



Natural Resources Conservation Service  
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**Date: March 10, 2010**

**Subject: March 1, 2010 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 March 1, 2010.

## **OVERVIEW**

The typical El Niño pattern of moisture is dominating the West with above normal snowpack over the Southwest and below normal snowpack over the Northwest (Fig.1). Alaska's south central coast saw near normal snowpack while much of the state experienced deficits. Since last month, snowpack has decreased across much of the West although some locations over the Southwest and eastern Interior Alaska saw increases (Fig. 2).

For the 2010 Water Year that began on 1 October 2009, precipitation percent of normal totals reflects a typical El Niño pattern with a wetter Southern Tier States and a drier Northern Tier States (Fig. 3). The Northern High Plain also have received higher than average totals.

As of March 1, 2010 the spring and summer streamflow forecasts are calling for well below normal values across all but the Southwest Mountains of southern Utah, Arizona, New Mexico, and southern Colorado (Fig. 4). During the past month, the spring and summer streamflow forecasts have increased across southwest Utah and north-central New Mexico (Fig. 5). Decrease forecast flows are persisting or worsening over the Northern Tier States.

The Western States show a lot of state to state variability in reservoir levels with Nevada at the lower range and Arizona at the higher range.

## **SNOWPACK**

On March 1, 2010, western snowpack is below the long-term average over much of the Northern and Central Rockies, Cascades, Intermountain West, and much of Alaska as shown in Fig. 1. Above normal values are noted over the Sierra, eastern Great Basin, and especially over the 4-Corner States. Increases in snowpack this month were more significant over the Southwest than over the Northern Tier States (Fig. 2). 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**

Preliminary seasonal precipitation is above normal, >110% of average, throughout the higher elevations of southern California, southern half of Nevada, southern Utah, much of western Arizona, eastern New Mexico and the Western High Plains as shown in Fig. 3. Precipitation is well below normal (<70% of average) across much of the Interior West and Northern Rockies.

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>  
[http://www.hprcc.unl.edu/maps/current/index.php?action=update\\_product&product=PNorm](http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=PNorm)

### **SPRING AND SUMMER STREAMFLOW FORECASTS**

Abundant snowfall during March has resulted in streamflow forecasts (>130% across the 4-Corners region. Forecasts (<70%) are noted much of the remainder of the West as shown in Fig 4. Forecast improvement since February is most notable over the southwest Utah and north-central New Mexico. Elsewhere forecasts are calling for lower stream flows (Fig. 5).

Specific state streamflow summaries can be obtained from the Internet location - <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

### **RESERVOIR STORAGE**

As of March 1, 2010, reservoir storage by state is shown in Fig. 5. About a half of the West has reservoir levels near average, and two much below average. As of 10 March, California and data is unavailable but will be updated soon.

