



January 2012
Newsletter

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Ecosystem Banking: Alternate Land-Use

Ecosystem Banking is a vehicle for land owners to achieve long term goals and potential financial gains. This alternative is suitable in situations where traditional development (residential, commercial, etc.) is either undesirable or impossible, or if the land owner’s goal is to protect the property and have it remain in a natural state. In this Update, we highlight four ecosystem banking options and their benefits.

Mitigation Banking generally focuses on two main components: 1) **streams** and associated riparian buffers and 2) **wetland** resources. Both stream and wetland mitigation banking focus on the restoration, enhancement, and preservation of wetlands and streams as a form of compensation for unavoidable impacts associated with development elsewhere within a pre-determined watershed. These ecosystem enhancement efforts result in the establishment of “banking” credits, on otherwise idle or marginal lands, that can be sold to produce income. These enhancement activities help to maintain or improve the ecological values of wetlands and streams as well as providing a viable mechanism to achieve long-term conservation, ownership, or land-use goals.

Conservation Banking focuses on the preservation and enhancement of habitat that supports threatened and/or endangered flora and fauna species. Similar to mitigation banking, credits are derived from enhancement and long-term preservation activities on lands that, because of their suitability for listed species, may otherwise prove difficult to develop anyway. These credits may be sold to produce income and thereby serve land-owner goals while participating in the protection and/or re-establishment of sensitive species. These activities also help to serve regional ecosystem goals by creating connected and contiguous parcels of preserved lands that provide important

wildlife corridors that facilitate the movement or buffering of species.

Nutrient Offset or Credit Banking focuses on the reduction of excess nutrient loads (e.g. nitrogen, phosphorus, etc.) from surface waters. Nutrient reductions can be accomplished through a variety of means, including retirement or reduction of point sources (e.g. “end-of-pipe” discharges) or non-point sources (e.g. agricultural nutrients, urban stormwater nutrients, etc.) of pollution. Practices may include enhanced treatment of runoff or surface water, reduction or elimination of existing sources (e.g. conversion of agricultural lands to forest lands), and other innovative strategies.

All these forms of ecosystem banking can be appealing from an environmental standpoint in that they typically involve protection and restoration of natural resources, enhancement of ecosystem functions through improved water quality and wildlife habitat, and conservation or protection of larger tracts of lands. Ecosystem banking provides not only the opportunity to augment ecological functions on a property, but also the opportunity to potentially generate financial income. Banking is also one of the preferred options by both federal and state regulatory agencies as a means to offset permitted impacts.

These initiatives may not be for everyone, but a few questions to ask might include: Are you interested in alternative eco-friendly income sources? Does your property contain marginally productive agricultural lands? Does it contain a network of stream or drainage features? Do you manage livestock? If you answered ‘yes’, ecosystem banking may be an option to consider.

Please contact WEG to learn more about the mitigation banking process.

Special Points of Interest:

- **Ecosystem Banking can be a profitable land-use alternative (pg. 1)**
- **Banking examples at work (pg. 2 & 3)**
- **2008 Mitigation Rule puts banking credits at the top of the list of mitigation options (pg. 4)**

Wetland Mitigation Banking

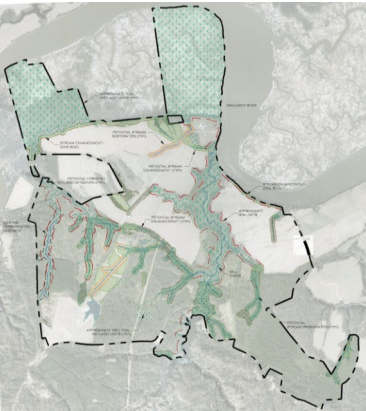
Wetland mitigation is the replacement of wetland acreage and function that is lost to unavoidable impacts during the course of development. This is accomplished through the restoration, enhancement, and preservation of wetlands which improve water quality, reduce flooding, recharge groundwater, enhance fish and wildlife habitat and increase opportunities for recreation. Wetland mitigation prevents the loss of these important ecological values by maintaining or increasing the acreage of wetlands within watersheds as they are developed. With the right site, **wetland mitigation can provide significant financial incentives for landowners** by dedicating what otherwise may be unusable and/or marginally productive lands as conserved wetlands. The WEG Wetland Mitigation team has conducted wetland mitigation feasibility and assessment studies on over 30,000 acres of land which has led to over 4,900 acres of restored or created wetlands. These efforts include the development of one of Virginia's first wetland mitigation bank to receive credits (the James River Mitigation Landbank) as well as one of the largest successful tidal wetland mitigation projects undertaken in Virginia (APM Marine Terminals Wetland Mitigation Area). WEG has worked on over 17 approved banks to date.



