United States Department of Agriculture

Western Snowpack and Water Supply Conditions

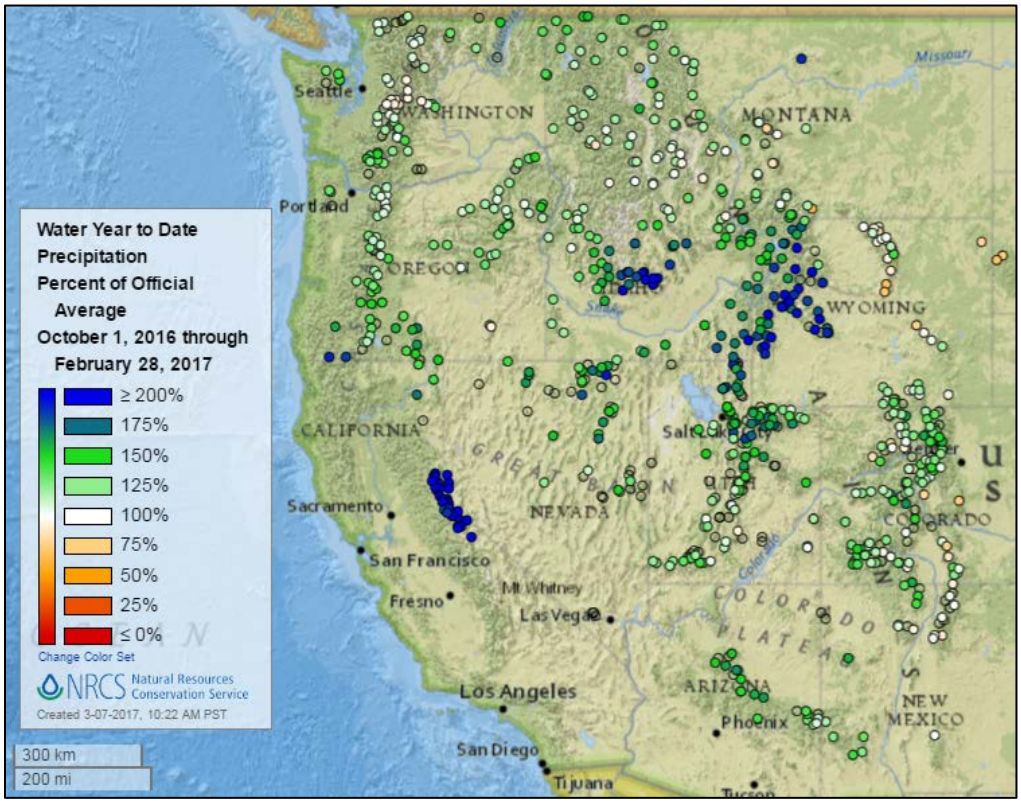
March 2017

Overview

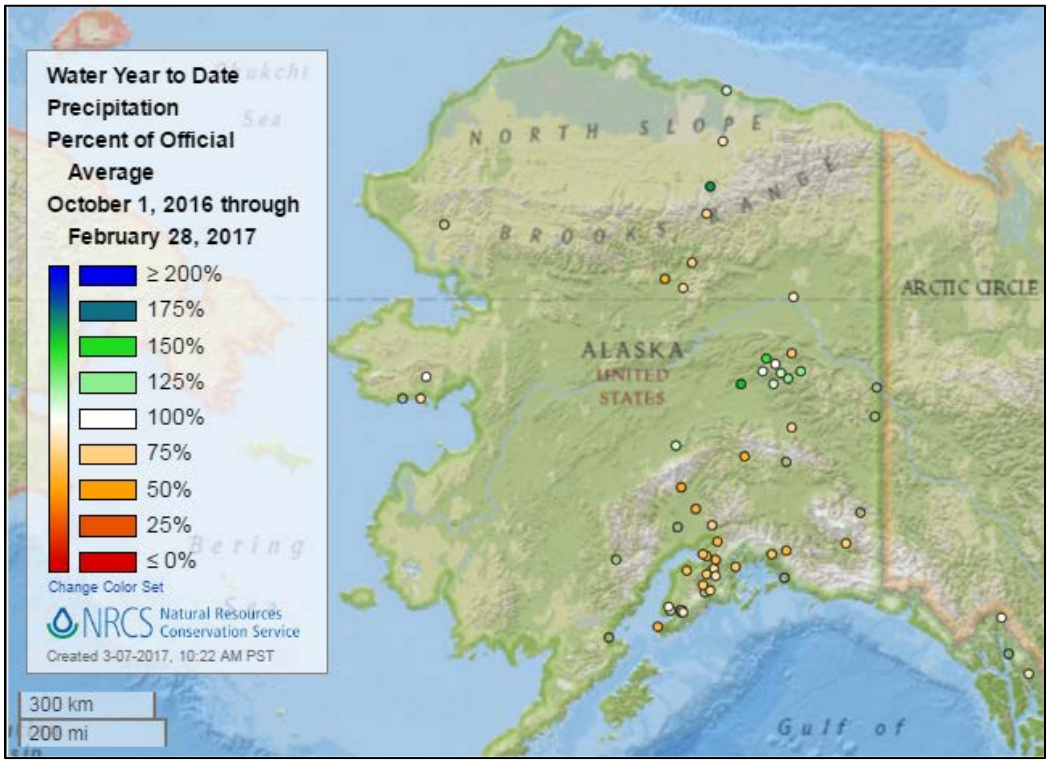
This report summarizes Snow Telemetry (SNOTEL) and snow course network data, streamflow forecasts, and reservoir storage data collected and analyzed by the National Water and Climate Center.

