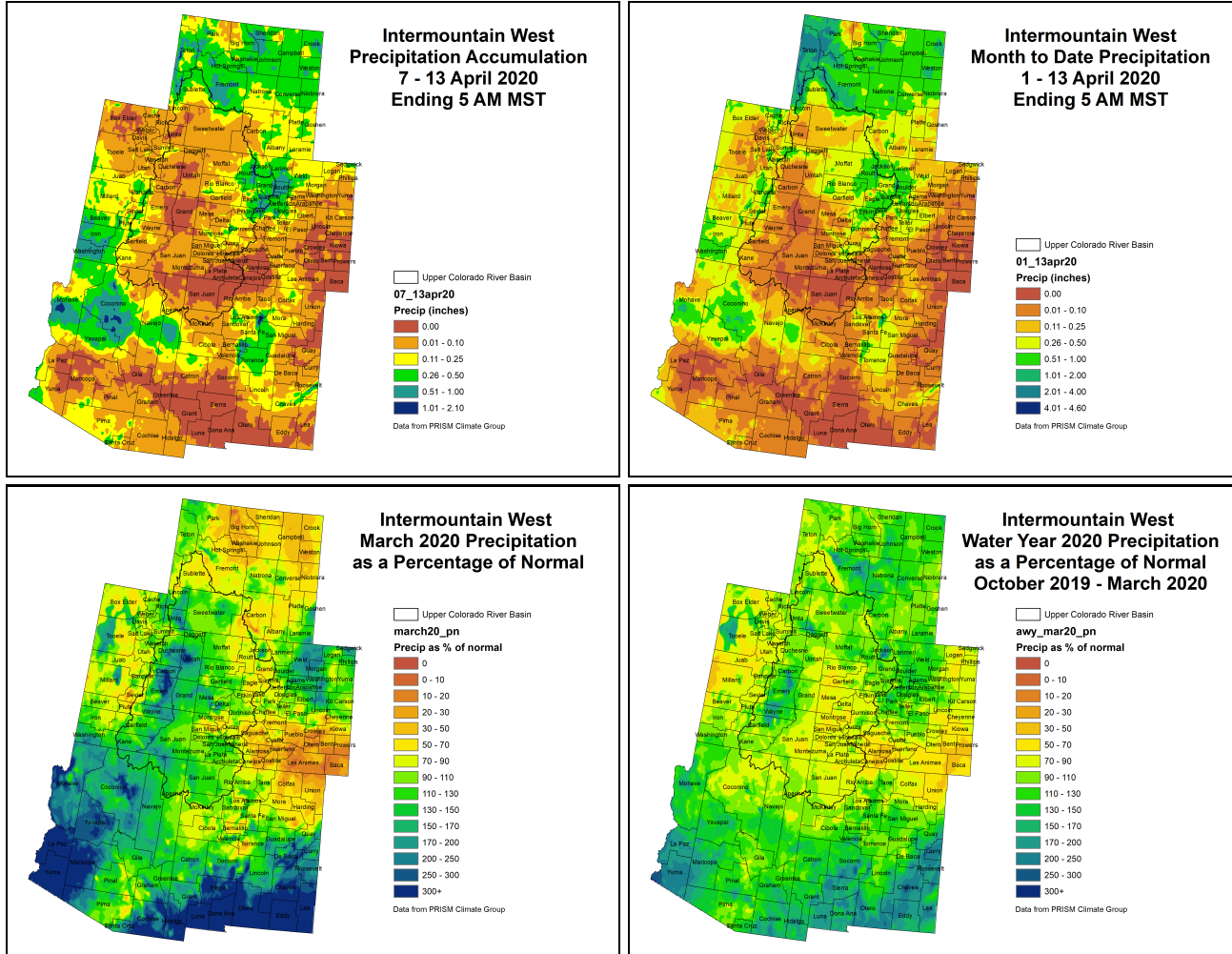


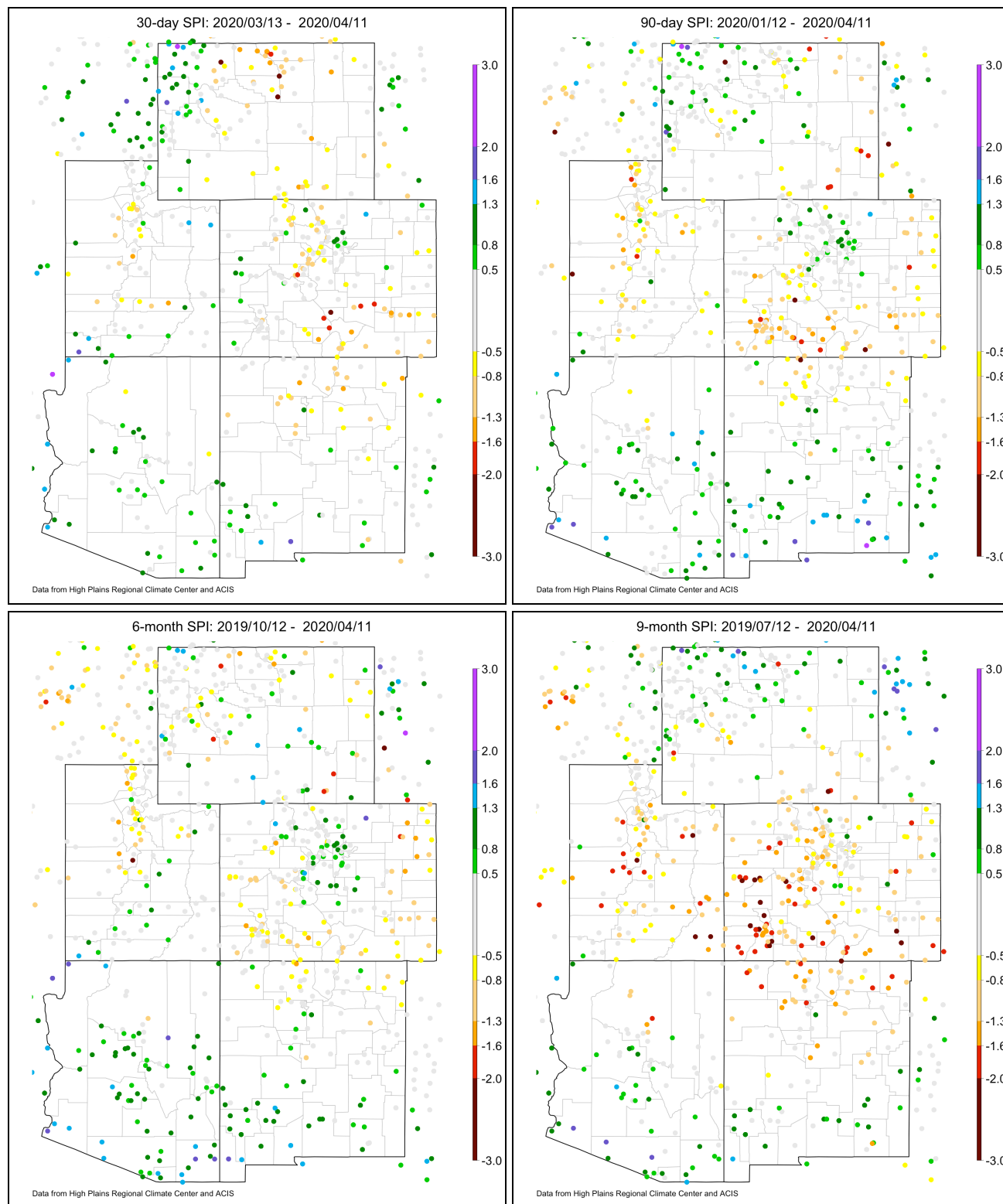
# NIDIS Intermountain West Drought Early Warning System April 14, 2020

