

Metal Madness

By Allen Best

Mining gets a second life in the West.

Mountains are a form of religion in Crested Butte, located 200 miles west of Colorado Springs. Some of the earliest mountain bikes were invented here, and every July homage is paid to the mountain meadows with a festival devoted to wildflowers. Crowds sometimes gather on summer evenings along Elk Avenue, the town's main street, simply to contemplate the fabulous rainbow of light falling on surrounding peaks.

But some mountains are more special than others. To the east lies Crested Butte's 12,162-foot namesake, ski trails braided down its flanks. The ski area opened in 1961, creating an economy that filled the void left after the last of the coal mines had closed a decade before. To

the west is Mount Emmons, also called the Red Lady, for the alpenglow that bathes its 12,392-foot summit morning and night.

Yet that beauty hides something sinister in the eyes of most local residents: an ore body containing molybdenum, which can be extracted only by open-pit or underground hard-rock mining. The metal is used primarily as an alloying agent to strengthen steel. It is in high demand in China, India, and elsewhere in the fast-industrializing world. Whether that ore body will be developed, and how, is central to Crested Butte's attempts to sort out its future as a one-time mining town now wary of returning to its extractive roots.

Other communities face the same question.

What some call the biggest boom in the metals market in world history has caused the prices of dozens of metals to soar anywhere from 144 percent for gold to 2,060 percent for vanadium during the last five years. Prospectors have recently staked thousands of claims for minerals and uranium on public lands in the West, where the bulk of the nation's mining occurs.

Analyzing data from the Bureau of Land Management, the government agency responsible for minerals on public lands, a Washington-based advocacy organization called the Environmental Working Group this year found that there are now more than 51,000 claims within five miles of cities and towns, up from 35,350 in 2003. Claims have also been staked near the Grand

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Mount Emmons in Crested Butte, Colorado, contains molybdenum ore, which is used to strengthen steel. The resource is in high demand these days, but getting it out of the mountain could come at a cost.

Canyon, Yosemite, and other national parks.

“We have never seen a boom like this, ever,” says Doug Silver, chairman and chief executive officer of the International Royalty Corporation, a Denver-based company involved in mining. “Commodity prices for the vast majority of metals have never been so high. A lot of people are planning to build mines.”

Unwelcome neighbors

How will the mining boom affect the American West? Like Crested Butte, many one-time mining regions now have economies based on recreation and leisure, which filled the void left by departing miners. However, even in places far from resorts, new values—and new settlement patterns—have combined to make mines unwelcome neighbors.

Doug Silver puts the blame for the mismatch on the interstate highways. Even in the spacious West, he says, every location is now in somebody’s backyard.

Still to be worked out are new rules governing mineral deposits on federal lands, including uranium. Existing extractions are governed by the Mining Law of 1872, long criticized by environmental activists as a giveaway of federal lands. The 1872 law allows this land to be patented, or put into private ownership, at a cost of as little as \$2.50 per acre if mineral deposits have been proved.

The U.S. House of Representatives last November passed reform legislation that would impose a royalty of eight percent on new claims for minerals such as gold, copper, and uranium and four percent on existing claims. By some estimates, \$1 billion is taken from public lands

each year with no compensation to the government. The royalties would be used to pay for an estimated \$70 billion cleanup of the hard-rock mining that has occurred over the past 150 years, and it would end the patenting of federal lands by claimholders.

According to Roger Flynn, an attorney with the Western Mining Action Project, the bill would “establish once and for all” that the federal government has the right to determine the best use of the land by weighing and balancing mining against other needs, such as watershed protection. “The main threat facing communities like Crested Butte is the position of the Forest Service and Bureau of Land Management that they can’t say no, regardless of environmental impacts,” says Flynn.

The bill is now before the U.S. Senate, where Majority Leader Harry Reid (D-Nev.), the son of a gold miner, is reported to be wary of imposing royalties on mining companies.

