COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Emily Adrid, Water Planning and Climate Impacts Specialist, Water Supply Planning Section
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**DATE:** March 14, 2024 CWCB Board Meeting

**ITEM:** Agenda Item 20 Spring Drought and Flood Outlook

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**Staff Recommendation**
This is an informational item only. No Board action is required.

**Background**
Staff will be co-presenting the latest information on drought and flood conditions and outlooks for the coming months. Staff will share long-term regional forecasts and possible impacts from current weather patterns, snowpack, reservoir levels, stream flows, and related data.

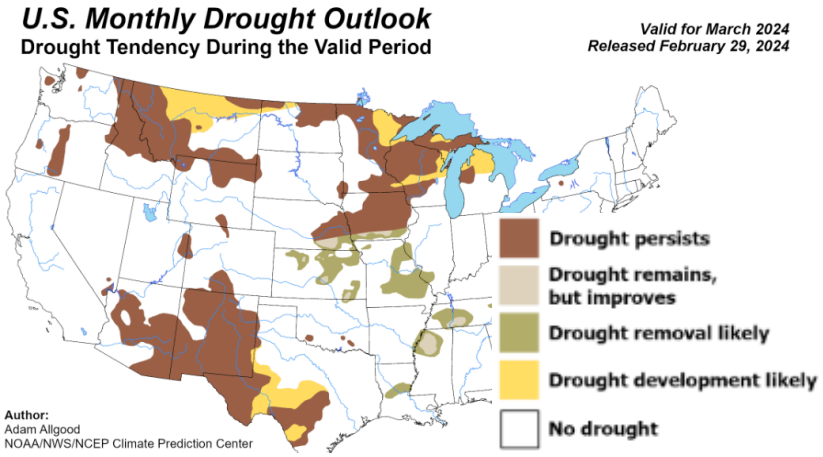
This year the Water Availability Task Force (WATF) rebranded itself with a new name: Water Conditions Monitoring Committee (WCMC). The 'committee' name change better represents the ongoing role of this group as compared to the term 'task force' which generally refers to a group that meets to complete a task and then dissolves.. Importantly, the function of the WCMC remains the same - serving as a central resource for monitoring Colorado's current and forecasted conditions related to things like snowpack, precipitation, temperature, soil moisture as well as natural disasters (flood, fire, drought). and will continue to meet monthly.

The next WCMC meeting will be on March 19, 2024 at 9:30am. Meeting information for upcoming and past meetings can be found online (https://cwcb.colorado.gov/Water-Conditions-Monitoring-Committee). Like all meetings, the next WCMC meeting will include updates from CWCB staff and scientific experts will share a current update of conditions. Also, as Colorado enters its flood season (May through September), daily flood threat bulletins will be available on the CWCB website.

A summary of the current forecast is also shown (below). The summary is broken into major topic areas as follows.

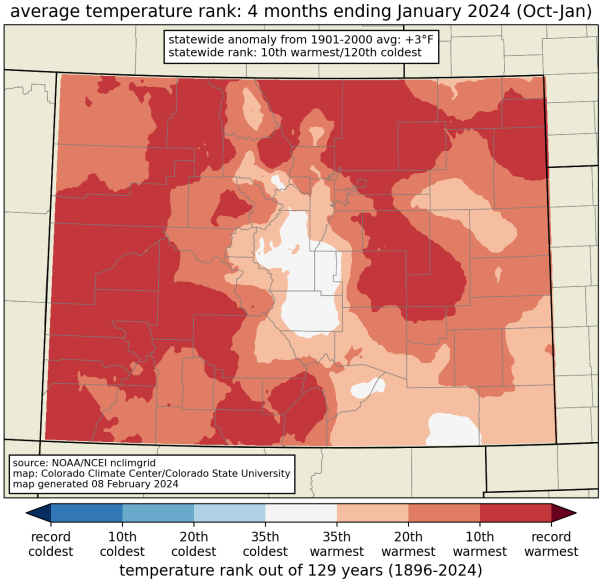
## Drought

After a wetter and cooler than average year last year, the 2024 Water Year (WY2024) so far (October - Present) has been drier and hotter by comparison. Drought conditions intensified across much of the western slope and eastern plains in early winter, but there have been recent improvements in drought conditions across large portions of the state. According to the US Drought Monitor, drought conditions are expected to persist in the San Luis Valley and pockets of northwestern Colorado.




