

NIDIS Weekly Climate, Water
and
Drought Assessment Summary
Upper Colorado River Basin
January 18, 2011

Precipitation and Snowpack

Colorado, Utah and Wyoming Month to Date Precipitation
1 - 15 January 2011

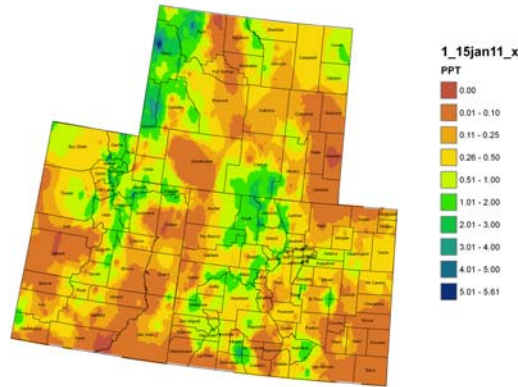


Figure 1: Month to Date Precipitation (1-15 January 2011).

Colorado, Utah and Wyoming 7 Day Precipitation
9 - 15 January 2011

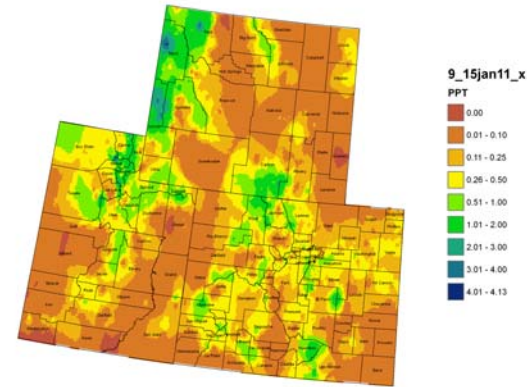


Figure 2: 7 Day Precipitation (9-15 January 11).

Much of the high country in the Upper Colorado River Basin (UCRB) has received good moisture for the month of January (Figure 1). The pattern is quite similar for the past 7 days with the same areas receiving another brief shot of moisture (Figure 2). The areas receiving the most precipitation were in Lincoln and northern Sublette county in Wyoming where amounts ranged from 4-5" since the beginning of January. The Wasatch range of Utah and Colorado's northern mountains received 1-3" of precipitation for January to date. Lower elevations are still reporting below average precipitation, both on the Western and Eastern slopes. This pattern is being closely monitored as the season progresses. Over the past week (Figure 2) some beneficial moisture has fallen on the Eastern Plains of Colorado but these amounts only ranged from 0.25" – 0.50" and was confined to the northern plains and Palmer Divide.

Snotel One Week Change in Water Year Precipitation Percentage of Normal
17 January 2011

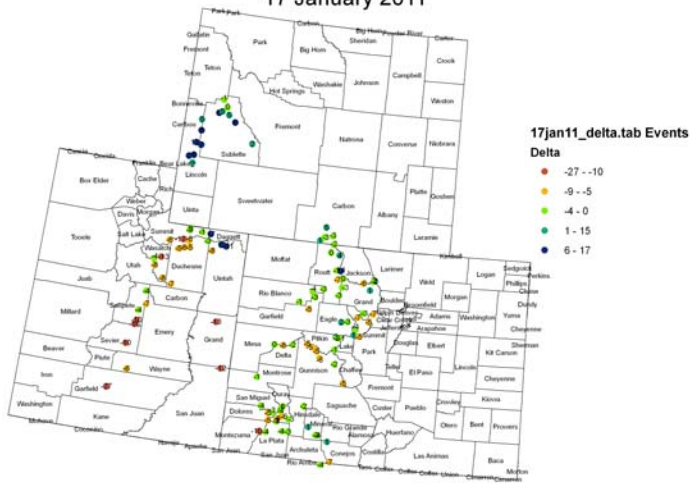


Figure 3: Snotel One Week Change in Water Year Precipitation Percent of Average.