## Precipitation



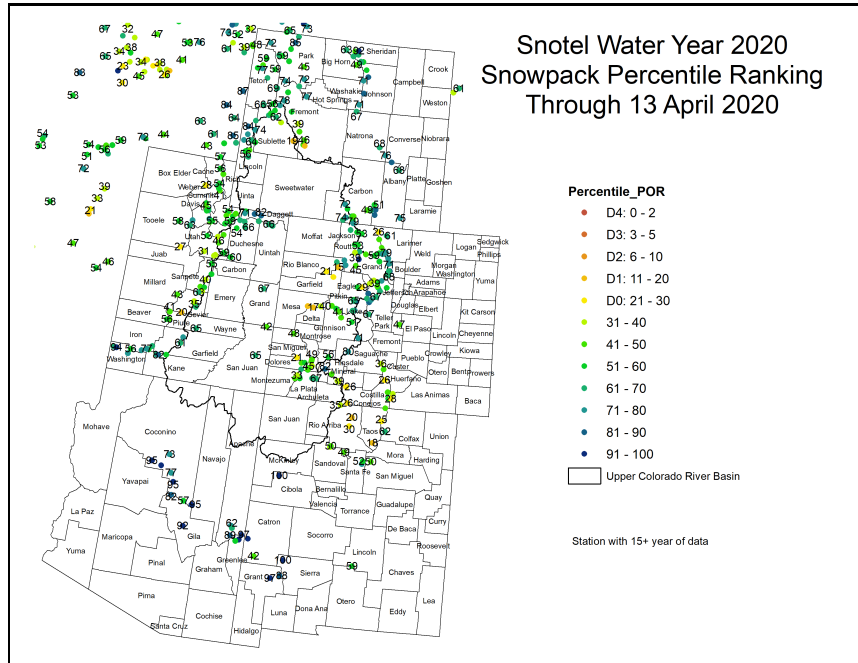
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

## Standardized Precipitation Index

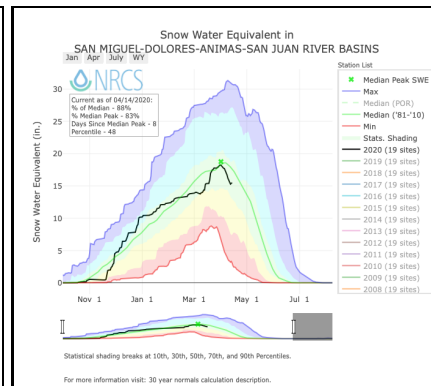
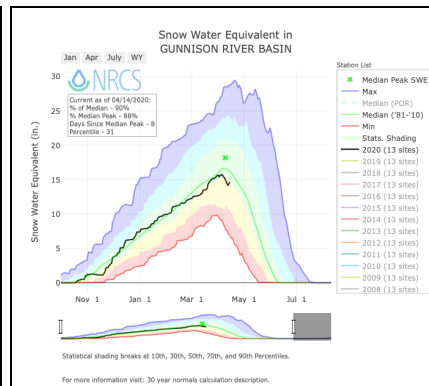
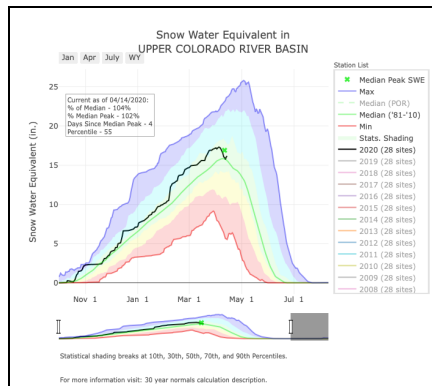
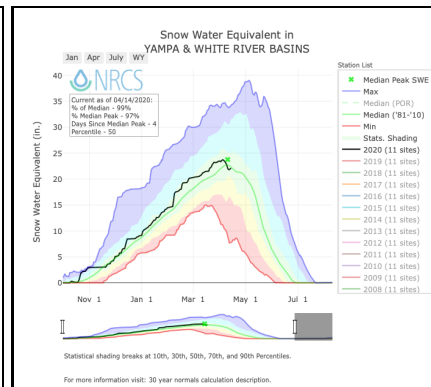
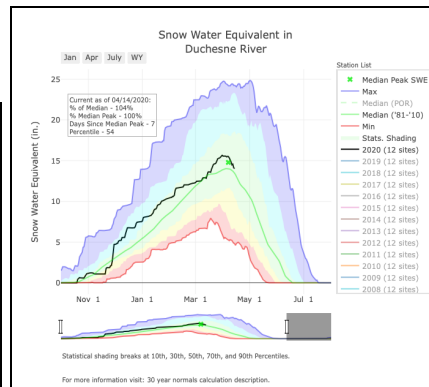
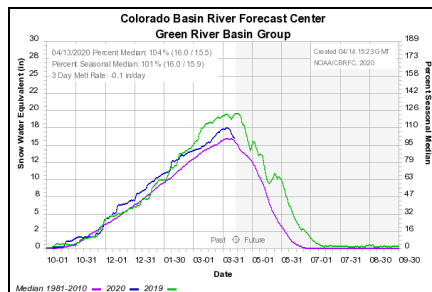


Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. Colors match the different drought categories with the U.S. Drought Monitor. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions. SPI data provided by High Plains Regional Climate Center.

