



# Agricultural Environmental Management

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Annual Report



## Cultivating Environmental Stewardship in New York State

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# Agricultural Environmental Management



AEM helps farmers make practical, cost-effective decisions that protect natural resources for their families, communities and for future generations.

## Core Concepts

- Voluntary, incentive-based
- Customized farm by farm
- Reduce farmer liability
- Target watershed needs
- Locally led and coordinated
- Confidential planning and assessment
- Increase farmer environmental awareness
- Promote agriculture's environmental benefits

## Tiered Approach

Farmers work with local AEM resource professionals 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; assess 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.

### Cover Layout

- Top: View of Fox Run Winery in Yates County, NYS SWCC.
- Left: Fencing cows out of streams protects soil and water on Gordon Farms in Albany County, NYS SWCC.
- Center: Grazing cows on Fuess Meadows Farm save energy by harvesting their own feed, Madison County SWCC.
- Right: Composting on-farm nutrients enriches the soil and nourishes crops, Ontario County SWCC.

## Farming Cleaner and Greener

More than 10,000 New York farm families participating in AEM are leading the nation in conservation. Farmers know that in order to remain economically viable, they need to be vigilant about protecting natural resources. AEM provides the tools to help accomplish both.

Water quality is impacted by many sources including runoff from roads and construction sites, faulty septic systems and agriculture. While there are no perfect land uses, well managed farms can actually protect water quality as they contribute far less polluted runoff to waterbodies compared with most land uses. Where agricultural runoff concerns do occur, they can be remedied by implementing AEM practices.

County Soil and Water Conservation Districts (SWCD) and other partners deliver AEM resources and technical services that support farm families in their efforts to farm cleaner and greener while competing in today's global market. New York farmers spend millions of dollars annually to implement conservation practices that maintain the status of agriculture as a preferred land use to protect the soil and water resources we all depend on. Between 2005 and 2006 farmers invested more than \$11 million in state AEM projects alone, and millions more through federal and local programs.

In the face of growing public concerns regarding food production and the environment, it is in everyone's best interest to keep farming viable in New York. Farmers grow crops on nearly eight million acres statewide to produce the fresh food, green energy and other products that we enjoy everyday. Farmland also provides wildlife habitat, recreational opportunities, open space, scenic views, and a rural quality of life. Buying New York products supports the multiple benefits farms give back to our environment and our communities.

## Advancing Conservation in Allegany County

Increased state and federal support for the AEM Base Program has allowed the Allegany County SWCD to advance efforts to document farm stewardship and environmental needs. "The willingness of farmers to evaluate their current issues and future needs lies at the core of the program's success," says District AEM Coordinator Colleen Cavagna, who spearheaded the development of their County's AEM Strategic Plan. The strong teamwork between the District, USDA Natural Resources Conservation Service (NRCS), and Cornell Cooperative Extension (CCE) resulted in the development of a solid strategic plan with each agency taking on a role. Detailed resource maps are developed and utilized with the AEM Tier 2 Risk Assessment to identify potential environmental concerns. The maps include floodplains, wetlands, soils, classified streams, topography and field delineations, along with enhanced aerial photos. Results are provided to the farmer and utilized to prioritize farms for technical services and cost-sharing programs. Building on their success, the AEM team is assisting the growing pool of farmers moving on to the planning and implementation phases while also enrolling new farms from targeted watersheds.



"Farmers do their best and with AEM they can do even better."

-Dan Nickerson, Nickerson Farms

Dan & Sue Nickerson of Nickerson Farms welcomed AEM as an opportunity to consider their proximity to nearby school athletic fields. "If you don't spend the time evaluating your farm, problems don't get solved," said Dan. Their AEM assessment helped develop a solution to reduce odor from their 15,000 gallon pump station containing manure and other recyclable organic nutrients. With the installation of a 6-inch diameter tractor powered pump, odor causing agitation time has been cut from one hour to less than five minutes.

"There is a ten-fold increase in efficiency emptying the hopper, saving us both time and energy," reports Dan, "and odor has been reduced to the point that there are no neighbor complaints!" He further remarks on the benefits of participating in AEM by adding, "If someone does complain, at least you can tell them what you are trying to do."

The Nickersons also utilized the AEM process to identify other conservation opportunities. They are developing a Comprehensive Nutrient Management Plan to better manage farm operations, enhance neighbor relations and protect water quality. "It is extremely important that farmers are stewards of the land for future generations," says Dan. "The AEM program helped our farm fund, design and implement necessary environmental changes."

