

2013 Annual Report

New York State Soil & Water Conservation Districts



**NYS SOIL & WATER
CONSERVATION COMMITTEE**

Mission: Advance
comprehensive natural
resources management
through the support of local
Soil & Water Conservation
Districts

New York State
Soil & Water
Conservation Committee

PRODUCED BY:
NYS DEPARTMENT OF AGRICULTURE & MARKETS
DIVISION OF LAND & WATER RESOURCES
WWW.NYS-SOILANDWATER.ORG

CONSERVATION DISTRICTS

WORK



P
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E

500,000

New Yorkers young and old participated in and educated on environmental conservation led by conservation districts

PROJECTS

conservation districts implemented

\$65M

worth of projects and programs to protect the environment across New York State in 2013



CONSERVATION PRACTICES



More than
1,300

agricultural best management practice systems were implemented in 2013 to protect water quality and reduce pollution

STATE COMMITTEE

New York State Soil & Water Conservation Committee operates within the Dept. of Agriculture & Markets to establish policy and guide the state's

58

Soil & Water Conservation Districts.

NYS Soil and Water Conservation Committee Members:

George Proios, Dale Stein, John Dickinson, David Brass, and Chuck Colby

Advisory Members:

NYS Dept. of Agriculture & Markets,
NYS Dept. of Environmental Conservation,
NYS Dept. of Health,
NYS Dept. of State,
USDA Natural Resource Conservation Service,
Cornell Cooperative Extension,
Cornell University,
SUNY ESF, and
NYS Conservation District Employees' Association

CONSERVATION IN NEW YORK

HABITAT INVADERS

INVASIVE SPECIES

Invasive species can cause extensive damage to the environment by dominating local ecosystems and out-competing native organisms for food and habitat. Eradication of invasive species that have become established in a local ecosystem may not be feasible. Conservation Districts around the state work to manage the population of invasive species to control their spread and provide opportunities for native species to come back. Districts implemented 93 invasive species projects on 19,000 acres in 2013 valued at over \$2 million.

MANAGEMENT

The Warren Conservation District removed 2,000 pounds of the invasive aquatic plant, Eurasian Watermilfoil and curlyleaf pondweed from Schroon Lake by hand harvesting the plant over a five week period. Water chestnut is an invasive aquatic plant that destroys native vegetation, alters fish habitat, creates low dissolved oxygen areas in the waterbody, restricts recreational boating, fishing, and can clog water intake screens for hydroelectric generating facilities. In 2013, Oswego Conservation District provided invasive weed management on 220 acres of the

Oswego River and its tributaries by removing water chestnut via hand pulling and other control measures.

Utilizing a memorandum of understanding between the NY Department of Environmental Conservation and NY Agriculture and Markets, the Washington Conservation District works with the Town of Dresden to mechanically harvest the invasive aquatic plant, water chestnut from Lake Champlain. During the summer



Hamilton SWCD Technician tosses a rake into the Spy Lake in the Adirondack region to survey for invasive plants.

of 2013 there were 64 harvest days with approximately 11,900 cubic yards of plant material removed from South Lake.

MONITORING

In addition to harvesting invasive weeds Districts also monitor or survey areas as a management strategy for early detection and control of these invaders. Hamilton Conservation District conducted a survey of Spy Lake in the Adirondack region in September 2013. During the survey staff used a rake-toss method where a rake is tossed into the water to gather aquatic plant life for identification and abundance. The survey of Spy Lake successfully concluded with no invasive plants found.

Lake surveys are important because early detection leads to rapid response, saving money that can be used to improve the ecosystem of the lake.

Invasive species know no boundaries and are not exclusive to vegetation. The Emerald Ash Borer (EAB) is an Asian beetle that infests and kills North American ash trees. Infected ash trees have tree canopy dieback with yellowing and browning leaves resulting in the loss of the tree. The spread of EAB in New York has been attributed to the transport of firewood that originated from infected trees. To control the spread, New York has regulated the movement of firewood to a 50 mile radius from its source. The Onondaga Conservation District is working closely with the County to manage EAB infestation by performing an inventory and treating all ash trees within the county.

EDUCATION

Educating the public about invasive species is an important component to their control and management. Albany Conservation District hosted an EAB Workshop with Cornell University's forest entomologist for community leaders and Highway and Parks Department staff in Albany County. The workshop focused on how communities can address infestations, options to save valuable ash trees, and how to manage infected trees. The Wayne Conservation District has created an Invasive Species Identification Guidebook, invasive species calendars, and developed lesson plans for Scout merit badges and community groups to use and actively participate in the identification and removal of invasive species.



