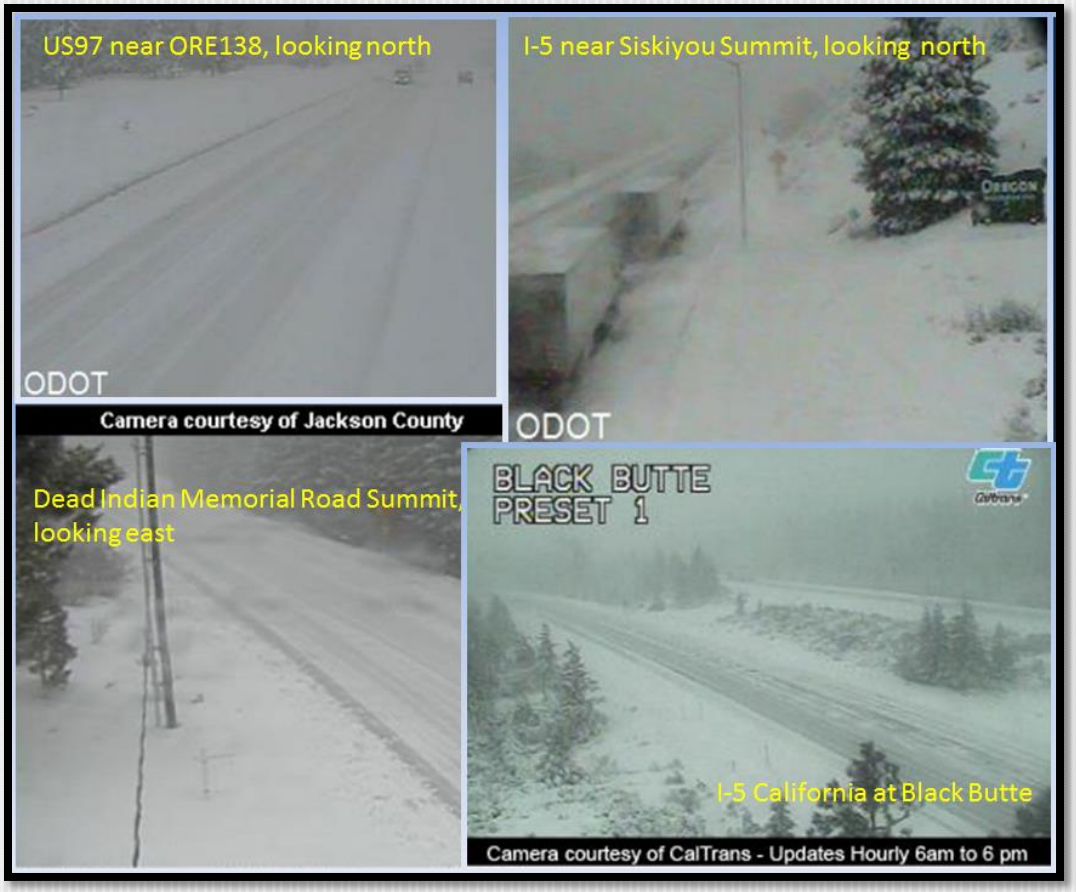
A series of storm systems moved through the area bringing strong winds and back to back rounds of heavy snow for the mountains and the Shasta Valley. This caused significant travel impacts to the I-5 corridor in northern California as well as Siskiyou Summit. Spotters reported up to 14-16 inches of snow each day during this time frame. One spotter outside of Black Butte reported that he had 54 inches in his backyard by the time the last storm moved through!

The images to the right and left show the synoptic setup that brought the heavy snow to the Mount Shasta area. Strong southerly winds aloft line up with the terrain and this enhances the precipitation intensity. This in turn lowers snow levels because the heavy precipitation pulls down the cold air. It's the ideal setup to get heavy snow in the Shasta Valley.



