

National Weather Service Medford

December 2016 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 \(NCEI\)](#).

December 2016 Weather Review

December 2016 can be summarized as cooler than normal for the forecast area, with drier than normal conditions roughly west of I-5. Locations east of I-5 were either right at normal or above normal for monthly precipitation resulting in healthy snowpack levels. After a one of the warmest Novembers on record, the stretch of days with non-freezing temperatures in Medford finally came to an end on the 5th when the airport recorded 31 degrees. This is the latest first freeze date on record for the Medford Airport. Consequently, this also set a new record for number of consecutive days without freezing temperatures, which is now 279 days.

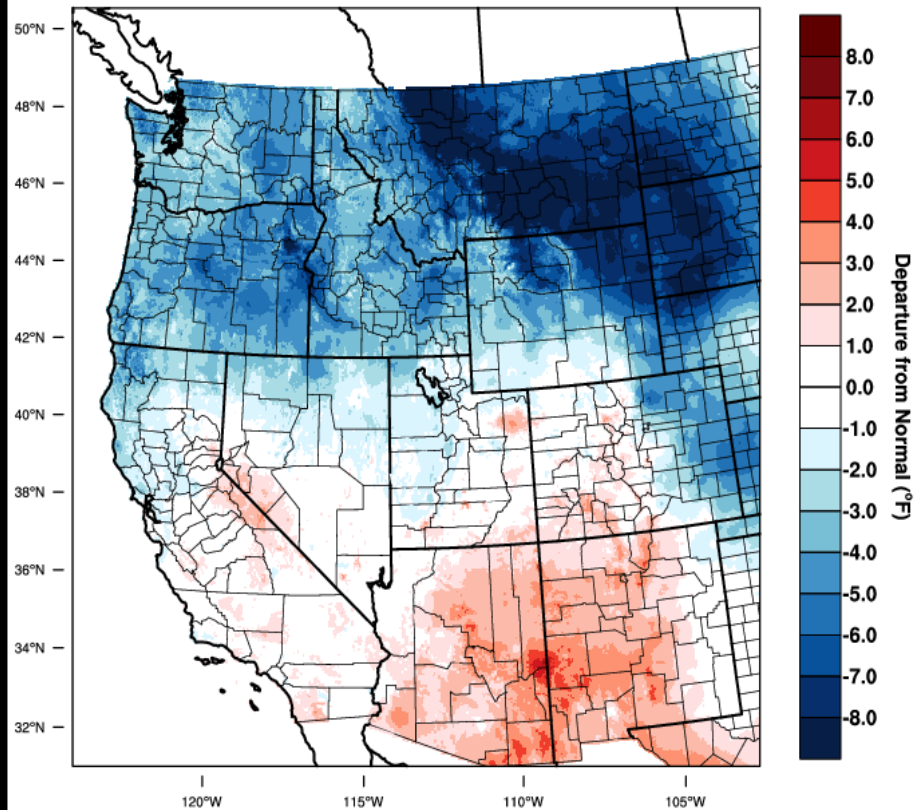
The weather pattern was fairly active for the month overall, although there weren't any significant wind storms. This fact could be part of the reason for the wetter than normal conditions in western valleys. Without the drying effects of downsloping that typically accompany strong wind storms, rain was able to fall uninhibited. During the 14th – 16th, one system moved through bringing record rainfall for many western valleys, leading to many river rises around the forecast area. Numerous areas around the Rogue and Illinois valleys had to deal with standing water on roadways and area parks had to deal with local creeks and rivers surpassing their banks for a brief time.

Shortly after this, a strong arctic high pressure settled over the area, bringing the coldest temperatures of the season, thus far. Temperatures dipped into the teens for western valley locations and single digits to below zero readings were reported east of the Cascades. After this brief period of quiet weather, another system passed through just before Christmas. This system brought record rainfall to the Medford area as well as travel headaches due to low snow levels and increased traffic for the holidays.

Aside from a few additional weak systems passing through, the weather remained rather quiet for the remainder of the month. However, snow began falling shortly after the ball dropped and 2017 began with snow on the ground for most western valleys.

