

Riparian Corridor Management Plan

Mad Brook

Brunsdon Property – Windham, NY



April 13, 2010

Prepared by:

Laura Weyeneth
Catskill Streams Buffer Initiative Coordinator
Greene County Soil and Water Conservation District
Cairo, NY



**Catskill Streams
Buffer Initiative**

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 Brunsden property in between Mill Street and Mad Brook

Site Visit Description / Existing Conditions

Mike Brunsten has owned a vacation property with .21 acres on Mill Street in Windham, NY since 1995. In the backyard, the eastern parcel boundary is Mad Brook, a tributary of the Batavia Kill and a C (TS) stream suitable for trout spawning.¹ Based on a recommendation from the Windham Town Supervisor, Mr. Brunsten called the CSBI program to schedule a site visit to evaluate localized erosion occurring along approximately 30 ft. of streambank. Snow covered the 6 – 7 foot high banks during the winter site visit but portions of the cracked village retaining wall were visible.

The drainage area for this location is 8.71 mi² including runoff from portions of Mount Pisgah, Mount Nebo, Mount Hayden, Richmond Mountain, and Bump Mountain. Approximately 88% of the drainage area is covered by forest. In the area where erosion is occurring on Brunsten's property, the roots are exposed on a mature evergreen adjacent to the stream. The ground cover is primarily herbaceous in the project area as the site is the landowner's backyard. The opposite side of the stream has a vegetated buffer.

The soil type within the project area is identified as Tunkhannock gravelly loam, fan 3 to 8 percent slopes (TvB). This soil is very deep, well drained, and formed in water-sorted glacial material derived from reddish sandstone, siltstone and shale. Mean annual air temperature is 45 to 50 degrees F., and mean annual precipitation is 43.5 inches. Depth to high water table is 3 to 6 feet. Native trees found in this soil type are maple, black cherry, beech, ash, oak, hemlock and white pine.²



USGS StreamStats map showing Drainage Area for Brunsten property

¹ All waters of New York State are provided a class and standard designation based on existing or expected best usage of each water or waterway segment. Classification C is for waters supporting fisheries and is suitable for non - contact activities. Classification TS designates trout spawning waters.

² National Cooperative Soil Survey
Official Series Description – 1999

Historic Conditions

In response to two major flood events in August 1955 and September 1960, the Greene County Legislature adopted a local ordinance in 1961 creating the GCSWCD, in order to allow local municipalities' access to federal flood protection funds. In 1965, the U.S. Department of Agriculture (USDA) Soil Conservation Service (now known as the Natural Resources Conservation Service) completed a Watershed Work Plan for Watershed Protection, Flood Prevention and Water Management in the Batavia Kill Watershed. The work plan called for the development of four flood control structures in the headwaters and on several tributaries to the Batavia Kill. The Mitchell Hollow Dam was designed to attenuate a 100-year flood event and was constructed in the early 1970s. It is maintained and operated by the Batavia Kill Watershed Protection District and has greatly reduced the amount of damage from floods in the watershed.

During the summer of 2009, GCSWCD conducted a stream feature inventory for Mad Brook which is shown as Mitchell Hollow on the Hensonville USGS topographical map. A Management Plan for the entire tributary with management recommendations will be completed in 2010.

The cracked retaining wall which extends on Brunsdens' property has been studied by Delaware Engineering. Although the Town of Windham received a grant from the Catskill Watershed Corporation for the Mad Brook retaining wall project, design and construction of repair work has been delayed due to lack of sufficient funding to complete the project.



Downstream view showing cracked retaining wall, 2010



Upstream view of planting area, 2010

Landowner Issues / Concerns

Mr. Brunsdon has expressed concern about erosion occurring on his property. The landowner states that erosion on the right bank (looking downstream) has increased in the past two years occurring mainly in spring and after heavy rainfall. The landowner is concerned about the mature evergreen tree adjacent to the stream that now has exposed roots due to recent erosion. In addition, he is concerned about the cracked retaining wall on the southern end of his property and would like to see the wall repaired or replaced. Although wall repairs are outside the scope of this program, Delaware Engineering, the firm working on this particular wall repair project, could be contacted by landowner.

