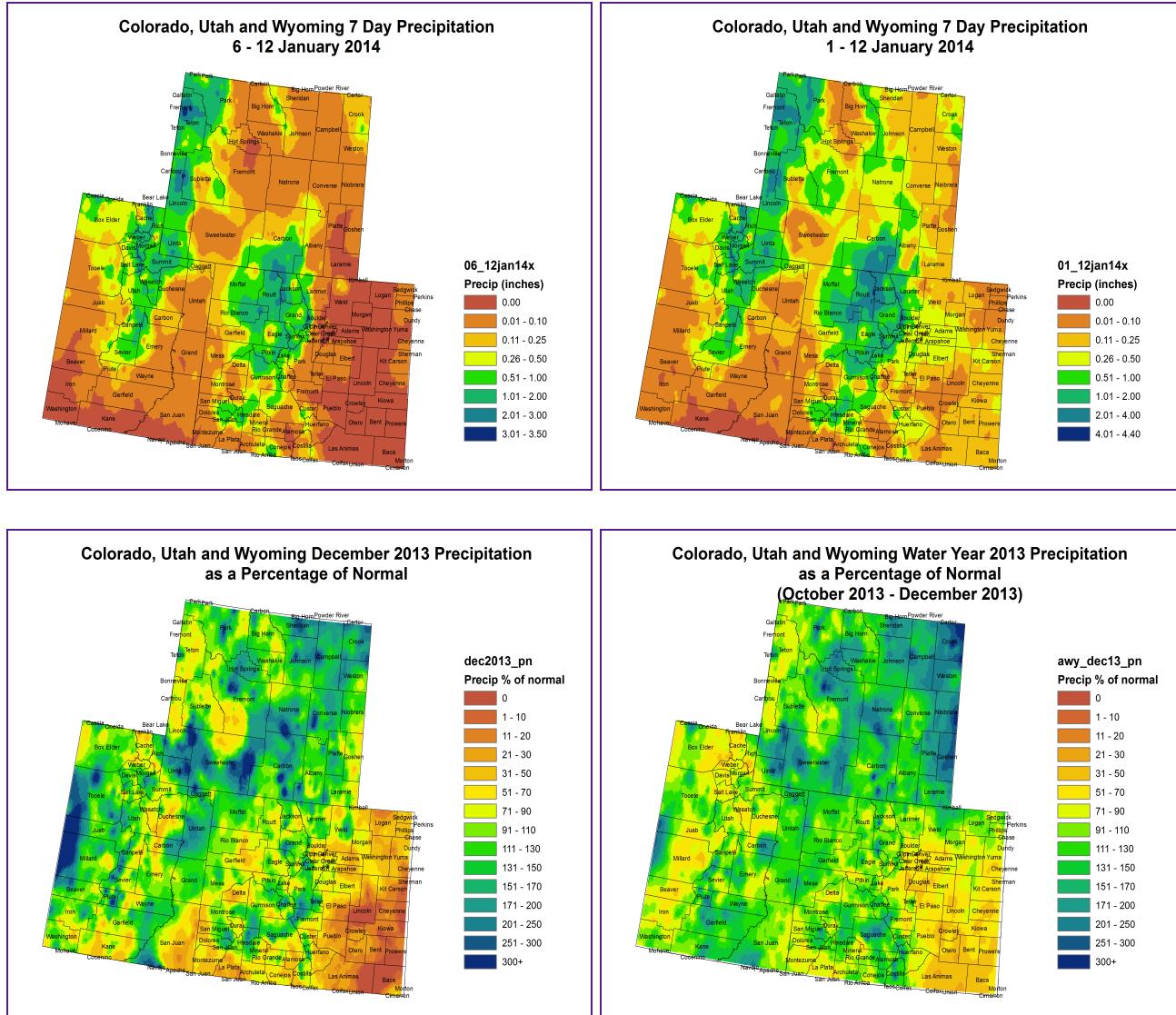


# PRECIPITATION



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 across the basin last week
- Most of the Wasatch and Uintah ranges in UT and most of western WY received between .50 and 2 inches of precipitation
- The northern and central CO mountains received between .50 and 2 inches of moisture. Spotty areas of the San Juans in southwest CO

received between .5 and 1 inch

- The lower elevations extending from southwest WY, through eastern UT, western CO and down the Four Corners mostly saw less than .10 inches of moisture for the week
- Higher accumulations around the Continental Divide, decreasing to between .01 and .10 inches of precipitation along the Front Range, with no precipitation along the eastern CO plains

