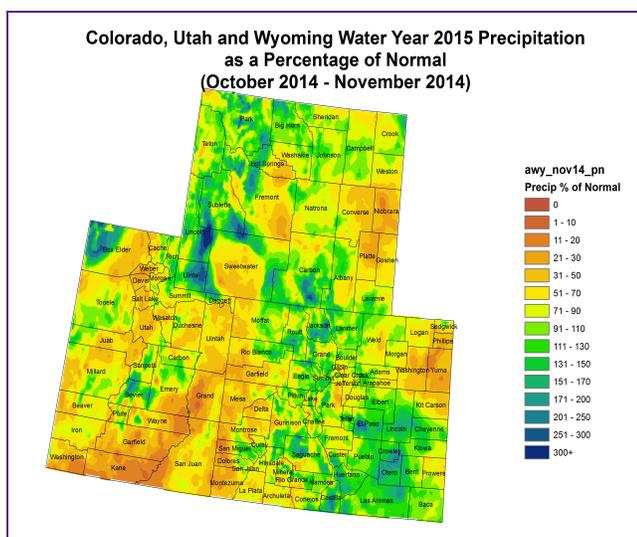
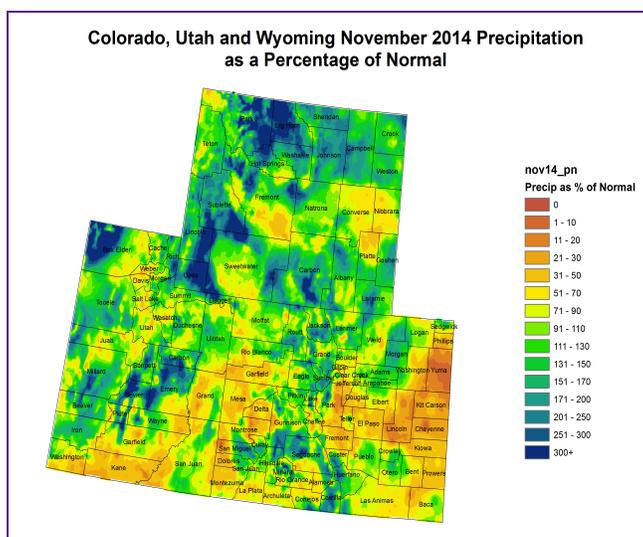
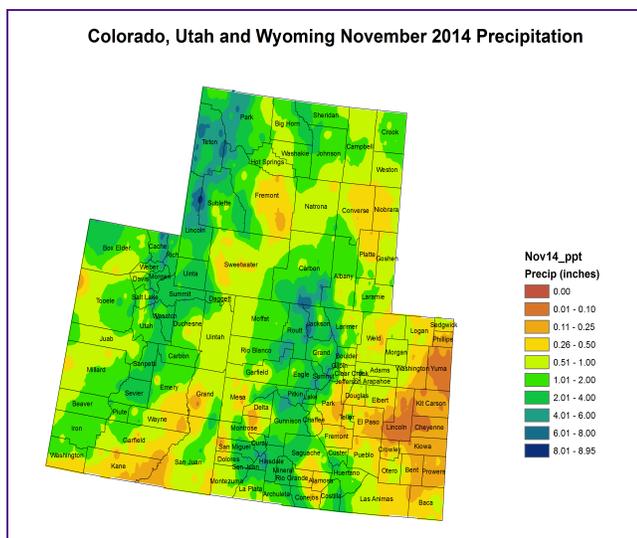
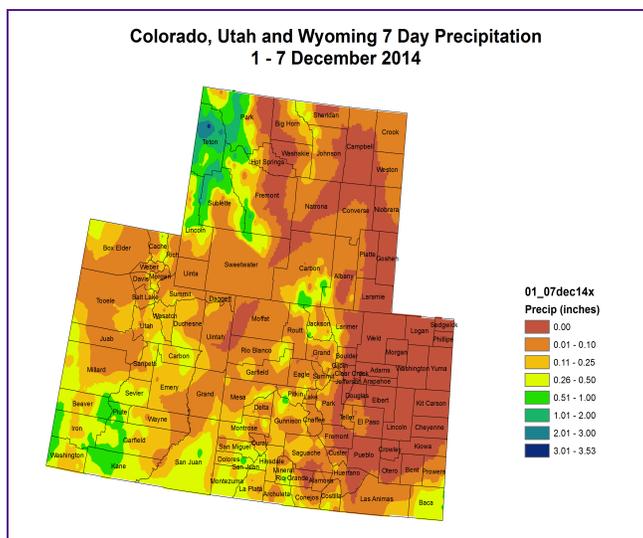


PRECIPITATION



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:

- It was a mostly dry week across the UCRB with sparse, spotty precipitation over some of the high terrain.
- The Four Corners region was one of the greatest beneficiaries of precipitation over the past week, but only saw spotty coverage of 0.25-0.50" with a few isolated areas over half an inch.
- The Wasatch and Uintah Mountain Ranges were dry. The Wasatch Range received 0.10-0.50", and the Uintah Mountains only received up to 0.10".
- The northern mountains in Colorado (Yampa/White/Colorado)

received more moisture than most areas, but still had a below average week. Areas north and east of Steamboat Springs received 0.10-0.50" with a few isolated areas over half an inch.

- The Central Rockies received 0-0.25" of precipitation.
- The lower elevations of the UCRB saw very little precipitation, mainly less than 0.25"
- The San Luis Valley was also dry receiving less than 0.25".
- East of the divide conditions were very dry. The majority of the area east of the divide had no measurable precip. Extreme southeast Colorado had some precipitation. Most of Baca County received between 0.25" and 0.50". Areas adjacent had 0-0.25".

