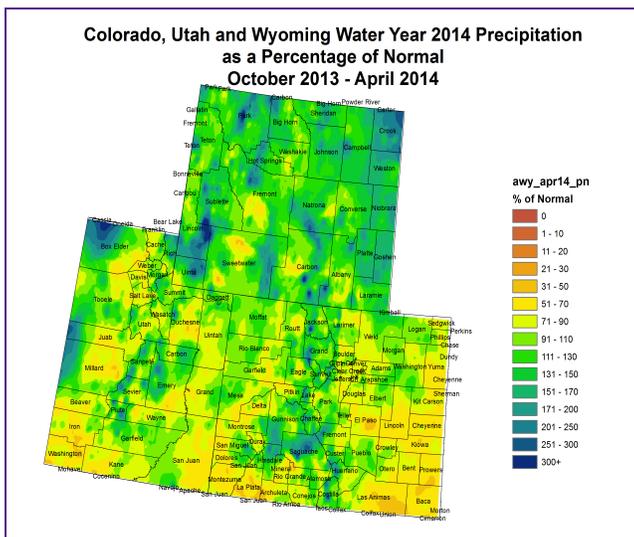
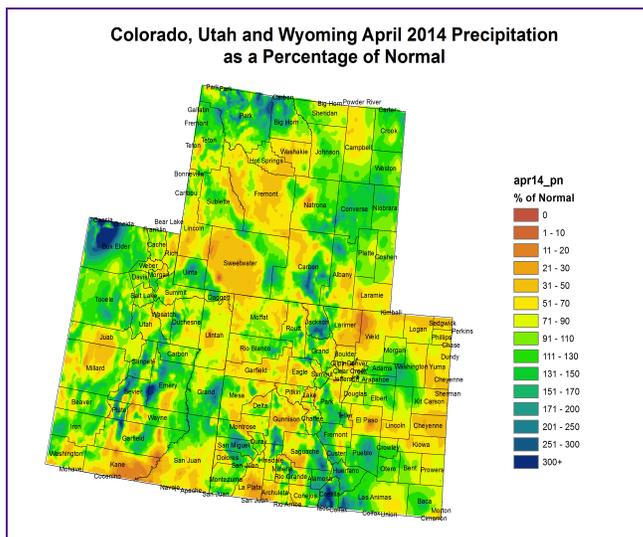
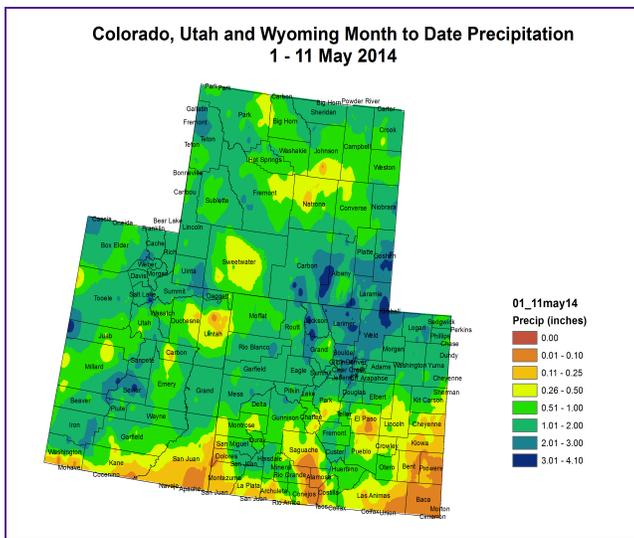
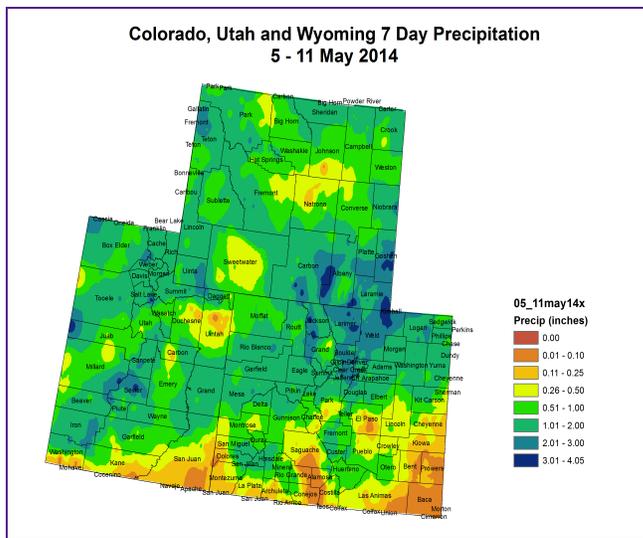


# PRECIPITATION



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:

- Widespread precipitation fell over the UCRB over the last week, with most areas in the basin seeing greater than 0.50".
- Sweetwater County in southwestern WY and the Duchesne River basin in northeastern UT saw less than 0.50".
- The northern and central mountains in CO mainly received between 0.50" and 2.00" with higher elevations up to 4.00".

- The San Juan Mountains saw up to 2.00" in the higher elevations, drying out to the south and the Four Corners with less than 0.50", most areas less than 0.25".
- East of the basin, precipitation was widespread through much of eastern WY and northeastern CO with amounts above 1.00".
- Southeastern CO in the Lower Arkansas Basin was dry with most areas receiving less than 0.10".

