



# The USC Approach to Ag BMP Data Collection

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Upper Susquehanna  
Coalition



# Upper Susquehanna Coalition

Established in 1992

19 Soil and Water Conservation Districts

16 counties in NY

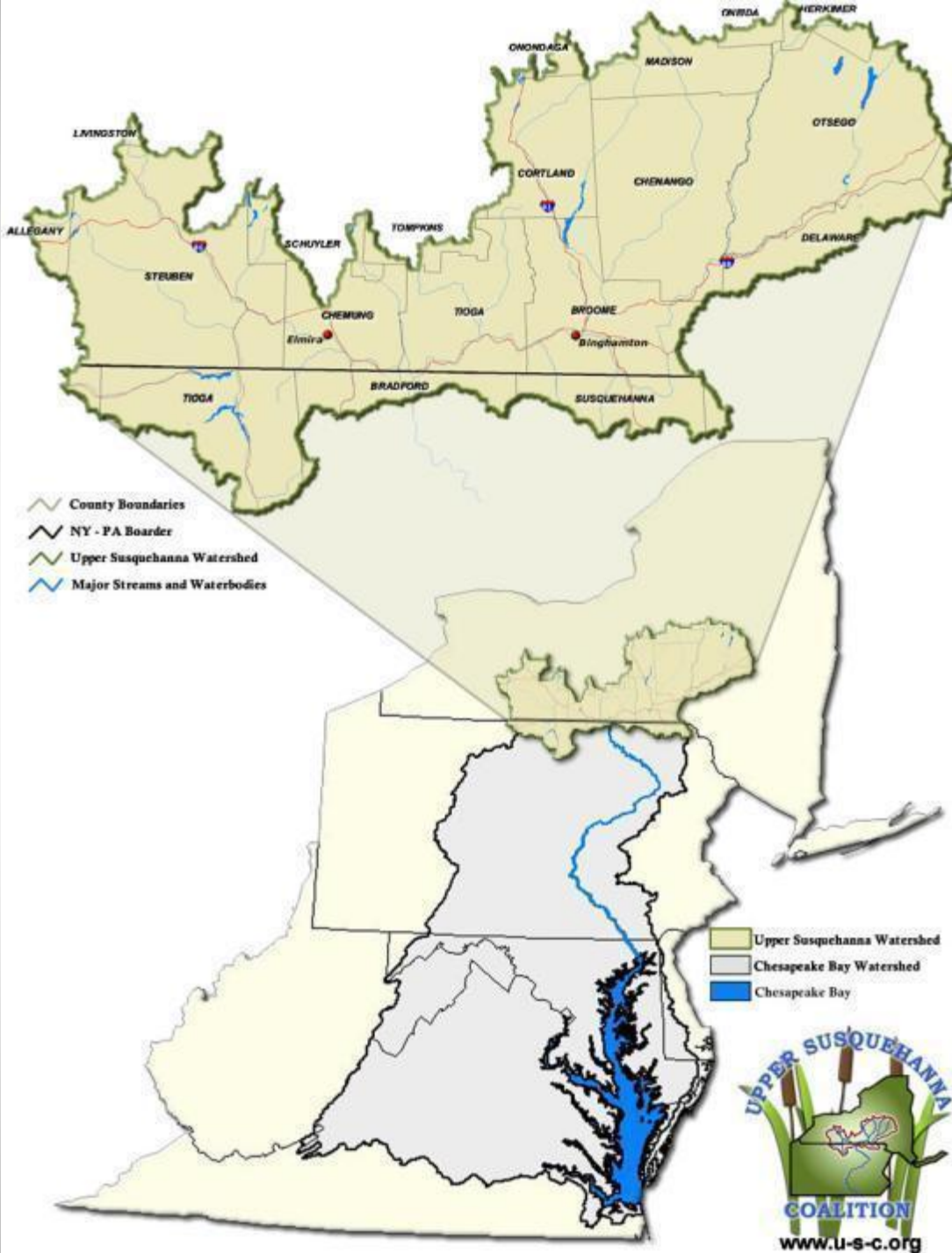
3 in PA

Partnerships with Ag & Markets,  
NRCS, DEC, Universities,  
Municipalities

7,500 square miles

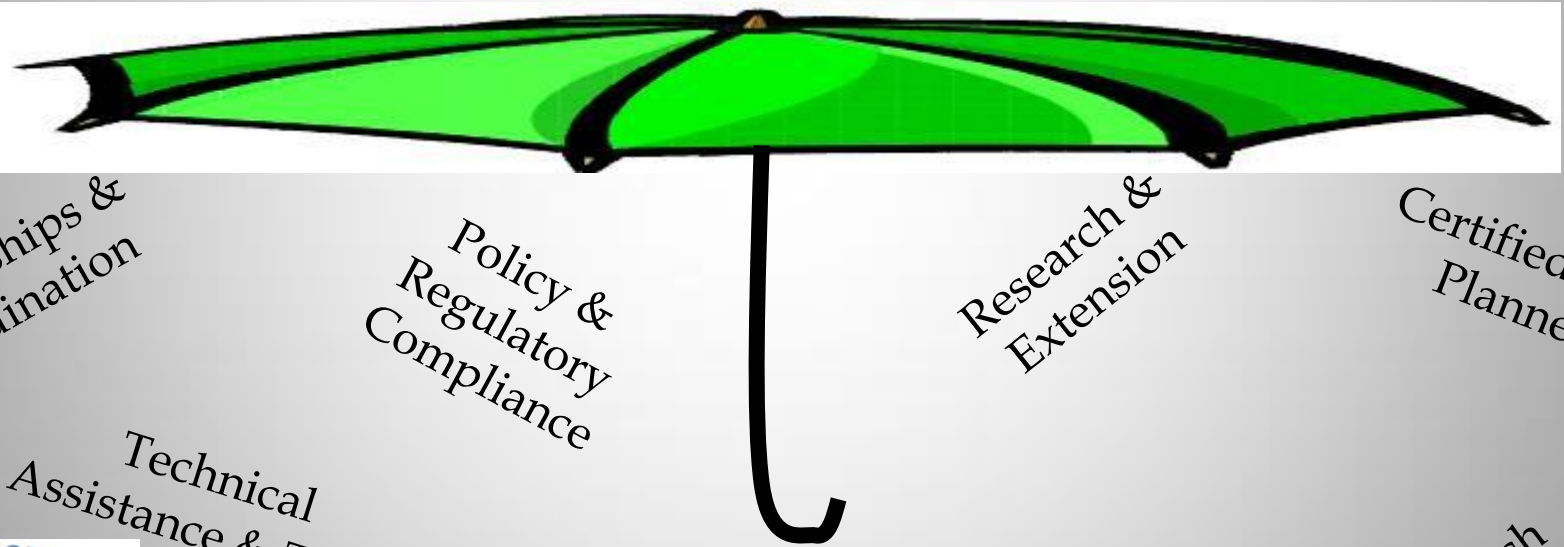
Headwaters of the Chesapeake  
Bay

USC implements nonpoint  
source projects to address  
watershed issues



# Agricultural Environmental Management (AEM)

AEM is the “umbrella program” that provides a consistent format to efficiently identify and address environmental concerns through a comprehensive on-farm assessment, planning, implementation, and evaluation cycle.



Partnerships &  
Coordination

Policy &  
Regulatory  
Compliance

Research &  
Extension

Certified AEM  
Planners

Technical  
Assistance & Tools

Programs

Locally-led Strategies &  
Priorities

Training

Outreach



# USC Data Collection Under the (AEM) Framework

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The USC has an Ag Team with a Team Leader, Coordinator, and a variety of specialists including a GIS specialist, lead data collectors, and technicians.

