

Western Snowpack and Water Supply Conditions

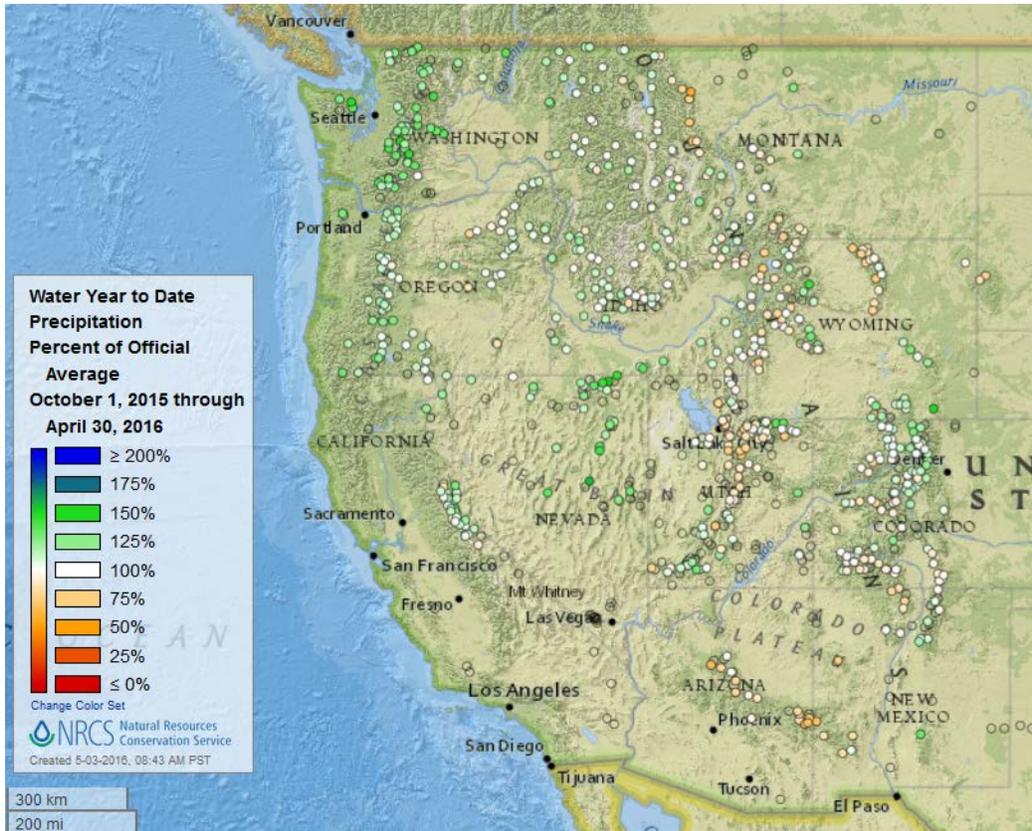
May 2016

Overview

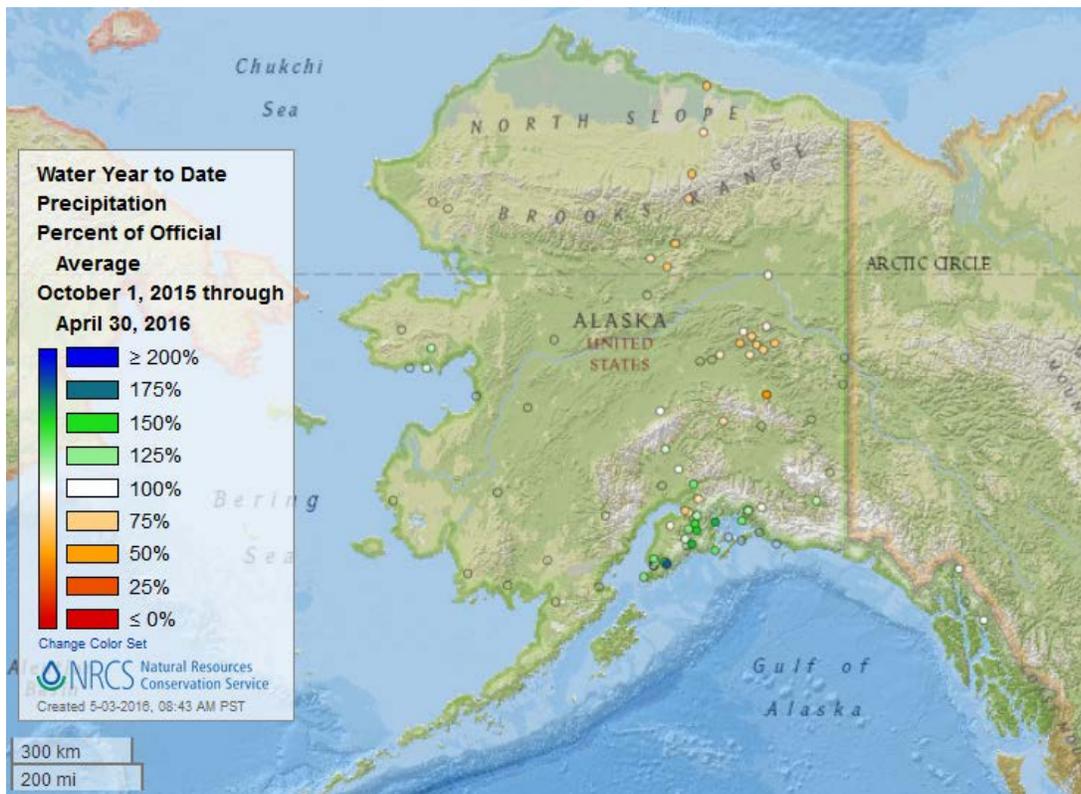
This report summarizes Snow Telemetry (SNOTEL) and snow course network data, streamflow forecasts, and reservoir storage data collected and analyzed by the [National Water and Climate Center](#).

