

The health and state of the Uncompahgre River, its tributaries, and watershed in 2023
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The health of the Uncompahgre River watershed remained relatively stable in 2023. No major human or natural events degraded the river, nor did any projects greatly improve or restore water quality, riverine function, or water supply.

The Town of Ridgway continues to work closely with and provide funding for the Uncompahgre Watershed Partnership (UWP), a nonprofit focused on monitoring, preserving, and restoring watershed health. The town also sent a team to a Growing Water Smart workshop, which resulted in goals to improve water conservation, infrastructure, related land use codes, and public information on water stewardship. These will have a positive impact on the health of the Uncompahgre River.

Due to above average flow in the Uncompahgre River through Ridgway in 2023, the form of the river changed more dramatically than in recent years. Banks and sandbars moved, creating a wandering, multi-threaded streambed, which is typical of natural unconfined rivers.

Construction of a large multifamily residential development occurred throughout the year. Because this development is located in the Uncompahgre River Overlay District,¹ the development was subject to additional review, included increased setbacks, and provided perpetual easements for the River Corridor trail. Potential impacts from current and future development should be monitored to ensure that river health is maintained.

Water Supply

In the Uncompahgre River watershed, water year 2023 (October 1, 2022-September 20, 2023) had one of the largest snowpacks in the last 22 years. In the past 11 years only 2019 reached a SWE peak greater than 30 inches.

The following chart shows the percentage of snow water equivalent (SWE) compared to median SWE for two locations: Gunnison Basin, the larger drainage where the Uncompahgre River watershed is located, and the Idarado SNOTEL site in the upper part of the Uncompahgre River watershed.

Date	Gunnison Basin	Idarado SNOTEL site
January 8	138%	121%
February 4	144%	113%
March 5	140%	124%
April 6	161%	136%
May 7	183%	141%
June	575%	0%
July 10	133%	0

¹ The Uncompahgre River Overlay District establishes increased development setbacks near the Uncompahgre River. The standard setback, 75 feet, is larger than the stream setback adopted in many communities. On the Western Slope stream setbacks range from as little as 12 feet to as much as 100 feet.

Overall snowpack and streamflow were higher than the previous five years, yet the Uncompahgre River watershed still experienced an abnormally dry to moderate drought year.² This was due to 1) earlier snowmelt in the San Juans than in other parts of the Gunnison Basin (see table above), 2) elevated temperatures contributing to low soil moisture, and 3) in lesser part due to the poor monsoon season, with less than expected precipitation during summer months. Ridgway Reservoir slowly, steadily filled throughout late winter and spring.

Though some spring flooding happened downstream in Montrose and Delta counties, Ouray County did not experience unusual flooding during runoff. However, during the summer, heavy rain triggered flooding in Corbett Creek and debris flows that washed out County Road 17 and resulted in short-term road closures, as it has for many years in a row. Sediment and debris generated from this type of flooding ends up in the Uncompahgre River upstream of Ridgway.

Flows in the Uncompahgre River tracked closely with long-term medians in January and February, and decreased below median rates in March and April (possibly due to cold temperatures limiting runoff from the snowpack). Streamflow in May through July was generally above the median, the well above normal snowpack provided water to the Uncompahgre and its tributaries. The lack of a prolonged warm spell produced a steady runoff without the very high peaks that contribute to flooding.

The Uncompahgre River's 2023 peak flow of slightly above 900 cfs was recorded at the USGS County Road 24 gauge on June 5, which is typical. Increased streamflow from monsoon storms, typically found in July and August, were not observed in 2023, with the exception of the flood event noted above.

From the beginning of August through November, flow in the Uncompahgre River was almost entirely below the median and flow declined further through November, with the gap between median flow and observed flow increasing through November.

Proposed Projects Related to Water Supply

The Cow Creek Pipeline and Ramshorn Reservoir, proposed in December 2019 by Ouray County and partners, is still being reviewed by the water court with negotiations ongoing between the applicants and parties that filed statements of opposition (opposers). The county convened a meeting in late 2023 to share modeling data prepared by contracted engineers, and sent a proposed settlement to opposers in late November.

