



Winter & Spring
2008

Friends of Coal Creek is a joint effort of the Coal Creek Watershed Coalition and the Standard Mine Technical Advisory group. See page 4 for more details.

Editors

Anthony Poponi

Harvey Castro

Logan Reese

By the Numbers...

Gallons per minute being treated by the passive treatment system at the Standard Mine
1

Average Number of Gallons Requiring Treatment at the Standard Mine
40

Number of Water Samples Collected in 2007 by the CCWC
197

Number of Sampling Sites Where Samples Were Collected
27

Number of Samples Collected in February of 2008
20

2007 Water Quality Monitoring Report Released

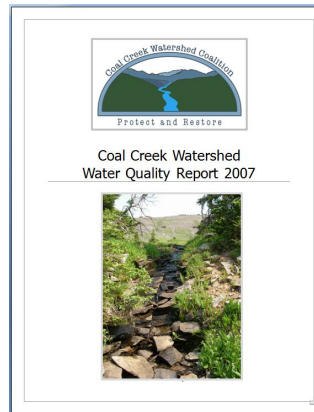
The Coal Creek Watershed Coalition is pleased to release its annual Water Quality Monitoring Report. The document is a summary of water quality data from 2005-2007 with focus placed on findings in the spring, summer, and fall of 2007. Sampling events were conducted in April, May, August, September, and October. The report provides details on the watershed's natural resources, the major impacts to water quality identified through the Coal Creek Watershed Coalition's water sampling program, and future plans and goals of the organization.

The report also details the levels of the contaminants and potential effects of the contaminants like metals, nutrients, and pathogens found within the watershed.

The Coal Creek Watershed Coalition (CCWC) plans on releasing this document annually to keep the public apprised of the CCWC's sampling efforts and any new findings within the watershed. "We're excited to release our second annual report. We want the public to be aware of the condition of the Coal Creek watershed since Coal Creek serves as the Town of Crested Butte's raw drinking water supply and is an important area for recreation," said Anthony Poponi, coordinator for

the CCWC since April of 2006.

The report indicates there is more to learn about water quality in Coal Creek. Specifically, there is a need to quantify the amount of contaminants entering the creek in certain stream segments to help guide future efforts to clean up any problem areas.



As was known in 2006, there are three main contaminant source areas in the watershed. The Standard Mine is a major source of metals contamination in Coal Creek. Aquatic communities in Elk Creek are impacted by contaminants coming from the site. The fen is a second major source of contaminants in the watershed contributing acidic waters and metals. Stormwater collected on the Lucky Jack Project property is the third major source of contaminants entering the watershed. Fortunately, drinking water standards in Coal Creek

are never exceeded in the raw drinking water with the exception of manganese which is removed by the Town of Crested Butte's drinking water treatment system.

Total coliform, an indicator of pathogens present in water was measured in Coal Creek at values well under levels of concern. Other contaminants in the form of nitrogen and phosphorus were well below the State and Federal standards but will continue to be monitored in the future. The goal of sampling in 2007 was to ensure the CCWC has a baseline understanding of water quality throughout the watershed. Sampling in 2008 will be conducted with the intention of refining that knowledge with more intensive sampling and then develop remediation goals for contaminant source areas throughout the watershed. The CCWC anticipates using data from previous years and 2008 to develop a Remedial Plan which will identify priority areas for cleanup within the watershed.

The Water Quality Monitoring Report and its appendices can be found by visiting the CCWC's website: www.coalcreek.org and clicking on Files and Publications. Any questions regarding the report can be emailed to coordinator@coalcreek.org.





Above: Coal Creek peeking through the snow in Town.

Mountain pine beetle infestation has reached a new epidemic level of approximately 1.5 million acres, with an increase of about a half million new acres in 2007.



Above: A mountain pine beetle and bore hole.

Responsible Winter Recreation - By Logan Reese

Only species that have evolved to life in the harsh winter are found in the upper Gunnison valley, one of the coldest places in the lower 48 states. If you don't hibernate, ungulates like Elk forage extensively in the fall to have enough fat stores to last the winter. Nibbling on willow buds, grass shoots and tree bark along riparian corri-

dors are an important activities for survival.

