



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

Date: April 8, 2008

Subject: April 1, 2008 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, 2008.

OVERVIEW

Western snowpack has transitioned into more of a typical La Niña wet pattern for the Pacific NW and drier pattern over Arizona and southern New Mexico. However, near normal snowpack over the southern Sierra and above normal snowpack over the Colorado and New Mexico Rockies has been an unexpected and pleasant surprise. Changes since March 1 are up over the Central Cascades, North Rockies and from a band from the Black Hills to eastern Oregon. Notable decreases occurred over the Sierra and much of the Southwest. More specific details are provided at the end of this document (News Stories).

During the past month, the spring and summer streamflow forecasts are near or above average in all but scattered basins in Nevada, lower Snake River (Idaho), Green River and Sweet Water River (Wyoming), central Montana, across Arizona and southern New Mexico. Since the March 1 forecasts, significant decreases in streamflows have occurred in eastern Nevada, and the 4-Corners region of the Southwest. Significant improvements are now expected for most of the northern half of the West excluding the Missouri drainage in Montana.

Only Arizona's reservoirs are averaging above normal followed closely by Colorado which is near average. The remaining states are below the long-term average.

SNOWPACK

On April 1, 2008, the western snowpack is above average compared to the long-term climate statistics across the Cascades (>180%), portions of the Great Basin (up to 180%), Northern and Southern Rockies (>150%), 4-Corner States and western Alaska (>130%) (Fig. 1). Values are down over eastern Alaska (<70%) and <25% over portions of the Southwest.

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

SEASONAL PRECIPITATION

Preliminary seasonal precipitation is above normal, (>110% of average) over portions of the Northern Rockies (Montana, Idaho & Wyoming), central Colorado, the southern Sierra, and southwest Alaska as shown in Fig. 3. Pacific Northwest is not available shows that northern Idaho with above normal totals and the Central and Southern Cascades with near normal

values but there is a lot of spatial variability throughout this region. Values are under 70% of the long-term average over much of the Interior and Northern Panhandle of Alaska, the Eastern High Plains, and scattered across California, Nevada, and southern Arizona-New Mexico.

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

Much of the West is forecasted to see average or above average streamflows (Fig. 4). Areas with much lower forecasted flows (<50%) are now being forecasted for isolated river basins in western Nevada, southeast Idaho, central Montana, central Wyoming, and across Arizona and New Mexico. Forecast changes since last month include significant decreases (<30%) over the 4-Corners and the and western Nevada while much of the West north of 42N is showing improvement (>6%) (Fig. 5). California data is not available yet.

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

RESERVOIR STORAGE

As of April 1, 2008, reservoir storages, shown in Fig. 6, are above seasonal averages in only Arizona (California not yet available). Reservoir storage is below average in the remainder of the Western States except for Colorado.

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>

/s/ NOLLER HERBERT
Director, Conservation Engineering Division

Mountain Snowpack as of April 1, 2008

Legend

percent

-  > 180
-  150 - 180
-  130 - 149
-  110 - 129
-  90 - 109
-  70 - 89
-  50 - 69
-  25 - 49
-  < 25

