NIDIS Weekly Climate, Water and Drought Assessment Summary Upper Colorado River Basin February 8, 2011

Precipitation and Snowpack

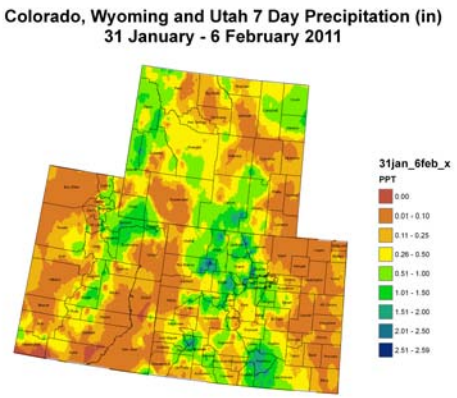

Figure 1: 7 day precipitation (24-30 January 2011).

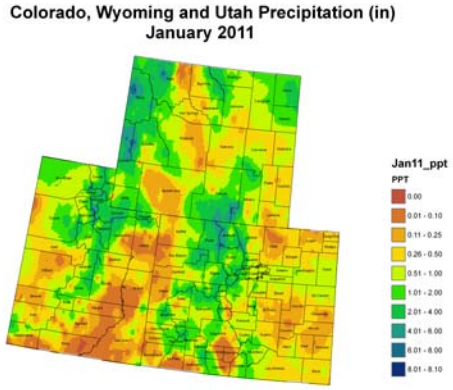

Figure 2: January 2011 Precipitation (in)

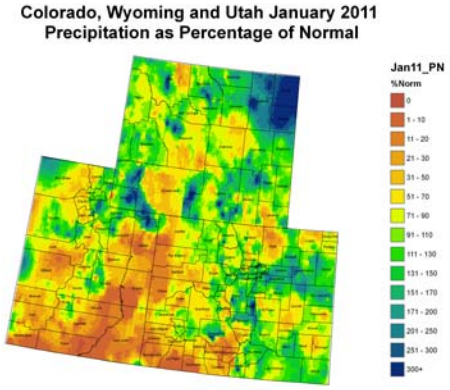

Figure 3: January 2011 Precipitation as Percentage of Average

Over the past week (Figure 1), the Northern mountains of Colorado received the most precipitation which ranged from 1.00 – 2.59". The Wasatch and Uinta mountains in Utah received 0.50 – 1.50". The San Juan's and Sangre de Cristo's in Colorado received 0.50 – 2.00" of much needed moisture over the past week. The Green River headwaters and the Plains of Colorado were relatively dry over the past week.

Figure 2 shows January 2011 precipitation and figure 3 shows January precipitation as a percentage of average. Overall, the Green River basin in SW Wyoming and NE Utah received the highest percentage of average in January, ranging from 71 to greater than 300 percent of normal. The northern and central mountains of Colorado received near to above average precipitation, but the San Juan and Sangre de Cristo mountains received below to near average precipitation, ranging from 51 – 110 percent of normal. The northern plains of Colorado received beneficial moisture that ranged from 90 - 200 percent of normal and the southern plains in the Arkansas basin ranged from 71- 130 percent of normal.

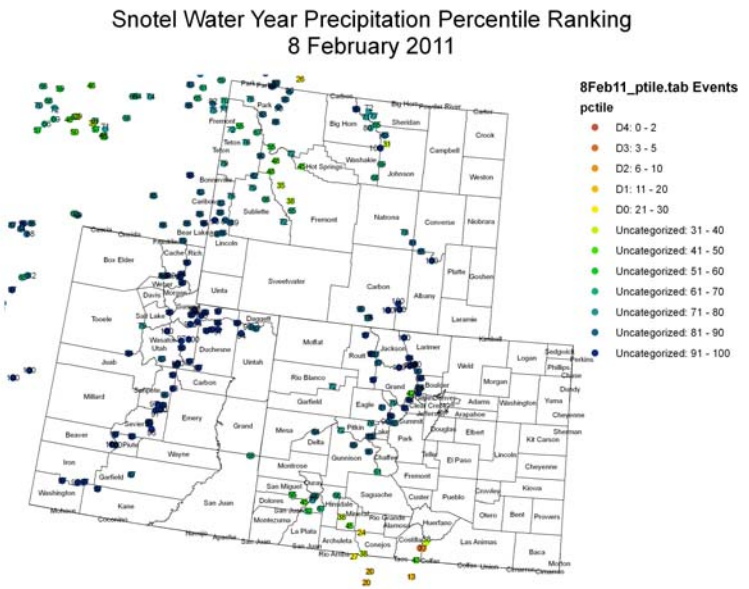

Figure 4: Snotel Water Year Precipitation Percentile Ranking.