Respect wildlife while viewing them from a distance. For wildlife to be successful in survival and reproduction, it is important to give them space. Responsible snowmobile use can minimize impacts to our drinking water. All responsible winter recreationists; cross-country and back-

country skiers, snowshoe and others, can minimize impacts to local wildlife by respecting their space. Please ride only where permitted, utilizing established Forest Service roads and trails. Report any resource damage to the Forest Service at (970) 641-0471. ◀

An Introduction to Bark Beetles - by Logan Reese

Although Bark Beetles are a natural part of lodgepole pine ecosystems, warm winters and drought within the past decade have turned the natural pest into an epidemic problem. The results of a 2007 Aerial Survey by U.S. Forest Service and Colorado State Forest Service indicate that the Mountain Pine Beetle (*Dendroctonus ponderosae*) (MPB) infestation has reached a new epidemic level of approximately 1.5 million acres, with an increase of about a half million new acres in 2007.

Mountain pine beetles develop in pines, particularly ponderosa, lodgepole, Scotch and limber pine, but are more likely to attack old stands with stress from injury, overcrowding, fire damage, or poor site conditions. MPB larvae spend the winter under the bark. At the current rates of tree mortality, the MPB will likely kill the majority of Colorado's large diameter lodgepole pines within the next 3-5 years.

The USFS is pushing

private landowners to adapt forest management plans and practice responsible stewardship for stands before they are hit by MPB, and for landowners with outbreaks already occurring on their lands. One common stewardship practice is Fire Breaks, a simple yet effective management tool for eliminating or decreasing fire danger. The USFS wants to create a diversity of age classes within the National Forests and private land to help prevent more outbreaks, which increase not only with age, but also tree density.

Due to our forest composition, and mostly cold basin temperatures, the epidemic has seemed to hit a wall at the San Isabel National Forest, in Chaffee County. Small populations of the MPB have been noticed in Sargents and Taylor Canyon.

There are, however, other pest threats within the National Forests that Gunnison country will contend with. The USFS presented maps of infesta-

tion areas within the State concerning Spruce Beetle, Aspen Decline and other defoliators. Within Gunnison County, Aspen Decline is the most serious threat.

Like lodgepole, aspen age class stands are all reaching maximum maturity, and these trees are more susceptible to natural stresses and multiple damage agents – drought, defoliation, and aspen diseases.

Mortality of an infected aspen can take up to 3-5 years, depending on how much help there is from other pests.

Spruce Beetle (*Dendroctonus rufipennis*) outbreaks are occurring in Englemann spruce throughout parts of Colorado. The outbreaks are limited right now to areas south of Lake City and Creede, and areas east of Steamboat Springs. Recent wind-throw events in southern Colorado have set the stage for developing populations of spruce beetle, which are being monitored. ◀

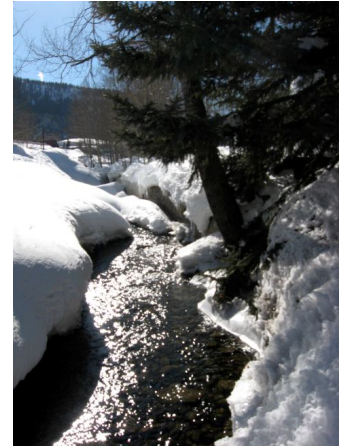
Water Quality Basics - Cadmium and Zinc

Metals are the primary contaminant of concern for both human and aquatic life in the Coal Creek watershed. The State of Colorado sets aquatic life standards for metals which are based on the levels of calcium and magnesium present in the water, a measure called **hardness**. Metals in waters with higher hardness are less toxic to aquatic organisms and therefore the standard for individual bodies of water can differ based on the hardness common to that water body. Metals of primary

concern in Coal Creek are cadmium, copper, lead, manganese, and zinc. Even though zinc is an essential nutrient in the body, over-ingestion of this metal can have lasting effects on the human body. Fortunately zinc levels in Coal Creek are lower than what are considered unhealthy for humans to drink. The same can't be said for aquatic life which are much more sensitive to zinc which can interfere with normal bio-chemical activities in these organisms. Zinc levels in Coal Creek possibly prevent

more sensitive trout species from surviving in creek.

Other metals like cadmium are a known carcinogen, or cancer causing substances, and can cause severe irritation to the stomach, leading to vomiting and diarrhea. Long-term exposure to lower levels of cadmium in air, food, or water leads to a buildup of cadmium in the kidneys and possible kidney disease. Be thankful for the EPA efforts to clean up these two contaminants coming from the Standard Mine. ◀



Above: Coal Creek flowing with future water in the wings.