Recycling

Agricultural plastics like those seen in fields covering feed so it doesn't degrade or spoil are hard for farmers to recycle. Recycling Agricultural Plastics Project (RAPP) started by Cornell in cooperation with Soil and Water Conservation Districts allow farmers to recycle agricultural plastics such as the plastic film that wraps silage, pesticide containers, seedling trays, and many other types of plastic instead of sending them to the landfill. Conservation Districts assisted 264 farmers in 2013 to recycle 266.5 tons of on-farm plastics nearly the weight of the Statue of Liberty. Wyoming Conservation District started accepting tubing used in maple sap harvesting for the production of maple syrup for recycling in 2013. The District diverted 3 tons of material in the first year accepting maple tubing.

A collaboration between Clinton, Franklin, and Hamilton Conservation Districts resulted in the recycling of 500 pounds of boat storage plastic with local marinas. The plastic was taken to a New York facility that will pelletize the plastic for reuse in new plastic products such as highway and parking bumpers or building materials. Orleans Conservation District worked with local municipalities in 2013 to recycle over 400 tires within the county.



Wayne SWCD harvested 1,798 tons of wet vegetation from Lake Ontario.

10TH ANNUAL NYS ENVIRONMENTAL EXCELLENCE AWARDS

EMERGENCY STREAM INTERVENTION PROGRAM

Conservation Districts have historically been involved in flood mitigation and stream remediation. As extreme storm events have become more frequent and knowledge of stream science has increased Conservation Districts are meeting the needs and educating municipalities on flood mitigation and stream morphology. The dynamic nature of streams and high potential for damages from large storm events generates on-going need for stream stabilization to protect local roads, bridges,



Layers of branches are used to stabilize the bank surface.

and other infrastructure to ensure public safety.

In 2013, thirty-seven Conservation Districts provided flood mitigation and emergency management services within their counties. Over 500,000 acres of land were remediated for flood damage. Statewide, Districts continue to assess damage from storms, secure funding to mitigate damage, assist the state and counties with mitigation strategies, floodplain reclamation, de-

bris removal, flood channel reconstruction, and permit assistance for work done. There were 283 stream stabilization projects completed by Districts in 2013 on 280,000 feet or 53 miles of streambank.

The Delaware Soil and Water Conservation District's Stream Management Team developed a Post-Flood Emergency Stream Intervention Program that is a critically-needed, innovative, and sustainable flood response

“Post-Flood Emergency Stream Intervention is a critically-needed, innovative, and sustainable flood response protocol and pre-flood training program”

protocol and pre-flood training program. This “stream triage” sets standards and practices for the period immediately following a flood. Flood damage can be widespread and therefore the objective of Emergency Stream Intervention (ESI) is to stabilize the situation in order to open clogged channels to convey normal flow, stabilize streambanks to prevent erosion, and return stream channels to their natural process to prevent continued flooding. Moreover, these same principles and methods can be applied to other municipal work in and around streams, such as bridge and culvert work. Mu-



Stream in Delaware County damaged by flooding (left). Stream after ESI Program implemented (right).

nicipalities using this new protocol learn how to work with the stream's natural tendencies, and post-flood responders obtain knowledge and guid-

ance that serves as a basis for an environmentally and economically sound post-flood response. The Post-Flood ESI protocol has gained broad acceptance by both municipalities and regulatory agencies. Using the protocol and training program, local stream responders can scientifically assess the need for intervention and use their knowledge to perform work that protects aquatic resources consistent with the streams natural tendencies.

An Emergency Stream Intervention (ESI) train-the-trainer program was launched in 2013 to educate other Conservation Districts across the state who will then educate municipalities within their counties. During a three day training 22 District employees representing 19 Districts across the state were immersed in the ESI Program learning stream triage techniques and how to educate post-flood responders on this new protocol.

The New York State Department of Environmental Conservation (DEC) recognized the Delaware County Soil and Water Conservation District for its Post-Flood Emergency Stream Intervention (ESI) Program at the 10th Annual New York State Environmental Excellence Awards celebration. The awards program, now in its 10th year, was established by DEC in 2004 to recognize those who improve and protect New



Delaware SWCD's Stream Coordinator Graydon Dutcher (left) accepts the DEC Environmental Excellence award from Commissioner Joe Martens (right).

York's environment and contribute to a more healthy economy by advancing sustainable practices involving creative partnerships. “These inspiring success stories have created a greater awareness of environmental sustainability and have contributed to a stronger economy through cost-effective innovations. Through strong



Honeoye Creek in Ontario County was remediated by the Ontario SWCD to remove obstructions and restore flow after flooding.



partnerships, we will continue to execute Governor Andrew Cuomo's green initiatives for New York.” said Commissioner Martens in a press release from the Department of Environmental Conservation.

