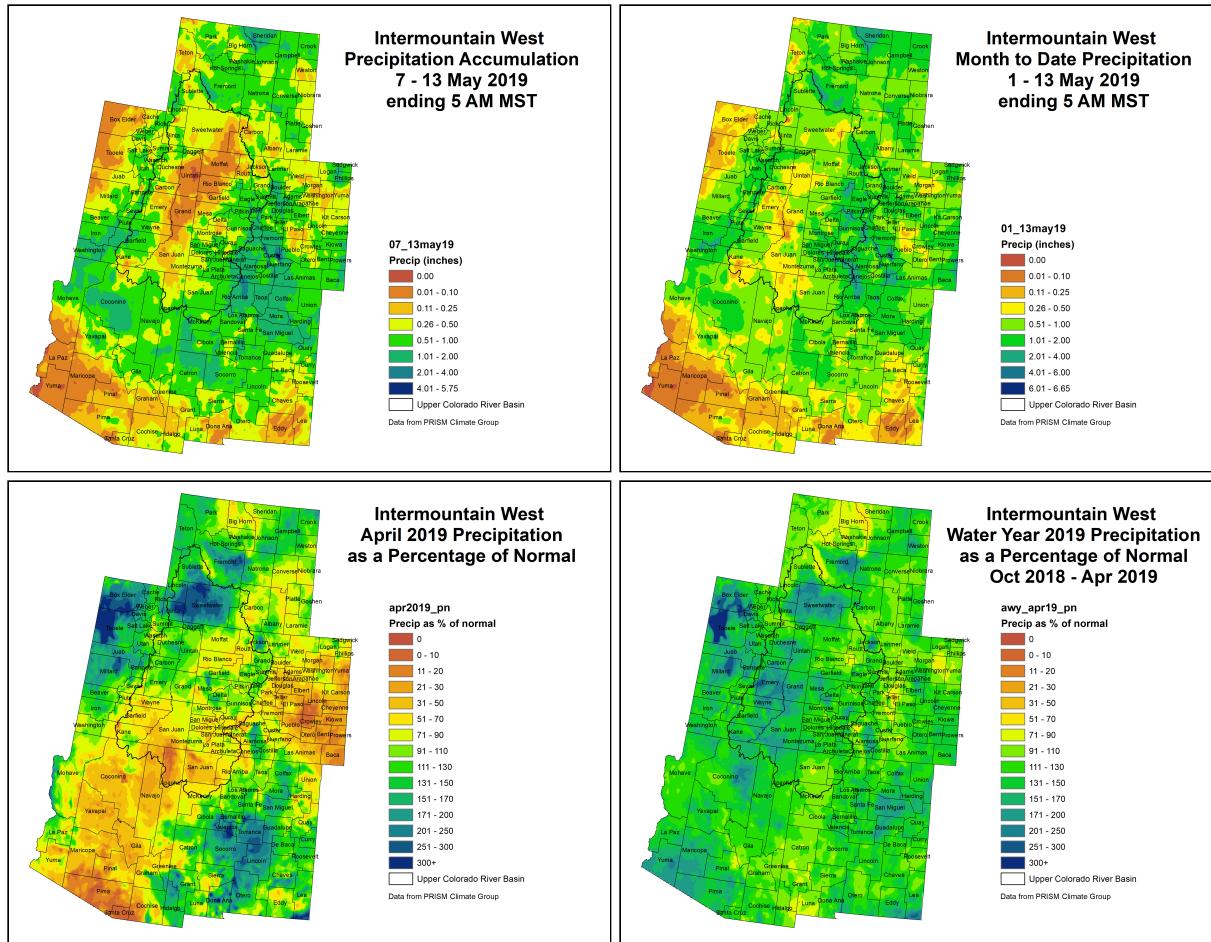


# NIDIS Intermountain West Drought Early Warning System May 14, 2019

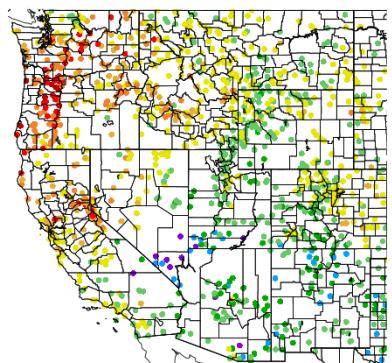
## Precipitation



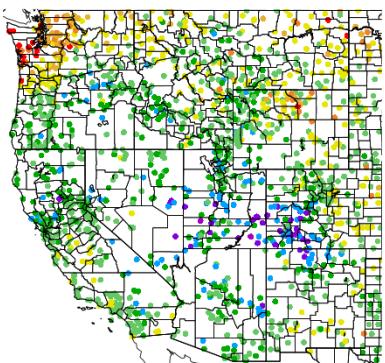
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average; water-year-to-date precipitation as a percent of average.

