

Soil & Water Conservation Districts

2012 Annual Report

New York State Soil & Water Conservation Committee

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

The New York State Soil and Water Conservation Committee (SWCC) operates as an agency of the state within the Department of Agriculture and Markets. The SWCC works to establish policy to guide the 58 Soil and Water Conservation Districts, assist with District operations, support agricultural conservation and natural resource management, and promote cooperative conservation in concert with state, federal, and private partners on soil and water conservation. Voting members of the State Commit-

tee are appointed by the Governor. Advisory members include: NYS Dept. of Ag & Markets, NYS Dept. of Environmental Conservation, NYS Dept. of Health, NYS Dept. of State, USDA Natural Resources Conservation Service, Cornell Cooperative Extension, Cornell University, SUNY ESF, and the NYS Conservation District Employees' Association.

Outlined in this report are the annual accomplishments of the ongoing work that SWCD's do across the state. Throughout the report you will find information regarding critical initiatives and programs for on-the-ground conservation. The Districts that are highlighted provide a snapshot of the work all Conservation Districts are doing to protect the environment, increase economic opportunities, and enhance the quality of life for all New Yorkers.

LEADERS IN CONSERVATION

The diverse topography and demographics of New York contribute to the State's various environmental resources. Rural in nature, many upstate counties have made agriculture conservation a high priority, while other areas of the state face pressures created by changes in land-use and urban sprawl. The state's urban centers and suburban surroundings are challenged by natural resource concerns including flooding, stormwater runoff, stream degradation, water supply concerns, biodiversity, and climate change. Conservation Districts, with support from the SWCC, have ever evolving programming and services to meet today's environmental challenges.

STATE AID TO DISTRICTS

Conservation Districts received \$3.5 million in State Financial Aid in 2012. State Aid to Districts is administered through the SWCC from the State's Environmental Protection Fund. Districts leverage these funds to receive additional county, federal, and private funding. In 2012 Conservation Districts conducted \$90 million in conservation projects and programs benefiting all New Yorkers.

Photo provided by Onondaga SWCD.

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www.NYS-SoilandWater.org



ENHANCING QUALITY OF LIFE

Districts provide community enhancement programs that stimulate tourism, promote the economy, and provide a better quality of life. In 2012, Districts protected and restored 7,900 feet of shoreline from erosion. They also conducted projects for trail development and maintenance, and open space planning and implementation. In 2012, twenty-five Districts worked to protect and restore natural environments through the development of 146 Open Space Plans and 170 projects on public and private lands. Niagara SWCD, working with the WNY Land Conservancy, restored 38 acres of unused farmland to grassland restoring valuable bird habitat and protecting the land from less desirable land uses.

PUTTING PUBLIC SAFETY FIRST

Public safety and protecting the environment may not be in many organizations' missions but Conservation Districts prove they can go hand-in-hand. In 2012 Districts aided municipalities and private landowners with the installation of 36 dry hydrants for rural fire protection. Fulton SWCD worked with a local Fire Department to build a recreational and flood control pond that included a dry hydrant on public property. The quarter acre pond serves multiple purposes for the community and creates habitat for wildlife. Collectively, Districts completed 168 wildlife habitat improvement projects on 1,700 acres throughout the state.



Franklin SWCD harvesting invasive weeds in Mtn View & Indian Lakes.



Conservation Districts engaged 600,000 NYS residents in 2012.

District education programs foster commitment & action...to make social & environmental impacts in communities.

CONSERVATION BLOCK BY BLOCK

Conservation Districts engaged 600,000 NYS residents in 2012. Community engagement is a critical component of change and development towards sustainable living. From Arbor Day events and organized volunteer clean-up outings to County and State Envirothon Competitions, Districts provide education and community involvement programs that provide awareness and connection to the natural environment. Over 45,000 students participated in environmental education programs put on by Districts. These programs foster the commitment and action necessary for individuals to make social and environmental impacts in their communities.

Backyard Conservation Programs that Districts conduct bring conservation practices to homes across the state. Conservation Districts are an important resource for conservation best management

practices at home. Tree and shrub sales and fish stocking programs are among the most popular Backyard Conservation Programs offered. Native plants that are equipped to handle the climate and soils of our region are offered at reasonable prices. Technical assistance is given to residents in selecting correct tree species and design of field windbreaks, shelter belts, and wildlife plantings. Over 850,000 tree and shrub seedlings were sold in 2012. These trees will reduce carbon dioxide (CO₂) by approximately 78,000 tons* over 20 years aiding in climate mitigation. District staff provided 368 pond consultations on public and private land and sold nearly 100,000 fish fingerlings and grass carp for recreation and aquatic invasive species control.