MANAGING STORMWATER AS A RESOURCE

GREEN INFRASTRUCTURE

Conservation Districts are tasked with protecting the State's natural resources. When stormwater is treated as a resource and not a waste, the practices of green infrastructure (GI) decrease pollution to local waterways by treating rain where it falls and keeping polluted stormwater from entering sewer systems and potentially waterbodies. Districts are aiding towns, municipalities, schools, and residents all over the state to utilize green infrastructure tools and techniques

the often concrete outdoor space offered. Projects help to reduce combined sewer overflows (CSO) to the Hudson and Bronx Rivers and NY Harbor. The District has implemented five projects that can capture the first inch of rainfall or combined over 11,000 gallons of stormwater runoff. The NYC Conservation District has also been very active in educating practitioners on green infrastructure hosting four bus tours with over 200 participants. In 2013 the NYC District had the pleasure of hosting a delegation

of Chinese resource managers. The NYC District Manager took the delegates to several sites where green infrastructure projects were completed by the District



Stormwater planters installed by NYC SWCD for roof runoff capture and retention.

that include green roofs, permeable materials, alternative designs for streets and buildings, trees, rain gardens, and rain harvesting systems. These practices also help to reduce flooding, irrigate landscapes, save energy, reduce heat islands, increase community aesthetics, and reduce costs to manage stormwater.

The New York City Conservation District has been working with residential properties, particularly low income housing, in the South Bronx and Crown Heights, Brooklyn, and Central Harlem to capture and retain roof runoff in rain barrel systems (cover photo) and constructed wetland planters. Rainwater is harvested through vegetative interception and effluent is reused for irrigation, lessening stormwater runoff and increasing pervious area and wildlife habitat. The projects also help to educate residents that every bit of green space counts and increases the aesthetics in

and through the NYC GI Program. They also attended a series of presentations by one of the District's Directors with the Gaia Institute and the NYC Department of Environmental Protection to share ideas on green infrastructure and climate change adaptation and resiliency.

Current stormwater regulations require that new developments implement runoff reduction and consider green infrastructure but existing urbanized areas are often overlooked. The Orange Soil and Water Conservation District



Bioretention basin at Warwick HS captures parking lot runoff (above). Basin in operation (below).



(SWCD) has become involved in projects to demonstrate environmentally sensitive management of runoff from older urban areas. The District implemented a modern stormwater management measure at an Orange County office building installing a stormwater planter that improved aesthetics and functions as a stormwater filtering and infiltration system (cover photo). A similar stormwater planter and rain garden was also installed at SUNY Orange. The District also worked with Warwick High School to divert parking lot runoff into a bioretention basin protecting nearby Wawayanda Creek.

Monroe SWCD worked with the Village of East Rochester to capture untreated stormwater runoff from a building rooftop and sidewalk directing runoff to porous pavers and infiltration cells that street trees were planted in. The porous pavers allow for infiltration in an other-

wise impervious area. An interpretive sign was also installed to educate the public on how the porous pavers and street trees treat the stormwater runoff. A second project in the Town of Webster captures untreated stormwater runoff from the Town Hall parking lot into a series of catch basins that otherwise outlet to Mill Creek, an impaired local waterbody. These bioretention cells capture and treat 1.4 acres of impervious surface.

Nassau SWCD continues to work with SUNY Old Westbury to maintain the county's first green roof that was installed by the District in 2012. Green roofs absorb summer heat reducing building cooling needs and filter stormwater before it runs off into stormdrains. In-



First green roof in Nassau County by Nassau SWCD at SUNY Old Westbury.



stalled on the roof of the Natural Science Building, it is also being used as a living classroom by students and faculty.



Street trees and permeable pavers in the East Village of Rochester by Monroe SWCD.

Soil Health

The concept of soil health is not a new idea but is making its way back into the mainstream for agriculture. There are four core principles to creating a robust healthy soil system that were discussed at a Soil Health Train-the-Trainer workshop sponsored by the NY Soil and Water Conservation Committee and USDA Natural Resource Conservation Service. The workshop was held at a farm in the Owasco Lake Watershed near Syracuse in the summer of 2013. David Lamm, agronomist and leader for the USDA Natural Resource Conservation Service (NRCS) National Soil Health and Sustainability Team laid out those core principles for the group, "to improve soil health: disturb it less, plant cover crops, use plant diversity, and grow living roots during the year." These core practices form the basis of a Soil Health Management System that can help farmers optimize inputs, protect against drought, and increase production.