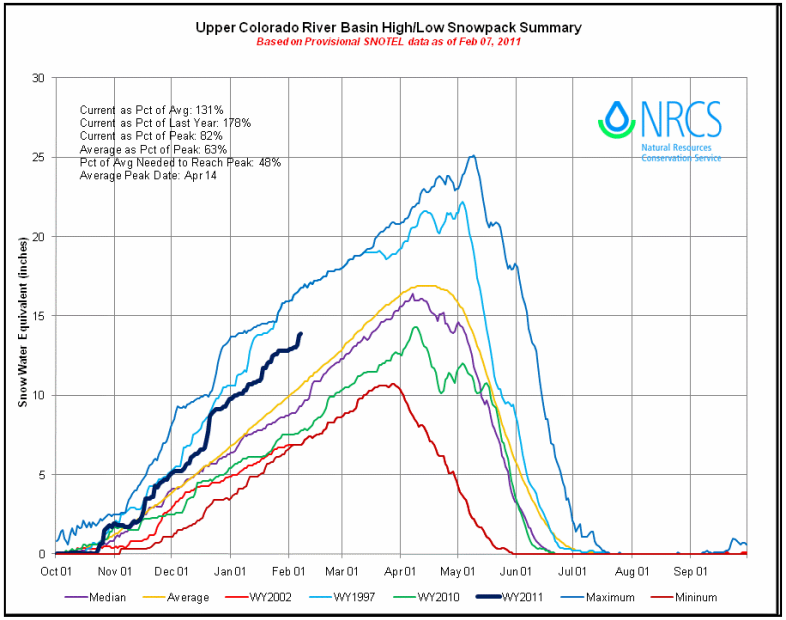

Figure 5: Upper Colorado Mainstem Group Snow Water Equivalent Plot (Green = 2011, Red – 2010, Blue = Average)

SnoTel water year precipitation percentile rankings (Figure 4) are favorable over the majority of the UCRB. The Sangre de Cristo mountains showed improvement at some stations from last week due to the recent precipitation (Figure 1) but a few stations are still reporting percentile rankings less than 13. The San Juan and Rio Grande stations have remained steady over the past week with some stations showing minor decreases.

Figure 5 shows the snow water equivalent (SWE) evolution plot for the Colorado mainstem station grouping. This group of stations is showing SWE to date of 131% (up 5% from last week) of average and 82% of the average peak SWE for the season.

Streamflow

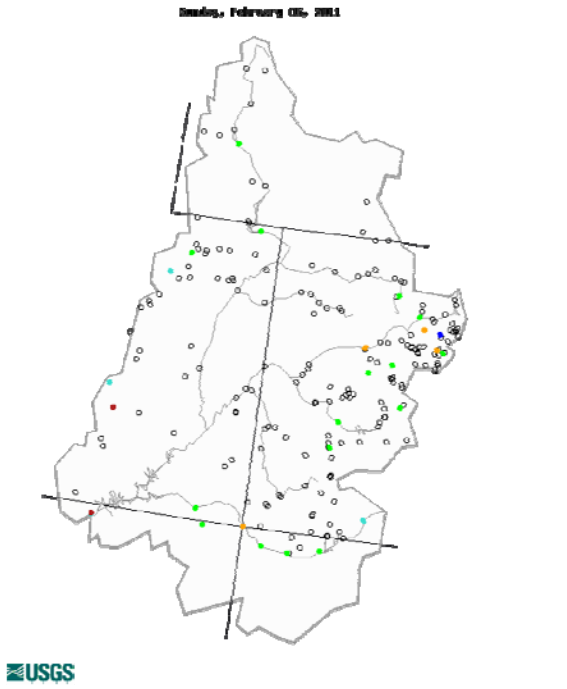

Figure 6: 7-day average discharge compared to historical discharge for February 6th.