WEG Case Study: The **James River Mitigation Landbank (JRMLB)** is situated on 430 acres of James River floodplain in Goochland County, Virginia. WEG was instrumental in helping the project proponents identify a wetland banking opportunity that would include a mosaic of habitat types and environmental conditions. WEG was able to assist the client through all phases of project development including feasibility, design, construction oversight, planting, and long-term maintenance and monitoring. WEG also completed all stages of the mitigation bank establishment process from submission of the banking documents to the agencies through implementation and final banking instrument approval. This mitigation bank was the first non-tidal wetland bank in Virginia to complete the Interagency Review Team (formerly MBRT) process and gain formal authorization. To date, JRMLB has constructed over 224 acres of non-tidal wetlands. WEG is currently performing mitigation maintenance and monitoring for Phases I & II, and overseeing the construction of Phase III.

For more information, **please contact any WEG office.**

Nutrient Offset Banking



Nutrients like phosphorus and nitrogen are present in ambient waters and help to sustain ecosystems. Excess nutrients, however, can harm receiving waters by fueling algae growth, subsequently reducing dissolved oxygen, and impairing overall resource quality. Nutrient banking strategies can be an effective incentive for landowners to reduce excess nutrients and sell/transfer credits or offsets to industrial sources and land developers. The trading framework affords regulated entities the opportunity to participate in more cost-effective nutrient reduction strategies to assist them in meeting stringent nutrient reduction objectives required by local, state, and federal regulatory authorities.

The Commonwealth of Virginia has been a national leader in the development of nutrient trading legislation and a regulatory framework. Expansion of the current nutrient trading and exchange program is one of the primary tools put forth by the state to comply with the federally-mandated Total Maximum Daily Load (TMDL) established for the Chesapeake Bay and its tributaries. Many other states have followed suit in recent years by developing enabling authority for watershed-based nutrient reduction strategies including trading. Nutrient trading creates yet another opportunity for landowners to help with conservation and ecological restoration efforts. **Nutrient reduction strategies can also complement other conservation and land management strategies.** WEG is currently evaluating nutrient reduction strategies in Virginia and elsewhere and is a leader in providing innovative nutrient reduction services for urban runoff and wastewater, and is a regional and national leader in environmental credit development and mitigation. If you would like more information on nutrient banking, **please contact one of WEG's Water Resources Engineers.**

WEG Case Study: The **Pamunkey Farm Stream and Wetland Mitigation Bank** is situated on approximately 2,020 acres in New Kent County, Virginia and includes approximately 23.6 acres of wetland restoration, 8.1 acres of wetland creation, 133.2 acres of wetland preservation, 408.7 acres of upland buffer preservation, and 523.3 acres of tidal wetland preservation. The Bank also supports several federally threatened and endangered species and associated habitats (bald eagle, small whorled pogonia, and sensitive joint vetch).

WEG has completed mitigation bank development and is complementing the ecological restoration effort with the reduction of nutrients on residual agricultural lands adjacent to the wetland and stream mitigation bank. These nutrient reduction efforts will create additional contiguous forest conservation, improve site ecology and will complement the mitigation bank by reducing nutrient inputs to surface waters. The nutrient reduction implementation is currently underway and we envision that nutrient credits will be certified and available in early 2012.

Conservation Banking



The U.S. Fish and Wildlife Service (USFWS) promotes conservation banks as a tool for mitigating impacts to endangered species. While credit sales to off-set unavoidable impacts to the specific habitat needs of certain species has not been recognized by regulatory agencies in all states, WEG is tracking this emerging market and is pursuing conservation bank opportunities where appropriate. Property that possesses the proper habitat and have recorded occurrences of threatened or endangered species would be permanently protected through a conservation easement. In exchange for making the commitment to protect the habitat in perpetuity, the bank owner may sell credits to developers and others who need to compensate for the unavoidable environmental impacts. The bank uses a portion of the funds to protect or enhance the environmental resources it holds and provide for long term management. Conservation banks are typically used when it makes more sense for a

developer to purchase conservation credits than to protect part of the area being developed (i.e., when on-site conservation would result in small, isolated sites). Properly managed, a conservation bank, which must be approved by a state or federal wildlife agencies (such as USFWS), can be a **win-win for the landowner, developer, environment, and public.**

WEG Case Study: WEG is currently working on one of the first sand skink conservation banks in the state of Florida. The proposed bank, known as the **Collany Conservation Bank**, is located in Polk County Florida and looks to expand to include protection for scrub jay and gopher tortoise habitat as well. WEG staff performed a natural resource inventory of the property as well as a bank feasibility study. Characteristics evaluated included threatened and endangered plant and animal species, vegetative communities including rare community associations, soil types, topography, flood zones, adjacent land uses and natural resources, connectivity to other preserved lands, and historical and/or archaeological resources. Based on the results of the feasibility study, WEG conducted detailed surveys for sand skink (*Plestiodon reynoldsi*) throughout the 122 acres of identified suitable habitat for listed plant species throughout the entire upland and wetland habitats. With the presence of sand skinks and other rare biota, the degraded nature of the natural systems, and the landscape position, the USFWS encouraged pursuit of the project.

