

APPENDIX P. Relative Load Reductions Analysis of Source Sectors and BMPs in the Jurisdictions' Phase II Watershed Implementation Plans (WIPs)

Analysis presented to the
 BMP Verification Committee: March 13, 2013
 Agriculture Workgroup: April 11, 2013
 Urban Stormwater Workgroup: May 21, 2013
 BMP Verification Review Panel: June 19, 2013

Objectives of analysis

- Identify and quantify the relative contribution among source sectors – and the contribution among BMPs within those sectors – to the nutrient and sediment load reductions needed to achieve the Phase II Watershed Implementation Plan (WIP) loading goals.

Methods

- Create a NO ACTION Scenario.
- Determine load reductions between Phase II WIP Scenario and NO ACTION.
- Isolate each BMP in a separate scenario using Scenario Builder processing rules.
- Determine load reductions from the isolated BMP scenario to the NO ACTION.
- Compare the load reductions from the isolated scenarios to those from the Phase II WIP to determine a percent share of the reductions attributable to each BMP.
- **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.**

Table 1. 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

Table 2. Most Common Urban BMP Phase II WIP Acres Watershed-Wide

BMP	Acres
Filtering Practices	848,488
Infiltration Practices	655,730
Wet Ponds & Wetlands	411,753
Extended Dry Ponds	225,756
Dry Ponds	174,664
Forest Harvesting BMPs	164,821
Extractive Erosion and Sediment Control	149,635
Forest Conservation	113,977
SWM by Era (1985-2002)	98,803
Street Sweeping	89,474
Erosion and Sediment Control	83,551
Retrofit Stormwater Management	69,208
SWM by Era (2002-2010)	65,668
Impervious Surface & Urban Growth Reduction	61,956
Abandoned Mine Reclamation	61,285

Table 3. Agricultural Practices used in the analysis

Land Retirement	Prescribed Grazing
Forest Buffers	Precision Intensive Rotational Grazing
Conservation Tillage	Mortality Composting
Cover Crop	Decision Agriculture
Animal Waste Management Systems	Forest Buffers on Fenced Pasture Corridor
Grass Buffers	Continuous NoTill
Enhanced Nutrient Application Management	Water Control Structures
Carbon Sequestration	Crop Irrigation Management
Conservation Plans	Enhanced Nutrient Application Management
Commodity Cover Crop	NonUrban Stream Restoration
Wetland Restoration	Loafing Lot Management
Decision Agriculture	Pasture Alternative Watering
Stream Access Control with Fencing	Conservation-Till Specialty Crops
Grass Buffers on Fenced Pasture Corridor	Tree Planting on Fenced Pasture Corridor
Dairy Precision Feeding	Poultry Phytase
Poultry Injection	Swine Phytase
Tree Planting	BioFilters
Capture & Reuse	Horse Pasture Management
Manure Transport	Lagoon Covers
Continuous NoTill	Nutrient Application Management on Crop
Barnyard Runoff Control	Ammonia Emission Reductions (Alum)
Liquid Injection	Prescribed Grazing

Table 4. Urban Practices used in the analysis

Infiltration Practices
Filtering Practices
Urban Nutrient Management
BioRetention
Wet Ponds & Wetlands
SWM by Era (2002-2010)
Forest Conservation Act
Forest Buffers
Extended Dry Ponds
Abandoned Mine Reclamation
Erosion and Sediment Control
Retrofit Stormwater Management
SWM by Era (1985-2002)
Extractive Erosion and Sediment Control
Urban Stream Restoration
Enhanced Construction Erosion and Sediment Control
Vegetated Open Channel
Impervious Surface Reduction
Tree Planting
Dry Ponds
Street Sweeping
Permeable Pavement
Urban Growth Reduction

Table 5. Other practices used in the analysis

Resource Practices		Septic	Wastewater+CSO
ForHarvestBMP	Forest Harvesting BMPs	[Septic Connections]	
DirtGravel	Dirt&Gravel Road E&S	[Septic Denitrification]	
		[Septic Pumping]	

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Key for the following charts:

Green = Relative reduction from an agricultural BMP (from no action scenario)

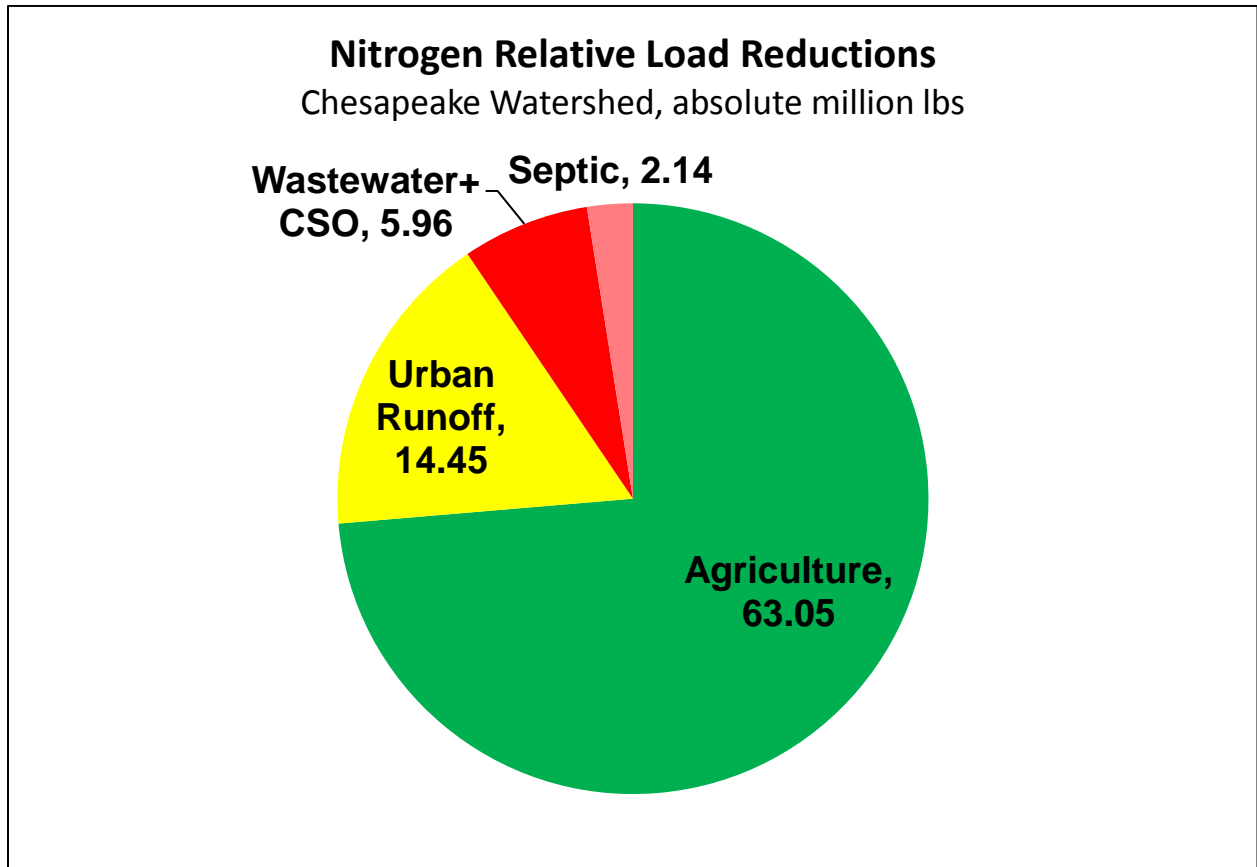
Yellow = Relative reduction from an urban stormwater BMP (from no action scenario)

Red = Wastewater + CSO reductions (from current 2011 load)

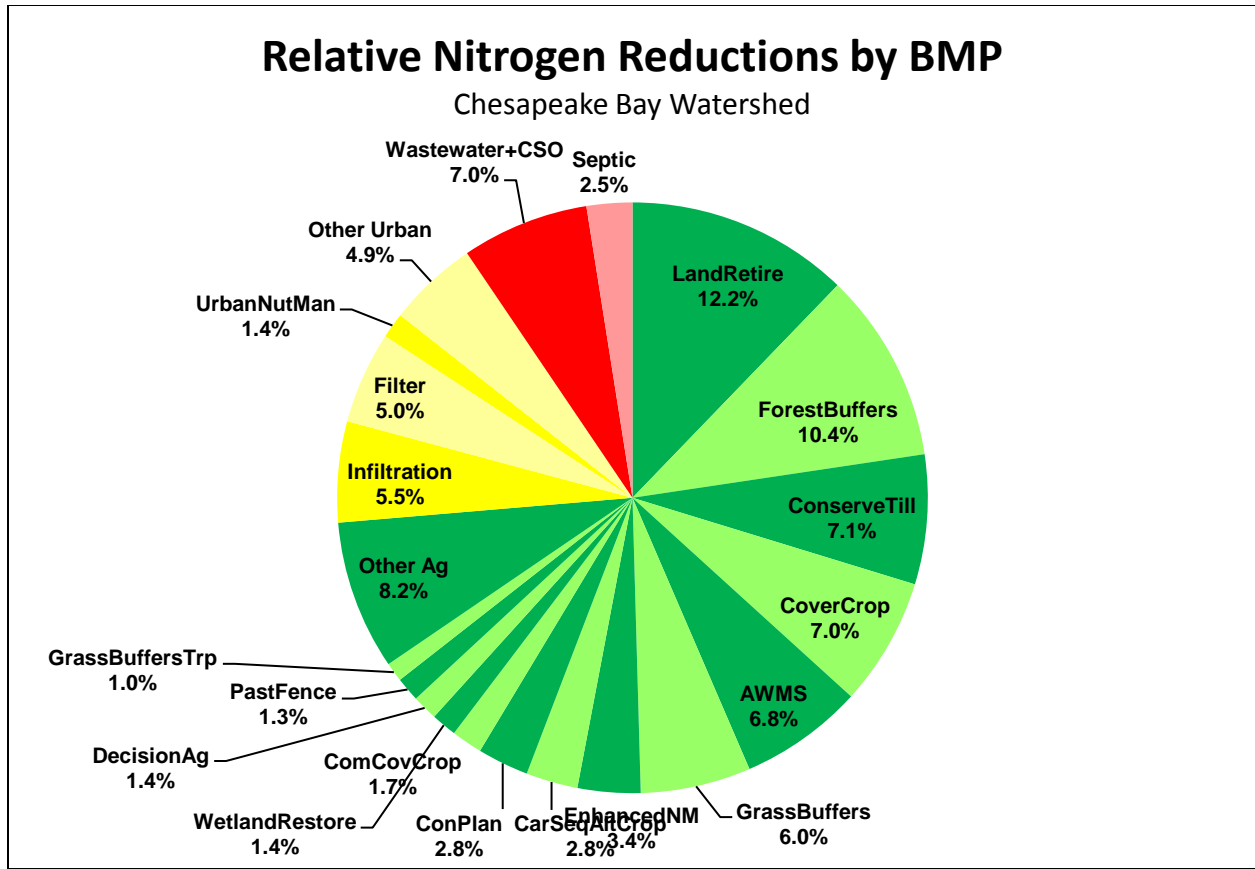
Pink = Septic reductions (from no action scenario)

Each slice in the following pie charts represents the percent of the total load reduction attributable to planned implementation levels for that BMP. For example, for the pie chart “Relative Nitrogen Reductions by BMP – Chesapeake Bay Watershed”, land retirement represents 12.2% of the nitrogen reduction currently planned for by 2025, OR (85.6 million) X (.12) = 10.3 million pounds of N reduced. The retirement includes maintaining historic levels as well as new retirement called for in the states’ plans.

