

# **MARKET BASED CASE STUDIES INVOLVING ECO-ASSET MANAGEMENT ON NON-MINED LANDS:**

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## **Abstract**

Corporations and property owners have entered a decade that will radically alter industry's relationship with the environment. Tomorrow's business leaders are looking beyond enhancing returns from existing, conventional practices. The trend today and in the future will be to reward those who restore and protect our natural resources. What follows are two examples of enhancing the environment while creating a healthy economic return from that investment.

PROGRESS ENERGY - 2001 - A baseline assessment of ecological assets at the 3,000 acre site owned by Progress known as the "South River, Tract" in Bladen County, North Carolina demonstrates the opportunity to leverage a \$600,000 conventional land value by creating over \$4,000,000 in ecological asset values. This increase in value is based on the number of wetland mitigation and stream restoration credits that could be established on the property under North Carolina and Federal statutes. The North Carolina Department of Transportation (NCDOT) has estimated over \$460,000,000 in wetland mitigation costs and over \$200,000,000 in stream restoration requirements for wetland and stream impacts in that State between 2001 and 2011. The agricultural and forested acreage owned by Progress is within that watershed, and is identified as having the greatest wetland and stream impacts by DOT and other permit applicants. The entire 3,000-acre tract will be preserved as a conservation bank. The preservation of a significant loblolly pine stand will also help protect the Red Cockaded Woodpecker, a species protected under the Endangered Species Act. These ecological values will be sold to NCDOT and other permit applicants needing that type of mitigation.

RANCOCAS WETLAND MITIGATION BANK - 2000 - A 400 acre bottomland hardwood tract in Burlington County, near Mt. Holly, New Jersey was assessed for purposes of wetland mitigation planning and development. Sixteen acres of wetlands was restored to satisfy mitigation required by the New Jersey Turnpike Authority on a turnkey basis. A habitat conservation plan along with a wetland mitigation bank is in place for the balance of the 384-acre site. The increase in net value to the landowner is approximately \$2.4 million. The ecological benefits are: (1) the restoration of prior converted agricultural land; (2) the elimination of use of pesticides, herbicides and fertilizers, which negatively impact water quality; (3) the re-establishment of habitat for wood turtle; and (4) the establishment of walking trails for community residents.

## Introduction

We all depend on clean water, air and other natural amenities, which are often regarded as free. As the extent of environmental degradation becomes apparent, society is faced with increased pressure to improve upon environmental quality. Existing environmental policies have been designed to protect human health and welfare. However, quality of life improvements continue to be desired and new environmental control measures are needed to facilitate progress.

There are many regulatory controls that have been put in place to protect our environment. Incentive-based markets have developed to protect environmental assets or ecosystem services and now exist because of the following regulatory controls:

- Clean Water Act
- Clean Air Act
- Endangered Species Act
- Water Resources Development Act
- National Environmental Policy Act
- Mining Reclamation Act
- Natural Resources Damage Claim Act
- State Statutes – wetlands, water quality, flood control, rare species
- Montreal Protocol – SO<sub>2</sub> and NO<sub>x</sub>
- Kyoto Protocol and associated state and local statutes – CO<sub>2</sub>

Because of the high cost associated with introducing new environmental controls, agencies are now turning to incentive-based, environmental management programs. These programs include bank and trade systems, tax incentives, and creative property easements, all of which encourage the private sector to become active in protecting and enhancing ecosystem services (EPRI, 2001).

Recent experience suggests that incentive-based environmental programs will likely play an increasingly important role in the United States (Newell et al., 2001). Currently, the approach to controlling pollution has been on a “point-by-point” or “pollutant-by-pollutant” basis, that has been very effective in specific situations, but has failed to provide cost-effective compliance options. A better approach is managing pollutants on a holistic or ecosystem-based approach (Frederick and Herd, 2001).

Since incremental improvement in existing environmental controls is both costly and politically difficult, agencies are now evaluating incentive based strategies that are: (1) capable of improving environmental quality, (2) satisfying regulatory requirements, (3) meeting community goals and standards, and (4) providing financial incentive to the stakeholder (Coleman, 2000).

