

# Market-Based Approaches to Conservation:

## Keeping Family Forests as Forests

Most Tree Farmers want what's best for their land, and many are interested in managing it to improve and protect water quality, air quality, and wildlife habitat. However, doing the right thing should not come at the expense of income generation and long-term management flexibility. When it comes to property management, landowners often see a lot more regulations and red tape than positive incentives. This is a shame, as the best means of advancing conservation efforts on private lands is through voluntary action.

By **TODD**  
Gartner

Conservation incentives attempt to address these concerns by creating additional income streams and providing technical assistance, regulatory assurances, and other support to help interested landowners manage their land for multiple values while continuing to keep their family forests in sustainable production. These incentives are increasingly important, especially in the face of slumping timber markets and rising development pressures, which are driving the loss and fragmentation of private forests at an alarming rate. This conversion of private working forests to other land uses can dramatically change the scenic landscape and character of the surrounding area and have detrimental environmental impacts.

### Valuing Ecosystem Services

Historically, forest-based ecosystem benefits, other than timber, have been undervalued or have not been valued



at all. These benefits, referred to as ecosystem services, include habitat for wildlife, carbon sequestration, water quality and quantity control, flood and erosion prevention, and recreational opportunities. There are several reasons why this undervaluation has occurred. First, it is difficult to track and quantify the value of the processes that filter out pollutants to ensure clean drinking water or provide nesting sites for wildlife. Additionally, many people argue that these systems and processes are so important, perhaps even priceless, that it is nonsensical to put a dollar figure to their value. However, as with any asset, failure to properly assign value, essentially assigns a value of zero. Not surprisingly, things that are undervalued get replaced, oftentimes in the case of forests, with housing developments, roads, and strip malls.

During the last decade or so, economists, foresters, environmentalists,

# The Roots of Market-Based Approaches

Though the idea of monetizing environmental services has become a popular topic in recent years, its origin lies in wetland mitigation banking that began more than 25 years ago. Wetland mitigation banking was established, with guidance from the U.S. Fish & Wildlife Service, as a compensatory mitigation process primarily to offset impacts anticipated by state departments of transportation or other agencies.

Since then the mitigation permitting and practices have evolved to become more formalized and effective. Now regulated by the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACE), wetland mitigation banking provides government agencies or developers the opportunity to obtain permits to alter or destroy wetlands, as long as they mitigate those impacts by ensuring that wetlands are first created or restored off-site.

The mitigation process usually occurs through an exchange between a buyer (developer) and seller of wetland mitigation credits. The seller, in most cases, is usually a private landowner who voluntarily chooses to create a wetland on his property. The landowner must go through a detailed process of third-party verification by the ACE to ensure the created wetland performs at an acceptable level. If the wetland is approved, that landowner can sign a contract ensuring that the wetland will remain in perpetuity. The EPA can then issue the landowner wetland mitigation credits based on acreage, wetland type, and other ecological attributes. Wetland mitigation credits are the currency the landowner can then sell to developers who need to offset their wetland impacts.

As mandated in the Clean Water Act, this process ensures that there is a “no net loss” of wetlands by anthropogenic actions anywhere in the United States. In fact, in most cases, wetland mitigation requires a positive offset ratio (such as 15 acres created for every 10 acres destroyed). This market-based approach also forces developers to consider the additional cost per acre of destroying wetlands so that they incorporate the price of wetlands into their site selection.

—T.G.

academics, and other stakeholders have been promoting a solution to this problem of non-valuation: payments for ecosystem services (PES). PES is built around the idea that ecosystem services can be bought and sold through ecosystem markets. These markets function in a similar fashion to other, more traditional markets such as the New York Stock Exchange, only instead of stocks, the currency being bought

and sold is environmental services. Another major difference is that ecosystem markets do not operate as free markets since they are primarily driven by regulations and policies. The three most common ecosystem markets in the United States — biodiversity, water, and carbon markets — are driven by the Endangered Species Act (ESA), Clean Water Act (CWA), and voluntary initiatives, respectively.

# Landowner Agreements

Safe Harbor agreements encourage private landowners to volunteer to restore and maintain habitat for endangered species. Property owners commit to manage their land to benefit an endangered or threatened species, and, in return, the U.S. Fish & Wildlife Service absolves the landowner of any increased restrictions should the landowner's management actions bring that endangered species to his or her land. If a landowner accomplishes the agreed-upon voluntary actions, he or she is only responsible for protecting "the baseline" — the endangered species population or habitat present at the time the agreement was signed.