Precipitation for the water year (beginning October 1, 2015) has been near or above normal in much of the West except for parts of Wyoming, northeastern Utah, a small area in northwestern Montana, and in the Southwest. **Snowpack** has decreased significantly since April 1 both in terms of actual amounts and percent of normal in most areas, reflecting strong and early snowmelt. **Streamflow forecasts** for the remainder of the snowmelt season are predominantly below normal, but there are some near normal locations scattered throughout the region, and above average streamflows are predicted for the central Rocky Mountain area. **Reservoir storage** is well below average in Arizona, Nevada, and New Mexico and near average elsewhere.

Water Year-To-Date Precipitation



Precipitation for the 2016 water year-to-date remains near to above average over much of the West. The main exceptions to this pattern, with below average precipitation, continue to be areas in northcentral Wyoming, northcentral Utah, a small area in northwest Montana, and the Southwest. (Click image to view map online.)



Precipitation in Alaska for the 2016 water year-to-date has been near to above average in the southcentral and coastal areas and below average in the Interior. (Click image to view map online.)

Note: These interactive maps can be accessed at the links in the figures and at: http://www.wcc.nrcs.usda.gov/snow/snow_map.html.

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

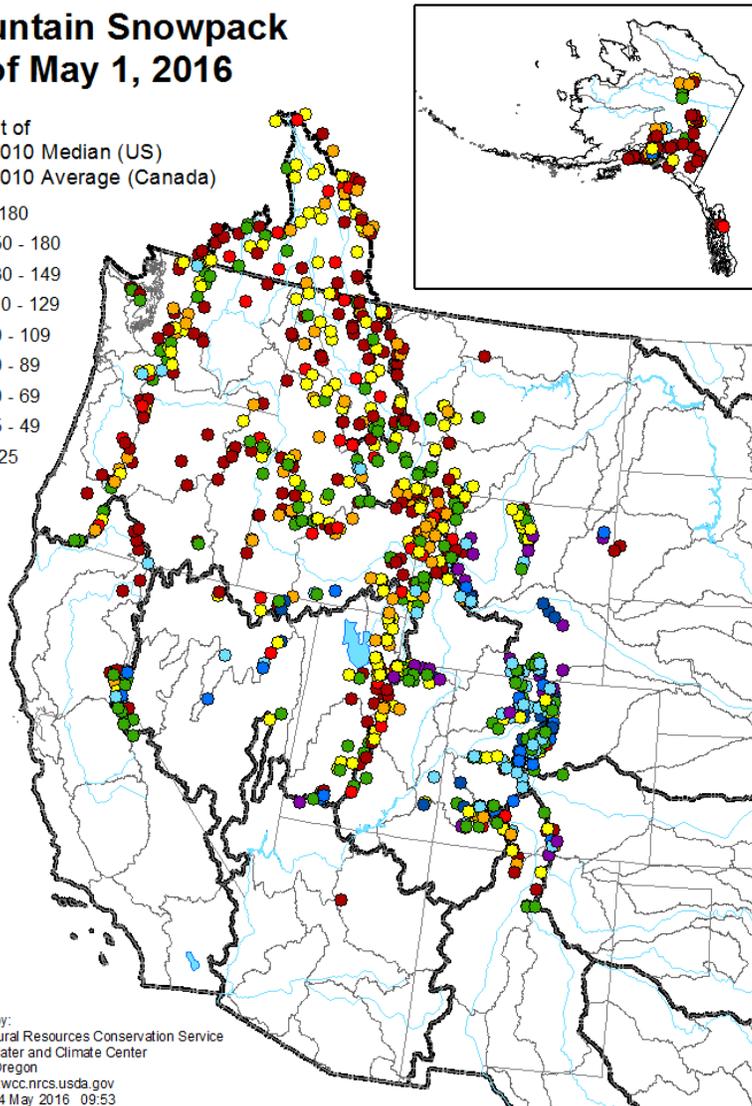
Snowpack

Mountain Snowpack as of May 1, 2016

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

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[Snowpack at SNOTEL sites and snow courses as of May 1](#) throughout the western U.S. and the Columbia Basin in Canada reflects the substantial snowmelt that occurred region-wide during the month of April.

Most areas saw major decreases in snowpack during April and are now below normal. The notable exceptions to this that still have above normal snowpack include the Rocky Mountains of northern Colorado and western Wyoming, while the central Sierra in California remains near normal. Elsewhere, snow is generally well below normal or completely melted out.

Snowpack in Alaska is now well below normal throughout the state.

Note: Current snowpack values are available via the interactive map at: http://www.wcc.nrcs.usda.gov/snow/snow_map.html.

