New York State

Conservation Project Assistance

Case Studies of Local Success

New York State
Soil & Water Conservation Committee
First Edition - 2009

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Message from the State Committee

October 5, 2009

Dear Readers,

The following report provides 20 inspiring examples of work accomplished by Soil and Water Conservation Districts through the new Conservation Project Financial Assistance program.

In 2006, New York State Conservation District Law was amended adding this annual program to advance natural resource protection goals. The program provides $6,000 of Environmental Protection Funding to each of the States 58 Soil and Water Conservation Districts for the purpose of carrying out projects on both public and private lands.

The Soil and Water Conservation Committee is very pleased with the outcome of the Conservation Project Financial Assistance program in its first full year of implementation. The program is an excellent example of how locally driven programs should and can work to magnify the effect of public dollars on our landscapes. The flexibility of this funding has also expanded partnerships that will allow for continued protection of the environment.

The diversity of activities Conservation Districts are involved in and the important work they do on the ground every day is a testament to their dedication to the preservation of our natural resources. Please join me in review of these significant conservation outcomes from this very first year of reporting.

Best regards,

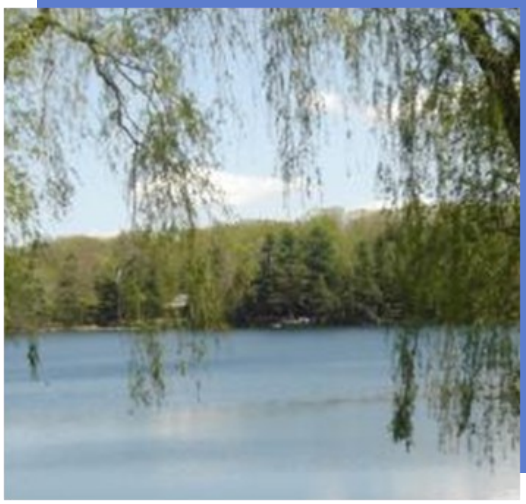
George Proios

George Proios
Chairman, NYS Soil and Water Conservation Committee

Albany County

Keeping Crystal Lake Crystal Clear

Nestled in the Helderberg Mountains of southern Albany County are a handful of small lakes. One of these is Crystal Lake, a privately owned lake with no motor boats and plenty of serenity. Crystal Lake is very typical of many of New York's smaller lakes. It has 68 homes surrounding it, most being seasonal, but some have converted to year-round homes. While Crystal Lake is considered pristine, it still faces some potential problems. The primary concern, and a common one for lakes, is septic systems. Living close to the water has its aesthetic benefits, but unfortunately it requires that septic systems are also built in close proximity to the water. Improperly designed, inadequately sized, or not properly maintain, septic systems can easily leak sewage into a nearby lake. This can result in bacteria and excess nutrients entering the lake. These pollutants can cause complications to a lake ecosystem, including algae blooms, fish kills and even human health risks for those that use the lake as a household water source.



The Albany County Soil and Water Conservation District utilized Conservation Project Financial Assistance funds to conduct a pilot project for septic system maintenance on Crystal Lake. The "Crystal Lake Septic Pump Out Conservation Project" was planned to help demonstrate simple actions which homeowners can take to conserve and enhance the water resources of their lake.

Under the Crystal Lake Septic Pump Out Conservation Project, the Conservation District offered reimbursement to homeowners for having their septic tanks pumped out. Depending on the size and location of a septic tank, this is a practice that is recommended every one to three years. Having limited funding, the Conservation District decided to start by offering this opportunity to homes that are occupied year-round. The program allowed the Conservation District to reimburse landowners up to $300.00 for the pump out of their system by a license septage hauler. Although the number of year-round homes participating was lower than hoped, the program was expanded to all home owners on the lake. In the end, 15 septic tanks were pumped and homeowners received additional information about maintaining their septic system. This information included a record keeping folder for tracking information regarding their maintenance activities and an Environmental Protection Agency Homeowner Guide to Septic Systems. Each participating landowner also received an "I Save Water" kit and toilet tank bank, which if used as intended will reduce the load on their septic leach field prolonging the functionality by reducing water usage and preventing tainted water from entering Crystal Lake.

A survey following the project concluded that those that participated were very happy with the results. One landowner said, "Thank you, living on a limited income, this was a real help to us."

Allegany County

Filling in the Financial Gap

Maurice and Nola Cairns purchased their first farm property in Allegany County in 1968 and started their beef operation in 1970. Today, the herd consists of between 160-200 head and during the summer is split between the three farms they own and the five parcels they rent. In May of 2006, the Cairns' contacted Allegany County Soil and Water Conservation District to find out more about the Agricultural Environmental Management (AEM) process. After working with the District to complete an AEM Farm Assessment, the Cairns' realized that implementing a rotational grazing system would help the environment and their farm business. Using the information gathered through the AEM process, the Conservation District was then able to help piece together the funding opportunities needed to complete the project.

First, the USDA Natural Resources Conservation Service (NRCS) assisted with the development of a Comprehensive Nutrient Management Plan for their farm, followed by a design and installation of an Alternative Water Supply System for one of their summer grazing areas. This system provides the herd with fresh clean water and prevents the cattle's access to the stream. The District was then able to utilize funds from the Finger Lakes-Lake Ontario Watershed Protection Alliance to install another watering system. Next, a Rotational Grazing System was established on the main farm under the NRCS Environmental Quality Incentive Program. The District used their Conservation Project Financial Assistance funds to install an Alternative Water Supply System to these paddocks. In order to establish this watering system a line was placed below creek level, a distance from the stream, which channels groundwater to a pump house where it is pumped to two watering tanks. Each tank supplies water to two paddocks.

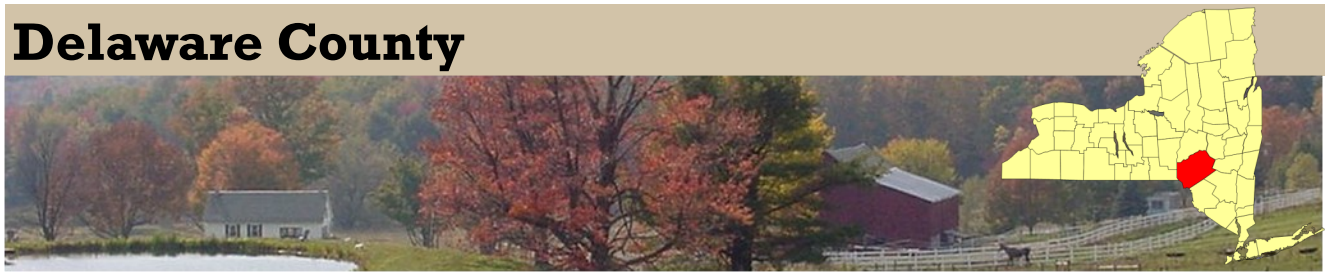
Water trough made from a tire.