November Precipitation:

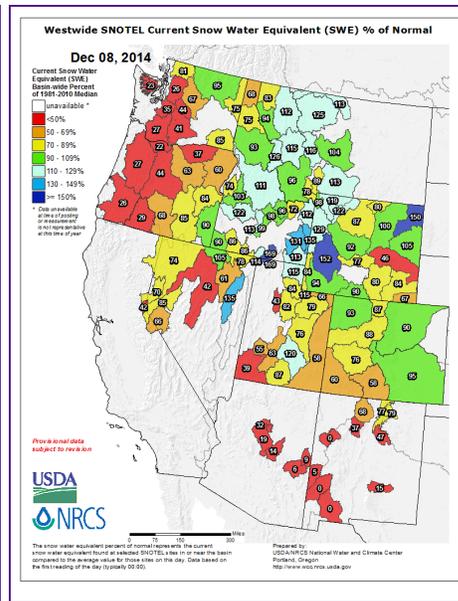
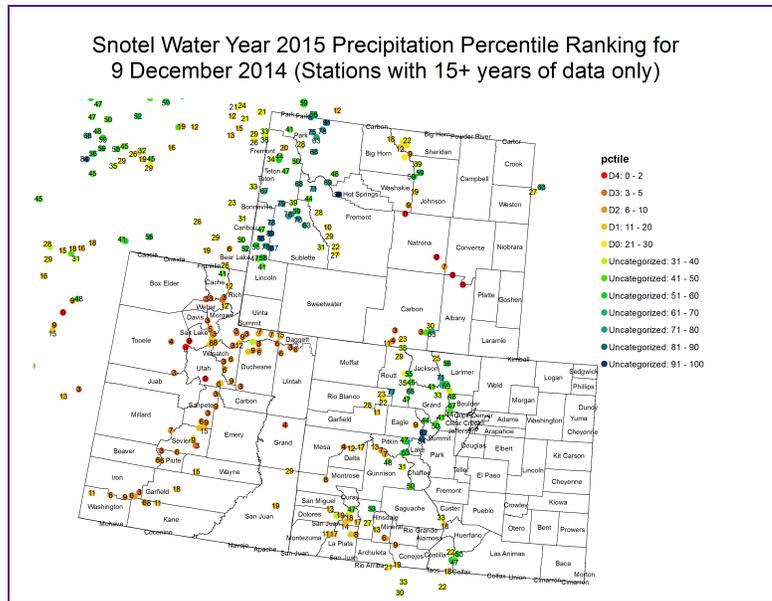
- The month of November brought good moisture to the high country of the UCRB following a warm and dry October.
- The Upper Green saw greater than 300% of normal for the month over much of Uinta, Lincoln and Sublette counties. Sweetwater county also saw near normal moisture for the month over the northern half of the county.
- The Wasatch had above normal moisture while the Uintahs were slightly drier but still near normal for the month.
- Much of the high country in Colorado had above normal moisture for November. The lower elevations of the UCRB in Colorado and Utah were drier reporting less than 70% of normal precipitation. San Juan county, Utah is an exception to this and saw near to slightly above normal precipitation for the month.
- The Rio Grande basin saw above normal moisture over the higher terrain but moisture on the valley bottom was less than 90% of normal.
- East of the divide saw near to slightly above normal moisture to the NE and SE however, parts of the Arkansas, South Platte and Republican basins from Park/Fremont counties east to the border saw less than 50% of normal for the month. This is a climatically drier time of year for this region.

Water Year 2015 Precipitation:

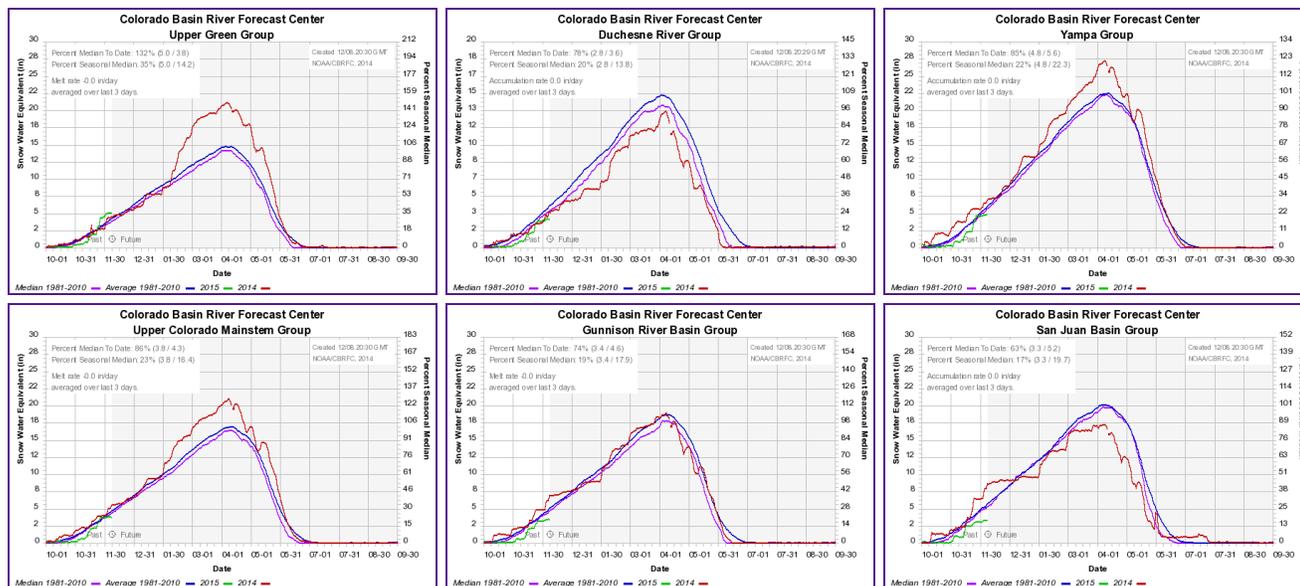
- Two months into the water year, much of the higher terrain of the UCRB is at or above normal in terms of precipitation, much of this moisture fell in November.
- The southern edge of the Uintahs are drier, reporting less than 70% of normal.
- The southern basins are also slightly drier than the northern basins, but still near normal.
- The lower elevations of the UCRB are reporting below 90% of normal from Sweetwater county in Wyoming south to the Four Corners. Areas of San Juan county, UT are slightly better.
- East of the divide in Colorado, the NE plains are reporting precipitation less than 90% of normal from Weld county east and south to Kit Carson county.

- Areas south of about I-70 are reporting above normal moisture for the water year through November. Portions of Kiowa and Prowers are slightly below normal.

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 tier of the UCRB is reporting precipitation percentiles above the median over the Green.