# Funding Conservation Success

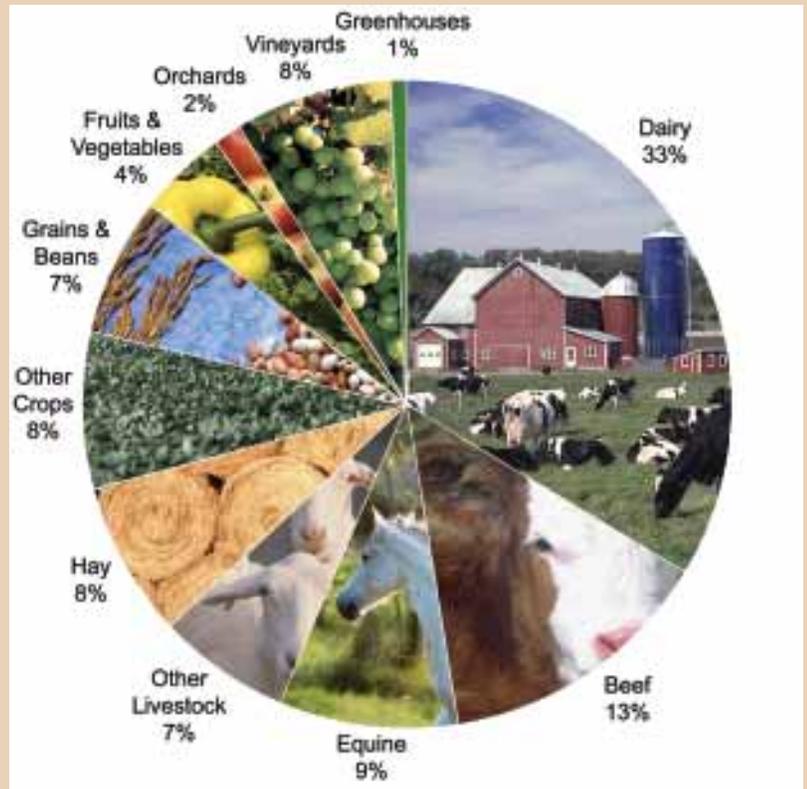
## Accelerating Efforts

Allocations from the State Environmental Protection Fund (EPF) and Congress have accelerated the AEM Base Funding Program to support Districts in the systematic completion of the AEM process on farms in priority watersheds. Launched in 2005, this non-competitive grant program provided a total of \$500,000 in state funds and \$800,000 of federal funds to 52 Districts who utilize a watershed approach to develop County AEM Strategic Plans. These plans prioritize agricultural concerns and opportunities, as well as target available resources to maximize environmental benefits.

AEM Base Funding has increased the numbers of new farms involved in AEM and established a consistent trend of farmers progressing through the AEM process from year to year. In the first year over 1300 new farms initiated AEM by completing farm inventories, with nearly 50% expected to develop plans in year two.

In year one, May 2005 – May 2006, 53 Districts worked with a total of 2,253 farms encompassing over 600,000 acres. In addition, 72% of these farms reported defined waterbodies on or near the farm and potential impact to these waters has been identified or addressed.

In year two, between May and November 2006, 43 Districts brought 561 new farmers into the program, completed 257 risk assessments, developed 111 conservation plans, implemented 43 conservation practices, and conducted 49 follow-up evaluations. The excellent results reported for assessment and planning show that farmers are advancing through the program and are positioned to compete for state and federal cost-share funds for conservation project implementation.



AEM Base Funds in 2005-06 helped Soil and Water Conservation Districts assist all types and sizes of agricultural operations.

## Partnering with USDA and EPA

United States Department of Agriculture (USDA) Farm Bill funds and US Environmental Protection Agency (EPA) 319 Clean Water Act funds complement state AEM resources to align New York goals with federal priorities maximizing conservation on the ground. For example, Farm Bill programs provided over \$18 million to install conservation practices on farms in 2006 bolstering AEM's objectives. In addition, Federal Farm Bill conservation program funding now requires the use of the AEM assessment process, which helps provide a more consistent basis for conservation program delivery.

"AEM helps maximize state and federal funds to get the job done."

- Colleen Cavagna, Allegany SWCD

## Spreading the News

Since 2005, AEM media training has provided tools and techniques to over 200 farmers and local AEM partners to help them communicate the role farm families play in protecting the environment and the need for strong local agriculture. "Farms are important to the future of every New Yorker," said Dale Stein of Stein Farms, LLC in Genesee County. "We need to work together to educate the public on the innumerable benefits of agriculture, from protecting our soil and water to supporting our local economy. Having a communications component in a farm's business plan is a key ingredient for successful farming today."

