Lawn Establishment and Maintenance

Master Gardener Training
Henrico County

* Before we talk about Lawns, lets talk a little about

Water Quality

The Water Cycle

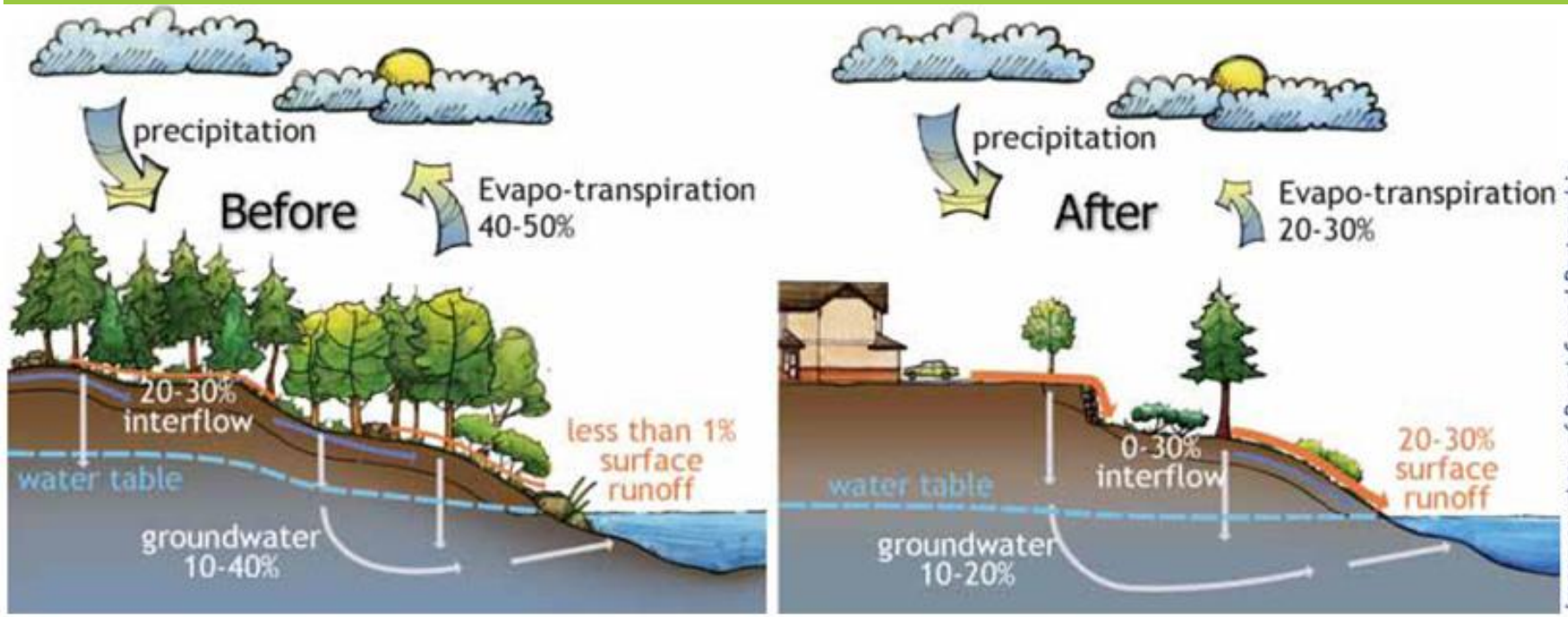


Image courtesy of Puget Sound Partnership

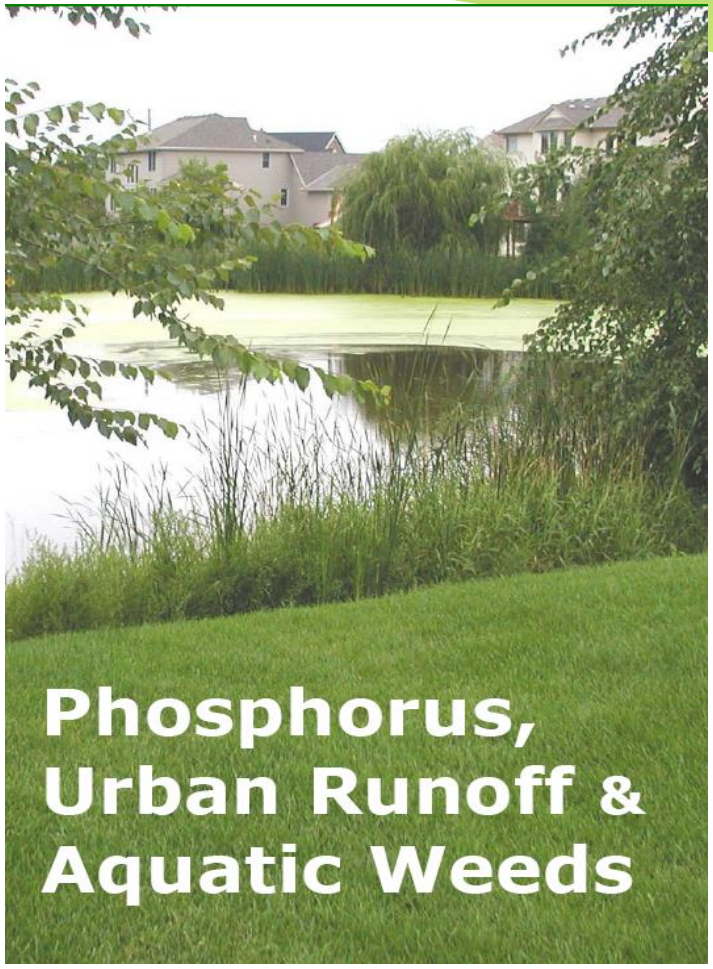
Before *development almost all rainfall is taken up by plants, evaporates or infiltrates through the ground.*
After *conventional development, surface runoff increases significantly while evaporation and infiltration into the ground decrease.*

Before Development
<1% Surface Runoff

After Development
20 – 30% Surface Runoff

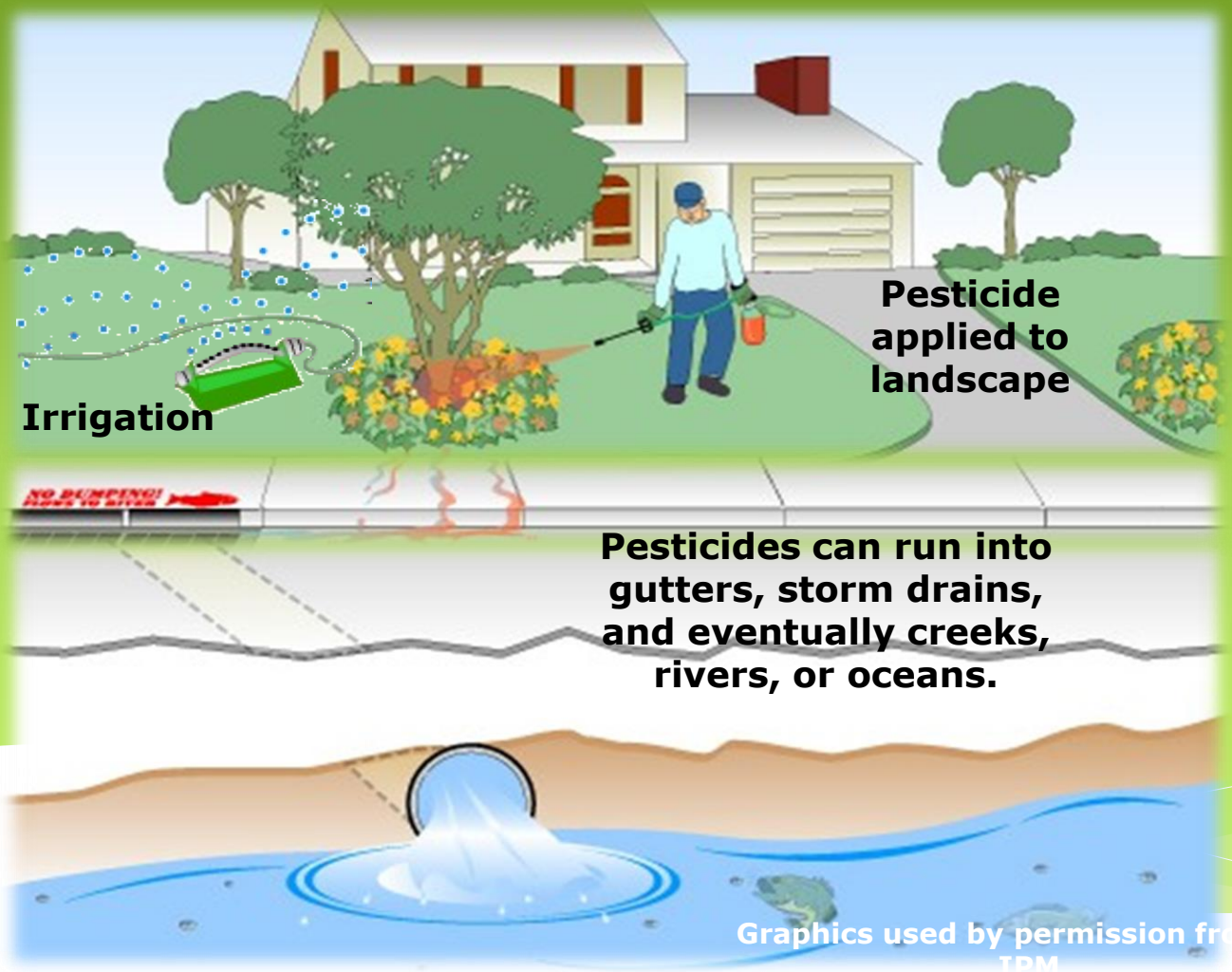
Fertilizers, Pesticides and Sediment have been found in water in many places.

Improper Use of Lawn Fertilizers and Pesticides. . .



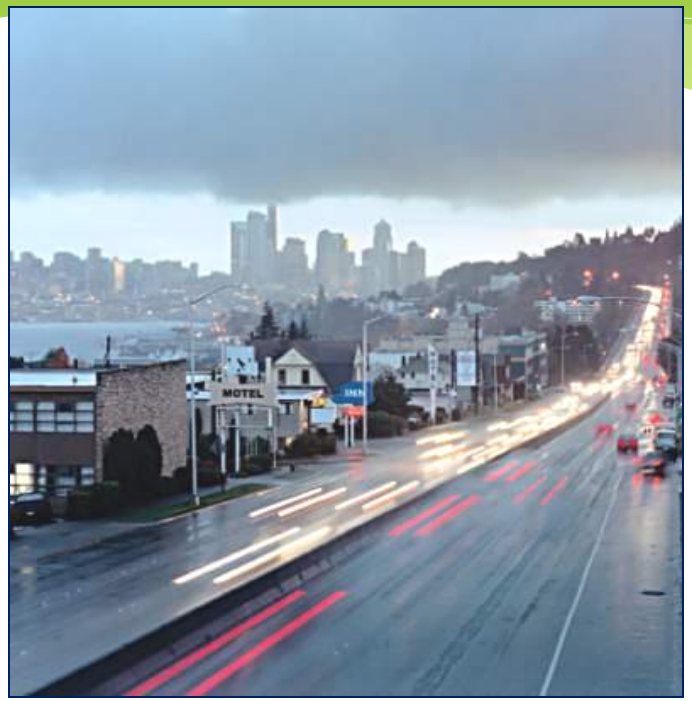
Can Result in Non-point Source Pollution

There are several ways that pesticides and fertilizers get into water.