These issues are intensely local, but also global. Mining advocates say restrictive, no-risk policies in the U.S. are already pushing mining to other countries, and that the federal royalties would accelerate the change. In this view, the U.S. is fast in danger of becoming metal-dependent, just as it is dependent on imported oil. An average computer has something like 40 different metals, they point out. Environmental activists respond that mining, even after decades of environmental laws, remains the most common cause of toxic pollution.

From mining town to ski resort

Crested Butte’s story illustrates many of these tensions. Gold, silver, and other hard-rock

minerals drew the first miners, anthracite and bituminous coal the second wave. The last coal mine closed in 1952.

After 1961, when Crested Butte’s first ski area opened, recreation and tourism started to fill the town’s economic void. Newcomers—many from the East—have fiercely protected Crested Butte’s enduring small-town feel and, above all, the sense of living in a landscape that is as magnificent as any of our national parks.

Unlike Aspen, located 40 miles but one very difficult mountain range away, Crested Butte has had a wobbly economy. To many locals, that’s an acceptable tradeoff. “It’s not trashed out like Aspen and Vail,” says Linda Powers, a former mayor who operates a retail store called Pooh’s Corner. “We have beautiful vistas and wonderful water, and we want it to stay that way.” She adds: “Something has to be sacred in this world, and if our mountain isn’t, very few things are.”

The molybdenum-rich ore body that now concerns Crested Butte was discovered in 1974 when copper, lead, and zinc were extracted from a now-closed hard-rock mine in Mount Emmons. Myles Rademan, FAICP, then the planning director for Crested Butte and now director of public affairs for Park City, Utah, recalls stalling tactics, but also carefully legislated environmental regulations used to govern mining impacts there.

“Under the 1872 Mining Law, you can’t just tell these companies, ‘No, you can’t come.’ What you can say is, ‘This is how we will deal with you,’” Rademan says.

In 1978, Crested Butte adopted regulations protecting its watershed, the first such rules in



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Colorado. The water comes from Coal Creek, which drains the side of Mount Emmons where the proposed molybdenum mine, then owned by a company called Amax, was to be located. Although the company challenged the town's authority to regulate operations outside its borders, the court sided with the town. The treasure of Mount Emmons remained intact.

Then, in the 1980s, molybdenum prices tanked. That was good news to mining opponents in Crested Butte, but unwelcome news in Leadville, another Colorado mining town that is located about 100 miles southwest of Denver. Climax, the big molybdenum mine near Leadville, was mothballed, putting 3,000 people out of work.

The assessed value of property in Lake County dropped from \$242 million to about \$42 million in just two years. Car dealerships decamped. The daily newspaper became a weekly. The highways filled with U-Hauls. Residents who remained found lower paying work at the ski resorts—Vail, Beaver Creek, Copper Mountain, and Breckenridge—along the nearby Interstate 70 corridor.

In 1999, the other shoe finally dropped when Black Cloud, a silver and gold producer, also closed. It was Leadville's last mine. Climax was selling off assets, including water rights.

Prices push the industry

Even then, the ground was being laid for the comeback. China and other nations were growing fast, pushing up prices for everything from cement to steel, including molybdenum. Successive owners of the Climax mine began to study a potential reopening. Last December,

current owner Freeport-McMoRan Copper & Gold Inc. decided to proceed.

Now \$500 million in updated processing infrastructure is being installed in anticipation of a 2010 reopening. High prices are the incentive. Molybdenum surged from \$2 per pound in 2002 to \$40 per pound in 2005, and has lingered at more than \$30 a pound since then. Company officials estimate cash costs of production at \$3.50 a pound.

The permanent payroll will be only 350, barely a tenth of the boom years, but even that is welcomed in Leadville. "I think anybody in the mining world will tell you that the Climax ore body is the best molybdenum ore body in the world," says Carl Miller, a former elected official and third-generation miner. However, the good old days won't be back. Even now, Miller says, Lake County has an assessed value of only \$80 million, not even a third of what it was 26 years ago.

