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. -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
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).
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

<table>
<thead>
<tr>
<th>1-week EDDI categories for April 20, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% 90% 80% 70% 60% 50% 30% 20% 10% 5% 0%</td>
</tr>
<tr>
<td>1-month EDDI categories for April 20, 2018</td>
</tr>
</tbody>
</table>

Generated by NOAA/ESRL Physical Sciences Division
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**

All snow on the lee side of Sangre de Cristos melted out in March. Wind has dried things out faster than normal. Strong winds are blowing dust and preventing precipitation from even hitting the ground. Fires throughout southeast CO have been an issue, with Colorado's 5th largest fire in history occurring in the last couple of weeks in El Paso County and a 7k acre fire reported by Otero FSA. Streams are looking better because of the inability to collect the water. Downstream exchanges are becoming increasingly complicated, so irrigation operations are struggling.

Not as bad around Kiowa County. Clods of dirt are suggesting there is still some subsurface moisture present from last fall. They also received some beneficial moisture that didn't hit areas to the south and west.

**Southwest CO**

Low streamflows on the San Miguel and Dolores. Hardly anything trickling down from upstream. Fire near Cortez reported. Winter wheat and grasses are yellowing. If Montrose were to put a call on the river, ag irrigation will be halted. In the higher elevations, there are about 5 dust layers below about 1 to 2 inches of clean snow. That dust will probably come to the surface in the next couple of days, and what's beneath is just muddy slush. With warm temperatures, likely to see a quick melt.

**Eastern UT**

Winds have been bad throughout Emery and Grand counties, with reports of fires and difficulty containing them. There has not been much precip to report at Green River, UT since the beginning of October and the region is really struggling. Conditions may be a little better in northern UT.

**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 24, 2018

Last week's exciting weather pattern brought excessive winds and warm temperatures, followed by a large moisture-rich system that dumped rain and snow across many parts of the Intermountain West. Large areas of Wyoming and Colorado, along with some more isolated spots in Utah and New Mexico, received over half an inch of precipitation for the week. The biggest disappointment is that larger accumulations weren't observed over the worst drought areas in eastern CO and NM, and little to no precipitation fell over the Four Corners, where D4 (exceptional drought) was recently introduced on the U.S. Drought Monitor.

High winds, warm temperatures, and low relative humidities have dominated much of the plains areas. The result is that what little moisture is in the ground gets sucked up into the atmosphere, and fire danger has been extremely high. Fires have been an issue in CO, NM, and UT.
For most of the higher elevations in the IMW, snowpack accumulation has peaked and melting has commenced. For the northern basins, that melt-off is a bit more slow, with a few lingering snow events helping to delay it. But snowmelt has been rapid in the southern basins. Despite a better snow season in the northern basins, many areas still did not quite reach their average peak this year. Runoff is less than average, and it's forecasted that water supplies will be below average this summer. The Upper Green basin in WY remains the Upper Colorado River Basin's one area of good conditions. To the south, the situation is much more bleak. Dust is a major concern in the San Juan mountains. In addition to low snowpack peaks, runoff is in poor shape, melting will likely be completed a month earlier than normal, and water supply forecasts are much below average.

As we progress through spring, we enter the "wet" season for much of the eastern plains. For these areas, a soaking event like what we saw last week should be typical. Events that drop half an inch of moisture are expected this time of year, and while they may delay further deteriorating drought conditions, they are not beneficial enough to eliminate impacts or improve drought conditions. For areas around the Four Corners and the higher elevations currently in drought, they are now entering their "drier" time of year. The chances of chipping away at drought during the dry season are slim, and those who reside in those areas will likely have to wait till the kick-off to monsoon season to see large scale relief.

On a positive note, the Climate Prediction Center is showing that the Southern Plains drought area (which extends into eastern CO and NM) has a good chance of above average precipitation on the 3-4 week time scale. Unfortunately, with a summer seasonal outlook showing warmer than average conditions likely, summer water demands are likely to be high, putting stress on a vulnerable water supply and further stressing already struggling crops and rangelands.

**Recommendations**

**Improvements:** Areas outlined in blue are recommended to show 1-category improvements to their U.S. Drought Monitor categories. For all these areas, long-term SPIs are more marginal (on the edge of a specific D-category possibly), and they've received enough month-to-date moisture to justify improvements. In Utah, D3-to-D2 improvement areas have received 2 to 4 inches of moisture in April. In Colorado, D1 and D0 areas recommended for improvement are mostly showing near, to slightly below, normal SPIs any different timescales, and have received 2 inches or more of moisture since the beginning of April.

**Deteriorations:** Areas outlined in black are recommended for expansion to D3 drought conditions. All areas are reporting very strong and damaging winds sucking moisture out of the ground, many fires, wheat and grasses are struggling, and irrigated lands are struggling as well. Higher elevation areas
are bare of snow or SNOTEL is reporting less than 5th percentile snowpack (with many showing 0 percentile precipitation water-year-to-date). The black striped areas outlined in gray have already been proposed for D4 expansion by the U.S. Drought Monitor author. These areas received little-to-no precipitation in the most recent storm event that passed over last weekend. While short-term SPIs aren’t as bad, these proposed D3 and D4 expansion cover areas where longer-term SPIs (particularly at the 6-month time scale) are less than -2.