Additional 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>

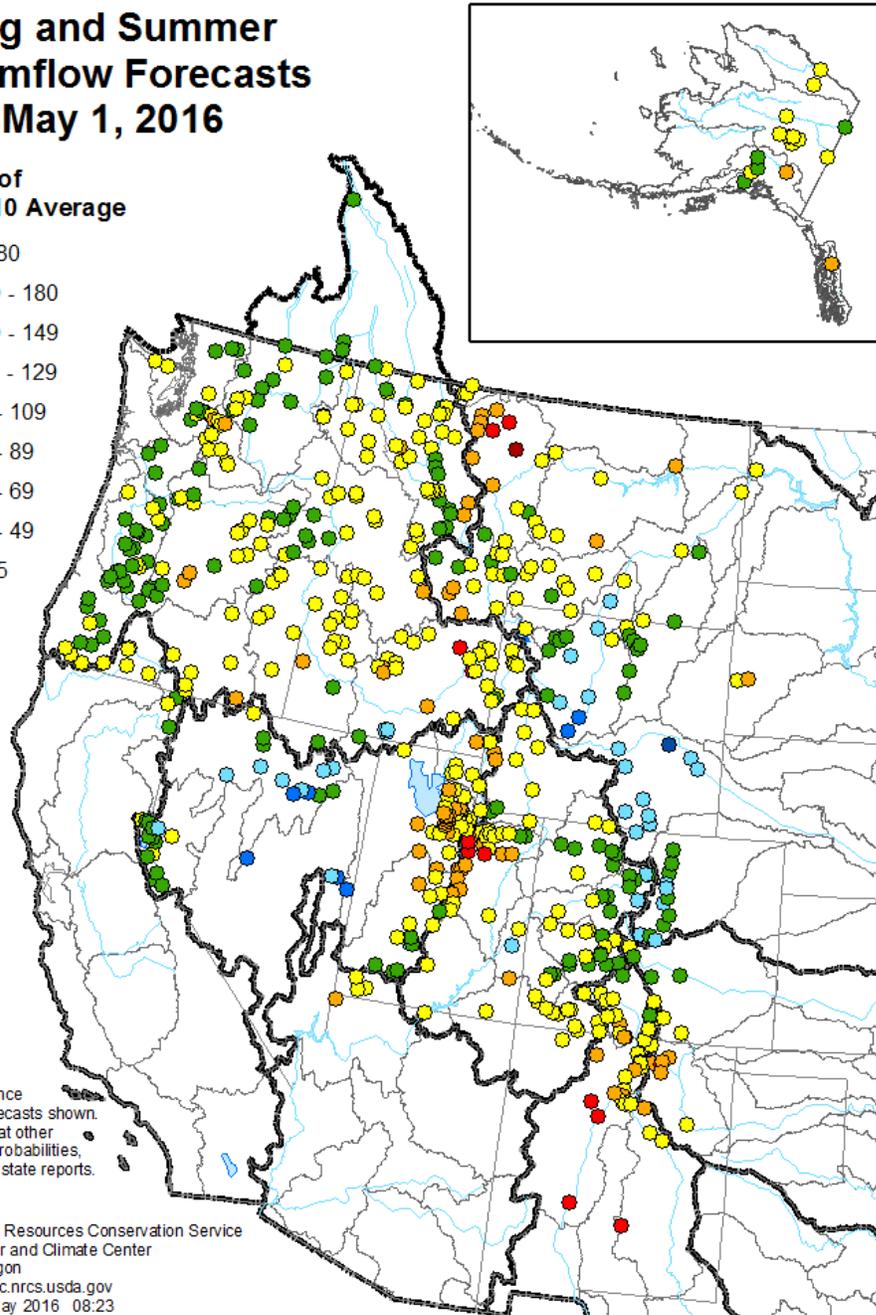
Streamflow Forecasts

[Streamflow forecasts](#) for the remainder of the snowmelt season (May onward) are predominantly below normal, but there is a notable number of rivers interspersed throughout the region expected to be near normal. The central Rockies in Colorado and Wyoming are the exception to this picture, where above normal streamflows are expected. Very low streamflows are predicted in northwestern Montana, central