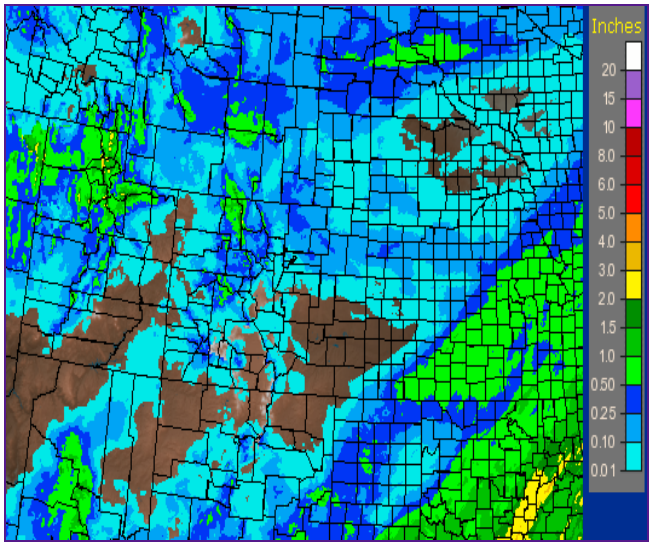
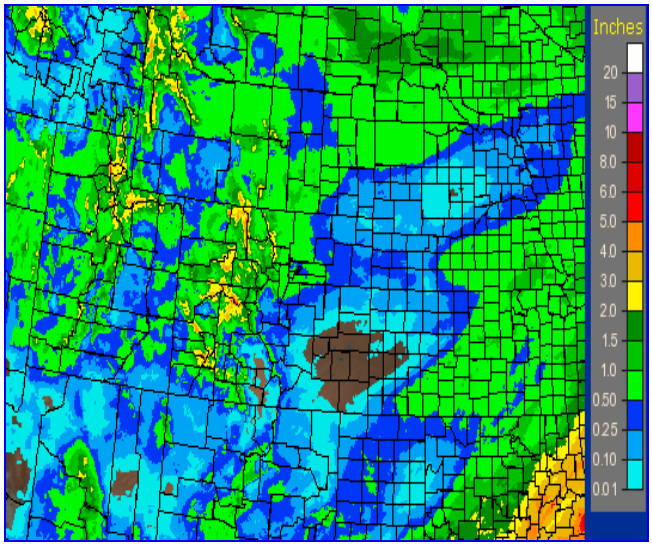
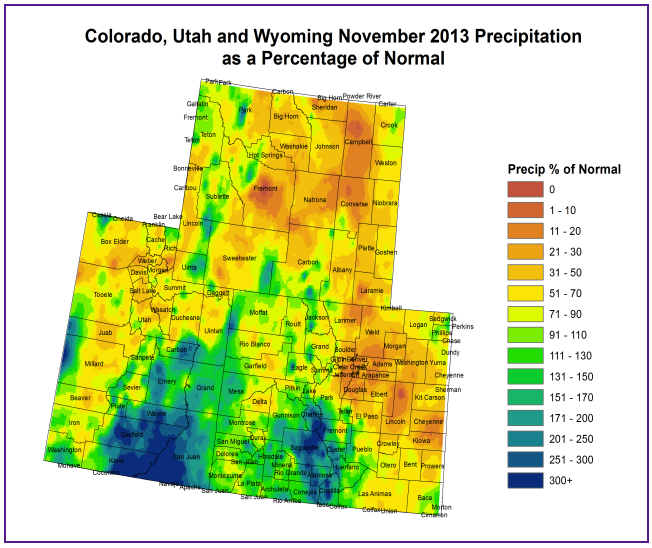
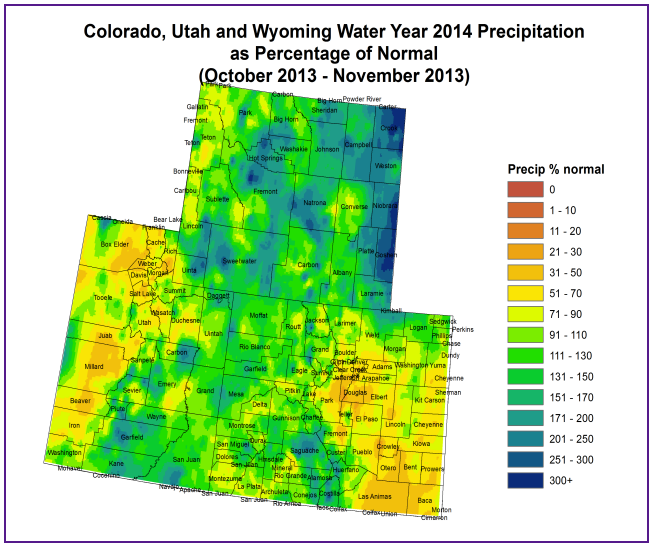
PRECIPITATION









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:

- The higher elevations of the UCRB received some precipitation last week, while most of the lower elevation areas remained drier
- The Wasatch and Uinta mountains in northern UT received between .50 and 1 inch of precipitation
- The Wyoming and Wind River ranges in western WY and the northern and central CO mountains received between .25 and .5 inches, with

some areas closer to 1 inch
- The lower elevations mostly received no precipitation up to .25 inches
- Northeast CO and eastern WY received between .01 and .25 inches last week, while southeast CO was dry

