

Owasco Lake Agricultural Conservation Blueprint

By Judy Wright and David Haight





New York State Office

112 Spring Street, Suite 207
Saratoga Springs, NY 12866
(518) 581-0078

newyork@farmland.org
www.farmland.org/newyork

www.facebook.com/americanfarmlandtrustny

National Office

1200 18th Street, NW
Washington, DC 20036
(202) 331-7300

www.farmland.org
www.facebook.com/americanfarmlandtrust

American Farmland Trust is the nation's leading conservation organization dedicated to saving America's farm and ranch land, promoting environmentally sound farming practices and supporting a sustainable future for farms. As the vital link among farmers, conservationists and policy-makers, we're focused on ensuring the availability of the land that provides fresh food, a healthy environment and lasting rural landscapes.

Since our founding in 1980 by a group of farmers and citizens concerned about the rapid loss of farmland to development, we've helped to save more than three million acres of farmland and led the way for the adoption of conservation practices on millions more.

AFT's New York State Office is located in Saratoga Springs with additional staff and consultants working in areas of the state where farmland is at risk of being lost to development. Since 1990, AFT has been a leader on farmland protection issues in the state by developing effective public education programs and advancing agriculture and conservation policies at all levels of government.

Our work in New York focuses in three areas:

- Protected farmland from poorly planned development;
- Promoting environmental stewardship on farms; and
- Strengthening the economic viability of agriculture.

Through our research, education programs and advocacy, AFT helps farmers, public officials and the public strengthen the future for farming in New York.

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NYS Agricultural Environmental Management Program Coordinator

USDA- NRCS Cayuga County District Conservationist

Director of Public Works, City of Auburn

Tompkins County Soil and Water Conservation District

New York Farm Bureau

Person:

David Haight

Judy Wright

Ron Podolak

Jessica Miles

John Mizro

Dirk Young

Keith Severson

Dan Welch

Bruce Natale

Geoff Milz

Scott Harrison

Jeff Ten Eyck

Katie Schor

Vicky Murphy

Craig Schutt

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Executive Summary

Farmers are some of our nation's greatest environmental stewards. This notion is perhaps better exemplified in New York than anywhere else. Almost 10 million residents of New York City and the City of Syracuse receive clean, unfiltered drinking water every day thanks in part to efforts to protect farmland and promote environmental stewardship of that land in watersheds surrounding their water supplies. These actions not only keep water clean, they annually save hundreds of millions of dollars by avoiding the costs of constructing and operating water treatment facilities.

Success in keeping water clean in these watersheds, like many others in New York, is due in part to farmers protecting their land and managing it as a natural water filter, as well as targeted investments made by government agencies in farmland conservation programs and staff to work with farmers. However, at a time of tight budgets at all levels of government, public funds and agency staff to aid farmers to protect and steward their land are under threat. Thus, practical, cost-



effective solutions are needed to enable farmers to pro-actively address water quality problems. Through the development of the *Owasco Lake Agricultural Conservation Blueprint*, American Farmland Trust and its partners have sought such solutions that strengthen the economic viability of farming while addressing water quality concerns in Owasco Lake.

Owasco Lake Watershed

Owasco Lake is the sixth largest Finger Lake with a drainage basin of 205 square miles. The water drawn from Owasco Lake is used primarily as drinking water by the City of Auburn and Town of Owasco and lakefront property owners, with a small amount used for irrigation. While water quality in Owasco Lake has improved since the 1970s, there are still water quality concerns due to nutrients entering the lake. Nutrients are generated by agricultural activities, over fertilization of lawns along the lake shore and tributaries, poorly functioning septic systems, improper disposal of yard waste and overwintering and nesting of waterfowl are often identified as contributing to the problem.

Approximately 55% of the Owasco Lake watershed is in agricultural use including approximately 200 farms. These farms range from small operations of less than 20 acres to larger farms of over 2,000 acres. A majority of the farmland is utilized to produce feed and forage for dairy and beef cows with major field crops grown in the watershed including corn, wheat, soybeans, hay, and sweet corn. Roadside stands, Community Supported Agriculture

farms and orchards are also producing tomatoes, pumpkins, gourds, strawberries, blueberries, garlic, beans and fruit in the watershed as well.

Importantly, agriculture is not only a major land use in the Owasco Lake watershed; it is a critical part of the region's economy. It is estimated that the value of products sold annually from farms in the Owasco Lake watershed is more than \$36 million, with many of these farm businesses closely tied with agribusinesses and food processors such as Byrne Dairy. Additionally, local farms provide fresh, healthy food and farm products to consumers at farmers' markets such as the Central New York Regional Market and farm stands.

Project Goals and Process

The overall goal of the *Owasco Lake Agricultural Conservation Blueprint* is to enable farmers in the Owasco Lake watershed to pro-actively protect water quality while strengthening the region's agricultural economy. Specific objectives include:

- compile existing research and data about the state of Owasco Lake, including actions being taken by farmers in the Owasco Lake watershed to protect water quality,
- identify the practices and activities relevant to agriculture that hold the most promise for improving water quality and reducing barriers to farmers' adoption of such practices, and
- develop specific recommendations for action at the local, state and federal levels of the most viable options for assisting farmers in enhancing water quality in the Owasco Lake watershed.

To achieve these objectives, this project actively sought leadership, participation and support from farmers, landowners and the broader community in the Owasco Lake watershed using the following methods:

Steering Committee

A project steering committee was formed early in the process to guide the project. The committee consisted of 14 people all working in the Owasco Lake watershed including two farmers. The steering committee met three times in person in addition to offering support in information gathering and public outreach.



Interviews

A significant amount of time early in the project was spent conducting confidential interviews with 10 farmers. Those interviewed representing the diversity of the agriculture in the watershed as well as the location throughout the watershed. In addition, an additional eight individuals, who were not farmers, provided input via one-on-one in confidential interviews.

Farmer and Public Forums

AFT organized an Agricultural Forum on March 2, 2011 that was attended by 50 farmers, landowners and agricultural service providers in the Owasco Lake watershed. Information gathered from the Agricultural Forum was used to further define the Issues and Recommendations found in the blueprint. In addition two Public Forums were also held to seek input on the Issues and Recommendations.



Current Agricultural Conservation Activities in the Owasco Lake Watershed

There is a broad network of agency partners, agricultural service providers and others working with farmers in the Owasco Lake watershed to protect water quality. One of the primary funding partners for conservation work is the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) which coordinates the implementation of a series of federal conservation programs. Roughly 60% of the federally funded conservation practices in the watershed received funding from the Environmental Quality Incentive Program (EQIP).

New York's Agricultural Environmental Management (AEM) program is another incentive based program that is actively implemented in the Owasco Lake watershed to help farmers make common cost effective and science based decisions to achieve business objectives while protecting and conserving the state's natural resources. The AEM process is often facilitated with funding from New York's Agricultural Nonpoint Source Abatement and Control Program (ANSACP) and the federal EQIP. As of 2010, 89 farms in the Cayuga County portion of the Owasco Lake watershed had participated in AEM. While there is a relatively high level of participation in AEM, only a minority of participants had implemented AEM plans to protect water quality.

Major Challenges and Recommendations

Four major issues were identified during the development of the Agricultural Conservation Blueprint that needed to be successfully overcome to enable farmers to adopt additional conservation practices and protect water quality in Owasco Lake. These include the following:

Issue 1: Need for Further Research and Technical Assistance on Conservation Issues

Technical assistance about conservation issues is currently delivered by a network of county, state, federal and private organizations including Soil and Water Conservation Districts, Cornell

Cooperative Extension, USDA Natural Resources Conservation Service and Farm Service Agency, private crop consultants and others. This system has changed over the last decade as public sector budgets have become tighter and federal funds have been pushed towards hiring Technical Service Providers (TSPs) to design and install conservation practices. Owasco Lake watershed farmers have expressed interest in greater or alternative technical assistance to comply with environmental regulations or develop and implement strategies for addressing conservation issues.

Issue 2: Barriers for Adoption of Conservation Practices

Farmers in the Owasco Lake watershed expressed deep concern about the cost of installing and maintaining conservation practices to protect water quality. These concerns are particularly strong for dairy farmers recovering from extremely low milk prices in 2009. While farmers are interested in conservation cost share funds, state and federal budget problems may limit the availability of public cost share dollars in future years.

Issue 3: Public Perception of Farm Practices

The agricultural community in the Owasco Lake watershed is concerned that the public frequently does not understand common farm practices and as a result the public frequently sees farming, particularly on larger farms, as a threat to water quality in Owasco Lake. Mainstream media coverage is perceived as highlighting occasional manure spills or neighbor complaints, but ignoring the hard work and efforts of farmers and landowners across the watershed to protect Owasco Lake.

Issue 4: Loss of Farmland to Development

The landscape of rural central New York and the Owasco Lake watershed has been changing for generations. Non-farm development has been spilling out from cities like Auburn, Ithaca and Syracuse into rural communities. The scattered fragmentation of farm landscapes in the region have been characterized as “Sprawl Without Growth: The Upstate Paradox,” by Cornell University’s Rolf Pendall and the Brookings Institution. As farmland is converted to development, it impacts not only the viability of farming in the region but the health of Owasco Lake.

Recommendations:

The following 19 recommendations were identified as being important for enhancing water quality and farm viability in the Owasco Lake watershed. These include:

- Support funding for staff at Soil and Water Conservation Districts, Cornell Cooperative Extension, NRCS, FSA and other entities to assist farmers and landowners with adopting conservation practices and complying with water quality regulations
- Actively use New York’s Agricultural Environmental Management program to coordinate conservation education and technical assistance among county, state and federal agencies.
- Engage conservation teams to provide technical assistance to farmers identified with significant resource concerns such as significant gully erosion in fields, major streambank erosion, lack of cover crop, manure management/compliance, animals in streams, or experiencing neighbor complaints.

