

STREAMBANK / STREAM RESTORATION

Identifying Program Opportunities for the Landowner

Stream Mitigation Banks / Mitigation Banking

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Williamsburg Environmental Group, Inc.

- Founded in 1990
- Offices in Stafford, Richmond and Williamsburg
- 85+ employees
- Specialized services
 - Stream Restoration
 - Wetland Mitigation
 - Water Resources Engineering
 - Environmental Permitting
 - Wetland Ecology
- 17 Approved Banks; 10 more in process
- JRMLB – one of the first approved in Commonwealth (1999)

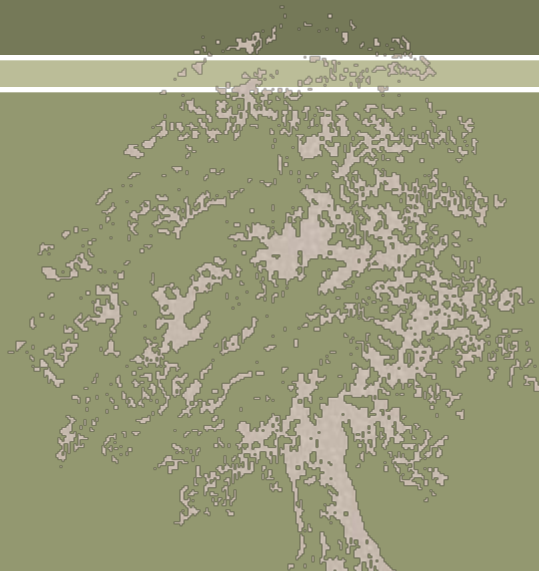


Outline

- What is mitigation banking?
- What is the process?
- Example Mitigation Banks
- How do I get started?



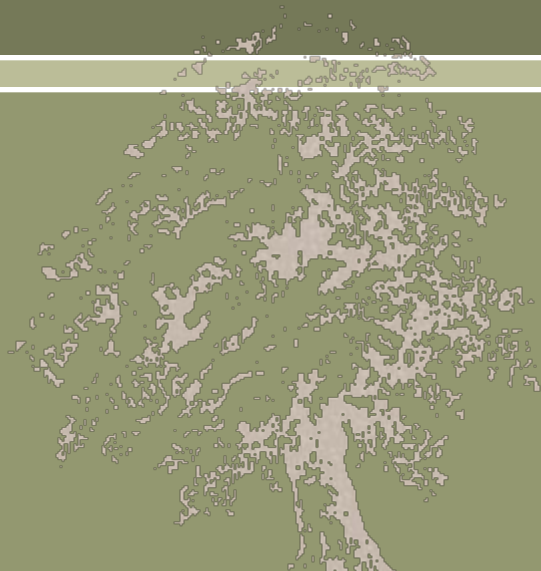
What is Mitigation Banking?



What is Mitigation Banking?

-"the restoration, creation, enhancement of a wetland, stream, or habitat conservation area which offset expected adverse impacts to similar resources
- In general,
 - Wetland for wetland
 - Stream for stream
 - Rare, Threatened & Endangered Species for R,T&E
 - Nutrient for nutrient
- Credits as "exchangeable currency"
- Sell Credits on open market within defined Geographic Service Area

How do you establish a mitigation bank?



Mitigation Banking Process

- Prospectus
- Interagency Review Team (IRT) – presentation, site meeting, project evaluation
- Mitigation Banking Instrument (MBI) and Bank Development Plan (BDP)
- Approval and Advance Release – Open for Business!
- Construction Plans / Construction
- Monitoring and Reporting – 10 years
- Maintenance
- Financial Assurances

Interagency Review Team (IRT)

- U.S. Army Corps of Engineers
- Department of Environmental Quality
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Department of Game and Inland Fisheries
- VA Marine Resources Commission
- Locality-specific
- NGO and various interest groups

