

#### **Mission Statement**

It is the mission of the Cayuga County Soil and Water Conservation District to enhance and protect the natural resources of Cayuga County through "hands on" implementation of best management practices.

### **Cayuga County Soil and Water Conservation District**

#### **STAFF**

Sandy Huey Watershed Program Manager

Doug Kierst, CPESC, CPSWQ Conservation District Field Manager

Valerie Horning Conservation District Technician

John Fraser, CPESC, CCA Nutrient Management Specialist

Jason Cuddeback, CCA Grazing Specialist

Katie Jakaub Owasco Lake Watershed Inspector

Wanda Jakaub Principal Account Clerk

Lisa Miller Senior Typist
Mike Riley Foreman
Karl Radcliffe Foreman

Al Noga

Motor Equipment Operator

Pat DeVoe

Tim Lozier

Sean McCarthy

Motor Equipment Operator

Motor Equipment Operator

Motor Equipment Operator

Denise Dixon Cleaner

#### **USDA Natural Resource Conservation Service**

Katherine Schor District Conservationist
Shannon Bozeat Soil Conservation Technician

Steve Stroka Area Biologist

#### **Board of Directors**

Ray Lockwood

James Young

Roger Mills

Paul Pinckney

Steve Nemec

Charles Roberts

Dale Kehoe

Chairman, Member at Large

Vice Chairman, Farm Bureau

County Legislature

County Legislature

Member at Large

Member, Grange

Member at Large

# Awards Received in 2011 NYACD 2011 Diversity Award

The Cayuga County Soil & Water Conservation District is the proud winner of the NYACD 2011 Diversity Award which was presented to them at the NYACD Annual Meeting in October 2011, in Utica, NY. The award represents the diverse programs and jobs performed by the District over the years.

### From the Executive Director

As you will see in this report, the Cayuga County SWCD's programs and services are many in number and quite diverse. These accomplishments by our Staff and Directors are a model for many Districts. We have always found new and innovative ways to accomplish our mission and we will continue to do so going forward.

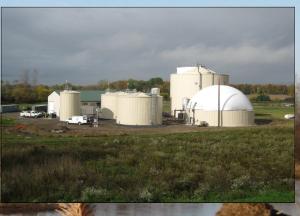
Looking ahead to 2012, the District will be stressed dealing with a \$50,000 cut to our program allocation from the County. The "do more with less" motto is alive and well here at the District. The reality associated with this method of management is that at some point, it eventually catches up to you. The challenge of balancing constant long term budget constraints with the need to update our aging equipment is becoming more significant. This was on display recently when we suffered a breakdown to our aquatic vegetation harvesting equipment during the peak season of summer. To sustain a budget cut during these tough times also has a cumulative effect on our ability to leverage our program resources, towards obtaining additional State and Federal grant dollars that are needed throughout Cayuga County to protect our indispensable natural resources.



As we go forward with a positive attitude and careful, frugal management, we will be able to provide, at some level, the programs and services that the taxpayers of Cayuga County have become accustomed to. The key to success will be working together with a larger number of agencies and departments to better utilize taxpayer dollars that are available. This report demonstrates that partnering has been a long standing policy of the Cayuga District and it will continue to be in the future.

## Cayuga County Regional Methane Digester





If you drive down County House Road, you may have noticed a large building, a white dome and several tanks located behind the District's campus. This is the Cayuga County Regional Methane Digester.

A digester is basically a tank that is filled with manure and other organic waste. The tank is heated to around 100 degrees and the mix is seeded with organisms that "digest" the material. As the material is reduced, methane gas is given off as a by-product. Cows do this naturally, which makes them one of the largest contributors to greenhouse gases in the atmosphere. In the digester, the gas will be captured and used to fuel a large generator that will produce electricity and heat for the Natural Resource's campus, the Public Safety Building, and the Nursing Home. Excess electricity will be sold back to the grid.

Once the digestion process is complete, the manure will be further processed into solid and liquid components. The liquid will be used by area farmers as a nutrient source, while the solids will be combined with wood chips and mulch that has been processed by the District's tub-grinder. The compost material will be used in District conservation projects and made available to other County Agencies. The Digester will be a state of the art plant, with technology currently used in Europe, and is introducing new methods of gas cleaning to the County and Region.