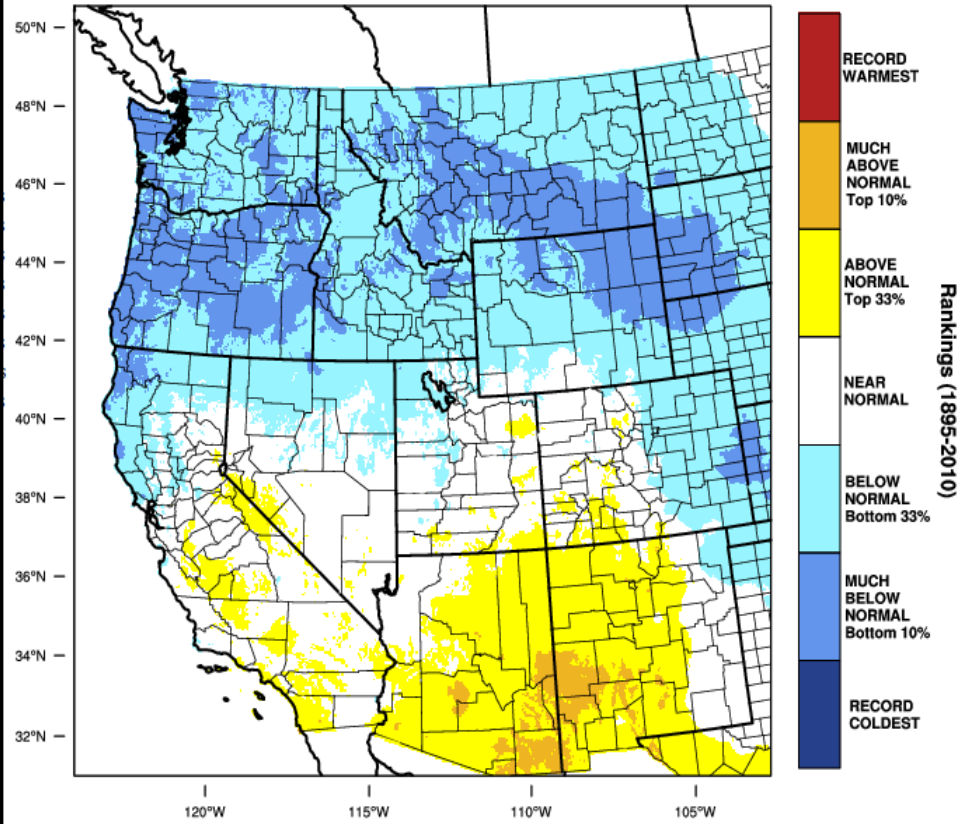
December 2016 Observed Temperatures

Western United States - Mean Temperature
December 2016 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 JAN 2017

Western United States - Mean Temperature
December 2016 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 JAN 2017

Rankings (1895-2010)

- RECORD WARMEST
- MUCH ABOVE NORMAL Top 10%
- ABOVE NORMAL Top 33%
- NEAR NORMAL
- BELOW NORMAL Bottom 33%
- MUCH BELOW NORMAL Bottom 10%
- RECORD COLDEST

Average & Record Temperatures

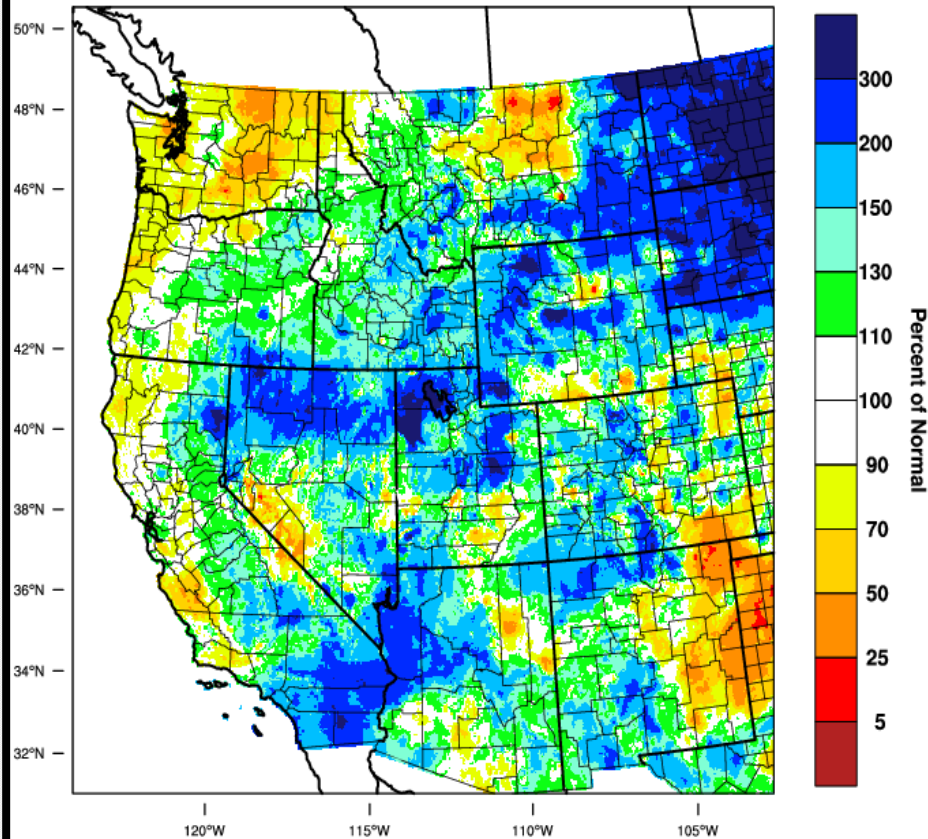
	<i>Average (°F)</i>	<i>Departure from Normal</i>	<i>Average Max (°F)</i>	<i>Departure from Normal</i>	<i>Average Min (°F)</i>	<i>Departure from Normal</i>
<i>North Bend</i>	43.5	-1.8	50.1	-0.9	37.0	-2.7
<i>Roseburg</i>	39.9	-2.2	45.3	-2.4	34.6	-1.8
<i>Medford</i>	37.2	-2.1	43.1	-2.8	31.3	-1.4
<i>Klamath Falls</i>	28.7	-0.9	37.9	-0.5	19.5	-1.2
<i>Montague, CA</i>	32.1	-3.0	41.6	-2.6	22.6	-3.4
<i>Mt. Shasta City, CA</i>	33.1	-2.0	41.8	-2.5	24.4	-1.6
<i>Alturas, CA</i>	27.3	-2.2	38.5	-1.7	16.2	-2.6