Finally, an Agricultural Management Assistance contract was obtained from NRCS for the installation of a grassed waterway that will help filter runoff from the fields. In addition to protecting water quality, these practices also help prevent soil from eroding and enhance fish habitat. "We were excited to start the project, but couldn't have done it without the help of our Conservation District and their partners," said Maurice Cairns. "They provided us with assistance and obtained the funding we needed to get the job done."

"The Conservation Project Financial Assistance funding provides the District with flexibility to use the funding where it will have the most impact," said Gretchen Gary, Executive Director of the Allegany County Soil and Water Conservation District. "With today's economy all farming operations struggle financially and this funding was critical to assist with implementation of projects like these that benefit us and future generations."

> *"...this funding was critical to assist with implementation of projects like these that benefit us and future generations." - Gretchen Gary*

Delaware County



Training the Next Generation of Conservationists

Soil and Water Conservation Districts are experts when it comes to coordinating efforts to get conservation projects on the ground. Whether it is through municipal cooperation or hiring private contractors, Districts manage to find the most cost effective solution to getting a job done. Just as important, Districts also recognize when there is an opportunity to include an education component to a project. This was the case in Delaware County when the Conservation District brought in Boy Scout Troop 49 from the Town of Delhi to help install a stormwater wetland adjacent to the County's salt storage shed, protecting the West Branch of the Delaware River.

Storm water wetlands are designed to capture rainwater that enters storm drains before it empties into streams or rivers. They are constructed to hold this water long enough for wetland plants to grow, acting as a living filters, capturing and absorbing excess nutrients and allowing sediments to settle. In addition, these areas can also provide a habitat for wildlife.

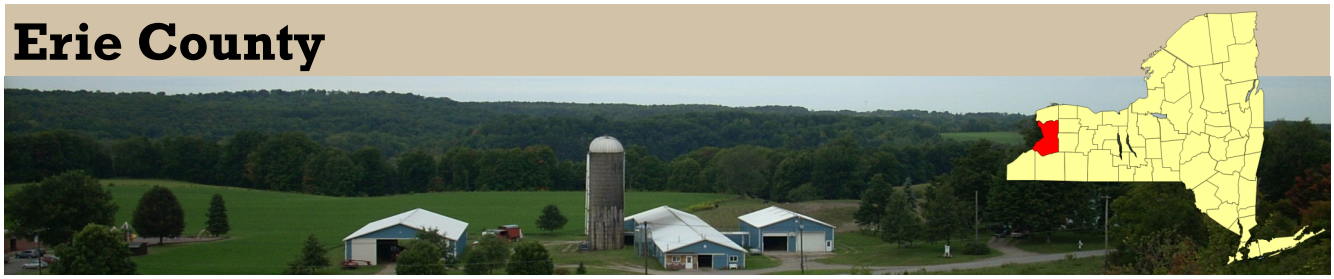
Members of Boy Scout Troop 49 of Hamden get their feet wet in conservation.

The stormwater wetland was designed and constructed with funding from the US Environmental Protection Agency and the Catskill Watershed Corporation. Once the earth moving construction was done, Larry Day, Soil and Groundwater Specialist and Karen Clifford Special Programs Technician with the Delaware County Soil and Water Conservation District designed the planting plan. The District then used Conservation Project Financial Assistance to provide a hands-on learning experience to members of Boy Scout Troop 49. The Scouts were first taught the function, purpose, and importance of stormwater wetlands by the SUNY Delhi Catskill Education Corp. They also learned about recent efforts to control Japanese knotweed, an invasive species that has been growing along the Delaware River, without using harmful pesticides. The Troop then headed out to work along side the District planting beneficial species of trees and shrubs such as Streamco Willow, River Birch, Japanese Larch, Elderberry, Arrowwood, and Redosier Dogwood, as well as Cardinal flowers and salt resistant Soft Stem Bulrush which will provide shade, keep the water cool and filter the water to remove sediment, salt and other pollutants.

Stormwater wetlands act as a living filter, removing pollutants before they enter streams and rivers.

At the end of the day, the Scouts went home with a new understanding of wetlands and plants, the Town of Delhi had a new stormwater wetland and the District had one more job completed.

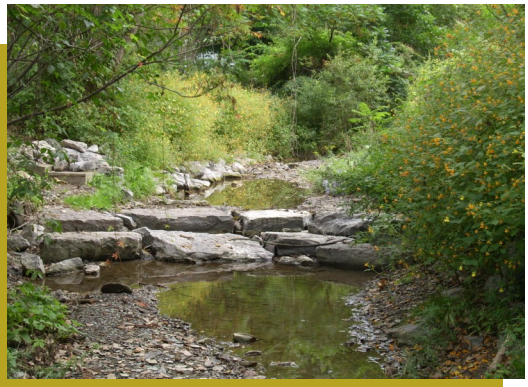
Erie County



An Ounce of Prevention……

Fluvial Geomorphology is the scientific study of a stream's form and function. The form of a stream is dictated by factors such as width, depth, slope, degree of meandering and composition of bed materials. The function of all streams is to transport water and sediments from its watershed (drainage basin) to an outlet, usually a larger stream or lake. For this reason, changes occurring in a streams watershed, often create changes in the streams form. If these changes become too great, unstable stream conditions result.

Over the past few years there has been an increased interest in using fluvial geomorphologic principles to help watershed managers restore streams. As a pilot project, the Erie County Soil and Water Conservation District utilized the principles of fluvial geomorphology to address 1,000 feet of eroding stream in the Town of Wales. The stream, an unnamed tributary to Buffalo Creek, had been altered during the development of a Town park back in 1984. At the time, it was thought that straightening and shortening the stream by 500 feet would have the best results for the new park. However, since this was not the natural flow path, the stream began to down cut into the new channel and began widening as a new floodplain was trying to establish. The results were severely eroding stream banks and under-cutting that was beginning to threaten a nearby road and two private residences.

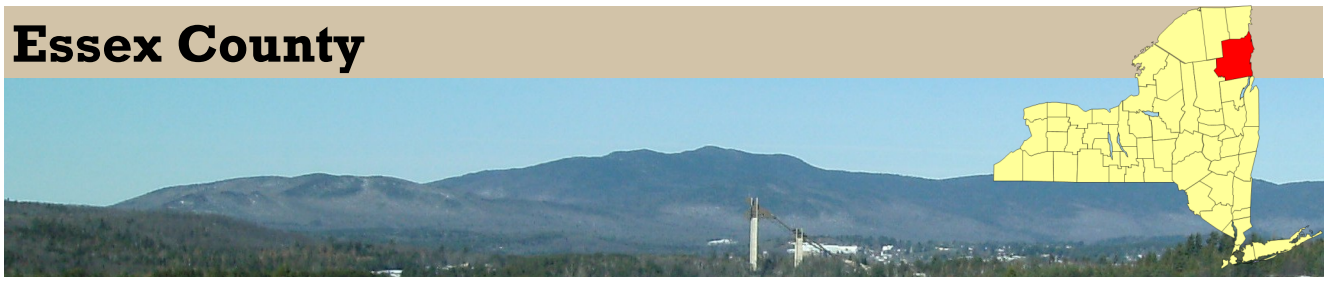


In 2000, funding for this pilot project was secured to address the eroding stream through a grant from the Environmental Protection Fund. This grant allowed the Conservation District to once again reshape the stream, this time using fluvial geomorphologic principles. As part of this process, large rocks and vegetation were used to not only direct the stream flow, but to dissipate some of the energy carried by the stream. Installing a series of rock wiers, the Conservation District created pools and riffles, much like those that exist in naturally stable streams. After the weirs were installed Streamco Willow (*Salix purpurea*) was planted around the structures to aid in the stabilization of the disturbed banks.

