

Greene County Soil & Water Conservation District



2020 ANNUAL REPORT

In 2020, GCSWCD continued to assist Greene County landowners, municipalities and others in meeting their natural resource management objectives. The District continues to focus on multiple benefit programs that help achieve a balance between community growth and conservation. Over the years, the District has positioned itself as a respected agency that is known for its ability to address complex natural resource issues. The District continues to expand its technical capabilities and uses them to help constituents throughout the County. While the District continues to increase its natural resource planning activities, it still maintains its primary strength as an agency that implements effective on the ground conservation. The following sections summarize some of the diverse activities undertaken in the previous year.

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Batavia Kill Stream Restoration Project at Red Falls—Phase 1 Completed

Prattsville, NY— Construction has begun for a multi-year full channel stream restoration project located along the Batavia Kill, immediately upstream of the waterfall known as “Red Falls.” This project was identified as a top priority for restoration in the Batavia Kill Stream Management Plan, which was completed by GCSWCD and the New York City Department of Environmental Protection (DEP) in 2003.

This segment of the Batavia Kill has been the focus of extensive geomorphic and water quality monitoring studies completed by the GCSWCD and DEP since the late 1990s. The reach has been characterized as the largest contributor of turbidity and suspended sediment in the Batavia Kill watershed. In 2000, the reach was also identified as one of the most unstable sections of stream in the watershed.

The purpose of this multi-year restoration project is to restore stable stream function to this segment of the Batavia Kill. The primary goal of the project is to reduce the negative impacts to water quality associated with fine sediment loading due to excessive streambank erosion.

The proposed actions for the restoration project include: creating a bankfull floodplain to alleviate an incised and entrenched channel condition, stabilizing high bank and hillslope failures, and providing erosion controls to reduce excessive streambank and bed erosion. The proposed actions will provide grade control through the reach by constructing rock cross vanes and riffles to halt continuing channel degradation and lateral migration processes.

The first phase of the project was completed this year. This phase included construction of an approximately 2,900 foot long gravel



Aerial photo taken during construction of the access road and dewatering channel that were included in Phase 1 of the Batavia Kill Full Channel Stream Restoration Project at Red Falls.

access road and a rock-lined dewatering channel. This phase also included tree clearing and grubbing operations in the area, which included the salvage and storage of 100 root wads and 100 logs to be used in stream repair structures.

The access road and dewatering channel are going to be essential for future phases of the project. The newly created dewatering channel is approximately 1,250 feet long and will be used to temporarily divert the stream flow around the project site. Dewatering this portion of the Batavia Kill will allow for the restoration of over 2,000 feet of the Batavia Kill to take place in a dry stream channel. The access road will allow for the transportation of building materials and heavy equipment to the project site. Since the dewatering channel will flow underneath the newly constructed access road (see photo above), culverts were installed at the road-stream crossing.

This project is located on a stream within the Schoharie Reservoir watershed. The Schoharie Reservoir is one of the 19 reservoirs that make up the New York City water supply system.

County Route 78 Culvert Replacement and Streambed Stabilization Project

Jewett, NY— A culvert replacement and streambed stabilization project was completed in 2020 on an unnamed tributary to the East Kill in the Town of Jewett. The location was on County Route 78 near Colgate Lake.

It is worth noting that in 2011, shortly after Hurricane Irene, this culvert filled with sediment and the stream blew around it. This cut off access to the youth camp further up the road. As a short-term response at the time, the GCSWCD's Schoharie Watershed Stream Management Program coordinated emergency repairs to the culvert and road.

The original culvert was a 27 foot long steel pipe with a 6 foot diameter. This culvert was undersized, which limited flow capacity and caused a discontinuity of sediment transport. This discontinuity of sediment transport led to streambed instability upstream and downstream of the structure. By replacing the pipe culvert with a new box culvert, there will be an increase in flow capacity, which should reduce both the frequency of backwater as well as the streambed instability.

In addition to the culvert replacement, the project also involved streambed stabilization upstream of the culvert. Riffles were constructed in the streambed to achieve long-term bed stability and habitat protection. The final step in the project involved revegetating the riparian buffer that was disturbed during construction. The area was seeded and mulched as well as planted with native trees and shrubs.

