

## December 2010 DROUGHT UPDATE

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### Executive Summary

Following a warm and dry September and October throughout much of the state, November saw conditions improve in some regions and deteriorate in others. The Rio Grande and Eastern Plains have received little to no precipitation in November and continue to experience moderate to severe drought conditions. The four corners region also remains dry, but has yet to be classified as experiencing drought conditions. Conversely, the northwest portion of the state experienced good precipitation in November alleviating previously dry conditions. Reservoir storage remains strong across most of the state with five of the eight major basins near or above average.

- The eastern plains of Colorado have received below normal precipitation in November and remain below normal for the 2010 water year, which began in October. Much of Northwestern Colorado has seen average precipitation in November helping to ease dryness from the late summer and early fall.
- Recent storms have alleviated dry conditions in The Yampa White Basin. This basin is now at 149% of average for the water year and has a snowpack 129% of average.
- Statewide snowpack is 103% of average. Individually, four of the eight basins are well above 100% of average snow water equivalent. The North Platte has the highest percent of average snow pack at 142%, the Colorado, Yampa/White and South Platte sit at 130%, 129%, and 116% of average, respectively.
- The San Miguel/Dolores and the Rio Grande River Basin remain well below normal for snow pack with 67% and 56% of average. Conditions in the southwest portion of the state will be closely monitored over the coming weeks for emerging drought conditions.
- According to the U.S. Drought Monitor 59% of the state is now experiencing D0, D1 or D2 status, which represents abnormally dry, drought moderate and drought severe conditions respectively. The drought conditions that have covered the eastern plains of the state throughout the fall have continued to deteriorate with D0, D1 and D2 covering much of Colorado east of the divide.
- The December 1<sup>st</sup> traditional SWSI values range from -1.8 in the Rio Grande Basin to +3.9 in the Yampa/White/ North Platte Basin.<sup>1</sup> The Gunnison and Arkansas basins are both near normal at +0.1 and +0.3 respectively. The Colorado and South Platte are both showing strong positive values at +2.6 and +2.0. The dry conditions in the San Juan/Animas/Dolores/San Miguel are illustrated by a SWSI value of -1.4. The traditional SWSI values are partly influenced by reservoir storage and may not fully represent conditions in the region; the revised SWSI values were not available for this month.<sup>2</sup>

<sup>1</sup> Traditional SWSI values are based on streamflow, reservoir storage and precipitation for the summer period (May-October). The values range from a high of +4.0, which indicates an abundant supply to a low of -4.0, which indicates severe drought. A value of 0.0 indicates a near normal supply. Traditional SWSI values will be presented alongside the Revised SWSI as the transition to the new calculation is completed.

<sup>2</sup> Colorado was the first state to develop a methodology for calculating the Surface Water Supply Index (SWSI) in the 1980's but in the early 1990s the Natural Resource Conservation Service (NRCS) refined the SWSI calculation to address the subjectivity of the original computation. The use of streamflow forecasts in the NRCS updated SWSI is an objective, statistical assessment of the data relating to snowmelt runoff. Additionally, the revised methodology provides a more stable month to month transition and utilizes a higher spatial resolution improving from four digit hydrologic units (seven values statewide) to eight digit hydrologic units (37 values statewide). This shift enables more detailed evaluation of the regions that are most effected by drought at any given time. The revised SWSI calculations are now available for western Colorado and will be presented in drought updates. Statewide figures will be available on a monthly basis beginning in the spring 2011, when the State of Colorado will fully adopt the new methodology. The scale of +4.0, which indicates an abundant supply to a low of -4.0, which indicates severe drought will remain the same.