- Percentiles in the Yampa-White headwaters are mostly near the median, but there is quite a spread from the 3rd percentile to the 77th percentile.
- The Wastach and Uintahs in Utah are reporting nearly exclusively below the 10th percentile.
- There is a large gradient in the Gunnison River Basin from the headwaters down to where it meets the Colorado Mainstem. Percentiles are near the median at the headwaters, but dip below the 10th percentile lower in the river basin.
- The San Juans are highly variable with percentile rankings ranging from 6th (Mineral county) to the 53rd (Hinsdale).
- The headwaters of the South Platte and Arkansas basins are reporting above the median.
- The Sangre de Cristo mountains are reporting percentiles from the 22nd to 53rd.

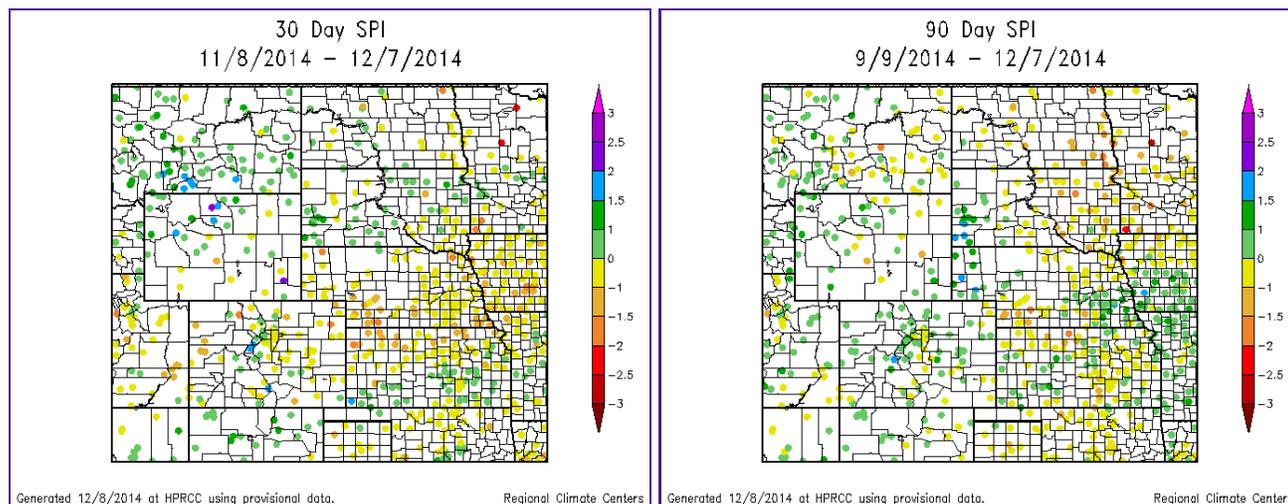
Basin-wide Snow Water Equivalent (SWE) Percent of Normal:

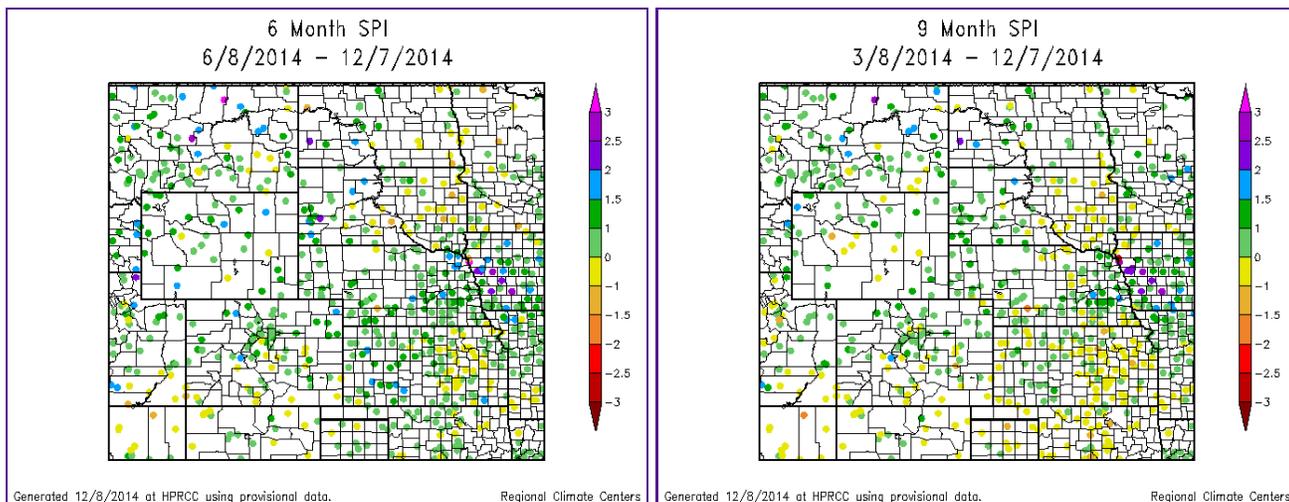
- River Basins on the north end of the UCRB are reporting near average SWE to date. Values in this area are between 66 and 115% of average.
- The Gunnison and San Juan basins are a fair amount below normal at 76 and 60% of normal, respectively.
- The Colorado River Mainstem River Basin in Western Colorado is at 88% of normal.
- Both the South Platte and Arkansas basins are reporting very near, but below normal SWE for the date, 90 and 95% of normal, respectively.

SWE Timeseries Graphs:

- The Upper Green basin is at 132% of median snowpack to date.
- The Duchesne basin is only at 78% of median snowpack to date.
- The Yampa-White basin is at 85% of median snowpack to date.
- The Upper Colorado basin is at 86% of median snowpack to date.
- The Gunnison basin is at 74% of median snowpack to date.
- The San Juan basin is only at 63% of median snowpack to date.

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.

