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TU Cleans Up Abandoned Mines

More than 500,000 sites dot the nation and poison trout streams

ALAN MOORE, ROB ROBERTS, AMY WOLFE AND REBECCA DUNLAP

SINCE THE SIGNING of the Declaration of Independence, mining has been a mainstay of the U.S. economy. According to the West Virginia Geological and Economic Survey, the presence of coal in the Allegheny Mountains was first referenced as early as the mid-1700s. In short order, crude extraction operations flourished, and company-owned coal towns with makeshift houses dotted the Eastern landscape.

As extensive logging reduced lumber availability, the new country turned to coal for fuel, and hardworking men fed an insatiable American juggernaut with the toil of their sledgehammers and steel wedges. In the Appalachian region, coal was so plentiful that by 1900 approximately 30 million tons per year were being mined from just four Eastern states.

The opening of the American West to settlement during the 1800s was fueled

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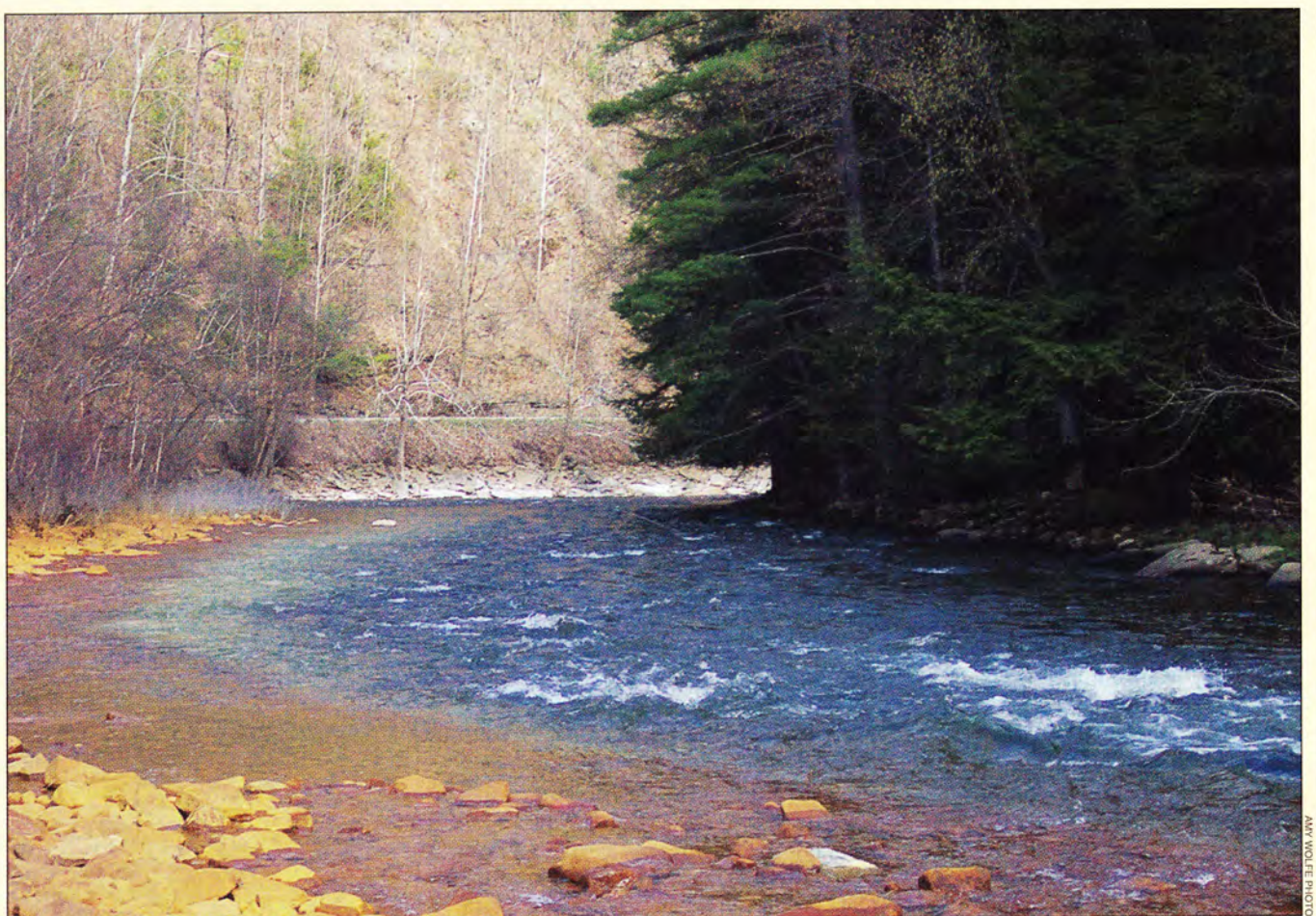

AMY WOLFE PHOTO

The West Branch Susquehanna River in northwest Pennsylvania is one of the nation's largest polluted river basins with more than 1,100 stream miles impacted by 36,800 acres of abandoned mine lands. TU and others are working to restore the watershed. Above, Twomile Run carries mine pollutants into Kettle Creek, an important Pennsylvania trout stream and tributary of the West Branch Susquehanna.