### **December Precipitation:**

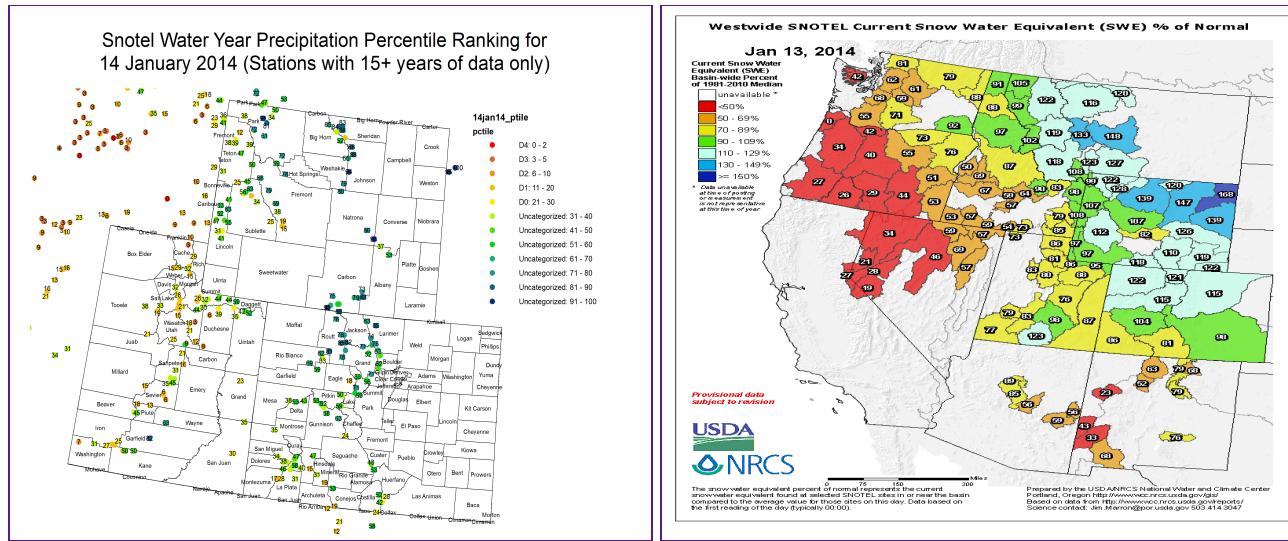
- For the month of December, the UCRB saw mainly average to above average precipitation.
- The Green River basin saw precipitation above 90% of average for most locations with the exception of a dry area near Sublette, Fremont and Sweetwater counties with less than 50% of average precipitation in that 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:**

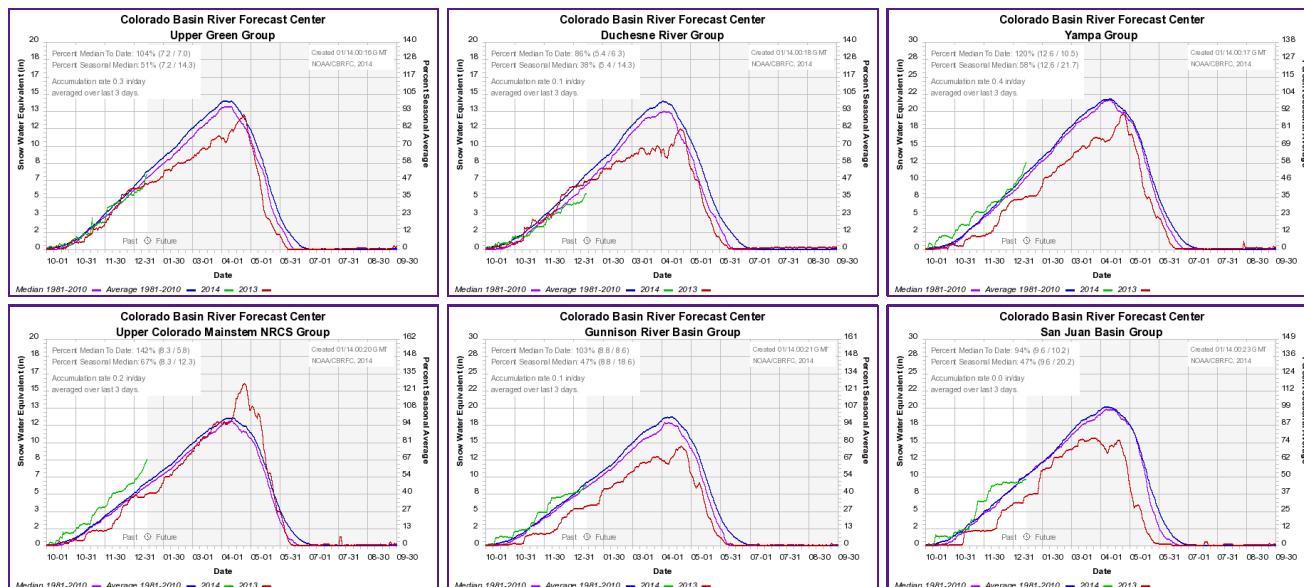
- Much of the UCRB has seen near and above average precipitation through the first three months of WY2014
- The driest areas for the water year through December are the Wasatch mountains in northern Utah which has received 20-90% of average, depending on location.
- The Four Corners area has seen water 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.

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## **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 30s
- 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, precipitation percentiles are mostly in the 30s and 40s with a couple of drier sites