This little bit of prevention will go a long way in protecting the State's investment, the Town Park and water quality.

Through regular stream inspections, the District was able to monitor this pilot project to gain valuable knowledge of the structures function during various storm events and flow conditions. Late in 2005 the District began to see maintenance issues develop, which if left unchecked could eventually undermine the entire project. Conservation Project Financial Assistance dollars were matched with local dollars to allow the District to perform maintenance on the original project and to install 250 linear feet of stone toe protection to prevent future degradation of the original protect. This little bit of prevention will go a long way in protecting the State's investment, the Town Park and water quality.

Essex County



Happy Campers on Bulwagga Bay

Bulwagga Bay Campground is a public campground and RV Park located along the shore of scenic Lake Champlain owned by the Town of Moriah. Recently, campers and Town officials were becoming concerned about erosion occurring along McKenzie Brook, which runs through the campground and was threatening both campsites and nearby sewer and water infrastructures. The Town contacted the Essex County Soil and Water Conservation District for help. After further investigation, it was determined that there was a lack of riparian vegetation along this stream section due to intensive use by campers. Furthermore, the State Department of Transportation was working to enlarge a bridge on nearby Route 9N, which would increase the flow of water running in McKenzie Brook. It became imperative that a plan was needed to correct the situation before greater damage could result.

Using Conservation Project Financial Assistance, the Conservation District, along with the Natural Resource Conservation Service and the Town, developed a plan to address the concerns. A planting plan was produced to utilize native plants to secure the soils along the stream bank. Conservation District staff first harvested native willow and dogwood cuttings, which are well suited for wet areas. The District then enlisted students from CV-Tech (Champlain Valley Educational Services) in Mineville to assist District staff in planting the native cuttings, along with some additional trees and shrubs purchased from a local nursery. These plantings will help maintain the stability of the stream bank once they are established.

Holes for the larger plants were dug by the Town of Moriah highway crew and the trees were planted by the students. The Town also installed signs made by Essex County's sign department. The signs identify and recognize the partners involved and educate campers on protecting the riparian plantings.

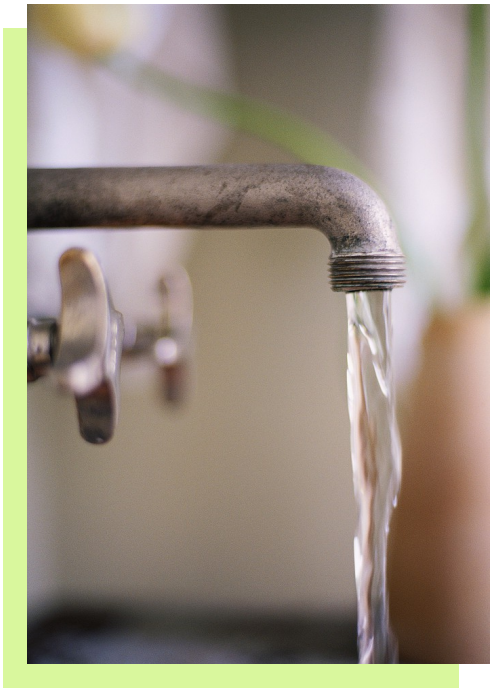
A teacher from CV-Tech remarked that "this was a great project for students to learn about environmental responsibility and agency cooperation". The Town of Moriah is very pleased to have protected this critical riparian habitat while beautifying the area for campers.

"This was a great project for students to learn about environmental responsibility and agency cooperation" — CV– Tech teacher

Franklin County

What's in Your Water?

Rural Franklin County has very few municipal water sources; most residents rely on private wells for their household water use. Unlike municipal water supplies, well water is not normally filtered or chlorinated. While soil does act as a natural filter, it does not remove pathogens and excess nutrients that may be carried in runoff from surrounding areas. Nitrates are of particular concern in drinking water as excess quantities can cause a number of health problems, particularly for babies. Sources of nitrates include runoff from fertilizer usage, leaching from septic tanks, and sewage.



Knowing how important ground and surface water is to the residents in Franklin County, the Soil and Water Conservation District serves as the County's primary information and technical assistance center for the testing of drinking water, groundwater, and surface water samples. The District's program provides water testing kits, information packets and investigative and technical services to residents and businesses throughout the county. The goal of this program is to provide both the public and municipalities an awareness of potential ground and surface water impairments according to contaminate levels recorded in the labs test results.

In 2008, the District decided to take this program one step further. Using Conservation Project Financial Assistance funding, they began offering free nitrate testing for homes with infant children. High levels of nitrates can cause birth defects, brain damage, blue baby syndrome, miscarriages, and learning and developmental delays in young children. Over 300 water samples were collected in 2008. The samples collected and tested indicated low nitrate levels across the northern portions of Franklin County. This area was of particular concern because of the high number of farms. There were locations where the nitrate levels were higher, but never exceeded the upper limit acceptable for drinking water (EPA standards = 10 mg/L MCL). The results from these samples indicate that the drinking water generally has low nitrate levels and is safe for infant children. However, the District still encourages homes with pregnant women and infant children to have their drinking water tested. The District continues to provide this service to the public and monitor the nitrate levels found in Franklin County.

One unexpected benefit of this service was demonstrated by the Town of Bangor which decided to build a public water system due to their history of unacceptable nitrate levels. Overall, the results seen so far have indicated that the drinking water in Franklin County is safe and continuing to improve. The Conservation Districts hopes to be able to continue this important program and is seeking additional funding sources.

Herkimer County

Innovative Use of Multiple Funding Sources

Rick and Robin Dolan started their farming career with a 70 cow dairy operation in 1994. In 2005 they decided it was time for a change and started a sheep/goat meat operation. Located in the Town of Litchfield, southern Herkimer County, this 83 acre operation has grown to approximately 400 animals, comprised of mostly sheep, a few goats, and beef cows. They have found a unique ethnic market for the sheep and goat meat and have recently added farmers markets as an additional mechanism for selling their product.

Realizing improvements were needed, the Dolan's came to the Herkimer County Soil and Water Conservation District for help and they began the Agriculture Environmental Management (AEM) process to assess the concerns on their farm. Funding from the Finger Lakes—Lake Ontario Watershed Protection Alliance was available to plan and develop a rotational grazing system on 38 acres, but as the flock grew it was apparent that the barnyard area was not going to hold up under heavy foot traffic. This area needed improvements as foot problems began to plague the operation. Again, through the AEM process, the District conducted a conservation plan evaluation and updated information to incorporate Best Management Practices (BMPs) for the barnyard system.