Western IPM Center

Stormwater Runoff



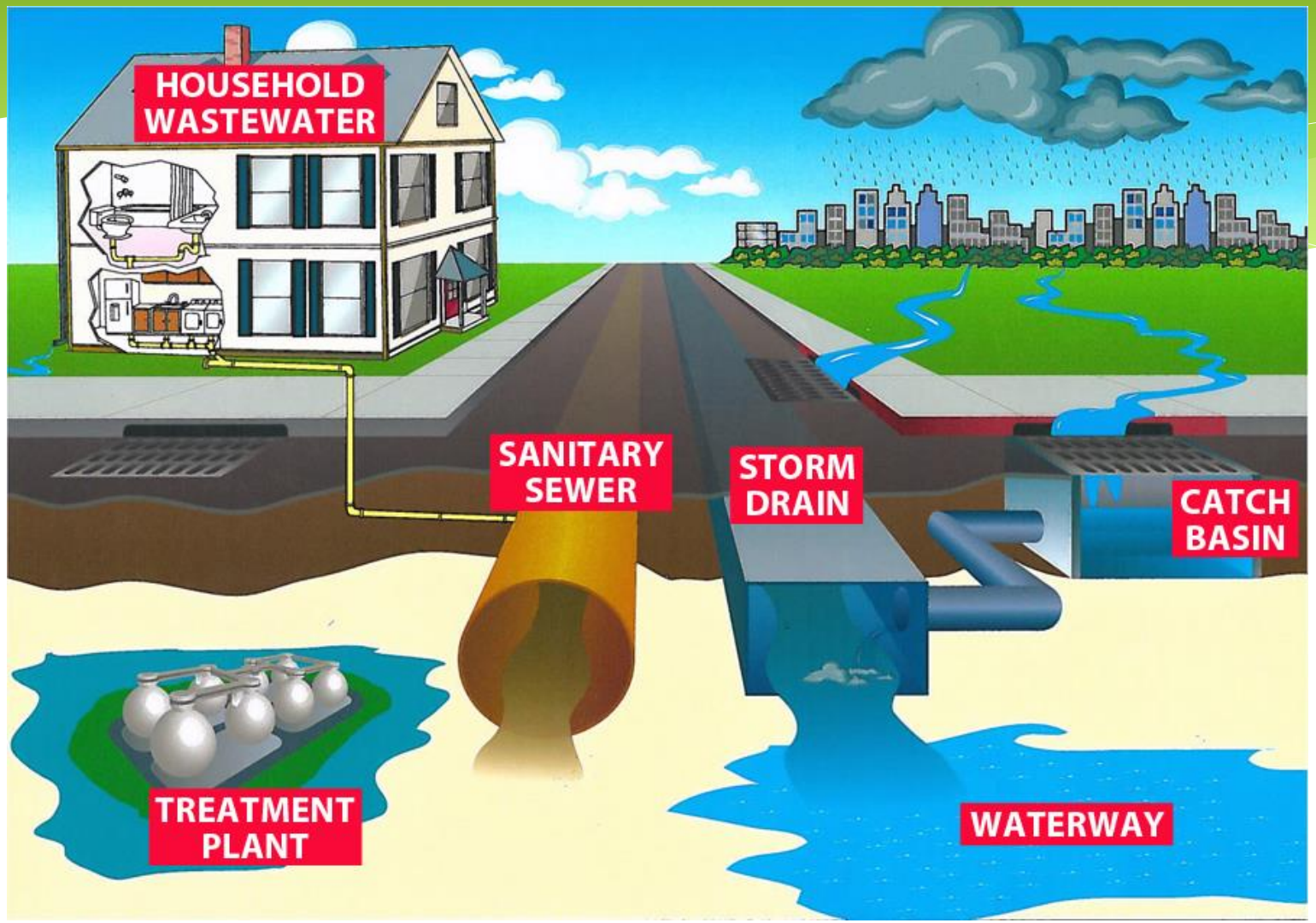
Stormwater Flows over surfaces such as roads, driveways and parking lots.

* Water falls as rain, snow, or ice. Most seeps into ground.
* If ground is saturated, frozen, or has paved surfaces, water flows & is called stormwater runoff.

Where Does Storm Water Go In Our Community?

- Travels over land
- Carried through municipal separate storm sewer system (MS4)
* This polluted runoff goes to streams & lakes untreated.
* It may carry soil, pet waste, oil, pesticides, & other pollutants with it.

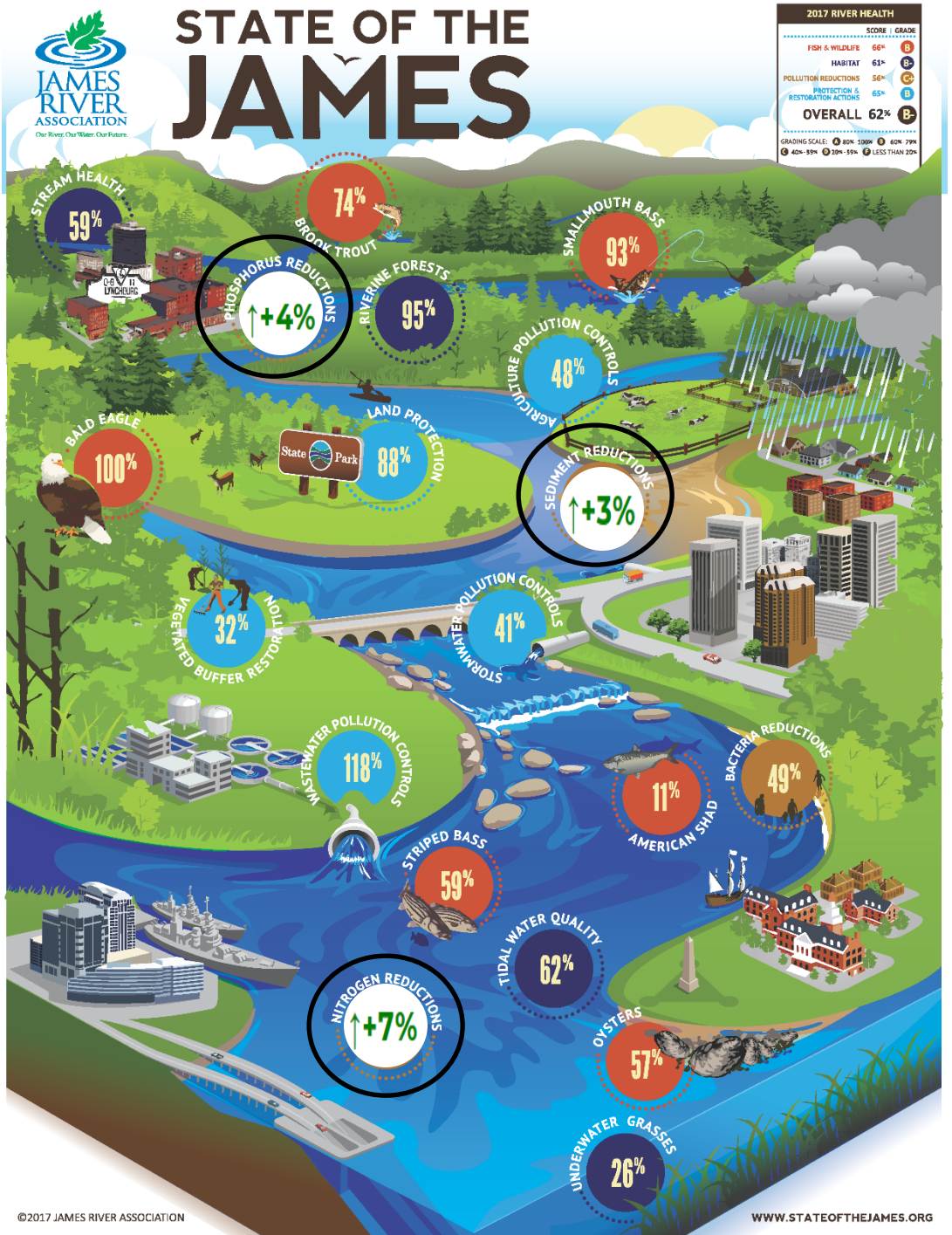
Sanitary vs. Storm Sewer



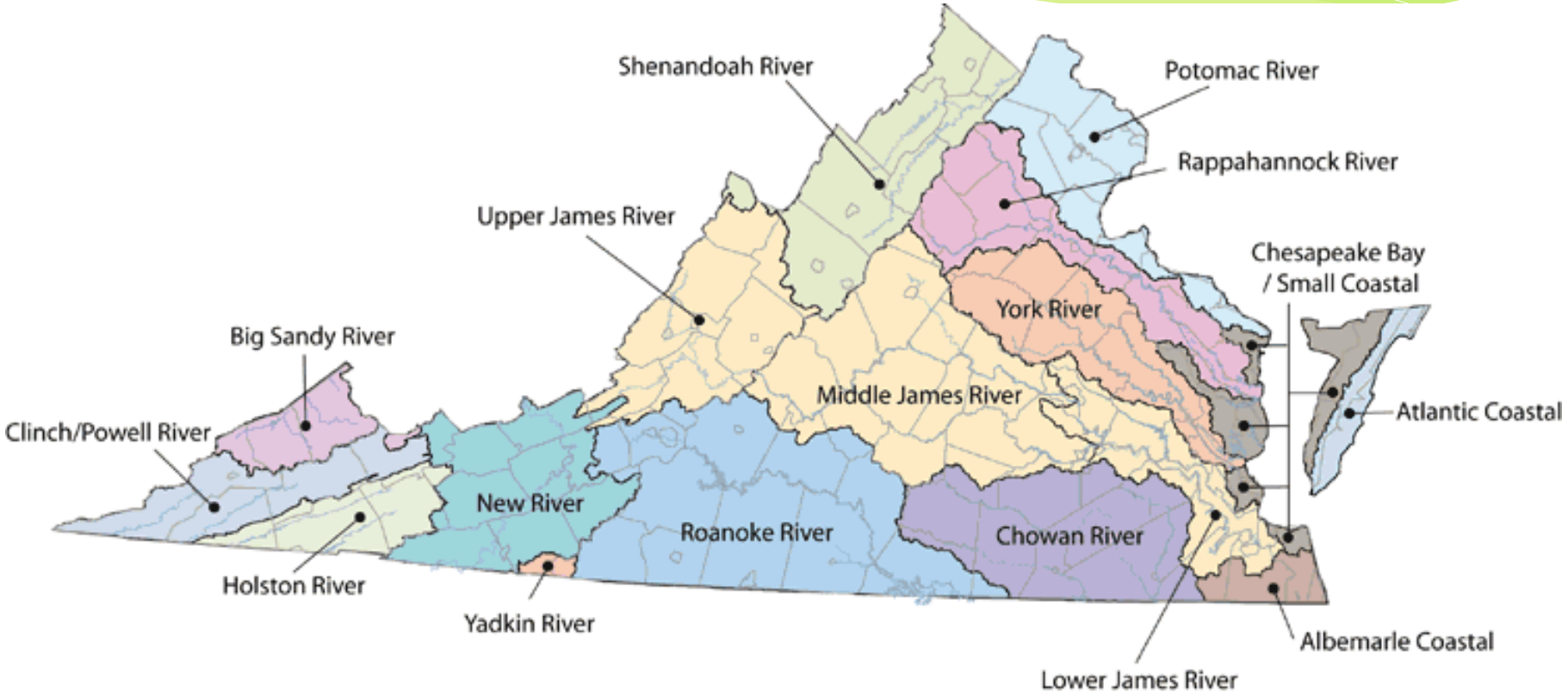
Stormwater Runs to Local Waterways Untreated

