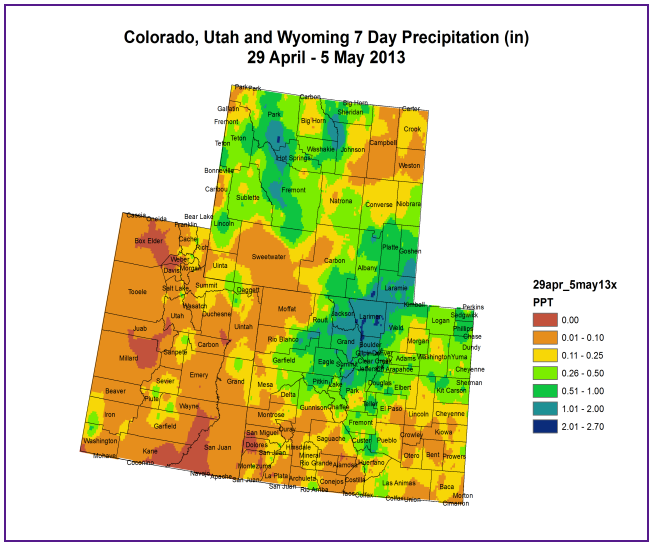
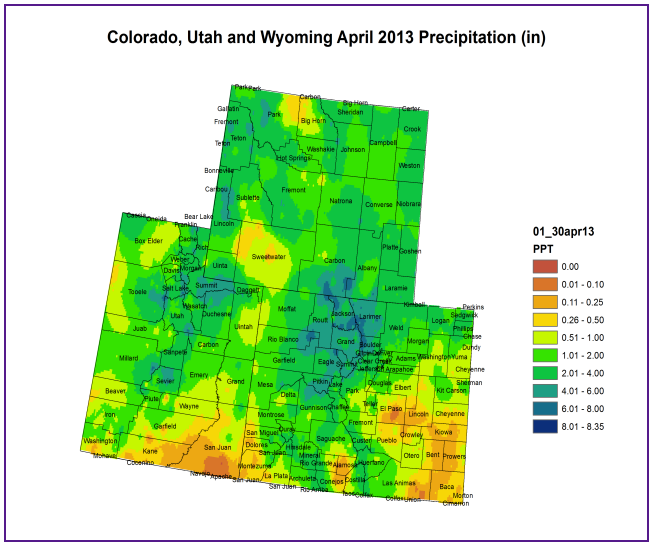
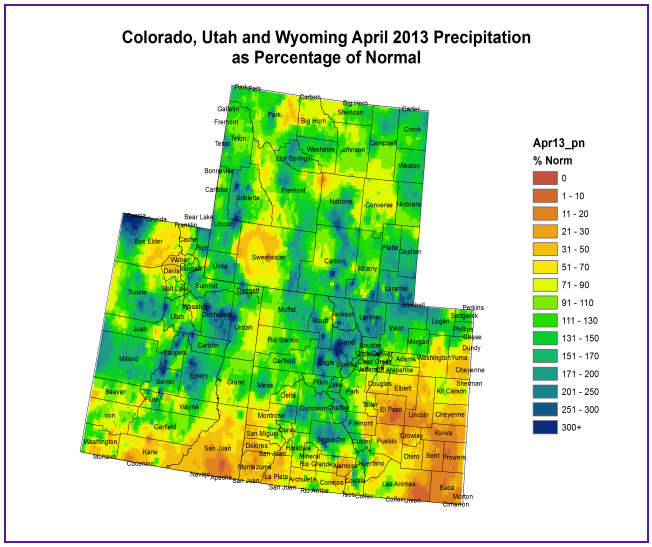
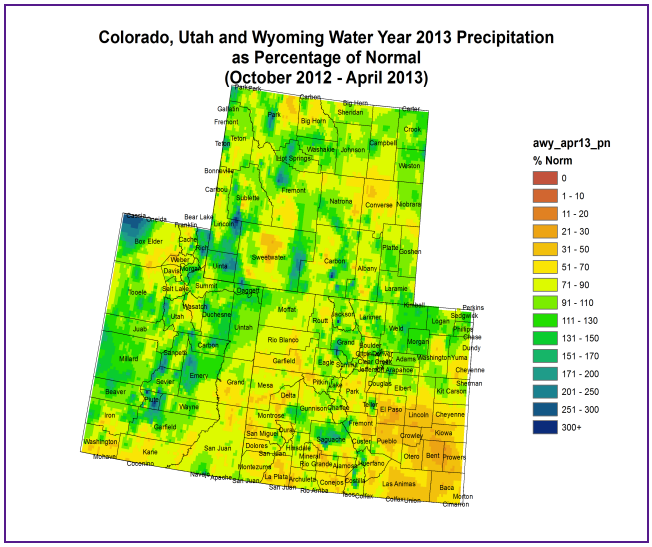
PRECIPITATION









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.