NYS funds were used to install this barnyard that has enabled the Dolan's to use a barnyard they previously could not. Pictured here are some happy sheep with dry feet.

Drip line trench for roof water control was planned, as was gravel with filter fabric for heavy use area protection. The Dolan's were anxious to take on the project but with limited funding, they were unable to proceed with implementation. Utilizing Conservation Project Financial Assistance funds, the District was able to install the complete barnyard system on the south side of the facility. "There is no way we could have accomplished this project without the state funds" stated Robin Dolan.

"There is no way we could have accomplished this project without the state funds" - Robin Dolan

The completed barnyard system has dramatically improved the ease of daily maintenance. "The roof water control and gravel barnyard has been a major improvement. We wouldn't be able to use the barnyard on that side of the barn without the BMP's in place" explained Robin. "The new barnyard has stayed dry even with the amount of rain we've had. We have had no foot problems and everybody has had foot problems this year."

The Dolan's sheep operation is located in the Moyer Creek Watershed. This watercourse is a classified trout stream and empties into the Mohawk River. The rotational grazing system and new barnyard system, will serve to protect the water quality of this valuable resource.

Jefferson County

Trees Get an Overdue Check-Up

For those people that live in the Village of Clayton, Jefferson County, the ice storm of 1998 is a well remembered event. The glimmering ice that coated much of the north country created havoc for municipalities, businesses and residents; fallen power lines and tress left many stranded. Once the ice melted and utilities were repaired, things went back to normal for most; but the trees still showed the affects of the storm. At the time, state and federal assistance was available to develop an urban forestry plan, which provided a snapshot of the overall condition of the village trees, including general recommendations for pruning and removal.

Ten years later, Clayton found their trees under severe stress. Weather-related events and other environmental stresses caused decay, dieback, and mortality. Many of the previous funding sources had dissipated and the community did not have the resources to update their Urban Forestry Plan. The Jefferson County Soil and Water Conservation District recognizes the need to provide forestry assistance to local municipalities. "From timber to tourism, trees are a large part of our County's economy," said Brian Wohnseidler, Executive Director for the Conservation District. "The Conservation Project Financial Assistance funding makes it possible for the Conservation District to help municipalities like Clayton, develop detailed management plans for the community trees."

Using Conservation Project Financial Assistance funding, the District updated the Village of Clayton's forestry management plan to include a detailed inventory, assessment, and recommendations for each tree located between the curb and sidewalks. All trees located in public green spaces and trees that might cause significant problems to the village if unattended were also inventoried. The inventory contained 611 trees that were identified, located, and given a number. Each tree was measured, mapped and assessed for crown loss, die back, health, vigor or the tree, decay, or any other potential problems. The trees were rated for failure potential, and the size of any deformities were noted. Recommendations were then determined for each individual tree. Global Positioning System (GPS) was used to locate each tree and the data linked with Geographic Information System (GIS). "Utilizing this type of technology allowed us to assign each tree a coordinate and map its location. We were able to identify the trees by location, species, obstructions, physical characteristics, and quickly develop a priority list of trees that required treatment," said Wohnseidler.

> *"From timber to tourism, trees are a large part of our County's economy," - Brian Wohnseidler*

Lewis County

Planning for the Environment

A Comprehensive Nutrient Management Plan, or CNMP, is a farm's road map for utilizing manure efficiently. Understanding the nutrient value of the manure produced on a farm and the nutrient requirements of the farm's soil helps the farmer in determining how much manure is needed on specific fields based on the crops being planted, existing nutrients in the soil and nearby surface and groundwater resources. If this sounds complicated and technical, well, it is. Today's farmers need to have a vast understanding of issues far beyond animal husbandry. In order to keep their businesses profitable and meet the environmental expectations of the public, farmers need to have a solid understanding of how their daily decisions impact natural resources, as well as their bottom line. To assist farmers in this arduous task, the Lewis County Soil and Water Conservation District has maintained a great working relationship with local farm planners. Therefore, when it came to their attention that Harmony Haven and A&M Tabolt Farms could benefit from a CNMP, the Conservation District made resources available using Conservation Project Financial Assistance funding.

These farms were chosen based on the agricultural-related impairments in the Black River watershed and knowledge of their farm management that could put these CNMPs to good use. "Utilizing manure efficiently makes excellent resource sense and often allows the farm manager to make better use of on-farm wastes," noted Nichelle Billhardt, Conservation District Manager. A secondary benefit to the CNMP plans is that it opens up the farm's eligibility to compete in water quality protection grants such as the NYS Agricultural Nonpoint Source Abatement and Control Grant program and the USDA's Environmental Quality Incentives Program.

> *"Utilizing manure efficiently makes excellent resource sense and often allows the farm manager to make better use of on-farm wastes." - Nichelle Billhardt, Conservation District Manager*

Although the two farms selected were different sizes and have different goals, it was determined that both would benefit from a Manure Storage System. The heavy snow load that often blankets the Tug Hill region makes daily spreading of manure a challenge. During snow melt or heavy rains, manure can runoff fields and enter nearby streams. By implementing the recommended storage systems, these farms will be able to collect the manure produced and apply it to their fields when weather conditions are favorable. The storage systems being planned will be sized according to individual farm needs. In addition, Harmony Haven is planning a Livestock Exclusion System that will keep their dairy cows out of the stream and A&M Tabolt Farms is planning to divert rainwater and reduce soil erosion from their farmstead.

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Livingston County

Home Renovations for Wildlife

Rattlesnake Hill State Wildlife Management Area is a 5100-acre upland site located partially in Livingston and Allegany counties. The management area consists of a wide variety of habitats such as old growth forest, conifer plantations, open meadows and many constructed wetlands. Rattlesnake Hill is home to numerous species of wildlife including white tail deer, wild turkey, ruffed grouse, beaver, coyotes, black bear; not to mention Management Area's namesake, the timber rattlesnake, which can be found in the more remote sections of the "Hill".

The marsh sites of Rattlesnake Hill are important nesting sites to migratory waterfowl, including ducks and Canada geese. The marsh sites were originally constructed in 1954, but over 50 years of existence had left many of the water control structures in a poor state of repair. Concrete and corrugated metal pipe outlet structures were severely deteriorated, to the point that replacement was necessary to avoid potential dam failure. These old structures also seem to be a favorite target for the beaver population causing overflow conditions.

Through a cooperative effort involving staff from the NYS Department of Environmental Conservation and the Livingston County Soil & Water Conservation District, two of the antiquated water control structures were replaced with a new Agri-Drain water level control structure and corrugated plastic pipe. The two marshes renovated are the largest water impoundments in the management area, both being about nine acres in size. The Agri-Drain structure also seems to have confounded the beaver population.

