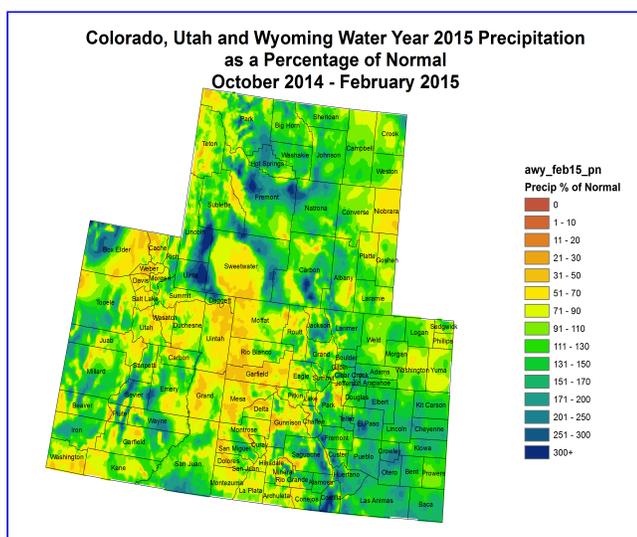
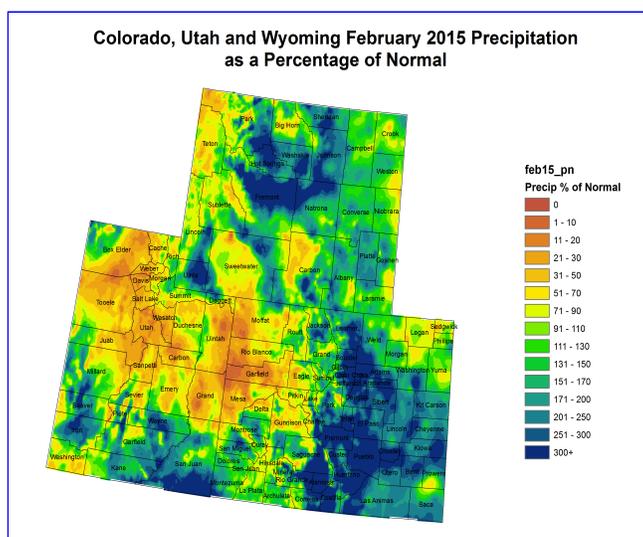
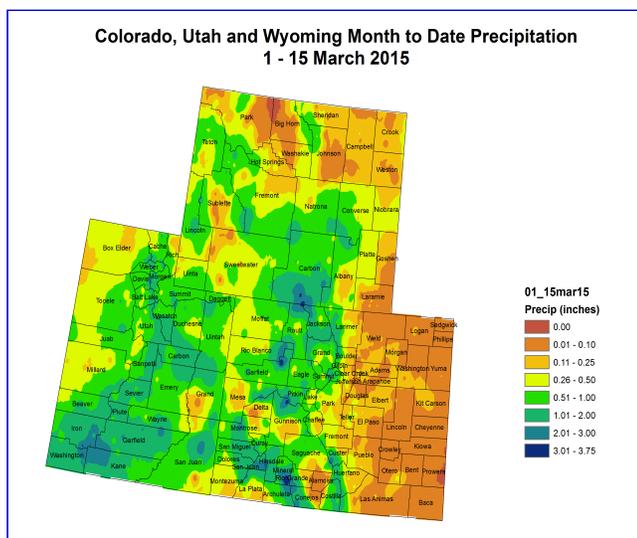
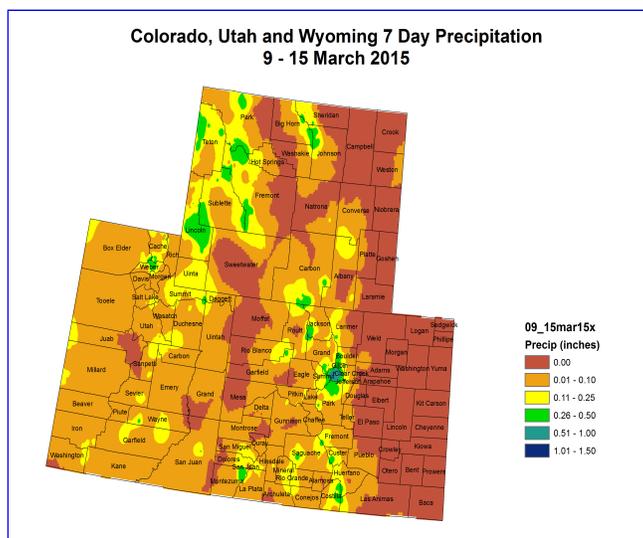


PRECIPITATION



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 Upper Colorado River Basin was dry the past week seeing less than 0.10" over most of the basin.
- The northern portion of the Upper Green River Basin in Sublette, Lincoln and down into Uinta counties in WY and Summit County in UT saw up to 0.25" with an area up to 0.50" in Lincoln County.
- The San Juan Mountains in southwestern CO saw an area of up to 0.50" as well.
- East of the Divide was dry as well, with all of the plains east of I-25 seeing no precipitation for the week.

- Up to 1.00" fell in parts of Jefferson, Park, Clear Creek, Gilpin, Boulder and western Larimer counties. Some of this precipitation spilled over the divide into Summit County as well.
- The San Luis Valley was dry with less than a tenth of an inch of precipitation.
- The eastern Sangre de Cristo Mountains in Costilla, Huerfano, Custer and Fremont counties saw areas between 0.10 and 0.25" with a few spots seeing up to 0.50".

February Precipitation:

- February was variable over the UCRB with above normal precipitation over the Green river basin and Four corners and dryer than normal conditions in the Duchesne, Yampa, White, Colorado and Gunnison basins.
- The headwaters of the Upper Green river basin saw normal to above normal moisture for February.
- The driest areas were NE Utah and NW Colorado where less than 70% of normal precipitation fell, particularly over lower elevations. The high country also struggled in the northern basins.
- The Four corners saw above normal moisture for the month, particularly in San Juan county Utah.
- Normal to above normal moisture fell over much of SW Colorado, however higher elevations in Hinsdale/San Juan/ La Plata counties saw below normal moisture for the month.
- The Rio Grande saw above normal precipitation for the month.
- East of the divide, precipitation was mainly above normal. The driest areas were extreme NE Colorado where 50-90% of normal precipitation fell over Logan, Sedgwick and Northern Washington as well as SE Yuma counties.
- There was also a dry pocket on the border of Prowers and Baca counties where 50-90% of normal precipitation fell.

