



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

Jared Polis, Governor

Dan Gibbs, DNR Executive Director

Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Megan Holcomb, Senior Climate Change Specialist
Kevin Houck, P.E., Chief, Watershed & Flood Protection Section

DATE: March 15, 2022

AGENDA ITEM: 18. Spring Drought and Flood Climate Report

Staff Recommendation:

This is an informational item only. No Board action is required.

Background:

Staff will present the latest information on drought and flood conditions and outlooks. Staff will share long-term regional forecasts and possible impacts from current weather patterns, snowpack, reservoir levels, stream flows, and related data. For more detail, the next Water Availability Task Force meeting will be March 22, 2022 (virtual) from 9:30a to 12:00p. Daily flood threat bulletins will be available on the CWCB website from May through September.

Overview //

Thus far in the 2022 water year (October 1 to March 1), moderate to extreme drought remains an issue statewide with conditions becoming more long-term/hydrological across the Intermountain West. In Colorado, a snowy December was followed by a lackluster January, returning [snow totals](#) to near or below normal for this time of the season (as of March 1st). We remain in a La Niña pattern, which is expected to weaken in the May-July period, but will be a strong influence on lower than normal precipitation patterns for the spring season.

Snowpack and Streamflow //

The [accumulation of the snowpack](#) this year has taken on a stair stepped appearance with large snow accumulation in December, then essentially a 7 week dry spell, followed by big late February storms. This stop and go process has so far kept major Colorado basins between 84%-106% of average. As we head into spring 2022, conditions look similar to WY2020 and WY2021 in that major basins were average or within reach of average snowpack conditions, but a hot/dry spring, few productive spring storms, significant dust-on-snow conditions, and thirsty soils all played a part in depleting the snowpack or robbing water that would otherwise go towards streamflow. The spring WY2022 forecast is once again drier than average, soils are still considerably dry, and we have significant dust in the snowpack as of March 1.



March 1st snowpack data indicates a sharp drop statewide from the early January highs, although many basins are still close to normal for the date. Although it has proven to be a very wet start to the year for portions of the eastern plains, the important mountain snowpacks are already showing signs of decrease. Two dominant indicators show a strong likelihood of below average spring streamflows as we look toward the runoff season.

First, global and regional models show high confidence in warmer and drier conditions statewide relative to normal, especially farther south and west – likely attributed to the presence of a second-year La Niña. La Niña conditions are generally not favorable to all of Colorado during the spring months, with second year La Niña conditions even more unfavorable.

The second factor in expected lower streamflows are the dry soil moisture readings statewide as we headed into the winter months. While much has been made of the fact that they were not as bad as measured in the fall of 2020 (which resulted in dismal streamflows during the 2021 runoff season), they are still very low and are expected to have a significant impact in reduced streamflows during the 2022 runoff season. When the mountains soak up a higher percentage of early season runoff in order to replenish soil moisture, our rivers and streams carry a much smaller portion of snowmelt downstream.

Drought Outlook //

The [U.S. Drought Monitor](#), released February 24, shows 1-4 class improvements in drought severity for much of the western slope, with the biggest improvements in the Yampa and Colorado basins. In the last month, drought severity has improved primarily on the front range and northeast plains. The current (Feb. 24) drought monitor shows 0% of the state in exceptional (D4) conditions; 9% in extreme drought (D3); 50% severe drought (D2); 32% moderate (D1); and 10% of the state in abnormally dry (D0) conditions.

The drought status time series below, dating back to 2000, displays the extended coverage (full verticals indicate 100% of the state in drought) and continued intensity (D0 - D4 color scheme) of the current drought cycle.