Rainfall simulator demonstrates how organic matter holds soil in place while tilled soil disperses and promotes erosion.

A panel of farmers and soil health demonstrations covered soil compaction, microbial activity in soil, how to maximize pore space in soil for drainage, and the importance of cover crops. Conservation tillage and no-till practices were also demonstrated to show how these practices can reduce compaction while increasing soil microbial activity and improved pore space for drainage during storm events. Conservation Districts will utilize these hands-on training techniques to conduct workshops across the state to show farmers and watershed partners the great economic and environmental benefits of Soil Health Management.

Watershed Management

Water quality is an issue that affects all New Yorkers and is important to our livelihood. In 2013 Soil and Water Conservation Districts were involved in the creation of new watershed management plans and revisions to existing watershed management plans for the 17 watersheds located in NY. Districts spent a combined \$318,000 on monitoring and sampling of waterbodies to protect water quality and ensure safe drinking water for residents. Districts received requests from over 1,300 municipalities, landowners, schools, and businesses for technical assistance on hydrologic conservation projects. Projects included 280,000 feet of stream stabilization, 77,000 feet of riparian buffer installation, 922 acres of wetland creation and protection, 4,000 feet of shoreline protection, 2,500 acres of critical area seeding to prevent erosion, and 900 acres of wildlife habitat improvements. Across the State, Conservation Districts implemented 1,324 projects spending over \$25 million on public and private lands.

***SWCC Value:
Comprehensive and science-based
natural resource management on
lands both public and private.***

Open Space

Connecting people to the land

Community based land use planning that considers natural resource impacts is a vision of the NYS Soil and Water Conservation Committee and the 58 local Soil and Water Conservation Districts. Open Space planning and the creation of public greenspaces provide the opportunity for all individuals to experience and connect with their environment. Well-managed open space programs protect the natural green infrastructure of a place, providing opportunities for recreation, preserving important environmental and ecological functions, and enhancing community quality of life. Conservation Districts across the state developed 16 Open Space plans and implemented 23 projects to protect open space in 2013.

Greene County Conservation District working collaboratively with other organizations to develop a 1.5-mile trail

that follows the abandoned Ulster and Delaware Railroad. The Kaaterskill Rail Trail located in the Catskills is open to the public for non-motorized, multi-use activities. Greene Conservation District started a Mountaintop Community Resource Strategy where the District looked for ways to improve the area's outdoor and cultural resources that were also fitting for watershed protection. Districts across the state developed recreational trails within their counties including snowmobile trail mapping and trails development within county forests.

Jefferson County Conservation District designed and constructed a covered bridge creating passage over a small stream connecting recreational and snowmobile trails in a tri-county region of Lewis, Oswego, and Jefferson counties. The newly constructed trails and covered bridge protect the stream and

make riding and recreational activities safer removing 8 miles where recreationists would otherwise outlet to a road before connecting back with the forest trails.



Covered bridge connecting recreational trails built by Jefferson Conservation District.



NEW YORK AGRICULTURE



Districts Educate on Farm Safety

An educational project assessing the potential dangers to farmers and their families of storing manure with gypsum cow bedding was initiated by the Yates Soil and Water Conservation District (SWCD) in 2013. Partnering with a local fire department for their gas meters, the Conservation District measured the levels of hydrogen sulfide (H₂S) gas at the edges of manure storages as farmers were loading their spreaders. On the farms where gypsum was used for cow bedding, high levels of hydrogen sulfide were measured at the perimeter of the storage as the farmer agitated and loaded manure. The levels were high enough to pose a serious safety threat to farmers working at the storage. On farms not using gypsum for bedding, they found that hydrogen sulfide levels were generally undetectable while emptying storages. Overall, hydrogen sulfide is diluted with air during applications to cropland, thereby quickly reducing the hazard in either scenario when removed from the immediate area of the manure storage. To educate farmers of this potential danger when emptying manure storages, the Yates SWCD worked with Cornell Cooperative Extension and the Cornell PRO-DAIRY program to create publications and get the information out to the farmers. Their fact sheets were quickly picked up and publicized in the farm press throughout North America.



Local leadership and grass-roots decision making are key to successfully managing natural resources.

Sheland Farms Wins NYS AEM Award

Good Stewardship of the land lowers costs, improves Global Environment

Sheland Farms and Jefferson Soil and Water Conservation District, were honored by the State Department of Agriculture and Markets, Empire State Potato Growers and American Agriculturist Magazine as the 2013 Agricultural Environmental Management (AEM) awardee.