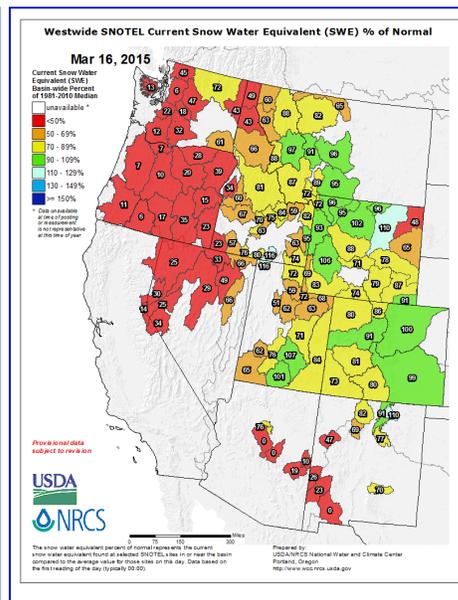
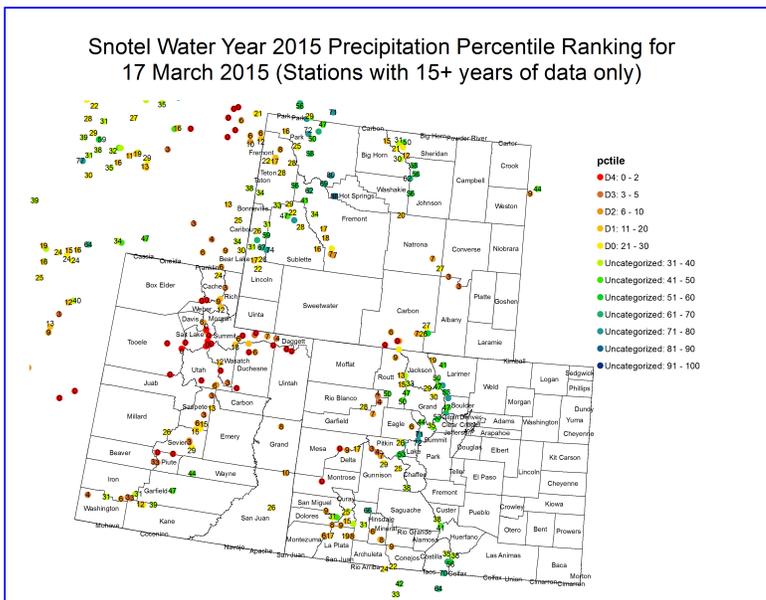
Water Year 2015 Precipitation:

- The Water Year percents of normal in the UCRB are starting dry out a bit after a drier than normal January and much of February.
- The Upper Green river basin has seen above normal moisture for the water year through with the exception of Sweetwater county which saw 30-90% of normal precipitation.
- The lower elevations of the UCRB have struggled for the water year through February where less than 90% of normal moisture has fallen over a large portion of Eastern Utah/Western Colorado.
- The headwaters of the Yampa/White have below normal moisture for the water year, but conditions improve near the continental divide where amounts are more near normal for the water year.
- The Upper Colorado has near normal precipitation through Grand/Summit/western Eagle counties, but dries out considerably west of the headwaters. From Central Eagle down to Mesa county,

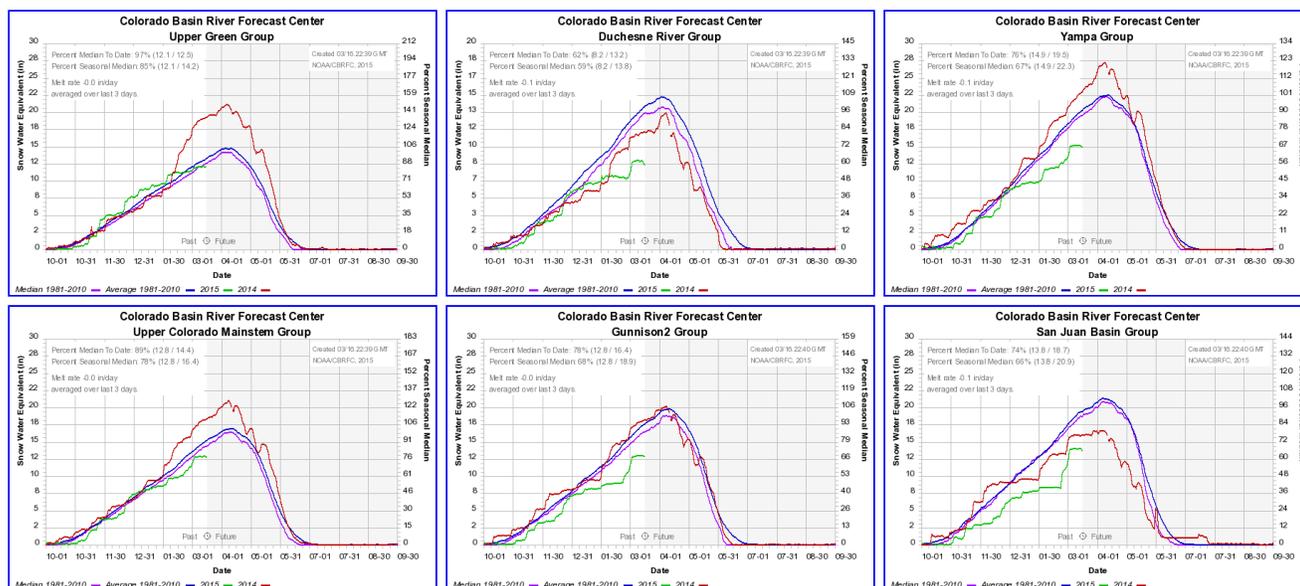
30-110% of normal precipitation has fell for the water year through February.

- The San Juan mountains have seen below normal precipitation for much of the water year. Some areas are near to above normal in Montrose/San Miguel/Dolores/Ouray counties, but the rest of the area is below normal for the water year, mainly 30-90% of normal.
- San Juan county, Utah saw near to above normal moisture with the exception of the northern portion of the county where 50-90% of normal fell.
- The San Luis valley saw mainly above normal precipitation with the exception of the western side of the basin.
- Much of the Eastern plains are at or above normal for the water year. The driest area is in portions of NE Colorado in Washington/Yuma/Sedgwick and Phillips county which saw 70-90% of normal for the water year.
- The SE plains have seen above normal moisture for the water year, which is much needed and welcomed considering that region has been in drought since September 2010.

