

# Back from the Dead

Once a toxic wasteland, Silver Bow Creek now has native cutthroat

▲ MICHAEL HAMILTON

**I**N 1908, A massive flood washed millions of tons of copper, lead, zinc, cadmium and arsenic 100 miles downstream from the Anaconda Copper Mine at Butte, Montana. The torrent of 1908 destroyed Silver Bow Creek that extends from Butte approximately 22 miles to the Warm Springs Ponds, the headwaters of the Clark Fork River. Today, the Clark Fork is still one of the most polluted watersheds in the country, gradually recovering from a century of mining for copper and other heavy metals in its many headwaters.

For over 100 years, Silver Bow Creek lay dead as a door mouse. Five million cubic yards of toxic mine tailings covered the creek bottom. Raw untreated effluent from mine sites near Butte flowed unimpeded. Aquatic life ceased to exist. The 1,300-acre flood plain was completely devoid of vegetation, and incapable of supporting life. Silver Bow Creek was an industrial sewer. It stunk of brimstone. The locals called it “shit creek.”

But in 1983, Silver Bow Creek finally caught a break. The Environmental Protection Agency (EPA) identified Silver Bow Creek in the Upper Clark Fork River Basin as one of the nations largest Superfund sites, and named the Atlantic Richfield Company (ARCO) as the “poten-

tially responsible party” for cleanup costs. ARCO purchased the Anaconda Company in 1977, and Anaconda had been responsible for the release of heavy metals into the watershed since the early 1900s. The EPA designation opened the door to the second largest lawsuit ever filed under the Natural Resources Damage and Assessment Program (NRDA).

“Natural resources that are damaged as a result of an oil spill such as the 1989 Exxon/Valdez disaster in Alaska or a hazardous substances release, which was the case in Silver Bow Creek, qualify for compensation to remediate the toxins, to restore the resource to its pre-impact condition, and to pay for the public’s cost for not being able to use the resource,” said Gregg Mullen, Senior Environment Specialist for Montana’s NRDA Program.

Since 1990, the NRDA under the arm of Montana’s Department of Justice, has been responsible for assessing environmental damage to Silver Bow Creek and pursuing litigation against ARCO. Mullen says the EPA

and the Department of Environmental Quality (DEQ) in November of 1995 issued a record of decision that spelled out the remedy and rationale behind a massive remediation and restoration plan for Silver Bow Creek and the contaminated flood plain.

“We knew this opportunity would present one of the largest, if not the largest, remediation and restoration projects ever undertaken,” said Mullen. Then in 1999, everything fell into place when ARCO agreed to pay \$215 million to the State of Montana to resolve claims. “The money gave us the green light to begin implementing clean up plans,” said Mullen.

The seed of planning does not always sew fertile ground, especially in projects this size. However, anticipating the settlement from ARCO, several state agencies, nonprofit organizations, and advocacy groups were in place and ready to act.

“We were in the lead and began efforts to immediately clean up Silver Bow Creek as well as the flood plain,” says Joel Chavez, construction manager for Montana Department of

Environmental Quality (MDEQ).

Chavez and his team were charged with the design, documentation, and monitoring of the remediation and restoration program. He says that design changes to Silver Bow Creek included building new channels, widening the creek, creating a completely new creek bottom, and constructing new river banks.

“We had to dig up over 5 million cubic yards of surface contaminants. It was daunting.” Meanwhile, the immense task of completely reseeding more than 1,300 acres of flood plain and 22 miles of creek banks with native plants, grasses, and shrubs fell to Richard Prodggers, principal of Big Horn Environmental Sciences, one of the many private contractors hired by the State of Montana.

“It was a moonscape. It was dead, devastated, and completely devoid of life. It’s damn hard to believe unless you saw it for yourself,” says Prodggers. Gazing at before and after pictures supports Prodggers claim. What was a cesspool oozing decay in 1999 is today a living wetland of wild grasses, native trees, shrubs, and abundant wildlife.

## Native Trout

But what of the native fish that were once so abundant that the Salish Tribe in the late 1800s called Silver Bow Creek “the place where you shoot them in the head?”

“We found a couple of westslope cutthroat and a few brook trout in Silver Bow near the mouth of German Gulch creek in 2008. We were pretty darn excited,” exclaimed Jason Lindstrom, area fisheries biologist for Montana Fish, Wildlife & Parks. Since then, in annual samplings and shocking along with pit tagging, Lindstrom says they have continued to record gradual increases in brook trout and westslope cutthroat. Lindstrom says a new fish barrier about 13 miles downstream from Butte will help keep brown and brook trout from infiltrating westslope habitat.

“Its like a mini dam that allows fish to travel downstream over the dam, but won’t allow them to return upstream. We are especially concerned about rainbows migrating upstream and interbreeding.”