### **April Precipitation:**

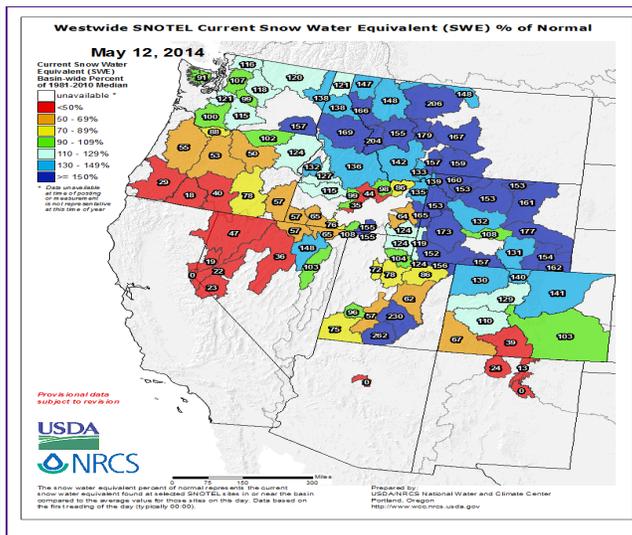
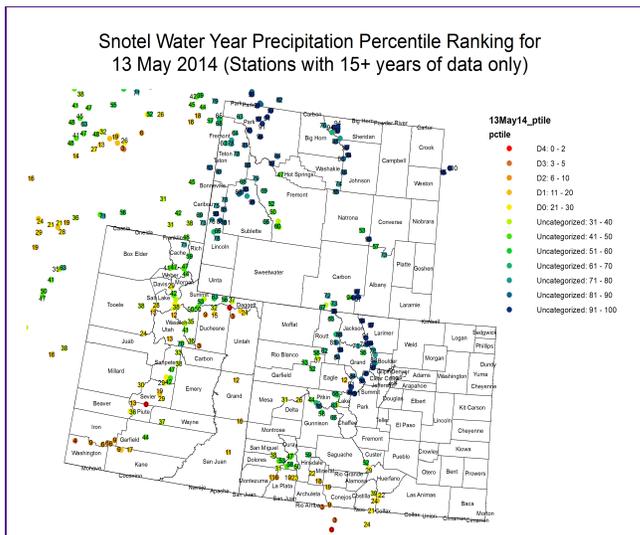
- April precipitation throughout the UCRB was mixed, ranging from 30% of average to over 170% of average
- Wetter than average areas during April include much of the Wasatch range in UT and the northern higher elevations of the basin in WY
- Drier than average areas include Sweetwater County in WY, and the lower Colorado River valley just above Lake Powell
- East of the basin, much of eastern WY received above average precipitation for the month
- The northern Front Range and far eastern plains of Colorado were drier than average, mostly between 30% and 70%
- The Sangre de Cristos were much wetter than average, receiving between 90% to 200% of average precipitation
- Parts of the Arkansas valley and parts of the central plains (around Adams and Arapahoe counties) were near average for April

### **Water Year Precipitation (Oct-Apr):**

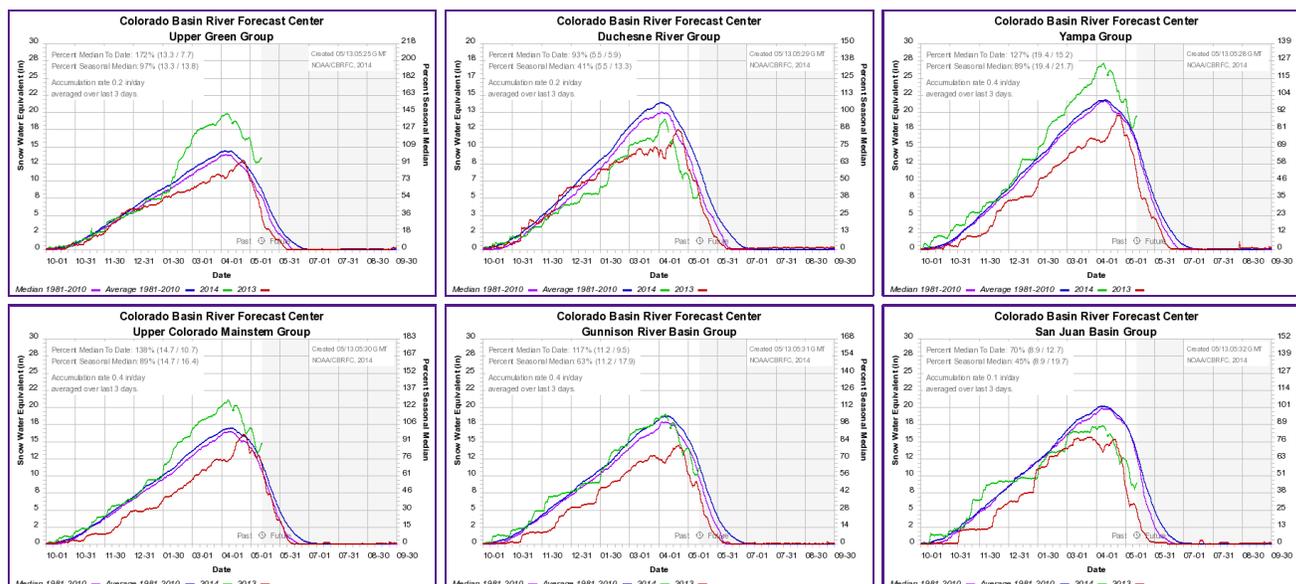
- Most of the northern and higher elevations of the UCRB have received near to above average precipitation for the water year
- The Four Corners region and areas around the Duchesne basin in northeast UT have been drier than average, mostly receiving less than 70% of average precipitation since October
- Most of Wyoming has received from 90% of average to 200% of average precipitation
- The Wasatch range in central UT has been mixed, receiving between 50% to 130% of average
- The northern, central, and southern CO mountains have all been above average for the water year
- East of the basin, the CO Front Range and most of northeast CO have received near to above average precipitation
- The far eastern CO plains and much of southeast CO has been drier than average, mostly receiving less than 70% of average

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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:**

- SNOTEL precipitation is at or above the median (50th percentile) for the northern and eastern part of the UCRB with drier percentiles along the western and southern portions of the basin.
- Percentiles in the Upper Green region are mainly above the 75th percentile.
- In the northern and central CO mountains percentiles are at or well above the median. Most SNOTEL sites along the Continental Divide are reporting precipitation above the 70th percentile.
- The Wasatch range in northern Utah is near the median. The Uintah range in northeast UT is slightly drier with percentiles ranging from 3rd to 50th. The lowest values are being reported on the southern and

eastern portions of the range.