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>57°</i>	<i>8th</i>	<i>30°</i>	<i>18th & 31st</i>
<i>Roseburg</i>	<i>51°</i>	<i>20th & 27th</i>	<i>26°</i>	<i>17th & 26th</i>
<i>Medford</i>	<i>51°</i>	<i>9th</i>	<i>19°</i>	<i>18th</i>
<i>Klamath Falls</i>	<i>49°</i>	<i>9th</i>	<i>7°</i>	<i>25th</i>
<i>Montague, CA</i>	<i>56°</i>	<i>9th</i>	<i>15°</i>	<i>18th</i>
<i>Mt. Shasta City, CA</i>	<i>51°</i>	<i>3rd</i>	<i>11°</i>	<i>26th</i>
<i>Alturas, CA</i>	<i>50°</i>	<i>4th</i>	<i>-4°</i>	<i>26th</i>

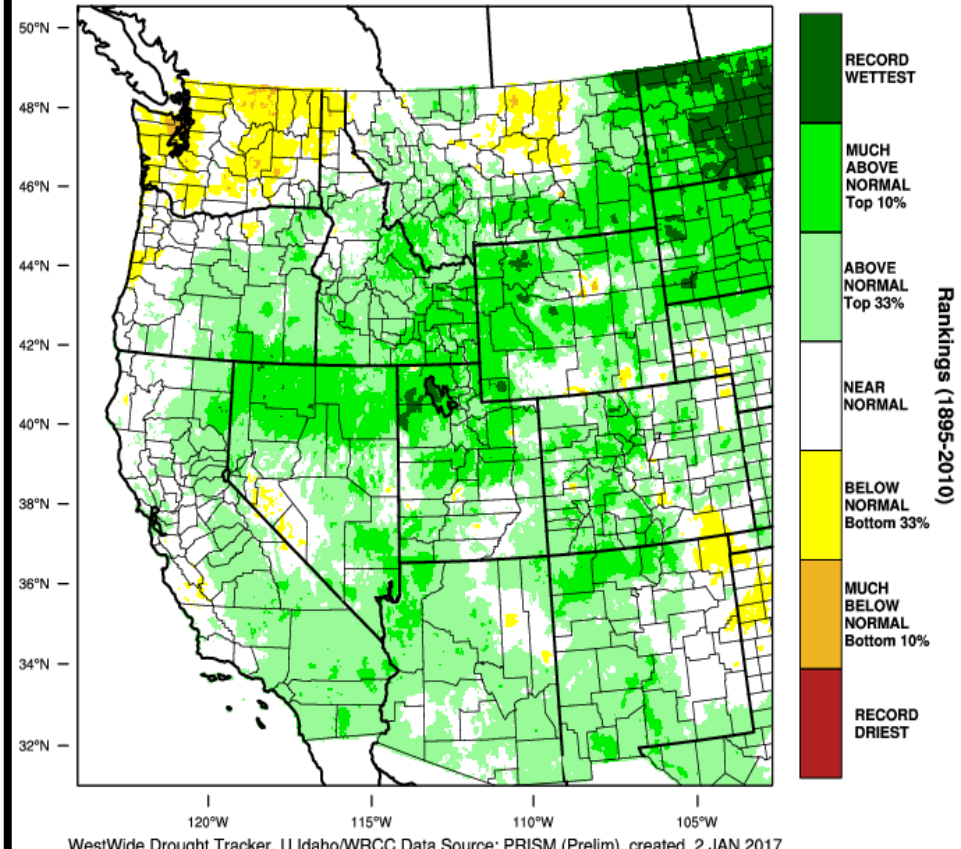
December 2016 Observed Precipitation

Western United States - Precipitation
December 2016 Percent of 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 JAN 2017

Western United States - Precipitation
December 2016 Percentile



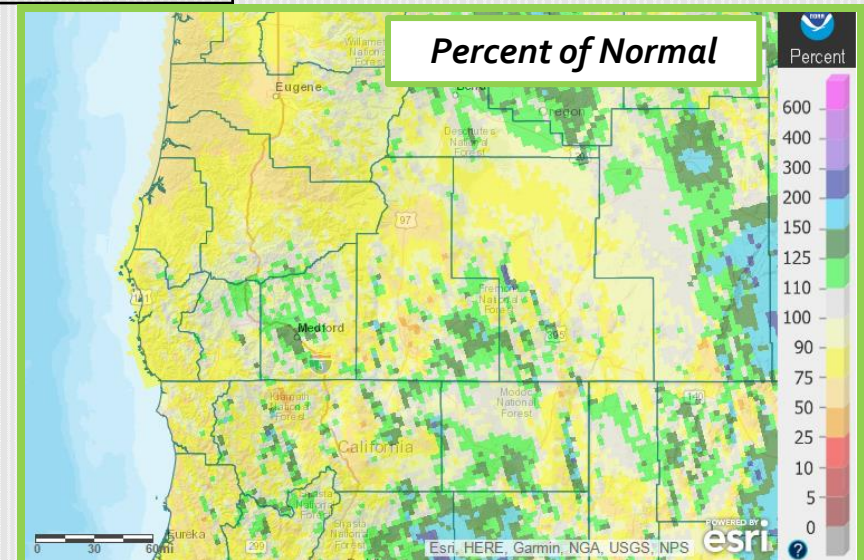
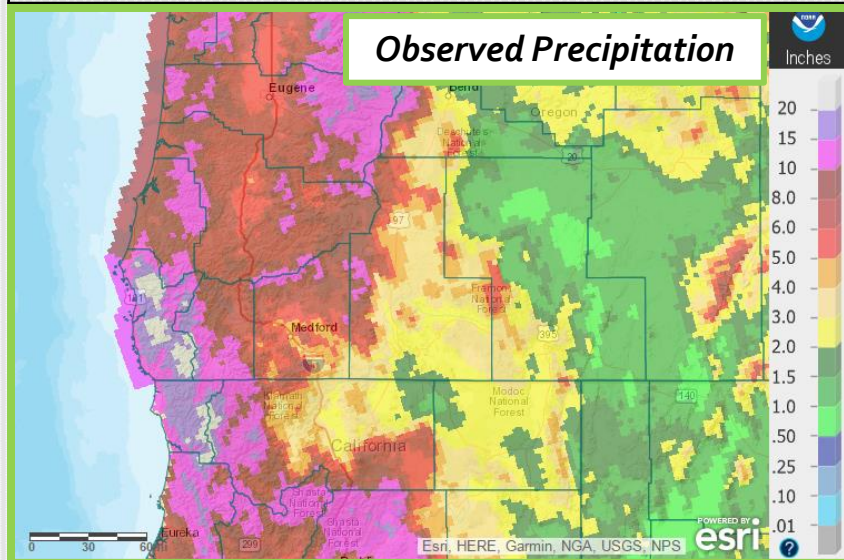
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 JAN 2017