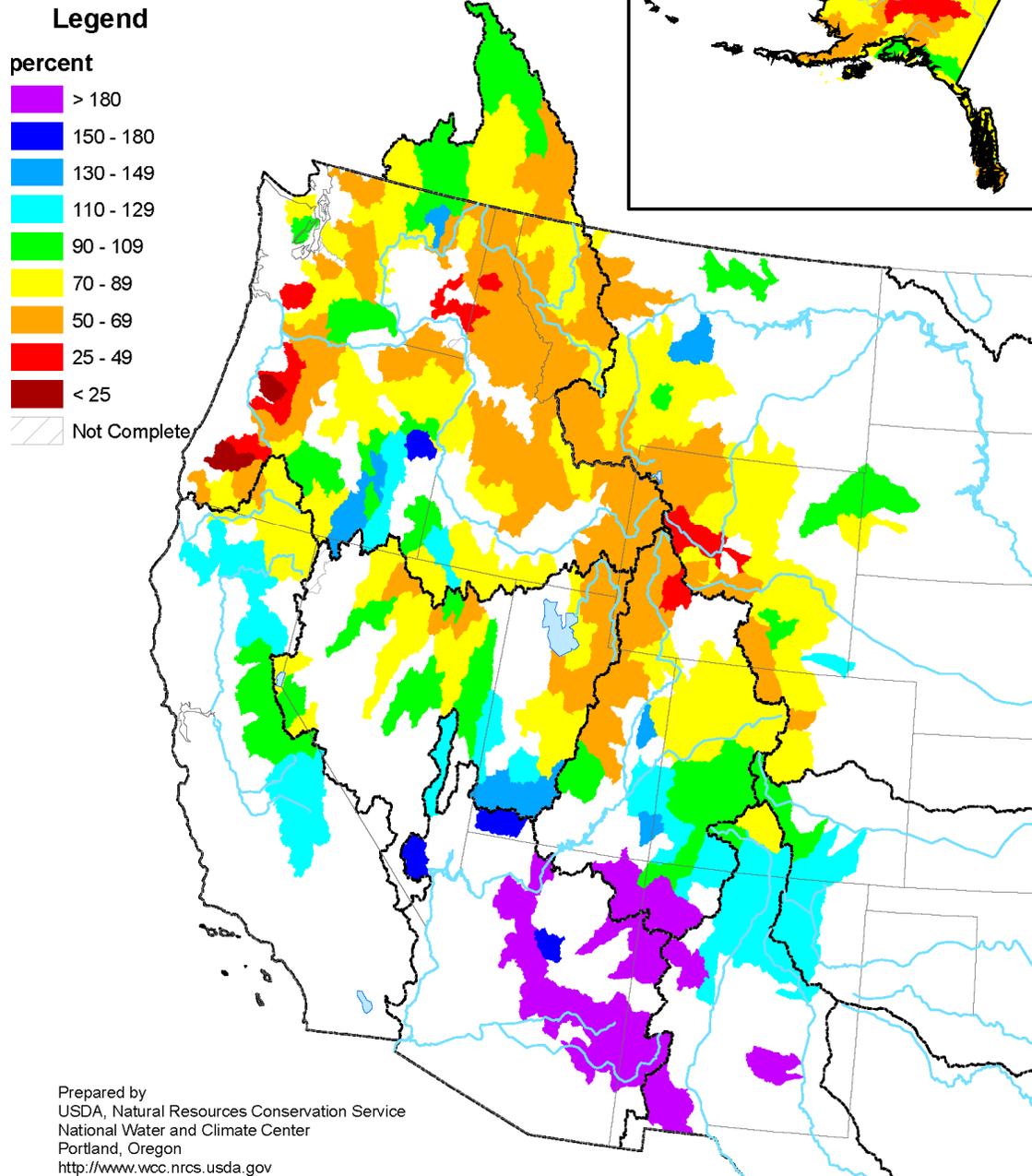
<http://www.wcc.nrcs.usda.gov/cgibin/resvgrph2.pl?area=west&year=2010&month=02>.

