Fact Sheet[1]
Land Conservation and Former Mine Lands:
Preserving Natural Land Resources, Planning for the Future

This fact sheet is intended to educate communities, mine land owners, potentially responsible parties, companies, and other interested groups about how land conservation tools can be used as part of an integrated strategy to remediate and restore former mine lands. It is one of a series of papers that describe a variety of tools that can facilitate the reuse of former mine lands. Other series topics include carbon sequestration, wetlands banking, and water quality credits trading.

This fact sheet describes available land conservation tools and their potential benefits. Land conservation tools may be appropriate at only a small percentage of former mine lands. However, given the vast number of former mining areas, land conservation may be able to provide benefits at thousands of sites. This report also describes the opportunities and limitations associated with using different land conservation tools and provides sources for additional information.

Introduction

Former mine lands were once home to industries that helped sustain local economies and supply our nation with valuable raw materials. Today, many of these areas, contaminated by previous mining operations, lie idle and are not considered for reuse by mine land owners or local communities. These sites may pose significant environmental, regulatory, and financial challenges. Left unreclaimed, these former mine lands may continue to degrade the surrounding environment, negatively impact water resources, and deter the revitalization of local economies. However, when reclaimed, former mine lands may present opportunities for scenic recreation, historic preservation, and wildlife habitat.

While no comprehensive inventory of former mine lands in the United States exists, estimates of the number of sites range into the hundreds of thousands. Property owners, local governments, and state and federal agencies face a shared challenge to find the resources necessary to remediate former mine lands. The reuse of these sites has the potential to provide valuable funding that can offset the costs of their remediation. Unfortunately, many former mine lands face limited conventional development opportunities due to factors such as high remediation costs or a rural location. The remediation and reuse of these sites will require creative solutions that involve multiple funding sources and reuse approaches.

[1] This document does not represent official US EPA policy or guidance. Rather this material presents alternative approaches which may lead to environmental improvements at mining sites.

Land conservation is the long-term protection and management of unused or underused land resources, such as open space, farmland, and forest land. In the following sections, this fact sheet: (1) introduces land conservation and discusses how land conservation tools can support the restoration of former mine lands; (2) reviews potential benefits associated with land conservation; and (3) evaluates conditions under which land conservation tools can best facilitate the restoration of former mine lands.

What is Land Conservation?

Land conservation is the long-term protection and management of undeveloped land resources, such as open space, farmland, and forestland. Land conservation is achieved through a series of tools, some of which are introduced in the adjacent sidebar.

Land conservation efforts arose in response to growing concerns about the pace of sprawling development and the rapid consumption of valuable land resources. Today, the use of land conservation tools can be an important part of strategies designed to achieve: water quality management, flood control, habitat protection, scenic preservation, urban revitalization, historic preservation, and new recreational opportunities.

Land Conservation Tools

Agricultural and Forestal (A&F) Districts – designation that restricts landowners' development rights to agricultural and forestal uses for a specified period of time. In return, landowners pay lowest-use property taxes.

Bottom Line: Limited duration; reduced property tax rates.

Conservation Easement – voluntary legal agreement in which a landowner, in exchange for tax credits, donates development rights to an organization that protects land resources. An easement is established in perpetuity.

Bottom Line: Permanent restriction; federal, state, local, and estate tax credits (up to 40% of the value of the land until 2010, when the estate tax is scheduled to be repealed). For example, conservation easement placed on a $1 million property, which lowers value of property to $700,000. 40% of $700,000 = $280,000 = estate tax exclusion.

Land Acquisition – property purchase from a willing landowner by a public agency or conservation organization.

Bottom Line: Permanent property transfer, one-time purchase payment at land's current market value.

Purchase of Development Rights (PDR) – programs that allow a public agency or non-profit organization to acquire a property's development rights. The programs place a conservation easement on the land that ensures its ongoing use as farmland, forestland, or open space. PDR programs operate in 15 states.

Bottom Line: Permanent restriction, one-time PDR credit payment. Average per-acre payment, existing programs, 2000: $1,600.

Transfer of Development Rights (TDR) – programs that protect natural areas by shifting development to alternative locations. Local governments establish, by ordinance, two zones: a conservation zone and a targeted development zone. Landowners in the conservation zone receive development-right credits from the locality to sell on the open market, which can be purchased by developers for higher-density growth in the development area.

Bottom Line: Permanent restriction, one-time TDR credit payment. Average per-acre payment, existing programs, 2000: $7,000.

Why are Land Conservation Tools Working at Former Mine Lands?