Invasive species can wreak havoc on the environment, people, and the economy. Conservation Districts take on the costly task of working to eradicate invasive species across the state. Districts treated over 6,500 acres of land for invasive weeds in 2012 to the tune of \$1.9 million. The Franklin SWCD worked with volunteers and partner organizations to harvest 12 tons of Eurasian Watermilfoil from Mountain View and Indian Lakes. This aquatic invasive species crowds out native plants destroying feeding areas for fish. Oswego SWCD monitors and treats Oneida Lake for the invasive water chestnut which depletes native vegetation, alters aquatic habitat, and greatly limits recreational use of public waterways. Onondaga SWCD is working to combat the Emerald Ash Borer by taking inventory and monitoring all ash trees within the county.

*Based on the US Forest Service Individual Total Tree Carbon Calculator for Sugar Maple.

WATERSHED MANAGEMENT

Conservation Districts develop and implement watershed plans in concert with local partners and municipalities. In 2012, 88 percent of Districts were involved in creating or updating Watershed Management Plans. The best management practice systems identified support goals to provide safe and reliable sources of drinking water, reduce nonpoint source inputs to waterways and lakes such as sediment, nutrients, and chemicals while preserving water quality and wildlife habitat.

FLOOD MITIGATION

New York has more than 70,000 miles of rivers and streams throughout the state. Extreme storm events over the past few years have brought Districts to the forefront of emergency management with post-flood stream intervention. Delaware SWCD developed a protocol for Post-Flood Emergency Stream Intervention that calls for working with the streams natural tendencies for post-flood corrective action. Districts completed flood mitigation projects restoring 77,000 acres of public and private land protecting people, property, and the environment. In 2012 Schoharie SWCD turned the flood debris and damage from Hurricane Irene into an opportunity to put 70 people to work through the implementation of a \$1.3 million cleanup project in Schoharie County.

Recycling not only reduces the amount of waste that ends up in the landfill but also reduces the amount of raw materials needed to make new products. Districts facilitate this process by hosting recycling events for tires, agricultural plastics, and even wood waste. Producers across the state are

BIOMASS ENERGY

Conservation Districts in the Lower Hudson Valley; Dutchess, Orange, Ulster, and Rockland in conjunction with the USDA Lower Hudson-Long Island Resources Conservation & Development Council have developed the Hudson Valley Grass Energy Project (HVGE) to promote biomass energy. This collaborative project developed one of the first mobile biomass pellet systems in the US. In 2012, 65 tons of hay were pelletized for biofuel facilities producing energy for a highway facility, a greenhouse operation, and heating several private residences. The purpose of the project is to promote development of a farm-to-user green energy network, expanding production sources and markets for heating pellets from hay, grasses, and other farm product sources. Conservation District representatives were asked to showcase this innovative project

RENEWABLE ENERGY IN AGRICULTURE

at the 2012 Heat Northeast Ag Biomass Conference in Saratoga Springs, NY. Biomass research projects using algae, manure, willows, and grasses for energy production are also being conducted by Franklin, Jefferson, and St. Lawrence Conservation Districts.

ANAEROBIC DIGESTERS

The Cayuga Soil & Water Conservation District built a Community Anaerobic Digester facility that breaks down cow manure and other organic wastes to produce methane gas for renewable energy. The 300kw facility will provide combined heat and power to the facility office as well as a nearby county public safety building and nursing home. The project was funded through a federal grant and has been an excellent learning platform to demonstrate

renewable energy technologies for farmers and communities interested in managing waste to produce energy.

Washington SWCD worked with a local farm in 2012 to install an Anaerobic Digester for energy production on-site. The project was funded thru the Soil & Water Conservation Committee's Agricultural Nonpoint Source Abatement & Control Program grant.

ENERGY EFFICIENCY

Districts assisted several farms in conducting energy audits in 2012. Saratoga and Suffolk Conservation Districts worked with farmers in their counties to complete energy audits to help make their farm operations more energy efficient. Technical assistance was also provided by several Conservation Districts for the implementation of wind turbine projects throughout the state.

Cayuga SWCD Community Anaerobic Digester uses methane gas for renewable energy.