- Percentiles in the San Juans range from single digits in the lower elevations of the SW side of the range to near median on the NE side of the range.
- In the Rio Grande Basin, percentiles are mainly below the 25th percentile.
- While the headwaters of the Arkansas basin are reporting above the median, the southern basins (Custer, Huerfano, Costilla counties) are reporting mainly below the 30th percentile with a few sites slightly better.

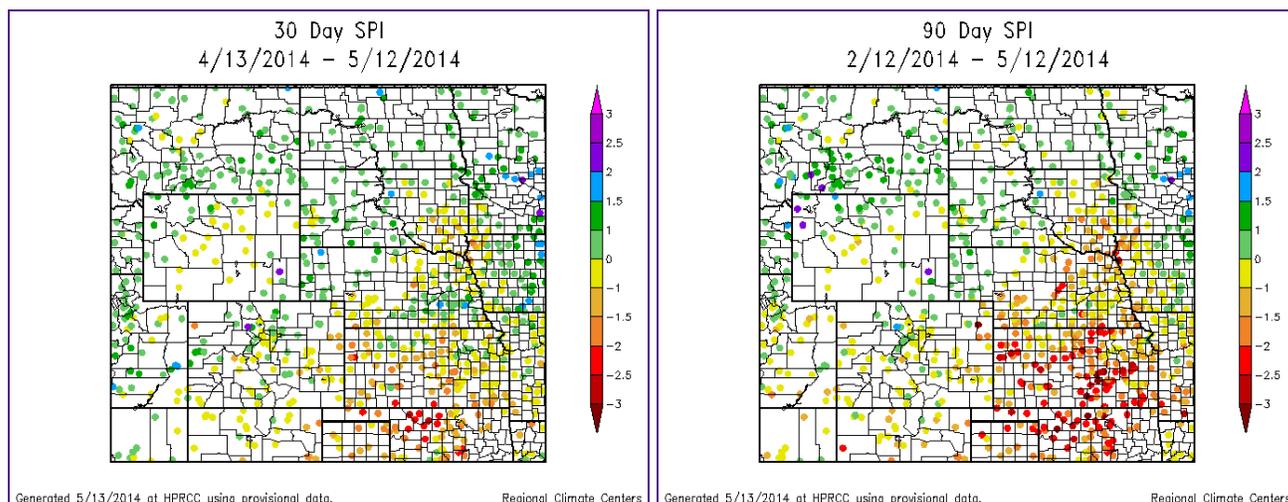
### Basin-wide Snow Water Equivalent (SWE) Percent of Normal:

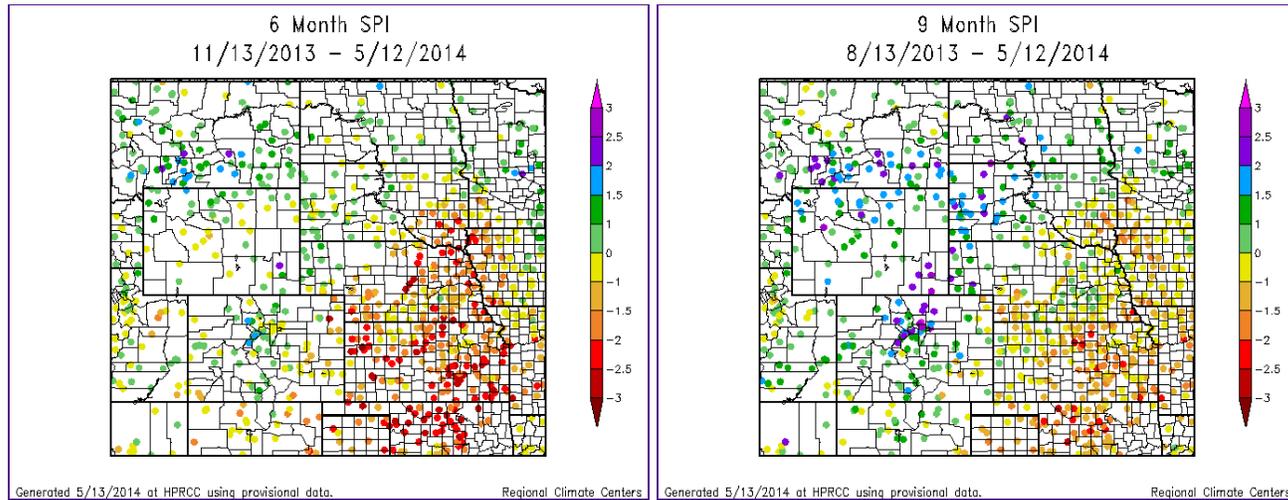
- In the UCRB, the CO and WY sub-basins show above normal snowpack, while the UT sub-basins show below normal snowpack
- The southern sub-basins in UT range between 0% to 50% of normal, while the northern sub-basins range between 60% to 124% of normal
- The northwest CO and southwest WY sub-basins range between 100% to 173% of normal, and the San Juan basin in southeast CO is 67% of average.
- East of the basin, all of the WY sub-basins and the northern CO sub-basins are above normal. The Rio Grande basin in southern CO is much below average at 39% of normal