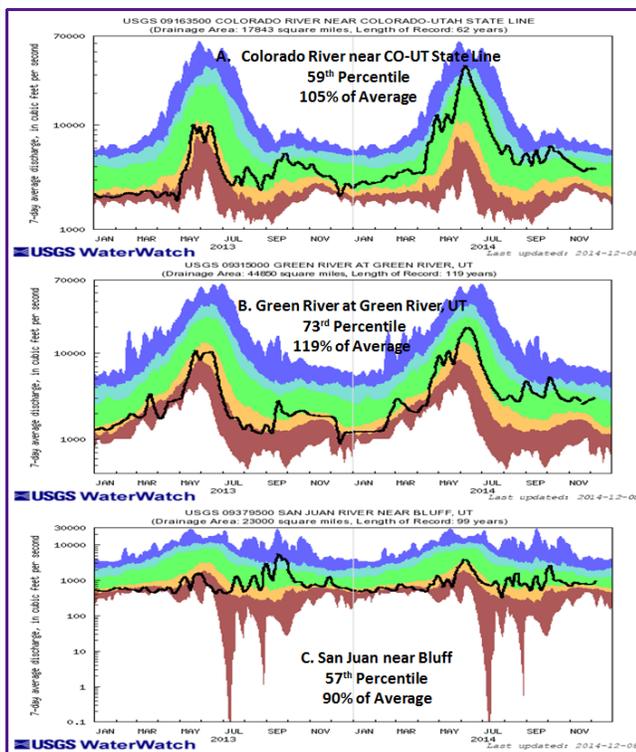
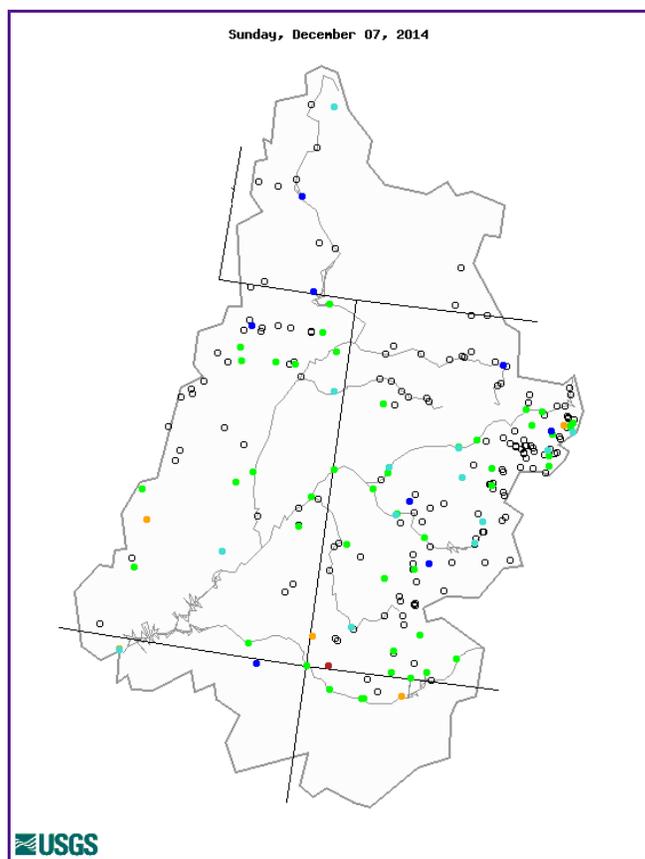
Short Term (30-day):

- Short term SPI's throughout the UCRB are mostly on the dry side (-1.5 to 0), but a few wet SPI's remain near the Four Corners and the headwaters of the Green River.
- The Green River basin is reporting SPI's between +1 and -1.
- The Wasatch and Uintahs are also reporting between +1 and -1.
- The Four Corners area in SE Utah/SW Colorado is reporting widely variable SPI's ranging from -1.5 to +1.
- Most of the dries SPI's in the UCRB are along the Colorado Mainstem, and are between -1.5 and -1.
- The northern Rockies are reporting a mixed bag of SPI's ranging from -2 to +1.
- The central Rocky Mountains in Colorado are reporting mainly wet SPI's on the 30-day timescale ranging from 0 to +2.
- The San Luis Valley is reporting SPI's from +2 to -1.
- In the northeast quadrant of Colorado SPI's are mainly between -2 and 0 with some 0 to +1 SPI's closer to the foothills.
- Southeast Colorado is reporting SPI's between -1.5 and +1 on the 30-day timescale. The majority of these are between -1 and 0.

Long Term (6-month):

- For the longer term, much of the UCRB continues to report wet SPI's. The Four Corners is the driest area and is reporting SPI's from 0 to -1.5.
- The San Luis Valley is showing a mixed bag with slightly dry to slightly wet (-1 to +1) SPI's.
- East of the divide, the NE plains are mainly reporting wet SPI's, however south of about I-70 is more variable. Those SPI's range from +1.5 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.

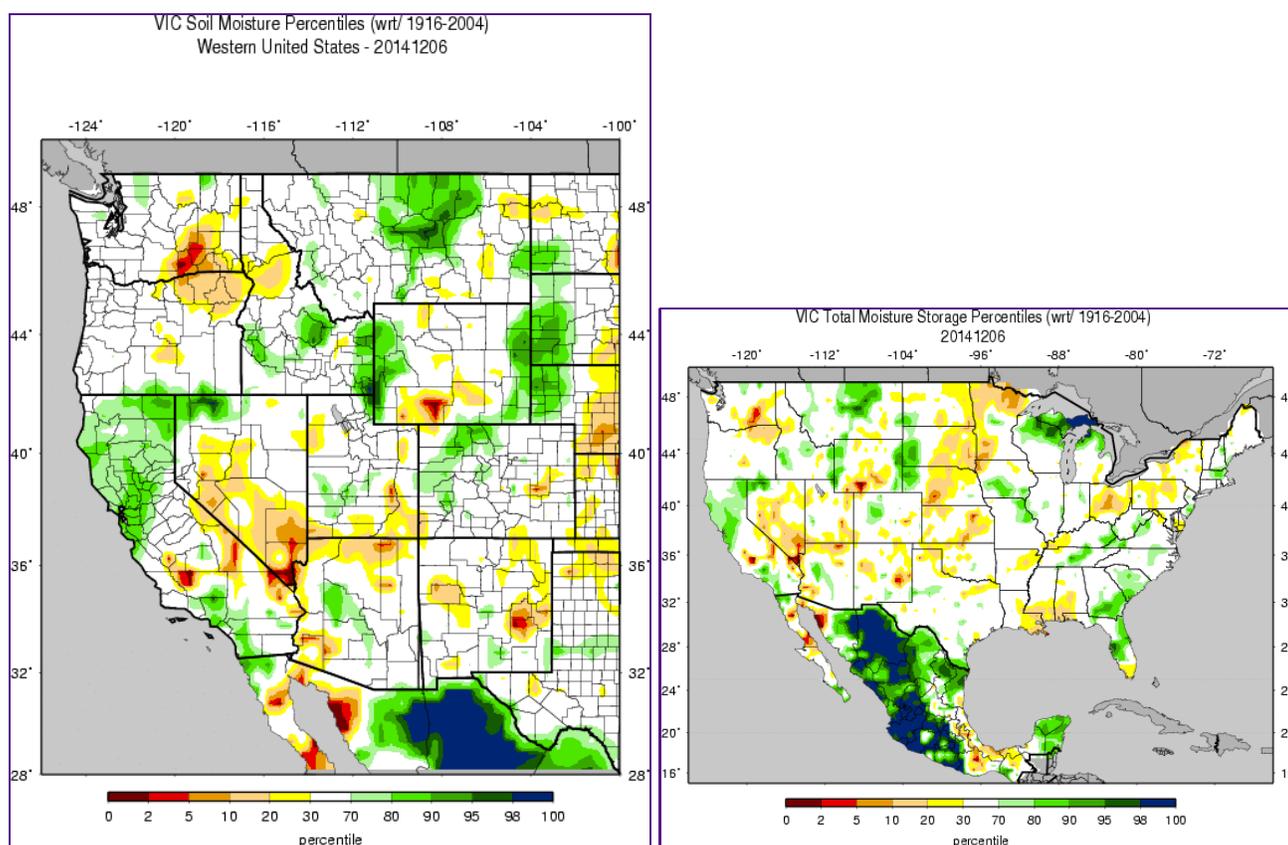
Streamflow Statistics:

- Of the 77 gages reporting in the UCRB this week streamflows are still by and large average or above average. 84% of gages are reporting between the 25th and 90th percentile.
- 95% of the gages are in the normal to much above average the for 7-day average streamflow.
- 5% of gages in the UCRB are reporting 7 day average streamflow in the below to much below normal ranges (none are record low). The lower flows are mainly along the San Juan river.
- Streamflow on the Colorado River near the CO-UT state line is in

the normal range, reporting in the 59th percentile (105% of average).

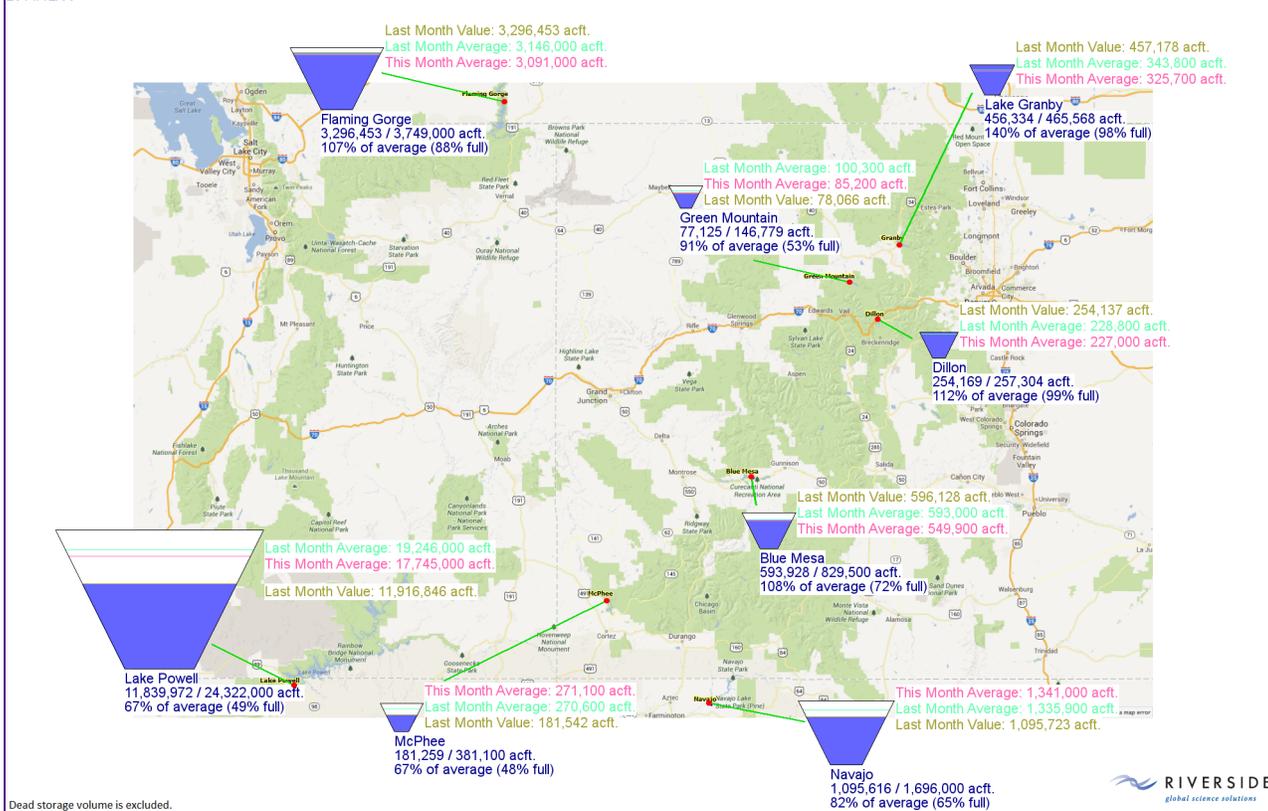
- The Green River at Green River, UT continues to report increased flows and is reporting at the 73rd percentile (119% of average).
- The San Juan River near Bluff, UT has improved over the past week and is reporting at the 57th percentile (90% of average).

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.

2014/12/08



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:

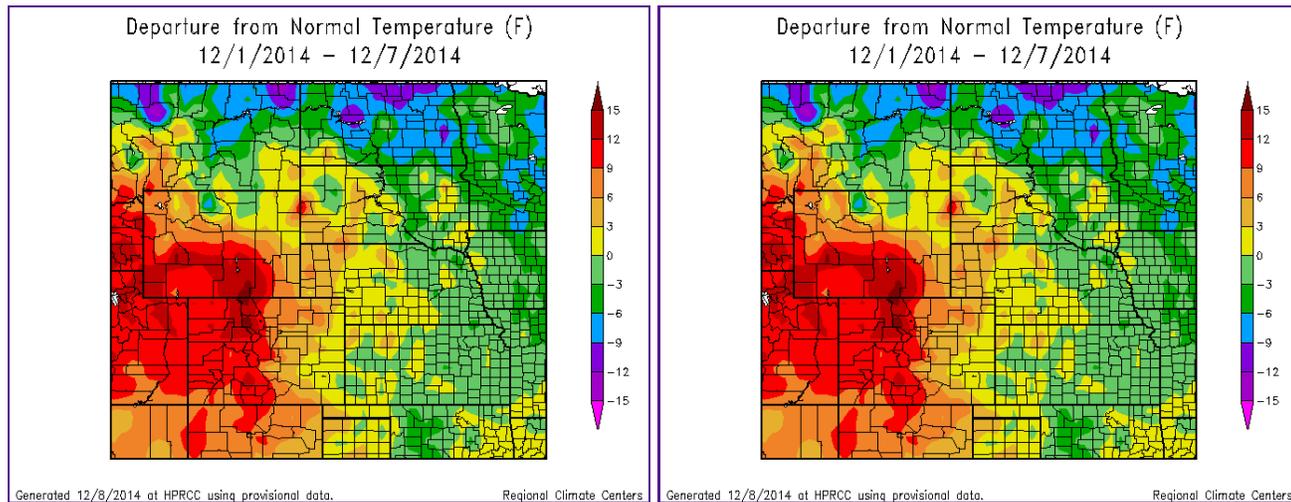
- Sweetwater County, WY has been shown as dry by the VIC for a considerable amount of time and continues to depict soils between the 0th and 30th percentile in the area.
- Western CO is still showing a large area of above average soil moisture above the 70th percentile
- Soil moisture in the Four Corners area is starting to show drying particularly in San Juan County, UT extending to the north and west up into Emery County, UT and east into Montezuma and Dolores counties in CO. Percentiles here range from 2nd to 30th.
- The San Luis Valley has rebounded to the normal range.
- East of the divide, the northern plains are showing normal to just above normal soil moisture conditions.
- Soil moisture conditions are in the normal range in southeast Colorado. The exception is southern Lincoln County where soil moisture is between the 2nd and 30th percentiles.

Reservoirs:

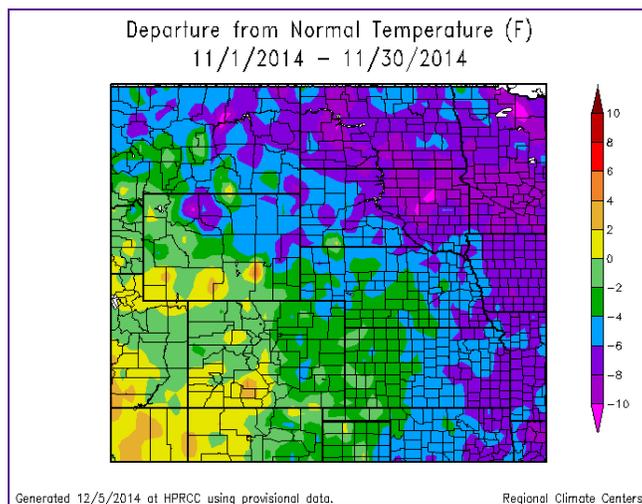
- Flaming Gorge is 107% of the November average.
- Green Mtn is 91% of November average.
- Lake Granby is 140% of November average.

- Lake Dillon is at 112% of the November average.
- Blue Mesa is 108% of the November average.
- Navajo is 82% of the November average.
- McPhee is 67% of the November average.
- Lake Powell is 67% of November average and 49% 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:

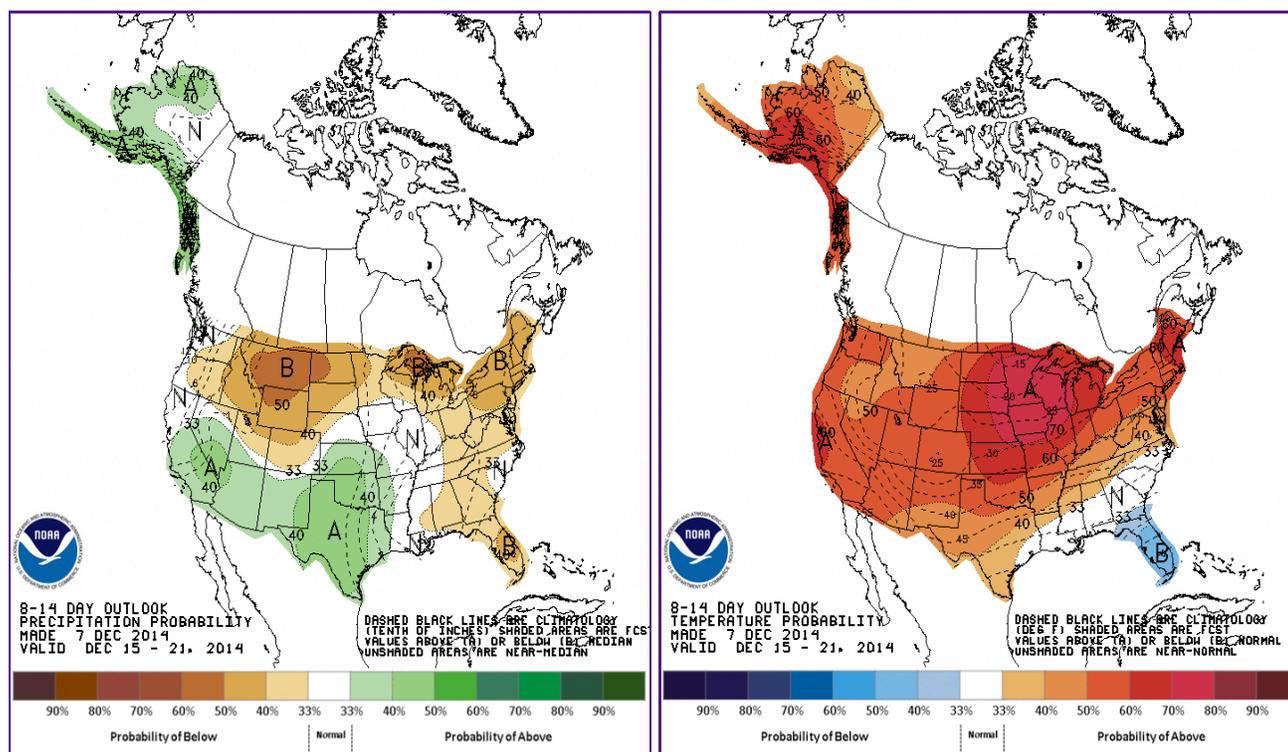
- Temperatures across the UCRB were well above average last week.
- The Wasatch Range and the Green River Headwaters were particularly warm, and recorded temperatures 12-15 degrees above average.
- The northern Rockies in Routt, Jackson, and Grand Counties were also anomalously warm, and recorded temperatures 12-15 degrees above average.

