
VIII-C Riparian Zone Management

The role of vegetated riparian buffers in water quality protection and the promotion of stream stability can not be overstated. Healthy, well vegetated riparian buffers filter upland pollutants, provide rooting mass for bank stability and lower stream water temperatures. As noted previously in this SMP, overall riparian condition along the Batavia Kill is often poor at best. While some riparian vegetation is present through most of the stream corridor, often the structure of the buffer, including the width, variability of plant types, and dominance of



invasive species, is not adequate to ensure long term protection of the stream. As such, the GCSWCD has developed a series of recommendations regarding riparian buffers. These recommendations are presented in three primary categories, including protection of buffers, establishment or enhancement of buffers and invasive species control.

VIII-C.1 Protection of Existing Buffers

First and foremost, the GCSWCD strongly recommends that priority be given to efforts which will protect existing riparian buffer zones along the Batavia Kill. While the riparian area is currently far from ideal, any additional loss of intact riparian vegetation and its buffer function must be avoided., the protection of riparian buffers already benefits from the NYC Watershed Rules and Regulations because they closely monitor development activities within 100 feet of a watercourse and provide an opportunity for discussion with the landowner or developer the importance of protecting the riparian buffer area. While large scale disruption of buffers associated with new development may be prevented by the watershed rules and regulations, the GCSWCD has observed a number of activities, that occur on a smaller scale, and generally do not fall under existing regulations. (Rene -- if this is true I think you should include it: Further, the watershed rules and regulations do not strictly prohibit the removal of riparian vegetation, so they cannot be relied upon alone to do the job of protecting existing buffers.

For the most part, there are a set of everyday activities carried out by private landowners that damage their riparian area and initiate problems down the line. These landowners may not be aware of the potential impacts of their actions. In fact, the GCSWCD has found that landowners feel that their activities actually have a benefit to stream health. This accentuates the need for increased awareness of the role riparian vegetation in stream health, and this cannot be overstated. The following activities, while not inclusive of all potential impacts, addresses the predominate concerns noted by the GCSWCD.

Vegetation Maintenance - Often, in an attempt to maintain their view of the stream, landowners will remove all (or most) of the woody vegetation, and will maintain their lawn right up to the top of the streambank. While the grass vegetation may provide adequate buffering of upland water quality impacts, the loss of shrubs, understory trees and other woody vegetation results in a dramatic reduction in the deep rooted vegetation critical to bank stability and maintaining cooler stream temperatures. In general, stream side landowners should make every attempt to maintain a diverse and healthy buffer of at least 50' along the entire corridor. In the lower, flatter sections of the watershed, minimum buffer width should be increased to at a desired minimum of 100'.

Landowners are advised to be selective in their management of riparian vegetation. By limiting mowing and using selective pruning, and by planting species that provide good rooting depth without being tall (blocking views), significant gains in buffer restoration and stream stability may be made. Specific recommendations to address this concern are presented later in this section.

Yard Waste Disposal - On many occasions, the GCSWCD has noted that landowners favor the riparian zone for disposal of their yard waste. Grass clipping, leaves and woody brush are often disposed of by dumping over the streambank, with some landowners indicating that they thought this would help protect the streambank from erosion. The GCSWCD's observations have been that these debris piles are more likely to suppress vegetative growth and in fact reduces the streambank's protection. The dense piles of debris "smother" all living vegetation. While the debris may provide protection from rainfall impact and runoff, the materials provide no value to protection from erosive stream flows

Landowners should evaluate their disposal of yard waste materials and seek locations outside of the desired buffer width. In cases where alternate disposal locations are limited, yard waste should be well distributed, and spread out and not densely piled. Distribution of the material will hasten decomposition, and may actually have a positive benefit by adding organic material to the soil. The GCSWCD recommends that Greene County or the local Municipalities investigate the feasibility of developing a public composting facility in the watershed area for safe disposal of these materials.