Precipitation

	Total	Departure from Normal	Greatest 24-hr Total	Date(s)
North Bend	6.90"	-4.23"	1.57"	14 th
Roseburg	6.09"	-0.43"	2.88"	14 th
Medford	4.56"	1.07"	1.83"	14 th – 15 th
Klamath Falls	1.51"	0.06"	0.82"	14 th – 15 th
Montague, CA	2.23"	-0.43"	1.31"	14 th – 15 th
Mt. Shasta City, CA	4.69"	-3.16"	1.97"	14 th – 15 th
Alturas, CA	1.75"	0.04"	0.48"	15 th – 16 th

Record Daily Precipitation

	New Record	Date	Old Record	Year
Medford	1.55"	14 th	1.13"	1977
Roseburg	2.88"	14 th	2.45"	2003
Medford	1.05"	23 rd	0.93"	1964



December 14th – 16th Rainfall

A series of storm systems moved through the area during the week of the 12th, bringing copious amounts of rainfall to the area. Over an inch and a half of rain fell at the Medford airport on the 14th and 2.88 inches of rain fell in Roseburg on the same day. These heavy rains led to many river rises around the forecast area. Numerous areas around the Rogue and Illinois valleys dealt with standing water on roadways and area parks had to deal with local creeks and rivers surpassing their banks for a brief time.



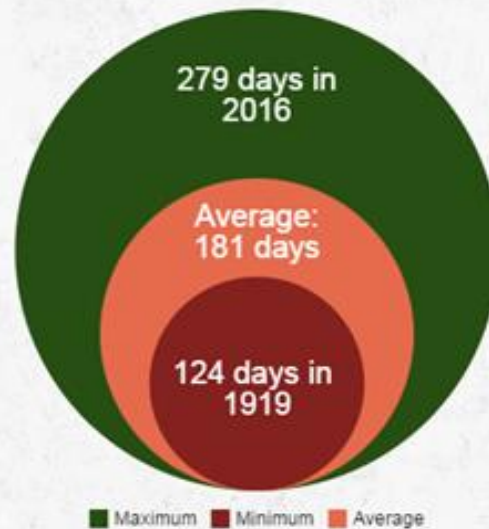
Left: TouVelle Park Medford

Right: Elmhurst St. Medford

Photos: Brad Schaaf, NWS Meteorologist

Medford's latest first frost/freeze dates on record!

Number of Days between Freezing Temperatures



Medford's Airport records go back to 1911!

