

A Primer on Mitigation Banking: Process and Potential Revenue

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Regardless of whether the property was passed down through generations of family or recently purchased, owning a piece of mother earth instills an innate sense of pride and stewardship, provides a practical education in nature, and creates memories to last a lifetime. Whatever the reason for owning land, many of us depend on some type of income stream produced by land ownership, e.g., farm rent, timber sales, recreational leases, etc. With increasing land values, development pressures, and global competition in agricultural and forestry arenas, traditional means of generating income from land ownership do not always provide the most lucrative financial returns. Mitigation banking may provide an additional avenue for generating the income stream necessary to retain ownership and preserve a much-valued way of life.

What is Mitigation and Mitigation Banking?

Section 404 of the Clean Water Act (CWA §404) establishes the federal program for regulating the discharge of dredged or fill material into federally jurisdictional wetlands, streams, and other waters of the United States. As part of the CWA §404 permitting process, applicants are often required to compensate for unavoidable impacts to jurisdictional waters by providing mitigation. Compensatory mitigation for streams typically consists of restoring degraded streams, replanting denuded stream buffers, and preserving intact forested stream buffers. Compensatory mitigation for wetlands typically consists of restoring wetlands that have been hydrologically altered, replanting wetlands that have been cleared or otherwise maintained for agricultural purposes, and preserving high-quality existing wetlands.

Mitigation banking is a market-based approach established by federal regulations that allows a public or private entity, i.e., bank sponsor, to restore and preserve wetlands, streams, and other

aquatic resources expressly for the purpose of providing compensatory mitigation for authorized impacts to similar resources at development sites. Mitigation banks operate similarly to other financial institutions that describe transactions in terms of credits and debits. Credits represent the composite of ecological function at a mitigation bank, while debits represent the loss of ecological function at a development site. Bank sponsors can sell mitigation credits to permittees who are required to compensate for jurisdictional impacts incurred at their development sites. Mitigation banks can generate credits from wetland mitigation, stream mitigation, or both. The sale of these credits legally transfers the liability for compensatory mitigation from the permittee to the bank sponsor.

The number of wetland and stream credits generated at a potential mitigation bank is determined using procedures outlined in a regulatory guidance document, referred to as the Standard Operating Procedure (SOP), that is typically provided by the appli-



▲ Constructed riffle with rock vane to dissipate flow energy, provide grade control, and enhance aquatic habitat.

cable U.S. Army Corps of Engineers (USACE) district office. A given district's SOP represents a collaborative effort between multiple federal and state environmental agencies referred to hereafter as the Interagency Review Team (IRT). The IRT is responsible for reviewing and approving the banking instrument, which is the primary permit document that describes in detail the physical and legal characteristics of the bank, the proposed mitigation design, the net ecological benefit that will be realized from implementation of the proposed design, the total number of mitigation credits generated at the bank, and the schedule for releasing credits.

Mitigation Bank Site Selection Criteria

There are certain favorable criteria used to evaluate a site's potential for developing a successful mitigation bank. These favorable criteria include the following market and land-use considerations.

Banking Market Criteria

- The potential bank site is located in a high-growth watershed that is not saturated with existing mitigation banks.
- The potential bank is located within an area in which credits are required for large local, state, and federal projects, e.g., state department of transportation road projects, military base expansion, reservoirs, landfills, etc.
- The potential bank is located within a watershed listed, or is otherwise considered by the regulatory agencies as high priority.

Land-Use Criteria

- Mitigation banking is consistent with adjacent land uses and will not create complications arising from neighboring properties or infrastructure (e.g., existing roads, utility lines, impoundments, etc.).
- The potential bank site contains ditches, constructed waterways, tile drainage, levees, and other man-made structures that have altered the site’s natural hydrologic regime.
- The potential bank site contains impounded, channelized, or straightened streams in which natural channel form can be restored.
- The potential bank site contains wetland or stream buffers in which vegetation consisting of planted pine monoculture, pasture grasses, or agricultural crops can be replaced with native species.

Sites being considered for mitigation banking should meet all or most of these market and land-use criteria. Development of a mitigation bank that meets these criteria usually results in lower start-up costs and a higher profit margin. It is important to note that many expenses associated with developing a mitigation bank are independent of the actual size of the proposed bank site. For example, regulatory agency coordination required for a 100-acre mitigation bank is typically similar to that required for a 500-acre bank. Consequently, it is financially advantageous to select sites on which

Type of Mitigation	Amount	Credits	Fair Market Value for Credit	Gross Revenue
Wetland	110 acres	273	\$7,500	\$2,047,500
Stream	7,000 feet	113,050	\$70	\$7,913,500
			Total	\$9,961,000

▲ **Table 1:** Credit and gross revenue estimates for the hypothetical mitigation bank.