- Coordinate field workshops and applied research in targeted subwatersheds to educate farmers and others about conservation practices. Document the impact of practice adoption on both farm productivity and water quality.
- Support applied research by Cornell University and other partners to provide farmers with ‘real time’ information to make informed decisions about nutrient management and new techniques for addressing nutrient loading.
- Support funding for New York’s Agricultural Nonpoint Source Program, USDA’s Environmental Quality Incentives Program and other programs that provide cost share funding to assist farmers in installing and maintaining conservation practices to protect water quality. Ensure that some portion of public conservation funds is used to ensure practice maintenance and follow up with producers.
- Coordinate conservation projects among farmers and landowners in identified priority subwatersheds to maximize environmental benefits and strengthen applications for state and federal funding. Promote and pursue cost share funding for cost effective field-based conservation practices that deliver significant environmental benefits such as conservation tillage, cover crops or rotational grazing.
- Work with NRCS, FSA and others to educate farmers and landowners about the economic benefits of participating in programs like CREP that can provide income to landowners while reducing business costs for managing environmentally sensitive agricultural land.
- Evaluate the potential for creation of a “Pioneers in Conservation” program to encourage farmers in the Owasco Lake watershed the adoption of innovative conservation practices that benefit both farmers and water quality.
- Support an update to the Owasco Lake Management Plan by 2015 with customized approaches for addressing agricultural issues and environmental conditions in specific sub-watersheds.
- Support efforts of farm groups as well as local, state and federal agency partners to pro-actively pursue positive media coverage about farmers’ efforts to protect Owasco Lake. Support media training programs for farmers and local partners.
- Encourage farm groups, county agencies and others to participate in Owasco Lake watershed events and celebrations and maintain an open dialogue with the Owasco Lake watershed Association. At a minimum, have farmer representation on OWLAs agriculture committee by OWLA’s next annual meeting.
- Work with dairy promotion committees, county Farm Bureau chapters and other local partners to evaluate hosting an Owasco Lake Watershed Farm Day on a local dairy farm.
- Create a “field guide” for the public about common conservation practices used by farmers or a similar “farm book” to educate the public about farm practices.
- Investigate ways for local agencies to reach out to farmers in a positive manner when farm practices are witnessed that are inconsistent with sound agricultural practices.
- Encourage local governments throughout the Owasco Lake watershed to review and update local plans, zoning and subdivision codes and policies to ensure they are “farm-friendly” and encourage the protection of agricultural land from poorly planned residential and commercial development. Support funding for “circuit riders” to assist town governments with updating these plans and regulations.
- Encourage the newly formed Owasco Lake Watershed Management Council to work with local governments, area land trusts and others to bolster regional efforts to

permanently protect farmland from development. Such an effort could include developing funding sources for Purchase of Development programs, outreach to area landowners about donations of conservation easements, trainings about farm estate planning or other land protection techniques that result in the permanent protection of agricultural land.

- Additional consideration should be given to tools for ensuring long-term affordability of protected agricultural land.
- Encourage Cayuga, Onondaga and Tompkins Counties to update their agricultural and farmland protection plans by 2015. During the update process ask that the update include specific components for Owasco Lake watershed based on this report.
- Support private, state and federal funding to build the capacity of area land trusts, such as New York Agricultural Land Trust and Finger Lakes Land Trust, to work with farmer and landowners in permanently protecting their land.

Taking Action to Protect Water Quality In Owasco Lake

As previously noted, water quality concerns in the Owasco Lake watershed have been occurring for decades and can be attributed to many sources. The problem did not occur overnight nor will not be resolved in a short timeframe.

The actions recommended in the *Owasco Lake Agricultural Conservation Blueprint* will assist the agricultural community to proactively take steps to improve water quality in the Owasco Lake watershed. Implementing these recommendations will require assistance from many partners including Soil and Water Conservation Districts, Cornell Cooperative Extension and Cornell University, Farm Bureau, County Departments of Planning, County Water Quality Agencies, County Agricultural and Farmland Protection Boards and others.

Already, project partners have taken steps to implement recommendations from this blueprint by pursuing funds to develop a field guide of conservation practices in the Owasco Lake watershed and conduct field research that would provide farmers with current information about lands that are vulnerable to runoff and nonpoint source pollution. Additional efforts will be needed by all partners to build on these early actions and continue momentum to protecting Owasco Lake and strengthening the economic viability of farming in the surrounding watershed.



Section I: Introduction

Project Background

Well managed farms make key contributions to the health of New York's environment, economy and culture. Within New York State, 30 percent of the private land (7 million acres) is in agriculture. Approximately 55% of the Owasco Lake watershed is in agricultural use with approximately 200 farms.

According to the United States Department of Agriculture, Cayuga County's 936 farms sold almost \$214 million in farm products in 2007. Assuming one-fifth of these products were produced in the Owasco Lake watershed (the watershed's share of the county's agricultural land base), the value of products sold annually from watershed farms is more than \$36 million, with many of these farm businesses are closely tied with other local businesses such as Byrne Dairy. Additionally, local farms provide fresh, healthy food and farm products to consumers at farmers' markets such as the Central New York Regional Market and farm stands throughout the region.

Owasco Lake is the sixth largest Finger Lake with a drainage basin of 205 square miles. Although Owasco Lake is one of the smaller Finger Lakes, the size of the drainage basin ranks third of all the Finger Lakes. The soils within the watershed are deep, well drained, and contain significant amounts of calcium that make them ideal for agricultural production.

The project goals of *Owasco Lake Agricultural Conservation Blueprint* include:

- compile existing research and data about the state of Owasco Lake, including actions being taken by farmers in the Owasco Lake Watershed to protect water quality,
- identify the practices and activities relevant to agriculture that hold the most promise for improving water quality and reducing barriers to farmers' adoption of such practices, and
- develop a "conservation blueprint" with recommendations for action at the local, state and federal levels of the most viable options for assisting farmers in enhancing water quality in the Owasco Lake watershed.

The ultimate goal of this project is to enable farmers in the Owasco Lake watershed to proactively take steps to enhance and protect water quality. This outcome will require solutions that deliver environmental results but are also practical and support economically viable farming in the Owasco Lake Watershed.

Why Owasco Lake?

Farmers are some of our nation's greatest environmental stewards. This notion is perhaps better exemplified in New York than anywhere else. New York State is home to a globally significant effort to provide clean, unfiltered drinking water to more than 9 million residents in New York City. A more local example can be found in the nearby Skaneateles Lake Watershed that provides unfiltered drinking water to residents of the City of Syracuse and neighboring communities. These success stories demonstrate the important role that farmers can play in providing clean water to millions of people - saving residents in both cities hundreds of millions of dollars annually by avoiding the costs of constructing and operating water treatment facilities.

Success in both the New York City and Skaneateles Lake Watersheds is due in part to farmers protecting their land and managing it as a natural water filter in the watersheds surrounding the reservoir systems. It is a great example of farmers across the state making a living from their land while taking good care of it.

Critical to the success in both watersheds is the millions of dollars invested by both cities in farms. These investments have permanently protected more than 15,000 acres from development and put in place stream buffers and other conservation practices on thousands more acres. Such public investments are important to solving water quality problems as many farmers are not paid for providing clean water, wildlife habitat and other environmental benefits that the public enjoys and protecting the environment can be an additional cost to farm families.

However, at a time of tight budgets at all levels of government, such public funds to help farmers protect and steward their land are under threat of being cut severely or eliminated. *So, how can the farm community be a part of solving water quality challenges at a time of such uncertainty about farm profitability and public conservation dollars?* These are exactly the type of questions that AFT seeks to answer for the Owasco Lake Watershed.

State of Owasco Lake

The water drawn from Owasco Lake is used primarily as drinking water with a small amount used for irrigation. The City of Auburn, the town of Owasco and lakefront property owners all draw water from the lake. It is estimated that approximately 70% of the population in Cayuga County, where Owasco Lake is centrally located, obtain their drinking water from Owasco Lake. Owasco Lake is a filtered drinking water source and has been filtered since 1917. Roughly 55 percent or 67,562 acres of the watershed surrounding Owasco Lake is in agricultural use and approximately 41% or 50,484 acres is forested.



In 1972, Owasco Lake was classified as mesotrophic¹ and in 1986 was reclassified to oligo-mesotrophic. The most likely reason for the improvement is due to phosphorus bans in laundry detergent enacted in the 1970s. In spite of this slight improvement Owasco Lake has historically been one of several Finger Lakes with water quality problems. Dr. John Halfman of the Finger Lakes Institute at Hobart and William Smith Colleges has been researching and documenting

¹ A measure of a lake's health depends to a large extent on the nutrients that enter it which influences the amount of algae (phytoplankton) production. The three trophic states that describe the levels of nutrients and amount of phytoplankton in a lake are oligotrophic, mesotrophic, and eutrophic. Oligotrophic means nutrient levels, particularly phosphate or nitrogen compounds, are low. When lakes are young, they are oligotrophic. Eutrophic means nutrient levels are high, and mesotrophic means nutrient levels are between oligotrophic and eutrophic.

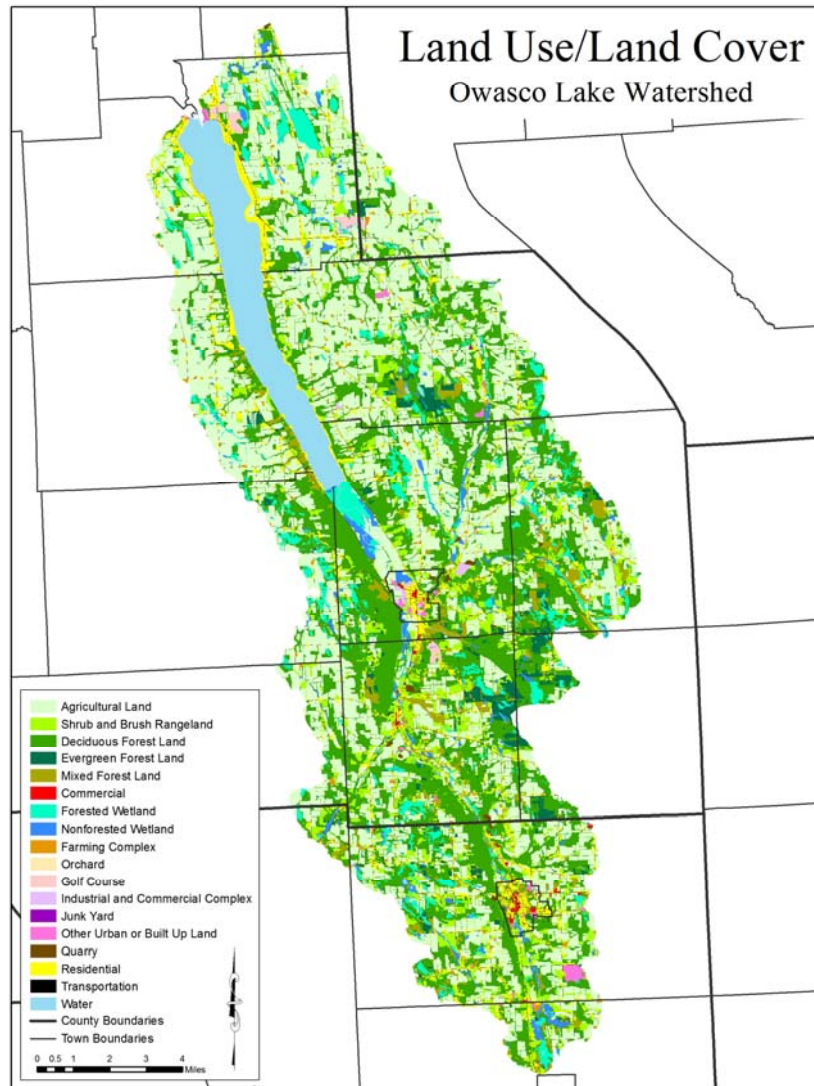
water quality problems in the Finger Lakes. His work can be found at:
<http://people.hws.edu/halfman/Data/Halfman%20OwascoLake%208-4-10.pdf>.