So today, with the mine soon to reopen, the talk continues of economic diversification. The first effort to create a tourism economy began, Miller notes wryly, with the creation of a "palace" made of ice in the winter of 1896.

Environmental concerns

Neighboring Summit County also has a deep history of mining. But there, county officials are leery of a resurgence of gold mining, at least of any process using cyanide to leach microscopic gold from vast piles of rock.

Gold mining took hold in Summit County in 1859, when prospectors flooded into the upper Blue River Valley to pan for the precious metal. They found plenty, resulting in

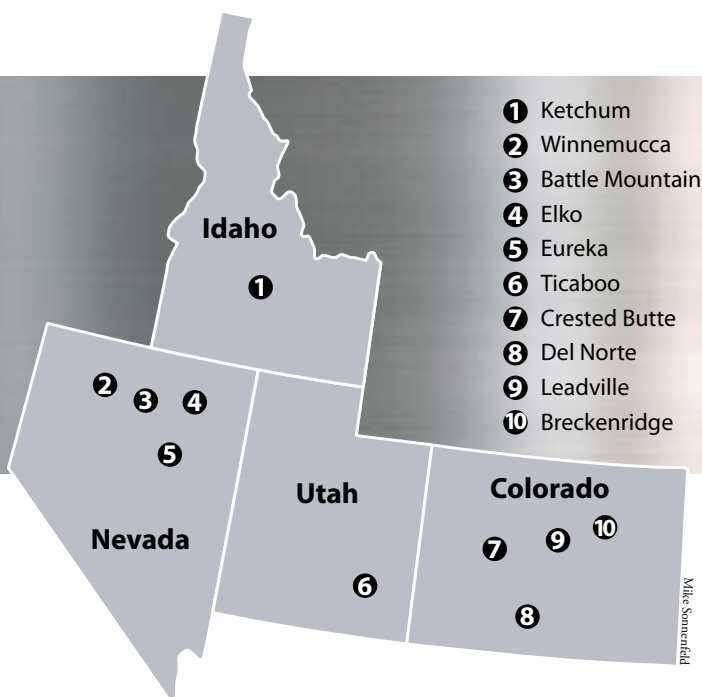
the creation of the county seat, Breckenridge, with a main street—similar to Crested Butte's Elk Avenue—that is lined with gaily painted false-front Victorian buildings. This is what the tourism industry calls "genuine Colorado."

A big concern in Summit County—and elsewhere—is the environmental damage that mining causes. An atlas of creeks—French, Peru, and Illinois among them—occasionally turns Kool-Aid orange. It's called acid-mine drainage, and it was common in the West until new mining techniques were established. The water runs across the sulfurous rocks, where minerals are most commonly found. The combined water, sulfur, and oxygen create sulfuric acid, which in turn leaches heavy metals from the rocks, including cadmium, lead, and zinc. Zinc, though relatively benign to people, kills trout.

Water is everything in Summit County. It has four ski areas, which altogether account for more skier visits than all of Utah. It has blue-ribbon trout streams, a rafting industry, and in the middle of the burgeoning lifestyle-based economy, a reservoir that supplies drinking water for Denver, 70 miles away.

Heavy metal

Some mining problems have cropped up only recently. Gold mining that employed a newer process called sodium cyanide heap-leach led to the poisoning of 17 miles of the Alamosa River in the early 1990s. The operator of the two mines, Summitville and Battle Mountain, paid \$30 million for the cleanup before going bankrupt. Taxpayers have paid an additional \$200 million since the federal government



Left to right: Acidic mine drainage from Keystone Mine in Crested Butte; downtown Breckenridge, Colorado, today; Carl Miller, a former Leadville elected official and third-generation miner on Harrison Avenue in Leadville.

took over responsibility through its Superfund program.