While the financial benefits from the use of land conservation tools alone are unlikely to provide enough incentive for landowners to restore former mine lands, they can be a contributing element to an overall strategy that leads to mine land restoration. The use of land conservation tools can contribute to the reuse of former mine lands as natural areas, wildlife preserves, and recreation areas. Restoring the land for these purposes can generate both revenues for landowners, who may also have additional financial incentives in the form of tax incentives or direct cash payments, and economic activity for local communities.

Local communities can also benefit from working with former mine land owners to implement land conservation tools as part of a strategy to restore these areas. The restoration of former mine lands can bolster local economies through increased tourism, enhanced property values, improved recreational opportunities, and protection of important natural resources. In many communities, former mine lands are an important, underutilized land resource. Restoring and conserving these lands can be an important component of an overall economic development plan.

At first glance, former mine lands may not look like first-choice locations for parks and natural areas. However, many of these sites can support activities as varied as recreation, historic preservation, and wildlife habitat[2]:

I. Former mine lands can be ideal, scenic locations for recreational activities, including hunting, fishing, and wildlife watching, as well as for business retreats and training, at facilities like wilderness conference centers.

II. Physical reminders of mining activities at former mine lands, including buildings, machinery, and waste piles, provide opportunities to preserve and recognize communities' mining heritage.

III. Former mine lands can also provide significant wildlife habitat and sustain diverse ecosystems. The restoration and conservation of these ecosystems can provide several environmental benefits, including water and air filtration, soil retention, climate change moderation, and flood mitigation.

Land conservation can be achieved through a variety of approaches, as detailed in the sidebar on the previous page. The appropriateness of a particular approach at a former mine land will depend upon the community's needs, the landowner's needs, and the land conservation tools available in that community. The availability of land conservation tools varies by state and community.

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[2] For example, in Leadville, Colorado, the 12.5-mile Mineral Belt Trail provides recreational opportunities for residents and visitors and commemorates the region's mining heritage. In Front Royal, Virginia, a 240-acre nature conservancy has been created.

What are the Benefits of Land Conservation?

Economic Benefits

The restoration of former mine lands using land conservation tools can provide significant benefits for landowners and communities. In addition to generating on-site revenues from recreational and wildlife activities, landowners can derive immediate financial benefit from the implementation of land conservation tools, including:

- *State and federal tax breaks:* Land conservation may provide owners of contaminated mine lands with significant state and federal tax breaks. In return for granting conservation easements, for example, mine land owners become eligible for estate tax breaks of up to 40 percent of the value of the land.

- *Development-right credits:* In areas with purchase of development rights (PDR) or transfer of development rights (TDR) programs, mine land owners can sell their property's development rights or receive one-time payments from development-right credits from local governments in return for instituting land conservation measures. In 2000, PDR programs provided participating property owners, on average, with $1,600 for each acre with restricted development rights. TDR programs, on average, provided property owners with $7,000 for each acre of restricted development in 2000. While many former mine lands are located in rural areas, a significant number are located in more rapidly urbanizing areas, where

Former Mine Land Conservation Case Study: Mines of Spain Recreation Area, IA

Located south of the City of Dubuque in eastern Iowa, the 1,380-acre Mines of Spain Recreation Area is a designated "watchable wildlife area" and National Historic Landmark that includes several different ecosystems, including upland forest, lowland forest, prairie, and wetlands.

The Area is home to several rare species, including the bobcat, red-shouldered hawk, flying squirrel, and bald eagle, as well as a variety of songbirds, white-tailed deer, wild turkey, and small mammals.

During the 19th and early 20th centuries, lead mining operations at the Area resulted in the creation and eventual closure of multiple pits and mining shafts. For most of the 20th century, the Area was used as farmland.

In the late 1970s, the local community recognized a need for nearby state park facilities and identified the former mining site and adjacent farmland as a suitable location. The Dubuque County Conservation Board, the Iowa Natural Heritage Foundation, a non-profit land conservation organization, and the Iowa Department of Natural Resources (DNR) worked together to acquire the properties. A $1.4 million grant from the federal Land and Water Conservation Fund helped pay for the properties' acquisition.

Following acquisition, ownership of the site was transferred to the Iowa DNR, mining pits and shafts were filled in or fenced, and in 1981, the properties were designated as the Mines of Spain Recreation Area.

Today, the Area serves as a vital local and regional resource, offering recreational opportunities, restoring and preserving the region's diverse ecosystems, and providing critical wildlife habitat.

TDR programs are more likely to exist.

- *Additional revenues from integrated environmental management approach:* Land conservation can be combined with innovative, market-based environmental management approaches such as clean water credits and wetland banking to generate additional site revenues.

