

# Western Snowpack and Water Supply Conditions

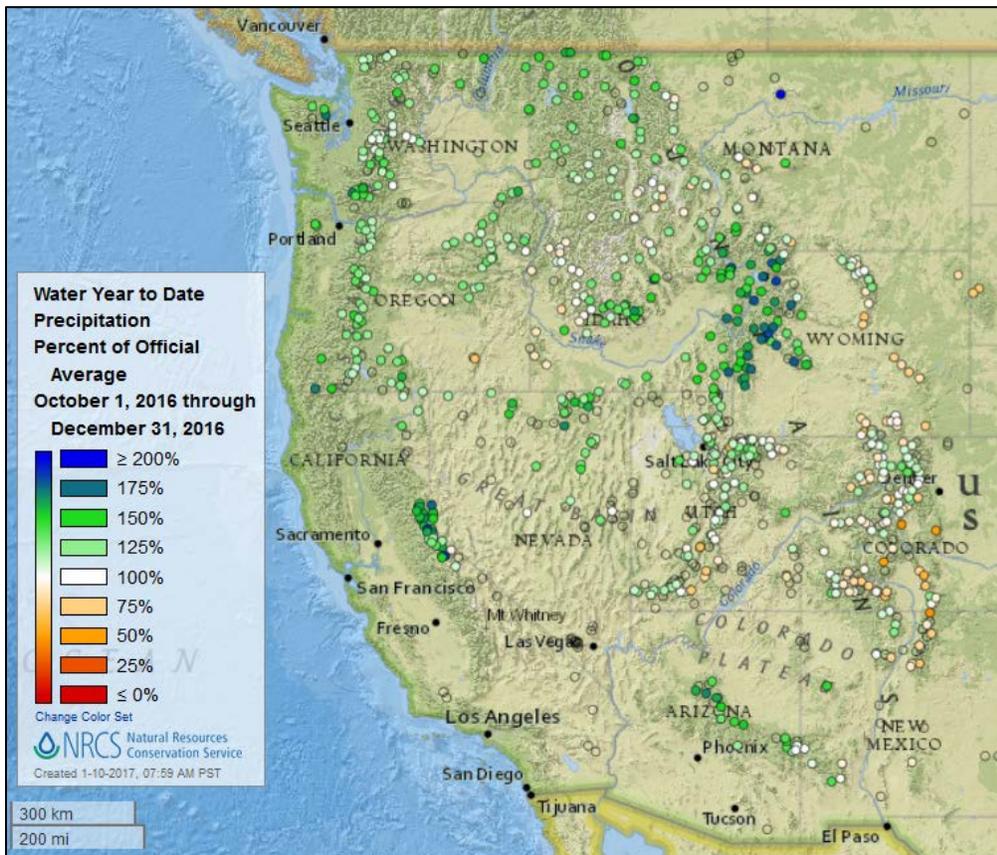
## January 2017

### Overview

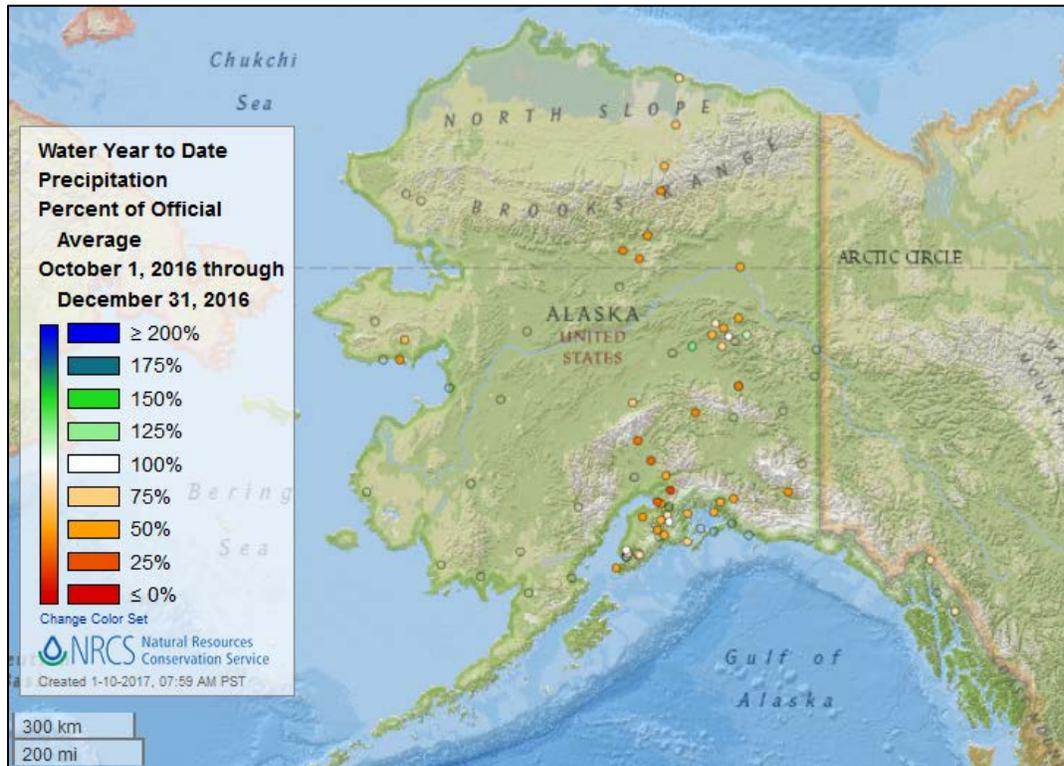
This report summarizes Snow Telemetry (SNOTEL) and snow course network data, streamflow forecasts, and reservoir storage data collected and analyzed by the [National Water and Climate Center](#).