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:

- In the Upper Green River Basin, precipitation percentiles are still mostly above the median, and range from the 16th to the 74th percentile.
- Percentiles in the Wasatch and Uintah Ranges in northern Utah are very low, currently in the 0 to 24th percentile range with many SNOTEL stations indicating an all-time low.
- There is a large gradient in SNOTEL percentiles between the higher and lower elevation stations in the northern and central mountains. There is also an east to west gradient with the farther east stations showing higher percentiles.
- The Yampa and White River Basin are showing percentiles in the 4th to 50th percentile range.
- Stations in Summit County, along the Continental Divide, and slightly east of the divide are mostly above the median, and in the 29th to 72nd percentile range.
- SNOTEL stations in the Gunnison Basin are in the 0 to 53rd percentile range. The higher percentiles are near the headwaters of the Gunnison River, decreasing in the lower basin.
- The San Juan Mountains are still well below the median in most areas for the water year to date. Precipitation Percentiles are in the 6th to the 66th percentile range.
- The Sangre de Cristo Mountains are showing precipitation percentiles near the median, between 35th and 70th.

Westwide Snow Water Equivalent (SWE) Percent of Normal:

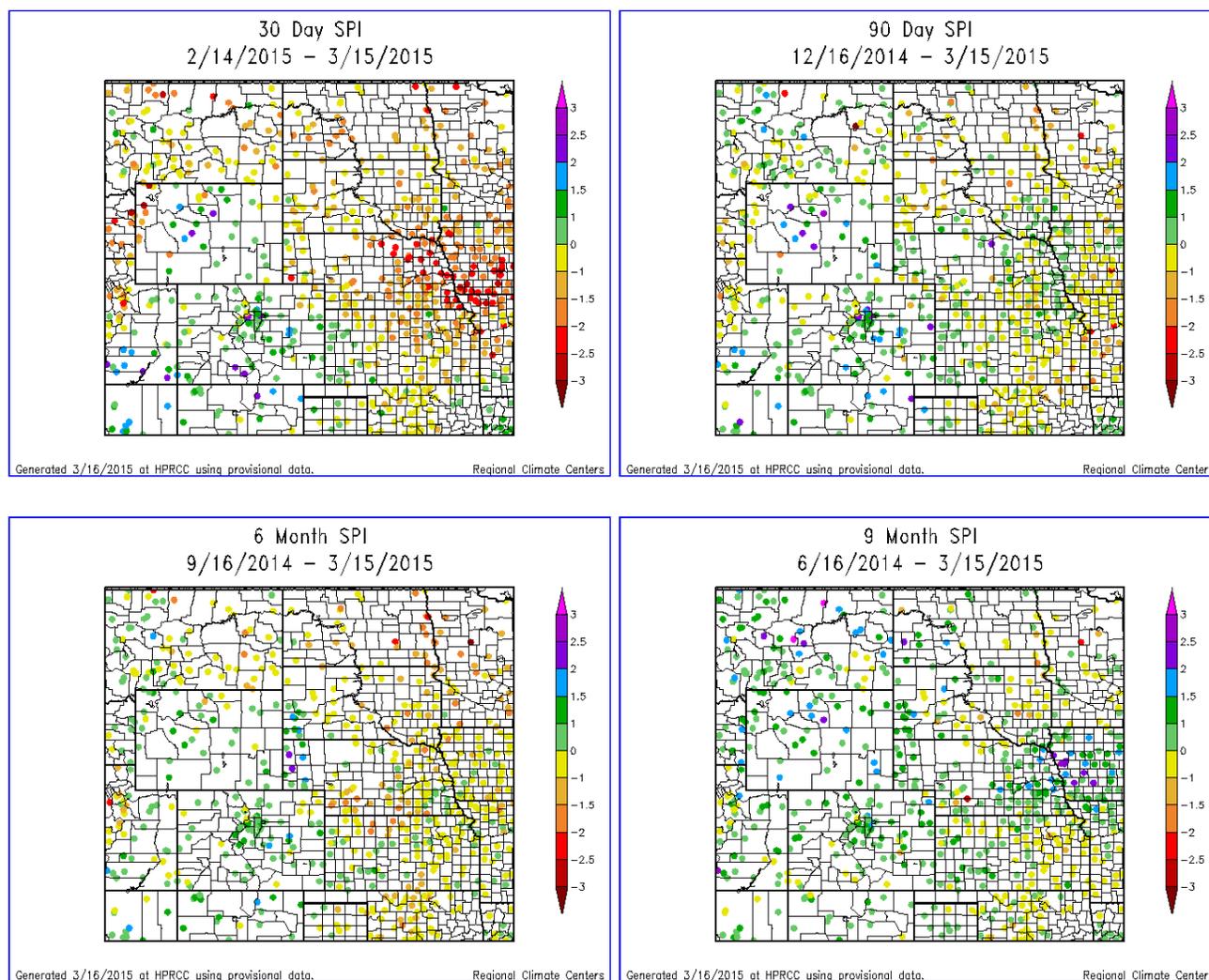
- Snowpack in the Upper Green River basin ranges from 69 to 106 percent of median.
- URCB sub-basins in western Colorado range from 80 to 91% of the median for the snow season to date. The lowest percent of median is along the San Juan, and the highest is in the headwaters of the Colorado River. The Colorado Mainstem is at 91% thanks to the higher elevation snowpack. The closer to the CO-UT stateline, the lower snowpack is.
- East of the divide the South Platte Basin is at 100% of the median to date, the Arkansas is at 99%, and the Rio Grande Basin is at 80% of median, a nice increase from a few weeks ago.

SWE Timeseries Graphs:

- The Upper Green basin is at 97% of median snowpack to date.
- The Duchesne basin is at 62% of median snowpack to date, with significant melt the past week.
- The Yampa-White basin is at 76% of median snowpack to date.
- The Upper Colorado basin is at 89% of median snowpack to date.