WYTD Precipitation:

- Parts of the Upper and Lower Green basins in southwest WY and northeast UT are near to above average for the water year
- Parts of the northern CO mountains show near average precipitation for the water year
- Much of western CO and eastern UT are between 30% and 90% of average
- Near average precipitation for much of northeast CO
- Much of the Arkansas basin (in southeast CO) below 50% of average precipitation since October

April Precipitation:

- Much of the higher elevations of the UCRB received over 2 inches of precipitation with some areas in the northern and central CO mountains and in northern UT received between 4 and 6 inches for the month
- With the exception of the Four Corners, much of the lower elevations in the basin received between 1 and 2 inches of moisture
- The Four Corners region was much drier in April, receiving less than .5 inches in some areas
- Northeast CO and all along the Front Range (east of the Continental Divide) received between 1 and 4 inches of precipitation for the month
- Southeast CO was much drier, with many areas seeing less than .5 inches

Last Week Precipitation:

- The northern and central mountains of CO received between .5 and 2 inches of moisture last week, and the far northern fringes of the UCRB received between .25 and 1 inch of precipitation
- The rest of the UCRB was relatively drier last week, with most areas receiving less than .10 inches
- Parts of northern CO and into southeast WY saw over 1 inch of moisture last week
- Most of northeast CO received between .25 and .5 inches of precipitation, while southeast CO received less than .25 inches in most areas

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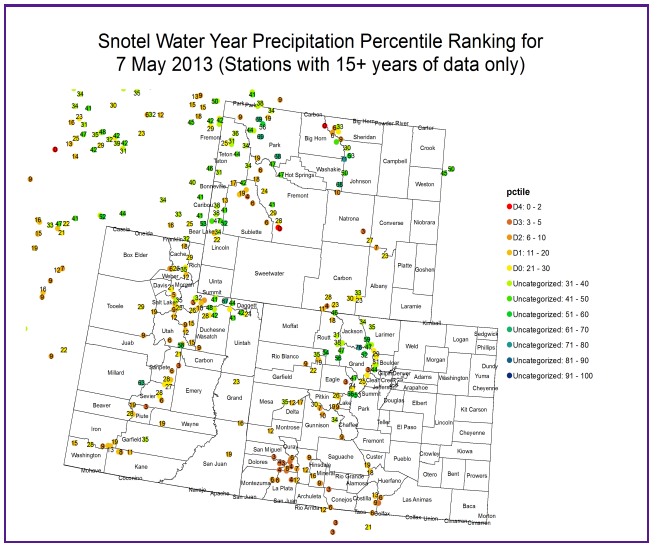
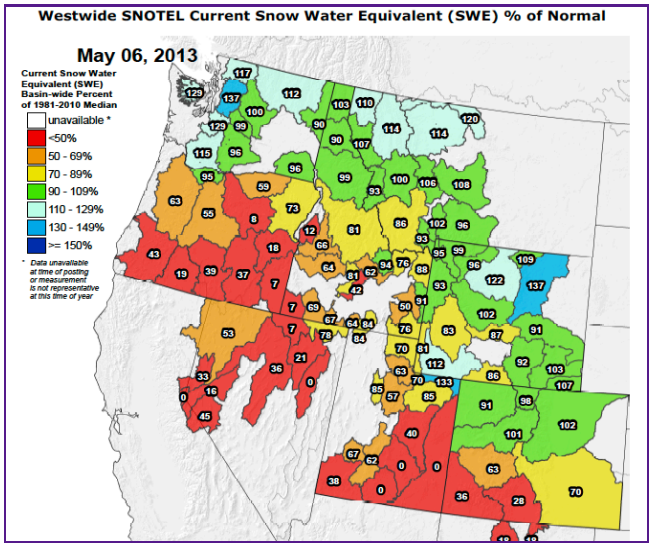
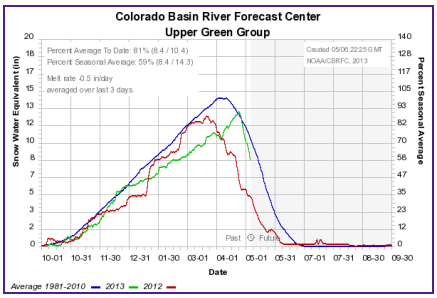
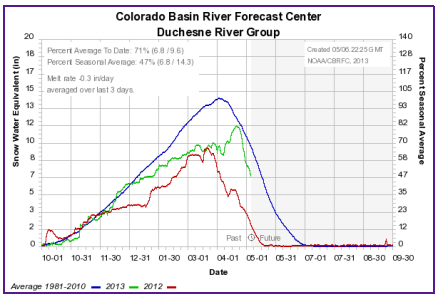
SNOTEL AND SNOWPACK

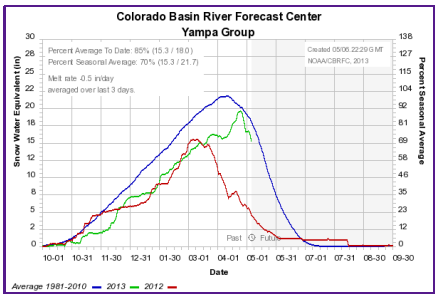


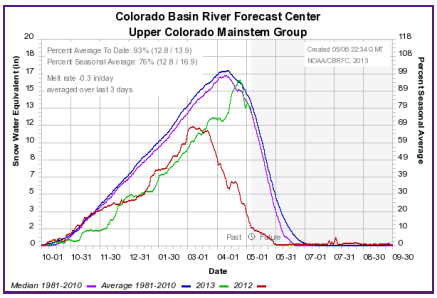


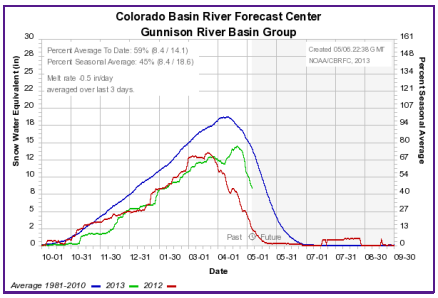
The top left image shows the Natural Resources Conservation Service's SNOTEL water-year-to-date precipitation percentile rankings. The top right image shows sub-basin averaged snow water equivalent accumulations as a percent of average. The images below show accumulated snow water equivalent in inches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