 Not Complete

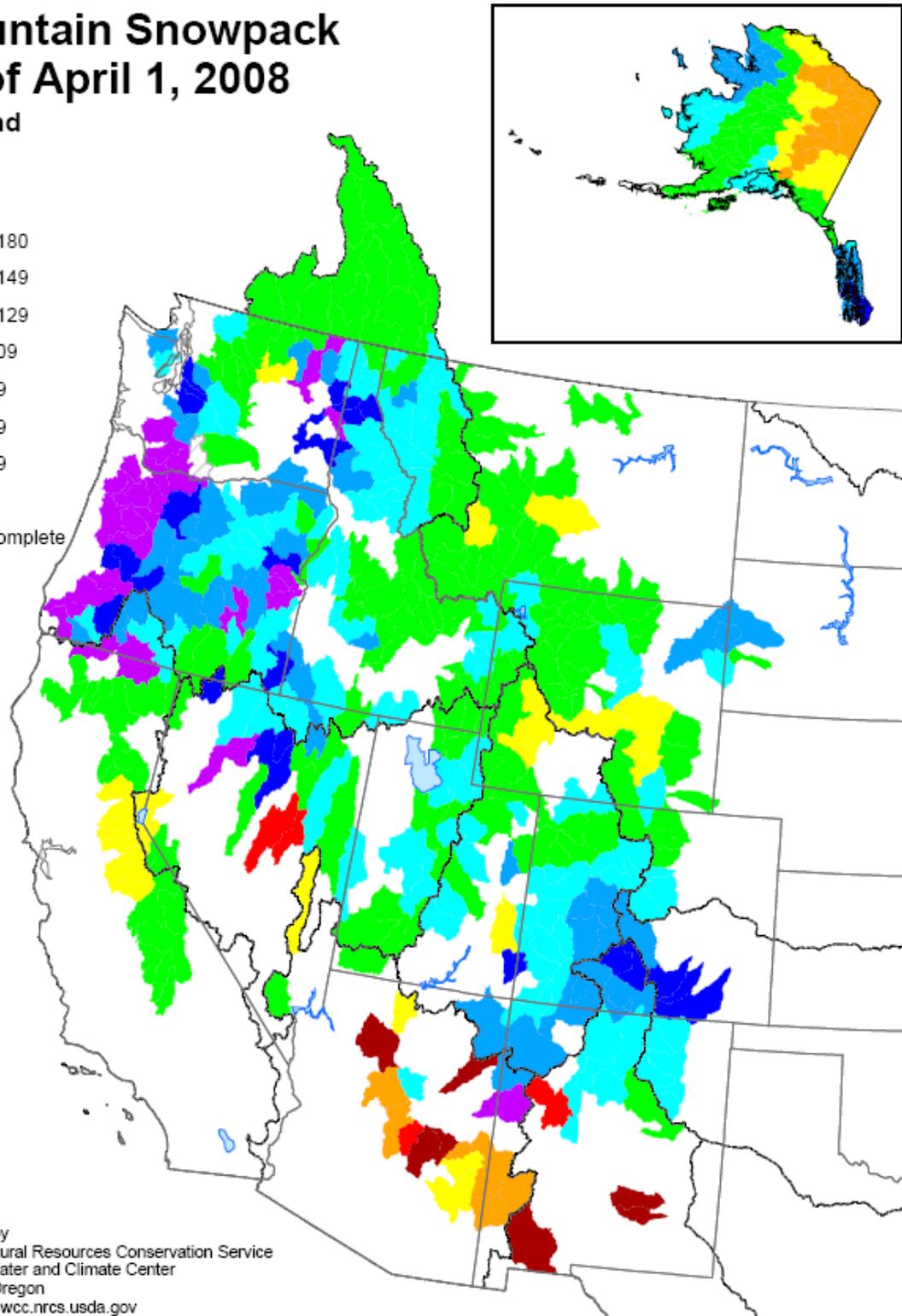


Fig. 1. Mountain Snowpack, April 1, 2008

<ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2008/snow0804.gif>

Mountain Snowpack Change between March 1 and April 1

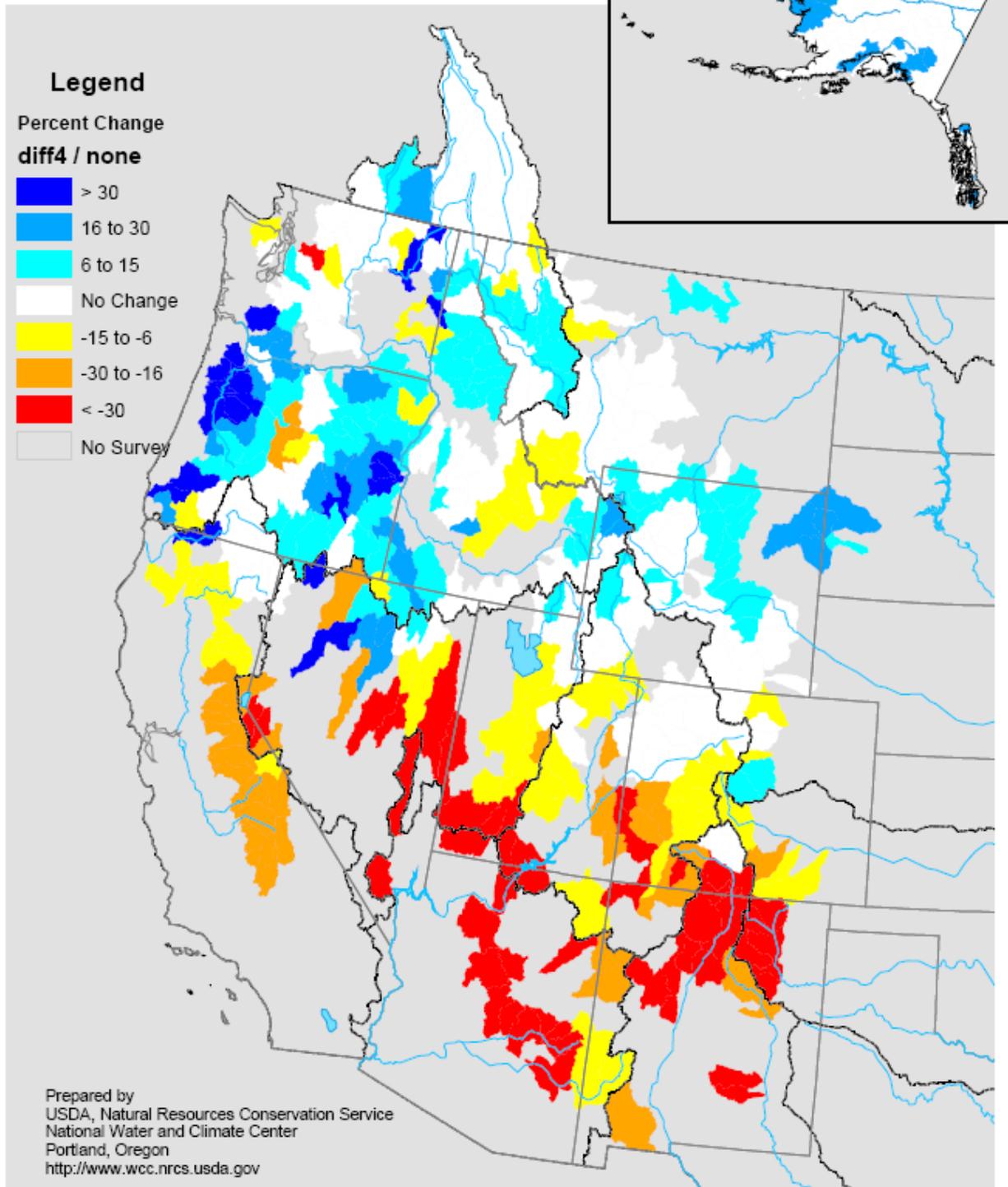


Fig. 2. Mountain Snowpack Change between 1 March and 1 April 2008.