**Precipitation** thus far in the water year (beginning October 1, 2016) has been near or above normal in most of the West except for some locations in Wyoming, Colorado, and New Mexico, whereas it has been well below normal in most of Alaska. **Snowpack** shows a mixed pattern of some well above normal areas together with areas of near to below normal conditions. **Streamflow forecasts** at this early point in the season are near to above normal in many areas, with some below normal locations scattered throughout. **Reservoir storage** is currently above normal in Colorado, Montana, and Wyoming and below normal elsewhere.

### Water Year-To-Date Precipitation



[Precipitation for the 2017 water year-to-date](#) has been near to above average over most of the West. There are, however, some scattered locations with below average precipitation primarily in eastern Wyoming, Colorado, and northern New Mexico.



[Precipitation in Alaska for the 2017 water year-to-date](#) has been well below average at most sites throughout the state.

Basin-filled maps containing monthly and daily updates of SNOTEL precipitation are available at: <http://www.wcc.nrcs.usda.gov/gis/precip.html>

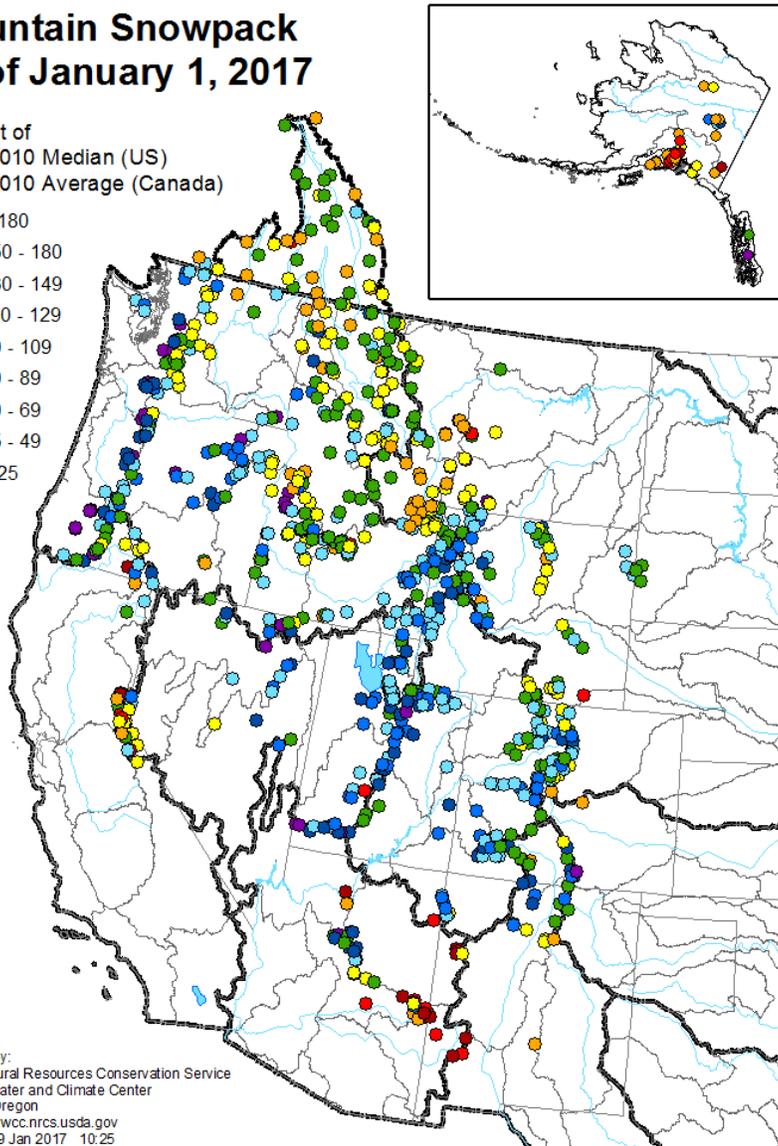
## Snowpack

### 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

Prepared by:  
USDA Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>  
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[Snowpack at SNOTEL sites and snow courses as of January 1](#) in the western U.S. and the Columbia Basin in Canada shows a mixed pattern over the region.

