

Mitigation Banking: A Sustainability Tool Here to Stay

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INTRODUCTION

This article is not about saving energy, green roofs or LEEDS certification. It is not about reducing waste consumption or operating efficiencies. This article is written in hopes of inspiring and educating real estate professionals and future generations about a tool that helps establish a balance between economic growth and environmental quality. It is about one tool that everyone who is a real estate professional should understand. It is mitigation banking. Do you know what this is?

BACKGROUND

Natural Resource Impacts

We generally recognize that we are all part of a world that is reliant on the natural environment to live and do business. It is also pretty clear that as a world we have a history of negatively impacting our natural resources. Moreover, the economic systems in most countries assume an infinite supply of raw materials including soils, air, water and the biodiversity system they support.

The real estate we occupy and our use of these improvements whether our homes, our factories, our agricultural fields, runways and highways all have a negative impact on natural resources. Every one of us as consumers

contributes, even if in a small way, to these negative impacts—even environmentalists.

We consume power to run our businesses, homes, boats and lawnmowers. We flip on light switches and turn on faucets. We fly in planes, take trains and drive cars. We buy consumer products to satisfy our desire to lead a productive comfortable lifestyle. We work in industries and have careers most of which are dependent on impacting natural resources whether we make shoes, use chemicals in our dental practice, develop real estate, build bridges, farm, fly, engage in the armed forces to protect our national security or practice at a firing range as part of our law enforcement community, etc.

Even when we seek refuge from the fast paced world we live in we use products to fuel and clean our boats, pursue artistic talents involving oils and paints, play golf on courses using fertilizers and pesticides. You get my point!

The world also assumes an infinite supply of energy and that the unlimited supply of these raw materials allows limitless production, significant growth in consumption annually and boundless sinks for disposing of the waste we produce.

As this article is written, the world's population grows and dependency on energy

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increases. By 2040, only 26 years from now the global economy is expected to be about 130% larger than in 2010. Projections suggest another 2 billion people will inhabit the planet. Just in the Chesapeake Bay Region on the East Coast of the United States, a geographic footprint system which includes just 5 states including Washington D.C. it is estimated the population will increase from 17 million today to 24 million people by 2060.

Open Space Value

Most humans know, appreciate and can connect with land and water. We love lakes, streams, oceans and the mountains. We appreciate the fact that these resources can be a sanctuary where we find peace of mind in the turbulent world in which we live. There have also been countless articles written by real estate economists and related finance professionals about the measureable positive impact that green open spaces, access to water and natural views capes have on real estate values.

Developers recognize the premium that can be secured, whether for residential lots, office rents, or even industrial parks if there is a green component. These concepts are well established and recognized by the organizations that service the development industry like Urban Land Institute, NAIOP, and the International Council of Shopping Centers.

A Colorado State University study conducted in 2012 found that homeowners will pay as much as a 29% premium to live near open undeveloped land—enhancing the role of conservation style developments.¹ That same study found that roughly 310,000 acres have been developed in the United States as conservation subdivisions. This concept resulted in green open space amenities being considered more favorably in all other forms

of real estate development including commercial office parks and even industrial development schematics.

What would happen if you could use those green open spaces or even the fringes of some of that acreage to create a financial return by developing ecosystem service mitigation credits? Wouldn't it also be more efficient to have your compensatory mitigation requirements satisfied in advance of the time you start the final design of your projects? As a lender secured by the potential performance of your borrower engaged in the development of a complex project, wouldn't you want to know that the mitigation required under the permits had no contingent liability tail?

It goes without saying, but maybe it isn't obvious to everyone, that we need to build houses, improve and enlarge highways, build pipelines, enhance economic stability by developing improvements that serve our growing population, deepen ports, explore the world for more sources of energy, farm for food sustenance, cut timber to produce wood products, etc.

But how can we sustain this type of activity in light of the negative impact it has on our natural resources? More importantly, how do we deal with the future impacts to deal with our growing population at the levels contemplated?

CURRENT NATURAL RESOURCE PROTECTION

What we have today is an uncoordinated patchwork of requirements that are often at odds with economic development and sustainability objectives. The existing system seems ill-equipped to handle the pressures we place on our natural resources. The

weaknesses have been apparent for some time while new ones have started to surface—in new growth moratoria and forms of zoning that change forever the ability to extract value from land, in the handling of new environmental catastrophes and significant adverse climatic events.