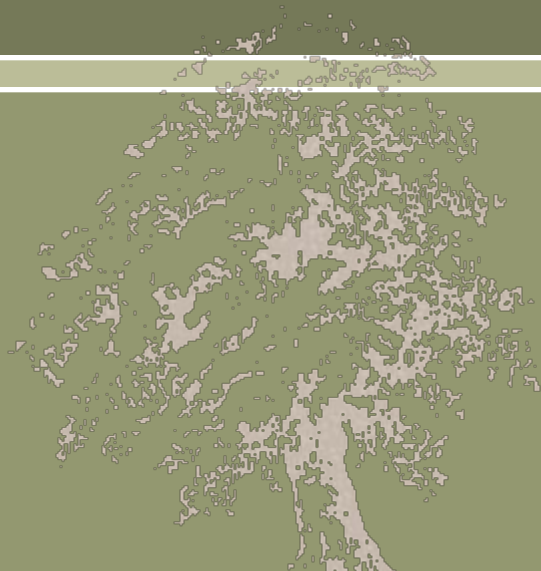


Key Factors

- Existing Easements
- Development Activities
- Recent Clearcutting (< 5 years)
- Other State and Federal Programs
 - CREP, CRP, VOF, et al.
- Ownership of both sides of stream resources
- Buffers (wider is better)
- Credits
 - Wetlands (> 50% from restoration and creation)
 - Streams (> 50% from restoration and enhancement)



ASSESSMENT & CREDITING



Methodology & Categories

- Unified Stream Methodology
 - Statewide procedure
 - Assessment and Crediting
- Stream Mitigation Categories
 - Stream and Buffer Resources
 - ◆ Preservation
 - ◆ Enhancement
 - ◆ Restoration
 - Adjustment Factors
 - ◆ Livestock Exclusion
 - ◆ Watershed Protection
 - ◆ Rare, Threatened & Endangered Species



Stream & Buffer Preservation



Stream & Buffer Preservation



Stream & Buffer Preservation



Stream Enhancement



Stream Restoration



Riparian Areas - Buffer Restoration



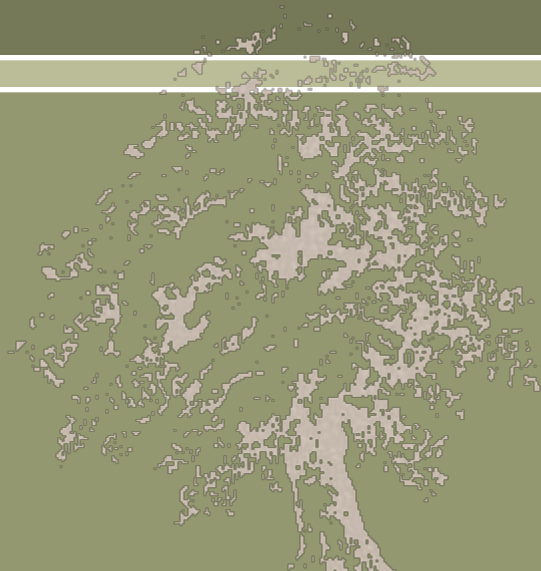
Adjustment Factors

- ⤴ Rare, Threatened and Endangered Species
 - Bald Eagle
 - Loggerhead Shrike
- ⤴ Livestock Exclusion
 - ⤴ Removal or Fencing
- ⤴ Watershed Protection

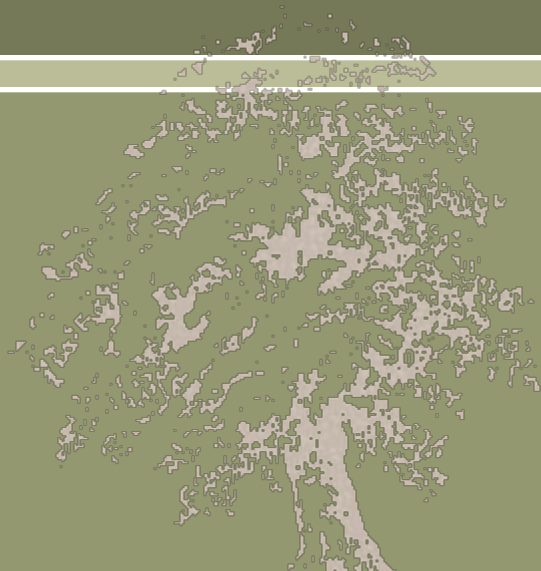


*Extra credit ranges between 10 and 30% of the LF per AF.