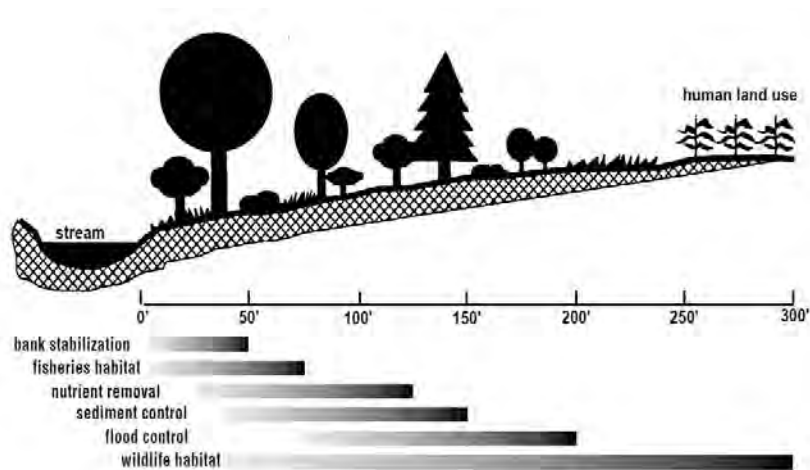
Landowner Goals

- 1) Reduce erosion and loss of property adjacent to stream
- 2) Protect mature evergreen tree adjacent to stream
- 3) Plant a riparian buffer to prevent further erosion
- 4) Replace or repair retaining wall
- 5) Improve wildlife habitat
- 6) Maintain property for retirement

Mr. Brunsdon does not participate in any other watershed programs at this time. He has applied for a CSBI grant and has indicated he can provide a partial cost share for any project installation costs.

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** 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 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 native species such as willow 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) **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.
- 5) **Continue to monitor reach stability through normal observations.** Take photographs from the same location each year to photo document erosion.
- 6) **Consider cutting mature tree (at risk of falling) on severely undercut banks above beginning of root ball.** To minimize soil loss and further erosion of undercut banks, leave root ball in place in bank.