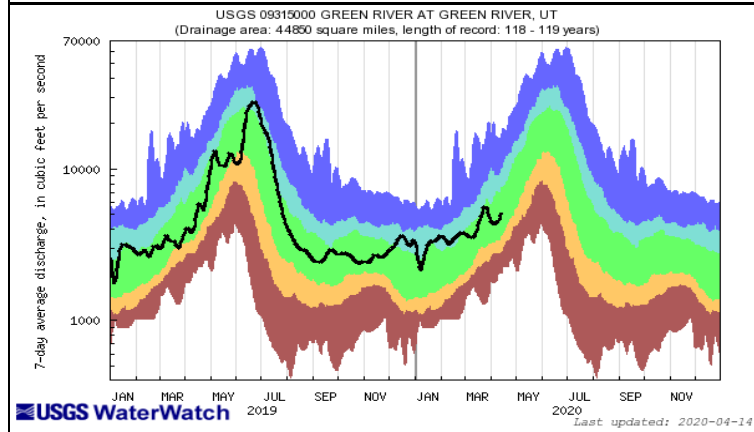
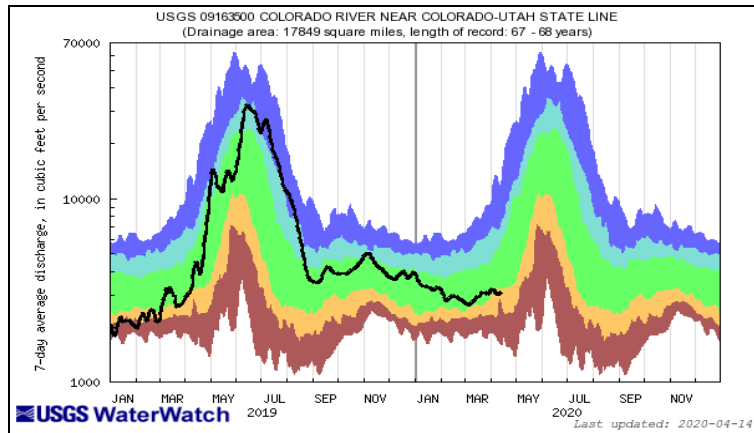
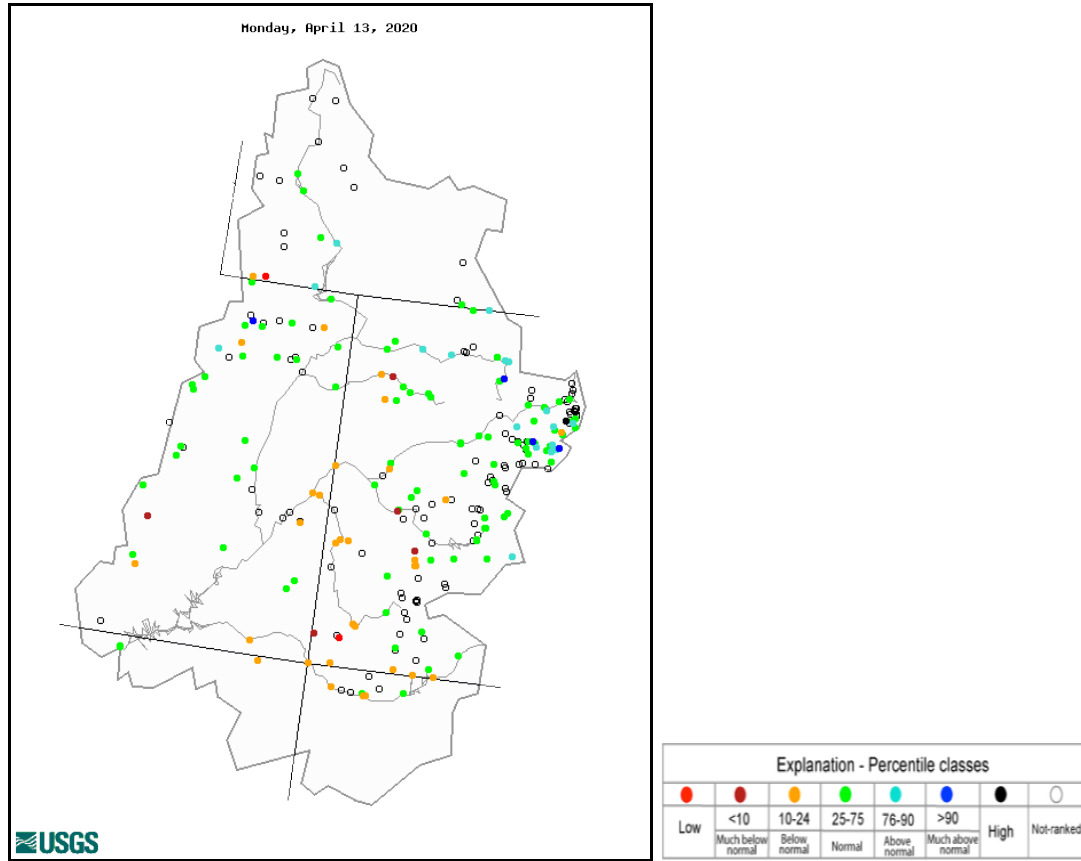
# Snotel and Snowpack



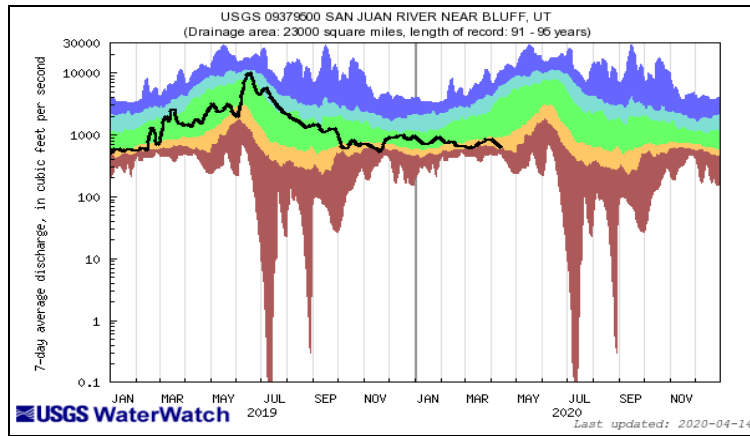
The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches (green) compared to average (blue) and last year (red) for several different sub-basins across the UCRB (and were created by the Colorado Basin River Forecast Center).