<ftp://ftp.wcc.nrcs.usda.gov/support/water/worldwide/snowpack/wy2008/difsnow0804.gif>

Seasonal Precipitation, October 2007 - March 2008

(Averaged by Hydrologic Unit)

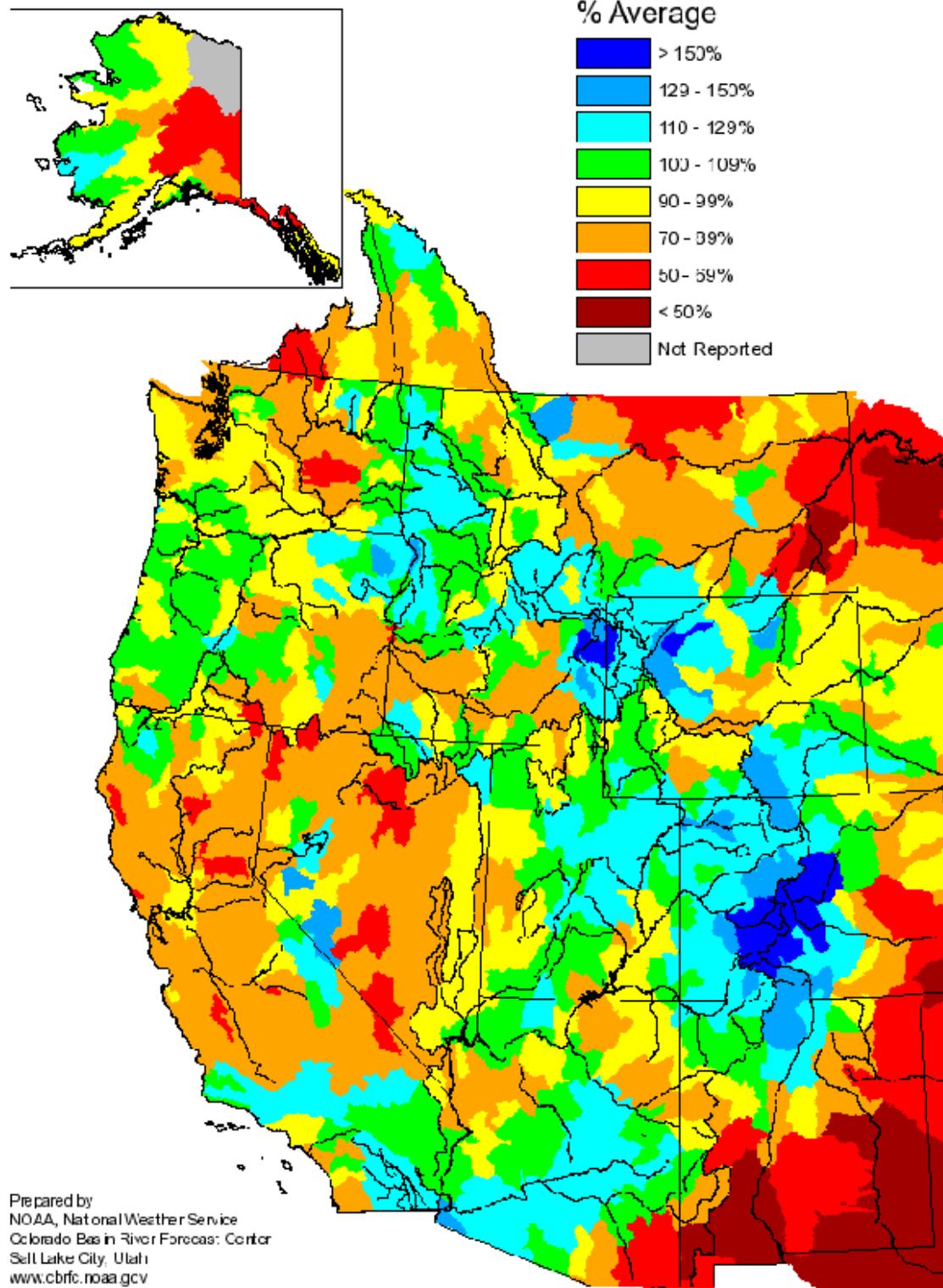


Fig. 3. Seasonal Precipitation, October 2007 to March 2008.