Appendix P: Nitrogen Analysis

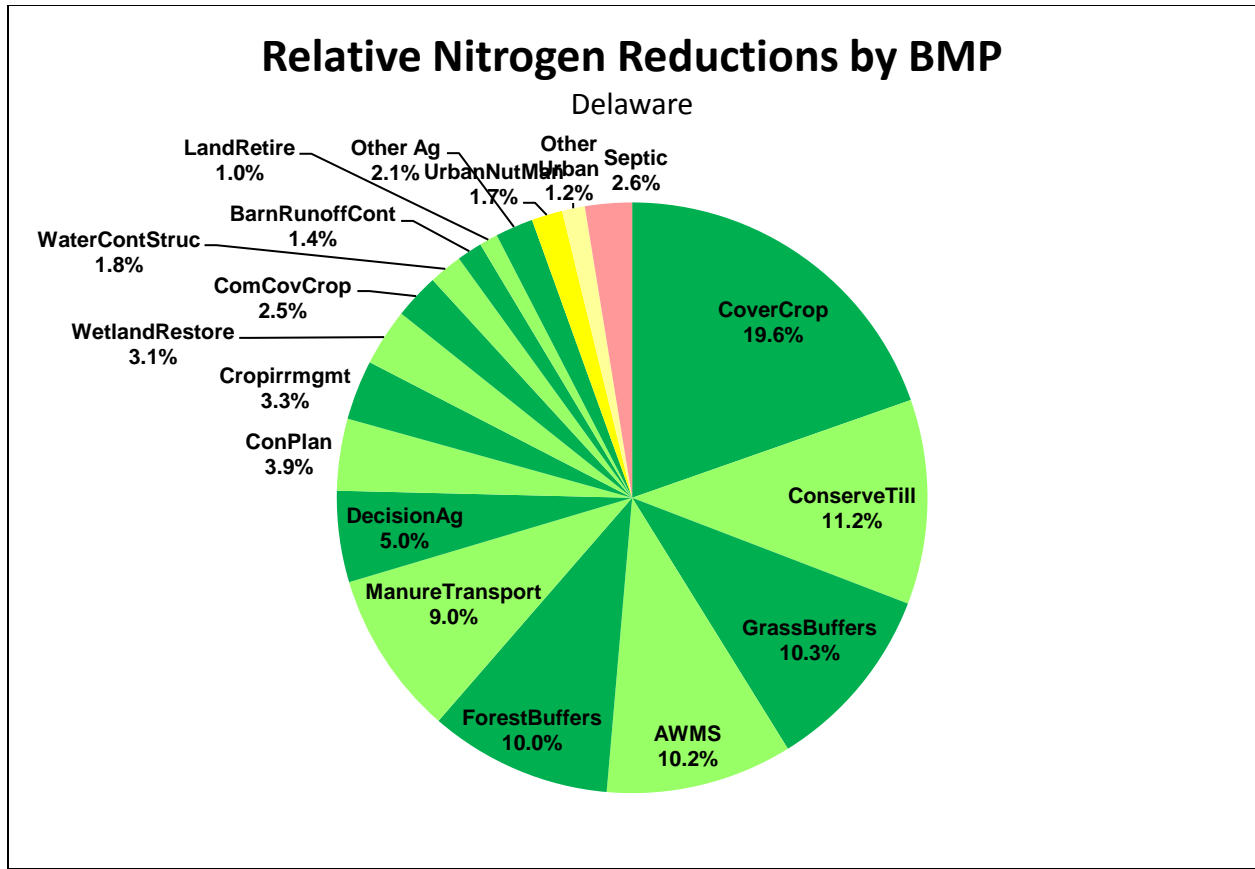


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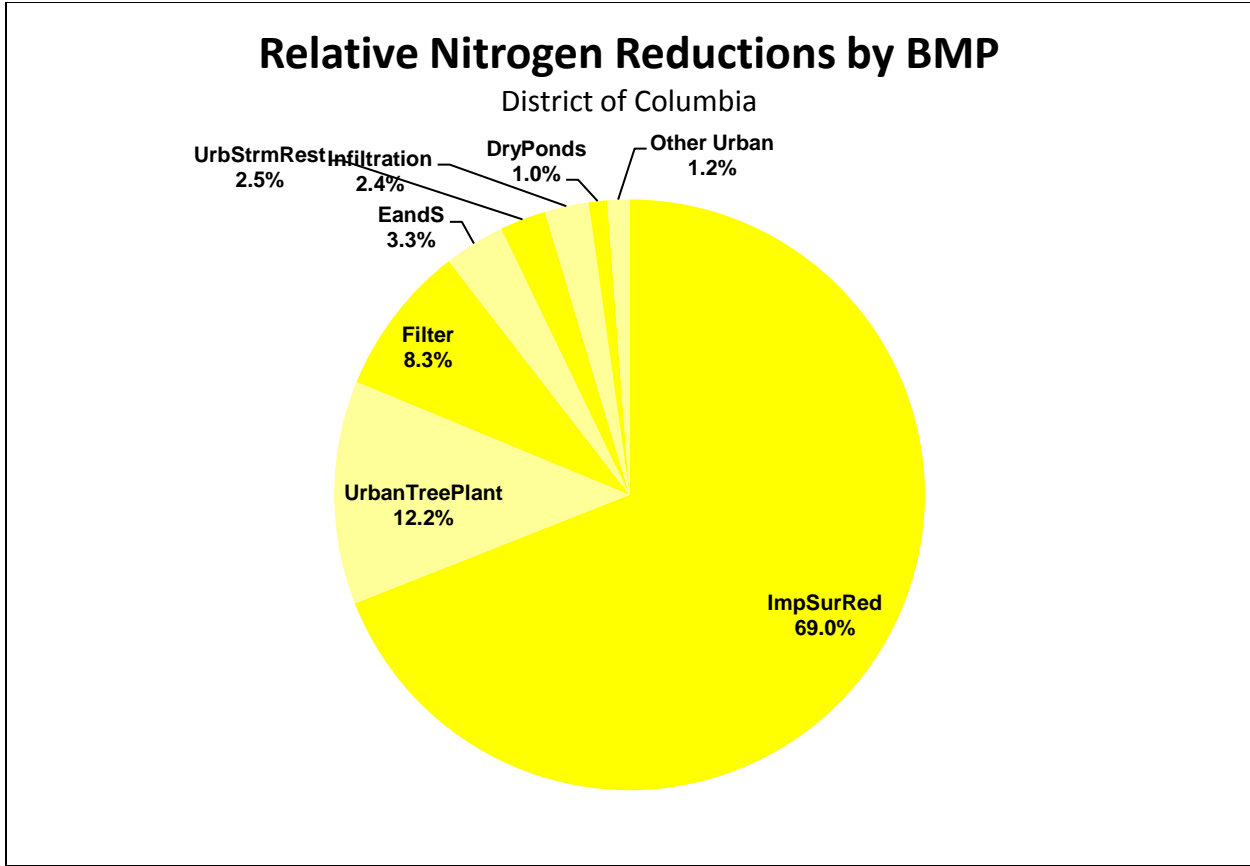
Chesapeake Bay Watershed			
BMP	Relative Reduction	BMP	Relative Reduction
Land Retirement	12.2%	Streamside Grass Buffers	1.0%
Forest Buffers	10.4%	Other Agriculture	8.2%
Conservation Tillage	7.1%	Urban Infiltration Practices	5.5%
Early Cover Crops	7.0%	Urban Filtering Practices	5.0%
Animal Waste Management System	6.8%	Urban Nutrient Management	1.4%
Grass Buffers	6.0%	Other Urban	4.9%
Enhanced Nutrient Management	3.4%	Forest Practices	0.0%
Alternative Crops	2.8%	Wastewater + CSO	7.0%
Soil Conservation and Water Quality Plans	2.8%	Septic	2.5%
Commodity Cover Crops	1.7%		
Wetland Restoration	1.4%		
Decision Agriculture	1.4%		
Stream Access Control with Fencing	1.3%		

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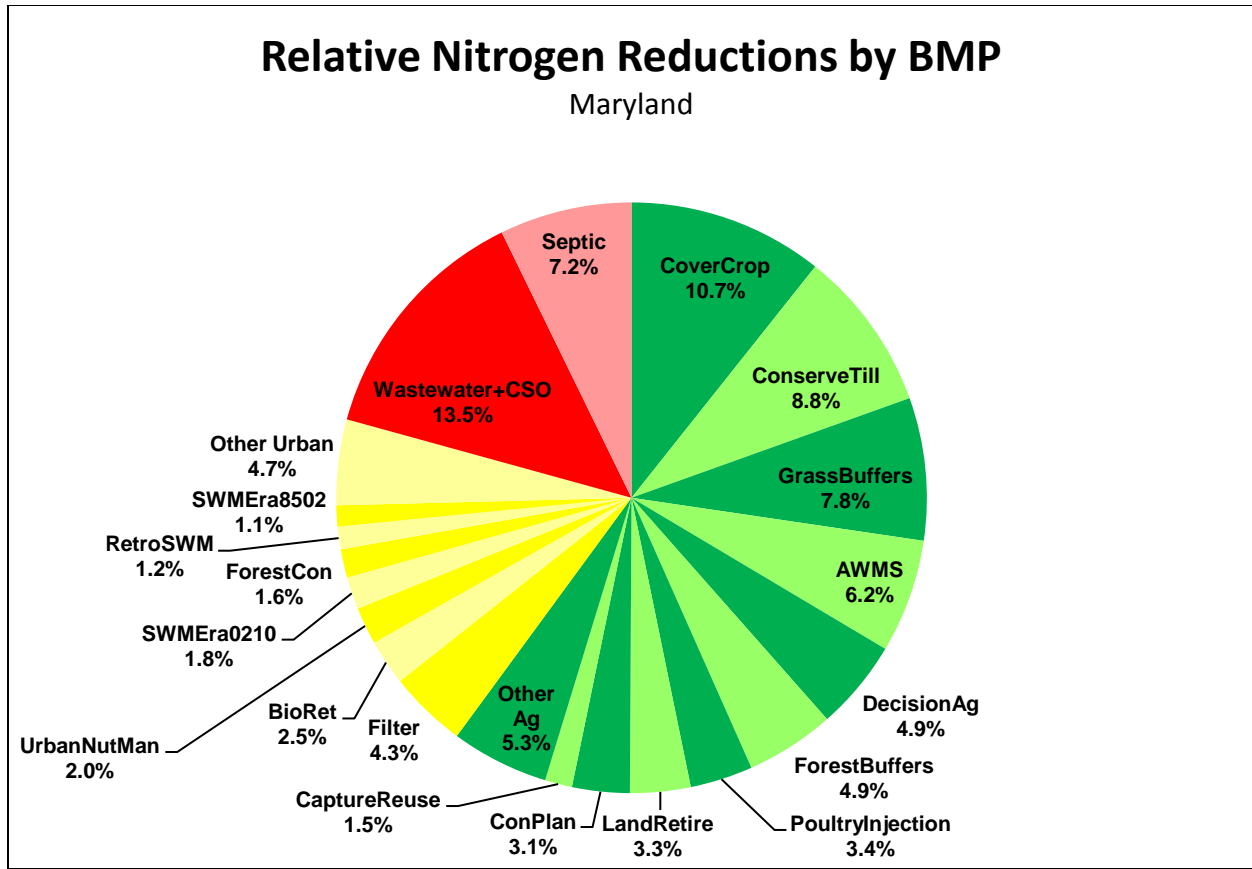
Delaware			
BMP	Relative Reduction	BMP	Relative Reduction
Early Cover Crops	19.6%	Land Retirement	1.0%
Conservation Tillage	11.2%	Other Agriculture	2.1%
Grass Buffers	10.3%	Urban Nutrient Management	1.7%
Animal Waste Management System	10.2%	Other Urban	1.2%
Forest Buffers	10.0%	Forest Practices	0.0%
Manure Transport	9.0%	Wastewater + CSO	0.0%
Decision Agriculture	5.0%	Septic	2.6%
Soil Conservation & Water Quality Plans	3.9%		
Cropland Irrigation Management	3.3%		
Wetland Restoration	3.1%		
Commodity Cover Crops	2.5%		
Water Control Structures	1.8%		
Barnyard Runoff Control	1.4%		

Appendix P: Nitrogen Analysis



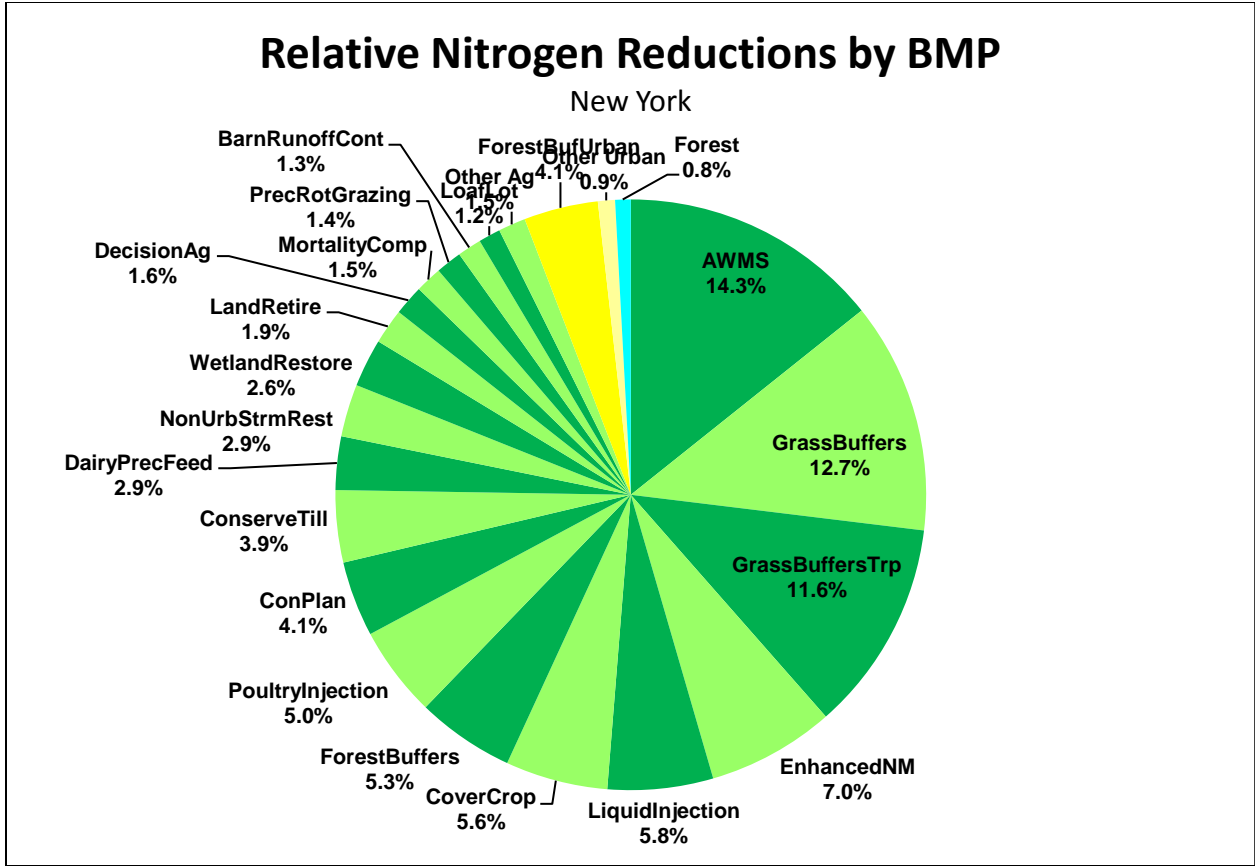
District of Columbia	
BMP	Relative Reduction
Impervious Urban Surface Reduction	69.0%
Urban Tree Planting; Urban Tree Canopy	12.2%
Urban Filtering Practices	8.3%
Erosion and Sediment Control	3.3%
Urban Stream Restoration	2.5%
Urban Infiltration Practices	2.4%
Dry Detention Ponds	1.0%
Other Urban	1.2%
Forest Practices	0.0%
Wastewater + CSO	0.0%