Resources and References

Batavia Kill Stream Management Plan

<http://www.gcswcd.com/stream/bataviakill/smp/>

Batavia Kill SMP Executive Summary

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

Catskill Streams Buffer Initiative

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

Riparian Buffers

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

Introduction to Riparian Buffers Fact Sheet

<http://northjerseyrcd.org/upload/uploads/Intro.pdf>

DEC Environmental Resource Mapper

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

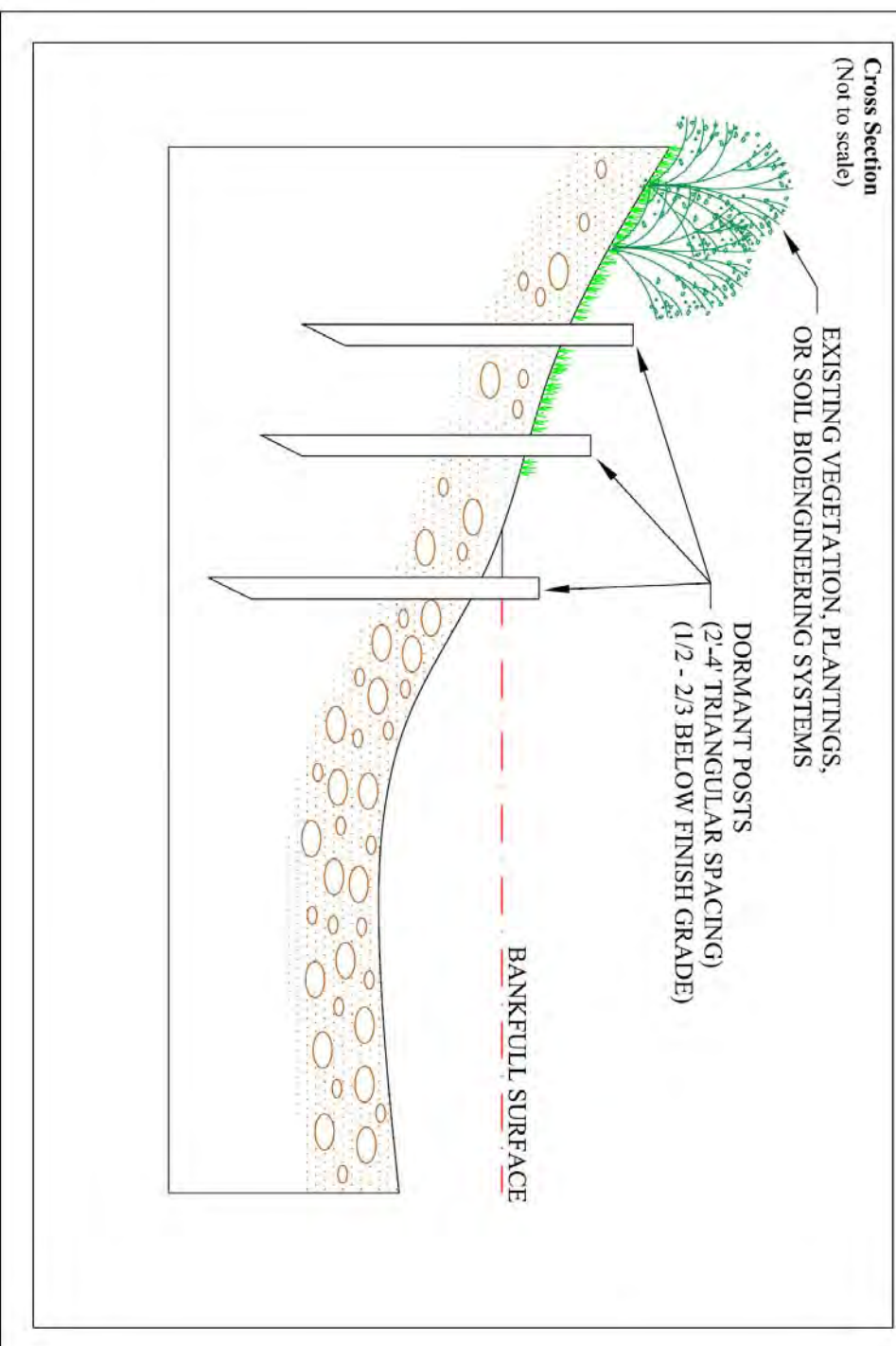
Soils

National Cooperative Soil Survey

Official Series Description Series, 1999

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

DORMANT POST DETAIL (VS-03a)



Landowner Self-Evaluation Form

CATSKILL STREAMS BUFFER INITIATIVE (CSBI)

DATE 2/10/10

Landowner Name: MICHAEL + KATHERINE BRUNSDEN

Mailing Address: 25 STRATFORD ROAD SCARSDALE N.Y. 10583

Project Site Address: 40 MILL ST, WINDHAM N.Y.

Phone #: 914 713 4208 Cell: 914 316-5691 Email: MJWEB7@AOL.COM

STREAM NAME: MAD CREEK Watershed: _____ Tax Parcel(s): _____

How did you hear about the Catskill Streams Buffer Initiative?

Supervisor from Windham

History of working with GCSWCD, NYCDEP, USACE, Other agencies? (specify)

N/A

Do you participate in any other NYC Watershed Programs? (See below. Describe)

N/A

- Catskill Watershed Corporation (CWC)?
- Conservation Reserve Enhancement Program (CREP)?
- Watershed Agricultural Council's (WAC) Forestry or Whole Farm Programs?

Land-use History?

owned property since 1995

Flooding History?

NO

Long-term Goals for the Property?

Retire to property in ~~5~~ 5 yrs

Do you anticipate any major changes on your property within the next 5 years? (explain)

NO

Landowner Self-Evaluation Form

CATSKILL STREAMS BUFFER INITIATIVE

Please describe the present conditions of the property/project site, including presence of erosion, invasive species and site dimensions.

Property is .19 acres Rear of property Borders
Mad creek, House is approx 30 ft from Mad
Creek, approx 70 ft on mad creek. Erosion has
been gradual until 2 yrs ago when it accelerated.
Large Evergreen bordering creek has major erosion
of roots (large roots showing). Retaining wall has
large crack (6 inches wide) from top to bottom.

Goals for the proposed project? (Erosion, wildlife habitat, etc.)

wall Replace or repaired. Buffer to prevent
further erosion

Preferred Buffer Width:

- 5-10 ft
- 10-25 ft
- 50-100 ft
- 100-300 ft
- Other:

