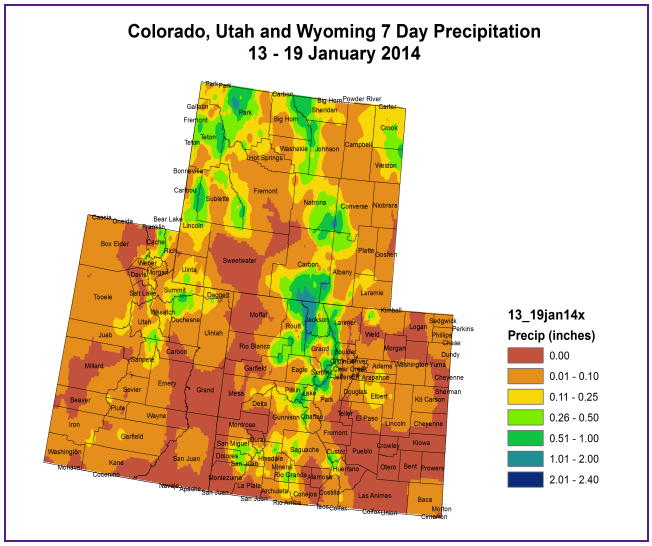
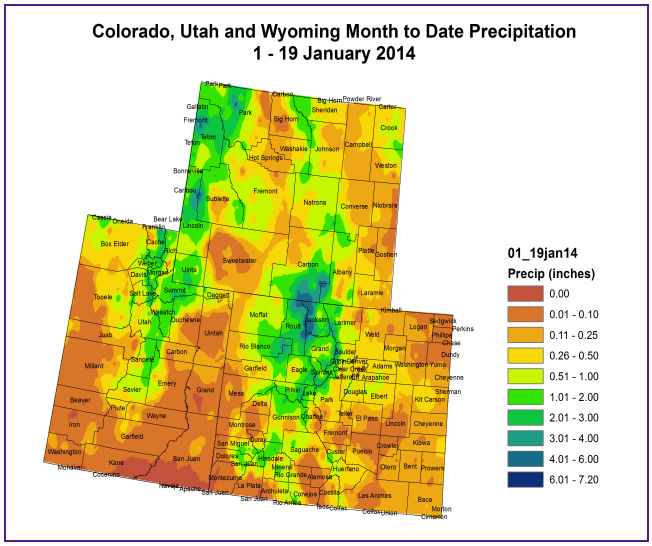
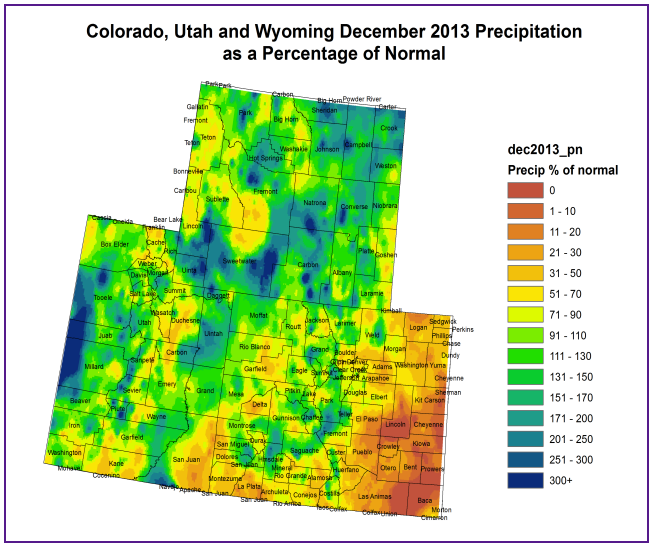
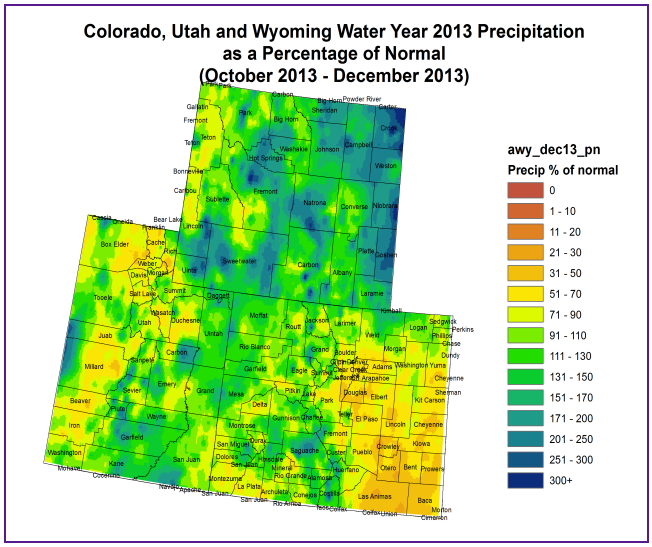
PRECIPITATION









The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average; water-year-to-date precipitation as a percent of average.

Last Week Precipitation:

- Precipitation was mostly confined to the higher elevations along the eastern portion of the Basin
- In eastern UT the Wasatch and Uintah ranges were mostly below 0.25" with spotty areas up to 1.00"
- The higher elevations of the basin in WY received up to 1.00", however mostly between 0.10 and 0.25"

- The northern and central CO mountains received between 0.25 and 2.00"of moisture, only in the higher elevations.
- Spotty areas of the San Juans in southwest CO received between 0.25 and 0.50"
- The lower elevations from southwest WY, through eastern UT, western CO and down the Four Corners mostly received less than 0.10" of moisture for the week
- Higher accumulations around the Continental Divide, decreasing to between 0.01 and 0.10" of precipitation along the Front Range, with no precipitation along the eastern CO plains

