



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

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Date: **May 10, 2011**

Subject: **May 1, 2011 Western Snowpack Conditions and Water Supply Forecasts**

The following information is provided for your use in describing western climate and water supply conditions as of May 1, 2011.

## **OVERVIEW**

A weakening "La Niña" is expected to dissipate by summer. However, its impact of excessive moisture during April has been noteworthy across much of the Pacific Northwest, Northern Rockies, Sierra Nevada, and northern and western Alaska. Reservoir levels are near normal over most of the West. New Mexico as would be expected with extreme deficits in mountain snowpack has the lowest reserves while Idaho's storage is current low because of the late onset of spring melt.

Since the start of the 2011 Water Year in October, abundant precipitation has fallen over all but the southeastern half of Arizona, southern and eastern Colorado, and all of New Mexico. This has translated into above normal spring and summer forecast stream flows for all but the extreme Southwest.

## **SNOWPACK**

May opened with the driest region clearly over the Southwest where snow-melt is complete (Fig. 1). Conditions continued to improve over western half of the West (west of the Continental Divide) but also over the Eastern Slopes of the Northern and Central Rockies (Fig. 2). Southeastern Alaska including the Panhandle Region experienced heavy snow during April while the Interior of the state experienced a marked decrease.

A map containing a daily update of the westwide snowpack may be obtained from the following URL - <http://www.wcc.nrcs.usda.gov/gis/snow.html>

## **SEASONAL PRECIPITATION**

In a typical La Niña winter, the Western States usually experience above normal precipitation north of latitude of 41°N and below normal south of 41°N. However, thus far during the 2011 Water Year, this La Niña has delivered excess moisture as far south of 37°N (Fig. 3). Perhaps this was caused by the combination of a cold phase Pacific Decadal Oscillation, and strong La Niña, and an early season negative phase North Atlantic Oscillation and Arctic Oscillation. Alaska's moisture surplus improves the further north one travels and this is typical of many La Niña events.

Monthly and seasonal precipitation maps are available from the following location - <http://www.wcc.nrcs.usda.gov/gis/precip.html> and <http://www.cbrfc.noaa.gov/wsups/westwide/westwide.cgi>

## SPRING AND SUMMER STREAMFLOW FORECASTS

The spring and summer streamflow forecasts as of May 1, 2011 are calling for above normal flows over all but the 4-Corners region, and most of Arizona, southern Colorado, and New Mexico (Fig. 4). Decreased flow forecasts are relegated to only a few isolated river basins across the West (Fig. 5). Specifically:

The additional list of above average streamflow forecasts is a long one: The Flathead River in Montana is forecasted to break the all time record runoff. The northern panhandle region of Idaho, the nearby Pend Oreille and Kootenai in northwestern Montana, and to the east in Montana, the Milk, Musselshell, Missouri, and Yellowstone headwaters. Working south, the Upper Snake headwaters are much above average, as is the Bear River in Utah/Idaho, the nearby Green River, the Bighorn headwaters in Wyoming, the Colorado River headwaters, the Yampa in western Colorado, the Duchesne in eastern Utah, and rivers in the Great Basins of Utah, Nevada, and California. In contrast, only in some areas of Colorado including the Arkansas, the Upper Rio Grande, the San Juan, and most streams in New Mexico and Arizona, is the snowmelt runoff forecasted to be below average.

State Basin Outlook Reports can be accessed at: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl> and in higher PDF resolution at:

[ftp://ftp-fc.sc.egov.usda.gov/OR/snow/watersupply/2011/WSOR\\_2011\\_May.pdf](ftp://ftp-fc.sc.egov.usda.gov/OR/snow/watersupply/2011/WSOR_2011_May.pdf) - **Oregon**  
<http://www.wcc.nrcs.usda.gov/cgibin/newbor.pl?state=nm&year=2011&month=5&format=html> – **New Mexico**  
<http://www.co.nrcs.usda.gov/snow/fcst/state/current/monthly/data/reportselection.html> - **Colorado**  
<ftp://ftp-fc.sc.egov.usda.gov/ID/snow/watersupply/bor/2011/borid511.pdf> - **Idaho**  
<ftp://ftp-fc.sc.egov.usda.gov/ID/snow/watersupply/bor/2011/borid511.pdf> - **Utah**

## RESERVOIR STORAGE

Statewide (average) reservoir levels (Fig. 6), shows most Western States near average capacity with the exception New Mexico and Idaho. Idaho's reservoirs are expected to gain storage during May and June when the abundant snowpack melts in earnest.