Stream Mitigation Banking

Stream mitigation focuses on the restoration, enhancement, or preservation of stream and buffer resources that compensate for unavoidable stream impacts. Stream preservation areas

encompass stable, natural streams that exhibit a variety of in-stream habitat and minimal channel alterations. Based on the amount of existing resource and proposed activities (i.e. restoration versus preservation), stream credits are generated that serve as the exchangeable currency sold by the bank sponsor (i.e. landowner) and purchased by the buyer (entity that impacts resources and needs to compensate or mitigate for such losses during the regulatory permitting process). Concurrently, livestock exclusion, watershed protection, and protection of threatened and/or endangered species may also generate stream credits as part of the overall mitigation bank. Stream mitigation activities can reduce sedimentation, restore fish and macroinvertebrate habitat, improve water quality, expand or establish wildlife corridors, and **have potential financial opportunities and tax incentives.** WEG's Stream Mitigation team has completed over 1,000 miles of stream assessment and mitigation feasibility studies. Our team has also designed over 29 miles of stream restoration with 16 miles constructed. **Please contact WEG,** if you believe that your property may be suitable.



WEG Case Study: The York River Mitigation Bank (YRMB) is sited on 959 acres in King William County along three miles of the Pamunkey River and includes 13 miles of stream mitigation and

over 290 acres of wetland mitigation. WEG has provided full-service environmental consulting in support of this project since its inception in 1998. Specifically, WEG has completed environmental resource surveys, Interagency Review Team coordination, detailed stream and wetland mitigation assessment, design, and construction plans, agency permitting, contractor coordination, construction oversight, monitoring and reporting activities, and mitigation credit sale coordination. The first phase included nearly 8

miles of stream preservation, including buffers that provide critical wildlife corridor areas from numerous headwater tributaries to the Pamunkey River. The second phase included the restoration of nearly 1,700 linear feet (LF) of Hornquarter Creek, which had been severely degraded from historic ditching and on-going agricultural practices. The third and fourth phases of the stream mitigation portion of the bank included over 7,100 LF of restoration, 28 acres of riparian buffer reestablishment, and livestock exclusion. Presently, over 163 acres of wetlands have been restored, created, or preserved as part of the YRMB.

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What does the 2008 Compensatory Mitigation Rule mean to you Today?

Today, the 2008 regulations are affecting the mitigation process by putting the purchase of mitigation bank credits at the top of the list of options. The 2008 “Mitigation Rule”, as it is commonly referred to, enacted jointly by the Corps and the EPA back in June of 2008, did not change the basic premise of Section 404(b)(1) of the Clean Water Act which requires avoidance and minimization before mitigation. Nor did it change *when* the mitigation is to take place. The main principles of the Mitigation Rule are 1) to establish a preferred hierarchy of the mitigation options; 2) to establish equivalent standards and criteria to all of the mitigation options; and 3) to establish timeframes for the review of mitigation bank and in-lieu fee establishment documents.

The hierarchy puts the purchase of mitigation bank credits at the top of the list. The hierarchy, in order of preference, is as follows: Mitigation Bank Credits; In-lieu fee program credits; Watershed approach based mitigation by the permittee; On-site mitigation/in-kind mitigation by the permittee; Off-site mitigation/out-of-kind mitigation by the permittee.

The standards and criteria, which apply to all types of mitigation, encourage the establishment of larger mitigation projects that are part of a broader watershed plan and provide additional benefits such as expanding other protected resources and habitat corridors. They also require equivalent levels of planning, success, monitoring, financial assurances, and site protection instruments for all of the mitigation options. The timeframes established in the Mitigation Rule serve as a planning tool for those going through the process of establishing a mitigation bank or in-lieu fee fund.

What does all this mean to those who need mitigation and to those who provide mitigation? Since 2008, the Mitigation Rule has effectively changed the mitigation process for all those involved (landowners, developers, bankers, consultants, and agency personnel). Opportunities to perform on-site or off-site mitigation are now more limited, particularly if established credits are available from a mitigation bank. Opportunities that may have been approved in years past are now being evaluated within the more ecologically-based watershed approach described in the Mitigation Rule.

What effect has the Mitigation Rule had on the number of mitigation banks being established? While there has been a steady increase since 1995, there’s been a marked increase since the Mitigation Rule went into effect. Prior to 2008, approximately 70 mitigation banks were established across the country per year. In 2008, there was a spike of 119 mitigation banks, while 2009 had 89, and there were 104 in 2010. To date, seven in-lieu fee funds across the country have been approved under the Mitigation Rule, including the Virginia Aquatic Resource Trust Fund in Virginia. Three more are expected to be approved within the next two months.