## Standardized Precipitation Index

30 Day SPI  
4/13/2019 – 5/12/2019



90 Day SPI  
2/12/2019 – 5/12/2019



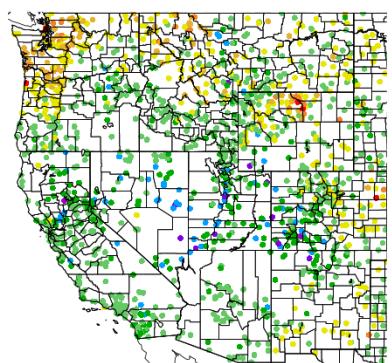
Generated 5/13/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

Generated 5/13/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

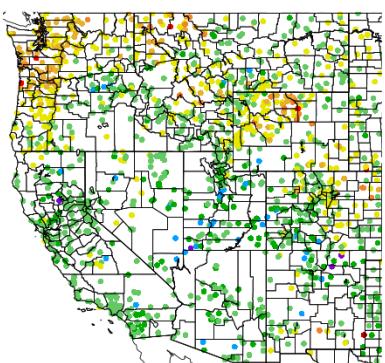
6 Month SPI  
11/13/2018 – 5/12/2019



Generated 5/13/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

9 Month SPI  
8/13/2018 – 5/12/2019



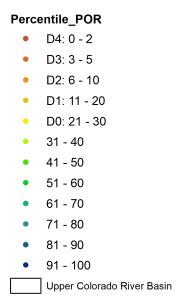
Generated 5/13/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

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.

## Snotel and Snowpack

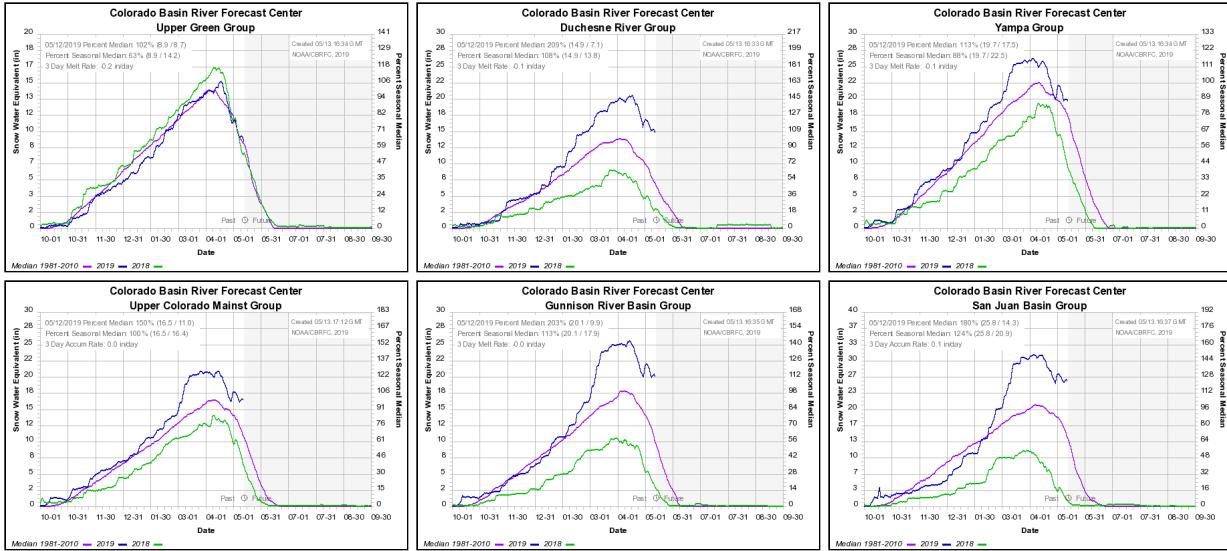
Snotel Water Year 2019  
Snowpack Percentile Ranking  
through 13 May 2019



Station with 15+ year of data

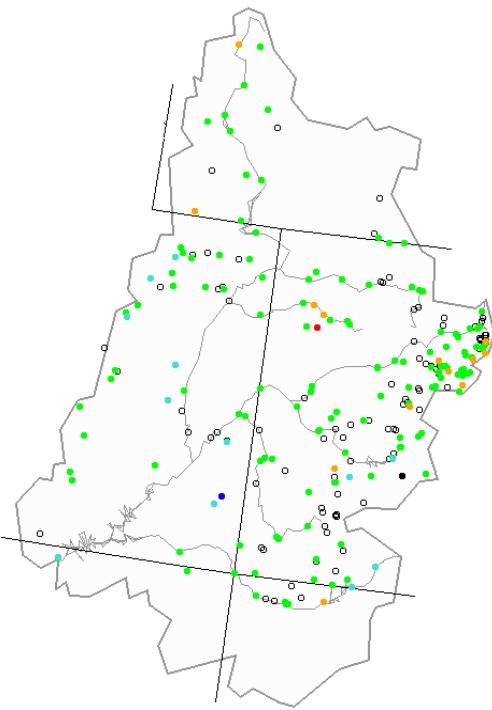
The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches

(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).