### Brownfield Site, Town of Meridian

The Meridian Brownfield Site is a 0.41 acre parcel of land in the Village of Meridian. The property has a long history of petroleum storage and handling, beginning with a 350 gallon gasoline tank installed in 1911, and evolved into an automotive service station by 1934. In the 1980s two gasoline tanks were closed and filled in by the owner, however the site continued to be used as an automotive service station until 1998.

In April of 2000, Phase I and II Environmental Site Assessments were conducted. The major findings of the Phase II ESA was that petroleum was impacting site soils. The results also showed that one area was contaminated with lead, believed to be from lead -acid battery servicing or disposal.

The Cayuga County Soil and Water Conservation District completed portions of the site restoration work on behalf of the Cayuga County Planning Department. Utilizing CCSWCD equipment, the district installed a cutoff swale on the eastern edge of the property, filled in an existing open pit area of excavation, installed an average of five inches of topsoil throughout, and completed conservation seeding and mulching of the site. The future of the site is still being determined.



### **Emerson Park Pavilion Renovations**



During the fall of 2011, the Cayuga County SWCD worked at Emerson Park on the Pavilion Renovation and Addition Project. The goal of the project is to preserve and enhance the structural integrity, functionality and utilization of the Emerson Park Pavilion.

The work completed by the District included the installation of 850 feet of waterline, including 2 new hydrants. The new line will allow the Pavilion to be utilized year-round. A 0.25 acre bioretention basin, 550 feet of access road, over 1,000 feet of installed silt fence, and 2 acres of seeding and mulching were also accomplished. Twenty-two stormwater inspections were conducted throughout the duration of the project to ensure that practices were being used to prevent sediment from reaching Owasco Lake and the Owasco River. The Pavilion renovation and addition is expected to be completed by the spring of 2012.

# Cayuga County Industrial Development Agency Eagle Drive Business Park

The Cayuga County Industrial Development Agency has been working diligently to attract businesses to their Industrial Park located in the Town of Aurelius. The potential impact of this new business development for the local economy is significant, however the area that is available for development was limited due to the lack of infrastructure. This year, Phase 1 of the site's development was improved with the help of the Cayuga County Soil & Water Conservation District.

At the CCIDA location, the SWCD has completed tasks to date which include the installation and maintenance of erosion and sediment controls, new road culvert installation, upgrade of a pre-existing culvert crossing, the stripping and stockpiling of topsoil, performing the required cuts and fills for the new roadway and the installation of the new road base. The SWCD was able to spread and roll the base material while the CC Highway Department trucks assisted with the delivery of the stone. To date, over 1,300 feet of a solid, compacted gravel and crusher run base has been installed. New water and sewer distribution lines have also been installed by a local contractor.



### Stormwater Management

Originating from precipitation events and snow melt, stormwater can pick up many different forms of pollution, especially in urban areas, as it flows over impervious surfaces and open soils en route to its destination which is usually a local body of water. For this reason it is important to use stormwater management techniques, as to mitigate both volume and pollutant load of stormwater through best management practices.

#### **Storm Water Management Training**

The NYDEC mandates that all contractors working on sites that create one or more acre of soil disturbance obtain a State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges. All contractors working on SPDES sites are required to complete a four hour Erosion and Sediment Control Training Course. This course familiarizes participants with the permit, their responsibilities under the permit, site inspections, and several of the best management practices, thus resulting in reduced runoff and better water quality. The Cayuga County Soil and Water Conservation District held five Erosion and Sediment training courses in 2011. Our district is fortunate to have two employees Certified in Erosion and Sediment Control (CPESC) on staff, one of whom is also a Certified Professional in Storm Water Quality, to educate and assist with local stormwater issues.

### Village of Moravia, Stormwater System Replacement

The Cayuga County Soil and Water Conservation District worked with the Village and Town of Moravia as well as the Cayuga County Highway Department on improving a stormwater management system located on West Avenue in the Village of Moravia. The project included replacing 420 feet of an old 30 inch corrugated metal stormwater pipe, with 700 feet of 30 inch double wall high density polyethylene pipe. The work also included 500 feet of ditch grading below the rock outlet of the new pipe. The new pipe will be better at handling stormwater coming off the hillside above the village and it will last longer than the old metal pipe. Two additional manholes were also installed along the pipe to allow the Village to maintain the new stormwater system.