### **FOR MORE INFORMATION**

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

/s/ NOLLER HERBERT  
Director, Conservation Engineering Division

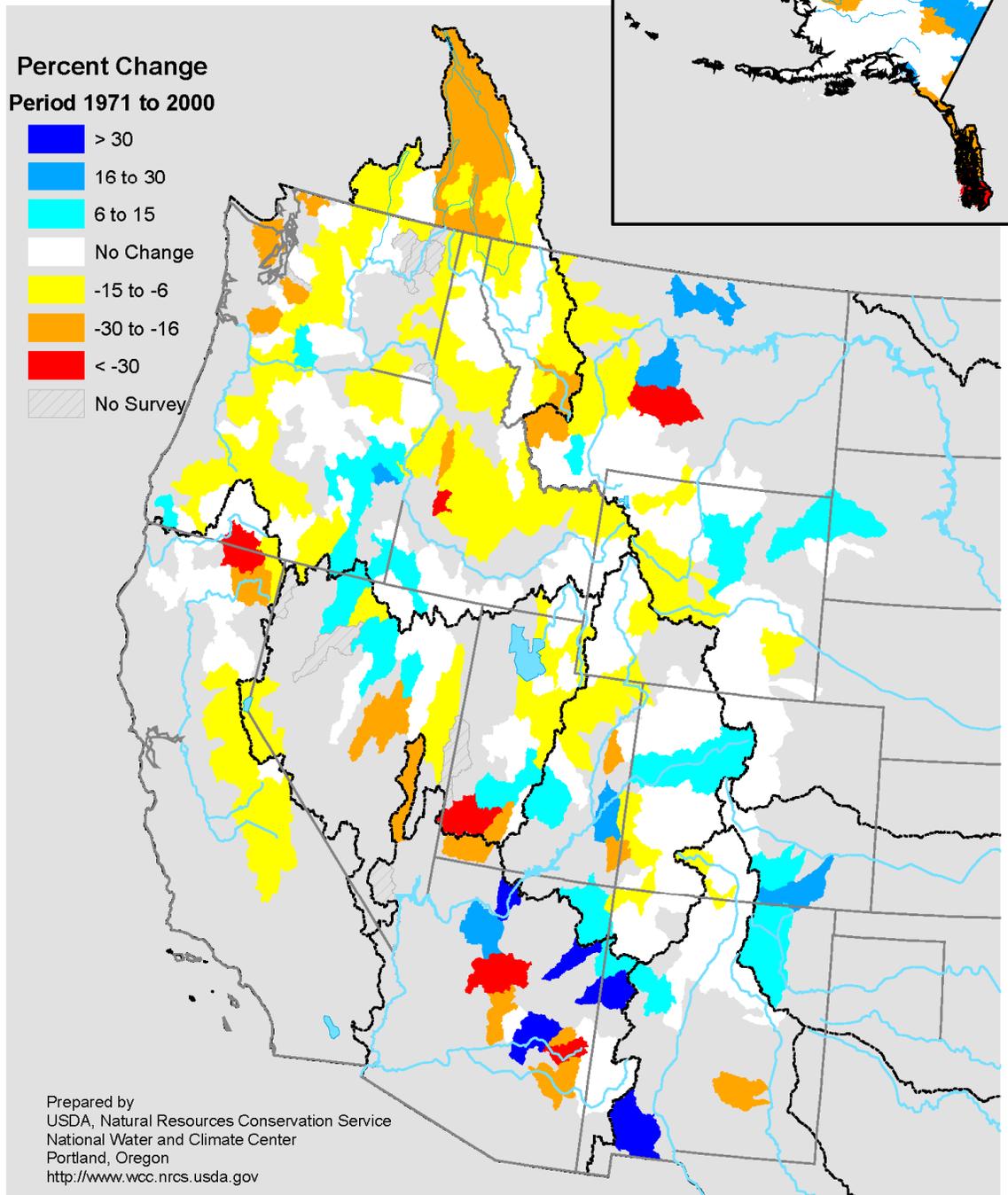
# Mountain Snowpack as of March 1, 2010



**Fig. 1. Mountain Snowpack, March 1, 2010**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2010/snow1003.gif>

# Mountain Snowpack Change between February 1 and March 1

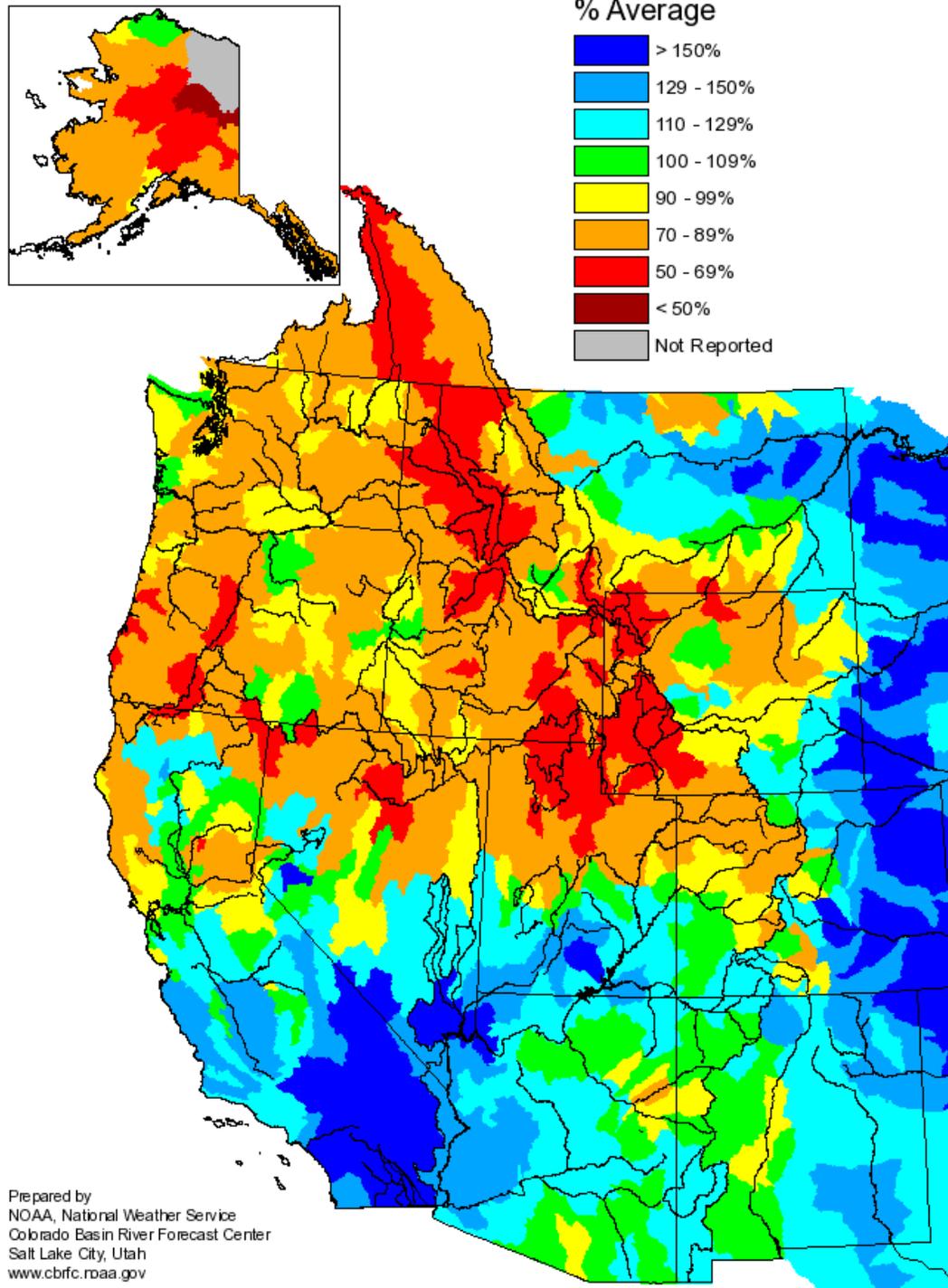


**Fig. 2. Mountain Snowpack Difference between, February 1 to March 1, 2010. The red area depictions over the Southwest only reflect a greater than 30 percent decrease from very high snowpack levels (e.g., relatively not significant in this region of the West).**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2010/difsnw0310.gif>