Example Mitigation Banks



Powhatan Plantation Stream Restoration Project James City County, VA



Powhatan Plantation

James City County, Virginia

Issues

- Severe bank erosion
- Channel instability
- Floodplain wetlands being dewatered
- Stormwater Runoff
- Poor water quality
- Degraded R,T&E species habitat



...urban headwater, sand-bed stream restoration



Powhatan Plantation

James City County, Virginia

Activities

- Watershed Plan Implementation
- 20-acre project
- 2,639 LF of stream restoration and enhancement
- 2,176 LF of preservation
- Riparian buffer preservation
- R,T&E protection
- Stormwater controls





Powhatan Plantation

James City County, Virginia

Outcomes

- Single-user mitigation bank (James City County)
- 4,173 Credits
- Corps training site
- Public outreach and education
- Cost savings to JCC

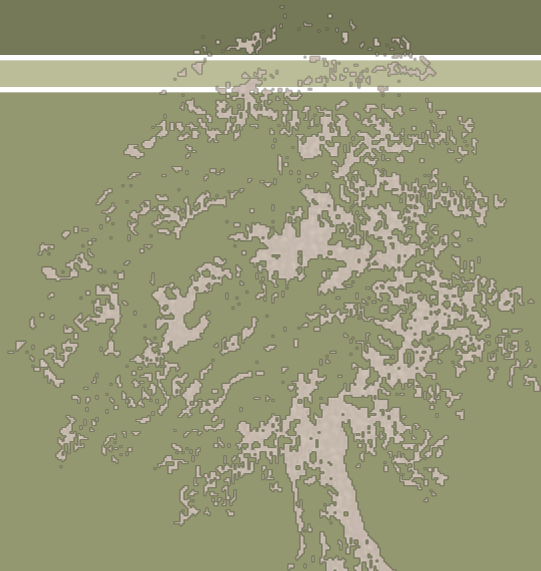


...urban headwater, sand-bed stream restoration



York River Mitigation Bank

King William County, VA



York River Mitigation Bank

King William County, Virginia

Issues

- Severe bank erosion
- Narrow riparian areas
- Ongoing Agriculture
- Ongoing Cattle Operation
- Historic ditching



York River Mitigation Bank

King William County, Virginia

Activities

- 959-acre project
- 70,431 LF
 - 44,649 LF of SP
 - 10,709 LF of SE
 - 15,073 LF of SR
- Riparian buffer preservation/restoration
- Livestock exclusion
- 273 acres of wetland mitigation



York River Mitigation Bank

King William County, Virginia

Outcomes

- Private Bank
- 36,417 Credits
- Serves majority of the York River Watershed
- Compatible use
 - Bank
 - Livelihood
- Supplemental Income