Some of the water quality concerns in Owasco Lake are due to nutrients entering the lake from agriculture. Other activities including over fertilization of lawns along the lake shore and tributaries, poorly functioning septic systems, improper disposal of yard waste and overwintering and nesting of waterfowl are also identified as contributing to the problem.

Description of farms and farmland in the watershed

The predominant land use in the Owasco Lake watershed is agriculture. There are approximately 200 farming operations in the watershed. The variety of operations varies as much as the size of the farms, which range from 15 to over 2,000 acres. A majority of the farmland is utilized to provide feed and forage for livestock (dairy and beef) both within and outside the watershed. Some beef farmers raise only a few animals to supplement their off-farm incomes and provide food for themselves and their families. Others raise over 300 animals either in confined feed lots or in grazing programs. Figure 1 titled Land Use/Land Cover of the Owasco Lake Watershed provided by Cayuga County GIS shows the amount of land in agriculture.

Figure 1: Land Use/Land Cover of the Owasco Lake Watershed



Dairy farms are a dominant feature of the agricultural landscape in the Owasco Lake watershed, as they are in much of New York. Medium or large dairy farms in the watershed are frequently referred to as Concentrated Animal Feeding Operations (CAFOs). New York State Department of Environmental Conservation (DEC) has a permitting process for CAFOs. A map located at <http://www.dec.ny.gov/permits/36895.html>, while not delineated by watersheds indicates there are approximately 10 large permitted CAFOs and 8 medium permitted CAFOs in the Owasco Lake watershed. CAFO is a term used by the Environmental Protection Agency (EPA)². EPA defines a CAFO as an animal feeding operation (AFO) that confines animals for more than 45 days during a 12 month period and there is no grass or other vegetation in the confinement area during the normal growing season.

² For more information about EPA's approach to CAFOs, visit www.epa.gov/region7/water/cafo/index.htm

The EPA has delineated three categories of CAFOs: large, medium and small. The relevant animal unit for each category varies depending on species and capacity. For instance, large CAFOs house 1,000 or more cattle, medium CAFOs can have 150-499 horses, and small CAFOs shelter no more than 16,500 turkeys.³

The table below provides some examples of the size thresholds for CAFOs:

Table 1

Animal Species	Large CAFOs	Medium CAFOs	Small CAFOs
cattle or cow/calf pairs	1,000 or more	300-999	less than 300
mature dairy cattle	700 or more	200-699	less than 200
swine (over 55 pounds)	2,500 or more	750-2,499	less than 750
horses	500 or more	150-499	less than 150
sheep and lambs	10,000 or more	3,000-9,999	less than 3,000
turkeys	55,000 or more	16,500-54,999	less than 16,500

New York State has adopted strict regulatory guidelines for medium and large CAFO's and requires that they secure a permit by December 30, 2010.⁴ These permits require the development of Certified Nutrient Management Plans by qualified conservation professionals and are designed to manage: 1) the production, handling, storage and/or treatment of animal manure and organic by-products generated in the areas the animals are concentrated, 2) commercial fertilizers; 3) the amount, source, form, placement and timing of the application of these materials to the land; 4) and soil erosion. It is estimated that farmers spend between \$5,000 and \$20,000 per year to keep their plans current.⁵

The relatively highly productive soils in the watersheds allows a significant amount of farmland to remain in continuous crop production.. Major field crops grown in the watershed include corn, wheat, soybeans, hay, and sweet corn. Acreage of soybeans has increased since the 1990s due to low corn prices, improved varieties for Upstate New York climate and the availability of convenient markets.

In addition, roadside stands and recently established Community Supported Agriculture (CSA) farms are producing tomatoes, pumpkins, gourds, strawberries, blueberries, garlic, and beans. There are also several fruit orchards in the watershed.

Soils are very slow to form and almost all farm operations (exceptions are “soil less” greenhouse and container crops and hydroponics) are dependent on soil for crop production. These crops are either marketed off the farm or fed to livestock. The soil quality and quantity present in a given land area affects the potential to grow certain crops. The soils within the Owasco Lake

³ For more information on the regulatory definition of CAFOs consult EPAs website at: http://www.epa.gov/npdes/pubs/sector_table.pdf

⁴ Czymmek, Karl. 2009 *NYS ECL SPDES Permit for CAFOs*. Cornell University Pro-Dairy Program.

⁵ For more information about CAFOs consult New York State Department of Environmental Protection's Division of Water at www.dec.ny.gov/docs/water_pdf/gpappendixa.pdf

watershed were formed and deposited by glaciers and are characterized as deep, well drained and gently to moderately sloping and of a medium texture. The majority of the soils are calcareous, meaning they contain high amounts of calcium thus providing a neutral to high soil pH making them ideal to grow most crops suited for the area which supports dairy farming. Figure 2, provided by Cayuga County GIS shows the various soil associations within the watershed and Table 2 provides the acreage and percentage of each soil association.

Figure 2: Various Soil Associations within the Owasco Lake Watershed

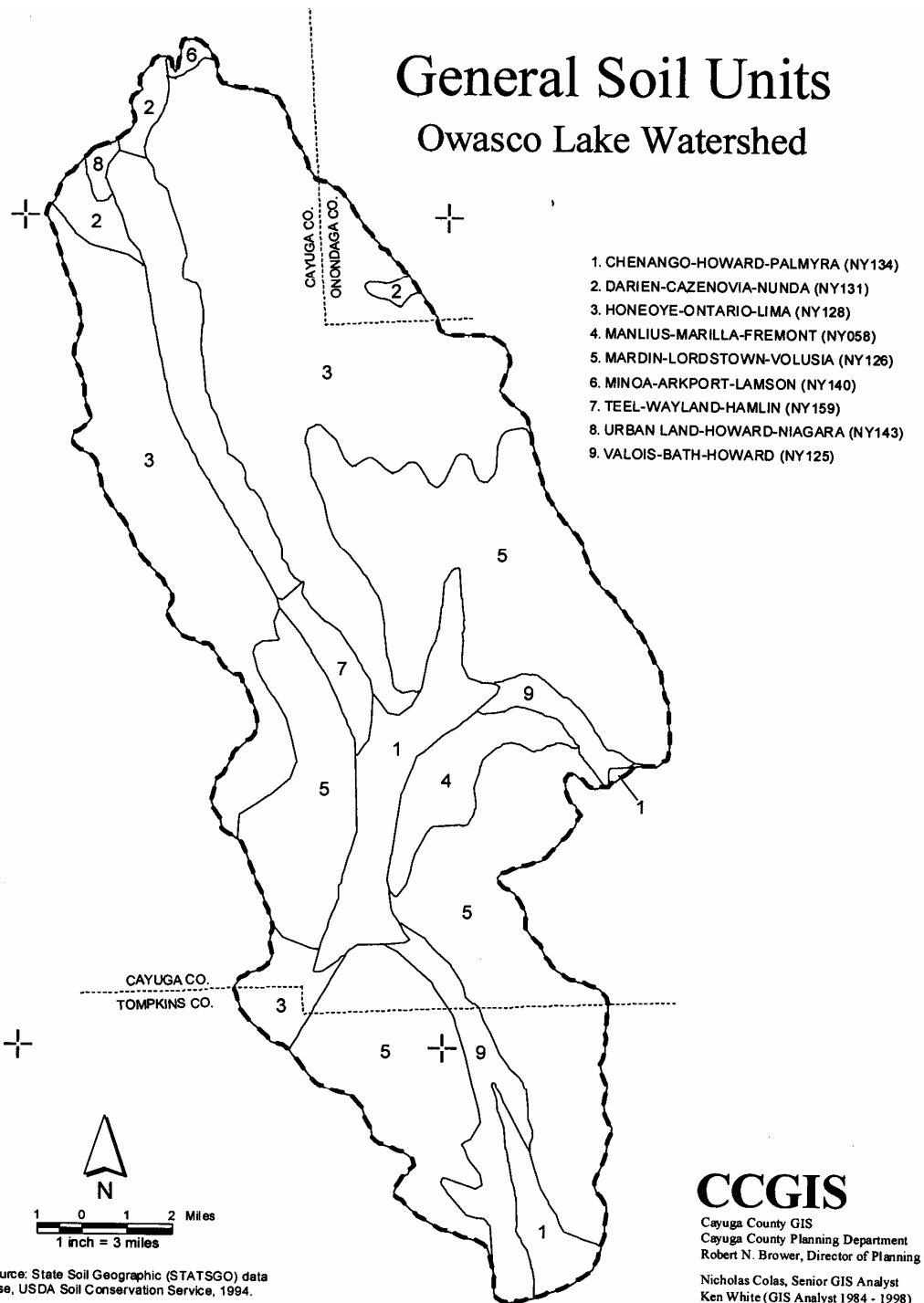


Table 2

Soil Association Acres and Percentages for the Owasco Lake Watershed

Soil Association	Acres	Percentage of Total
Mardin-Lordstown-Volusia (NY 126)	52151.13	42.31
Honeoye-Ontario-Lima (NY 128)	48075.80	39.00
Chenango-Howard-Palmyra (NY134)	8563.31	6.95
Valois-Bath-Howard (NY 125)	6104.36	4.95
Manlius-Marilla-Fremont (NY058)	3680.68	2.99
Darien-Cazenovia-Nunda (NY131)	2327.99	1.89
Teel-Wayland-Hamlin (NY159)	1691.51	1.37
Urban Land-Howard-Niagara (NY143)	388.58	0.32
Minoa-Arkport-Lamson (NY140)	298.09	0.24

Section II: Project Process

The Owasco Lake Agricultural Conservation Blueprint's primary purpose is to enable farmers in the Owasco Lake watershed to pro-actively take steps to enhance and protect water quality. Throughout this project, AFT and project partners have sought solutions that will enable the agricultural community within the Owasco Lake watershed to adopt and implement conservation solutions that deliver environmental results but are also practical and support economically viable farms. Towards this end, we have actively sought leadership, participation and support from farmers and the broader agricultural community in the Owasco Lake Watershed.