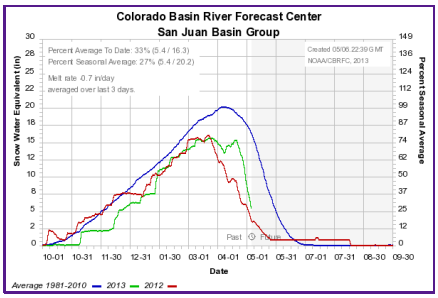












SNOTEL Precipitation Percentiles:

- Precipitation percentiles near the median around the Duchesne basin in northeast UT
- Wasatch range and central UT percentiles are lower, ranging from the teens to the 20s
- Western WY percentiles are just below the median with drier percentiles further to the east
- Northern and central CO mountains showing improvement with percentiles ranging from the 20s to median
- San Juans in southwest CO in the single digits and teens and continue to decline

Basin-wide Snow Water Equivalent Percent of Normal:

- Percents of normal will be highly variable during the melt season. Compared with normal melting rates, faster melting or further accumulations can cause anomalously small or large values in percents of normal

SWE Timeseries Graphs:

- The northern areas reached around 90% of normal peak snowpack values, while the southern areas reached less than 80% of normal peak seasonal snowpack
- Most sub-basins are now melting at a rate between .3 and .5 inches per day
- All graphs show later peak than last year and later peak than normal
- The San Juan sub-basin is melting very quickly (.7 inches per day), had the lowest percent of seasonal peak of all the sub-basins, and is now at only 33% of normal snowpack

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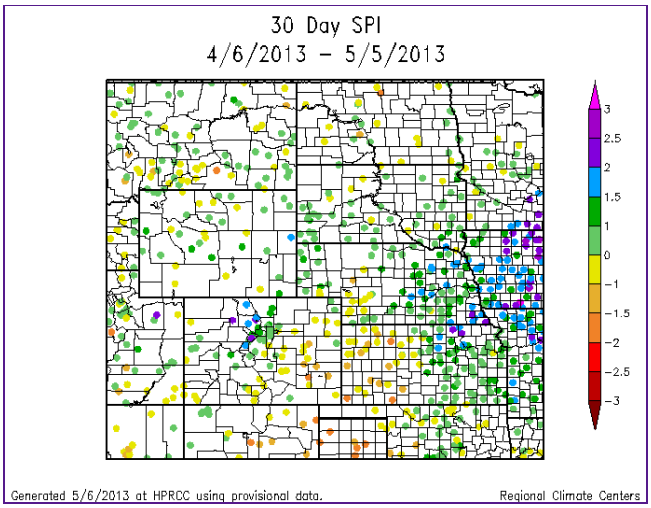
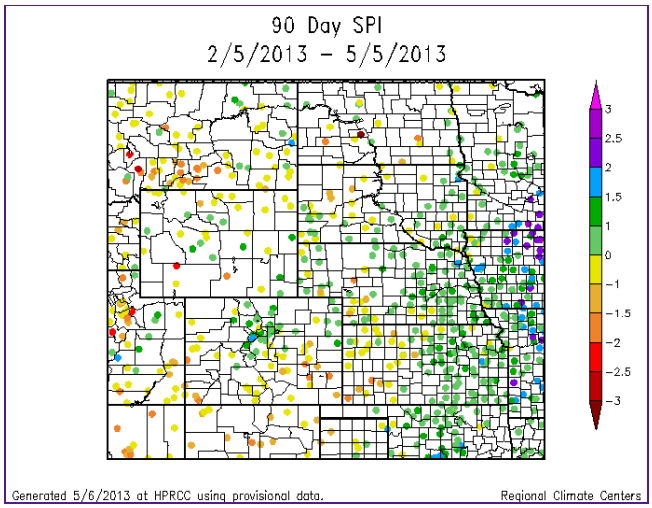
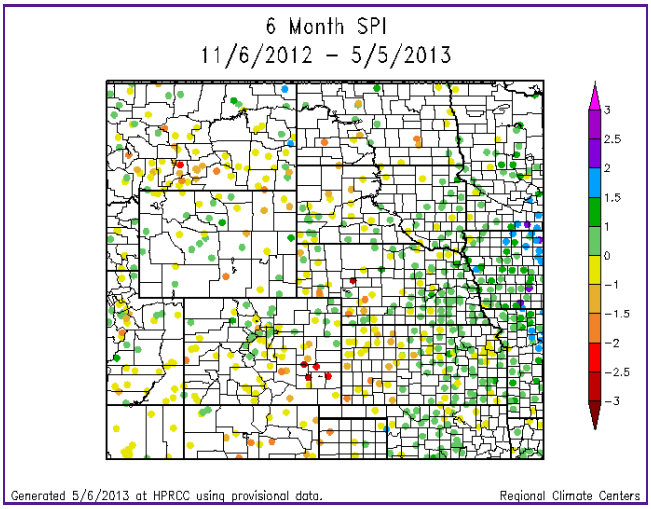
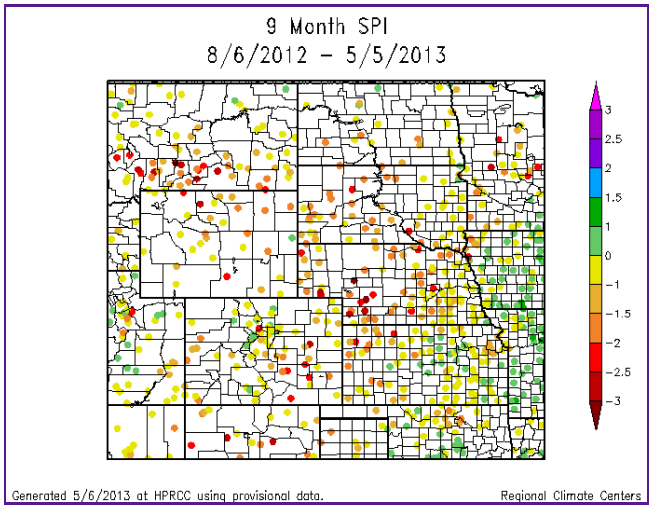
STANDARDIZED PRECIPITATION INDEX









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.

