United States Department of Agriculture

NRCS

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

Date: **April 18, 2011**

Subject: **April 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 April 1, 2011.

OVERVIEW

A moderate "La Niña" is declining in strengthen and is expected to dissipate by summer. However, its impact of excessive moisture during March has been noteworthy across much of the Pacific Northwest, Northern Rockies, Sierra Nevada, and northern and western Alaska. Reservoir levels are below normal over New Mexico as would be expected with extreme deficits in mountain snowpack. What is somewhat surprising is that Nevada, Oregon, Utah, and Idaho are still below average levels despite relatively high mountain snowpack (snow-melt has been delayed somewhat due to cooler than normal temperatures). In Arizona, where snowpack was higher than average earlier in the winter, reservoir levels are above average. The remaining states are at or above the long term levels for early April.

Since the start of the 2011 Water Year in October, abundant precipitation has fallen over all but the eastern 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 Southwest (excluding much of Utah where the best snowfall in years has occurred).

SNOWPACK

April opened with the driest region clearly over the Southwest where snow-melt was occurrence in earnest from deficit totals in most river basins (Fig. 1). Conditions improved 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). Central Alaska experienced exceptional heavy snow (somewhat unusual for the month of March).

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 PDO, and strong La Niña, and an early season negative phase NAO and AO. 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/wsup/westwide/westwide.cgi

SPRING AND SUMMER STREAMFLOW FORECASTS

The spring and summer streamflow forecasts as of April 1, 2011 are calling for near normal flows over much of Washington, central Idaho, north-central Wyoming, southwestern and southeastern Montana. Above normal flows are expected for the Sierra Nevada, Great Basin, northern Colorado, and all but north-central Wyoming including the Black Hills. Below normal forecasts are called for the 4-Corners region, and most of Arizona, southern Colorado, and New Mexico (Fig. 4). Decrease flow forecasts are noted over the 4-Corner Region southward (Fig. 5). State Basin Outlook Reports can be accessed at: http://www.wcc.nrcs.usda.gov/cgibin/bor.pl.

RESERVOIR STORAGE

Statewide (average) reservoir levels (Fig. 6), shows that about half the states have above normal totals and half below normal. Arizona and Montana have the largest surpluses while Nevada and New Mexico have the greatest deficits. Capacity should improve over states with deficits (excluding New Mexico) next month when snow-melt increases.