One major reoccurring plight is the significant delays and therefore increased costs associated with trying to obtain permits for alternative energy and transportation infrastructure projects all of which have a large impact on associated development values. You will recognize in the list below many of the Federal, State and local type statutes or sources of rulemaking that are in conflict. They include:

- National Environmental Policy Act
- Clean Water Act
- Clean Air Act
- Oil Pollution Act
- Mining Reclamation Act
- Water Resources Development Act
- Gulf of Mexico Energy Security Act
- Endangered Species Act
- Natural Resources Damage Claim Act
- Kyoto Protocol—CO₂
- State Statutes—wetlands, water quality, flood control, rare species
- Maryland Nutrient Cap & Trade Rules
- Maryland Forest Conservation Act
- Chesapeake Bay Critical Area Relief Act
- Chesapeake Bay Ecosystem Reauthorization Act of 2009

- EPA—Total Maximum Daily Load Allowance (TMDL) Rule

For the area and jurisdictions where you conduct your business, all you have to do is to go on the website of your state natural resource or environmental protection offices and the corresponding EPA website to determine what environmental protection permitting rules exist. As you might well know, the requirements and obstacles for real estate development are extremely onerous when it comes to satisfying these permitting requirements.

Within this permitting framework, politicians, citizens, utilities, environmentalists and land use managers are constantly faced with potentially competing objectives with limited or even shrinking resources. These competing objectives include:

- Improve water quality;
- Restore and maintain ecosystem functions;
- Reduce air emissions;
- Protect and restore critical habitats;
- Manage and improve coastal zone resources;
- Provide energy and materials resources;
- Offer recreational amenities;
- Deliver water to agriculture in order to provide the foods we depend on;
- Provide quality drinking water;
- Manage water supply quantities;
- Equitably allocate responsibilities for pollution control expenditures;
- Support economic development;

- Produce energy;
- Rebuild failing infrastructure; and
- Provide a housing supply for a growing population (in many parts of the country).

Unfortunately as a society we place environmental quality last. History clearly suggests when it comes to adapting budgets whether it's Congress, state legislatures, or local decisions about how to prioritize the use of available dollars among the following priorities:

- 1) Health
- 2) Education
- 3) Economic stability or revitalization
- 4) Public Safety/National Security
- 5) Crime Prevention
- 6) Infrastructure, Roads, Bridges and other Transportation
- 7) Environment

We can probably all agree that the first 6 items may come in different order at different times and places, but that the smallest amount of funding normally gets allocated to environmental quality. It's just "natural" and it's because we assume we have that infinite source of natural resource values mentioned above.

In a struggling economy, guess what gets cut first? The budget designed to enhance environmental quality is deemed dispensable. It's considered not as important as the other issues we face as a society. And when we get pushed into a corner, when we suffer from economic woes, even the environmental laws in place are then "weakened" or "re-

laxed," in the name of "business friendly" or other political nomenclatures.

In short, rules declared to protect resource values are not enforced because of political pressure to enhance, not diminish, a recovering economy. There is no doubt that a recovering economy is a major factor in lawmakers retaining their jobs and maintaining jobs for their constituents does not always equate to spending money on environmental issues.

MAXIMIZING THE VALUE OF LAND ASSETS

Many developers and institutions cannot depend on conventional development objectives to create returns or establish value in land holdings in today's economy. Recovery timetables, absorption rates, the availability of financing and many traditional political issues mandating no growth are issues confronting developers that are more complicated than ever. Some of these issues cannot only cripple, but many times end, projects.

In the meantime sustainability concepts are driving major structural changes in industry, competitive markets and value chains, changing the way we do business. Sustainability innovation which includes innovation of new business models, markets and ecosystem relationships have emerged. These dynamics are driving changes where the intersection of profitable growth meets environmental quality prerequisites.

There are ways to maximize value beneath, at and above the surface of land. Some of these techniques and tools are not new but can be combined with new technology and established science to create cash flow from unconventional sources. Streams of cash can be found in:

- Using biomass to create wood pellets for fuel
- Wind power & Solar Energy
- Eco-asset development utilizing acreage not suitable for development
- Restoration of tidal riparian rights
- Storm water management easements
- Flood storage easements
- Environmental tax credits associated with restoration of environmentally impaired land
- Tax deductions associated with conservation easements

Understanding these tools will enable you to understand all new markets both emerging and established. The market is driven by global recognition that the world can no longer live the way it has in the past. International, U.S. State and local governments have all jumped on the bandwagon and continue to enact laws and rules that prevent negative impacts to resource values. Find out how to use these rules to your advantage.