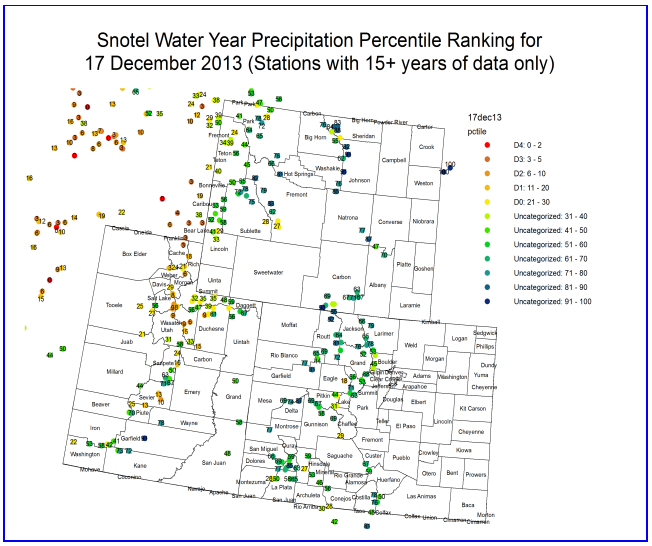
November Precipitation:

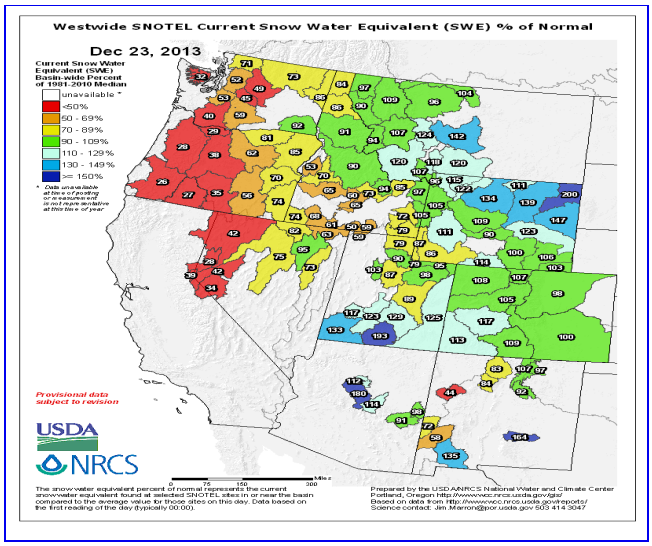
- The majority of the northern half of the UCRB received below average precipitation, between 20 - 70% of average for the month, with some isolated areas near or slightly above average.
- The central portion of the basin in western CO and eastern UT, received between 50% - 130% of average precipitation, the higher amounts along the CO-UT boarder and west.
- Most of the Four Corners region and the CO River valley in southern UT were wetter, receiving between 90% and 200% of average precipitation for the month, with southern UT above 300% of average
- The Wasatch range and other higher elevations in central UT received much below average precipitation
- East of the basin, in eastern CO and WY was drier, receiving between 20% - 70% of average for the month.
- The upper Arkansas basin and the Rio Grande basin in southeast CO saw beneficial precipitation, with above average precipitation, to more than 300% of average.
- Southeastern CO was also drier, between 50% - 90% of average.

Water Year Precipitation:

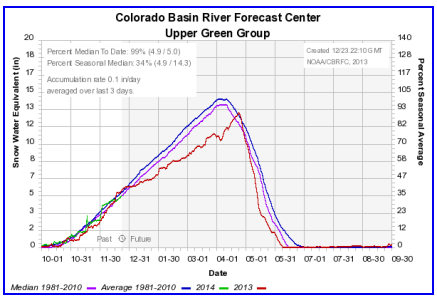
- Much of the UCRB has seen near and above average precipitation through the first two months of WY2014
- The Wasatch and southern Duchesne ranges has been drier with 50% - 90% of average.
- Most areas of eastern UT and western CO received between 90% and 130% of average precipitation for WY2013, with some spotty areas less than 70% of average
- Northeast CO was near average 70% to 130% of average.
- The rest of eastern and southeastern CO has been below average, in the range of 30% to 70% of average, with some areas up to 90% of average.
- The upper Arkansas basin and Rio Grande basin are above average for the start of WY 2014 thanks to an above average November.

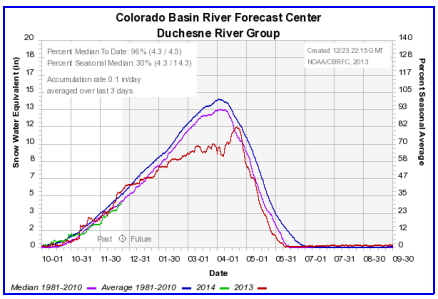
SNOTEL AND SNOWPACK

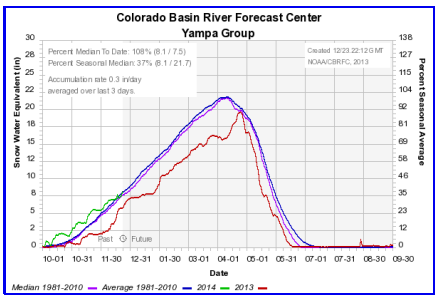


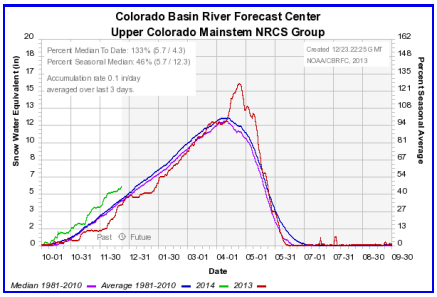


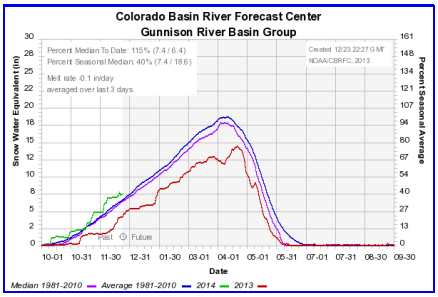
The top left image shows the Natural Resources Conservation Service's SNOTEL water-year-to-date precipitation percentile rankings. The top right image shows sub-basin averaged snow water equivalent accumulations as a percent of average. The images below show accumulated snow water equivalent in inches (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).