The USC is the sole collector of Ag BMP data and reports progress directly to EPA

**It is the goal of the USC to collect all on-farm BMPs – both cost shared and non-cost shared BMPs.** AEM, in general, provides the framework to capture this

What is needed is the development of a finer level of detail within our current system to better capture **non-cost shared, non-structural, and annual practices**

Within the AEM framework, other methods of data collection may be used in the future

- Call your District
- Phone surveys
- Farmer self-certifications
- Aerial imagery/dashboard surveying of cropland



# USC Data Collection Under the (AEM) Framework

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Each county SWCD is the contact for data reporting

Collected as AEM data, so held in confidence

The USC aggregate data to county-level for annual EPA submission

- Individual farms are not identified in reporting
- Due every year



# Agricultural Environmental Management

## AEM Framework:

## 5 Tiers

- Document stewardship *Tier 1- Inventory Questionnaire*
- Identify concerns & opportunities *Tier 2- Assessment Worksheets*
- Develop conservation plans *Tier 3 - Planning*
- Implement conservation practices *Tier 4- Implementation*
- Evaluate plan, practices & program *Tier 5- Evaluation*

Voluntary Approach

CAFOs 35% of the animals and ~16% of the Ag Land Use

AEM provides the framework to capture both AFO/CAFO





(YOUR COUNTY'S NAME)

## AGRICULTURAL ENVIRONMENTAL MANAGEMENT TIER I

Watershed Identification: \_\_\_\_\_ Date: \_\_\_\_\_

Farm Name: \_\_\_\_\_

Owner's Name: \_\_\_\_\_ Operator's Name: \_\_\_\_\_

Address: \_\_\_\_\_ Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_ Email: \_\_\_\_\_

Preferred Contact Point ..... ☐ ..... (Please Check One Only) ..... ☐

### 1) Future Status of the Farm

Yes No

Do you anticipate any major modifications on your farm within the next 5 years?

☐ ☐

If yes, please circle the condition(s) that best describes the modification(s):

Business Structure  
Operation Type

Expansion  
Diversification of Farm Business

Retirement  
Sale of Farm

### 2) Basic Farm Information

What **Primary** Farm Type best

describes your operation? (Please Circle One Only)

	Owned	Rented
Dairy	_____	_____
Beef	_____	_____
Poultry	_____	_____
Vineyard	_____	_____
Swine	_____	_____
Horses	_____	_____
Orchard	_____	_____
Vegetables	_____	_____
Cash Crop: (Please Define)	_____	_____
Other: (Please Define)	_____	_____
Total Acres	_____	_____

Animal Numbers for your **Primary** Farm Type

Average Weight: \_\_\_\_\_ Number: \_\_\_\_\_ Average Weight: \_\_\_\_\_ Number: \_\_\_\_\_

Average Weight: \_\_\_\_\_ Number: \_\_\_\_\_ Average Weight: \_\_\_\_\_ Number: \_\_\_\_\_

### 3) Management Questions (Please check Yes or No)

	Yes	No
Do you grow specialty crops? (Ex. fruits, vegetables, grapes etc.)		
Do you spread and/or store manure?		
Is there a barnyard or feedlot on your farm?		
Do you store silage on the farm?		
Do you utilize pastureland on your farm?		
Do you use fertilizer?		
Do you use pesticides (herbicides, insecticides, fungicides) on your farm?		
Do you store and/or mix pesticides (herbicides, insecticides, fungicides) on your farm?		
Does your operation utilize cropland?		
Is the water supply on your farm from a well or a spring?		
Is there a defined stream within or adjacent to your farm?		
Do you presently or do you plan to harvest timber on your farm?		
Do you store petroleum products on your farm?		

