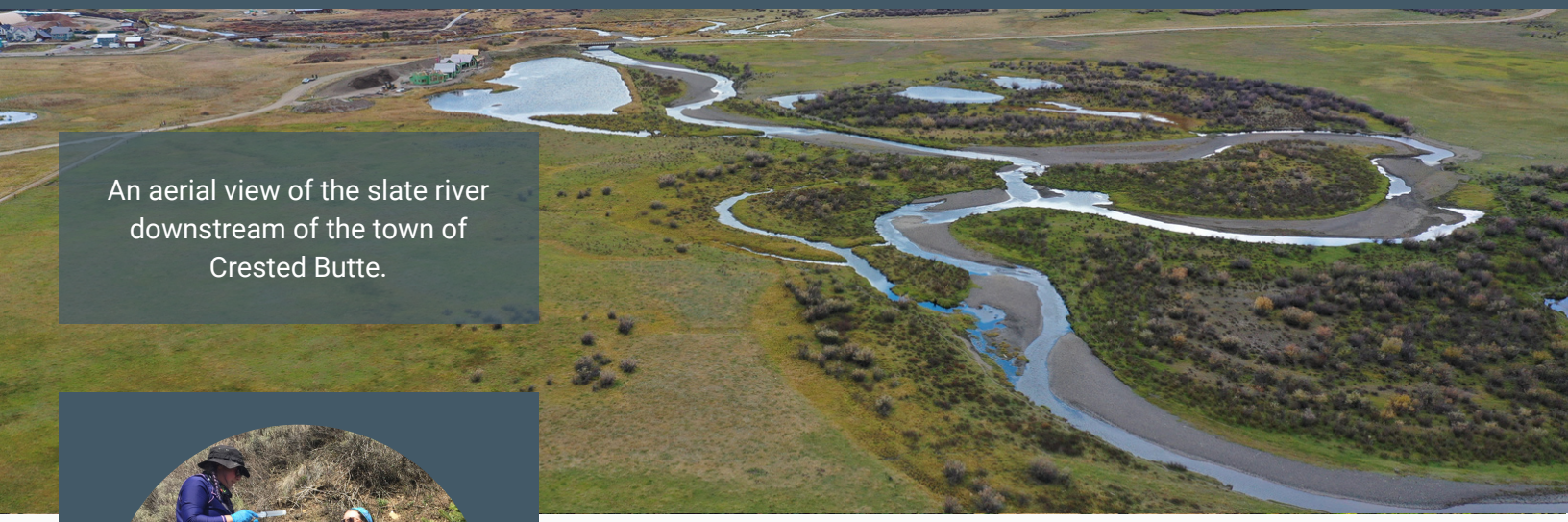
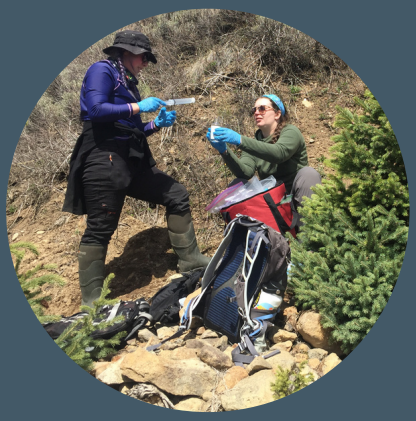
NOV 2022, ISSUE 4

THE LIVE STREAM

Official Newsletter of Coal Creek Watershed Coalition



An aerial view of the slate river downstream of the town of Crested Butte.



WATER QUALITY MONITORING

Historic mine sites and natural geologic features, like the iron fen and gossan, deliver metals to Coal Creek and its tributaries.

CCWC collects water quality samples to assess attainment with water quality standards, to identify natural and man-made sources of pollution, and to select and implement water quality improvement projects.

Executive Director Update

Like others in the valley, the Coal Creek Watershed Coalition (CCWC) is very excited about the tremendous progress to prohibit mining on Mt. Emmons and further protect our local water quality. CCWC applauds the Town and County for their long-term commitment to this effort. We are also thrilled to work alongside other local organizations, like High Country Conservation Advocates and the Crested Butte Land Trust.

Throughout the process to review the land exchange, conservation easement and mineral extinguishment agreement, water rights case, and federal mineral withdrawal, CCWC has offered expertise on water quality and watershed health to assure these critical elements are protected to the fullest extent. We look forward to continued progress and are humbled by the degree of collaboration to accomplish these tremendous goals. As you celebrate the upcoming holiday season, please consider how you might support our efforts and those of our local governments and organizations to continue advancing this incredible work.
With gratitude,

Ashley Bembenek, Executive Director

COAL CREEK WATER QUALITY HIGHLICHTS

Since 2012, CCWC has closely monitored the water quality standards used to protect aquatic life in lower Coal Creek (specifically, Coal Creek downstream of the confluence with the Keystone Mine discharge). A decade ago, temporary modifications to the cadmium, copper, and zinc standards applied year-round. Today, the aquatic life standards for copper are met year-round and the cadmium and zinc temporary modifications only apply from April to June. **These changes to the water quality standards are the result of our and our partners' efforts and the improved water quality in Coal Creek and reduced pollution from the Keystone Mine site.**

Since acquiring the Keystone Mine site in 2016, Mt. Emmons Mining Company (MEMC) has improved operations at the Keystone Mine Water Treatment Plant. In particular, these improvements have reduced metal concentrations in the plant's effluent during spring runoff. **Monthly average concentrations of cadmium, copper, and zinc have decreased substantially. For more information see our 2020-2021 water quality report.**

NEXT STEPS AT THE STANDARD MINE

Since 2005 several remediation activities have occurred to reduce the extent of environmental contamination at the Standard Mine and to improve water quality in Elk Creek.

A five-year interim monitoring period began in 2018. The state of Colorado hired CCWC to collect water quality samples and prepare annual reports during this interim monitoring period. One of the objectives of the interim monitoring period is to determine how operations of the Level 1 Bulkhead affect water quality conditions in Elk Creek. Each year the bulkhead was managed as follows:

- In 2018 the bulkhead was closed and mine drainage was contained in Level 1. The annual snowpack and precipitation totals were far below average.
- In 2019 the bulkhead was open and mine drainage flowed freely from Level 1. The annual snowpack and precipitation totals were above average.
- In 2020 the bulkhead was metered to allow a maximum flow rate of 20 gpm. Mine drainage may have flowed from Level 1 during and immediately after runoff. The annual snowpack and precipitation totals were slightly below average.

Elk Creek Responded as expected. Cadmium, copper, and zinc concentrations in Elk Creek immediately upstream of the confluence with Coal Creek were generally lowest and least variable in 2018 when the bulkhead was closed, highest in 2019 when the bulkhead was open, and moderate in 2020 when flow from the bulkhead was metered.

WATER WORDS

In water words we explore the etymology of words we commonly use in the world of water.

Avulsion (n.) the natural processes by which flow diverts out of an established river channel into a new permanent course on the adjacent floodplain, partially or completely abandoning the former channel. **Channel avulsion creates important habitat.**

Avulsion is derived from the Latin word *vellere* meaning "pull".

An aerial view of the Slate River where there are avulsing channels. YELLOW represents the active channel and PINK indicates partially or completely abandoned channels.