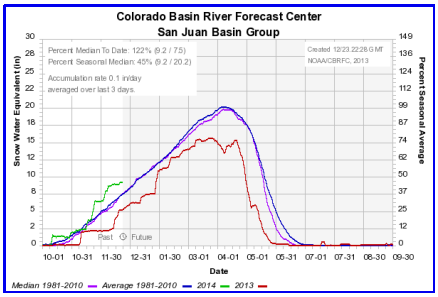












SNOTEL Precipitation Percentiles:

- The northern and eastern parts of the UCRB are seeing percentiles near to above the median while the western part of the basin is seeing drier percentiles
- Percentiles in the Upper Green and northern and central CO mountains mostly range between the 40s and 70s
- San Juan percentiles are mostly between 40 and 60
- The Uintas are a bit drier, with percentiles ranging between the 30s and 50s
- The Wasatch range is much drier, with many percentiles below the 20s

Basin-wide Snow Water Equivalent Percent of Normal:

- Most of the sub-basins in the UCRB are near to above average snowpack
- All of CO and the southern part of the UCRB are showing snowpack above average. Southern UT and CO are showing the highest percents of normal, many in the southern tier of the basin are above 110% of normal.
- Some sub-basins in northeast UT and southwest WY are slightly below average, and several sub-basins in northern UT are between 70% and 80% of average

SWE Timeseries Graphs:

- The Yampa-White, Duchesne and Upper Green basins in the northern part of the UCRB are showing near median snow water equivalent accumulations
- The southern sub-basins, the Upper Colorado, Gunnison, and San Juan are all well above average for snowpack accumulations

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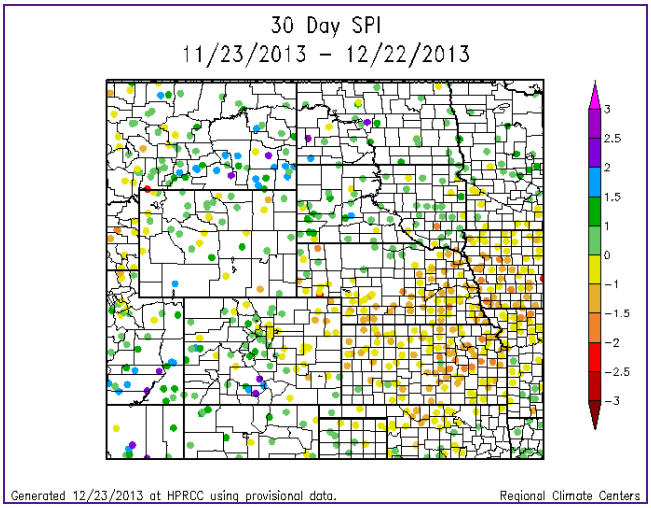
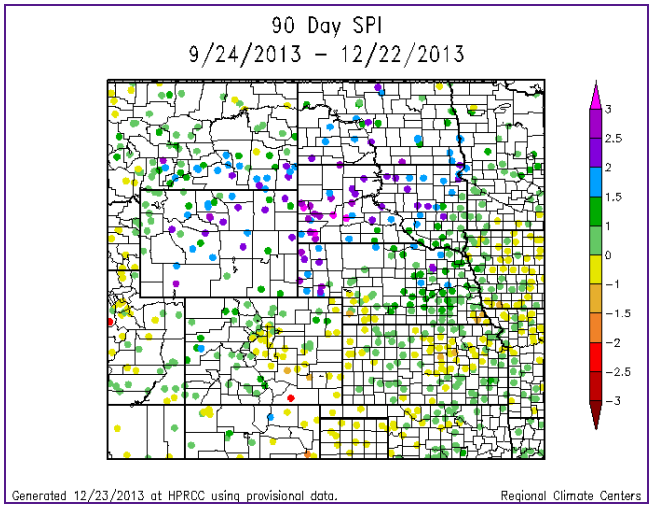
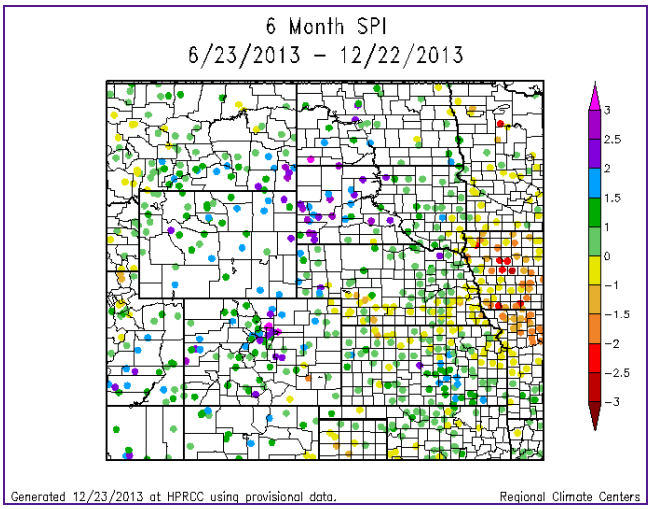
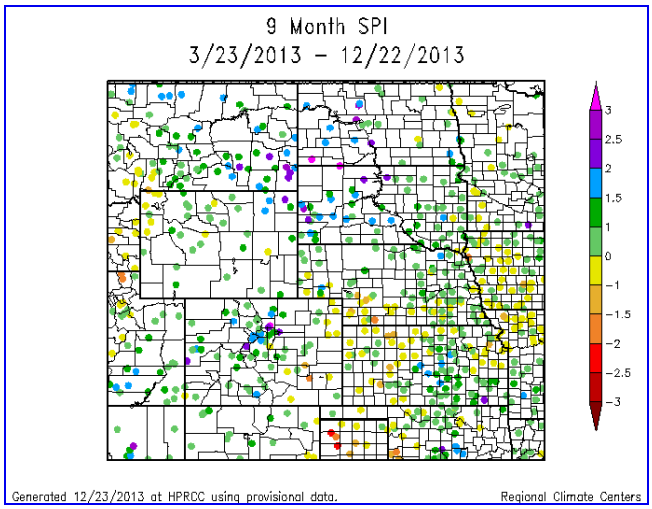
STANDARDIZED PRECIPITATION INDEX