(OPTIONAL)

Producer Questions & Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### NYS AGRICULTURE INTEREST ASSESSMENT

Farm, Resource, and Conservation Management Issues (Please Identify Interest level)

					Reference # Appendix B
Agricultural Tax Relief	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	1
Agriculture Recreation and Tourism	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	2
Air Quality Concerns- Odors	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	3
Air Quality Concerns- Wind Erosion	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	4
Concentrated Animal Feeding Operations	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	5
Energy Conservation	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	6
Farmland Protection	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	7
Fish Habitat Improvement	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	8
Grasslands Farming	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	9
Irrigation Water Management	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	10
Neighbor Relations	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	11
Nuisance Wildlife Control	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	12
Stream Vegetative Buffer	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	13
Water Conservation	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	14
Wellhead Protection	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	15
Wetland Conservation	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	16
Wildlife Habitat Improvement	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	17
Woodland Management	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> None	18

### PLEASE PROVIDE ME WITH MORE INFORMATION ON THE FOLLOWING:

<input type="checkbox"/> Local Technical Assistance for Landowners	<input type="checkbox"/> Safe Drinking Water Act
<input type="checkbox"/> Clean Water Act	<input type="checkbox"/> CAFO General SPEDES Permit
<input type="checkbox"/> NYS Agricultural Nonpoint Source Abatement and Control Program	<input type="checkbox"/> NYS Agricultural and Farmland Protection Program
<input type="checkbox"/> NYSA&M Economic Viability Grants	<input type="checkbox"/> NYSERDA Agricultural Grants
<input type="checkbox"/> USDA - Wetlands Reserve Program	<input type="checkbox"/> USDA - Farmland Protection Program
<input type="checkbox"/> USDA - Wildlife Habitat Incentives Program (WHIP)	<input type="checkbox"/> USDA - Environmental Quality Incentives Program (EQIP)
<input type="checkbox"/> USDA - Stewardship Incentives Program (SIP)	<input type="checkbox"/> USDA - Conservation Reserve Program (CRP)
<input type="checkbox"/> USDA - Forestry Incentives Program (FIP)	<input type="checkbox"/> Other Local Programs

# Manure Management Worksheet

AEM Tier 2 Worksheet:

Manure Management

Table 1: Nutrient Management

Potential Concern

Factors Needing Assessment	Lower 1	2	3	Higher 4
How many animal units* do you have per acre of land to which manure is applied (see footnote below)?	<u>Animal Units</u> <u>per Acre</u> <u>Rotation</u> Corn-Legume <1 Corn-Grass <1.5 Grass <2.25		<u>Animal Units</u> <u>per Acre</u> <u>Rotation</u> Corn-Legume 1 – 1.5 Corn-Grass 1.5 – 2.25 Grass 2.25 – 2.5	<u>Animal Units</u> <u>per Acre</u> <u>Rotation</u> Corn-Legume >1.5 Corn-Grass >2.25 Grass >2.5
Do you know the nutrient needs of your crops?	All fields are soil tested at least every 1 or 2 years.	All fields are soil tested at least every 3 years.	Fields are soil tested regularly, but less often than every 3 years	Soil testing is not done regularly on fields.
How is the need for sidedress nitrogen on your corn crop determined?	Pre-sidedress Nitrogen Testing (PSNT) of all corn fields receiving manure.	Pre-sidedress Nitrogen Testing (PSNT) of some corn fields receiving manure <b>OR</b> Other method used to determine available nitrogen (e.g. Cardimeter).		Pre-sidedress Nitrogen Testing (PSNT) is not utilized on fields receiving manure. <b>AND</b> Other method to determine available nitrogen is <u>not</u> used on corn fields receiving manure.
Do you keep records of manure applications to fields?	Records are kept indicating the number of loads applied, yields, rotations, and fertilizer applications for each field.	Records are kept indicating the number of loads applied, only.		No records are kept indicating the number of loads applied, yields, rotations, and fertilizer applications for each field.