MITIGATION AND ECOSYSTEM SERVICES BANKING

What has evolved over the last 17 years into a more balanced and sensible management of these competing political and societal interests while achieving a greater level of environmental protection is the concept of mitigation banking. Wetland mitigation banking, the initial form of creating value by using advanced compensatory mitigation is codified within 33 U.S.C. 401, 33 CFR Part 332, a portion of the Clean Water Act. This revision to the Act was finally adopted in December 2008 after 17 years of relying on just

policy and guidance known as the 1981 Mitigation Policy issued previously by several federal agencies including Environmental Protection Agency, the Army Corp of Engineers and the U.S. Fish & Wildlife Service.

The Army Corp and the EPA had built on decades of experience associated with mitigating for adverse impacts to the environment to develop the most comprehensive rule allowed. The Rule for the first time established standards and criteria for compensatory mitigation options to create sufficient consistency and predictability for parties seeking permits to develop and improvements on land, natural resource restoration managers and the public.

This new “banking” approach incorporates economic incentives and market-based mechanisms to harness environmental entrepreneurialism. The result can be improved water quality, enhanced wetlands, restored streams, expanded riparian forests, and re-established habitat and ecosystem functions all of which can be incorporated into green open space initiatives as a part of open space and environmental restoration objectives.

Wetland mitigation banking is a market based approach established by federal and state regulators as mentioned above and endorsed by Congress in such legislation found in the National Defense Authorization Act, the Water Resources Development Act and the Transportation Equity Act for the 21st Century. As of November 2013, more than 1,377 wetland and stream mitigation banks had been approved by the U.S. Army Corp of Engineers and the EPA restoring and permanently protecting more than 1 million acres of property across the U.S.

How Does It Work?

These bank projects have helped facilitate efficient permitting objectives and provided good quality mitigation values to offset the losses from the permits in the following way.

A. Mitigation “banks,” and the establishment of bank credits, result in the advanced restoration of natural resource functions and values on land acquired and restored where the developer of the project known as a bank sponsor carries out the mandate of the restoration objective.

B. These lands are restored, reconstructed and managed to reestablish wildlife habitat, improved water quality and to promote ecological diversity.

C. The lands are then placed under permanent conservation easement to protect the biological and restored values that have been established.

D. Credits are awarded to the bank sponsor for undertaking these efforts.

E. The credits are then sold to offset other authorized environmental impacts occurring within a certain service area of the impacted site. The bank sponsor carries the investment risk in its bank project as there is no known purchaser at the time that the credits are established.

The risk mentioned above is based on the:

- (1) Potential failure of restoration work performed in a project,
- (2) Length of time involved in securing the release of the credits to be utilized for sale on the open market, and
- (3) The liability associated with full compliance with all regulatory requirements

and success criteria involved in maintaining the character of the restored site.

Credits represent the composite of value of the restored system within the mitigation bank; debits represent the loss of the ecological function being replaced. The number of credits generated at a mitigation site is determined using scientific calculations and procedures outlined in regulatory guidance and rules adopted by both federal and state regulators and found within the standard operating procedures adopted by each of the 38 Army Corp of Engineers District offices around the county.

Site specific conditions dictate what level of enhancement, creation, preservation and restoration will be feasible on a site. Those conditions become the basis upon which the restoration work is designed and implemented.

An agreement, reached between the bank sponsor and the regulators, is set forth in a Memorandum of Understanding known as a Mitigation Banking Instrument (MBI). This instrument establishes the ecological benefit to be realized from:

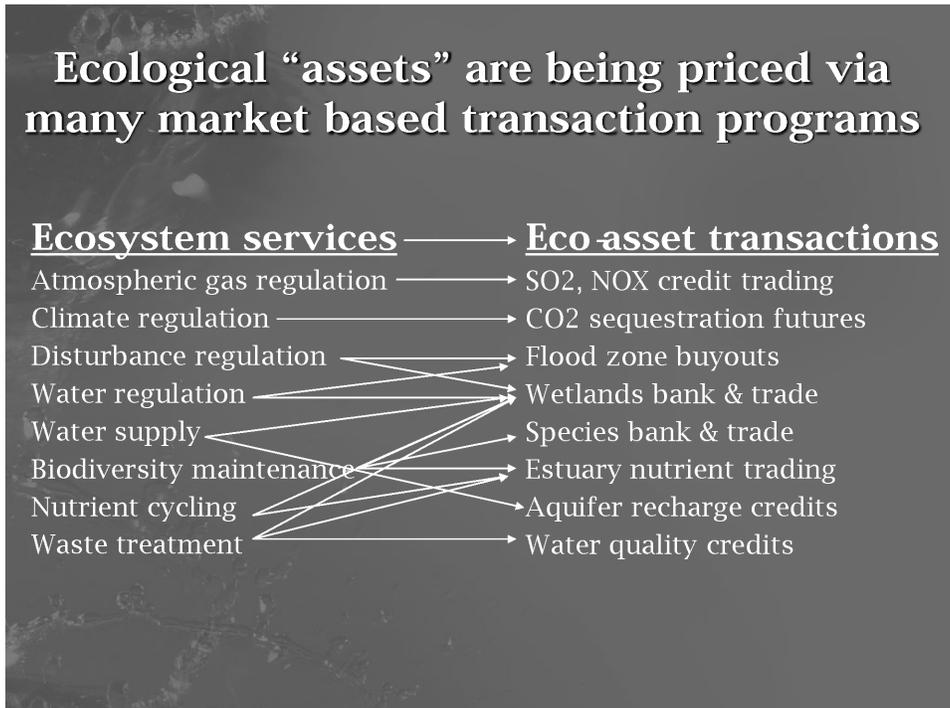
- (1) The engineered design plan resulting in the restoration of the land being used for mitigation
- (2) The type (stream, wetland, forestry or habitat) and total number of credits generated within the bank project, and
- (3) The timeline and schedule for the sale and use of those credits to compensate for other authorized impacts

The chart below further explains the relationship between the type of environmental regulations that exist in our country to protect

resource values such as air, water, soils and habitat and the credit type markets that exist. The credit market has evolved in part to

provide a remedy for those who have to comply with these regulatory requirements.

Figure 1: Relationship Between Ecosystem Services and Eco-asset Transactions



New Jersey’s wetland mitigation banking system is just one example of a robust market for ecosystem service and mitigation credits. As mentioned above the Clean Water Act provides the federal statutory predicate for wetland banking. Some states like New Jersey, have laws associated specifically with creating wetland mitigation banks. Other states may create “banks” or other mitigation systems that are unique to that’s states resource values.

The New Jersey Freshwater Wetlands Act prescribes specific procedures for approval and administration of banks. Bank projects take from 5 to 8 years, with credits accumulating based on success criteria found

within the law. An MBI is issued to the bank sponsor by the N.J. Department of Environmental Protection (NJDEP) for work associated with establishing the bank resulting in the wetland creation, enhancement or restoration of that piece of property.

Tidal Mitigation Banking in New Jersey requires approval by the United States Army Corp of Engineers through a separate and distinct process in which NJDEP also participates. The bank sponsor would undertake this effort because they perceive a need and demand for mitigation as a result of major infrastructure improvement projects, home building, or construction or expansion of public amenities such as schools, highways,

ports, churches and hospitals all of which need permits and most of which have environmental impacts.

What has taken shape across the country is the growing practice of engaging in *multi-credit trading* of environmental impact reduction credits and ecosystem values across multiple environmental media, using watersheds as a basis of trade. Watersheds become the service areas within which impacts can be solved. They are solved by developing credits that can then be sold. This approach recognizes the ecosystem values of the watershed, i.e., its water, wetlands, habitats, riparian forests, etc., and provides multiple incentives for restoration and improvement of ecosystem functions.

In multi-credit trading programs, companies and landowners can invest in best management practices, pollution controls, or restoration projects and earn tradable credits to sell or use toward requirements or voluntary commitments associated with water quality, TMDLs, wetlands, endangered species habitat protection, or carbon sequestration.

THE CRANBURY TOWNSHIP CASE STUDY

The Cranbury (New Jersey) Wetland and Riparian Buffer Bank project constructed by GreenVest, an Annapolis based eco asset Development Company engaged in the business of banking makes a good case study of a mitigation project. The project details are as follows:

Location: Cranbury Township, Middlesex County, NJ;

Description: This 138 acre site historically was a headwater forested system comprised of riparian/palustrine forested wetlands and uplands. The natural headwater system was

significantly altered and impaired by ditching, deforestation, intensive agricultural use and surrounding development including the NJ Turnpike which forms the sites western boundary. The site was zoned residential but existence of jurisdictional wetlands and a significant forested system prevented conventional development.

Service Area (SA): The service area established by agreement with the regulators was a hydrological significant series of watersheds management areas (WMA) within the Raritan River Basin known as:

- WMA 8—North & South Branch Raritan,
- WMA 9—Lower Raritan River
- WMA 10—Millstone.