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

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

/s/
Jeff Goebel
Acting Director, Resource Inventory Division

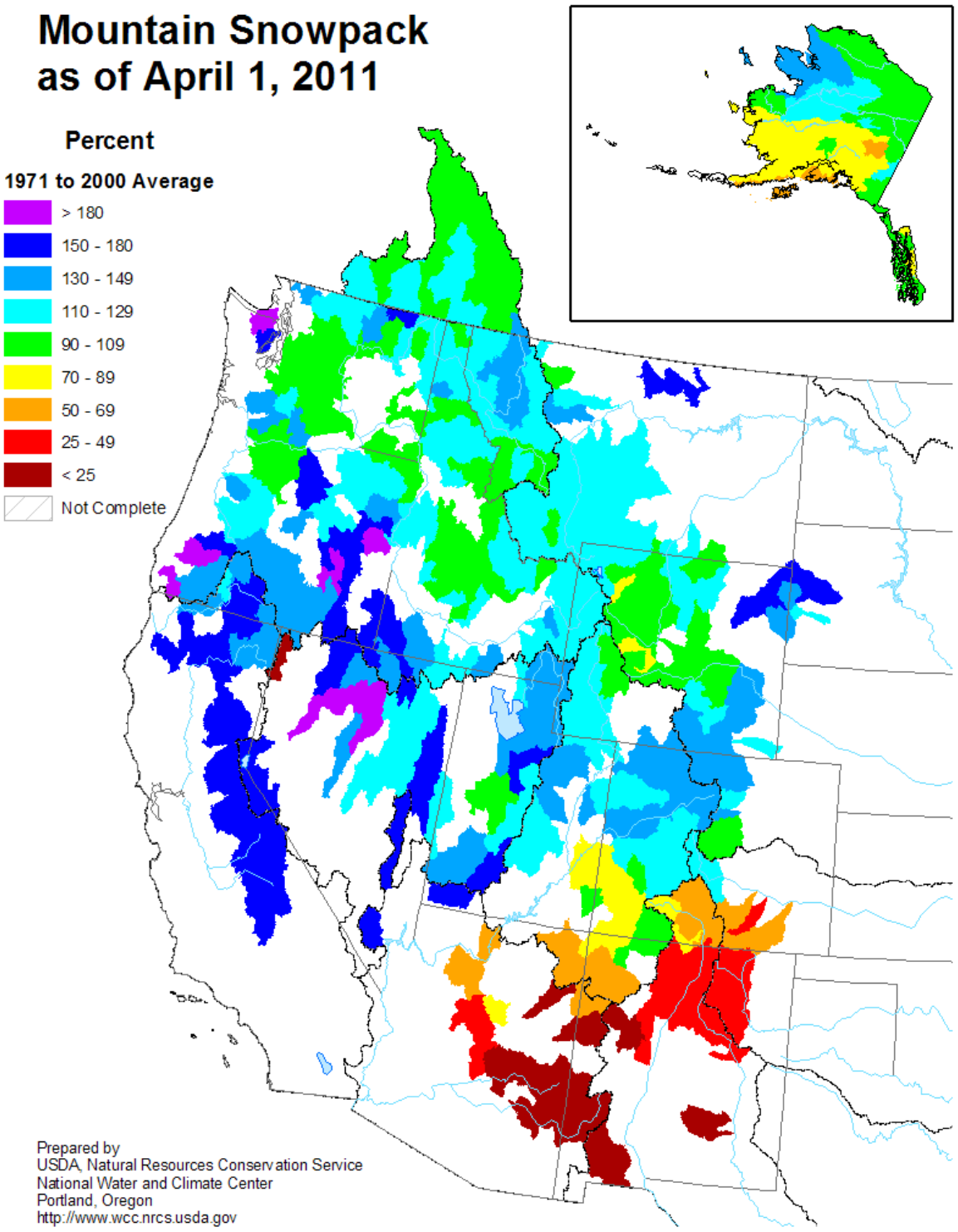

Fig. 1. Mountain Snowpack, April 1, 2011
ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2011/snow1104.gif