The blame was laid on lax state enforcement of regulations during mining operations from 1984 to 1991. State regulations were tightened in the wake of the disaster. Mining industry representatives say the Summitville problem could never happen now. "The state environmental controls and protections 16 years later are vastly different than what existed even in 1992," says Stuart Sanderson, president of the Colorado Mining Association.

Summit County is taking no chances. The thought occurred to county officials that somebody might use cyanide to leach gold from the piles of waste that are found among the 1,000 patented mining claims in the upper Blue River Valley. Summit County commissioners in 2004 banned the use of cyanide and other topical reagents in the leaching process. They were promptly sued by the Colorado Mining Association. [See News, June 2007.]

Colorado counties, says Sanderson, have land-use authority, but not the authority to regulate specific mining techniques. That authority

resides with the state. "The local governments do not have the staff, the resources, or the expertise to do it," he says. Sanderson admits that his industry is concerned that the prohibition, if allowed to stand, could lead to further prohibitions. Four other Colorado counties have adopted similar bans on cyanide heap-leach mining (as has the state of Montana).

Gary Lindstrom, a former Summit County commissioner who voted for the regulations, says he believes a town or county must have very strong environmental concerns in order to justify regulations, but if they do have concerns, they should adopt those regulations. Colorado has proved time and again its ineptness at regulating the mining industry, he says.

Jeff Parsons, a lawyer with the Western Mining Action Project, a mining reform and watchdog group, concurs. Risks must be documented, he says: "It can't be just on political whim or willy-nilly."

He says that its history of cyanide heap-leach mining gives Summit County a compelling justification. "The record was pretty clear that these types of mines in particular pose

disproportionate risks—and on water quality especially," Parsons says. "And there is nothing more important to Summit County than its water quality."

Nevada boom

In Nevada, the world's fourth largest gold-mining region, the boom began years ago. Alan Coyner, administrator of the Nevada Division of Minerals, says more gold has been extracted in the last 15 years than in all of Nevada's previous history. Mining now continues briskly along Interstate 80 around the towns of Elko, Battle Mountain, and Winnemucca, all in the state's north-central section.

Mining experts in Nevada dismiss the concern about cyanide in gold mining. They insist that it's far safer than it sounds—and certainly safer than the use of mercury to draw out gold, a process used a century ago that is still polluting streams in areas near Ketchum, Idaho, hundreds of miles away.

A major molybdenum mine with a 52-year life is being planned near Eureka, along the lonely Highway 50, on a mountain auspiciously called Hope. A partnership of a Denver-based company, General Moly, and POSCO, a Korean company that is the world's third largest steelmaker, describes the ore body as the world's largest pure molybdenum deposit. Production is projected to begin in 2010, with 350 workers.

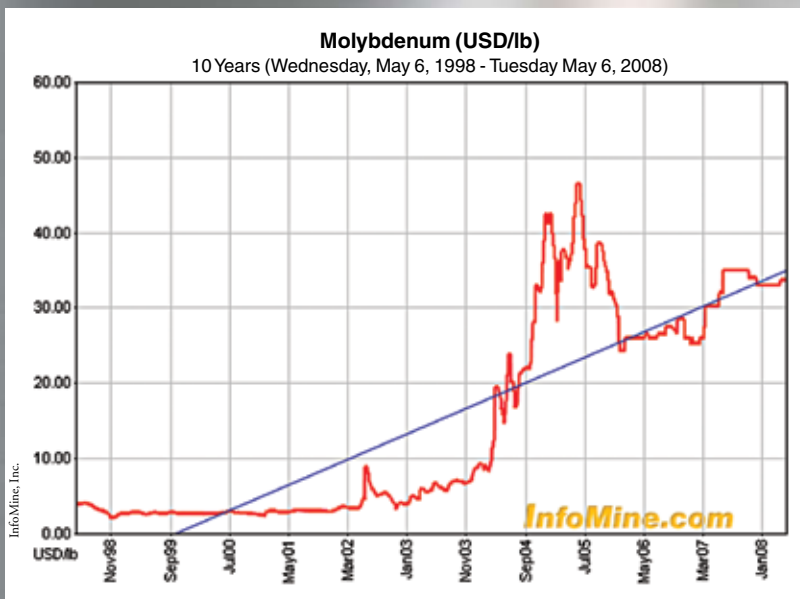
Nothing has changed about the boom-and-bust cycles of mining, says John Dobra, an economics professor at the University of Nevada at Reno. Gold was selling for more than \$1,000 an ounce early this year, then dropped suddenly to \$840 an ounce in late March.