Appendix P: Nitrogen Analysis



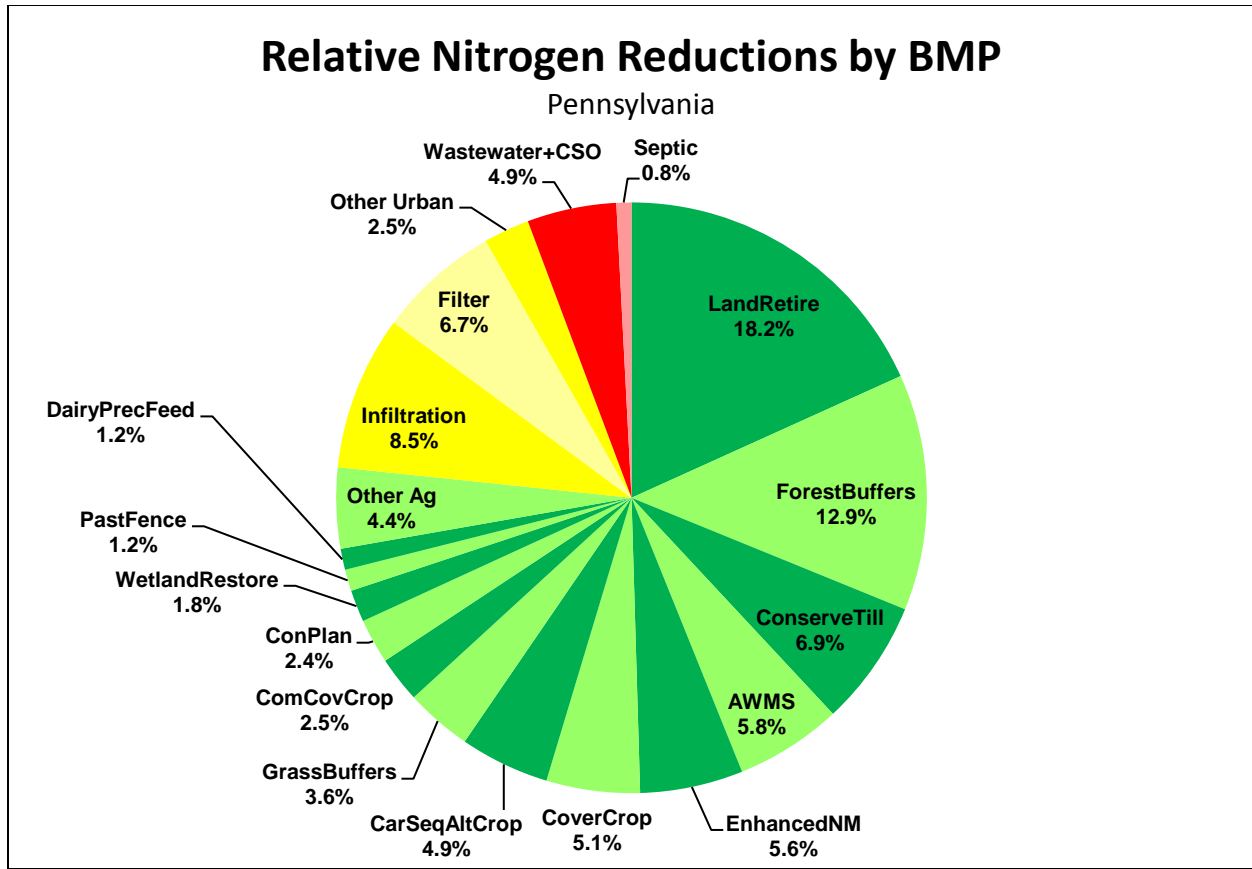
Maryland			
BMP	Relative Reduction	BMP	Relative Reduction
Early Cover Crops	10.7%	Urban Filtering Practices	4.3%
Conservation Tillage	8.8%	Bioretention/raingardens	2.5%
Grass Buffers	7.8%	Urban Nutrient Management	2.0%
Animal Waste Management System	6.2%	Stormwater Management (2002 to 2010), MD	1.8%
Decision Agriculture	4.9%	Forest Conservation	1.6%
Forest Buffers	4.9%	MS4 Permit-Required Stormwater Retrofit	1.2%
Poultry Litter Injection	3.4%	Stormwater Management (1985 to 2002), MD	1.1%
Land Retirement	3.3%	Other Urban	4.7%
Soil Conservation and Water Quality Plans	3.1%	Forest Practices	0.0%
Irrigation Water Capture Reuse	1.5%	Wastewater + CSO	13.5%
Other Agriculture	5.3%	Septic	7.2%

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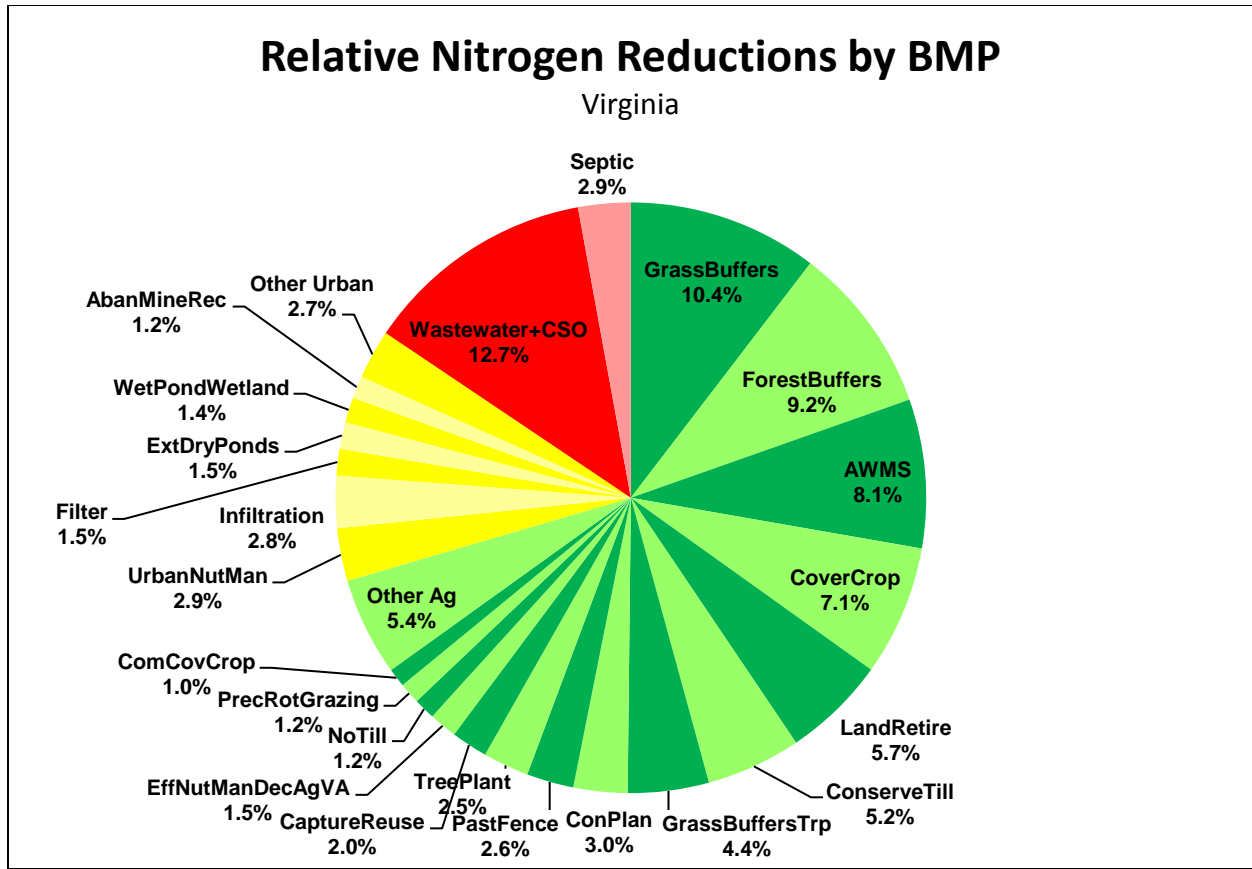
New York			
BMP	Relative Reduction	BMP	Relative Reduction
Animal Waste Management System	14.3%	Decision Agriculture	1.6%
Grass Buffers	12.7%	Mortality Composters	1.5%
Streamside Grass Buffers	11.6%	Prescribed Grazing	1.4%
Enhanced Nutrient Management	7.0%	Barnyard Runoff Control	1.3%
Dairy Manure Injection	5.8%	Loafing Lot Management	1.2%
Early Cover Crops	5.6%	Other Agriculture	1.5%
Forest Buffers	5.3%	Urban Forest Buffers	4.1%
Poultry Litter Injection	5.0%	Other Urban	0.9%
Soil Conservation & Water Quality Plans	4.1%	Forest Practices	0.8%
Conservation Tillage	3.9%	Wastewater + CSO	0.0%
Dairy Precision Feeding	2.9%	Septic	0.0%
Non Urban Stream Restoration	2.9%		
Wetland Restoration	2.6%		
Land Retirement	1.9%		

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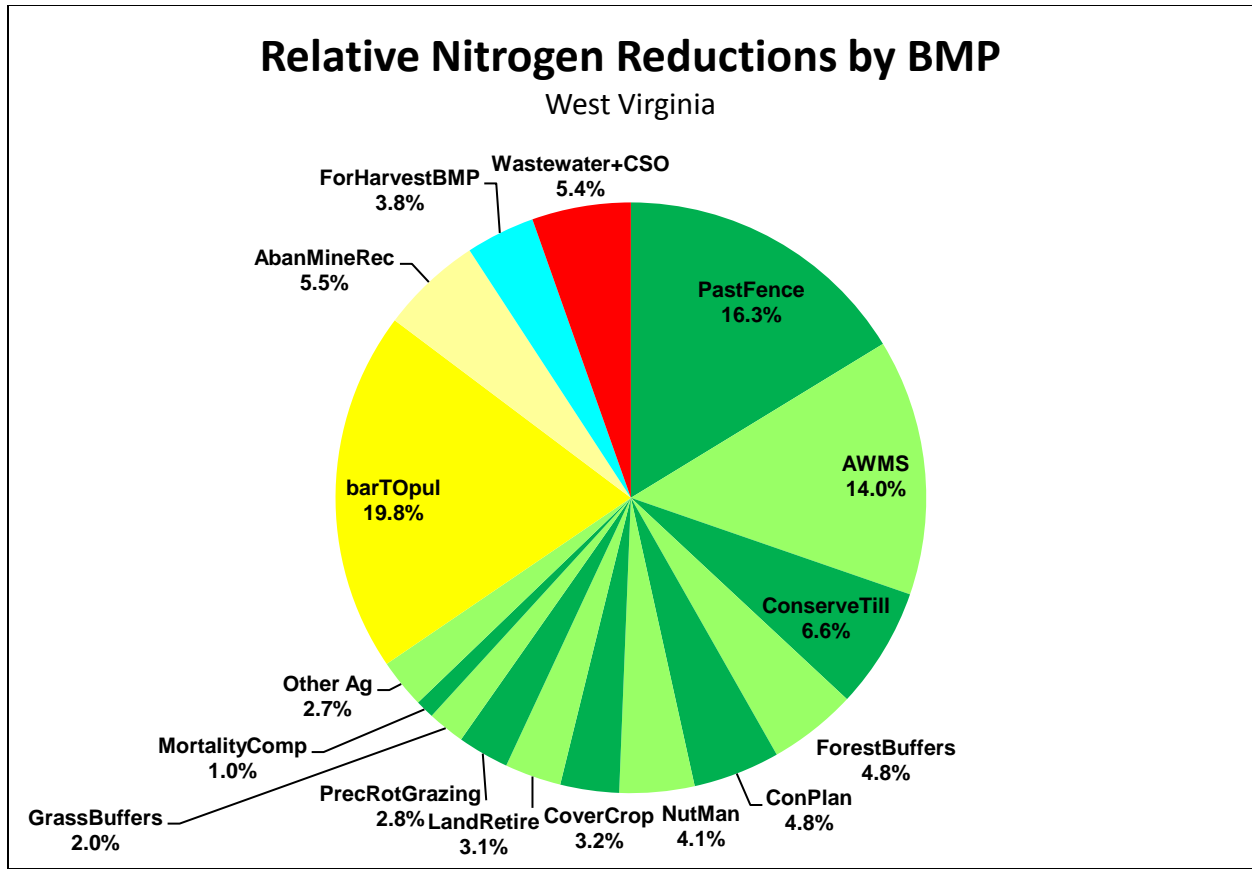
Pennsylvania			
BMP	Relative Reduction	BMP	Relative Reduction
Land Retirement	18.2%	Other Agriculture	4.4%
Forest Buffers	12.9%	Urban Infiltration Practices	8.5%
Conservation Tillage	6.9%	Urban Filtering Practices	6.7%
Animal Waste Management System	5.8%	Other Urban	2.5%
Enhanced Nutrient Management	5.6%	Forest Practices	0.0%
Early Cover Crops	5.1%	Wastewater + CSO	4.9%
Alternative Crops	4.9%	Septic	0.8%
Grass Buffers	3.6%		
Commodity Cover Crops	2.5%		
Soil Conservation and Water Quality Plans	2.4%		
Wetland Restoration	1.8%		
Stream Access Control with Fencing	1.2%		
Dairy Precision Feeding	1.2%		