Utah, and New Mexico. Elsewhere in the Southwest, forecasts are not made in May because snowmelt is typically over. Alaska's outlook is predominantly near or somewhat below normal.

Spring and Summer Streamflow Forecasts as of May 1, 2016

Percent of 1981-2010 Average

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



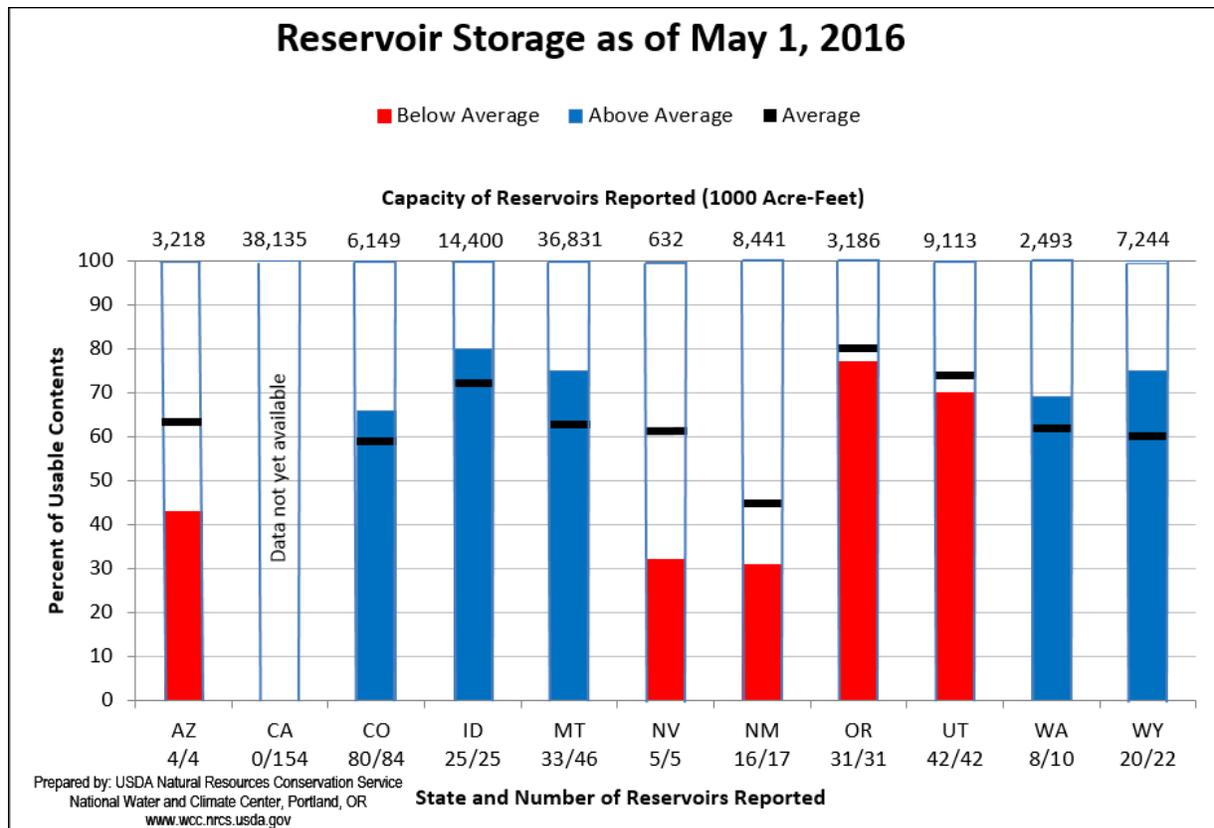
Trends in streamflow forecasts in basins for which daily water supply forecast models are available at: http://www.wcc.nrcs.usda.gov/wsf/daily_forecasts.html