They have put into practice advanced conservation systems protecting the watershed and reducing climate changing emissions, in effect improving the global environment. Their covered manure storage, successfully captures and filters methane emissions, a greenhouse gas 25 times more potent than carbon dioxide. Sheland Farms are also digesting cow manure to produce a clean, renew-



able source of electricity for the farm and utility grid.

Sheland Farms milks approximately 700 cows and utilizes 2,100 acres of land to grow all the crops needed to feed the dairy cows on the farm. They also use reduced soil plowing practices and cover crops to enhance the health of the soil and increase the amount of organic carbon that can be sequestered and utilized by growing crops. These proven conservation systems reduce the loss of nutrients and topsoil to the nearby waters of Sandy Creek, an important tributary to Lake Ontario.

ALTERNATIVE ENERGY IN AGRICULTURE



Farms around the state are tapping into the environmental and economic benefits of renewable energy applications on their farms and Soil and Water Conservation Districts are helping to provide the support, research, funding, and technical expertise to do it. Thirteen Conservation Districts aided farmers in 2013 with alternative energy projects and conducted Agriculture Energy Audit Plans on 9 farms.

The Onondaga Conservation District conducts the Skaneateles Lake Watershed Ag Program and focused on Renewable Farm Energy for their 2013 annual meeting. The meeting highlighted manure

will keep cattle out of the Boquet River while providing a fresh drinking water source for



Yates SWCD installed solar panels for a grazing water system.

the cattle. A solar panel was installed and provides power to a pump system that fills a storage tank connected to a well.

The storage tank gravity feeds water 300 feet below to the grazing paddocks. This alternative water system works to not only protect water quality by providing an alternative

water source that facilitates the exclusion of cattle from the Boquet River but also utilizes photovoltaic solar panels to power the system in an environmentally friendly way. Yates SWCD worked with a beef cow operation to install solar panels that provide power to a pump that conveys water to an underground storage tank that gravity feeds water to all points in the water system. The solar panels eliminate the use of a diesel powered generator eliminating air pollution, providing a clean source of energy, and making the water system more efficient.

Cayuga Conservation District's Regional Digester generates power from the digestion process of cow manure (picture above). The anaerobic digester

generates 315 to 625 kw per day of power, enough power for the District building, the County jail, a county nursing home, and additional power that is sold back to the grid. This is equivalent to generating enough power for 50 -100 homes! Manure from local farms is mixed with food processing waste to create methane that is scrubbed clean of

hydrogen sulfide and burned for the production of power. Methane gas, which comes from the breakdown of manure, is a greenhouse gas that is 25 times more potent than carbon dioxide. The digester, pictured above, is not only creating environmental benefits for Cayuga County but also economic benefits. The District sources parts and supplies through local and regional businesses supporting the local economy. In addition, the project supports local jobs through mechanics, electricians, and a full-time facility foreman who are all utilized to keep the operation running smoothly.

Dutchess, Orange, Rockland, and Ulster Soil and Water Conservation Districts in conjunction with the Lower-Hudson Long Island Resource Conservation and Development (RC&D) Council sponsor the non-profit Hudson Valley Grass Energy (HVGE) project to convert left-over hay and hey grass products into pellets for

heating. Pellets made from hay contain the same heating value as those made from wood. Providing a shorter growing period to create the fuel source. The grass pellets are a local, renewable, and carbon-neutral energy source absorbing the same amount of carbon when growing that is emitted through combustion to create energy. A mobile grass-pelletizer was built in 2011/2012 to bring pelleting equipment directly to the



When filled, this sack will hold 1 ton of grass pellets for energy.

source to eliminate costs associated with transporting the biomass to a pelleting facility. The project continues to flourish producing heating pellets for agricultural producers, offsetting their energy costs. Excess production is sold to the public and private sources providing agricultural producers with an additional source of income.

Steuben SWCD is taking part in a research project funded by NYSERDA to evaluate emission levels of cool season grass hay (mulch hay) and warm season grass hay (switchgrass). The grasses are made into pellets and burned in an advanced gasification boiler while tested at a contracted Emissions Testing Facility. The goal of the project is to determine if the grass combustion can produce satisfactory emission levels compared to other fuel sources.



Onondaga Conservation District Manager speaks about Renewable Farm Energy at the Skaneateles Lake Watershed Ag Program 2013 Annual Meeting.

digester power, LED lighting options, wind turbines, micro-hydro power, and grant funding sources to support these technologies on farms.