The first AEM 'Agriculture in the News' awards were presented to Cortland, Madison and Wyoming SWCDs to recognize their success promoting public awareness of agricultural issues.

Over \$60 million in State EPF funding has been provided to Districts through AEM's competitive grant program since 1994 to help farmers plan and implement over 4,000 costly conservation projects. In 2006 alone, more than \$15.5 million was awarded. These AEM funds have facilitated the development of 22 farm plans and the implementation of over 650 projects. The most common conservation projects include systems to manage barnyard runoff and pasture management practices such as fencing and alternative water supply systems.

The technical assistance and cost-share funding offered through AEM are particularly important in this time of high production costs to help farmers continue their commitment to conservation. Orleans County dairy farmer Edward Neal adds, "Through AEM, the District provides the assistance we need to stay up to date with new environmental regulations and keep the water clean for our friends and neighbors."

# AEM Growing Statewide

## Grape Growers Take AEM to the Next Level

For New York wine and juice grape producers, environmental stewardship is more than just the 'right thing to do,' it's a strategic component of their business plans. Now the industry has taken AEM to the next level. Grape production occurs on the slopes adjacent to the Finger Lakes and Great Lakes, and over the shallow aquifer that supplies drinking water to over a million residents on Long Island. By adopting growing practices that minimize environmental impacts, growers are doing their part to preserve these important water resources.

Since the original AEM Assessment Worksheets for Vineyards came out in 1998, at least 50 growers representing more than 75% of the Finger Lake's grape acreage, have completed them, reports Tom Eskildsen, Yates County SWCD AEM Planner. "One tangible result has been the construction of 27 pesticide storage, mixing and loading facilities on Finger Lakes grape farms through state and federal cost-share programs."

Expanding upon the AEM worksheets, a new *Grower Self-Assessment Workbook for Sustainable Viticulture* was developed to allow growers to rate the entire range of production practices they use in their vineyards for environmental, economic and social impact. "The workbook applies to all 40 grape varieties grown in the state, from bulk Concord grapes in Western New York, to high-end premium wine varieties on Long Island," said Tim Martinson, Senior Extension Associate in the Finger Lakes. "The workbook has been completed by 52 growers, 16 of which have already developed action plans that implement an average of 9 farming practices each." The most common practices are safe storage and handling of fertilizers and pesticides, and improving soil health.

By documenting the sustainable practices they use, growers and processors can demonstrate to buyers, neighbors, and tasting room visitors that they are producing their product in an environmentally responsible manner. Growers and industry leaders expect this to help preserve existing markets, build demand for juice and wine products, and improve neighbor relations.

"With the new workbook," commented Eskildsen, "New York's viticulture industry is positioned to meet increasing public demand for environmentally sustainable products and remain competitive in the national market."

The workbook project, funded by the Northeast Center for Risk Management Education and the New York Farm Viability Institute, was a direct result of interest from the National Grape Cooperative (Welch's), Centerra Wine Company, New York State Winegrape Growers, and the Long Island Wine Council.

## Conservation Taking Root

Many farm families are taking their commitment to water quality protection one step further by establishing vegetative buffers through the State's Conservation Reserve Enhancement Program (CREP). The CREP partnership between the State and Federal Departments of Agriculture helps farmers plant specifically designed strips of native grasses, shrubs and trees on environmentally sensitive farmland in priority watersheds.

Planting buffers is a relatively simple, low-cost way to provide a wide array of environmental benefits. Well designed and managed buffers along streambanks and wetlands protect water quality by filtering rainwater runoff from crop fields and pastureland. Water is also protected by fencing livestock out of streams, which in turn improves herd health by providing them with an alternate supply of clean water. Buffers also prevent streambank erosion and enhance habitat for birds, fish and other wildlife.

"Buffers are a win-win scenario," said Craig Schutt, District Manager in Tompkins County. "The farm family receives reimbursement for setting aside sensitive land, and the entire community benefits from water quality protection." The USDA has committed to pay more than \$13 million to nearly 400 farms to install and maintain buffers statewide. In Oneida County farm families are enrolling in CREP as a way to help keep their farms viable and productive so the next generation can stay on the farm. Buffers have been installed on 159 acres along streams and wetlands involving 19 farms. "The success in Oneida County is largely due to the team effort between the Farm Service Agency, NRCS and the District, who make farmers aware of how CREP can benefit their operations and take their conservation efforts to the next level," said Margaret Fusco.

The statewide program, which is now in the fourth year of its five-year agreement, grew dramatically in 2006 with 191 new projects spanning over 2,258 acres of land. This valuable program has the capacity to enroll a total of 40,000 acres of sensitive land and provide more than \$100 million to farmers.