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.

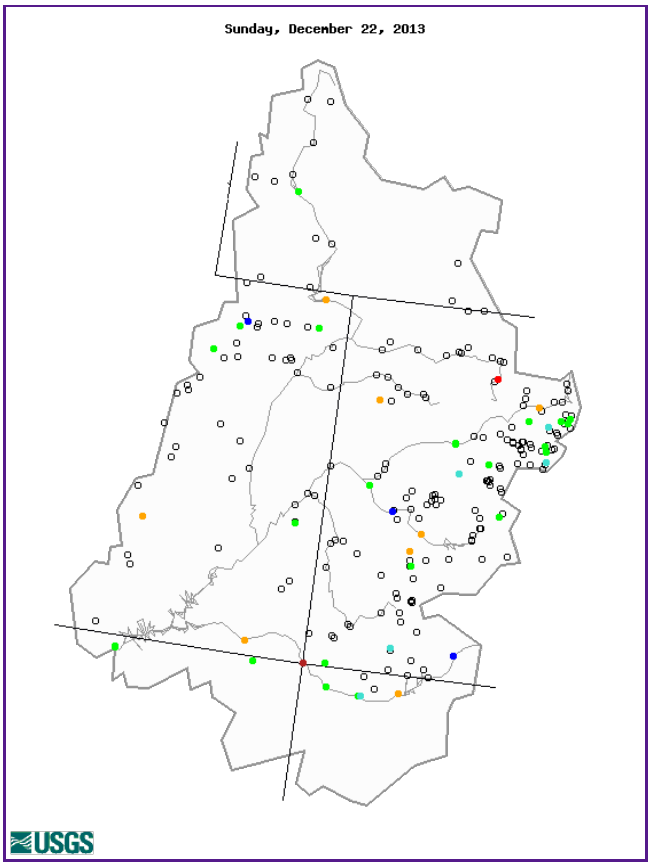
Short Term (30-day):

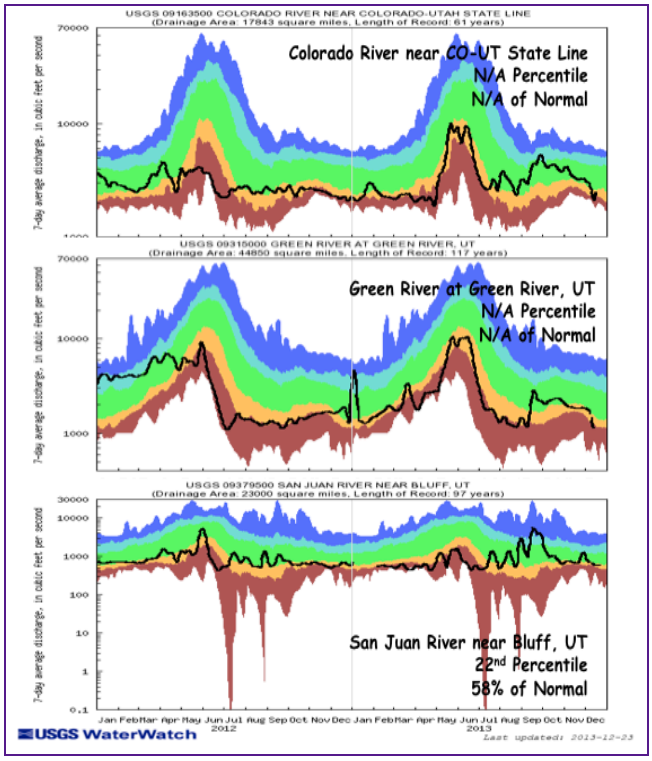
- Most of the UCRB is showing wet SPIs, ranging between 0 and +2
- Northern UT, far western WY, and some spotty western CO locations are slightly drier with some SPIs between 0 and -1
- East of the basin, the Front Range Urban cooridor is showing mixed SPIs between -1 and +1
- Mixed SPIs are observed in eastern WY, between -2 and +1
- Eastern CO is drier, with SPIs mainly between 0 and -1.5

Long Term (6-month):

- Northern UT and the Wastach range is the driest area on the 6 month time scale with SPI's ranging from +1 to -1.5.
- The Green, Yampa, White, Colorado, Gunnison and San Juan basins all show wet SPI values ranging from 0 to +3.
- Most of CO and WY east of the basin are showing wet indicators, with the exception of parts of southeast CO (0 to -2) and in far northeast CO (0 to -1)