Steering Committee

AFT facilitated the creation of a project steering committee. The steering committee met initially on June 29, 2010 to discuss the projects focus, identify farmers and rural landowners for interviews and explore final product options. A second steering committee meeting was held September 16, 2010 to report on progress of interviews, plan the Agricultural Forum and discuss how to present the Agricultural Conservation Blueprint. A third steering committee meeting was held on June 28, 2011 to review the identified Issues and Recommendations and provide guidance on the development of the final Agricultural Conservation Blueprint.

Interviews

Farm Community

Letters introducing the project were sent out to 30 members of the agricultural community by all three county SWCDs. Judy Wright, AFT's Project Consultant, then contacted the farm and scheduled individual appointments for confidential interviews. Ten (10) farms were interviewed ranging in size, location within the watershed and type of operation. A series of questions were designed to learn how the farm viewed their role in affecting water quality, the types of conservation practices they had adopted and the barriers they experienced in adopting conservation practices on their farm or what types of practices they would like to adopt.

In general, the farms interviewed all had adopted some type of conservation practices on their farm. All interviewees wanted to have a positive impact on keeping water clean because their operation depended on clean water and they expressed a strong desire to be a good neighbor and steward of the land.

Non –Farm Community

Members of the non-farm community were also identified and contacted. This group of eight (8) individuals had a strong desire for the lake to be in better condition but also had an understanding for the importance of agriculture in the watershed and were not active farmers. Again, letters introducing the project were sent out and Judy Wright followed up with the identified individuals and scheduled individual appointments for confidential interviews.

The non-farm community recognized that farming was an important land use and generally felt that the farmers were responsible stewards but there were concerns about some practices. Most

specifically there were often questions related to manure and nutrient management and how CAFO's were impacting water quality and the lack of stricter regulations.

Conclusions from the Interviews:

- Farmers interviewed want to “do the right thing” to protect water and the environment; yet they need to balance this with being profitable in an often volatile economic climate.
- There seems to be a communications disconnect between the farm community and non-farm community. Those particularly concerned about Owasco Lake seem to ask questions that farmers might be interpreting as “threatening” or uninformed and the responses provided by the farm community are often interpreted as uncaring or unconcerned. Local print coverage of agriculture has not helped foster communications between the two groups.
- Continue to brainstorm ways to overcome barriers to: 1) the adoption of conservation practices or 2) the implementation of conservation practices farmers want to implement.
- Those closely related to Owasco Lake support well managed farms and want to work with the farm community to help them implement conservation practices to further protect water quality in Owasco Lake.
- There is broad based support among farmers and nonfarm residents for stream bank stabilization projects.
- It seems reasonable to recommend that a lake steward be hired. This person would provide the education and support to all members of the watershed community. Currently the watershed inspector is trying to do some of this which is not part of the inspector position and can be taking time away from doing inspection work.



Agricultural Forum

AFT hosted an “Agricultural Forum” to gain a better understanding of the agriculture community’s attitudes towards water quality, the ways that conservation practices on farmland are helping to protect water quality and the barriers to adopting conservation practices. Post cards were mailed to farmers from all three SWCDs, information and a poster was mailed to all town clerks and the forum was advertised in various newsletters. In addition, Judy Wright was invited to discuss the Agricultural Forum on Erik Sorensen’s Morning Show on WAUB, part of the Finger Lakes Radio Group, March 1, 2011.



On March 2, 2011 approximately 50 farmers, agricultural land owners and others involved in agriculture (SWCD, CCE, NRCS, etc) attended the Agricultural Forum for a discussion on the barriers to adoption of conservation practices. The invited audience included farmers and rural landowners who rented land to farmers within the watershed. In addition all the local agricultural agencies were invited to attend and set up displays. Of the fifty people registered fifteen farms were represented with a total acreage of 8,200 acres. Six questions were posed to generate discussion and gather the agricultural community’s input into the plan and identify barriers they encountered in adopting conservation practices.⁶

Key themes from the Agricultural Forum included:

- **Regulatory compliance:** Requested assistance with paperwork related to permitting and bureaucratic red tape, also help with communicating a positive message about their current compliance with regulations.
- **Lack of information:** Farmers are not taking/making time to seek information; yet when offered to meet one on one at their kitchen table to investigate their particular circumstance they are receptive. Dwindling in-field personnel is a key contributing factor.
- **Finances:** Cost share at 25% during difficult economic times can prevent good practices being installed. Some practices may be cost effective to the farm’s bottom line while others may not. The question of “How does a farm determine when it is cost effective for the environment and subsequently good PR?” was raised.
- **Additional Labor issues and maintenance/operation of practices:** Some practices require more labor which is either not available or is an additional cost. Concern about

⁶ See questions and responses in Appendix.

responsibility for maintenance and cost of some practices negatively affecting the farm's bottom line was given as a factor in determining if a conservation practice could or would be adopted.

- **Stream Bank Stabilization:** to prevent erosion and sedimentation into the lake was a strong request from those farmers present.
- **Other Items:** Assistance in identifying location of tiles lines was expressed.

Public Forums

Two Public Forums were held to provide an opportunity for local officials, residents, farmers and others interested in agriculture's impact on water quality in the Owasco Lake Watershed to provide input into the Agricultural Conservation Blueprint. Participants were encouraged to discuss the ways agriculture can be part of the solution to the water quality concerns in Owasco Lake and barriers farmers are experiencing in adopting conservation practices and what can be overcome the barriers to adoption.

The first Public Forum was held on May 24, 2011 at the Moravia Fire Hall with two dairy farmers in attendance in addition to members of the Steering Committee. The suggestions from this discussion included:

- Continue Forums to build bridges between farm and non farm community
- Nesting Canada geese in farm field bordering lakeshore are creating a problem. The proposed solution is to lengthen the hunting season.
- Need to make all landowners- farmers and non-farmers- aware of the protected tributaries on their properties
- Stream crossings and limiting access to streams by livestock was viewed as a positive step
- The Citizen, a local newspaper, back page photo spread was not a good way to foster communication and trust

A second Public Forum was held on May 25, 2011 at the Owasco Fire Hall with six non-farm public in attendance in addition to members of the Steering Committee. Discussion about agriculture and agricultural practices were conducted with the following suggestions:

- Document where nutrient flows are coming from and create a baseline to see if practices are making a difference
- Restore wetlands where possible
- CAFO concerns and nutrient saturation of soils from manure

The results of the Interviews and the Agricultural Forum were utilized to aid in the drafting of the Issues and Recommendations provided in Section IV.

Formal Presentations

Power Points of the project were presented by invitation at several conferences:

Finger Lakes Institute Research Conference held on December 4, 2010 at the Hobart and William Smith Colleges campus provided an overview of the project and gave results of the confidential interviews.

Environmental Finance Center at Syracuse University hosted a one day conference on April 13, 2011 titled Farms, Folks and Funding: Cultivating Leadership Through Research and Practice in Canandaigua New York. The Owasco Blueprint findings and preliminary recommendations were shared with those in attendance.

Owasco Lake Day sponsored by the Owasco Watershed Lake Association was held on August 7, 2011 at the Pavilion at Emerson Park. The focus of the presentation was an overview of the many conservation practices that farmers are implementing to protect water quality in the lake as well as the barriers farmers are facing to adopting more conservation practices.



Section III: Conservation Programs and Practices

There are a broad network of agency partners, agricultural service providers and others working with farmers in the Owasco Lake Watershed to protect water quality. One of the primary players, and funding partners, for such conservation work is the United States Department of Agriculture's Natural Resources Conservation Service (NRCS). NRCS coordinates the implementation of a series of federal conservation programs including:

This includes⁷:

Agricultural Management Assistance (AMA) - provides funding where participation in the Federal Crop Insurance Program typically has been low.

Conservation Technical Assistance (CTA-GENRL) - provides technical assistance to any group or individual interested in conserving natural resources and sustaining agricultural production utilizing soil and water conservation programs.

Conservation Technical Assistance- Grazing Lands Conservation (CTA-GLC) - provides technical assistance specific to grazing lands.

Conservation Reserve Program (CRP) - encourages farmers to convert highly erodible cropland and other environmentally sensitive land to vegetative cover.

Environmental Quality Incentive Program (EQIP) - provides technical assistance, cost-share payments and incentive payments to assist with environmental and conservation improvements on land used for agricultural production.

Wetlands Reserve Program (WRP) - restores and protects wetlands on private property.

Wildlife Habitat Incentives Program (WHIP) - offers financial incentives to agricultural landowners who maintain habitat for fish and wildlife.

The following is an analysis of data received from NRCS for federal conservation projects in the Owasco Lake watershed.

⁷ More information on NRCS project codes and programs descriptions can be found at: <http://ias.sc.egov.usda.gov/help/webtcas/docs/ProgramActivityModifierDefinitions.pdf>

Figure 3: Participation in NRCS Programs in the Owasco Lake Watershed, 2000-2010.

