Urban Nutrient Management Continuing Education Meeting

May 12, 2015

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Virginia Department of Conservation & Recreation

Today's Agenda

- Back to Basics Planning
- UNM Plan Verification
- The Future of UNM in Virginia

Back To Basics Planning

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Urban Nutrient Management Specialist
May 12, 2015

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What We'll Cover

- Soil sampling
- Fertility ratings
- N&P cycles

The Goal of Nutrient Management

- Produce quality landscapes while limiting the amount of nutrients lost to the environment
  - Knowing the fertility needs of landscape plants
  - Factoring in landscape conditions and use

Soil Sampling

- Do I have enough information to write this plan successfully?

instead of…

- What is the minimum number of soil samples I need to take?

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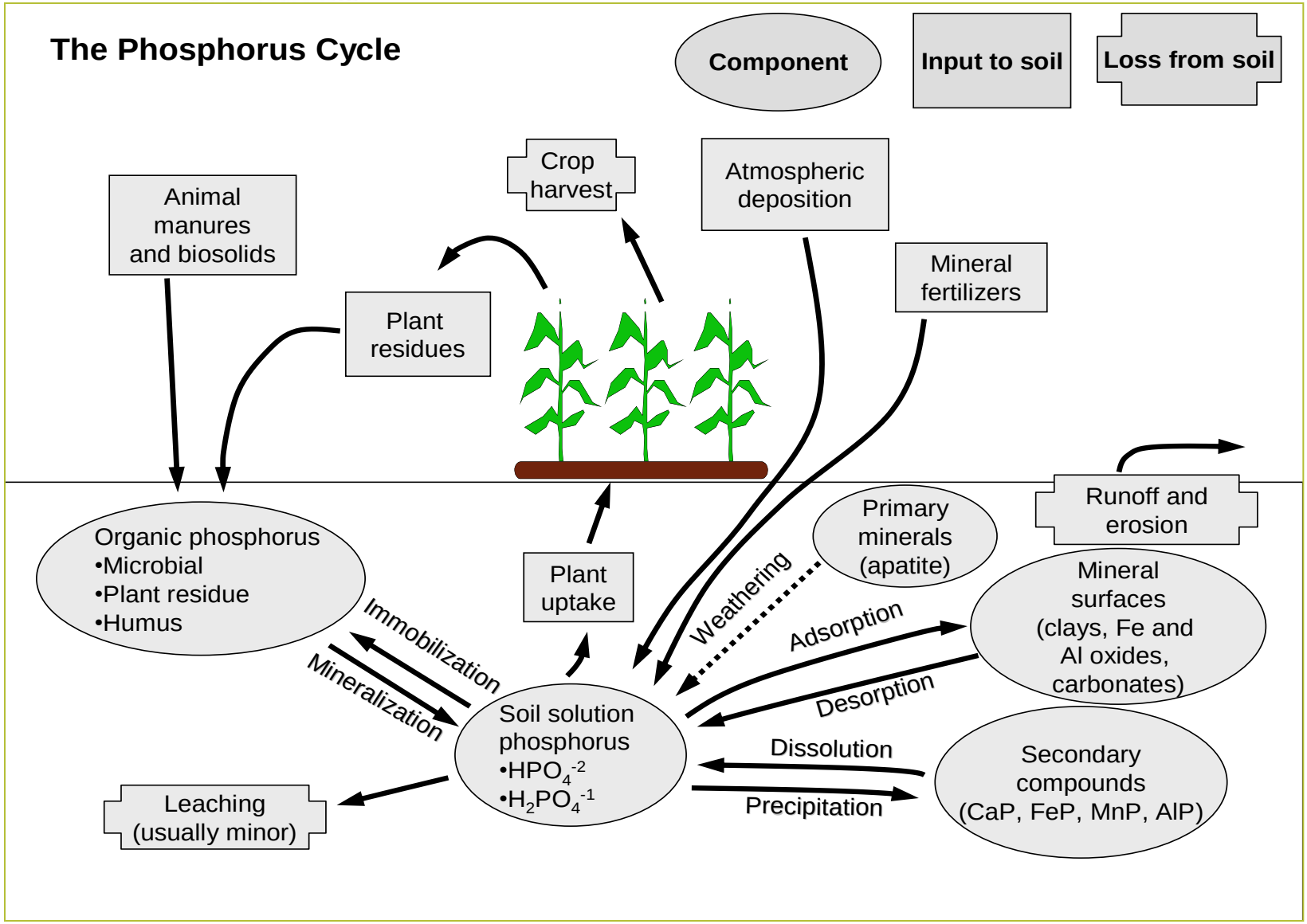
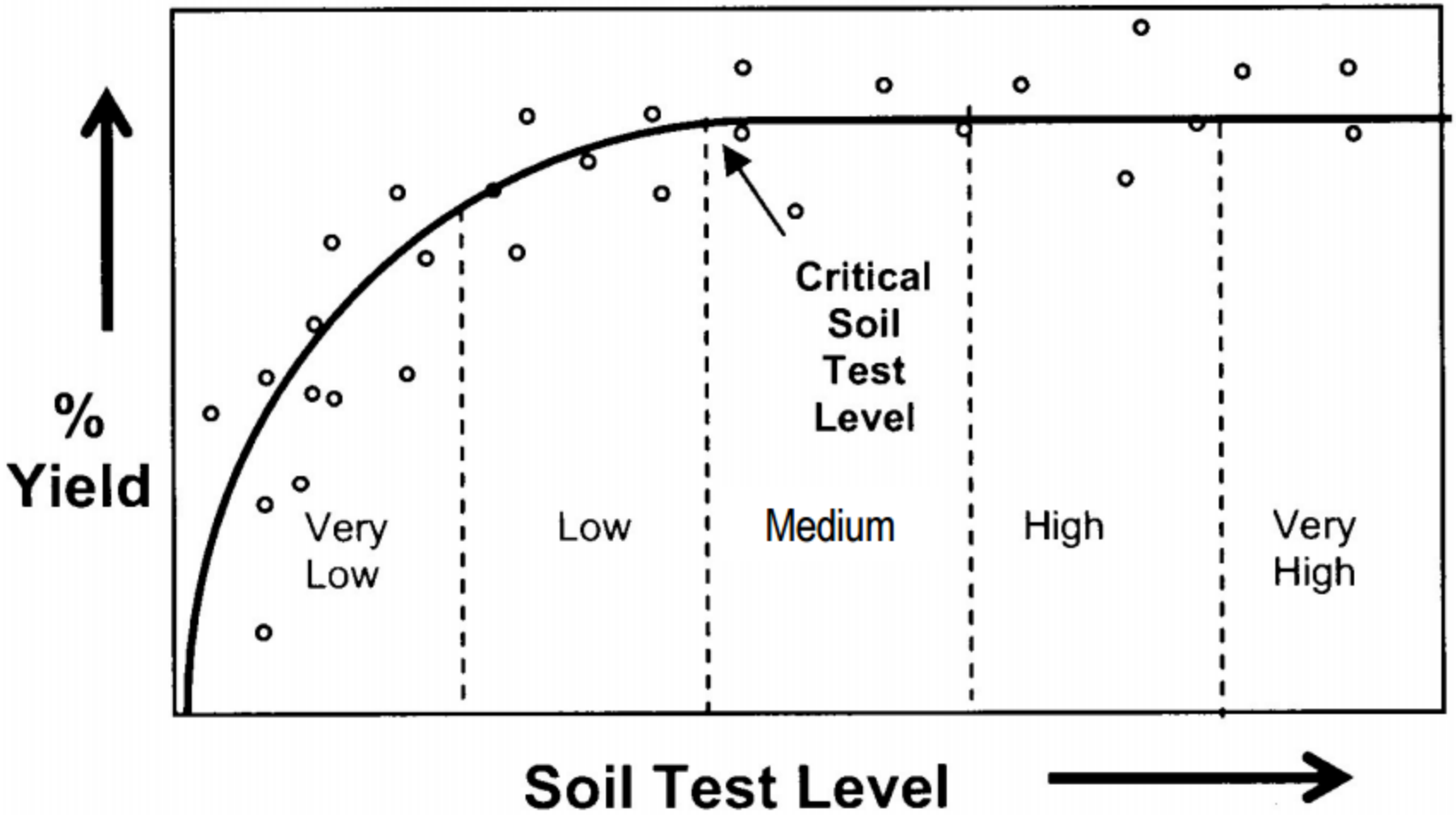
Soil Test Results