Precipitation thus far in the water year (beginning October 1, 2016) has been predominantly near to well above average throughout the West except in Alaska, where much of the state has been below average. **Snowpack** shows a distinct contrast between the northern portion of the region (including Alaska), being near to somewhat below median versus well above median over the rest of the West. **Streamflow forecasts** reflect the snowpack pattern, with near or somewhat below average streamflow expected in the northern part (including Alaska) and well above average streamflow in the middle and southern parts of the West. **Reservoir storage** has improved since last month and is currently above average in Montana and Wyoming, below average in Nevada, New Mexico, and Washington, and near average elsewhere.

Water Year-To-Date Precipitation



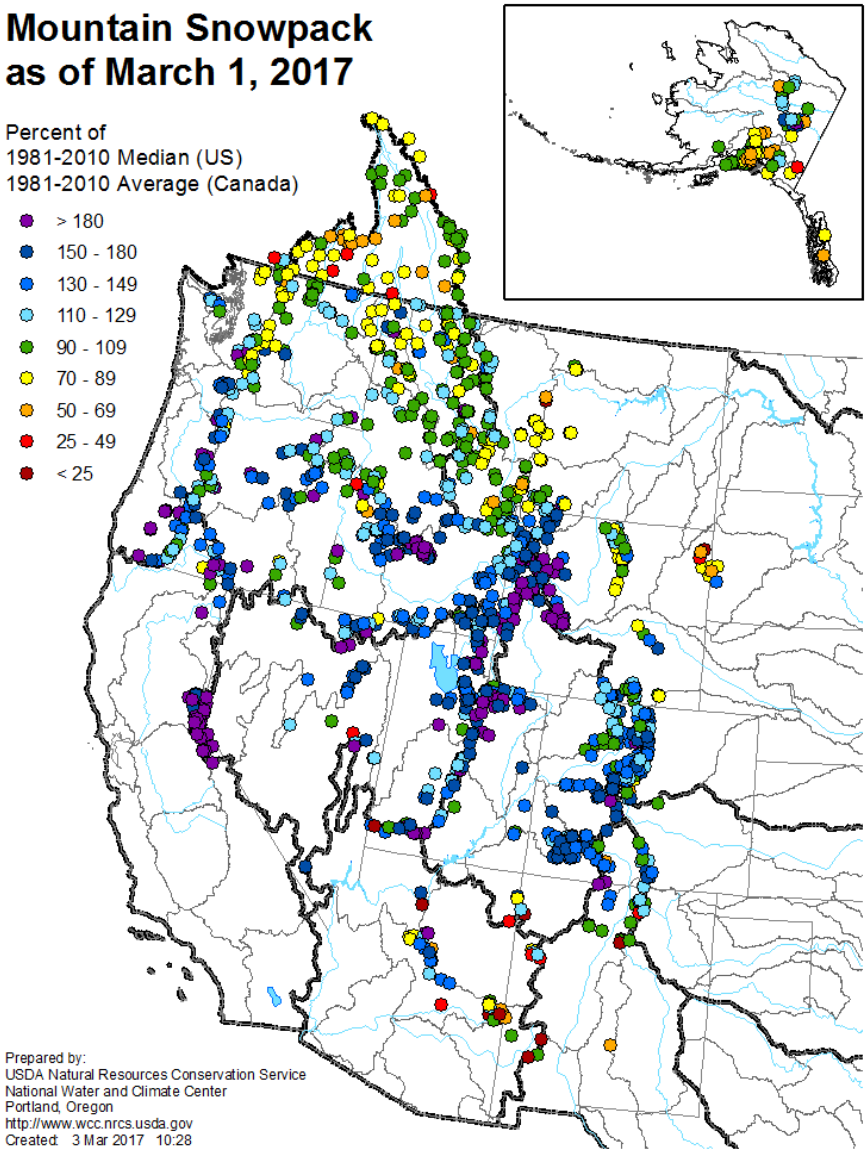
Precipitation for the 2017 water year-to-date has been near to well above average over the entire West. Particularly wet areas include the Sierra in California, central Idaho, and western Wyoming. While a few areas remain near average, the overall pattern has been very wet, with many stations reporting record amounts of precipitation.