York River: Stream Restoration



Pre-Restoration



Post-Restoration

York River: Stream Restoration



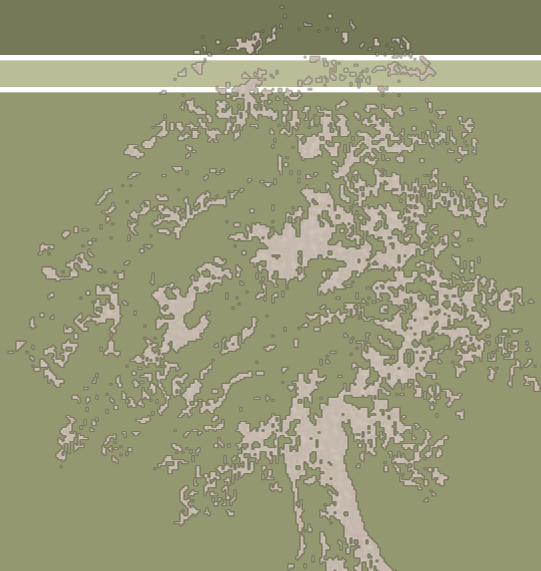
Pre-Restoration



Post-Restoration

Bolling Branch Mitigation Bank

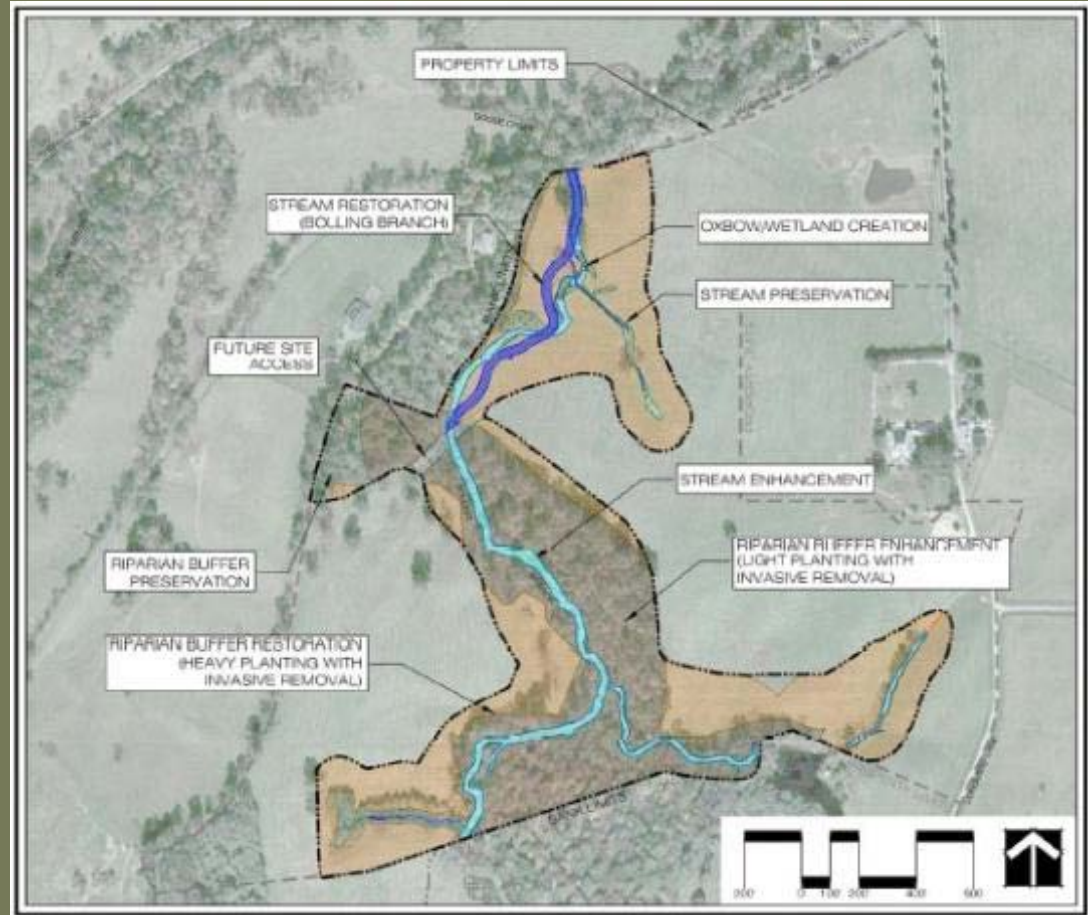
Fauquier County, VA



Bolling Branch Mitigation Bank Fauquier County, Virginia

Issues

- Severe bank erosion
- Narrow riparian areas
- Historic Ditching
- Previous Cattle Farm
- Non-native / Invasive species