Essex Conservation District funded the installation of an alternative water system that



Essex SWCD installed a solar panel to pump water for cattle.



Mobile pelleting machine turns hay into pellets for energy.



The Agricultural Environmental Management (AEM) framework provides tools, skilled people, and incentives to support farmers in their efforts to voluntarily improve farm viability while protecting the environment. AEM plans and practices carried out by farmers through the support and technical guidance of Soil and Water Conservation Districts (SWCD) reduce pollution, protect water quality, improve wildlife habitat, and bolster the economic output of NY farms. Based on their local AEM Strategic Plans, in 2013 Conservation Districts used \$1.86 million from the AEM Base Program to provide technical assistance with farmers advancing through the AEM Tiers. Districts performed 556 Tier 1 inventories with farms to start the AEM process, conducted 341 Tier 2 resource assessments to document existing stewardship and opportunities for conservation, and developed 220 farm-specific Tier 3 conservation plans with farmers to detail and prioritize solutions to resource concerns. Based on those plans, Districts also provided technical assistance for Tier 4 implementation of 242 best management practice (BMP) systems to address non-point source pollution from farmstead facilities, pasture, and cropland. An additional 42 BMP systems were implemented in conjunction with the Agricultural and Community Recovery Fund (ACRF) addressing flood recovery and the devastation that occurred from Hurricane Irene and Tropical Storm Lee in 2011.

AEM Tier 5 evaluation of conservation plans and existing BMPs was the highest total ever for the AEM program, 327, reflecting the emphasis and importance of follow-up. This activity helps protect taxpayer investment in conservation; helps the farmer maintain, adjust, revise, and enhance their conservation management; and often leads to further conservation work among the farmer, the District, and

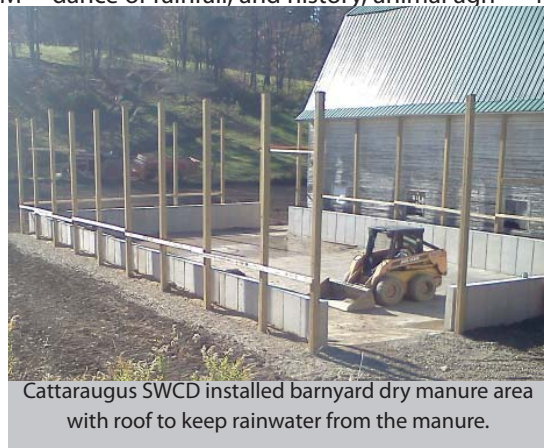


Manure storage implemented by Schuyler SWCD.

local partners.

The Agricultural Non-point Source Abatement and Control Grants Program (Ag NPS) dovetails with work through the AEM Tiers to provide Districts the opportunity to apply for competitive cost-share funding for planning and BMP implementation on farms. In 2013, over \$12.6 million in grant funds were awarded to 28 Districts to conduct water quality improvement projects on 208 farms. The resulting BMP systems will improve and protect water quality in 137 watersheds across New York.

Given New York's soil resources, abundance of rainfall, and history, animal agri-



Cattaraugus SWCD installed barnyard dry manure area with roof to keep rainwater from the manure.

culture, especially dairy farming, is a pillar of our agricultural industry. Manure generated by farms is a key resource when managed properly, as it represents the primary source of nutrients for their crop production. Farmers and Conservation Districts work year in and out through AEM and Ag NPS on proper collection, storage, and application of manure to cropland. By pairing manure storage with a field nutrient management plan based on crop nutrient need and environmental risk assessments, producers are better equipped to apply manure nutrients at times of the year when

they can be best conserved and recycled by crops. Storing this source of nutrients during times of high rainfall events or inclement weather also helps to aid in the protection of water quality. The Schuyler SWCD received an Ag NPS grant to implement a manure storage on a farm located in the Taughannock Creek Watershed, a trout stream listed on the Priority Water Bodies (PWL) list for NYS. The farm now has adequate capacity to store manure during inclement



Cropfield before (left) and after (right) cover crops are applied.

weather and times of greater risk for runoff or leaching from fields. Manure can now be applied to cropland when weather and field conditions are more amenable to retaining the nutrients and when crops can better utilize the nutrients from manure.

Manure storage and proper nutrient management also reduced the amount of commercial fertilizer imported onto the farm (and into the watershed) necessary for crop production. By better utilizing local, on-farm nutrient sources, such as manure, soil supplies, and crops in rotation, to grow the crops to feed the farm's livestock, the farm improved its recycling loop. This is not only an important aspect of running a sound agricultural business today, but is also important in protecting surface and ground water quality in and around the farm and its associated cropland.