## Critical Area Seeding

Soil erosion and sedimentation is one of the leading causes of water quality degradation. The CCSWCD uses many tools to establish grass cover on bare soils. From our 1,000 gallon hydroseeder to hand seeding, the District can quickly respond to requests for assistance. The Cayuga County Soil and Water Conservation District provides hydroseeding for County, Town and Village governmental departments. In 2011, the District completed 11 acres of critical area seeding including road and stream banks, highway ditches, steep slopes, and areas of disrupted soil due to construction.





## Agricultural Environmental Management (AEM)

Farm planning and natural resource protection in New York begins at the local level through the Agricultural Environmental Management (AEM) program. The AEM program helps farmers implement environmentally and agriculturally beneficial practices. Through the AEM process our District is able to document the importance of farming in Cayuga County, provide technical assistance to farms, and help put local farmers in touch with grant funding available for conservation practices.

Some of the conservation practices applied in Cayuga County include: Animal Trails and Walkways, Comprehensive Nutrient Management Plans, Cover Crops, Critical Area Planting, Subsurface Drainage, Waste Storage Facilities, Fencing, Filter Strips, Grazing Plans, and Stream bank and Shoreline Protection. 2011 AEM Accomplishments

#### The AEM program has five different Tiers:

Tier I– Inventory current activities, future plans and potential environmental concerns.

Tier II— Document current land stewardship: assess and prioritize areas of concern.

Tier III— Develop conservation plans addressing concerns and opportunities to reach farm goals.

Tier IV- Implement plans utilizing available financial, educational and technical assistance.

Tier V- Evaluate to ensure the protection of the environment and farm viability.

Tier I-	1
Tier II-	1
Tier IIIA-	1
Tier IIIB-	1
Tier IV-	2
Tier VA-	3

#### **AEM aims to:**

- Provide environmental stewardship
- Protect our food supply
- Maintain the rural economy
- Impact water quality
- Impact fish & wildlife habitat
- Open space, and scenic vistas
- · Impact air quality and energy
- Improve/maintain viability/ competitiveness
- Promote good neighbor relationships

### To achieve these goals, AEM will:

- · Document farmer's environmental stewardship
- Provide a comprehensive look at environmental risk and opportunities on farms
- Provide information that can be used to make decisions on the use of limited resources by farmers and resource managers
- Prioritize and prepare farms for implementation considering all available funding sources
- · Promote progressive systems-based conservation planning that analyzes the entire farm
- · Identify agricultural benefits to the community











#### **BOOTS TO SOIL...**

The District is working with the Seneca County SWCD and Onondaga County SWCD to implement Best Management Practices under the Round 17 Ag. Nonpoint Ag. & Markets State Grant. Soil and Water Districts cooperating together to put BOOTS TO SOIL, implementing BMP's to improve water quality to our lakes, rivers and streams. Total project funded was \$759,914.40 to implement grazing and manure management.



### Agricultural Implementation— Graze New York





### **Conservation No-Till Seeding**

The District continued to work with local farmers and conservation programs on seeding projects with our no-till seeder. The District's 11 foot wide no-till drill can handle the variety of seed types used for pasture, hay, wildlife habitat, and food plots with minimal soil disturbance. In 2011 the district seeded over 32 acres of pasture lands and fields.

Prescribed grazing utilizes Best Management Practices (BMP's) to help improve animal forage while reducing the movement of nutrients into water bodies. This is done by encouraging the establish-



ment of healthy vegetated pastures for animal forage, implementing perimeter fencing, pasture/hay land plantings, animal walkways and watering systems prevent animals from roaming into hydrologically sensitive areas that could pose a water quality issue.

