

**Driving Conservation Progress
in New York State since 1940**



Conservation Project Assistance

Annual Report of Success Stories 2011
State Aid to Districts Part B Funded Projects

New York State Soil & Water Conservation Committee
www.nys-soilandwater.org

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New York State Soil and Water Conservation Committee

The mission of the New York State Soil & Water Conservation Committee (SWCC) is to promote a comprehensive natural resource program for New York State by supporting local Soil & Water Conservation Districts to develop and implement projects and programs that will preserve, protect, and enhance the wise use of the state's soil, water, and all related resources.

What We Do

The State Soil & Water Conservation Committee operates as an agency of the State located within the Department of Agriculture & Markets. While the Committee functions under its own statutory charge, the full-time staff members are employees of the Department's Division of Land and Water Resources. The SWCC works to;

- Establish policy to guide Soil & Water Conservation Districts,
- Assist with District operations,
- Support Agricultural Conservation and Comprehensive Natural Resource Management,
- Promote Cooperative Conservation advising State and federal partners on soil and water conservation.

Meet the Soil & Water Conservation Committee

The New York State Soil & Water Conservation Committee is led by five voting members appointed by the Governor who serve five-year terms:

George Proios, Chair - Urban, Suburban, and Rural Non-Farm Interests

Dale Stein, Vice-Chair - At-large Farm Interests

Chuck Colby, New York Association of Conservation Districts

John Dickinson, New York Farm Bureau

David Brass, New York State Grange

Soil & Water Conservation Committee Advisory Members

NYS Department of Agriculture & Markets

NYS Department of Environmental Conservation

NYS Department of Health

NYS Department of State

USDA Natural Resources Conservation Service

Cornell Cooperative Extension

College of Agriculture & Life Sciences at Cornell University

State University of New York College of Environmental Science & Forestry

New York State Conservation District Employees' Association

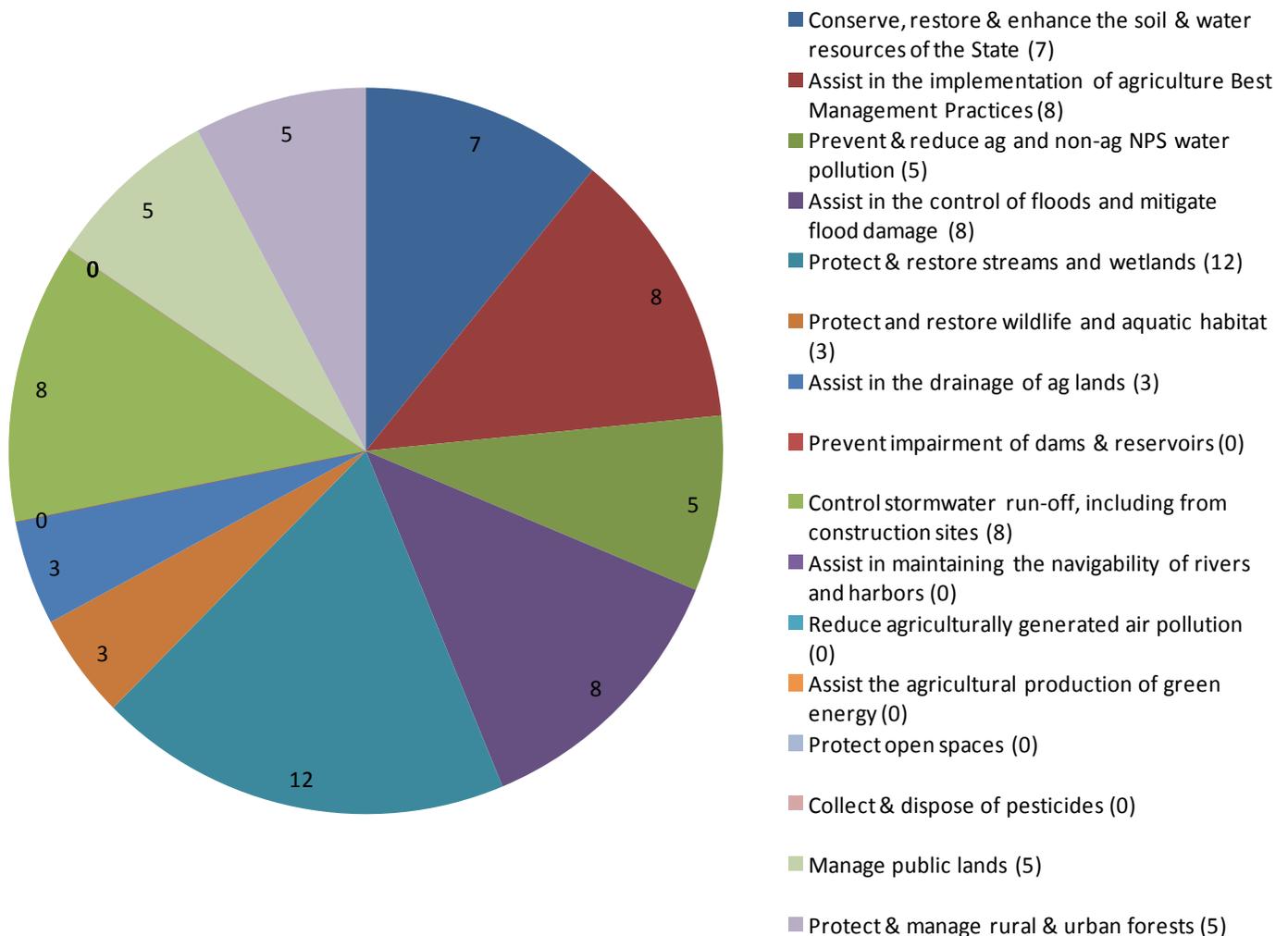
Conservation Project Assistance

Assistance to Soil and Water Conservation Districts

Pursuant to the Soil and Water Conservation Districts Law (SWCDL), the New York State Soil and Water Conservation Committee is authorized to provide State Aid to Districts from the Environmental Protection Fund. The SWCDL Section 11a-1b permits annual support up to \$6,000 per District in support of local Conservation Projects. District's matched the \$368,000 in state funding with an additional \$856,000 in 2011.

Conservation Project Assistance funding must be used toward objectives outlined by the SWCDL. The sixteen objectives under the Conservation Project Assistance are listed on the following page. The number of projects that occurred in 2011 per objective are outlined in the chart below. This report highlights projects completed utilizing this funding and captures a fraction of the diverse work done by Soil and Water Conservation Districts annually.

Number of Projects Per Objective 2011



Conservation Project Assistance Objectives

Objective 1

Conserve, restore and enhance the soil and water resources of the state.

Objective 2

Assist in the implementation of agricultural Best Management Practices.

Objective 3

Prevent and reduce agricultural & non-agricultural nonpoint source water pollution.

Objective 4

Assist in the control of floods and mitigate flood damage.

Objective 5

Protect and restore streams and wetlands.

Objective 6

Protect and restore wildlife and aquatic habitat.

Objective 7

Assist in the drainage of agricultural lands.

Objective 8

Prevent impairment of dams and reservoirs.

Objective 9

Control storm-water run-off, including from construction sites.

Objective 10

Assist in maintaining the navigability of rivers and harbors.

Objective 11

Reduce agriculturally generated air pollution.

Objective 12

Assist the agricultural production of green energy.

Objective 13

Protect open spaces.

Objective 14

Collect and dispose of pesticides.

Objective 15

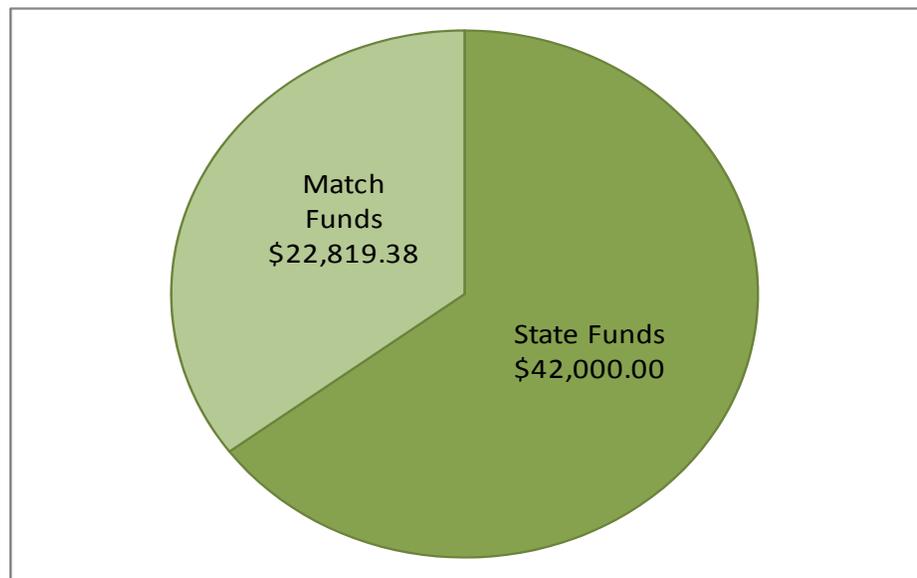
Manage public lands.

Objective 16

Protect and manage rural and urban forests.

Conserve, restore and enhance the soil and water resources of the state.

Soil & Water Conservation Districts (SWCD) assist in conserving, restoring and enhancing the soil and water resources of the state by implementing projects that control erosion through vegetating or seeding exposed areas of land, providing technical assistance and engineering support to stabilize and control roadside ditch erosion, promoting waste reduction and recycling just to name a few. In 2011 \$42,000 was provided to Districts for Conservation Project Assistance for this objective. Districts leveraged these state funds to receive matching funds of over \$22,000 to implement conservation projects.



CAYUGA County Soil & Water Conservation District Critical Area Seeding Project



Seeding of roadside ditch in Owasco Lake Watershed.

The Cayuga County SWCD conducted a Critical Area Seeding Project to protect water quality through erosion and sediment control. Hydroseeding roadside ditches and exposed areas utilizes vegetation to stabilize soils and reduce erosion preventing sediment from entering the waterway.

The SWCD presented on the importance of protecting water quality through erosion and sediment controls at several Highway Superintendent Association Meetings and hosted a NYS Department of Environmental Conservation endorsed erosion and sediment control course for Highway Department personnel. In addition to providing education the District stabilized approximately 4 miles of

roadside ditches and 3 acres of exposed areas located throughout the county through hydroseeding. The SWCD also assisted two farms in stabilizing critical areas. Five hundred feet of drainage swale that diverts water from entering a barnyard was re-vegetated and 150 feet of drainage swale was seeded and mulched. The Conservation Project Assistance funds were essential in re-vegetating these critical areas.