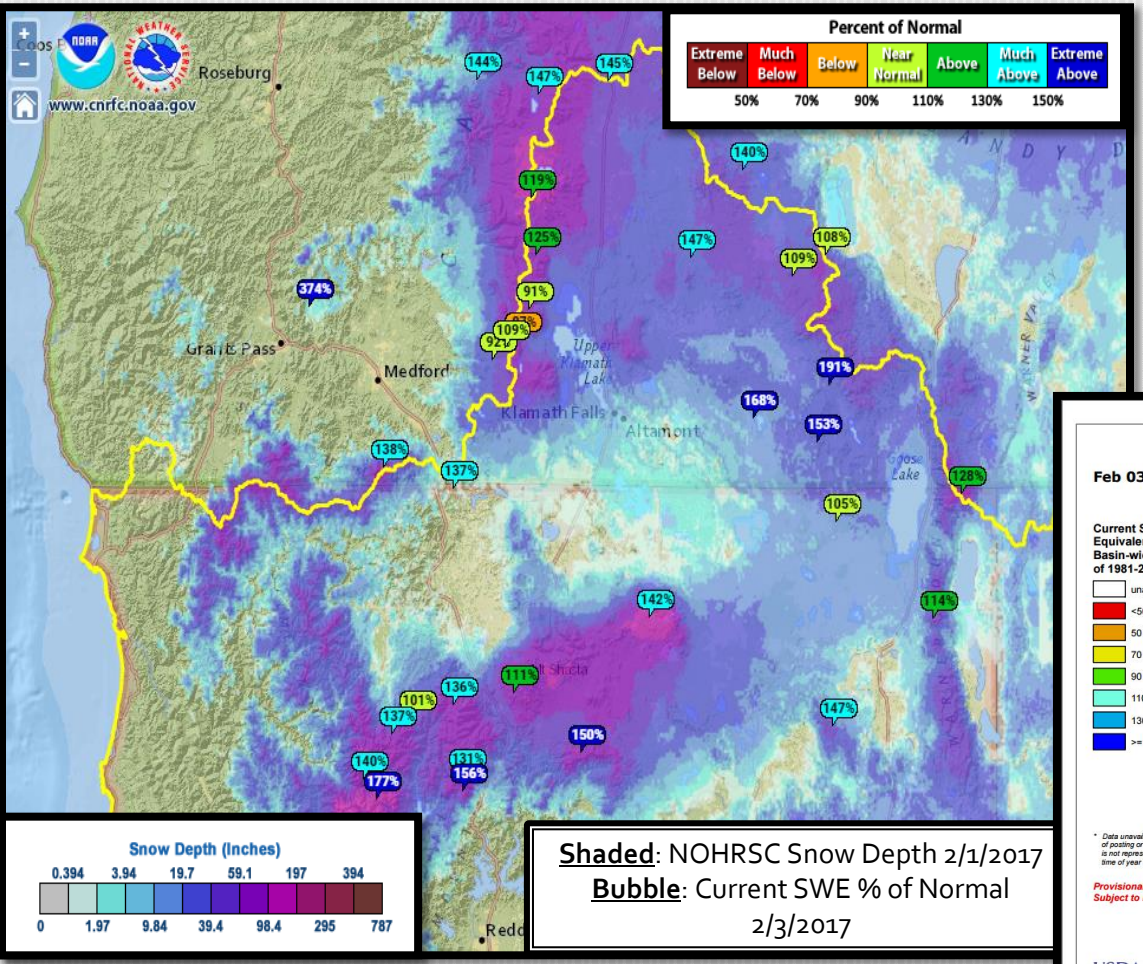
500 mb analysis at 4 am PST Jan 20th 2017 Solid lines: pressure contours Dashed lines: Temperature contours