WASTE REDUCTION AND RECYCLING

choosing to recycle their Ag plastics instead of hauling them to landfills or burning them causing dangerous emissions to be released. Districts worked with 207 farmers in 2012 to collect and bale 481,000 pounds of silage bags, bunker covers, bale wrap, and many other types of Ag plastics. Schuyler SWCD held its 3rd Annual

Pesticide Plastics Collection recovering 1,600 pesticide containers for recycling. The containers are sterilized and



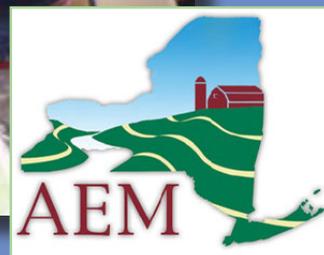
recycled into drain tile for farmland. Districts collected 9,616 tires in 2012 for recycling. Districts also recycled wood waste into mulch from various storm events. The Schenectady SWCD manages the county's yard-waste composting facility and resident recycling center.

STATEWIDE AWARD FOR AGRICULTURAL ENVIRONMENTAL MANAGEMENT



The sixth generation Patterson Family Farm in Cayuga County was the recipient of the 2012 Agricultural Environmental Management

(AEM) Award. Working with the Cayuga Soil & Water Conservation District the Patterson Farm is using cutting-edge technology to increase profits and protect the environment. The 1,000 cow dairy and beef farm invested in a manure irrigation system utilizing state and federal funding for more efficient application of nutrients. They use cover crops and reduced soil plowing practices to limit the loss of nutrients and soil entering nearby Cayuga Lake. The Patterson family provide on-farm tours to show other farmers the environmentally friendly techniques they've implemented over the years.



Warren & Fulton SWCD staff providing technical assistance.

FARMLAND PROTECTION

The declining amount of agricultural land in New York has been a growing concern that Conservation Districts are actively working on. There are 46 Districts who are involved with their County Ag Protection Boards. Districts supported projects and programs that seek agricultural viability in 2012 by assisting over 400 entities with Farmland Protection initiatives. The Herkimer Conservation District aids in implementing the county's Farmland Protection Plan assisting landowners with Ag assessments for tax purposes and reviewing land use variances maintaining farming as Herkimer County's number one industry. Oswego SWCD is working with county legislators to lease vacant county land for agricultural purposes reclaiming a closed landfill and promoting agriculture.

**PROTECTING,
MANAGING, AND
IMPROVING NATURAL
RESOURCES FOR ALL
NEW YORKERS.**

AGRICULTURAL ENVIRONMENTAL MANAGEMENT

New York's Agricultural Environmental Management (AEM) program is a voluntary, incentive-based framework to help farm operators make science-based and cost-effective decisions that meet business and environmental protection objectives. AEM is supported with \$14 million annually through the State's Environmental Protection Fund. Approximately \$2 million goes directly to Districts through the AEM Base Funding Program to provide technical assistance to farms and the balance as cost-share funds through the competitive Ag Non-point Source Grant Program.



Columbia SWCD assists farmer to install fencing to prevent overgrazing.

In its seventh year, the 2012 AEM Base Funding Program provided nearly 5,300 hours of technical assistance to farmers by Conservation District staff, the equivalency of 32 full-time positions. The 52 participating Districts added 605 new farms to the AEM Program. Technical assistance included conducting

382 resource assessments, developing 266 site-specific farm plans, and implementing 259 best management practice systems. Conservation practice systems applied include cover crops, critical area planting, nutrient management, prescribed grazing, exclusion fencing around waterways, and vegetated buffers. Districts awarded 228 farms with AEM awards in 2012, recognizing exemplary producers that are undergoing the AEM assessment, planning, and implementation process.

AEM has become an umbrella framework for all NY agricultural environmental initiatives. The AEM framework has allowed for the expansion of new tools for all different types of agricultural operations. Long Island Sustainable Winegrowing Inc. has expanded the

VineBalance Sustainable Viticulture Program that incorporates AEM assessment worksheets for vineyards and developed a Sustainable Vineyards Certification. In 2012 the nonprofit announced the certification of 10 vineyards encompassing 400 acres on Long Island.