## Streamflow

Monday, May 13, 2019

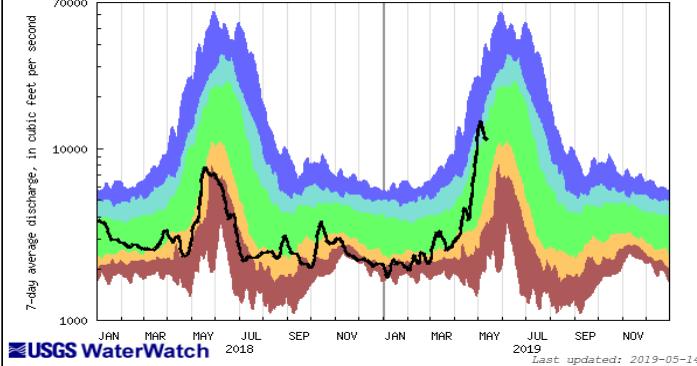


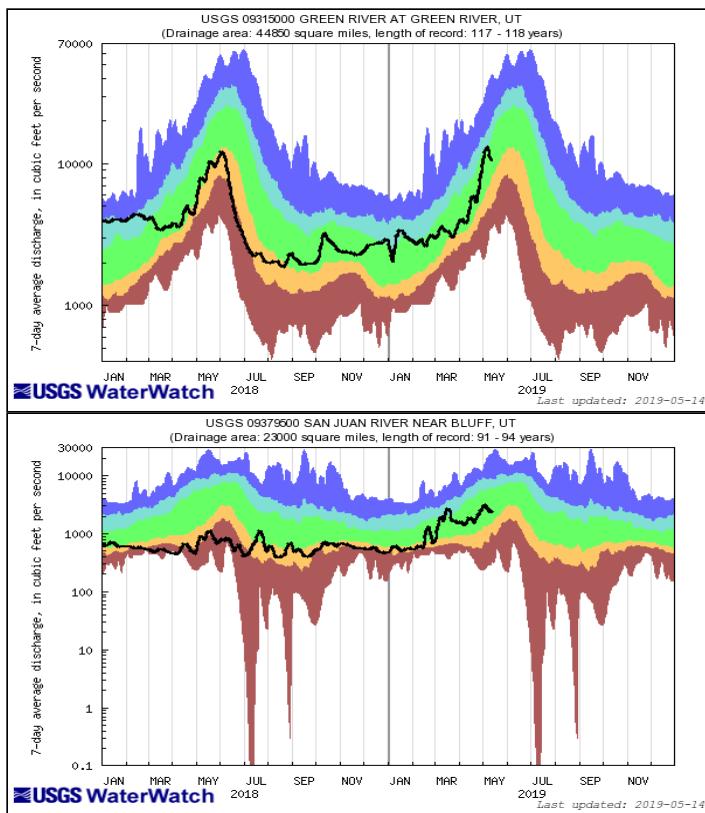
USGS

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	High	

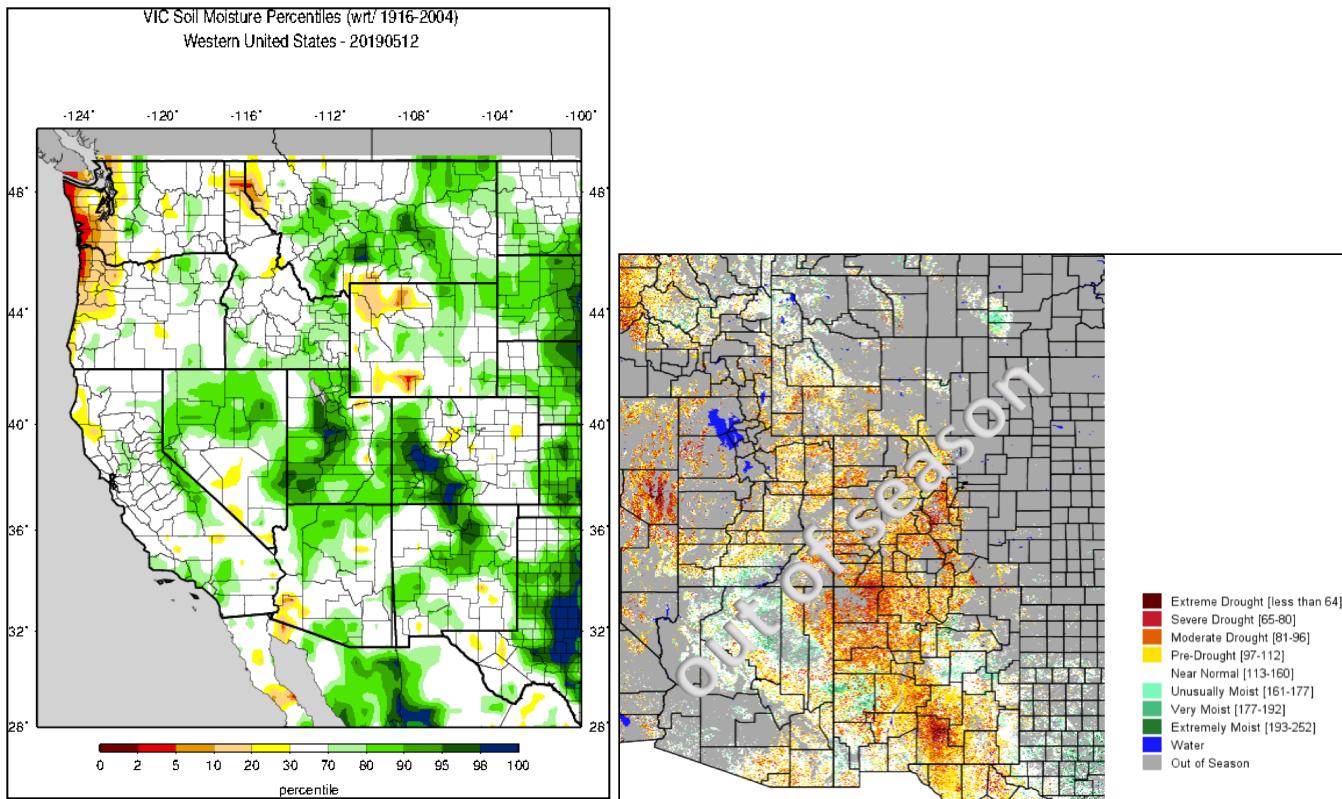
USGS 09163500 COLORADO RIVER NEAR COLORADO-UTAH STATE LINE  
(Drainage area: 17849 square miles, length of record: 66 - 67 years)