6th Annual Gunnison River Festival August 14th-18th

The Upper Gunnison valley is an important headwater tributary to the Colorado River and also a vital resource to the local economy and the environment. For five years community volunteers and Western State College have been organizing a local event that celebrates local rivers – the kind of event that draws visitors

to the valley and reminds locals why they live here. Festival organizers hope to add new events to the festival to highlight “Rivers As A Resource” through a partnership with River Awareness Week. Festival organizers are excited to bring a fun-filled week of river races and competitions, and environmental educa-

tion events to highlight the local value of the rivers and how responsible stewardship is something everyone can be a part of. For more information on the festival visit the Gunnison River Festival's website at www.gunnisonriverfestival.com or email gunnisonriverfestival@gmail.com. ◀

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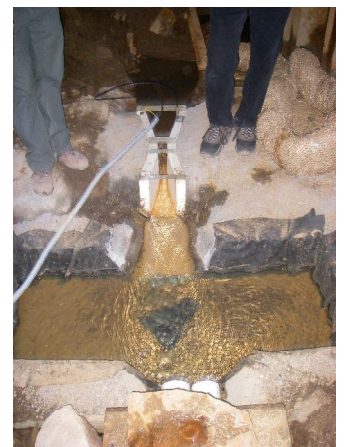
Standard Mine Update - Submitted by the Standard Mine Technical Advisory group

In the summer of 2007 an underground mine workings assessment was conducted at the Standard Mine by the Division of Reclamation, Mining and Safety (DRMS). A study of how ground water flows through the mine and where it could become contaminated was conducted by the U.S. Geological Survey (USGS). The purpose of the underground assessment is to investigate the structural integrity and connectedness of the workings, map the

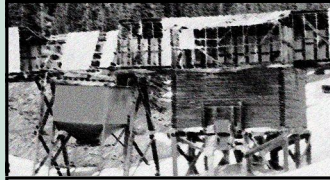
geology of the workings, as well as to identify source control measures that could be implemented to reduce the amount of water entering the mine and becoming contaminated. The underground assessment indicated that the major pathway for water movement within the mine is through the fault zone, and it identified several alternatives that may be feasible at the site. The most important finding of the groundwater study is that ground water is not being stored

inside the mine workings for extended periods of time; instead the water flows relatively quickly through the mine system mirroring seasonal water table fluctuations.

DRMS and USGS will reenter the mine next summer to refine their understanding of certain areas within the mine. The EPA also hopes to finalize the removal of contaminated waste materials at the site and re-establish vegetation in areas where waste materials were once located. ◀



Above: Contaminated waters leaving the Standard Mine.



Standard Mine Technical Advisory Group

PO Box 459

Crested Butte, CO 81224

(970) 349-6646



c/o Town of Crested Butte

PO Box 39

Crested Butte, CO 81224

(970) 349-5338

www.coalcreek.org

Mission Statement: The mission of the SMTAG is to assure that Standard Mine clean-up activities and the final outcome of the clean-up process are beneficial to the environment and to affected persons and communities; to assess and protect the quality of water in Elk Creek and Coal Creek; to serve as a hub of communication about abandoned mine cleanup efforts; to help foster positive relationships between citizens and the state and federal government; and to educate the community about environmental and health issues concerning Elk Creek and Coal Creek and the cleanup of abandoned mine sites.

Mission Statement: The mission of the Coal Creek Watershed Coalition is to maintain, restore and enhance the environmental integrity of the watershed to provide high-quality water for wildlife, aquatic life, and human life.

Goals:

- Provide high quality water quality data to facilitate cooperative water quality assessment in order to identify and address water quality concerns in a proactive manner.
- Enhance the Coal Creek Watershed by reducing or eliminating existing and potential water quality problems and restoring degraded habitats to allow for permanent delisting from the State's 303(d) list of impaired waters.
- Communicate water quality and watershed related information that increases public awareness of watershed issues.
- Expand the public's participation in protection of the watershed.
- Develop a strong and diverse funding structure to ensure the long term stability for funding core programs.

Volunteers Needed

The Coal Creek Watershed Coalition is in need of volunteers for a variety of functions including public outreach, water sampling, grant writing, and general administrative functions. Water sampling will begin again in April and volunteers are needed. Volunteers are trained in sampling procedures and will be provided with lunch during sampling events. Come join us for a day of fun in the sun. For more information contact Anthony Poponi at (970) 596-7496 or coordinator@coalcreek.org or visit www.coalcreek.org and click on our "Volunteer" page. ◀



Quotable Quotes:

"For many of us, water simply flows from a faucet, and we think little about it beyond this point of contact. We have lost a sense of respect for the wild river, for the complex workings of a wetland, for the intricate web of life that water supports."

- Sandra Postel, *Last Oasis: Facing Water Scarcity*, 2003