SAMPLE

**YOUR County  
Agricultural Environmental Management (AEM)  
Program Team**

**AEM Tier 2 Summary Report  
Shelf Creek Watershed AEM Project**

<b>Farm Name</b>	Sunny Day Dairy Farm	
<b>Contact Name</b>	Sam Malone	
<b>Address</b>	27 Shelf Creek Rd. Whoknows, NY 11111	
<b>Phone</b>	706-333-4444	
<b>Evaluator</b>	Norm Peterson	<b>Phone:</b> 706-838-3533

<b>Worksheet Name and Number</b>	<b>Level of Concern (1-4)</b>	<b>Items of Concern</b>	<b>Evaluation &amp; Recommendations</b>
<b>1. Watershed Site Evaluation</b>			<b>Details Captured on Tier 2 Worksheet</b>
<b>2. Manure Management</b>	3	Nutrient Mgmt Plan PSNT Improved Record Keeping	Soil testing is done every three years, but there is not a complete nutrient management plan looking at runoff & leaching potentials on each field. Spreading on frozen and snow covered fields is generally avoided. Set backs from waterbodies are not followed. No method is used to determine available nitrogen on cornfields receiving manure. Manure storage meets NRCS standards and is well maintained.
<b>3. Barnyard</b>	2	Improve O&M of barnyard runoff mgmt system	Barnyard runoff management system has been installed to NRCS standards and is working, diverting clean water; polluted water is sent to a vegetative filter area. Stream is approximately 200 ft away. Barnyard should be scraped more often and screens need to be cleaned.
<b>4. Management of Feed Nutrients</b>	2		Dry matter intake is estimated by weighing amounts fed and estimating feed refused. Dry matter intake is estimated infrequently. Feeds are analyzed for nutrient content and rations are balanced annually. Phosphorus and potassium levels in ration are not known. The herd is on a local health program with a local veterinarian. Farm participates in NYSCHAP.

# Agricultural Environmental Management

## Benefits of Tiers 1 & 2:



- ID & prioritize issues, opportunities, & farms
- Documents existing stewardship
- Initiate changes through education
- Measure farmer commitment and management ability
- Guide for assessment of less familiar topics

# Sample Data Collection Form

## Ag BMP Data Entry Form

### Farmstead BMPs

Animal Waste Management Systems

☐  
☐  
☐  
☐  
☐

Manure Storage  
Manure Transfer  
Silage Leachate  
Milkhouse Waste  
Mortality Composting