Reservoir operators have been cautioned to make room for the coming snowmelt in the wetter regions. In addition to supporting NRCS water supply forecasting, the NRCS SNOTEL monitoring network provides real-time hourly measurements of snowpack, precipitation, and temperature that assist the National Weather Service in flood forecasting, as well as the US Army Corps of Engineers and the US Bureau of Reclamation in reservoir management. The data from the SNOTEL monitoring network will be invaluable to these operating agencies as they manage the complex network of dams and reservoirs to control the upcoming high flows.

## FOR MORE INFORMATION

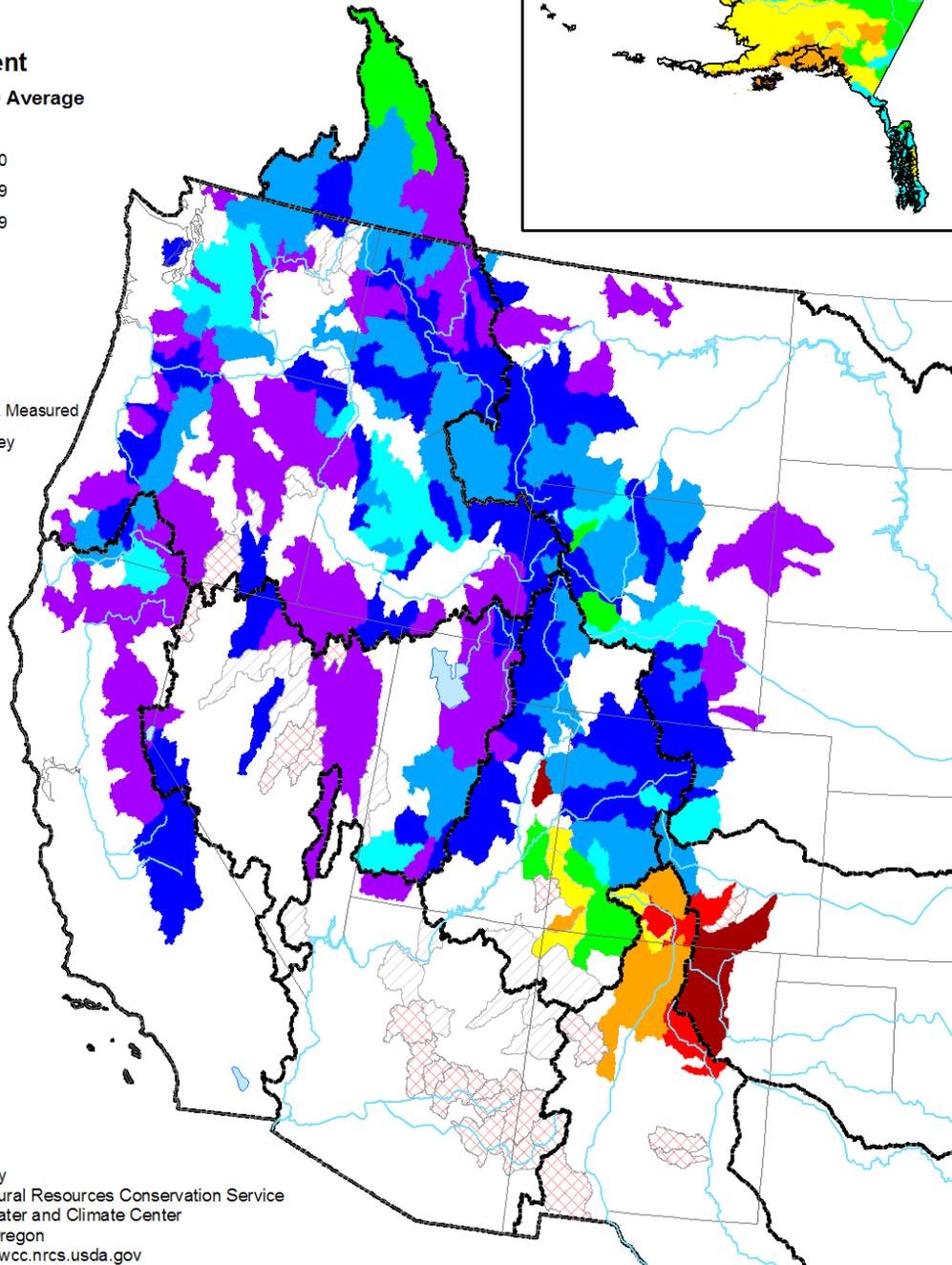
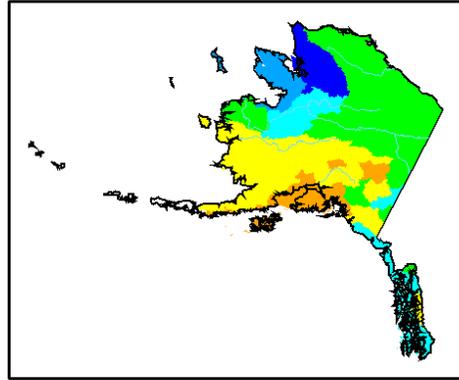
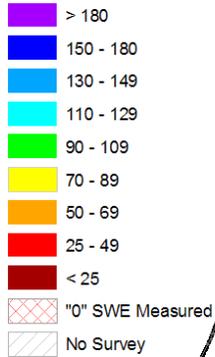
The National Water and Climate Center Homepage provides the latest available snowpack and water supply information. Please visit us at <http://www.wcc.nrcs.usda.gov>.