Local governments and public agencies can also benefit significantly from land conservation. Activities such as hunting, fishing, and wildlife watching generate revenue not only for landowners, but also for communities across the United States. According to the International Association of Fish and Wildlife Agencies, hunting generates $25 billion in retail sales, $17 billion in salaries, and employs 575,000 people annually in the United States. State-level findings are equally significant:

- In Texas in 2001, according to the Texas Parks and Wildlife Department, hunting, fishing, and wildlife watching generated $5.2 billion in retail sales, $2.6 billion in salaries, and supported approximately 97,000 jobs.

- In Colorado in 2001, approximately two million people participated in wildlife watching. Colorado's Division of Wildlife estimated wildlife watching's total economic impact in the state at $1.29 billion.

- In Pennsylvania in 2001, approximately four million people participated in wildlife watching. The Pennsylvania Wild Resources Conservation Fund estimated wildlife watching's total economic impact in the state at $1.98 billion.

Additional Benefits

In addition to increased tourism revenues, land conservation can also result in other significant environmental, social, and fiscal benefits. Land conservation can be a cost-effective way to safeguard drinking water, clean the air, manage storm water, control flooding, and protect valuable fishing areas. Former mine lands can encompass diverse ecosystems, including wetlands, forested areas, streams, and rivers. Protected wetlands serve as wildlife habitat, absorb storm and flood water, and reduce pollutant and sediment loads in watershed runoff. Protected forestlands help control erosion and reduce atmospheric carbon dioxide, which moderates climate change.

Land conservation can also help local governments manage spending on infrastructure and services. Owners of open land pay more in local taxes than it costs local governments to provide services to their properties, according to a 2003 report by the American Farmland Trust (AFT). The AFT study found that, on average, open space costs local governments 37 cents for every dollar received in taxes from the landowner. In contrast, residential developments cost local governments $1.15 for every dollar collected in taxes.

In addition to these direct economic impacts, the creation of new natural areas, wildlife preserves, and recreation areas spurs a range of indirect benefits. For example, parks, open space, and a high

quality of life are critical factors in attracting residents, businesses, and economic activity to communities. In turn, these potential benefits provide incentives for local governments, mine land owners, and public agencies to work together to remediate contaminated former mine lands. In some cases, the scale of potential community benefits may spur local governments to assist mine land owners with the cost of restoring former mine lands to ecological and recreational reuse.

Recognizing these benefits, communities across the country are supporting local- and state-level land conservation efforts.[3]

Former mine lands can also provide valuable wildlife habitat for species requiring significant tracts of land in order to thrive. As the number of large undeveloped areas in the United States continues to decrease due to development pressures, wide-ranging species like the bald eagle and bobcat are increasingly threatened. In turn, the location of significant wildlife habitat at former mine lands provides opportunities for bird-watching and wildlife tracking, which could serve as local and regional attractions for community residents and tourists.

When can Land Conservation Tools Best Facilitate the Restoration of Former Mine Lands?

Land conservation is an initial step that communities and mine land owners can take to protect a former mine land and provide a source of revenue for the site's restoration and reuse as a natural area, wildlife preserve, or recreation area. For example, the protection of a former mine land using a conservation easement will not, by itself, result in the site's reuse as a new community park. However, land conservation *does* set aside and protect the site, provide the mine land owner with revenues from tax credits and development credits, and remain consistent with future plans for the site's remediation and reuse as a recreational or ecological resource.

Community Evaluation of Land Conservation Tools

Land conservation tools can apply to any property in the United States, including former mine lands. However, communities should carefully consider whether land conservation is the most appropriate approach at a local mine land. First, a community should evaluate its local land use goals and priorities. If the community is interested in new recreational opportunities or the preservation of natural and historical resources, the protection and restoration of a local former mine land could provide a way to meet these goals. Land conservation tools could provide the starting point for a long-term approach to protect, remediate, and sustain these natural land resources over time.

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[3] In 2002, local and state land conservation efforts included:

- 75 percent of local and state conservation-related ballot measures passed (141 of 189 measures in 28 states).
- Measures generated $10 billion in conservation-related funding, with $5.7 billion specifically for land acquisition and restoration.

Second, the community will need to evaluate the former mine land's characteristics:

- **Does the site have limited reuse potential for commercial, industrial, or residential uses?** If the site is located away from population centers and has limited infrastructure (roads and utilities), distance and high infrastructure development costs may limit the site's conventional development potential.

- **Does the site include valued ecosystems or provide significant wildlife habitat?** Ecosystems and wildlife habitat at a site may already be thriving, or may require restoration. The protection and restoration of these natural systems can provide multiple environmental benefits, including water and air filtration, soil retention, climate change moderation, and flood mitigation.

