

**Riparian Corridor Management Plan
Schoharie Creek
Grossman Property – Tannersville, NY**



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Prepared by:

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**Catskill Streams
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Introduction

Maintaining healthy and intact riparian areas is a high priority of the Catskill Streams Buffer Initiative, 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 streambanks 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 Catskills 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 Catskill Streams Buffer Initiative 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.



Aerial view of Grossman property on Platte Clove Road

Site Visit Description / Existing Conditions

The Grossman parcels on Platte Clove Road in the Town of Hunter contain both the Schoharie Creek headwaters and Canda Creek, a tributary of Schoharie Creek which divides two contiguous parcels. Canda Creek drains the south east slopes of Roundtop Mountain and the south west slopes of High Peak, flows on Grossman's property west of Byrne Road, runs through a culvert under Platte Clove Road (County Rte. 16), and travels 400 feet on Grossman property before emptying into Schoharie Creek. The drainage area of the tributary is 1.8 mi². Approximately 98.9% of the drainage area is covered by forest. The parcel contains NYS DEC regulated Freshwater Wetland K-10 and the tributary runs through the regulated 100ft. wetland buffer zone. Land-use / land-cover in the Schoharie Creek reach is a mix of forest, shrubland, palustrine wetland, and limited residential development. In the area where erosion is occurring on Canda Creek, no deep rooted woody vegetation was visible next to the stream during a site visit in the fall of 2009.

The soil type within the project area is identified as Tunkhannock gravelly loam, fan, 3-8% slopes (TvB) derived mainly from reddish sandstone, siltstone and shale and is classified as prime farmland.¹ Native trees found in this soil type are maple, black cherry, beech, ash, oak, hemlock, and white pine.



USGS Topo map – Grossman property outlined in red

Historic Conditions

Greene County Soil and Water Conservation District (GCSWCD) completed the Schoharie Creek Management Plan in 2007. The Grossman parcel that GCSWCD visited

¹ National Cooperative Soil Survey
Official Series Description – Tunkhannock Series, 1999

in the fall of 2009 is located in Management Unit 1. As seen from the historical stream channel alignments (below), with the exception of the meander bend in the middle of this management unit, the channel alignment has not changed significantly over the years.



Historic stream channel alignments with 2006 aerial photograph

In 2001 Mrs. Grossman applied for a stream disturbance permit based on local recommendations to maintain and repair an existing farm crossing in Schoharie Creek and within Freshwater Wetland K-10 using gravel, and also to skim a 45' wide by 75' long gravel bar within the creek downstream of the crossing. As of 2006, according to available NYS DEC records dating back to 1996, there have been no stream disturbance permits issued in this management unit. The US Army Corps of Engineers did not approve the permit.

Due to its rural nature and headwater location in the watershed, the unit has a lot of beaver activity. While beaver impoundments can sometimes be a nuisance, beavers have historically played a beneficial and ecologically important role in the stream system. Beaver activity adds organic debris (trees, leaves, etc. which provide the base of the food chain), reduces water velocities and flood-related hazards downstream, and creates wetland areas that filter sediment and release water to the stream and groundwater slowly throughout the year.

Mrs. Grossman does not participate in any other watershed programs at this time.

Landowner Issues / Concerns

Mrs. Grossman had expressed concerns some years ago about erosion occurring on the Schoharie Creek headwaters that run through her property. Heavy rains and beaver activity have led to increased erosion. Based on stream feature inventories, this section of the Schoharie is relatively stable but vulnerable due to the steep slopes on the left bank. Some mature hemlock trees are leaning, some have fallen.

Canda Creek runs through a culvert under Platte Clove Rd and has flooded the property numerous times over the years. Recently the culvert has been replaced and damage to the house, landscaping and driveway has been minimized. The creek does continue to flood, change course in a heavy rain, and now regularly overflows onto the field, depositing rocks.