**Note:** Updates to all figures will be provided at a later date.

/s/  
Jeff Goebel  
Acting Director, Resource Inventory Division

# Mountain Snowpack as of May 1, 2011

Percent  
1971 to 2000 Average

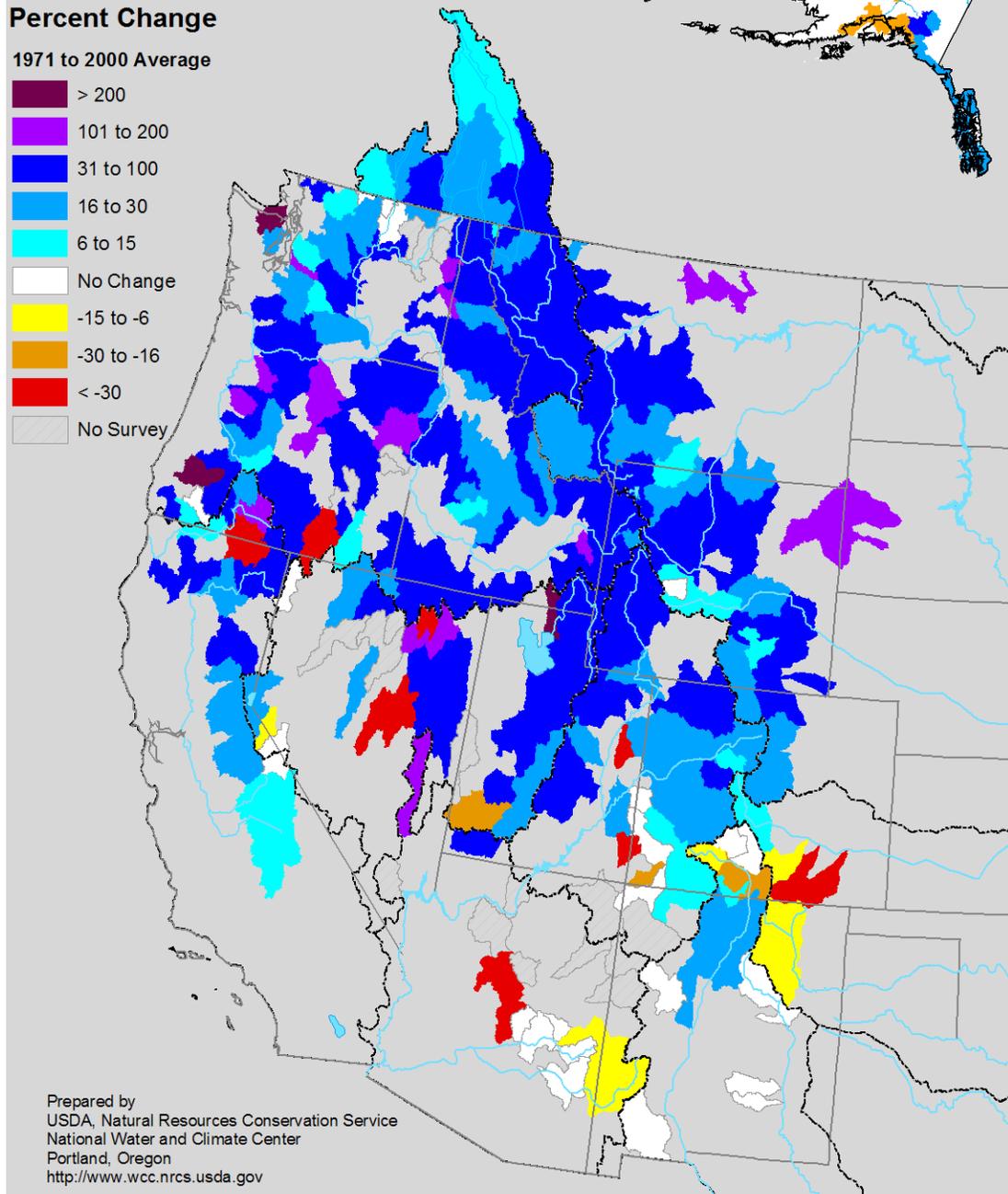


Prepared by  
USDA, Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

Fig. 1. Mountain Snowpack, May 1, 2011

<ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2011/snow1105.gif>

## Mountain Snowpack Change between April 1 and May 1

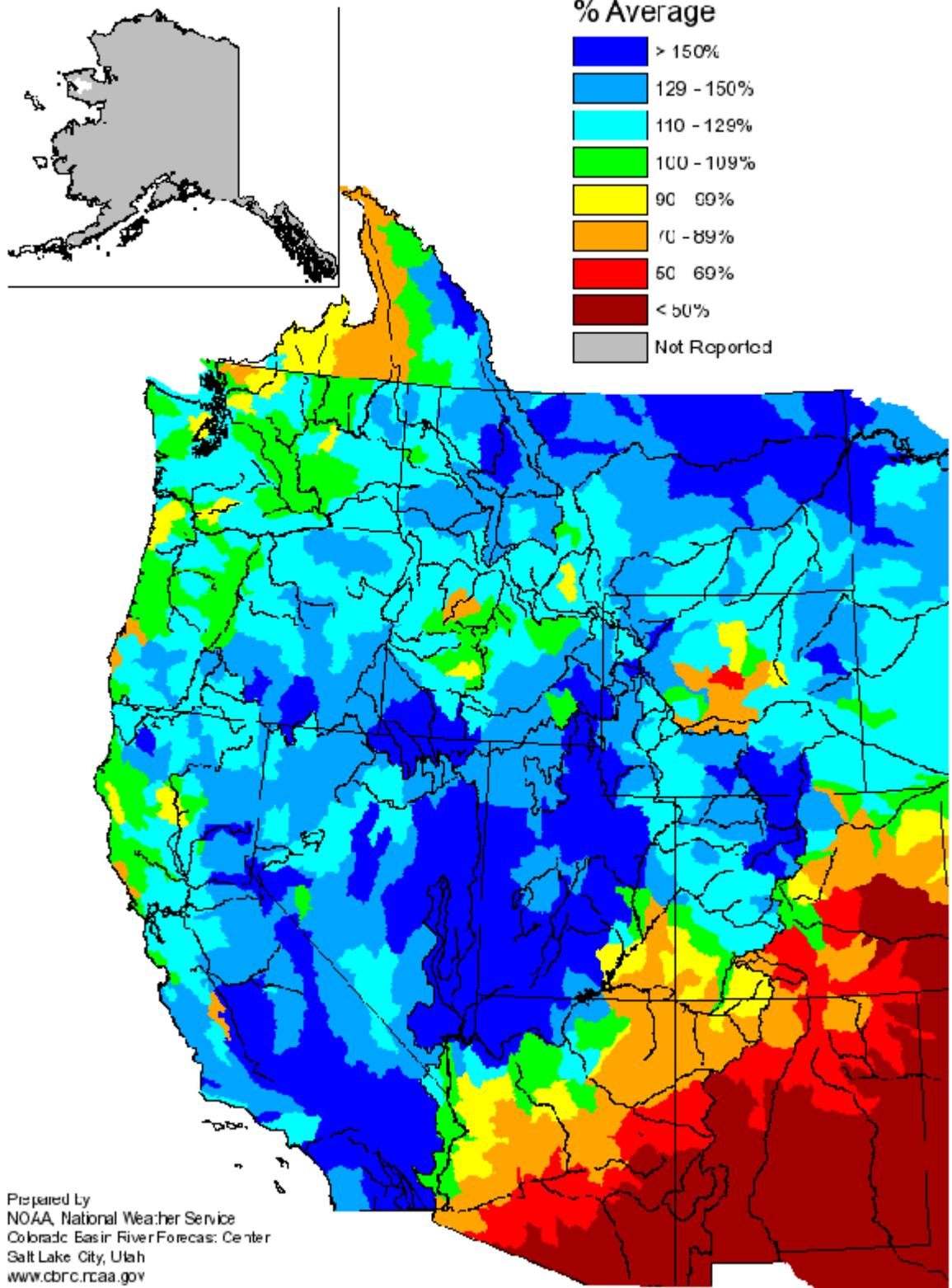


**Fig. 2. Mountain Snowpack Difference between, April 1 to May 1, 2011**

<ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2011/difsnow0511.gif>

# Seasonal Precipitation, October 2010 - April 2011

(Averaged by Hydrologic Unit)