- **Will the community's water resources need to be protected in the future?** If the site is located within a sensitive watershed, the conservation of the site can provide an opportunity for comprehensive protection of the region's water resources.

- **Could the site offer opportunities for recreation, tourism, and historic preservation?** Beautiful landscapes, historic mining structures, and open space are valuable community resources. Former mine lands can meet community needs for additional parks, wildlife areas, or historic areas recognizing an area's regional heritage, while also serving as a revenue source for mine land owners.

If the answer to one or more of these questions is "yes," land conservation could be an appropriate tool to protect recreational and natural land resources at a local former mine land.

When a community reviews the characteristics of a local former mine land, the evaluation should include an assessment of both current site conditions and potential future site uses. Many sites, for example, will require remediation and restoration to return on-site natural resources to use. At these sites, land conservation tools can be used to protect sites prior to or during restoration. Land conservation tools can also be used concurrently with innovative environmental management approaches like clean water credits or wetland banking to integrate a site's restoration and protection and to leverage resources to maximize site revenues.

Comparison of Costs and Characteristics of Common Land Conservation Tools

Following evaluation of local land use goals and former mine land characteristics, the community will need to determine the appropriateness of different land conservation tools. The table on the following page compares the costs and characteristics of five common land conservation tools: agricultural and forestal districts, conservation easements, transfer of development rights programs, purchase of development rights programs, and land acquisition.

First, the table evaluates the tools' primary and secondary costs. Primary costs are the direct costs associated with the creation, implementation, and management of a program. Secondary costs are

the indirect locality costs—primarily reduced local tax revenues—created by the operation of a land conservation program. Second, the table highlights the entities responsible for the management of protected land resources within each type of program. For example, non-profit organizations like land trusts typically work with land owners to place conservation easements on their properties. Finally, the table indicates whether each land conservation tool places flexible or permanent restrictions on a property's development rights.

Land Conservation Tools: Costs and Characteristics					
	Agricultural & Forestal Districts	**Conservation Easements**	**Transfer of Development Rights**	**Purchase of Development Rights**	**Land Acquisition**
Primary Costs	No-cost to localities; A&F Districts operated and funded by state agencies	No-cost to localities; a third-party, such as a land trust, purchases a property's development rights from mine land owner.	Low-cost to localities; program setup and administration	Higher-cost; locality purchases a property's development rights from mine land owner.	Highest-cost; locality or non-profit organization purchases property from mine land owner at market value
Secondary Costs	Property generates reduced tax revenues for locality.	Property generates reduced tax revenues for locality.	Reduced property tax revenues balanced by increased tax revenues from targeted development zone.	Property generates reduced tax revenues for locality.	Property generates no tax revenues for locality if property is purchased by locality or non-profit organization.
Ongoing Responsibilities	State programs	Land trust / non-profit organization	Locality	Locality	Locality
Time Frame	Variable; 5-10 years	Perpetuity	Perpetuity	Perpetuity	Perpetuity
Additional Information	Requires state implementation	Land conservation not managed by locality; can result in patchwork approach.	Common program funding mechanisms include: taxes (sales, use, and real estate transfer taxes), development impact fees, special assessment districts, and general obligation and revenue bonds).		
Information Sources:	Trust for Public Land, Land Conservation Fund, and Land Trust Alliance *(see page 10 for contact information)*				

Once a community and mine land owner have selected appropriate land conservation tools, they need to identify supporting resources. The federal Land and Water Conservation Fund, for example, administers a state-level land conservation grant program designed to encourage state and local governments to expand recreational opportunities. National organizations such as the Conservation Fund and The Nature Conservancy offer a range of relevant programs and funding sources to protect natural systems. Communities will need to consider a range of local public and private sector resources, financing mechanisms, and state and federal funding sources.

Partners and Organizations

Private and public organizations, including land trusts, environmental advocacy organizations, local governments, and state and federal agencies are working to support land conservation efforts in the United States. Appendix A lists some of these organizations and government agencies, which can provide many different types of resources, including funding, technical assistance, and educational materials, to communities and property owners interested in land conservation opportunities at former mine lands.

Summary

Land conservation provides communities with an opportunity to consider former mining sites within a new context. Former mine lands can support diverse ecosystems and wildlife habitat. Former mine lands can provide recreational and educational opportunities, including hunting, fishing, wildlife watching, trails, and educational facilities. Restored mine lands can serve as valued local and regional resources.