Purpose: To provide compensation for permitted impacts to wetlands, riparian zone and critical aquatic wildlife habitat, with the goal of no net loss of these ecological resources within the service area.

Mitigation Offered: This fully approved mitigation bank was allotted 38.14 available to offset impacts within its approved Service Area (SA). The bank is comprised of the key ecological elements that may provide compensation for similar impacts.

- Headwater Forested, Scrub-Shrub and Emergent/Wet Meadow Wetlands
- Zero and First Order Headwater Stream
- Riparian Buffer
- Critical Wildlife Habitat (Contact GV for details)
- Vernal Habitat's
- Forested Upland

Ecological Benefits/Proposed Uplift:

- Restore 80 acres by converting active agricultural fields into forested headwater wetlands/uplands.
- Restore hydrology to 37 acres of ditched, drained and impaired headwater forested wetlands.
- Restore 1,500 lf of historic headwater stream and enhance 37 acres of zero and first order stream habitat.
- Restore and enhance over 65 acres of Riparian Wetlands and Uplands.
- Enhance and create 13 vernal pools (5 currently NJDEP certified).
- Enhance/Restore/Create habitat for vernal species, wood turtle, barred owl & other interior dwelling species.
- Reduce the input of sediment and nutrient loading into the Raritan Basin.
- Improve the chemical, biological and physical processes of existing and proposed forested wetlands plus downstream receiving waters/aquatic habitats.

ADVANCING THE MITIGATION BANKING MARKET

The key requirement to advance this market is for a property owner to be provided with the incentive to restore, preserve and enhance environmental quality on their property. If they can gain cash flow from a portion of their land that is otherwise unproductive due to environmental constraints then the incentive exists.

Finally, the ability to trade credits among the various ecosystem values is cheaper

because resources are spent more cost-effectively. Delays that siphon funds away from improvement actions and leave problems to get worse are minimized or avoided altogether. So, stakeholders can spend less under a multi-credit system than they otherwise would have to get the same results. A multi credit system like that established in the Cranbury project above allows for the establishment of more than one credit (wetlands and riparian buffer or wetlands and forest conservation) and therefore can help solve more impacts. The result can actually be improved environmental quality over time.

Property owners with land suitable for mitigation practices can either sell, joint venture or license their land for mitigation bank development. The result can be restored environmental habitat that is measureable, that improves property values and results in the payment of funds to the landowner.

There are also certain potential tax benefits resulting from the use of a permanent conservation easement that is recorded against the acreage used for the mitigation. The tax benefits are based on the donation of the remaining fair market value of the property after the easement is recorded. For a full explanation of banking practices nationally you can visit www.mitigationbanking.org for more details on the scope of the industry.

Mitigation banking is also expected to play a critical role in implementing President Obama's May 2013 Presidential Memorandum directing federal agencies to expedite permitting relating to key infrastructure projects. The Memo follows a March 2012 Executive Order, which instructed federal agencies to review the permitting process to increase efficiencies:

Through the implementation of Executive Or-

der 13604 of March 22, 2012 (*Improving Performance of Federal Permitting and Review of Infrastructure Projects*), executive departments and agencies (agencies) have achieved better outcomes for communities and the environment . . . by implementing best-management practices. These best-management practices include . . . **utilizing landscape and watershed-level mitigation practices.**²

Ecosystem service value mitigation bank projects help restore numerous biodiversity benefits. The most common and popular types of mitigation banks:

Forest and Carbon Mitigation Banks:

While the main purpose of most banks is to restore and reestablish wetlands and improve water quality in areas degraded by human activity, an added benefit is the project's ability to function as an effective carbon sink. That is the ability of the restored wetlands and forested systems to sequester carbon. Carbon dioxide is absorbed into leaves and plants and stored in the woody fiber of those products thereby helping clean the air.

An article in the July-August issue of *the Journal of Environmental Quality* noted, "two 15-year-old constructed marshes in Ohio accumulated soil carbon at an average annual rate of 2,150 pounds per acre—or just over one ton of carbon per acre per year."³ An average 400 acre agricultural site involving newly restored and fully functioning wetlands, has the potential to claim credit for as much as 6,224 tons, or 12.5 million pounds, of carbon sequestration over the next 15 years.

Wetland, Stream and Nutrient Banks

A typical wetland restoration banking project is also estimated to reduce nutrient pollution by including reduction of nitrogen, phosphorus and sediments over the perpetual life of the project.