Photo: Matt Carman

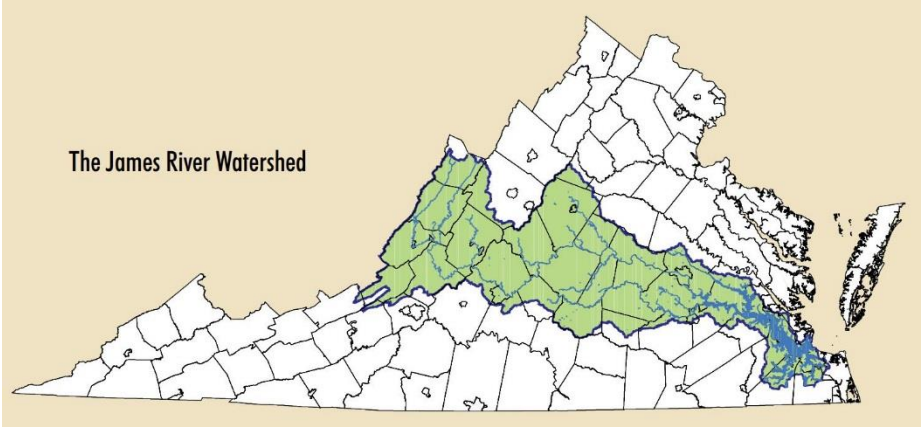
James River viewed from the Lee bridge


JAMES RIVER ASSOCIATION
Our River. Our Water. Our Future.
STATE OF THE JAMES
2017 RIVER HEALTH
SCORE | GRADE
FISH & WILDLIFE 66% B
HABITAT 61% B-
POLLUTION REDUCTIONS 56% C-
PROTECTION & RESTORATION ACTIONS 65% B
OVERALL 62% B-
GRADING SCALE: A 80% - 100% B 60% - 79% C 40% - 59% D 20% - 59% F LESS THAN 20%
STREAM HEALTH 59%
74% BROOK TROUT
PHOSPHORUS REDUCTIONS ↑+4%
RIVERINE FORESTS 95%
SMALLMOUTH BASS 93%
AGRICULTURE POLLUTION CONTROLS 48%
BALD EAGLE 100%
State Park
LAND PROTECTION 88%
SEDIMENT REDUCTIONS ↑+3%
32% VEGETATED BUFFER RESTORATION
STORMWATER POLLUTION CONTROLS 41%
WASTEWATER POLLUTION CONTROLS 118%
11% AMERICAN SHAD
BACTERIA REDUCTIONS 49%
STRIPED BASS 59%
TIDAL WATER QUALITY 62%
NITROGEN REDUCTIONS ↑+7%
OYSTERS 57%
UNDERWATER GRASSES 26%
©2017 JAMES RIVER ASSOCIATION
WWW.STATEOFTHEJAMES.ORG

It's All About the Watershed



James River Watershed

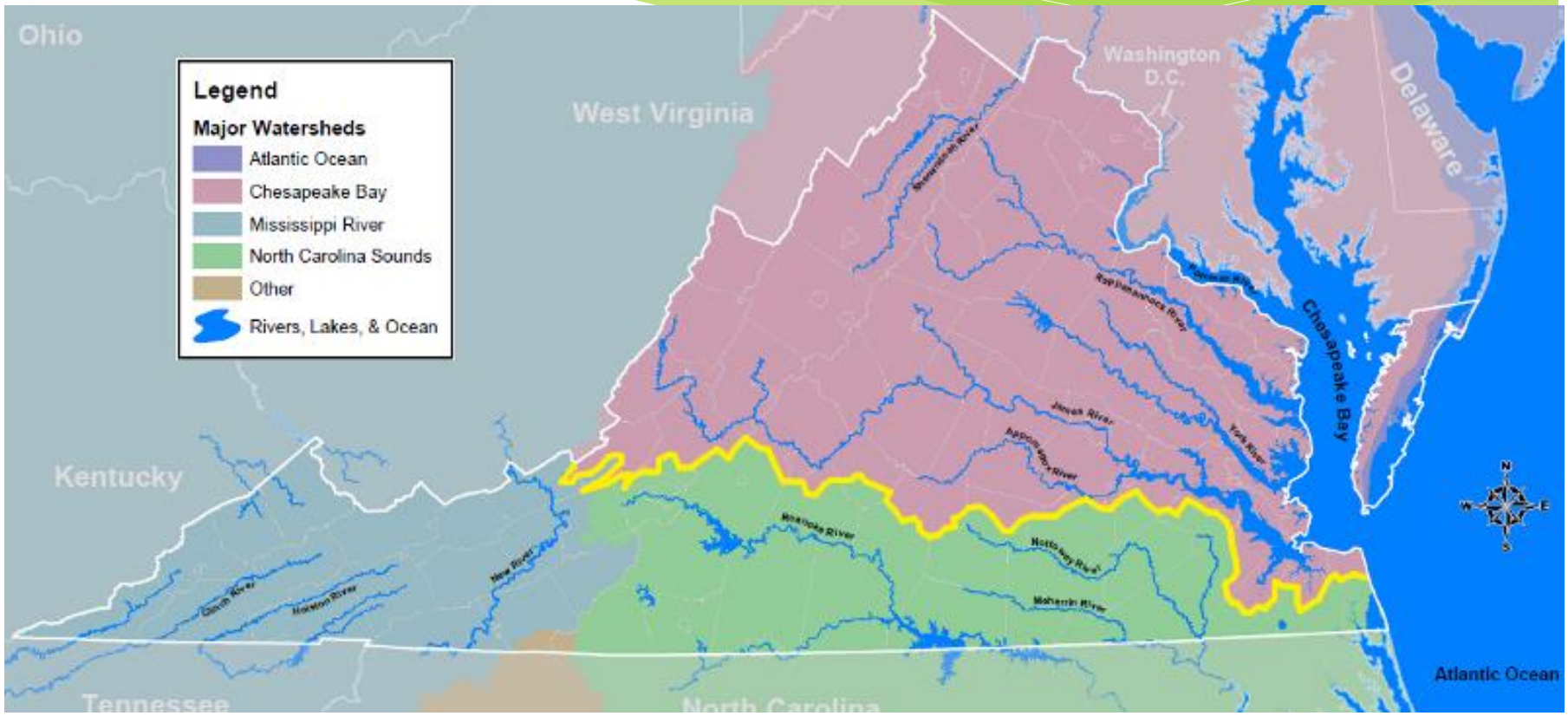


* 348 miles long
* Drains over 10,000 mi^2
* The fall zone around Richmond drops the James 105 feet in seven miles.
* Major source of drinking water for Virginians

ENVISION THE James

http://www.envisionthejames.org/

It's All About the Bay



Rivers north of the yellow line flow into the Chesapeake Bay

Source: Virginia Department of Game and Inland Fisheries

Executive order – Chesapeake Bay Protection and Restoration?

"The Chesapeake Bay is a national treasure constituting the largest estuary in the United States and one of the largest and most biologically productive estuaries in the world.

The Federal Government has nationally significant assets in the Chesapeake Bay and its watershed in the form of public lands, facilities, military installations, parks, forests, wildlife refuges, monuments, and museums."

*Federal Leadership Committee chaired by EPA

Chesapeake Bay

Delaware

District of Columbia

Maryland

New York

Pennsylvania

Virginia

West Virginia

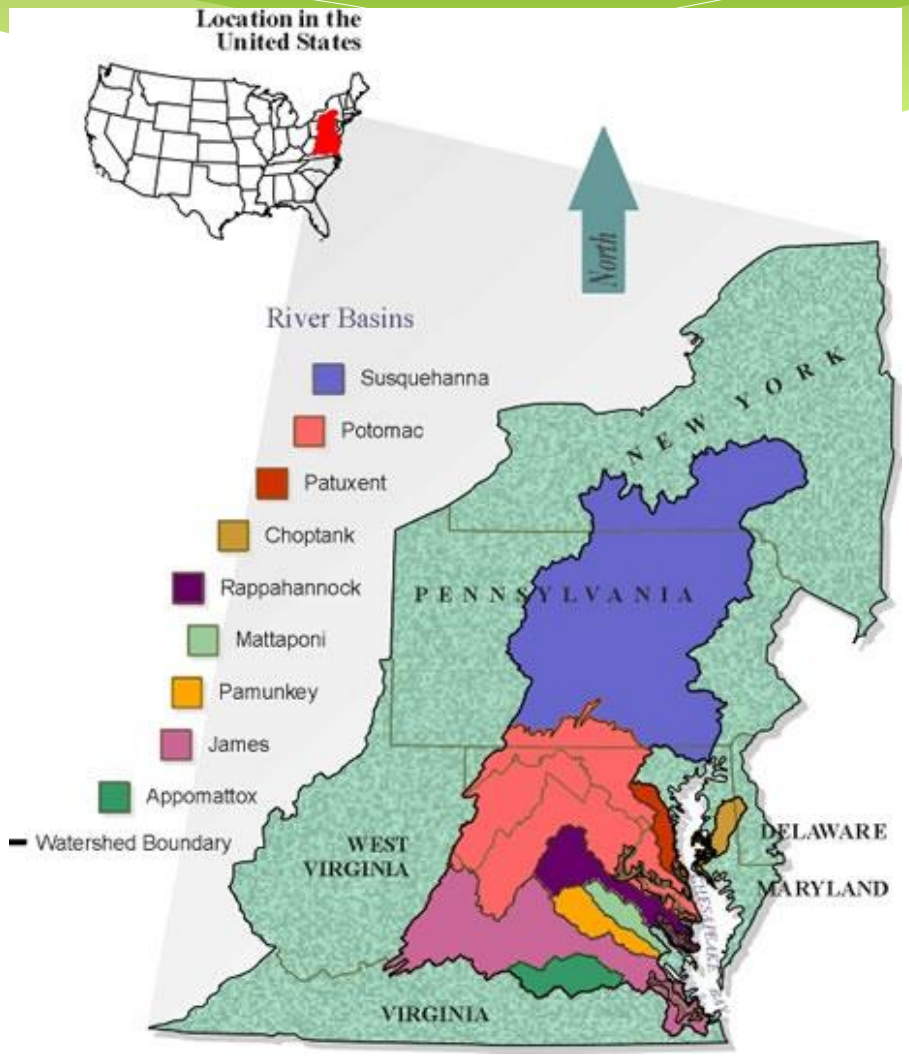
Chesapeake Bay

- Largest U.S. estuary
- 64,000 mi² watershed; six states and District of Columbia
- 10,000 miles of shoreline (longer than west coast)
- 14:1 land to water surface ratio
- Average depth 21 ft
- Over 3,600 species of plants and animals
- $750 million contributed annually to local economy from the Bay
- Population = 17 million and growing

Chesapeake Bay

- **The Bay Total Maximum Daily Load (TMDL), a historic and comprehensive "pollution diet," was established in December 2010 based largely on implementation plans**

- **Reductions**
  - **N- 25%**
  - **P - 24%**
- **Sediment - 20%**



What is a Total Maximum Daily Load (TMDL)?

- **A Total Maximum Daily Load (TMDL) calculates the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards.**

- **A TMDL is the sum of all the wasteload allocations (WLAs) for point sources (i.e. sewage treatment plants, industrial discharges, etc.), load allocations (LAs) for non point sources (i.e. pollutants carried by rainfall runoff from forests, agricultural lands, abandoned mine lands, etc.), and a margin of safety (MOS) to account for uncertainty.**

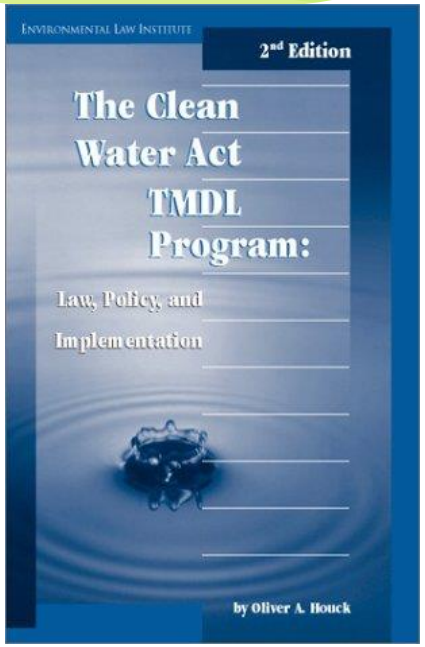
CHESAPEAKE BAY TMDL

- **Chesapeake Bay and its tidal waters are impaired due to excess nitrogen, phosphorus and sediment**