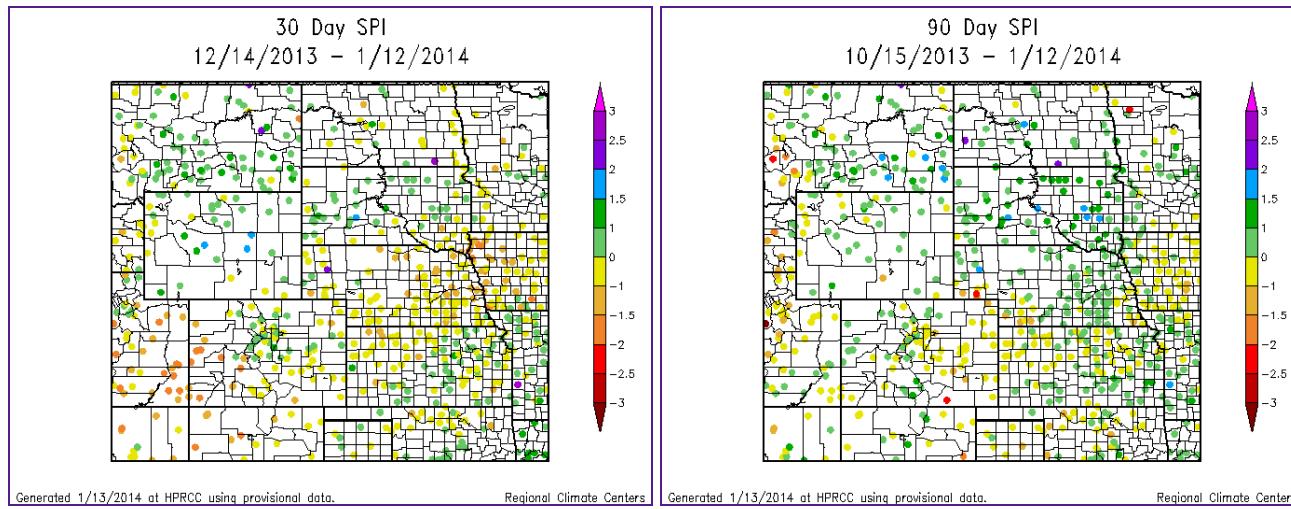
### **Basin-wide Snow Water Equivalent Percent of Normal:**

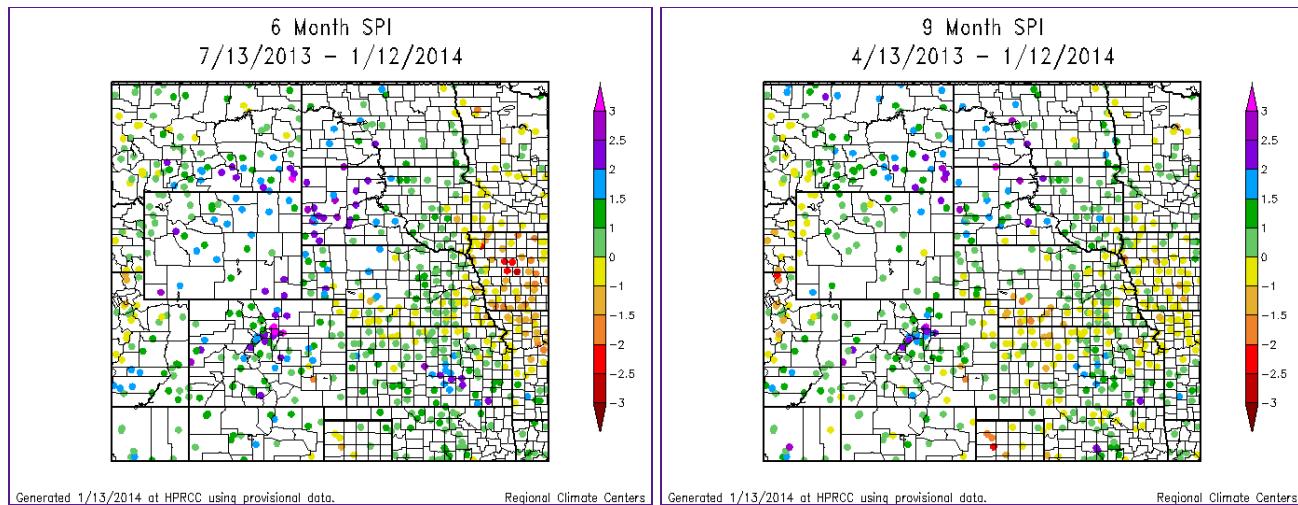
- Snowpack across the basin ranges from around 80% of average to above average
- The sub-basins of western WY and northwest CO are showing near to above average SWE conditions, ranging between 97% and 122% of average
- Most of the UT sub-basins are a bit drier than average, with most SWE percents of average between 76% and 88%, and a couple of basins near average
- The Four Corners sub-basins have begun drying out over the past month, and SWE is currently around 85% of average

### **SWE Timeseries Graphs:**

- With the exception of the San Juan sub-basin, most sub-basins in the UCRB saw a decent increase in SWE over the past week
- Upper Green snowpack increased from below median to slightly above median conditions last week
- The Duchesne basin increased to 86% of median 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 very little accumulations over the past month. This last week, SWE-to-date dipped just below the median

## **STANDARDIZED PRECIPITATION INDEX**





Generated 1/13/2014 at HPRCC using provisional data.

Regional Climate Centers

Generated 1/13/2014 at HPRCC using provisional data.

Regional Climate Centers

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.