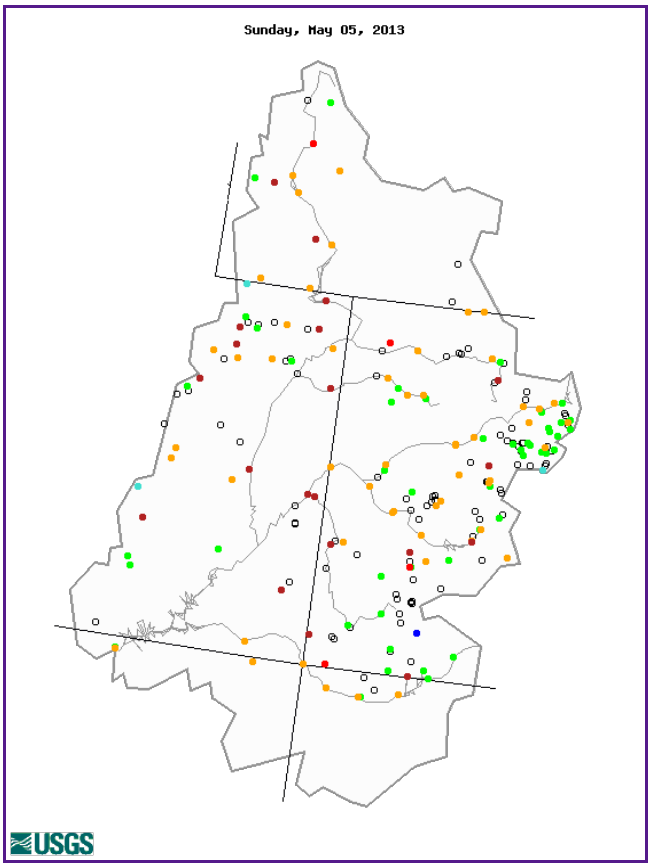
Short Term:

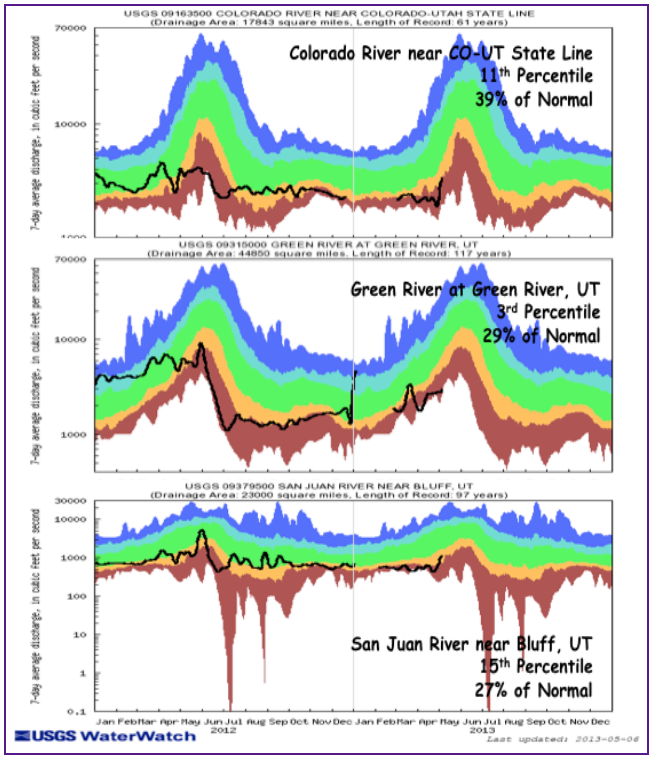
- Wetter SPIs in the northern and central CO mountains
- Wetter SPIs in western WY and northern UT
- SPIs between 0 and -1 along southeast UT and southwest CO
- Wetter SPIs along northeast CO and drier SPIs in southeast CO

Long Term (9-month):

- SPIs between 0 and -2.0 in southwest CO and southeast UT
- SPIs between -1 and -2.5 throughout southeast CO
- -1 to +1 SPIs in northwest CO, northeast UT, and southwest WY
- Mixed wet and dry SPIs in northern UT

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:

- 41% of gages recording normal to above normal 7-day average streamflows
- 18% of gages recording much below normal or low 7-day average streamflows
- Increase in flows across much of the basin due to warmer temperatures and snowmelt
- 130 gages now reporting, out of a maximum of 135 that usually report

in the summer
- Two of the three key gages in the basin (Colorado River near the CO-UT state line and the San Juan River near Bluff, UT) have increased in flows this past week and are reporting below normal flows (had reported much below normal flows last week)
- The third key gage in the basin (Green River at Green River, UT) has seen steady flows over the past few weeks and has not begun increasing yet (currently reporting much below normal flows)
- Expect to see sharp increases in flows across the basin as temperatures warm and snowpack continues to melt