"We decided to participate in CREP out of concern for our downstream neighbors," said Dale Laue, beef farmer in Tompkins County. "As more people move into the area, we need to be vigilant about protecting water quality. The future of our farm depends on it!"



Neil Simmons (right) of Simmons Vineyards in Yates County with District AEM Coordinator Tom Eskildsen by his facility designed to safely store and handle pesticides.

"AEM is a great partnership that has been enormously beneficial for grape growers," said Simmons. "We expect even more benefits to the industry as more growers implement the program."

Barbara Silvestri, NYS SWCC



Fencing cows out of streams and providing them with alternative water supplies are key practices that provide multiple benefits.

# Keeping Current with Regulations

While AEM supports the voluntary environmental stewardship efforts of farms of all types and sizes, it is also the vehicle by which changes in environmental regulations have been effectively implemented on over 600 Concentrated Animal Feeding Operations (CAFOs). Nearly all CAFO regulated farms are family-run businesses grown from a long legacy of farming in New York.

## The Plan

CAFO regulated farms follow complex science-based plans to control runoff, conserve soil, recycle nutrients and farm in harmony with the environment. Comprehensive Nutrient Management Plans (CNMPs) are developed and annually updated for farms by Certified AEM Planners according to the AEM process and standards developed through the AEM partnership. CNMPs assess environmental risks on farms and identify site-specific conservation practices to address concerns, while also meeting farm business objectives. Farm plans often cost several thousand dollars to develop and hundreds of thousands to implement and maintain, all toward the goal of protecting water quality. Plans have been successfully developed for all 147 large CAFOs and 92% of the state's 472 medium-sized CAFOs. These plans are routinely spot-checked in order to assure the public, regulators and farmers of quality AEM planning.

## The Planners

AEM Planners are certified by the USDA-NRCS and the NYS Department of Agriculture and Markets to develop CNMPs for regulated farms. In place since 1999, the AEM Planner Certification Program is coordinated by the Soil and Water Conservation Committee (SWCC) in cooperation with NRCS, Cornell University, Cornell Cooperative Extension, and the Northeast Region Certified Crop Advisor Program (CCA). In 2005, two CNMP Specialists were added to oversee New York's unique Quality Assurance component. Planner Certification is an on-going, performance-based process. For initial certification, individuals must achieve CCA status, pass an NRCS web-based course, attend an intensive four-day training, and have three plans successfully reviewed by the CNMP Specialists. Re-certification involves maintenance of their CCA accreditation, continuing education, and a successful biennial Quality Assurance review of their CNMP work. There are 43 Certified AEM Planners across a range of private and public sector agricultural service organizations in New York.



The Giroux Poultry Farm family received the State's first "AEM Partnering to Protect Our Environment" roadside sign from the Clinton County SWCD. Willie, Craig and Roger Giroux were awarded the sign in recognition of their exemplary environmental stewardship and management skills operating a large CAFO, as well as dedication to their local community.

"We try to farm under a good-neighbor policy. After all, it's our back yard too," said Craig. "All sizes of farms can benefit from the AEM planning process." Roger adds, "Through AEM, farmers can get into compliance easier than they think."

The Giroux's were also recognized internationally for their environmental stewardship this year by the Lake Champlain Basin Program, involving Vermont and Canada.



## The Partnership

Funding made possible by a partnership between the SWCC and the NYS Environmental Facilities Corporation makes a big difference for farms struggling to comply with environmental regulations at a time of high production costs. The Environmental Farm Assistance & Resource Management Program (EFARM) has made \$13 million in State funds available to CAFO farms to help pay for the costs of preparing and updating CNMPs necessary to comply with state regulations and protect natural resources. The average cost of a CNMP is \$10,000 and some have cost over \$50,000. In 2005, 340 reimbursement requests were received and over \$1.7 million were provided to farmers for initial plan development costs. Over \$350,000 will be divided among 195 farmers seeking reimbursement for annual update costs.

## AEM in the Environmental Marketplace

By considering AEM impacts beyond water quality, the State is taking a holistic and proactive approach to on-farm resource management and has begun to identify policy linking opportunities between agriculture, the environment and energy. As the new environmental marketplace emerges farms are increasingly being viewed as ecosystem service providers that produce valuable environmental commodities. Environmental benefits, or "credits", are already being traded in some regions for nutrient reduction, greenhouse gas reduction and domestically produced green energy. By documenting past, present and future on-farm environmental improvements, AEM is the critical first step in the verification process that will be necessary in order for New York to continue to gain traction in this new market. Documenting agriculture's benefits is also one more way of furthering AEM's foremost goal of protecting natural resources, while helping farms to attain greater economic sustainability.