SENECA County Soil & Water Conservation District Drainage Ditch Management

Seneca County SWCD has long recognized adequate drainage as a key component of successful farming and urban development. The Seneca County Group Drainage Channel Improvement Program began in 1968 and is administered by the SWCD. The program is funded by budgetary allotments from the County Board of Supervisors and other sources as may be available including Conservation Project Assistance funds in 2011. The SWCD oversee 15 drainage improvement channels throughout the county maintaining mowing, tree removal, and maintenance which include erosion repairs and sediment removal. Erosion repairs demand a significant portion of the budget due to high intensity rain events. Benefits realized through the Drainage Channel Improvement Program include improved drainage for tillable land, increased land values for agricultural use, improved drainage and lower maintenance costs for roads, better outlets for road culverts, reduced hazard of flooding, reduced flooding in residential properties, increased residential land values, and reduced mosquito and other pest problems.



Erosion in drainage ditch.

WYOMING County Soil & Water Conservation District Club Road Stormwater Management Project



Wyoming County SWCD provided technical assistance and engineering support to complete a design to stabilize and control road ditch erosion on Club Road in the Silver Lake Watershed. The purpose of the project was two-fold; first reduce sediment inputs into Silver Lake from ditch erosion, and second improve public safety by the elimination of a very deep roadside ditch. Sediment from road ditches, streambanks, and shoreline erosion affect water quality by causing cloudiness and decreasing water clarity. This inhibits respiratory capabilities of aquatic species, creates poor visibility conditions for fish, and affects spawning. The design, prepared by the SWCD, proposed the installation of 930 feet of pipe in the existing ditch and five concrete inlets to handle road runoff. The design also included a rock lined plunge pool area for outlet protection that would be constructed by the Town of Castile Highway Department. Due to the increased cost of the project, the Conservation Financial Assistance Funding was utilized to assist in purchasing pipe for the project, while funds from local partners provided assistance to complete this important project.

MONTGOMERY County Soil & Water Conservation District Pasture Management Planning

Montgomery SWCD completed the implementation of a Pasture Management Plan for a property in Montgomery County. Pasture Management help provide effective pasture planning and management practices to promote soil health, protect water quality, and produce high-quality feed for livestock production. The plan developed by the District covered 53 acres and included the installation of 3,000 feet of fence along pastures and 3,750 feet of laneways or walkways for livestock to travel between the pasture system and the barn. These practices will provide the infrastructure



necessary to conduct rotational grazing which reduces overgrazing. Additionally, 2,200 feet of pipeline was installed to control water run-off to prevent erosion and reduce water pollution. Utilizing the Conservation Project Assistance funds the best management practices outlined in the plan were implemented over the course of several months and was an extensive undertaking.

RENSSELAER County Soil & Water Conservation District Critical Area Seeding Demonstrations

The SWCD demonstrated and promoted critical area seeding for erosion control in towns within Rensselaer County and with county farmers. Three demonstration sites were chosen for this project; the Town of Pittstown's reclaimed sandbank and future site of a new Town Hall, and two locally owned farms. The SWCD provided technical support on re-sloping the banks where erosion was occurring and installing a swale or vegetated area above the banks for additional sediment control and water infiltration. Vegetation was established by using seed, fertilizer, and mulch purchased from local farms and businesses. The mixture was applied to the land using a mulcher. The seeding will also protect areas on the farms for land-smoothing and debris removal funded by Agriculture and Community Recovery Fund (ACRF) grants. Governor Cuomo announced the creation of ACRF grants to provide recovery aid from Hurricane Irene and Tropical Storm Lee. Additionally, at each of the demonstration sites the SWCD provided education on the importance of critical area seeding and sod establishment for the purposes of erosion control. The town highway superintendent in Pittstown was complementary of the work completed and was interested in future partnerships for technical services on critical seeding from the District. The District also partnered with the Town of Brunswick to supply equipment and seed for re-vegetating banks damaged by Hurricane Irene.

HAMILTON County Soil & Water Conservation District Countywide Recycling Cooperative



Hamilton County SWCD established a cooperative countywide approach to evaluate the effectiveness of existing recycling efforts and developed a plan to expand programs that encourage residents to reduce, reuse and recycle. The District partnered with the Water Quality Coordinating Committee, county and local municipalities, and sought public input to assess the needs of the community and develop programs resulting in reduced waste and increased recycling.

The District provided assistance to the County Highway Department with the development of a solid waste management plan. Necessary improvements to the

transfer station were itemized by cost effectiveness and increased efficiencies. New holding areas and containers for additional recycled materials were obtained and outreach efforts were made to increase the participation of residents and seasonal tourists. The District worked with the county to increase office paper recycling. The District collected paper and corrugated cardboard from county department buildings and baled the paper at the transfer station. There was 5,696 lbs of paper removed from the waste stream in 2011 an increase from the 3,790 lbs recycled in 2010. This helps to decrease the cost of waste shipment out of the county to a landfill in Rodman, NY saving taxpayer and county dollars. A revenue source was also realized through the sale of the baled paper.

The District developed an educational outreach campaign for municipalities, residents, and tourists to promote waste reduction through reducing, reusing, and recycling. Outreach consisted of several articles published in the District's monthly Conservation Corner Newsletter and a "Reduce,

10 things YOU can do to
Reduce, Reuse, and Recycle

1. **Reduce by using fewer resources.** Purchase items that are useful and durable. If an item is beautiful and well made, it will please you for a long time, and money and resources will not be spent on replacing the item.
2. **Turn water off** while brushing your teeth and save 5 gallons a day.
3. Purchase goods made from post-consumer recycled materials.
4. **Replace disposables** with reusable cloth napkins, dishes, plastic food storage containers, batteries, and coffee filters.
5. **Clean green** by replacing expensive household products with homemade remedies. Clean kitchen counters with Conquer grease, lemon juice or vinegar.
6. **Buy reusable** grocery go mugs. Say no to away coffee cups.
7. **Buy used goods** from thrift shops, consignment stores, or garage sales.
8. **Reuse** jam jars to store leftovers, food scraps as compost, an old shirt as PJs, an opened envelope as a shopping list. Share magazines, trade DVDs, return bottles, or donate cell phones.
9. **Donate** clothes, old furniture, or household appliance to charity organizations.
10. **Recycle.** Hamilton County transfer stations accept glass, #1 and #2 plastics, metal food and beverage containers, newspaper, white paper, and corrugated cardboard. Learn what the recycling rules are in your community. If the wrong number plastic is melted in a batch, the whole load must be trashed.



Reduce,
reuse, then
recycle.



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Providing today
Protecting tomorrow

Reuse, Recycle” poster that was created and distributed to town offices and various sites throughout the county. A public event was organized to provide information and education to residents on how they can reduce waste. Attendees were informed on how items diverted from the landfill save money and natural resources while innovative ideas and success stories about waste reduction were shared. The creation of a Green Gift Exchange was a result of the community event as a way to promote the reuse of items. Instead of disposing of unwanted household items they can be donated to the District’s Green Gift Exchange where residents can take them for reuse. Reducing waste and recycling help to conserve natural resources and will result in a cleaner environment in Hamilton County. Tourists will remain attracted to the area as a result of a more pristine landscape which aids Hamilton Counties tourist-driven economy. These efforts in Hamilton County will resonate beyond county borders by increasing water and air quality, promoting the sustainable use of natural resources, reducing greenhouse gas emissions, and reducing energy.

TOMPKINS County Soil & Water Conservation District Countywide Tire Recycling Day



Tompkins County SWCD organized and sponsored a tire recycling collection event. The purpose of the event is to collect old tires and transport them to a recycling center for proper disposal. The cost of tire disposal is continually rising causing an increase in illegal disposal of tires in ravines, streams and along roadsides. The District has sponsored tire recycling events since 2003 but due to increasing cost to collect, transport, and recycle tires the District it was becoming increasingly difficult to offer the recycling events. The District received requests from several towns in Tompkins County to continue providing the tire recycling events. The Conservation Project Assistance funds provided the District with the additional funding necessary to meet this community need.



Tompkins SWCD diverted 848 tires from the landfill in 2011.



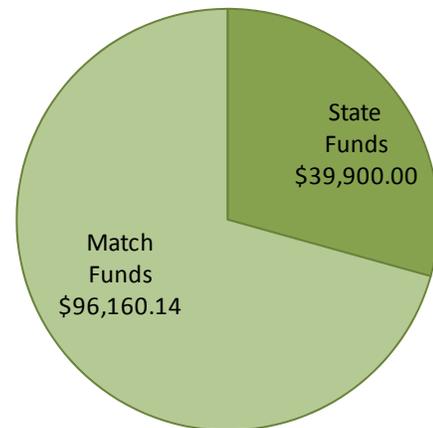
Residents of Tompkins County dropping-off tires for the SWCD’s 2011 Tire Collection Event.

During the 2011 Tire Recycling Event seven District staff dedicated a Saturday to collect the tires and ready them for transport. The District collected 848 tires for recycling. Since 2003 the District has diverted 8,915 tires from the landfill. An important aspect of the 2011 event verses past collection events was that the District was able to accept tires on rims, something that is not allowed by many recyclers of tires. Tires collected were delivered to Liberty Recycling in Western New York where they will be recycled into several products such as athletic fields, paving and landscaping applications. The District has already scheduled a Tire Recycling Event for 2012

in Lansing, NY due to the continued success for recycling.

Assist in the implementation of agricultural Best Management Practices.

Soil & Water Conservation Districts (SWCD) assist in the implementation of agricultural best management practices (BMP) by working with local farmers on stormwater management, rotational grazing, agricultural waste management, riparian zone protection, and many other practices. In 2011 Conservation Project Assistance funds were matched 3:1 with state funds accounting for \$39,900 of over \$136,000 spent on this objective.



COLUMBIA County Soil & Water Conservation District Stormwater Runoff Management Project

The SWCD assisted a farm in Columbia County with the design and installation of a stormwater runoff diversion system. At the farm stormwater runoff from the partitioned pasture area or paddocks, parking area, and roof sends surface water into and through the barn, flooding horse stalls and the indoor arena. The SWCD designed a stormwater runoff management system diverting runoff to be collected and held for infiltration. This project has improved conditions at the farm and prevents stormwater from passing through the barn, eliminating surface water contamination by pathogens. Protecting water quality in nearby waterways.

COLUMBIA County Soil & Water Conservation District Rotational Grazing System Project

Rotational grazing results in improved pasture cover and better livestock health through enhanced management. The District provided technical and financial assistance to a local farm to enable them to rotationally graze their 40 acres of pasture already fenced on the perimeter. The project involved the purchase and installation of fencing for laneways to transport sheep, raised for meat production, from the barnyard to the pasture. The implementation of rotational grazing will additionally reduce soil compaction, extend the grazing season, reduce soil erosion, and reduce weeds.

HERKIMER County Soil & Water Conservation District Agriculture Best Management Practice Implementation



The SWCD worked with a local landowner of a 50 black angus cattle operation to plan and implement a rotational grazing system. The project consisted of properly sizing the paddocks or partitioned pasture area, and installing 6,100 feet of perimeter fence around 50 acres of cropland that will be converted to rotational pasture. Converting annually tilled cropland to year-round vegetative-covered pasture will reduce erosion and sediments entering waterways. Additionally, the project excluded cattle access to the woodland and adjacent stream protecting water quality and providing higher quality pasture forage for this excellent herd of black angus cattle.