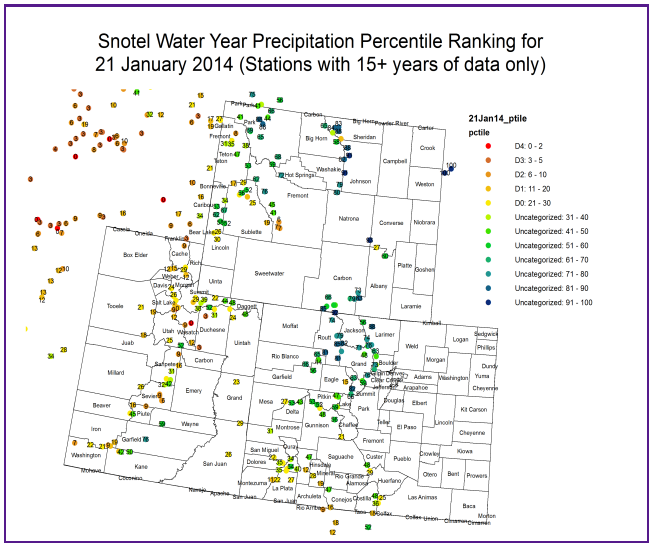
December Precipitation:

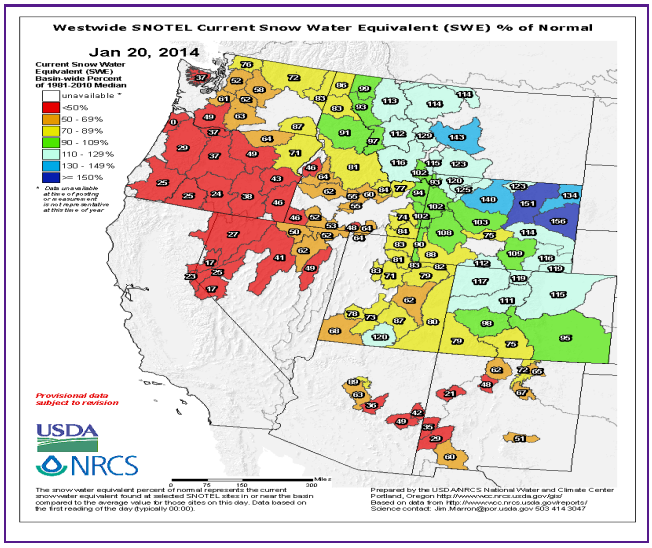
- For the month of December, the UCRB saw mainly average to above average precipitation.
- The Green River basin saw precipitation above 90% of average for most locations with the exception of a dry area near Sublette, Fremont and Sweetwater counties with less than 50% of average precipitation in that area.
- Northern Utah received variable precipitation in December with the Wasatch and Uintahs showing areas less than 50% of average as well as areas with above average precipitation. NE Utah and NW Colorado had above average moisture in December which stretched down into the lower Colorado River basin through Grand, Emery, Wayne and Garfield counties in Utah.
- SW Colorado in the San Juans saw near to above average precipitation in the mountains, with lower lying areas receiving less than 50% of average.
- East of the divide was well below average for December with widespread areas on the plains receiving less than 50% of average for the month.

Water Year Precipitation:

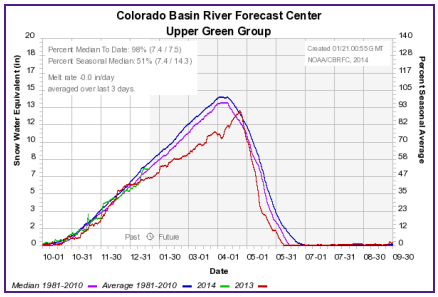
- Much of the UCRB has seen near and above average precipitation through the first three months of WY2014
- The driest areas for the water year through December are the Wastach mountains in northern Utah which has received 20-90% of average, depending on location.
- The Four Corners area has seen water year precipitation 50-90% of average through December.
- East of the divide, the plains have seen lower than average precipitation through December with widespread areas receiving 30-70% of average for the water year.
- The majority of the rest of the UCRB and Colorado received average to above average precipitation from Oct-Dec.

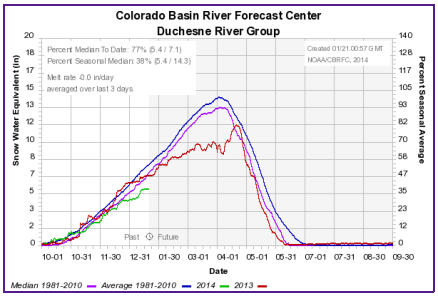
SNOTEL AND SNOWPACK

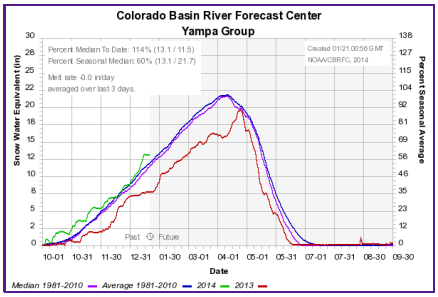


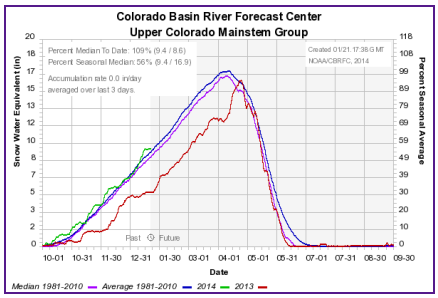


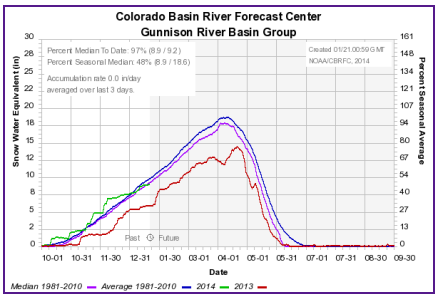
The top left image shows the Natural Resources Conservation Service's SNOTEL water-year-to-date precipitation percentile rankings. The top right image shows sub-basin averaged snow water equivalent accumulations as a percent of average. The images below show accumulated snow water equivalent in inches (green) compared to average (blue) and last year (red) for several different sub-basins across the UCRB (and were created by the Colorado Basin River Forecast Center).