Task	Estimated Cost
Site evaluation and mitigation prospectus	\$9,000
Draft banking instrument, includes: baseline hydrologic, water quality, vegetative and ecological studies, topographic survey, Phase One cultural resources survey, 50 percent design drawings, preparation of draft banking instrument, and regulatory coordination	\$170,000
Final banking instrument, includes: complete design drawings, preparation of final banking instrument, and regulatory coordination	\$27,000
Section 404 permitting, state, and local permitting	\$10,000
Recordation of restrictive covenant	\$15,000
Construction, planting and supervision of site grading and tree planting	\$600,000
Report containing as-built GPS survey and final credit generation	\$5,000
Annual monitoring of bank and reference sites (7 years)	\$194,000
Total Estimated Cost	\$1,030,000

▲ **Table 2:** Estimated costs for the hypothetical mitigation bank.

large areas of wetlands and extensive reaches of stream can be restored. This will allow a bank sponsor to generate a large number of mitigation credits, thereby increasing the profit margin for the project.

Potential Revenue From a Hypothetical Mitigation Bank

Because of the many advantages mitigation banking offers the regulated community, banking represents a potentially lucrative means of generating income. A hypothetical bank site is presented herein to demonstrate potential cash flows generated from mitigation banking. The hypothetical bank is assumed to contain 110 acres of wetland mitigation and 7,000 linear feet of stream mitigation located in

north Georgia. Based on some general assumptions for calculating credit generation in the applicable SOP, the hypothetical bank has the potential for generating 273 wetland credits and 113,050 stream credits.

Projected gross revenue estimates generated from the hypothetical bank are provided in Table 1. The cost per credit estimate indicated for stream and wetland credits is based on current market value as determined from recent quotes obtained from mitigation banks located in north Georgia. It is important to note that there is currently a significant demand for mitigation credits in north Georgia, which may exceed the demand for credits in other states and other regions of Georgia. Consequently, the number of

Year	Mitigation Milestone	Credit Release	Revenue to Date	Cost to Date	Cash Flow to Date
1	Baseline studies, permitting, design	0%	\$0	\$179,000	-\$179,000
2	Bank concurrence, recordation of restrictive covenant, initiation of construction	15%	\$1,494,150	\$529,000	\$965,150
3	Completion of construction, as-built GPS survey, and Year 1 annual monitoring report	35%	\$4,980,500	\$869,000	\$4,111,500
4	Year 2 annual monitoring report	6%	\$5,578,160	\$882,500	\$4,695,660
5	Year 3 annual monitoring report	6%	\$6,175,820	\$917,500	\$5,258,320
6	Year 4 annual monitoring report	6%	\$6,773,480	\$929,500	\$5,843,980
7	Year 5 annual monitoring report	6%	\$7,371,140	\$966,500	\$6,404,640
8	Year 6 annual monitoring report	6%	\$7,968,800	\$980,000	\$6,988,800
9	Year 7 annual monitoring report	20%	\$9,961,000	\$1,030,000	\$8,931,000

▲Table 3: Typical credit release schedule and projected cash flow.

credits and the revenue generated from the north Georgia hypothetical bank should not be extrapolated to other areas. It is imperative to understand the mitigation process and the demand for credits that are specific to a given market before a cost/benefit analysis can be accurately prepared.

Anticipated costs for developing the hypothetical mitigation bank are provided in Table 2. The cost estimates are based on projects in north Georgia that are similar in nature. Estimated costs do not include the cost of mitigation lands, implementation of potential contingency and remedial actions, or administration of the proposed mitigation bank.

Credits generated from the hypothetical bank would be released by the USACE at defined mitigation milestones. The initial release in Georgia is equal to 15 percent of the total number of credits. This release is granted by the USACE upon approval of the final banking instrument and recordation of the restrictive covenant. The second release, which is typically equal to 25 percent of the total number of credits, is granted after completion of construction activities. Release of the remaining 60 percent is distributed on an annual basis over a minimum seven-year period. The USACE releases the credits only after reviewing scientific

data in an annual post-mitigation monitoring report submitted by the bank sponsor and then determining that the mitigation has sufficiently met success criteria. If the bank has not met success criteria, the USACE may request that the bank sponsor implement contingency measures to correct problem areas before a credit release is granted.

A typical credit release schedule and cash flow projections are provided in Table 3. The credit release schedule assumes a total of 35 percent of the credits are released at year three (25 percent release for completing the construction and the 10 percent release after submitting the first annual monitoring report). Cash flow estimates assume that all credits are released by the USACE and sold by the bank sponsor on an annual basis, and that the fair market value for credits indicated in Table 1 remains constant throughout the eight-year credit sale period. Using these same assumptions and an annual discount rate of eight percent, the net present value of this hypothetical mitigation banking investment equals \$6,095,302.15.

While the hypothetical example appears to indicate that mitigation banking represents a lucrative form of business, it is important to understand the risks associated with developing and implementing a mitigation bank.