"It's a risky game. You can spend \$200 to \$300 million to build a gold mine, and by the time you have got it permitted and built, the price will be down to \$250. And that's the downside for these communities," says Dobra. "When the price was \$200 to \$300, there were a lot of for-sale signs and empty houses."

Mines typically require dozens of permits from local, state, and federal agencies, and the regulatory review and construction process usually takes 17 years, according to industry officials.

Just what makes mining companies think commodity prices will stay high? Todd Hennis is president of Colorado Goldfields, which is gearing up to renew milling and possibly mining operations near Silverton, in southwestern Colorado. He reports down- and up-cycles lasting 17 years each. So far, the boom in metals has lasted six years. "So we have a minimum of eight to 10 to go," he says.

After the last mine at Silverton closed in 1991,



As development in China and other parts of the world has increased, so has the price of molybdenum. The blue line shows its upward trend, the red shows actual prices (in U.S. dollars per pound) over a 10-year period.

Gold, Silver, and Molybdenum

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Gold \$881.80 per ounce

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Silver \$17.14 per ounce

Courtesy 321gold.com



Molybdenum \$1.8 per ounce

The prices of gold, silver, and molybdenum have been on the rise. These prices (in U.S. dollars per ounce) are as of May 12.

housing prices tumbled and unemployment soared. Home prices have lately jumped again, partly the result of Silverton's reputation as a center for adventure sports. The mine Hennis is contemplating could coexist nicely next to a new double-black-diamond ski area, although he says he may have to build a dormitory to house miners due to the area's lack of affordable housing.

It's radioactive

Uranium, not gold, is the greatest concern in much of the West. In the canyon country of Arizona, New Mexico, Colorado, and Utah, several uranium mines have renewed operations with the full support of several local communities that have never shared in the wealth of the recreation economy.

Officials in Garfield County, Utah, close to Lake Powell, hope a resurgent mining industry will help bolster the tourism-based economy. The county, with a population of 5,000, is home to Bryce Canyon National Park and parts of two other national parks.

An old uranium mining town called Ticaboo could well benefit. It was down to a few dozen residents last year, but mining companies that plan to develop several underground uranium mines are predicting an eventual population of 1,500. Justin Fischer, the county planning director, says creating a town with a critical mass in a rural area may attract visitors. "It is very, very scenic. The major thing it has against it is that it's just so remote," he says.

Bitter memories also remain of the last uranium boom, which began during the Cold War. Even now, cancer and other illnesses are being reported among Navajos and other former uranium miners.

Mineral rights

Uranium is also causing concern for those who own the land above the deposits. Near Hartzel, in Colorado's grassland basin of South Park, owners of several ranches were startled to learn that while they own their land, mining companies own the mineral deposits below. In that case, 640-acre parcels of grazing lands were homesteaded under a 1916 law that retained government ownership of subsurface mineral rights.

A similar split ownership situation exists on rolling prairie in northern Colorado, about 30

miles south of Cheyenne, Wyoming. Union Pacific was granted alternating sections of land when it built the first transcontinental railroad about 30 miles away in the 1860s. It sold much of the land, but kept the mineral rights.