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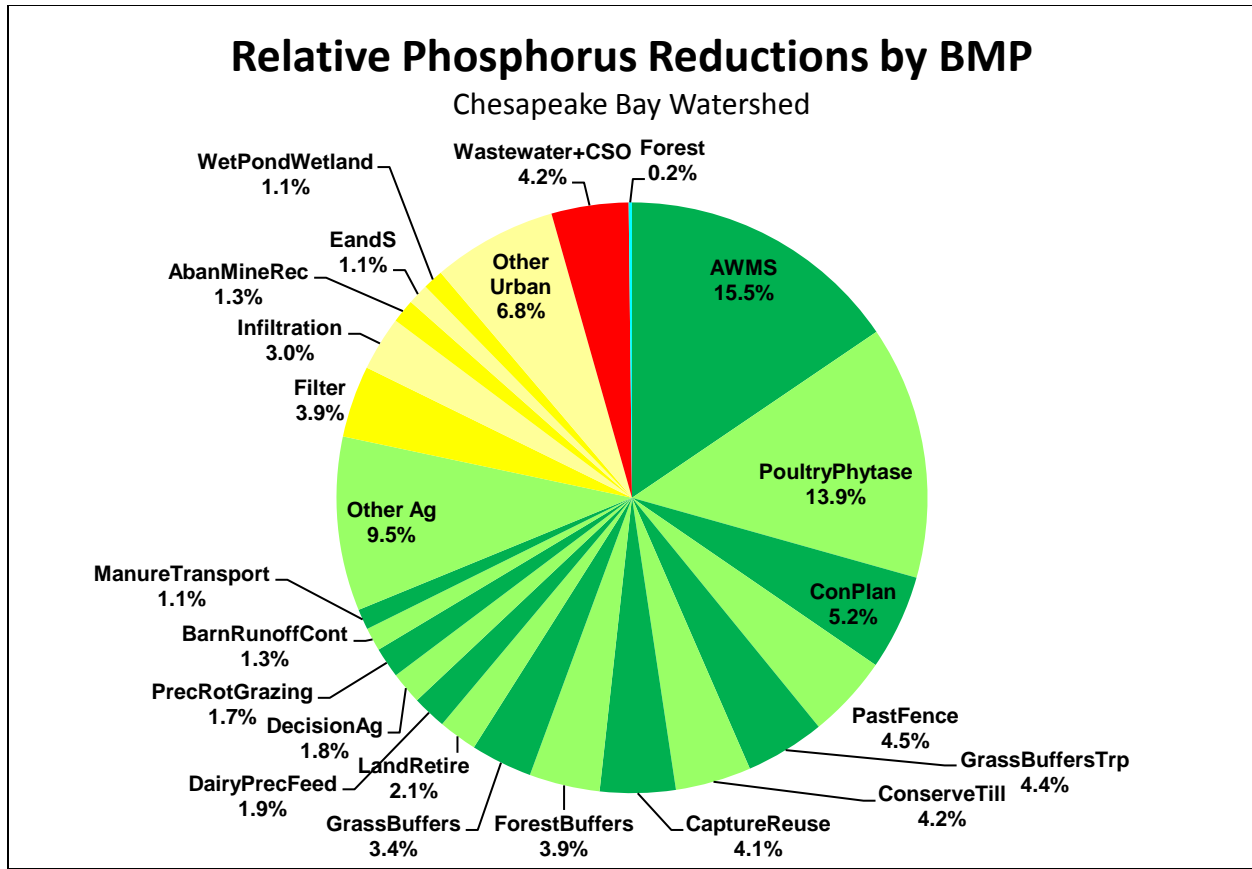
Virginia			
BMP	Relative Reduction	BMP	Relative Reduction
Grass Buffers	10.3%	Commodity Cover Crops	1.0%
Forest Buffers	9.1%	Other Agriculture	5.3%
Animal Waste Management System	8.1%	Urban Nutrient Management	2.9%
Early Cover Crops	7.1%	Urban Infiltration Practices	2.8%
Land Retirement	5.6%	Urban Filtering Practices	1.4%
Conservation Tillage	5.1%	Dry Extended Detention Ponds	1.4%
Streamside Grass Buffers	4.4%	Wet Ponds and Wetlands	1.4%
Soil Conservation and Water Quality Plans	2.9%	Abandoned Mine Reclamation	1.2%
Stream Access Control with Fencing	2.6%	Other Urban	2.7%
Tree Planting	2.5%	Forest Practices	0.9%
Irrigation Water Capture Reuse	2.0%	Wastewater + CSO	12.6%
Virginia Decision Agriculture	1.5%	Septic	2.8%
No Till (stackable)	1.2%		
Prescribed Grazing	1.1%		

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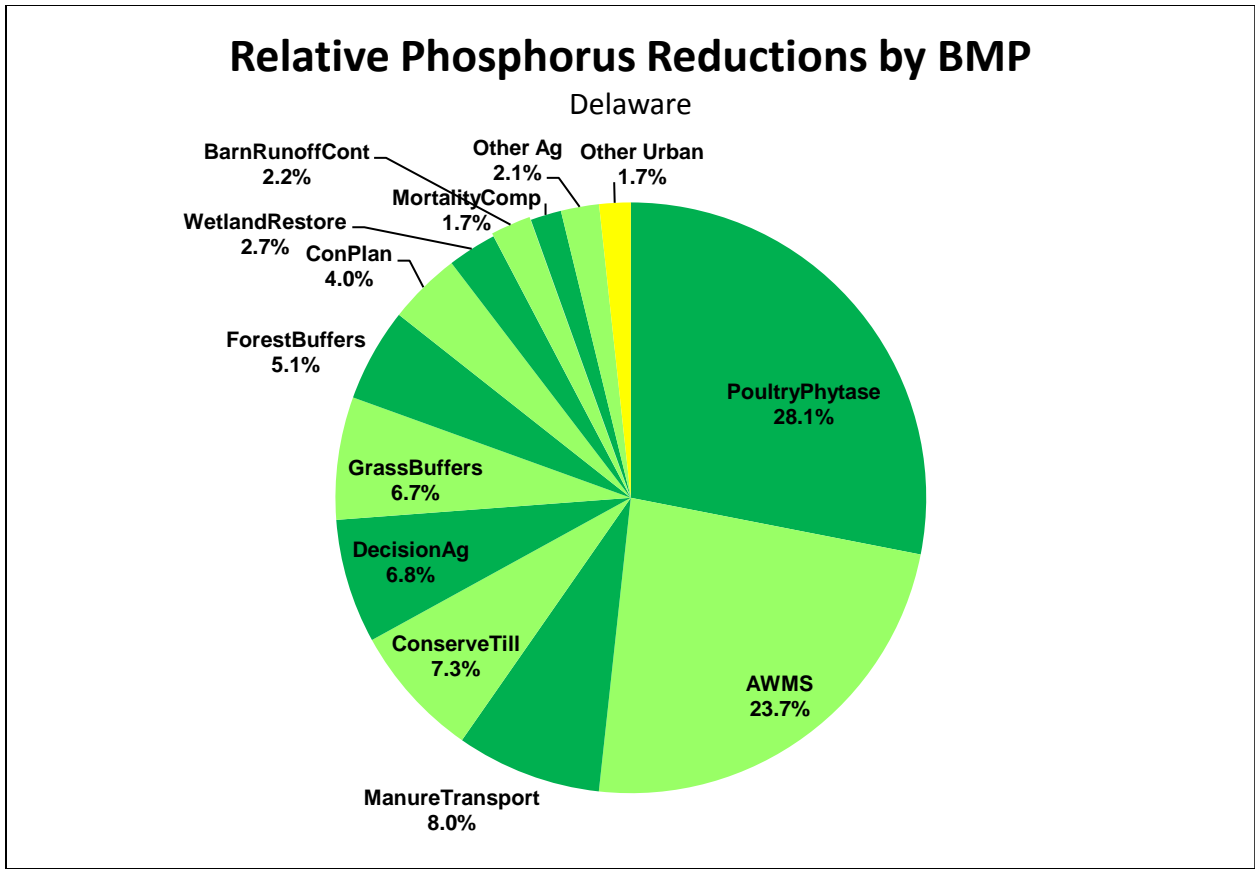
West Virginia			
BMP	Relative Reduction	BMP	Relative Reduction
Stream Access Control with Fencing	16.3%	Other Agriculture	2.7%
Animal Waste Management System	14.0%	Interim Erosion and Sediment Control	19.8%
Conservation Tillage	6.6%	Abandoned Mine Reclamation	5.5%
Forest Buffers	4.8%	Forest Harvesting Practices	3.8%
Soil Conservation and Water Quality Plans	4.8%	Wastewater + CSO	5.4%
Nutrient Management	4.1%	Septic	0.0%
Early Cover Crops	3.2%		
Land Retirement	3.1%		
Prescribed Grazing	2.8%		
Grass Buffers	2.0%		
Mortality Composters	1.0%		

Appendix P: Phosphorus Analysis



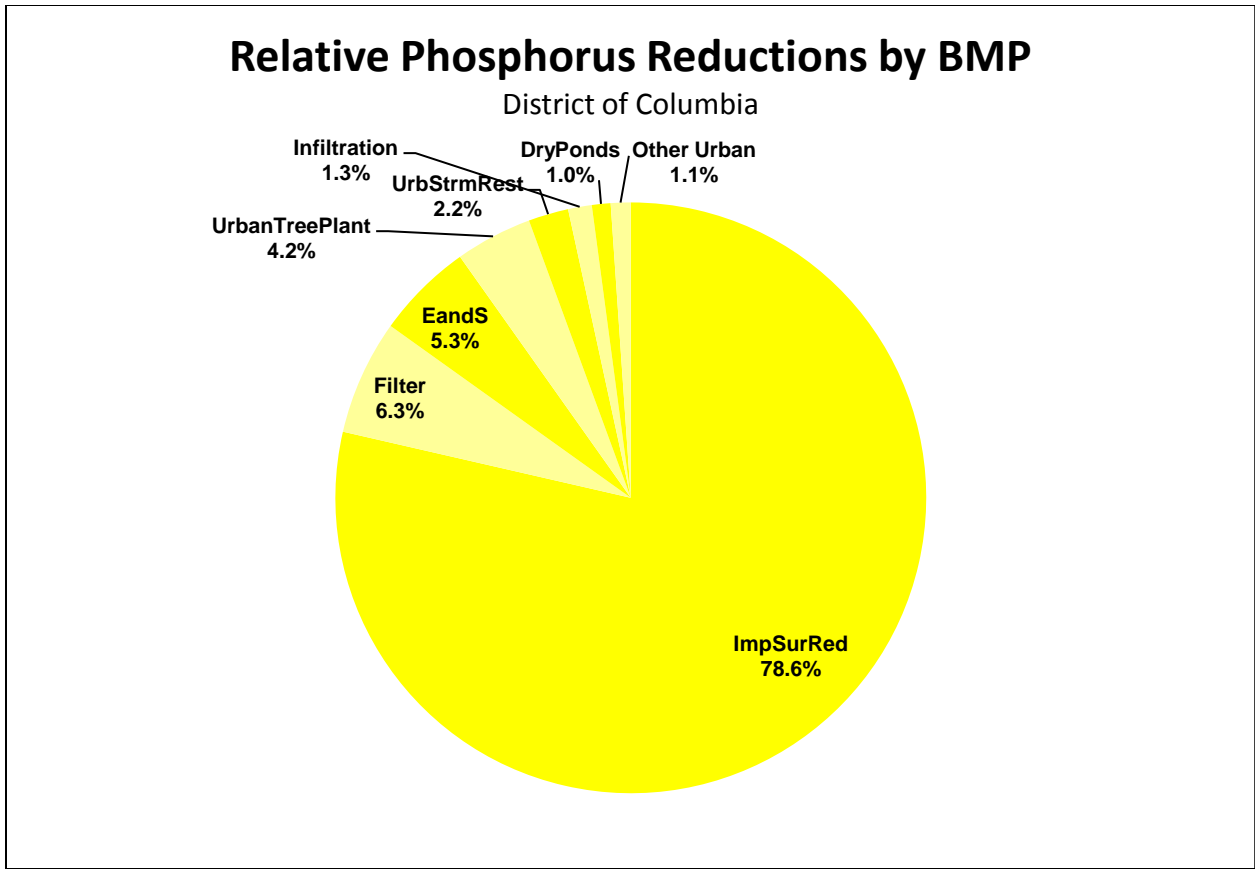
Chesapeake Bay Watershed			
BMP	Relative Reduction	BMP	Relative Reduction
Animal Waste Management System	15.5%	Prescribed Grazing	1.7%
Poultry Phytase	13.9%	Barnyard Runoff Control	1.3%
Soil Conservation and Water Quality Plans	5.2%	Manure Transport	1.1%
Stream Access Control with Fencing	4.5%	Other Agriculture	9.5%
Streamside Grass Buffers	4.4%	Urban Filtering Practices	3.9%
Conservation Tillage	4.2%	Urban Infiltration Practices	3.0%
Irrigation Water Capture Reuse	4.1%	Abandoned Mine Reclamation	1.3%
Forest Buffers	3.9%	Erosion and Sediment Control	1.1%
Grass Buffers	3.4%	Wet Ponds and Wetlands	1.1%
Land Retirement	2.1%	Other Urban	6.8%
Dairy Precision Feeding	1.9%	Forest Practices	0.2%
Decision Agriculture	1.8%	Wastewater + CSO	4.2%