- What do the numbers represent?
- Calibration of test results is everything

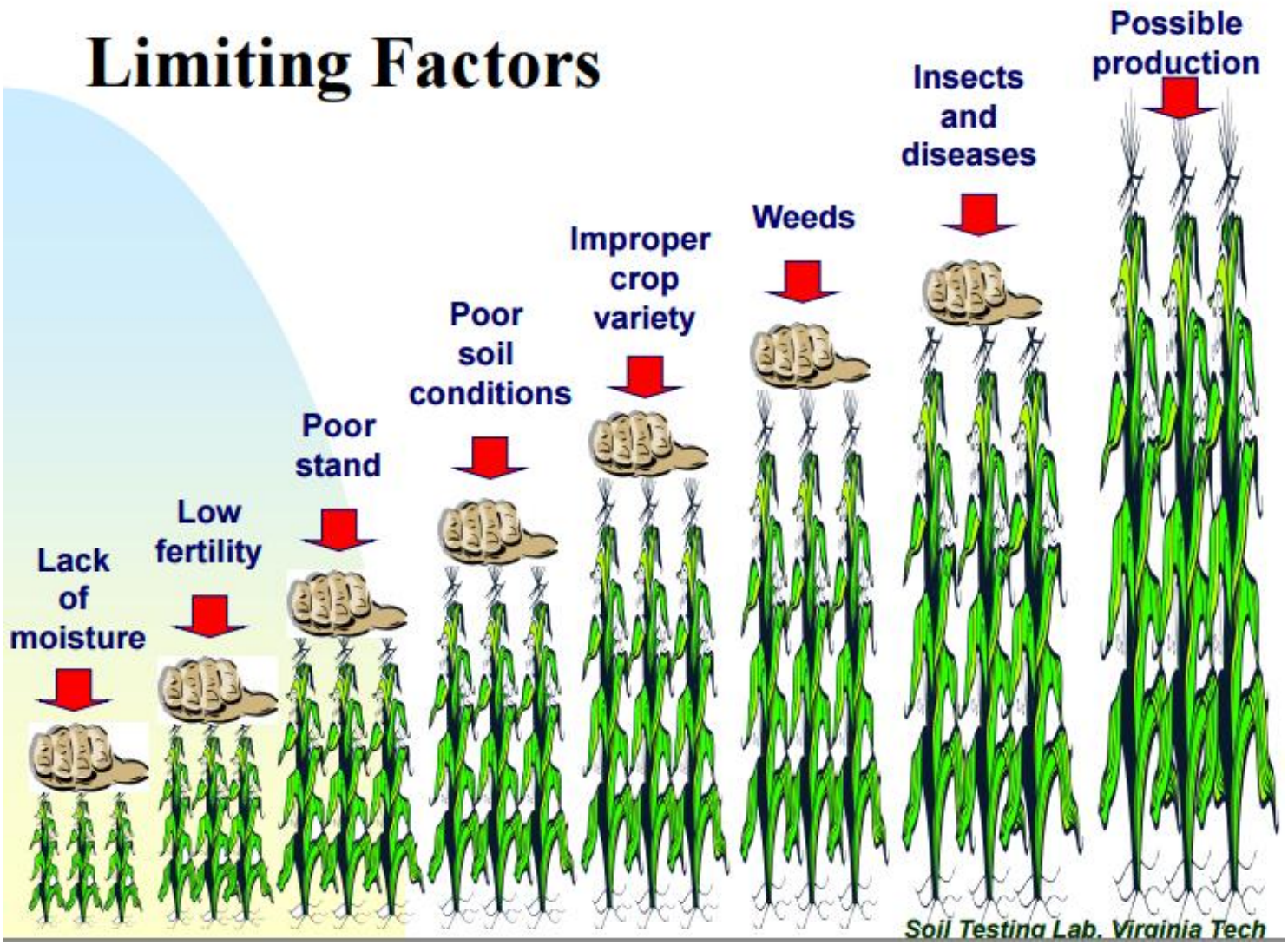
The Phosphorus Cycle



Calibration Curve

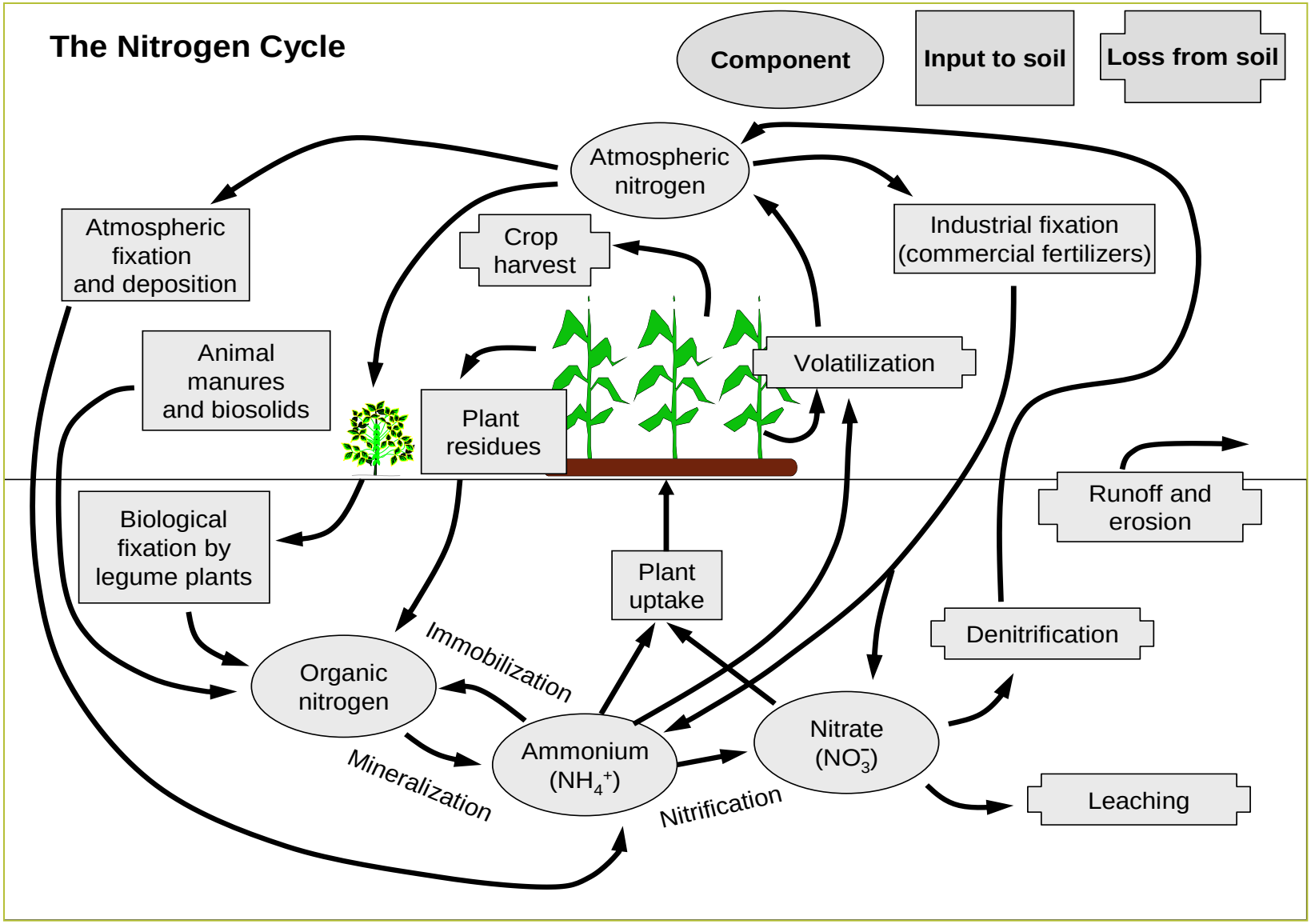


Limiting Factors



Nitrogen Use Efficiency

- Are you losing the N you apply?
- Are you harvesting your N?
- Are there products available to match your management and plant needs?


The Nitrogen Cycle
Component
Input to soil
Loss from soil
Atmospheric nitrogen
Atmospheric fixation and deposition
Crop harvest
Industrial fixation (commercial fertilizers)
Animal manures and biosolids
Volatilization
Plant residues
Runoff and erosion
Biological fixation by legume plants
Plant uptake
Denitrification
Immobilization
Organic nitrogen
Ammonium (NH_4^+)
Nitrate (NO_3^-)
Mineralization
Nitrification
Leaching

The Future of UNM in Virginia

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Bay TMDL

VA's 2025 TMDL Targets

- N- 52.5 million lbs
- P- 6.4 million lbs
- Current progress: N- 59 P- 6.6

Urban Pervious Pollutant Loads

Watershed Model 5.3.2

- N- 7.5 lbs/A
- P- 0.45 lbs/A

Urban Pervious Acreage Breakdown

Estimated Distribution of Turf Cover in the Chesapeake Bay Watershed (Schueler, 2010)	
State	**Urban Pervious Area (in acres)**
Delaware	36,481
District of Columbia	17,206
Maryland	990,291
New York	170,716
Pennsylvania	1,052,558
Virginia	1,195,567
West Virginia	88,218
TOTAL	3,551,037

Bay TMDL Reductions

- Recommendations of the Expert Panel to Define Removal Rates for Urban Nutrient Management

- Approved March 2013
- Appendix September 2013

UNM Efficiency

- There are three efficiency classifications
- High, low and blended

Percent TN and TP Reduced per Acre		
	Nitrogen	Phosphorus
High	20%	10%
Low	6%	3%
Blended	9%	4.5%

UNM Expert Panel

- Recommended adaptive management
- Recommended model improvements when research is available
- Expand UNM message and outreach

UNM Reported Acreage

- Reported Plans
- WQA- Green & Clean Companies
- VDACS Certified Fertilizer Applicator Reporting

Mandatory Plans

- Golf courses by July 1, 2017
- State lands that fertilize
- MS4 permittees

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Distribution of Turfgrass by Sector	
Home Lawns	70%
Public	15%
Commercial	15%
% Home Lawns Managed by LCO	10%

NMPs for Private Land Owners

- Cost-share
- Incentivize it
- Pay for it