Area Webcams on January 18th & Daily Snowfall Reports in Siskiyou County

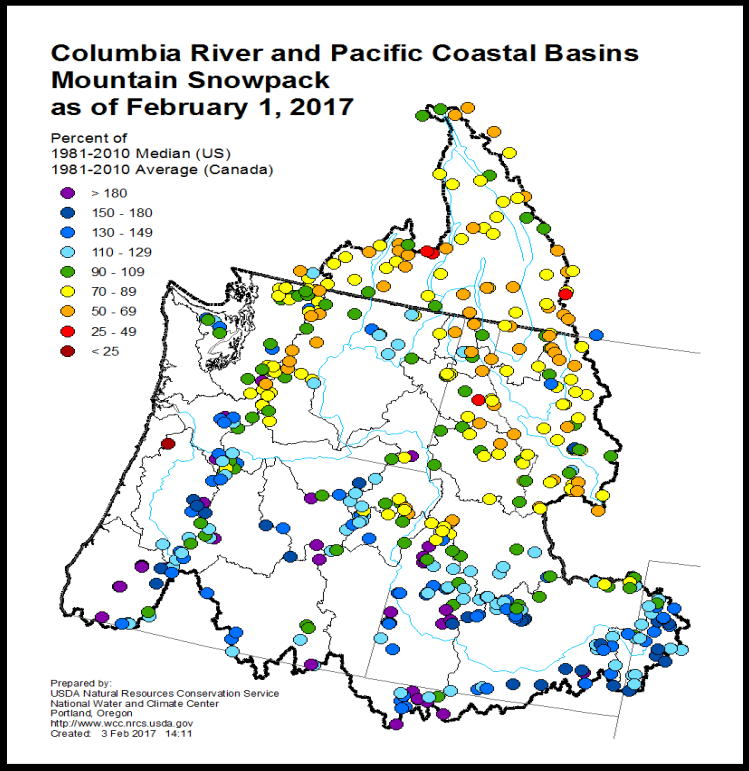


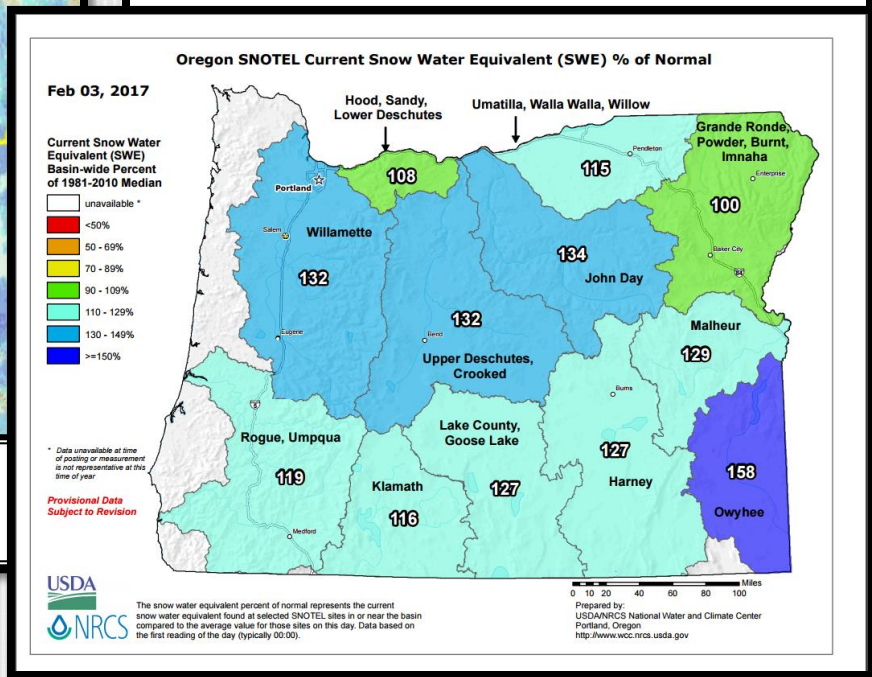
Where	Snowfall	Time of Report	Date of Report
...Siskiyou County...			
NEAR HIGH SCHOOL	7.0 in	0709 PM	01/18
IN MT. SHASTA; NORTHERN PART	5.0 in	0115 PM	01/18
IN MT. SHASTA; NORTHERN PART	4.0 in	0444 PM	01/18
2 MI. S OF MT. SHASTA CITY	13.0 in	0556 PM	01/18
2 MILES WEST OF WEED	10.0 in	0420 PM	01/18
...Siskiyou County...			
2 MILES WEST OF WEED	16.0 in	0753 AM	01/19
BLACK BUTTE SUMMIT	16.0 in	0200 AM	01/19
IN MT. SHASTA; NORTHERN PART	14.0 in	0900 AM	01/19
...Siskiyou County...			
NEAR HIGH SCHOOL	4.0 in	0222 AM	01/20
1.2 MILES WEST OF I-5 & LASS	20.0 in	0727 AM	01/20
2 MI. S OF MT. SHASTA CITY	14.0 in	0800 AM	01/20
IN MT. SHASTA; NORTHERN PART	11.0 in	0800 AM	01/20
MT. SHASTA	10.3 in	0930 AM	01/20
...Siskiyou County...			
MT. SHASTA	8.0 in	0630 PM	01/22
IN MT. SHASTA; NORTHERN PART	8.0 in	0830 AM	01/22
MT. SHASTA	5.8 in	0945 AM	01/22
2 SW Weed	19.0 in	0520 PM	01/22
IN TENNANT	16.0 in	0127 PM	01/22
6 MI W BLACK BUTTE	14.0 in	0101 PM	01/22
2 MILES WEST OF WEED	14.0 in	0502 AM	01/22
TENNANT	12.5 in	0800 AM	01/22
Mount Shasta	11.0 in	0730 PM	01/22