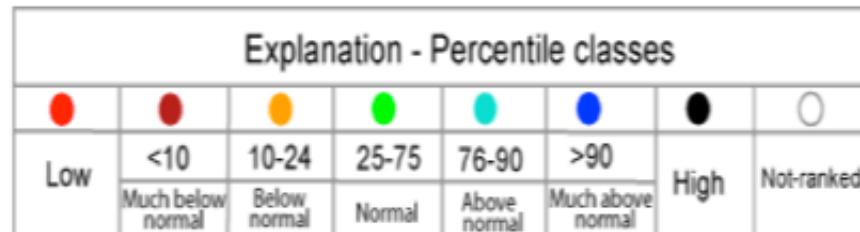
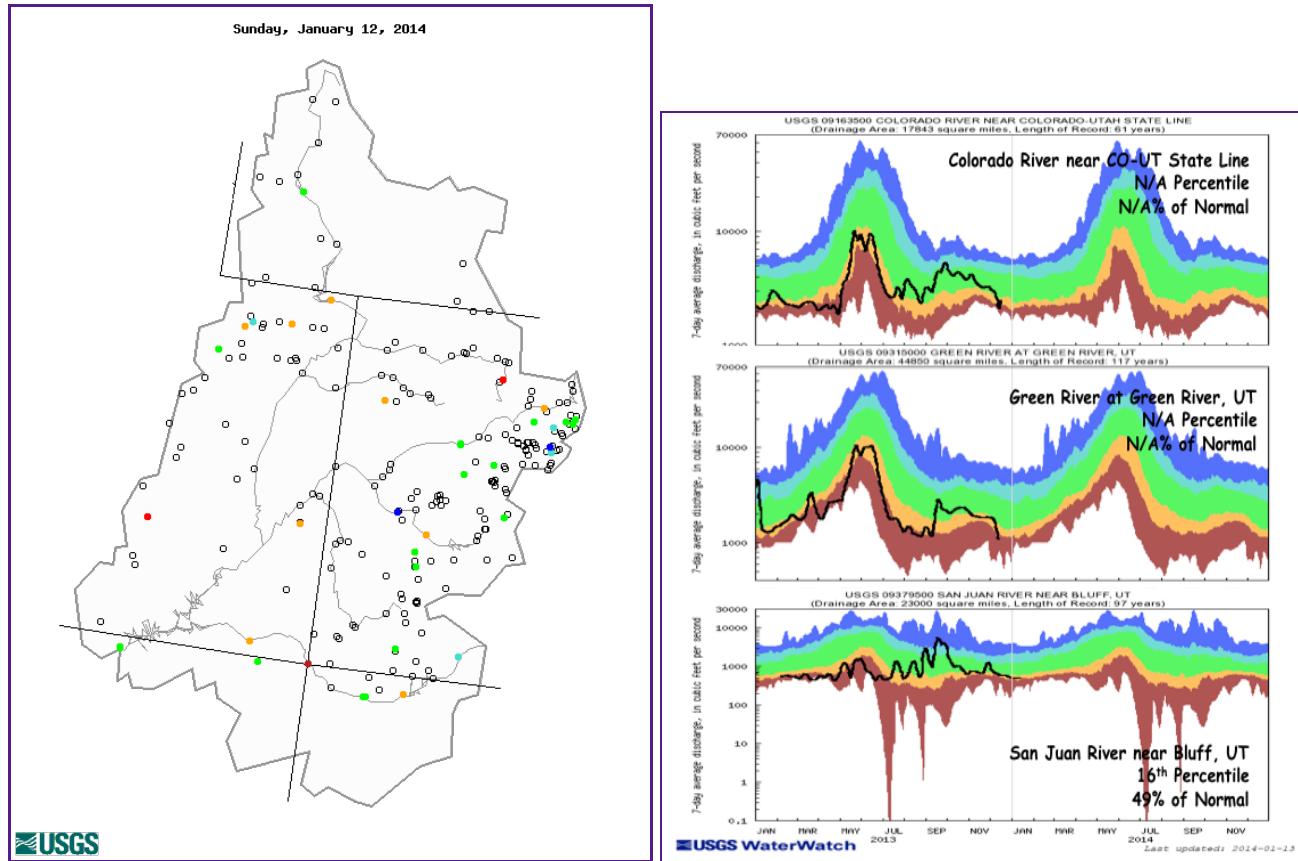
### **Short Term (30-day):**

- The majority of the basin is showing dry SPIs on the short-term timescale
- SPIs across most of eastern UT and western CO are between -1 and -2
- Western WY is showing slightly better conditions, with SPIs ranging between -1 and +1.5
- Northern UT is showing mixed wet and dry SPIs
- Most of the higher elevations along the Continental Divide in CO are showing near normal SPIs, between -1 and +1
- 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 -1.5.
- 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 very wet conditions with 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