The calculation in pounds of each load reduction is based in large part on site specific conditions, methodologies and technology employed to reduce loads, and certification methods use by the jurisdiction where the property is found. Wetland, riparian buffer and stream banks offer credits that satisfy regulatory compliance for Section 404 of the federal Clean Water Act, and other state and local regulations, for mitigating unavoidable impacts to wetland and stream resources.

Nutrient banks offer credits that offset water quality impacts (phosphorous, nitrogen and sediment) from point source and non-point source polluters, such as wastewater treatment plants and agricultural fields, respectively. These credits satisfy regulatory compliance for Clean Water Act's Total Daily Maximum Load (TMDL) requirement.

Species Habitat Restoration

The restoration of the riparian headwater system through the planting of native trees and plants and the stabilization of streambeds not only improves water quality but also provides habitat for native species. A number of avian and mammalian species typically return to these restored systems thereby enhancing their survival and potential for long term reproduction.

These banks offer credits that satisfy regulatory compliance for Sections 7 and 10 of the federal Endangered Species Act, and other State and local regulations, for mitigating unavoidable impacts to threatened and endangered species and their habitats and other sensitive habitat areas.

WHAT'S THE POINT OF MITIGATION BANKING?

Many property owners may not be aware of the negative impacts to their property

values from some natural resource conditions. Take for example the following list of limiting natural resource conditions that actually place limitations on the conventional development value or use of a property and can in some instances reduce a property's value:

- Wetlands
- Wildlife Habitat
- Presence of Threatened or Endangered Species
- High Food Production Capability (Farmable land)
- Sources of Clean Drinking Water that cannot be impacted
- The need to maintain clean air
- Productive Fisheries or acreage that is a buffer for productive fisheries
- Existing Biological Diversity
- Biological, Botanical and Scientific Opportunity
- Soil Creation
- Carbon Sequestering capacity of forests
- Flood Control Capacity to accept storage of flood waters
- Cultural resources

If we as property owners agree that there are elements such as those listed above that reduce property values why not find a way to potentially create value and cash flow from those resources while at the same time enhancing environmental quality? Recognizing that simple fact alone may improve your environmental standing in the regulatory

community is which business and real estate developers must conduct their business

The ability to develop a mitigation bank is very site specific but most properties unless already fully developed have some acreage that is environmentally challenged or has potential for restoration, preservation or enhancement that could be undertaken in conjunction with some other conventional development right. If not then a potential remedy to address permitting needs may lie in the purchase of credits from a bank within the watershed.

CONCLUSION

The market-based, incentive-driven ecosystem mitigation banking approach to watershed stewardship and restoring environmental quality that is implemented in tandem with existing regulatory programs is a real advantage for the property owner and real estate developer. The combination offers several advantages over traditional command and control environmental rules of the past while addressing biodiversity impacts that impede development.

Market valuations and pricing mechanisms provide a framework to rank watershed improvement projects according to the total benefits delivered to the watershed. Stakeholders will have the incentive to undertake projects in priority order based on cost-effectiveness. Developers can participate or utilize mitigation credits to help facilitate their projects. Government and non-profit organizations also will have all the information they need to first spend their money on those projects that offer the most environmental restoration potential and improvement per dollar invested.

Ecosystem service credit trading also brings new resources to the problem and helps hasten improvements because it attracts participants that are otherwise not required or enticed to participate. The collaborative process set up by the multi-credit system helps stakeholders make continuous progress in setting goals and objectives for enhancing and protecting what we as a society value.

These results contrast significantly with delay, excessive costs and inaction associated with approaches that focus on litigating solutions helping establish this author's point that banking activities can help find that balance between economic growth and stability with environmental quality. Mitigation banking

is a tool that everyone should understand and look for opportunities to implement.

NOTES:

¹Stephanie Gripne, J.C. Martel, and Brian Lewandowski, "A Market Evaluation of Colorado's High-performance Commercial Buildings". December, 2012, *The Journal of Sustainable Real Estate*. p.123–p. 148.

²Presidential Memorandum—Modernizing Federal Infrastructure Review and Permitting Regulations, Policies, and Procedures. May 17, 2013. <http://www.whitehouse.gov/the-press-office/2013/05/17/presidential-memorandum-modernizing-federal-infrastructure-review-and-pe>.

³Farming carbon: Study reveals potent carbon-storage potential of manmade wetlands. June 24, 2013. <http://esciencenews.com/articles/2013/06/24/farming-carbon.study.reveals.potent.carbon.storage.potential.manmade.wetlands>.