Snotel Water Year Precipitation Percentile Ranking
17 January 2011

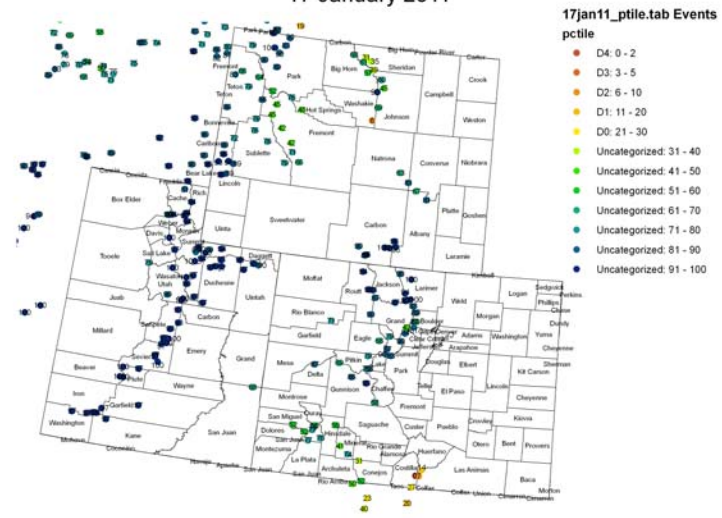


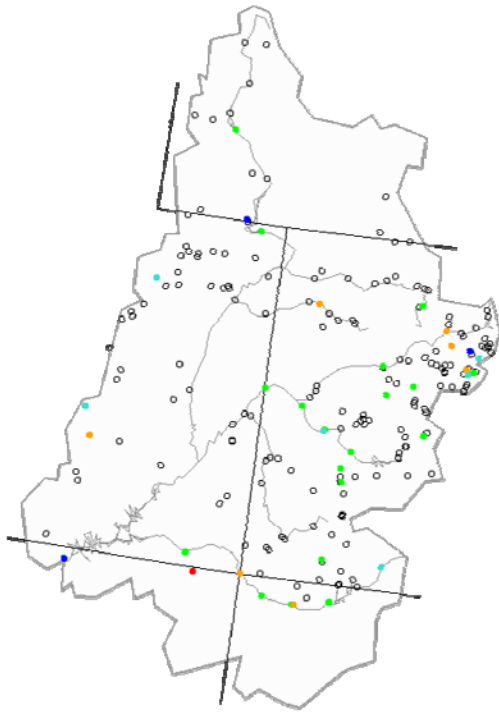
Figure 4: Snotel Water Year Precipitation Percentile Ranking.

SnoTel weekly change in water year precipitation percents of average (Figure 3) decreased at many locations with the exception of the Upper Green River basin in Wyoming/Utah and the northern mountains of Colorado which received the most moisture over the past week (Figure 2). The northern mountains show some small decreases, however this is due to the already above average conditions present in these areas.

Water year precipitation percentile rankings are in good condition at the majority of mountainous locations, with the exception of the Sangre de Cristo range in SE Colorado where lower percentile rankings are still present. These stations percentile rankings range from 7 – 27.

Streamflow

Monday, January 17, 2011



Explanation - Percentile classes							
Low	≤10	10-24	25-75	76-90	≥90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Figure 5: 7-day average discharge compared to historical discharge for January 17th.

Seven day average discharge conditions across the UCRB are showing good percentile rankings (Figure 5). Approximately 77% of the gages are reporting normal or better conditions (percentile ranking of 25 or greater).

Figure 6 shows time series for key sites in the UCRB. The Colorado River at the CO-UT state line is 89% of normal (34th percentile) and the San Juan River near Bluff, UT is 89% of normal (41st percentile). The Colorado River gage did see a slight increase from last week while the San Juan gage decreased slightly from last week. Overall, streamflow conditions are near normal for this time of year.

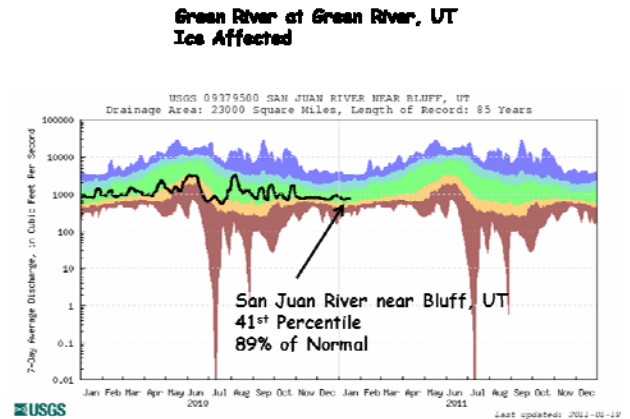
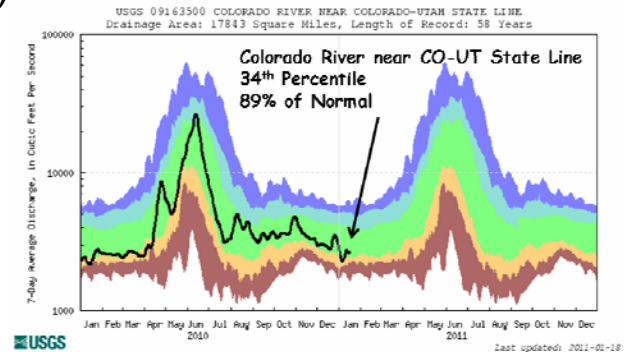


Figure 6: USGS 7 - day average discharge time series at the CO - UT state line (top), Green River, UT (middle) and Bluff, UT (bottom). Note Green River is ice affected.