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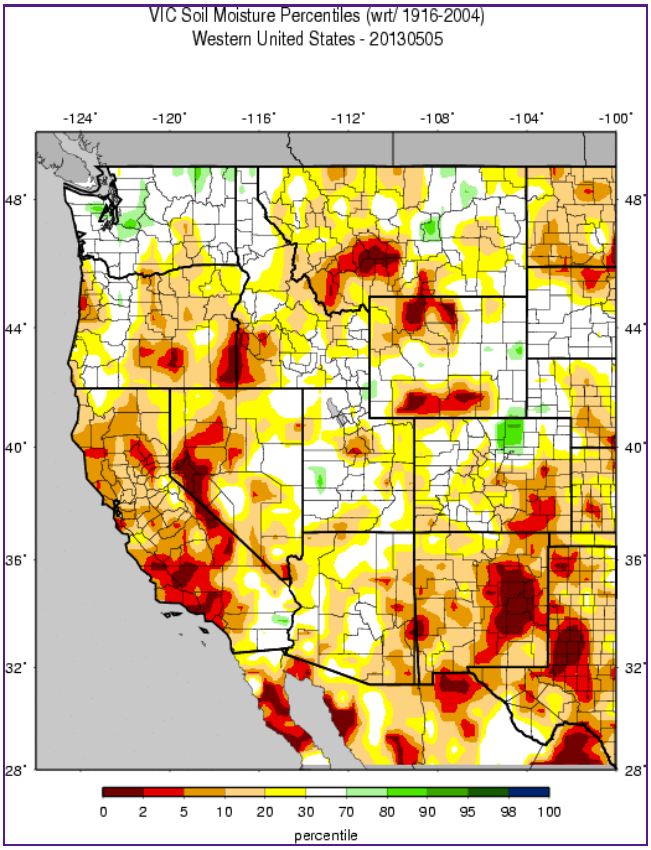
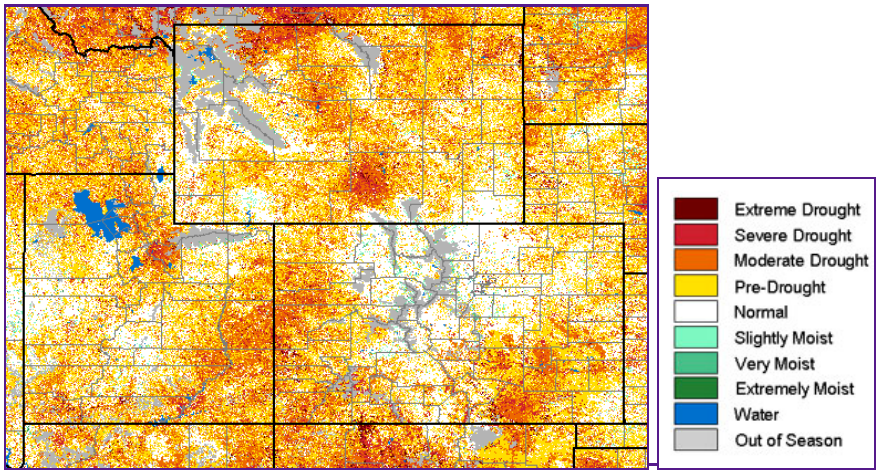
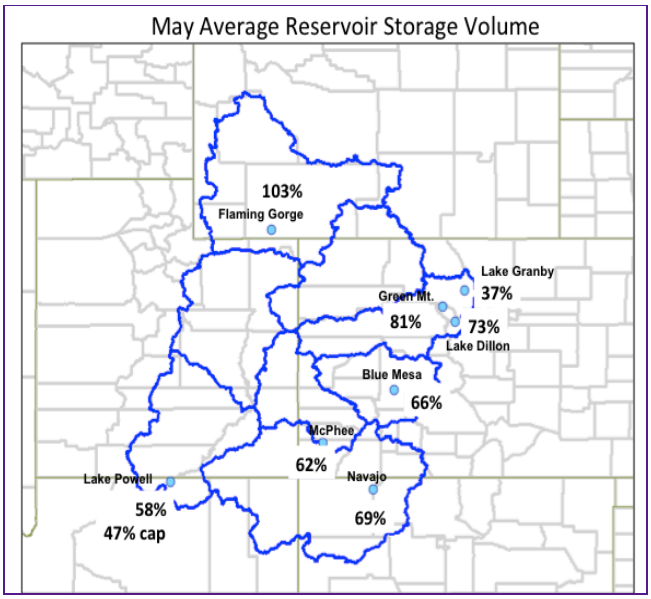
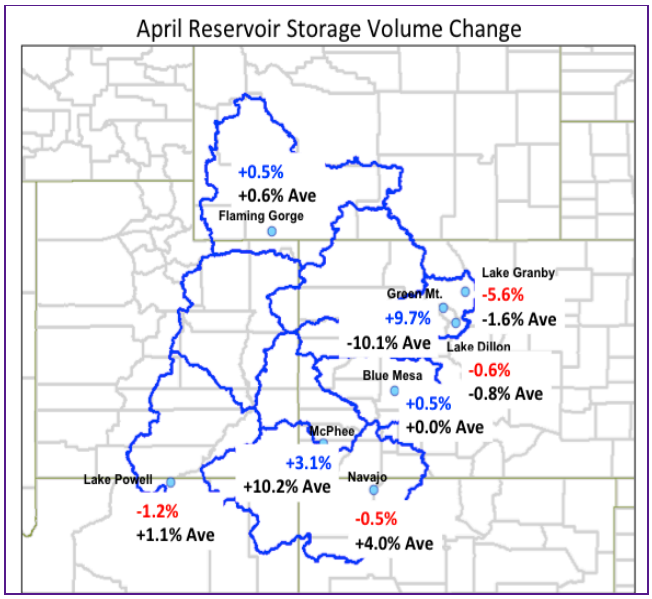
SURFACE WATER





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 left image shows the percent of average volumes of the major reservoirs in the UCRB. The above right image shows the percent change in volume over a specific time period for the reservoirs.