Emission trading programs are one example of such approaches, with emission sources allowed to buy and sell tradable credits. Other examples include offset programs such as:

- Wetlands and Stream Banking
- Endangered Species Habitat Bank and Trade Programs
- NO<sub>x</sub> and SO<sub>x</sub> Trading Programs
- TMDL Trading Programs
- Watershed Based Effluent Trading Programs
- Carbon Sequestration Programs

These programs expand the scope and level of environmental performance achieved by economic factors by providing financial incentives for involvement in accomplishing tangible performance beyond that which is required as a baseline. Under them, firms may compensate for permitted activities that, destroy wetlands, release point source pollution to water bodies, increase air emissions, release non-point source pollution, and impact endangered species, by creating or purchasing wetlands mitigation credits, equivalent effluent or emission reductions, or endangered species credits. The common feature of these programs is that they work to augment, not replace, existing regulatory compliance requirements.

### **Ecological Assets**

Development of ecological resource value (ERV) can be accomplished by establishing individual projects for specific ecosystem services, from which ecological resource value mitigation “credits” can be produced. Eco-asset mitigation credits can be earned by preserving, enhancing, restoring, or creating valuable land ecosystem services. The values from ecological asset bank and trade can come in the form of increased land appraisal value, developing tradable credits, or offsetting compliance obligations (Coleman, 1999).

Realizing the values associated with wetlands, riparian stream buffers, endangered / threatened / rare habitat, as well as the sequestration of nutrients, and atmospheric carbon involves proper identification of natural resource value in the context of local, state, regional and corporate goals. Preservation, enhancement, restoration, and/or creation of specifically valued areas within a property may then be accomplished via asset prioritization, enhancement and management programs. The benefit to the mining industry of creating these assets on their lands is to:

- Avoid real estate taxes on surplus land
- Mitigate their own environmental impacts at a lower cost
- Fix the costs of their environmental compliance requirements
- Develop ecosystem sustainability and management programs to satisfy consumer, regulatory and stakeholder demands
- Eliminate contingent liabilities associated with pending or threatened litigation
- Create a monetary return from underutilized real estate assets

- Structure liquidation of non-core assets on a tax advantageous basis(Frederick and Herd, 2001)

Growth of ecological assets as tradable commodities is attributed to the increased cost of environmental compliance (\$155 billion for U.S. businesses in 1999, according to EPA estimates) and greater emphasis on preserving and enhancing clean air, clean water, clean soil and protecting plant, animal and bird habitats (GreenVest, 2001).

## Case Studies

### CANNAAN VALLEY, WV: Eco-Assets

Allegheny Power owns property in Canaan Valley that is located in Tucker County, West Virginia. Allegheny owns over 20,000 acres of properties in this region, that were purchased in the 1920's to build a hydroelectric facility. The company was forced to cancel the project after it failed to obtain a permit from the U.S. Army Corps of Engineers and find alternative uses for the land.

At an average elevation of 3,200 feet, the Canaan Valley is the most elevated lowland of its size east of the Rocky Mountains. The valley supports many unusual plants and animals, being home to 40 different wetland and upland plant communities and supporting more than 580 plant species. These habitats support equally interesting wildlife populations, with 290 species of mammals, birds, reptiles, amphibians and fishes known or expected to occur there. Home to one of the largest wetlands east of the Mississippi, the area contains habitat for the threatened Cheat Mountain salamander and potential habitat for the endangered West Virginia northern flying squirrel and Indiana bat.

Because of the great diversity and ecological importance of this land, the US Fish and Wildlife Service showed great interest in purchasing the properties. Allegheny Power was also interested in selling off some of the property. However Allegheny was not interested in a direct sale of the land. An innovative idea that incorporated ecological value into the land was used in order to place this land into conservation.

GreenVest, LLC, a leader in determining ecological values helped develop a report and subsequent ecological appraisal that resulted in recognizing additional ecological values for the land. A certified independent appraiser was hired to determine what the value of the land was worth. Unlike traditional real estate land appraisals, this appraisal took into account the worth of the land's ecosystems. The valuation estimated the worth of the property in terms of resort residential, upland-investment holding, wetland mitigation, habitat mitigation/open space, wetlands/open space, and carbon sequestration potential.

This approach used incentive-based strategies that go beyond traditional real estate market values. The mechanisms utilize the environmental credit market. Value can be created from the creation of "banks" which can be applied to wetlands, carbon sequestration, endangered species, nutrient trading, and others. For example, the

Allegheny properties included 253 acres of degraded wetlands and adjoining lands that were suitable for restoration. If given the opportunity to establish a wetland mitigation bank, these lands could have a net value of up to \$8,000/ac.