### SWE Timeseries Graphs:

- All sub-basins peaked in snowpack around the second week of April and have seen large amounts of snowmelt since, with a slight increase this last week from a storm across the basin.
- The Upper Green, Yampa-White, and Upper Colorado sub-basins peaked well above normal and remain above normal
- The Gunnison sub-basin peaked just above the median seasonal peak and remains near the median
- The Duchesne and San Juan sub-basins peaked below their normal seasonal peaks with 96% and 87% of the median peak, respectively

## 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):

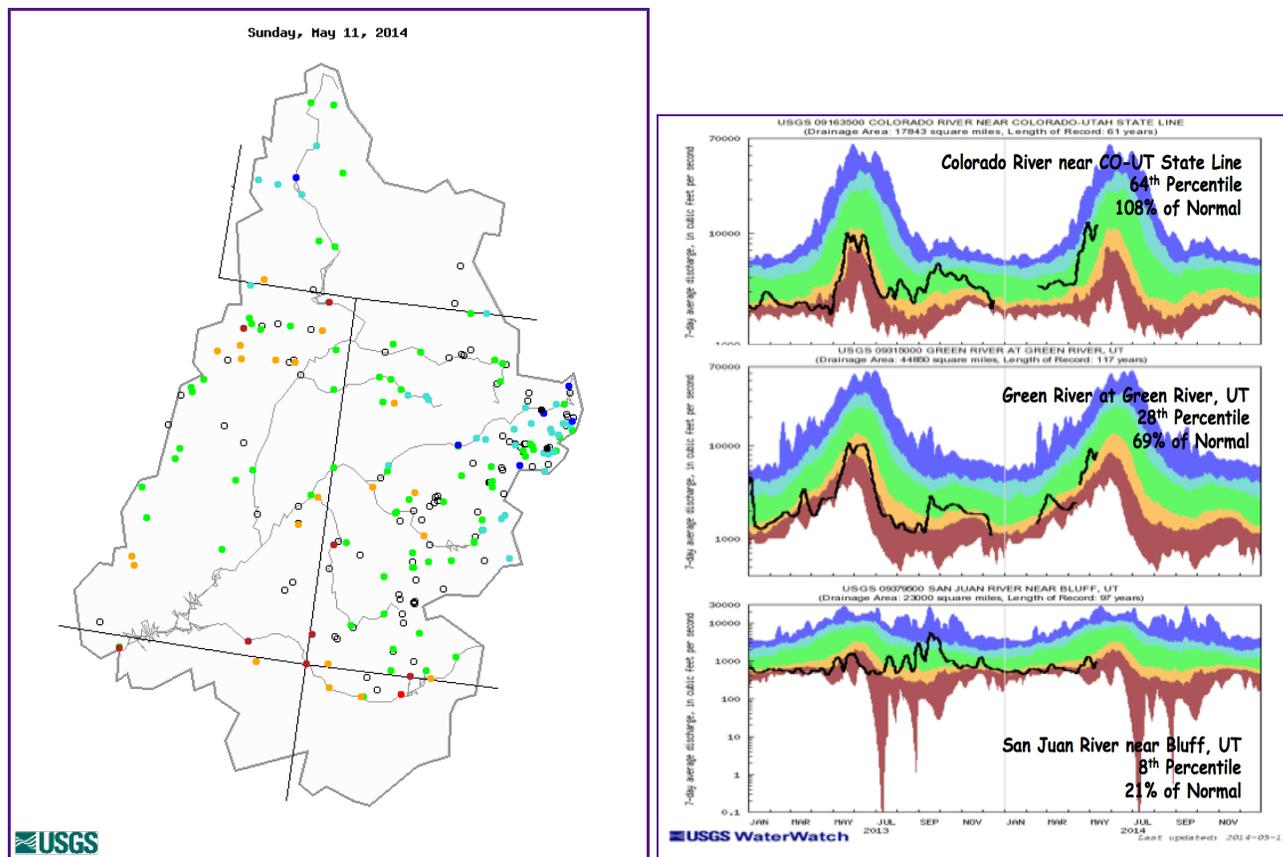
- Most of the UCRB is showing near average short-term indicators, with most SPIs between 1.5 and -1.
- The southern portion of the basin in southwestern CO is mainly showing dry SPIs of -1.
- East of the basin, SPIs are mixed, with southeast WY and northern CO are wetter with SPI between 0 and 1.5.
- The southern Front Range and the rest of CO is near average (SPIs between -1 and +1) with drier SPIs in southeast CO, down to -1.5.

### Long Term (6-month):

- The Upper Green is reporting dry SPIs in the 0 to -1 range with southern Sweetwater County reporting wetter at +1.
- Eastern and northern UT are mostly drier, with SPIs ranging between 0 and -2.5, with a few wetter SPIs up to 1.5 in the northern Wasatch Range.
- The driest areas are the Duchesne basin and the Four Corners area with SPIs between 0 and -2 in both areas.
- Most of the higher elevations of CO are showing wet SPIs above zero however the western valleys are drying out with SPI's between 0 and -1
- East of the basin, the Foothills are showing near normal SPIs between -1 and +1
- Eastern CO shows long-term dryness, with SPIs in NE Colorado reporting 0 to -2.