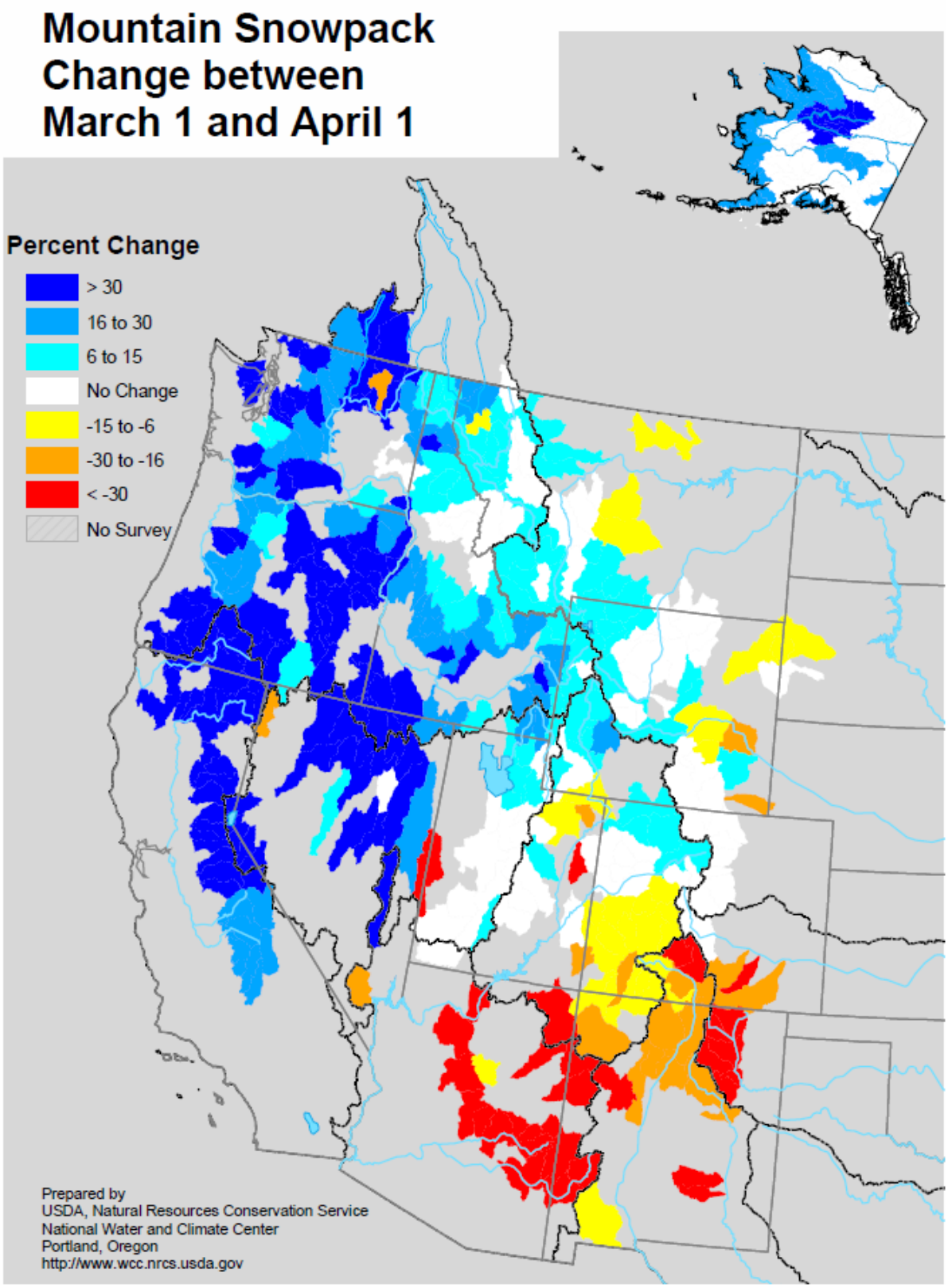

Fig. 2. Mountain Snowpack Difference between, March 1 to April 1, 2011
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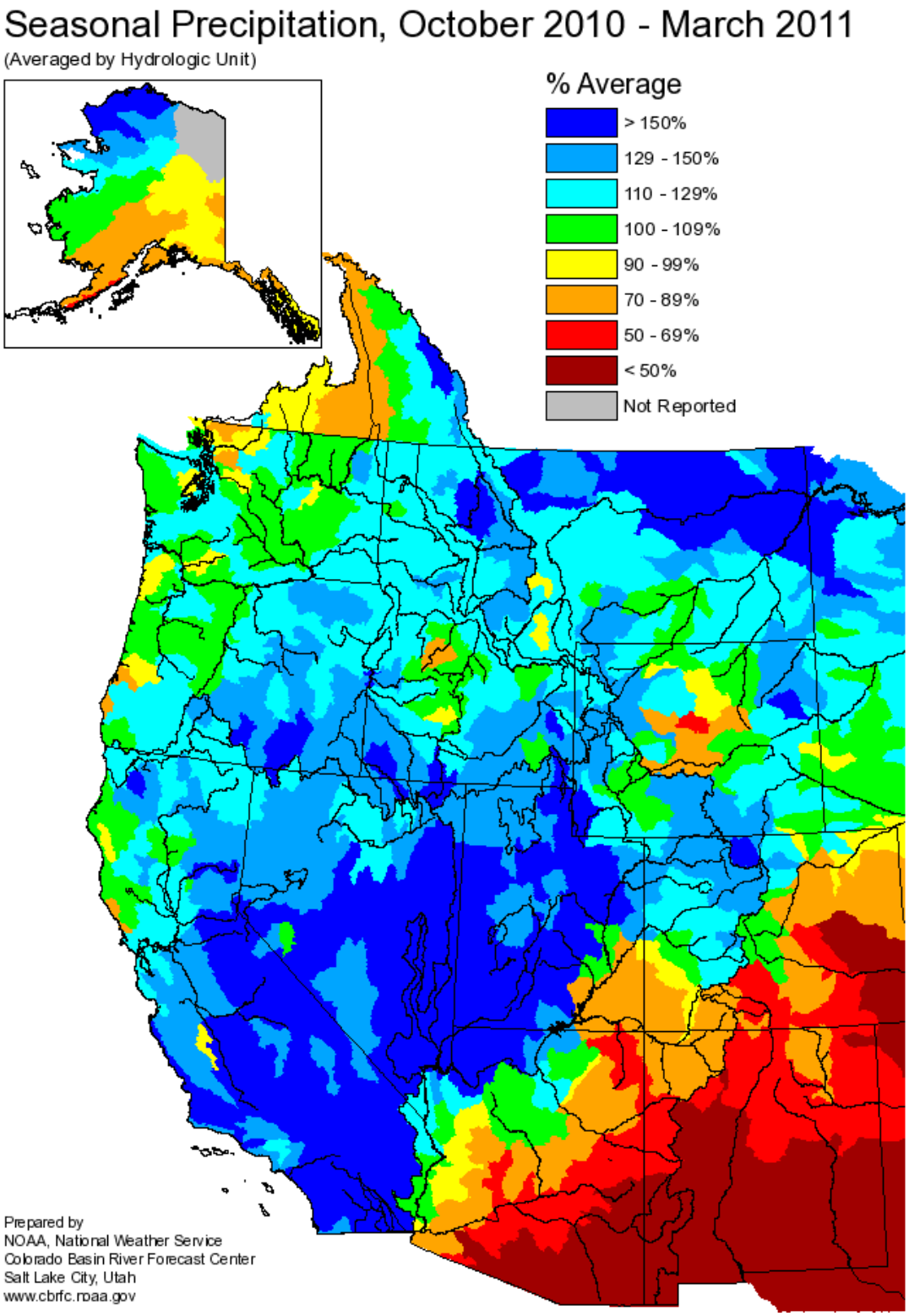

