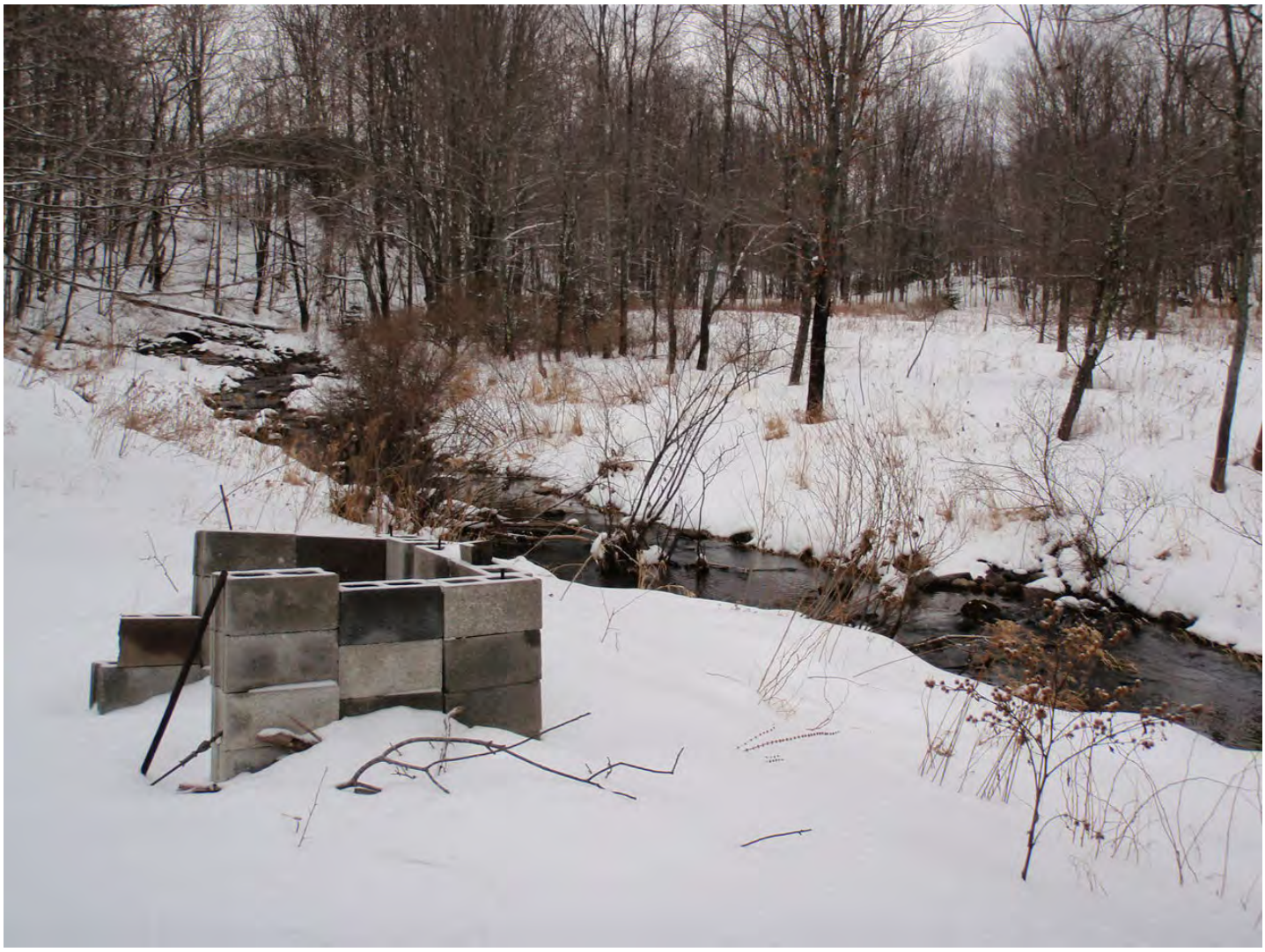
Riparian Corridor Management Plan

Manor Kill-Quinn 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 Quinn Property within Management Unit 2 and states that the reach would benefit from improved riparian buffers (Fig 1). Throughout areas of the reach, riparian buffers, when present at all, are limited in width and provide minimal benefits. During a recent site visit SWCD staff noted a presence of few trees within the stream corridor, as well as limited woody vegetation near the water's edge. Species present include; White Ash, Eastern Hemlock, Red Maple, Norway Spruce, and few Red-Osier Dogwood. The landowner has indicated that there is a presence of Japanese Knotweed within the property that they have taken steps to control. Knotweed is a known invasive species in the watershed that should be eradicated as soon as it is discovered on a stream bank because it can overtake a stream corridor in a few years causing bank erosion, loss of native species, and potential flooding. No knotweed was visible during the 2008 walkover or during the recent visit, although snow cover pre-dominated the area during the latter.