- The Gunnison basin is at 78% of median snowpack to date.
- The San Juan basin is only at 74% of median snowpack to date, with some melting 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):

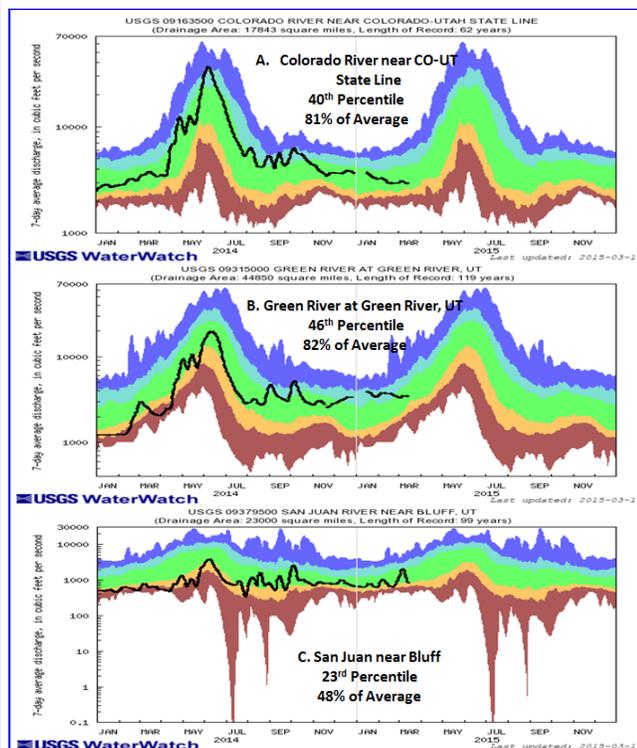
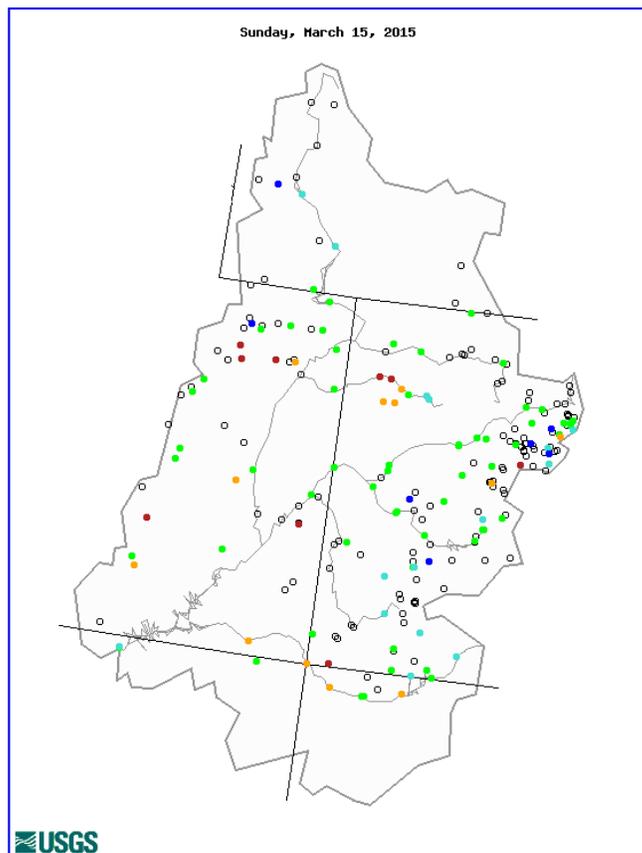
- Sweetwater County in WY is showing a mix of dry and wet SPI, from -2 up to +1.
- The Duchesne basin ranges from +1 to -1 on the short term SPI.
- The Wasatch Range in Utah is showing very dry SPI's on the 30 day timescale between -3 and 0.
- Western Colorado SPIs are showing average for the short term, between +1 and -1, with wetter SPIs along the Divide, up to +3.
- The Four Corners are showing wet SPI on the short term, ranging from 0 to +2.5.

- The San Luis valley is also wet with SPI's ranging from 0 to +2.5.
- East of the divide is also showing wet conditions ranging from -1 to +2.5. The wetter SPIs show up in western Lincoln County and around the Denver Metro area.
- The driest area east of the divide is the northeast corner of Colorado where SPI's range from -1.5 up to 0.

Long Term (6-month):

- The 6 month time scale shows much less variability than the short term with most areas slightly wet to slightly dry.
- The Green river basin SPI's range from 0 to +1.
- The Duchesne basin ranges from +1 to -1.
- The Wasatch Range in UT is still showing drier SPIs, between -1.5 to +1.
- The Yampa/White basin ranges from +1 to -1.
- The Upper Colorado and Gunnison basins are mainly wet with of SPIs between -1 to +1.5
- The Four Corners range from +1 to -1.
- The San Luis valley is wet with SPI's between 0 to +1.
- The SE plains are also mainly wet (a few down to -1) with the majority between 0 and +2. The NE plains continue to show dryness at the 6 month time scale where SPI's range from 0 to -1.

STREAMFLOW



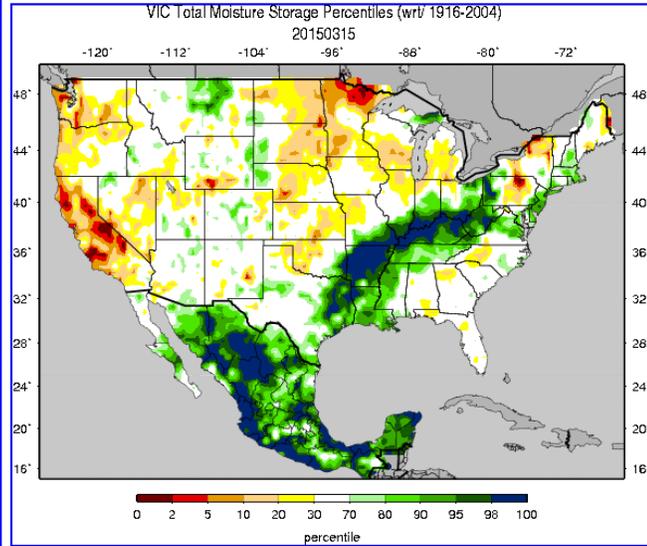
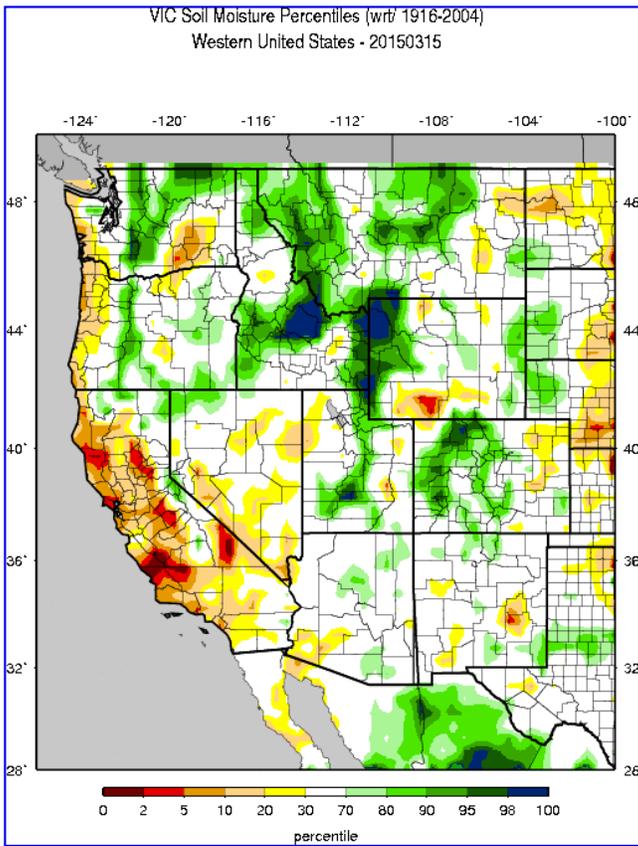
Explanation - Percentile classes							
							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