Many positive comments were received during construction on these two sites from the occasional hunters and trail users. Everyone was pleased that some long overdue maintenance was being completed.

Madison County

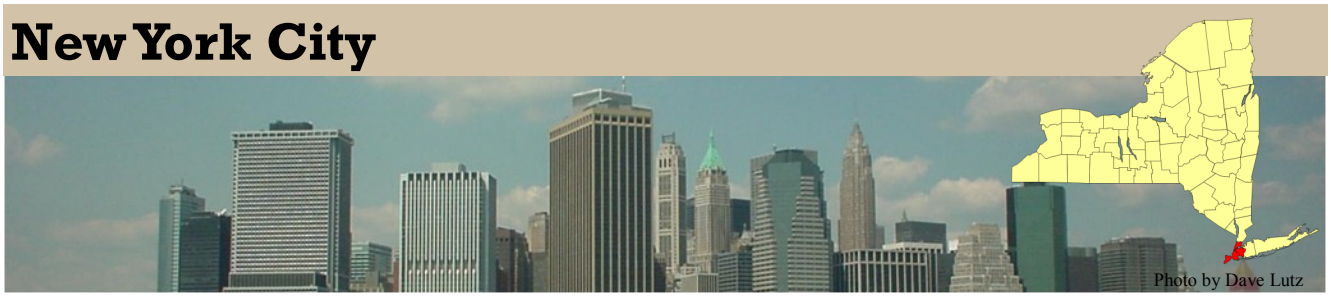
Harvest Season in Madison County

Madison County is comprised of a rolling landscape consisting of a patch work of crop fields and forest land. Over the years the County has acquired more than 800 acres of forested land spread throughout the county. Large portions of this forested property are pine plantations planted in the 1930's and 1940's. Many of these sites have reached maturity and are in need of management to ensure their transition from pine forest to hardwood forest.

Realizing that forestry is an important natural resource in Madison County, the Madison County Soil and Water Conservation District decided that protecting this resource was a high priority. Working with their local New York State Department of Environmental Conservation (DEC) Forester and the County Planning Department, the Conservation District utilized their Conservation Project Financial Assistance funding to implement a managed harvest program on the county land to ensure a smooth transition from pine forest to hardwood forest. The Conservation District and the DEC forester reviewed the sites in question and developed a plan for the property. Once the plan was developed, the District inventoried the timber on the property to calculate the volume of timber that needed to be removed from the site. Then, partnering with the County Planning Department, a timber sale was developed and put out to bid with the local loggers. Since logging can create erosion problems, the District watched over the harvesting to ensure minimal damage was done to the landscape and that proper harvesting techniques were being utilized. Once the harvest was complete, the district worked with the logger to repair any damage to logging roads or drainage ways.

With the pine trees thinned out, the County forest land is now in good shape to allow the hardwood species to thrive. An additional benefit that came out of this project was the recreational opportunities that were created as a result of the harvests. A new parking area was created to accommodate horse trailers. This new parking area allows residents to trailer their horses to the county-owned land and ride the trails that were created from the timber harvest.

New York City



Using Green Infrastructure to Solve Urban Issues

In highly urbanized areas, such as New York City, managing runoff water after storm events is a critical issue. With so much of the city covered by buildings, pavement and other impermeable surfaces, stormwater is normally diverted into sewer systems. Since stormwater runoff can carry a number of different pollutants this leads to pollution of rivers and harbors or expensive treatment. In natural systems, stormwater runoff is filtered by the soil and absorbed by plants. In the 1990's researchers began to look toward these natural systems as a way to reduce runoff volume and improve water quality in urban areas. Creating or mimicking natural systems, even on a small scale, could have large benefits. Sometimes referred to as Low Impact Development or better site design, green infrastructure practices are those that provide benefits to the environment and community.

To support green infrastructure initiatives in New York City, the Conservation District used Conservation Project Financial Assistance funding to sponsored a training workshop targeted to architects, environmental engineers, and city agency personnel. The focus was on ways to incorporate green infrastructure in development or redevelopment projects in a highly urbanized area like New York City. The workshop featured three presenters each covering different aspects of sustainable stormwater management, often referred to as Low Impact Development (LID) practices.

Green roof top. Photo by Paul Mankiewicz

Tatiana Morin, the District's Stormwater Technician, presented an overview of what LID practices are and touched on the constraints posed by current construction codes and legislation that would affect the use of green infrastructure. Tim White, Construction Manager for eDesign Dynamics, talked about pros and cons of LID practices and some pitfalls to watch out for during construction. His presentation included both green infrastructure (green roofs, bioretention systems, rain gardens, tree pits, constructed wetlands and green walls) and more conventional stormwater best management practices (blue roofs, rain barrels, cisterns, graywater and blackwater reuse systems, permeable pavement, and subgrade storm chambers). The third presenter, Marit Larsen, an ecologist from the NYC Parks Department, gave an in-depth analysis of designing and constructing an LID retrofit. She talked about site characterization, design considerations including soil analysis and plant selection, ordering materials, working with contractors and handling maintenance.

The workshop was attended by three dozen professionals from various city agencies and the private sector. Because of the growing interest in the use of green infrastructure in stormwater management in the city, the District plans on hosting more workshops in the future.

Niagara County

Facelift to Benefit the Residents of Niagara County

The Victor Fitchlee - Royalton Ravine Conservation Park is a 146-acre county-owned park, which is a popular location for conservation education events, hiking, camping and family picnics. Within the park is a 1.5 acre fishing pond that was constructed in the 1970's and was in need of some maintenance. Nearly forty years later, the dynamics of nature had taken its toll. Trees had begun growing on the embankment of the pond, which caused a concern for the long term stability of the earthen structure. Cattails had completely surrounded the pond and were over 20-feet wide in some places. Eurasian Milfoil, an invasive species, had also moved in, completely eliminating all but a couple hundred feet of open water in the pond. The pond's average depth was just over three feet deep, and was being reduced each year from the muck that was accumulating from decomposing vegetation and sediment. The excessive vegetation also afforded too much protection to smaller forage fish, which reportedly had substantially altered the bass population over the years. Using Conservation Project Financial Assistance the Niagara County Soil and Water Conservation District provided some long overdue maintenance to the pond; including removal of the excess vegetation in and around the pond and removal of the accumulated muck in the bottom to restore the pond to its original depth.