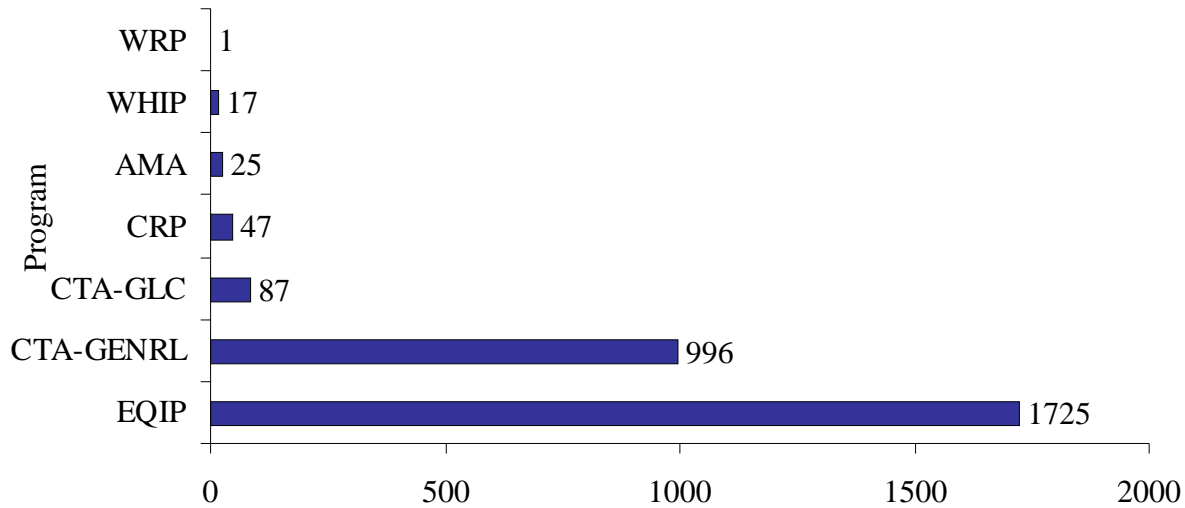


Figure 3 shows that roughly 60% of the federally funded conservation practices in the watershed were in the EQIP program, which is to be expected since this program provides both technical assistance and payments to assist with environmental and conservation improvements on land used for agricultural production. 34% of practices were derived from the Conservation Technical Assistance- General (CTA-GENRL) which provides technical assistance for conserving natural resources and sustaining agricultural production utilizing soil and water conservation programs. The remaining five programs accounted for 6% of the practices implemented.

Farmers identified that technical assistance is important to them when implementing conservation practices. In addition there was a strong desire expressed by the farm community to have more technical assistance available to them. Traditionally technical assistance has been provided by NRCS staff supported by County Soil and Water Conservation Districts. In order to better serve agricultural producers, the 2002 Farm Bill encouraged the use of technical service providers to increase the technical assistance available to help landowners meet their conservation goals.

Figure 4: Owasco Lake Watershed: Affiliate Type Frequency

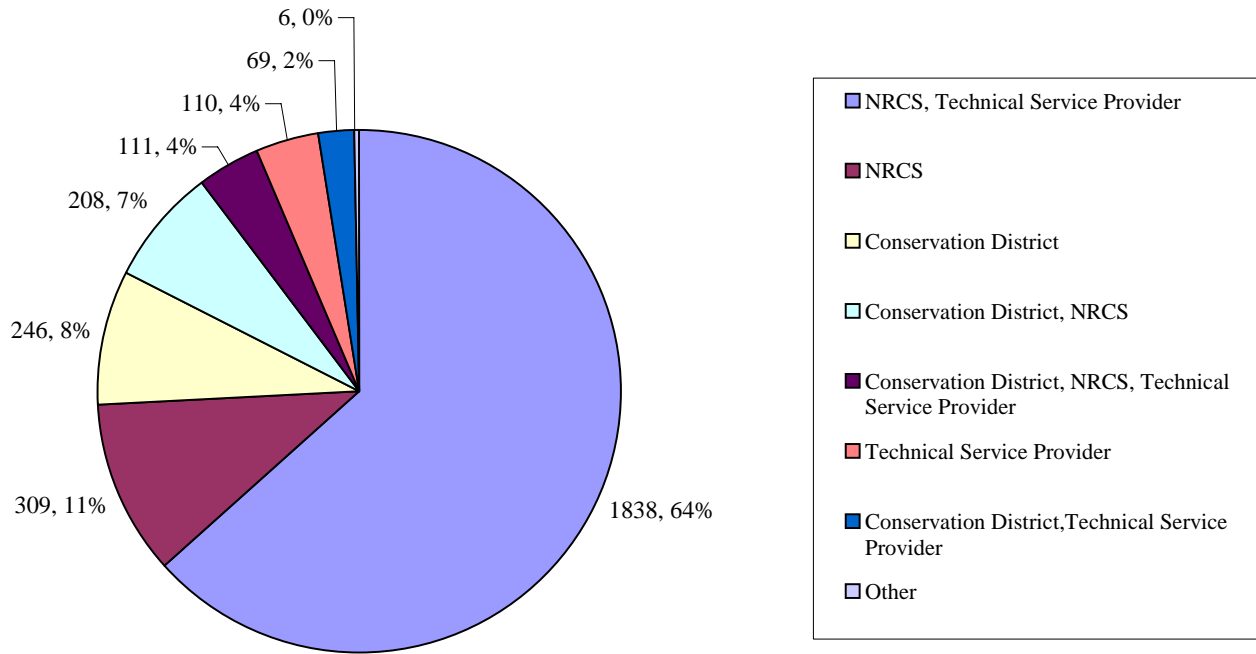
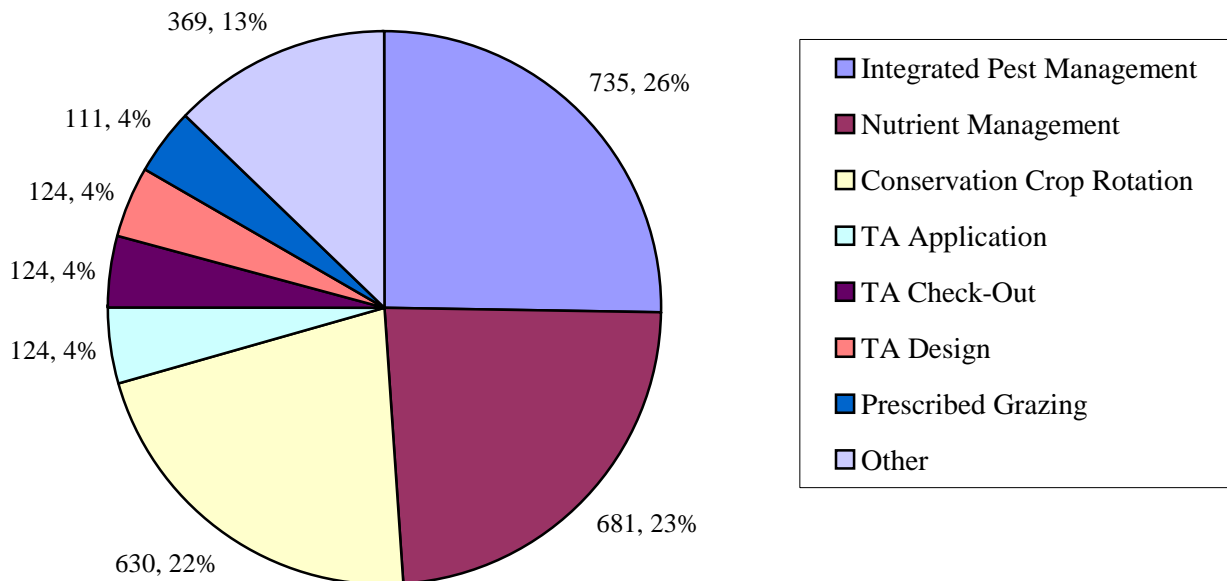


Figure 4 shows during 2000 to 2010 63% of the technical assistance in the Owasco Lake watershed was provided by a combination of NRCS and a technical service provider followed by 11% provided by NRCS alone.⁸

Figure 5: Owasco Lake Watershed: Practice Frequency



⁸ More information about technical service providers can be found at <http://techreg.usda.gov/help/TSP200409Brochure.pdf>

Figure 5 shows that during 2000 and 2010 there was significant participation in the Integrated Pest Management program and Nutrient Management followed by Conservation Crop Rotation. IPM is defined as a site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies for more information on NRCS's IPM Conservation Practice Standard visit the following website:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf

Nutrient Management is defined as managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments for more information on NRCS's Nutrient Management Conservation Practice Standard visit the following website:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf

Conservation Crop Rotation is defined as growing crops in a recurring sequence on the same field for more information on NRCS's Conservation Crop Rotation Conservation Practice Standard visit the following website

<http://www.awqa.org/pubs/conservation/NRCSPractices/ConservCropRotation.pdf>

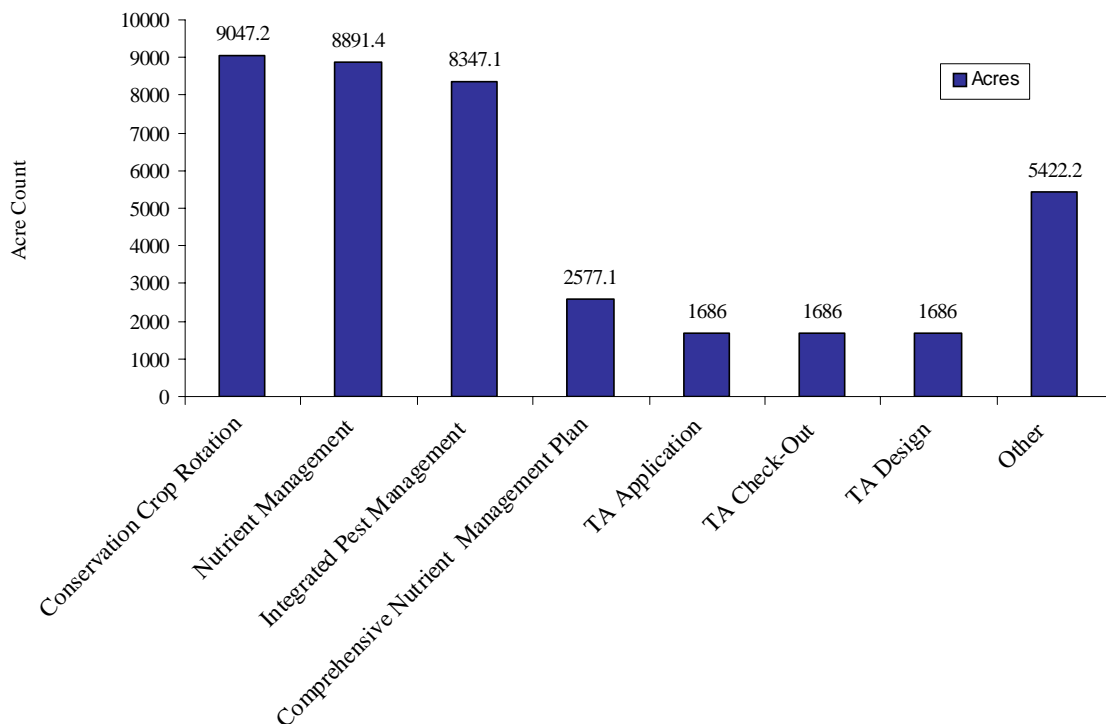
Prescribed Grazing is defined as managing the harvest of vegetation with grazing and/or browsing animals for more information on NRCS's Prescribed Grazing Conservation Practice Standard visit the following website:

<http://efotg.sc.egov.usda.gov/references/public/NE/NE528.pdf>

The Technical Assistance Application, Check-out and Design as time spent with program administration.