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.

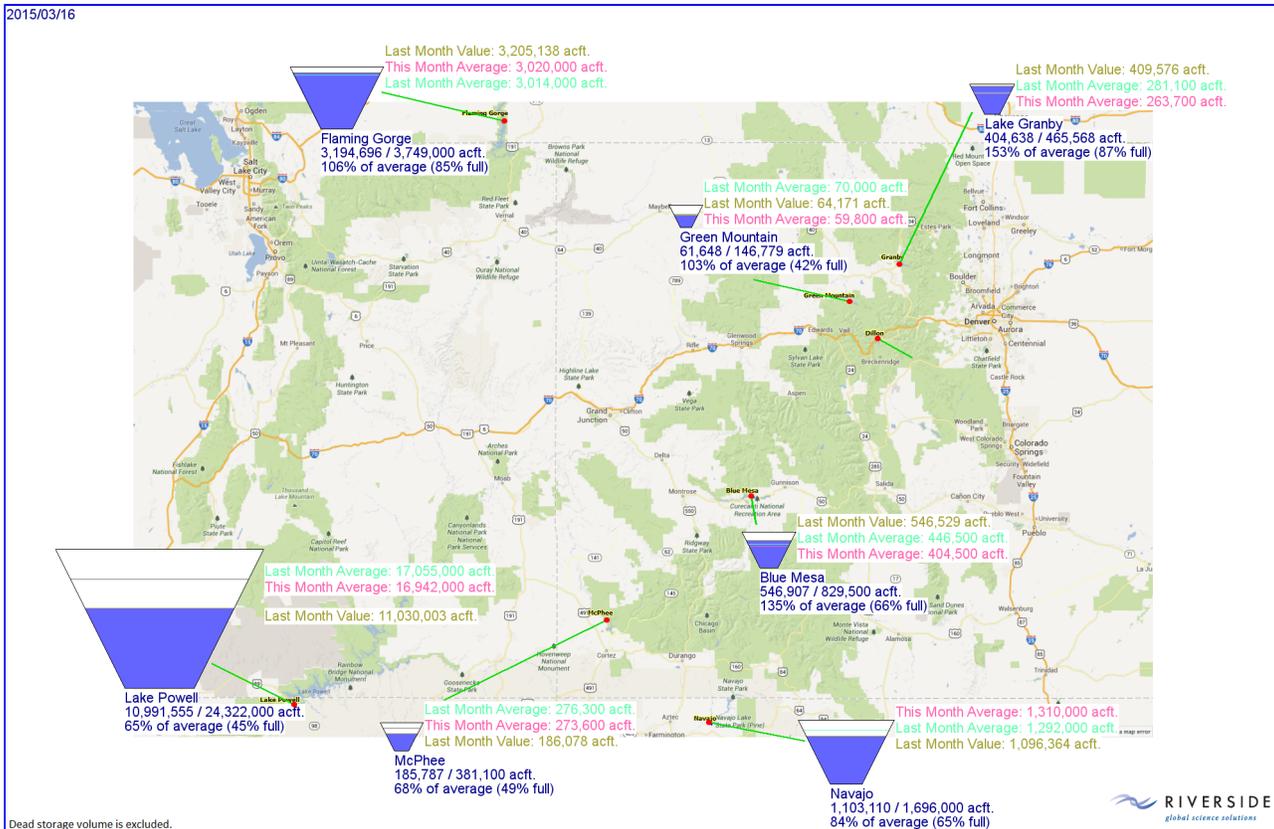
Streamflow Statistics:

- After a warm week, quite a few gages broke out of ice. 100 of the 140 stream gages in the UCRB are reporting. All others are still ice affected.
- 79% of the gages are in the normal to much above normal range for the 7-day average streamflow, no gages are at record high flow.
- 12% of the gages are in the below normal range and 9% are in the much below normal range.
- The lower flows are mainly along the Duchesne, White and San Juan drainages with one in the much below normal range draining into the Colorado River.
- The Colorado River near the CO-UT state line is reporting in the 40th percentile, 81% of normal.
- The Green River at Green River, UT is at the 46th percentile, 81% of normal.
- The San Juan River near Bluff, UT dropped in flow again to below normal. It is now at the 23rd percentile, 48% of average.

SURFACE WATER



The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows VIC plus SWE total soil moisture storage.



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.