Snowpack Status



Shaded: NOHRSC Snow Depth 2/1/2017
Bubble: Current SWE % of Normal 2/3/2017



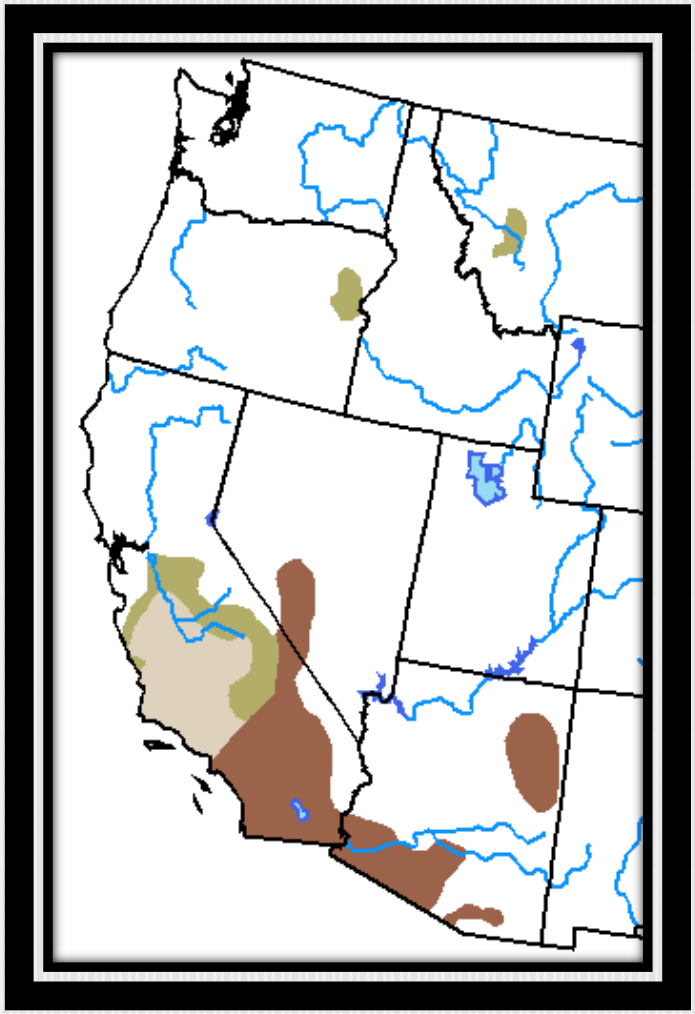


Crater Lake

Image Courtesy: NPS

	Average Max Temp (°F)	Average Min Temp (°F)	Total Precipitation	Total Snowfall	Snow Depth as of: 01/31/17	Highest Max/ Lowest Min
January	30.2°	14.2°	13.41"	133.4"	104"	46° on 31st / -2° on 6th
Normal (1981-2010)	34.4°	18.4°	9.41"	87.4"	N/A	N/A

Drought Outlook: February



Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

Valid for February 2017
Released January 31, 2017

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

Looking Ahead: Normals for February (1981-2010)

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

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

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

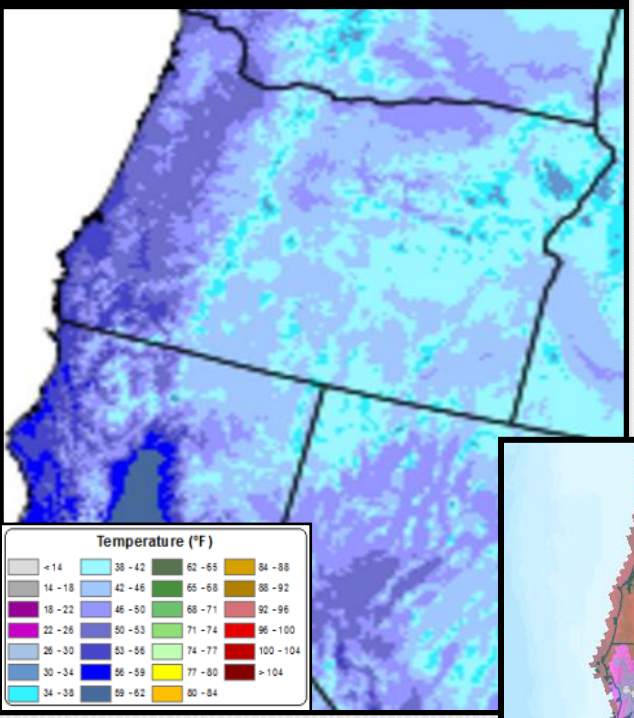
Precipitation: For most of the forecast area, February is certainly still a wet month, but not as wet as November through January and, in some areas, March. Interestingly, however, data indicates that February is the second wettest month of the year for Klamath Falls and Mount Shasta City and is the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