2016 Growing Season Records:

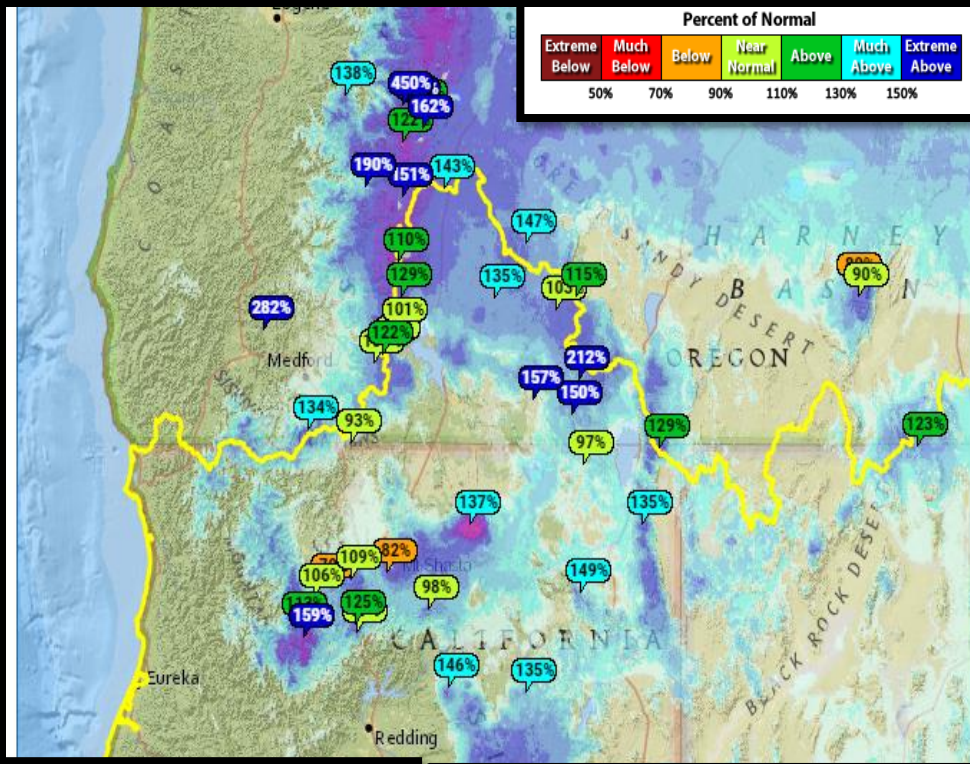
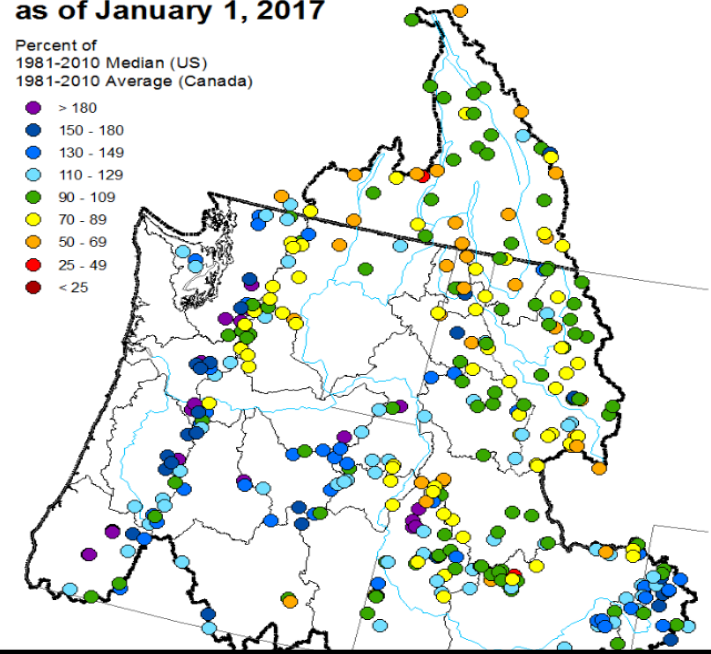
- Longest number of days between freezing temperatures: 279 days
- Earliest last freeze date: 2/29/2016
- Latest first freeze date: 12/5/2016
- Ties for longest number of days between frost: 205 days
- Latest first frost date: 11/18/2016

Snowpack looking healthy so far!

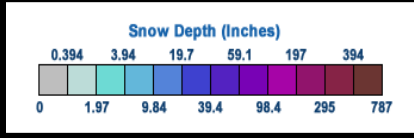
Columbia River and Pacific Coastal Basins Mountain Snowpack as of January 1, 2017

Percent of 1981-2010 Median (US) 1981-2010 Average (Canada)

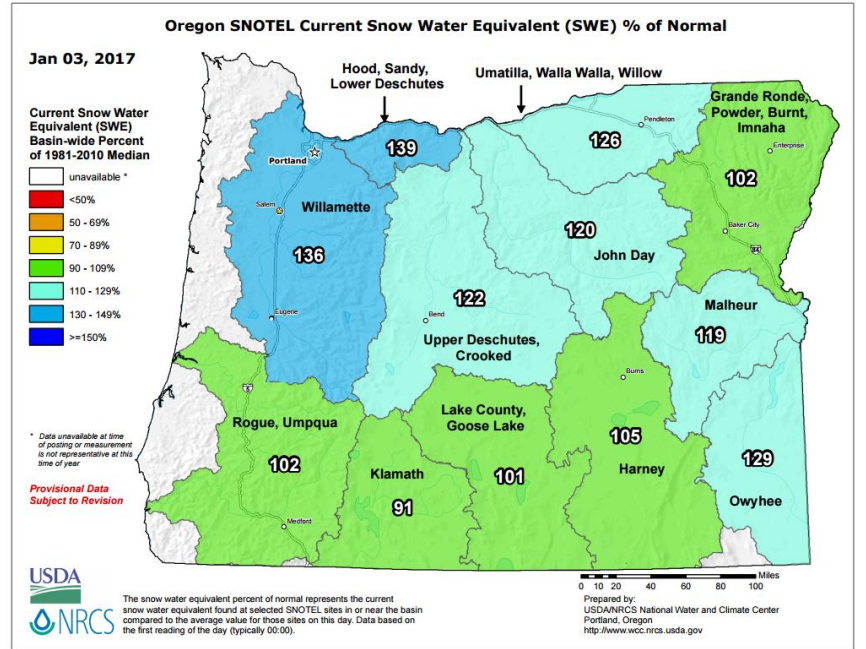
- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25



Percent of Normal						
Extreme Below	Much Below	Below	Near Normal	Above	Much Above	Extreme Above
50%	70%	90%	110%	130%	150%	



Shaded: NOHRSC Snow Depth 1/16/2017
Bubble: Current SWE % of Normal 1/16/2017



Jan 03, 2017

- Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median
- unavailable *
 - <50%
 - 50 - 69%
 - 70 - 89%
 - 90 - 109%
 - 110 - 129%
 - 130 - 149%
 - >=150%

* 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).