DELAWARE County Soil & Water Conservation District Riparian Forest Buffer in the Susquehanna Watershed



Alternate water sources installed to exclude livestock from streams.

The District utilized Conservation Project Assistance funding to implement an alternative water supply required in the federal Conservation Reserve Enhancement Program (CREP) Riparian Forest Buffer Plan for an 82.5 acre beef farm located in the Upper Susquehanna River Watershed. The project will improve and protect water quality by reducing nutrients and sediment from entering Carrs Creek, a Susquehanna River tributary stream. Fencing was installed and an alternate water supply system was completed. The buffer now excludes

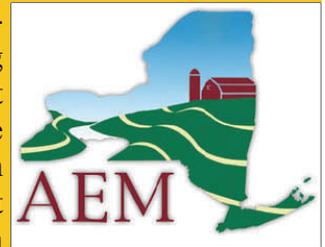
livestock from the stream and streambanks which allows the banks to recover; reducing soil erosion, promoting nutrient uptake, and providing nesting and wildlife habitat. The stream crossing and a tree and shrub planting will complete the riparian forest buffer in 2012.



ERIE County Soil & Water Conservation District Vegetated Treatment Area Retrofit

The District has worked with the Phillips Family Farm to conduct Agriculture Environmental Management (AEM) planning aimed at assisting farmers to protect and conserve the State's natural resources. As a result of AEM planning Agricultural Waste Management is maintained on the farm. A vegetated treatment area which consists of a strip of vegetation for the treatment of contaminated wastewater or runoff, requires a retrofit to maintain function. The District planned, designed and implemented a

retrofit to a vegetated treatment area for silage leachate or the liquid runoff from silage piles on the Phillips Family Farm. Modifications were necessary to remove clean water from the system and eliminate any amount of waste from passing through the system and reducing the efficiency and effectiveness of the filter area. Retrofits made to the vegetated treatment area will protect the effluent basin from stormwater flowing off the bunk silo and provide a suitable surface for removing trapped sediment.



GREENE County Soil & Water Conservation District Agriculture and Community Recovery Fund Supplement



The SWCD assisted with debris removal in streams after the storm events.

In the aftermath of Hurricane Irene and Tropical Storm Lee Governor Cuomo announced the creation of an Agriculture and Community Recovery Fund (ACRF) grant to provide recovery aid from the storms. In the initial round of funding the Greene County SWCD worked with farms that received reduced funding to assist in rehabilitating farmland damaged by the storms. The District supplemented ACRF funds with Conservation Project Assistance funding to complete projects that included:

- Debris removal,
- Restoration of fencing and conservation practices, and
- Land shaping and grading.

The emergency conservation Best Management Practices will prevent further degradation of natural resources through the implementation and repair of the land's productive capacity.

FRANKLIN County Soil & Water Conservation District Recycling Agricultural Plastics Program



SWCD promotes the Recycling Agricultural Plastics Program (RAPP).

Franklin SWCD promotes the Recycling Agricultural Plastics Program (RAPP) by Cornell University. RAPP is a collaborative program that provides the infrastructure and markets necessary to divert waste film and rigid plastics from the agricultural waste stream. In 2011 Franklin County SWCD had eight producers participating in RAPP. They recycled 37 bales of feed cover and Ag bags shipping them to Texas to be recycled into manufacturing products. Bale wrap was also recycled, 22 bales were shipped to Indiana to be processed into pervious non-concrete walkways that are used in Green Infrastructure projects for stormwater management. The products created from the recycled plastics provide another

value added to RAPP. The District received modular sidewalks from the company made from plastic collected in Franklin County and used the sidewalk pieces in their outreach for RAPP. Partnerships are imperative to the success of RAPP. Franklin and St. Lawrence County SWCD's co-own an Ag plastics baler "BigFoot" and Franklin SWCD also partner with the Franklin County Solid Waste and Highway Departments who assist with the storage and loading of the bales for transport. Conservation Project Assistance funding was utilized to provide demonstrations of the baler expanding potential program participants. In August the Franklin District conducted a countywide training on RAPP and demonstration of the baler. The training was well attended with over 15 participants. Franklin SWCD gained additional participants through the outreach efforts and is now working with over 15 farmers on recycling their Ag plastics. Additionally, the District worked with the Cornell Cooperative Extension of Franklin County to reach out to local pellet companies to encourage their customers to save their pellet bags for recycling.



BigFoot the Ag plastics baler.



Baler demonstration.



Feed covers, Ag bags, and bale wrap are baled and recycled.

ESSEX County Soil & Water Conservation District Multi-Farm Riparian Fencing Project

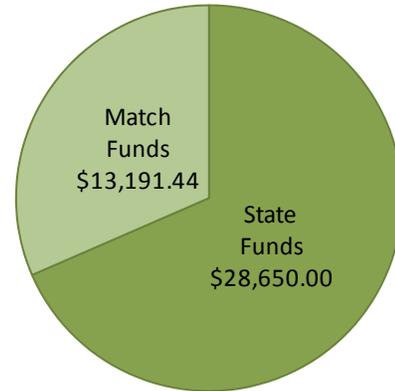
The Riparian Fencing project conducted by Essex SWCD was targeted to assist landowners in small riparian fencing projects and assist in promoting riparian protection. Riparian refers to the interface between land and water. Riparian fencing involves the installation of fence to exclude livestock from waterways. The fencing creates a buffer that protects streambanks from erosion, improves water quality, and increases wildlife habitat. The District worked with two landowners implementing fencing of riparian areas on two important tributaries that drain to Lake Champlain. The riparian fencing will protect the Boquet River and the second project will install over 2,500 feet of fencing to protect Stacy Brook. The Conservation Project Assistance funding was utilized to not only assist with the installation of riparian fencing but to also promote landowner use of existing riparian protection assistance programs.



Riparian fencing protect stream health.

Prevent and reduce agricultural & non-agricultural nonpoint source water pollution.

Soil & Water Conservation Districts (SWCD) prevent and reduce agricultural and non-agricultural nonpoint source (NPS) water pollution to protect water quality. NPS water pollution refers to runoff that picks up pollutants as it flows to rivers and lakes. In 2011 District's matched over \$28,000 of Conservation Project Assistance funds with an additional \$13,000.

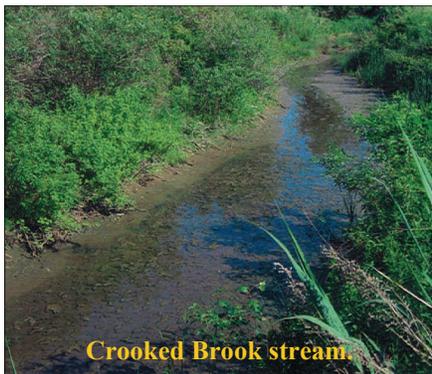


LIVINGSTON County Soil & Water Conservation District Water Control Structure Implementation

The SWCD implemented a water control structure project designed to address severe erosion taking place on 50 acres of cropland. Land erosion can lead to sediment loading in nearby waterways degrading water quality. To prevent erosion the installation of 1,900 feet of an underground outlet was tied into an existing underground drainageway installed by the farmer in 2009. Design and layout of the diversions totaling 900 feet were implemented by the District utilizing Conservation Project Assistance funding. Outcomes from this project include eliminating NPS pollution and improved cropland drainage.



CHAUTAUQUA County Soil & Water Conservation District Chautauqua County Fairgrounds Stormwater Retention Pond



The SWCD assisted the Chautauqua County Fair in the survey and design of a shallow wetland retention pond. Upon recommendation from the Chautauqua County Health Department during a Dunkirk Beach Study, it was noted that animal wastes from the fairgrounds significantly impact bacterial loading in Crooked Brook, which affects water quality and can lead to beach closures on Lake Erie.

The relationship between turbidity or the cloudiness of water and bacteria suggest that stormwater management practices that substantially reduce turbidity will also provide the greatest improvement to reducing concentrations of bacteria in stormwater runoff. Installing a retention pond where sediment can settle at the bottom of the pond and not be transported further downstream will reduce the bacterial loading in the stream. This will prevent recreational beaches from closure on Lake Erie and significantly increase recreational opportunities.



OTSEGO County Soil & Water Conservation District Highway Hydroseeding Project

The SWCD worked with the County of Otsego to conduct hydroseeding along highways after construction activities. The purpose of the project was to reduce soil erosion through the establishment of vegetative cover on roadsides. The District applied hydroseeding on approximately 9 acres on Thurston Hill, Lippit, and Todd Roads in Otsego County post-road construction, ditch digging and bank re-grading. Before and after photos of the site show the soil stabilized once vegetated.



SCHENECTADY County Soil & Water Conservation District Critical Area Seeding Program

The Schenectady Conservation District promotes the importance of erosion and sediment control via the County Critical Area Seeding Program. The District conducts hydroseeding on all road ditches that are cleaned out as part of a regular maintenance plan by the County Department of Public Works. Conservation Project Assistance funds assisted in seeding approximately one acre of ditches in an ongoing effort to reduce the amount of sediment load entering local waterways. In addition the Conservation District completed hydroseeding projects for the City of Schenectady involving re-grading, seeding, and mulching of an open construction site and the stabilization of a large bank that was experiencing erosion in the Town of Glenville. The two sites totaled approximately one acre each for a total of two acres vegetated.

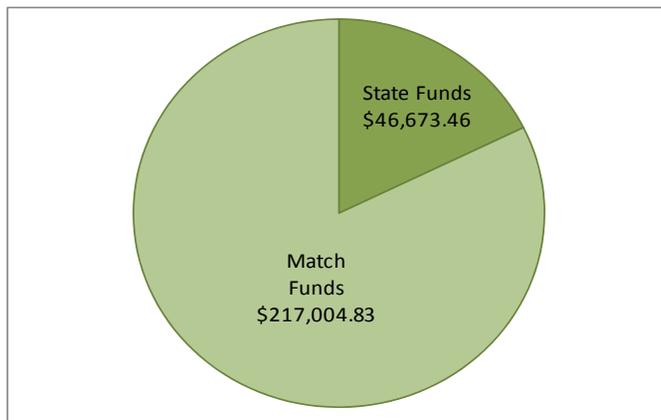
SCHOHARIE County Soil & Water Conservation District Bear Gulch Lake On-site Wastewater Improvement Program

Schoharie SWCD created a On-site Wastewater Improvement Program to pump-out septic tanks of homes that were within 50 feet of Bear Gulch Lake. The program consisted of an educational component that distributed information on properly designed and maintained septic systems as well as water saver kits. The District contacted 74 landowners that had properties bordering the lake requesting they fill out a simple questionnaire regarding their septic system. Twenty-six surveys were returned and 13 septic tanks were pumped. The participation rate was 18% of the identified homeowners around the lake. Participating landowners provided positive feedback to the program. Many of the homeowners had never pumped their septic tanks or knew the location of the tanks on their property. Through the program residents gained the knowledge and appreciation for how neglect of maintenance to a septic system can effect the health of the lake. Of the 13 tanks that were pumped and inspected the District identified several old rusted tanks that were missing the bottom of the tank. These landowners were informed and encouraged to replace the existing tank to reduce potential pollution from entering the lake. The program was successful but was unfortunately interrupted by the workload that was caused by Hurricane Irene therefore limiting the number of pump-outs that were completed.