Localized erosion and gravel bars were noted at the site visit on the left streambank where Canda Creek has changed its course. The Grossman residence is located on an alluvial fan which forms on land where a stream emerges from a mountainous area and flows out onto a more gently sloping plain. The decrease in slope causes the stream to decelerate and deposit sediment, forming the alluvial fan. Flash floods will naturally occur as a direct result of the topography.

A horse fence is located in the riparian buffer zone where there are no woody species growing. The ground cover is primarily herbaceous pasture for the horses. Planting additional native species already present on the property such as willow and alder can help restore the riparian buffer to stabilize the streambanks. Stable banks will help minimize future gravel deposition.



September 28, 2009 – Site Visit Photo showing upstream berm near residence

Landowner Goals

- 1) Reduce erosion and stabilize streambanks
- 2) Minimize flood damage
- 3) Maintain pasture area for horses
- 4) Improve aesthetics

Recommendations – Best Management Practices (BMPs)

- 1) **Apply** to CSBI for funding support to install one or more of the practices below.
- 2) **Establish a riparian buffer** of deep rooted woody vegetation on the tributary to maintain bank stability. Planting and maintaining a healthy buffer of native trees and shrubs along streambanks and floodplains is one of the most cost effective and self-sustaining methods for landowners to protect streamside property. Planting additional native species already present on the property such as willow and alder can help restore the riparian buffer to stabilize the streambanks. Native species are recommended due to their adaptation to our regional climate and soil conditions and because they typically require less maintenance than exotic species following planting and establishment.
- 3) **Use vegetative treatments such as dormant posts and stakes to address minor localized erosion.** Bioengineering, the use of live vegetation to stabilize soils associated with streambanks, can be used at this location. Dormant cuttings from appropriate species, such as willows and dogwoods, quickly establish vegetation on the banks. Live posts and 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. A dormant post detail drawing is attached. Onsite willows can be used for this treatment.
- 4) **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 streambank from erosion. Onsite willows can be harvested and used for this treatment. A live fascine detail drawing is attached.
- 5) **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 streambanks helps to minimize erosion and protect property, filter pollutants, and increase habitat value.
- 6) **Consider cutting mature, falling trees above beginning of root ball.** If the fallen trees become a problem, buck up trunk into smaller (floatable) pieces and leave in place or remove for use elsewhere. Leave root ball in place in bank.
- 7) **Underplant the area where trees are falling with shrubs and herbaceous plants.** Supplementing the existing forest with some native shrubs will help hold the banks in place.
- 8) **Relocate fencing that is close to dynamic stream.** Horse pasture can be set back from stream to allow for riparian buffer.
- 9) **Continue to monitor reach stability through normal observations.** Take photographs from the same location each year to photo document erosion.