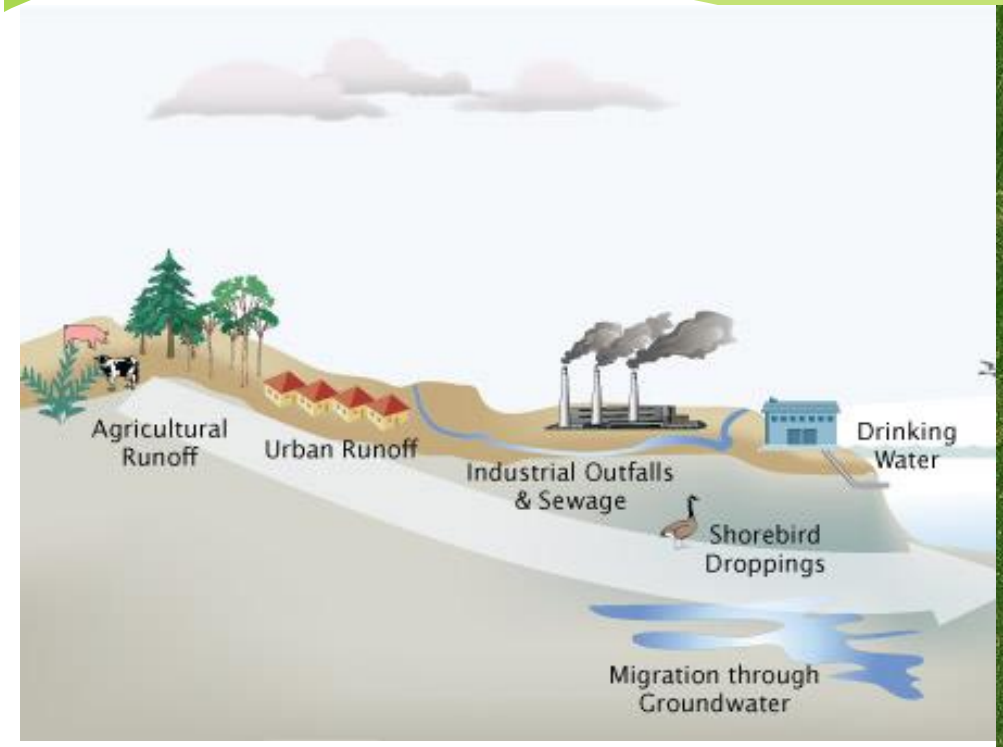
- **Pollutants cause algae blooms that consume oxygen and create "dead zones", block sunlight and smother aquatic life on the bottom**

- **Insufficient reductions in pollution during the past 25 years by federal, state and local governments; non-governmental organizations; and stakeholders**

- **Executive Order issued on May 12, 2009, which directed the federal government to restore and protect the Chesapeake Bay and its watershed**



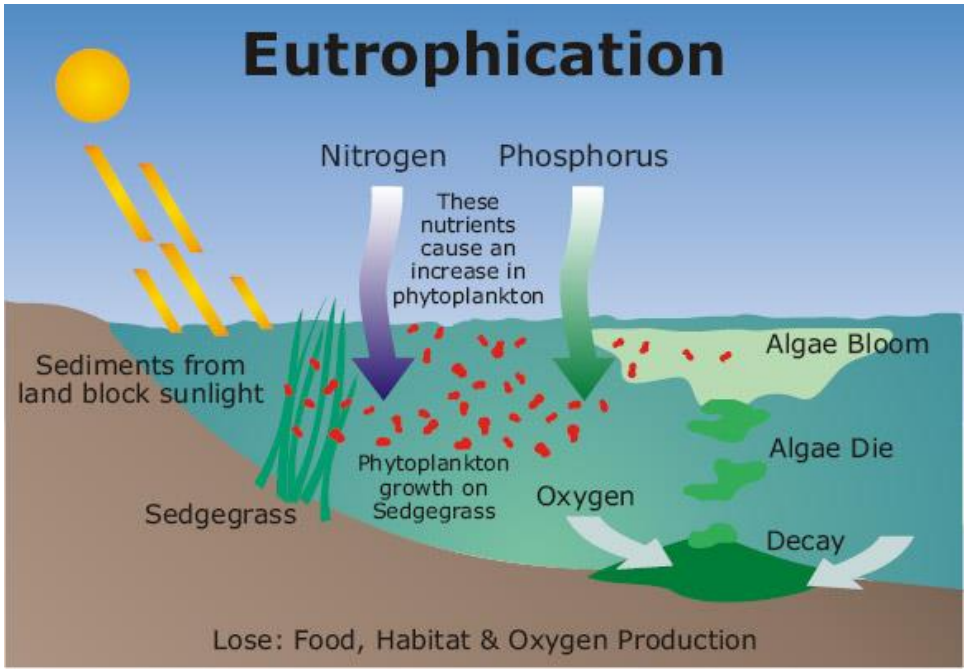
TMDLs: The Bay's "Pollution Diet" for . . .



. . . Nitrogen, Phosphorus, and Sediment

Don’t Fertilize the Bay

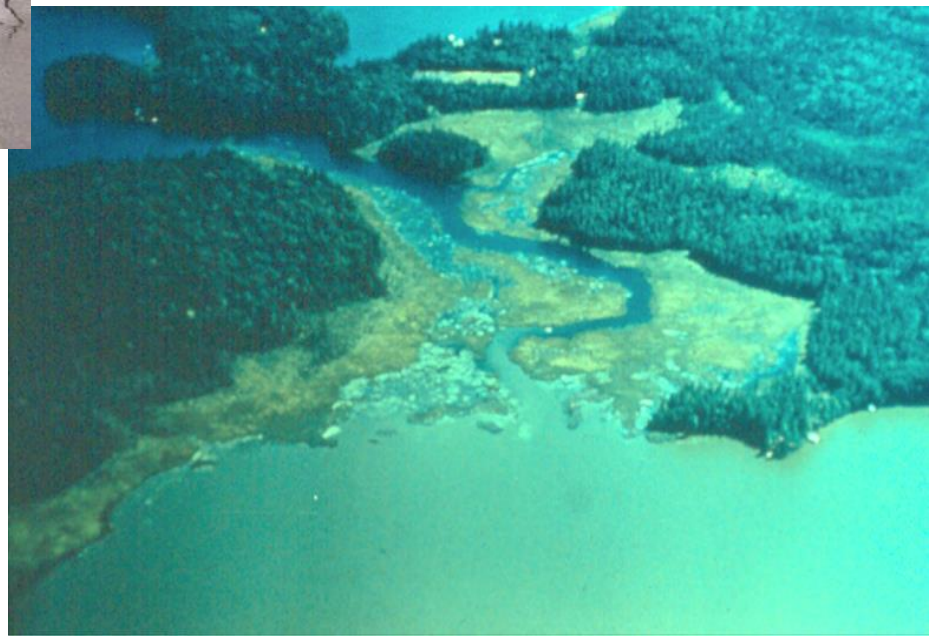
* Phosphorus is often a limiting factor to growth of freshwater aquatic weeds and algae
  * It takes only 25 – 75 ppb phosphorus to trigger excessive growth of algae and aquatic weeds.
* Release of nitrogen and phosphorus into surface waters often results in eutrophication



Responsible Lawn Fertilization

* Turfgrass requires nitrogen in the largest quantity.
* Where P is needed, as indicated by soil testing, it is IRRESPONSIBLE to NOT apply Phosphorus.

Nutrients are carried away with eroding soil



Soil Sediment is Pollution

Healthy Lawns Protect Water Quality

A dense turf protects against soil erosion and nutrient runoff


AND NOW BACK TO
OUR REGULARLY
SCHEDULED
PROGRAMMING

Turfgrass Adaptation Zones

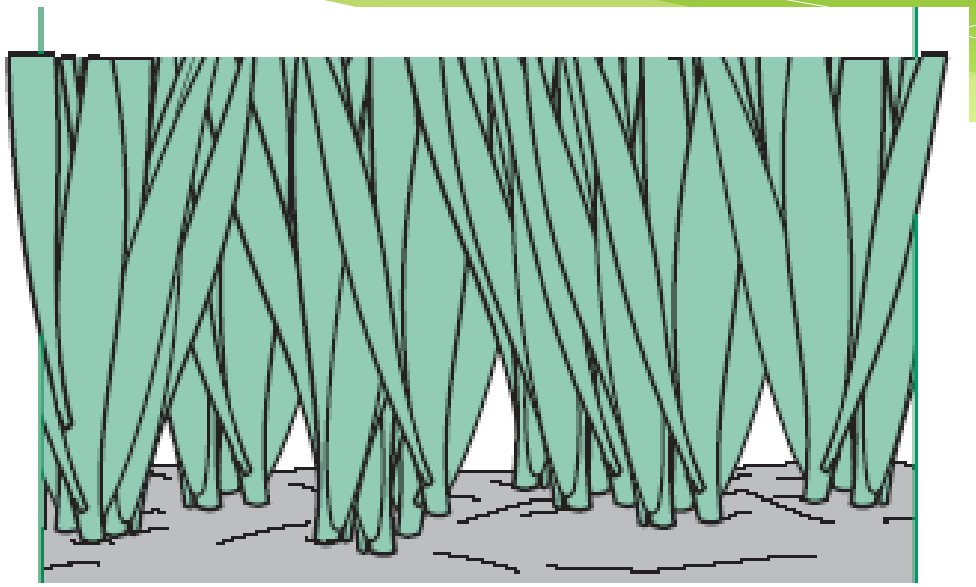
Cool Season **vs. Warm Season**

* Prefer cooler temps 65° – 75° F.
* Grow best in spring and fall
* Stays green in winter
* Good color 9 months of year
* Fescue, Bluegrass

* Prefer warmer temps 80° to 95° F.
* Grow best in summer
* Go dormant in winter
* Good color 6 months of year
* Bermuda, Zoysia

Grasses for Henrico County

Tall Fescue	Fine Fescue	Bermuda	Zoysia
Sun-Some Shade Doesn't spread	Some Shade Dry areas Low pH & N	Full sun only Spreads Tolerates lower fertility	Some shade Slow to grow Spreads Tolerates low fertility
Disease: M	Disease: H	Disease: L	Disease: L
Heat Tolerant	Not Heat Tolerant	Heat and Drought Tolerant	Heat and Drought Tolerant



Lawn Maintenance

LAWN MAINTENANCE
Best Management Practices

* Get a soil test
* Measure for accuracy
* Apply lime if needed
* Fertilize properly
* Mow properly
* Water well . . . or don't water at all!
* Core aerate each year
* Use integrated pest management

SMART Steps to a Healthy Lawn

* Know your **Soil**
* **Measure** to save time and money
* **Aerate** those roots
* Be **Right** about Fertilizer
* Practice **Trouble-free** maintenance

What to Expect From Your Lawn (and Yourself)

The overall quality and appearance of your lawn is very much dependent upon the level of maintenance you intend to provide. The following chart can help you determine your expectations for the quality and maintenance of your lawn.

SMART Lawns Expectations for Cool-Season Grasses

Quality Expectations	Maintenance Levels
☐ **High Quality Turf** Deep green color Manicured appearance Thick, dense turf Few to no weeds	**High Maintenance** Sunny to mostly sunny exposure. Regular irrigation to maintain active growth. Optimum fall fertilization (3-3.5 pounds N/1,000 ft^2/year). Frequent mowing (2x per week) to meet max of 1/3 blade removal rule. Clippings returned to lawn. Multiple grassy and broadleaf weed control applications. Preventative or early curative treatments for insect & disease pressure. Fall aerate every year. Over-seed as needed to maintain dense coverage.
☐ **Moderate to Good Turf Quality** Good green color Mostly dense, some areas thinner Some weeds present (<15%)	**Regular Maintenance** Sunny to mostly sunny exposure. Rarely irrigated once established. Good fertilization program (2-2.5 pounds N/1,000 ft^2/year). Weekly mowing to meet max of 1/3 blade removal rule. Clippings returned to lawn. Grassy weed control in spring; spot applications for broadleaf weeds. Insect and disease pests addressed only if pressure is extreme. Fall aerate every two to three years. Over-seed as needed.
☐ **Acceptable Turf Quality** Moderate green color Moderate density Noticeable weeds (20-30%)	**Reduced Maintenance** Sun to partial shade exposure. No irrigation. Moderate fall fertilization (1-1.5 pounds N/1,000 ft^2/year). Mowing every 10-14 days to meet max of 1/3 blade removal rule. No weed control anticipated. Insect and disease pests addressed only if catastrophic.

Next, compare the current quality of your lawn with what you hope to achieve through the SMART Lawns program to determine your **Management Objective**.