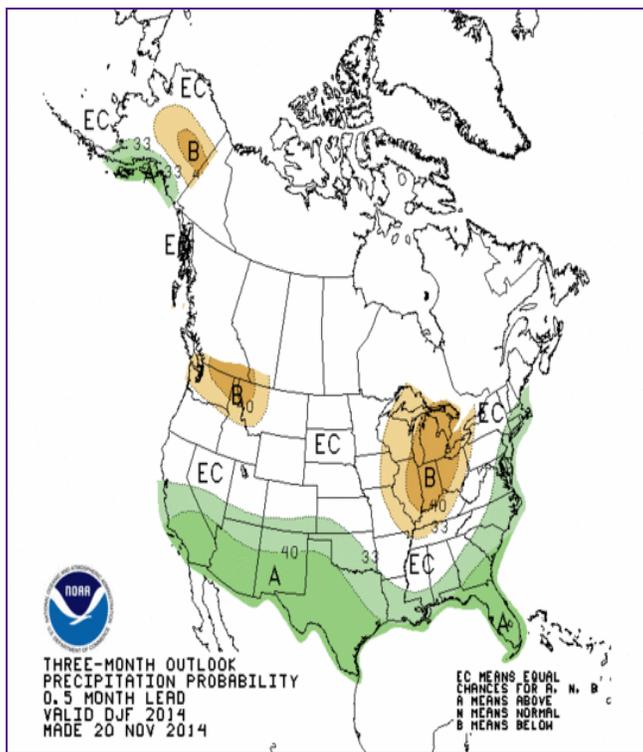
- The majority of the UCRB was between 9 and 12 degrees above average with the Four Corners Region being a little bit cooler at 6-9 degrees above average.
- The San Luis Valley recorded temperatures 9-12 degrees above normal.
- East of the divide was also warm with temperatures 0-9 degrees above normal for the week.
- The temperature anomaly gradient for the last week east of the divide is very much oriented west to east with values in the 6-9 degree above average range along the foothills and Front Range, and in the 0-3 degrees above average range on the Colorado-Kansas border.

Last Month Temperatures:

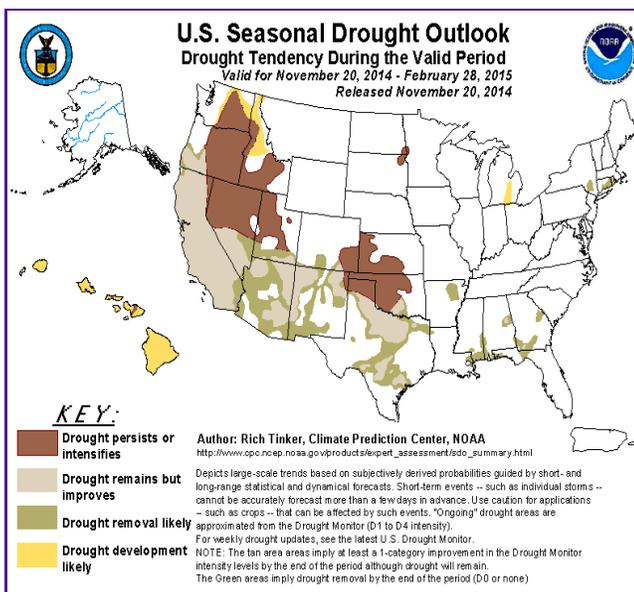
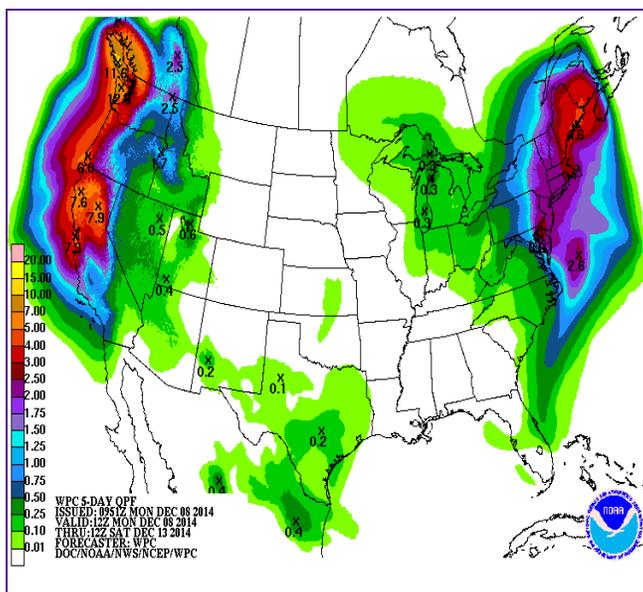
- November temperatures in the UCRB were slightly warmer than average in the Green river basin and the Four Corners regions, but the rest of the area saw below normal temperatures. Much of the region was in the 0 to 4 degrees below normal temperature range.
- The San Luis valley was one of the warmest regions with temperatures 0 to 4 degrees above the normal for the month.
- East of the divide was cold for the month of November. The plains ranged from 0-6 degrees below normal for the month.

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:

- Currently the UCRB and the area in Colorado east of the divide are dominated by high pressure conditions and temperatures above seasonal averages. This is forecast to last through to Friday morning when this high starts to drift eastward.
- As the region sits out ahead of the next trough on Friday the area