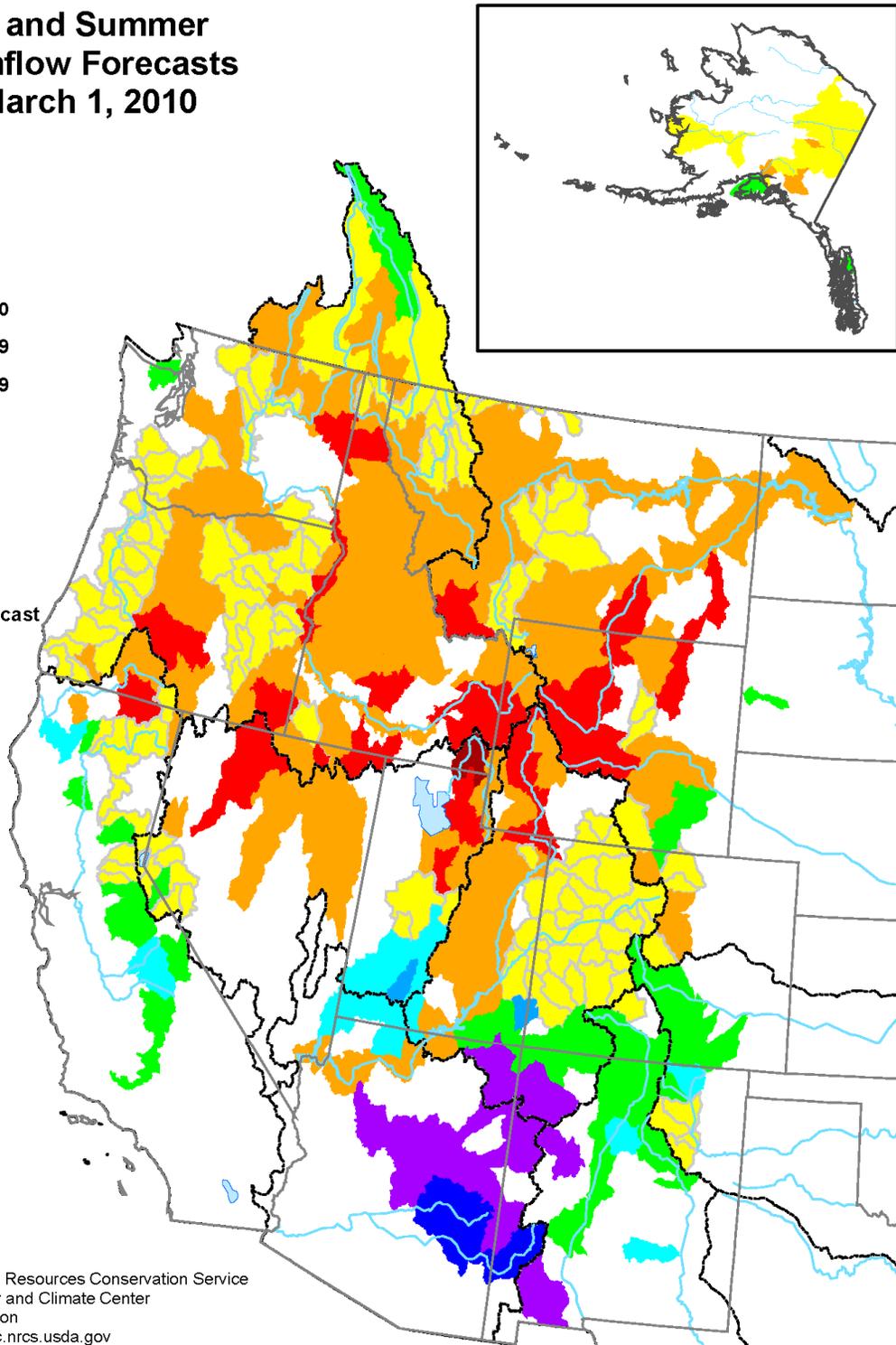
Ref:  
**Seasonal Precipitation, October 2009 - February 2010**

(Averaged by Hydrologic Unit)



**Fig. 3. Seasonal Precipitation, October 2009 to January 2010 shows the classic El Niño precipitation pattern across the West.**