While the county is no longer including the reservoir project in their application, other entities such as Tri-County Water Conservancy District are still discussing going forward with reservoir planning. UWP is monitoring this project proposal to understand whether operation of the proposed water exchanges associated with the pipeline or reservoir would alter flows in the Uncompahgre River from Ouray to the Ridgway Reservoir.

² Source: <https://www.drought.gov/states/colorado/county/ouray>

Water Quality

The long-term health of the Uncompahgre River is adversely affected by high levels of metals, caused by both natural mineralization and acidic drainage from active and inactive mines. As a result, the amount of aquatic life including fish and macroinvertebrates is reduced. Some kokanee salmon have been found in the Uncompahgre River, as they temporarily swim upstream from Ridgway Reservoir during their autumn run. Otters have also been observed in the Uncompahgre River downstream of Ridgway.

In 2023, UWP analyzed water quality data from samples taken from 2015 to 2019. The Uncompahgre River segment from Dexter Creek to Dallas Creek, which includes the Ridgway Town and County Road 24 sites, was removed by the state from the 2022 stream impairment list because cadmium, copper, and iron concentrations were lower than the standards used to protect aquatic life. Dissolved manganese concentrations were lower than the water supply standard and manganese was also removed from the impairment list. Total arsenic also did not appear on the 2022 list for water supply; however, since 2019 numerous total concentrations greater than the standard of 0.02 micrograms per liter have been observed at three River Watch sites.

The water quality of the Uncompahgre River below Red Mountain Creek is routinely monitored by UWP and Ouray River Watch volunteers, and these data are sufficient for Colorado's Water Quality Control Division to assess impairment. However, for the 2022 assessment, the upper segments of the river and several of its tributaries lacked sufficient data to update impairment lists from more than ten years ago. UWP has added six River Watch sites to fill data gaps on six different Uncompahgre watershed stream segments.

Mine Site Activity related to Water Quality

The Governor Basin Mine Site Restoration Project, that UWP has been working on since 2018, remained stalled in 2023. Ouray Silver Mines Inc., the property owner and important project partner, went into receivership in mid-2022. The company and property were sold at auction in August 2023 to Thorin Resources that also owns the nearby Camp Bird Mine. Meanwhile, the EPA began moving forward on plans to take over the implementation of the mine site restoration at Governor Basin, collaborating with UWP and Trout Unlimited on updating design plans and future revegetation and monitoring. Even with EPA involvement and new mine owners, the timing of the Governor Basin Project is uncertain. Consequently, water quality improvement projects that will lead to decreased metals concentrations in tributaries of the Uncompahgre River are stalled.

The Revenue-Virginus Mine remains subject to permits from two state agencies, the Water Quality Control Division and the Division of Reclamation, Mining and Safety, which should provide critical water quality and watershed health protections. In 2023 UWP added a new water sampling site in Sneffels Creek downstream of the mine. The discharge permit for the Revenue-Virginus Mine is administratively continued. When the permit is renewed, more stringent permit limits could further protect water quality.

Another mining-related water quality concern in the upper Uncompahgre River Watershed is the lack of progress related to the Idarado Consent Decree. Newmont, the company that owns Idarado, is responsible for water quality remedial actions in the Red Mountain Creek sub-basin identified in the 1992 Consent Decree (outcome of 1983-1991 CERCLA litigation led by the State of Colorado). The primary objectives were to stabilize mine tailings and improve water quality in Red Mountain Creek by reducing zinc concentrations by 50 percent or to 1.5 ppm. Although tailings have been successfully stabilized and vegetated, the zinc concentrations do not meet the requirements. Extremely acidic water with very high metal concentrations continues to flow from mine tailings, seeps, and springs into Red Mountain Creek, which is a tributary to the Uncompahgre River.

Newmont has been experimenting with various technologies for further remediation over the past 10 years, and monitoring water quality in Red Mountain Creek. As of October 2023, the most recent experiments appear to be showing good results, but Newmont has not fully implemented the technology and the creek's water quality has not improved.