Resources and References

Schoharie Creek Management Plan

http://www.catskillstreams.org/Schoharie_Creek_Management_Plan.html

Catskill Streams Buffer Initiative

http://www.catskillstreams.org/pdfs/CSBI_application.pdf

DEC Environmental Resource Mapper

<http://www.dec.ny.gov/animals/38801.html>

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

http://www.nycwatershed.org/lc_fmp.html

www.nycwatershed.org

Japanese Knotweed Information

<http://www.catskillstreams.org/pdfs/Knotweed%20webpage%20text%20&%20links.pdf>

Riparian Buffers

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

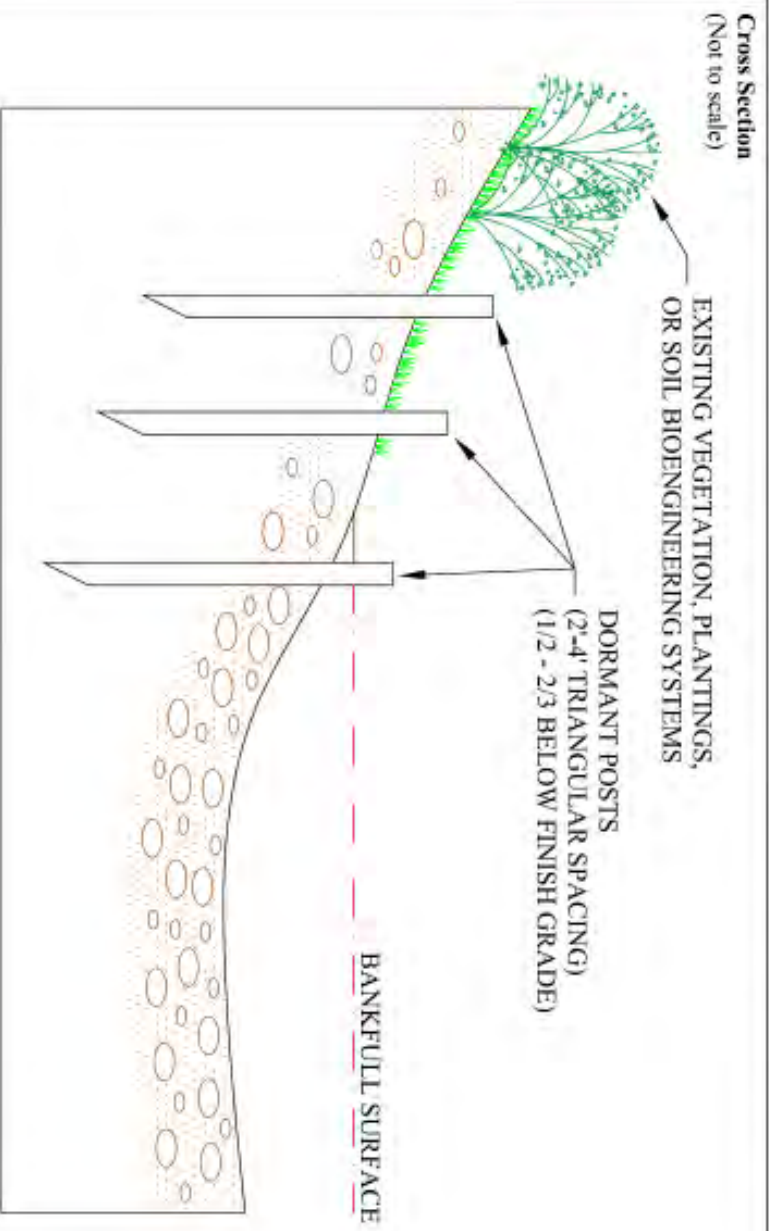
Soils

National Cooperative Soil Survey

Official Series Description Series, 1999

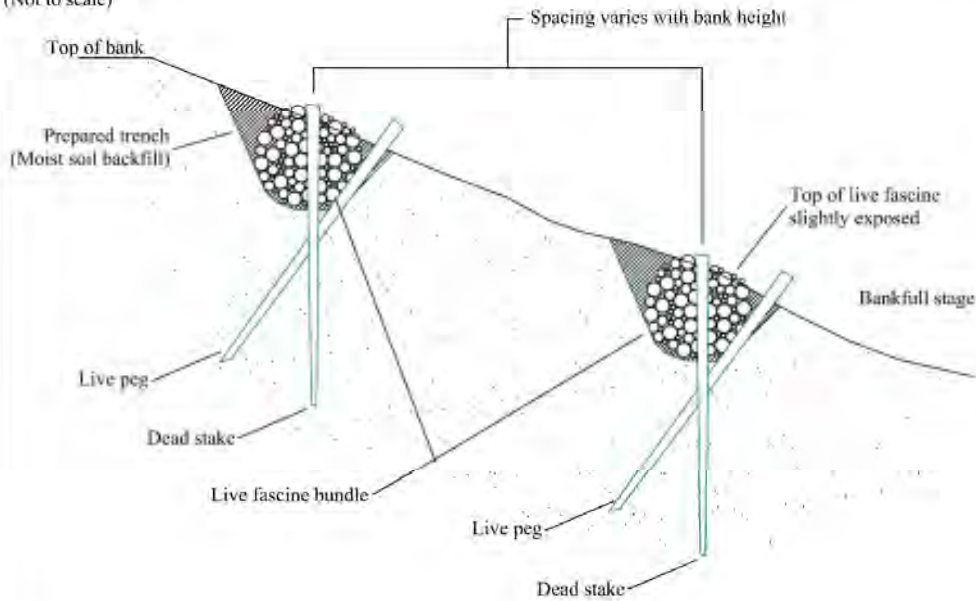
<http://soils.usda.gov/technical/classification/osd/index.html>