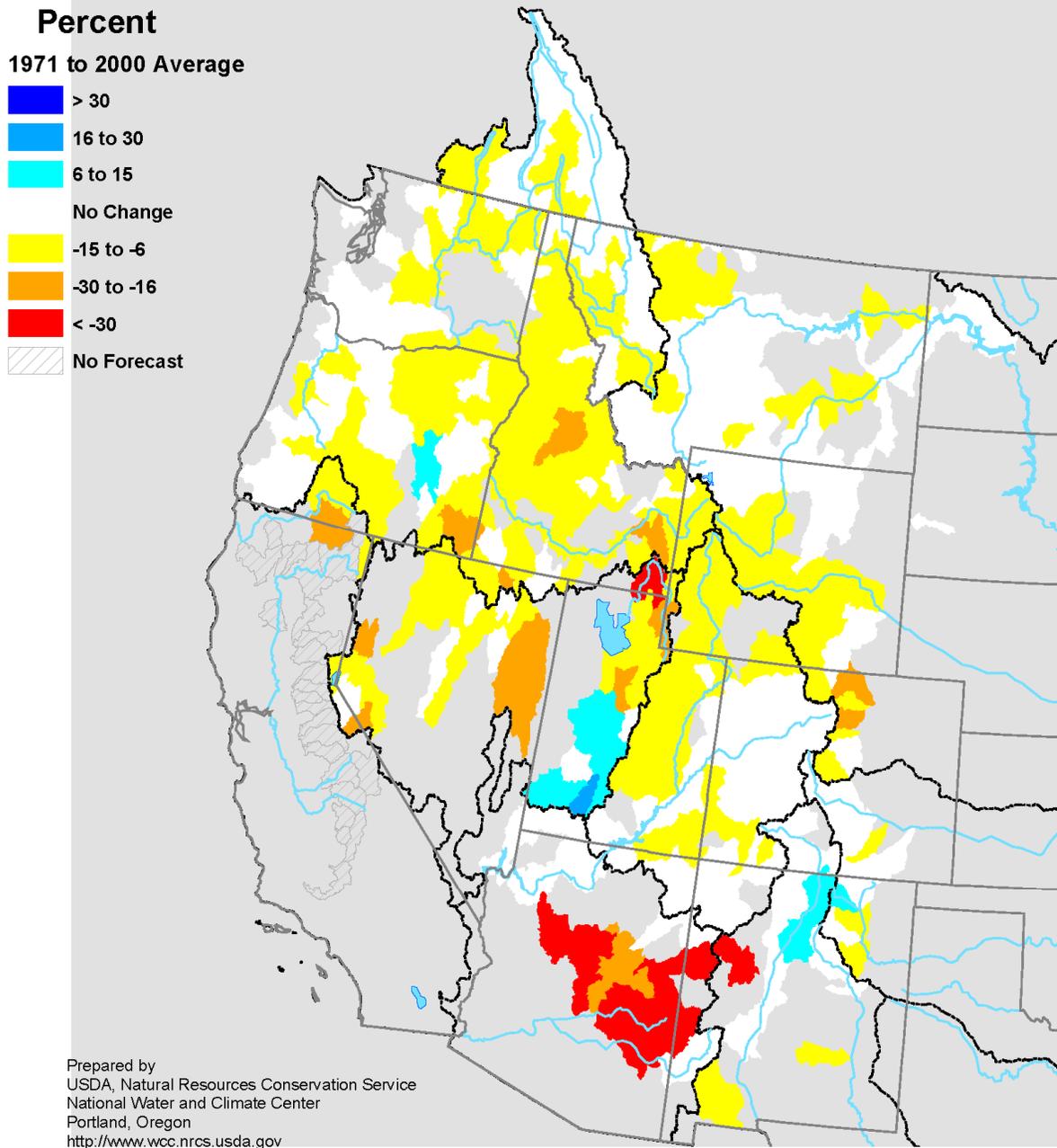
### Spring and Summer Streamflow Forecasts as of March 1, 2010



**Fig. 4. Seasonal Water Supply Forecasts - March 1, 2010. Lower flow dominate north while higher flows are expected over the Southwest.**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2010/strm1003.gif>