Several areas have well above median snow water equivalent, including Oregon, southeastern Idaho, western Wyoming, and most of Utah and Colorado.

In contrast, several areas have a mixture of near to below median snow water equivalent, including British Columbia, Idaho, Montana, eastern Wyoming, and the Tahoe area of California and Nevada (although the latter has changed significantly since the first of the month). In addition, there is a small area of well below median snowpack in southern Arizona and New Mexico.

In Alaska, snowpack is well below median at most sites.

Maps with daily updates of the snowpack (SNOTEL data only) for the entire West, as well as for individual states, are available at: <http://www.wcc.nrcs.usda.gov/gis/snow.html>

## Streamflow Forecasts

[Streamflow forecasts](#) at this early point in the year are of modest skill and therefore must be considered only as an initial indication of how the water year is shaping up. Nevertheless, forecasts are near to above normal over most of the West. There are, however, some scattered locations primarily in Montana, Colorado, and the Southwest, where the expectation is moderately below normal. Most of the winter remains, so these outlooks could change significantly by the time the snow accumulation season has reached its maximum, usually in April.

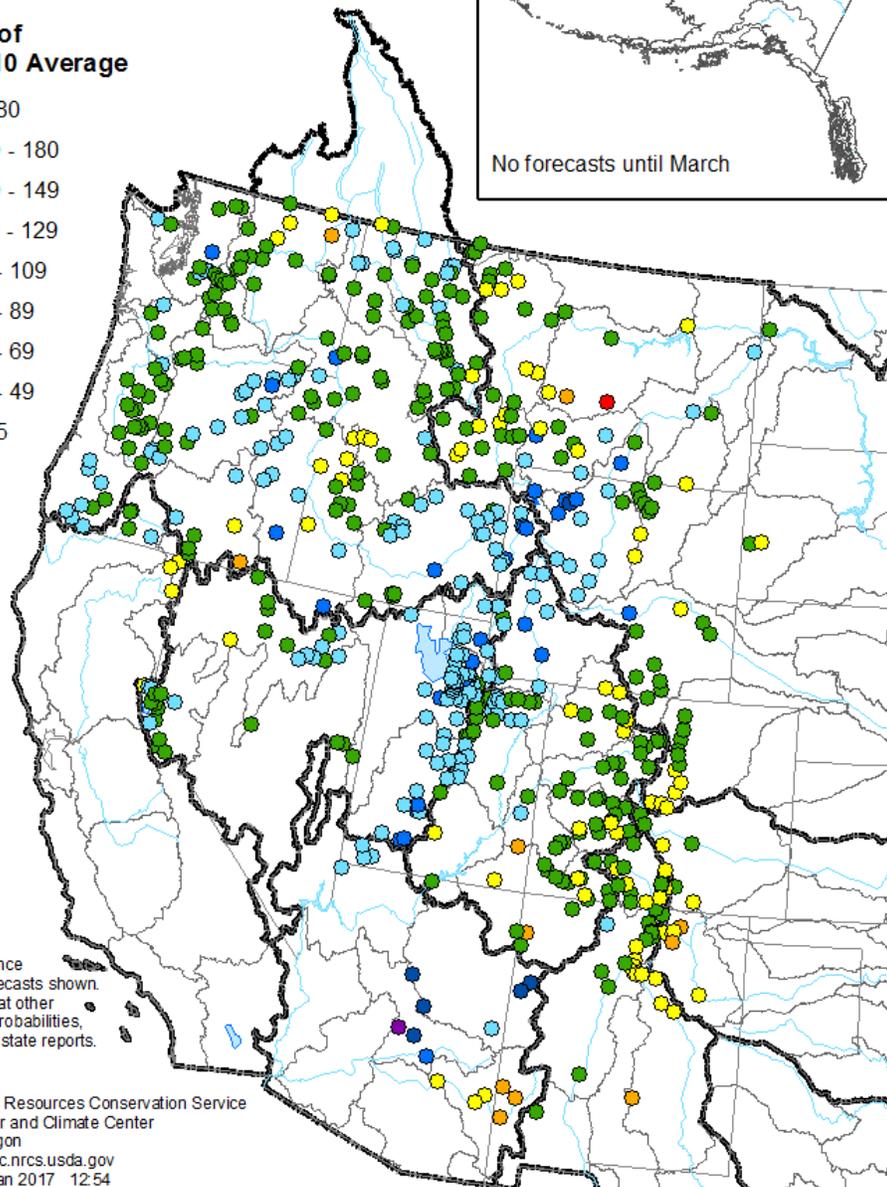
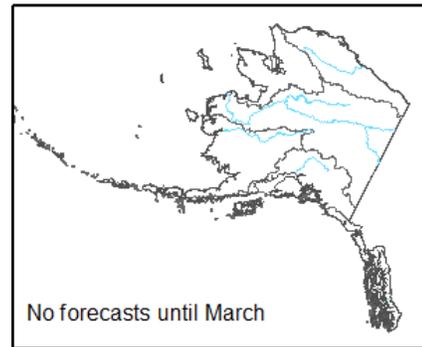
### Spring and Summer Streamflow Forecasts as of January 1, 2017