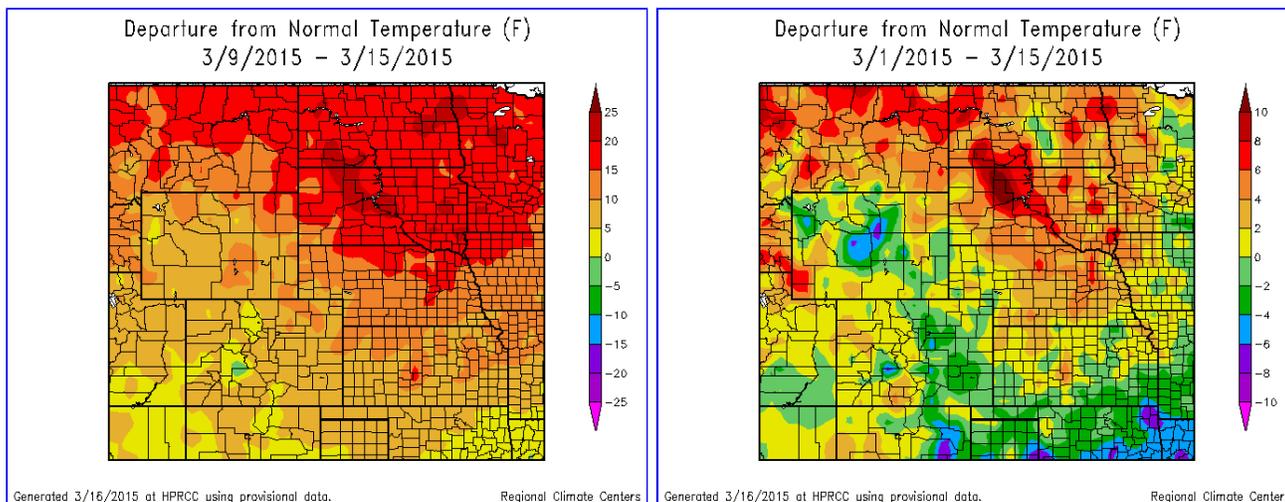
VIC:

- Sweetwater County, WY has been shown as dry by the VIC for a considerable amount of time and continues to depict soils in the 2-30th percentile range over much of the eastern part of the county. The driest portion of this area did diminish a little over the past week and change in shape.
- Northeastern UT is showing normal to wet soils, with the exception of Uintah County, which is showing a small area of dry soils between the 10th and 30th percentile.
- There are some very wet soils in the Upper Green River Basin. Near the Wyoming-Utah state line soil moisture is in the 70-100th percentile range.
- Western CO is still showing a large area of above average soil moisture over the 70th percentile. The highest percentiles are in Jackson County.
- The Four Corners Region is mostly in the normal range with some isolated areas above the 70th percentile, and one very small area below the 30th percentile in western Dolores County.
- The San Luis Valley is in the normal range and slightly wet in the hills surrounding the valley.
- East of the divide, much of the eastern plains are showing normal soil moisture with a few exceptions. On the high side of average Boulder, southwester Larimer, and northern Jefferson Counties are now above the 70th percentile. On the low side, south Lincoln County and west Kit Carson County are now in the 5-30th percentile range.
- In southeast Colorado a small portion of Las Animas County is in the 20-30th percentile range, and Prowers, and eastern Kiowa Counties are now above the 70th percentile.

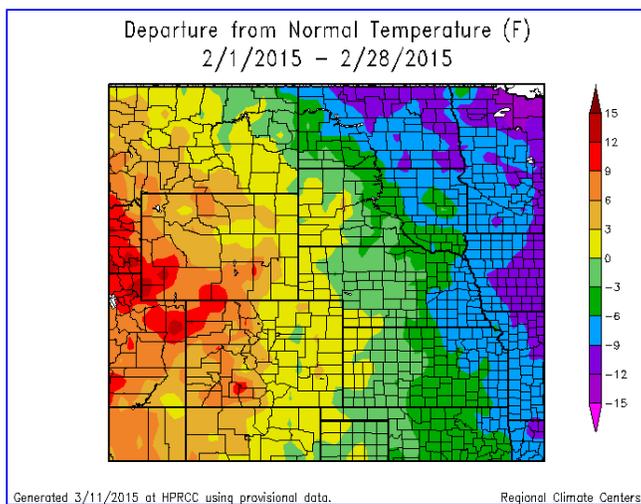
Reservoirs:

- Flaming Gorge is 106% of the March average.
- Green Mtn is 103% of the March average.
- Lake Granby is 153% of the March average.
- The data for Lake Dillon are missing, but the reservoir is near full.
- Blue Mesa is 135% of the March average.
- Navajo is 84% of the March average.
- McPhee is 68% of the March average.
- Lake Powell is 65% of the March average and is only 45% full.

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:

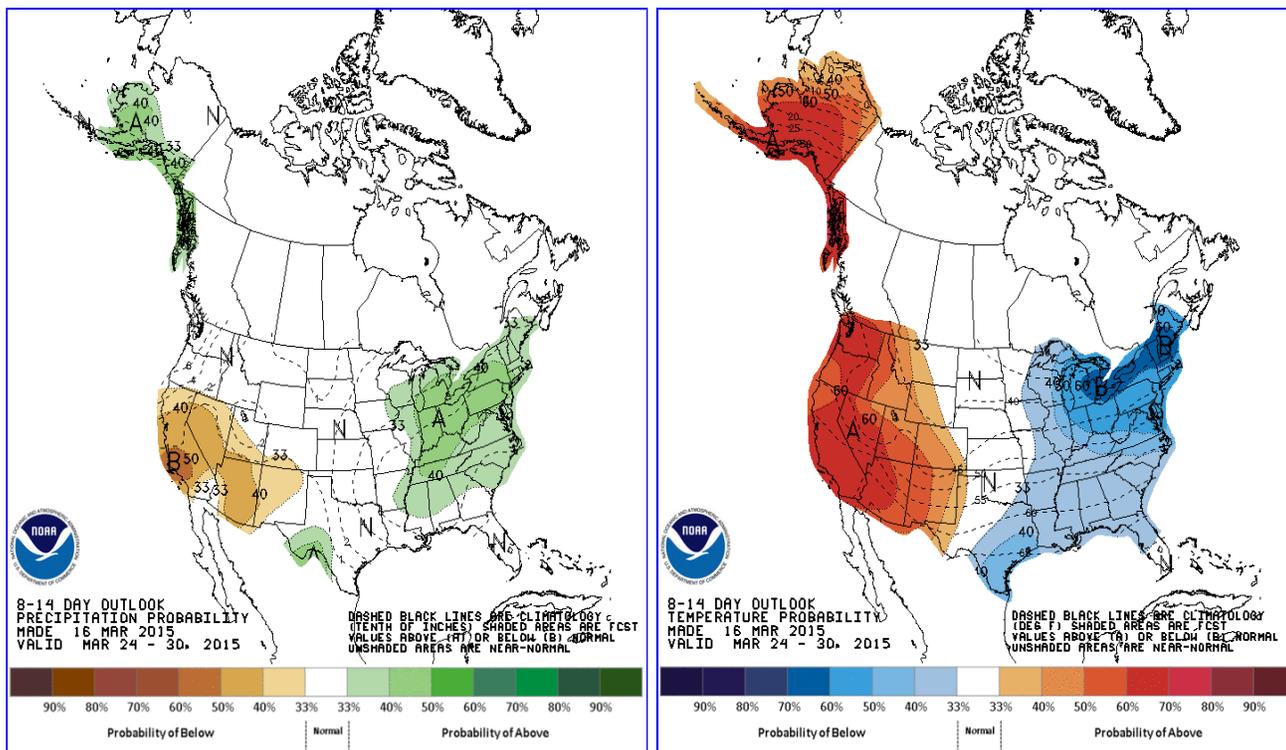
- The UCRB and all the rest of Colorado saw above normal temperatures over the past week. A few daily maximum temperature records were broken during the week at various locations.
- Most of the UCRB saw temperatures 5 to 10 degrees above normal. The Four Corners area was only 0 to 5 degrees above normal. Gunnison County was also 0 to 5 degrees warmer than normal, with a small area 0 to 5 degrees cooler than normal.
- East of the divide saw temperatures in the 5 to 10 degrees above normal, with a few areas in northeastern Colorado 10 to 15 degrees warmer than average.
- Monday saw the earliest 80 degree temperature at Fort Collins and Denver International Airport.