As more farms focus on the importance of soil health management, Districts are assisting farmers with implementing cover crops. Cover crops are grown between a season's main crop to build organic matter in the soil, prevent erosion, recycle



Vineyard cover crop in Schuyler County.

nutrients, reduce runoff, and conserve soil moisture. Districts worked with 220 landowners to

plant over 10,000 acres of cover crops in 2013. The Wyoming SWCD worked with a farm to plant over 1,900 acres of cover crop on their fields (cover photo). The Yates SWCD worked with 15 different vineyards in their county to prevent erosion and enhance soil organic matter through the use of cover crops, mulch, and compost in between rows of grape vines. Using cover crops and mulches to protect the soil surface has an enormous effect on annual rates of erosion by reducing the force of rainfall hitting the soil.

NYS WINS NORTH AMERICAN ENVIROTHON



NYS ENVIROTHON

Spawned by the environmental movement of the 1970s, the Envirothon began in Pennsylvania in 1984 and by 1990 had spread to several other states including New York. The New York State Envirothon is hosted and organized by the NYS Envirothon Committee, a subcommittee of the NYS Conservation District Employees Association and will celebrate its 25th anniversary in 2014.

Students are tested on their knowledge of natural resource topics and compete for scholarships. The NYS Envirothon provides challenging environmental education and hands-on instruction, correlated to state education standards, to participating teams of high school age students. Throughout the year students learn about the resource topics of aquatic ecology, forestry, soils/land use, wildlife, air quality, and an emerging environmental issue. Students also develop

an oral presentation relating to the Current Environmental Issue, with 2013's focus on Sustainable Rangeland Management. Students utilized problem solving techniques, teamwork skills, and subject matter gained during study sessions to cross the finish line as Envirothon elites.

"The main benefit student's gain is a greater appreciation of

the wonders of nature," said Cathy Law, Envirothon Advisor for New Paltz High School. "The detail required in the Envirothon is considerable, so students spend a long time learning about the finer points of field biology and agronomy. The second benefit is the Envirothon can inspire and prepare students for a career in field biology or agriculture."

Local Conservation Districts sponsor and organize county or regional competitions. Every May, winning teams from each regional competition are invited to



Mount Academy Team from Ulster County NY beat 57 teams at the North American Envirothon in August 2013 at Montana State University to become the first NY team to win the entire competition.

the NYS Envirothon. This two day event gives students the opportunity to meet like-minded peers, refine teamwork skills, experience an overnight stay at a college, and let their knowledge of natural resources shine. The 2013 NYS Envirothon occurred at Morrisville State College.

First place teams from each US State and Canadian Province compete at the Envirothon "finals". The 2013 North American



Envirothon was held in Montana where New York State's very own Mount Academy team from Ulster County achieved the highest

scores to become the international champions and first ever NY team to win. Neal Horning, Mount Academy advisor, detailed, "Through studying the Envirothon's content areas (aquatics, soils, forestry, wildlife, and current issues), students become actively engaged in learning about the natural world around them and thereby gain a greater knowledge and respect for the environment and its conservation. The competition also fosters important interpersonal skills such as teamwork, collaborative problem solving, and oral communication."

The Envirothon relies on sponsorships and volunteers to run the successful event. To get involved or learn more about the NYS Envirothon, contact your county Soil and Water Conservation District or visit <http://www.nysenvirothon.net>



First place teams from each regional competition convened at SUNY Morrisville to compete for scholarships and a chance to advance to the North American Envirothon.



Eco Education

Education is an inherent part of what Conservation Districts do to protect, conserve, and enhance the natural resources of New York State. Districts host workshops, conservation tours, and outdoor educational events to engage residents and tourists from across the state. In 2013 over 530,000 individuals partook in environmental education opportunities offered by local Conservation Districts.

Herkimer Conservation District presented to 455 fifth grade students on farm safety issues during an annual Farm and Home Safety Day. Presentations included discussions on farm and recreational equipment, animal safety, and poison ivy awareness to name a few. Across the state over 21,000 people were educated at Farm Safety Day events held by Conservation Districts within their own counties.

The Native Plant Symposium hosted by the Suffolk Conservation District offered professional's continuing education credits to learn about native plants on Long Island. The symposium taught participants about wildflower seed propagation, native pollinators, and proper plant choices for the region.

The Wayne Conservation District sponsored a Summer Water Education Series with the County Water Quality Coordinating Committee in 2013. Residents were invited to learn about landowner waterfront management, landscaping for water quality, septic systems for homeowners, and composting for water quality.