Appendix P: Phosphorus Analysis



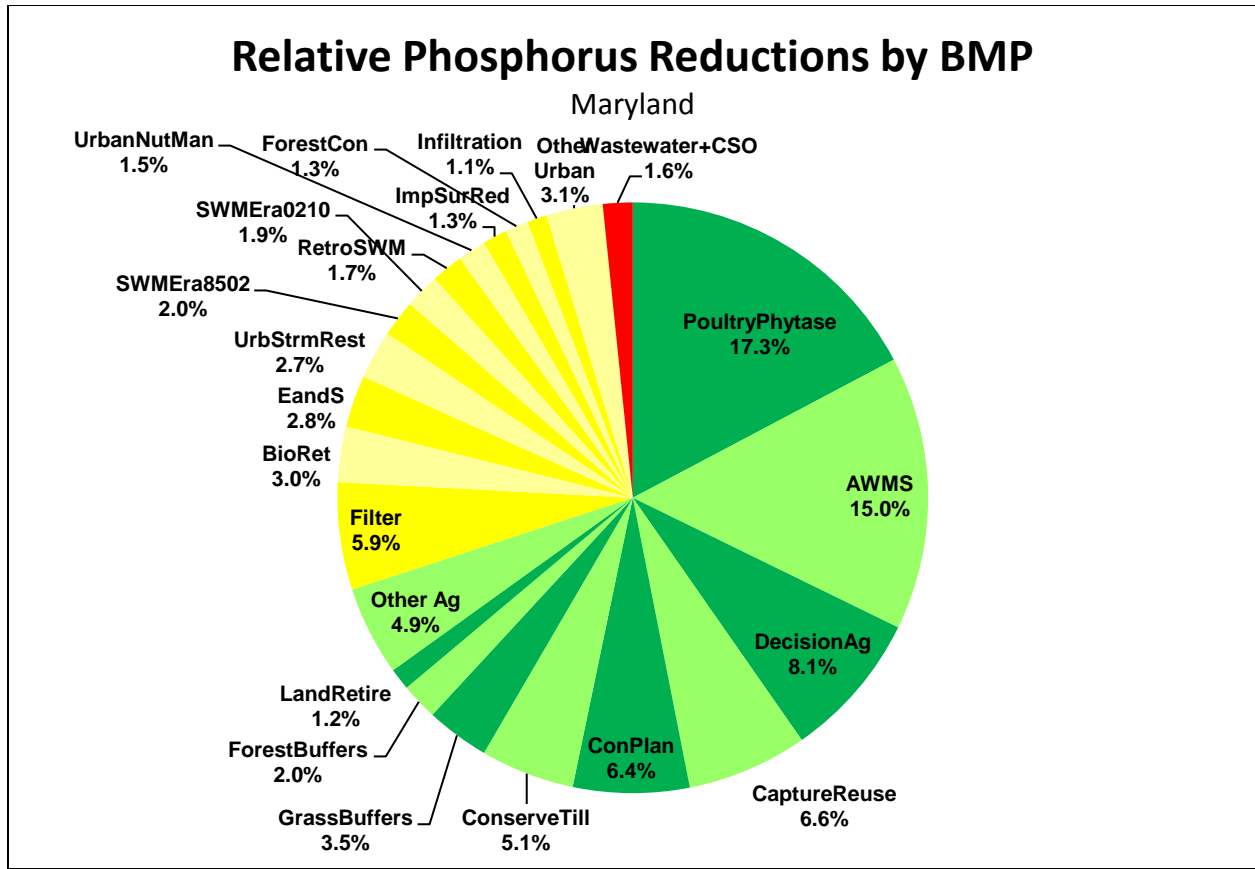
Delaware	
BMP	Relative Reduction
Poultry Phytase	28.1%
Animal Waste Management System	23.7%
Manure Transport	8.0%
Conservation Tillage	7.3%
Decision Agriculture	6.8%
Grass Buffers	6.7%
Forest Buffers	5.1%
Soil Conservation & Water Quality Plans	4.0%
Wetland Restoration	2.7%
Barnyard Runoff Control	2.2%
Mortality Composters	1.7%
Other Agriculture	2.1%
Other Urban	1.7%
Forest Practices	0.0%
Wastewater + CSO	0.0%

Appendix P: Phosphorus Analysis



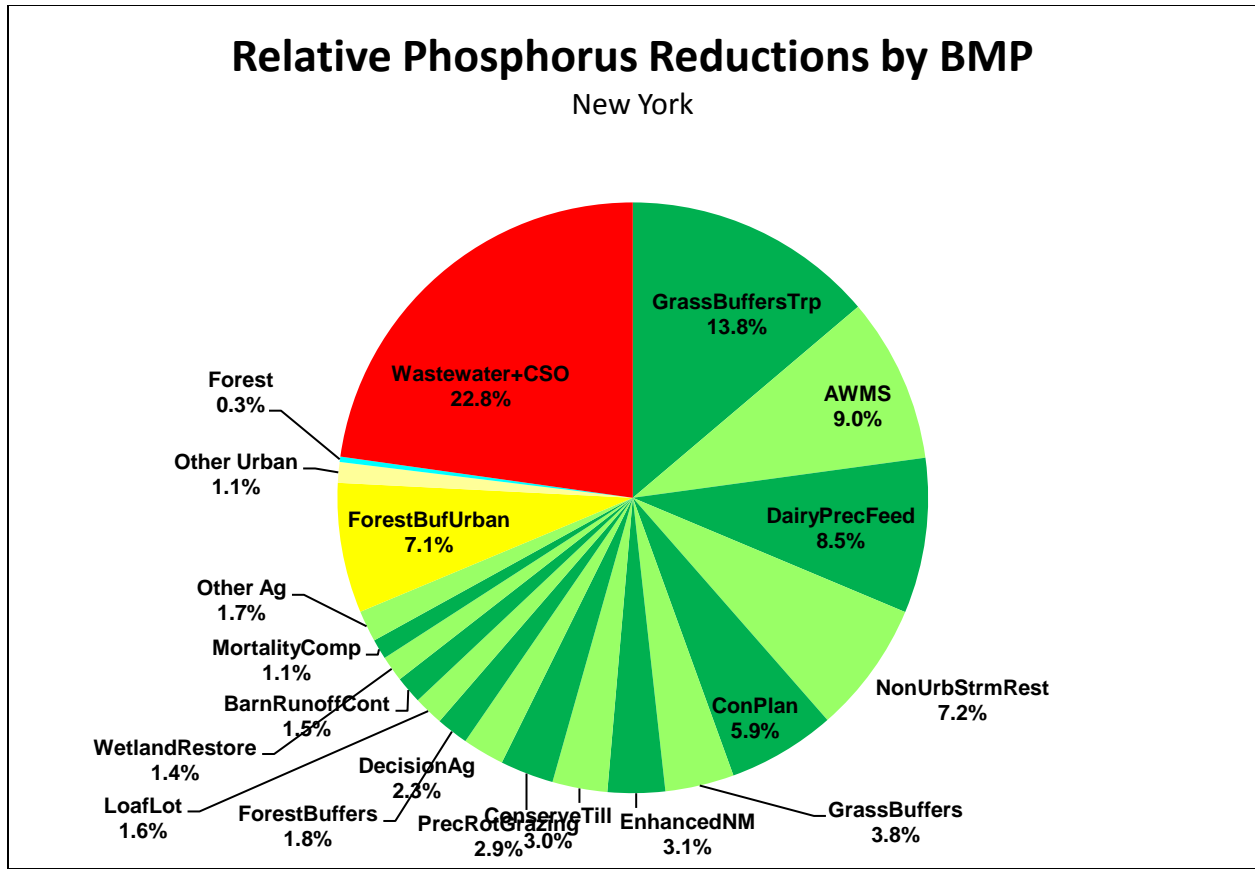
District of Columbia	
BMP	Relative Reduction
Impervious Urban Surface Reduction	78.6%
Urban Filtering Practices	6.3%
Erosion and Sediment Control	5.3%
Urban Tree Planting; Urban Tree Canopy	4.2%
Urban Stream Restoration	2.2%
Urban Infiltration Practices	1.3%
Dry Detention Ponds	1.0%
Other Urban	1.1%
Forest Practices	0.0%
Wastewater + CSO	0.0%

Appendix P: Phosphorus Analysis



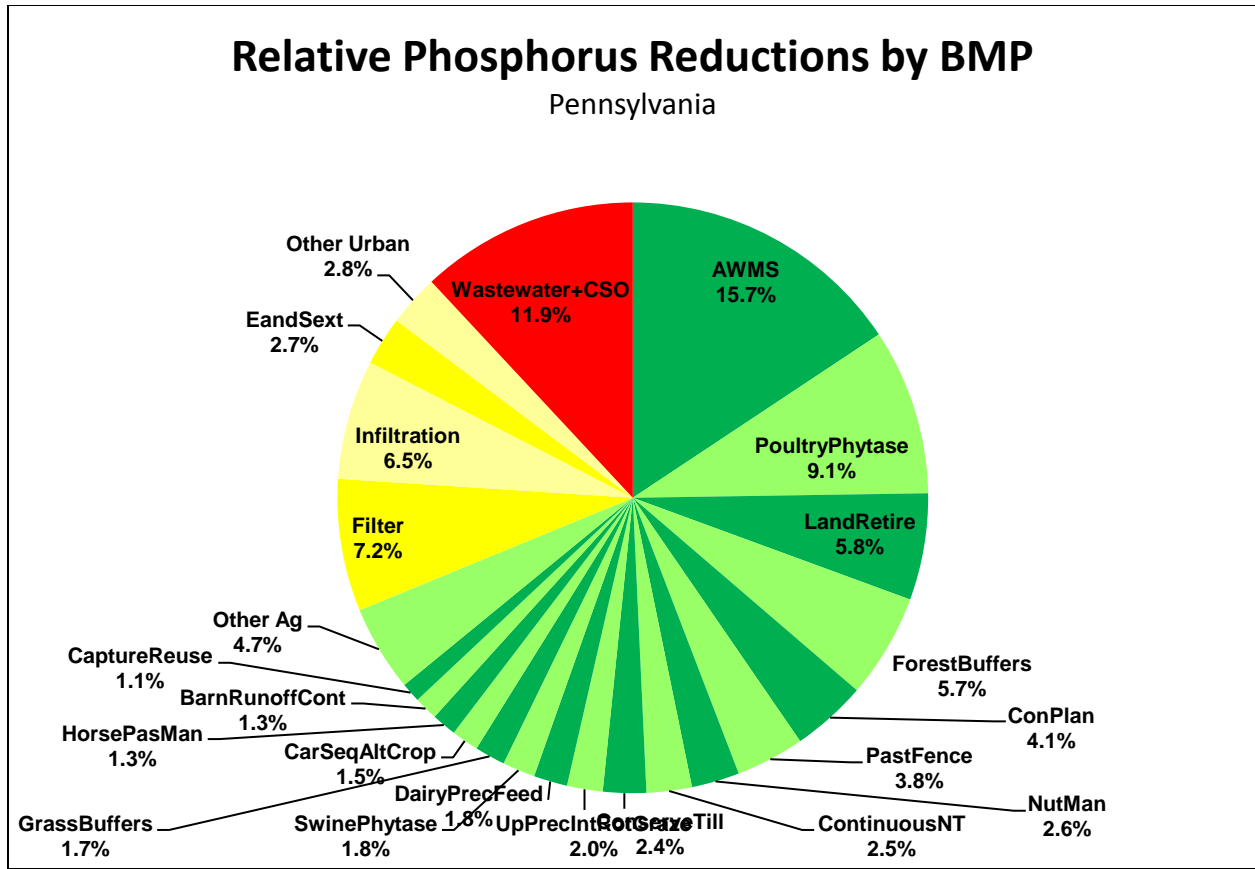
Maryland			
BMP	Relative Reduction	BMP	Relative Reduction
Poultry Phytase	17.3%	Erosion and Sediment Control	2.8%
Animal Waste Management System	15.0%	Urban Stream Restoration	2.7%
Decision Agriculture	8.1%	Stormwater Management (1985 to 2002), MD	2.0%
Irrigation Water Capture Reuse	6.6%	Stormwater Management (2002 to 2010), MD	1.9%
Soil Conservation and Water Quality Plans	6.4%	MS4 Permit-Required Stormwater Retrofit	1.7%
Conservation Tillage	5.1%	Urban Nutrient Management	1.5%
Grass Buffers	3.5%	Impervious Urban Surface Reduction	1.3%
Forest Buffers	2.0%	Forest Conservation	1.3%
Land Retirement	1.2%	Urban Infiltration Practices	1.1%
Other Agriculture	4.9%	Other Urban	3.1%
Urban Filtering Practices	5.9%	Forest Practices	0.0%
Bioretention/raingardens	3.0%	Wastewater + CSO	1.6%