<http://www.cbfc.noaa.gov/precip/qpe/mapsum/map/westS200803.png>

Spring and Summer Streamflow Forecasts as of April 1, 2008

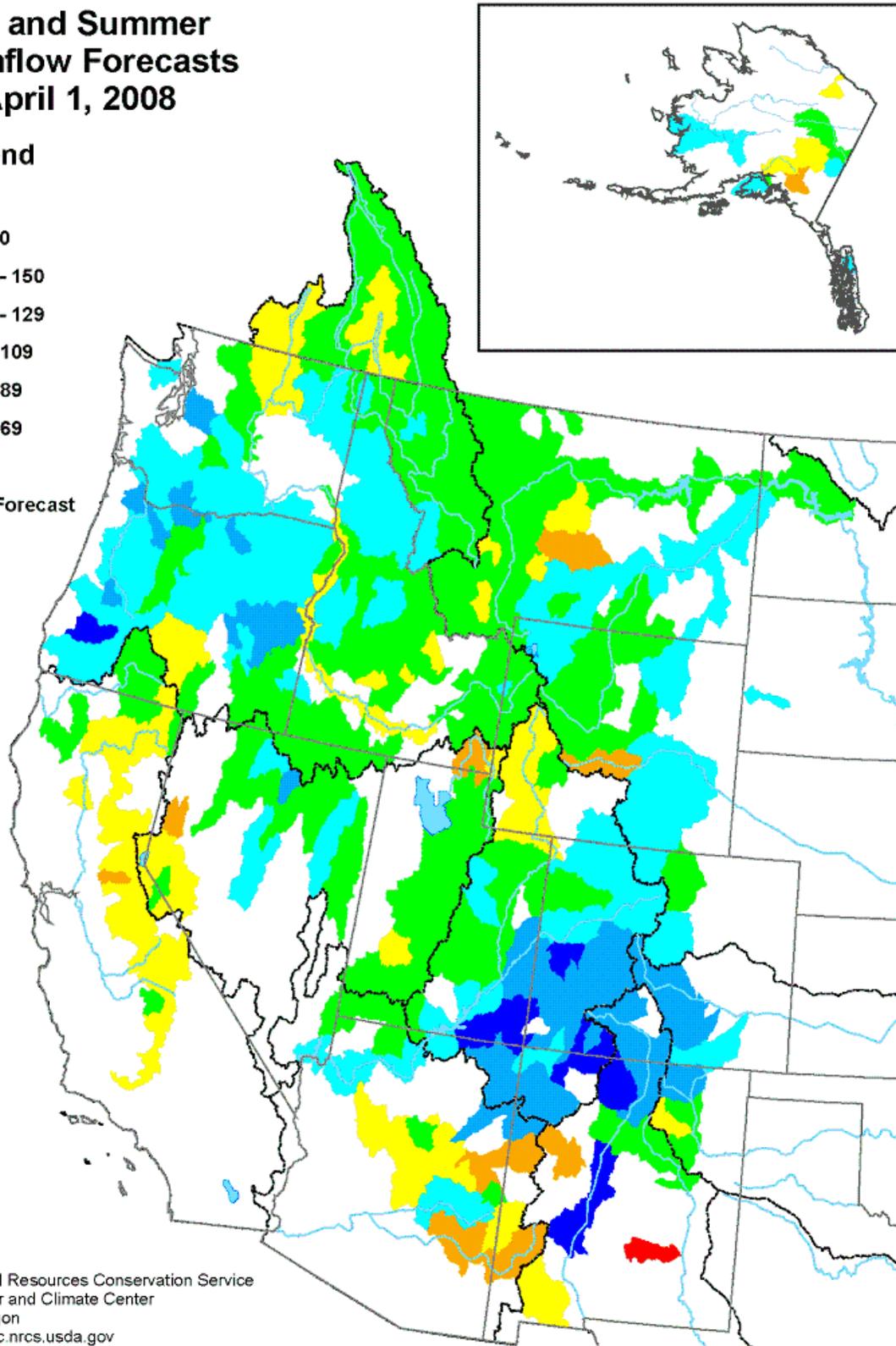
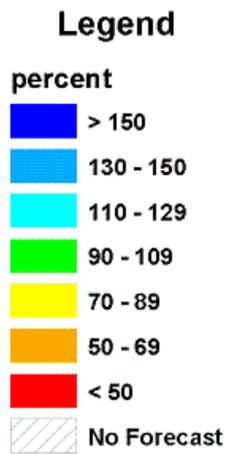


Fig. 4. Water Supply Forecasts - April 1, 2008.