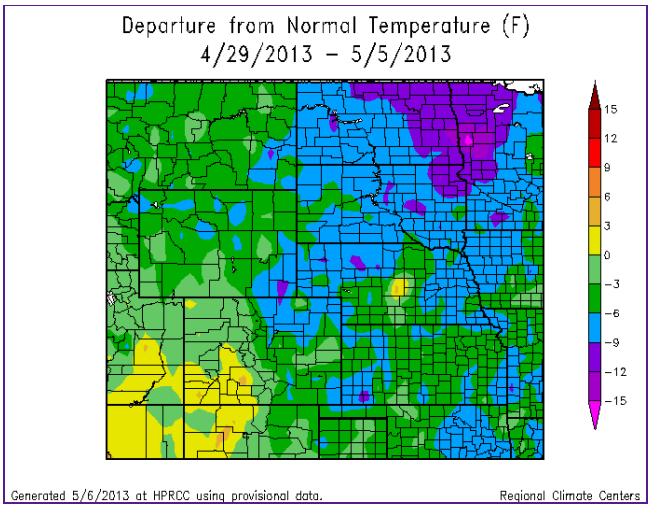
VIC:

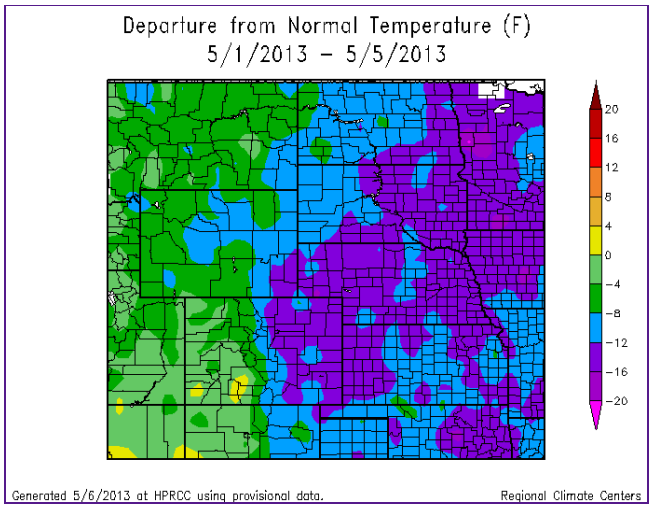
- Widespread improvement in soil moisture over much of WY
- Eastern UT and western CO showing soil moisture below 30th percentile with some areas showing improvement
- Deteriorating conditions over southwest CO, with soil moisture conditions below the 20th percentile
- Soil moisture below the 10th percentile for much of southeast CO
- Near average to wet soil moisture conditions in northern CO

Reservoirs:

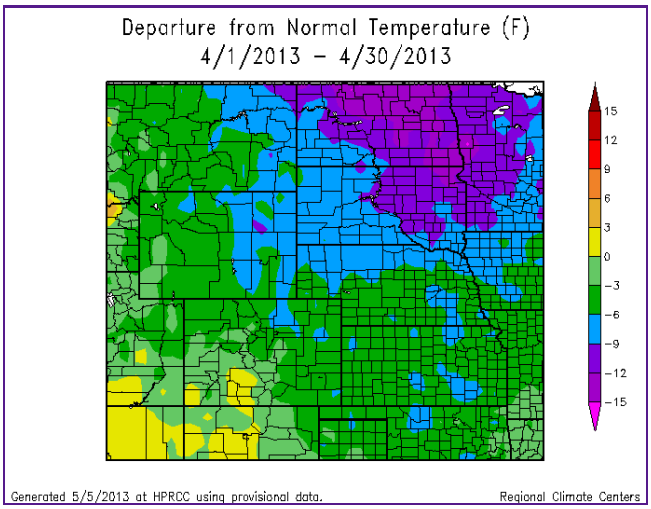
- Flaming Gorge is near average volume for May
- Rest of reservoirs below May average (ranging from 37% at Granby to 81% at Green Mountain)
- Flaming Gorge, Green Mountain, Blue Mesa, and McPhee increased in volume over the month of April
- Dillon and Granby decreased in volume in April, which is normal right before snowmelt season begins
- All the major reservoirs above Lake Powell have now begun increasing in volume, and Lake Powell continues to decrease (but could begin increasing very soon)

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:

- Temperatures near average for the southern half of the UCRB
- Temperatures 0 to 6 degrees below average for the northern half of the UCRB
- Most of eastern CO saw temperatures 3 to 9 degrees colder than average last week

Last Month Temperatures:

- Temperatures throughout the UCRB were cooler than average for the month of April
- Near average to 3 degrees colder than average for the southern half of the basin
- Temperatures 3 to 6 degrees colder than average for the northern half of the basin