The District Grazing specialist works one-on-one with farmers all over the county in developing new, expanded, or enhanced rotational grazing plans. The process and resulting product helps farmers make decisions that improve profitability and time management while also protecting natural resources and making progress toward sustainability. The grazing plans address these areas:

#### Pasture quality assessment

- Soil characteristics and sampling for soil nutrient analysis
- Grass species identification and seeding recommendations
- Forage yield potential and sampling for forage nutrient analysis

#### Stocking rate recommendations

- •Enough acres for the size and number of livestock
- Paddock sizing and rotation schedule
- Areas reserved for mechanical harvest, bird habitat, or feed stockpiling
- •Supplemental feed plan if needed due to limited acres, nutrition needs, or drought

#### Infrastructure improvements, planning & cost estimation

- Perimeter fencing
- •Water supply & delivery system
- Animal laneways & access roads

### Funded Rd. 17 Agricultural Nonpoint Source Projects for Farms

Owasco Lake Watershed- \$172,068.00

Cover Crop Seeding- \$50,500.00

Cayuga Lake Watershed- \$75,090.00

Seneca River Watershed- \$283,465.00

### **Conservation Mowing**

The CCSWCD uses two mowers in its conservation mowing program. The boom mower has a floating brush-hog style head on an arm that gives it a reach of over 15 feet. It is best for trimming back overgrown hedgerows, ditches and roadsides. The "bat-wing" deck mower can mow 15 feet in one pass, making it ideal for overgrown pastures and field conservation programs. Over the last few years, the District has been increasing the number of acres mowed and trimmed. In 2011, SWCD mowed 133 acres of land and approximately 66 miles of conservation ditches.



## **Aquatic Vegetation Control Program (AVC)**

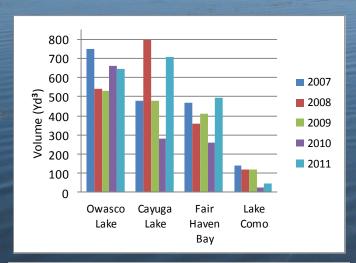
Cayuga County is home to a very diverse network of waterbodies. Within the county, you will find Lake Ontario, Cayuga, Owasco, and Skaneateles Lakes. In addition there are several smaller waterbodies including Lake Como and Otter Lake. These waterbodies are used year round by local residents and visitors alike. The most common complaint from individuals utilizing Cayuga Counties' beautiful lakes is nuisance aquatic vegetation. Due to nutrient inputs and sunlight, aquatic vegetation is an unavoidable reality in these natural ecosystems. From hindering navigation and swimming, to creating water and air quality issues during mass die off events, aquatic vegetation can dramatically interfere with people's use of the lakes. The Cayuga County Aquatic Vegetation Control Program's objectives are to increase the accessibility and usability of the county's waterbodies, while seeking to leave the lakes as ecologically intact as possible. The AVC program seeks to provide relief to the county's waterbodies where usability has become impaired by dense vegetative growth.

The District's AVC program consists of two boats, an on shore conveyor, and a small dump truck. The largest boat is a paddlewheel type boat that is designed to access heavy vegetation and shallow water. This boat cuts and picks up the weeds. The second boat is a transport boat which is used on the larger lakes to cut down transport time from the cutting area to the truck, increasing the efficiency of the program. The weeds are off-loaded onto the dump truck using the conveyor, and taken to a near by farm where the vegetation is used as compost to enrich the soil.

The AVC program in the summer of 2011 was hindered by many unforeseen break downs, and after inspection by a hydraulic specialist it was determined our harvester had extensive damage to our hydraulic pumps and valves. We did what we could to keep our harvester operational as much as possible, and despite mechanical difficulties we managed to harvest above average amounts of aquatic vegetation from the major waterbodies. The abundant growth of a new species to the lakes, called Stacey Stonewort, mixed with Chara (known as Mat Weed) made the weed bed thicker than usual. Due to timing of our mechanical difficulties some lakes were not able to be completely harvested. Hopefully next year our harvesting will resume to normal.

# In 2011, the Aquatic Vegetation Control Program removed from Cayuga County waterbodies:

- 1,230 tons of Aquatic Vegetation
- 5,191 pounds of Nitrogen
- 443 pounds of Phosphorus
- 2,780 pounds of Potassium



This 5-year AVC harvesting chart compares the variation in the amount harvested year to year in major Cayuga County waterbodies. The chart measures weed removal in terms of the volume of vegetation removed (cubic yards). 2011 was an above average year for weed growth. In total the program removed approximately 1893 Yards<sup>3</sup> of aquatic vegetation.





### Community Recycling Events

The Cayuga County Soil and Water Conservation district is the host site for four significant recycling programs. The District works with the Cayuga County Planning Department and Cornell Cooperative Extension, who act as coordinators of these events. The District assists by making facilities, equipment and staff available. Be on the lookout for dates of the upcoming 2012 recycling events.