## Streamflow

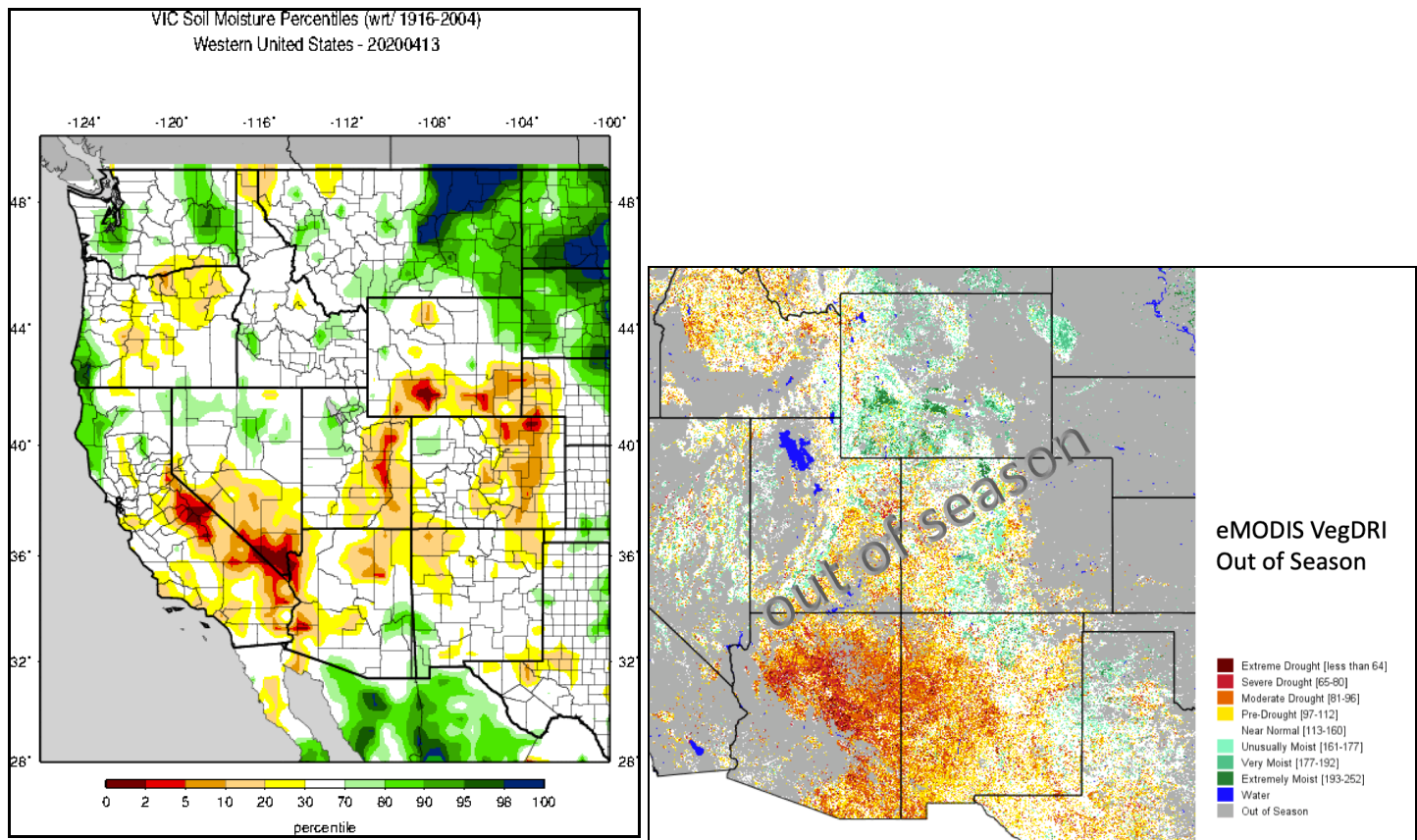






The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

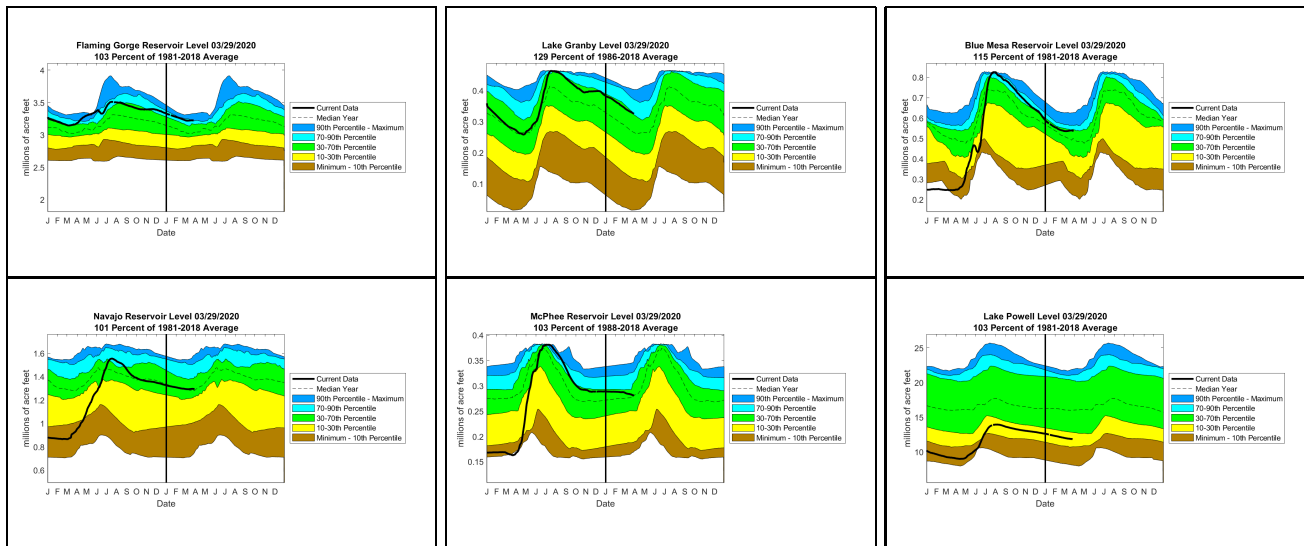
## Surface Water



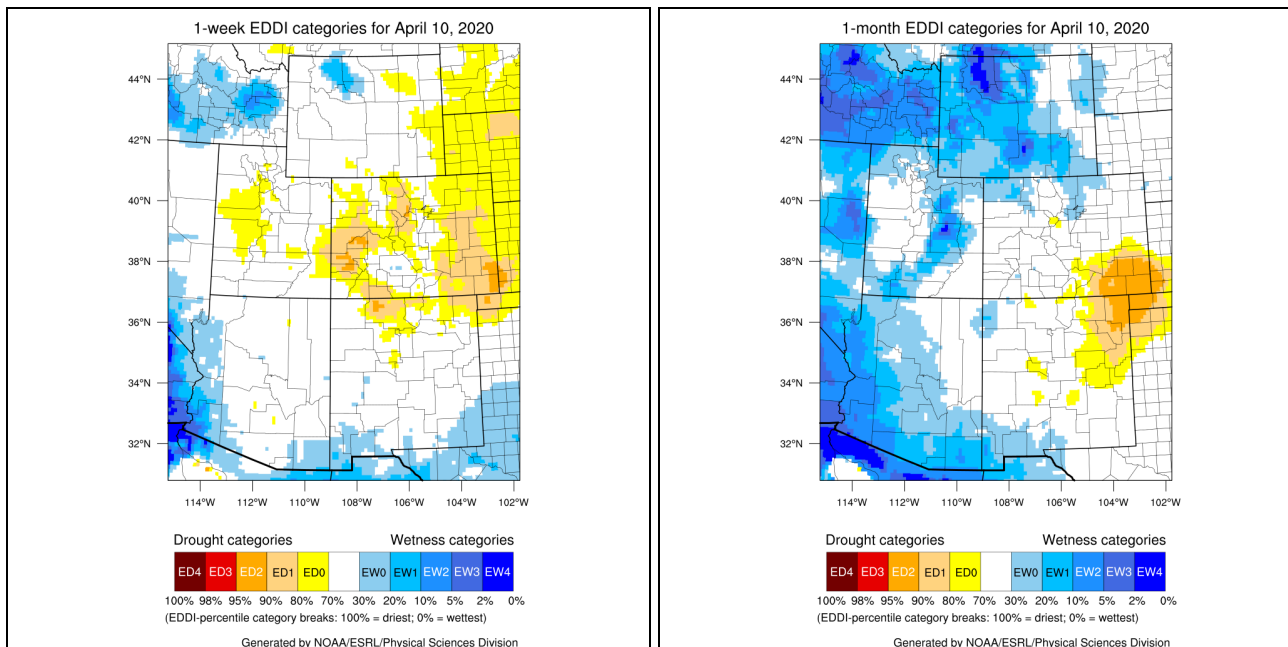
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

