

Natural Resources Conservation Service P.O. Box 2890 Washington, D.C. 20013

#### Western Snowpack and Water Supply Conditions April 2015

#### **Overview**

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

Precipitation during March was well below normal throughout almost the entire West, with the exception of Interior Alaska. Precipitation thus far in the water year (beginning October 1, 2014) is now below normal over most of the West except for some northwestern areas and coastal Alaska. Snowpack has declined significantly since last month throughout the West due to the warm and dry March. Only high-elevation areas in the Rocky Mountains and Interior Alaska retain somewhat near normal snowpack.
Streamflow forecasts have dropped since last month due to a lack of snow accumulation during March and an early snowmelt, with most regions now expecting below normal streamflow. Reservoir storage is currently below normal in the Southwest and Nevada, with near to above normal storage elsewhere.

# **March Precipitation**



<u>Precipitation during March</u> was well below normal throughout essentially the entire West. The only exceptions to this were a few small areas of near or above normal precipitation in the far northern and southern extremities of the region.



#### Precipitation in Alaska during March

was below normal in the southcentral part of the state and near to above normal in the Interior and the Panhandle.

# Water Year-To-Date Precipitation



#### Precipitation for the 2015 water year-

<u>to-date</u> is now below normal over most of the West except for some northwestern areas. The dry March has significantly affected this picture since a month ago, when far more of the West was near normal.



Precipitation in Alaska for the 2015 water year-todate retains a similar pattern as last month, with most of the Interior being below normal and the south coastal and Panhandle areas being near normal.

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

#### Snowpack



Snowpack at SNOTEL sites and snow courses as of April 1 in the western U.S. and the Columbia Basin in Canada has declined significantly since last month.

Snowmelt has begun early this year throughout most of the West, leading to significant snowpack losses and corresponding increases in streamflow during March.

Although a major storm during the first few days of March struck areas of Utah, Colorado, Arizona, and New Mexico, the resulting snowpack accumulations have since melted.

Western parts of the region still have record-breaking low snowpack, as they have had all winter. Snowpack is nearly gone in Nevada, Utah, Arizona, and much of New Mexico. Only areas of high elevation along the crest of the Rockies – in Colorado, Wyoming, Montana, and British Columbia – retain snowpack in the near normal or only somewhat below normal categories.

Snowpack in Alaska remains below normal in coastal areas and near normal in the Interior.

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

### **Streamflow Forecasts**

<u>Streamflow forecasts</u> are moderately to extremely below normal for most of the West. Only a few areas in the Rocky Mountains and Interior Alaska are near normal. Forecasts have dropped significantly since last month. This is due to the warm and dry March, which has led not only to reduced snowpack accumulation but also to early melt. With snowpack melting and streamflow rising already in March, less snowmelt remains for the usual water supply forecast periods beginning in April.



Trends in streamflow forecasts in basins for which daily water supply forecast models are available can be followed at: <u>http://www.wcc.nrcs.usda.gov/wsf/daily\_forecasts.html</u>

## **Reservoir Storage**

<u>Reservoir storage levels</u> are well below average in the Southwest and Nevada, while they are near to above average elsewhere in the West.

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

<u>Alaska</u>: The snowpack across Alaska is variable. March storms brought increases to the snowpack in parts of western and Interior Alaska. However, above normal temperatures have helped contribute to early melting in other regions of the state.

<u>Arizona</u>: March was exceptionally warm and dry with only the Verde Basin receiving above normal precipitation. As a result, the snowpack has melted out about a month earlier than normal, and streamflow forecasts are further reduced.

<u>California</u>: Snowpack is at record low levels, which is relied upon as the primary source of the summer water supply. With very little snowmelt runoff, the current reservoir contents will essentially be the amount available for use this summer. The major storage reservoirs for California are at roughly 50% of capacity with very little opportunity to increase.

<u>Colorado</u>: The snowpack has prematurely transitioned to early spring-like conditions, with lower and some mid-elevation snowpacks already seeing significant melt. Mountain precipitation during March was very low -- near 65% of normal. This reinforced the dry conditions from January. Streamflow outlooks have fallen since January 1, with a significant decrease since the last outlook on March 1.

<u>Idaho</u>: Warm, dry conditions dominated the March weather scene, which greatly increased the probability of water shortages or marginally adequate water supplies this summer.

<u>Montana</u>: This is the third, straight month of declining basin snowpack percentages due to well above average temperatures and below normal snowfall. As a result, spring and summer streamflow forecasts continue to drop.

<u>Nevada</u>: April 1 snowpack was the lowest ever recorded at nearly every measuring site statewide (including three sites with over 100 years of data). Water year precipitation is also nearing record low amounts. Expect record low streamflow volumes this summer.

<u>New Mexico:</u> The month of March provided little in the way of drought relief. Inconsistent winter weather patterns have left water and snow conditions well below normal. Above normal temperatures have persisted across the state, deteriorating the remaining snow levels and further reducing any hope for a normal spring snowmelt and runoff.

<u>Oregon:</u> As of April 1, 76% of Oregon's long-term snow monitoring sites were at the lowest snowpack levels on record. In a typical year, most sites would be near their peak snowpack at this point in the season. This year, more than half of all snowpack measurements across the state recorded bare ground on April 1. Snowpacks across Oregon peaked 40 to 90% below typical peak levels this winter, which will lead to reduced water supplies in the coming summer.

<u>Utah:</u> Utah water supply conditions are in the bottom 5% with about 35 SNOTEL sites at period of record low values and an additional 15 in second place. 2015 will be associated with other notable drought years such as 1977 and 1934.

<u>Washington</u>: Extremely low snowpack continues across the state. Combined with an early melt during a warm March, streamflows for the spring and summer are expected to be correspondingly low.

Wyoming: Snowpack and streamflow forecasts are below normal throughout the state.

#### **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: <u>http://www.wcc.nrcs.usda.gov</u>