

An aerial photograph of a farm complex situated in a vast, green agricultural landscape. The farm features several large, cylindrical silos, some with blue and white stripes, and several barns with red roofs. The surrounding fields are lush green, with visible furrows and patterns from agricultural machinery. The text is overlaid on the image, centered in the upper half.

Agricultural Ammonia Emissions and Deposition in the Chesapeake Bay Watershed

CBP Modeling Quarterly Review Meeting

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Chesapeake Bay Program

A Watershed Partnership

Mark Dubin
Agricultural Technical Coordinator

University of Maryland Extension-College Park
College of Agriculture and Natural Resources
mdubin06@umd.edu

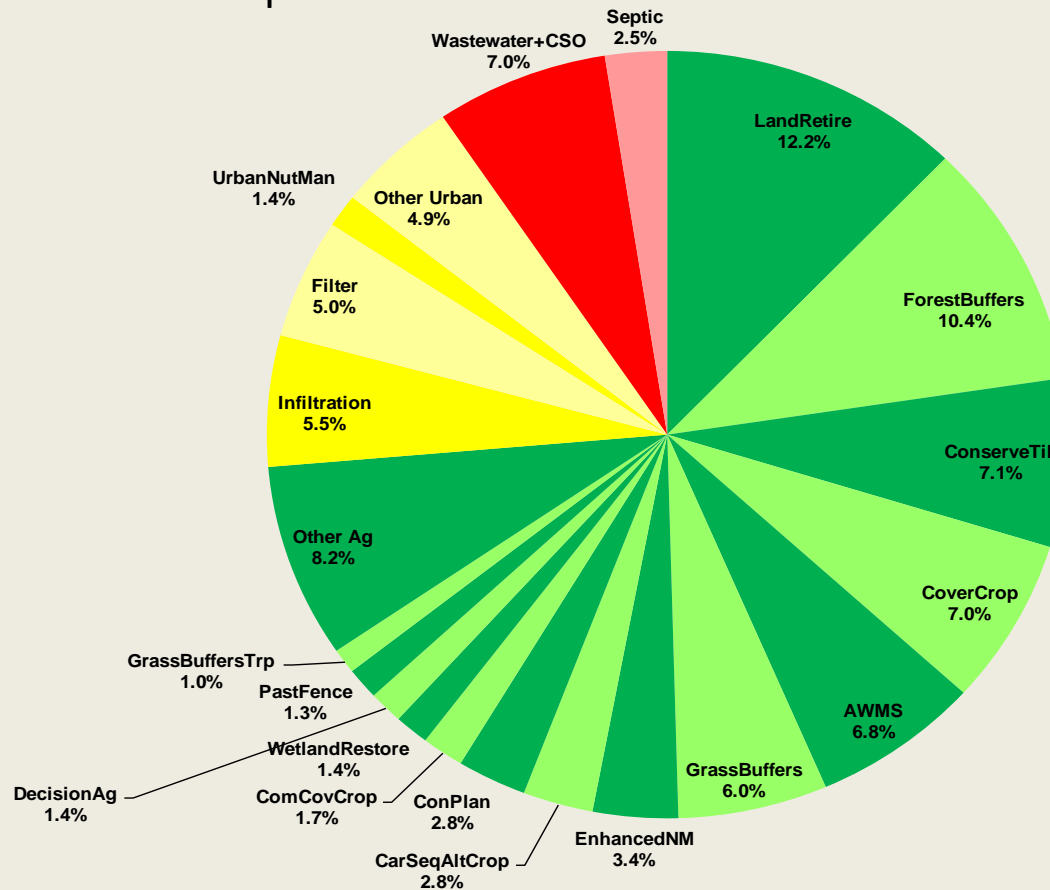
EPA Chesapeake Bay Program Office
mdubin@chesapeakebay.net

A photograph of a farm scene. In the foreground, two men are standing in a field of young green plants. The man on the left is wearing a white polo shirt, dark pants, and a blue baseball cap. The man on the right is wearing a blue t-shirt, dark overalls, and a red baseball cap. They are both looking at something the man on the left is holding. In the background, there is a large white barn with a long covered walkway. Behind the barn is a red barn and a tall silver silo. A blue pickup truck is parked near the red barn. To the right, a dark-colored tractor is pulling a trailer. The sky is blue with some white clouds.