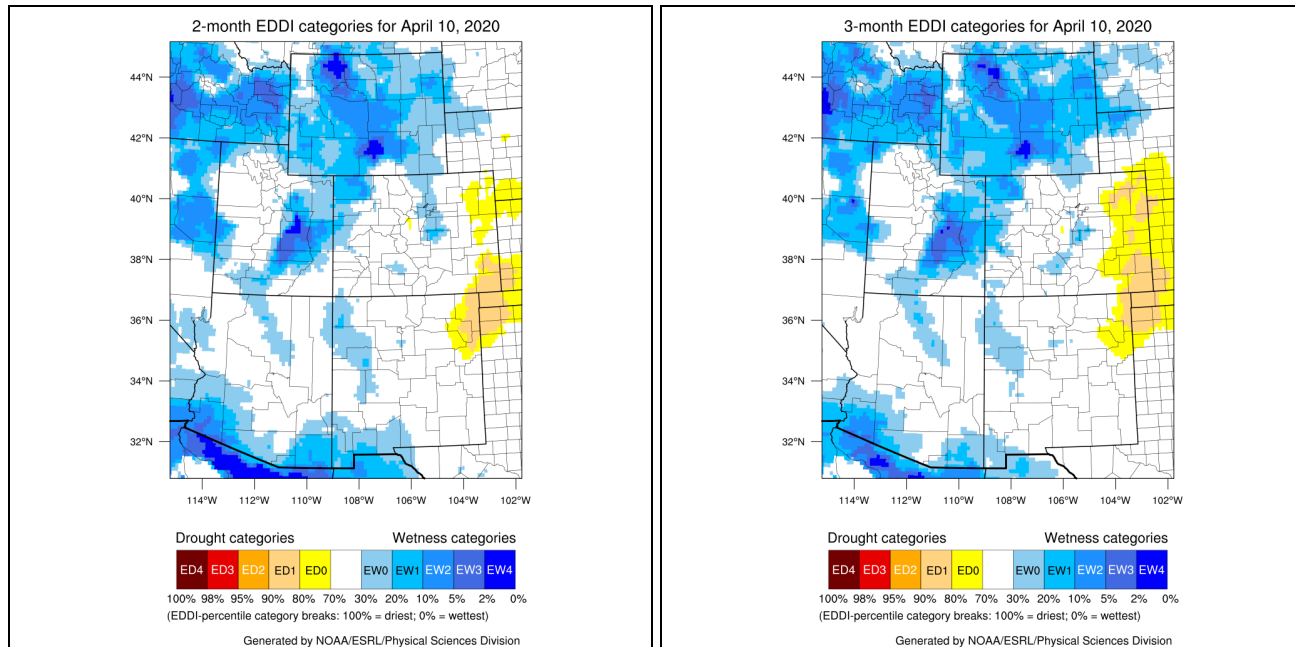
The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir

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.



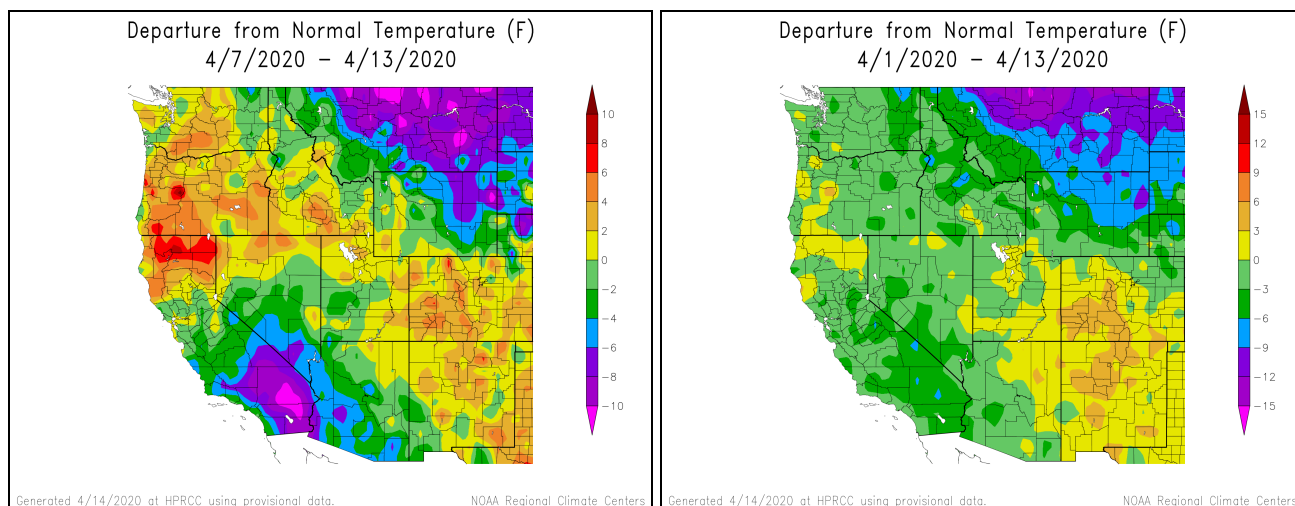
## Evaporative Demand



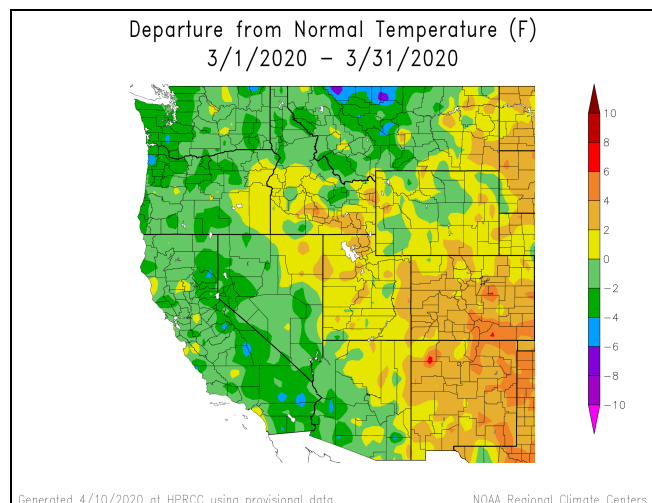


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are 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.