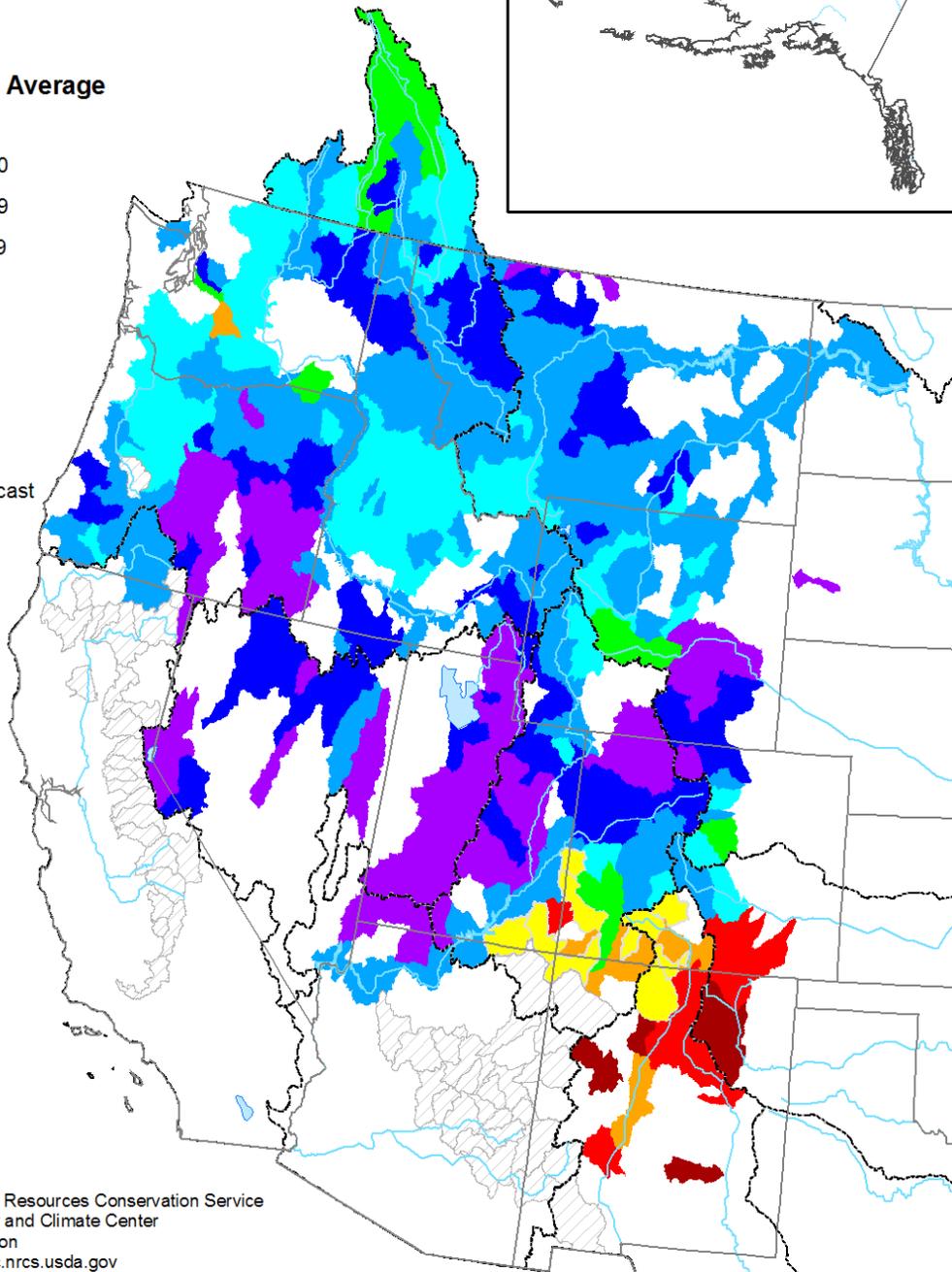
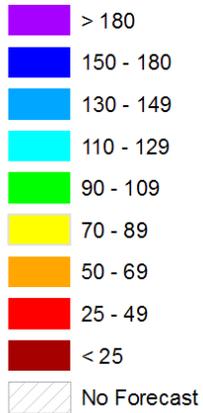