Figure 3. Seasonal Precipitation, October 1, 2010 to March 2011.
Ref: http://www.cbrfc.noaa.gov/product/masum/mapsum.cgi??west?S?2011?03

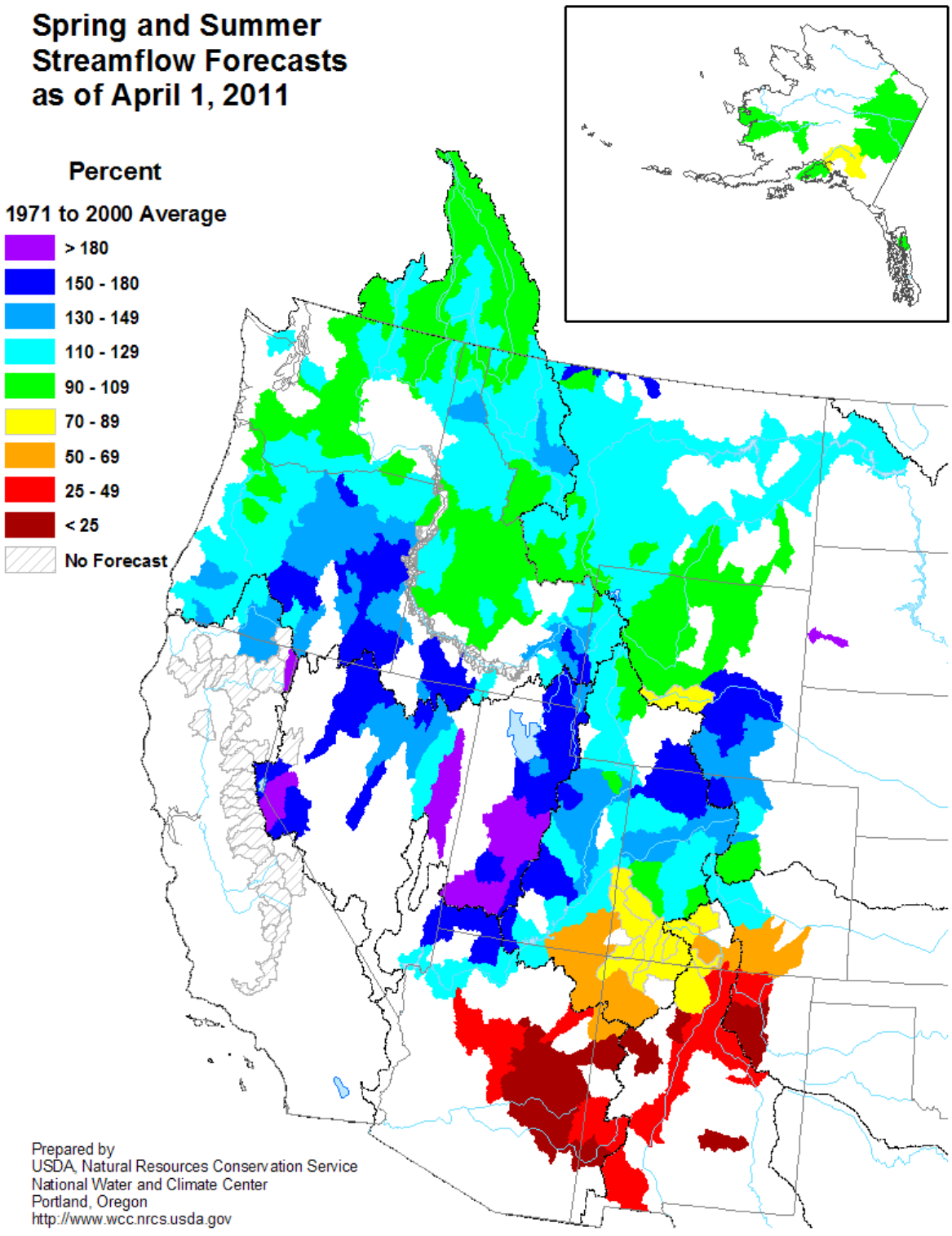

Figure 4. Seasonal Water Supply Forecasts - April 1, 2011