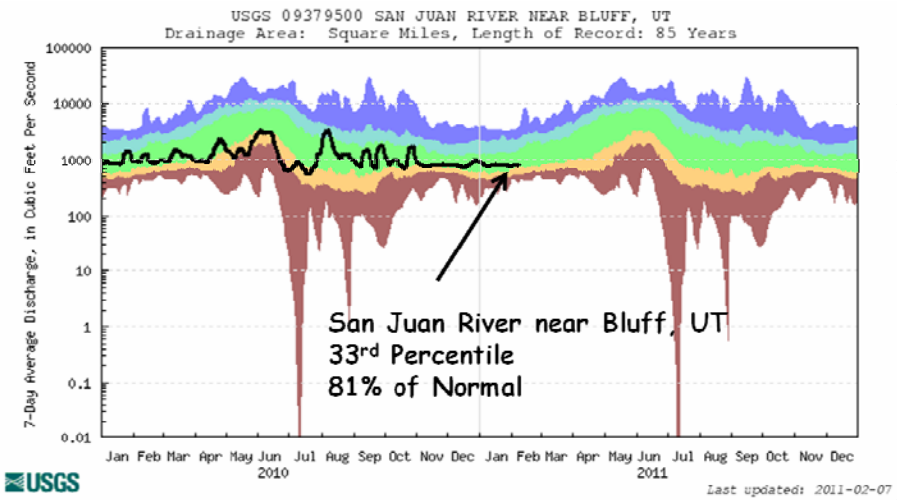

Figure 7: USGS 7 - day average discharge time series at Bluff, UT. Note Colorado and Green Rivers are ice affected.

Seven day average discharge conditions across the UCRB are showing good percentile rankings (Figure 6) for those gages reporting at this time. Approximately 73% of the gages are reporting normal or better conditions (percentile ranking of 25 or greater). Note many gages are not reporting due to ice.

Figure 7 shows time series for the San Juan River near Bluff, UT. Discharge is 81% of normal, down 6% from last week (33rd percentile) but still in the normal range. Both the Colorado and Green Rivers are not reporting due to ice.

Water Supply and Demand

Temperatures:

Over the past week (Figure 8), the entire UCRB region has seen normal to much below normal temperatures. The Eastern Plains of Colorado were the coldest ranging 10-25 degrees below normal.

Figure 9 shows the VIC soil moisture model, which from last week has remained mainly unchanged with slight degradations on the Northern plains of Colorado.

Reservoirs:

Most reservoirs in the UCRB are in good condition. Lake Granby saw decreases of 7,000 ac-ft since last week and both Green Mountain Dam and Blue Mesa Reservoirs decreased around 1,000 ac-ft since last week. Flaming Gorge reservoir saw a 1500 ac-ft decrease and McPhee saw a 500 ac-ft decrease.

Lake Powell dropped 117,000 ac-ft since last week and is now 79% of average. Figure 10 shows the UCRB tea cup diagram.

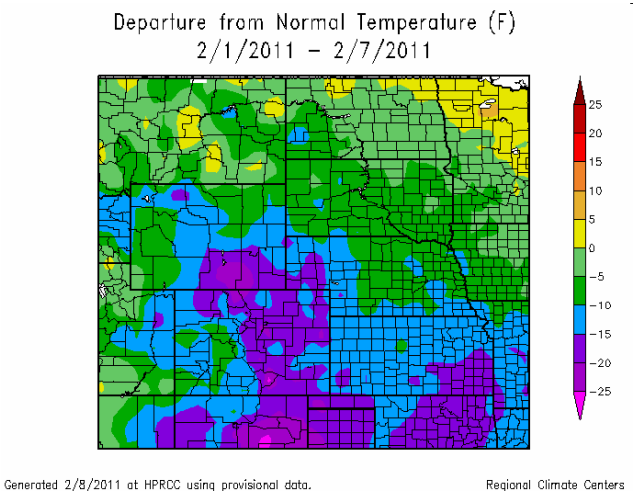

Figure 8: Temperature departure from normal 2/1 – 2/7.