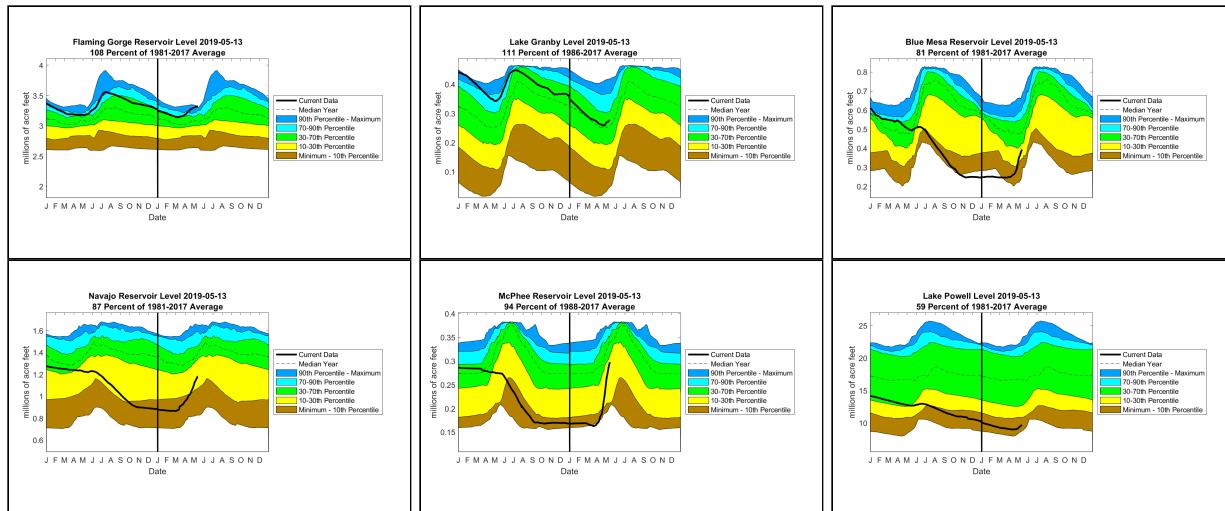
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