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

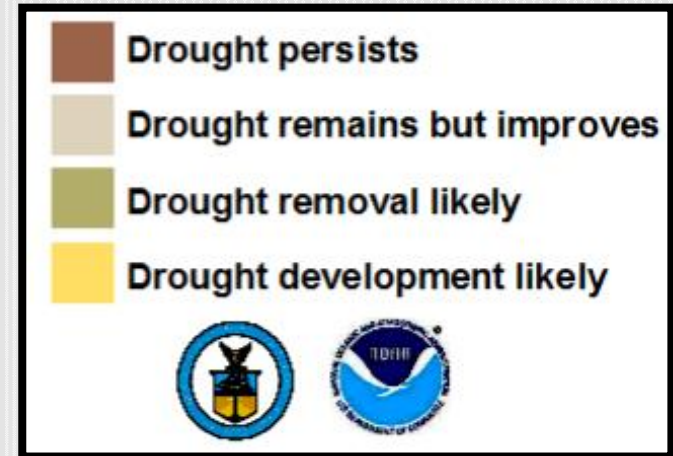
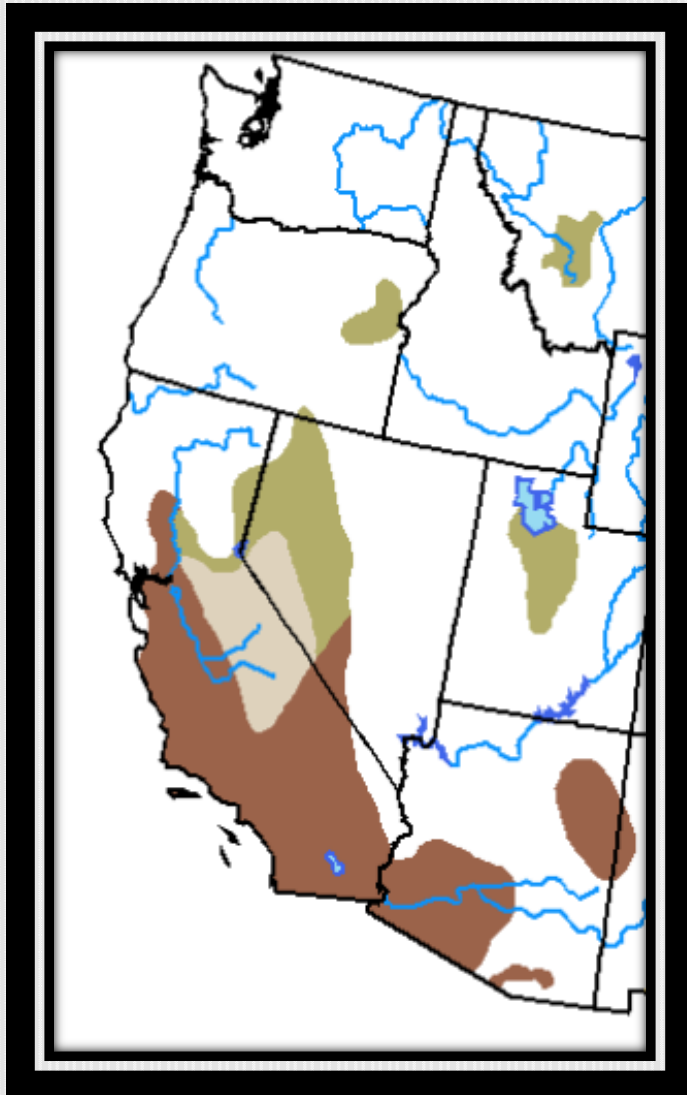
Crater Lake

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: 12/31/16</i>	<i>Highest Max/ Lowest Min</i>
<i>December</i>	<i>27.8°</i>	<i>12.0°</i>	<i>11.41"</i>	<i>94.7"</i>	<i>69"</i>	<i>39° on 23rd / -5° on 7th</i>
<i>Normal (1981-2010)</i>	<i>33.6°</i>	<i>18.1°</i>	<i>11.56"</i>	<i>91.1"</i>	<i>N/A</i>	<i>N/A</i>

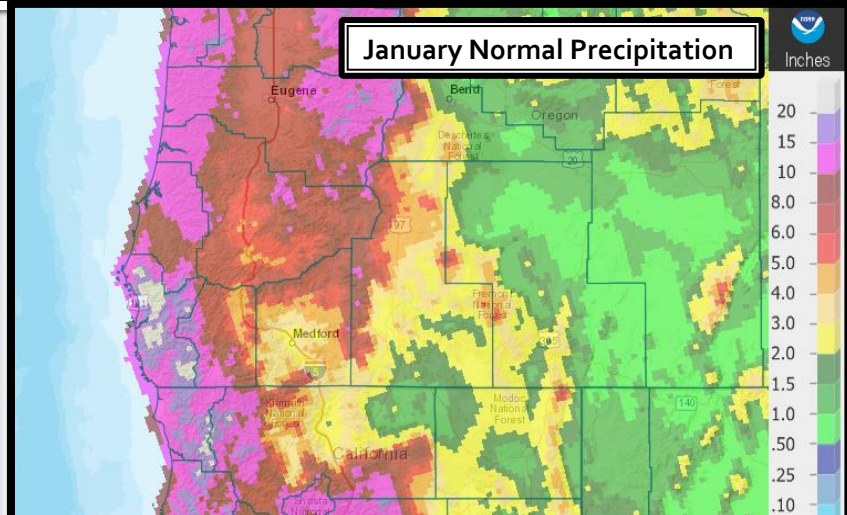
Drought Outlook: December



***Valid for January 2017
Released December 31, 2016***

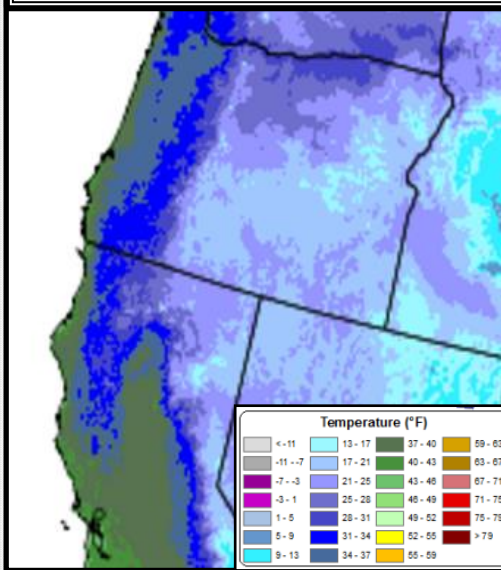
Looking Ahead: Normals for January (1981-2010)