The long-term objective of this project is to improve the resilience of Greene County's transportation infrastructure to future flood events, while reducing the impacts of the transportation system on the stability and ecological integrity of the county's waterways. Specific project goals included the improvement of road stability, flow conveyance, sediment transport continuity, habitat connectivity, and aquatic organism passage.

This project involved the collaboration of the Greene County Highway Department, the GCSWCD, and the New York City Department of Environmental Protection (DEP). Funding for this project was provided by the Greene County Highway Department and the Schoharie Watershed Stream Management Implementation Program (SMIP). The Schoharie Watershed SMIP is a collaborative program between



The original County Route 78 steel pipe culvert.



The newly installed County Route 78 box culvert.

GCSWCD, DEP, and Schoharie Reservoir watershed municipalities.

This project is located on a stream within the Schoharie Reservoir watershed. The Schoharie Reservoir is one of the 19 reservoirs that make up the New York City water supply system.

Bear Kill Stream Feature Inventory (SFI) Completed

Schoharie Reservoir watershed— During the summer, the District conducted a stream feature inventory (SFI) on the Bear Kill, located in Schoharie and Delaware Counties.

The Schoharie Watershed Stream Management Program (SWSMP) at GCSWCD conducts SFIs on the major streams and tributaries located within the drainage basin of the Schoharie Reservoir. While the Bear Kill is not located in Greene County, the stream is part of the Schoharie Reservoir watershed (geographic area of land where all water drains to the Schoharie Reservoir).

During the SFI, our team recorded key stream features (soil erosion, large woody debris, invasive species, infrastructure, etc.) to increase our understanding of the current condition of the stream and its surrounding watershed. This was the first SFI to be conducted on the Bear Kill.

The Bear Kill is approximately 11.7 miles in length, and nearly all of the stream was assessed during the SFI. There were several unique land use characteristics observed during the field evaluation. Streamside land use was predominantly agricultural, though there was recreational use of the Catskill Scenic Trail, which followed nearly half of the stream. Additionally, there were no observable occurrences of the invasive species, Japanese knotweed, which is rare for a stream in the Schoharie Reservoir watershed.

Processing of the data collected during the SFI is ongoing. Analysis of the data collected during the SFI will help to inform GCSWCD's SWSMP of stream health and potential stream projects or management needs. The findings of the SFI will be compiled into a report that classifies areas which will require continued evaluation or issues that must be addressed.

For more information about the SFI, please contact Michelle McDonough, District Technician, at 518-622-3620 or by e-mail at michellem@gcswcd.com.



Recording a tributary to the Bear Kill.



Lacustrine clay found in the Bear Kill can lead to murky water and overall decreased water quality.

Catskill Streams Buffer Initiative (CSBI) Planting Projects

Schoharie Reservoir watershed—

This year, the Catskill Streams Buffer Initiative (CSBI) and GCSWCD planted a total of 1,589 native trees and shrubs and installed 900 native willow stakes to protect, enhance, and restore streamside areas along the East Kill, Batavia Kill, Manor Kill, and several unnamed tributaries.

Reestablishing riparian forest buffers, areas of vegetation located next to water, plays a valuable role in providing flood control, creating wildlife habitat, and reducing surface runoff which helps minimize erosion.

This year, there were 8 total CSBI streamside planting projects. These projects included the following goals:

- ◆ Filling in the gaps to increase species diversity where native vegetation was lacking,
- ◆ Willow staking streambanks to quickly revegetate vulnerable streamside areas,
- ◆ Seeding and mulching to establish a (native riparian) ground cover,
- ◆ Removing invasive honeysuckle and restoring native vegetation to areas overrun with invasive species,

- ◆ Enhancing vegetation where previously planted areas needed additional trees and shrubs,
- ◆ And installing protective tree tubes to protect young trees from deer.

One of this year's CSBI plantings is located at the Windham Path walking loop which provides public access to the Batavia Kill. CSBI completed a planting project here in 2015, however, a small area along the stream was showing signs of erosion due to increased foot traffic in 2020. To address the erosion and repair the sensitive streamside area, CSBI replanted this section with additional trees and shrubs to prevent further erosion. The new trees have tubes to protect them from deer predation. The tree tubes also serve as a visual clue to pedestrians that they are walking through a restoration area. Visitors to the Windham Path may also notice the new CSBI signs (see more information about these below).