SWCD pumped out 13 septic tanks preventing pollution from entering the lake.

Assist in the control of floods and mitigate flood damage.



Soil & Water Conservation District's (SWCD) assist in floodplain management and the mitigation of flood damage. District's played an integral role in 2011 assisting in recovery efforts from Hurricane Irene, Tropical Storm Lee, and other significant storm events. District's utilized \$46,000 of state funds for floodplain management and flood damage restoration matching

those funds with an additional \$217,000 for projects towards this objective.

CORTLAND County Soil & Water Conservation District Grout Brook Floodplain Evaluation and Revision

The SWCD developed and submitted a new floodplain map for Grout Brook to the Federal Emergency Management Agency (FEMA) for review and approval. Floodplains are overflow areas allowing high water to rise above the typical water level. New floodplain mapping, completed by the SWCD with the services of a consultant engineer, significantly changed and reduced the size of the flood hazard area, removing several homes from the floodplain. Newly excluded homeowners from the floodplain will no longer be required to carry flood insurance, if required by their mortgage companies for homes in the flood hazard area. This is a significant savings to homeowners. Additional areas were evaluated near Luker Road in Cortlandville and around Little York Lake in Homer/Preble. These areas may be later pursued for floodplain correction and remapping.

DUTCHESS County Soil & Water Conservation District Hurricane Irene Agricultural Recovery



The District proved that collaboration was essential to the recovery from flooding after Hurricane Irene. The SWCD provided financial assistance to match Agriculture and Community Recovery Fund (ACRF) grants created by Governor Cuomo to assist farmers with restoration efforts after the extreme storms in 2011. The District provided funding and coordination for engineering services for the design and post construction approval of lined waterway and outlet protection practices necessary for two farm's recovery projects. The District also funded three ACRF projects that experienced an increase in cost for reconstruction. A local Christmas Tree Farm experienced extensive damage after flooding eroded roadways and a drainage ditch along the property as seen from the damaged outlet above. The drainage ditch was widened and stabilized with rock rip-rap to mitigate flooding in the future.



Outlet protection after construction.

BROOME County Soil & Water Conservation District Stream Restoration and Flood Mitigation Project



The District focused on stream restoration and flood mitigation in 2011 as a result of the severe flooding caused by Tropical Storm Lee. Several areas of Page Brook in the Town of Fenton were extensively damaged by flood waters. Over 400 feet of stream was completely blocked by trees washed downstream and from severe erosion of streambanks. Due to the blockage five homes remained flooded for nearly a week after the storm event. The SWCD worked in collaboration with the Department of

Environmental Conservation to secure contractors and coordinate the work to remove the debris. The District provided construction oversight to ensure the stream was returned to its pre-flood condition. Broome SWCD also contracted with Cayuga SWCD to use their tub-grinder to chip the immense amount of trees and woody debris that was removed from the creek showing how districts work together to accomplish common goals. Broome SWCD worked with staff of Chenango Valley State Park to assess damage to the park, the origin of the trees that blocked the creek, and provided options to address the severe streambank erosion. An unforeseen benefit from the work included the utilization of the wood chips by the State Park for the reconditioning of their trails.



Districts working together; Cayuga SWCD tub grinder used by Broome SWCD.

ONTARIO County Soil & Water Conservation District Mud Creek Obstruction Removal & Assessment Initiative

The SWCD conducted a damage assessment after the storm events in 2011, walking the entire section of Mud Creek from South Bristol to East Bloomfield in Ontario County. During the initial assessment, staff used cameras, GPS equipment, and canoes to visually and digitally catalog the numerous obstructions and eroded areas in the creek. The assessment helped to prioritize the sites and determine property boundaries of landowners. Permission forms were created to access the properties and sent to each individual landowner in the assessed area. Landowner cooperation was integral to removing obstructions along the creek. Follow-up occurred to encourage landowners to provide permission to access their property and answer questions regarding the extent of damage and solutions. Several landowners provided conditional permission to access their property after hunting season. The District began work on the properties where permission was obtained upon the closing of the hunting season. The District will continue to secure participation from additional landowners along the most critical reaches of Mud Creek to remove debris.

ORANGE County Soil & Water Conservation District Flood Recovery Agricultural Best Management Practices



The District supplemented Agriculture and Community Recovery Fund (ACRF) grants created by Governor Cuomo to assist farmers with restoration efforts after the extreme storms of Hurricane Irene and Tropical Storm Lee in 2011. The District's restoration efforts included drainage ditch cleaning, land leveling, and related land preparation practices. The District assisted with repairing 20,359 feet of access road, 861,559 feet of surface drainage, 87 structures for water control, 1,260 acres of land smoothing, and 20 acres of obstruction removal on farms. A high percentage of the projects

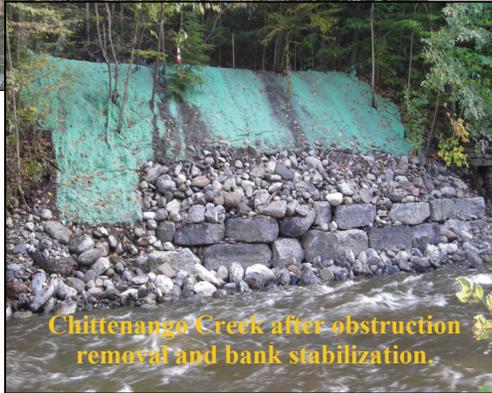
were located in the Wallkill River Watershed.

MADISON County Soil & Water Conservation District Countywide Stream Maintenance Project



Chittenango Creek obstruction and flooding damage.

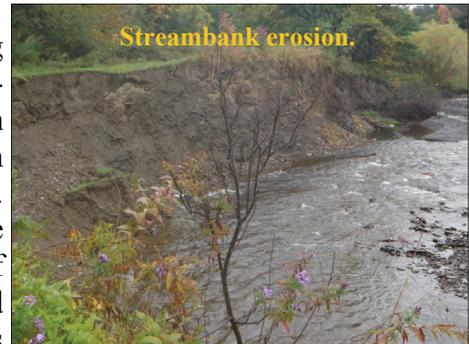
The District created a countywide stream maintenance program designed to reduce flooding hazards and repair damage associated with flooding across Madison County. The project consisted of two phases, the first being mitigation of flooding potential. In this phase the District and local municipalities identified areas that contain obstructions in the stream channels that will result in flooding during high flow events. Once the critical areas were located and reviewed by the District, a local contractor was hired to remove the obstruction and reduce the threat of flooding in the future. The second phase was stream channel repair and restoration of damage resulting from flood events. In locations that experienced damage due to flooding, the District assessed the site, developed a design for remediation and assisted the municipality or landowner in the permitting process and securing funding for the design and installation. In 2011 the District oversaw the removal of channel obstructions at eight different locations and streambank repair occurred at two different sites.



Chittenango Creek after obstruction removal and bank stabilization.

LEWIS County Soil & Water Conservation District Roaring Brook Stream Stabilization

The District utilized Conservation Project Assistance funding for a stream stabilization project. Roaring Brook stream delivers a significant amount of sediment to the Tug Hill stream every spring. The Lewis County Highway Department has an ongoing permit to remove rock and debris from the stream. Since 2009 the stream has re-routed itself and streambanks have eroded significantly. A private landowner is also losing part of their property at a significant rate. The SWCD collaborated with the landowner, Department of Conservation (DEC), Lewis Co. Highway Department, Lewis County Water Quality Coordinating Committee, and Steuben County SWCD to review potential solutions. Site recommendations for streambank stabilization included; narrowing the stream with rock veins a technique to direct stream flow, re-establishing the original stream path, providing a floodplain bench or area for water infiltration, and planting willows to prevent further streambank erosion. With the recommendations, the District surveyed and designed a stream stabilization plan and prepared a permit through DEC to complete the work.



Streambank erosion.

ORLEANS County Soil & Water Conservation District Multi-Watershed Stream Obstruction Removal

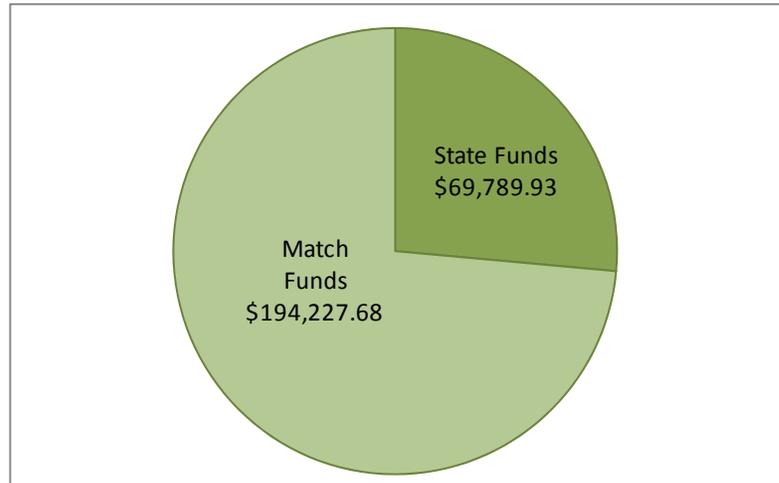


“Slashbuster” clearing debris from a tributary to Oak Orchard River.

The SWCD continue to strengthen its partnership with the ten towns participating in the Countywide Drainage Program to mitigate flooding. The District partners with the County in a 50/50 match agreement where the District provides equipment and the County covers the cost for an operator. The District owns a special piece of equipment which when installed on an excavator helps in clearing debris and blockages from streams and waterways. This agreement has proven to be successful resulting in the reduction of flooding in 7,250 feet of waterways in the County during 2011.

Protect and restore streams and wetlands.

Streams and wetlands are protected and restored to ensure water quality, provide habitat for wildlife, prevent flooding, and to enhance recreational and agricultural practices. Conservation Districts work to restore and protect streams and wetlands through controlling erosion, maintaining water flow, conducting hydrologic studies and other practices including the projects explained in this report. Districts matched state funds with an additional \$194,000 towards work under this objective in 2011.



ALBANY County Soil & Water Conservation District Fox Creek Stream Restoration and Habitat Improvement



Eroded banks along Fox Creek.

The Albany SWCD has monitored for the past few years a 100 foot stretch of Fox Creek that has eroded approximately 15 feet of productive farmland. Along with erosion and loss of land there was an increased amount of sediment entering the stream compromising the aquatic ecosystem. The District conducted a project to address the erosion installing two rock J-Hooks a technique used to push the stream energy into the center of the stream and away from the eroding banks. Two gravel benches were constructed to allow deposition of sediment during flood events and allow the continued build up of sediment along the streambank. The benches form an area excellent for

riparian vegetation to quickly become established. The project also included the installation of a structure upstream in a sharp bend that would prevent erosion and sediment loading in the stream. The Toe Log structure contained several large trees inserted into the bank with the roots angled upstream into the channel, the roots slow the oncoming water and protect the streambank. The tree roots also provide a great habitat for fish and other aquatic species. Riparian vegetation was planted in order to help protect the banks as well as help reduce water temperature to improve the overall health of the stream.