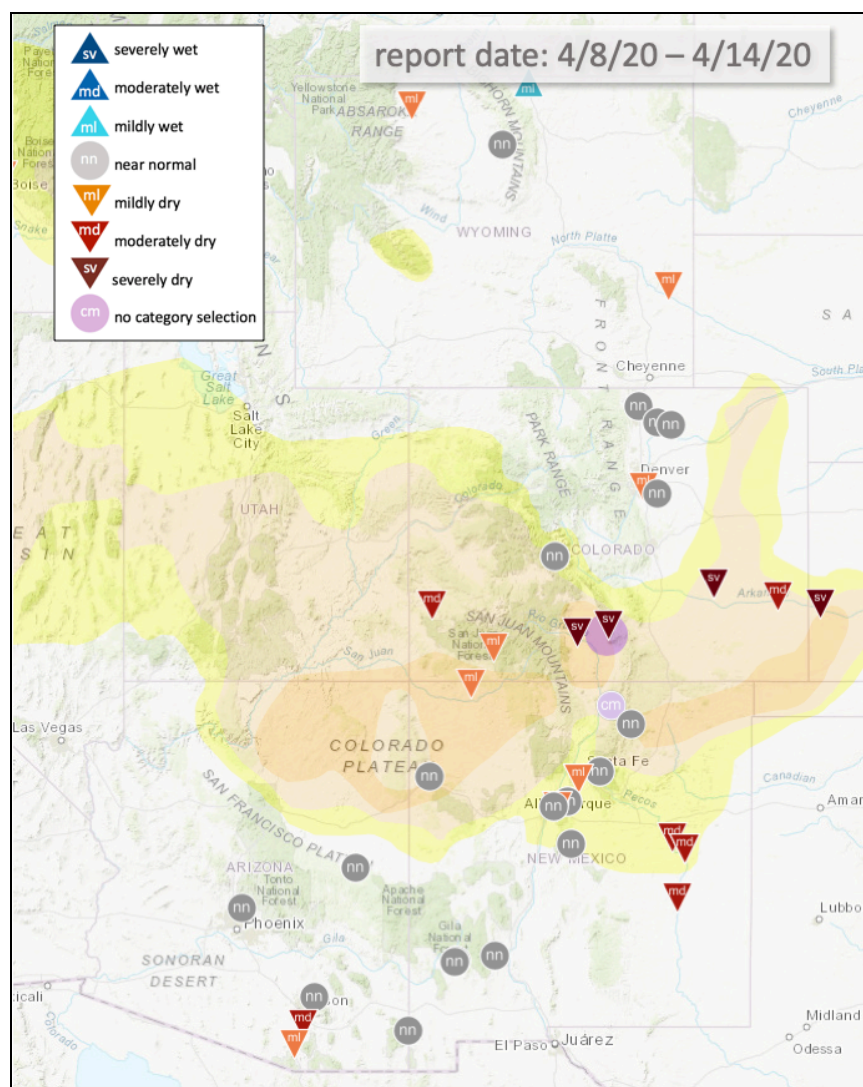
## Temperature



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.



## Condition Monitoring and Impacts



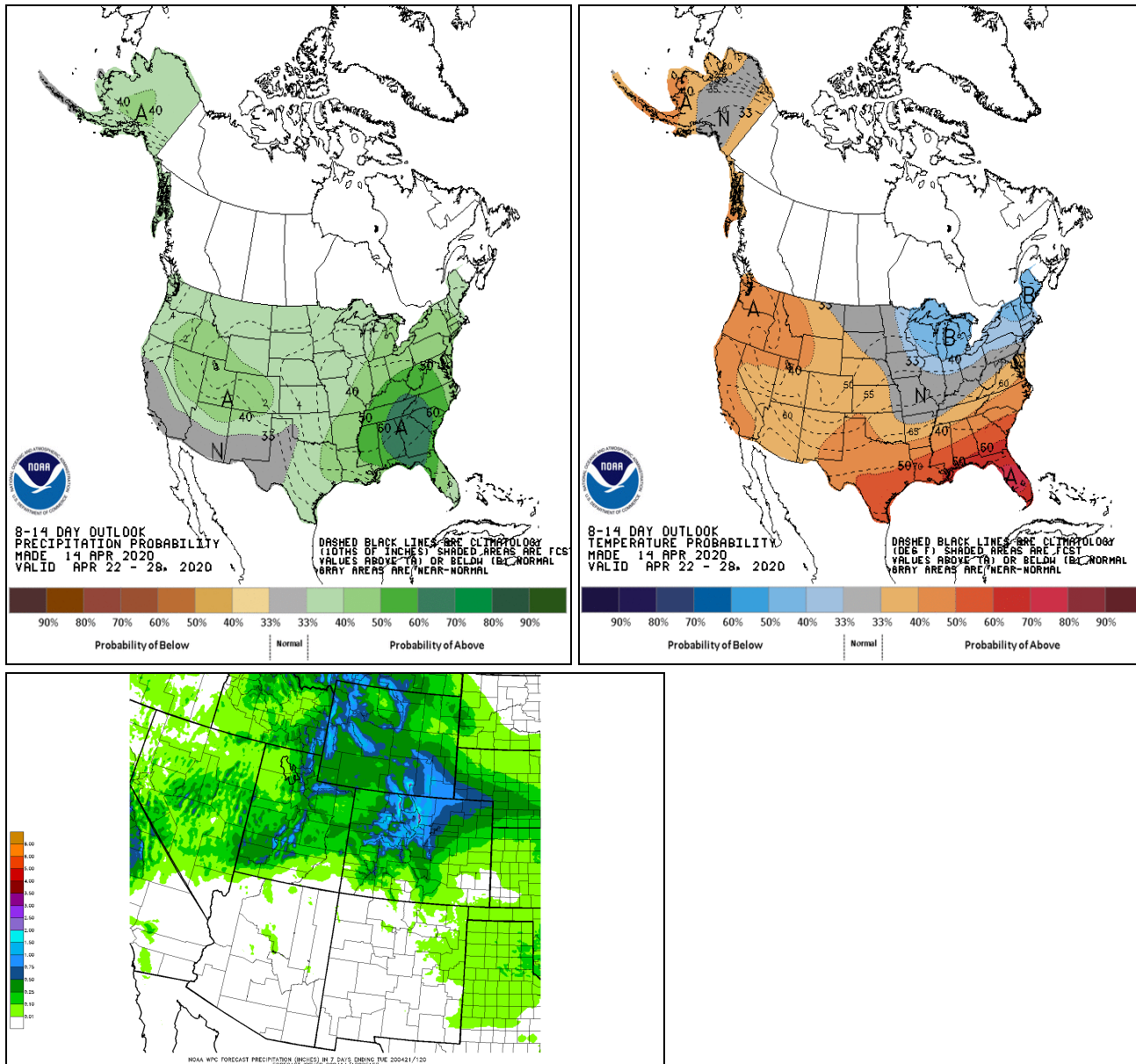
Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.