- Farther to the south in the lower Arkansas basin, SPIs range from 0 to -2, with the driest SPIs in Lincoln, Otero and Las Animas counties

# 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		

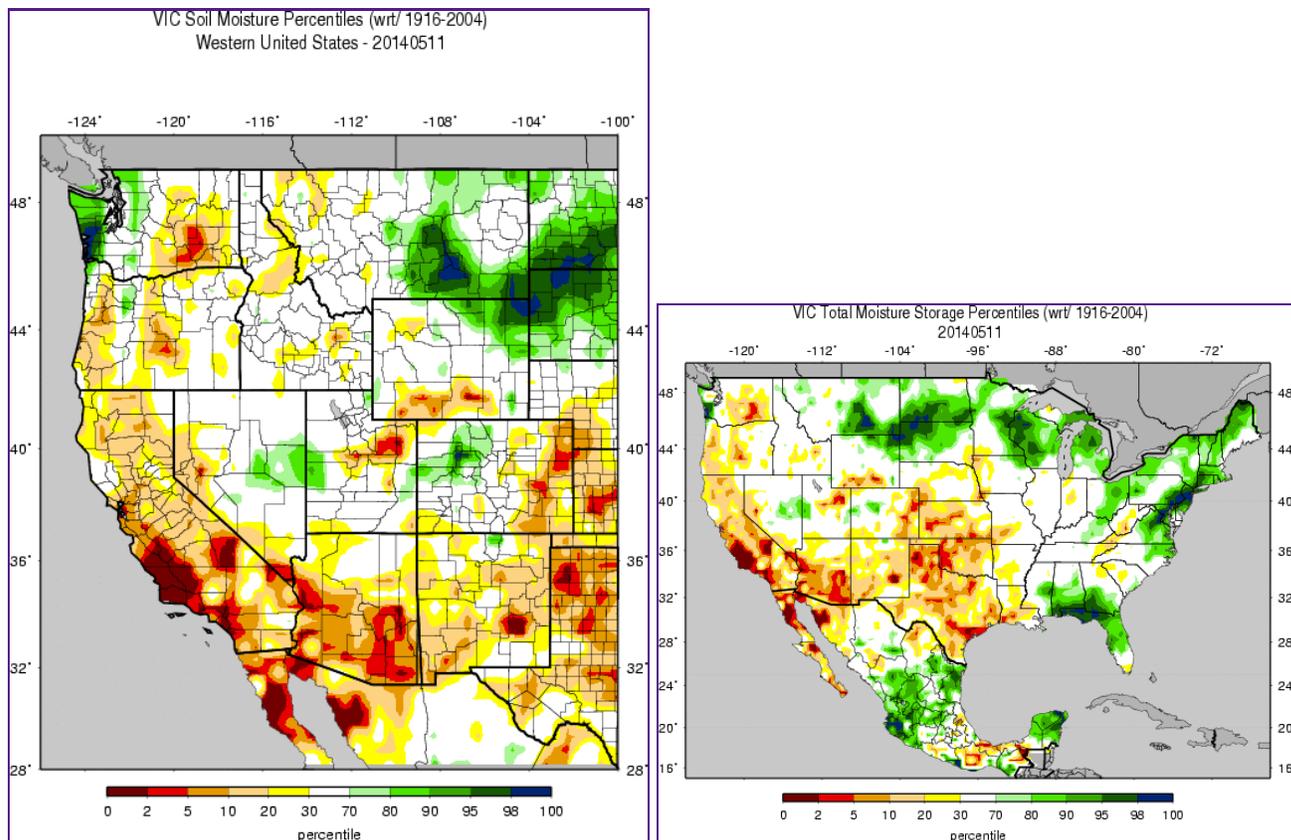
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

## Streamflow Statistics:

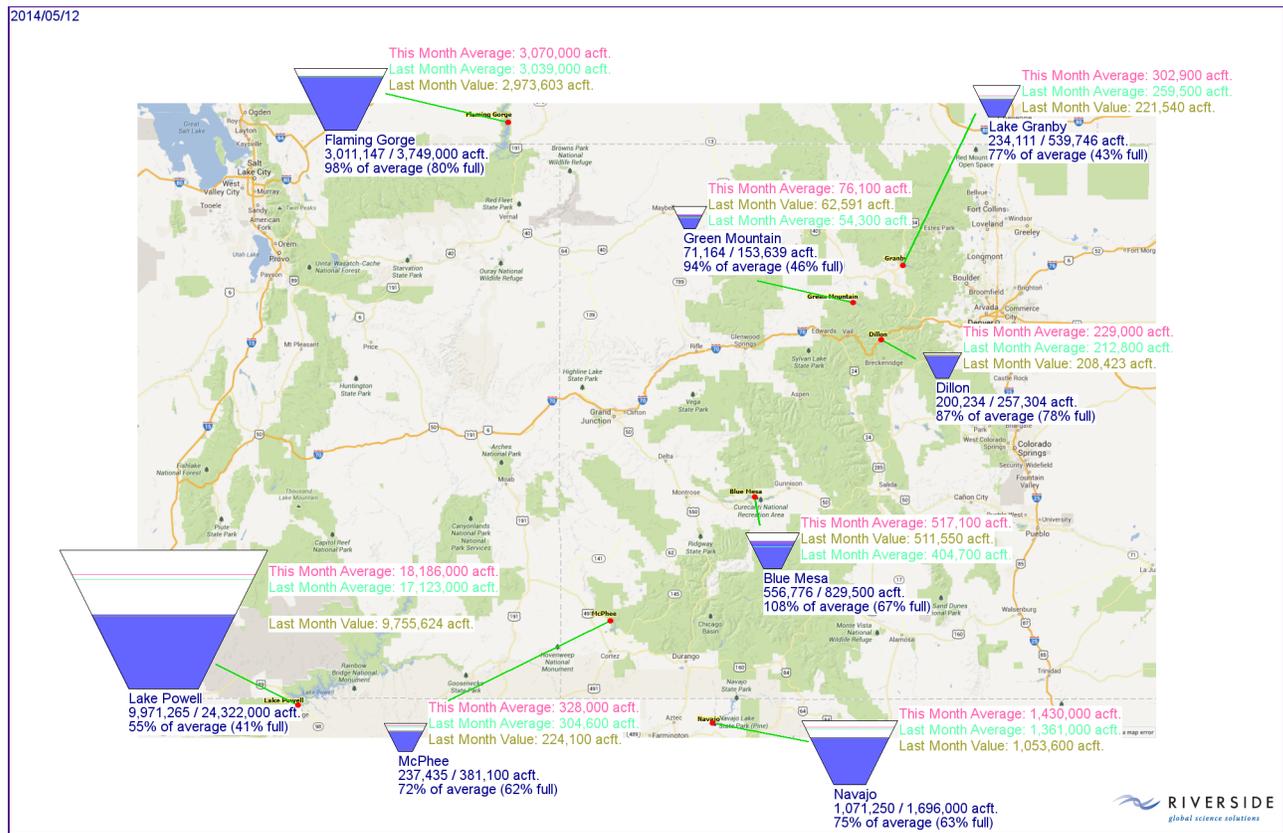
- 80% of the gages in the UCRB are reporting above the 25th percentile (normal and above) for 7-day average streamflow. 4% of gages are