January is, on average, the second coldest and second wettest month of the year, collectively, for southwestern Oregon and far northern California. Much of the lower terrain of Lake County, the Tule Lake Basin, and parts of the Sprague and Pitt River Basins receive 1/2 inch to 2 inches of water, while higher elevations east of the Cascades typically receive 2-6 inches of water. The Cascades and Mount Shasta typically receive 5-15 inches. The drier valleys west of the Cascades like the Bear Creek drainage of the Rogue Valley and the Shasta and Scott Valleys in California usually receive 2-5 inches. The remainder of the West Side gets 5-15 inches, though the wettest portions of Curry County and far western Siskiyou County average 15-20+ inches.

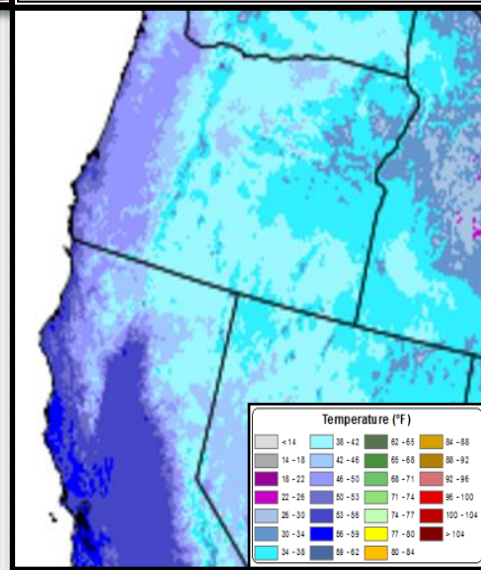


Much of this water typically falls as snow above about 4,000 feet MSL. For instance, the 1981-2010 average snowfall for Crater Lake National Park Headquarters is 85.4 inches. Snow depth there usually is 67.8 inches on January 1st and 87.4 inches on January 31st based on the same average period.