- Eastern CO was 3 to 9 degrees below average for the month of April

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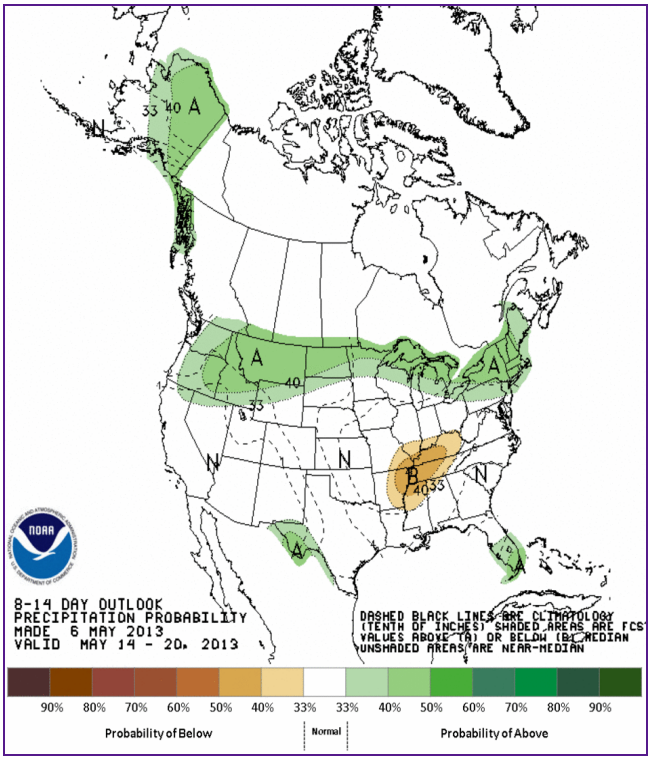
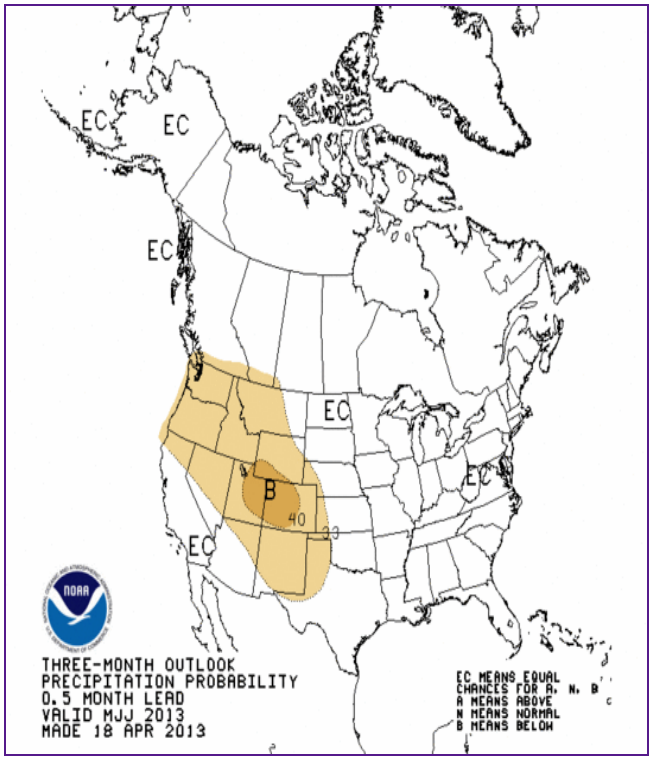
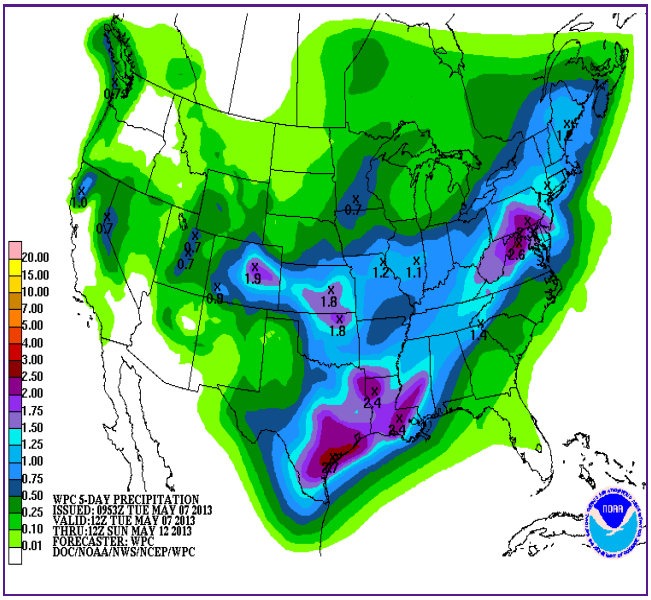
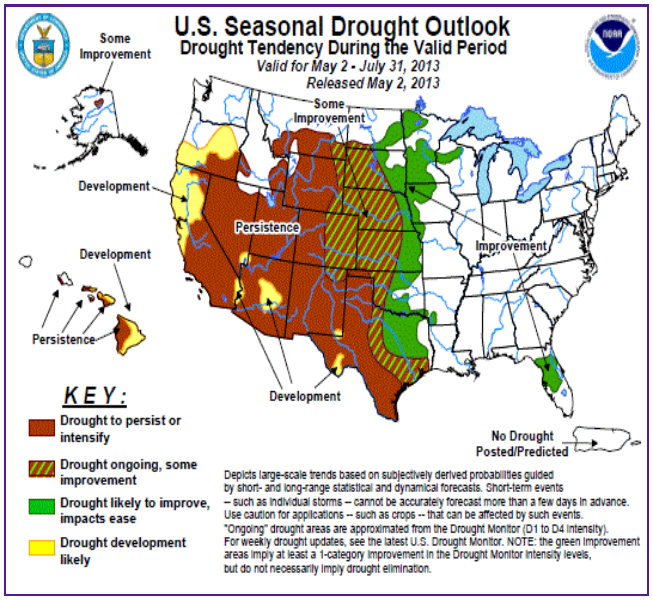
FORECAST AND OUTLOOK





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.