Bolling Branch Mitigation Bank

Fauquier County, Virginia

Activities

- 47-acre project
- 5,586 LF
 - 2,847 LF of SP
 - 825 LF of SE
 - 1,914 LF of SR
- 37 acres of riparian buffer restoration
- Invasive species eradication



Bolling Branch Mitigation Bank

Fauquier County, Virginia

Outcomes

- Private Bank
- 36,417 Credits
- Serves majority of the Middle Potomac River Watershed
- Conservation and Estate Goals
- More Fish & Macros
- Better WQ



Bolling Branch: Stream Restoration



Pre-Restoration



Post-Restoration

Bolling Branch: Stream Restoration

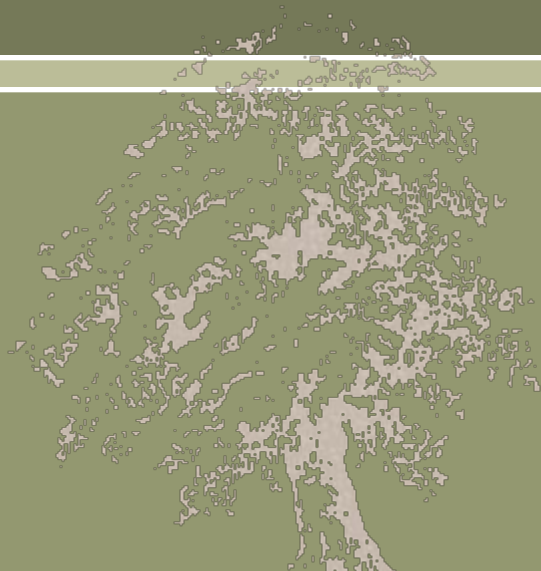


Pre-Restoration



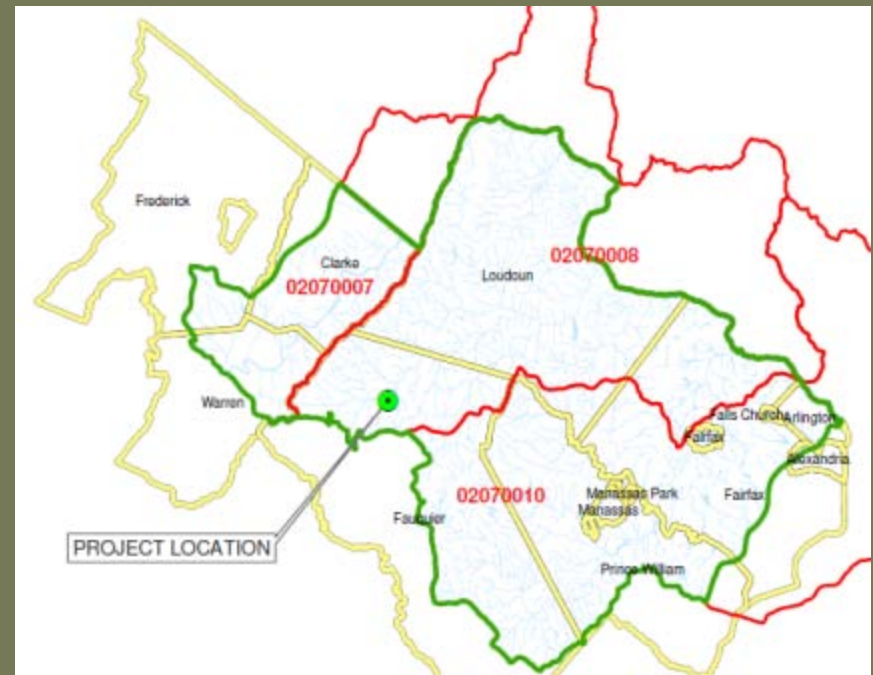
Post-Restoration

How do I get Started?



Fundamental First Steps

- Conduct Feasibility Study
 - Resource Identification
 - Bank area
 - Credits (#, type)
 - Pro forma
 - Service Area
 - Market Evaluation
- Prepare Prospectus



Questions?

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