Appendix P: Phosphorus Analysis



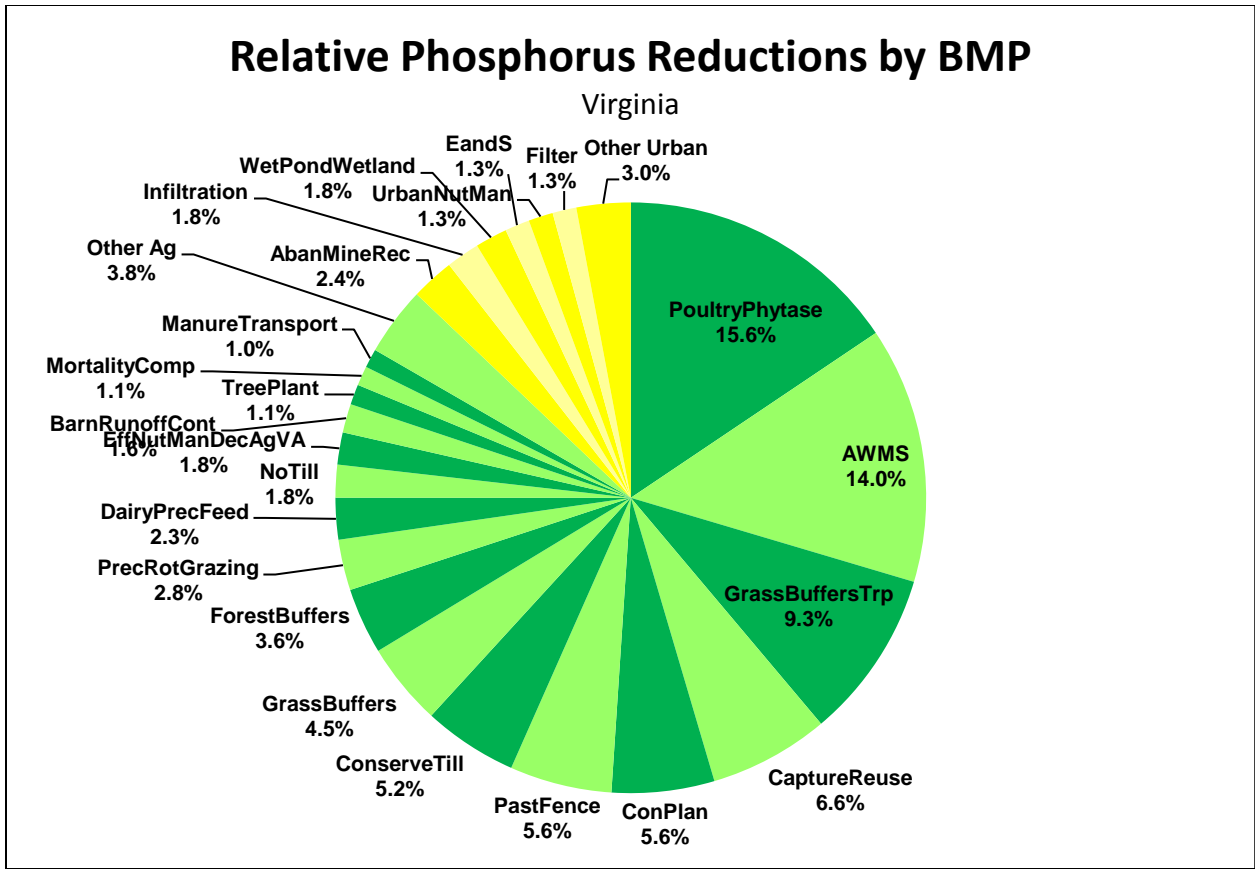
New York			
BMP	Relative Reduction	BMP	Relative Reduction
Streamside Grass Buffers	13.8%	Wetland Restoration	1.4%
Animal Waste Management System	9.0%	Mortality Composters	1.1%
Dairy Precision Feeding	8.5%	Other Agriculture	1.7%
Non Urban Stream Restoration	7.2%	Urban Forest Buffers	7.1%
Soil Conservation & Water Quality Plans	5.9%	Other Urban	1.1%
Grass Buffers	3.8%	Forest Practices	0.3%
Enhanced Nutrient Management	3.1%	Wastewater + CSO	22.8%
Conservation Tillage	3.0%		
Prescribed Grazing	2.9%		
Decision Agriculture	2.3%		
Forest Buffers	1.8%		
Loafing Lot Management	1.6%		
Barnyard Runoff Control	1.5%		

Appendix P: Phosphorus Analysis



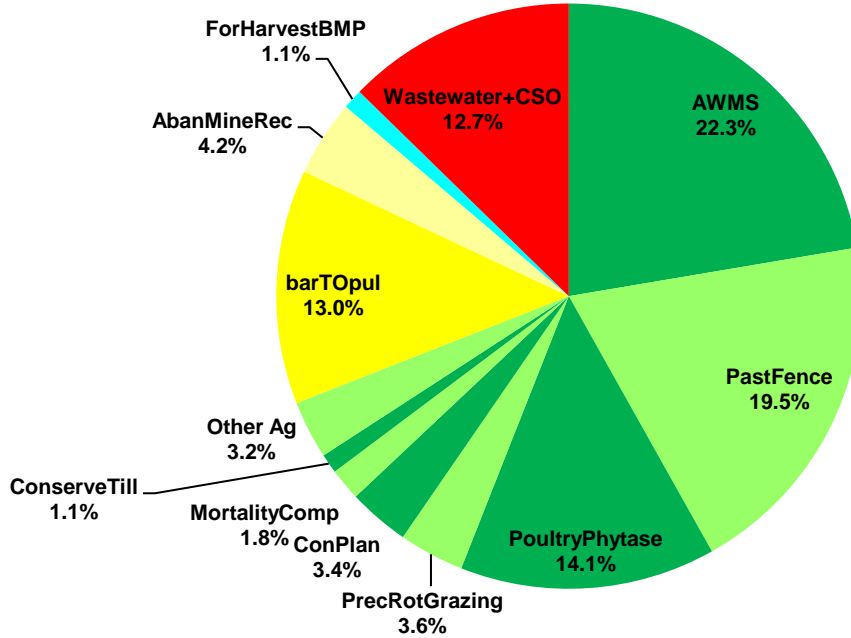
Pennsylvania			
BMP	Relative Reduction	BMP	Relative Reduction
Animal Waste Management System	15.7%	Grass Buffers	1.7%
Poultry Phytase	9.1%	Alternative Crops	1.5%
Land Retirement	5.8%	Horse Pasture Management	1.3%
Forest Buffers	5.7%	Barnyard Runoff Control	1.3%
Soil Conservation and Water Quality Plans	4.1%	Irrigation Water Capture Reuse	1.1%
Stream Access Control with Fencing	3.8%	Other Agriculture	4.7%
Nutrient Management	2.6%	Urban Filtering Practices	7.2%
Continuous No Till	2.5%	Urban Infiltration Practices	6.5%
Conservation Tillage	2.4%	Erosion and Sediment Control on Extractive	2.7%
Precision Intensive Rotational Grazing	2.0%	Other Urban	2.8%
Dairy Precision Feeding	1.8%	Forest Practices	0.0%
Swine Phytase	1.8%	Wastewater + CSO	11.9%

Appendix P: Phosphorus Analysis



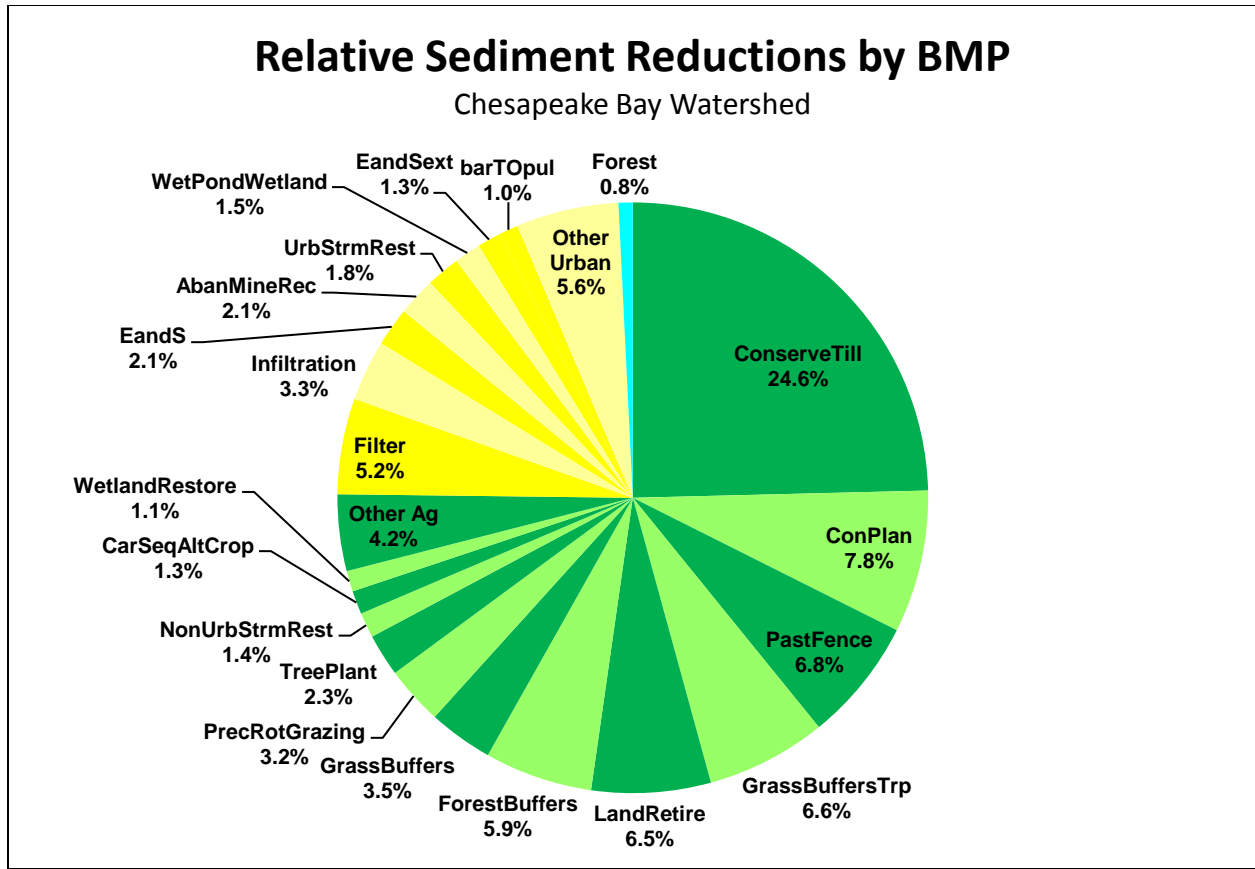
Virginia			
BMP	Relative Reduction	BMP	Relative Reduction
Poultry Phytase	15.5%	Tree Planting	1.1%
Animal Waste Management System	14.0%	Mortality Composters	1.1%
Streamside Grass Buffers	9.2%	Manure Transport	1.0%
Irrigation Water Capture Reuse	6.5%	Other Agriculture	3.7%
Soil Conservation and Water Quality Plans	5.6%	Abandoned Mine Reclamation	2.3%
Stream Access Control with Fencing	5.6%	Urban Infiltration Practices	1.8%
Conservation Tillage	5.1%	Wet Ponds and Wetlands	1.8%
Grass Buffers	4.5%	Erosion and Sediment Control	1.3%
Forest Buffers	3.6%	Urban Nutrient Management	1.3%
Prescribed Grazing	2.8%	Urban Filtering Practices	1.3%
Dairy Precision Feeding	2.3%	Other Urban	2.9%
No Till (stackable)	1.8%	Forest Practices	0.4%
Virginia Decision Agriculture	1.8%	Wastewater + CSO	0.0%
Barnyard Runoff Control	1.6%		

Relative Phosphorus Reductions by BMP West Virginia

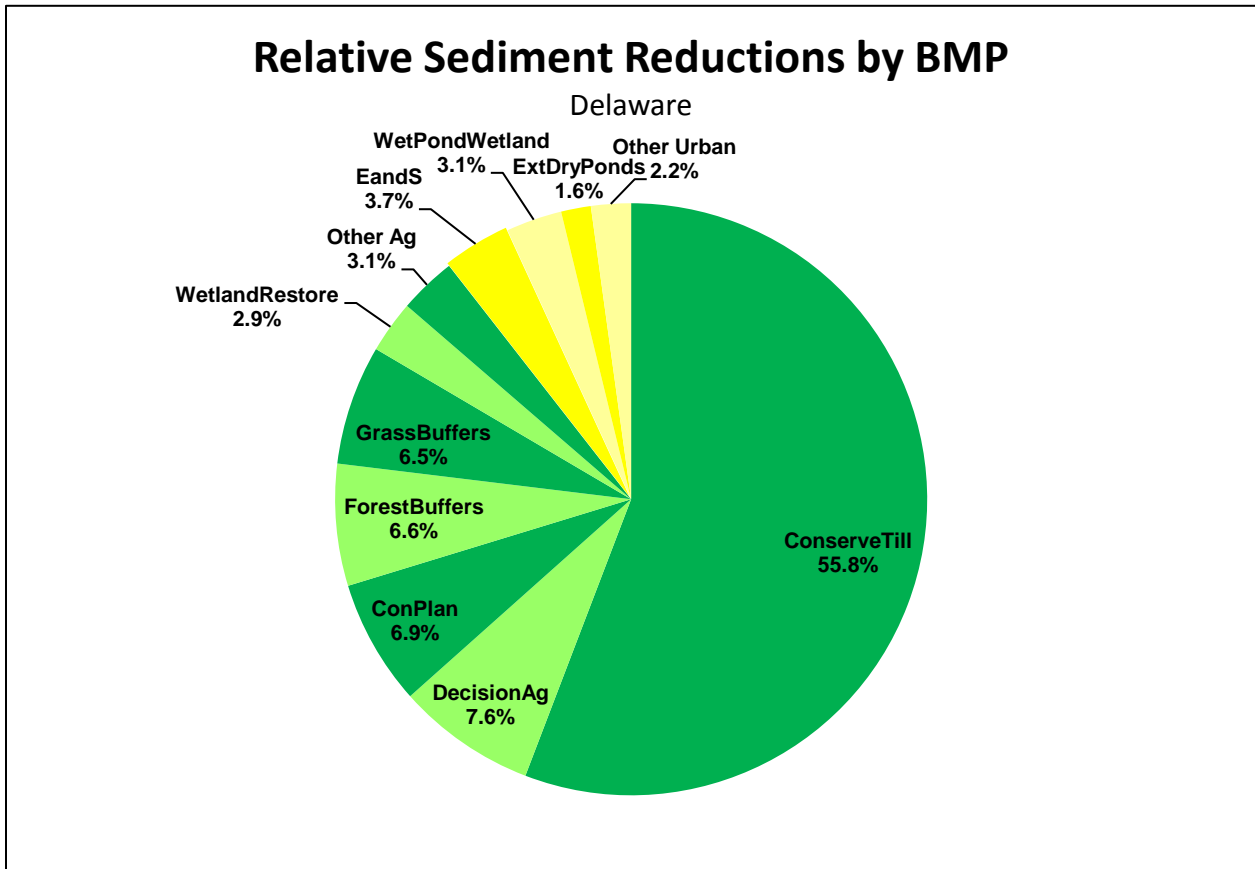


West Virginia	
BMP	Relative Reduction
Animal Waste Management System	22.3%
Stream Access Control with Fencing	19.5%
Poultry Phytase	14.1%
Prescribed Grazing	3.6%
Soil Conservation and Water Quality Plans	3.4%
Mortality Composters	1.8%
Conservation Tillage	1.1%
Other Agriculture	3.2%
Interim Erosion and Sediment Control	13.0%
Abandoned Mine Reclamation	4.2%
Forest Harvesting Practices	1.1%
Wastewater + CSO	12.7%