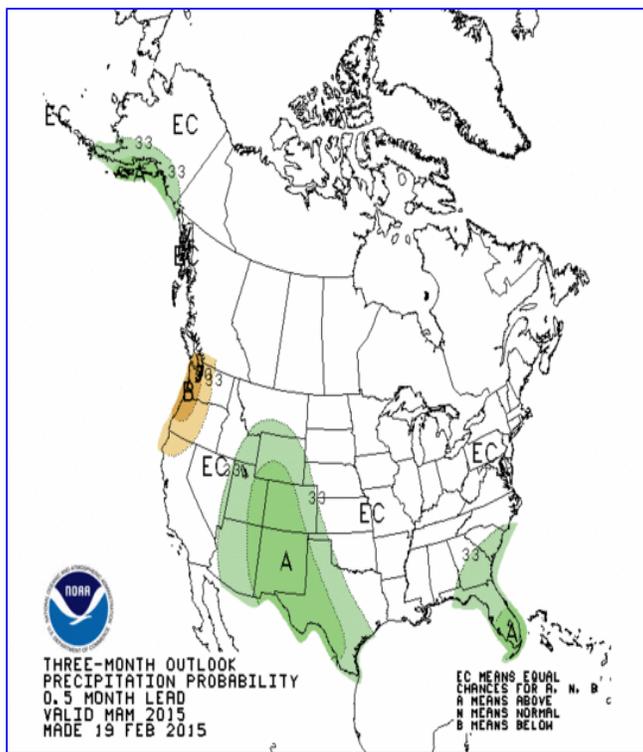
February Temperatures:

- The month of February was warm across the UCRB.

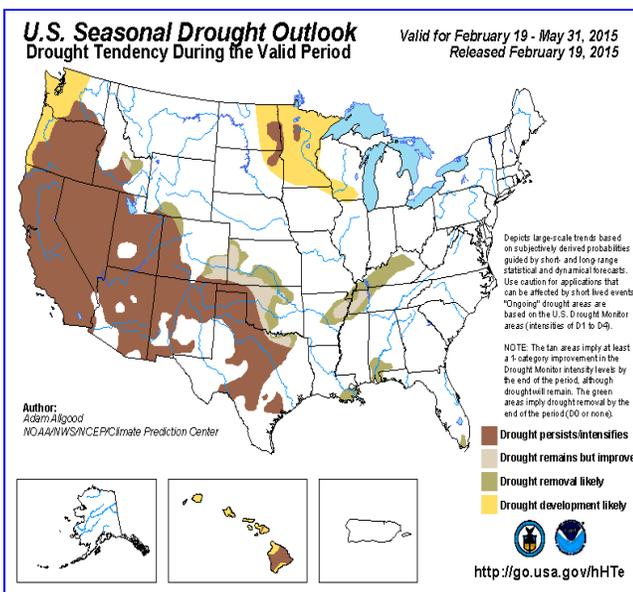
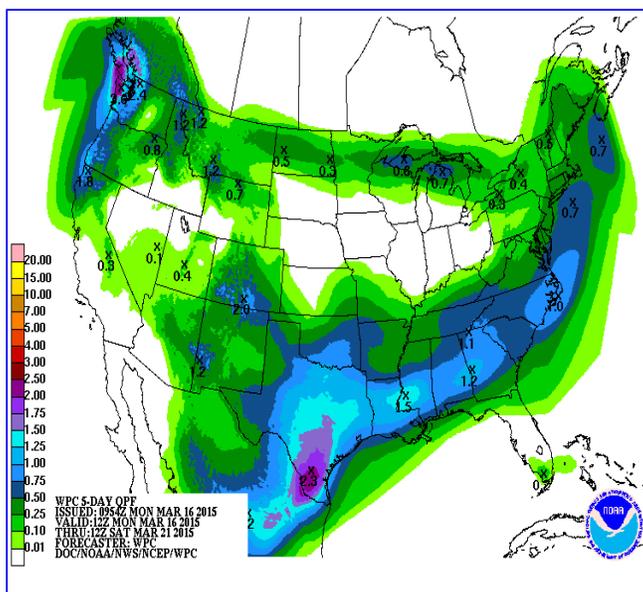
- The Upper Green basin was 3-15 degrees above normal for the month.
- The Wasatch and Uintah ranges were the warmest part of the basin and experienced temperatures 9-15 degrees above normal.
- The Yampa/White/Colorado/Gunnison basins were 3-9 degrees above normal while the San Juans were slightly more moderate with departures ranging from 0-9 degrees above normal with a small bullet of 9-12 degrees above normal over NE La Plata county.
- The San Luis valley was also warm with temperatures 3-12 degrees above normal for the month.
- East of the divide saw much more seasonal temperatures than the west slope. Departures on the plains were 0-6 degrees above normal with a few pockets of cooler than normal temperatures.