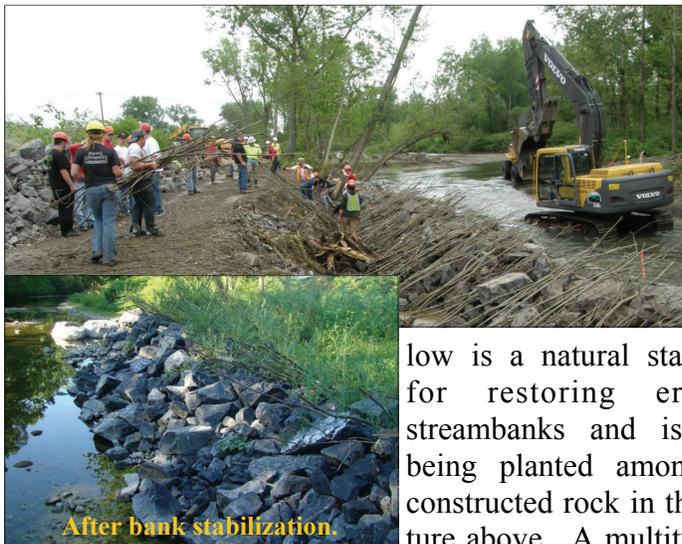


Installation of J-Hook, technique to direct stream flow preventing erosion.

CATTARAUGUS County Soil & Water Conservation District Conewango Creek Hydrologic Restoration Study

The District conducted a Hydrologic Study on the Conewango Creek to determine the cause for declining dissolved oxygen (DO) levels or the amount of oxygen present in the water. Low DO levels are often caused by excessive nutrients, low stream flow, and high water temperature. When DO levels decline aquatic organisms may move away, weaken, or die. The District studied baseline data on DO levels in water samples obtained in 2010 and analysis occurred on additional samples for various parameters including nutrients and channel sediments to determine probable causes for the low DO levels. The District worked with a University of Buffalo graduate student who performed sampling, analysis of data, and prepared a report evaluating the potential effectiveness of proposed solutions for increasing DO levels. The District submitted an application to the US Army Corps of Engineers for additional funding and technical assistance to implement habitat restoration measures in Conewango Creek. The report developed from the data analysis supports the need for a restoration project to improve the health of the stream.

CHEMUNG County Soil & Water Conservation District Newtown Creek Streambank Restoration Training



In 2011 the Chemung SWCD hosted a three day field training on stream stabilization that followed-up from a three day workshop sponsored by the District in 2010 with Dave Derrick, world renowned expert in natural stream design. The field training included a 320 linier foot stabilization project on Newtown Creek utilizing rock constructed in a pyramid and a great deal of vegetation. Wil-

low is a natural stabilizer for restoring eroding streambanks and is seen being planted among the constructed rock in the picture above. A multitude of



partners were involved in the project who provided supplies, training fees, equipment, and labor. Partners included; Chemung and Steuben SWCD, Chemung County, Town and Village of Horseheads, Upper Susquehanna Coalition, County Department of Public Works, Greater Southern Tier Boces, and Big Flats USDA Plant Material Center. The Chemung District would like to thank all who assisted with the successful training and streambank restoration efforts.

CHENANGO County Soil & Water District Tropical Storm Lee Disaster Assistance for Stream Restoration

Chenango County had sustained three severe flooding events in 2010, two of which were large enough to be declared a disaster. Prior to Hurricane Irene and Tropical Storm Lee in 2011 the District worked with several landowners and municipalities within the county to install stream protection Best Management Practices (BMP) that withheld damage and prevented flooding from the extreme storm events. Practices implemented included installing weirs, log spurs, and rock rip-rap to stabilize streambanks and prevent erosion. The SWCD assisted in planning and installation of the BMP's as well as securing the necessary permits to implement stream restoration practices throughout the county.

**PUTNAM County Soil & Water Conservation District
Mahopac High School Stormwater Project**

The District used Conservation Project Assistance funds to install a 150 foot pervious walkway and observation deck cantilevered over a stream at Mahopac High School in Putnam County. The project provides access to the stream for water quality sampling and wildlife observation. The project was constructed to be compliant with the American Disabilities Act allowing for a greater number of students to participate in educational activities at the stream. The project also serves as a demonstration of porous pavers and a stormwater retrofit for the High School under the heightened requirements for Putnam County's stormwater standards.



Construction of a stream observation area at Mahopac HS also acts as stormwater control for runoff.

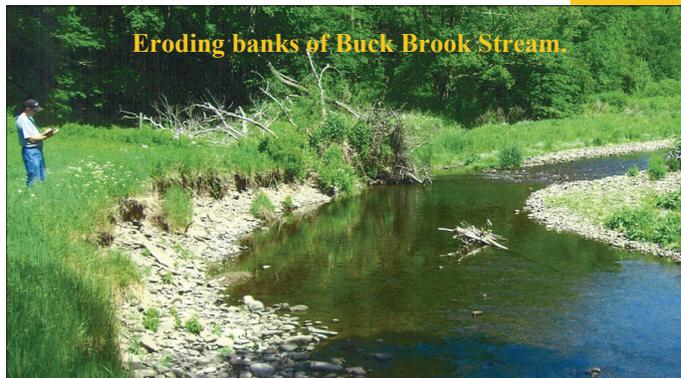


Pervious paver walkway allows stormwater to infiltrate instead of runoff.

**SULLIVAN County
Soil & Water Conservation District
Buck Brook Streambank Stabilization**

Buck Brook, a tributary to the North Branch of the Callicoon Creek, runs adjacent to Buck Brook Road, and has caused severe erosion along the road.

Through the use of Conservation Project Assistance funds and match from the County of Sullivan the SWCD remediated three areas along the road. Areas where remediation occurred the stream had washed out the shoulder of the road, leaving approximately one foot of solid ground from the edge of the black top to the stream. Bank stabilization along Buck Brook stream will prevent further erosion from occurring.



Eroding banks of Buck Brook Stream.

**SCHUYLER County Soil & Water Conservation District
Chaffee Stream Protection Project**

The District stabilized and restored 200 feet of streambank in the town of Cayuta on the Chaffee Stream. This stream is extremely unstable and was causing a significant amount of erosion of an adjacent pasture and crop field. This critical area of Chaffee Stream is 500 feet upstream from a designated trout stream making its protection vital for aquatic habitat and recreational purposes. It is estimated that nearly 30 tons of sediment annually were prevented from entering the nearby trout stream from this stabilization work. Excessive sediment can impair growth and survival of fish in the stream.



WAYNE County Soil & Water Conservation District Multi-Site Slope Stabilization & Erosion Control Project

The District provided technical and cost-share assistance to landowners and townships for implementation of best management practices to enhance water quality and mitigate erosion. The District worked with the Town of Macedon to stabilize a streambank in the Trap Brook. Heavy rock rip-rap was placed along the bottom of the bank to prevent erosion and undercutting allowing natural re-vegetation to occur. The second project; a diversion swale or vegetated area for infiltration was completed on private land with erosion and sedimentation issues. A failing diversion swale was widened and deepened to allow the installation of light rock rip-rap for stabilization. The area was seeded and mulched for further erosion prevention. The final project involved a severely eroded road ditch. The ditch was stabilized using rock rip-rap to armor the channel and slow the water flow as seen in the photos. The overall impacts of the three projects aided 40 residents in flood mitigation and erosion control due to stormwater management.



GENESEE County Soil & Water Conservation District Upper Tonawanda Creek Log Jam Removal

The numerous large debris jams in the Tonawanda Creek have been a problem for years, causing flooding, erosion, pollution of drinking water, and impairment of the general health of Tonawanda Creek, Niagara River, and Lake Ontario. A very large debris jam formed downstream and posed a threat to the Village of Alexander's sewage treatment facility. The District alleviated the threat of flooding and erosion by removing the jam. This was the first attempt to remove such a large jam in the county and educate the municipalities on the process for removal. There was a tremendous amount of material lodged within the stream that took four days to remove and grind. Over four semi-truck loads of waste debris and two loads of lumber logs were removed. The streambank was then graded and reseeded for stabilization. The project was successful in removing the threat of flooding and providing experience of removing a debris jam of its size. Accurate estimates for the cost of removing large log jams are important for future planning. The District is hopeful that this information will help in addressing other large jams along the Tonawanda Creek. A landowner along the Tonawanda Creek said after the project, "We know we can do it, it can be done."

TIOGA County Soil & Water Conservation District Apalachin Creek Emergency Streambank Restoration



The District completed an emergency stream restoration project to redirect a portion of the Apalachin Creek to its existing channel. The District partnered with the Town of Owego, Tioga County Department of Public Works, and the Upper Susquehanna Coalition to restore 700 feet of eroding streambank, reduce sediment delivery, and protect homes from future flooding. The District provided project oversight including survey, design, construction inspection, permitting, and funding assistance. The District also partnered with Alfred State University's Heavy

Equipment Program working with 7 students who gained experience while providing labor for the equipment operation. The project included reconfiguring the channel to proper channel dimensions and removing a 500 foot berm to reestablish floodplain connectivity. A bankfull bench was constructed on the outside bank to allow area for flood flows and six log vane structures were installed to redirect flows away from the outer banks and reduce erosion. To promote streambank stability and wildlife habitat 200 willow stems were planted along 700 feet of streambank. The District's coordination of partnerships enabled a smooth, efficient, and successful project.

WASHINGTON County Soil & Water Conservation District Black Creek Stream Corridor & Riparian Assessment



The District conducted a stream corridor and riparian assessment of Black Creek using GIS mapping techniques including information about soils, buffer zones, and tax parcels in the towns of Salem and Hebron. The District relied on Natural Resources Conservation Service Earth Team volunteer assistance to identify and send letters to landowners along the creek to explain the project, asking for permission to enter the property, and to conduct an initial survey. District staff kayaked the stream corridor collecting documentation of GPS coordinates and photos of debris jams and severe bank

erosion. The kayak trip took one day and covered a 10 mile stretch due to extreme meanders of the creek and several areas that required carrying the kayak over land to avoid stream obstacles known as portaging. As a result of the stream assessment the District has a better understanding of the dynamics and problem areas associated with Black Creek. The district can now identify where stream restoration and widening of the riparian buffer along crop fields should occur as evidenced by several areas of dense algal growth due to excess nutrient load from crop fields. Other identified problem areas are banks comprised of extreme height, slope, unstable soils, and mature top heavy vegetation. These banks will be reviewed during onsite meetings with the District and receptive landowners to give insight into possible remediation plans. The District concluded that the main corridor of Black Creek is an extremely dynamic ever-changing corridor with innumerable meanders in the system. The assessment also helped verify how agricultural and recreational activities are impacting the stream system and how to move forward with potential remediation of identified problem areas.