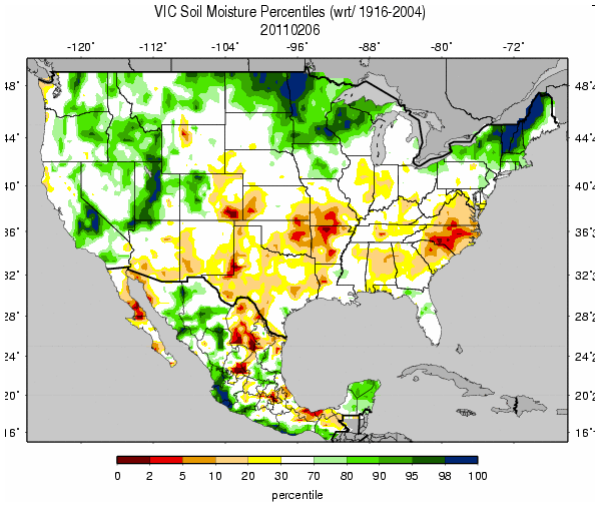

Figure 9: VIC soil moisture model for 6 February 2011.

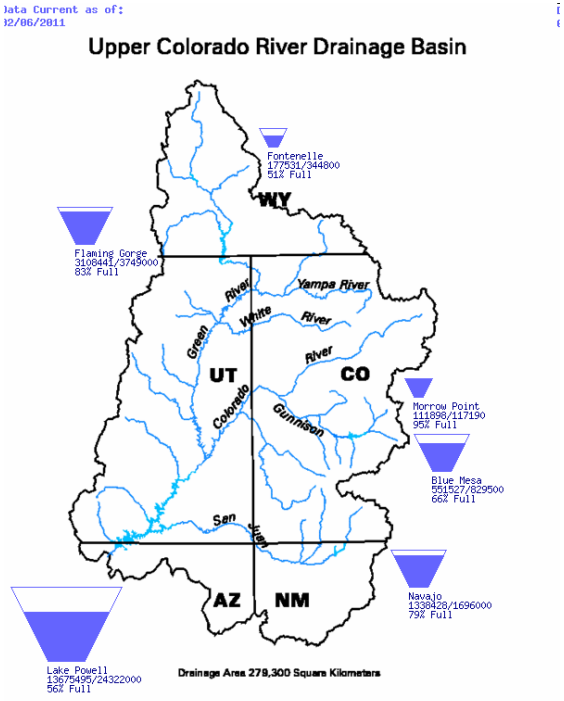

Figure 10: UCRB tea cup diagram, showing levels of major reservoirs in the basin for Feb 6th.

Precipitation Forecast

Arctic cold front has dropped south of the four corners area this morning with moderate snow filling in behind it. Snow showers will be possible across most of the Upper Colorado River Basin through this morning, and should begin to diminish from northwest to southeast throughout the day. Significant accumulations are expected to be confined to the western slope of Colorado where Quantitative Precipitation Forecast fields show 0.1 to 0.25 inches of liquid equivalent. Northern slopes of the San Juan mountains will also see decent snow accumulation, with forecast totals around 0.5 inches of liquid through tonight. Beyond today there does not appear to be much in the way of precipitation as a ridge builds over the basin for the end of the week. Forecast models do indicate a weak disturbance brushing the northern areas late Thursday, but at this point it appears this feature will only produce some light showers in southern Wyoming/northern Colorado. Dry weather will continue through the weekend and into early next week.

Recommendations

This past week has brought much needed moisture to the San Juans and Sangre de Cristo's and continued to bring moisture to the high country of Colorado and Utah.

SPI values for the eastern plains of Colorado are still moderately dry on the 120 day – 6 month time frame, thus status quo is recommended for the region again this week. This area continues to be closely monitored for potential improvements.

Next week (Tuesday, February 15th at 10AM MST) begins our weekly drought assessment webinars, so please join us. You can register here:

http://ccc.atmos.colostate.edu/drought_webinar_registration.php