

2005 ANNUAL REPORT

CAYUGA COUNTY SOIL AND WATER CONSERVATION DISTRICT

Regional Methane Digester

Manure digesters work with environmental quality, but must be economically feasible to be implemented. Digesters deal with air quality and phosphorus loading of soils and also produce electricity. While on-farm digesters are built to handle manure from a certain amount of animals, the regional digester has the ability to expand as demand increases.

Over two million dollars in State and Federal grants have been secured by District personnel to fund the regional digester. This makes the digester the biggest project the District has ever taken on. Funds came from the New York State Research and Development Authority, the

United States Department of Agriculture Rural Development, and the Environmental Protection Fund.

German technology is being used by the District to build an above ground mesophilic hydraulic-mix methane digester. The manure is agitated by downward pressure, eliminating the need for moving parts that ultimately need to be repaired. The digester will use manure from three dairy farms, a potato processing plant, and used fry oil from area restaurants.

The digester will convert thousands of tons of waste annually



A methane digester similar to what will be built behind the Natural Resource Center.

into energy (heat & electricity) which will be supplied to three county facilities.

On Farm Methane Digesters

Two farms in Cayuga County currently have on farm manure digesters. The Patterson Farm and Twin Birch Farm came to the district with concerns about manure storage and disposal. The answer to their questions was an on farm manure digester.

Today, farmers are building manure digesters more for the environmental aspects rather than the power produced. Farmers don't get enough back for the excess power they pump into the grid when compared to how much it costs to build and maintain a methane digester.

The New York State Soil and Water Conservation Committee has funding for agriculture non-point pollution projects that can only be applied for by Soil and Water Conservation Districts. This is a competitive process among all Soil and Water offices in New York State. Cayuga County secured funds for both the Patterson Farm and Twin Birch Farm to build manure digesters. Funding was also received from the Environmental Protection Fund and Rural Development with the rest of the money coming directly from the farmers.

Both manure digesters are concrete structures built in the ground. The natural heat from the ground maximizes the work done by the micro-organisms and helps speed up the digestion process. The digesters are plug flow systems meaning that the manure goes in then comes out after the methane gas is harnessed.

Digesters solve air quality issues and phosphorus loading of soils. The odor is essentially removed from manure after the methane gas is removed. Phosphorus loading of soils is diminished because the manure is broken down and reduced in volume before it is land applied to fields.

Ongoing Projects

Trade-A-Tree

After Christmas, residents were invited to bring their used Christmas trees to the Natural Resource Center for recycling. In return, they received a free balsam fir transplant. The Christmas trees were ground up and the chips were used on county projects. The transplant trees were available for pick-up in May. This year, over 650 people took advantage of this program.

Tree Sale

Every spring, the District has trees, shrubs, and groundcover plants for sale. This is an opportunity for residents to purchase high quality plants at a low cost. Backyard conservation has become more popular in recent years and participants have greatly increased since its implementation 35 years ago. This year, approximately 250 people participated in the sale.

Tire Recycling

District staff partnered with local volunteers to collect old tires. This was done to minimize mosquito breeding sites and reduce the threat of West Nile Virus. Over 11,400 tires were recycled.



Recycled Christmas Trees waiting to be chipped.



Old tires collected by the staff for recycling.

Information and Education

Boat Tours

Now in their fourth year, the River Otter and Elizabeth E. boat tours reach many patrons throughout the summer months.

The River Otter boat tour takes place on the Seneca River in the towns of Weedsport, Port Byron, and Cato. The impact the Erie Canal had on the surrounding towns is dis-

cussed during the tour while patrons enjoy the beautiful scenery and keep an eye out for river otters, bald eagles, and blue herons.

The Elizabeth E. boat tour takes place on Little Sodus Bay in the town of Sterling. History of the bay, including early residents, ship wrecks, and battles are discussed aboard the boat as pas-

sengers enjoy the sights and spot wildlife.

