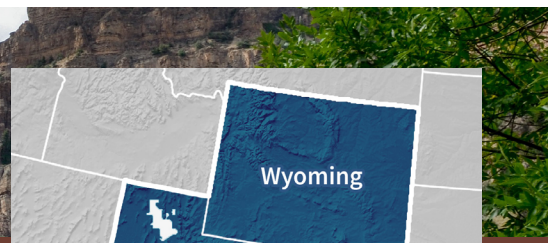


# DROUGHT EARLY WARNING IN COLORADO



## INTERMOUNTAIN WEST DROUGHT EARLY WARNING SYSTEM

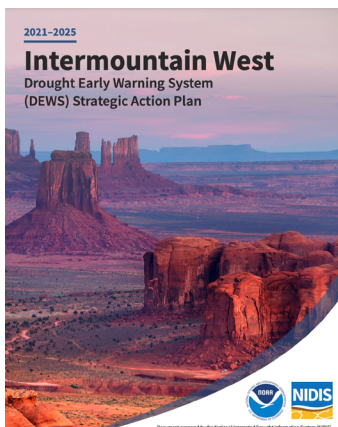
Colorado is served by NIDIS's Intermountain West Drought Early Warning System (DEWS). A regional DEWS is a network of federal, tribal, state, local, and academic partners who work together to make information accessible and useful for drought planning and response. The Intermountain West DEWS has served this region since 2009, and includes Colorado, Arizona, Utah, Wyoming, and western New Mexico.

The climates across the Intermountain West typically experience high variability in rain and snow totals, making the region highly susceptible to drought. In addition, the arid nature of the region places high demand on the Colorado River and other water sources. Colorado is a headwaters state to four major river basins: the Rio Grande, Colorado, Platte, and Arkansas.



**Fig 1.** The Intermountain West DEWS includes Arizona, Colorado, Utah, Wyoming, and western New Mexico. Image credit: Fiona Martin.

## 2021–2025 INTERMOUNTAIN WEST DEWS STRATEGIC PLAN



**Fig 2.** The Intermountain West DEWS Strategic Action Plan.

The *Intermountain West DEWS 2021–2025 Strategic Action Plan* was developed following a series of stakeholder meetings held in October–November 2020. Each meeting was focused on one of the following sector needs: Colorado River management and issues; water management (non-Colorado River); farming and cropping; livestock; recreation and tourism; and forestry, ecology, and fire management. This plan provides a snapshot of the current needs and gaps of drought early warning identified by the Intermountain West DEWS stakeholders—including Colorado—and can be used to objectively measure the alignment of future projects with the needs of the region. The three priority areas for the Intermountain West region are:

- Build resilience and mitigate economic, human health, ecological, and other costs of drought.
- Deliver earlier warning of drought than is currently available.
- Improve or build a comprehensive understanding of drought impacts in the region.

## COLORADO COMMUNICATIONS & INFORMATION DELIVERY

NIDIS and its partners in the Intermountain West DEWS provide Colorado constituents with the best available information and resources to better prepare for, mitigate, and respond to the effects of drought. This includes communication and outreach as drought conditions emerge or improve, disseminating information on conditions, forecasts, impacts, and relevant research and tools through:

- **The Colorado state page on Drought.gov**, which was expanded in 2023 and provides a one-stop shop for state drought information, including interactive and easily shareable maps, statistics, and resources
- **Drought Status Updates**, sent to more than 1,900 drought stakeholders and decision-makers in the region and shared on social media
- **Monthly Webinars**, including the monthly Southwest Drought Briefing co-hosted by NIDIS and the USDA Southwest Climate Hub, as well as the Intermountain West Monthly Climate Briefings, delivered by Western Water Assessment, a NOAA CAP/RISA team

## RECENT HIGHLIGHTS FOR COLORADO

Intermountain West DEWS activities are featured and searchable on [Drought.gov](https://drought.gov).