<http://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2008/strm0804.gif>

Change in Spring and Summer Streamflow Forecasts from March 1 to April 1, 2008

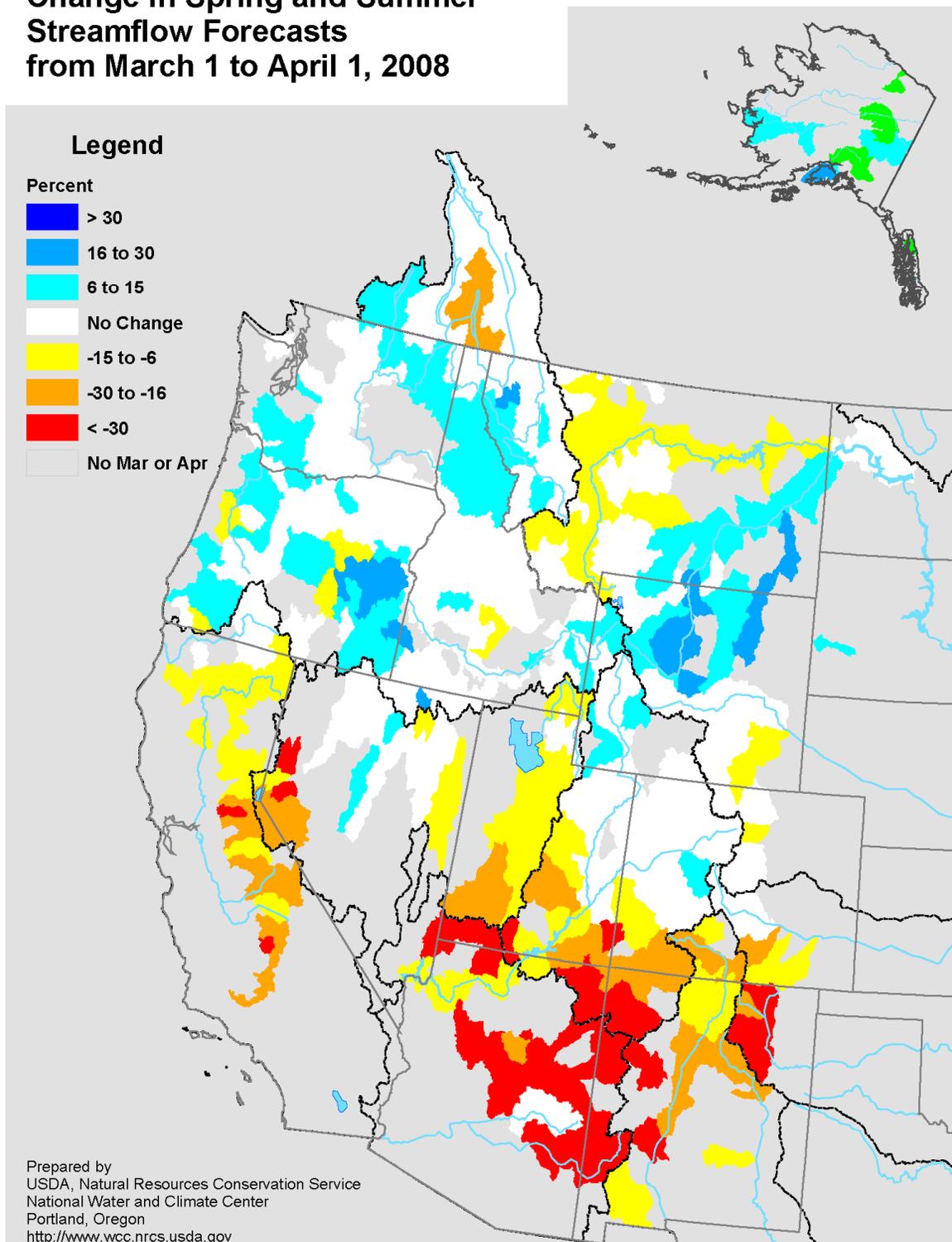
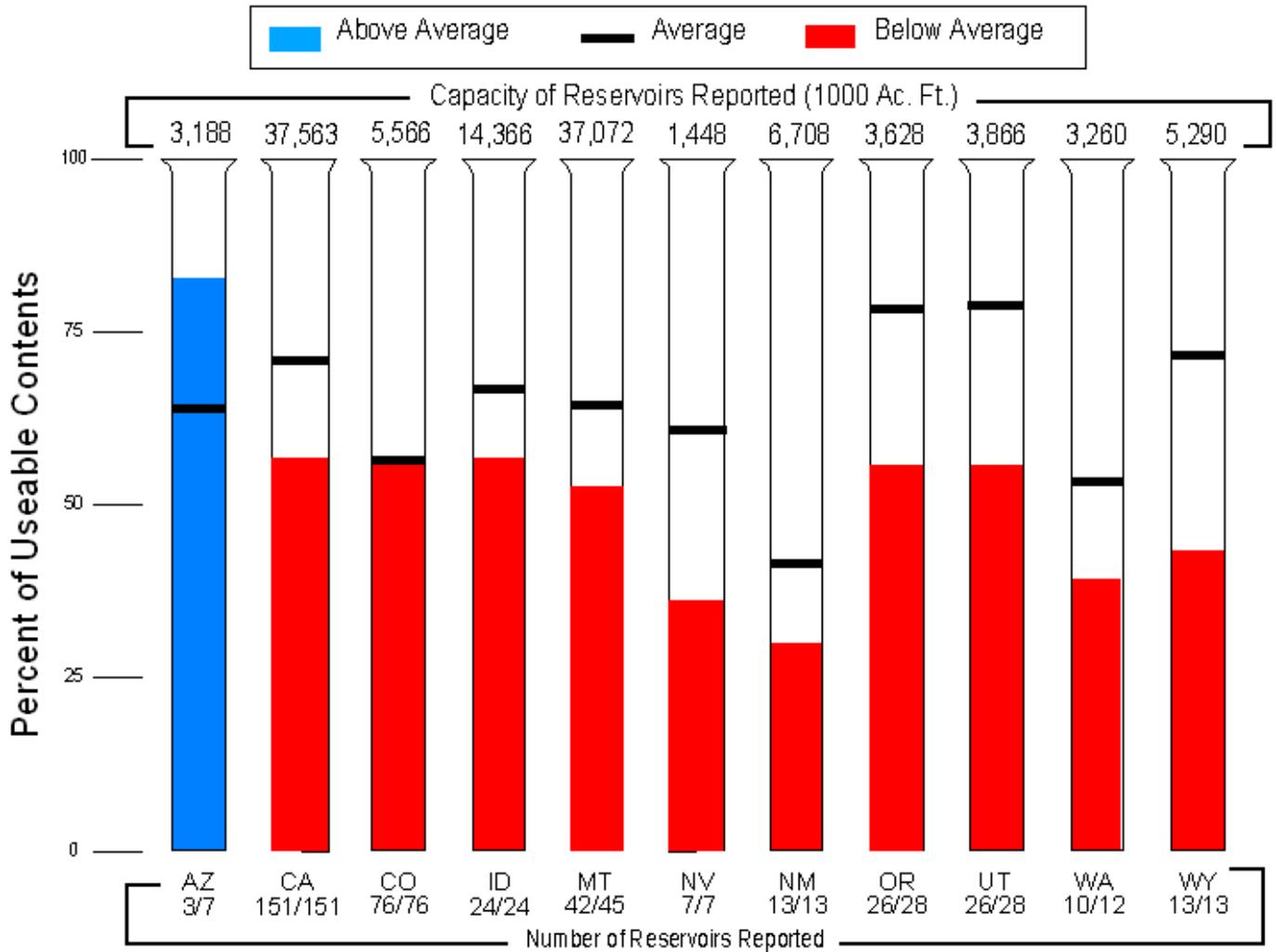