As seen in Figure 6 Conservation Crop Rotation, Nutrient Management and Integrated Pest Management covered a significant amount of acreage.

Figure 6: Owasco Lake Watershed: Acre Coverage by Practice



These programs are an investment of monies by the federal government in to our farming community. Without this investment some of these important conservation practices may not have been made. When a farm produces a commodity, such as milk, corn, soybeans the farm cannot set their selling price. The price is set by the government. Unlike other businesses where free market principles are used in order for a farmer to make improvements and investments in their business they look to government programs. If a farm is to invest thousands (sometimes hundreds of thousands) of dollars into their business and cannot raise the price of their product to offset the cost they either don't make the improvement or go out of business. To aid in this investment in conservation the government provides money to farms for conservation.

Participation in State Programs

Farmers have played an important role in the stewardship of the state's natural resources for generations. New York's Agricultural Environmental Management (AEM) program is an incentive based program that helps farmers make common sense, cost effective and science based decisions to achieve business objectives while protecting and conserving the state's natural resources.

Farmers work with local AEM resource professionals on a voluntary basis to develop comprehensive farm plans using a tiered process.

Tier 1- Inventory current activities, future plans and potential environmental concerns.

Tier 2- Document current land stewardship; access and prioritize areas of concern.

Tier 3- Develop conservation plans addressing concerns and opportunities tailored to farm goals.

Tier 4- Implement plans utilizing available financial, educational and technical assistance.

Tier 5- Evaluate to ensure the protection of the environment and farm viability.

The AEM program is implemented through the cooperation of several agencies including Cornell Cooperative Extension, Soil and Water Conservations Districts and the USDA Natural Resources Conservation Service. The AEM process is often facilitated with funding from New York's Agricultural Nonpoint Source Abatement and Control Program (ANSACP) and the federal Environmental Quality Incentive Program (EQIP). ANSACP may provide up to 87.5 percent of the funding needed for farmers to plan and implement best management practices while EQIP



pays up to 75 percent of the cost to implement structural and management practices on eligible agricultural land. Also under EQIP cost-share payments may be made to help farmers install erosion control measures, agricultural waste management facilities, or renewable energy. EQIP funding may also establish conservation practices such as nutrient management, forest management, integrated pest management (IPM), manure management and wildlife habitat management.

An examination of AEM participation in the Cayuga County section of the watershed only during the past 15 years (1995 through 2010) revealed that eighty-nine farms totaling 31,765 acres have participated in AEM in Cayuga Co's section of the watershed. These farms were identified as:

Farms By Type

Dairy & Heifers	22
Beef (non grazing)	10
All Grazing operations	8
Cash Crop	38
Horse	7
CRP/Idle/Greenhouse	4
Total	89

A majority of the farms in the Cayuga County portion of the watershed were still in the early stages of Tiers 1 and 2 with only 24 at Implementation Stages of Tiers 4 and 5. All of the implementation activity occurred between 2007 and 2010.

AEM Tier	Number of Farms
Tier 1	11
Tier 2	49
Tier 3	5
Tier 4	11
Tier 5A	11
Tier 5B	2
Total	89

Since AEM is a voluntary program continued outreach to individual farms is needed to encourage participation within the watershed and implementation of identified practices. In addition increased funding to ANSACP is necessary to meet the documented need. EQIP funding directed to the Owasco Lake watershed or subwatersheds would further aid implementation of identified conservation practices to improve water quality.



Section IV: Issues and Recommendations

Below are four issues and accompanying recommendations to address the concerns, barriers and technical problems that agriculture and farmers are experiencing in working to strengthen their role in improving water quality in the Owasco Lake watershed. As previously noted, water quality concerns in the Owasco Lake watershed have been occurring for decades and can be attributed to many sources. The problem did not occur overnight nor will not be resolved in a short timeframe.

The results of the Interviews and the Agricultural Forum discussed in Section II were utilized to aid in the drafting of the following Issues and Recommendations. It is felt that these recommendations can assist the agricultural community to proactively continue to take steps to improve water quality in the Owasco Lake watershed. There are many partners that can help implement these recommendations. Some of the partners include but are not limited to: Soil and Water Conservation Districts, Cornell Cooperative Extension, County Farm Bureaus, County Water Quality Management Agencies, Owasco Lake Watershed Management Council, County Planning and Economic Development Offices, County Agriculture and Farmland Protection Boards, and County Departments of Health.

Issue 1: Need for Further Research and Technical Assistance on Conservation Issues

Technical assistance about conservation issues is currently delivered by a network of county, state, federal and private organizations including Soil and Water Conservation Districts, Cornell Cooperative Extension, USDA Natural Resources Conservation Service and Farm Service Agency, private crop consultants and others.

This system has changed over the last decade as public sector budgets have become tighter and federal funds have been pushed towards hiring Technical Service Providers (TSPs) to design and install conservation practices. The use of TSPs has limited the availability of more holistic conservation technical assistance and there is a limited availability of technical expertise among TSPs in certain areas such as organic agriculture and integrated pest management.

Owasco Lake Watershed farmers have expressed interest in greater or alternative technical assistance to comply with environmental regulations or develop and implement strategies for addressing conservation issues. Specific areas of interest for further technical assistance include:

- Conservation practices for organic dairy farms and other types of organic operations;
- Integrated pest management;
- Stream bank stabilization;
- Complying with local, state and federal environmental and public health regulations;
- Pursuing cost-share funds to install and maintain conservation structures and practices;
- ‘Real time’ information about weather and other factors that impact farmers’ decisions about manure spreading and nutrient management.
- Benefits of conservation practices?

Recommendations:

- Support funding for staff at Soil and Water Conservation Districts, Cornell Cooperative Extension, NRCS, FSA and other entities to assist farmers and landowners with adopting conservation practices, complying with local, state and federal water quality regulations and participating in conservation programs.
- Actively use New York's Agricultural Environmental Management program to coordinate conservation education and technical assistance among county, state and federal agencies.ⁱ
- Develop a system for engaging conservation teams to provide education and technical assistance to farmers identified with significant resource concerns such as significant gully erosion in fields, major streambank erosion, lack of cover crop, manure management/compliance, animals in streams, fall plowing out of RUSLE (Revised Universal Soil Loss Equation) or experiencing neighbor complaints.ⁱⁱ
- Coordinate field workshops and applied research in targeted subwatersheds (to include grab samples from tile drains to establish baseline data) to educate farmers and others about conservation practices. Document the impact of practice adoption on both farm productivity and water quality.ⁱⁱⁱ
- Support applied research by Cornell University and other partners to provide farmers with 'real time' information to make informed decisions about nutrient management and new techniques for addressing nutrient loading.



Issue 2: Barriers for Adoption of Conservation Practices

Farmers in the Owasco Lake Watershed expressed deep concern about the cost of installing and maintaining conservation practices to protect water quality. These concerns are particularly strong for dairy farmers recovering from extremely low milk prices in 2009. Additionally, farmers talked about the challenge of maintaining such practices – particularly if they do not directly enhance short-term farm productivity and profitability.

While farmers are interested in conservation cost share funds, state and federal budget problems may limit the availability of public cost share dollars in future years. New York's Agricultural Nonpoint Source Program and Soil and Water Conservation Districts have received nearly level funding during the last two years – a very positive sign given the New York State's persistent budget challenges. However, federal funding for the Environmental Quality Incentives Program was cut in 2011 and there are threats of further cuts to federal conservation programs in the next Farm Bill.

Recommendations:

- Support funding for New York's Agricultural Nonpoint Source Program, USDA's Environmental Quality Incentives Program and other programs that provide cost share

funding to assist farmers in installing and maintaining conservation practices to protect water quality. Ensure that some portion of public conservation funds is used to ensure practice maintenance and follow up with producers.

- Coordinate conservation projects among farmers and landowners in identified priority subwatersheds to maximize environmental benefits and strengthen applications for state and federal funding.^{iv} Promote and pursue cost share funding for cost effective field-based conservation practices that deliver significant environmental benefits such as conservation tillage, cover crops or rotational grazing.
- Work with NRCS, FSA and others to educate farmers and landowners about the economic benefits of participating in programs like CREP that can provide income to landowners while reducing business costs for managing environmentally sensitive agricultural land.
- Evaluate the potential for creation of a “Pioneers in Conservation” program to encourage farmers in the Owasco Lake Watershed the adoption of innovative conservation practices that benefit both farmers and water quality.^v
- Support an update to the Owasco Lake Management Plan by 2015 with customized approaches for addressing agricultural issues and environmental conditions in specific sub-watersheds.

Issue 3: Public Perception of Farm Practices

The agricultural community in the Owasco Lake Watershed is concerned that the public frequently does not understand common farm practices and as a result the public frequently sees farming, particularly on larger farms, as a threat to water quality in Owasco Lake. Mainstream media coverage is perceived as highlighting occasional manure spills or neighbor complaints, but ignoring the hard work and efforts of farmers and landowners across the watershed to protecting Owasco Lake.