CSBI provides FREE technical assistance, project design, installation of locally sourced native plant materials, and follow up monitoring on all planting projects to ensure their success.

Streamside landowners with property in the Schoharie Reservoir watershed may be eligible for assistance with native plantings. If you are interested in a site visit to assess



Every spring and fall, GCSWCD staff plant young trees at CSBI project sites to restore native vegetation and reestablish riparian forest buffers.

your streamside area or would like FREE trees and shrubs to enhance and protect your streamside property, please call Laura Weyeneth, CSBI Coordinator, at 518-622-3620 or e-mail laura@gcswcd.com for more information.

CSBI Riparian Buffer Signs Installed at Windham Path

Windham, NY— This year, GCSWCD staff worked on developing riparian buffer restoration area educational signs. These signs are intended to be placed at highly visible Catskill Streams Buffer Initiative (CSBI) project sites. The goals for the signs are: 1) to inform the general public about the benefits of riparian buffers, 2) to potentially recruit new streamside landowners to the CSBI program for buffer plantings, and 3) to create awareness for the planting sites in order to help protect the riparian buffer areas currently under restoration.

The Windham Path, a publicly accessible walking trail, has a few streamside areas that were planted

during a CSBI project that was completed in 2015. Now, five years later, the CSBI project sites at the Windham Path have new signage to help educate visitors.

Visitors who view these CSBI planting sites at the Windham Path, may notice the white pine and gray birch trees growing above the surrounding vegetation. These tree species are considered pioneer species and can grow 2–5 feet per year. The rapid growth of these native trees will initiate forest succession, increase biodiversity, and help establish a new forest canopy in areas previously lacking shade.

In the future, GCSWCD hopes to install additional riparian buffer restoration area signs at other publicly visible CSBI project sites!



One of the new riparian buffer restoration area signs installed at the Windham Path. Enjoy the trees and the signs as you walk along the path!

GCSWCD Watershed Assistance Program Updates

The GCSWCD Watershed Assistance Program (WAP) supports mountaintop communities and residents advocating for public and private interests to exist in the NYC watershed and maximizing watershed, federal and state program and resource opportunities for the benefit of Greene County's mountaintop region. Highlights for 2020 include:

The Watershed Assistance Program (WAP) Assists with Enhancing Outdoor Recreation

Hunter, NY— Before the pandemic changed life as we know it, tourists recreating throughout the mountaintop was already a management concern for popular destinations like Kaaterskill Falls, Colgate Lake, and as far west as the Prattsville barrier dam. Insert COVID-19 and a perfect storm ensued during 2020.

As communities and agencies grapple with how to handle the influx of people to the area, the WAP's work with outdoor recreation may make a small dent. Over the years, the WAP has supported communities in developing trail systems that offer alternatives to the extensive long-distance hiking trails on state land. The local trail projects offer other places for people to recreate helping disperse visitors, a core strategy in dealing with the dramatic increase in tourists to the Catskill Park. They are also good for the local economy not to mention the physical and mental health benefits.

There is nothing more rejuvenating than a walk in the woods.

Beginning in 2010, the WAP began working with the Town of Hunter and a local committee on the Kaaterskill Rail Trail (KRT), a project recommended in the Mountaintop Community Resource Strategy. Since the opening of the KRT in 2013, the Hunter Area Trail Coalition (HATC) formed, which is a partnership of government and not-for-profit organizations working on a five-phase plan to extend the KRT from Kaaterskill Falls to the Village of Hunter.

The five-phase Hunter trail network weaves through public and private land for nearly 11 miles. The Town of Hunter holds trail easements from participating private property owners, and New York City Department of Environmental Protection (DEP) supports the trails that traverse their land through the issuance of land use permits. Public lands owned by the DEP are critical to Hunter's growing network, as well



Photo taken during a trail assessment with New York City Department of Environmental Protection (DEP).

as other trail projects in neighboring mountaintop communities including Prattsville and Lexington.

