Riparian Corridor Management Plan

Manor Kill-Colangelo Property Conesville, NY

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Introduction

Maintaining healthy and intact riparian areas is a high priority of the Catskill Streams Buffer Initiative (CSBI), as is improving the condition of degraded riparian buffers. Through the protection and enhancement of the riparian corridor we are protecting water quality, protecting and increasing habitat diversity, and offering some level of stabilization for stream banks through natural biological means. Well vegetated riparian buffers filter upland pollutants; provide rooting mass for bank stability, and lower stream water temperatures. Numerous streams in the Schoharie Creek Watershed have been walked with detailed mapping of the vegetation conducted within the riparian corridors, documenting various stream conditions, need for supplemental vegetation, presence of invasive species, and other conditions impacting the health of the riparian area. While 75% of the West of Hudson Watershed is forested, it is apparent that some riparian areas lack this protective cover.

The overall goal of the CSBI is to inform and assist landowners in better stewardship of their riparian (streamside) area through protection, enhancement, management, or restoration. The New York City Department of Environmental Protection and its partners (County Soil & Water Conservation Districts and Cornell Cooperative Extension) will assist private, riparian landowners throughout the West of Hudson Watershed by providing:

1) Riparian Corridor Management Plans to create awareness about riparian management issues specific to individual properties

2) Best management practice design and/or prescriptive measures and installation to encourage positive riparian stewardship and

3) Educational materials and activities as needed by landowners to understand the critical role of their buffer and how to maintain it in optimal functioning condition.

Any watershed landowner with property within the mapped buffer area can receive technical assistance and a Riparian Corridor Management Plan.

Site Visit Description / Existing Conditions

The Manor Kill Stream Management Plan (SMP) identifies the Colangelo property along Potter Mountain Road in Management Unit 3 and states that the entire corridor would benefit from improved riparian buffers (Fig 1). Past and present agricultural activities have resulted in minimal woody vegetation along the riparian corridor. Throughout areas of the reach, riparian buffers, when present at all, are limited in width and provide minimal benefits.

Figure 1. Aerial photo of Colangelo Property showing 50ft buffer on both sides of the Manor Kill.

The Manor Kill flows west through Conesville paralleling Potter Mountain Road along the Colangelo property. Aerial photography shows mostly herbaceous cover along the entire reach on both banks flowing through where owners have expressed concern about erosion. After initial inventory and assessment of the reach, a more detailed analysis documented in the SMP identified a need for riparian plantings on both banks of the Colangelo property. The scope of the proposed project includes both vegetative bank stabilization treatments as well as riparian buffer plantings on the adjacent terrace. The vegetative bank stabilization treatments are intended to reduce rates of bank retreat resulting from erosion, while the riparian buffer plantings are intended to enhance the overall ecological function of the riparian corridor.

The invasive species Japanese knotweed (*Fallopia japonica*) has colonized certain areas of this segment and appears to be proliferating in the low lying floodplain areas (Fig 2). It is believed the invasive species, known for its dominant characteristics, is limiting the re-establishment of any effective native species to serve as an effective buffer through the segment. It is believed that at least 10 small colonies of Japanese Knotweed totaling approximately 300 square feet exist on this stream reach. Stands within the stream would require manual removal to include the extensive root systems. Disposal of the plants would follow SWCD and DEP protocols for disposal of aggressive invasive plant species. Post removal, areas should be planted with fast growing native species suited for existing soils and hydric conditions.

Figure 2. Manor Kill Riparian Vegetation Classification Map showing presence of Japanese Knotweed on Stream Reach at Colangelo Property

Soils

Review of the general soil characteristics of the segment revealed that the segment was highly susceptible to bank erosion due to the thick unconsolidated layers of glacially deposited soils. Gravelly loams, soils loose in structure with little rock content, predominate the stream banks in this segment, corresponding to a natural susceptibility to erosion and entrainment. Healthy riparian buffers are critical in maintaining stability for this stream type. The soil type located within the project area is mostly Basher and Middlebury silt loams (Bm), and Holly and Papakating silt loams (Ha). The Basher and Middlebury silt loams that make up 85.7% of the site of the site are prone to stream bank erosion. The slopes range from 0-15%, are deep, moderately to well drained, medium to moderately course textured, and may be somewhat acidic. These soils are suited for stands of Sugar maple, yellow birch, beech, red maple, white ash, black cherry, basswood, hemlock, white pine, and aspen. They will also accommodate plantings of scotch pine, red pine, European larch, Japanese larch, Norway spruce, white spruce, and red and white cedar.[1]
So planting recommendations would lean towards using those species.

Landowner Issues / Concerns

Joe Colangelo has expressed concerns about localized erosion, soil loss, and flooding.

Landowner Goals

1) Minimize erosion
2) Reduce taxes
3) Improve aesthetics and appearance – keep wild
4) Keep fields open – maintain access for hay harvest

Buffer Width of 50ft. on both sides is acceptable.