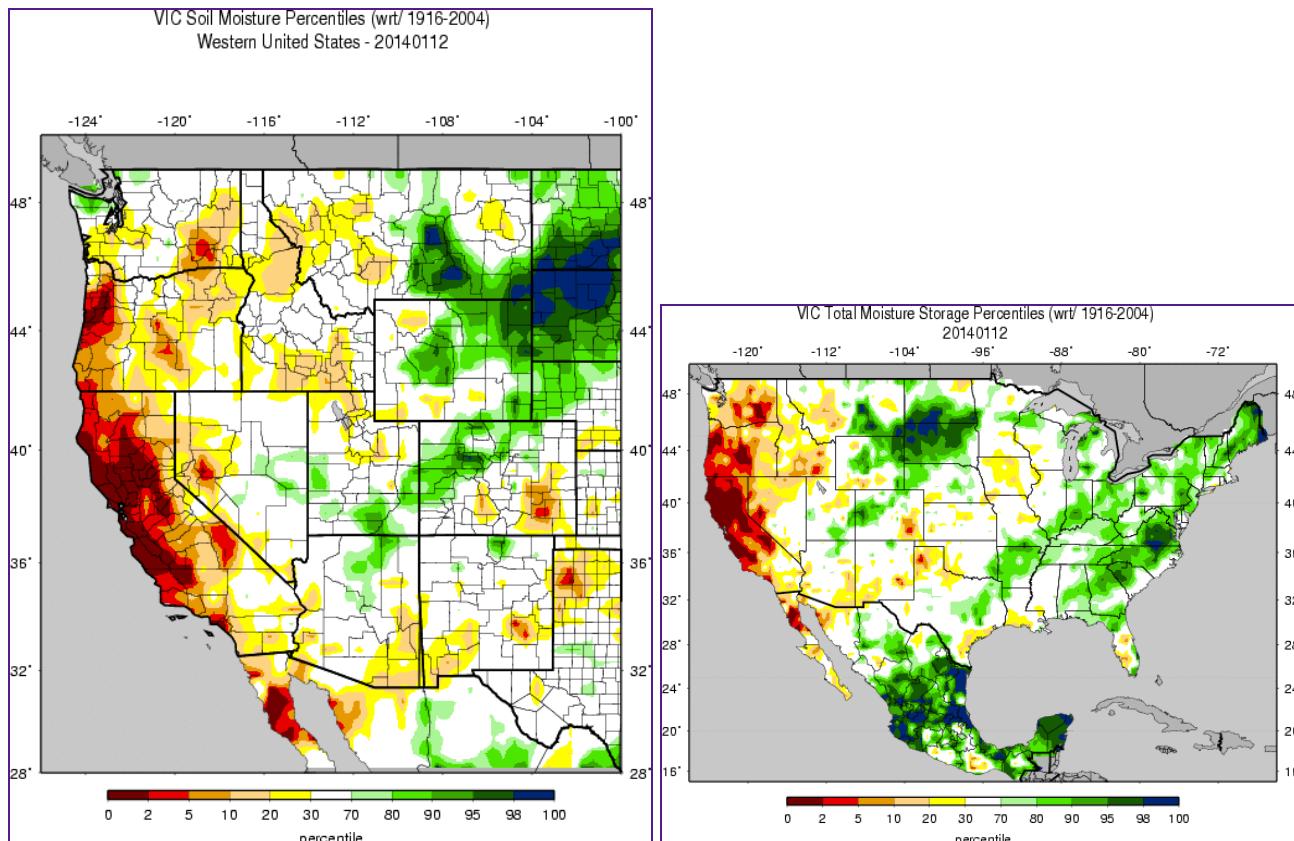
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

## Streamflow Statistics:

- 67% of gages recording normal or higher 7-day average streamflow
  - 32% 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

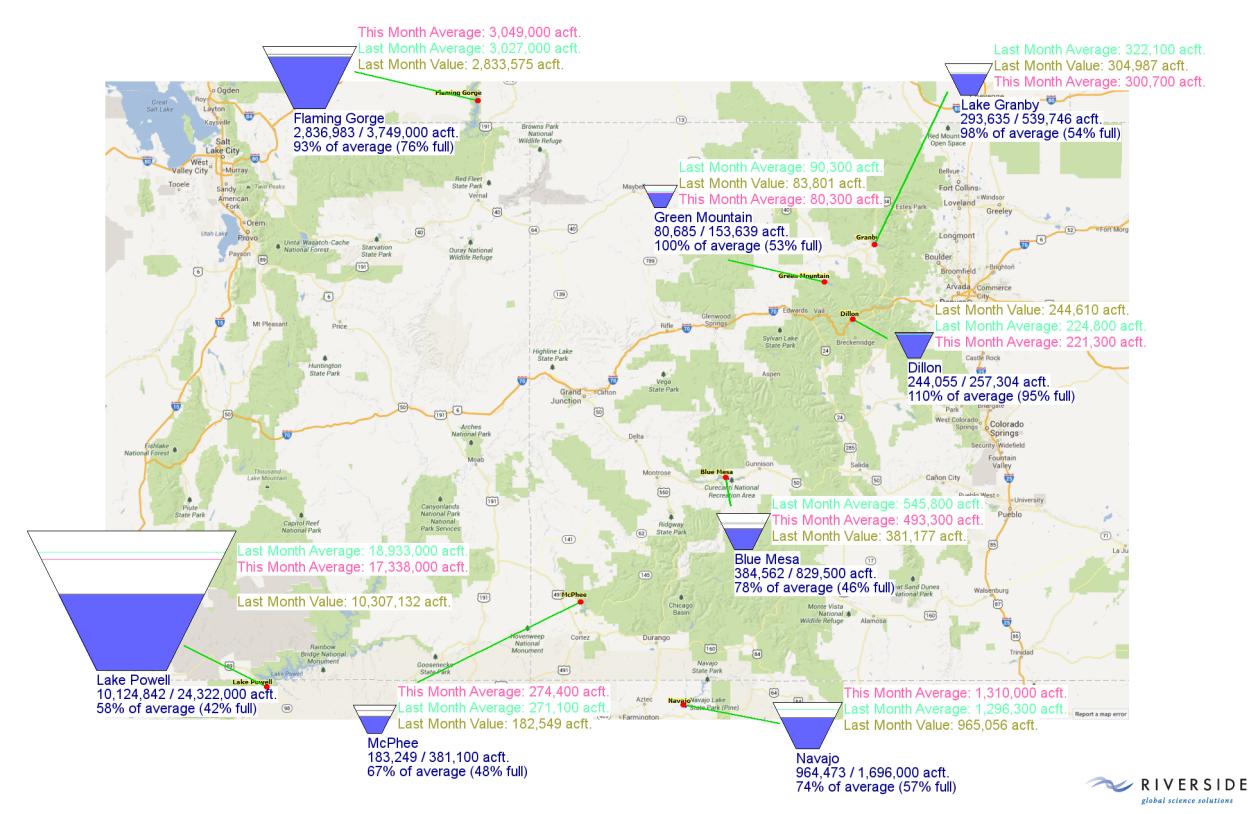
- Both the Colorado River near the CO-UT state line and the Green River at Green River, UT have become ice affected after dropping to below normal flows before the end of the calendar year
- The San Juan River near Bluff, UT has stayed near steady the past couple of weeks and is reporting below normal flows at the 16th 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).