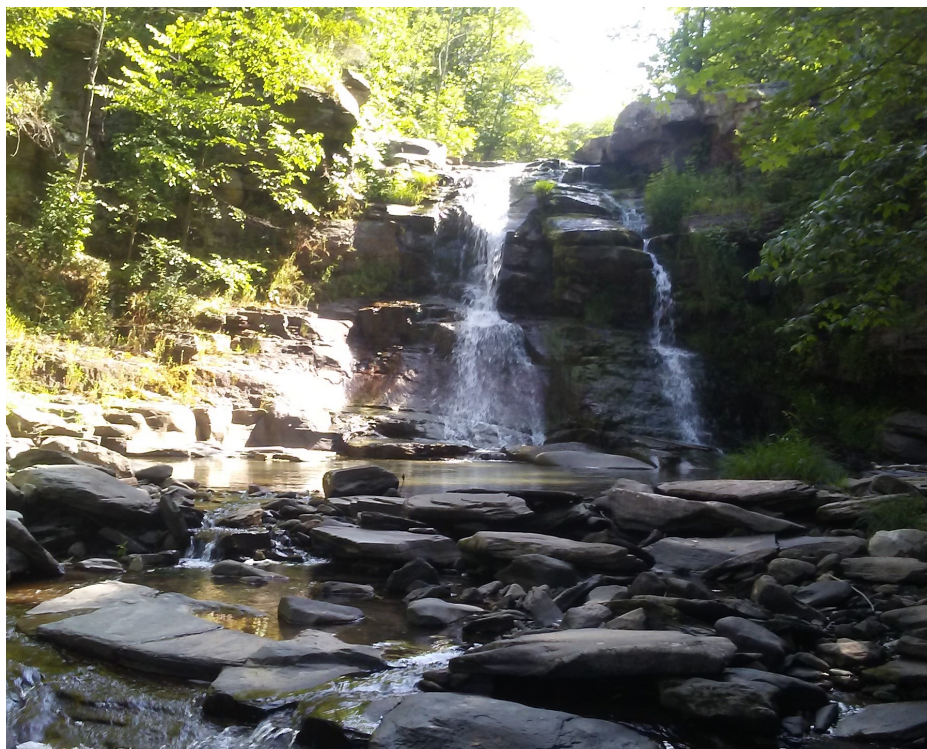
Now more than ever, visitor use of and access to outdoor recreation is paramount, and the HATC looks forward to turning this vision into a reality one phase at a time.

Prattsville, NY—Another local trail project being developed is the Huntersfield Creek Falls Trail (HCFT), a lovely loop trail through a former hayfield bordering Prattsville's business district.

New York City Department of Environmental Protection (DEP) issued the town a land use permit for the trail, which was originally laid out by the NY-NJ Trail Conference. GCSWCD and the WAP updated the original layout and assisted the town with securing a \$6,000 Stream Management Implementation Program (SMIP) grant for footbridges, a kiosk, and educational material.

The 0.8-mile trail is expected to open in 2021. Beautiful views of nearby valleys can be seen from the top, along with access to the Huntersfield Creek and its cascading waterfalls. A future connection to neighboring Pratt Rock Park is planned, which will offer expanded hiking and direct access to this historic park.

Partners supporting the town with this project include the Huntersfield Christian Center, the Catskill Mountain Club, the Zadock Pratt Museum, GCSWCD, DEP, and the Catskill Center.



One of the views from the planned Huntersfield Creek Falls Trail (HCFT). The trail is expected to open in 2021.

Education & Outreach Efforts

The ability to hold and/or attend events was limited due to the on-going COVID-19 pandemic. Highlights for 2020 include:

Municipal

Railroad Avenue Presentation - Following the completion of a bank stability and stormwater assessment of Railroad Avenue in the Village of Tannersville, GCSWCD arranged a presentation by the consulting engineer to share the findings of the assessments with Village officials and project stakeholders. With the input gathered from the presentation attendees, the project was moved into the design phase in the Fall of 2020. This presentation reached a total of 8 participants.

Greene County Superintendents of Highways Association Presentation - GCSWCD made a presentation at the November meeting of the GCSOHA. The presentation offered an overview of the programs and services available from the District that would be applicable to the work done by highway departments. The presentation highlighted grant funding opportunities, the district's Critical Area Seeding Program, technical assistance available, and culvert assessments completed. This presentation reached approximately 40 participants.