Proposed Biosolids Applications

In July, the Colorado Department of Public Health & Environment (CDPHE) began reviewing letters of intent for applications for disposal of biosolids by a company, Denali, contracted by the City of Ouray's wastewater treatment facility builder. The proposed locations for spreading biosolids from the old wastewater facility were two ranches along the Uncompahgre River, just upstream from Ridgway. Due to the proximity to the river, irrigation ditches, and downstream domestic wells, these sites did not appear to be well situated for land application of biosolids. The soil survey reports that the depth to groundwater ranges from 6 to 18 inches, the soils have high infiltration capacities, and "the soil has one or more features that are unfavorable for the intended specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected."

UWP and others contacted the CDPHE, Denali, and the City of Ouray to share concerns about potential impacts on the Uncompahgre River if the proposal was approved. New proposals for more suitable properties downstream of Ridgway (Colona area) were submitted by the company, but were put on hold at the company's request. The revised proposal for biosolid disposal in Ouray County is expected to be considered in spring or summer 2024. UWP supports the necessary and appropriate management and disposal of biosolids as part of wastewater management. But, UWP would not recommend the originally proposed locations immediately adjacent to the Uncompahgre River, and upstream of Ridgway, due to the proximity of groundwater and surface water resources and multiple down-gradient domestic wells. UWP supports the use of the properties near Colona due to the increased depth to groundwater increased distance to surface water features.

Ongoing Watershed Health Hazards

- Climate change, drought, and aridification decrease snow accumulation and overall precipitation which in turn reduces groundwater recharge, decreases the amount of water stored in reservoirs and lakes, and causes streamflow to fall below the rates needed to sustain watershed health and provide for various human uses. Reduced streamflow can

contribute to elevated water temperatures. Existing temperature data indicate that stream temperatures in the Uncompahgre Watershed remain cool enough to support aquatic life.

- Dust and microplastics in snow impact the rate and timing of snowmelt as well as water quality. While water treatment can improve the quality of public water supplies, the demands on the treatment processes are increased.
- The risk of wildfires continues to be a concern due to potential impacts to life, economic health, wildlife habitat, watershed health, and water supplies.

Projects to Protect or Improve the Uncompahgre Watershed

- Local governments and fire districts have been implementing information campaigns to reduce the risk of wildfire, and securing funding to implement fire risk reduction measures in the coming years.
- The Multi-benefit Uncompahgre River Project, upstream of Ridgway, is aimed at improving agricultural ditch operation, reconnecting floodplains, and reestablishing native biodiversity. The project received more than \$1 million in funding in 2023, and is expected to have a positive impact on the Uncompahgre River after implementation in 2024. The project could serve as a model for similar projects along this stretch of the river.
- The City of Ouray continues to build a new wastewater treatment facility. The existing facility is inadequate. The new wastewater treatment facility will greatly improve the City of Ouray's ability to protect water quality in the Uncompahgre River..
- A historically high amount of funding is available for water-related projects from infrastructure to river restoration. These funds from the state and federal government could be secured to improve the health of the Uncompahgre River.
- As part of its strategic planning process in 2023, UWP gained knowledge and potential partners related to projects that could improve ecosystem function in the watershed in the future. Low-tech, processed-based restoration is being considered as one method that could be employed locally with useful benefits.
- Through the GMUG Management Plan public process and UWP's strategic planning, the protection of the fens in the Red Mountain area has been identified as important to overall watershed health. Fens are peat-forming wetlands, created 4,000 to 10,000 years ago when wetland plants became mats of dead and decaying plant matter. The iron fens in the Ironton Park area capture highly mineralized water, and support a diverse plant and animal community.
- UWP volunteers and contractors increased watershed science education materials and supplies in 2023, and are planning for additional materials and supplies in 2024. These have been used by Ridgway teachers at the elementary, middle, and high school levels. Ouray teachers and other local educators have access to these educational resources as well. Educating all ages, especially younger generations, could lead to better stewardship of the Uncompahgre River and the watershed.
- The Town of Ridgway's voluntary water restrictions in the summer are an important step in conserving water. Communication about the restrictions also set the stage for future water conservation information campaigns.
- Implementation of a public education campaign about outdoor water conservation and progress on the town's other goals as proposed at the 2023 Growing Water Smart workshop would be beneficial to the Uncompahgre River and its watershed.