## Surface Water

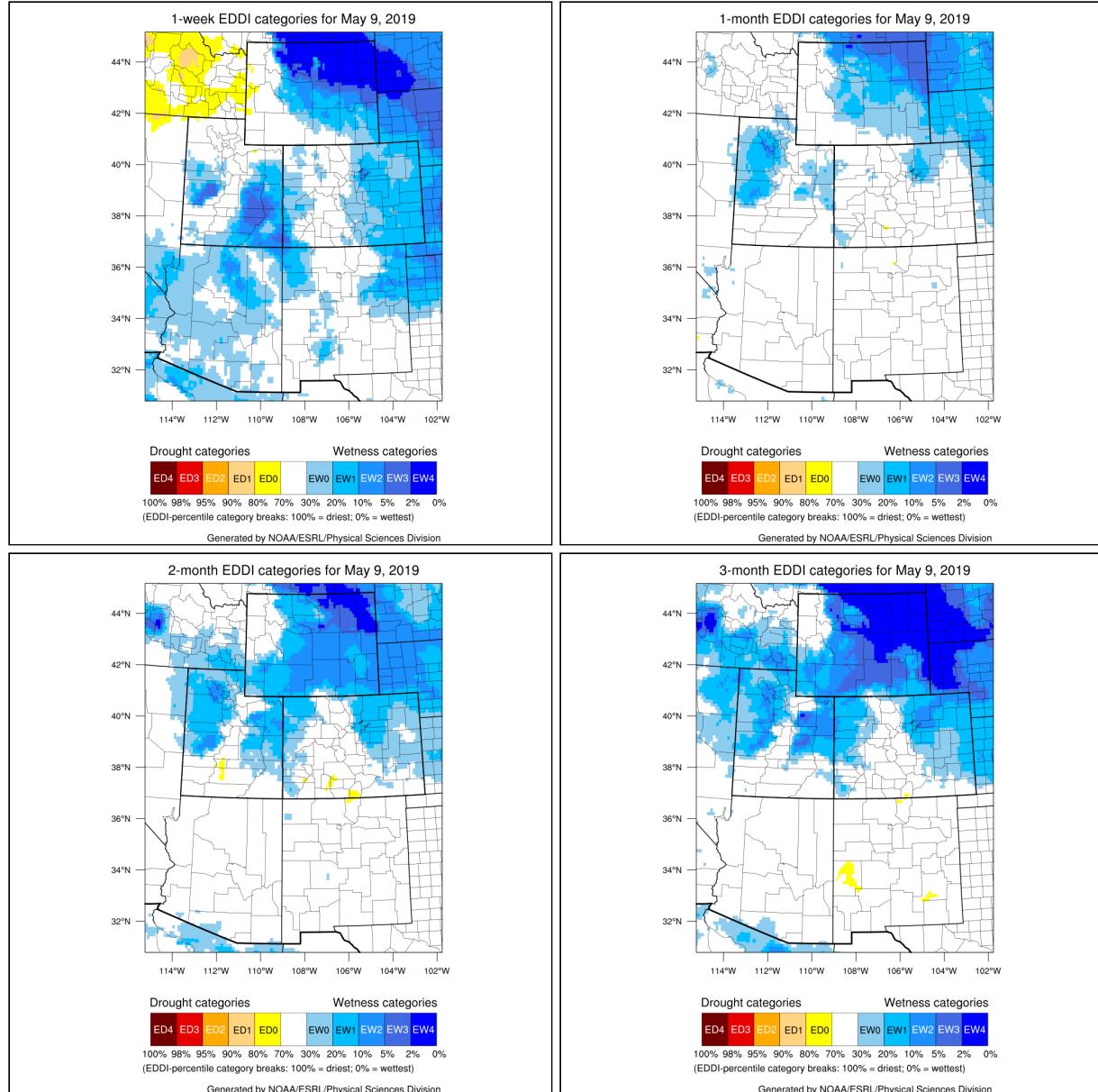


The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past 30 years. The data are obtained from the Bureau of Reclamation. Some of the reservoir percentiles don't line up at the new year due to differences in reservoir levels at the beginning of 1985 and the end of 2014. Dead storage has been subtracted. Note: Lake Granby data are obtained from the Colorado Division of Water Resources, and only goes back to the year 2000.



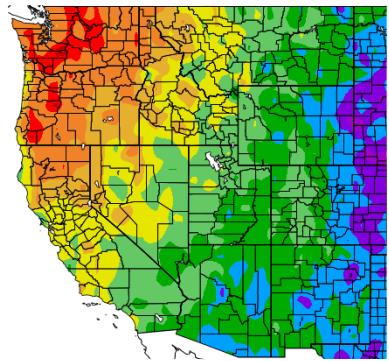
## Evaporative Demand



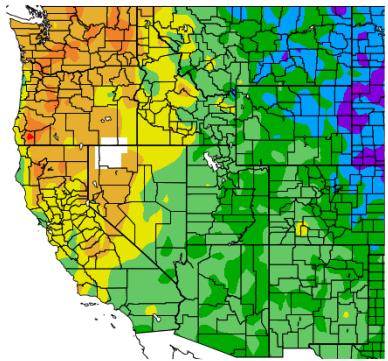
The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are in line with the [US Drought Monitor's Percentile Ranking Scheme](#). Data used to generate these maps come from the North American Land Data Assimilation System Phase-2 (NLDAS-2) project, which assimilates observations of temperature, wind speed, radiation, and vapor pressure deficit. The date indicates the last day of the period of record, and the week number indicates the window size for the period of record.

## Temperature

Departure from Normal Temperature (F)  
5/7/2019 – 5/13/2019



Departure from Normal Temperature (F)  
5/1/2019 – 5/13/2019



Generated 5/14/2019 at HPRCC using provisional data.

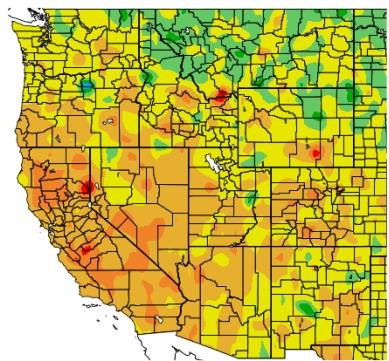
NOAA Regional Climate Centers

Generated 5/14/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

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.

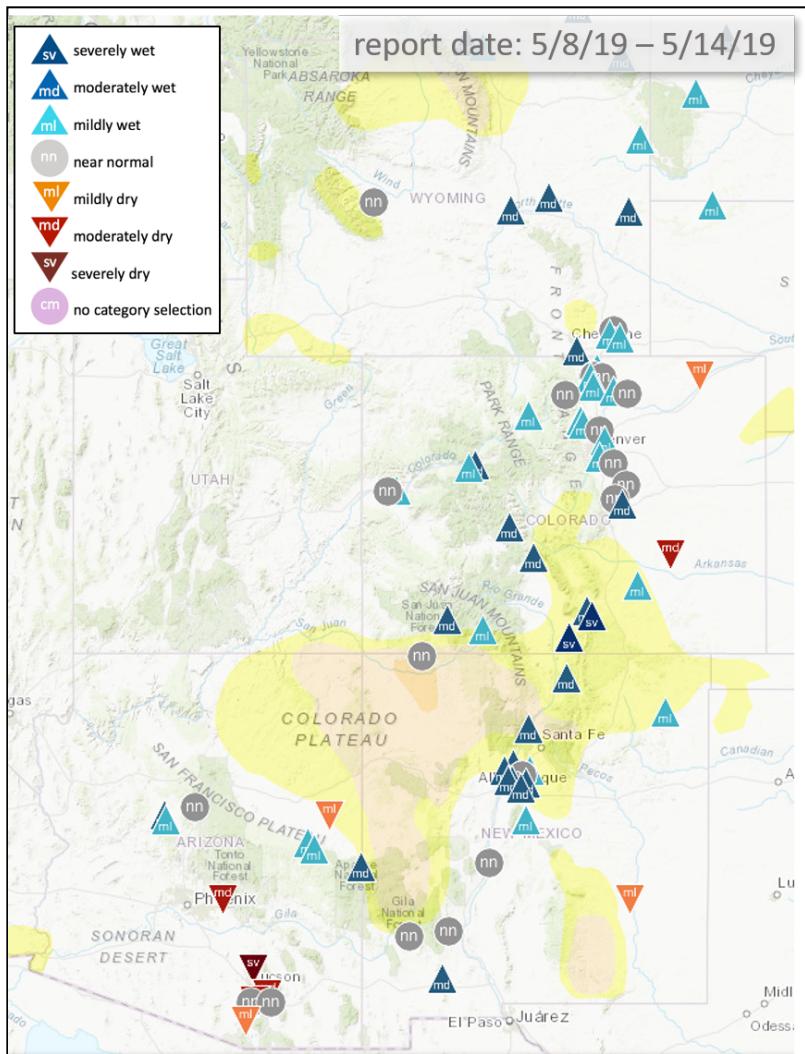
Departure from Normal Temperature (F)  
4/1/2019 – 4/30/2019



Generated 5/10/2019 at HPRCC using provisional data.