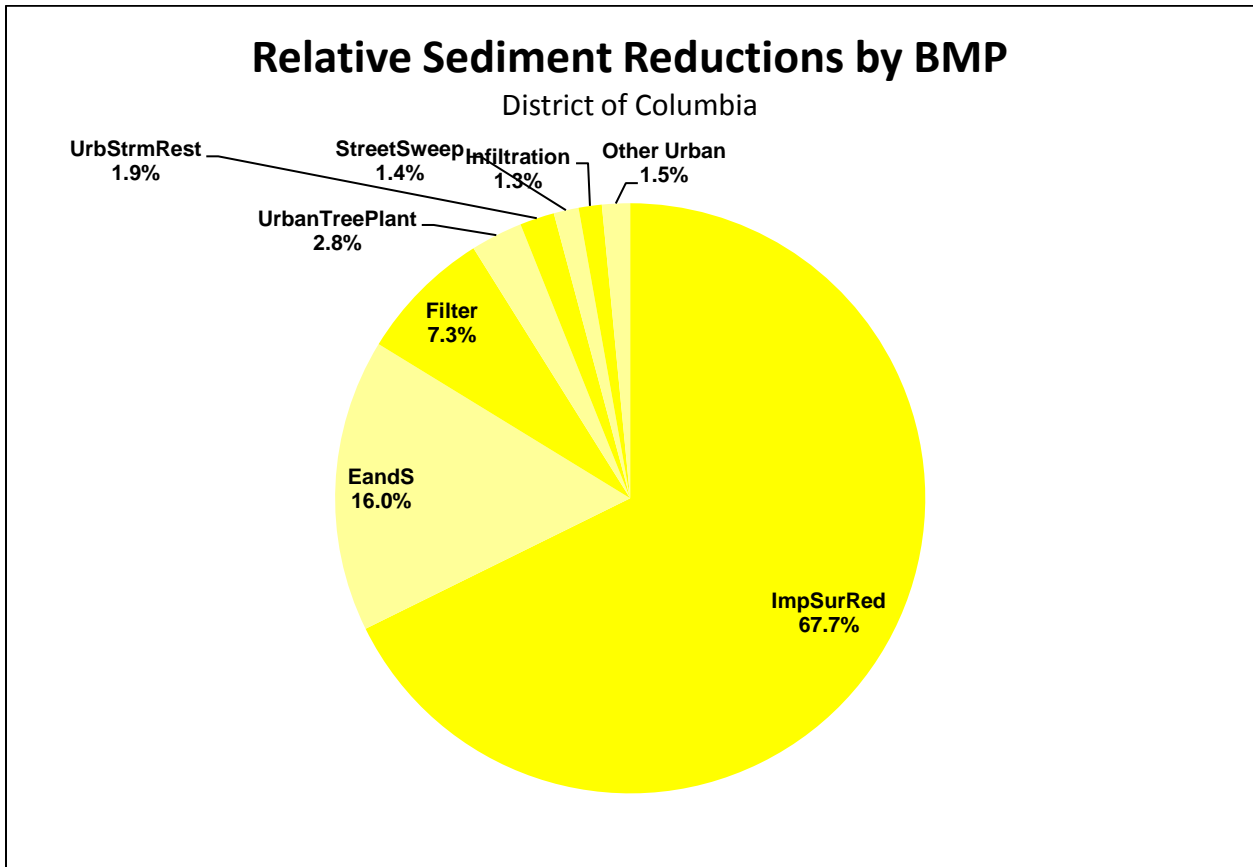
Appendix P: Sediment Analysis



Chesapeake Bay Watershed			
BMP	Relative Reduction	BMP	Relative Reduction
Conservation Tillage	24.6%	Other Agriculture	4.2%
Soil Conservation and Water Quality Plans	7.8%	Urban Filtering Practices	5.2%
Stream Access Control with Fencing	6.8%	Urban Infiltration Practices	3.3%
Streamside Grass Buffers	6.6%	Erosion and Sediment Control	2.1%
Land Retirement	6.5%	Abandoned Mine Reclamation	2.1%
Forest Buffers	5.9%	Urban Stream Restoration	1.8%
Grass Buffers	3.5%	Wet Ponds and Wetlands	1.5%
Prescribed Grazing	3.2%	Erosion and Sediment Control on Extractive	1.3%
Tree Planting	2.3%	Interim Erosion and Sediment Control	1.0%
Non Urban Stream Restoration	1.4%	Other Urban	5.6%
Alternative Crops	1.3%	Forest Practices	0.8%
Wetland Restoration	1.1%	Wastewater + CSO	0.0%

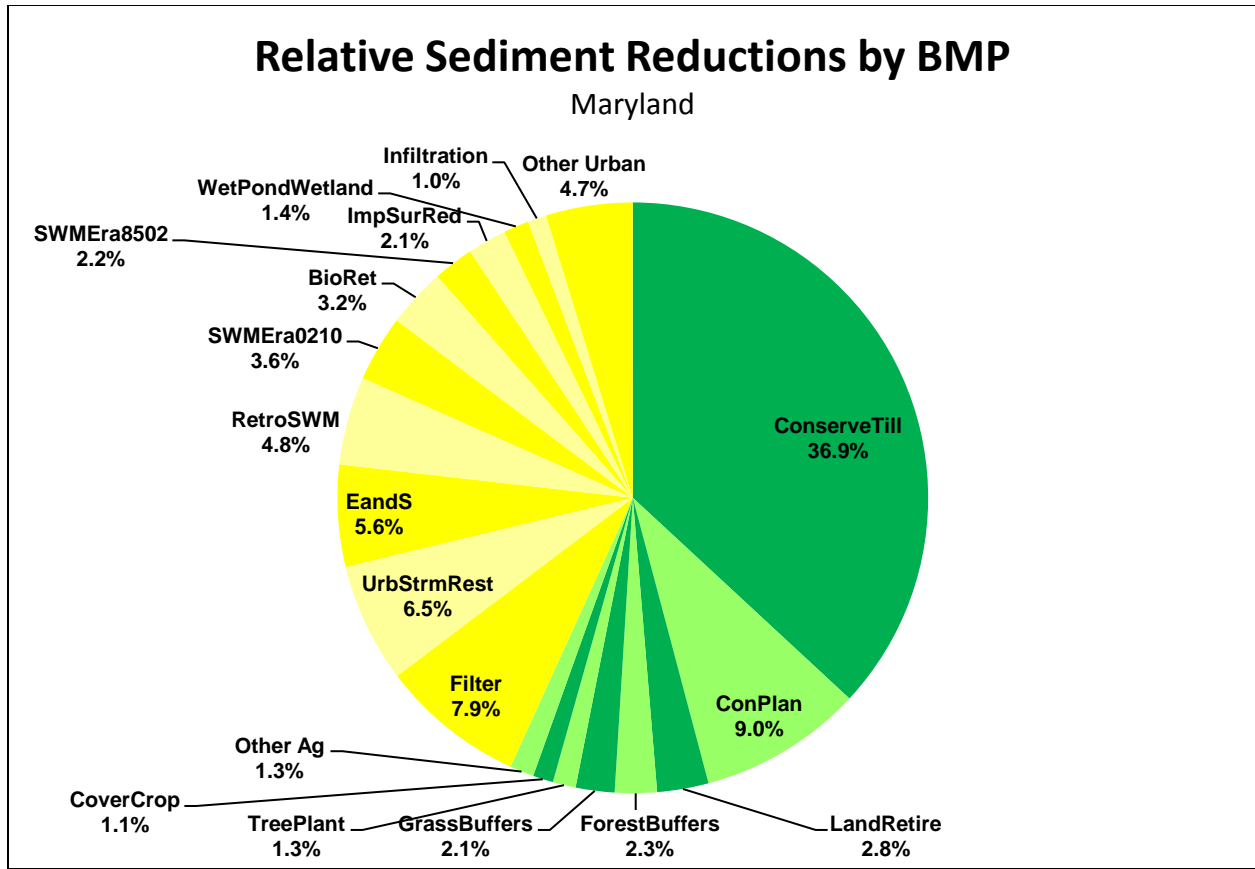


Delaware	
BMP	Relative Reduction
Conservation Tillage	55.5%
Decision Agriculture	7.6%
Soil Conservation & Water Quality Plans	6.8%
Forest Buffers	6.6%
Grass Buffers	6.5%
Wetland Restoration	2.9%
Other Agriculture	3.1%
Erosion and Sediment Control	3.7%
Wet Ponds and Wetlands	3.0%
Dry Extended Detention Ponds	1.6%
Other Urban	2.2%
Forest Practices	0.5%
Wastewater + CSO	0.0%



District of Columbia	
BMP	Relative Reduction
Impervious Urban Surface Reduction	67.7%
Erosion and Sediment Control	16.0%
Urban Filtering Practices	7.3%
Urban Tree Planting; Urban Tree Canopy	2.8%
Urban Stream Restoration	1.9%
Street Sweeping	1.4%
Urban Infiltration Practices	1.3%
Other Urban	1.5%
Forest Practices	0.0%
Wastewater + CSO	0.0%

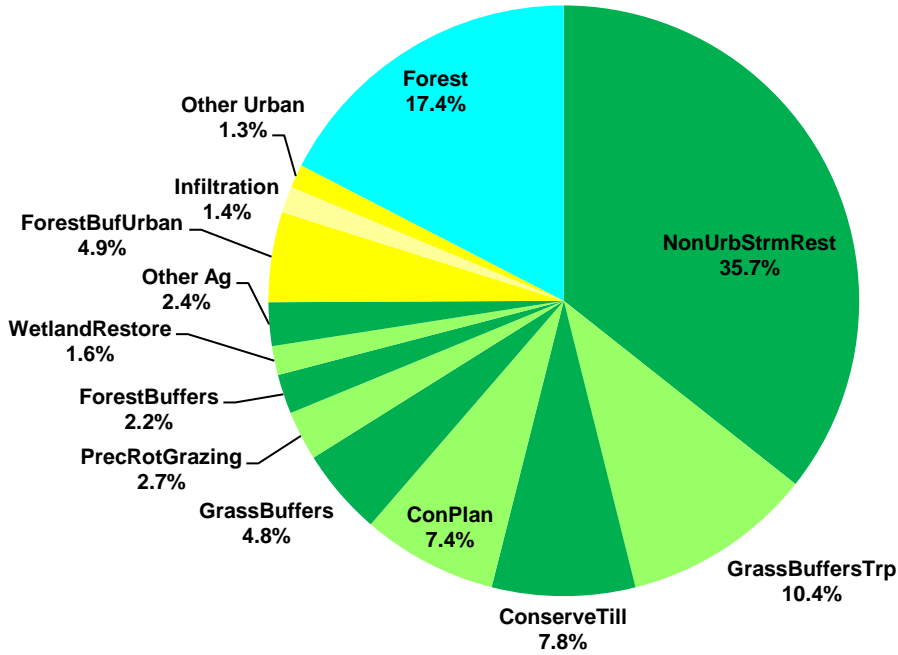
Appendix P: Sediment Analysis



Maryland			
BMP	Relative Reduction	BMP	Relative Reduction
Conservation Tillage	36.9%	Stormwater Management (2002 to 2010), MD	3.6%
Soil Conservation and Water Quality Plans	9.0%	Bioretention/raingardens	3.2%
Land Retirement	2.8%	Stormwater Management (1985 to 2002), MD	2.2%
Forest Buffers	2.3%	Impervious Urban Surface Reduction	2.1%
Grass Buffers	2.1%	Wet Ponds and Wetlands	1.4%
Tree Planting	1.3%	Urban Infiltration Practices	1.0%
Early Cover Crops	1.1%	Other Urban	4.7%
Other Agriculture	1.3%	Forest Practices	0.0%
Urban Filtering Practices	7.9%	Wastewater + CSO	0.0%
Urban Stream Restoration	6.5%		
Erosion and Sediment Control	5.6%		
MS4 Permit-Required Stormwater Retrofit	4.8%		