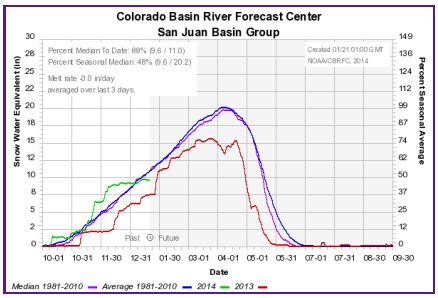












SNOTEL Precipitation Percentiles:

- The northern part of the basin in western WY is mostly showing precipitation percentiles in the 40s and 50s with a couple of drier sites on the east side
- The Wasatch Range and northern UT are seeing drier water-year-to-date precipitation, with percentiles ranging from the teens to the 20s

- The Uintahs are faring a little better with precipitation percentiles in the 30s and 40s
- Very wet precipitation percentiles are observed over northern CO, many above the 60th percentile
- Around the Colorado mainstem and in the central CO mountains, precipitation percentiles are mostly near to slightly above the median
- Throughout the San Juan mountains in southwest CO, most SNOTEL sites have now dropped below the 40th percentile with many sites now below the 30th.

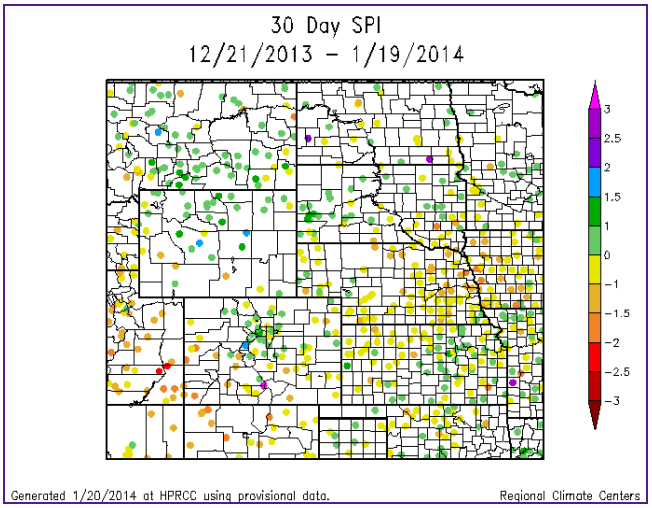
Basin-wide Snow Water Equivalent (SWE) Percent of Normal:

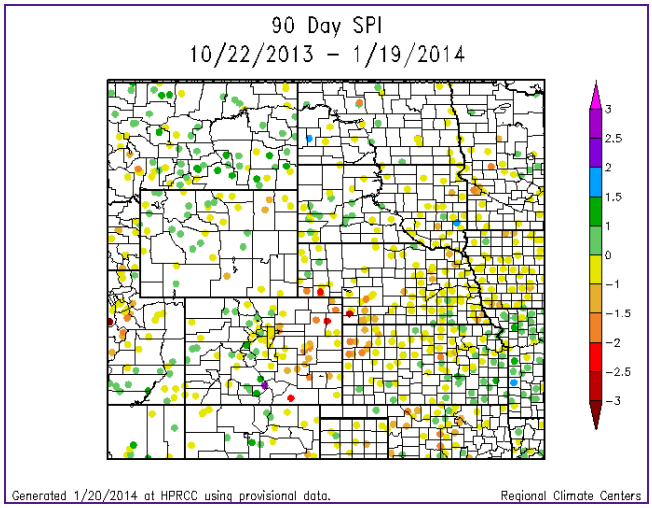
- Snowpack across the basin ranges from around 80% of average to above average
- Most sub-basins of western WY and northwest CO are between 90% and 115% of normal SWE
- Most of the UT sub-basins have below normal SWE, with percents of normal between 70% and 85%
- The Four Corners sub-basins SWE are currently around 80% of normal

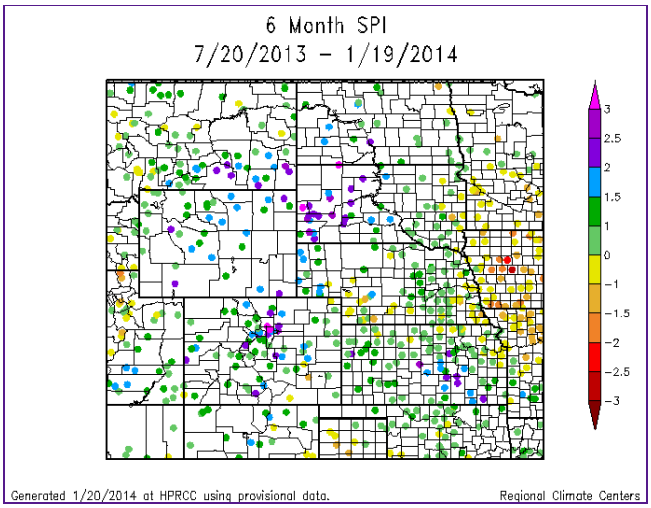
SWE Timeseries Graphs:

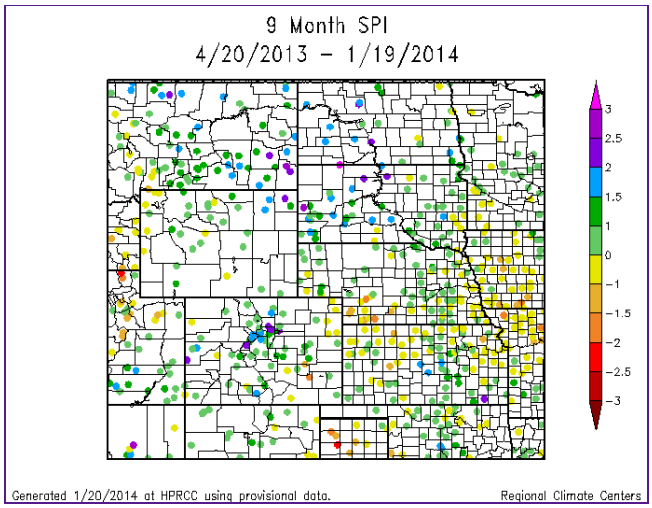
- Most of the sub-basins in the UCRB saw steady SWE numbers over the last week, no increase or decrease.
- Upper Green River Basin snowpack is now just below normal at 98% of normal snowpack after a steady week
- The Duchesne basin is now 77% of median snowpack to date and only 38% of the normal peak snowpack.
- Both the Upper Colorado and Yampa-White sub-basins are well above average, while the Gunnison sub-basin is close to average for SWE accumulations-to-date
- The San Juan, which had been above average earlier in the water year, has seen little accumulations over the past month and is now 88% of normal to date with a slight decrease in the SWE the last week.

