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## INTERMOUNTAIN WEST CLIMATE SUMMARY



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### **April 2011 Mini-Summary Announcements & News**

This month's Summary is a short supplement that covers only precipitation and drought, snowpack conditions, and streamflow forecasts. If you are interested in the most recent updates of other maps and products we feature in the full-length IWCS, please follow the links on the [Notes and Weblinks](#) page. We will release the next full-length IWCS in the 3rd week of May.

#### ***WWA/CBRFC Streamflow Forecast Workshop - Salt Lake City - June 21***

Participants at this workshop will hear about the latest science relevant to the Colorado River and Great Basin rivers, and will receive training in a computer lab setting on using the new Colorado Basin River Forecast Center (RFC) online streamflow forecast tool. Participants will also be able to provide opinions and insight directly to the developers so the RFC can improve the tool.

For more information and to register, go to the [workshop web page](#).

#### ***CWCB Municipal Drought Planning Workshops - multiple Colorado locations - May and June***

The Colorado Water Conservation Board (CWCB) is presenting several all-day interactive workshops around the state designed to help participants understand and use new and innovative resources for improved drought planning. Participants from both the public and private sectors are welcome. The workshop dates and locations are May 19th - Durango; June 2nd - Denver; June 14th - Glenwood Springs; June 15th - Steamboat Springs; June 28th - Colorado Springs.

For more information and to register, go to the [workshops web page at CWCB](#).

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### **Precipitation and Drought Conditions**

In March, storms favored the high mountain regions across the three-state region, leaving lower elevations dry. Significantly above-average precipitation fell across the northern mountains of **Colorado**, **Utah**'s Wasatch Front and portions of western and northern **Wyoming**. Little precipitation fell across central **Wyoming**, eastern and southern **Utah**, and most of **Colorado**, including the plains already experiencing severe drought (D2) conditions

(Figure RC-1). Storms in early April finally brought some relief to lower elevations in western **Utah** and the far eastern portions of **Colorado**, along with parts of the Front Range.