Stream side Access - The GCSWCD recommends that all riparian landowners evaluate potential impacts to the riparian buffer related to their access to the stream. This is of special concern in cases where landowners must access the stream from a high bank or terrace. Repetitive use of a "trail" has been observed to concentrate runoff, damage the vegetation on the trail and resulting in localized gully erosion. Often, this condition continues to worsen over time, with the gully getting deeper and the stream-side vegetation being undermined, and eventually expanding from a localized problem to a broader area of the buffer zone. The

GCSWCD has observed sites in the Catskills where a single short trail down a steep streambank resulted in a major slope failure over 600 feet in length. Landowners should manage their access to the stream such that it prevents erosion and loss of riparian vegetation.

The following represents a series of specific recommendations proposed by the GCSWCD. These recommendations address education, review of buffer impacts and potential revised or new regulations which would focus on protecting riparian vegetation.

NO. RB - 01			
Recommendation	Educate riparian landowners and others on specific methods to manage their riparian buffers.		
Priority		Task Leader	GCSWCD
Funding Sources	NYCDEP NYSDEC other grants	Task Partners	NYCDEP Catskill Center Cooperative Extension Watershed Forestry Program Catskill Forest Owners Landowners
Estimated Cost	undetermined	Schedule	start sessions fall 2003
Notes	In addition to “traditional” topics such as mowing, pruning and planting, the GCSWCD recommends that training also address the fact that people want to see and get to the stream. Information on maintaining buffers as a “landscape” feature, such as selecting plants with aesthetic value as well as growth habits that allow a view without compromising rooting structure, are examples of the information that is needed. In areas with high residential pressure, landowners should come to value their buffers as “stream-side gardens.”		

NO. RB - 02			
Recommendation	The Watershed Agricultural Program should re-evaluate all participating farms in the watershed for applicability of existing buffer protection programs. Additional eligible farms that are not in the WAP should be encouraged to apply.		
Priority		Task Leader	Watershed Agricultural Council
Funding Sources	Watershed Ag Program USDA-CREP Program	Task Partners	GCSWCD - WAP Landowners
Estimated Cost	not determined	Schedule	2003
Notes	The GCSWCD has noted several locations along the Batavia Kill where improvements to buffers are required on agricultural lands. These may be participating farms where riparian restoration was not prioritized for immediate funding, or they may be non-participating farms. The GCSWCD recommends that WAP efforts to promote buffers address farmer concerns regarding loss of their production land. The WAP should work with farmers to identify replacement lands (lands outside of the buffer area) for crop or hay production. This will remove the largest obstacle to farmer participation and enable restoration of a significant riparian area along the stream corridor. Increased use of the WAP riparian buffer program will also meet buffer establishment/enhancement recommendations.		

NO. RB - 03			
Recommendation	Provide watershed stakeholders ready access to technical assistance (TA). TA should include site evaluations, development of detailed site management plans, and facilitation of access to watershed programs.		
Priority		Task Leader	NYCDEP - SMP
Funding Sources	NYCDEP NYSDEC USDA NRCS USFWS USEPA	Task Partners	GCSWCD Other Watershed SWCD's WAP CFA NYSDEC - Forestry/Watersheds Landowners
Estimated Cost	undetermined	Schedule	undetermined
Notes	<p>1. The GCSWCD strongly recommends that TA must be closely aligned with on-going SMP efforts. TA must integrate stream morphology assessment.</p> <p>2. The GCSWCD proposes that the combined Batavia Kill, West Kill and Schoharie watershed projects share a dedicated Riparian Buffer Specialist position at the GCSWCD. This position could also provide assistance to other SMP focus areas.</p> <p>3. Technical assistance should be aggressively marketed to riparian landowners using direct contracts, press and home visits.</p>		

NO. RB - 04			
Recommendation	Watershed municipalities should evaluate existing land use regulations, such as site plan review laws, to determine if adequate consideration is given to riparian buffers impacts.		
Priority		Task Leader	Watershed Municipalities
Funding Sources	NYCDEP NYSDOS CWC Municipalities	Task Partners	GCSWCD NYCDEP GC Planning Department Catskill Center
Estimated Cost	Not determined, minimal	Schedule	2004-2005
Notes	This could be implemented with the assistance of a Riparian Buffer Specialist (see RB-03) or could be contracted out (by either the Towns or GCSWCD) to a planning specialist and funded with Batavia Kill Phase II funds through the GCSWCD.		