STANDARDIZED PRECIPITATION INDEX









Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions. SPI data provided by High Plains Regional Climate Center.

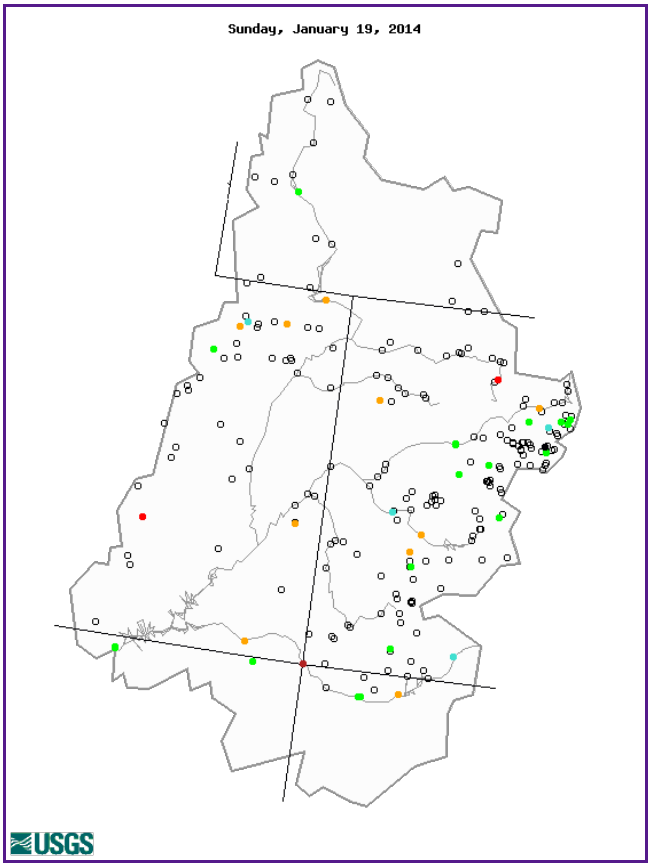
Short Term (30-day):

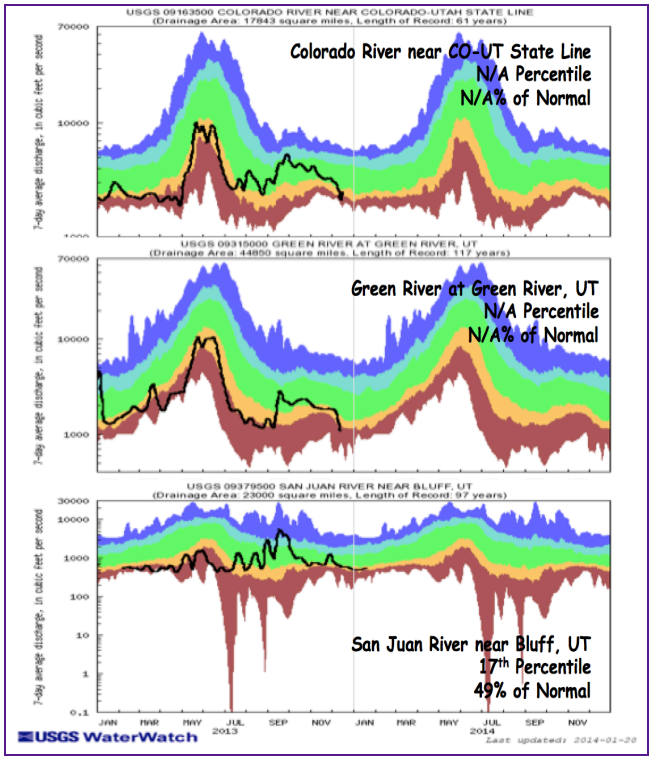
- The majority of the basin is showing dry SPIs on the short-term timescale
- SPIs across most of eastern and northern UT, western CO and southwestern WY are between -1 and -2
- Most of the higher elevations along the Continental Divide in CO are showing near normal SPIs, between -1 and +1
- The Four Corners region is now showing much drier SPIs between -1 and -2.
- Conditions throughout eastern CO and eastern WY (east of the basin) are mostly near normal, with SPIs ranging between -1 and +1

Long Term (6-month):

- The longer term of 6 months shows a different picture than the short term. The only area indicating dry conditions on the longer term is northern UT near the Wasatch mountains and slightly into the Uintah mountains. That area is showing SPIs from +1 to -2.
- The majority of the UCRB is indicating wet conditions on the longer term with SPIs ranging from 0 to +2.5.
- The northeast plains and northern Front Range in Colorado are indicating mostly wet SPIs from -1 to +3, SPIs drop slightly farther to the east.
- The southeast plains in CO show SPIs ranging from -1.5 to +2.5 with the lowest values around Otero and Crowley counties where exceptional drought is still present.

STREAMFLOW





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		

The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff, UT. All streamflow data provided by United States Geological Survey.

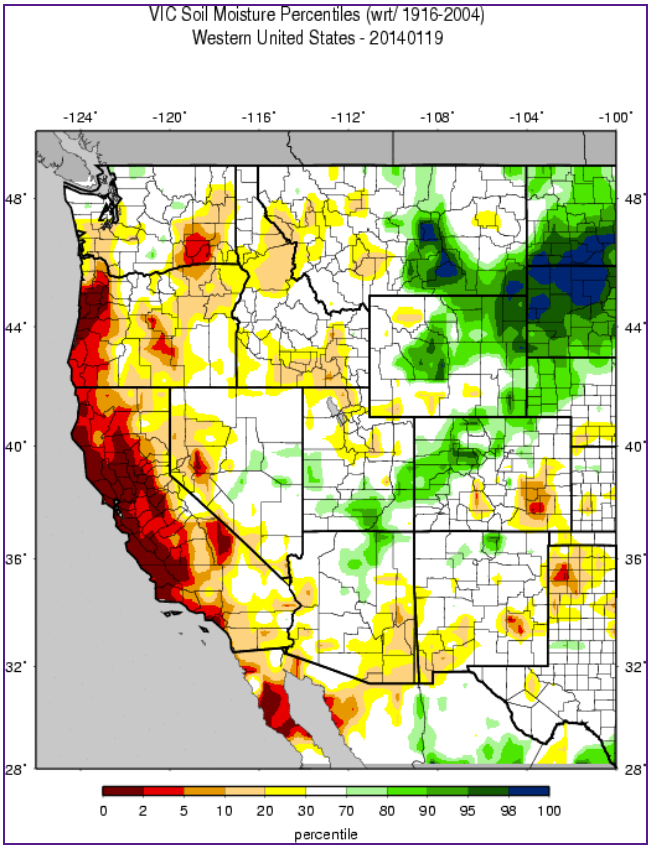
Streamflow Statistics:

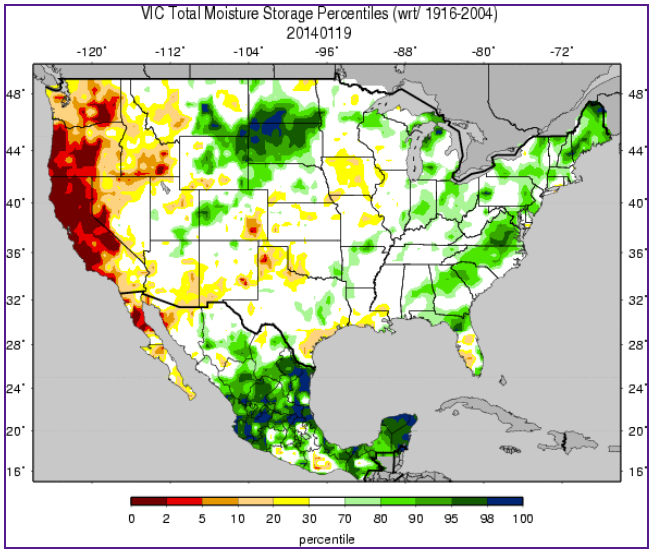
- 65% of gages recording normal or higher 7-day average streamflow
- 35% of the gages are recording below the normal range, with 8% recording much below normal or lower flows
- Only 37 gages are reporting (the rest are ice affected). Normally about 140 are reporting during the summer

- Both the Colorado River near the CO-UT state line and the Green River at Green River, UT have become ice affected after dropping to below normal flows before the end of the calendar year
- The San Juan River near Bluff, UT has stayed near steady the past couple of weeks and is reporting below normal flows at the 17th percentile

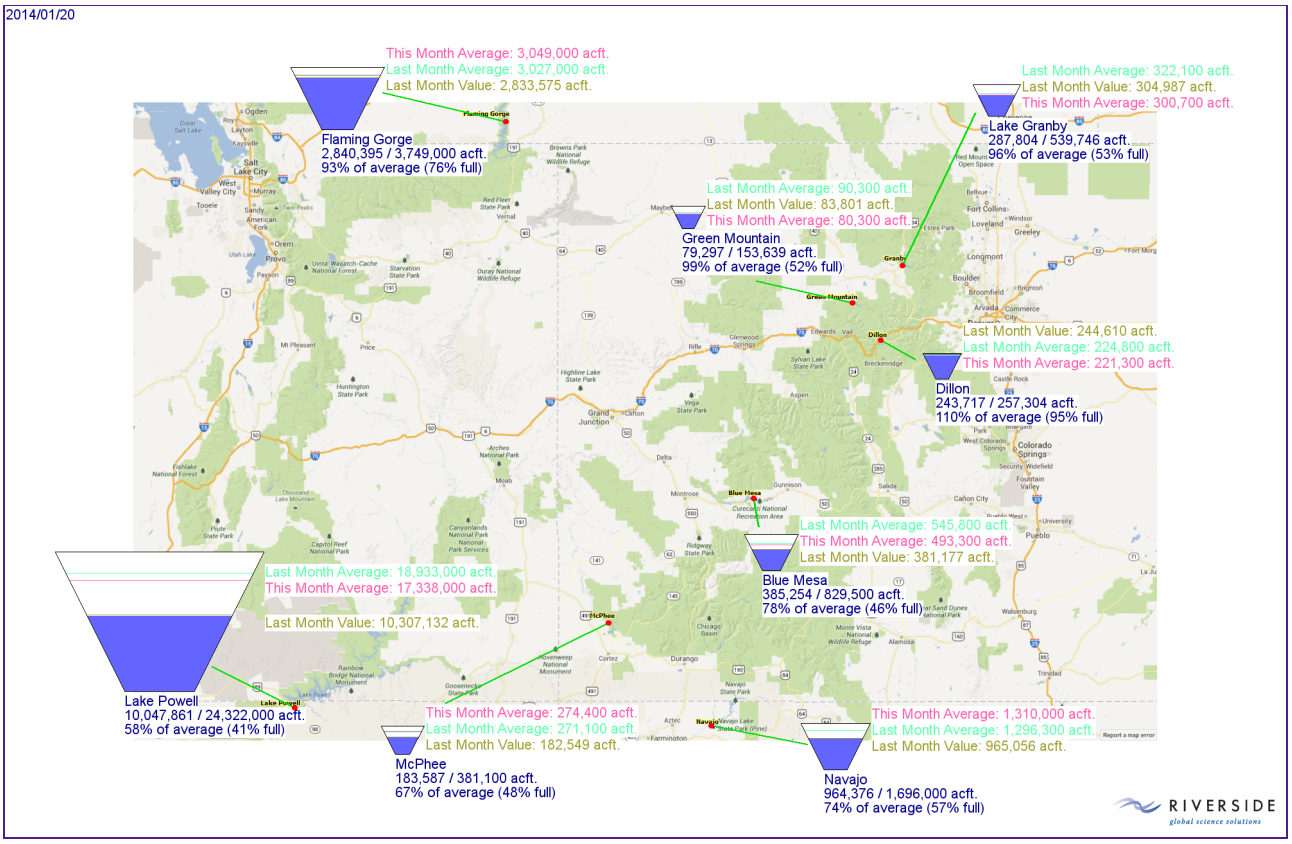
---

SURFACE WATER





The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).