## Precipitation and Temperature

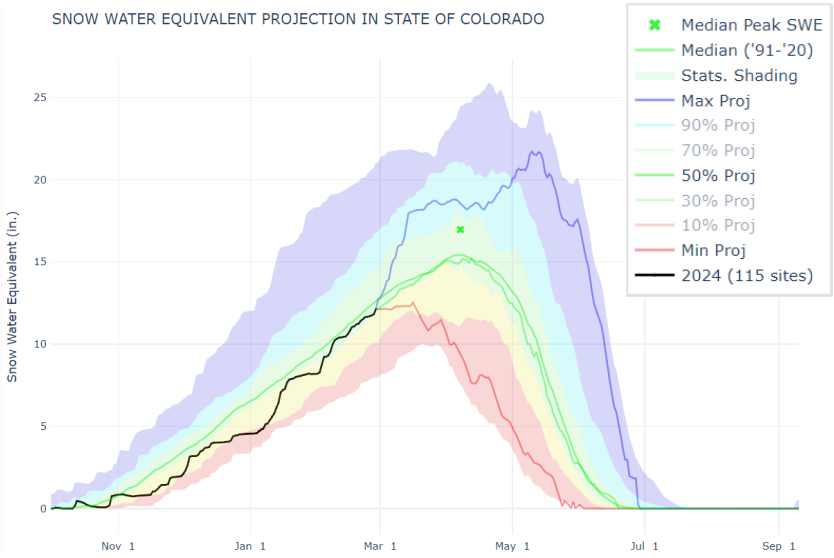
WY2024 started off very dry, dipping below 10 percent of median precipitation in mid November and early January. However, winter storms in January and February have brought precipitation back up to near normal levels, hovering between 90 and 95 percent of the median statewide over the past few weeks. According to NOAA's Climate Prediction Center, March could bring slightly above average precipitation, which could provide a good amount of precipitation during our snowiest months.




Temperature has been well above average throughout WY2024. In fact, the average temperature rank from January to October was the 10th warmest on the 129-year record, and December 2023 was the 7th warmest December on the 129-year record. This month has continued the warm pattern as parts of northeastern Colorado experienced temperatures 6 to 10°F above average throughout February. NOAA's Climate Prediction Center indicates that Colorado could experience temperatures that are closer to average in March.

## Snowpack, Streamflow, Soil Moisture

This year's snowpack statewide was well below normal until winter storms in January and February brought snowpack levels back up to near normal. Snowpack is projected to remain at or just below normal for the rest of WY2024, as indicated by the 50 percent projection on the graph to the right.




Soil moisture is a critical element in the spring runoff calculation because thirstier soils soak up more snowpack

moisture, leaving less water in our streams and rivers during the rest of the year. There has been recent improvement in the shallow soil moisture readings, especially in the eastern plains, while the deeper soils are drier than normal, especially in the northwest portion of the Yampa Valley and in the Rio Grande basin. However, statewide soil moisture stands at 85 percent of normal, which isn't a cause for concern at this point.

**Seasonal Outlook**

Since June 2023, Colorado has experienced moderate-strong El Niño conditions, which will persist through March and weaken throughout spring. Spring El Niño events indicate that the western slope and Front Range down through the Sangre de Cristos tend to be wetter. However, by late spring and early summer neutral conditions are expected. By late summer, a shift to La Niña conditions is projected.

**Flood Outlook**

As with any year, it is extremely difficult or impossible to predict flood events more than a week or two ahead at the very most. While snowmelt floods can have some lead time (although are often overstated in Colorado), the majority of historical floods in Colorado have been rain-based. That said, El Nino regimes are typically associated with enhanced flooding risks, and with the expected demise of the current El Nino, this would indicate that the risks for flooding this summer are slightly diminished. It is important to remember that floods can occur anytime and anywhere in Colorado - primarily during the typical flood season that can last from April through October, with occasional outlier events outside of this time period. With a warming climate that has already been observed, these rain-based events are being observed at higher elevations than used to be noted, a trend that is expected to continue. The recent climate report prepared by the Colorado Climate Center for the CWCB emphasizes that flooding is expected to worsen in both frequency and intensity due to climate change.

One risk from flooding that has increased greatly in recent years has been "post-wildfire floods." These events occur when a fire has scorched an area (called a burn scar) of large steep-terrain located downstream of large steep-terrain where a fire has recently occurred and t burn scars. Because there have not been any large, steep-terrain wildfires in the past three years, it is expected that flooding and debris flows in these areas will be reduced this year. This will change if any large wildfires occur during this flood season. The CWCB Flood Threat Bulletin makes specific post-wildfire flood forecasts for many recent burn scars.