During Tomato Fest, boat tours were given on Owasco Lake by District staff. The history of Owasco Lake and environmental practices implemented on its shores are discussed while visitors enjoy the scenes.

This year 25 boat tours were given, reaching over 300 people.



Patrons aboard the Elizabeth E. Boat Tour.

Owasco Lake Dredging

Severe storm events over the past several decades have accelerated soil movement into Owasco Lake. With the soil comes nutrients and pathogens that encourage the growth and distribution of invasive plant species.

An area was dredged along the south end of

Owasco Lake, parallel with the shore. The dredging removed approximately 6,000 cubic yards of sediment that had accumulated on the bottom of the lake. The dredging was done to remove the built-up materials and pathogens that were present in the lake. These substances degrade the quality of the

water and the lake ecosystem.

Initially done to improve lake water quality, the deep channel also improves fish habitat and enables shoreline property owners to access deep water.



District staff dredging along the South shore of Owasco Lake.

2005 Regional Envirothon

The Envirothon is a unique approach to environmental education that combines hands-on learning, academic competition, and the outdoors. The goal is to motivate students to develop their skills and grow into environmentally-aware, action-oriented adults.

The 2005 Regional Envirothon was held at Beaver Lake Nature Center on April 27 & 28. The Regional Envirothon gath-

ers teams from high schools in Onondaga, Chenango, Madison, Cayuga, and Wayne Counties to compete in the topics of soils, water resources, forestry, wildlife, and current environmental issues. The top scorer in each county advanced to the New York State Envirothon in May. This year, the Weedsport High School team represented Cayuga County in the New York

State Envirothon.

The Envirothon began in Pennsylvania in 1979 and New York in 1990. It has since spread across the nation and has become more popular in recent years. Today, more people are aware of our nation's environmental concerns and more teachers recognize environmental science as an important topic.



The 2005 Weedsport High School Envirothon Team.

Nutrient Management

A concentration of animals in any area poses potential environmental concerns. Runoff from farm fields and feedlots can contaminate ground and surface waters with nitrogen, phosphorus, bacteria, and sediment. Comprehensive Nutrient Management Plans (CNMP) are a way to address environmental issues.

A CNMP is a total farm plan that takes into account three main things: fertilizer and manure application, crop rotations, and point source pollution. When applying manure and fertilizer to fields, leaching and runoff must be considered. Crop rotations are important to control soil loss and protect the integrity of the soils. Point sources of pollution are covered in

CNMPs so that farmers are aware of potential violations and can implement BMPs.

The District Nutrient Management Specialist completed three CNMPs in 2005 and worked with farmers on aspects of existing plans.

Funding for CNMPs and their applications may be applied for through grants from the EPA .

"Comprehensive Nutrient Management Plans (CNMP) are one way to address environmental issues."

Manure Storage Systems

Improperly stored manure can contaminate surface and ground water with nutrients and disease causing organisms. In an effort to reduce water pollution, the District has partnered with the Natural Resources Conservation Service (NRCS) to assist farmers with manure storage.

District staff and NRCS technicians evaluate the need for storage systems, conduct on-farm surveys, and give soil information to farmers and landowners. Final plans are reviewed and approved by a professional engineer before they are implemented.

Funding may be applied

for through the Environmental Quality Incentive Program (EQIP).

In 2005, the District and the NRCS staff worked with five different farms and their manure storage concerns.



A manure storage pit under construction.

AmeriCorps

The AmeriCorps program was created in 1993 by President Clinton. This program is seen by some as recent work in our Nation's history of encouraging and supporting civic engagement. AmeriCorps proves their mission of getting things done by being an intensive service which meets the nation's critical needs—specifically in the environment.

Conservation District

The 2005 AmeriCorps members worked on projects ranging from streambank stabilization to the survey and design of ponds. They assisted with Fluvial Geomorphology projects at the Owasco Lake Inlet and Grout Brook, the Envirothon, tree plantings, and other projects to reduce soil erosion.