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1. Schoharie County Soil Survey 1969 United States Department of Agriculture Soil Conservation Service, Cornell University

Recommendations – Best Management Practices (BMPs)

1 a.) As deep rooted woody vegetation is critical to maintaining bank stability, this site could benefit from enhanced buffer width and establishment of more woody vegetation. Planting and maintaining a healthy buffer of trees and shrubs along the stream banks and floodplains is one of the most cost effective and self-sustaining methods for landowners to protect streamside property**.**

1 b.) Use willow stakes to prevent localized erosion. Bioengineering, the use of live vegetation, either alone or in combination with harder materials such as rock or (dead) wood, to stabilize soils associated with stream banks or hill slopes can be used at this location. Dormant materials such as willows quickly establish vegetation on the banks. Willow stakes are cut from living willow shrubs when the shrub is dormant (usually during the fall). The stakes, ranging from one to several feet long, are hammered or pushed into the stream bank where they will grow quickly and provide necessary bank stabilization where it is needed most.

1 c.) Use live fascines. Live fascines are a standard bio-engineering technique which involves the bundling and planting of dormant plant cuttings. The plant bundles sprout and develop a root mass that will hold the soil in place and protect the stream bank from erosion.

2) Increase native riparian vegetation and habitat. Plantings can include a variety of flowering shrubs, trees and sedges native to Schoharie County. Native species are adapted to our regional climate and soil conditions and typically require less maintenance than exotic species following planting and establishment.

3) Maintain root systems that hold soil in place by not mowing right to the stream edge. Degrading buffer zones can be improved by not mowing in the buffer zone. Keeping a buffer zone of trees and shrubs, especially in the first 50 to 100 feet, along stream banks helps to minimize erosion and protect property, filter pollutants, and increase habitat value.

4) Remove invasive species such as Japanese Knotweed. Invasive, non-native species can threaten the ecology of a native plant community. This impact may extend to an alteration of landscape or bank stabilization. Japanese Knotweed is an exotic, invasive species and in recent years has been a serious issue in the Schoharie Basin. As the name implies it comes from Asia and was originally brought here as an ornamental plant. In an attempt to beautify their homes, residents unknowingly introduced a threatening element to the environment. Knotweed out-competes native plants by growing much faster than its native counterparts. Knotweed can tower over native plants, cut off their light supply and eventually, take over the entire length of a stream. This is especially dangerous, because knotweed does not hold stream banks together as well as native species. Furthermore, it is a very resilient plant. Simply cutting it down without proper disposal can potentially make the problem worse. See the link below (in the Appendix) to learn how to identify and control Japanese Knotweed.

5) Consider the NYC Department of Environmental Protection's Watershed Land Acquisition Program. DEP's Land Acquisition Program involves willing seller/willing buyer agreements. The lands acquired must meet various criteria established by the MOA for water quality protection purposes. DEP offers to purchase lands and conservation easements at fair market value, as determined by independent, professional appraisers. The City will pay assessed property taxes on fee acquisitions and on conservation easements; the latter will be in proportion to the value of the easement with respect to the overall vacant property.

Project Proposal

The scope of the proposed project includes both vegetative bank stabilization treatments as well as riparian buffer plantings on the adjacent terrace. The vegetative bank stabilization treatments are intended to reduce rates of bank retreat resulting from erosion, while the riparian buffer plantings are intended to enhance the overall ecological function of the riparian corridor.

The success of the vegetative bank stabilization treatments will be dependent upon the flood regime endured by the project in the period following project implementation. The vegetative bank treatments may need maintenance and repair over time to achieve their maximum bank stabilizing effect. Various bank armoring techniques, though beyond the scope of the proposed project, could be applied to the reach if acceptable rates of bank retreat are not achieved by the vegetative treatments. SCSWCD could provide technical assistance in the event that the landowner elected to implement a more aggressive bank stabilization treatment.

The Schoharie County Soil and Water Conservation District will provide:

1. A Riparian Corridor Management Plan
2. Project Design for the Riparian Buffer Plantings
3. All Native Plant Materials including trees and willow stakes
4. Installation of Plant Materials
5. Japanese Knotweed Containment
6. A Landowner’s Guide to Vegetation Management

Resources List (Appendix)

Manor Kill Stream Management Plan
http://www.catskillstreams.org/Manorkill_Stream_Management_Plan.html

Batavia Kill SMP Executive Summary
http://www.catskillstreams.org/pdfs/BataviaKillExec_Summ.pdf

Agriculture
Whole Farm Planning
Conservation Reserve Enhancement Programs
www.nycwatershed.org

NYS Department of Agriculture and Markets
2009 Agricultural Assessment Values per Acre
http://www.agmkt.state.ny.us/AP/agservices/2009_General_Ag_Value_memo.pdf

Fascines
Ohio Stream Management Guide
http://www.dnr.state.oh.us/Portals/7/pubs/fs_st/stfs14.pdf

Forestry
Watershed Agricultural Council's (WAC) Watershed Forestry Planning Program
www.nycwatershed.org

Riparian Buffers
http://www.catskillstreams.org/stewardship_streamside_rb.html

Soils

USDA Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Schoharie Stream Management Implementation Funds
http://www.catskillstreams.org/SWAC.html

Stormwater Program - CWC
http://www.cwconline.org/programs/strm_wtr/strm_wtr.html

Watershed Land Acquisition Program
http://www.nyc.gov/html/dep/html/watershed_protection/html/landac.html