Percent of 1981-2010 Average

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

50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

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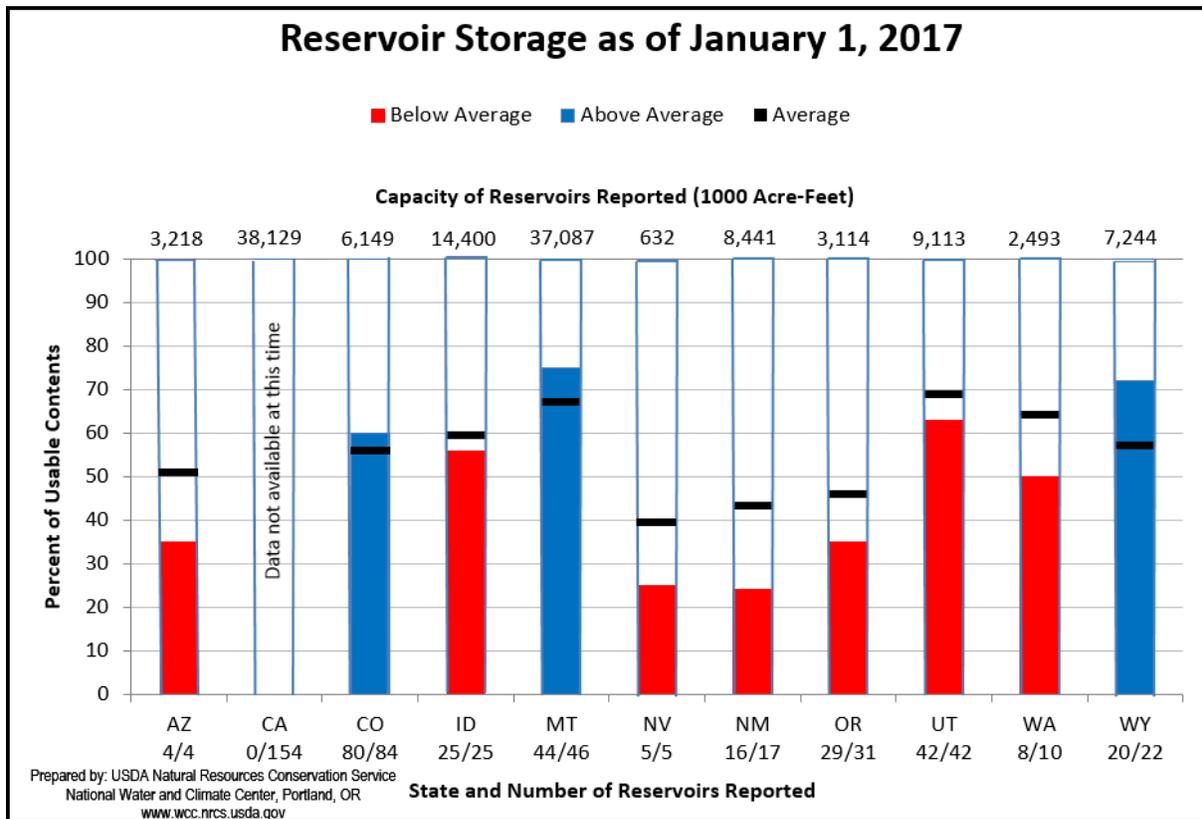
Trends in streamflow forecasts in basins for which daily water supply forecast models are available can be followed at: [http://www.wcc.nrcs.usda.gov/wsf/daily\\_forecasts.html](http://www.wcc.nrcs.usda.gov/wsf/daily_forecasts.html)

## Reservoir Storage

[Reservoir levels](#) are above average in Colorado, Montana, and Wyoming and below average elsewhere.