SMART Lawns Management Objectives for Cool-Season Grasses

Management Objectives
☐ **Maintain High Turf Quality** ☐ **Improve Turf Quality** (denser turf, fewer weeds) ☐ **Decrease Turf Maintenance** (may result in lower turf quality) ☐ **Convert Some Areas to Turf Alternatives**

What are your Expectations?

- **Lawn Quality**
- **Maintenance Level**
- **Management Objective**

SMART Step One

Know Your Soil

Soil Testing

* Will provide information about
  * pH
  * P and K, Ca and Mg, some micros
* Will provide recommendations about
  * lime applications
  * fertilizer types and rates
* Recommended every two to four years

Soil Test Box and Form

Test every 2 to 3 years

Virginia Cooperative Extension

PUBLICATION 452-125

Virginia Tech Soil Testing Laboratory

Soil Sample Information Sheet for Home Lawns, Gardens, Fruits, and Ornamentals

Please Print

INSTRUCTIONS: See other side for sampling instructions. For a recommendation, be sure to fill in the **plant code number.** Place check marks (√) where appropriate. Use another form for commercial crop production. Send samples, forms, and payment to Virginia Tech Soil Testing Lab, 145 Smyth Hall (0465), Blacksburg, VA 24061, in a sturdy shipping carton. Processing will be delayed if soil is not received in an official sample box. See *www.soiltest.vt.edu* for more information.

Your Name _____

Street, Route _____

_____

City _____ ZIP (required) _____

Telephone No. _____ County _____

Extra Copy For (Dealer, etc.): _____

Street, Route _____

City _____ ZIP (required) _____

Date sampled: _____

Office Use only
Extension Unit Code:
087

SAMPLE IDENTIFICATION

Your Sample Box Number or Name (Up to 5 digits) ☐☐☐☐☐

PLANT TO BE GROWN

Insert Plant Code # from list at right ☐☐☐

SOIL INFORMATION

Last Lime Application

Months Previous	Pounds per 1,000 sq ft.
☐ –	☐ 0
☐ 0 – 6	☐ 10 – 50
☐ 7 – 12	☐ 51 – 100
☐ 13 – 18	☐ 101 – 150
☐ 19+	☐ 151+

PLANT CODE LIST

Lawn: Kentucky Bluegrass, Fescue, or Ryegrass
201 Establishing New Lawn
202 Maintaining Lawn, Repair of Bare Spots

Lawn: Bermudagrass, Zoysiagrass, or St. Agustine
203 Establishing New Lawn
204 Maintaining Lawn, Repair of Bare Spots

Garden
210 Vegetable Garden
211 Flower Garden
212 Roses

Acid-Loving Shrubs
240 Azaleas
241 Andromedas
242 Camellias
243 Laurel
244 Rhododendron

Non-Acid-Loving Shrubs and Trees
245 Shrubs - Lilac, Forsythia, Box-wood, etc.
246 Trees - Pine, Maple, Oak, etc.

Fruits
220 Apples
221 Blackberries
222 Blueberries
223 Currants
224 Gooseberries
225 Grapes
226 Nectarines
227 Peaches
228 Pears
229 Plums
230 Quince
231 Raspberries
232 Sour Cherry
233 Strawberries
234 Sweet Cherries

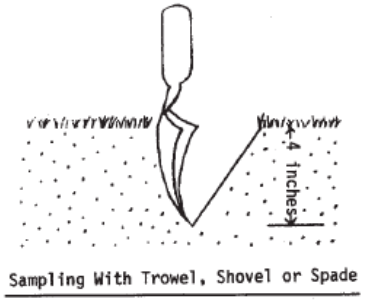
House Plants
250 Potted House Plants

SOIL TESTS DESIRED AND FEES	COST PER SAMPLE IN-STATE	COST PER SAMPLE OUT-OF-STATE
☐ Routine (soil pH, P, K, Ca, Mg, Zn, Mn, Cu, Fe, B, and estimated CEC)	$ 10.00	$16.00
☐ Organic Matter – Determines percentage in soil – no recommendation given	$ 4.00	$ 6.00
☐ Soluble Salts – Determines if fertilizer salts are too high	$ 2.00	$ 3.00
☐ Fax Results: FAX # (_____) _____	$ 1.00	$ 2.00

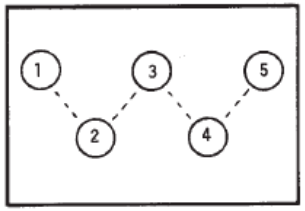
Send in payment along with soil sample and form; make check or money order payable to *"Treasurer, Virginia Tech."*

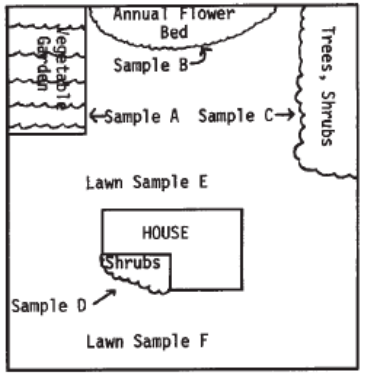
Accurate Soil Testing

* Requires a representative sample
* Sample from 1
* Sample to 4-6
* Mix soil toget
* Place 1 cup of sample box
* Send to Soil Testing Lab



How To Take Composite Samples of Each Bed or Section





Soil pH

* A measure of soil alkalinity or acidity.
* Many nutrients become unavailable if pH is not correct.
* May need 100 pounds of lime per 1000 square feet to raise pH 1 point.

Proper pH for Lawns
6.2 to 6.5


pH and Nutrient Availability
NITROGEN
PHOSPHORUS
POTASSIUM
SULFUR
CALCIUM
MAGNESIUM
IRON
MANGANESE
BORON
COPPER and ZINC
MOLYBDENUM
4
5
6
7
8
9
10
pH

OWNER

JOHNSTON GENNE
11724 PARSONS WALK CT

GLEN ALLEN, VA 23059

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
GMJ07										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	56	88	1807	159	3.6	8.3	0.6	19.5	0.3	
Rating	H	M-	H	H-	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.7	6.47	5.3	0.8	99.2	84.8	12.3	2.1	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

619. Lime recommendations: NONE NEEDED.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)

pH = 6.7; Lime Recommendation ?

OWNER

HEARN BROOKE
1402 GILLSPUR RD

RICHMOND, VA 23238

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
TBACK										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	56	115	948	155	3.0	7.8	0.9	30.8	0.2	
Rating	H	M	M-	H-	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.6	6.17	4.5	30.2	69.8	52.4	14.1	3.3	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 60 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)

pH = 5.6; Lime Recommendation ?

OWNER

HEARN BROOKE
1402 GILLSPUR RD

RICHMOND, VA 23238

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
FRONT										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	46	146	396	205	2.3	6.7	0.3	28.7	0.1	
Rating	H-	M	L	H+	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	4.8	5.75	5.9	65.6	34.4	16.8	14.4	3.2	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 170 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)

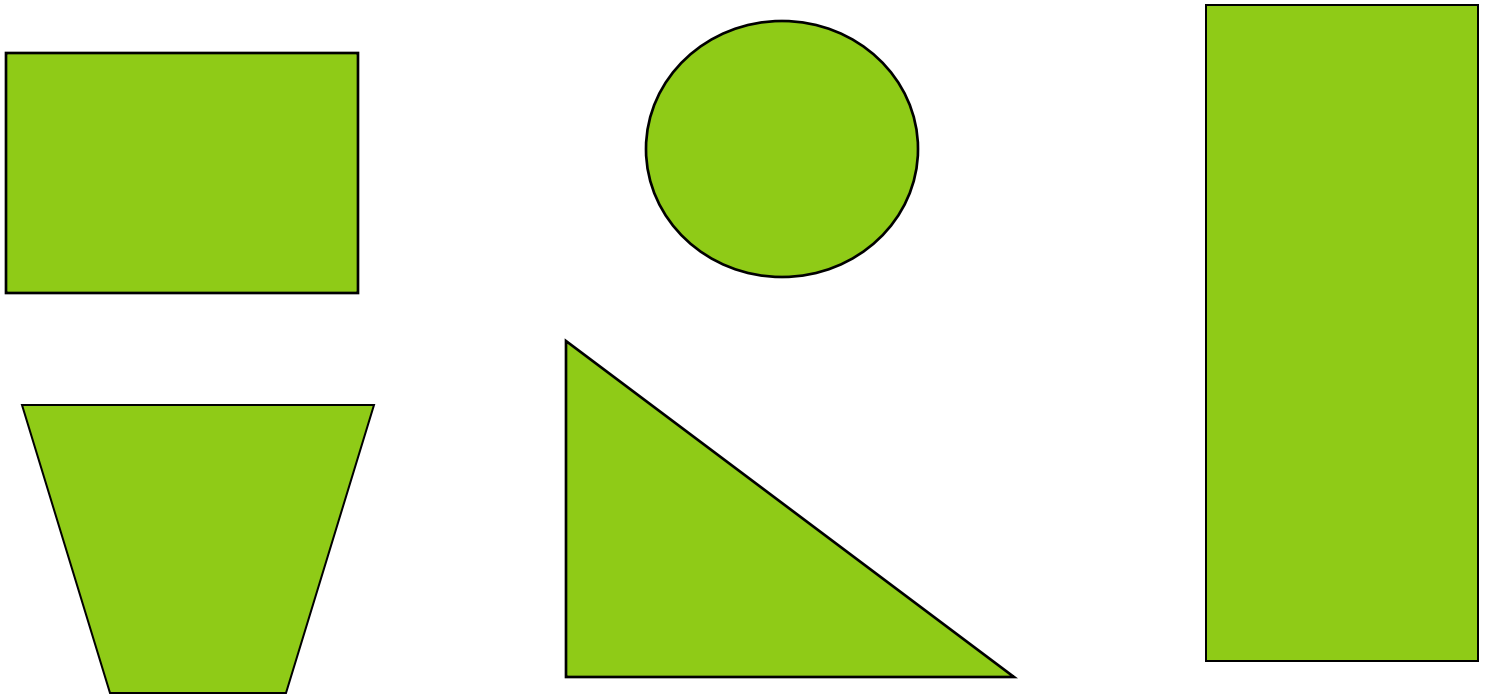
pH = 4.8; Lime Recommendation ?

SMART Step Two

Measure to Save Time and Money

Measuring Lawn Areas

Measure smaller areas and add up for total lawn area.

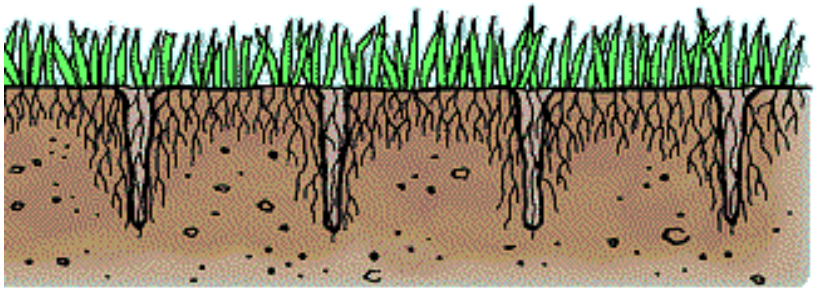


SMART Step Three

Aerate Those Roots

Aeration

* Relieves soil compaction and/or thatch buildup.
* Allows oxygen, water and nutrients to reach the root system.
* Good soil moisture is important.
* Fall for cool-season turf.
* Core or hollow-tine aerators recommended.



SMART Step Four

Be **R**ight About Fertilizer

Right Fertilizer

Right Time

Right Amount

Many Choices

Which One is Right for Your Lawn?

Information on a Fertilizer Label

18 - 24 - 6

Total Nitrogen..... 18 %
5.6% WIN (Water Insoluble Nitrogen)

Available Phosphoric acid (P_2O_5)... 24 %

Sulfate of Potash (K_2O)..... 6 %

Virginia Test Soil Test Report

OWNER
MCCLENNY KEVIN
5402 MONCURE AV

RICHMOND, VA 23231

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
71757										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	23	57	1107	97	8.0	9.1	0.9	41.7	0.2	
Rating	M	L+	M	M	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.3	5.97	5.8	44.1	55.9	47.7	6.9	1.3	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 110 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

207. FERTILIZER RECOMMENDATIONS: Apply a 3-1-2 or 4-1-2 ratio fertilizer (examples of grades to use are 12-4-8, 16-4-8, etc.) according to the instructions in the enclosed note on lawn fertilization.