Precipitation in Alaska for the 2017 water year-to-date remains near to well below average at most sites throughout the state except at a group of sites in the Interior near Fairbanks, which are near or somewhat above average.

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

Snowpack



Snowpack at SNOTEL sites and snow courses as of March 1 in the western U.S. and the Columbia Basin in Canada experienced marked increases from last month but continued to show a distinct contrast between the northern portion versus the rest of the region.

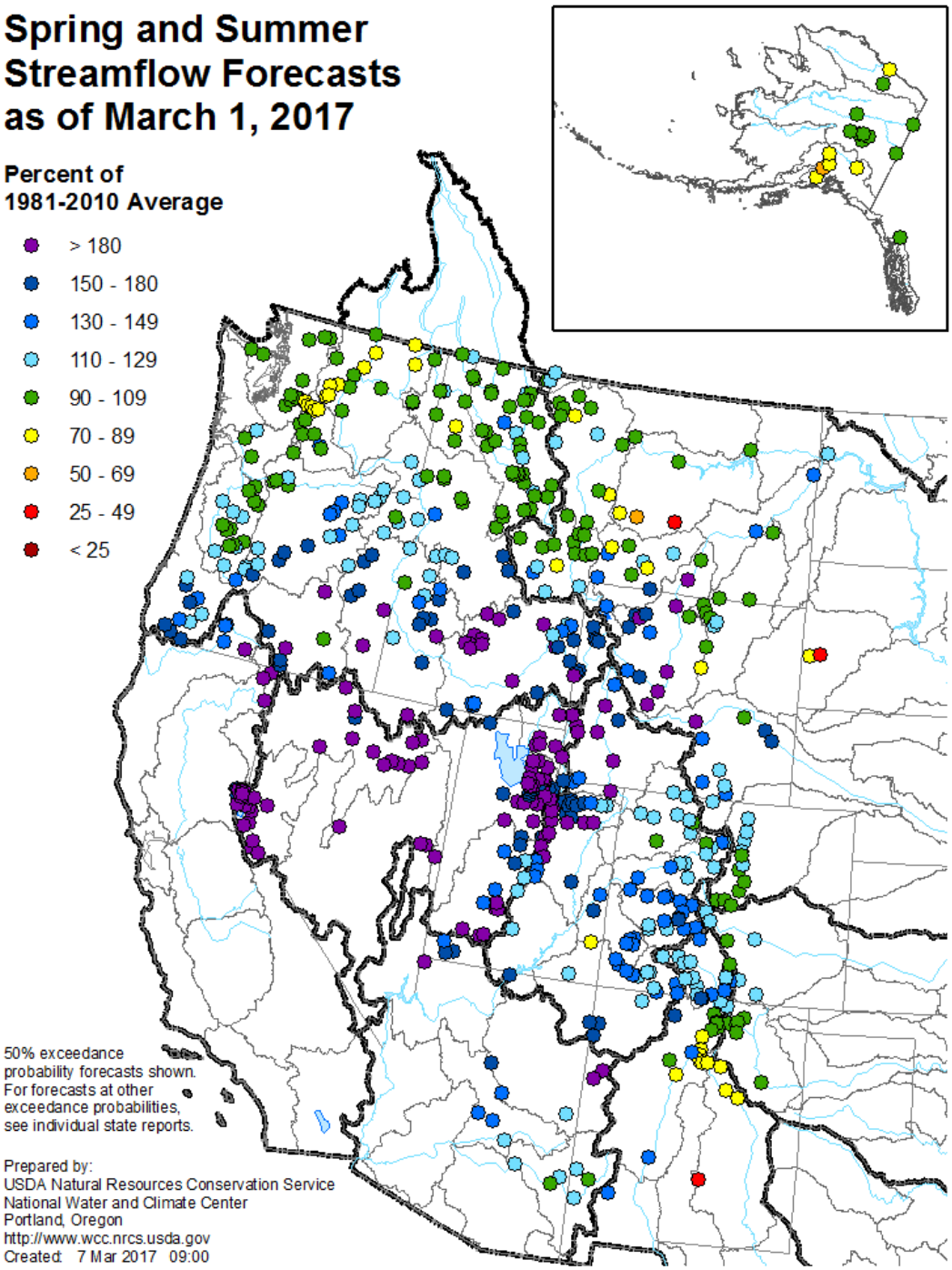
Snowpack is near or somewhat below median at most sites in Washington, northern Idaho, Montana, northern Wyoming, and British Columbia. Elsewhere, it is well above median except for a few sites in Arizona and New Mexico. The month of February saw large snow accumulations throughout the central and southern parts of the region, with many sites now at record or near-record levels.