☐

\_\_\_\_\_ A#s

Covered

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Date 9/20/11

☐

CAFO

Manure Processing Tech

\_\_\_\_\_ A#s

Liquid Manure Injection

\_\_\_\_\_ Ac

Liquid Manure Incorporation

\_\_\_\_\_ Ac

Barnyard Runoff Control

76 A#s

☒

Loafing Lot Management

### Precision Feeding (Dairy) BMPs

NYS Precision Feed Management

\_\_\_\_\_ A#s for the lactating portion of the herd

Date \_\_\_\_\_

### Cropland BMPs

CNMP

\_\_\_\_\_ Ac

Date \_\_\_\_\_

Nutrient Management Plan

\_\_\_\_\_ Ac

Date \_\_\_\_\_

Soil Conservation Plan

\_\_\_\_\_ Ac

Date \_\_\_\_\_

Conservation Till

\_\_\_\_\_ Ac

Date \_\_\_\_\_

Continuous No-Till

\_\_\_\_\_ Ac

Date \_\_\_\_\_

Cover Crops

With Fall or Winter Manure

\_\_\_\_\_ Ac

☐ Wheat

☐ Rye

Planting

Date \_\_\_\_\_

With Spring Manure or Fertilizer

\_\_\_\_\_ Ac

☐ Wheat

☐ Rye

Planting

Date \_\_\_\_\_

No Manure

\_\_\_\_\_ Ac

☐ Wheat

☐ Rye

Planting

Date \_\_\_\_\_

### Pasture and Buffer BMPs

Total Pasture

120 Ac

From AEM Tier 1

☒

Prescribed Grazing Plan

\_\_\_\_\_ Ac

Date 2/13/05

☐

Score 1 or 2 on AEM Tier II

\_\_\_\_\_ Ac

Date \_\_\_\_\_

☐

Stream Present in Pasture

☐ Off-Stream Water

☐ Stream Fenced

\_\_\_\_\_ L

Date \_\_\_\_\_

Grass Buffer -----

\_\_\_\_\_ Ac

----->

Date \_\_\_\_\_

Forest Buffer -----

\_\_\_\_\_ Ac

----->

Date \_\_\_\_\_

Forest Buffer -----

\_\_\_\_\_ L

----->

Date \_\_\_\_\_

Cropland Buffers

Grass Buffer -----

\_\_\_\_\_ Ac

----->

Date \_\_\_\_\_

Forest Buffer -----

\_\_\_\_\_ L

----->

Date \_\_\_\_\_

Forest Buffer -----

\_\_\_\_\_ L

----->

Date \_\_\_\_\_

Horse Pasture Management

\_\_\_\_\_ Ac

----->

Date \_\_\_\_\_

### Other BMPs

Ag Land Retirement

\_\_\_\_\_ Ac

Date \_\_\_\_\_



# AEM BMP Online Tracking Tool

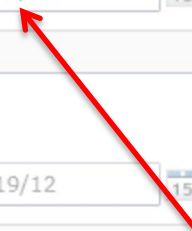
Animal #'s



BMP Type



Date BMP installed or implemented



**AGRICULTURAL ENVIRONMENTAL MANAGEMENT**

**All Counties**

Name: USC Farm  
Owner: Aaron Ristow

**Farm Details**

- Tier 1
- BMP**

**Farmstead BMPS**

**Animal Waste Management Systems**  # Animals ☐ CAFO

**Manure Storage** ☐ Covered Date

Comment

**Manure Transfer** Date

Comment

**Silage Leachate** Date

Comment

**Milk House Waste**

HOME Save

Upper Susquehanna Coalition  
Chesapeake Bay  
Ag BMP Entry Form



Farm Owner/Operator \_\_\_\_\_

Farm Name \_\_\_\_\_

**Farmstead BMPs**

**Animal Waste Management System**

	Yes	No
Manure Storage	_____	_____
Manure Transfer	_____	_____
Silage Leachate	_____	_____
Milkhouse Waste	_____	_____
Mortality Composting	_____	_____
Manure Processing Tech	_____	_____
Liquid Manure Injection	_____	_____
Liquid Manure Incorporation	_____	_____
Barneyard Runoff Control	_____	_____
Loafing Lot Management	_____	_____

**Precision Feed Management (Dairy)**

**Cropland BMPs**

CNMP	_____	_____
Nutrient Management Plan (590 only)	_____	_____
Soil Conservation Plan	_____	_____
Conservation Tillage	_____	_____
Continuous No-Till	_____	_____
Cover Crops	_____	_____