In response to the 2006 Oceans and Great Lakes Ecosystem Conservation Act establishing the ecosystem-based management (EBM) framework, the Soil and Water State Committee has been revamping all of the AEM assessment tools. Following the EBM framework, which takes a comprehensive approach for environmental management, the new AEM tools allow Conservation Districts to address ecosystem issues in addition to water quality issues. A total of 20 AEM worksheets have been redeveloped and used by Districts. A District training was conducted in November 2012 on the use of these new assessment tools. To locate the new AEM worksheets visit: www.nys-soilandwater.org/aem

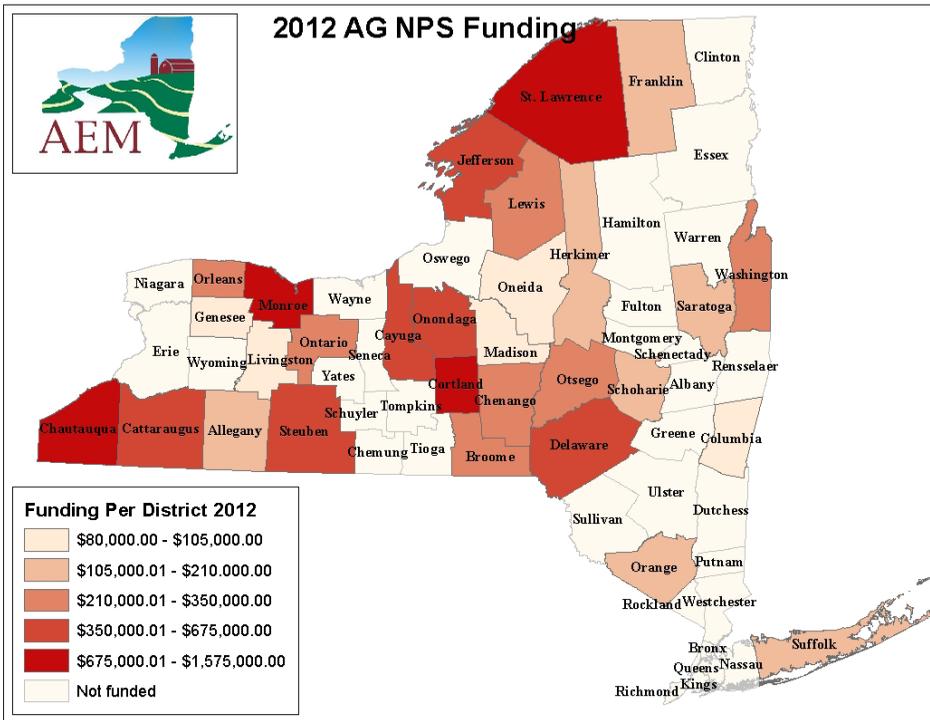
2012 AGRICULTURAL PROGRAM ACCOMPLISHMENTS

Soil & Water Conservation Districts put *Boots to Soil* implementing best management practice systems (BMP) for agricultural conservation. A BMP is a control or technique put into place that prevents pollution and manages resource concerns. Districts funded \$53 million for agricultural planning and implementation of BMP systems.

Cover Crops - 1,424 acres	Milkhouse Waste Systems - 16 built
Waste Storage Facilities - 71 projects	Nutrient Mgmt Planning - 89,000 acres
Barnyard Runoff Control - 80 projects	Silage Leachate control - 39 projects
Conservation Tillage - 13,000 acres	Strip Cropping - 470 acres
Filter Strips - 36 installed	Terraces - 2,650 ft.
Grazing Systems - 40,000 acres	Riparian Buffers - 216 acres



Onondaga SWCD worked with a farmer within the Oneida Lake Watershed to implement best management practice systems for a heavy use area (top, left). A concrete floor was poured in the barnyard & an exclusion fence keeps animals in the barnyard preventing soil degradation, erosion, and runoff (top, right).



AG NONPOINT SOURCE CONTROL GRANT PROGRAM

Under the Agricultural Environmental Management (AEM) framework Conservation Districts are competitively awarded Ag Nonpoint Source Control and Abatement grants to address water quality challenges facing farms in priority watersheds throughout the state. Funded projects reduce or prevent polluted runoff originating from agricultural sources.

In 2012, 169 farms were funded receiving \$11.6 million. Funding distribution across the state can be seen in the map, *2012 Ag NPS Funding*. Conservation Districts administer the cost-share funds to farmers, provide planning expertise for system designs, and provide oversight of each project. Projects included; prescribed grazing and cover crops to prevent soil erosion, and silage leachate and manure management systems to prevent runoff for watershed protection. Since its inception, in 1993, the NPS Grant Program has funded 722 grants providing cost-share funding of more than \$120 million towards water quality projects and improvements.