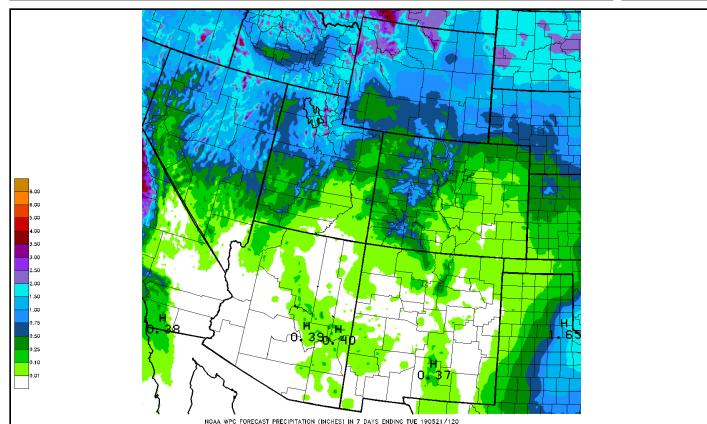
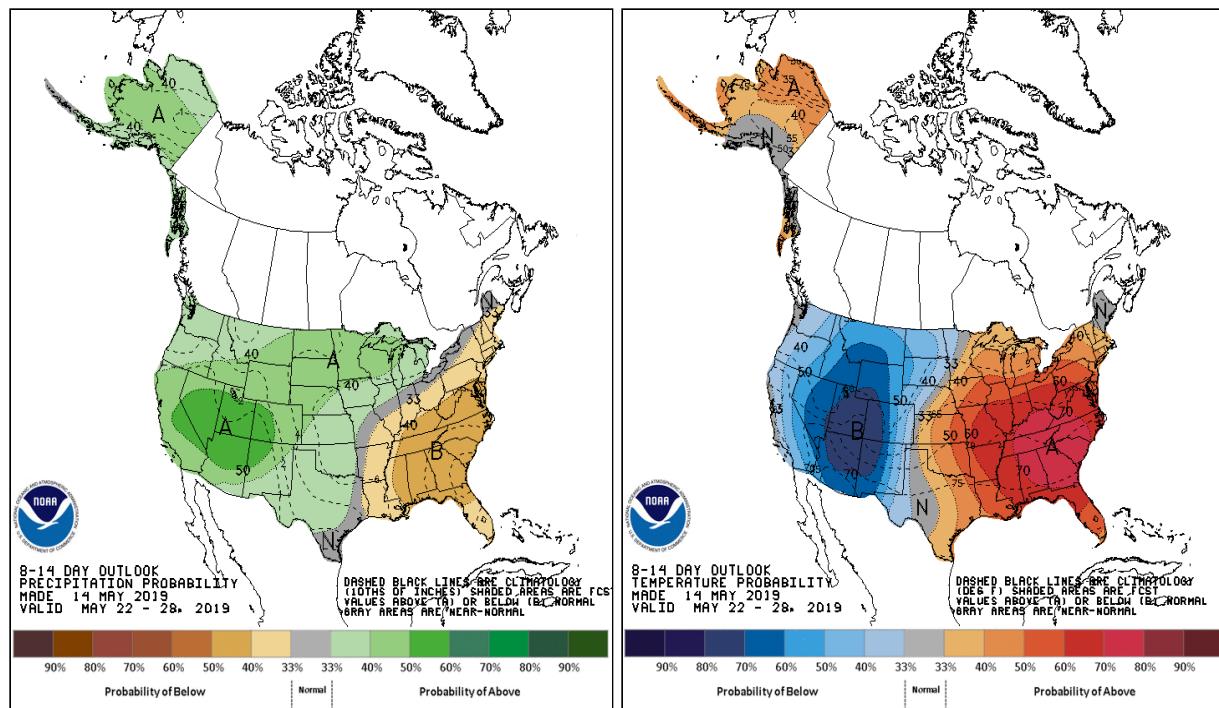
NOAA Regional Climate Centers