- HOUSEHOLD HAZARDOUS WASTE CLEANUP DAY- Is an opportunity for county residents to responsibly dispose of substances that do not belong in normal garbage, such as batteries, oil based paints, and household chemicals.
- HOUSEHOLD ELECTRONICS RECYCLING DAY— Is geared towards the collection and recycling of electronic devices found around the home, such as televisions and computers. These are banned from regular trash since heavy metals inside these devices can contaminate ground water when improperly disposed of.
- **TIRE ROUNDUP** Old tires can be brought in by county residents for a small fee. Tires are then used as an alternative carbon source for the production of steel at Nucor Steel Auburn, Inc.
- **TRADE-A-TREE** County residents have the chance to drop off Christmas trees from the holiday season in exchange for a voucher granting them a free seedling. The trees are chipped with the District's Tubgrinder and used as mulch.





## Wood Waste Recycling

Municipal and commercial wood waste piles can often be difficult to dispose of. With the Cayuga County Soil and Water Conservation District's Tubgrinder and hydraulic shears, large quantities of wood waste can be quickly and efficiently processed into readily usable wood mulch. In 2011, the district used its tubgrinding services to recycle approximately 53,738 cubic yards of woody debris for approximately 24 municipal organizations.

Debris pile AFTER grinding

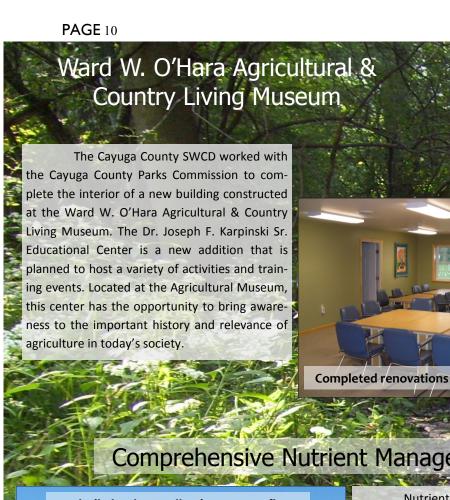


### Broome County Wood Waste Recycling Assistance

Severe weather significantly impacted the Southern Tier Region of NY during 2011. Hurricane Irene and Tropical Storm Lee created disaster areas in the stream corridors of Broome County. The Broome County Soil and Water Conservation District contacted us to assist them in the cleanup efforts of large piles of woody debris that remained as a result of

the storms. Fearful that the large debris may someday wash back into the stream and wreak havoc on local infrastructure, we moved in to the area with our tubgrinder and excavator with hydraulic shears. Once funding was secured by the Broome SWCD through FEMA, the Cayuga SWCD spent 5 days shearing up the woody vegetation and grinding the material into coarse mulch.

**During construction** 



# Comprehensive Nutrient Management Planning

Bunk silo leachate collection system, flows into vegetated treatment area



Draghose manure injection into crop field.



Nutrient management plans help farmers balance their nutrient applications (manure and fertilizer) with the needs of the crops. Soil samples are an important part of this balance, and are taken on all of the fields. The nutrient management plan also defines what crop rotations the farm will be using. These rotations must keep erosion rates below a defined "tolerable" level for the soil types present. By following this plan a farm can reduce erosion and nutrient losses from their fields, thereby helping to improve the water quality. By balancing manure applications, a farm can also reduce their fertilizer costs. Farms that have a Concentrated Animal Feeding Operation (CAFO) permit and farms that are in certain programs must follow their nutrient management plan. However, the farm operator should continue to use his or her own caution and good judgement when applying nutrients, as they are still responsible for keeping those nutrients away from water courses; even when these nutrients are applied according to a nutrient management plan.

In addition to taking a close look at all of the land that a farmer works, a planner must look at the farmstead facilities. Barnyards, feed storage areas, and milking centers are all potential sources of nutrients that need to be addressed. If a component of a farmstead is contributing nutrients to a waterbody, then the plan describes the course of action that will be taken to fix it. A plan that covers both the agronomic (field) practices, as well as the farmstead, is called a Comprehensive Nutrient Management Plan (CNMP). CNMP's must be updated annually.