SOIL CARBON SEQUESTRATION

In addition to water quality benefits, best management practice systems (BMP) used by farmers partnering with Conservation Districts help capture and store ("sequester") carbon dioxide from the atmosphere as organic matter in the soil. Many of the following BMP systems that were applied in 2012 mitigate greenhouse gases while improving soil health and crop productivity.

Conservation tillage reduces the amount of soil disturbance relative to historically intensive tillage practices. This requires less fuel, increases levels of organic carbon in the soil, and reduces erosion by providing cover on the soil surface.

Cover crops are small grains or legumes planted to enhance soil coverage, organic matter, and nutrient recycling after the primary crop has been harvested. Increased organic matter holds more nutrients to reduce leaching and represents a larger pool of carbon stored in the soil.

Comprehensive Nutrient Management Planning by District staff assists farmers to balance nutrient applications of manure and fertilizers with the needs of their crops. Keeping this balance supports nutrient recycling loops between livestock and crops, carbon

capture via healthy crops, and further greenhouse gas benefits through nitrogen management.

Prescribed grazing involves livestock grazing a pasture system on a rotation that allows the vegetation to re-grow between grazing periods. Perennial vegetation can reduce soil erosion and further improve carbon capture and storage.

Filter strips and riparian buffers are strategically placed areas of grasses, trees, and shrubs to catch and filter contaminants from water runoff, and sequester carbon in the soil and vegetation.



George Proios, Soil & Water Conservation Committee Chair speaks at 2012 Inaugural Long Island Green Infrastructure Conference hosted by Suffolk & Nassau Conservation District's.

STREAMSIDE CONSERVATION

Conservation District streamside conservation programs offer benefits to the community and the environment. Over 1,500 projects were completed throughout the state in 2012 including 140,000 ft. of riparian buffer plantings, 900 acres of wetlands restored, equivalent to the size of Central Park, and 286,000 ft. of streambank stabilized. These projects improve water quality by filtering out pollutants and removing sediment which can reduce oxygen levels in the water, killing fish and promoting algae growth.

WATER QUALITY MONITORING

Conservation Districts spent over \$500,000 in 2012 to monitor and sample waterbodies throughout the state. Many Districts collect stream biomonitoring baseline data on the health of streams. Data collection includes a physical site assessment, chemical analysis, and macro invertebrate identification. Most stream invertebrates cannot tolerate polluted water and can indicate healthy water by their presence. Districts also monitor for nitrogen and phosphorus from lawn products, sewage, and animal waste; heavy metals and toxic chemicals from municipal and industrial sources; and sediment from soil in water runoff.

Slow down, spread out, and soak in rainfall. Districts work on Green Infrastructure projects to protect water quality & reduce CSOs.

GREEN INFRASTRUCTURE

Slow down, spread out, and soak in the rainfall is the mantra of Green Infrastructure. Conservation Districts have been longtime advocates for green infrastructure or the use of vegetation and soil to manage stormwater where it falls. Absorbing stormwater back



into the ground reduces the amount of polluted runoff entering waterways and alleviates Combined Sewer Overflow (CSO) problems where untreated sewage is discharged into public waterways during storm events. Districts implemented 82 green infrastructure projects in 2012 with a stormwater capacity of over 500,000 gallons of water. Green infrastructure projects included the installation of rain gardens, rain barrels,

bioretention basins, vegetated swales, hydroseeding, and porous pavers. Suffolk and Nassau Conservation Districts partnered in 2012 to offer the Inaugural Long Island Green Infrastructure Conference. The Nassau District also completed a green roof at SUNY Old Westbury to save energy and water on campus. While the NYC Conservation District worked with a multi-residential building in the Bronx to capture runoff from the roof in raised wetland planters.

STORMWATER MANAGEMENT

Stormwater runoff is the major contributor of sediment and nonpoint pollutants in our waterways. In 2012 Districts provided \$1.2 million in stormwater management services to municipalities and contractors. In addition to assessing 1,054 sites for runoff is-

suess, developing or reviewing 185 Stormwater Management Plans, Districts provided the Department of Environmental Conservation endorsed contractor erosion and sediment control training to 2,348 professionals.



Warren SWCD installs a stormwater basin underground.



Westchester SWCD plants around stormwater treatment units for added filtration.