Candidate Conservation Agreements with Assurances (CCAA) give private landowners regulatory incentives. In return for voluntary land management to benefit wildlife that is declining (but not under Endangered Species Act protection), the landowner receives future regulatory certainty. If a species covered by a CCAA is later listed, the landowner enrolled in that agreement has no legal obligations beyond what he or she committed to in the agreement. The ultimate goal of a CCAA is to eliminate the need to list a plant or animal.

—T.G.

Innovative, market-based approaches to conservation provide positive incentives for family forest owners through the creation of additional income streams, while allowing developers flexibility in meeting their regulatory environmental requirements so as to not stymie economic growth. When implemented effectively, these approaches have provided sustainable economic and ecological solutions, helping to combat land use change and keep private forests as forests.

There has been a lot of experimentation and adaptations in recent years regarding the way payments for ecosystem services are applied. What was once a niche market exclusively focused on wetlands (see sidebar, page 13) has now become a global billion-dollar business including voluntary and regulated carbon markets, species and habitat banks, ecotourism, ecolabeling, and payments for watershed services. These market-based approaches to conservation are increasingly recognized

as a viable approach to addressing natural resource issues.

## The American Forest Foundation and Market-Based Approaches

The American Forest Foundation (AFF) recognizes the possibilities these market-based incentives hold in terms of income generation and working forest management and conservation. AFF is working to ensure that family forest owners are able to participate in and benefit from these increasingly expanding markets. This is an important role for AFF, as these markets can be quite complex and often require major financial outlays and long-term contractual commitments. This year AFF created a new focus area — conservation incentives (CI) — to address the rising level of demand for ecosystem services and to increase the awareness of the benefits of active forest management. Through landowner outreach, demonstration projects, and market development, CI will promote models that properly compensate family forest owners who





United States, real opportunities exist. AFF is currently exploring the role family forests may play in various types of ecosystem markets and what tools and guidance are necessary for success.

### Conservation Banking

The ESA was designed to protect imperiled species, but created unintended consequences for landowners as more than 75 percent of threatened and endangered species in the United States occur on private lands. Many landowners see the restrictions in the

can sell credits to developers who need to compensate for the impacts of their projects on these species. Credits are the currency bought and sold in a conservation banking agreement representing imperiled species or their habitat (units defined in acreage). The credits available for a specific piece of land is determined by ranking or weighting habitat attributes such as site condition, parcel size, and proximity to other conservation lands. The pricing of credits is determined through traditional market factors, including supply and demand, construction and management costs, and opportunity costs, such as the income bypassed from alternative land-use options. Credit sales are generally restricted to a service area, which may be defined by a species' historic range, watersheds, or political boundaries.

Banks require landowners to have a long-term management plan, updated over time, that identifies tasks for managing a bank site, such as conducting prescribed burns and controlling invasive species. A management plan will also include monitoring requirements to ensure appropriate habitat conditions. Additionally, landowners must identify how they intend to fund long-term habitat management.

In coordination with other tools, this collaborative, incentive-based approach to conservation may aid in the recovery of imperiled species. A great deal of planning is required and these banks can take years to develop. Currently banks are only available for a few select species.

AFF recently received a conservation innovation grant from the Natural Resources Conservation Service to develop a habitat credit bank for the gopher tortoise in portions of Georgia and Alabama. AFF will be partnering with the Environmental Defense Fund, Longleaf Alliance, Department of Defense, Georgia Department of Natural Resources, Alabama Department of

## For More Information

**For more information on conservation incentive programs, go to these websites:**

- [www.forestfoundation.org/ccs\\_conservation.html](http://www.forestfoundation.org/ccs_conservation.html)
- [www.forest-trends.org/](http://www.forest-trends.org/)
- [www.epa.gov/owow/wetlands/facts/fact16.html](http://www.epa.gov/owow/wetlands/facts/fact16.html)
- [www.fws.gov/ventura/esprograms/hconservation/cbanks.pdf](http://www.fws.gov/ventura/esprograms/hconservation/cbanks.pdf)
- [www.nycwatershed.org/](http://www.nycwatershed.org/)
- [www.edf.org/page.cfm?tagid=53](http://www.edf.org/page.cfm?tagid=53)
- [http://ecosystemmarketplace.com/documents/acrobat/stateofthevoluntarycarbonmarket18july\\_final.pdf](http://ecosystemmarketplace.com/documents/acrobat/stateofthevoluntarycarbonmarket18july_final.pdf)
- [www.chicagoclimatex.com/content.jsf?id=242](http://www.chicagoclimatex.com/content.jsf?id=242)

offset the unplanned impacts of development, and military projects — with approaches that are generally compatible with working forests and timber production. In fact, many of these markets provide the highest payments for the best “quality” of forest, creating a system that rewards good stewardship and leads to ecological and economic sustainability.