OWNER

LANGE CAROLYN
2003 RAINTREE DR

RICHMOND, VA 23238

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
31642				18+	10-50 lb/1000					

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	189	145	2620	548	4.1	14.2	0.2	10.6	0.5	
Rating	VH	M	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	7.1	N/A	9.0	N/A	100.0	72.8	25.1	2.1	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

619. Lime recommendations: NONE NEEDED.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)

No Deficiencies

OWNER

ROCKER KATHY
1601 LAKESIDE AVE APT 202

RICHMOND, VA 23228

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
12345										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	4	97	1137	261	2.8	9.7	0.3	28.4	0.2	
Rating	L	M-	M	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.1	6.22	5.1	20.9	79.1	55.6	21.1	2.4	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: NEW LAWN ESTAB. - BLUEGRASS, FESCUE (201)

609. LIME RECOMMENDATIONS: Apply 50 pounds of agricultural limestone (ground or pulverized) per 1000 square feet.

201. FERTILIZER RECOMMENDATIONS: Apply a 1-2-1 ratio fertilizer (examples of grades to use are 5-10-5, 15-30-15, etc.) Using the rate listed in the "2.5" LB. nitrogen column in Table 3 in the enclosed note on lawn fertilization. Be sure to incorporate the fertilizer into the soil (along with lime, if needed) to a depth of 4 to 6 inches. After the turf has been established (6 to 8 weeks) follow one of the maintenance fertilization programs described in the Note.

Phosphorus is low

OWNER

MCCLENNY KEVIN
5402 MONCURE AV

RICHMOND, VA 23231

COPY FOR

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
71757										

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	23	57	1107	97	8.0	9.1	0.9	41.7	0.2	
Rating	M	L+	M	M	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.3	5.97	5.8	44.1	55.9	47.7	6.9	1.3	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

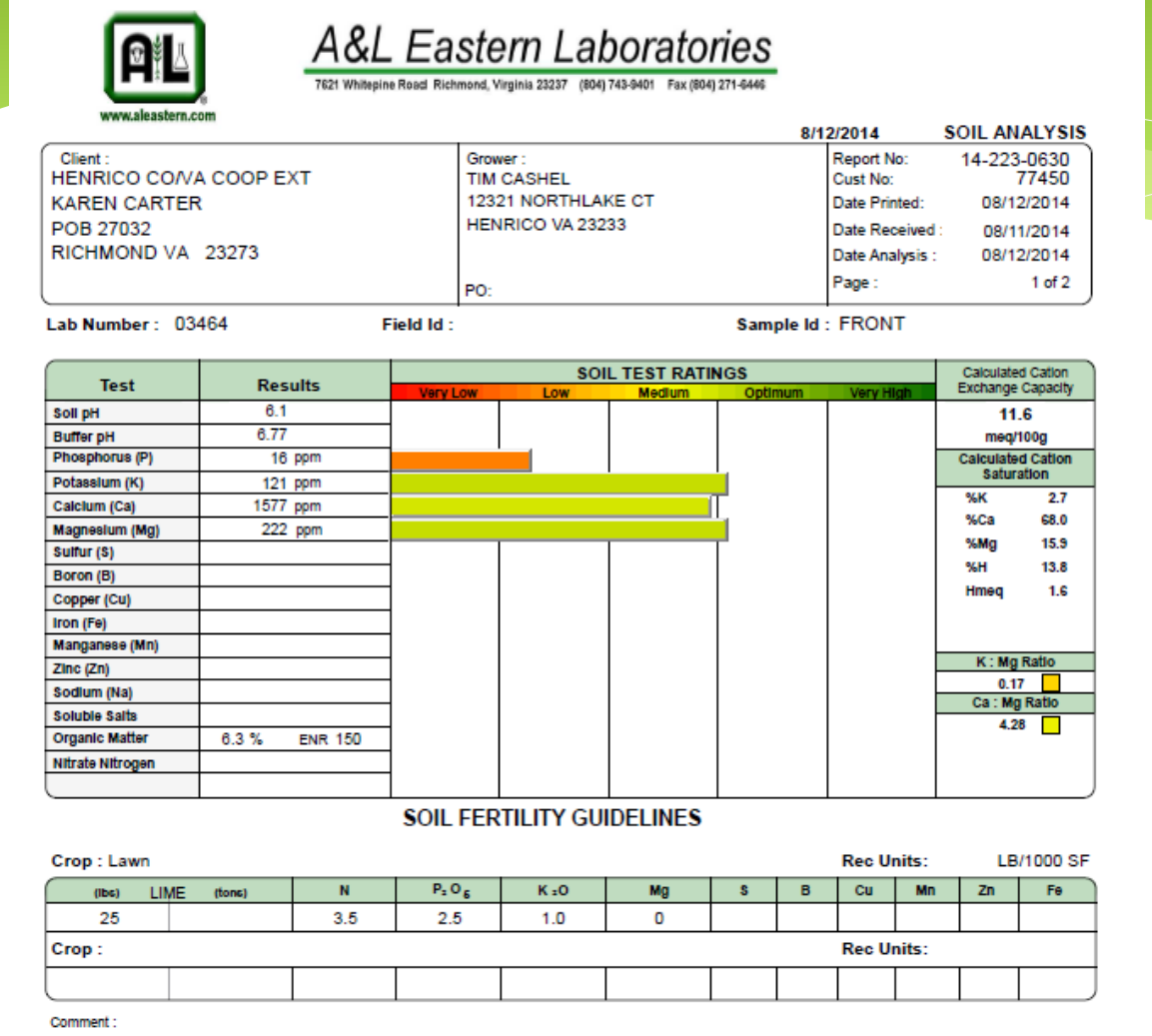
Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 110 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

207. FERTILIZER RECOMMENDATIONS: Apply a 3-1-2 or 4-1-2 ratio fertilizer (examples of grades to use are 12-4-8, 16-4-8, etc.) according to the instructions in the enclosed note on lawn fertilization.

Potassium (K) is low

A&L Soil Test Report



A&L Eastern Laboratories
7621 Whitepine Road Richmond, Virginia 23237 (804) 743-9401 Fax (804) 271-6446
www.aleastern.com

8/12/2014 SOIL ANALYSIS

Client :
HENRICO CO/VA COOP EXT
KAREN CARTER
POB 27032
RICHMOND VA 23273

Grower :
TIM CASHEL
12321 NORTHLAKE CT
HENRICO VA 23233

PO:

Report No: 14-223-0630
Cust No: 77450
Date Printed: 08/12/2014
Date Received : 08/11/2014
Date Analysis : 08/12/2014
Page : 1 of 2

Lab Number : 03464 **Field Id :** **Sample Id :** FRONT

Test	Results
Soil pH	6.1
Buffer pH	6.77
Phosphorus (P)	16 ppm
Potassium (K)	121 ppm
Calcium (Ca)	1577 ppm
Magnesium (Mg)	222 ppm
Sulfur (S)	
Boron (B)	
Copper (Cu)	
Iron (Fe)	
Manganese (Mn)	
Zinc (Zn)	
Sodium (Na)	
Soluble Salts	
Organic Matter	6.3 % ENR 150
Nitrate Nitrogen	

SOIL TEST RATINGS
Very Low | Low | Medium | Optimum | Very High

Calculated Cation Exchange Capacity
11.6 meq/100g

Calculated Cation Saturation

%K	2.7
%Ca	68.0
%Mg	15.9
%H	13.8
Hmeq	1.6

K : Mg Ratio
0.17

Ca : Mg Ratio
4.28

SOIL FERTILITY GUIDELINES

Crop : Lawn **Rec Units:** LB/1000 SF

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
25	3.5	2.5	1.0	0						

Crop : **Rec Units:**

Comment :

Nutrient Target

3.0-2.5-1.0

Target Nutrient Recommendations

Soil Test Level	Nutrient Needs (lbs/1000 ft²)	
	P_2O_5	K_2O
L-	3.0	3.0
L	2.5	2.5
L+	2.0	2.0
M-	2.0	2.0
M	1.5	1.5
M+	1.0	1.0
H-	0	0.5

2014 Lawn Products

SMART LAWNS

Lawn Fertilizer Products List - 2014
Complied for the Henrico SMART Lawns Program

Disclaimer: Commercial products are named in this publication for informational purposes only. Virignia Cooperative Extension does not endorse these products and does not intend discrimination against other products which also may be suitable.

Maintenance Fertilizers

%N	%P_2O_5	%K_2O	Brand	SAN as % Total N	lbs/1000 sq ft	lbs N	lbs P_2O_5	lbs K_2O
25%	0	3%	Landscape Supply	32%	3.6	0.9	0	0.11
26%	0	2%	Scotts Green Max	25%	3.5	0.9	0	0.07
29%	0	4%	Vigoro	27%	3.1	0.9	0	0.12
29%	0	5%	StaGreen	23%	3.1	0.9	0	0.16
32%	0	4%	Southern States	20%	2.8	0.9	0	0.11
32%	0	4%	Scotts Turf Builder	28%	2.8	0.9	0	0.11
32%	0	7%	Landscape Supply	32%	2.8	0.9	0	0.20
32%	0	10%	Scotts Super Turf Builder	33%	2.8	0.9	0	0.28
35%	0	5%	Vigoro	34%	2.6	0.9	0	0.13

Fall /Winterizer Blends

%N	%P_2O_5	%K_2O	Brand	SAN as % Total N	lbs/1000 sq ft	lbs N	lbs P_2O_5	lbs K_2O
6%	1%	11%	Lebanon ProScape	72%	15	0.9	0.15	1.65
22%	0%	14%	StaGreen	22%	4.1	0.9	0	0.57
24%	0%	11%	Sunniland Turfgro Pro	50%	3.8	0.9	0	0.41
24%	0%	11%	Southern States	100%	3.8	0.9	0	0.41
32%	0%	10%	Scotts WinterGuard	33%	2.8	0.9	0	0.28
32%	0%	12%	Scotts Fall Lawn Food Step 4	21%	2.8	0.9	0	0.34

Starter Fertilizers

%N	%P_2O_5	%K_2O	Brand	SAN as % Total N	lbs/1000 sq ft	lbs N	lbs P_2O_5	lbs K_2O
10%	20%	15%	Southern States	15%	9	0.9	1.80	1.35
18%	24%	6%	StaGreen	21%	5	0.9	1.20	0.30
18%	24%	12%	Lesco	22%	5	0.9	1.20	0.60
20%	27%	5%	Vigoro	20%	4.5	0.9	1.22	0.23
24%	25%	4%	Scotts	28%	3.8	0.9	0.94	0.15
14%	20%	14%	Landscape Supply	30%	6.4	0.9	1.29	0.90

Organic Fertilizers

%N	%P_2O_5	%K_2O	Brand	SAN as % Total N	lbs/1000 sq ft	lbs N	lbs P_2O_5	lbs K_2O
5%	0%	3%	Agway Organic	99%	18	0.9	0	0.54
5%	2%	0%	Milorganite	70%	18	0.9	0.36	0
5%	3%	2%	Chickity Doo Doo	60%	18	0.9	0.54	0.36
8%	0%	0%	Espoma Spring Lawn Booster	85%	11.3	0.9	0	0
8%	0%	0%	Espoma Summer Revitalizer	80%	11.3	0.9	0	0
8%	0%	5%	Espoma Fall Winterizer	84%	11.3	0.9	0	0.56
8%	5%	5%	Nature Safe	85%	11.3	0.9	0.56	0.56
9%	0%	0%	Espoma All Season	80%	10	0.9	0	0
10%	2%	8%	Nature Safe	90%	9	0.9	0.18	0.72
11%	2%	2%	Scotts Natural Lawn Food	91%	8.2	0.9	0.16	0.16
13%	0%	0%	Nature Safe	93%	6.9	0.9	0	0
18%	0%	3%	Espoma Lawn Food	56%	5	0.9	0	0.15