# AEM: It's Good Business



## Award-Winning Commitment to Conservation

The Neal Family's Orleans Poverty Hill Farm and their County Soil and Water Conservation District (SWCD) were the recipients of the 2005 AEM Award. One of the County's first farms to complete an AEM Risk Assessment, the 50-year old farm has participated in AEM since 1995. Owner Edward Neal grew up on the farm, which started with 16 milking cows on 90 acres. Today, the farm is run by Edward and his two oldest sons, James and Jody, who milk 330 cows and farm 585 acres of land.

"The farm has tried to implement common sense practices that are good for the environment and make sense for the farm's financial bottom line," said Jody. "For example, by following the farm's nutrient management plan we reduced the amount of fertilizer on some crops, which added up to be a substantial savings." Over the past

decade, they have instituted a variety of conservation practices including contour strips on highly erodible land, grass waterways to improve drainage, crop rotation to preserve soil health, integrated pest management to reduce pesticide applications, and fencing off pasturing cows from surface water and ditches to protect water quality. The Neals also improved their bunk silage leachate collection system and are now implementing a larger nutrient storage system with the assistance of the District.

"The Neals are excellent stewards of the land, and serve as role models promoting conservation practices and positive community relations here in Orleans County," said District Manager James Kingston. "As new homes and businesses develop along farm borders, the Neals have proactively maintained good relations with their neighbors, while providing open space, wildlife habitat and other benefits to the growing community."



"Every time you visit the farm, a family member or employee is maintaining or improving on their conservation practices."

- James Kingston, Orleans County SWCD

American Agriculturist

## Partners

- Adirondack Council
- American Dairy Association & Dairy Council
- American Farmland Trust
- Champlain Watershed Improvement Coalition of NY
- Citizens Campaign for the Environment
- Cornell Cooperative Extension (CCE)
- Cornell Pro-Dairy Program
- Cornell Small Farms Program
- Cornell University
- County Soil & Water Conservation Districts
- Environmental Defense
- Environmental Facilities Corporation
- Finger Lakes-Lake Ontario Watershed Protection Alliance
- Keuka Lake Watershed Protection Program
- Long Island AEM Stewardship Committee
- Lower Hudson Coalition of Conservation Districts
- Northeast Certified Crop Advisor Program
- NY Association of Conservation Districts
- NYC Watershed Agricultural Program
- NY Farm Bureau
- NY Rural Water Association
- NYS Agri-business Association
- NYS Agricultural Agents Association of CCE
- NYS Agricultural Mediation Program
- NYS Cattle Health Assurance Program
- NYS Conservation District Employees' Association
- NYS Department of Agriculture & Markets
- NYS Department of Environmental Conservation
- NYS Department of Health
- NYS Department of State
- NYS Energy Research & Development Authority
- NYS Horse Health Assurance Program
- NYS Integrated Pest Management Program
- NYS Soil & Water Conservation Committee
- NYS Sustainable Viticulture Program - VineBalance
- NYS Water Resources Institute
- NYS Wine & Grape Foundation
- Skaneateles Lake Watershed Agricultural Program
- SUNY College of Environmental Science & Forestry
- Upper Susquehanna Coalition
- US Environmental Protection Agency
- US Fish & Wildlife Service
- USDA Farm Service Agency
- USDA Natural Resources Conservation Service
- Wappingers Creek Watershed Program

The Arnold family's Twin Oaks Dairy and the Cortland County Soil and Water Conservation District were the recipients of the 2006 AEM Award. Since the 1930's, conservation has been the mantra of the Arnold family's farm. Today, Bob and Rick Arnold carry on their parents' legacy with their own families. Among the first farmers in the state to participate in AEM, the Arnold family now operates a 140 cow organic dairy with 250 head of cattle on nearly 700 acres. They also grow hay, corn and small grains.

The Arnold's have been working with the District for years, implementing everything from strip cropping and diversion ditches for erosion control, to water quality projects including fencing and planting trees along the river. They also utilize intensive grazing,



"Let's face it, more crop land goes under concrete and blacktop all the time and we have to take care of what's left."

- Kathie Arnold, Twin Oaks Dairy

which is beneficial to the cows and keeps the rolling hills of their property in permanent sod cover, reducing erosion. "Going to intensive grazing was the most helpful innovation we made," says Rick.

"The Arnold's are innovators and leaders in applying new technology and exploring non-traditional techniques to further their conservation goals," said District Manager Amanda Barber.



[www.nys-soilandwater.org](http://www.nys-soilandwater.org)

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