Fig. 5. Change in streamflow forecast between 1 March and 1 April 2008.
<ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/streamflow/wy2008/difstrm0804.gif>

Reservoir Storage as of April 1, 2008



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

Fig. 6. Reservoir Storage - April 1, 2008.

<http://www.wcc.nrcs.usda.gov/cgibin/resvgrph2.pl?area=west&year=2008&month=04>

SUPPLEMENTAL NEWS STORIES

<http://kjct8.com/Global/story.asp?S=8122270>

An avalanche of stories associated with April 1 snowpack and forecasts

The Colorado Department of Transportation has exhausted a fund set up to cover overruns in its budget for snow and ice removal this season. It expects costs to reach a record \$71 million by the time the season ends. CDOT originally budgeted \$43 million for snow and ice control this winter, but it had already spent \$53 million through mid-March.

<http://www.azcentral.com/news/articles/2008/03/29/20080329drought0323.html>

(long story...[Arizona](#), colorado river)

Wet winter raises water levels, but drought persists

This was supposed to be a dry Arizona winter, deprived of rain and snow by the oceanic weathermaker La Niña. As sure as it's hot in August, if it's La Niña, it's dry in winter. Tell that to workers at Roosevelt Lake who raced rising water levels last month to secure shifting boat docks as storm runoff poured into the reservoir. "It came up 10 or 12 feet in one day," said Dan Grim, general manager of the marina, which is about a mile and a half east of Roosevelt Dam. "We have to keep adjusting the marina . . . to make sure the whole thing doesn't get sucked under."

<http://www.jacksonholestartrib.com/articles/2008/03/29/news/wyoming/76bc9172995200478725741b00012bd1.txt>

Data shows [[Wyoming](#)] snowpack in good shape so far

Experts are predicting the snowpack in Wyoming's mountain ranges could provide enough water to fill most of the state's reservoirs and keep normal flows in rivers and streams this summer. Snow accumulation in much of Wyoming's high country is just about average for this time of year, a state hydrologist said Thursday. Wyoming's snowpack reached 99 percent of the 30-year average by early March, said Wyoming National Oceanic and Atmospheric Administration hydrologist Jim Fahey. "So far ... it's looking good," said Fahey. He said all major basins across Wyoming have had near normal to above normal precipitation totals this winter.

http://www.kndo.com/Global/story.asp?S=8103722&nav=menu484_8_18_11

[Yakima [Washington](#)] Water Levels Stay Above Average This Spring

According to the latest snow pack readings we no longer have to worry about the water levels in our area being low. The numbers show were at 124% of average for the upper Yakima river area and 126% for the lower part. The Department of Agriculture says water supplies are expected to be in good shape this coming Spring. They say people in the Tri-Cities can also rest easy because most of our irrigation water comes from the snow above the Yakima area. "We're definitely always lucky when we have a good snow pack year because that means we're going to have a good sustainable water supply this season," said Scott Pattee, a Water Supply Specialist for the Natural Resources Conservation Service.