Development of these markets relies on working partnerships with state and federal resource agencies, nonprofit organizations, landowner associations, military installations, family forest owners, and other stakeholders. With 10 million family forest owners holding more than 262 million acres in the

ESA as burdening and limiting their management flexibility, and some argue the incentive is not to protect endangered species but rather to get rid of them before they are documented. This attitude has led to the “three S’s” approach to endangered species management: shoot, shovel, and shut up.

Conservation banking, which refers to both species banking and habitat credit trading, is a market-based approach that works to accomplish the goals of the ESA while rewarding landowners for managing for endangered species. In exchange for the long-term protection and management of at-risk species or their habitat, landowners

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Conservation and Natural Resources, state forestry agencies, U.S. Fish & Wildlife Service (USFWS), and private landowners. This working group will develop and implement a habitat credit bank for the gopher tortoise on family forestlands that will help preclude the need to federally list the eastern population. Under the program, interested family forest owners become eligible for gopher tortoise habitat management assistance and conservation credit payments. The Department of Defense is interested in purchasing these credits to offset unplanned impacts on installation lands.

The initial stages of the project will focus on bank development, including the determination of criteria needed to value and rank habitat sites and assign credits. Following this determination, GIS and assessment tools will be used to identify priority lands for participation. An important element of this program will be the identification of an agency or organization that can act as an intermediary between landowners, the Department of Defense, and other stakeholders. This project is scheduled to begin in October 2008

and will be implemented over a three-year period.

### Payments for Watershed Services

The conservation incentive initiative established to protect the water source of the New York City Watershed (NYCW) is an excellent example of a successful market-based approach to conservation. Forests in the NYCW cover 75 percent of the total land area and includes more than 120 working private forests. In 1989 the EPA began to require specific quality standards on the water supply that could either be met through treatment or natural conditions. Portions of the NYCW decided to develop a program based largely on improvement of watershed management, hoping that investing in improved farm and forestry practices would improve water quality to meet EPA standards at a fraction of the cost of building and operating a new purification plant. The local Watershed Agricultural Council (WAC) was formed to provide leadership to improve land use practices and to support the economic development of local communities. The nonprofit

## The Chicago Climate Exchange System

The Chicago Climate Exchange (CCX) launched in 2003 is the world's first and North America's only active voluntary, legally binding trading system to reduce emissions of greenhouse gases, with offset projects worldwide. Forest carbon sequestration projects are of the offset methods recognized by exchange. Eligible projects on the exchange may exist under all four of the mitigation measures outlined by the Intergovernmental Panel on Climate Change:

- Maintaining or increasing forest area (reducing deforestation and degradation)
- Maintaining or increasing forest area (afforestation/reforestation)
- Forest management to increase stand- and landscape-level carbon density
- Increasing off-site carbon stocks in wood products and enhancing product and fuel substitution.

—T.G.

Catskill Watershed Development Corp. administers the watershed program. The watershed program consists of promoting forest and agricultural best management practices, instituting education and outreach programs, purchasing conservation easements, and working with the U.S. Department of Agriculture on the Conservation Reserve Enhancement Program. New York City paid the initial costs of the program, which was financed by a 9 percent increase in the water bill taxes across a five-year period. This billion-dollar investment is less than half of the anticipated tax increase that would have been necessary to cover the building and operating costs of a new filtration plant. New York City bonds and trust funds covered the remaining amounts.


Forest owners managing at least 50 acres and willing to commit to a 10-year forest management plan are eligible for an 80 percent reduction in local property tax and free consultation on best management practices. WAC also explores ways to market the wood from these properties with a special label and create new markets for non-timber products that will provide incentives to improve forest management.

AFF is currently exploring strategies that can build upon the NYCW example in other locations.

### Voluntary Carbon Markets

The U.S. federal government does not currently regulate carbon dioxide or other climate change-related pollutants. However, many experts believe that a federal policy on this issue will be in place during the next presidential term. In the meantime, voluntary markets and regional greenhouse gas initiatives play a key role. In fact, one of the greatest attributes about voluntary markets is that they allow for flexibility and can help set the stage for future policy.

AFF is working with a broad range of stakeholders to build a consensus on how private forests should be incorporated into future federal carbon policy. In addition to these efforts, AFF is developing several pilot aggregation projects to work through the mechanics of forest carbon offsets, which will be traded on the Chicago Climate Exchange.

Ecosystem markets are not a silver bullet for Tree Farmers, but they do represent a powerful tool that, if used appropriately with other available options, can go a long way toward ensuring that forests remain forests. 

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