This Week:

- Showery weather will prevail through Friday
- Expect snow accumulations to be spotty and remain above 9000 feet

Longer Term:

- Drier and warmer conditions return for the weekend
- The 8 - 14 day outlook shows that near normal precipitation conditions are most likely
- The three month outlook through July shows drier than normal conditions are likely

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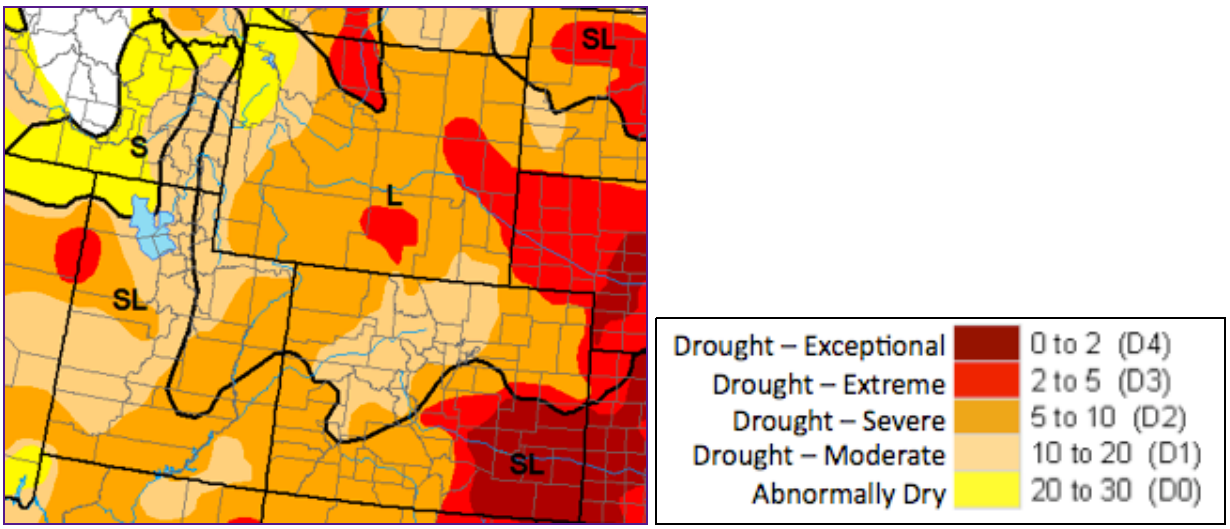
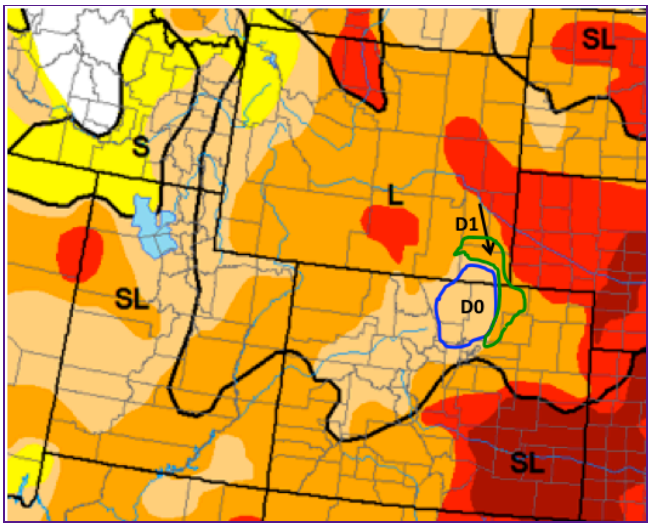
U.S. DROUGHT MONITOR



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: May 7, 2013

Heavy precipitation accumulations (due to a large snowstorm) occurred along the northern CO Front Range and extended west into the northern CO mountains. The UCRB remained relatively dry last week, and most of the higher elevations saw increased snowmelt and a corresponding increase in streamflows was observed as well. Southwest CO continues to deteriorate, following low accumulations in April and very fast melting of snowpack over the past week. The entire region is expected to see increased shower activity and decent liquid accumulations throughout this week, with a return to warm and dry weather through the weekend and into next week.

Recommendations

UCRB: Status quo is recommended for the UCRB in the current depiction of the U.S. Drought Monitor (USDM) map. One area that is closely being watched is southwest CO (from the San Juan Mountains to the Four Corners area). Many indicators show this region as borderline D2/D3 (SNOTEL precipitation percentiles, 60-day SPIs, very fast melting). Since it is borderline, the recommendation is to wait this week and watch the area for possible degradations in the near future.

Northeast CO/Southeast WY: Some improvements are recommended for northern CO and southeast WY, including a trimming of the D2 (green shape) and an introduction down to D0 (blue shape). This region saw much above average precipitation for the month of April and an additional 1 to 2 inches of moisture accumulation for the first week of May. The lines drawn match well with VegDRI and AHPS 60-day departure from normal (following departures of +2 to +4 inches). Although the NE panhandle does appear to be drier according to long-term SPIs, the current USDM author may want to consider adjusting the D3 across the WY/CO/NE borders to reduce the strong D-gradient that the above recommendations would introduce.

Southeast CO: Status quo is recommended for the rest of CO.