http://www.magicvalley.com/articles/2008/04/04/news/local_state/134140.txt

Cool March stabilizes [[Idaho](#)] water outlook

After years of drought, it's about time Idaho caught a break. Cool temperatures and a wetter-than-average March have left southern Idaho, in Idaho Department of Water Resources Director Dave Tuthill's words, "poised to have a good water year." Across the state, water experts and irrigators have held their fingers crossed for the past month, hoping weather patterns that brought above-average precipitation in December, January and February would hold out. The biggest concern at the end of February was that temperatures would soar in March and trigger runoff before farmers' irrigation seasons even began. That disaster appears to have been averted. Instead, March temperatures were well below normal and precipitation was above average, Natural Resources Conservation Services water supply specialist Ron Abramovich said Wednesday. Abramovich said

nearly every basin that feeds the Snake River is now home to above-average snowpacks. The Upper Snake River basin, located near the state!

's border with Wyoming, received 140 percent of normal precipitation in March to raise its snowpack above the coveted 105-percent-of-normal mark considered necessary to avoid massive water-use curtailment on the Eastern Snake River Plain.

<http://www.capitalpress.info/main.asp?SectionID=67&SubSectionID=616&ArticleID=40549&TM=55384.71>

Snow news is good news for **most Western states**: Except for California, states report

It appears Mother Nature has granted irrigators a reprieve from the weak stream flows and low reservoir levels that plagued much of the West last year. Judging by snowpack levels in early April, when accumulation is considered to reach its peak, most of the region will have plenty of runoff this growing season. Not all states will benefit equally, though.

California saw near-normal snow levels, but water pumping curtailments will significantly reduce water deliveries to farmers and other users. At the other end of the spectrum, Washington state saw decent stream flow and reservoir levels in 2007, so the state's healthy snowpack in 2008 is in addition to that. For Idaho and Oregon, above-average snowpacks should provide enough water to replenish reservoirs that were seriously depleted last year. "This is what we were hoping and praying for," said Jeff Anderson, hydrologist with the Idaho Natural Resources Conservation Service. "If we had this type of winter every year, we'd have no water shortages."

http://www.montanasnewsstation.com/Global/story.asp?S=8119341&nav=menu227_2

March [**Montana**] mountain snowpack well above last year

March mountain precipitation statewide was 88% of average and water year precipitation was 102% of average as of April 1st.

Roy Kaiser is a water supply specialist with the Natural Resources Conservation Service in Bozeman. He says March mountain precipitation west of the Continental Divide was 94% of average. East of the Continental Divide, March mountain precipitation was 83% of average.

<http://www.tri-cityherald.com/901/story/145792.html>

Strong winter [**Washington**] snowpack may meet summer water demands

The Mid-Columbia and Southeast Washington have one of best snowpacks in several years and likely enough water to meet needs this summer, based on information provided by the U.S. Natural Resources Conservation Service. Measured snow water content for the Snake River region east of the Tri-Cities is 147 percent of the average for the past 30 years, said Scott Pattee, water supply specialist for the conservation service in Mount Vernon. "I don't think there will be a drought," he said.

<http://www.heraldnet.com/article/20080402/NEWS01/567459102&news01ad=1>

Snowpack near Spada Lake [**Washington**] buries 1997 record [long article]

The snowpack above Snohomish County's main drinking water reservoir at Spada Lake has smashed a record set more than a decade ago. At Stickney Ridge, the snow is 16 1/2 feet deep, nearly 3 feet deeper than the record set in 1997. Most years, the snow is about 8 feet deep. "These are the deepest readings ever recorded on the first of April since we started measurements in 1986," said Bruce Meaker, senior manager of regulatory affairs for Snohomish County PUD. The deep snow ensures there's enough water for people, fish and power generation at the Jackson Hydroelectric Project, he said. "A year like this means we'll be able to generate more electricity in late spring and summer than we would in a drier year," Meaker said. "We will have a steady source of water running into the reservoir for the next several months."

http://www.koaa.com/aaaa_top_stories/x408981654

Snowpack creates flooding potential [in Colorado]

The Wet Mountains lived up to their name Thursday, as rain and snow clouds hung low over the ridges. "There's some runoff not a whole lot," Gary Kyte said, while looking at the creek that runs behind his Beulah home. But he says he's not worried about the snowpack creating flooding. "Typically, flooding is not a major concern up here." He's more worried about heavy rains, like the ones that knocked out part of Highway 78 last year.

<http://www.leadvillechronicle.com/home.php?content=article&article=2410>

Can the Arkansas [Colorado] Valley take 163 percent snowpack?

No doubt about it: 2008 will be a watershed year for communities in the Upper Arkansas River Valley.

Southeast Colorado, Kansas, much of Oklahoma and the northern regions of Arkansas drain toward the Arkansas River before following the Mississippi toward the Gulf of Mexico. This year the entire region (especially Lake County) can expect a mixed blessing: fast currents and high watermarks. Water reservoirs along the Arkansas River have been below their projected fill lines since drought years in 2002 and 2003, but they've been steadily rising. This year, residents along the river can finally expect full reservoirs along the Arkansas and Mississippi, says Mike Gillespie, snow survey supervisor with the Natural Resources Conservation Service. Gillespie has been collecting some remarkable statistics: snowpack in the Arkansas River valley is at 162 percent of the 30-year average, and spring runoff is projected to reach 147 percent of the 30-year average.