The value placed on habitat mitigation was based on the appraiser’s estimate of the value of these lands for threatened and endangered species habitat. Numerous threatened and endangered species were identified on the tract. The carbon sequestration values were based on managing existing forests for maximum carbon sequestration using long rotations plus establishing mixed species plantations on available open areas to sequester carbon. A price of \$25/ton of CO<sub>2</sub> was used.

The official appraisal covered twenty-nine properties that totaled 12,380.19 acres. The following table summarizes the results of the appraisal.

**Table 1.** Valuation of the selected Allegheny Powers Canaan Valley properties:

Land Use	Parcel Size	No. Parcels	Overall Size	Value/Acres	Total Value
Resort Residential	50	5	250	10,000	2,500,000
Resort Residential	100	5	500	7,500	3,750,000
Resort Residential	200	5	1000	5,000	5,000,000
Upland-investment holding	4,212.39	1	4,212.39	1,500	6,318,585
Wetland Mitigation	253		253	8,000	2,024,000
Habitat Mitigation/open space	2,425.71		2,425.71	1,200	2,910,852
Wetland/open space	3,739.09		3,739.09	800	2,991,272
Carbon Sequestration					7,100,000
					32,594,709

In a sale, Allegheny would sell the land for \$16 million, in line with prior estimates based on similar sales. Since the properties value was estimated higher than that amount, Allegheny would inform the Internal Revenue Service that its true market value was more than \$32 million. The “bargain sale” of these lands would allow Allegheny to claim a charitable contribution of roughly \$16 million. This in turn would save the company several million dollars in taxes.

The eco-asset approach allows properties to be put into conservation that would not otherwise. This movement in the market in the long run will lead to more conservation. Without this approach it is unlikely this parcel would be conserved.

Corporations such as Allegheny own vast amounts of property. These properties are part of ecosystems that generate a wide array of service critical to the human economy. Property owners are discovering ways of “capturing” a portion of the value of these services. The same theory can be used with abandoned mine lands. This approach used to create value in the Canaan Valley can be directly applied to the vast amounts of mine land that has not been reclaimed across the country.

## RANCOCAS WETLAND MITIGATION BANK: Wetland Mitigation Crediting

A fourth case study focuses on the Rancocas Wetland Mitigation Bank (RWMB). The RWMB is comprised of 381 acres of forested, scrub/shrub and emergent wetlands and associated uplands in Burlington County, New Jersey. This project will permanently preserve a unique wetland ecosystem that will provide water quality improvements, flood flow attenuation, sediment control, and critical wildlife habitat in one of the most densely populated areas of New Jersey.

A total of 28.5 mitigation credits are assigned to the RWMB by the New Jersey Department of Environmental Protection (NJDEP) based on wetland creation and preservation. Any public or private development project can utilize credits to satisfy wetland mitigation permit conditions. The RWMB owner provided an additional 16.5 acres of wetland mitigation on a turn key development basis to the New Jersey Turnpike Authority to satisfy wetland impacts caused by the construction of a new exit.

Although the RWMB does not directly relate to abandoned mine land sites, the same principals can be used for establishing wetlands on these lands. The operator in charge of restoration may have the opportunity to design, construct, monitor, and maintain these wetlands. If the restoration goes above and beyond the required reclamation guidelines, the restoration effort should receive “credits.”

The credits could be used toward in-house needs, or sell to any developer, public or private. There are several benefits of purchasing wetland mitigation credits. Some of the examples are listed below:

- Eliminates the cost and time associated with acquiring, designing, constructing and maintaining your own mitigation site.
- The responsibility to provide mitigation is eliminated. No additional regulatory obligations or liabilities exist.
- Create added value to a project site by increasing development potential.
- Costly project overruns are avoided due to contingencies. Mitigation costs are defined up front and fixed.
- Economies of scale can make mitigation credits less expensive than singular wetland mitigation sites.
- Regulatory agencies save time approving mitigation because mitigation is already in place prior to wetland impacts.
- Contribution to the overall health of the watershed by protecting vital wetland functions and values

Like all mitigation banks, the “credit” assigned value is based on the activities undertaken to restore the site. The crediting system can provide an incentive for coal mining companies to reclaim mine lands to a high quality, fully functioning ecosystem that enhances the environmental characteristics of the area. Once these credits have been exhausted, the bank is permanently preserved for long-term protection and management.

The final result is an effective, environmentally responsible method of providing incentives to the mining industry for high quality reclamation while protecting vital wetlands functions and values.

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