Communities can use land conservation tools, such as conservation easements and property acquisition, to protect these sites and promote their remediation and restoration to recreational or ecological reuse. After remediation, the sites can prosper as natural areas, wildlife preserves, and recreation areas. These site uses will generate economic and environmental benefits for mine land owners and local communities. While land conservation tools may be appropriate at only a small percentage of former mine lands, this small percentage may constitute thousands of sites, given the vast number of former mining areas.

Land conservation can enhance a community's quality of life, protect local ecosystems, preserve significant cultural and historical resources, and spur the return of former mining sites to productive recreational and ecological reuse. While former mining sites may offer only limited opportunities for conventional industrial, commercial, or residential reuses, former mine lands can be well-suited to the protection and restoration of valued landscapes and unique natural resources and the creation of new community parks. The end result is former mine lands restored and protected as natural and recreational resources that can benefit communities for years to come.

Contact Information

Interested in pursuing land conservation opportunities for a local former mine land? For additional information, contact the following resources:

- EPA's Abandoned Mine Land (AML) Team can provide communities with technical support and resources as they explore reuse opportunities available at former mine lands. EPA's AML Team works in partnership with communities to clarify EPA's interests at former mine lands and address potential obstacles to reuse planning at these sites. For more information, please refer to the AML Team's website at www.epa.gov/superfund/programs/aml.

- EPA also supports the reuse of former mine lands through the Superfund Redevelopment Initiative (SRI). For additional information, SRI's website, at www.epa.gov/superfund/programs/recycle, provides tools, case studies, and resource information addressing the reuse of Superfund sites, including former mine lands.

Appendix A: Community Resources

National Land Conservation Organizations	
The Trust for Public Land (415) 495-4104 (202) 543-7552 www.tpl.org	National Trust for Historic Preservation (202) 588-6000 www.nthp.org
The Conservation Fund (703) 525-6300 www.conservationfund.org	The Nature Conservancy (800) 628-6860 www.nature.org
Land Trust Alliance (202) 638-4725 www.lta.org	Rails to Trails Conservancy (202) 331-9696 www.railtrails.org

Federal Resources	
Clean Streams Initiative	Program provides funds for communities in 13 states to address acid mine drainage at former mining sites. *Administering Agency:* U.S. Department of the Interior, Office of Surface Mining (www.osmre.gov/acsiplan.htm)

Federal Resources	
Clean Water Act (Section 319)	Act funds national and state Nonpoint Source Pollution programs to restore and protect areas damaged by nonpoint source pollution. *Administering Agency:* U.S. Environmental Protection Agency (www.epa.gov/owow/nps/cwact.html)
Land and Water Conservation Fund (LWCF)	Largest source of federal money for park, wildlife, and open space land acquisition. *Administering Agencies*: Bureau of Land Management (www.blm.gov), U.S. Forest Service (www.fs.fed.us), National Park Service (www.nps.gov/ncrc/programs/lwcf/index.html)
National Coastal Wetlands Conservation Grants	Program provides matching funds to state agencies to acquire or restore coastal wetland ecosystems. *Administering Agency:* U.S. Department of the Interior, Fish and Wildlife Service, Branch of Habitat Restoration, Division of Habitat Conservation (www.fws.gov)
North American Wetlands Conservation Act	Act provides funds for projects that acquire or restore wetland ecosystems. *Administering Agency:* U.S. Department of the Interior, Fish and Wildlife Service (www.fws.gov)
Pittman-Robertson Act (Federal Aid in Wildlife Restoration Act)	Act provides states with funding for the restoration of wildlife habitat. *Administering Agency:* U.S. Department of the Interior, Fish and Wildlife Service (www.fws.gov)
Stateside LWCF	Matching grant program provides funds to states for planning, development, and acquiring land and water areas for state and local parks and recreation areas. *Administering Agency:* National Park Service (www.nps.gov/ncrc/programs/lwcf/index.html)
Transportation Efficiency Act for the 21st Century (TEA-21)	Funding for states to acquire land for historic preservation, trails, scenic beautification, and water pollution mitigation. *Administering Agency:* U.S. Department of Transportation (www.fhwa.dot.gov/tea21/index.htm)

Federal Resources	
Wetlands Reserve Program	Program offers landowners easements and cost-sharing agreements to preserve wetlands. *Administering Agency:* U.S. Department of Agriculture, Natural Resources Conservation Service (www.nrcs.usda.gov/programs/wrp/)
Wildlife Habitat Incentive Program	Program provides technical and cost-sharing assistance to landowners interested in the development of wildlife habitat on their property. *Administering Agency:* U.S. Department of Agriculture, Natural Resources Conservation Service (www.nrcs.usda.gov/programs/whip/)

Appendix B: Sources

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