**Figure 3. Seasonal Precipitation, October 1, 2010 to April 2011.**

Ref: <http://www.cbrfc.noaa.gov/wsup/westwide/precip/westS201104.png>

### Spring and Summer Streamflow Forecasts as of May 1, 2011

Percent  
1971 to 2000 Average

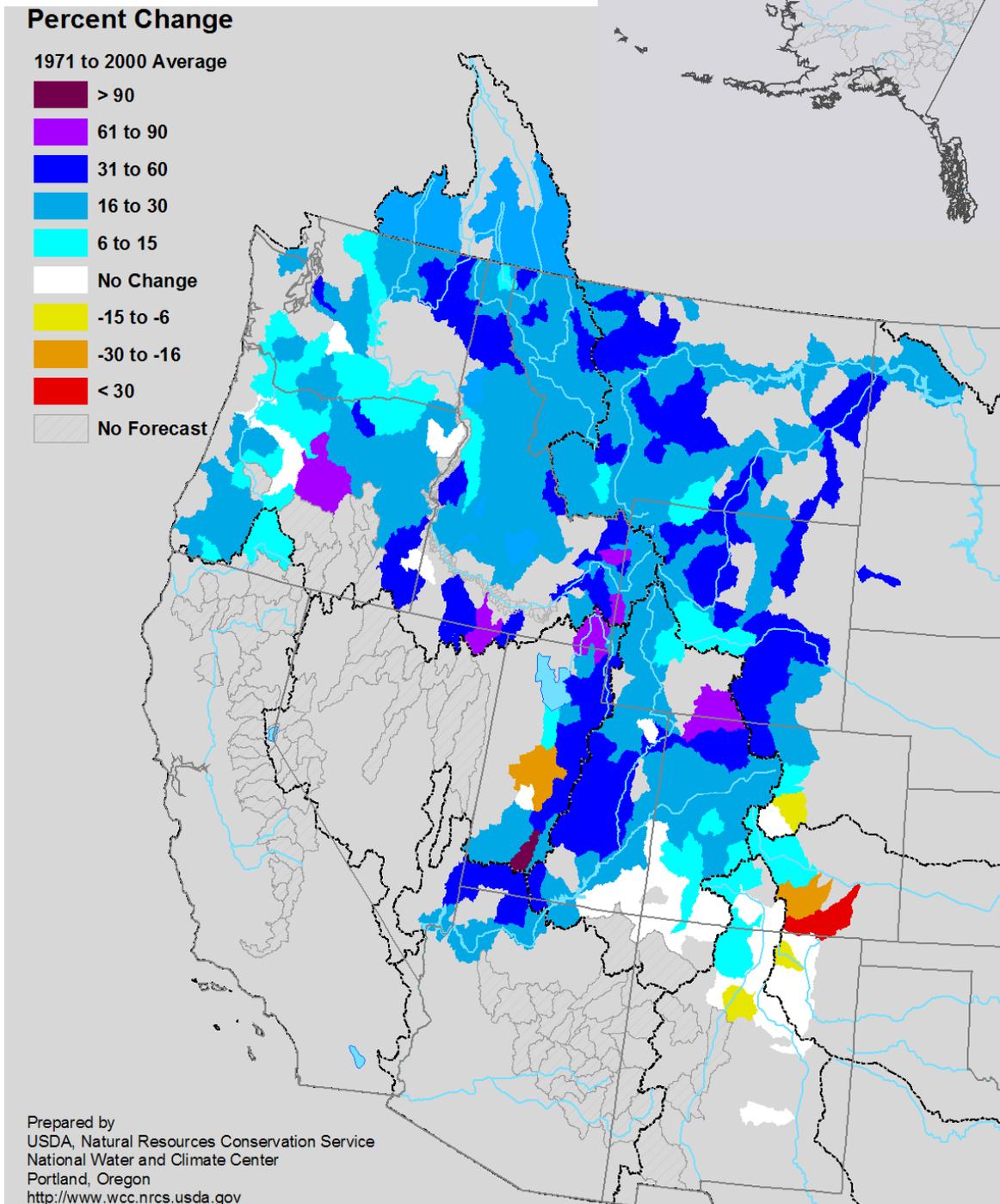


Prepared by  
USDA, Natural Resources Conservation Service  
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Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

**Figure 4. Seasonal Water Supply Forecasts - May 1, 2011**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2011/strm1105.gif>