STEUBEN County Soil & Water Conservation District Brown Hollow Embankment Protection

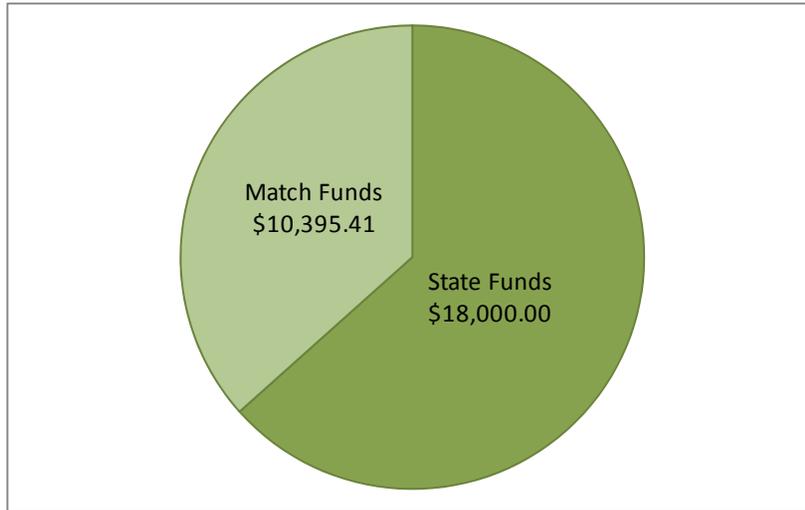


The Town of Corning requested assistance from the District for mitigation of streambank erosion on a bridge retaining wall at Brown Hollow Creek. A site review by the District indicated the stream had eroded below the wooden retaining wall causing material to erode from behind the wall and into the roadway shoulder. The old timber wall also had begun to lean towards the stream due to failure of the original tie back system of telephone poles and cables that had reached its life expectancy. If the structure wasn't replaced the south bound lane could collapse into the stream

creating a public safety hazard and continued erosion of the stream. The District developed a plan and provided construction oversight to replace the 75 foot retaining wall using vertical stacked rock. Timber was removed and a rock vane was placed upstream to redirect flows to the center of the channel and protect the streambanks from future erosion. The new wall protected the roadway from failure, improved the stream flow alignment to the center of the bridge, and reduced sediment and excess nutrients from entering Brown Hollow Creek which runs directly into the Chemung River then ultimately to the Chesapeake Bay.

Protect and restore wildlife and aquatic habitat.

Soil and Water Conservation District's (SWCD) protect and restore wildlife and aquatic habitat to promote biodiversity. Districts assist toward this objective through



preventing habitat destruction, mitigating pollution, reducing the spread of invasive species, and as demonstrated by the following projects. Districts utilized \$18,000 in state funding that was matched by over \$10,000 towards habitat restoration in New York State.

FULTON Soil & Water Conservation District Pond Maintenance and Wetland Enhancement Planning

The Fulton County SWCD worked with landowners and the NYS Department of Environmental Conservation (DEC) to conduct maintenance dredging and wetlands enhancement at two sites in the county. A DEC General Permit issued to the District was used to facilitate this project because the sites are located in identified wetland areas requiring special permits for work. To maintain the ponds the SWCD collected pre-maintenance sediment samples and pond bottom sediment samples that were tested per DEC specifications. The SWCD also developed the DEC permit application for dredging and wetland enhancement plans. One of the ponds will have 2 acres left as a shallow water wetland and the remaining 5 acres will be dredged with approximately 20,000 yards of sediment removed. The other three ponds will have approximately 10,000 yards of sediment removed. Outcomes achieved through this project included the sediment samples that were taken and analyzed by the Adirondack Environmental Services Inc., and dredging plans and maps were completed and submitted to DEC for permit approval. The District also completed survey and design for a series of water control structures to divert the incoming water and dewater the ponds for dredging. Dredging will restore access to the ponds to re-establish habitat for fish and wildlife.



Plans for pond maintenance & wetland enhancement.

NIAGARA County Soil & Water Conservation District Bonds Lake Park Habitat Improvement Project

Bonds Lake Park is a county-owned park in Niagara County containing several lakes, including Bond Lake, Meyers Lake and East Meyers Lake. Through deposition and accumulation of organic matter the maximum depth of the lakes has been diminished, resulting in an overabundance of Eurasian Milfoil, an aquatic invasive species that form dense mats of plant material on the surface. Due to the dense overgrowth recreational use of the lakes is virtually eliminated and an overpopulation of forage fish has occurred. To address the control of this aquatic invasive plant, grass carp were introduced to Bond Lake in 2010. Grass carp feed on aquatic plants and are used as a biological tool to



Eurasian Milfoil an aggressive aquatic invasive plant.

control invasive aquatic plant growth as an alternative to using herbicide to eradicate the Eurasian Milfoil. In 2011 Conservation Project Assistance funds were utilized by the District to introduce grass carp to both Meyers and East Meyers Lakes. An assessment will be made each year and an adjustment of the grass carp population will follow. The introduction of grass carp to control the Eurasian Milfoil will improve the aquatic habitat and the lakes' ability to maintain a sustainable fish population increasing the use of the lakes by wildlife and for recreation.

WESTCHESTER Soil & Water Conservation District Natural Resources Restoration Site Maintenance



Site before and after treatment of invasive Japanese Knotweed.



Plantings for stormwater control at Glen Island

The District contracted with John Jay Landscape Development to maintain existing natural resource restoration and stormwater management project sites on County properties. The District met with the contractor to determine what type of maintenance activities should be performed at each site and provided

oversight throughout the project. Maintenance activities included; the removal of invasive plants through herbicide application and manual removal, the removal of debris, and replacement of plants. Japanese Knotweed, an invasive plant that grows along forest edges, streambanks, and disturbed areas can grow up to 10 feet tall and crowd out native plants, is

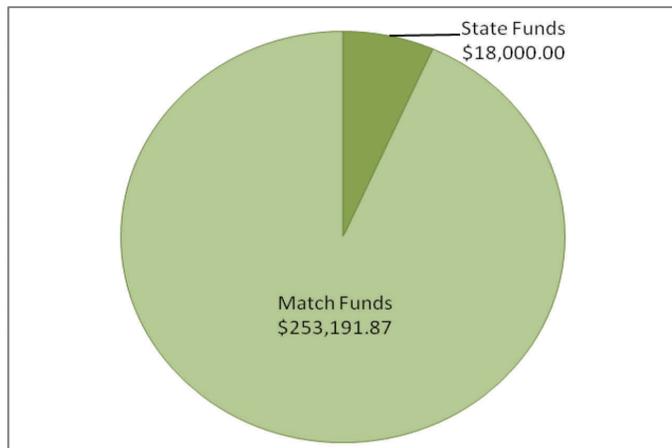
controlled through herbicide application and manual removal. Pictured left is a treatment site within the Nature Study Woods in New Rochelle. Invasive weed control is important for maintaining the recreational trails within the park.

Plantings occurred at a stormwater control area at Glen Island Park. The plantings will further assist with runoff mitigation at the parking lot by retaining and cleaning water and preventing pollutants from entering the New Rochelle Harbor. Maintenance activities were also conducted at; Crestwood Maintenance Facility, Tuckahoe, Maple Moor Golf Course, White Plains,

and Manursing Lake at Edith G. Read Sanctuary in Rye. The maintenance activities conducted at each of the sites will contribute to the long-term success of restoration at each site.

Assist in the drainage of agricultural lands.

Proper drainage of agricultural lands protect crop health as well as soil and water quality. Districts play an important role in working with producers in the proper drainage of their fields. In 2011 Districts worked with producers who matched state funds by 14:1 for a total of \$271,000 towards proper drainage of agricultural lands.



SARATOGA County Soil & Water Conservation District Multi-Farm Agricultural Drainage Implementation

The District provided technical assistance to farmers and excavating contractors analyzing surface and subsurface drainage on crop fields, pastures, and paddocks. Agricultural drainage projects consist of feasibility studies, planning, surveys, design, layout, and construction of drainage systems. Drainage projects do not directly qualify for state or federal Natural Resources Conservation Service (NRCS) funds and therefore benefit from Districts utilizing Conservation Project Assistance funds. Agricultural drainage projects enable farms to improve crop and pasture productivity, reduce soil compaction, and allow timely access to lands for planting, harvesting, grazing and utilizing their agricultural lands.

MONROE County Soil & Water Conservation District Agricultural Drainage Assistance to Landowners

The Monroe SWCD assisted two County landowners and operators with agricultural land subsurface drainage. In 2011 District staff provided layout, survey, and design for 7,140 feet of subsurface drainage. The District also provided construction inspection and project oversight for the implementation of 4,040 feet of subsurface drainage. Subsurface drainage systems promote proper root development and enhance a plants ability to effectively absorb more nutrients and water.

CLINTON County Soil & Water Conservation District Multi-Farm Lake Champlain Milkshed Agricultural Drainage Project

The SWCD installed 268,575 feet of drainage tile on five dairy farms spanning four townships in Clinton County. Drainage tile removes excess water from the soil through subsurface tubes or “tiles”. Approximately 250 acres of cropland was improved through enhanced drainage increasing root development, field access, and optimal crop growth. All of this acreage was used to grow corn silage in 2011, but some may be converted to alfalfa production for 2012. Improved drainage in some cases can double yields, lowering feed costs substantially. Farm profitability will be improved ensuring the continued availability of nutritious foods for the population.

Objective 8

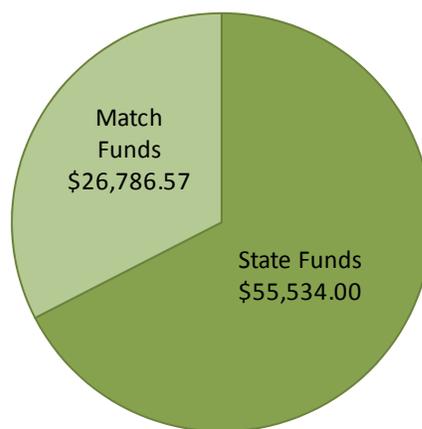
Prevent impairment of dams and reservoirs.

Conservation Districts prevent the impairment of dams and reservoirs to assist in preventing flooding and improving stream health. In 2011 there were zero District's that conducted projects for the maintenance of dams and reservoirs. This objective is achieved on a long-term basis therefore District's may not conduct projects annually that prevent the impairment of dams and reservoirs.

Objective 9

Control stormwater run-off, including from construction sites.

Stormwater run-off collects and transports pollutants and sediment to waterways affecting wildlife, aquatic life, plants, and humans. Soil & Water Conservation Districts (SWCD) assist to control stormwater run-off to prevent contaminated flow from reaching waterways. In 2011 Districts matched the \$26,000 in state funding with an additional \$55,000 for stormwater control.



NASSAU County Soil & Water Conservation District Rain Garden & Rain Barrel Demonstration Projects



Rain barrel demonstration.