Recommendations:

- Support efforts of farm groups as well as local, state and federal agency partners to proactively pursue positive media coverage about farmers’ efforts to protect Owasco Lake. Support media training programs for farmers and local partners.^{vi}
- Encourage farm groups, county agencies and others to participate in Owasco Lake Watershed events and celebrations (Owasco Lake Day) and establish an open dialogue with the Owasco Lake Watershed Association. At a minimum have farmer representation on OWLA’s agriculture committee by OWLA’s next annual meeting.
- Work with dairy promotion committees, county Farm Bureau chapters and other local partners to evaluate hosting an Owasco Lake Watershed Farm Day on a local dairy farm.^{vii}
- Create a “field guide” for the public about common conservation practices used by farmers or a similar “farm book” to educate the public about farm practices.^{viii}
- Investigate ways for local agencies to reach out to farmers in a positive manner when farm practices are witnessed that are inconsistent with sound agricultural practices.

Issue 4: Loss of Farmland to Development

Roughly 55 percent of the Owasco Lake watershed is in agricultural use – making farmers important players in protecting water quality and the overall health of the region’s environment. However, the landscape of rural central New York and the Owasco Lake watershed has been changing for generations. Non-farm development has been spilling out from cities like Auburn, Ithaca and Syracuse into rural communities. The scattered fragmentation of farm landscapes in the region have been characterized as “Sprawl Without Growth: The Upstate Paradox,” by Cornell University’s Rolf Pendall and the Brookings Institution. As farmland is converted to development, it impacts not only the viability of farming in the region but the health of Owasco Lake.

Recommendations:

- Encourage local governments throughout the Owasco Lake watershed to review and if necessary update local plans, zoning and subdivision codes and policies to ensure they are “farm-friendly” and encourage the protection of agricultural land from poorly planned residential and commercial development.^{ix} Support funding for “circuit riders” to assist town governments with updating these plans and regulations.
- Encourage the newly formed Owasco Lake Watershed Management Council to work with local governments, area land trusts and others to bolster regional efforts to permanently protect farmland from development. Such an effort could include developing funding sources for Purchase of Development programs, outreach to area landowners about donations of conservation easements, trainings about farm estate planning or other land protection techniques that result in the permanent protection of agricultural land.^x Additional consideration should be given to tools for ensuring long-term affordability of protected agricultural land.^{xi}
- Encourage Cayuga, Onondaga and Tompkins Counties to update their agricultural and farmland protection plans by 2015. During the update process ask that the update include specific components for Owasco Lake Watershed based on this report.
- Support private, state and federal funding to build the capacity of area land trusts, such as New York Agricultural Land Trust and Finger Lakes Land Trust, to work with farmer and landowners in permanently protecting their land.

ⁱ Sample materials to be included in the Appendix include a profile of Suffolk County’s Agricultural Environmental Management Program that integrates programs from Cornell Cooperative Extension and the Soil and Water Conservation District. <http://ccesuffolk.org/agricultural-stewardship-program/>

ⁱⁱ Sample materials to be included in the Appendix include the “SWAT” (Strategic Watershed Action Team) team approach to conservation program delivery being offered in the Chesapeake Bay. http://www.nrcs.usda.gov/news/releases/2011/chesbay_tech_teams_03.16.11.html

ⁱⁱⁱ Sample materials to be included in the Appendix include information about a 5-year study conducted in the Conesus Lake watershed to document the results of subwatershed management. http://www.co.livingston.state.ny.us/plan_lake-rpt.htm

^{iv} Sample materials to be included in the Appendix include information about USDA’s Cooperative Conservation Partnership Initiative funds that could be used to implement conservation practices to protect water quality on multiple farms. <http://www.nrcs.usda.gov/programs/ccpi/>

^v Sample materials to be included in the Appendix about American Farmland Trust’s Pioneers in Conservation Program in the Pacific Northwest as part of regional efforts to support agriculture and salmon recovery efforts. <http://www.farmland.org/programs/states/WA/PioneersinConservation.asp>

^{vi} Sample materials to be included in the Appendix about water quality trading programs in the Upper Mississippi and Ohio River Basins: <http://www.farmland.org/programs/environment/water-quality/water-quality-trading/What-is-Water-Quality-Trading.asp>

^{vii} Sample materials to be included in the Appendix about AEM media trainings conducted across New York. <http://www.swcsnewyork.org/events/view/aem-communications-marketing-and-media-trainings.html>

^{viii} Sample materials to be included in the Appendix about Sundae on the Farm in Saratoga County, www.saratogafarms.com and Oneida County Farm Fest, <http://counties.cce.cornell.edu/oneida/>.

^{ix} Sample materials to be included in the Appendix about Cazenovia Area Community Development Association’s Farm Book. <http://cacda.net/downloads/63.pdf>

^x Sample materials to be included in the Appendix include American Farmland Trust’s *Planning for Agriculture in New York: A Toolkit for Towns and Counties*. <http://newyork.farmland.org/publications>

^{xi} Sample materials to be included in the Appendix about Maine Farmland Trust’s “Buy, Protect, Sell” Program, <http://www.maineFarmlandTrust.org/Programs/BuyProtectSell/tabid/144/Default.aspx>, and Options to Purchase at Agricultural Value, <http://www.vhcb.org/agoption.html>.

APPENDIX

List of Resources that Document the State of Owasco Lake, Additional Lake Watershed Management Plans and Other Supporting Information

- Owasco Lake Watershed Plan, July 2001: is an action plan containing suggested management actions developed by the community, documents on-going lake management efforts, serves as a guide for future development and environmental initiatives and lists sources of revenue to fund projects
- Owasco Lake Watershed Rules and Regulations- Administered by Cayuga County Dept of Health: rules set forth the conditions and types of activities allowable in the Owasco Lake watershed
- State of the Owasco Lake Watershed Report 2000: contains information that was used to develop the Owasco Lake Watershed Plan that reflects community priorities and recommendations
- Owasco Lake Watershed Inspection Program-(ongoing): to help protect and enhance Owasco Lake as a potable water source. It serves as a drinking water supply for approximately 45,000 Cayuga County residents
- Cayuga County Water Quality Management Agency: staffed by Cayuga County Planning Department. Its mission is to protect and improve the quality of water in Cayuga County. The agency is comprised of Cayuga County Environmental Advisors, non-County local officials, and representatives of water body associations in Cayuga County.
- Finger Lakes Institute: promotes environmental research and education about the Finger Lakes: various reports including Water Quality and Nutrient Sources in the Owasco Lake Watershed 2010 Update
<http://people.hws.edu/halfman/Data/Halfman%20OwascoLake%208-4-10.pdf>
http://fli.hws.edu/pdf/2010_halfman_owasco_watershed_update.pdf
- Owasco Watershed Network www.owascolake.org : A portal that connects widely varied information and data interests, importance and influences for the protection of Owasco Lake.
- Owasco Watershed Lake Association www.owla.org: A citizens based association developed to support cooperation in the comprehensive management of land use, water quality, recreation, agriculture and other issues pertaining to Owasco Lake
- P-Project: a collaborative program led by Cayuga County Cooperative Extension in partnership with Cayuga County Water Quality Management Agency. The goal is to reduce external phosphorus from reaching Owasco and Cayuga Lakes as well as other Cayuga County water bodies.
- NYSDEC website: Owasco Lake Watershed Management, Maps of Protected Streams of Owasco Lake Watershed www.dec.ny.gov/

- Cayuga County Soil & Water Conservation District (CCSWCD) \$300,000 grant from EPA for agricultural nonpoint projects, to begin next construction season (2011), mostly focused in Owasco Lake watershed. Projects centered on prescribed grazing (Owasco Lake) and barn waste management systems (Owasco and Cayuga Lake watersheds)
- Cayuga County Soil and Water Countywide Annual Management Plan
- Environmental Protection Agency website: Concentrated Animal Feeding Operations (CAFO) <http://www.epa.gov/guide/cafo/> Also Cornell University cow power at <http://www.cowpower.cornell.edu/> : Information on CAFO's
- Conesus Lake Watershed Management Plan, Town of Livonia, Livingston County Planning Department, EcoLogic Project Consultant March 2003: Management plan to insure the preservation, restoration and enhancement of Conesus Lake and watershed
- Canandaigua Lake Watershed Council: 2009 Long Term Water Quality Report
- Skaneateles Lake Agricultural Watershed Program – Ongoing since 1994 the City of Syracuse is pursuing “filtration avoidance” to assure a healthy water supply from Skaneateles Lake. The City established a watershed program with education, property easement acquisition and agricultural components to protect the lake's water quality.
- Chesapeake Bay Showcase Watershed: Conewago Creek (NRCS): focus on Best Management Practices demonstrating a wide array of conservation systems on farmlands, pasturelands, croplands, forestlands and riparian areas
- Chesapeake Bay Watershed: Muddy Run Watershed: focus on groundwater contamination and manure discharge to streams
- Great Lakes Restoration Initiatives: Restoring and protecting the Great Lakes focus areas include near shore health and nonpoint source pollution including agricultural sources
- NRCS Mississippi River Healthy Watersheds Initiative 2010-2013: To improve the health of the MRB including water quality and wildlife habitat. Selected watersheds in MRB voluntarily implemented conservation practices that avoid, control and trap nutrient runoff, improve wildlife habitat and maintain agricultural productivity
- NOAA Fisheries Recovery Plan: Shared Salmon Strategy for Puget Sound, Washington: A user-friendly blueprint for how people across Puget Sound plan to restore salmon, preserve regional culture including agriculture and quality of life. Each of the 14 sub watershed basins of Puget Sound has developed individual plans.
- New York City Watershed: http://www.nycwatershed.org.clw_paired.html

- <http://www.agrinews.com/partnership/unites/diverse/group/story-3934.html>
Root River Field to Stream Partnership to determine if what flows off farm fields and through tile drainage ends up in the water.
- [Conservation Effects Assessment Project \(CEAP\).](http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap)
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap>
Link to a multi-agency effort to quantify the environmental effects of conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality. Project findings will be used to guide USDA conservation policy and program development and help conservationists, farmers and ranchers make more informed conservation decisions.

Results from Confidential Personal Interviews

Farm Community

Do you feel agriculture impacts the lake and if so how?