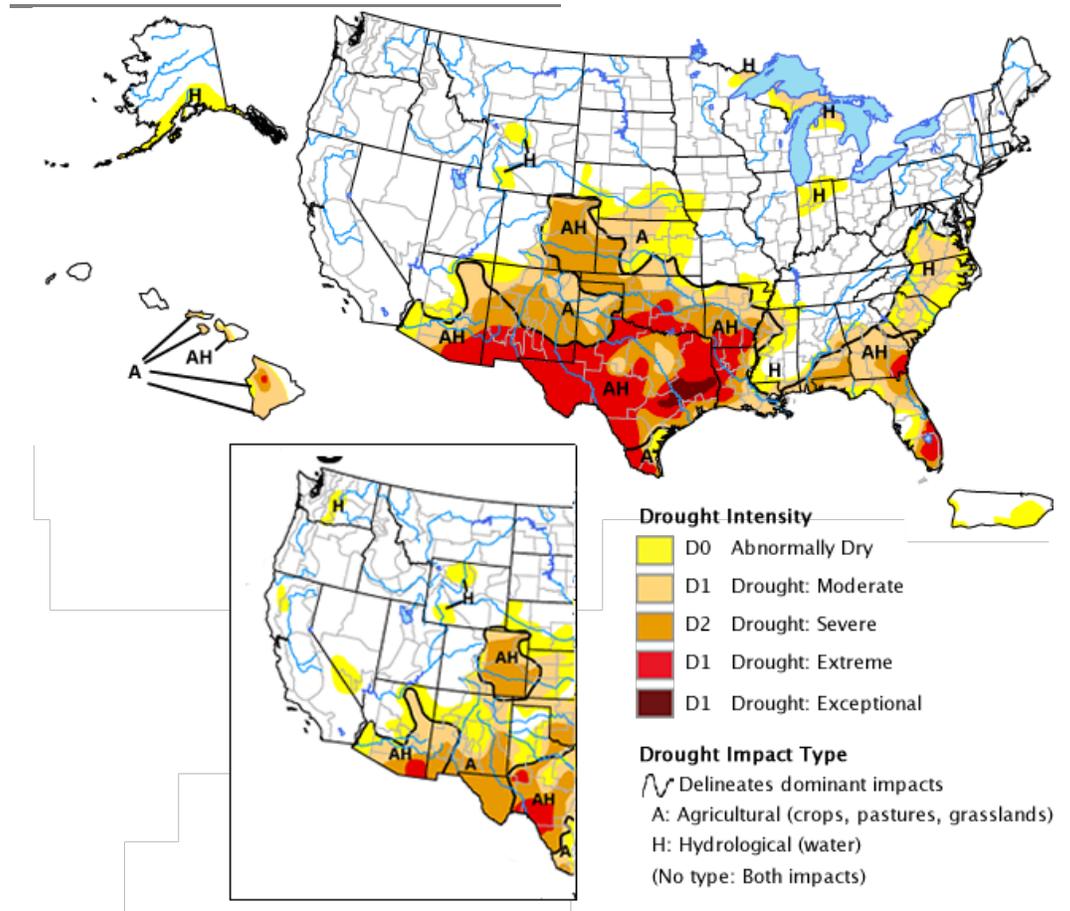


Figure RC-1. Drought Monitor from April 5, 2011 (full size) and March 8, 2011 (inset, lower left) for comparison. (Source: National Drought Mitigation Center)

According to the U.S. Seasonal Drought Outlook, the severe drought (D2) currently gripping eastern **Colorado** is projected to persist or worsen over the next three months, while drought conditions may spread to some portions of southwestern **Colorado** and southeastern **Utah** (Figure DO-1).

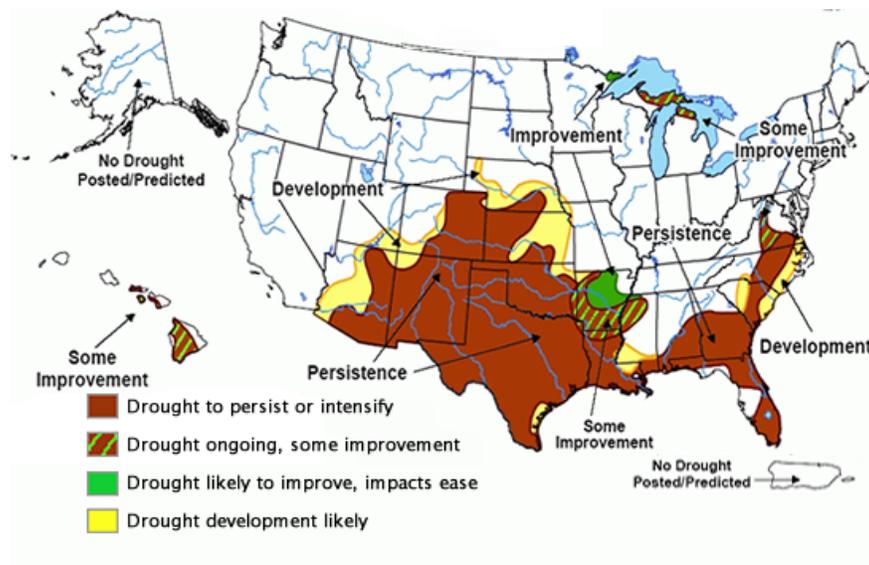


Figure DO-1. Seasonal Drought Outlook for April 7, 2011–July 2011. (Source: NOAA Climate Prediction Center)

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[Notes & Weblinks \(Recent Conditions\)](#)

(provides explanations of graphics and additional information sources)

[Notes & Weblinks \(Seasonal Drought Outlook\)](#)

(provides explanations of graphics and additional information sources)

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### Intermountain West Snowpack

April 1 snowpack values in the three-state region continued the trajectory of the past several months. Nearly all basins reported average to much-above-average snowpack conditions, except in southern Colorado, where the snowpacks lagged behind average conditions (Figure SP-1).