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

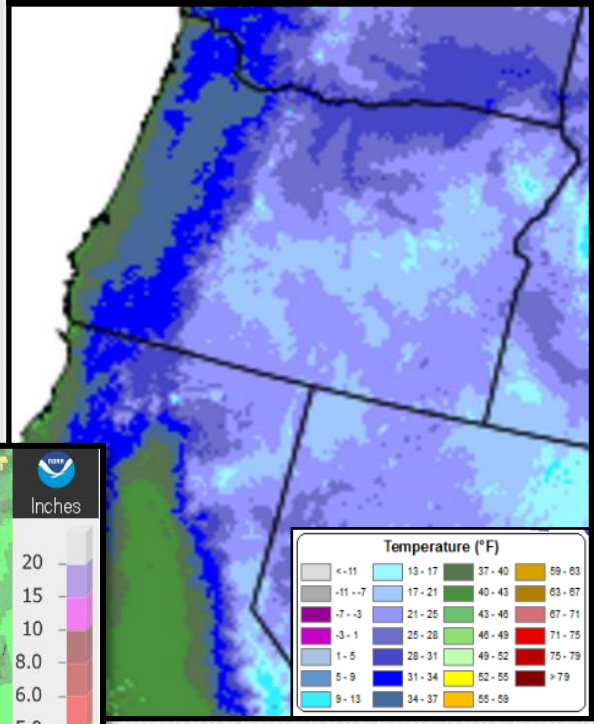
Much of this water typically falls as snow above about 5,000-6,000 feet MSL. For instance, the 1981-2010 average February snowfall for Crater Lake National Park Headquarters is 71.3". The average snow depth there is usually 88 inches on February 1st and 106 inches on the last day of the month.

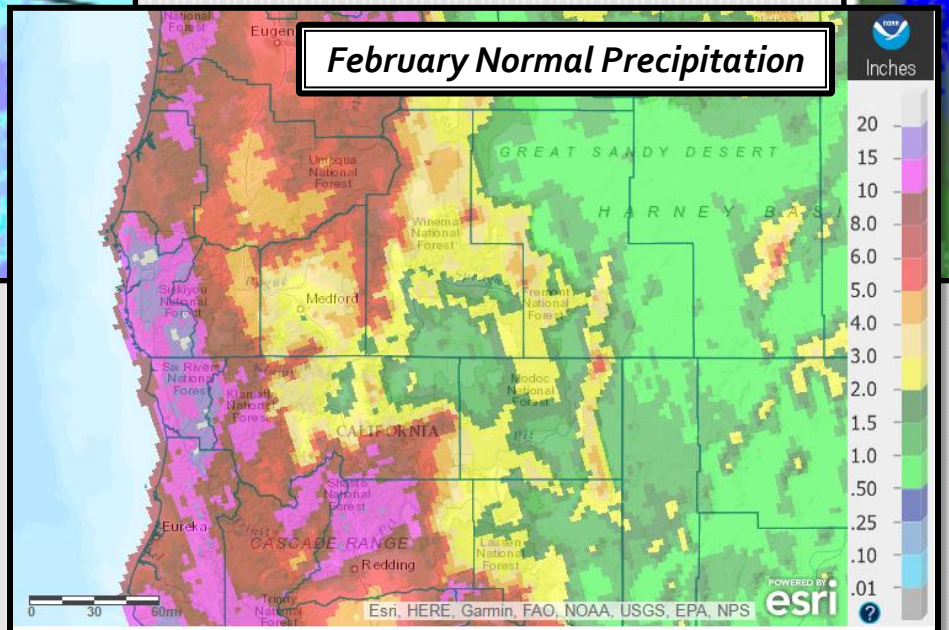
Normals for February (1981-2010)