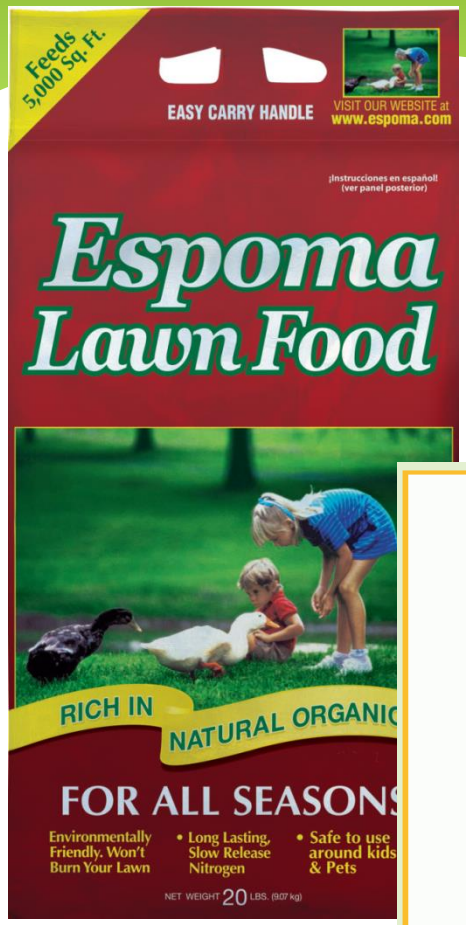
Lawn Fertilizer Examples

"Maintenance"

"Starter"
For More P

"Winterizer"
For More K

Natural or Organic Fertilizer Choices



Espoma® Lawn Food 18-0-3
GUARANTEED ANALYSIS

Total Nitrogen (N)	18.0%
2.1% ..... Ammoniacal Nitrogen	
11.1% ..... Other Water Soluble Nitrogen*	
0.3% ..... Urea Nitrogen	
4.5% ..... Water Insoluble Nitrogen*	
Soluble Potash (K_2O)	3.0%
Sulfur (S)	3.0%

Derived from: Pasteurized Poultry Manure, Methylene Urea, Ammonium Sulfate, Urea and Sulfate of Potash

*Contains 10% Slow Release Nitrogen from Pasteurized Poultry Manure and Methylene Urea.

Mixing and Matching Nutrients

*as % total N

Target (1st year)				Fertilizer Analyses					Nutrients Supplied		
lbs N	lbs P_2O_5	lbs K_2O	SAN*	%N	%P_2O_5	%K_2O		lbs product	lbs N	lbs P_2O_5	lbs K_2O
3	1.5	1.5	30%	14	20	14	S	6.4	0.9	1.29	0.9
			33%	32	0	10	M	2.8	0.9	0	0.28
			33%	32	0	10	M	2.8	0.9	0	0.28
								TOTALS	2.7	1.29	1.46

***SAN% must be at least 15% to apply nitrogen at 0.9 lbs**

Target Nutrient Recommendations

Soil Test Level	Nutrient Needs (lbs/1000 ft²)			
	P_2O_5	Starters	K_2O	Winterizers
L-	3.0	2	3.0	2-3
L	2.5		2.5	
L+	2.0	1	2.0	
M-	2.0		2.0	
M	1.5		1.5	1
M+	1.0		1.0	
H-	0		0.5	

SMART Lawns Lime & Fertilizer Plan

SMART Lawns
Lime and Fertilizer Plan

Name:	Eunice Burrow		**Prepared:**	10/10/14	
Address:	4815 Suecla Drive		**Expires:**	10/10/17	
Management Area:	Front	**Turf Species**	Tall Fescue	**Square Feet:**	4,460 ft2

Recommendations for Year 1

- ☑ Make two (2) lime applications of no more than 50 lbs /1,000 ft2 each month until the full amount is applied. Do not lime again until the soil is retested.
- ☑ Phosphorus is needed. Make one (1) application of a "starter" fertilizer (high in phosphorus) in October.
- ☑ Potassium is needed. Make two (2) applications of a "fall" or "winterizer" fertilizer (high in potassium) in November and December.
- ☐

There should be a total of 3 fertilizer applications per year.
Visit our fertilizer calculator at http://www.co.henrico.va.us/extension/anr/homeowner/lawncare/smartlawns/fertcalc/

	Application Date (month/day)*	Amount (lbs / 1,000 ft²)	ft²/1,000	Total Amount to Apply (pounds)
Lime Plan	10/15	50	4.46	223
	11/15	10		45
	Totals	60		268

	Annual Target Nutrient Needs	Application Date	Fertilizer Analysis	Fertilizer Type**	SAN***	Fertilizer Amount	Nutrients Supplied N	P_2O_5	K_2O
	N-P_2O_5-K_2O	month/day*	N-P-K %	M/S/F	%Total N	lbs/1,000 ft²	(lbs/1,000 ft²)		
Fertilizer Plan	3.0-1.0-2.0	10/15	24-25-4	S	28%	3.8	0.9	0.94	0.15
		11/15	22-0-14	F	22%	4.1	0.9	0	0.57
		12/15	22-0-14	F	22%	4.1	0.9	0	0.57
					Total Nutrients Supplied		2.7	0.94	1.29

* The month and day designations may not always be followed due to weather, etc. Apply as close to the month as possible, using the day designation to determine the interval between applications.
** M = Maintenance blend; S = Starter blend; F = Fall or winterizer blend
*** Slowly Available Nitrogen as percentage of total nitrogen (must be at least 15%)

Years 2 and 3: Make 3 applications of a lawn maintenance fertilizer in September, October, and November. If you start fertilizer applications late in the fall of the first year and are not able to make three applications, repeat the same recommended applications in the fall of the second year. Switch to a maintenance fertilizer the third year.
Year 4: Submit a soil sample for analysis to determine nutrient needs.

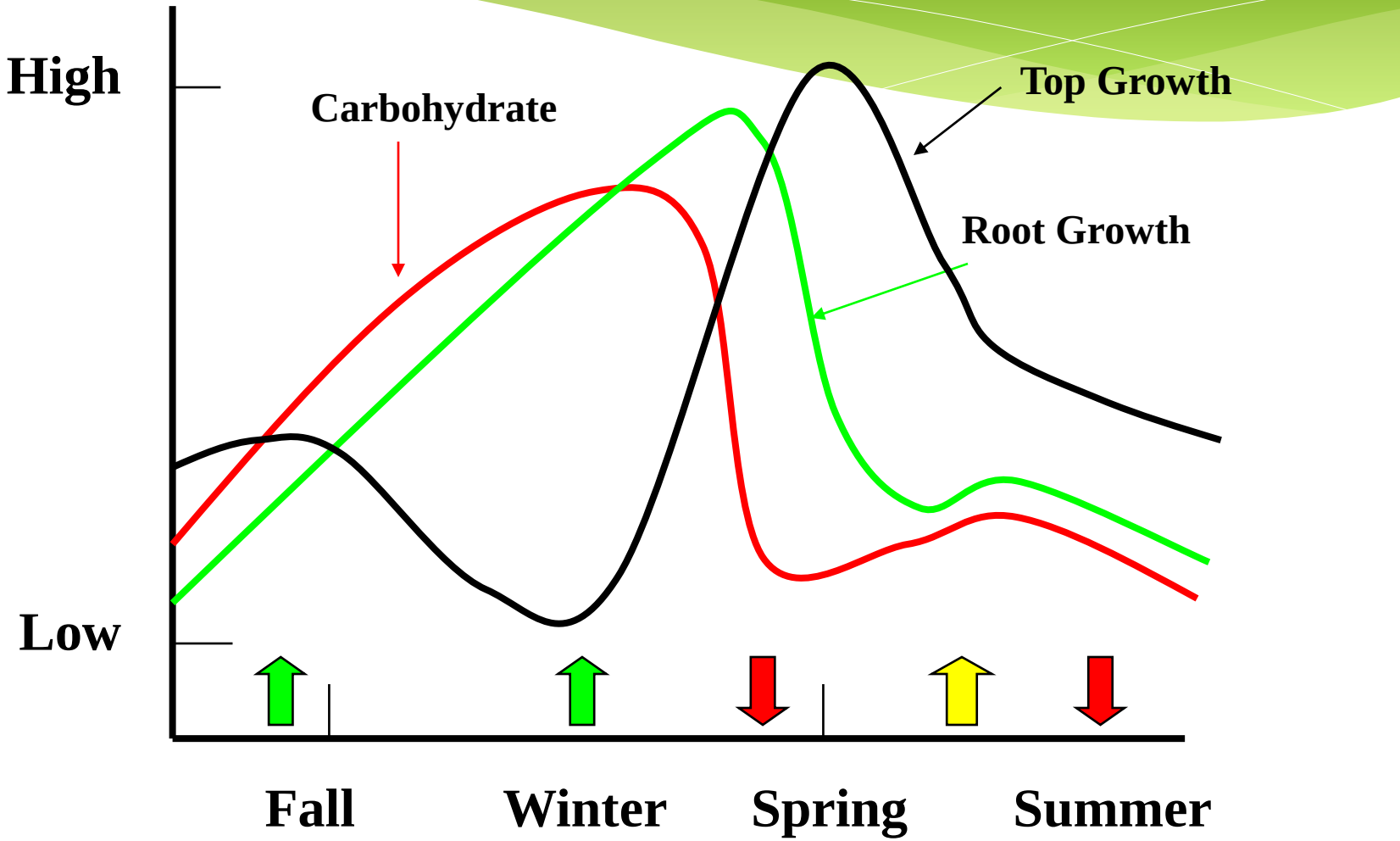
3.0-1.0-2.0

* Phosphorus is needed
  * 1 starter applications
* Potassium is needed
  * 2 winterizer applications

Timing of Fertilizer Applications for Cool Season Grasses

* September
* October
* November

Fertilizing Cool Season Lawns



Timing of Fertilizer Applications for Warm Season Grasses

* April
* May
* June
* July/August

COOL-SEASON TURF FERTILIZATION
"SON" Program

Time	lbs. Nitrogen per 1000 sq. ft.
* September 1 to 15	0.7 – 0.9
* October 1 to 15	0.7 – 0.9
* November 15 to December 15	0.7 – 0.9
* May 15 to June 15	0 to ½
TOTAL :	2.7 to 3 ½

Use this formula and the first number on the bag:

$$\frac{\text{Desired lbs. of nitrogen per 1,000 sq. ft.}}{\text{\% nitrogen in fertilizer}} \times 100 = \text{lbs. of fertilizer to apply per 1,000 sq. ft.}$$

Examples
For 16-0-8 Fertilizer

To apply 1 pound of nitrogen per 1,000 square feet:

1 / 16 x 100 = 6.25 lbs.

SMART Lawns Fertilizer Calculator

http://henrico.us/extension/anr/homeowner/lawncare/smartlawns/fertcalc/

HENRICO COUNTY VIRGINIA

SEARCH

Tuesday, Sep 9, 2014
76.0°F Overcast

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SMART Lawns Program

- SMART Lawns Fertilizer Calculator

Extension Office

- 4-H Youth Development
- Agriculture & Natural Resources
- Family & Consumer Sciences
- Gardens Growing Families
- Virginia Cooperative Extension

Home > Extension Office > Agriculture & Natural Resources > Homeowner > Lawn Care > SMART Lawns Program > SMART Lawns Fertilizer Calculator

SMART Lawns Fertilizer Calculator

What Section?

Front

Square Footage of Area:

1st Number (%N) %N

2nd Number (%P) %P

3rd Number (%K) %K

Calculate Reset

Amount of Fertilizer per 1000 square feet

Total Amount of Fertilizer for Entire Area (Pounds)

Contact Us

Henrico Extension Office

Mailing address:
Henrico Extension Office
P. O. Box 90775
Henrico, VA 23273-0775

Physical Address:
Henrico Government Complex
Human Services Building
8600 Dixon Powers Drive
Henrico, VA 23228

Phone: (804) 501-5160
Fax:(804) 501-5169

Office hours:
8:00 a.m.- 4:30 p.m. EST,
Monday through Friday

How Much Does 1 LB of N Cost?