CBP Agricultural Ammonia Emission BMPs

Nitrogen Relative Load Reductions

CB Watershed – as percent



For wastewater, the contribution to the total load reduction compares current discharges (2011) to WIP discharges while BMPs outside wastewater compare No-Action to WIPs.

Each slice represents the percent of the total load reduction attributable to planned implementation levels for that BMP.

For example, land retirement represents 12.2% of the nitrogen reduction expected by 2025, OR $(85.6 \text{ million}) \times (.12) = 10.3 \text{ million pounds of N.}$

Most Common Agricultural BMP Phase II WIP Acres Watershed-Wide

BMP	Acres
Conservation Plans	6,811,304
Enhanced Nutrient Application Management	2,082,419
Other Conservation-Till	2,002,283
Decision Agriculture	1,143,587
Cover Crop	1,136,034
Nutrient Application Management on Pasture	1,033,992
Nutrient Application Management on Crop	995,989
Prescribed Grazing	948,389
Land Retirement	609,407
Liquid & Poultry Injection	371,823
Continuous NoTill	321,901
Commodity Cover Crop	307,143
Precision Intensive Rotational Grazing	286,210
Forest Buffers	277,913
Crop Irrigation Management	251,767



Agriculture Practices

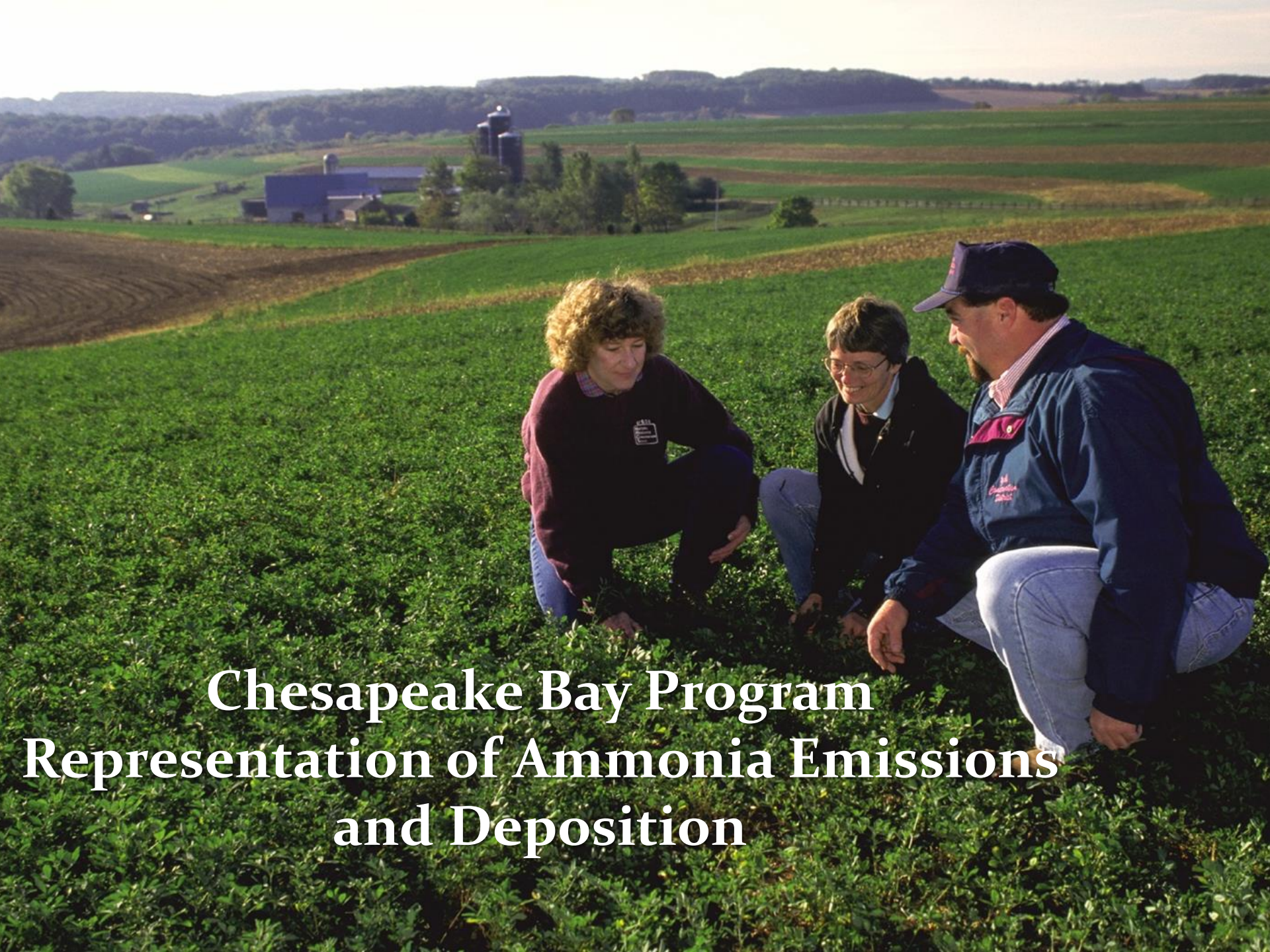
LandRetire	Land Retirement	PrecRotGrazing	Prescribed Grazing
ForestBuffers	Forest Buffers	UpPrecIntRotGraze	Precision Intensive Rotational Grazing
ConserveTill	Conservation Tillage	MortalityComp	Mortality Composting
CoverCrop	Cover Crop	EffNutManDecAgVA	Decision Agriculture
AWMS	Animal Waste Management Systems	ForestBuffersTrp	Forest Buffers on Fenced Pasture Corridor
GrassBuffers	Grass Buffers	NoTill	Continuous NoTill
EnhancedNM	Enhanced Nutrient Application Management	WaterContStruc	Water Control Structures
CarSeqAltCrop	Carbon Sequestration	CropIrrmgmt	Crop Irrigation Management
ConPlan	Conservation Plans	EffNutManEnhanceVA	Enhanced Nutrient Application Management
ComCovCrop	Commodity Cover Crop	NonUrbStrmRest	NonUrban Stream Restoration
WetlandRestore	Wetland Restoration	LoafLot	Loafing Lot Management
DecisionAg	Decision Agriculture	OSWnoFence	Pasture Alternative Watering
PastFence	Stream Access Control with Fencing	ConserveTillom	Conservation-Till Specialty Crops
GrassBuffersTrp	Grass Buffers on Fenced Pasture Corridor	TreePlantTrp	Tree Planting on Fenced Pasture Corridor
DairyPrecFeed	Dairy Precision Feeding	PoultryPhytase	Poultry Phytase
PoultryInjection	Poultry Injection	SwinePhytase	Swine Phytase
TreePlant	Tree Planting	BioFilters	BioFilters
CaptureReuse	Capture & Reuse	HorsePasMan	Horse Pasture Management
ManureTransport	Manure Transport	LagoonCovers	Lagoon Covers
ContinuousNT	Continuous NoTill	NutMan	Nutrient Application Management on Crop
BarnRunoffCont	Barnyard Runoff Control	Alum	Ammonia Emission Reductions (Alum)
LiquidInjection	Liquid Injection		