For example, new regulations may directly or indirectly affect mitigation schedules, credit generation, and service areas. Regulatory workloads and prioritization on CWA §404 permit applications or high profile projects may extend regulatory review periods resulting in prolonged delays to credit releases. Other risks include economic downturns and regulatory approval of competing banks that may reduce credit sales.

It is important to note that mitigation banks are not required to generate both wetland and stream banks. It is also important to note that mitigation banks must be protected in perpetuity through placement of a restrictive covenant or conservation easement. These forms of property control restrict certain activities within bank lands, such as future land development, agriculture, and forestry; but allow other activities that support or are consistent with mitigation banking, such as various wildlife management activities, maintenance of existing access roads, hunting, and fishing. It is also important to note that the restrictive covenant and conservation easements are only placed on credit-generating lands and do not include uplands or other areas that are not included in the bank.

Approaches to Mitigation Banking

There are three main approaches to investing in mitigation banking for landowners with properties meeting the appropriate market and land-use criteria. The first approach would be to serve as the bank sponsor and retain the services of an environmental consultant with experience in mitigation banking in the USACE district in which the property is located. Under this approach, the landowner would pay for all costs associated with developing the mitigation bank, receive all revenue generated from credit sales, and retain liability and exposure to risks inherent to the banking process.

The second approach to mitigation banking would be to enter a contractual agreement with a turnkey mitigation provider (TMP), which typically consists of an investor or group of investors interested in developing mitigation banks or mitigation sites dedicated to large-scale economic development projects. Under this approach, the landowner retains ownership of the land and the TMP serves as the

bank sponsor. Depending on the terms of the contract, the TMP typically retains all risks and liability associated with the project and pays for all costs associated with bank development. In return, the TMP would receive a percentage of the credit sales. Environmental consultants can often recommend TMPs to landowners interested in pursuing this mitigation approach.

The final approach to mitigation would be to sell property containing mitigation lands to third parties interested in pursuing mitigation. These third parties may include CWA §404 permit applicants in need of mitigation for their specific projects or investors (i.e., TMPs) interested in pursuing mitigation banking.

A Win-Win Opportunity

Mitigation banking provides positive results for all parties involved with the CWA §404 permitting process. The resource agencies and the regulated public benefit from mitigation banking because it provides the most effective means of meeting national goals of

no net loss of jurisdictional waters and ecological functions provided by jurisdictional waters. Mitigation banking also provides CWA §404 permittees with a centralized repository of mitigation credits that effectively compensate for jurisdictional impacts in a manner that reduces overall mitigation costs and liability. Finally, mitigation banking offers landowners an alternative means of generating revenue from their property, while still retaining ownership and preserving opportunities for recreation.

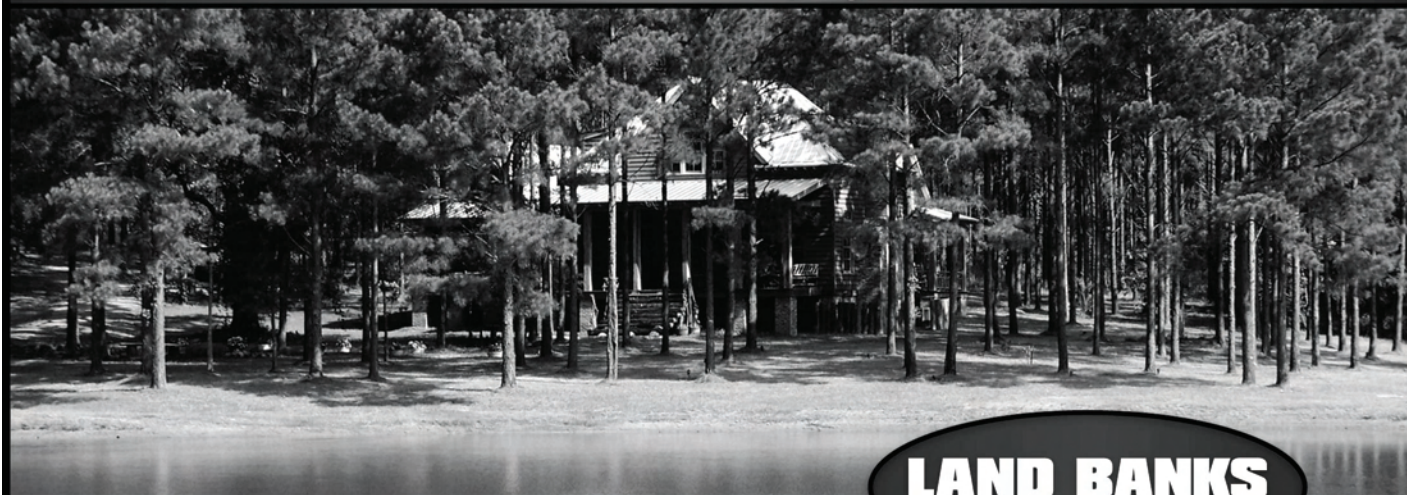
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