## Condition Monitoring and Impacts

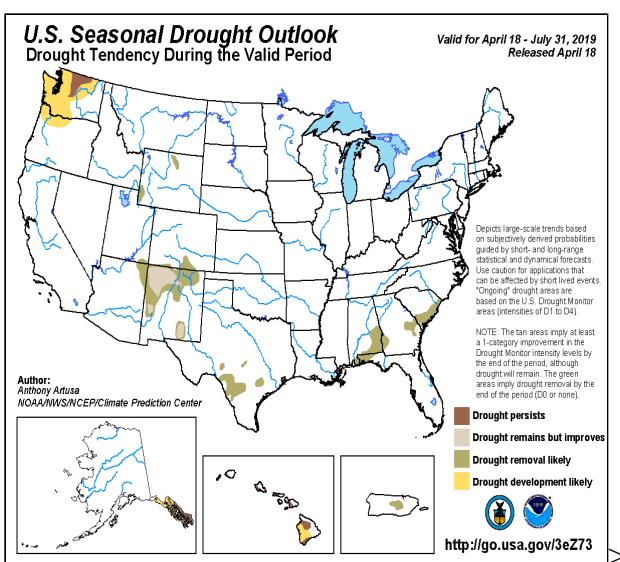
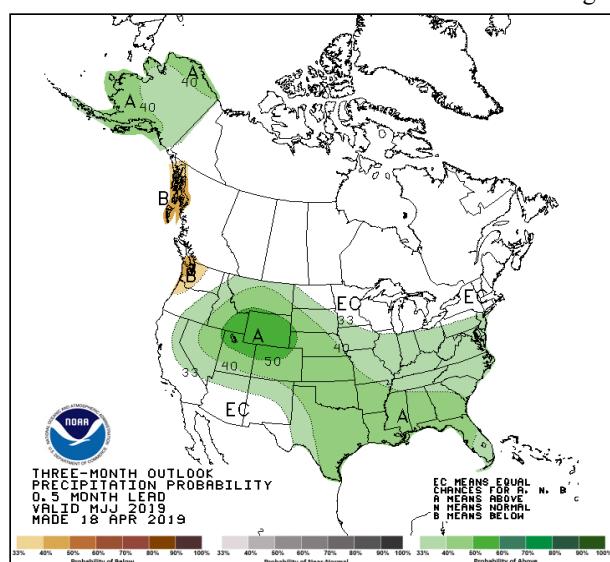


Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

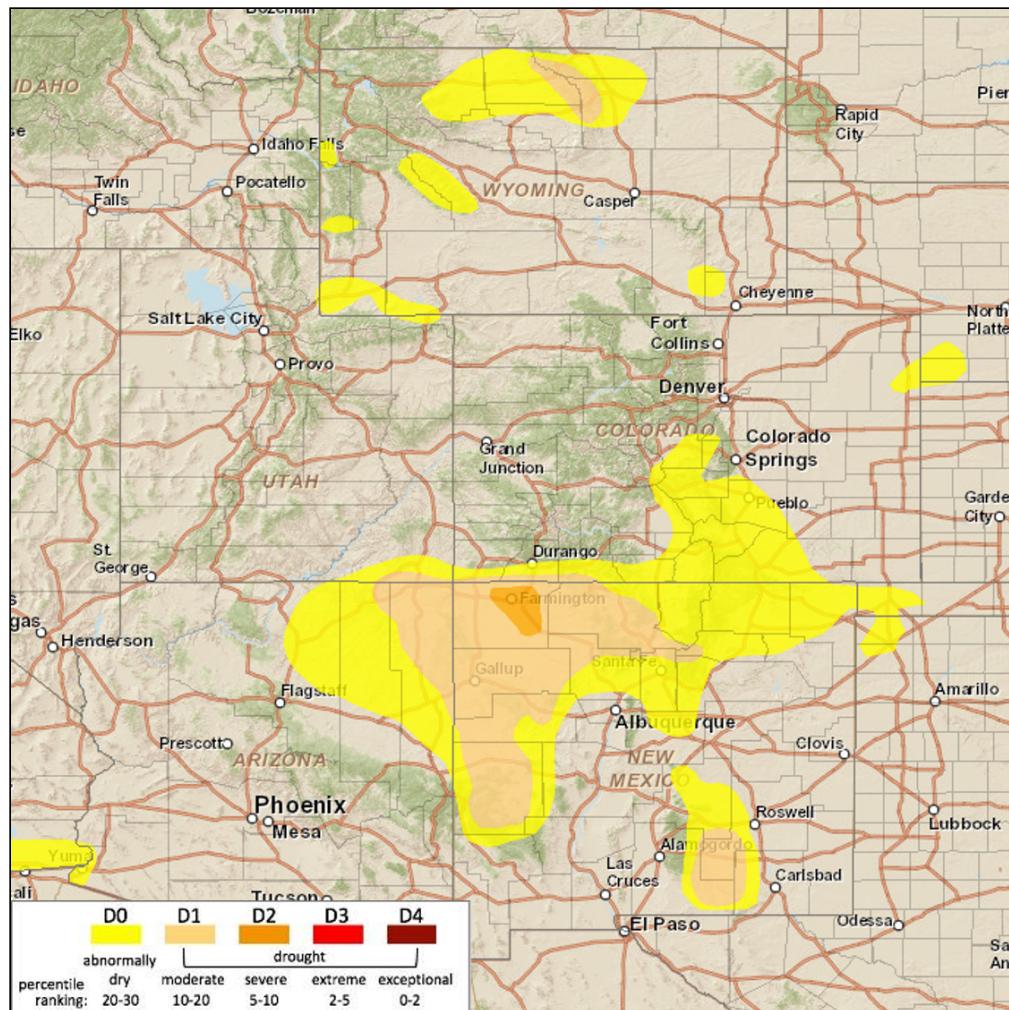
## Outlook



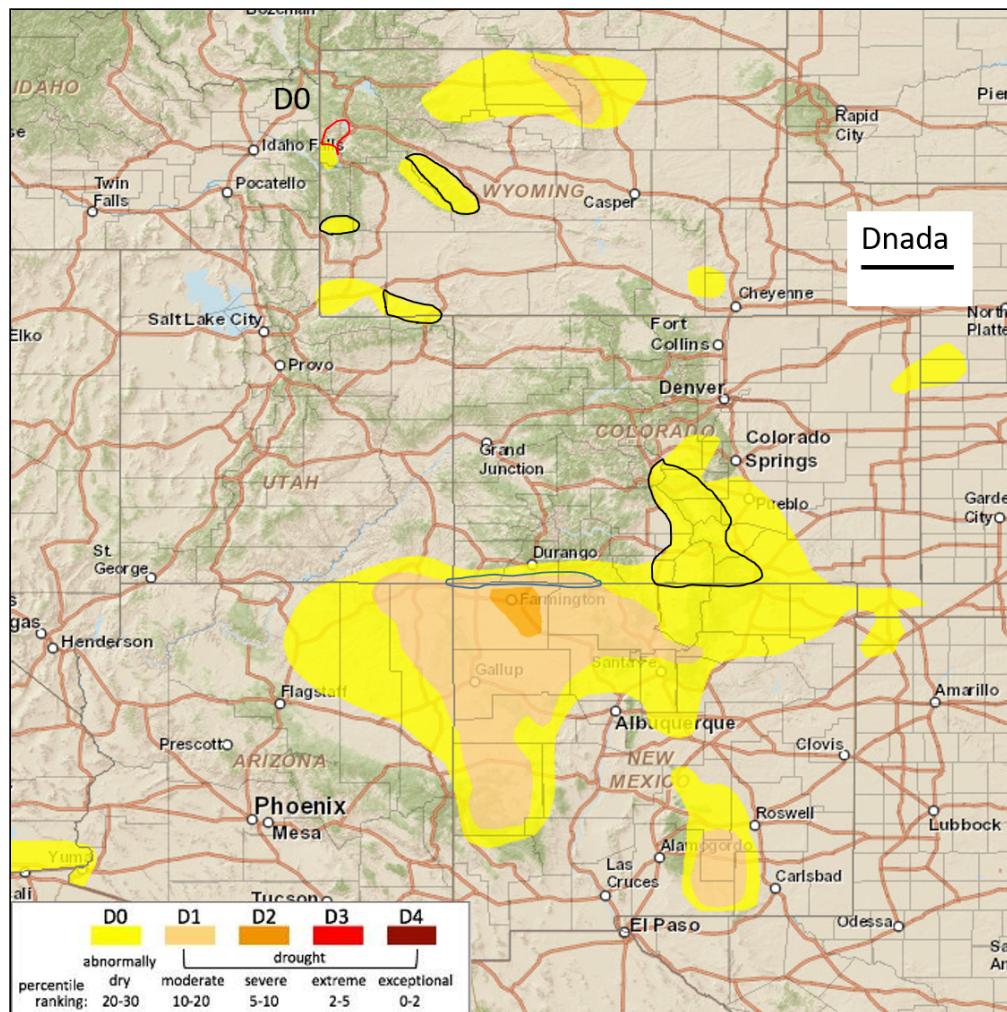
The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate Prediction Center, and the bottom right image shows the Climate Prediction Center's most recent release of the U.S. Seasonal Drought Outlook.



# Summary and Recommendations



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 14, 2019

The last week in the Intermountain West Region continued the cooler than average trend the first week of May saw. There was a mix of dry conditions in southwestern Wyoming, northwestern Colorado, and eastern Utah, and at least 0.25" through the rest of the region, with the exception of northwestern Utah, southern Arizona and parts of southern New Mexico. Parts of eastern Colorado also saw drier conditions: El Paso County, Pueblo County and northeastern Colorado. The bulk of precipitation was seen through central Colorado and northern New Mexico. This area saw over 1.00" up to 4.00" in areas in south-central Colorado and north-central New Mexico.

SPIs are still showing dryness on the short term in eastern Colorado and Wyoming. This is the beginning of the wet season in eastern Colorado and Wyoming, so deficits quickly show up on the SPI. SPIs through the rest of the IMW region are still looking good.

With the cooler temperatures in the mountains, snowmelt slowed down and there was a slight increase in snowpack in most basins throughout the Upper Colorado River Basin. Current snowpack through the UCRB is still at near record numbers in the southern mountains and median or above farther north. The slowing in melt was seen in the streamflow with decreases in streamflow being observed over the past 2 weeks.

The evaporative demand season is just starting up and with the cooler than normal temperatures, demand is off to a slow start, which is a positive. More

on this as the season progresses.

The outlook for the rest of the week looks warm, with some afternoon storms popping up. The best chances for precipitation for the next week will be in northern Wyoming, northern Utah and the higher elevations in Colorado. The 8-14 day outlook is showing good chances for below normal temperatures and above normal precipitation.

### **Recommendations:**

**UCRB:** There is still a sliver of D1 in southwestern Colorado. Looking at all the indicators out to at least 12 months, it does not look like D1 is still justified. We would like to see that D1 pushed south out of Colorado. Since the southwest is entering the dry season, there may not be a chance to make improvements until the monsoon season starts up.

**Eastern Colorado:** Erasing D0 in south-central Colorado thanks to the recent beneficial precipitation is recommended. This includes the eastern edge of the San Luis Valley, the Sangre de Cristo Mountains and the Wet Mountains. Pueblo was largely missed by the recent precipitation, so the D0 should stay there. Although there was beneficial precipitation in Las Animas County and Park County, we are holding off on removing the D0 at this time due to dryness on longer term.

**Wyoming:** Recommending removing D0 from southwest Sweetwater County, Lincoln County and the eastern flank of the Wind River Range. Some expansion of D0 in Teton County is also to be recommended.