Ref: ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2011/strm1104.gif

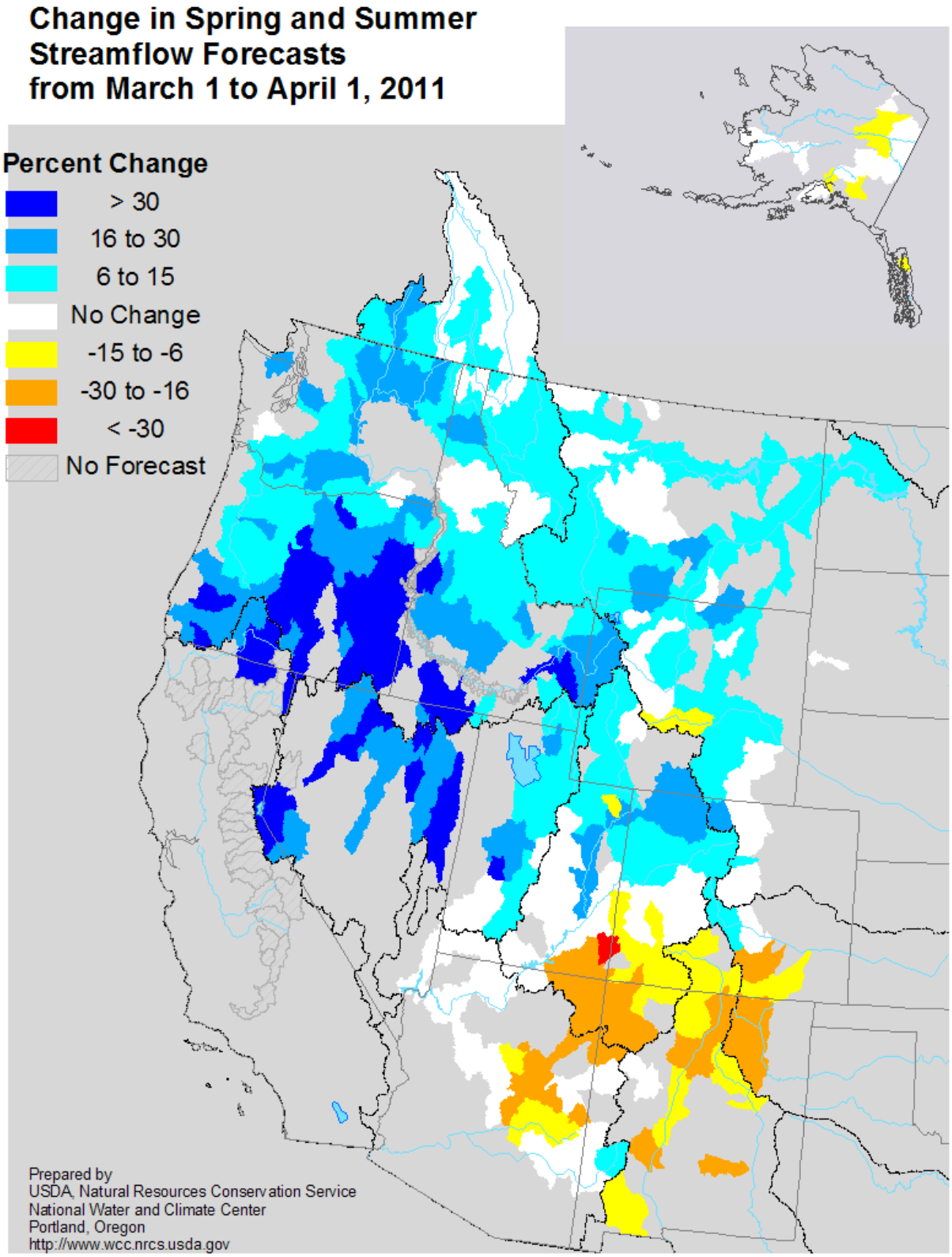

Fig. 5. Change in streamflow forecast between March 1 and April 1, 2011.
Note: California will be available later.
Ref: ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2011/difstrm0411.gif