Average Maximum Temperatures



Average Minimum Temperatures

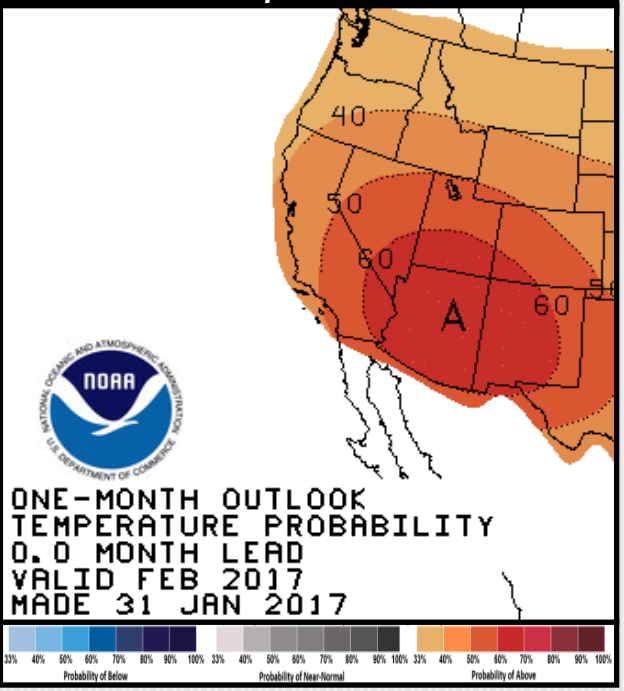




February 2017 Outlook

The official CPC forecast calls for increased chances of above average temperatures (34-45%) and increased chances of above average precipitation (50-70%) for the entire forecast area. As of Feb 6th, model data still strongly supports this CPC forecast. More specifically, the wettest conditions across the area are expected to be in the next week, Feb 6th-12th, with above average weekly precipitation decreasing as compared to normal each week through the end of the month. It should be noted that models are trending to near normal precipitation values for the last week of the month, but confidence is low for precipitation in that last week due to typically marginal model performance at that time range. Current indications are that the weekly temperatures are likely to be above normal until about the 20th, and then are expected to be near to below normal. Here at NWS Medford we believe that the month is likely to be warmer and wetter than normal across the forecast area. Confidence is highest in precipitation being well above average in our northern California areas due to a persistent and directionally favorable storm track. Confidence is highest in temperatures being above normal in the Interior Valleys west of the Cascades due to downslope winds from this storm track.

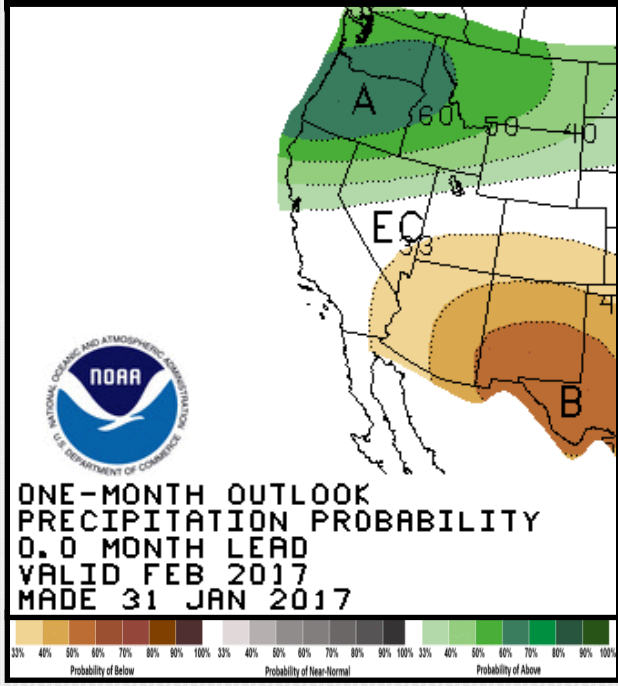
Temperatures



Expected Impact, February 2017:

This next week and the following week (Feb 6th - 19th) will bring flood concerns to the forecast area as generally high snow levels and significant precipitation combine to increase run-off. The greatest concern lies in Northern California and west of the Cascades in southern Oregon where the combined effects of snow melt and heavy rainfall are greatest. With these higher snow levels and the soil saturation currently in place from the already very wet winter, there will also be an increasing possibility of mud, rock, and snow slides near and below the snow line. Higher elevation areas will certainly see an increase in snow water equivalent as snow and rain continue. Around the 20th through the end of the month, colder air temperatures are expected to solidify the snowpack at mid-upper elevations and bring more snowfall to at least mid-upper elevations. With the warmer than normal temperatures that are expected, as well as the wet weather anticipated, spring green-up is likely to get off to an early start across valley locations. This is likely to be reigned in a bit toward the end of the month. With February usually being the first planting month of the season for cold hardy vegetables, warmer soil temperatures are likely to hasten seed germination.

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*