Scotts Naturals Award

As a recipient of the Scott's Naturals™ Award, the New York State Soil and Water Conservation Committee (SWCC) distributed \$50,000 in funding in a manner that rewards residents across



Volunteers plant trees and shrubs at Bennett Beach to protect the water quality of Lake Erie.

the State and supports the efforts of our local watershed groups and Soil and Water Conservation Districts (SWCD). New York currently has eight major watershed coalitions that are focused on work implemented through SWCDs. Each watershed coalition was awarded \$5,000 to implement one project that promoted planting trees and forest stewardship. Awards were leveraged for total project funding of almost \$73,000.

The Lake Erie Watershed Protection Alliance (LEWPA) eradicated 56 acres of invasive species and planted native trees in its place within Times Beach in Buffalo. Funds were also used to plant trees and shrubs for wildlife habitat and beach grass to protect the natural sand dunes from erosion at Bennett Beach.

The Finger Lakes – Lake Ontario Watershed Protection Alliance (FLLWPA) installed a demonstration rain garden at Long Point Park in the Conesus Lake and Genesee River watershed. The installation of a demonstration rain garden at Long Point Park will encourage additional rain gardens and green infrastructure practices to be built on private property. These practices help mitigate stormwater pollution, nutrient input, and erosion and sedimentation problems in the watershed.

The Champlain Watershed Improvement Coalition of New York (CWICNY) used the funding to plant native trees, shrubs, and ground cover on an 11 acre area of a new public park being built to overlook the East Branch of the Ausable River. This section of the river was hard hit by the flooding caused by Hurricane Irene and was recently restored using natural stream stabilization techniques. The Ausable River is nationally recognized for trout fishery, high water quality, scenic gorges, and recreational areas in the Adirondack High Peaks region.



Rain garden at SUNY Orange installed by Lower Hudson Coalition of Conservation Districts.

A rain garden was constructed on the SUNY Orange campus located on the Hudson River waterfront by the Lower Hudson Coalition of Conservation Districts (LHCCD). The existing stormwater catch basin draining road and walkway areas was retrofitted to create a stormwater treatment and infiltration area using plant material. Signage was also installed to educate students and campus visitors of its benefits.

The Long Island Conservation Districts worked together to install a rain garden at the Cold Spring Harbor Library and Environmental Center. The rain garden will help protect water quality in the Oyster Bay/Cold Spring Harbor area which is a critical habitat for commercial oyster and clam harvests. In addition, Oyster Bay located off the north shore of Long Island is designated as a NYS Significant Coastal Fish and Wildlife Habitat for its importance to migratory waterfowl and several fish species.

The New York City Conservation District engaged fourth and fifth grade students in forest restoration efforts in Inwood Hill Park, Manhattan. Students removed garlic mustard, a persistent invasive weed in the forest interior and planted tree saplings and herbaceous plants. During the field trips the students were taught by Conservation District and NYC Park Department staff on forest restoration and management topics.



Riparian buffer restoration on the Schoharie Creek.

The Mohawk River Coalition of Conservation Districts recruited over 65 volunteers for a planting project at the Mattice Farm on the Schoharie Creek. This section of the Schoharie Creek suffered tremendous damage from Hurricane Irene in 2011, which resulted in the loss of riparian tree species along the creek. Riparian buffers control erosion, nonpoint source pollution, water quality degradation, and the spread of invasive species. Nonpoint source pollution is caused by runoff that picks up and carries natural and human generated pollutants to local waterbodies. A Riparian Corridor Management Plan was developed by conservation districts and the NY Department of Transportation. Over 900 trees were provided through NY Department of Environmental Conservation.

The St. Lawrence River Watershed Project (SLRWP) worked with the Village of Canton to replace street trees that were removed during a reconstruction project. Street trees provide canopy cover, storm water infiltration, reduce heat island effects, and improve aesthetics of the community. Fifty-one trees were purchased or donated and planted with the help of conservation districts, Canton Tree Committee, State and local Highway Departments, and volunteers.



Susquehanna River riparian buffer planting by USC.

The Upper Susquehanna Coalition (USC), is a network of 19 Soil and Water Conservation Districts in NY and PA covering the headwaters of the Susquehanna River. USC staff planted 260 potted trees and shrubs along the banks of the Susquehanna River in Fortin Park, Oneonta, NY. The plantings will help establish a forested riparian buffer along the river where the US Fish and Wildlife Service completed a stream rehabilitation project. Riparian buffers are important elements in the landscape that stabilize streambanks during high flows, provide food and cover for wildlife and capture water-borne nutrients and sediment before entering the watercourse.