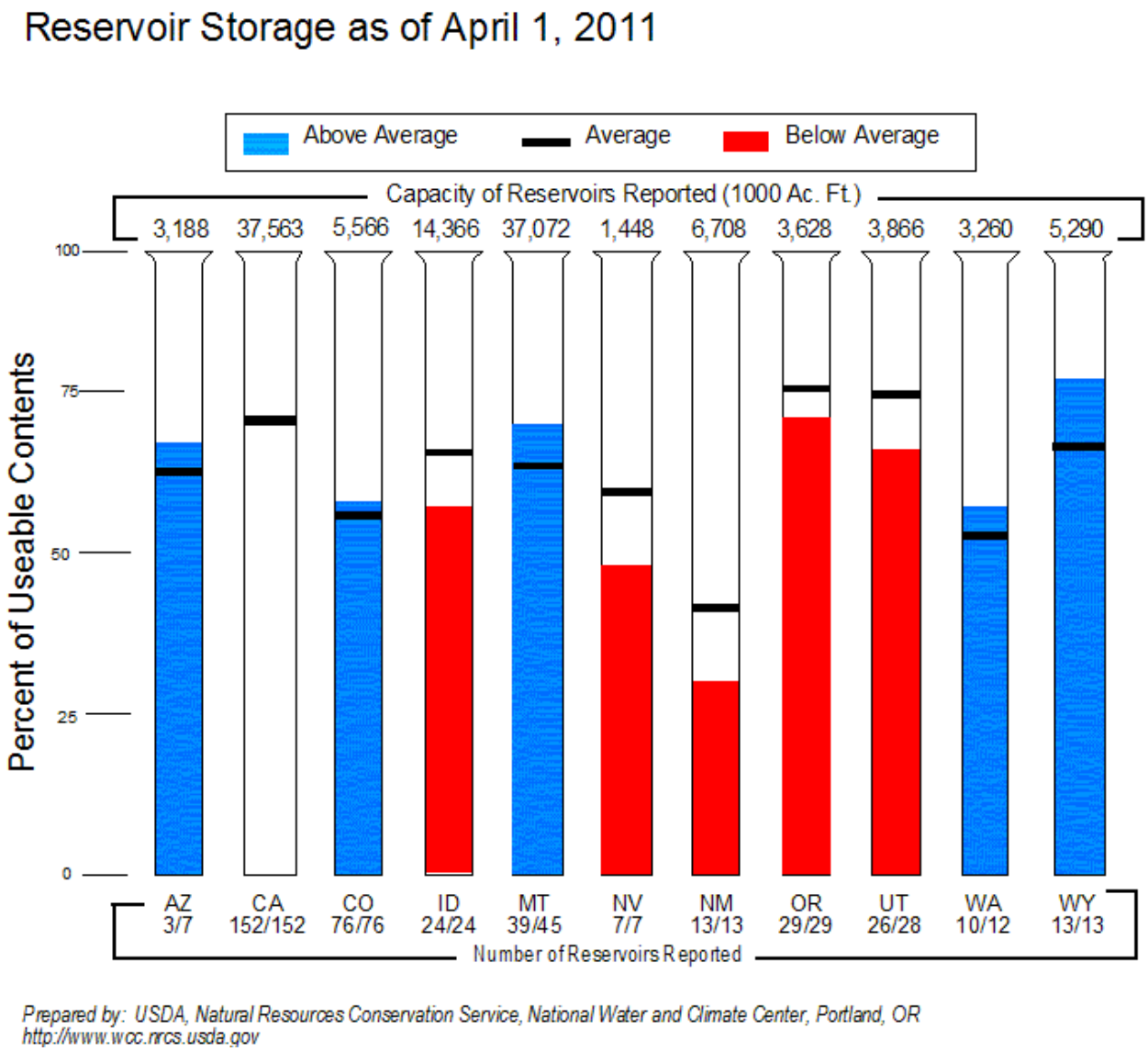

Figure. 6. Reservoir Storage - April 1, 2011. California data will be available in the near future.

http://www.wcc.nrcs.usda.gov/cgibin/resvgrph2.pl?area=west&year=2011&month=04