A Vancouver, British Columbia, firm called Powertech Uranium Corporation now wants to extract the uranium using in-situ mining. In this process, water is removed from the ore-bearing formations, enriched with oxygen and baking soda, and reinjected to dissolve the ore. The resulting slurry is pumped out and processed. The company has bought 5,760 acres of uranium mineral rights in the region.

The company's proposed \$20 million mine is within Weld County, where its director of planning, Thomas Honn, AICP, says there is sufficient oversight from county, state, and federal authorities. Neighbors in nearby Larimer County are more skeptical. Their state representatives have pressed for new state legislation to ensure expanded monitoring of groundwater.

Back in Crested Butte, regulations are being written in expectation of an application for molybdenum mining. Gunnison County, which has primary authority, is updating regulations approved in 1990 under broad authority from the state of Colorado to review ski area expansions, water diversions, and other large projects.

The new regulations aim to anticipate changes in mining technology that could, for example, reduce the number of employees needed, says Joanne Williams, AICP, the county's planning director. But the regulations now being drafted also recognize that the chemistry and hydrology of groundwater and aquifers interact in much more complex ways than was previously realized. The mine's tailings—the rock discarded after processing—would be outside the town's watershed.

In Crested Butte, the 30-year-old regulations drawn up to address impacts to the town's watershed are also being retooled. "It's all about water quality," says John Hess, the town's planning director.

The proposed regulations are less prescriptive and more performance based. Steve Glazer is the water expert with the local grassroots organization, the High Country Citizens' Alliance. He explains that creating too many prescriptions for mining operations leaves a community vulnerable to a charge that it is arbitrary. Set-

ting standards for preservation of water quality, instead leaves the method of compliance to the mine operator.

The challenge, says retired instructor George Sibley from nearby Western State College, is whether a community can assemble a set of regulations that protects not only its watershed, but also its local economy. "That's the real question here, and it's a planner's question."

It's also a local issue, mining opponents believe. "There are two local layers [town and county] of control," says Bob Salter, mineral resources director for the High Country Citizens' Alliance. "We don't expect much from the state, and absolutely nothing from the federal government."

Gearing up for another battle

The membership of a new antimining group in Crested Butte, the Red Lady Coalition, includes affluent urban refugees and retirees, among others. Crested Butte may still have asbestos-sided houses, as it did 30 years ago, but it is also becoming increasingly upscale, with a median home sale price last year of \$850,000.

The coalition has distributed red banners, resembling Tibetan prayer flags, which hang on scores of business entries and home porches. More important, the group has gained the free services of DLA Piper, described as among the world's largest law firms. Led by George Mitchell, former Senator majority leader, the firm has weight in Washington, D.C.

Opponents want mining claims to be withdrawn. Among the possible solutions is to buy the ore deposit from U.S. Energy, the current owner.

Opponents believe the value of the ore ranges from \$1 billion to \$12 billion, but they think that the owner, U.S. Energy, might be willing to sell it for \$100 million. Another former Colorado mining town, the resort of Telluride, managed to raise \$60 million last year to preserve open space, fueling hopes of similar local financial largesse in Crested Butte.

For the mining sector, the story ends on a very different note. "Nothing in life is ever guaranteed," says International Royalty's Doug Silver. "The part of nature that man doesn't like is that we can't control it."

Allen Best is a Colorado-based writer.

Resources

Mining companies. International Royalty Corporation: www.internationalroyalty.com. Freeport-McMoRan: www.fcx.com. General Moly: www.generalmoly.com. POSCO: www.posco.co.kr. Colorado Goldfields: www.cologold.com. U.S. Energy Corporation: www.usnrg.com.

Advocacy groups. Environmental Working Group: www.ewg.org. Western Mining Action Project: www.greenkarat.com. Colorado Mining Association: www.coloradomining.org. High Country Citizens' Alliance: www.hccaonline.org. Red Lady Coalition: www.redladycoalition.com.