2014/01/14



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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):

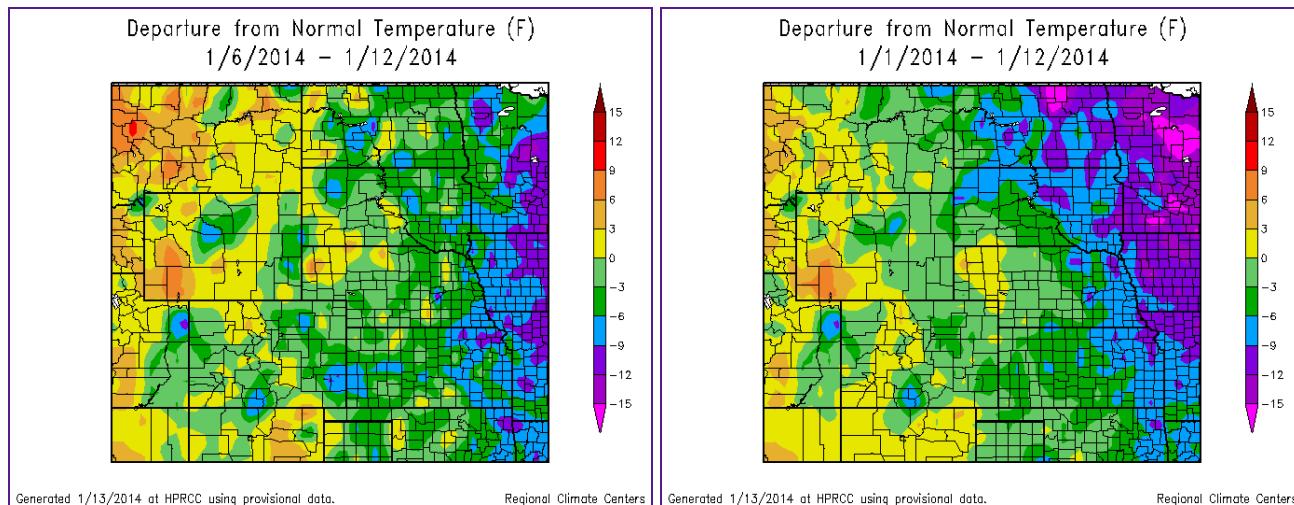
- Majority of the UCRB is showing near normal to wet soil moisture.
- Portions of southern WY and northeast UT are indicating slightly dry soil moisture storage with percentiles ranging from the 10th to 30th.
- Northwest CO and southern UT are showing wet soil moisture conditions above the 70th percentile
- East of the divide in CO, the area where 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:

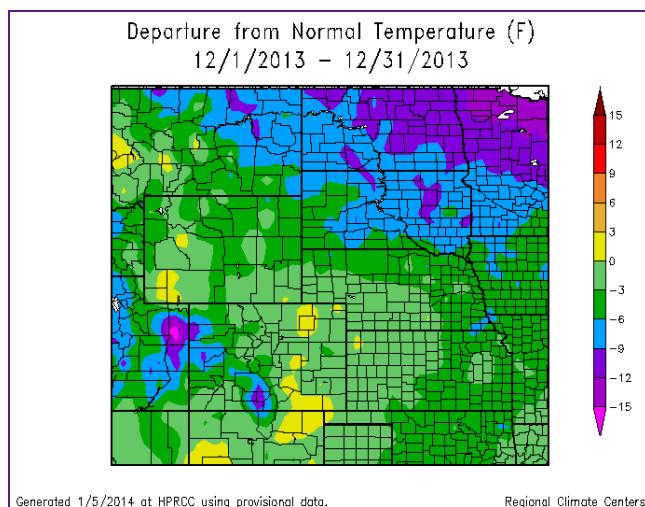
- The northern reservoirs are all near their January averages, ranging from 93% (Flaming Gorge) to 110% (Dillon) of average
- The southern reservoirs are all below January average, although some have seen some improvement over the past couple months. They range from 58% (Lake Powell) to 78% (Blue Mesa)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