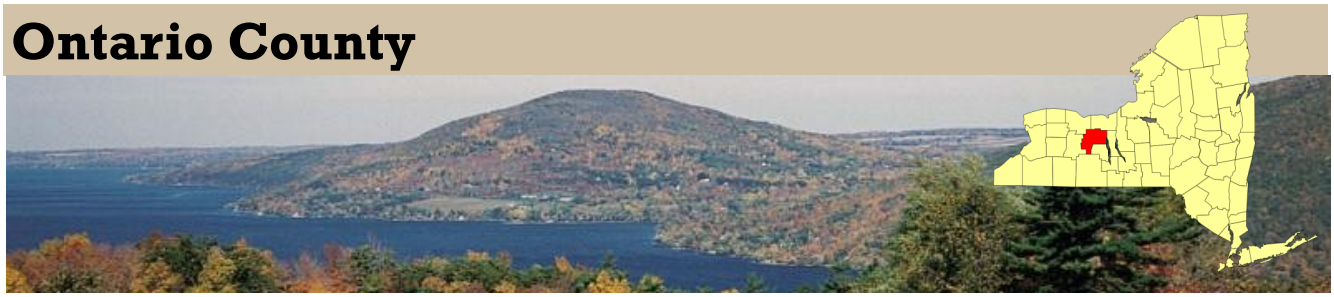
Royalton Ravine Pond before restoration.

Restoration began with the removal of trees and brush from the embankment berm. The berm was then re-graded and planted with grasses to prevent erosion. The majority of the mature trees on the upstream side of the pond were saved to maintain the mature characteristic of the pond and to provide shade to both fish and people. The trees that had to be removed to accommodate the restoration process were set aside and eventually placed in the pond to provide underwater structure for fish habitat and basking logs for the large turtle population. During the pond dredging, the shoreline access was improved by removing the ring of cattails around the pond, although certain areas will be allowed to revert back to provide habitat around the pond. Over 4,000 cubic yards of Eurasion Milfoil and muck was removed from the pond. This provided an additional 3 acre-feet of water retention. The dredged material was placed upstream, adjacent to the pond, where it will be spread and reseeded after it dewaters. It is anticipated that all the Eurasian Milfoil won't be eradicated from the pond, because any small remaining fragment can sprout roots and start growing. To help control this problem and prevent the pond from being taken over again, grass carp will be stocked in 2009 to control the invasive plant.

Royalton Ravine Pond after restoration.

The pond dredging project was completed in September 2008 and has been getting rave reviews from residents who haven't been able to use the pond for years.

Ontario County



College Students Get a Lesson in Conservation

The Muller Conservation Field Station is an important part of the educational experience for many students at the Finger Lakes Community College. Located in the Town of Canadice, at the southern end of Honeoye Lake, the field station provides students with hands-on experience in environmental studies and fisheries technology. Therefore, when the concrete culvert located under the main drive to the field station became plugged with shale and sediment from its surrounding 80-acre watershed, the Ontario County Soil and Water Conservation District saw it as an opportunity to create a demonstration site for students to learn more about stormwater management.

Culvert and outlet prior to practice implementation.

Routine storm events often caused the 24-inch culvert to flow at full capacity. These flows left the stream incised and the swift current of the water would transport sediment into a canal which is a spawning area for Walleye used by the college for scientific study throughout the semester.

Starting at the outlet of the culvert under County Route 36, stormwater management practices were planned and installed to more adequately handle the flows in the corridor. With the help of the Town of Canandaigua and Canadice Highway Departments, rock armoring was installed in the upper reach of the channel, followed by an area of Gabion baskets used to protect steep slopes adjacent to the driveway and handicap parking area. A new 24-inch smooth-lined culvert was installed with a stabilized outlet to prevent water exiting the culvert from causing erosion. The water was then directed into a settling basin to capture sediment being carried by water during storm events and allow for its removal during times of no flow. The settling basin also included extra protection for large storm events to prevent further erosion and reduce the energy of intense storm flows.

Gabion baskets used for steep slope protection.

The Conservation District used Conservation Project Financial Assistance funds to offset the cost of planning and labor for this project. Additional labor was provided by college students and the College is currently working on a kiosk that will provide educational information about the purpose of this project. Additional practices are being planned to further protect the channel and the site will be used as an outdoor classroom for students, municipal officials and residents with stream stabilization issues.

St. Lawrence County

Keeping with Tradition

Over the past few decades, the programs and projects of local Soil and Water Conservation Districts have evolved along with the knowledge gained by scientific research and better understanding of our natural environment. Naturally, new funding opportunities are usually targeted to planning and implementing the most current technologies. But what about the programs and services Conservation Districts have offered from the beginning? Do they still provide assistance to landowners that want to install a pond or need help getting rid of algae? Well, if you live in St. Lawrence County, the answer is yes.

Like many Districts, the St. Lawrence County Soil and Water Conservation District spends a significant amount of their time assisting farms and communities meet water quality standards. New and expanding programs require more paperwork and record keeping than ever before; not to mention the far more sophisticated solutions that are available for protecting our environment. However, historically, Conservation Districts have always been available to the local landowner to offer simple advice and assistance to basic questions. This is a service that most people can't get anywhere else, and certainly not for free. So when Conservation Project Financial Assistance became available, the St. Lawrence Conservation District decided it would be best used giving back to their County residents by offering their staff time and experience responding to the many requests they receive each year for pond information. The services they provided ranged from site feasibility, permitting, test pits, design, construction techniques, fish stocking, water quality and weed management, and general problem solving.

The goal was to implement as many projects as possible, both ponds in the traditional sense and wetlands. Educating people on wetlands including federal and state regulations and inadvertent destruction of critical habitat was a major component since St. Lawrence County is part of the Atlantic Flyway because of its proximity to Lake Ontario and the St. Lawrence River. The availability of diverse habitat (both water and emergent vegetation) is critical to waterfowl, raptors, shore birds, and songbirds that migrate and nest here.

The education provided, habitat saved, restored, and created … priceless!

At the end of the year, technical assistance was ultimately provided to over 250 landowners, businesses and units of government. Five wetlands were constructed. Numerous other projects were moved forward and the goals of many federal, state, tribal, county and private organizations as well as individual landowners were advanced. The education provided, habitat saved, restored, and created … priceless!

Schoharie County

Better Plans, Better Projects

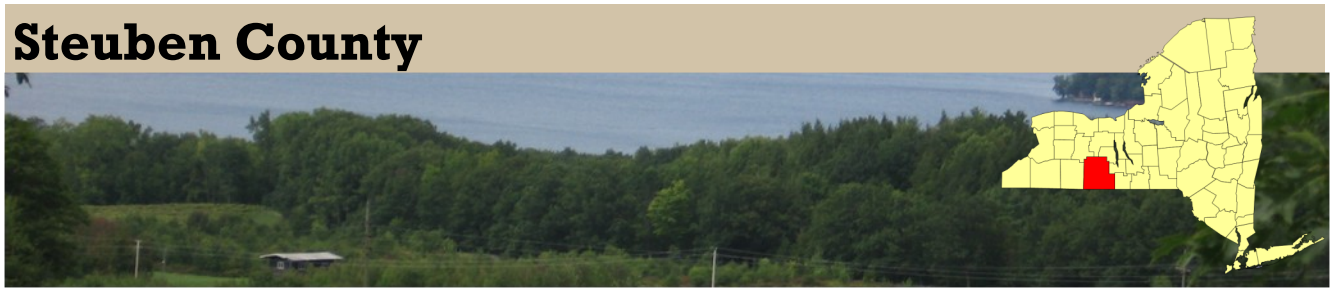
Schoharie County is covered by over 1,200 miles of creeks and streams, many of which are pristine and stable while many others are eroding at accelerated rates, cutting new channels and often threatening homes, farmland and County infrastructure. During the past 69 years the Schoharie County Soil and Water Conservation District has been asked to review and participate in many "stream projects" to remediate these problems. Most often, these projects were completed on small sections of creeks or streams with no clear vision as to how the proposed work would affect other portions of the stream. This work would include the removal of gravel bars, reshaping of the stream channels to encourage the streams to go back to their previous course or armoring a severely eroded bank with rip-rap. Over the past decade, however, the approach to stream restoration has changed with agencies looking at more comprehensive plans to address these problems before they are implemented.