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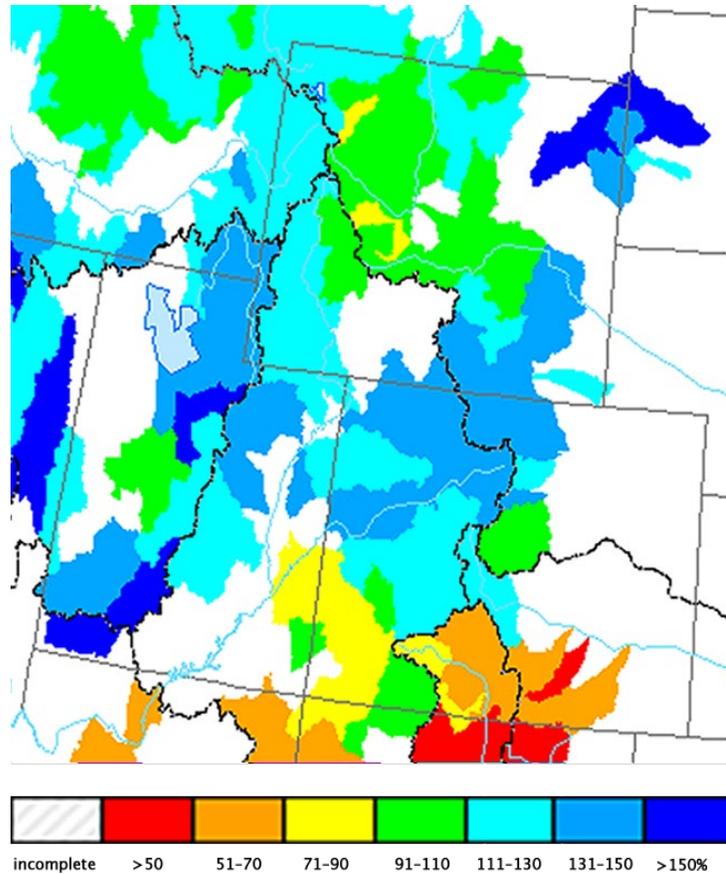


Figure SP-1. Snow water equivalent (SWE) as a percent of average for available SNOTEL and snow course sites in the Intermountain West as of April 1, 2011 (Source: NRCS).

In **Colorado**, April 1 snowpacks were near to above average in all but the Upper Rio Grande Basin, which was at 78% of average, and the combined San Juan, Animas, Dolores, and San Miguel basins, at 89% of average. The Laramie and North Platte basins recorded the highest snowpacks in the state at 137% of average, and the statewide average was 113% of average. March precipitation was far below average for the southern half of the state, but near to above average in the north. Water-year-to-April 1 precipitation ranged from 85% of average in the Upper Rio Grande to 132% in the Laramie and North Platte.

**Wyoming** snowpacks were above average in all basins as of April 1, with a statewide reading of 123% of average. Individual basins ranged from 104% of average on the Wind River to 141% in the Upper North Platte. March precipitation was near to much above average in Wyoming, ranging from 96 to 160% of average. April 1 water-year-to-date precipitation was 98% to 166% of average.

**Utah** statewide snowpack, at 135% of average, was the highest in the three-state region as well as the highest April 1 statewide measurement since 1983. Both the Weber and Ogden Basins recorded their highest-ever April 1 SWE, in over 40 years of automated measurements. Many individual sites across Utah are in the highest 5% of

their respective records. All basins recorded above-average snowpacks, ranging from 117% in southeastern Utah to 158% for southwestern Utah. March precipitation was 119% of average statewide, and much above average in the Bear and Weber basins. April 1 water-year-to-date precipitation was above average in all basins, and 142% of average statewide.

*Snowpack Update, April 14:* The first two weeks of April has delivered wetter-than-average conditions in most of mountainous Utah and Wyoming, with the exception of southeastern Utah. Most basins in Utah and Wyoming continue to see accumulation on the already large snowpacks, also delaying significant melt. Northern Colorado received above-average precipitation for the first half of April, with below-average precipitation to the south, continuing the season-long trend. The April 12 update from the Colorado Dust-on-Snow program reports that five dust events have affected at least the San Juan mountains this season, all occurring since mid-February. Dust from the March 21 event was recorded as far north and east as Steamboat and Winter Park. The overall seasonal dust loading at the Senator Beck Basin monitoring site in the San Juans appears to be lower than at this time in 2010. About one-third of all dust events affecting the San Juans since 2002 have occurred after April 20, so it is likely that there's more dust yet to come.

[The majority of the text in this section comes from the NRCS State Basin Outlook Reports.]