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by mining of a different sort. In 1872, President Ulysses S. Grant signed the General Mining Law, which offered public lands for $5 an acre or less, and exempted mineral extractors on those lands from taxes and royalties, not to mention any legal responsibility to reclaim the lands afterward. With the promise of untold mineral riches, cheap land through the Homestead Act ($6 for 160 acres), and a fresh start on the other side of the Mississippi, it didn't take long for settlers to migrate west. This momentum, and word of the California Gold Rush, energized unparalleled economic growth and burgeoning industries of silver, copper, lead, and other hard-rock mining operations throughout the West.

Fast-forward to today. We move mountaintops with house-size machines to unearth coal, and long gone is the problem of too few people occupying the American West. The California Gold Rush has been replaced by rush hour in Los Angeles, and huge numbers of both coal and hard-rock mines have been abandoned and largely forgotten. When the ore ran out or didn't materialize, our forefathers simply moved on to the next site. Clearly these were times predating today's conservation ethics.

Despite its historical significance to the growth of our nation, mining is responsible for some devastating impacts to America's landscape and to our cold- and warmwater fisheries. Its legacy is embodied in sick, barren aquatic ecosystems, toxic acid-mine drainage, and millions of acres of treeless landscapes. Though no one knows for sure, estimates are that some 500,000 abandoned hard-rock mine sites litter the Western landscape. The Environmental Protection Agency (EPA) says at least 40 percent of headwater streams in the West, or more than 16,000 miles of native salmonid spawning and rearing habitat, have been affected by mining, and—in the East—that drainage from coal mines poses the single largest threat to the Appalachian environment.

Reclamation Fund

In 1977, Congress finally took notice of this environmental destruction and passed the Surface Mining Control and Reclamation Act (SMCRA). Although only applicable to coal, the new law created a set of regulations to manage the mining industry and established the Abandoned Mine Reclamation Fund, financed by fees—12.5 percent of gross value for strip-mined coal and 8 percent for coal mined underground—collected from active coal mine operations. These funds literally shook the ground, as they financed bulldozers, excavators, and their local operators to move mine waste, build water treatment plants, and begin the process of piecing brook trout streams back together.

With the reauthorization of the Abandoned Mine Reclamation Fund in 2006, increased allotments go to states—like Pennsylvania—with an urgent need and high historical production. The Keystone State, which supplied more than 25 percent of the nation's coal for 200 years, will get approximately $1.4 billion over the next 15 years. Increased annual allocations will also be given to West Virginia, Kentucky, Ohio, and Virginia. While this won't cure all the coal mine drainage ailments—an estimated $15 billion is needed in Pennsylvania alone—it's a huge step forward.

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TED FITZGERALD PHOTOS

The abandoned Pacific Mine site—located on both private and public land—has been poisoning Utah's American Fork River for decades. TU's cleanup project (above)—in conjunction with the USDA Forest Service and Snowbird Ski Resort—excavated contaminated waste and encapsulated it in permanent repositories.

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Trout Unlimited (TU) was a leading advocate in the reauthorization of SMCRA and has been actively involved in on-the-ground reclamation, such as an ambitious effort to restore the West Branch Susquehanna River in Pennsylvania. Based on successes, partnerships, and lessons learned from coal-mine drainage remediation efforts in the Kettle Creek watershed in north-central Pennsylvania, TU initiated a cleanup campaign to restore the nation's largest polluted river basin in terms of impacted stream miles. With more than 1,100 miles of streams and over 36,800 acres of abandoned mine lands, the capital costs for water quality restoration and abandoned-mine land reclamation in the West Branch exceed $250 million.

Mines Across the Nation

Outside of Pennsylvania, the outlook is less optimistic. Amazingly, the 1872 General Mining Law remains on the books, and abandoned hard-rock mines are among the few major environmental hazards lacking any dedicated federal cleanup funding. While state and federal agencies cobble together scant funds to reclaim the worst polluters, they still have to deal with more modern mine disasters—such as the mile-wide and 900-foot-deep Berkeley Pit in Butte, Montana—and have limited authority to prevent newer, ill-conceived mines from opening. Meanwhile, thousands of small abandoned mines, with a large cumulative impact on clean water, fish, and wildlife, go unnoticed and untouched.