Rain gardens are specifically designed to soak up rainwater from roofs, driveways and other impermeable surfaces. Two gardens on properties owned by Nassau County, Tackapausha Preserve and the Malcolm House a historic house now used for offices, were planned and constructed by the SWCD. By calculating the size of the area and the amount of stormwater runoff, the Conservation District was able to design the gardens to function as a means to reduce runoff and stormwater pollution in the respective sites. A rain barrel was also constructed and installed on the Malcolm House site in conjunction with the rain garden. Rain barrels help to conserve water by capturing runoff from the rooftop while providing clean water that is ideal for watering plants or other outdoor purposes. The SWCD also assisted in the maintenance of an existing rain garden at the Oyster Bay Animal Shelter which included upgrading plantings.



Volunteer planting a rain garden.

ONTARIO County Soil & Water Conservation District East Bloomfield Highway Department Stormwater Runoff Project

The Town of East Bloomfield contacted the SWCD regarding a reoccurring stormwater concern. Stormwater runoff was causing a significant amount of erosion and flooding along a 1,600 foot section of Gauss Road in Ontario County. Flooding was causing damage to the road which presented a significant safety concern for motorists. The SWCD Technician met with the County Highway Department supervisor to look at the project and determine a cost effective solution. The District Technician provided a solution that involved installing 540 feet of heavy rock rip-rap on a geotextile lined highway ditch with an inlet structure and 700 feet of underground outlet. The town engineer reviewed and approved the design and cost estimate information for implementation. Erosion and flooding on Gauss Road has been eliminated since the project has been installed.

YATES County Soil & Water Conservation District Stormwater Management Site Plan Reviews

The Code Enforcement Officers and Planning Boards in the towns of Jerusalem and Torrey received technical assistance from the District in the review of six stormwater management plans. Stormwater erosion and sediment control plans are required by the towns of Jerusalem and Torrey when construction activities take place at locations identified as "steep slopes" under municipal regulations. The review of these plans included multiple site visits to determine if the erosion and sediment control plans and installed practices were adequate to protect the soil and water resources, town infrastructure, and adjacent properties. District staff reviewing these plans noted when the protection measures were not adequate or where the practices did not meet state standards. Steep slope construction permits were issued after all stormwater concerns were addressed. The District also assisted in stormwater runoff control through reestablishing vegetation on six acres of soils disturbed during road right of way maintenance activities. This was accomplished by District staff utilizing a hydro-seeder and bale mulching equipment.

SUFFOLK County Soil & Water Conservation District Municipal Rain Garden Demonstration Project



The SWCD designed, constructed and planted a rain garden in the parking lot of the Cornell Cooperative Extension (CCE) building in Riverhead. The SWCD, CCE, Natural Resources Conservation Service (NRCS), and the Farm Service Agency (FSA) are all co-located in this building making it

a highly visible project serving a dual purpose of public education and stormwater control. The rain garden captures and filters the first 3 - 4 inches of rainfall that falls upon the parking lot, thereby protecting the groundwater and improving water quality. All of the plant material in the garden was carefully selected based on the following criteria; native to Long Island, salt tolerance, bloom time, height, flower color, and deciduousness. There is an informational kiosk to greet visitors and explain the garden's purpose. Plant signs labeling each species were also installed in the garden to allow residents to learn what plants work well in rain gardens.



Rain garden in action during storm.

**ROCKLAND County Soil & Water Conservation District
Municipal Rain Barrel and Rain Garden Demonstration Pilot**



Rain barrel demonstration at the Department of Public Works building.

The SWCD created a program to support the creation of demonstration rain gardens and rain barrels in each of the five towns within the county and for the county of Rockland itself. The District chose town halls, public schools, libraries, and the County Public Works garages which are all regularly visited by local residents as the demonstration sites to introduce the benefits of rain barrels and gardens to the public.

The District purchased rain barrels for each of the sites. The SWCD supported each rain garden by offering \$600-\$1,000, depending on its size, to purchase native plants for the gardens. The SWCD also developed educational materials and signage. In 2011, one rain garden at the Valley Cottage Public Library was constructed under the new rain garden program. The SWCD contributed \$2,000 to the project for supplies, educational signage, and materials.



RAIN BARRELS

This **RAIN BARREL** protects the environment by collecting rain runoff from the roof and **REDUCING** stormwater **RUNOFF**. The barrel stores water for landscaping use between rain events which also helps **CONSERVE WATER**.



Learn more at:
www.rocklandgov.com/environment

Sponsored by:
The Rockland County Soil & Water Conservation District
The Rockland County Division of Environmental Resources
Project funded in partnership with the N.Y.S. Soil & Water Conservation Committee



Educational signage created by the SWCD to accompany rain barrel demonstrations (pictured above).
Rain barrel at Town of Stony Point Town Hall (pictured left).

**NEW YORK CITY Soil & Water Conservation District
South Bronx Green Infrastructure Project**



Community event after constructed wetland installation at Bronx residence.

New York City has a combined sewer system where sanitary waste and rain water flow into the same set of pipes which during heavy rains overwhelm the system and overflow into coastal waters and rivers, including the Bronx River. To alleviate this problem the Conservation District promotes Green Infrastructure or the use of systems that mimic natural processes to infiltrate, evaporate, or reuse stormwater. The District partnered with a community organization, Banana Kelly Community Improvement Association, to identify a high density residential building with an impervious backyard where a stormwater detention system could be installed.

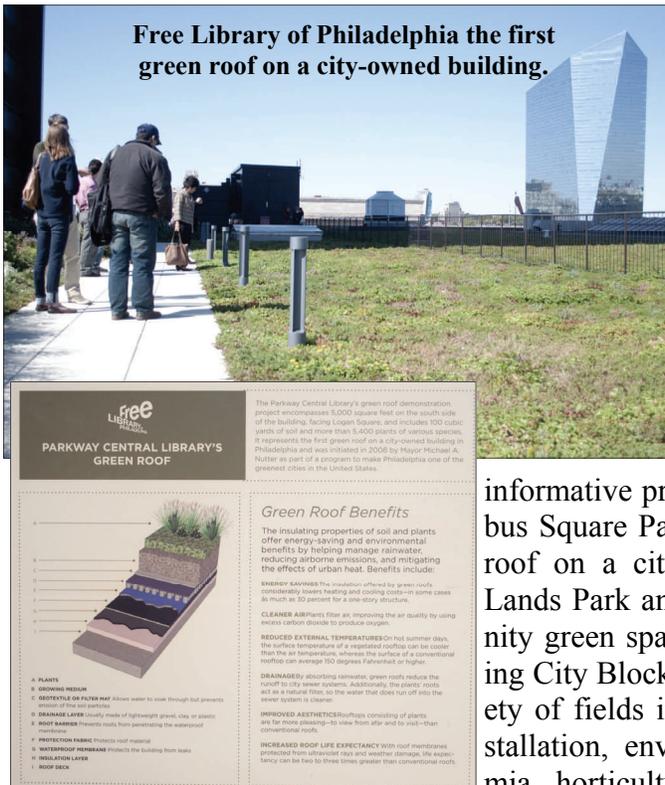
The District designed and built two planters with native wetland species. The external downspout draining the northern half of the building roof was diverted to the planters. The maximum storage volume for the two planters combined is estimated to be approximately 3,600 gallons of stormwater. The area of the roof draining into the planters is approximately 3,600 square feet, which can gen-



Wetland planters for stormwater control in Bronx, NY.

erate over 2,200 gallons of water during a one-inch storm. Thus the planters can detain 100% of a one-inch storm. While the system is primarily a detention system with a return flow (and overflow) to the sewer line, there is some retention via evapotranspiration by the plants. Secondary to the combined system overflow reduction benefit the planters provide greenery in an otherwise grey backyard, enhancing the aesthetics of the site. The planters also provide a small native habitat for insects and may provide some cooling effects. The District worked with a small group of residents in the building throughout the project, soliciting their input in the design of the planters and the use of the backyard. District staff will continue to work with the residents in maintaining the planters. Conservation Project Assistance funding was successfully leveraged to secure additional resources for the Banana Kelly CIA, leading to not only an environmental improvement, CSO volume reduction, but also a quality of life improvement for the residents.

NEW YORK CITY Soil & Water Conservation District Green Infrastructure Tours of New York City and Philadelphia



To continue the promotion of Green Infrastructure (GI) the District conducted two tours of GI projects. The District researched and identified projects in New York City and Philadelphia demonstrating GI and chose tour locations that are representative of different types of GI practices. For the Philadelphia tour the District partnered with the Pennsylvania Horticultural Society to coordinate the site visits and arrange for project managers to explain each site. Forty-nine people registered for the tour. The all day tour to Philadelphia ran smoothly with engaged participants and informative project managers. Project sites included; Columbus Square Park, Free Library of Philadelphia the first green roof on a city-owned building, Peco Green Roof, Liberty Lands Park an industrial Brownfield revitalized into community green space, and the Big Green Block Shissler a Greening City Blocks participant. Tour attendees came from a variety of fields including landscape architecture, green roof installation, environmental engineering, city agencies, academia, horticulture, and environmental policy and advocacy.

Regardless of their background, participants found that the tour provided useful information. Many participants expressed that they would attend future tours, perhaps even re-visiting some of the same sites to see the change in vegetation, which takes a few years to become established. The NYC tour focused on projects that have a GI monitoring component. The NYC tour was a half day tour and included many of the Philadelphia tour participants. More than 53 people registered, requiring a waitlist to be generated. As in Philadelphia, project managers for each site attended to explain the project. Sites visited were the MTA Bus Spring Creek Depot and ABC Carpet Warehouse both with constructed wetlands capturing parking lot runoff, and Nashville Blvd Greenstreet demonstrating an infiltration basin. This tour was also well received with a request to repeat in the future.



Participants on Green Infrastructure tour. Photos from the tour taken by Leonel Ponce.

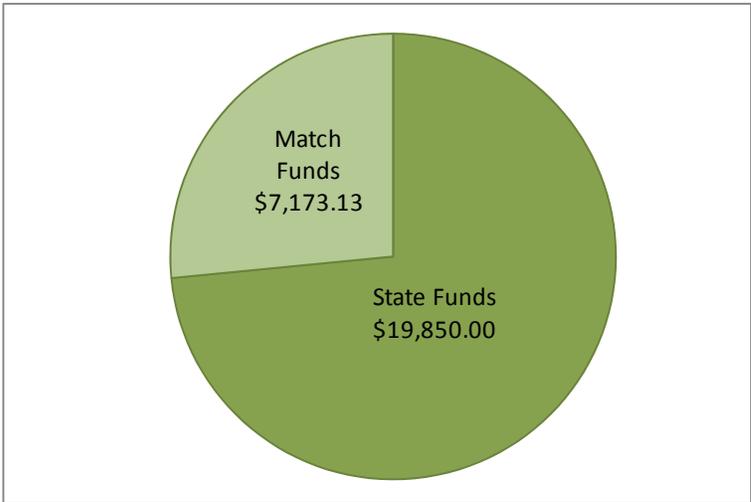
Objective 10	Assist in maintaining the navigability of rivers and harbors.
Objective 11	Reduce agriculturally generated air pollution.
Objective 12	Assist the agricultural production of green energy.
Objective 13	Protect open spaces.
Objective 14	Collect and dispose of pesticides.