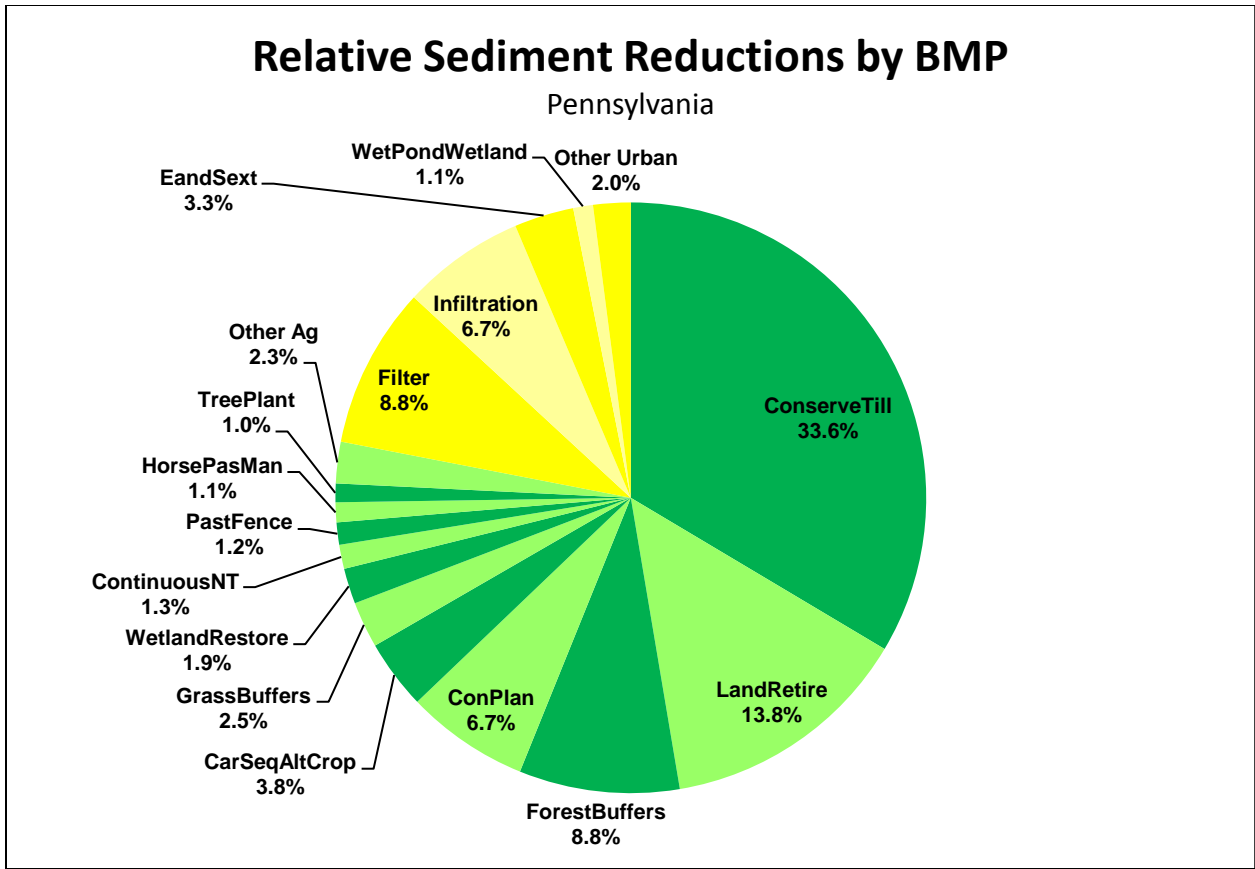
Relative Sediment Reductions by BMP

New York



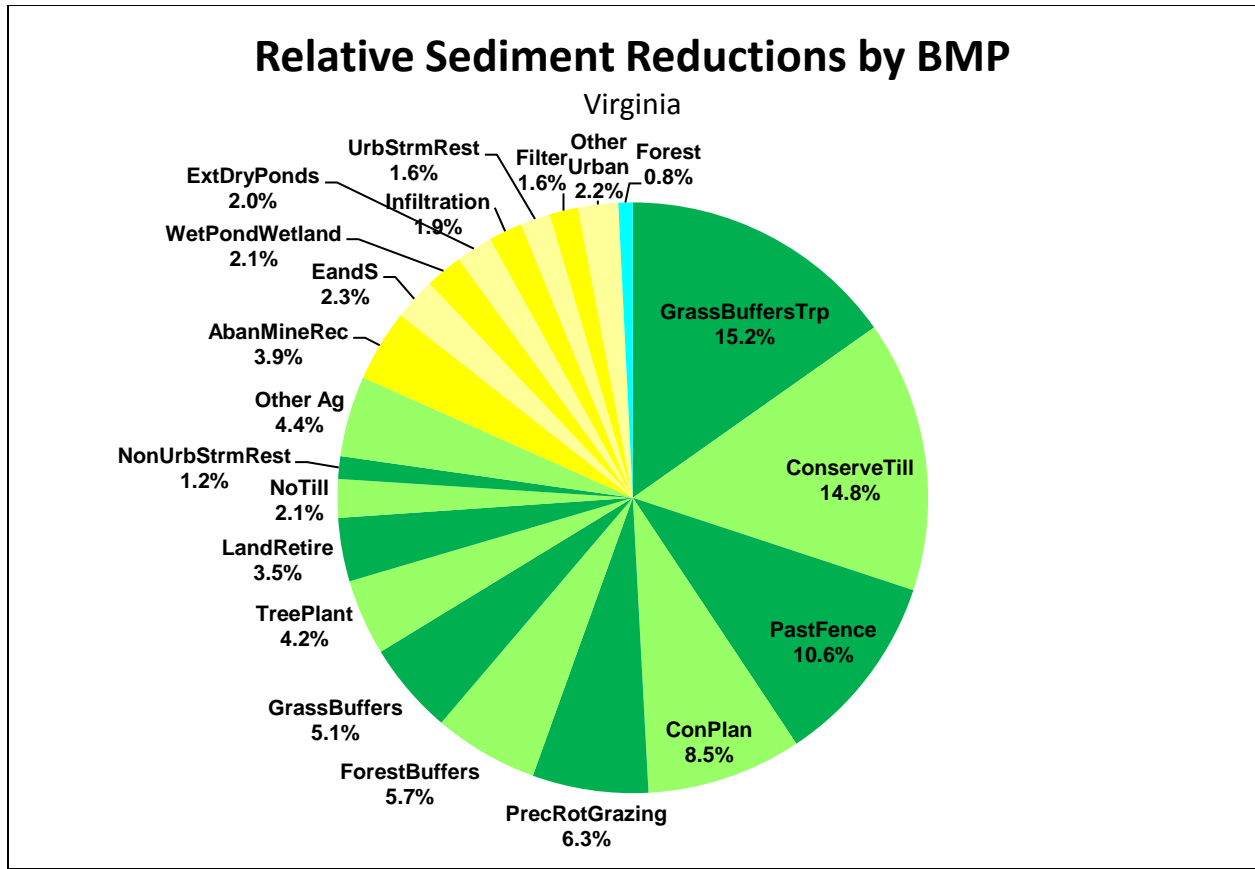
New York	
BMP	Relative Reduction
Non Urban Stream Restoration	35.7%
Streamside Grass Buffers	10.4%
Conservation Tillage	7.8%
Soil Conservation & Water Quality Plans	7.4%
Grass Buffers	4.8%
Prescribed Grazing	2.7%
Forest Buffers	2.2%
Wetland Restoration	1.6%
Other Agriculture	2.4%
Urban Forest Buffers	4.9%
Urban Infiltration Practices	1.4%
Other Urban	1.3%
Forest Practices	17.4%
Wastewater + CSO	0.0%

Appendix P: Sediment Analysis

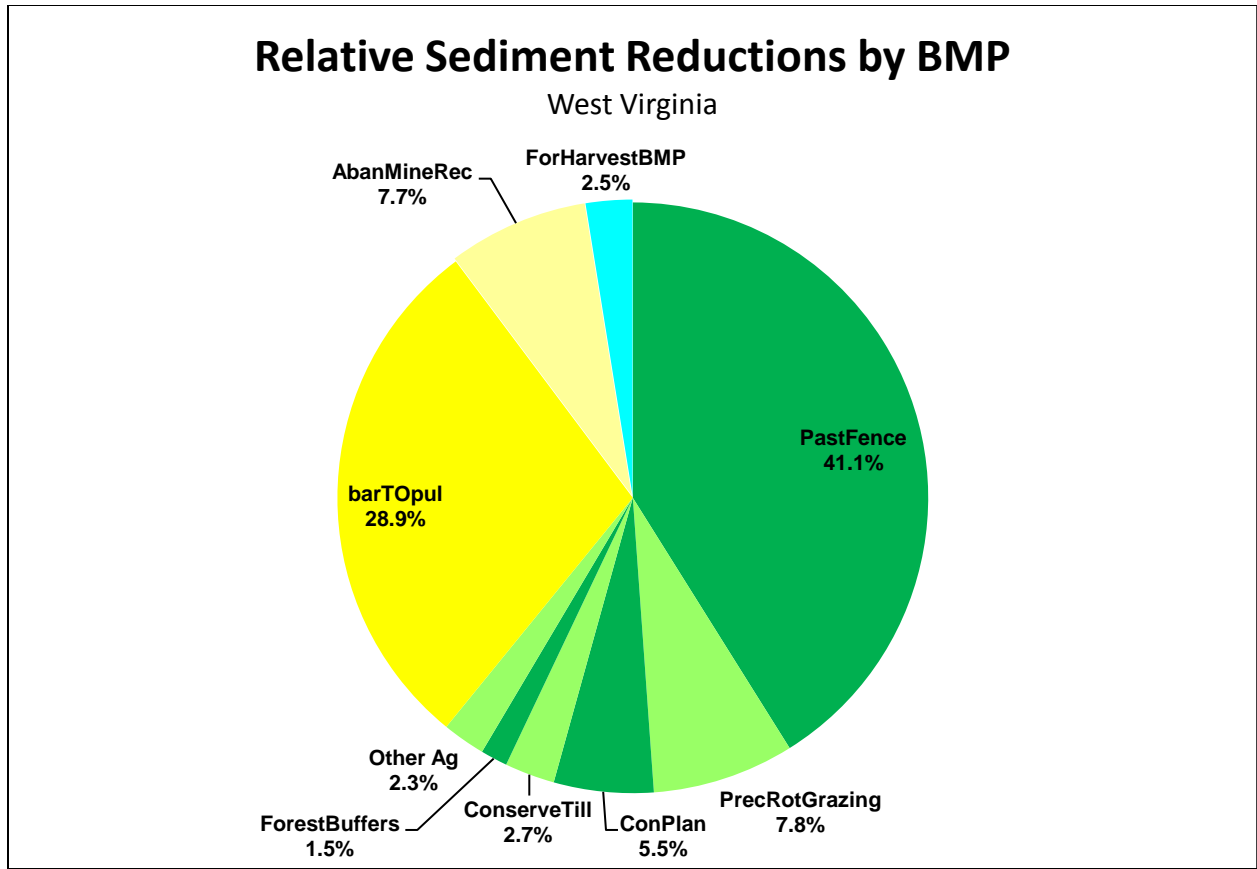


Pennsylvania			
BMP	Relative Reduction	BMP	Relative Reduction
Conservation Tillage	33.6%	Urban Infiltration Practices	6.7%
Land Retirement	13.8%	Erosion and Sediment Control on Extractive	3.3%
Forest Buffers	8.8%	Wet Ponds and Wetlands	1.1%
Soil Conservation and Water Quality Plans	6.7%	Other Urban	2.0%
Alternative Crops	3.8%	Forest Practices	0.0%
Grass Buffers	2.5%	Wastewater + CSO	0.0%
Wetland Restoration	1.9%		
Continuous No Till	1.3%		
Stream Access Control with Fencing	1.2%		
Horse Pasture Management	1.1%		
Tree Planting	1.0%		
Other Agriculture	2.3%		
Urban Filtering Practices	8.8%		

Appendix P: Sediment Analysis



Virginia			
BMP	Relative Reduction	BMP	Relative Reduction
Streamsides Grass Buffers	15.2%	Erosion and Sediment Control	2.3%
Conservation Tillage	14.8%	Wet Ponds and Wetlands	2.1%
Stream Access Control with Fencing	10.6%	Dry Extended Detention Ponds	2.0%
Soil Conservation and Water Quality Plans	8.5%	Urban Infiltration Practices	1.9%
Prescribed Grazing	6.3%	Urban Stream Restoration	1.6%
Forest Buffers	5.7%	Urban Filtering Practices	1.6%
Grass Buffers	5.1%	Other Urban	2.2%
Tree Planting	4.2%	Forest Practices	0.8%
Land Retirement	3.5%	Wastewater + CSO	0.0%
No Till (stackable)	2.1%		
Non Urban Stream Restoration	1.2%		
Other Agriculture	4.4%		
Abandoned Mine Reclamation	3.9%		



West Virginia	
BMP	Relative Reduction
Stream Access Control with Fencing	41.1%
Prescribed Grazing	7.8%
Soil Conservation and Water Quality Plans	5.5%
Conservation Tillage	2.7%
Forest Buffers	1.5%
Other Agriculture	2.3%
Interim Erosion and Sediment Control	28.9%
Abandoned Mine Reclamation	7.7%
Forest Harvesting Practices	2.5%
Wastewater + CSO	0.0%