In Alaska, snowpack remains near or below median at most sites except in the Interior, which is predominantly above median.

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 reflect the contrast between regions shown by the snowpack. The northern part, including Washington, northern Idaho, Montana, and northern Wyoming, is expecting near to somewhat below average streamflow, whereas the middle and southern parts of the West are expecting well above average streamflow. In Alaska, the Southcentral area is expecting below average streamflow, whereas the Interior and Panhandle areas are near average.



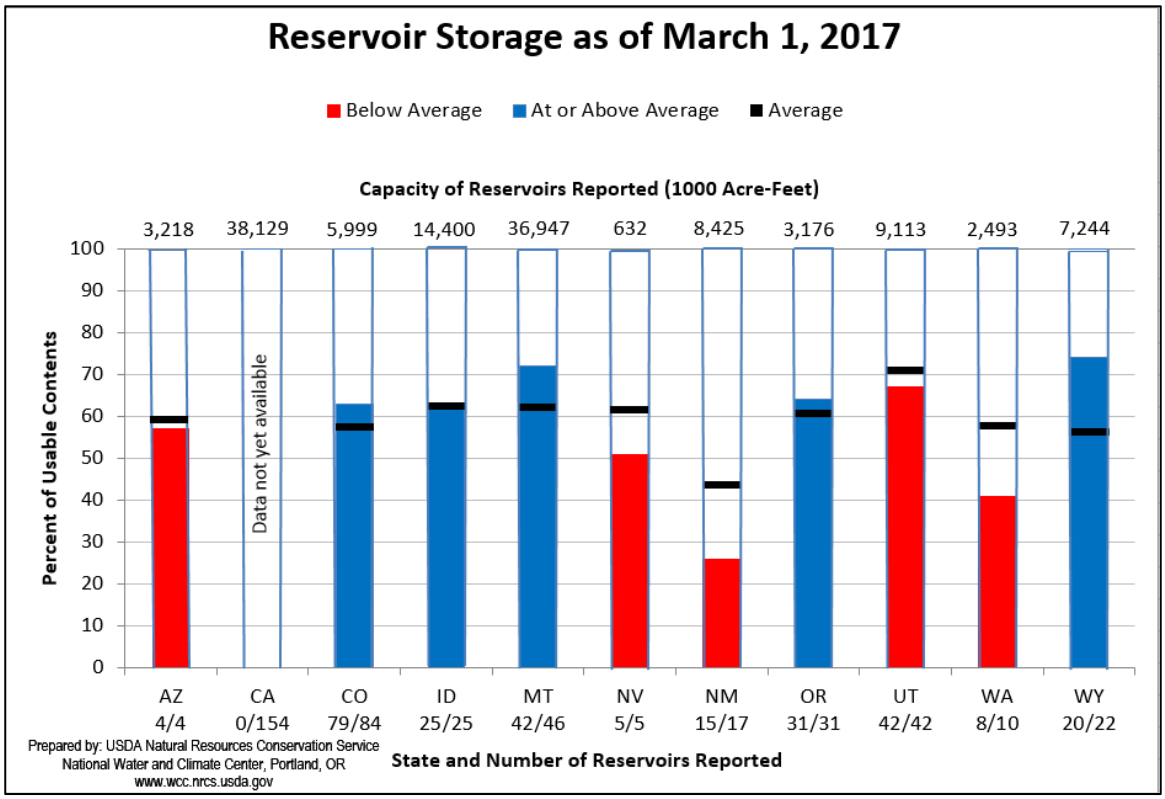
Trends in streamflow forecasts in basins for which daily water supply forecast models are available can be followed at: https://www.wcc.nrcs.usda.gov/wsf/daily_forecasts.html