The above image shows last month's and this month's current volumes of the major reservoirs in the UCRB, with percent of average and percent of capacity.

VIC (Total storage):

- Majority of the UCRB is showing near normal to wet soil moisture.
- Portions of southern WY and northeast UT are indicating slightly dry soil moisture storage with percentiles ranging from the 10th to 30th.
- Northwest CO and southern UT are showing wet soil moisture above the 70th percentile
- East of the divide in CO, the area were exceptional drought is still present continues to indicate low soil moisture storage ranging from the 2nd to 30th percentiles.
- Northeast CO and eastern WY shows near normal to wet soil moisture conditions

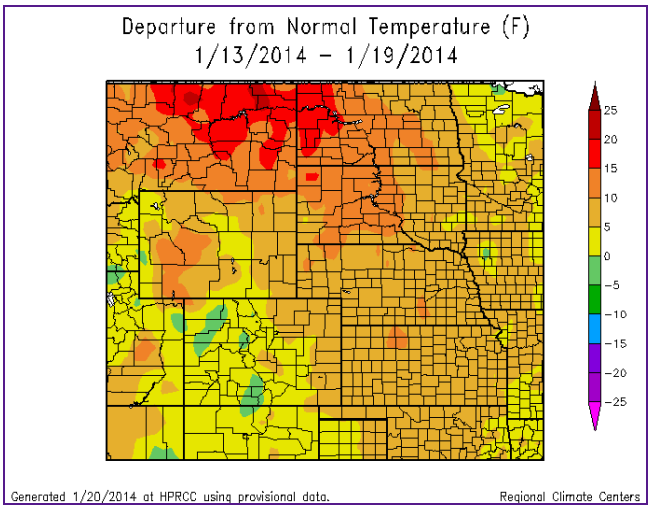
Reservoirs:

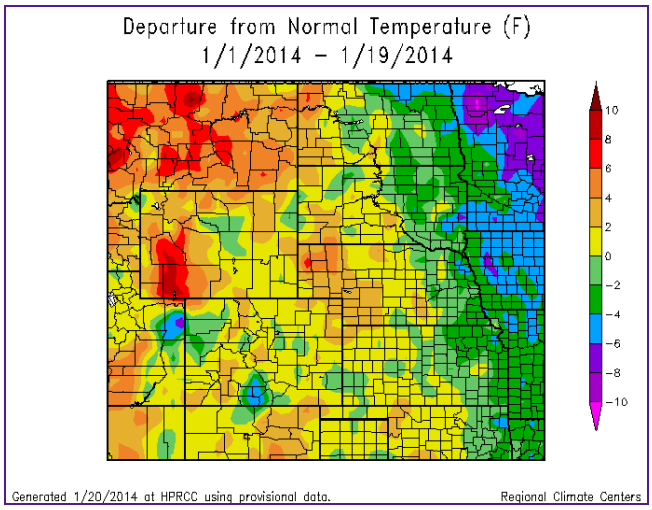
- The northern reservoirs are all near their January averages, ranging from 93% (Flaming Gorge) to 110% (Dillon) of average
- The southern reservoirs are all below January average, although some have seen some improvement over the past couple months. They range from 58% (Lake Powell) to 78% (Blue Mesa) of average for January

- Flaming Gorge, Blue Mesa, and McPhee have seen volume increases since the beginning of the month
- Most reservoirs normally decrease this time of year, but none of the reservoirs are currently showing larger decreases than what is expected

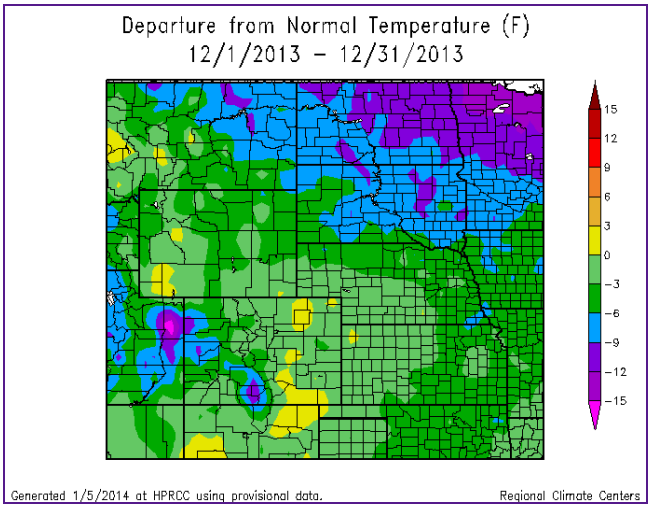
---

TEMPERATURE





All images show temperature departures from average over different time periods (last 7 days on top left; month-to-date on top right; last full month on bottom). Temperature departure maps provided by HPRCC ACIS.



Last Week Temperatures:

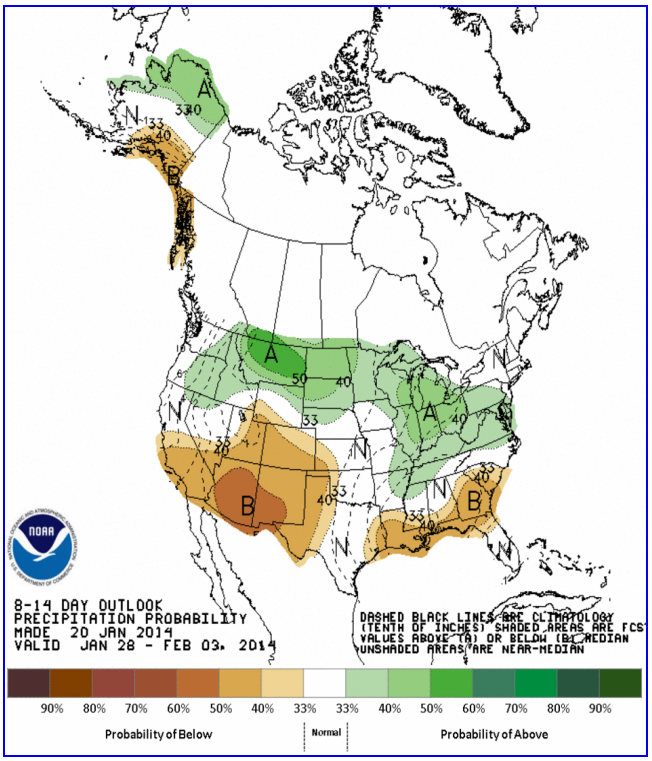
- Last week the basin saw mostly warmer than average temperatures, with a few spots of cooler than average
- In southwest WY, into northwestern CO and northeastern UT temperatures were 0 to 15 degrees warmer than average