Districts work towards goals under each objective on a long-term basis and conduct projects that often meet several objectives per project. Although Districts did not directly conduct projects under objectives 10-14 listed above many projects that were completed included elements relating to these objectives. Due in-part to the storm events of Hurricane Irene and Tropical Storm Lee many projects in 2011 focused on emergency relief aiding in flood mitigation, debris clean-up, and restoration efforts.

Objective 15

Manage public lands.

Soil & Water Conservation Districts (SWCD) assist in managing public lands through planning, maintenance activities, developing community green spaces, and as demonstrated by the projects below. In 2011 Districts received \$7,000 in state funding towards this objective and matched the funds with approximately \$20,000.



**ONONDAGA County Soil & Water Conservation District
Municipal Forest Management Services Program**

Onondaga County SWCD used Conservation Project Assistance funding in 2011 to develop a forest management plan for 117 acres of land owned by the City of Syracuse on the southwest corner of Skaneateles Lake, the City's unfiltered drinking water supply. The last known forest management plan was conducted in the 1930's by students from the Forestry School at Syracuse University. The new plan also provides an assessment of Ash trees for Emerald Ash Borer infestation monitoring. The Emerald Ash Borer is fatal to ash trees fortunately very few Ash trees were observed on the property. The District is also using their resources to assist the County of Onondaga with a comprehensive assessment of Ash trees in anticipation of Emerald Ash Borer devastation. Experience gained from the forest management planning process has enabled the District to be called upon by the City to review forest management and harvesting plans for easement properties within the Skaneateles Lake Watershed.

**COLUMBIA County Soil & Water Conservation District
Mud Creek Environmental Learning Center Hiker Visibility Kiosk**

The SWCD manages the Mud Creek Environmental Learning Center on behalf of Columbia County. The nature center contains trails that are open to the public from dawn until dusk everyday. As there is no individual actively monitoring the trail head, an accurate accounting of visitor use is unavailable. The District utilized Conservation Project Assistance funding in 2011 to purchase and install a visitor sign-in kiosk. Here hikers can provide their name, date, and time they went hiking and offer feedback to improve the management of the facility and trails. The result has been a more accurate accounting of visitor use and feedback on the trails. This information has helped the District to gain a better understanding of use levels and public needs at the nature center. Hikers have also reported on several geocaches within the trail system which is an outdoor activity using GPS to locate hidden sites.



**ULSTER County Soil & Water Conservation District
Village of New Paltz Community Garden**



The District manages and maintains the Riparian Buffer System which protects parkland from bank erosion caused by the Wallkill River. The riparian buffer also protects public infrastructure including the village water main as well as the Village Gardens. Supplemental plantings were conducted to enhance the buffer density with particular emphasis on the northernmost 500 feet which is the shadiest area. Conservation Project Assistance funds were used to plant larger more shade tolerant plants in this area. The survival rate of

the newly planted material is approximately 85%, an increase from the previous plantings. A properly maintained buffer protects water quality and increases wildlife habitat.

**YATES County
Soil & Water Conservation District
Municipal Forest Management Plans**

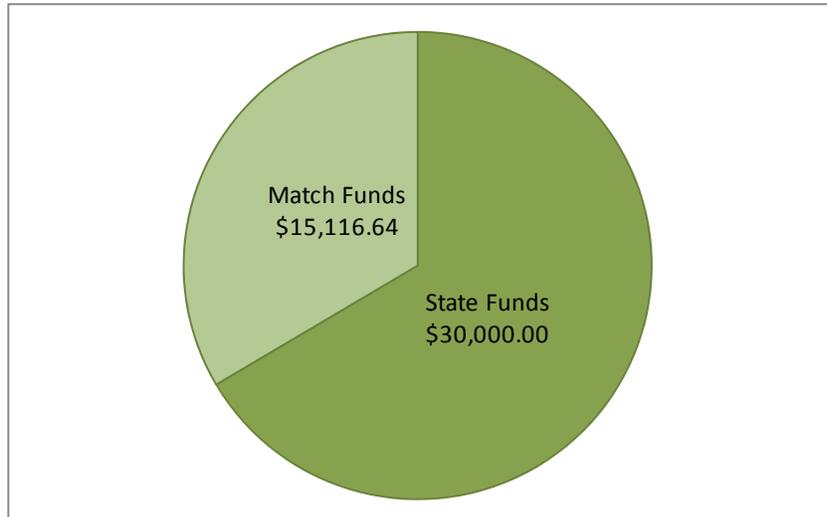
The SWCD worked with a NYS Department of Environmental Conservation (DEC) forester to inventory nine parcels of forested land owned by Yates County. The District developed a variety of geographic information system (GIS) resource maps for the parcels and assisted the DEC forester with locating parcel boundaries, inventorying forest stands, and collecting data. Utilizing data collected by the District the DEC forester developed management plans for these parcels. The plans were provided to the Yates County legislature for guidance on future management of county owned forested lands.

**JEFFERSON County
Soil & Water Conservation District
DANC Natural Resource Inventory**

The SWCD provided the Development Authority of the North Country (DANC) with an update to their natural resource inventory and reports for lands owned by the Authority in the Town of Rodman. The inventory totaled 1,400 acres of forest and agricultural lands owned by the Public Authority for the purpose of landfilling operations and limited public recreation. The natural resource inventory will guide development goals and strategies for resource conservation and management. Priorities for resource conservation were identified and information for open space planning provided.

Protect and manage rural and urban forests.

New York State has over 18 million acres of forested land. Conservation Districts assist in managing and protecting rural and urban forests through the promotion of silviculture or the practice of forest regeneration and responsible harvesting. Districts also work with landowners in the management of wildlife habitat, erosion control, recreation enhancement, and the production of non-timber crops. Districts matched \$30,000 of state funds with an additional \$15,000 in matching funds for this objective.



ALLEGANY County Soil & Water Conservation District County Forest Strategic Plan

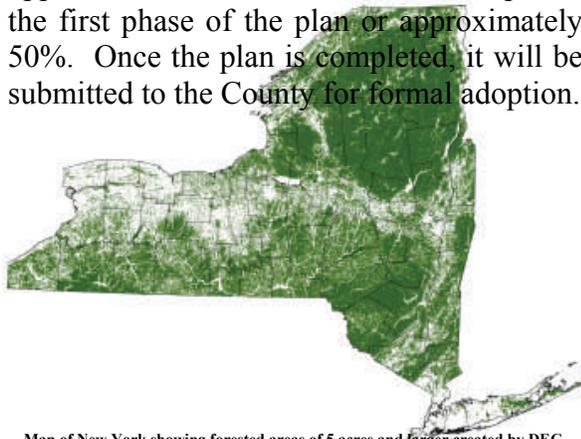
Allegany County owns approximately 2,050 acres of forested land. The SWCD is responsible for management of these forest resources. The County Strategic Forest Plan was last updated in 1991 and no longer included management decisions that reflect the best management practices currently being used for forest management. Benefits that will be realized by updating the Allegany County Forest Strategic Plan will include; improved timber stands, reduced time for trees to reach a harvestable size, and a new regimen for proper thinning. Proper thinning allows for regeneration of trees and in evergreen stands it allows for the re-establishment of desirable hardwoods which provide valuable economic benefit to the county.

OSWEGO County Soil & Water Conservation District Rural Landowner Forest Management Plan Development

The Soil and Water Conservation District developed six forest management plans for landowners owning a total of 447 acres in Oswego County. For each property, a detailed forest inventory was conducted. Data was collected in the field and then processed with forestry software and analyzed by District technicians. This analysis was used as the basis for the forest management plans. Each document included the identification and description of natural resources on the property including soils, water, wildlife, recreation, and forest resources. Recommendations and options available for management of those resources, a schedule of management actions, a forest stand map, and forest inventory summaries were included in the reports. The project helped to educate the six participating landowners, promoted sustainable forest management practices, and will provide protection of water quality as Best Management Practice information is provided in each plan.

**ONEIDA County
Soil & Water Conservation District
County Forest Recreational Use Plan**

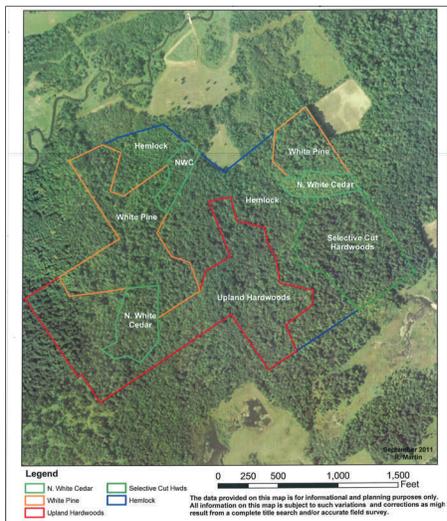
The District is developing a Ten Year Forest Lands Management Plan for the County of Oneida. The Plan development activities consist of physically assessing all existing 6,700 acres of forested area, boundary identification, assessment of timber value, and identification of areas that will require Best Management Practices implemented. Well managed forests help protect soil and water resources, reduce impacts to habitat, can provide economic benefit, and recreational opportunities. The District has completed the first phase of the plan on approximately 50%. Once the plan is completed, it will be submitted to the County for formal adoption.



Map of New York showing forested areas of 5 acres and larger created by DEC.

**ST. LAWRENCE County Soil & Water Conservation District
Private Lands Forestry Plan Development**

The SWCD Forester provided technical assistance to private forest owners in St. Lawrence County. Five forest stewardship plans were created covering a wide variety of goals including increased wildlife habitat, establishment of non-timber forest products, timber stand improvement, and future economic growth. The goal is to promote sustainable forestry practices and active stewardship on woodlands for the benefit of future generations while providing benefits to current landowners in the form of economic gain, aesthetic appeal, improved wildlife habitat, and other stewardship-minded goals. Benefits derived from sound forest management practices also include improved water quality, recreational opportunities, and a boost to the local economy through availability of raw materials for processing and resale. While all plans were written with basic stewardship in mind, specific goals varied from landowner to landowner. Some of those goals focused on; improving sugar bush, providing timber products for personal hobby use, firewood, non-timber forest products such as ginseng and mushrooms, improving access while harvesting mature white pine, returning a heavily high-graded stand to productivity, improving deer habitat, and increasing health and vigor in storm damaged stands. Total stewardship area equaled 327 acres and on individual parcels, acreages ranged from 14 to 114 acres.



**WARREN County
Soil & Water Conservation District
Landowner Logging Review Program**

The District has increased its level of landowner logging project reviews, both from landowner requests and from municipal requirements. Two towns in Warren County now mandate that all logging projects which need municipal permits must have approval from the SWCD. Prior to permit approval, District staff conduct individual site visits, walking the entire planned road network, reviewing permits, and writing reports including recommendations. In 2011, the District was involved in 20 logging projects. District involvement has raised the level of environmental stewardship on logging projects in Warren County significantly. Poorly planned timber harvesting practices can cause soil erosion, surface water pollution, and impact exotic species. The new requirements have also strengthened the partnerships between the District and the municipalities within the county. The Conservation Project Assistance funds supported the staff time required to conduct the logging review program, allowing the District to be more actively engaged in the review process to ensure properly managed forests.



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