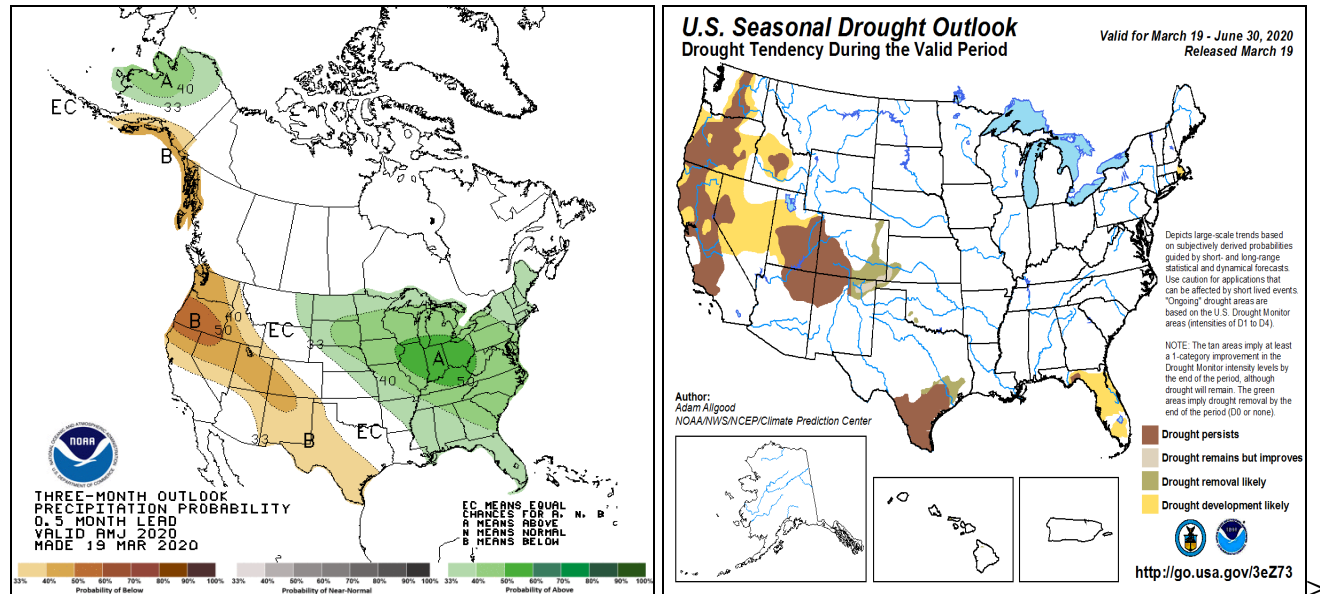
## Southeast CO

Very dry, not much snow from the latest storm. Many farmers experiencing losses. More senior water rights irrigators will be okay. Loading out feed and forage for cattle. Digging 4ft holes for posts and the soils are dry 4ft down. Chiseling wheat, reports of failed acres. Lots of wind and dirt storms. Increase of claims being turned in. No alternatives to consider for planting because there is no moisture in the soils. Several reports of brush fires from Crowley County down through Las Animas County.

## Outlook

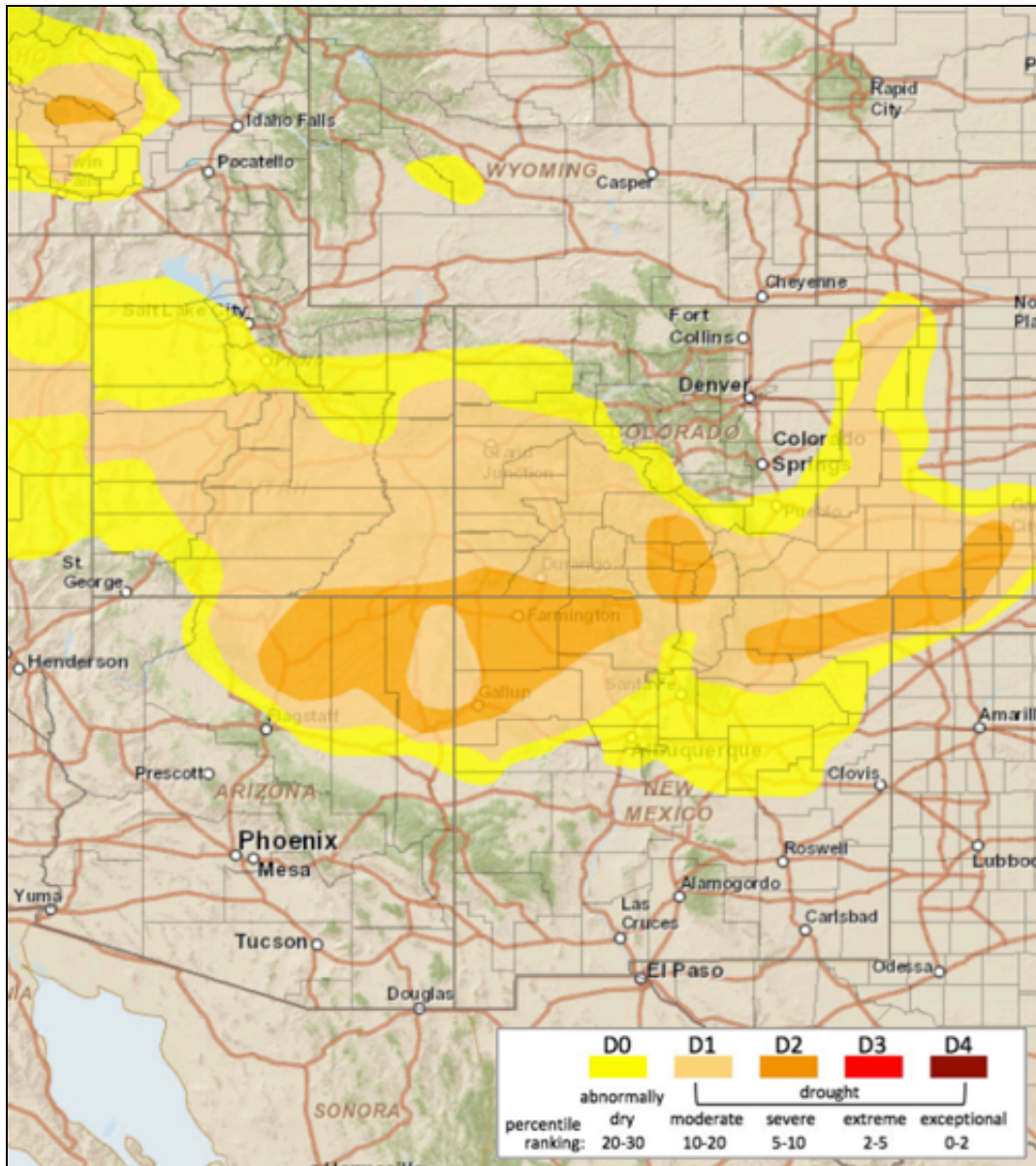


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate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