FORECAST AND OUTLOOK





The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the 3 months Precipitation outlook. 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 (3/17):

- Over the next three days a weak low is expected to develop and sit over eastern New Mexico and the Texas Panhandle. This will wrap some moist air up into the drought monitor region from the southeast. The main areas to benefit from this moisture will be southeast Colorado, the Sangre De Cristos, and the Rocky

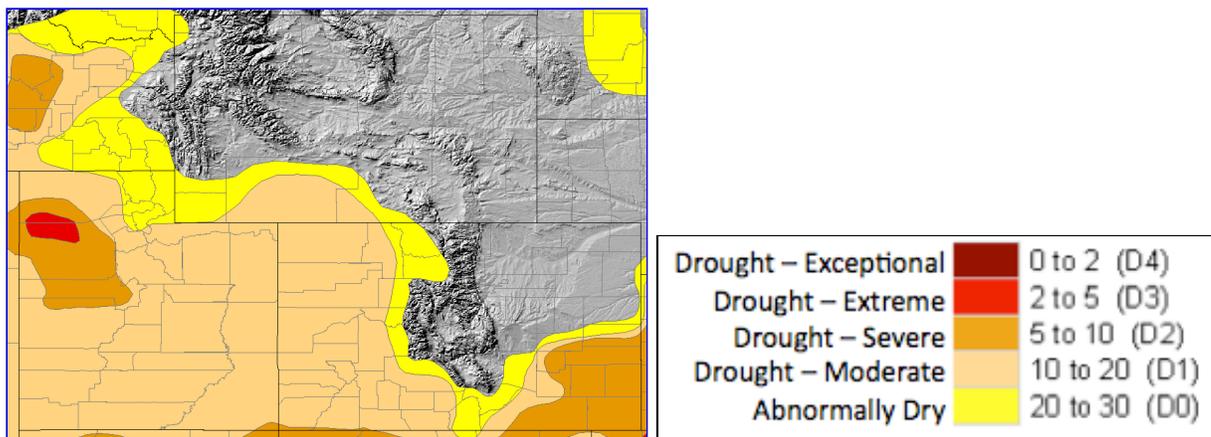
Mountains south of the Palmer Divide. Widespread totals of over half an inch are expected for this region with some areas of over an inch of new moisture.

- The UCRB will stay mostly dry over the 0-3 day time period. Some modest totals, mainly under a quarter of an inch, are expected to reach the central Rockies and San Juans, but with high pressure still in place to the north and west this area will remain warmer and clearer.
- Temperatures in the wake of this system will stay mostly at or above average moving into the weekend. Hotter and drier than average conditions return to the basin early next week as high pressure builds back in from the west. The low that will be spinning to the south and east of the basin over the next several days is not tapped into a source of polar air, so it is not expected to bring much reprieve from the recent warmth.

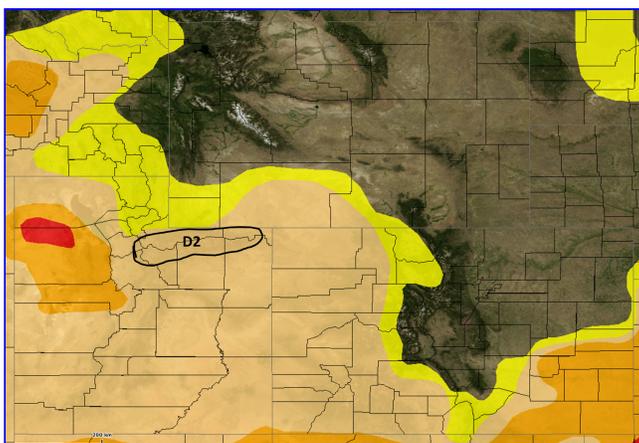
Longer Term:

- The 8-14 day precipitation outlook shows slightly increased chances for below average moisture for the southern portion of the UCRB and for the San Luis Valley. The northern portions of the UCRB are still forecast equal chances of above and below average precipitation over this time frame. East of the divide equal chances are forecast for above and below average precipitation as well.
- The 8-14 day temperature outlook shows increased chances for above average temperatures for the entirety of the UCRB. These chances are maximized in the southwest portion of the UCRB where there is a 50-60% chance for above average temperatures. East of the divide slightly higher than equal chance of above average temperature is forecast for the 8-14 day time frame. The exception is the northeast corner of the state where equal chances are still being forecast for both above and below average precipitation.
- The Climate Prediction Center 3-month precipitation outlook shows increased chances for above normal precipitation for the entirety of the UCRB, and the area in Colorado east of the divide for the March to May period. These chances are highest in southern and western Colorado, eastern Utah, and southwest Wyoming.
- The seasonal drought outlook indicates that drought is expected to persist or intensify in southwest Colorado and eastern Utah. Drought improvement and removal is forecast as likely for southeast Colorado.

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 for March 17, 2015:

The past week was warm and dry for the Upper Colorado River Basin and the rest of Colorado. The warm temperatures in the basin caused the already low snowpack to start melting. The Duchesne Basin in Utah saw the most significant melt, which already has the lowest snowpack in the basin. Many of the SNOTEL sites in the Duchesne Basin are showing the lowest water year precipitation accumulation on record, while the lower elevation NWS stations are showing near average SPIs. This suggests conditions in the lower elevations of the Duchesne basin are better than the higher elevation. The wet start to March has helped to keep conditions throughout the rest of the basin from degrading.

Eastern Colorado was also dry and warm, with record breaking high temperatures, in the last week. March has seen below normal precipitation to start the month. However, thanks to the wet end to February conditions remain positive for much of eastern Colorado, with the exception of the northeastern portion of the state. The northeastern portion of Colorado is showing drier SPIs out to 6 months and dry VIC soil moisture, however on the ground reports show that soil moisture is still very good from a wet fall and wheat is starting to green up.

Recommendations:

UCRB: Introduction of D2 in the high elevations of the Uintah Range in Utah is recommended. With SNOTEL precipitation percentiles near the lowest on record and terrible snow pack, the degradation seems justified. Since the lower elevations in the range and through the lower Duchesne River Basin, the D2 should stick to the higher elevations.

Status quo for the remainder of the UCRB is recommended. Even though many SNOTEL precipitation percentiles are low in many areas, snowpack is not as bad and lower elevation NWS stations are still showing positive SPIs. The wet start to March was also enough to justify holding off on any degradation, however, if the warm/dry weather continues over the next few weeks, especially into April, degradations will need to be made.

Eastern CO:

Status quo is recommended for all of eastern Colorado. Despite the dry start to March, SPIs are still positive over much of eastern Colorado.

Regarding the negative SPIs in northeastern Colorado, we would still like to remain status quo here. The negative SPIs out to 6 months are the only impacts in the area. Soil moisture is still very good over the area and wheat is growing and greening up.