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		

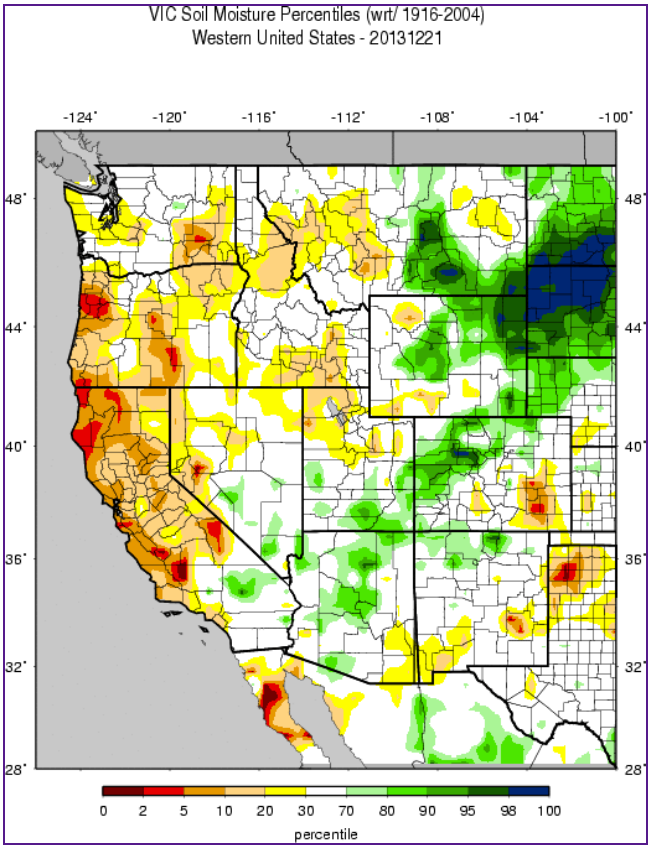
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

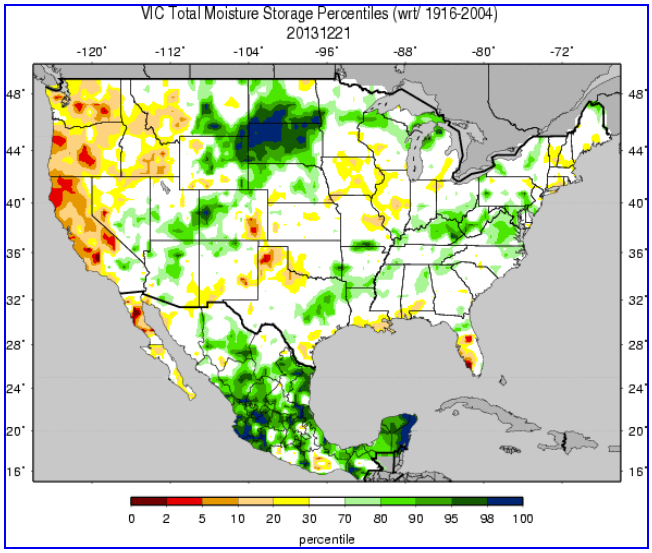
Streamflow Statistics:

- 75% of gages recording normal or higher 7-day average streamflow
- 24% of the gages are recording below the normal range, with 2% reporting record low flows
- Only 41 gages are reporting (the rest are ice affected), down from 103 gages one month ago
- 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
- The San Juan river near Bluff stayed fairly steady over the last week

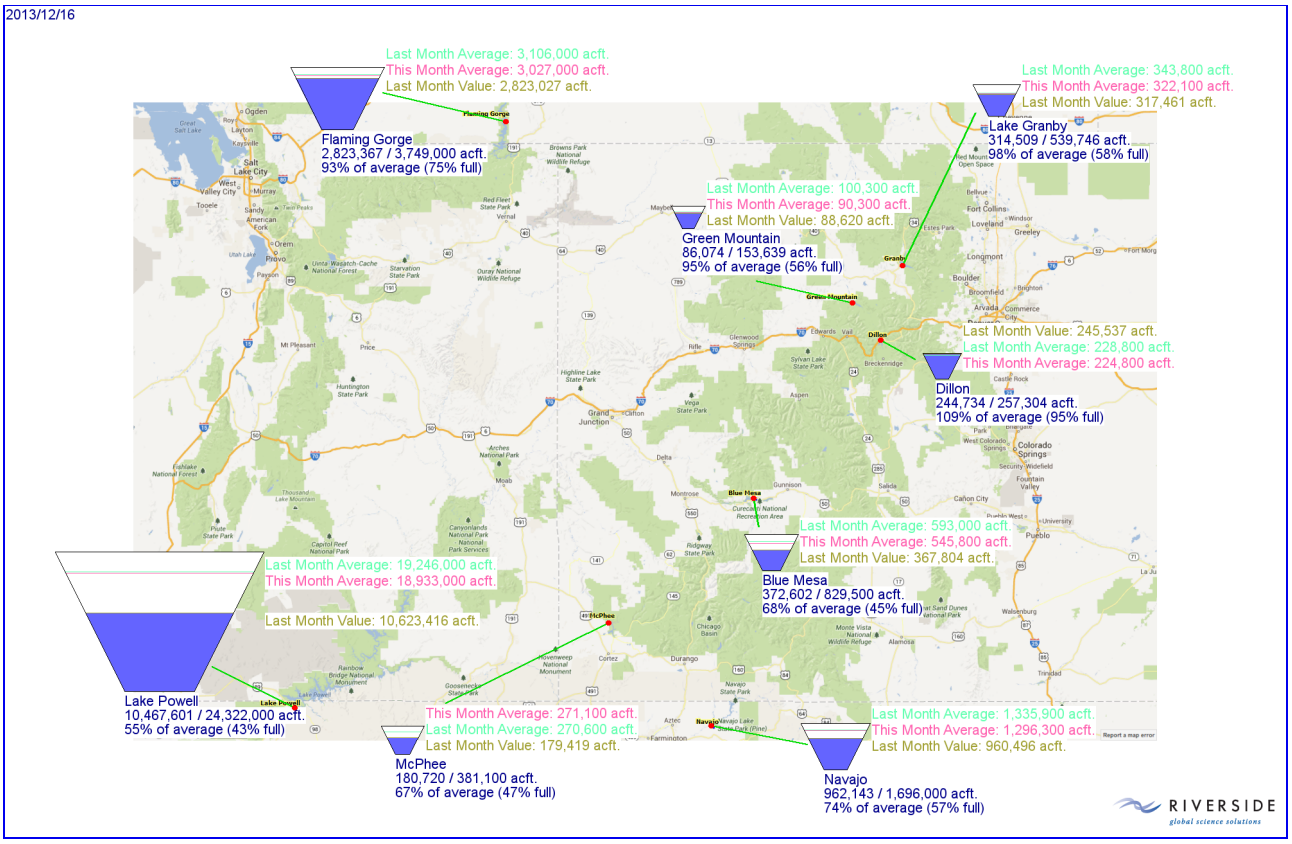
and is reporting below normal flows at the 22nd percentile