Reservoir Storage

Reservoir levels have generally increased since last month. They are above average in Montana and Wyoming, below average in Nevada, New Mexico, and Washington, and near average elsewhere.

Further data and charts are available at: https://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: Much of northern Alaska received above normal precipitation for the month of February, resulting in near normal or above normal snowpacks. Precipitation was more spotty in Southcentral Alaska, where snowpacks generally remain below normal in the mountains and near or above normal in the lowlands. The Iditarod Sled Dog Race start was moved north from Willow to Fairbanks to avoid treacherous trail conditions caused by low snow conditions where the traditional trail passes through the Alaska Range. Snowpacks in Southeast Alaska remain below normal, though more robust than the previous two years at measurement sites.

Arizona: February precipitation was above average. Much of the remaining snowpack will melt during the next month as temperatures warm up. Many Arizona streams are already roaring at peak flows.

California: February yielded above average rainfall and snowfall to most parts of the state. The snowpack in all parts of the Sierras continued to increase, and rainfall has filled most storage reservoirs to near capacity. Rainfall on soil that was already saturated from January's storms contributed to high streamflows and localized flooding in the Central Valley and other low areas.

Colorado:

Idaho: Precipitation during February was 150% to 500% of average across the state. The central and southeastern mountains received the most February precipitation since at least the early 1980s, which is largely when the Idaho SNOTEL network was established. In these same regions, mountain snowpack is also at or near record levels. As a result, March 1 streamflow forecast volumes range from 150% to 300% of average for the majority of the southern half of the state, while forecast volumes are near average for the northern half.

Montana: A return to more favorable weather patterns dropped significant amounts of snow during the first two weeks of February. Continued snowfall in most basins has improved snowpack totals to near or above normal for March 1.

Nevada: Adequate water supplies are a sure thing for 2017. Snowpacks are among the best ever measured in the eastern Sierra and far above normal across the rest of the state. This incredible water year has erased Nevada's drought status and switched concerns to springtime flooding.

New Mexico:

Oregon: Powerful February storm systems dumped several feet of new snow in the mountains and brought record high precipitation to Oregon. More than double the normal snow accumulation was observed at numerous measurement sites, leaving the statewide snowpack at 131% of normal. The last time the entire state had such a well-stocked supply of snow was in 2008, when it was 157% of normal. Multiple atmospheric river events caused rapidly rising streams, resulting in flooding and landslides in western Oregon and some doses of rain-on-snow around the state. Streamflow forecasts continue to predict well above average spring and summer streamflows. However, water users should be aware that temperatures later in the spring and weather patterns over the next few months will play a major role in shaping the final snowpack season and water supply picture. As of the end of February, there is wide variability in reservoir storage throughout the state as reservoir operators manage the need for flood control space and storage for summer water supplies.

Utah: Snowpacks in Utah are exceptionally high and, given average conditions from here out, northern basins in the state will be at or close to record high values. Soil moisture conditions are also either above average or close to maximum values. All this will combine to produce well above normal streamflow this runoff season.

Washington: The state went from one of the driest months in January to one of the wettest in February. Daily mountain rainfall records were shattered at many SNOTEL sites in early February. The March 1 statewide SNOTEL snowpack readings were 108% of median, a marked improvement over last month.

Wyoming: The snow water equivalent statewide is above the median on March 1 at 133%. The year-to-date precipitation for Wyoming basins is now at 135%, varying from 72-199% of average. Monthly precipitation for the basins varied from 51-309% of average for an overall average of 171%. Basin reservoir levels vary from 0-188% of average for an overall state average of 126%. Forecast runoff varies from 50-226% of average across the Wyoming basins for an overall average of 167%.

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: https://www.wcc.nrcs.usda.gov