- reporting much above normal or high flows for the 7 day average.
- 20% of the gages are recording below the 25th percentile (below normal) for 7-day average streamflows
- Streamflows continue to increase as a result of snowmelt, but the increase slowed significantly this week, with the cooler temperatures and snow that fell.
- The lowest streamflows are the San Juan river in SW Colorado and the Duchesne River in NE Utah, while streamflows are highest in the Colorado River headwaters.
- Flows on the Colorado River near the CO-UT state line are in the near normal range, currently at the 64th percentile
- Flows on the Green River at Green River, UT are just in the near normal range, at the 28th percentile
- The San Juan River near Bluff, UT is currently flowing in the much below normal range, at the 8th 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.

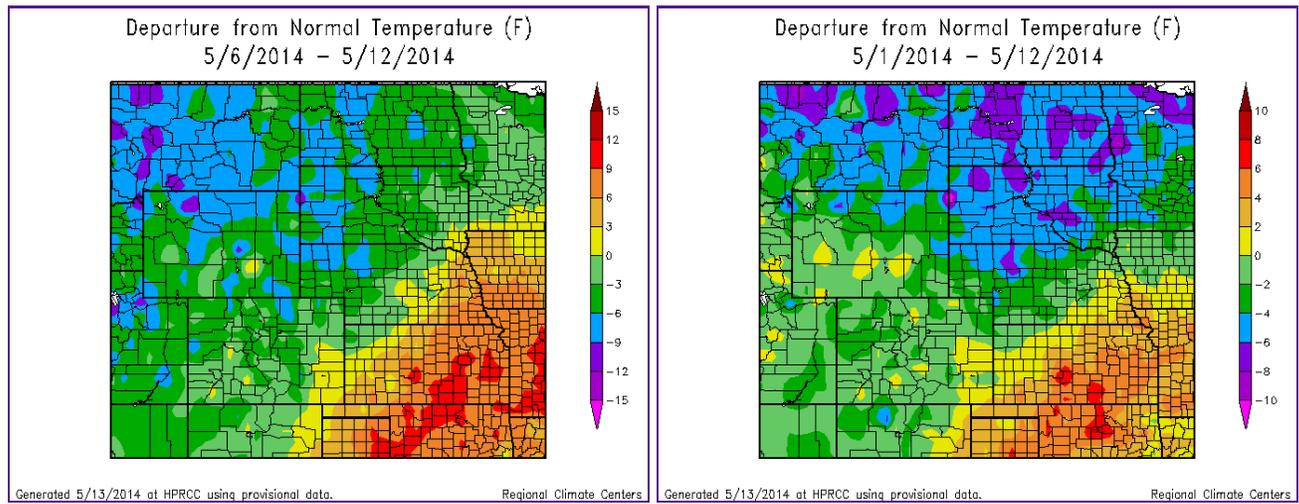
**VIC:**

- The UCRB is showing a mix of wetter and drier soil moisture conditions
- Soil moisture throughout northeast UT and southwest WY are between the 2nd and 30th percentiles with the driest area in the Duchesne basin just south of the Uintah mountains.
- The Four Corners region is showing drying soil moisture, with much of the region between the 10th and 30th percentiles.
- Western CO continues to show wetter soil moisture conditions, above the 70th percentile
- East of the basin, most of northern WY shows near normal to wet soil moisture conditions, however dry soil conditions are creeping east into Carbon and Albany Counties
- Soil moisture is near normal along the Continental Divide and across most of the Front Range
- Soil moisture on the plains is drying rather quickly with little moisture and high winds. The driest area is centered over southern Lincoln County and extends NE and south to the borders. These areas are reporting soil moisture between the 2nd and 30th percentiles

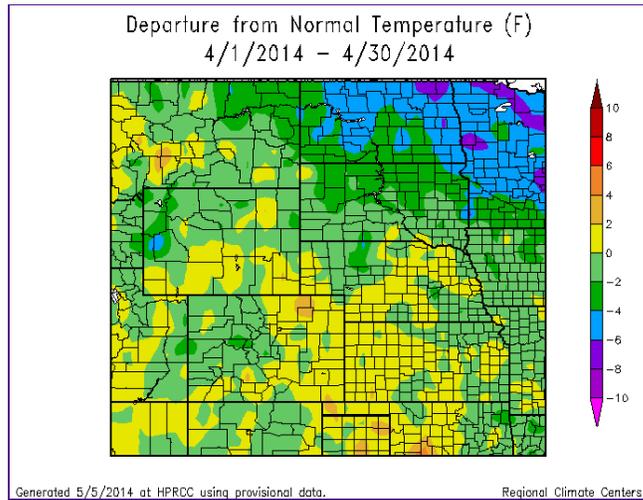
**Reservoirs:**

- Green Mountain, Flaming Gorge, and Blue Mesa are near or above their May average volumes
- Lake Powell, McPhee, Navajo, and Granby are all below average, ranging between 55% to 72% of their May average volumes
- Granby's drop in volume through the late winter and early spring has been due to sending water to the Front Range reservoirs, not due to any losses from the system
- Most of the reservoirs are now increasing in volume as a result of increased runoff from snowmelt
- Dillon continues to decrease in volume at this time in preparation for the expected high runoff