"Unless you are a private eye, there's no bad guys to catch in terms of who's responsible for the pollution coming from many of these mines," says Chris Wood, TU's vice-president for conservation programs. "Most of the players are long dead, and the companies dried up, but the legacy of degradation to fish and water lives on. Fixing that is where we need to focus."

In 2004, TU published "Settled, Mined & Left Behind," highlighting ten different Western watersheds that have long suffered from abandoned mine pollution, how those pollutants affect aquatic ecology, and, most important, what can be done to clean them up. Concurrent with the report's release, TU announced a new partnership with the USDA Forest Service to bring national attention and support to their efforts to clean up abandoned hard-rock mine sites.

American Fork Cleanup

One site where the TU-Forest Service collaboration is making progress runs through Salt Lake City's backyard along the Wasatch Front—the North Fork American Fork River. Historically a home for native Bonneville cutthroat, the American Fork fell victim to hard-rock mine operations that began in the 1870s and mostly ended around 1950. In 2002, the Utah state government issued fish consumption advisories for the American Fork due to high levels of arsenic detected in trout there.

Amending the Mining Law

Amending the 1872 Mining Law would give us all additional tools to jump-start the healing process: stronger standards to prevent acid-mine drainage and further environmental damage; an end to the patenting system and associated public lands giveaways; greater authority for federal officials to deny permits for mines that threaten clean water, important wildlife and fisheries, and recreation; and a royalty fee on hard-rock mines that would fund cleanup efforts.

In November, the House of Representatives passed HR 2262, the Hardrock Mining and Reclamation Act of 2007, sponsored by Rep. Nick Rahall (D-WV). This bill would reform the 1872 Mining Law by imposing royalties on existing and new hardrock mining operations to fund cleanup of our country's abandoned mines—a huge boost to the future of fish and wildlife habitat. It would prohibit mining near national parks and other special places and would end the giveaway of public lands through the patent system. Finally, it would require the government to balance public land uses—fishing and other recreation—with mining. At the time of this writing, a companion bill had not reached the U.S. Senate. President George Bush promised to veto the bill should it reach his desk.

The Forest Service identified the worst contaminator contributing toxicity to the American Fork—the Pacific Mine—and in 2000 set out to reclaim portions of it and five other nearby locations on public land, including mining, milling, and smelter sites. In some places, piles of toxic tailings actually formed the riverbanks, and high concentrations of lead, arsenic, zinc, iron, copper, and cadmium washed into the American Fork for decades. During the cleanup, crews constructed safe repositories to contain the mine, mill, and smelter wastes from the sites, and capped other waste sites to prevent leakage. They also excavated contaminated waste from Forest Service lands and filled those areas with clean soil.

With reclamation on public land largely under control, Ted Fitzgerald, a former Forest Service employee, joined TU in 2004 to spearhead the cleanup of the Pacific Mine site on private land. Working with Snowbird Ski Resort, the Natural Resource Conservation Service, and the Tiffany & Co. Foundation, TU cleaned up 33,000 cubic yards of waste rock, encapsulated it in a permanent repository, and rerouted a road around the waste to protect public safety. These efforts garnered TU the Environmental Protection Agency's Environmental Achievement Award and Utah's Earth Day Award, which were presented to Fitzgerald in 2007.

For years, the specter and sheer enormity of the abandoned mine problem, ominous terms like "Superfund," and astronomical cleanup cost estimates have caused many dedicated conservationists to turn to other, less daunting issues. But the potential for real and lasting achievements in abandoned mine reclamation is evidenced in places like the West Branch Susquehanna River and the American Fork, and through the lessons learned in the last 30 years with the Abandoned Mine Reclamation Fund.

Alan Moore is TU's acting salmon & steelhead director. Rebecca Dunlap is project manager for TU's West Branch Susquehanna Restoration Initiative. Copies of "Settled, Mined & Left Behind," "Restoring the Wealth of the Mountains," and TU's "Grassroots Guide to Abandoned Mine Cleanup" can be downloaded at tu.org. Printed copies are available from Rob Roberts (rroberts@tu.org), TU's Western mine restoration coordinator, or Amy Wolfe (awolfe@tu.org), TU's Eastern director of abandoned mine programs.

[*The opinions expressed in Forum are those of the authors who appear here and do not necessarily reflect the editorial policies or views of* Fly Fisherman. *We welcome polite reader responses to the issues presented here.* The Editor.]