<http://www.9news.com/news/article.aspx?storyid=88940>

Melting snow means swelling rivers

GLENWOOD SPRINGS, COLORADO - In Glenwood Canyon, the days are quiet along the banks of the Colorado River, but Kevin Schneider knows they won't stay that way for long. "We're looking forward to a great season," said Schneider. He's the owner of Rock Gardens Rafting near Glenwood Springs, and with the snow now melting he's getting his rafting campground ready. He knows his buses will soon be full with a flood of tourists ready for fun on the water. "We have a trip coming up in three weeks," said Schneider. It is then when rafters will start to see water levels on the rise in Colorado, fueled by a booming snowpack that, despite little March snow, is still well above average. "We're certainly looking for a great water year. The canyon should be pumping," said Schneider.

http://durangoherald.com/asp-bin/article_generation.asp?article_type=news&article_path=/news/08/news080329_5.htm

http://durangoherald.com/asp-bin/article_generation.asp?article_type=news&article_path=/news/08/news080404_6.htm

Spring runoff may be intense this year [Colorado]

Debris flow keeps C.R. 250 closed; freeze-thaw cycle loosens rocks

With the arrival of spring, local emergency workers are keeping a watchful eye toward the skies, wondering if a warm rain shower at high elevations will send a torrent of water down through area watersheds. A section of East Animas Road (County Road 250), 2.7 miles north of Durango, has been closed for a part of this week because snowmelt has sent a debris flow across the road. The road remained closed Friday night.

http://www.timescall.com/News_Story.asp?id=7765

Snowpack levels below average this year [northern Colorado]

LONGMONT - Although much of the Rocky Mountain region been pounded by snowstorms in March, snowpack levels in the St. Vrain River basin remain below average for this time of year. St. Vrain's snowpack stands at 94 percent of the 30-year average, according to the April 1 snowpack report published by the U.S. Department of Agriculture's Natural Resources Conservation Service.

Still, the St. Vrain watershed is sitting pretty compared to April of last year - at 121 percent of the 2007 level.

"I was pleasantly surprised given how dry early March was that the snowpack level on Longs Peak came in as high as it did," Don Graffis, an NRCS soil conservationist, said Friday. He leads monthly snow surveys from January through June in the area.

<http://www.greatfalltribune.com/apps/pbcs.dll/article?AID=/20080405/NEWS01/804050309/1002>
Snowpack keeps mounting up [in **Montana**]

The Natural Resources Conservation Service said Friday that March mountain precipitation in Montana was 88 percent of average, and water year precipitation was 102 percent of average. East of the Continental Divide, March mountain precipitation in Montana was 83 percent of average. West of the Continental Divide, March mountain precipitation was 94 percent of average for that part of the state. March mountain precipitation in the Lower Yellowstone River Basin fared the best at 121 percent of average.

As of April 1, the mountain snowfall season is about 95 percent complete, the agency said.

"The mountains will typically reach seasonal peaks during April," said Roy Kaiser, the NRCS water supply specialist.

"April 1 snowpack statewide was slightly above average and well above last year," he said.

"However, river basins that have areas of below-average snowpack and need close monitoring include the Jefferson, Upper Clark Fork, Judith, Musselshell, and Upper Yellowstone."

<http://www.mtexpress.com/index2.php?ID=2005120111>
Idaho water reserves look good

Forecasters say recent cool, wet weather helped boost snowpacks

Yesterday, Thursday, April 3, the Pocatello office of the National Weather Service released its eastern Idaho weekly hydrological update. The report said the cold, wet weather Idaho has recently received has added "a well-needed boost" to eastern Idaho snowpacks. The NWS said the weather brought a 2 percent increase in average snow-water equivalent in the 10 eastern Idaho river basins where the Natural Resources Conservation Service tracks snow depths.

<http://www.rapidcityjournal.com/articles/2008/03/30/news/local/doc47eeca2b3c5d3969251721.txt>
Black Hills snowpack: 'Best it's been in years'

On Friday, Natural Resources Conservation Service officials measured 9 inches of moisture in a 24-inch base. That's 140 percent of the 30-year average. It's the best spring snowpack that Keith Culver of the NRCS has seen in years.

"There's just a lot more water in the snow that we've got now," he said.

<http://www.signonsandiego.com/news/state/20080402-0735-nv-sierrasnowpack.html>
March dismal for **Sierra** snowpack

RENO, Nev. - March brought few storms and little snow to the Sierra, leaving the snowpack below average to date, officials said. Though spring storms could still add to the snow totals, April typically signals an end to the peak snow season.

"After January, we were looking really good, but February and March just didn't produce anything," said Dave Wathen, a hydrologist with the federal water master's office in Reno.

As of Tuesday, the snowpack in the Lake Tahoe basin was 87 percent of average for the date, according to the U.S. Natural Resources Conservation Service's automated SNOTEL system.