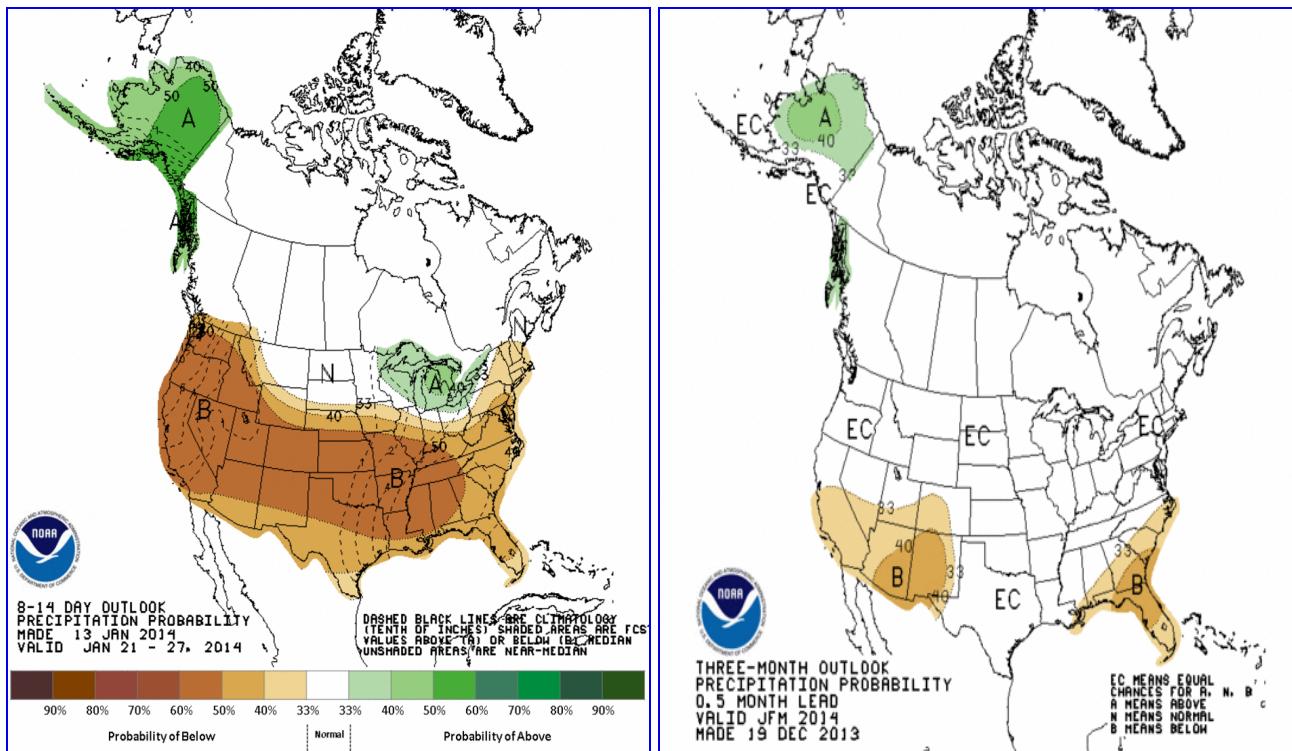
- Last week the basin saw mixed areas of warmer and colder than average temperatures
- Temperatures in southwest WY were 0 to 9 degrees warmer than average

- Northern UT and the northern mountains of CO saw temperatures near to slightly warmer than average
- Temperatures were 0 to 9 degrees colder than average for most of western CO and eastern UT
- Cooler than average temperatures were observed across much of eastern WY and eastern CO

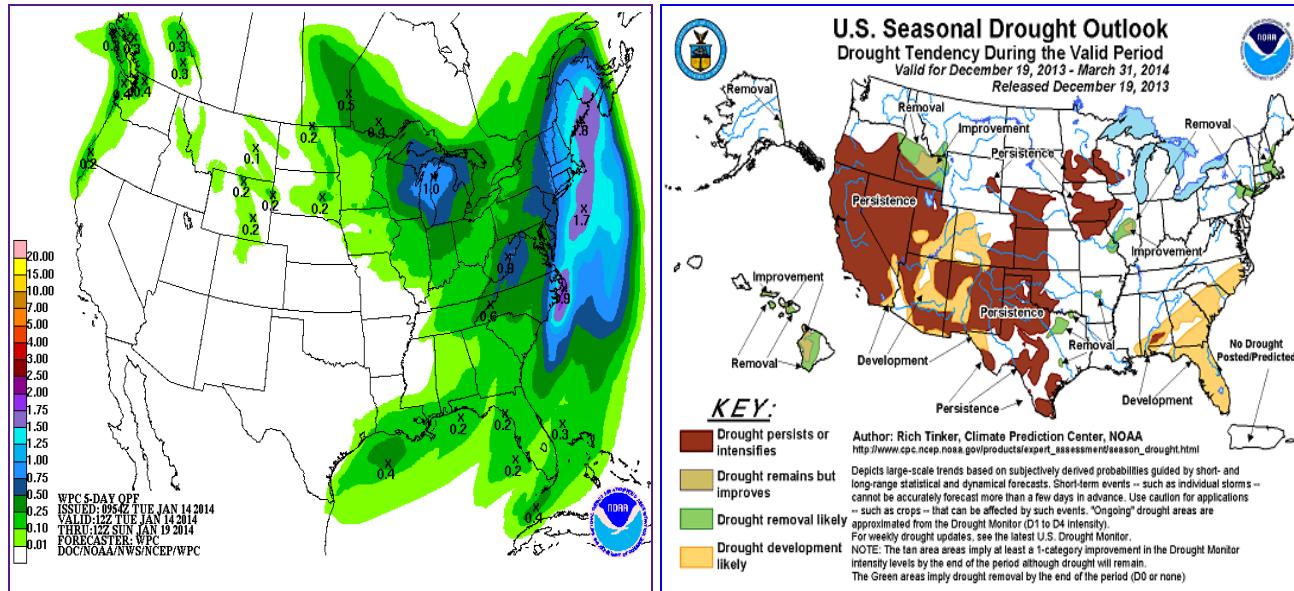
### Last Month Temperatures:

- 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.