DORMANT POST DETAIL (VS-03a)

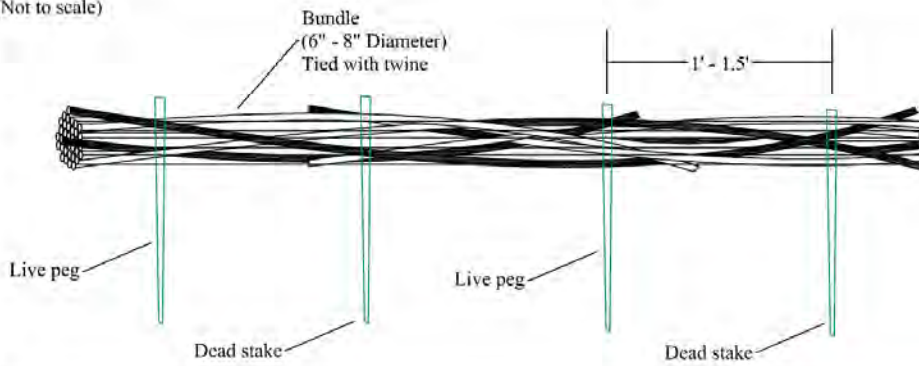


LIVE FASCINE DETAIL (VS-01)

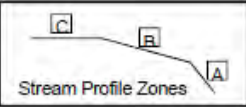
Cross Section
(Not to scale)



Profile
(Not to scale)



Grossman Riparian Planting Plan Schoharie Creek Trib

Site Details							 Stream Profile Zones
300 ft x 50 ft 15,000 sq ft .34 acre 200 trees and shrubs with 8 x 8 spacing	Latin Name	Wetland Indicator	Native	Location	Spacing (ft)	Total #	Notes
Evergreen transplants							
White pine	<i>Pinus strobus</i>	FACU	Y	C	10	25	
Eastern hemlock	<i>Tsuga canadensis</i>	FACU	Y	C	10	15	
						40	
Hardwoods							
Paper birch	<i>Betula papyrifera</i>	FACU	Y	C	10	20	
Silver maple	<i>Acer saccharinum</i>	FACW	Y	B-C	10	10	
Sugar maple	<i>Acer saccharum</i>	FACU	Y	C	10	15	
White oak	<i>Quercus alba</i>	FACU	Y	C	15	5	
Green ash	<i>Fraxinus pennsylvanica</i>	FACW	Y	B	10	10	
Black ash	<i>Fraxinus nigra</i>	FACW	Y	B	15	5	
Black cherry	<i>Prunus serotina</i>	FACU	Y	C	10	10	<i>plant in sun</i>
						75	
Shrubs							
Speckled Alder	<i>Alnus rugosa</i>	FACW	Y	B	10	10	
Elderberry	<i>Sambucus canadensis</i>	FACW	Y	B	5	10	
Shadbowl serviceberry	<i>Amelanchier canadensis</i>	FAC	Y	C	5	15	
Redosier dogwood	<i>Cornus sericea</i>	FACW+	Y	A-B-C	5	18	
Silky dogwood	<i>Cornus amomum</i>	FACW	Y	A-B	5	20	
Arrowwood	<i>Viburnum dentatum</i>	FAC	Y	C	5	10	
						83	
TOTAL PLANTS						198	

Wetland Indicator - Wetland Indicator Status

OBL: Obligate Wetland: Occurs almost always (estimated probability 99%) under natural conditions in wetlands.

FACW: Facultative Wetland: Usually occurs in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

FAC: Facultative: Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

FACU: Facultative Upland: Usually occurs in non-wetlands (estimated probability 67%-99%), but occasionally found on wetlands (estimated probability 1%-33%).