Water Supply and Demand

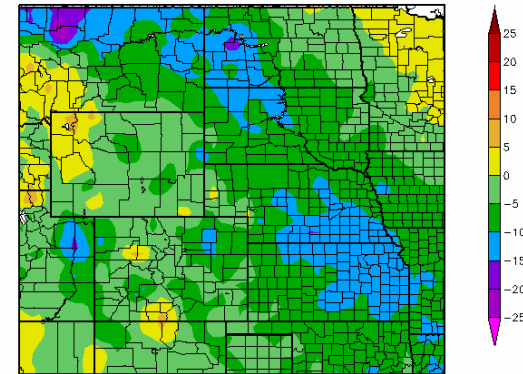
Temperatures:

Over the past week (Figure 7), temperatures were near to below average for the majority of the UCRB. The coldest areas were in NW Colorado and NE Utah. These areas saw temperature in the range of 10 -20 degrees F below average for the 2nd week in a row due to cold air pooling and fresh snow cover. Figure 8 shows the VIC soil moisture map. Since last week, soil conditions have improved slightly on the Eastern plains of Colorado due to a recent snowstorm. Improvements were focused on the

Reservoirs:

Only slight decreases in reservoir levels have occurred this week. Aside from Lake Powell (currently at 77% of average and 58% of capacity) all large reservoirs are above average (except for Green Mt. which has changed operations in the past couple of years). Lake Powell storage has decreased by 331,000 ac-ft since beginning of the month. Because of the above average inflows for the beginning of the water year, and because of the inflows forecast for the next three months, operations at Glen Canyon Dam have been modified and releases from Lake Powell have been increased.

Departure from Normal Temperature (F)
1/10/2011 - 1/16/2011



Generated 1/17/2011 at HPRCC using provisional data.

Regional Climate Centers

Figure 7: Temperature departure from average at NWS Cooperative stations from 10-16 January 2011.

VIC Total Moisture Storage Percentiles (wrt/ 1916-2004)
20110116

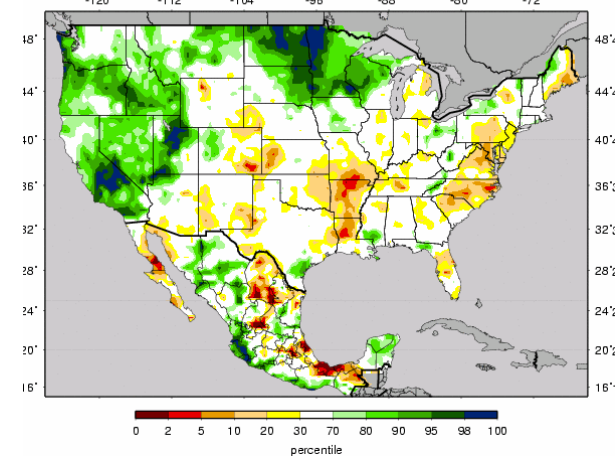


Figure 8: VIC soil moisture model for 16 January 2011.

Precipitation Forecast

Moderate to heavy snow over the Colorado Mountains will gradually diminish through the rest of today, with only minor additions to the snowfall already on the ground. After a short break on Wednesday, expect snow to begin increasing again for locations in northern Utah and Colorado. This system will again bring the potential for widespread accumulating snow for much of the northern Upper Colorado River Basin, but accumulations will be limited by the speedy movement of the storm. Quantitative precipitation forecast fields show amounts around 0.5 inches liquid equivalent over the northern Colorado mountains through Friday, with 0.25 inches in northern Utah and SW Wyoming. After another brief lull on Friday snow will again impinge on northern mountain areas by Saturday morning. There is considerably less confidence in the track and timing of the last of these storms, but it appears that significant accumulations are possible across the basin through the weekend. Dry conditions will then take over for the beginning of next week.

Recommendations

Taking into consideration current conditions, the time of year and modest recent precipitation East of the divide , status quo is recommended for the region this week.