German Gulch Creek, is the main tributary to Silver Bow Creek, and Lindstrom says its vital to increasing trout populations because it runs

Photo | Michael Hamilton

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► Before (left) and after photos of Silver Bow Creek show how a floodplain polluted by mining was restored by government and environmental agencies.



clear and cold, and historically has held westslope cutthroat. However, once again Montana's historic legacy of toxic mining wastes poses a threat. "There is concern over an abandoned gold mine at the headwaters of German Gulch Creek. We need to be very careful to monitor remediation efforts there so that no toxic metals flow downstream into Silver Bow Creek."

Bruce Farling, executive director of Montana Trout Unlimited (TU) echoes Lindstrom's concerns. "I knew that if there was any chance we would ever get native westslope cutthroat trout back into Silver Bow, tributaries like German Gulch Creek were critical," he said.

Farling has been an advocate for restoring the Clark Fork River Basin beginning in 1994 when he worked for the Clark Fork Coalition, the successful nonprofit organization that led the charge in 2008 to remove the Milltown Dam near the confluence of the Clark Fork and Black Foot Rivers.

In 2012, TU helped implement the first-ever special catch-and-release

regulations for Westslope cutthroat on Silver Bow Creek. Under Farling's leadership, TU continues to monitor the Silver Bow project, as well as work on an impressive list of habitat restoration initiatives throughout Montana.

Another key player in Silver Bow's resurrection is Silver Bow County Mayor Matt Vincent: "I never imagined a time in my life that I would live to see the day when native trout returned to Silver Bow Creek," he said.

Vincent campaigned during his election to complete an important piece of Silver Bow Creek's 15-year transformation. "I want to do everything I can do for my community to enjoy Silver Bow." Vincent says that includes finishing a \$30 million upgrade to Butte's Wastewater Treatment Facility. Situated at the edge of town, Butte's Sewer plant is undergoing a major makeover to reduce the amount of effluent.

During hot weather, Vincent says the creek suffers from algae blooms and a lack of oxygen. "This 2-mile section of the creek is still very bare of fish. That will change when the up-

grade is finished, resulting in cleaner water for fish, higher oxygen levels during summer, and an environmentally safe fluid waste stream."

The Silver Bow Creek remediation and restoration program has captured global recognition, and garnered national and international awards for environmental excellence. In 2005, the project received two awards from the National Association of Environmental Professionals. Also in 2005, the Green Organization, based in the United Kingdom, presented the project with its International Green Apple Environmental award. To this day, the project continues to receive accolades of achievement from a variety of key stakeholders as the work progresses.

### What's Next

When it is complete, over 23 miles of stream channel and floodplain will have been restored, and approximately 5 million cubic yards of tailings and soils laden with heavy metals removed. Under restoration activities funded by NRDP, aquatic

and riparian resources are being restored and a variety of recreational opportunities including a 22-mile greenway trail system. These combined remediation and restoration efforts will result in a restored floodplain ecosystem, slated for completion in 2014 or 2015.

Silver Bow Creek is now a unique fishery with rich nutrients that provide food year round," said fishery biologist Jason Lindstrom. "We have fishable numbers in low densities. We have come a long way, but we are not there yet. A lot of questions remain to be answered."

The most important thing to keep in mind may be Silver Bow's connection to the rest of the watershed. Montana's Clark Fork Coalition (CFC), founded in 1985, has spent 28 years pushing for comprehensive clean up of the mining wastes of the Upper Clark Fork Watershed. Now that Silver Bow Creek restoration is wrapping up, and the Milltown Dam removal and restoration is complete, the CFC is focusing its energy on the next major cleanup: the Superfund removal of toxic metals from 43 miles of stream banks and floodplain along the Clark Fork downstream of Silver Bow Creek.

In all, over \$300 million will be spent repairing this reach of the river, making it one of the most ambitious river restoration programs in the West. Anticipating this cleanup, the CFC purchased a 2,300-acre working cattle ranch, including 3 miles of the most polluted section of the Clark Fork floodplain near Deer Lodge.

Next year, after three years of analysis and design work, the CFC ranch is slated to be the first large private ranch to be cleaned up by Montana DEQ. The hope is to use this cleanup process to model how other private landowners can successfully engage in remediation without undue harm to their ranching operations. The goal is to restore the upper Clark Fork watershed to a true and lasting recovery at a landscape scale, with full ecological and economic benefits to local communities. 

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Michael Hamilton is a former broadcast journalist. His awards include Associated Press and United Press International Reporter of the Year. He was nominated for two television Emmy Awards, and received three Edward R. Murrow Awards for Excellence in Broadcasting. He has been writing outdoor and travel freelance articles for a decade.