- Runoff is bad for the lake- when you farm next to water you will have runoff. Provide guidelines from an environmental engineer where to plant and offer monetary reward for not planting in sensitive areas.
- This is a traditional bank barn located near a stream. Today manure storage/stockpiling and nutrient management are a concern.
- Have buffers because ground is too wet to plant; plant closest to stream is 25' because manure application and to avoid erosion from planting to close to stream edge- common sense.
- Crop farmers don't have much option to make change. Dairy farmers are already making a lot of changes, ie, barnyard runoff and concentrated flow areas.
- Need many big problems to rate high enough to get funding. Need to change the rules to benefit farmers, add more financial incentives.
- Have installed fencing to keep cattle out of Creek with assistance from NRCS. Should have done the fencing long ago. The filter strips take out a lot from the run off. You can see the water going into the strips is dirty and is clean when it comes out. They really do work.

Have you participated in AEM?

- Not sure (3)
- Yes, had a Nutrient Management Plan (NMP) contained no action items- very disappointed.
- Did AEM but there were no concerns
- Yes, installed a few projects as a result

Aware of Watershed Inspection Program?

- Yes (3) from years ago:
 - Aware (2) did something years ago and told they could not do it because they were in the watershed- but is Sucker Brook in the watershed?
 - Called DEC on potential sedimentation problem from land being developed
- No (3)

What conservation measures have you installed on your farm either with or without financial assistance?

- CRP
- Buffers (2)
- Pond (2)
- Laneways for animal movement
- Tillage drainage (2)
- Conservation tillage and strip cropping (4)
- Barnyard runoff improvements

- NMP
- Fencing (2)
- Changed to grazing from row crops

Non-Farm Community

- People talk past each other
- People are polarized on the Owasco Lake compared to other Finger Lakes
- Concern with stream bank erosion. Concern about road ditching and homeowners. Siltation of creeks is very bad, stream bank erosion due to lack of buffers
- SWCD housing Inspector- is this a potential conflict of interest? Inspector is housed at SWCD and is giving a 'bye' to ag issues.
- The current watershed plan is grandiose, not a true planning document. Suggests developing consensus based locations and items that then lead to rational prioritization. Need to get Watershed Inspector, SWCD, WQMA and OWLA to agree on priorities.
- Change the ag rules- no fertilizer near tributaries to the watershed and add buffers. Treat these areas as impervious surfaces to hold 1 inch of water for 24 hours.
- Make the Finger Lakes a protective zone. Statewide Lake Management program is not happening Finger Lakes-Lake Ontario Watershed Protection Alliance (FOLLOWPA) exists
- Need Health Department to have a protocol on manure spill sampling down stream
- What are BMPs doing? There is no baseline to measure from; especially to prove they are working
- All new nutrient management techniques are working, ie injection of manure but concern over saturation of Phosphorus in soils
- Look for common ground to work together on. For example methane digesters; NYSEG is not interested in helping, not wanting to move back into the grid. This is the common ground.
- Water Quality: Contact recreation (swimming/boating –algae-) will go before drinking water (Counter intuitive) If microtoxins (hormones and pharmaceuticals) are included would raise cost of filtration.
- Fish Farm is gone but Village of Groton is still bitter about the sewer upgrades, feels that OWLA pressured DEC into upgrade
- Need more money to get the information out about CREP. Cost Benefit ratio shows it works

Owasco Lake Ag Forum

March 2, 2011

American Farmland Trust is working on a project titled ***Strengthening Agriculture's Role in Protecting Water Quality in the Owasco Lake Watershed***. The ultimate goal of this project is to enable farmers in the Owasco Lake watershed to pro-actively take steps to further enhance their efforts to protect water quality. The objective of today's Owasco Lake Agriculture Forum is to provide the agricultural community of Owasco Lake's watershed to provide input about effective ways to protect water quality.

Agenda

- 10:00 Registration and View Exhibits
- 10:30 Welcome- CCE of Cayuga County
- 10:35 ***Reducing nonpoint source P pollution with science, common sense and 21st century information technology***
Dr. Todd Walter, Dept. of Biological & Environmental Engineering, Cornell
- 11:15 ***A farmer's perspective on protecting water quality***
Steve Cuddeback, Owasco Lake Watershed Farmer, Cayuga County Legislator and Chairman of the Cayuga County Soil and Water Conservation District
- 11:35 ***Summary of watershed interviews***
Judy Wright, CNY Consultant for American Farmland Trust
- 12:00 Lunch and view exhibits
- 1:00 ***Input on effective ways to protect water quality***
Discussion facilitated by Judy Wright
- 2:15 Closing Remarks and Wrap Up
- 2:30 Conclude with a Safe Trip Home!

Agricultural Forum:

Discussion on Barriers to Adoption of Conservation Practices

March 2, 2011

1. What are the reasons that motivate you to adopt conservation practice(s)?
 - Save the soil/ prevent erosion
 - Increase productivity/profitability
 - Protect water quality
 - Improve crop production
 - Social responsibility/ Public relations
 - Reduce Cost/ Competitiveness
 - Are tile lines a beneficial practice?
 - Cost Share

2. When you decide to implement a new conservation practice, where do you seek technical assistance?
 - Farmer to Farmer
 - Soil & Water Conservation Districts
 - NRCS/Govt. Agencies
 - Literature
 - Farm Shows

3. When you decide to implement a new conservation practice, how is it financed?
 - Cost Share
 - Personal/ Self
 - Landlord Cost Share
 - Grants- USDA, State Farmland Protection Funds

4. What are the barriers to the adoption of new conservation practice(s) that are encountered?
 - Cost/ Dollars
 - Regulations- Permits
 - Creating opportunity may create problems
 - Loss of Land
 - Rented Land
 - Lack of Information

- Long Term regulatory issues
5. Which of the following would better assist farmers in the Owasco Lake watershed in adopting new conservation practice(s)?
- Low/No Cost (6)
 - Cost Share (12)
 - Better Access to Information (8)
 - Risk Reduction (Crop Insurance) (3)
 - Technical Assistance (13) *
 - Regulatory (Permit) Assistance

Specifics: * Have person who knows regulatory process;
Filling out applications;
On-site planning including environmental;
Back end compliance/ monitoring;
Cost effective designs

6. Wish List of Conservation Practices for Owasco Lake Watershed
- Greater SWCD involvement
 - Soil Testing- costs/Fees Taking Accurate Samples
 - Streambank Stabilization
 - Buffers
 - Funding
 - Desire for less use of Pesticides
 - Ag plastics reduced
 - Tile Drainage Testing
 - Innovations outside normal practices that give corrective results
 - *Water testing- ID sources of input

Public Forum Agenda

For More Information

Contact: Judy Wright

CNY Consultant

(315) 730-4505

jlw4220@yahoo.com

“Strengthening Agriculture’s Role in Protecting Water Quality in the Owasco Lake Watershed”

PURPOSE: To provide an opportunity for local officials, residents, farmers and others interested in agriculture’s impact on water quality in the Owasco Lake Watershed to discuss: how agriculture can be part of the solution to the water quality concerns in Owasco Lake and brainstorm how barriers farmers are experiencing in adopting conservation practices can be overcome.

7:00 PM Welcome and Introductions

7:10 PM Program Overview- Judy Wright

7:30 PM Discussion seeking public input

- Where do you get information about farming? Where do you get information about the health of the lake? Newspaper, extension
- Do you have questions about agricultural practices and what farmers are doing?
- If you have a question about an agricultural practice who do you ask for information?
- What are your hopes that farmers might do to protect water quality?
- How do we make this happen?
- Is there an area of the watershed that you feel should be a priority? Why?

8:30 PM Conclude with a Safe Trip Home!

May 24th Public Forum at Moravia Fire Department

Since there was no non-farm public present (a review of our outreach concluded that we were through and since there were no current issues with the lake there was no reason to attend) there was some general discussion about agriculture in the watershed.

- There was a feeling that there was polarization over CAFO. The public feels that regulations will take care of problems.
- There is a need to create a model for lake shore living document for everyone in the watershed.
- Continue the FORUMs to build bridges for future crisis's
- Tompkins and Cayuga Counties are in the top 5 in the state in receiving state dollars for AEM projects through ANSACP (Agricultural Nonpoint Source Abatement and Control Program); yet in Cayuga County only 1 in 3 projects are funded because need outweighs resources.
- One of the dairy farms present mentioned that they are finally moving with their Organic EQIP
- There is hope that the newly formed Owasco Lake Watershed Management Council (OLWMC) will be staffed, right now Cayuga County Planning and Health Departments are provide the staff.
- One of the dairy farmers present mentioned that the nesting Canada geese are a huge problem along the shore line. He feels that goose hunting season is too short. The geese create a carpet of goose manure that runs into the lake in addition to the crop damage they cause. It was noted that 3 geese = 1 human in waste produced.
- There was discussion around how the public perceives cows in muddy barnyards (equate the mud to manure) and in creeks (this has historically happened along Route 38)
- There is strong interested in promoting protected tributaries via the watershed inspector and wanting to let farmers know where there are protected tributaries on their property. Stream crossing and limited access to water for livestock when needed are positive steps.
- It was mentioned that CREP (available through USDA FSA) can help with crossings and watering systems in addition to buffers. It was noted that Cayuga County FSA office is now fully staffed and is able to offer CREP when farmers come into the office.
- There was strong agreement that livestock needs to be kept out of streams; need a public campaign to make this happen or government will step in.
- There was discussion around the back page of The Citizen's fly over of farms. It was felt that this is not a good way to foster communication and trust between the ag community and the public.

May 25th Public Forum at Owasco Fire Department

There were no active farmers present. Surprise was expressed that so few people attended. It was felt that there was good notice of the meeting.

General discussion points included:

- Putting the Lake on a nutrient diet. Need to document where nutrient flows are coming from; create a baseline to see if practices are making a difference.
- “W40 ponds” were wetlands that we converted to ponds- need to be converted back.
- **Where do you get information about farming?** Grandfather, observing neighboring farm, on farm experience as a teenager, stop and ask farmer what they are doing (they are very receptive)
- **Where do you get information about the health of the lake?** OWLA’s testing, newspaper, WQMA annual report
- **Do you have questions about agricultural practices and what farmers are doing?**
 - Why do farmers spread cow manure on snow? 3000 cows is too much manure to be concentrated in one location. Equated that many cows to human population and thus the need for sewage treatment.
 - Observed more ‘drag lines’ this year allowing for immediate incorporation of manure
 - CAFO discussion and nutrient saturation
 - Why aren’t nutrient management plans available for the public?

Link to American Farmland Trust's New York Agricultural Land Owner Guide

<http://newyork.farmland.org/publications>