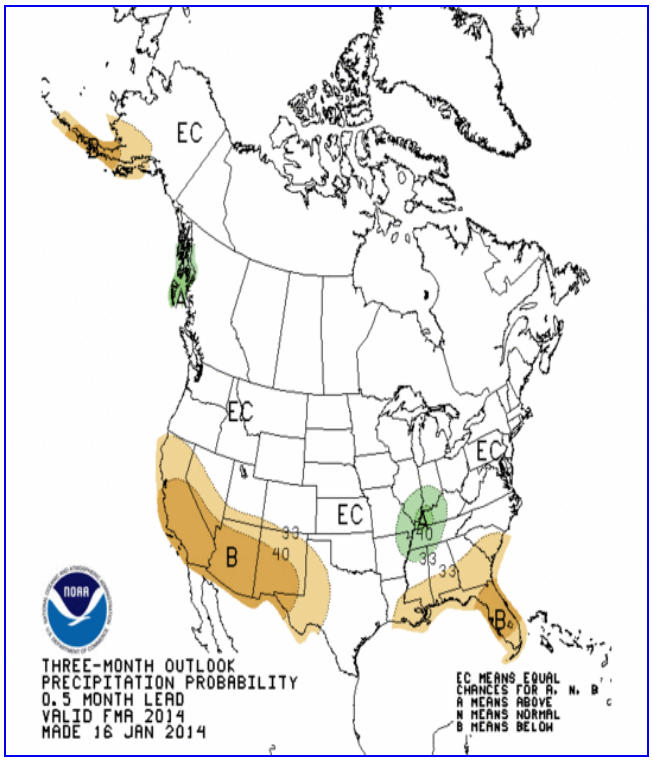
- Northern UT and western CO saw temperatures 0 to 5 degrees above average, with isolated areas 0 to 5 degrees below average
- Parts of southeastern UT were up to 15 degrees above average.
- Warmer than average temperatures were observed east of the Divide as well. Closer to the Divide temperatures were 0 to 5 degrees above average and up to 10 degrees above average on the Plains.

Last Month Temperatures:

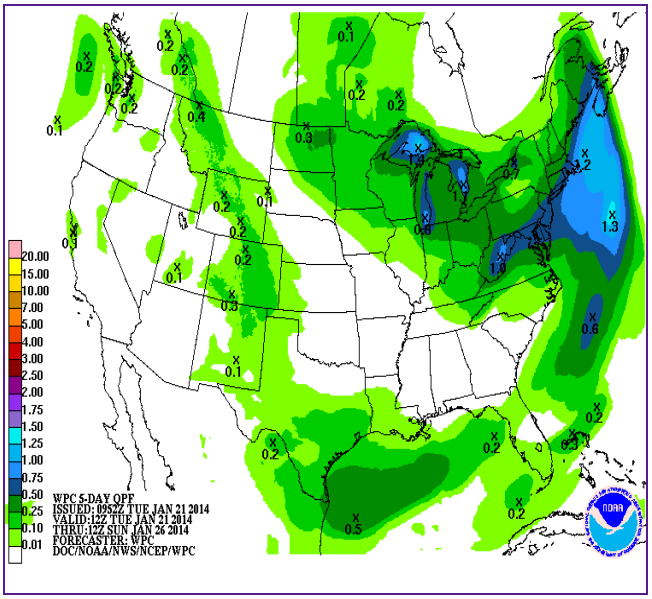
- The month of December brought below normal temperatures across much of the UCRB and CO.
- The coldest anomalies are present in eastern Utah, Mesa county in Colorado and the San Luis valley in CO. These areas saw temperatures 6 to 15 degrees below normal for the month. The low temperatures in these areas were mainly driven by the presence of snow cover.
- The northern portion of the UCRB saw temperatures 3 degrees above to 15 degrees below normal for December.
- The southern portion of the UCRB saw very cold temperatures in low lying valleys. The San Juan/Gunnison temperatures were more moderate ranging from 0 to 6 degrees below normal for the month.
- East of the divide in Colorado saw temperatures 3 degrees above to 6 degrees below normal for December.

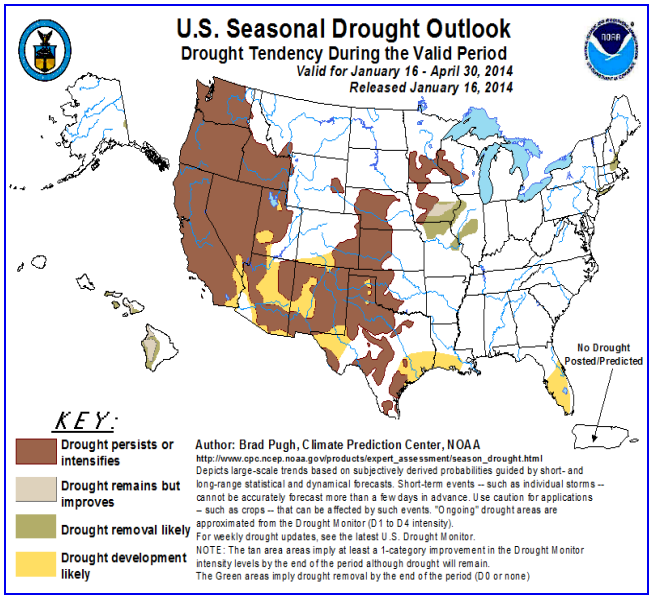
FORECAST AND OUTLOOK





The top two images show Climate Prediction Center's Precipitation outlooks for 8 - 14 days (top left) and 3 months (top right). The bottom left image shows the Hydrologic Prediction Center's Quantitative Precipitation Forecast accumulation for the five days between Tuesday 12Z and ending Sunday 12Z. The bottom right image shows the Climate Prediction Center's most recent release of the U.S. Seasonal Drought Outlook.