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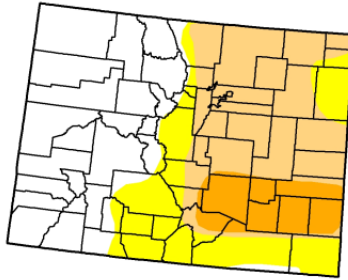
## U.S. Drought Monitor Colorado

December 7, 2010  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.1	58.9	38.7	10.0	0.0	0.0
Last Week (11/30/2010 map)	39.8	60.2	38.7	10.0	0.0	0.0
3 Months Ago (09/14/2010 map)	65.4	34.6	0.0	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	69.2	30.8	7.5	0.0	0.0	0.0
Start of Water Year (10/05/2010 map)	28.9	71.1	13.8	0.0	0.0	0.0
One Year Ago (12/08/2009 map)	71.0	29.0	7.5	0.0	0.0	0.0

**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



The adjacent map shows the U.S. Drought Monitor for Colorado as of December 7, 2010. The plains region of Colorado continues to experience sustained D0- D1 drought conditions for the ninth month in a row, with D2 conditions continuing in portions of Bent, Huerfano and Pueblo counties for the second week. Dry conditions experienced in the northwest part of the state have been alleviated by strong early season snowfall.

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

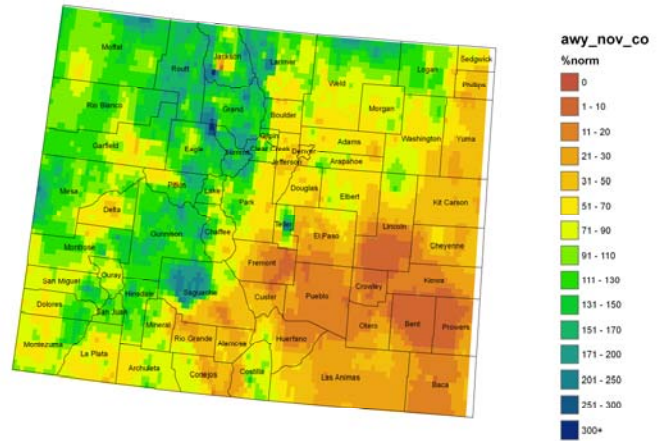
<http://drought.unl.edu/dm>



Released Thursday, December 9, 2010  
Author: R. Tinker, CPC/NOAA

The adjacent map shows precipitation for the water year thus far (October 2010-November 2010). The eastern plains of Colorado, which have seen little precipitation in November, are well below normal for the water year. The northwest corner of the state has experienced roughly normal precipitation for the water year, alleviating previously dry conditions in this region.

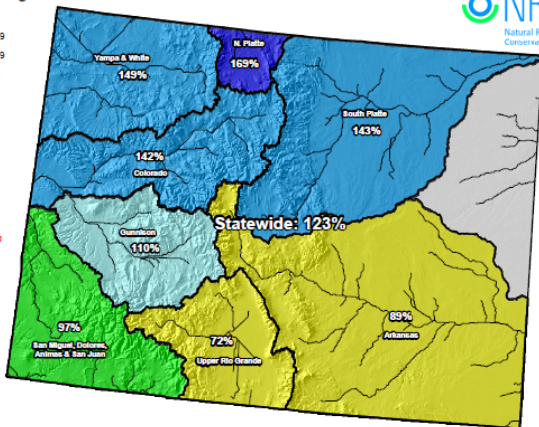
### Colorado Water Year Precipitation as Percent of Average (Oct 10 - Nov 10)



### Colorado SNOTEL Water Year-to-Date Precipitation Update Map

Percent of Average

- -- 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- - 50



Current as of Dec 01, 2010

The map to the left shows the precipitation summary for the 2011 Water Year as of December 1, 2010. This map shows that precipitation for the period from October 1, 2010 through December 1, 2010 which varied basin by basin from below normal to far above average. The northern mountains have seen significant precipitation since mid November. The Upper Rio Grande River Basin has had the least amount of cumulative precipitation so far this water year, at 77% of average.

**NOTE: The next WATF meeting is scheduled for January 18, 2011 at the Division of Wildlife, 6060 Broadway in Denver.**