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 conditions
- Parts of northern UT and southwest WY showing slightly dry soil moisture, with percentiles ranging from the 10th to the 30th. These percentiles are slightly improved when including SWE (total moisture storage)
- Soil moisture conditions are at or above the median percentile throughout western CO and the Four Corners
- Northeastern CO and eastern WY are also showing wet soil moisture conditions
- Southeast CO continues to experience dry soil moisture conditions, with the lower Arkansas basin showing soil moisture percentiles below the 20th percentile and isolated areas down to the 5th percentile.

Reservoirs:

- The northern reservoirs are all near their December averages, ranging from 93% (Flaming Gorge) to 109% (Dillon) of average
- The southern reservoirs are all below December average, though they

have seen some improvement over the past couple months. They range from 55% (Lake Powell) to 74% (Navajo) of average for December
- Some of the reservoirs are still showing volume increases (Blue Mesa, Navajo, and McPhee) when decreases are normally expected this time of year
- Decreases at the remaining reservoirs have been very small since the beginning of the month, and Flaming Gorge has stayed near steady since the beginning of the month

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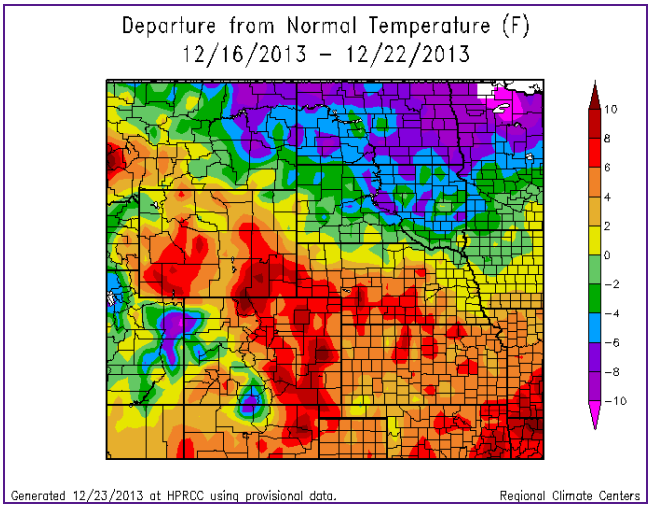
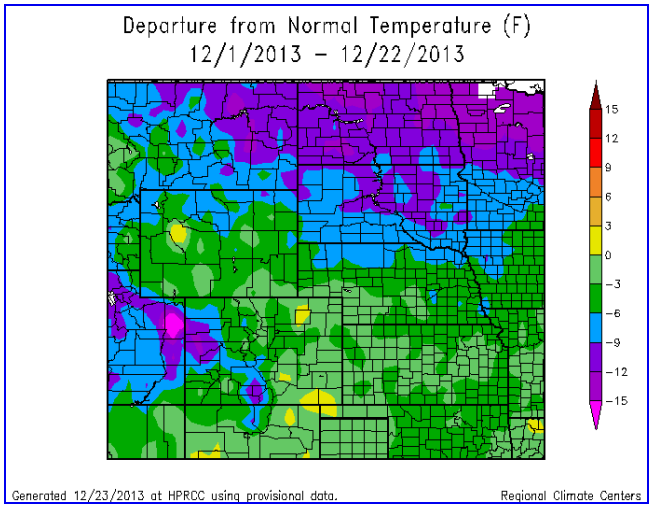
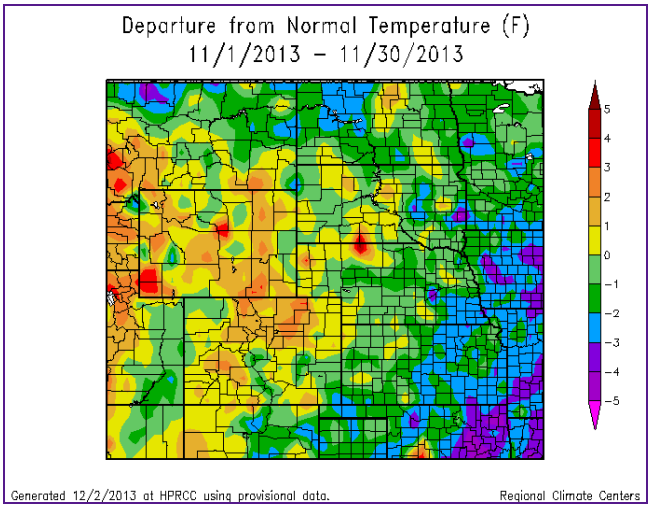
TEMPERATURE