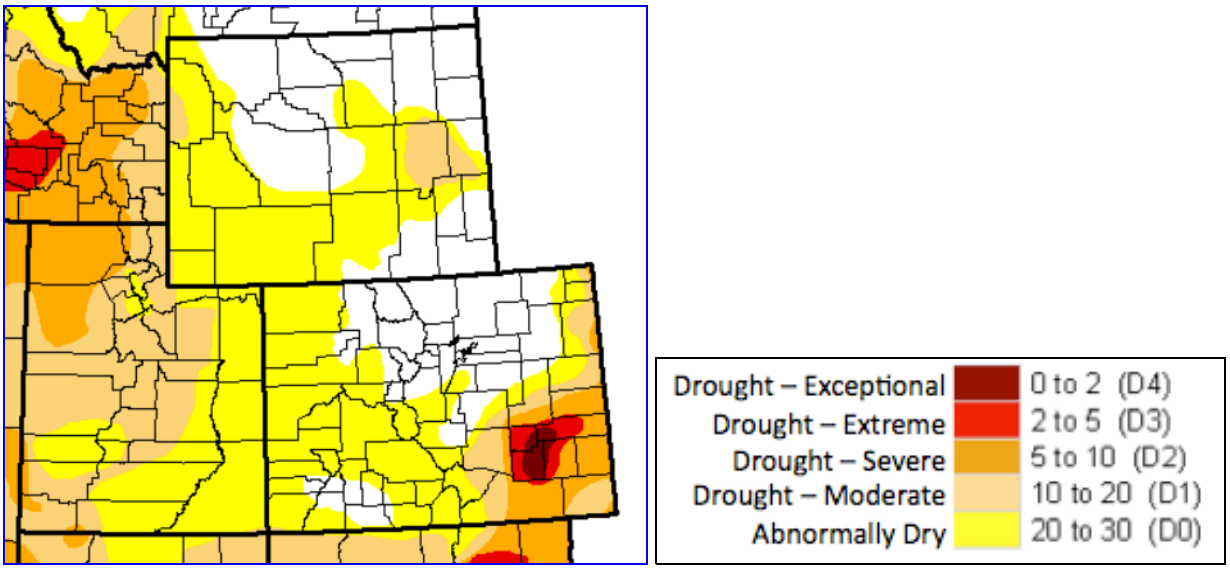
Short Term:

- A weak disturbance will move into the area bringing some cooler air into the area on Wednesday.
- As the wave passes, a chance of snow is expected Wednesday night into Thursday morning through CO and WY, especially the southern mountains, and hitting Front Range and eastern plains.
- This system will mostly miss eastern UT and southwestern WY.
- Dry and mild conditions will return by Friday as a high pressure builds over the region again
- Overall, drier than average conditions are expected for the next week, with only a chance for light accumulations

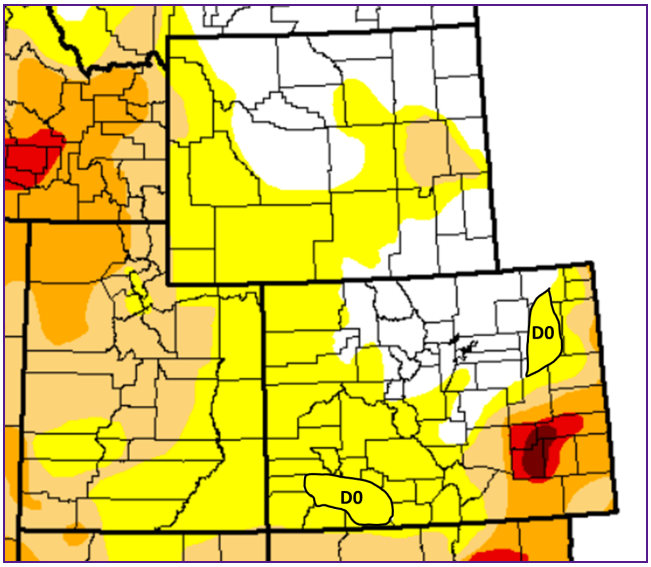
Longer Term:

- The 8-14 day precipitation outlook shows a good probability for drier than average conditions across the entire region
- The CPC 3-month outlook shows greater chances for drier than normal conditions across the southern part of the UCRB, with equal chances for wet, dry, or near normal conditions across the northern part of the basin and the rest of CO and WY
- The seasonal drought outlook shows a probability of drought persisting across the western portion of the basin and across southeast CO and northern UT

U.S. DROUGHT MONITOR



Above is the most recent release of the U.S. Drought Monitor map for the UCRB region.
Below shows the proposed changes for this week, with supporting text.



Summary: January 21, 2013

The higher elevations along the Divide, mostly in the Colorado River headwaters, were the only areas to receive any beneficial precipitation the past week, which fell early in the week. The lower elevations in the basin and east of the Divide saw little to no precipitation with above average temperatures. With the drier week in the mountains, snowpack snow water equivalent stayed steady (no increases or decreases), meaning the percent or normal numbers have dropped. A chance of precipitation is expected early

this week, then a warmer and drier pattern is expected to return.

Recommendations**

UCRB: With the San Jaun Mountains drying out, and SNOTEL precipitation percentiles and snowpack percent or normals decreasing, it is recommended the D nothing in southwestern CO to be degraded to D0.

Eastern Colorado: Northeastern CO has been below average precipitation for much of November and all of December and January has started dry. There have been reports of dry topsoil and blowing dust in Washington County. With the dry SPI showing up for the last 30 days and 90 days in the area, it is recommended to degrade to D0 in southern Logan County, Washington County and northern Lincoln County.

NOTE: These recommendations will most likely not show up on the USDM this week due to the Government being shut down because of a snow storm in Washington D.C. Look for these changes to be made next week.