Recent accomplishments addressing drought in Colorado include:

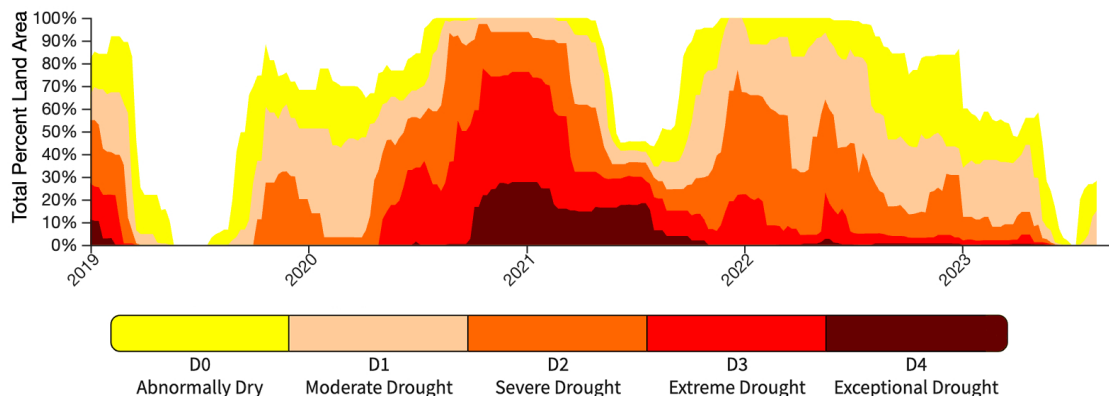
- Supporting Colorado Water Availability Task Force Meetings (ongoing)
- Investigating how much fall soil moisture contributes to spring runoff with the Colorado Climate Center (2021–2023)
- Developing drought socioeconomic impact models for the Intermountain West DEWS (2020–2022)
- Advancing research focused on drought impacts to Colorado’s outdoor recreation industry (2019–2020)
- Conducting an impact assessment of the 2017–2018 drought in the Southwest, in partnership with the Colorado Water Conservation Board, Colorado State University, and state agencies across Colorado, Utah, New Mexico, and Arizona (2019)

### Key Partners in Colorado:

- University of Colorado-Boulder:
  - Cooperative Institute for Research in Environmental Sciences (CIRES)
  - Masters of the Environment Graduate Program
  - Natural Hazards Center
  - Western Water Assessment, a NOAA CAP/RISA team
- Colorado Climate Center
- Colorado Agricultural Drought Advisors
- Colorado State University, Department of Atmospheric Science
- Colorado Division of Water Resources
- Colorado Water Conservation Board
- USGS North Central Climate Adaptation Science Center (CASC)
- USDA Northern Plains Climate Hub

## DROUGHT IN COLORADO BY THE NUMBERS

- As of August 15, 2023, **15%** of Colorado is in Moderate Drought (D1), and **13.1%** is experiencing Abnormally Dry (D0) conditions.
- At the start of 2023, nearly **34%** of Colorado was in drought (D1–D4). One year ago—on August 16, 2022—**57.9%** of the state was in drought.
- The state has seen significant drought improvement since May. June 2023 was Colorado’s **6th wettest June on record** (since 1895), with precipitation **1.29 inches above normal**.
- In early July 2023, Colorado was drought-free for 2 weeks, according to the U.S. Drought Monitor. Prior to this, some degree of drought (D1–D4) had been present in Colorado since **August 2019**.
- However, for 6 western Colorado counties, this July was among the **top 3 driest on record**: Saguache (driest), Alamosa (2nd), Chaffee (2nd), Gunnison (2nd), Rio Grande (2nd), and Montezuma (3rd).
- According to the National Weather Service Climate Prediction Center’s seasonal drought outlook (valid August 17–November 30), **drought is expected to persist or develop over much of southwestern Colorado**.
- As of August 2, 2023, the U.S. Department of Agriculture (USDA) declared Secretarial **drought disaster designations for 25 Colorado counties**.



◀ **Fig 3.** Historical timeseries showing the percent (%) of Colorado land area experiencing drought (D1–D4) and abnormal dryness (D0) from January 1, 2019–August 15, 2023, according to the U.S. Drought Monitor.

Source: National Oceanic and Atmospheric Administration, U.S. Department of Agriculture, National Drought Mitigation Center.