### Change in Spring and Summer Streamflow Forecasts from April 1 to May 1, 2011

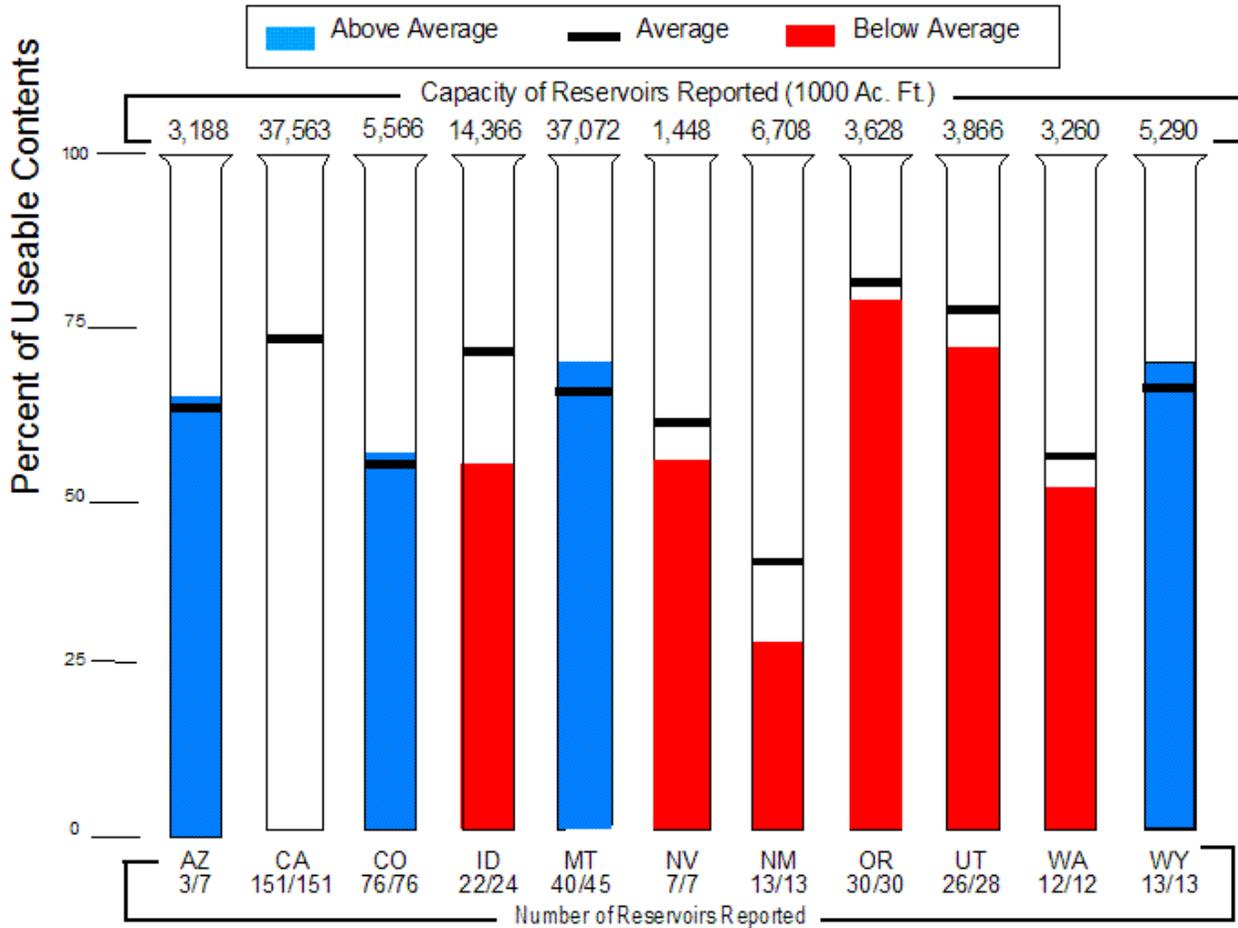


**Fig. 5. Change in streamflow forecast between April 1 and May 1, 2011.**

**Note: California will be available later.**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2011/difstrm0511.gif>

## Reservoir Storage as of May 1, 2011



Prepared by: USDA, Natural Resources Conservation Service, National Water and Climate Center, Portland, OR  
<http://www.wcc.nrcs.usda.gov>

**Figure 6. Reservoir Storage - May 1, 2011. California data will be available soon.**

<http://www.wcc.nrcs.usda.gov/cgi-bin/resvgrph2.pl?area=west&year=2011&month=05>