Homeland Security

Homeland Security members are committed to creating a safer Cayuga County. The team surveyed county buildings to evaluate crime prevention measures. They then prepared emergency response maps to assist area first responders in the event of an emergency. Along with assisting with conservation, they have also conducted drills and attended training on weapons of mass destruction in Alabama.



The Homeland Security team.



AmeriCorps members working on a drainage swale at Emerson Park.

Waterfowl Waste Management Control

In previous years the beaches on Owasco Lake had to be closed due to higher than allowable counts of fecal coliform. The District determined that geese were responsible for the contamination of the water. The District first partnered with a consulting firm in 2003 to utilize Border Collies to change the behavior of the geese. Border Collies are a goose's natural

predator and were very effective at removing the geese from the area. The geese are welcome as seasonal visitors of the lake, but discouraged as full-time residents.

2005 saw a dramatic decrease in the number of geese on Owasco Lake and the bathing beaches in particular. From over 100 resident Canada geese in the beginning,

Owasco Lake recently had only about 20. As a result of the goose management program, the levels of fecal coliform were drastically reduced and the bathing beaches were closed less frequently.

Due to the significant change in and around the lake, the District will continue the program in 2006.



Meg, a Border Collie, chasing Canada geese from the beach at Emerson Park.

Graze NY

Graze NY was developed in 1995 with the help of Congressman Walsh. This program gave livestock producers technical assistance and information about Prescribed Grazing through workshops, informational tours, and personal contacts. "Prescribed grazing" is the controlled harvest of vegetation with

grazing or browsing animals with the intent to achieve a planned objective. The main goal of prescribed grazing is to improve water quality by reducing non-point source pollution.

A District Graze Technician works with farmers to design and construct rotational grazing pastures.

Funding is made possible by Congressman Walsh.

In 2005, the District Graze Technician assisted over 100 farmers with grazing plans and fencing systems.



A rotational grazing system in Cayuga County.

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On the cover (clockwise from top): grazing cows, round hay bales in Ledyard, FGM at the Owasco Lake Inlet, students at the Regional Envirothon.

Created in the 1930's, soil and water conservation districts have been conserving and protecting our natural resources for over 70 years.

The Cayuga County Soil and Water Conservation District was formed on August 8, 1944. Originally created to distribute educational material, the District is now actively involved with the agricultural community.

Since it's creation, the District has adhered to it's goal of enhancing and protecting Cayuga County's natural resources through hands on implementation of Best Management Practices (BMPs).

www.co.cayuga.ny.us/soilcon/

Streambank Stabilization

Sediment is the biggest contributor of water pollution in Cayuga County. In response to this, the District is involved with many streambank stabilization projects. In 2005, the district assisted several towns and restored or stabilized 12,800 feet of land along streams and watercourses.

District personnel worked with landowners to evaluate streambanks and formulate a plan. The district applied for the proper permits and worked with contractors to install the required equipment. The streams often require rip-rap and vegetative cover to hold the soil in place. Rip-rap is large rocks that are placed on the bank to hold the soil in place. Vegetative cover holds soil in place and also creates shade for stream inhabitants.

Fluvial Geomorphology

Fluvial Geomorphology (FGM) is the science used to assess the shape and form of a stream in order to reduce streambank erosion and the amount of sediment entering the water body. 2005 saw the implementation of FGM on the Owasco Lake Inlet and Grout Brook.

Funding from the NYS Coastal Management Program made the evaluation of a two mile stretch of Owasco Lake's largest tributary possible. Based on the reaches of watercourse that needed help, a plan was created to stabilize the banks and create stream corridor habitat. Planning, referred to as natural stream design, was carried out. Eroding streambanks were stabi-



lized with vegetated rip-rap which is a mixture of stone, soil and plant materials that act as a new bank.

Two thousand feet of bank was stabilized throughout four sites with vegetated rip-rap. Over three thousand trees were planted along the banks as stabilization and to create shade for fish, invertebrates, and other stream inhabitants.

Completed Owasco Lake Inlet.