# Americorps/ Summer Youth Program



Mike Riley assists Americorps assistants in conducting a stream survey along the Owasco Outlet.

In 2011, the District was able to hire five young adults for our Americorps/ Summer Crew program. This program gives college age students a chance to work in nature and the conservation field, while earning an Educational Award applied toward university expenses.

The summer crew is a valuable addition to the CCSWCD work force during our busiest time of the year. This year's crew helped with recycling programs, the AVC program, the Regional Digester, and assisted CCSWCD Staff with many other projects. They had hands-on conservation experience with; hydroseeding, hand seeding and mulching, barley rolls, stormwater management systems, silt fence, soil protection, picking up trash from State owned fishing sites in Cayuga County, completing stream surveys along the Owasco Inlet, and other conservation practices.

This program gives youth a chance to work outside in the natural environment and gain appreciation for the world around them. Many alumni of this program have gone onto successful careers in Soil and Water Districts or other conservation agencies.



### Education



Students at the CNY Regional Envirothon

### Envirothon

The Envirothon is a fun, outdoor, team-based program designed to help students better understand their environment through exploration of ecology, natural resource management, and current environmental issues. The Envirothon combines classroom learning with hands-on field experience focused around five major topics:

•Soil and Land Use •Aquatic Ecology •Forestry •Wildlife •Environmental Issues

It has been stated that 95% of students who participate in the Environthon pursue careers in the environmental field. The Envirothon begins at the local level with three teams representing Cayuga County from Moravia and Weedsport. These teams competed against 25 teams at a regional level initially, then the winning team (from Weedsport) went on to compete at the state level.

### Conservation Field Days

Conservation Field Days is an exciting way to give sixth grade students from around Cayuga County the opportunity to become better acquainted with natural resources and the environment. Professionals from various fields give short programs, enabling the students to learn not only about the subject matter discussed, but also see nature and conservation related occupations in action.

In 2011 there were 12 stations for the students to attend. The stations covered topics such



as; The Trees of Cayuga County, Invasive Insects, Fire Safety, Outdoor Sports and How They Affect the Environment, and more. Students from seven school districts gathered together at Emerson Park over two days in September. After students spent the day at the park, they are asked to go back to their schools and write an essay detailing their favorite station at the field days. Each year the essays are collected and judged, with the top place winners earning recognition and a prize award.

## Owasco Lake Watershed Inspection Program

It was a year of new beginnings for the Owasco Lake Watershed Inspection Program (OLWIP). Since the formation of the Owasco Lake Watershed management Council, they have been working to bring together all of the municipalities within the watershed boundaries to take partnership in improving the health of the watershed. The program underwent a change of inspectors this year as well. Jessica Reinhart stepped down as the head watershed inspector in November after being on maternity leave. The position is currently being filled by one of the seasonal watershed inspectors from the summer, Katie Jakaub.



OLWIP was able to hire 2 seasonal watershed inspectors during the 2011 summer months. Along with logging 486 man hours and completing a total of 185 inspections, inspectors this summer worked closely with the Cayuga County Soil & Water Conservation District, Cayuga County Planning Department, and the Owasco Watershed Lake Association (OWLA) to complete water sampling at 11 different points along the lake shore and inlet. The seasonal inspectors completed a total of 251 boater surveys at the Emerson Park boat launch to create awareness about the harmful effects of aquatic invasives to fisherman and recreational boaters. A basic survey of Sucker Brook and all of its tributaries was also completed by the inspectors to collect data such as substrate types, flow regimes, bank conditions and other general properties of both in-stream and corridor characteristics, to identify additional areas of concern throughout Sucker Brook and aid in its bank restoration to reduce sedimentation. They also completed an inclusive survey of all streams feeding directly into the lake. To acquire more information about Owasco Lake and its watershed, please visit the recently created Owasco Watershed Network (OWN). The network allows property owners to send the program an email with questions, concerns and even provides them the ability to upload photos regarding their inquiries. You can access OWN by going to <a href="https://www.owascolake.org">www.owascolake.org</a>.









Cayuga County Soil & Water Conservation District

7413 County House Rd Auburn, NY 13021

Phone: (315) 252-4171 Ext. 3 Fax: (315) 252-1900

Email: cayugaswcd@cayugaswcd.org Website: www.co.cayuga.ny.us/soilcon