In 2008, the Schoharie County Board of Supervisors and the Conservation District took a pro-active step toward addressing the County's stream problems and hired Peter Nichols as a Stream Program Manager. Peter's task is to pursue a more coordinated approach to stream restoration in the County. Using Conservation Project Financial Assistance funding, his first assignment was to develop a Stream Management Plan for the Manor Kill Creek which feeds the Schoharie Reservoir and eventually empties into the Schoharie Creek. Developing this plan involved assessment of numerous stream features, including water quality, bank conditions, vegetative surroundings, fish and macroinvertebrates and mapping of impaired sites. The detailed plan outlines the natural and institutional resources within the Manor Kill watershed, and provides both site specific and overall recommendations for the entire watershed. This completed plan now serves as a blue print for addressing concerns along the stream.

With the Management Plan now in place, Peter is hard at work lining up the necessary resources and funding for implementing the recommendations outlined in the plan. He has formed a County-wide Stream Task Force, and has obtained funding to implement a number of bank stabilization projects using vegetation grown through a cooperative effort developed with SUNY Cobleskill. Plans are also underway for the first full restoration project, which will include reshaping and stabilizing of a section of stream bank.

Overall, this project provided invaluable experience in the process of developing steam management plans and the knowledge gained will be used to develop plans for other streams in the County.

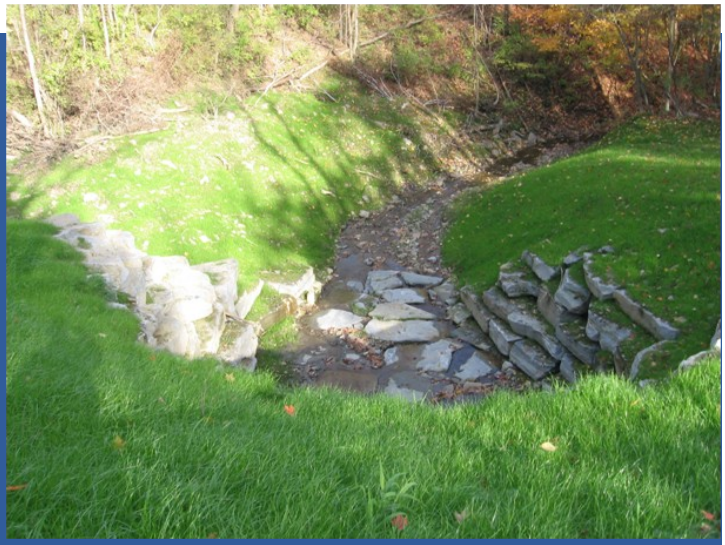
Steuben County



Pitching in for Public Safety

When the pavement on Collins Road began to crack due to an erosion problem caused by a stormwater culvert, the Town of Corning Highway Department contacted the Steuben County Soil and Water Conservation District for help. Solving erosion control problems is one of the many areas of expertise that Conservation Districts offer, and the Steuben County District is no exception. Staff from the Conservation District conducted a site visit to assess the situation. This visit revealed that the erosion was causing a section of the culvert pipe to separate from the rest of the pipe. The outlet of the road culvert led down a steep slope causing a 25-foot gully to the stream below. Inspection of the stream above the culvert revealed stable conditions, indicating that changing the grade of the culvert was not the answer; the existing culvert and downstream embankment would need to be stabilized.

The District developed plans to stabilize the culvert outlet, reset the existing culvert pipe, stabilize the 25-foot vertical embankment with stacked riprap, and install a splash pad and sill to prevent further erosion. The splash pad at the outlet was created to reduce energy of the water coming down the embankment, thus protecting the downstream portion of the stream from becoming unstable.



Standing on top of Collins Road looking down on completed project.

Due to insufficient funds in the Town's budget, it was decided to utilize the Shared Service program. Since the Shared Service program was initiated, the District was able secured enough equipment via the District excavator, County Department of Public Works (DPW) excavator, and Town equipment to use Conservation Project Financial Assistance monies towards the purchase of materials – rock riprap. The total cost of the project was $25,013 with the breakdown as follows: District- $7,115; State funds -$6,000; County DPW - $6,300 and Town - $5,598. Sixty-two percent of the cost was incurred locally while 38% was state funded.

Since this project was we were very successful, the District, Town and County DPW were able to complete another project upstream where the County DPW needed to stabilize a dangerous curve in the channel. The District constructed grade sills and sediment control structures using the impacts to Collins roadway as an example of how to manage stormwater runoff.

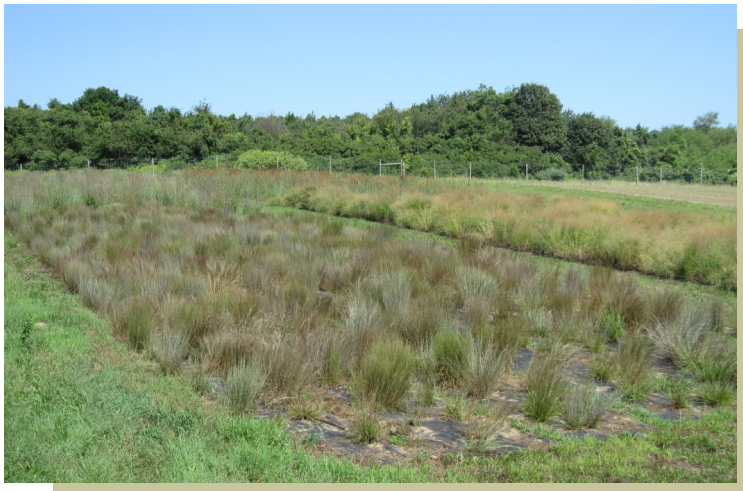
Suffolk County

Photo by Polly Weigand

Conservation Goes to Seed

The Long Island Native Grass Initiative (LINGI) is a cooperative effort of over 30 non-profit organizations, governmental agencies, and nursery professionals whose goal is to "bridge the gap" between supply and demand by providing initial sources of native plant materials to further commercial native plant propagation activities. Native plants are critical for erosion control and habitat restoration projects on Long Island where the sandy soils require drought and salt tolerant species for survival.