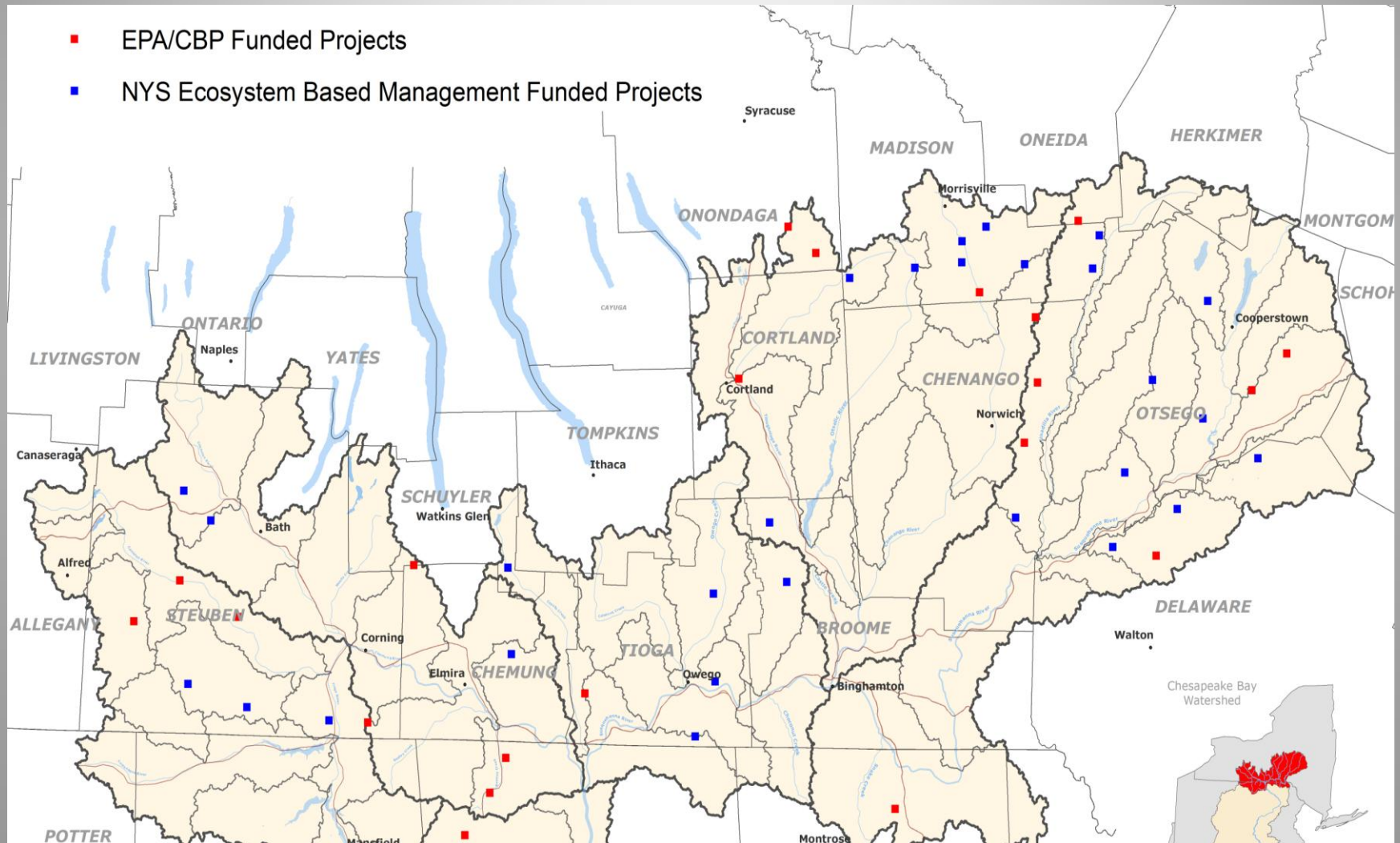
**Pasture and Buffer BMPs**

Prescribed Grazing Plan	_____	_____
Stream Present in Pasture	_____	_____
Grass Buffers	_____	_____
Forest Buffers	_____	_____
Cropland Buffers	_____	_____
Grass Buffer	_____	_____
Forest Buffer	_____	_____
Horse Pasture Management	_____	_____

**Other BMPs**

Ag Land Retirement	_____	_____
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# Sample of GIS Forest and Grass Buffer BMPs Based on Funding Source





# AEM

- Annual dedicated fund since 1994
- Recently, up to ~ \$1M/year within watershed for noncompetitive technical assistance funding to inventory assess, plan, design BMPs, evaluate effectiveness.
- Recently, up to ~ \$3.5M/year from competitive state grants to plan, design, and implement priority BMPs