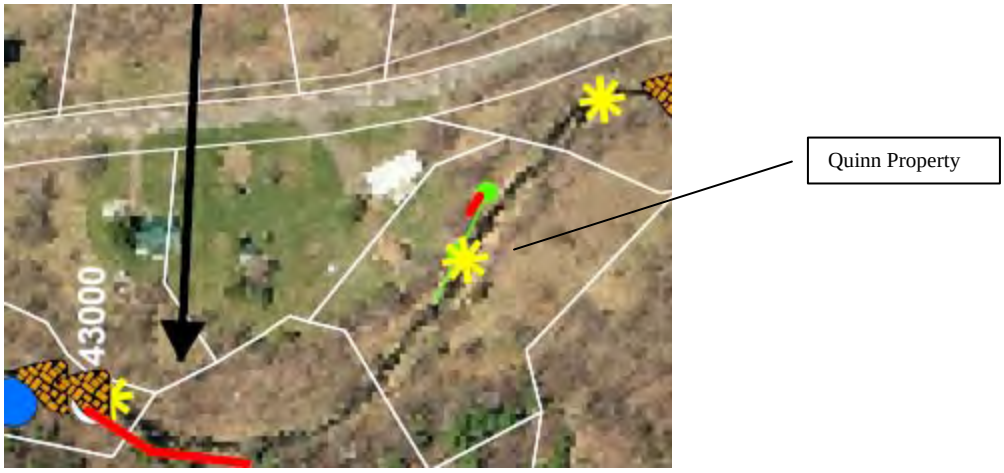

Figure 1. Aerial Illustrating Quinn Properties on both sides of Manor Kill MU2 (callout shows proposed planting site, erosion, and obstruction which was present during 2008 walkover).

The Manor Kill flows West through Conesville parallel to Potter Mountain Road along the Quinn property. Aerial photography shows mostly herbaceous cover with a narrow forested buffer along the entire reach on the left and right bank flowing through where landowners have expressed concern about erosion. Initial inventory and assessment identified a need for riparian plantings on the right bank of the Quinn property. The scope of the proposed project includes vegetative right bank stabilization treatments as well as riparian buffer plantings on both sides for a length of approximately 250 feet. 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.

Soils

Review of the general soil characteristics of the segment revealed that the segment was highly susceptible to bank erosion due to the fact that these soil types are usually found near fast moving streams subject to frequent flooding. Gravelly loams, soils loose in structure with little rock content are prevalent along 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 65.4% Barbour and Tioga (BbB), 0-8 percent slopes, 5.2% Alluvial Land (Al), 12.2% Tunkhannock and Chenango (ThCK) gravely silt loams, 3-15 percent complex slopes, and 17.3% Tunkhannock and Chenango (TnF), 25-60 percent slopes soils. The Alluvial Land soils which make up a small portion of the site consist of soils and recent deposits of sand, silt, and gravel. Alluvial land soils are excessively drained to very poorly drained. Drainage generally is very poor along the smaller streams and excessive in some cobble areas. Coarse fragments make up from less than 5 percent to as much as 90 percent of the soil material. Reaction ranges from very strongly acid to neutral. This makes this soil type variable for planting recommendations and will limit its use to mostly hydric grasses, forbs, and shrubs suited for those conditions. The Barbour and Tioga gravely loam soils that comprise the majority of the area can be used for crops pasture or trees. Their ability to supply moisture is generally not limiting for plant growth. However, because the areas may be subject to flooding, erosion is a hazard if the soils are left bare before plantings become established. This may require special practices to be implemented for control of stream bank erosion. This soil type provides a good substrate for Scotch Pine, Red Pine, White Pine, European larch, Norway Spruce, White Spruce, and Red Cedar. The Tunkhannock and Chenango soils, 3-15 and 25 to 60 percent slopes present on the property exist outside of the proposed buffer area, but are mentioned since they illustrate that steeper slopes and upland areas do exist within the properties. [1]

Landowner Issues / Concerns

The landowners have expressed concerns about localized erosion, soil loss, and flooding.

Landowner Goals

1) Minimize erosion
2) Control flooding
3) Improve aesthetics and appearance – keep wild
4) Buffer Width of 25ft. on the right and left bank is acceptable.

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

Recommended Actions- The landowner is encouraged to apply to CSBI for funding support to install one or more of the Best Management Practices (BMPs) below:

- ✓ **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**.**

- ✓ **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.

- ✓ **Install Sedge Bundles at the toe of the stream.** Tap rooted herbaceous species such as sedge, rush, and certain native species of grasses can aid in stabilizing the toe of stream banks.

- ✓ **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.

- ✓ **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.

- ✓ **Falling Trees**- Cut mature falling trees above the root ball. Buck up trunk into smaller (floatable) pieces and leave in place or remove for use elsewhere. Leave root ball in place in bank.

- ✓ **Consider Relocation of Fire Pit/Burn Barrel**. During assessment it was noted that a large fire pit constructed out of cinder block, and a 55 gallon burn barrel was sited within the proposed 25’ buffer zone. It is suggested these be located out of the buffer zone to allow for succession of soil stabilizing plants. Not only will this enhance the streamside habitat but it minimizes the risk that these materials could become washed into the stream in the event of high water.

- ✓ **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. Heavy planting using native species will aid with future control of Knotweed and other invasive species, as heavy presence of native species will stunt development of undesirables by promoting competition for water, light, and nutrients.

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

Storm water 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