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*(provides explanations of graphics and additional information sources)*

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### Spring and Summer Streamflow Forecasts for the 2011 Runoff Season

Spring and summer streamflow forecasts issued April 1 call for near- to above-average April to July runoff for **Wyoming**, northern **Colorado**, and eastern **Utah**. Forecasts for northern, central and southwestern Utah are for above- to much-above-average runoff, while below-average runoff is forecasted for southern **Colorado** (Figure STRM-1). The April-July inflow to Lake Powell is forecasted to be 120% of average. Since the March 1 streamflow forecasts were released, conditions have favored areas with already-ample snowpacks, leading to higher forecasts in Wyoming, most of Utah, and northern Colorado. Conversely, below-average March precipitation resulted in further reductions in streamflow forecasts for southern Colorado.

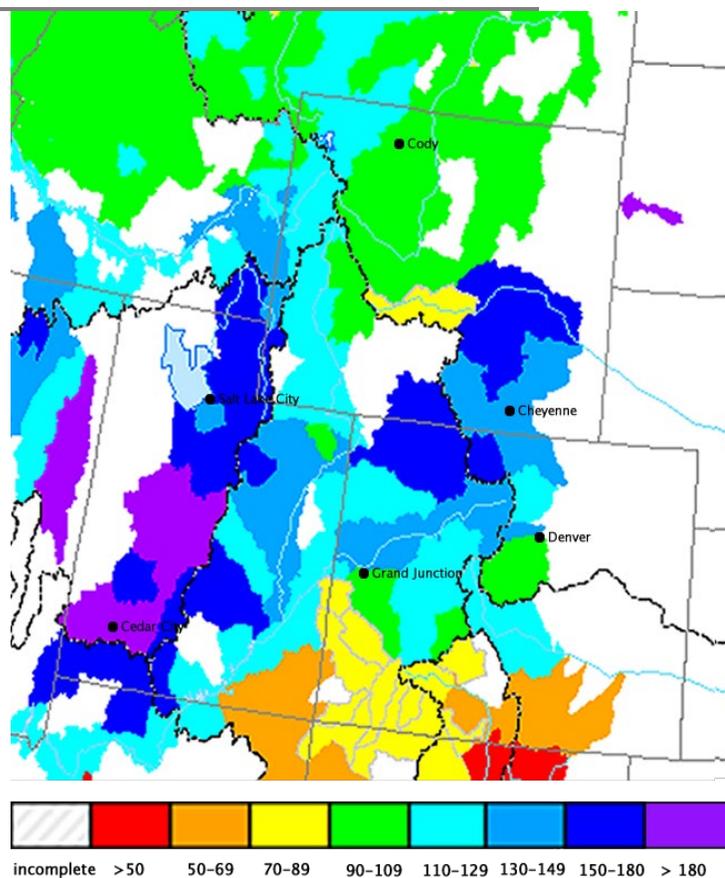


Figure STRM-1. NRCS outlook for natural streamflows for spring and summer 2011 in the Intermountain West region as a percent of average streamflows (data through April 1, 2011). (Source: NRCS)

In **Colorado**, April 1 streamflow forecasts maintained the north-to-south trend seen in the March 1 forecasts. In the northwest, forecasts range from 120% to 174% of average in the Yampa, Colorado, and North Platte basins. In the central and more eastern basin of the Gunnison, South Platte and Arkansas headwaters most forecasts range from 90% to 130% of average. A couple of very dry exceptions in the South Platte are Bear Creek and Antero Reservoir inflow, with forecasted runoff in the 40% to 50% range. The driest runoff forecasts in the state range from 34% to 60% of average for streams draining the Sangre de Cristo Mountains. Below-average runoff is also forecasted for most of the rest of southern Colorado.

**Wyoming** April 1 streamflow forecasts were near to much above average for the major basins in the state. On the higher end, the Belle Fourche and Cheyenne Rivers are forecast at 206% and 222% of average, respectively. Statewide forecasts are 125% of average with an individual point range from 88% to 222%. Only a few forecast points in the state fall slightly below average.

**Utah** April 1 streamflow forecasts are for above- to much-above- average runoff throughout the entire state with only two exceptions. Most forecasts are in the 130% to 180% range, with very high flows anticipated at both north and south ends of the state. The lowest flows, and only below average forecasts are expected at the San Juan near Bluff, and South Creek near Monticello, with forecast at 69% and 53% of average respectively. The potential for flooding is elevated in much of Utah, most notably in the northern part of the state.

[The majority of the text in this section comes from the NRCS State Basin Outlook Reports.]

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*(provides explanations of graphics and additional information sources)*

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