Further data and charts are available at: <http://www.wcc.nrcs.usda.gov/wsf/wsf-reservoir.html>

Data for California are summarized at: <http://cdec.water.ca.gov/cgi-progs/reservoirs/STORSUM>



## State Reports

*Click a state name to view the full report*

**Alaska:** Despite a potent storm system that traversed most of Alaska toward the end of December, snowpack in most of the state remains much below normal. Only the Chena Basin, northeast of Fairbanks, reported above normal conditions, and parts of southeast Alaska were near normal. Most sites across the state reflect a lackluster snowpack, ranging from one- to two-thirds of normal. The first full report for Alaska will be available in February.

**Arizona:** It has been a very wet start to the snow season, with total precipitation for the past month ranging from 162% up to 246% of average in the major basins.

**California:** January started off with roughly average snowpack and rainfall totals. Since that time though, California has been experiencing a fusillade of storms from the Pacific. The storms have been both cold and warm in nature, in almost an alternating pattern, causing snow to accumulate in the mountains, melt, then re-accumulate. The storms have increased soil moisture throughout the state, and in many areas, the soil is saturated.

**Colorado:** After the slowest start in over 30 years, Colorado snowpack has made an improbable rebound. Now at 114% of normal, statewide Colorado snowpack is only slightly more abundant in the southern portion of the state. Early January weather has further improved statewide snowpack conditions.

**Idaho:** As of January 1, water supplies are looking promising based on the past and current hydro-climate indicators, which include fall precipitation, fall streamflow, reservoir storage, and current snowpack.

**Montana:** The new water year started with record-breaking October precipitation at many SNOTEL sites in the state. A warm November left little snow on the ground entering winter, but above average snowfall during December helped to improve snowpack conditions for January 1.

**Nevada:** Flooding aside, this water year is off to a fantastic start. Large snowpack gains have occurred since January 1. Statewide, snowpacks on January 9 are 122-162% of median. Snow percentages roughly doubled since January 1 in the Lake Tahoe and Truckee River basins. Precipitation since October 1 is 119-215% of average across the state. With more storms on the way, these percentages will only improve over the next week.

#### **New Mexico:**

**Oregon:** All basins in Oregon are experiencing normal to above normal snowpack as of January 1. Record-breaking October precipitation provided a much-needed wet start to the water year. The wet autumn was followed by a cold and snowy December, which produced snow accumulation down to the lowest elevations of the state. As of January 1, most of the spring and summer water supply forecasts are projecting near average to above average streamflow volumes based on current conditions. Last year at this time, the state-wide snowpack was also above normal and continued to hover near normal through April 1. Rapid and record breaking snowmelt occurred during April, which led to below normal summer streamflow. This highlights the uncertainty of early season streamflow forecasts and acts as a reminder that there are still several months left in the snow accumulation season.

**Utah:** Snow accumulation in Utah started off very slowly, with almost nothing in October and November. December brought major storm events, and snowpacks across the state are now in the 130% to 170% of normal range with more on the way. Soil moisture conditions are above average, reservoir storage is about the same as last year, and general water supply conditions are much improved from recent years.

**Washington:** This water year began with much above normal rainfall. It took a while, but temperatures finally cooled off, and snow started to accumulate in earnest in early December, which seemed not to let up. Even though snow continues to pile up from valley floor to mountain top, the mountain snow is not keeping up with "normal" accumulation amounts.

**Wyoming:** The snow water equivalent across Wyoming is above median on January 3 at 109%. Monthly precipitation for the river basins varied between 79-247% of average for an overall average of 163%. The year-to-date precipitation average for Wyoming basins is now at 116%, varying between 75-172% of average. Forecast runoff ranges from 82-145% of average across the Wyoming basins for an overall average of 122%. Basin reservoir levels for Wyoming vary from 83-189% of average for an overall average of 123%.

## **For More Information**

The USDA-NRCS National Water and Climate Center website provides the latest available snowpack and water supply information. Please visit us at: <http://www.wcc.nrcs.usda.gov>