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:

- The UCRB saw mixed warmer and cooler than average temperatures last week
- The northern part of the basin and most of the rest of WY experienced warmer than average temperatures
- Most of eastern UT, the western slopes of CO, and parts of the San Juans saw cooler than average temperatures
- Temperatures along the Continental Divide and around the Four Corners were warmer than average
- All of the Front Range and eastern CO saw warmer than average temperatures

Last Month Temperatures:

- The basin saw a mix of cooler and warmer than average temperatures for the month of November
- The northern basin saw mostly 0 to 3 degrees warmer than average, with southern Sublette County, WY 0 to 2 degrees cooler than average
- The eastern and central portions of the basin were 0 to 3 degrees above average
- Eastern UT and along the CO river Valley saw 0 to 2 degrees cooler than average
- East of the basin was also a mix
- Most of northeast CO 0 to 3 degrees above average
- Southeast CO was 0 to 2 degrees cooler than average, with areas closer to the mountains were slightly warmer than average
- The upper Arkansas River and Rio Grande River basins were 0 to 2 degrees cooler than average.
- Most of WY experienced temperatures 0 to 3 degrees warmer than average

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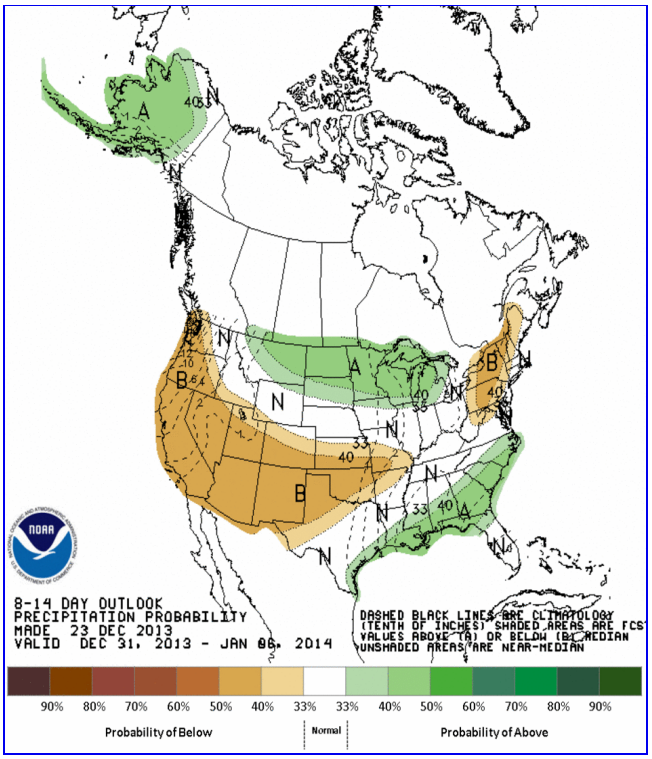
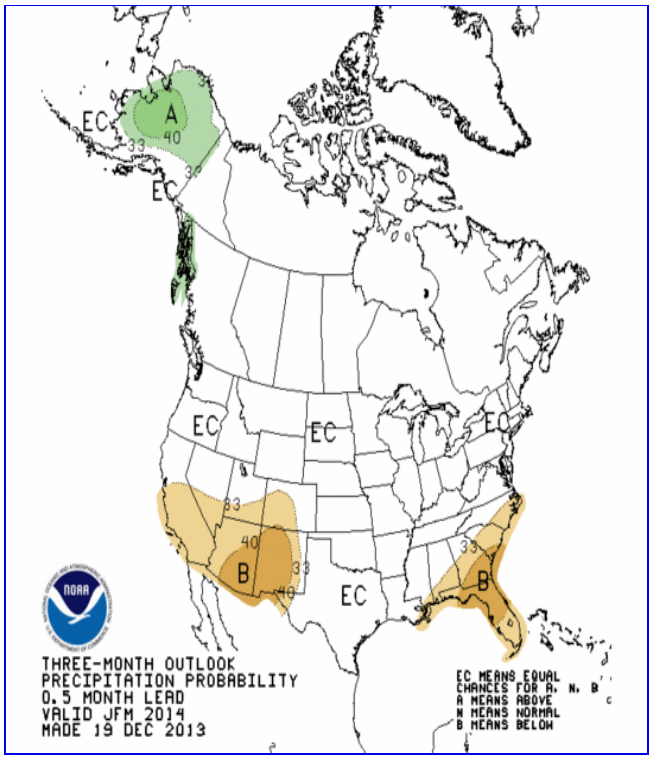
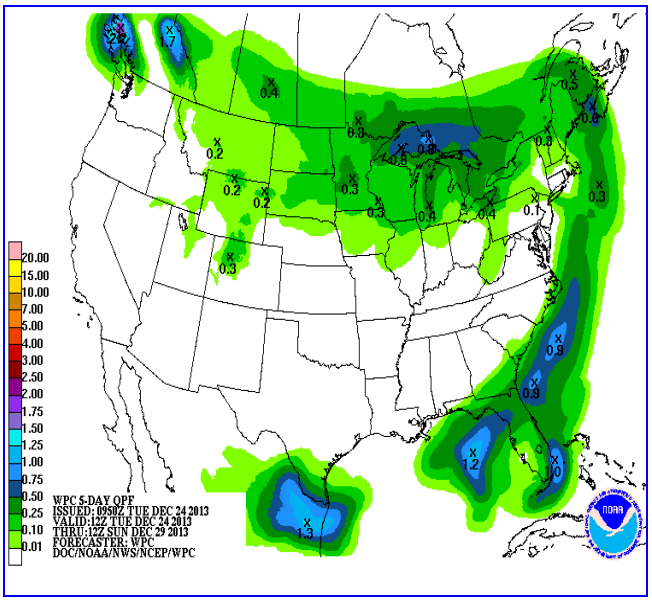
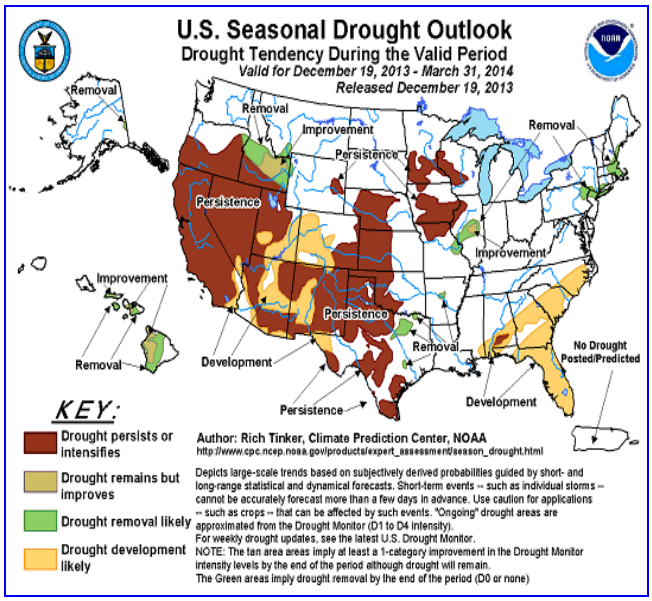
FORECAST AND OUTLOOK