Agricultural BMP Expert Panels



Phase 6 Agricultural BMP Expert Panels

- The Agriculture Workgroup is establishing multiple Phase 6 BMP Expert Panels in 2015-2016 using the partnership's approved "BMP Protocol" for the systematic and scientifically supported development of agricultural BMP definitions and effectiveness values.
 - Manure Treatment Technologies (VT)
 - Nutrient Management (Tt)
 - Cover Crops (Tt)
 - Conservation Tillage (Tt)
 - Animal Waste Management Systems (VT)
 - Manure Injection and Incorporation (Tt)
 - Cropland Irrigation Management (Tt)
 - Agricultural Farmstead and Nursery Stormwater Management
- Ammonia emission controls will likely be an element in multiple BMP evaluations; e.g. Animal Waste Management Systems.



Chesapeake Bay Program Representation of Ammonia Emissions and Deposition

CBP Modeling Representation of Agricultural Ammonia Emissions and Deposition

- Agricultural Ammonia Emissions
 - High Altitude Deposition vs. Local Deposition
 - Phase 5.3.2
 - Phase 6.0
 - Crediting Management Actions: Disincentives vs. Incentives
 - Phase 5.3.2
 - Phase 6.0
 - Is there a need for reconsidering how ammonia deposition is represented in Phase 6.0?

A photograph of three white sheep in a grassy field. The sheep are looking towards the camera. The sky is cloudy and grey. The word "Questions?" is written in white text on the right side of the image.

Questions?