NO. RB - 05			
Recommendation	Stream side landowners who practice forest harvest in the Batavia Kill watershed should be encouraged to participate in the NYC Watershed Forestry Program (WFP) to ensure timber harvesting operations use appropriate methods to reduce or eliminate impacts to the riparian buffer and improve its condition whenever possible.		
Priority		Task Leader	Watershed Forestry Program

Funding Sources	WFP U.S. Forest Service	Task Partners	GCSWCD NYCDEP CFA NYSDEC - Forestry/Watersheds Landowners
Estimated Cost	Undetermined	Schedule	initiate in 2003
Notes	<p>1. GCSWCD will provide information on WFP at public sessions held for the review of the Batavia Kill Stream Management Plan.</p> <p>2. If a Riparian Buffer Specialist position is created, that person should be familiar with WFP programs and encourage landowner participation.</p>		

NO. RB - 06			
Recommendation	Provide long term riparian buffer protection through permanent conservation easements for both currently degraded and intact buffer areas.		
Priority		Task Leader	Undetermined
Funding Sources	NYCDEP WAP NYSDEC other grants	Task Partners	GCSWCD NYCDEP - SMP NYCDEP - Land Acquisition NYSDEC - Forestry/Watersheds Catskill Center WAP Landowners
Estimated Cost	undetermined needs further study	Schedule	establish program development committee in 2003 develop draft strategy for increasing easement programs(s) by 2004
Notes	The GCSWCD strongly recommends that a committee of interested parties be convened. The committee should review all existing options to obtaining easements, evaluate roadblocks to increasing landowner participation and develop an easement program which will result in the greatest participation.		

NO. RB - 07			
Recommendation	Develop landowner incentive programs which would encourage participation in riparian buffer protection programs, and pilot the effort in the Batavia Kill watershed.		
Priority		Task Leader	undetermined
Funding Sources	NYS - EPF other sources	Task Partners	NYS NYSDEC Local SWCD's others
Estimated Cost	Not Determined	Schedule	not determined

Notes	The GCSWCD strongly recommends that NYS develop a state-wide riparian buffer protection incentives program. The GCSWCD is aware of other states where programs similar to New York's Forest Tax Law are used to provide tax relief incentives for participation in riparian protection programs. The GCSWCD would propose that the maintenance of healthy buffer zones provides multiple benefits to the public as a whole, and should be a priority of local, state and federal policies. This effort could be piloted in the Batavia Kill watershed.
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NO. RB - 08			
Recommendation	NYSDEC should develop a Technical and Operational Guidance Series (TOGs) focused on evaluation of riparian impacts during stream disturbance activities.		
Priority		Task Leader	NYSDEC
Funding Sources	no funding required	Task Partners	NYCDEP Local SWCD's Others
Estimated Cost	N/A	Schedule	not determined
Notes	The GCSWCD would recommend that NYSDEC develop TOGs for stream disturbance/restoration projects which will provide comprehensive and consistent guidance on the review of projects, and the expectations from the applicants. The GCSWCD would propose that a TOGs on stream management would help guide applicants to develop better projects. In addition, the TOGs should also apply to NYSDEC management of state riparian lands.		

VIII-C.2 Riparian Vegetation Establishment/Enhancement

While protection programs can go along way to meeting riparian buffer objectives, current conditions in the Batavia Kill will require a strongly proactive approach to restoration and/or enhancement of desirable riparian vegetation. In some places, allowing natural succession to generate woody vegetation may be desirable, while in many other places new plantings will be required. In several areas, stream channel morphology must be adjusted to a more naturally stable form in order to create conditions for the success of riparian plantings. Riparian restoration strategies must be capable of addressing what is sometimes a highly fragmented buffer condition, with many landowners involved within a very short stream distance. Unlike most agricultural buffer programs where a larger plantings may be required and doable because only one landowner is involved, buffers on the Batavia Kill will often require smaller patches of plantings on multiple properties.

NO. RB - 09			
Recommendation	Use Batavia Kill Phase II funding to leverage additional funds for a comprehensive riparian restoration effort in the Batavia Kill watershed.		
Priority		Task Leader	NYCDEP - SMP

Funding Sources	NYCDEP NYSDEC ACOE/USFS/USFWS	Task Partners	GCSWCD NYSDEC USFS/USFWS/NRCS Landowners
Estimated Cost	Not Determined	Schedule	Not determined
Notes	<p>While watershed agricultural lands have ready access to cost-share programs for riparian vegetation establishment/enhancement, there is currently no program available to non-agricultural landowners.</p> <p>The GCSWCD's assessment has indicated that extensive plantings would benefit the Batavia Kill stream and while funds are available in the Phase II Project for this effort, it is unlikely that they will be sufficient to restore, manage and maintain the riparian corridor in the Batavia Kill watershed.</p> <p>DEP should work with its partners to develop riparian buffer restoration cost-share programs to assist landowners with planting and maintenance of new buffer plantings.</p> <p>Develop a program to provide interested landowners free, or low cost, plant materials appropriate for use as riparian vegetation. The GCSWCD proposes that there is a certain segment of the riparian community which would take advantage of free plant materials and provide "sweat equity" to improve their buffer areas. The GCSWCD proposes that NYCDEP provide seed funds for a pilot project. The GCSWCD can coordinate with their annual tree and shrub program, and low cost materials could be obtained from the NYSDEC Tree Nursery in Saratoga.</p>		

NO. RB - 10			
Recommendation	NYSDEC and the ACOE should evaluate buffer restoration projects as a possible mitigation requirement on projects with smaller scale disturbances.		
Priority		Task Leader	NYSDEC/ACOE
Funding Sources	Project Sponsors	Task Partners	GCSWCD NYCDEP Landowners / Project Sponsors
Estimated Cost	Not Determined	Schedule	not determined
Notes	In recent years, NYSDEC and the ACOE have increasingly allowed alternate mitigation activities when applicants have minor impacts they have to address, or if site and/other conditions do not allow "replacement" mitigation. The GCSWCD strongly recommends that the regulatory agencies give greater consideration to requiring applicants to fund, or undertake, riparian buffer restoration projects as "in lieu" mitigation when appropriate..		

VIII-3 Invasive Species

As noted previously in this SMP, the Batavia Kill is significantly impacted by the presence of the invasive species Japanese knotweed. The knotweed presents a serious threat to riparian buffer health and at this time it is our understanding that it must be addressed if

any long term success in re-establishing buffers is expected. In Phase I of the Batavia Kill Pilot Project, the GCSWCD and NYCDEP entered into an agreement with Hudsonia Inc. to conduct a preliminary assessment of Japanese knotweed and its impact on stream stability. As part of this agreement, Hudsonia is surveying effective methods of control in the US and internationally. At the time of this SMP, the GCSWCD/NYCDEP have received the first draft of Hudsonia's report which is currently under review. Recommendations made by Hudsonia will be included in the final Batavia Kill SMP.

NO. RB -11			
Recommendation	The GCSWCD and NYCDEP will continue to investigate the impact of invasive species on the riparian buffer and implement appropriate demonstration projects to test management strategies.		
Priority		Task Leader	GCSWCD/NYCDEP
Funding Sources	NYCDEP others	Task Partners	Hudsonia Landowners
Estimated Cost	Undetermined	Schedule	Phase II Study 2003 Demonstrations 2004-2006
Notes	The GCSWCD and NYCDEP should engage Hudsonia to complete Phase II of the study which is focused on inventorying the knotweed population and developing demonstrations of management practices.		