Youth and General Public

Schoharie Watershed Weekends - This was the first year trying Schoharie Watershed Weekends in place of the annual Schoharie Watershed Month in an effort to spread events throughout the year instead of grouping them in May. Similar to Schoharie Watershed Month, Schoharie Watershed Weekend events are intended to provide a series of watershed-related educational programs. This year's programs included: "The Beauty of Survival: An Introduction to Reptiles" webinar coordinated in partnership with the Mountain Top Arboretum in Tannersville (Saturday, August 29) and "Streamside Photography Walk at the Windham Path" guided photography walk at the Windham Path in Windham (Saturday, October 3). These events reached a total of 34 participants.

School Visits (January-March 2020) - GCSWCD offered free visits to schools in Greene County and the Schoharie Reservoir watershed. Programs offered included demonstrations with the EnviroScape® watershed model, the Augmented Reality (AR) sandbox, the EmRiver stream table, and the Ward's® Stormwater Floodplain Simulation System. In 2020, GCSWCD staff visited the Accelerated Earth Science class at Cocksackie-Athens Middle School and 2nd and 3rd grades at both the Cocksackie Elementary School and the Edward J. Arthur Elementary School in Athens. These school visits reached a total of approximately 166 students.

Trail Improvements at the Cohotate Preserve

Athens, NY— Visitors to the Cohotate Preserve may have noticed some changes this summer and fall.

GCSWCD staff worked on developing and installing tree identification signs for many of the tree species found at the preserve. These educational signs were installed on wooden posts and placed at several points along the trails.

GCSWCD staff also installed new trail markers and property signs at the preserve. Each of the trails now has its own trail marker: the Main Path (~0.4 miles) is the large gravel path from the parking lot down to the Hudson River that is now marked with red trail markers, the Pond Trail (~0.2 miles) is a short loop around the pond that is now marked with yellow trail markers, and the Riverside Trail (~0.4 miles) is now marked with white trail markers.

In addition to signage, GCSWCD staff did some trail and infrastructure maintenance. Several of the benches at the preserve were repaired. On the Riverside Trail, a short trail reroute was created in an effort to move the trail away from a trench formed by rill erosion that was the result of



The above photo shows a bench that was repaired, a new trail marker, and a tree identification sign that was placed in front of a white oak along the Main Path at the Cohotate Preserve.

stormwater runoff in that area. Also on the Riverside Trail, a fallen tree on the trail had created a large hole that is now filled in.

Preserve History — The land that is now the Cohotate Preserve was entrusted to The Nature Conservancy (TNC) in 1978. TNC donated the property to Greene County, and, in 1991, the GCSWCD took over

management of the property. The Cohotate Preserve is home to the Columbia-Greene Community College's Hudson River Environmental Field Station. This 52-acre property is characterized by forested ravines and bountiful access to the Hudson River Estuary shoreline. Trails are open year-round from dawn to dusk.

Assisting Local Municipalities with Critical Area Seeding

Greene County & Schoharie

Reservoir watershed—For the past several years, the GCSWCD has offered critical area seeding to local municipalities within Greene County and the Schoharie Reservoir watershed. This critical area seeding work involves either seed and mulch or hydroseed at locations that may contribute to sediment erosion, such as roadside ditches.

Critical area seeding is necessary for a multitude of reasons. While this work makes the roadside ditches nice and green for landowners and travelers to enjoy, arguably the most important reason for this practice is soil stabilization. If soil is not properly stabilized, sediment and nutrients are allowed to runoff, which is considered a nonpoint source pollutant that negatively impacts water quality in nearby waterbodies. This is bad for both the animals that call these waterbodies home and the people who want to recreate on these streams and lakes.

In recent years, harmful algal blooms are big news during the late summer months. A main cause of harmful algal blooms is excess phosphorous running

off into the streams and lakes. Critical area seeding can help reduce this problem because once the seeded area becomes established with vegetation, it acts as a vegetated treatment area (VTA). The VTA can catch nutrients from surrounding lawns and fields and makes it less likely for those nutrients to flow directly into waterbodies during rain events.

GCSWCD currently encourages all municipalities in Greene County and the Schoharie Reservoir watershed to contact us to stabilize their open roadside ditches after grading is completed. In 2020 GCSWCD staff helped to establish vegetation on 5.5 miles of roadside ditches.