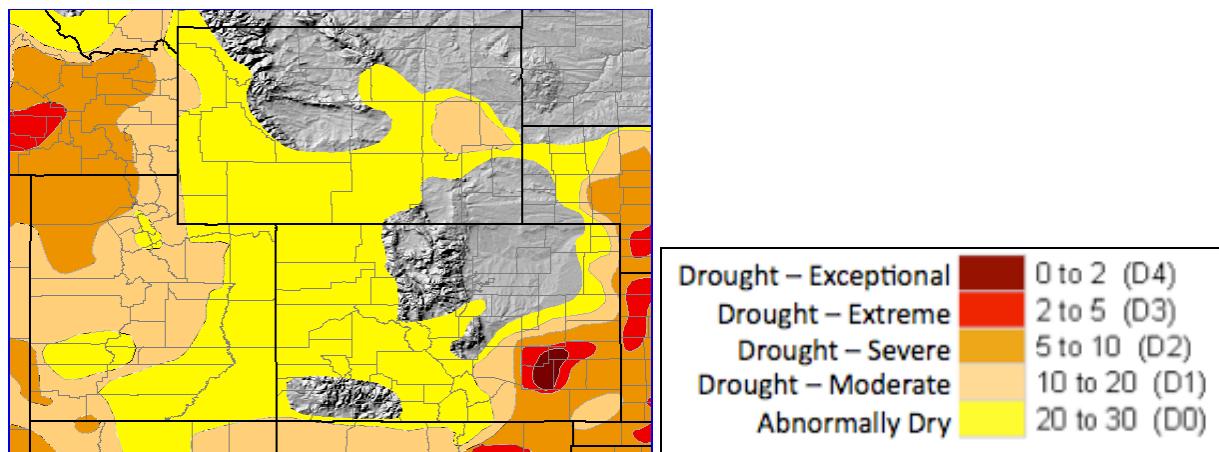
## Short Term:

- As a couple of slight disturbances pass over the region early this week, expect light and scattered snow showers with windy conditions
- Expect dry and mild conditions later in the week as a high pressure builds over the region
- Overall, drier than average conditions are expected for the next week, with only a chance for light accumulations in the northern mountains

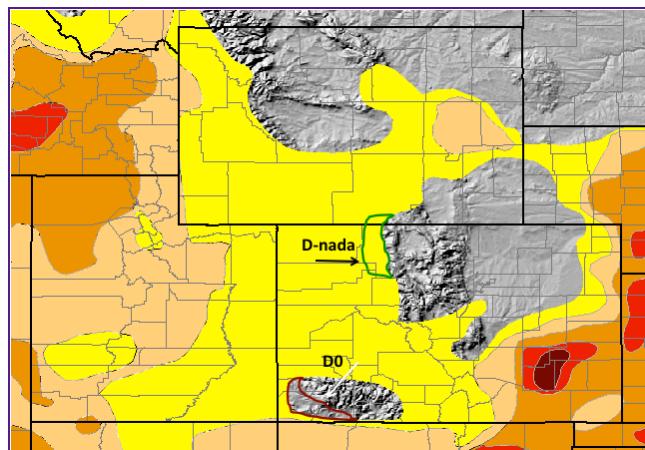
## Longer Term:

- 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 development across the southern and central portions of the basin with drought persistence likely 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 14, 2013

Most of the higher elevations around the UCRB have continued to receive decent snow accumulations, and most of the basin has been colder than average for the past month. Much of the basin has seen near average snowpack for the year, with the exception of parts of eastern UT (an area that has struggled since the beginning of the water year) and the San Juan mountains in southwest CO (started the water year well, but experienced a dry December). In the near future, conditions will be drying out and warming up across the region.

## Recommendations\*\*

**UCRB:** A couple of slight adjustments are recommended in the UCRB for this week's U.S. Drought Monitor (USDM) map.

Yampa basin - in northwest CO, it is recommended that the D0 be trimmed out of much of Routt County and the eastern tips of Rio Blanco and Garfield.

On the ground reports are that conditions are better than depicted on the USDM map. Water year precipitation percentiles are well above the median, short- and long-term SPIs are positive, and the area has received an additional 1 to 2 inches of precipitation in the past week.

Southwest CO - it is recommended that a slight area of the D-nothing region be degraded to D0. The region has received very little precipitation since the beginning of December. Although the higher elevations are still looking okay, some of the lower elevations have no snow cover right now, and SNOTEL precipitation percentiles are a bit lower.

**Eastern Colorado:** Status quo is recommended for the rest of CO.