**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:

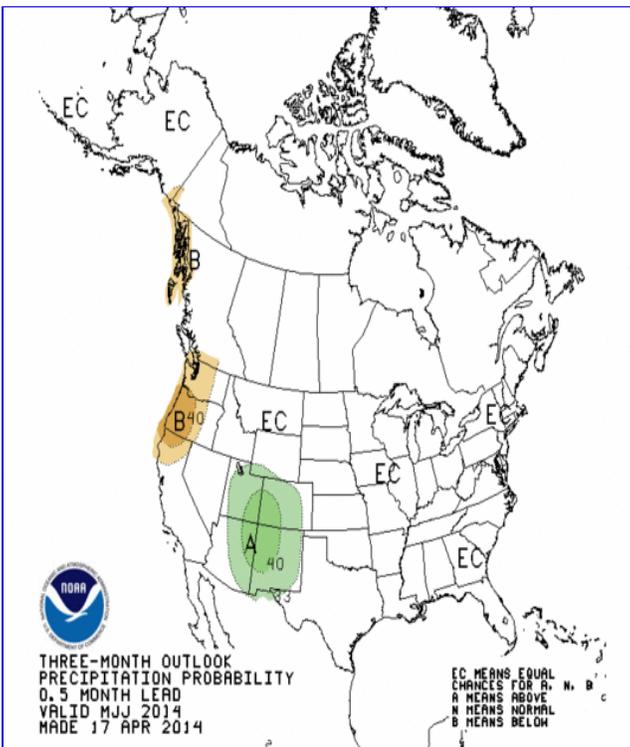
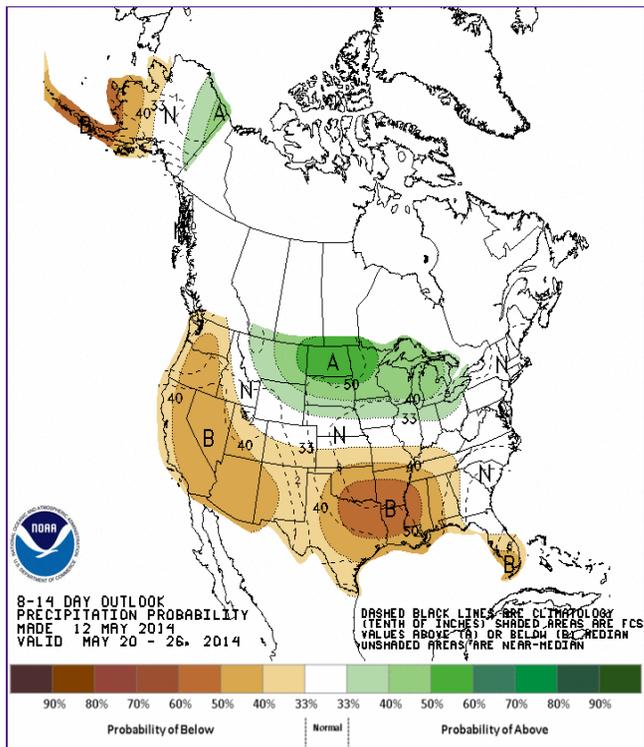
- The UCRB experienced cooler than average temperatures last week with temperatures 2 to 9 degrees cooler than average
- East of the basin, temperatures across eastern WY and eastern CO were also 2 to 9 degrees below average.
- Southeastern CO was warmer than average by 0 to 6 degrees.

### Last Month Temperatures:

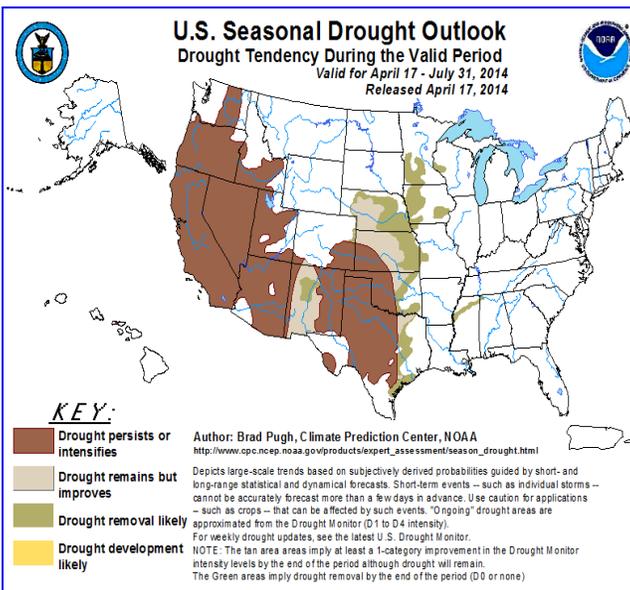
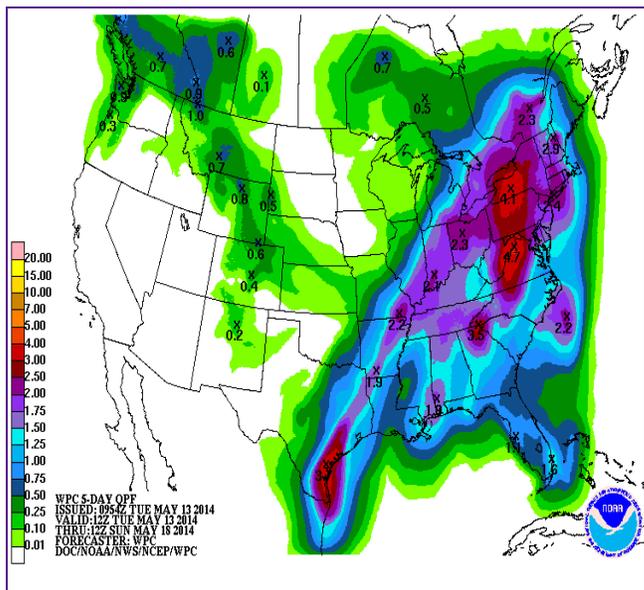
- Most of the UCRB saw near normal temperatures for the month of April
- Eastern UT, western CO, and northwest WY temperatures were 0 to 4 degrees below average
- Central UT, southwest WY and parts of the Four Corners saw temperatures 0 to 2 degrees above average
- East of the basin, most of eastern CO saw temperatures very near to slightly warmer than average, with cooler than average in northeast WY