Reservoir Storage

[Reservoir levels](#) are significantly below average in Arizona, Nevada, and New Mexico. Elsewhere, levels are near average, with Montana and Wyoming being a bit above average.

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: Another month of above normal temperatures has contributed to the early melt out of snowpacks in many Alaska basins. Most basins now have below half normal measured snowpack, though snowpack remains more robust in the upper mountains.

Arizona: No report is published in May. Reports for previous months are available at the link for the state name.

California: The total amount of storage in major reservoirs statewide is approximately 89% of normal for this time of year. The reservoirs in the northern part of the state, such as Oroville and Shasta, are near capacity, while the reservoirs in the central and southern parts of the state tend to be still below normal. The same trend holds true with the snowpack. Currently, the statewide snowpack is at 59% of average, with higher amounts in the northern part of the Sierras and lower amounts in the southern part.

Colorado: Much needed precipitation fell during April, especially in the southern mountains where it was needed most. April was the first month since December to receive above average precipitation. Similarly, snowpack made gains in the eastern and northern mountains. Overall water supply prospects are much more favorable this year as compared to last year at this time.

Idaho: Unusually warm and dry conditions across most the state in April accelerated the seasonal snowmelt and runoff process about two weeks earlier than normal. The snowpack prior to the warmup reached normal and above normal amounts at their peaks, which would indicate an overall adequate water supply. However, the accelerated melt is producing earlier peak flows and will lead to an earlier return to low flow conditions.

Montana: Snowpack peaked near or slightly below normal in most areas during the first week of April, one to three weeks earlier than average. Periods of high pressure ushered in abundant sunshine with well above average, and even some record high, temperatures, causing a rapid transition to snowmelt in most river basins.

Nevada: Accelerated snowmelt during most of April resulted in the loss of about half of the snow measured on April 1. Cool temperatures and new snow at the end of April helped bring snow amounts back in line with the long-term median for May 1. Streamflow forecasts range from 75-136% of average across the region. Nevada's surface water supply is expected to be better than in recent years, but irrigation shortages are still likely for many agricultural areas.

New Mexico:

Oregon: Record breaking temperatures in April took their toll on the state's May 1 snowpack, which is now well below normal for most sites. Nine SNOTEL sites experienced the most April snowmelt on record, and others neared record loss. In many cases, snow monitoring sites lost up to 4 feet of snow in one month. Early and rapid snowmelt led to above normal streamflows and earlier than normal peak flows. Many reservoirs were able to greatly increase their storage volumes and provide assurance of water supplies for users with access to reservoir water. However, water users who rely on direct streamflow diversions for their water supplies may likely observe below normal streamflows this spring and summer, especially in parts of southern and southeastern Oregon.

Utah: Snowpack is rapidly melting with normally increasing streamflow response. Snowpack conditions are 2 to 5 times higher than last year, and reservoir storage is at 70% of capacity. Overall water supply conditions are below to near normal but much improved over those of the past 4 years.

Washington: Record high temperatures in April rocked not only Washington but the whole Pacific Northwest. With snowpack already on the verge of melt, the heat served as the proverbial "straw that broke the camel's back". Over 80% of all SNOTEL sites with at least 15 years of data set new melt rate records, and the rest came in 2nd. During two separate high pressure weather systems in April, SNOTEL experienced minimum daily temperatures exceeding 20 degrees above normal. Due to the rapid snow melt, runoff was above normal, but rivers and streams were able to contain it without flooding.

Wyoming: May 1 snowpack across the state is near median at 101%. Basin precipitation during April was 59-162% of average for a statewide average of 121%. The year-to-date precipitation statewide average is now at 99%, varying from 59-162% of average across the river basins. Forecasted runoff varies from 60-110% of average across the basins for an overall average of 94%. Reservoir contents statewide are at 127% of average.

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>