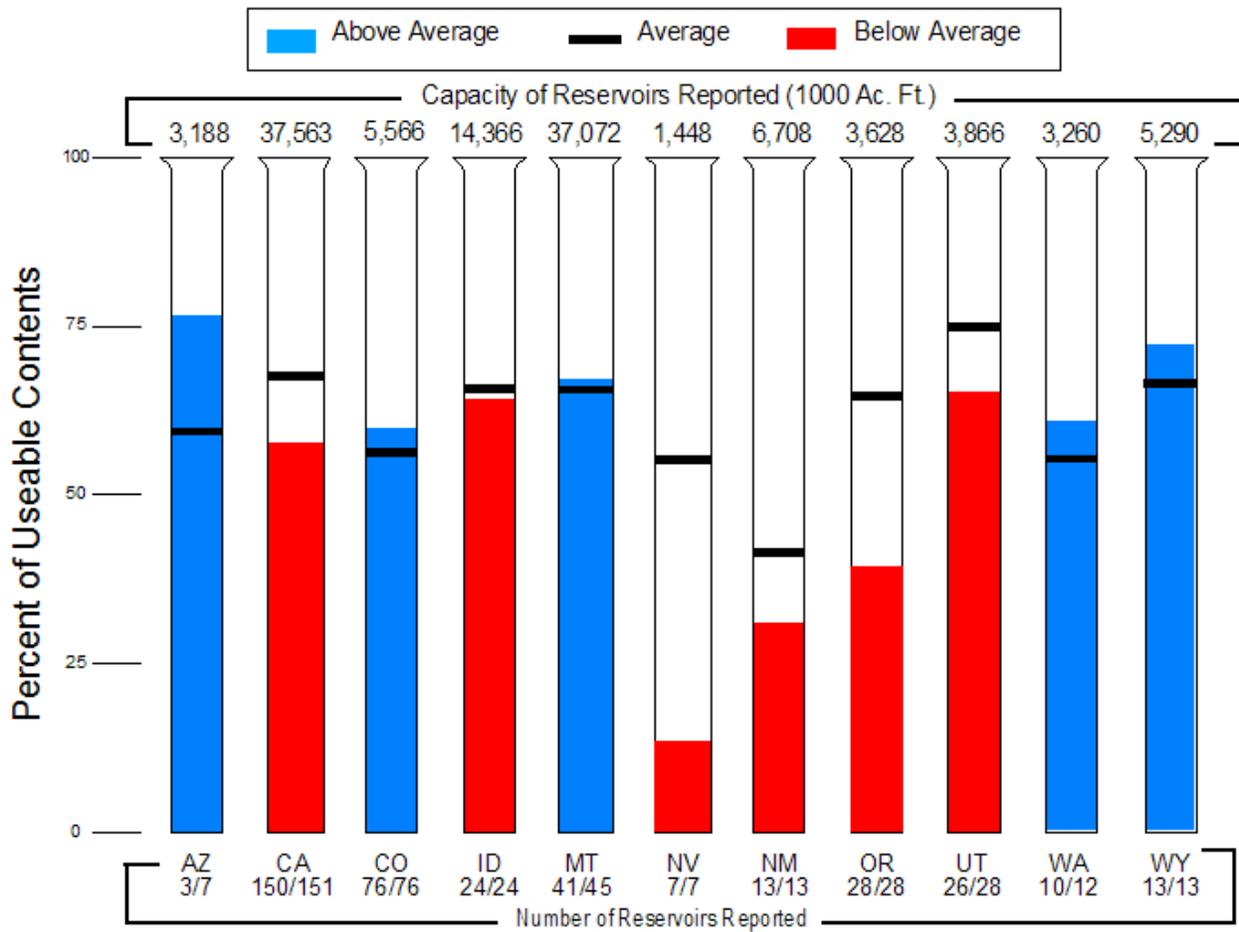
## Change in Spring and Summer Streamflow Forecasts from February 1 to March 1, 2009



**Fig. 5. Change in streamflow forecast between February 1 and March 1, 2010. Improvements are forecasted for southwestern Utah and north-central New Mexico. Note: California will be available later.**

Ref: <ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2010/difstrm0310.gif>

## Reservoir Storage as of March 1, 2010



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

**Fig. 6. Reservoir Storage - March 1, 2010.**

Ref: <http://www.wcc.nrcs.usda.gov/cgibin/resvgrph2.pl?area=west&year=2010&month=03>