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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:**

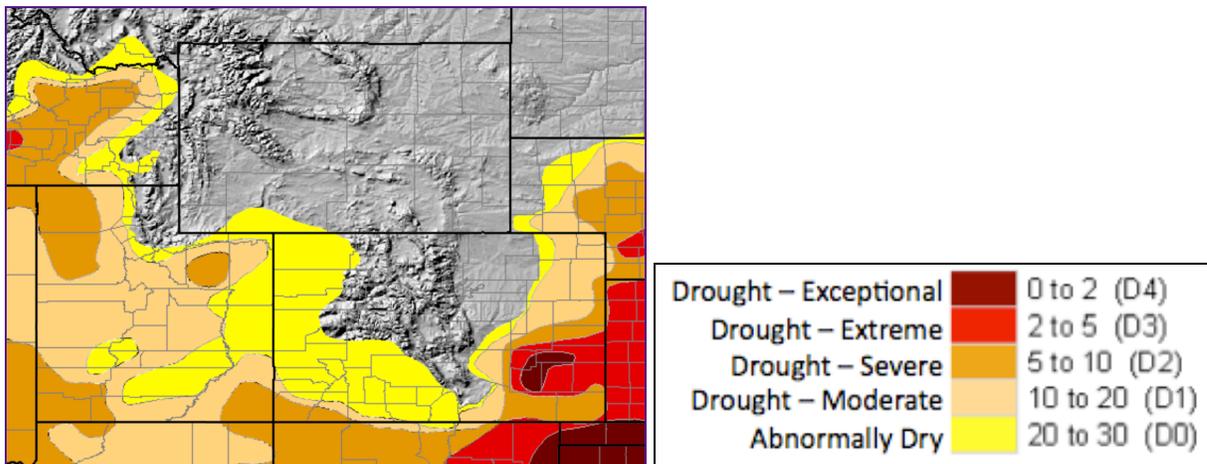
- Some mountain snow showers with little accumulation and dry in the valleys.

- Temperatures will warm to normal seasonal temperatures, however disturbances could bring a shower over northwestern CO
- A return to warmer and drier conditions (with the chance for isolated showers) is expected for the weekend

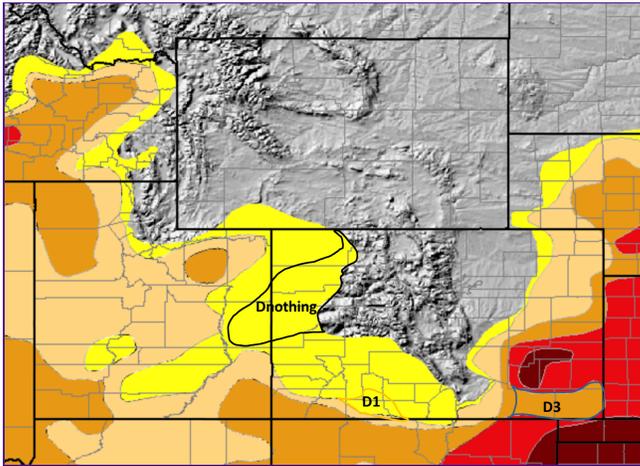
### Longer Term:

- The 8-14 day precipitation outlook shows increased chances of drier than normal conditions across the southern portions of the region, with chances for normal precipitation over the northern region.
- The 8-14 day temperature outlook (not pictured) is showing probability of cooler than average temperatures across the UCRB, with near normal in much of eastern CO and warmer than average in southeastern CO.
- The CPC 3-month outlook shows higher chances for wetter than normal conditions over the UCRB in Utah and Colorado as well as much of eastern Colorado for the May, June and July period.
- 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: May 13, 2014

The last week brought cooler temperatures and widespread precipitation, over the Upper Colorado River Basin and the rest of Colorado. Rain fell during the early part of the last 7 days with scattered thunderstorms, and widespread high moisture snow over the weekend. The cooler temperatures slowed the runoff and increased snowpack a bit, however streamflow in most of the basins with good snowpack are still increasing. Streamflows in the San Juan, Duchesne, and Rio Grande basins are the lowest in the region due to the low snowpack, for the second straight year.

### Recommendations\*\*

**UCRB:** With the past few weeks of beneficial precipitation across Mesa, Garfield and Rio Blanco Counties in CO and Grand County, UT, it is recommended the D0 be removed.

With low streamflow and single digit snotel precipitation percentiles, it is recommended to bring D1 in the Rio Grande Basin north to include western Conejos, and across the basin into Archuleta County.

**Eastern Colorado:** With continuing dryness and above average temperatures in Baca and eastern Las Animas counties, conditions continue to deteriorate. With these conditions, it is recommended this area be degraded to D3.

The Drought Monitor Author has already moved the D0 and D1 in Logan County east, improving this area. We agree with this improvement after the last week of beneficial moisture in this area.