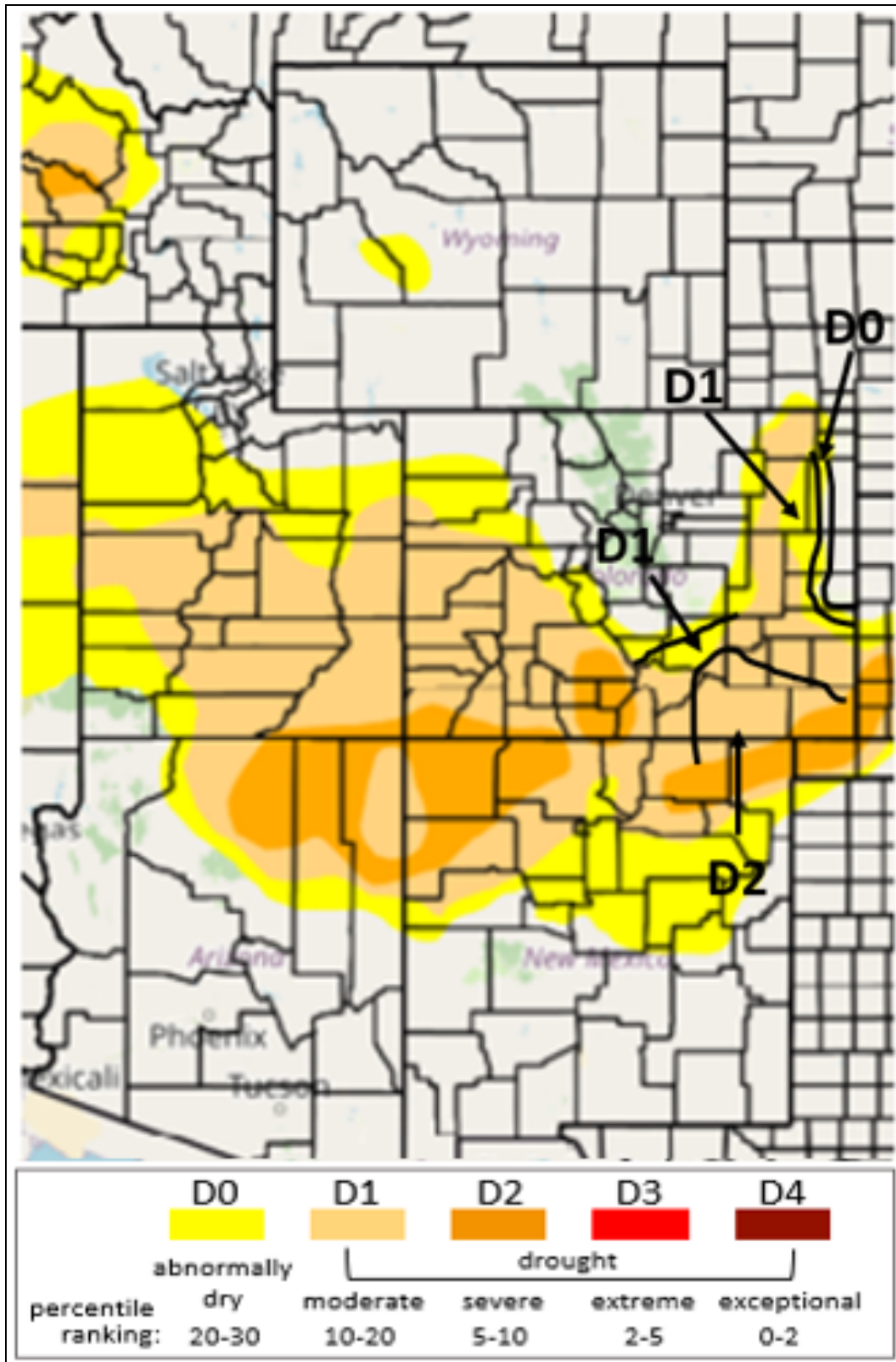


## Summary and Recommendations





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: April 14, 2020

The beginning of this last week was a warm one for the Intermountain West

with the entire region seeing above average temperatures, with the exception being southwestern Arizona and northeast Wyoming. Colorado took the brunt of the heat wave with the entire state seeing at least 2-4 degrees warmer than average, most of the state seeing 4-6 degrees warmer with pockets of 6-10 degrees warmer than average in eastern Colorado. Despite the warm start to the week temperatures dropped significantly as the last system pushed thru bringing decreased temperatures and snow to much of the northern IMW. Most of the IMW saw some precipitation (0.01-0.10") over the last week with much of the region seeing 0.10-0.25" of new liquid precipitation. Areas that saw increased moisture, 0.50-1.50", include central Arizona/New Mexico, the Colorado front range, southwest Utah and northern Wyoming. Some drier areas from the last week include southwest Wyoming, eastern Utah, and eastern Colorado.

March precipitation across the IMW was a bit of a mix, with below-normal precipitation through much of Wyoming, Western Utah, central and southeastern Colorado, and northeastern New Mexico. Southern New Mexico and Arizona were the winners with much higher than normal precipitation. Parts of eastern Utah and northeastern Colorado also saw much above normal precipitation for the month of March.

Looking at the longer-term time scales (90-days and greater) of the Standardized Precipitation Index, the pattern of dryness for much of Colorado is persisting and worsening in southern Colorado. Northern New Mexico is continuing to see sustained dryness as well. SPIs for the rest of the IMW, Arizona, the rest of New Mexico and much of Wyoming are near or above the normal.

Now that April is here, the focus from snowpack starts to shift gears to see what that snowpack will do with runoff. Currently, the majority of basins in the Upper Colorado River Basin have near and above normal snow to melt off. Most basins in the UCRB have reached their peak snowpack at near normal or peaked above the median, The exception being Gunnison as well as the San Miguel-Dolores-Animas-San Juan River Basins that peaked below normal. Eyes will soon be on the rivers to see what this snowpack does. Upper stream flow sites are showing near normal, the Mainstem as well as Yampa and White Rivers are slightly below normal while the San Juan River is very dry.

The outlook for the next week ending Tuesday, April 21 shows a few systems coming through, mainly benefiting Utah, Wyoming and northern Colorado. Most of Arizona and New Mexico are expected to remain dry. The 8-14 day outlook is showing above average temperatures for the entire IMW as well as favorable chances of above normal precipitation with an even greater possibility over all of Colorado, southern Utah, and northern Arizona/New Mexico.

## **Recommendations:**

**UCRB:** Status quo for the Upper Colorado River Basin.

**Eastern Colorado:** We are recommending an expansion of D1 north through Pueblo county, an expansion of D2 north through Las Animas county as well as southern Pueblo, most of Otero and southern Bent counties. We are also recommending D0 and D1 expansion east in eastern Colorado. These regions have continued to see dry conditions persist with little to no precipitation, above average temperatures and high winds. This is in agreement with longer-term time scales (90-days and greater) of the Standardized Precipitation Index.

**Wyoming:** Status quo. Looking at the short-term time scales (30 and 60-days) of the Standardized Precipitation Index we are seeing increased dryness in northern Wyoming over Big Horn and Washakie counties. However, this area did receive 0.50-1.00” of precipitation over the last week, with some small, localized spots seeing upwards of 1.50”. We will continue to watch this area for possible degradation in the next week.