While the majority of the critical area seeding work happens along roadways, GCSWCD has also helped municipalities by stabilizing other areas. Examples include hydroseeding at the Windham Transfer Station, seed and mulching a soccer field at the Vanderbilt Town Park in Greenville, and seed and mulching after a project was completed at the Wastewater Treatment Facility in Athens.

For more information about critical area seeding, please contact the GCSWCD main office at 518-622-3620.



GCSWCD staff using a hydroseeder at the Windham Transfer Station after a scale replacement project.



GCSWCD staff applied seed and mulch after the local highway department did shoulder work along County Road 3 in Halcott.

Agricultural Programs Offered through GCSWCD

Greene County, NY— The GCSWCD considers the agricultural community a priority. Along with technical assistance to Greene County agricultural producers, GCSWCD facilitates participation in two New York State programs: the Agricultural Assessment Program and Agricultural Environmental Management (AEM).

Through the Agricultural Assessment Program, property tax bills can be reduced for eligible landowners with land used for agricultural production. GCSWCD assists Greene County landowners by developing soil maps and Soil Group Worksheets, which are required for participation in the Agricultural Assessment Program. Eligible farmland is classified by soil productivity and help determine the level of exemption. This service is free to all Greene County landowners.

In 2020, GCSWCD developed soil maps and Soil Group Worksheets for 71 parcels in the Towns of Ashland, Athens, Cairo, Catskill, Coxsackie, Durham, Greenville, Lexington, New Baltimore, and Prattsville.

AEM is a statewide, voluntary program that helps farmers make sound economic and environmental decisions to help meet business objectives while preserving the state's natural resources. GCSWCD AEM program staff help farmers by identifying environmental risks in their farm operation and offering conservation plans to address the concerns. All of the information gathered through the AEM program is confidential and is only used to help the farm operation meet its goals.

In 2020, GCSWCD completed AEM Assessments on two active farms in Greene County.

For more information about agricultural programs, please contact Michelle McDonough, District Technician, at 518-622-3620 or by e-mail at michellem@gcswcd.com.



Story Farms in the Town of Catskill, Greene County.

GCSWCD Assisted with NAACC Assessments in Town of New Baltimore

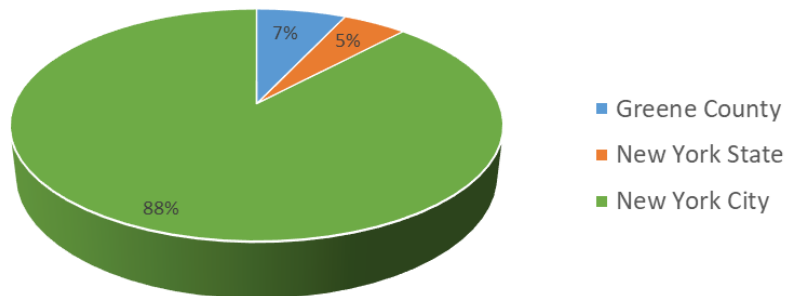
New Baltimore, NY—This summer, GCSWCD, in cooperation with Cornell Cooperative Extension (CCE) of Columbia and Greene Counties and the Lower Hudson Coalition of Conservation Districts (LHCCD), assessed road-stream crossings in the Town of New Baltimore. All road-stream crossings were evaluated following the North Atlantic Aquatic Connectivity Collaborative (NAACC) protocols.

The NAACC is a network of organizations, universities, state, and federal departments working to improve aquatic passage in the northeast. NAACC's focus is on the assessment of road-stream crossings, such as bridges and culverts. The assessments are compiled into NAACC's database, where high priority crossings are identified for upgrade and replacement.

District Funding

In 2020, the District received \$3,550,653.82 in total funding. Included in that amount is \$179,879.02 from New York State for reimbursement of technical services and conservation projects, a \$254,538.00 allocation from Greene County, and \$3,116,236.80 through the District's partnership with NYC Department of Environmental Protection.

While the District's allocation from Greene County has remained consistent at \$254,583.00 for the period spanning 2018–2020; our overall funding grew by over 61% from 2019 to 2020.



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2020 Student Conservation Association Intern

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