Average Minimum Temperatures



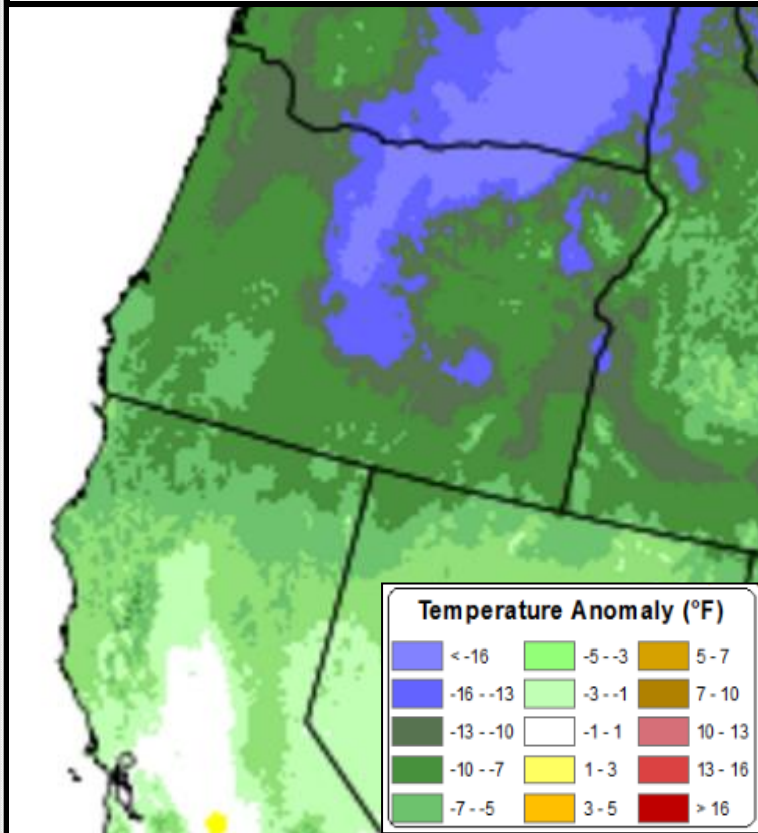
Average Maximum Temperatures



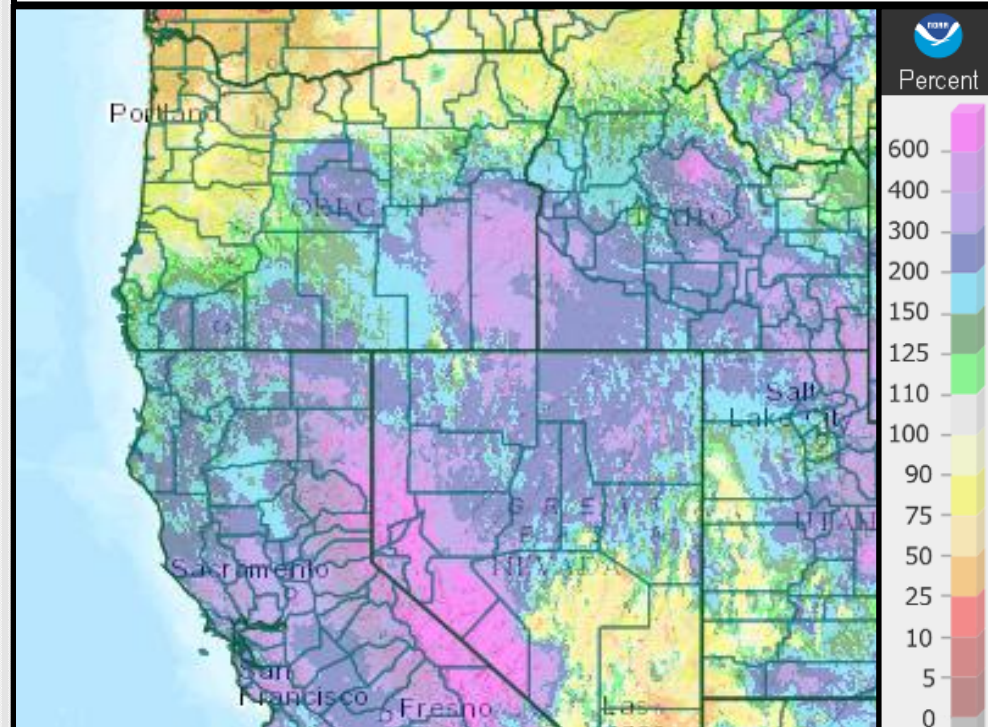
Average daily high temperatures are 30 to near 40 degrees in the mountains above 5000 feet and east of the Cascades and in the mid 40s to mid 50s west of the Cascades. Daily low temperatures are in the mid teens in the coldest locations east of the Cascades and on Mount Shasta, to the upper 20s in and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

A Look at January to Date (1/16/2017)

*Observed Average Temperatures
January 1-16, 2017
Compared to 1981-2010*



*Observed Precipitation (% of Normal to date)
January 1-16, 2017
Compared to 1981-2010*



January 2017 Outlook

The first half of January has gotten off to a much colder than normal start, with average temperatures mostly 5 to 15 degrees below normal, least furthest south and west, and greatest northeast. Precipitation for the first half of the month has been above normal for all areas except northwestern Douglas and northern Coos Counties. Approximately one third of the forecast area has already received precipitation amounts that are as much or more than the normal amount for the entire month of January. This was brought about by the collision of subtropical moisture with polar and arctic air masses, which has led to above average snowfall in much of the area, including the valleys west of the Cascades.

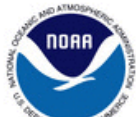
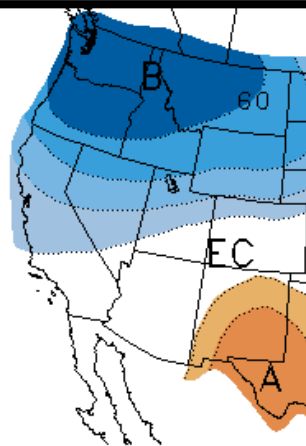
The cooler and wetter than normal pattern is expected to prevail until at least the last week of this month, and very well could continue through month's end. Therefore, it is highly likely the entire forecast area will end the month with above normal precipitation and below normal temperatures. This also means that the snow pack is very likely to be above normal for snow depth and snow water equivalent at month's end.

The official CPC forecast calls for increased chances of below average temperatures and equal chances of below/near/above average precipitation for just about all of the forecast area.

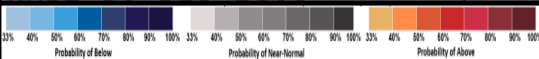
Expected Impact, January 2017:

The active jet stream across the Pacific and onto the West Coast of North America, and associated anomalous low pressure in the Gulf of Alaska, will continue to bring above average precipitation to the forecast area. Flooding observed in the first half of the month is unlikely to be surpassed in magnitude by additional flooding through month's end, but some minor flooding is possible west of the Cascades, especially the week of the 15th to the 21st. The melt water from remaining snow on the ground at lower elevations west of the Cascades is expected to combine with significant rainfall during that time period. Continued storm activity with a strong jet stream means we should expect periods of large ocean swell, strong winds, heavy low elevation rain and moderate to heavy mid and high elevation snow. Rivers will continue to run higher than normal, runoff will be strong, and reservoir levels and snow pack will continue to build. It should be noted that there is a tendency in long range guidance toward storm activity focusing more toward California, so this means that precipitation amounts compared to normal are likely to be highest there. This also means that there could be more windy periods across the area toward the end of the month as high pressure to the north builds and low pressure sinks southward.

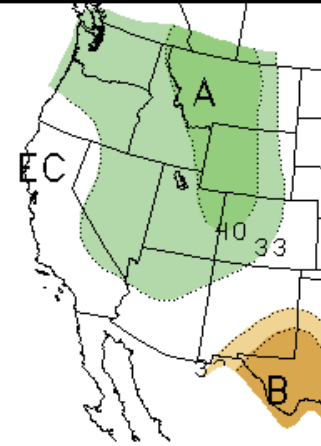
Temperatures



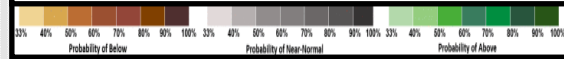
ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.0 MONTH LEAD
VALID JAN 2017
MADE 31 DEC 2016



Precipitation



ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.0 MONTH LEAD
VALID JAN 2017
MADE 31 DEC 2016



*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