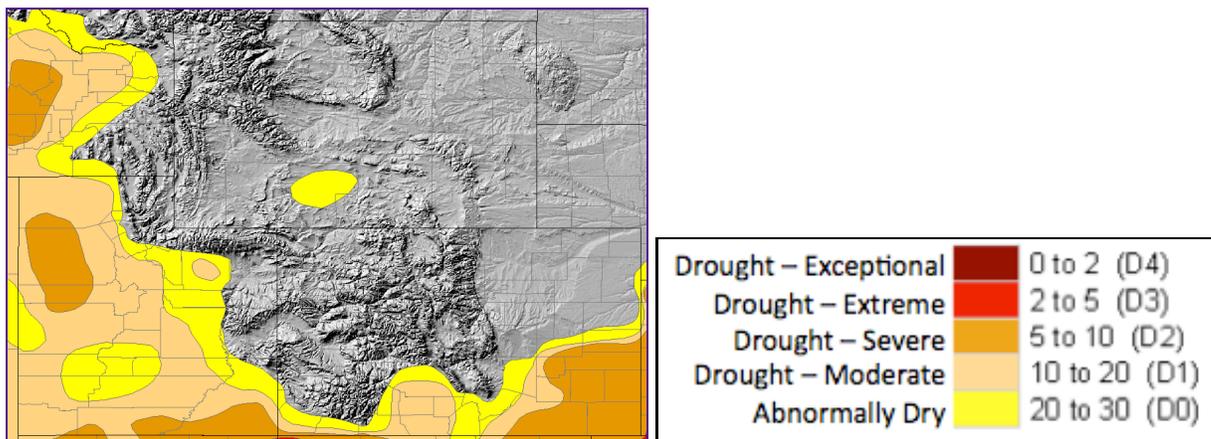
east of the divide is forecast to fall into a generous regime of warm air advection. If the right ingredients come together at the right time record high temperatures may be contested on Friday along the Front Range.

- Saturday morning a cold front oriented almost completely north to south is forecast to reach the west end of the UCRB and track across the UCRB throughout the day. Snow totals may be the highest in the San Juan and Uintah Mountain Ranges, but this system comes in fairly dry, so it probably won't be a large snow-producer anywhere.
- East of the divide will be warm and dry through Saturday. On Sunday a surface low tracks across New Mexico. It spools up some moisture from the Gulf of Mexico, and if the low lifts north a bit, this could bring a beneficial rain/snow mix to drought-stricken southeast Colorado. North of the Palmer divide areas may see a spat of snow on Sunday as westerly winds shift to out of the north and cooler temperatures enter the region.

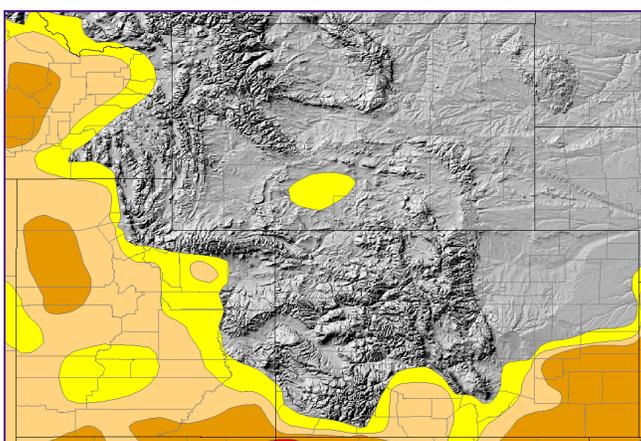
Longer Term:

- The 8-14 day precipitation outlook shows equal chances for above or below average precipitation over the northern half of the UCRB. The southern half sees an increased chance for above average precipitation. East of the divide the 8-14 day outlook shows increased chances for above average precipitation, especially in southeast Colorado.
- The 8-14 day temperature outlook shows increased chances for above normal temperatures across much of the entire U.S. Chances across the UCRB and CO for above average temperature are 40-50%. East of the divide chances for above average temperatures are 40-60% with the highest chances on the northeast plains.
- The CPC 3-month outlook shows increased chances for above normal winter precipitation for southern Colorado and Utah. Farther north in the drought monitor region equal chances are forecast for above and below normal winter precipitation.
- The seasonal drought outlook indicates that drought is expected to persist or intensify in southeast Colorado and northeast Utah. the Four Corners Region, and the San Luis Valley are more likely to see improvement or removal.

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 December 9, 2014:

UCRB:

It was a warm, dry week across the UCRB. In the Green River Headwaters region precipitation totals were mostly between 0.25-1.00" with a swath between Lincoln and Sublette County, WY between 1 and 2". This was the area that received the most beneficial moisture for the week. Most of the UCRB was lucky to see over 0.10". Some isolated areas of the San Juans and the Central Rockies received over half an inch of precipitation. Temperatures for the week were far above normal across the UCRB. Areas farther south didn't see quite as high of temperature anomalies, but the majority of the UCRB was between 9 and 12 degrees above average. Furthermore, it is still very early in the snow accumulation season, but SNOTEL water year precipitation percentiles have been very low thus far in the Uintah and Wasatch Ranges.

Eastern CO:

With high pressure having been the dominant weather over the past week over the entirety of the drought monitor region it comes as no surprise that it was also a warm, dry week east of the Continental Divide. The northern Front Range and northeast plains received no measurable precipitation. Areas in the foothills and along the Palmer Divide did receive up to a quarter inch of measurable precipitation. The southeast corner of the state received up to half an inch, which comes as a bit of a pleasant surprise this time of year. SPIs on short timescales are low, but this is only marginally concerning since this is a dry time of year on the plains and not part of the growing season, coupled with the fact that the trend reverses for longer timescales.

Recommendations:

UCRB:

Status Quo: With the exception of the San Juan River Basin most sub-basins of the UCRB are still near average snowpack on the season despite the warm conditions over the last week. As we continue to transition into the season dominated by synoptic-scale motions and large temperature gradients it is important not to overreact to a week of warm, dry conditions. 9-12 degree temperature anomalies do not mean the same thing in December as in July as there is not a flash drought concern driven by ET demand this time of year, and the warm and dry anomalies can much more easily be offset by one synoptic-scale trough this time of year.

This being said, careful drought monitoring in the next two week period will be crucial. The remainder of the week is forecast to be warm, and the CPC shows an increased likelihood for above-average temperatures on the 8-14 day outlook as well. The majority of the mountain ranges that surround the UCRB depend on an active December for a significant portion of annual snowpack. There is a trough projected to effect the UCRB in the 5-7 day period. If this system does not bring a nice swath of widespread moisture we could easily end up in a deficit that cannot easily be made up by one or two good systems.

Eastern CO:

Status Quo: It was a warm, dry week east of the divide as well, so we certainly are in no position to make improvements where drought already exists. Once again, this is the dry season for the plains and Front Range. Flows along the Arkansas and South Platte Rivers, and our reservoirs are currently in good shape. In this case the impact of positive 90-day and 6 month SPI's outweigh recent warmth and dryness. Should the trend continue such that reservoir levels fall and soil moisture is low in a couple months I'll be singing a different tune.