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:

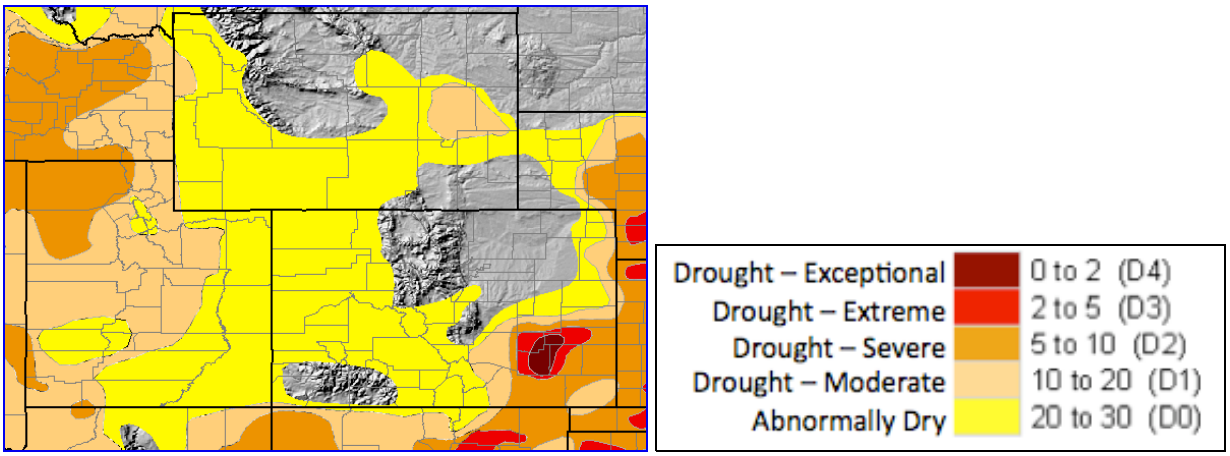
- A storm system currently moving through the area will bring the chance of scattered snow showers around the higher elevations and

cooler temperatures throughout the region
- After the passage of this system, expect dry and mild conditions for the entire region for the rest of the week
- Another small disturbance is expected to pass over the area during the weekend, bringing a slight chance of snow

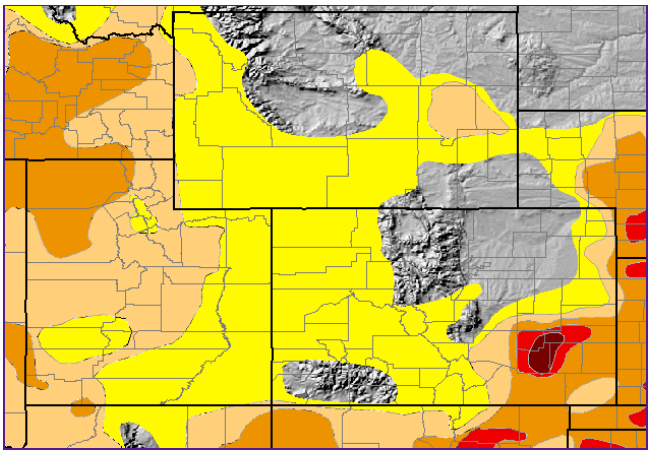
Longer Term:

- The 8-14 day precipitation outlooks shows increased possibility of drier than average conditions for most of the UCRB, CO, and UT, with likely near normal conditions across most of WY
- 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: December 24, 2013

Recommendations:

Another quiet week across the region. Some precipitation accumulations observed across the higher elevations, but most of the region remained relatively dry. Some additional accumulations can be expected, but the area will persist seeing drier than normal conditions. There has not been enough accumulations to justify any improvements at this time, but the winter season is developing enough to keep out any degradations.

UCRB: Status quo is recommended.

Eastern Colorado: Status quo is recommended.