Since 2005, LINGI's volunteers have conducted field collections, seed cleaning, and applied standard plant propagation techniques towards the creation of founder seed for Indiangrass (*Sorghastrum nutans),* Little Bluestem (*Schizachyrium scoparium),* Big Bluestem *(Andropogon gerardii),* and Switchgrass (*Panicum virgatum*). To assist their efforts, the Suffolk County Soil and Water Conservation District established four founder plots, located in Jamesport. The first step was installing deer fencing around the site. This was followed by preparing the land and transplanting plugs of each species into founder plots. The plugs were grown by The Greenbelt Native Plant Center from seed collected by LINGI members. Finally. the plots were hand sewn with a cover crop to suppress weeds.

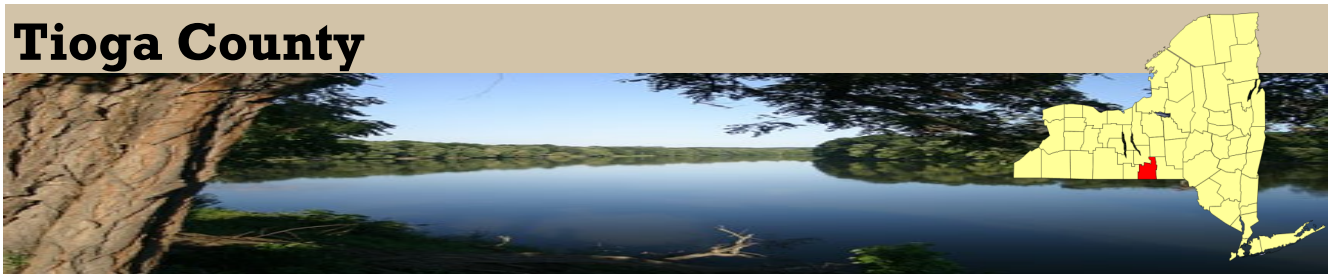


The first full harvest of plants was achieved in fall of 2008, with the resulting seed provided to Ernst Conservation Seed for commercial increase and sale. In addition to establishing the founder plots, the Conservation District conducted work on the Long Island Grassland Map. This included mapping and field verifying native grass sites throughout the County. Come 2011, the first LINGI Ecotyped - Source Identified Certified seed will be commercially available, marking a great milestone for LINGI.

Preservation of the genetic heritage of Long Island's native plant populations and thereby, biodiversity will continue to go to seed.

With increasing nursery interest, high public demand, and constant requests for additional plant materials, LINGI's momentum is rapidly expanding. Through annual plant sales, diversification of targeted plant materials, contract growing, and grant writing, LINGI will continue to successfully serve as the mechanism to identify and collect plant materials from the wild lands of Long Island for commercial plant production. As such, the preservation of the genetic heritage of Long Island's native plant populations and biodiversity will continue to go to seed!

Tioga County



Implementing Multiple Use Projects

Brick Pond in the Village of Owego is a 30-acre wetland area owned and maintained by the Waterman Conservation Education Center in Tioga County. Known as one of the best birding spots in New York, Brick Pond serves as a wildlife refuge for numerous species. In 2006, Brick Pond received local scrutiny when surrounding residential areas were severely flooded by the Susquehanna River. At the time of the flooding, the wetland was already at high water levels due to the resident beaver population. Pressure from the community resulted in the Waterman Center applying for a New York State Department of Environmental Conservation (NYSDEC) permit to remove the beavers. The permit was granted and the beavers and their dam were removed. As a result, Brick Pond was drained and its wetland benefits were lost.

Brick Pond wetland before and after restoration.

Protected under the Wetland Act of 1975 and under section 404 of the Clean Water Act, the NYSDEC required that the Brick Pond wetland area be restored to support ecological functions. In order to restore the wetlands to State and federal specifications and still address the neighborhood flooding concerns, the Waterman Center contacted the Tioga County Soil and Water Conservation District for assistance.

With the help of Conservation Project Financial Assistance, the Tioga County Conservation District facilitated coordination and communications between the Waterman Conservation Education Center, the Upper Susquehanna Coalition (USC), the U.S. Fish and Wildlife Service, the local government, concerned citizens and NYSDEC. A multi-agency group was formed which allowed the project to move forward with opportunities for all to evaluate and comment on the design and restoration plan. The agreed upon design was then constructed by the USC and the Conservation District using funds secured by Congressman Maurice Hinchey for the U.S. Fish and Wildlife Service "Partners for Wildlife Program". The end result of this collaboration was a functioning, vibrant and managed wetland that will attract visitors and allow the Waterman Center to continue to provide a unique educational program that was otherwise not available. "This project provided the Upper Susquehanna Coalition an opportunity to construct a project with many partners, giving back to the community a unique urban natural resource," said Jim Curatolo, USC Coordinator.

"This project provided the Upper Susquehanna Coalition an opportunity to construct a project with many partners, giving back to the community a unique urban natural resource," said Jim Curatolo, USC Coordinator.

Warren County

Fish-Friendly Culverts for Warren County

When culverts failed in the Town of Chester in Warren County, highway superintendent Gary Clark did what most highway departments typically do: replace it with a new pipe of the same size and style. Until recently that is. Gary, an avid trout fisherman, had been talking to the Warren County Soil and Water Conservation District about the issue of brook trout declines in New York, and the District mentioned that the primary cause for these declines was poor culvert design. A number of studies indicate that culverts that have outfall heights above eight inches (little waterfalls) are too high for brook trout to get through, greatly reducing spawning rates. When a stream culvert failed on one of Gary's town roads in 2006, the highway superintendent decided to work with the Conservation District to design a better culvert which would allow long-term fish passage on the local trout stream.

Warren County Conservation District staff met with Gary to review the failing culvert and talk about how to properly replace it. The District used the new NYS Department of Environmental Conservation (NYSDEC) standards for culvert replacement and recommended to Gary that the culvert be increased in size and an arch culvert be used. The $6,000 in state Conservation Project Financial Assistance funds went to helping offset the cost of the larger culvert, and reimbursed the District for its time in design, permitting, and construction oversight.

Gary Clark (left) and Dave Wick work side-by-side installing a culvert that will allow brook trout to pass.

The corroded 36" diameter round metal pipe was replaced with a new 48" arch pipe, embedded into the sediments about 20 percent. This design allowed an increased amount of water through the pipe, plus a natural gravel bottom within the pipe for fish passage. The Town of Chester highway crew conducted the project under the direction of Warren County Conservation District Manager Dave Wick. Project construction took one very long day, but was successfully completed and will last another 30 plus years. Brook trout can now pass from the stream up into a 40-acre wetland complex just upstream of the culvert, which NYSDEC says is a tremendous improvement.

"As highway superintendent, I have a chance to make things better for both my constituents and for our streams" said highway superintendent Gary Clark. "Working with Soil and Water helped us get the project done right, and the state funds helped with the cost", said Gary. "We plan to work with Soil and Water on all of our culvert replacements."

10B Airline Drive
Albany, NY 12235
(518) 457-3738
www.nys-soilandwater.org