Product	Price/ bag	Pounds/ bag	Price/ pound	SAN as % Total N	Lbs. Fertilizer to deliver 1 lb N	Cost/1 lb N
Conventional Product 1 32-0-4	$15.99	14 lbs	$1.14	28%	3.125	$3.56
Conventional Product 2 10-20-15	$21.90	40 lbs	$0.55	15%	10	$5.50
Organic Product 1 5-2-0	$12.99	36 lbs	$0.36	70%	20	$7.22
Organic Product 2 10-2-8	$38.70	50 lbs	$0.77	90%	10	$7.74
Organic Product 3 18-0-3	$42.99	20 lbs	$2.15	80%	5.56	$11.95
Organic Product 4 5-3-2	$21.99	40 lbs	$0.55	60%	20	$11.00
Product A						
Product B						
Product C						

Drop vs. Rotary Spreaders

Both must be calibrated!

- Covers up to 5,000 square feet

SPREADER SETTINGS

Cyclone	5
Scott	6-6½
Central	7
Sears	7

The above settings are approximate. Variation can occur because of condition of the spreader, speed it is operated and the pattern of application. This bag should be applied to 5,000 sq. ft.

- Covers up to 7,000 square feet

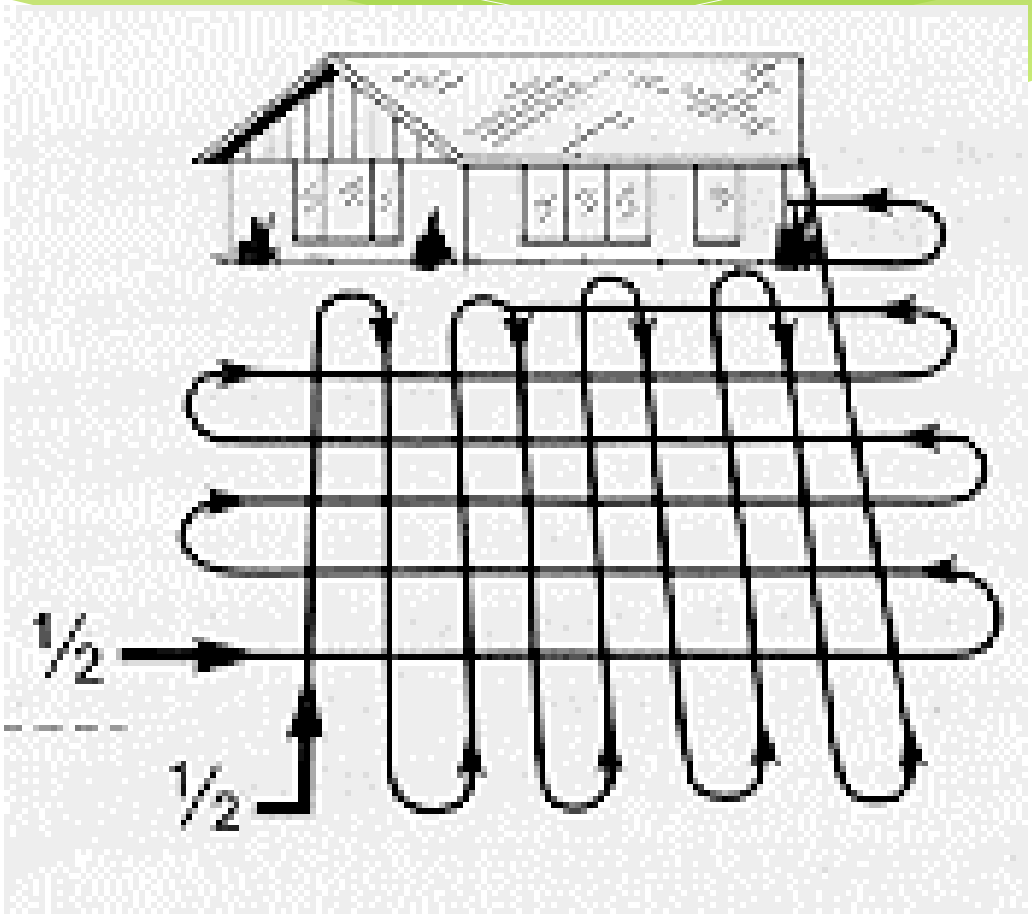
SPREADER SETTINGS

Cyclone	4-4¼
Statesman and Republic *(Drop)*	9
Statesman and E-Z Spreader *(Broadcast)*	12
Scotts Drop	5-5½
Scotts Broadcast	E-F

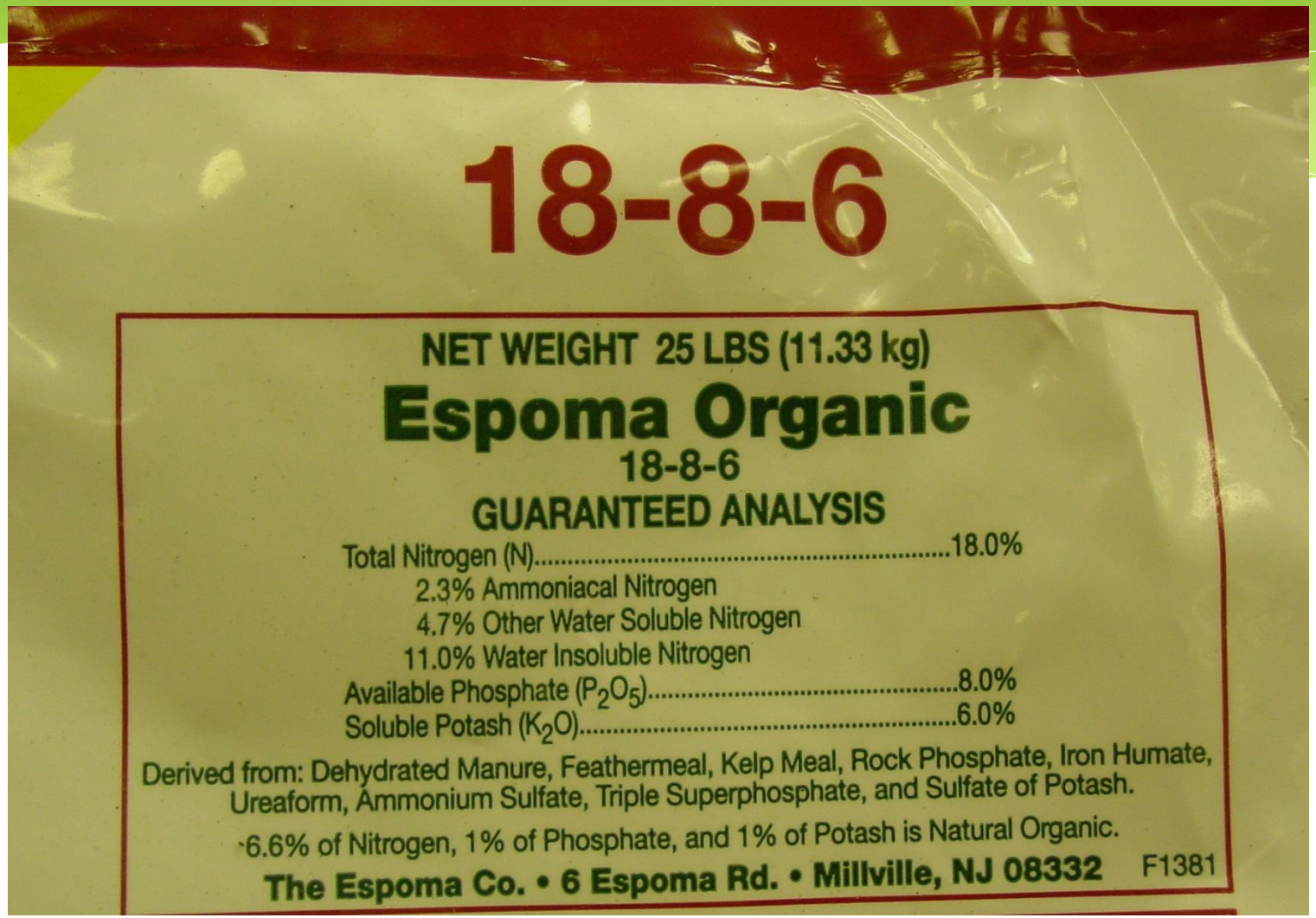
The above settings are approximate. Variation can occur because of condition of the spreader, speed it is operated and the pattern of application. This bag should be applied to 7,000 sq. ft.

Follow Bag Instructions

Trial and Error Calibration



W. I. N. = Water Insoluble Nitrogen



To Find the % Nitrogen that is WIN use the Following Calculation:

$$\frac{\%\ \text{WIN}}{\%\ \text{TOTAL N}} \times 100 = \%\ \text{of the Total Nitrogen that is WIN}$$

Using the Label Example:

$$\frac{11}{18} \times 100 = 61\%\ \text{of the Total Nitrogen is WIN}$$

SMART Step Five

Practice **T**rouble-free Maintenance

Mowing

Watering

Weed Control

Measuring Mower Height

Keep mower blades sharp

Recommended Mowing Heights

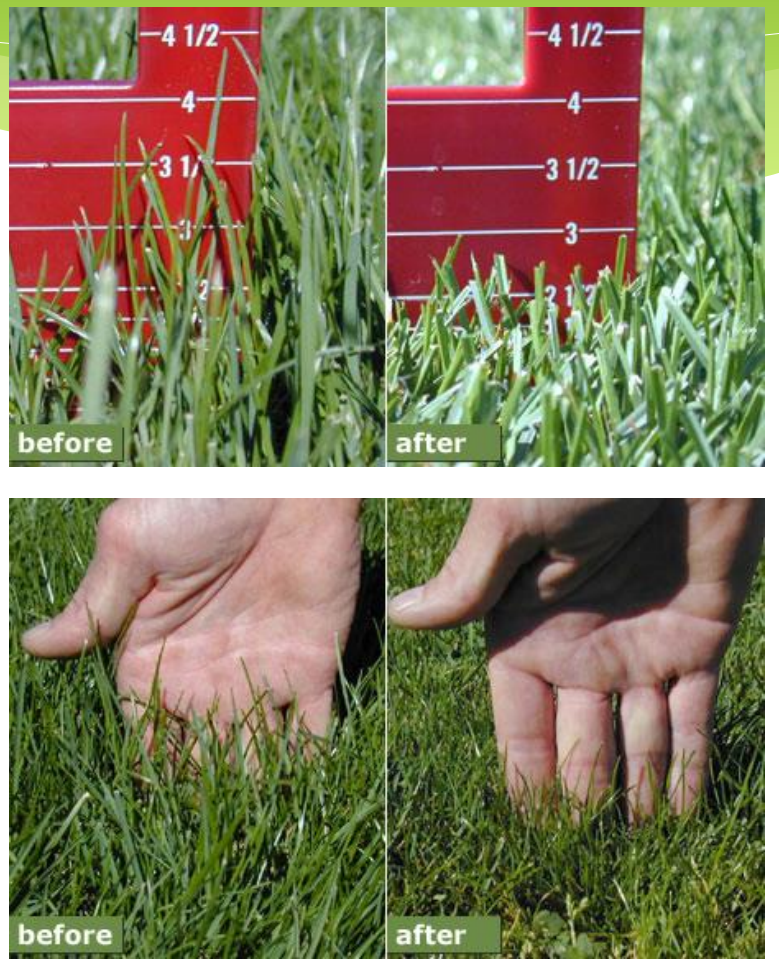
Turfgrass	Mowing Height
	Inches
Kentucky Bluegrass	1 ½ to 2 ½
Tall Fescue	2 to 3
Creeping Red Fescue	2 to 3
Perennial Ryegrass	1 ½ to 2 ½
Zoysia	½ to 1
Bermudagrass	½ to 1

Mowing Height and Weeds

Height	# Broadleaf Weeds per 100 sq. ft.
1 inch	42.3
2 inch	2.5
3 inch	0.2

One-Third Rule

* Mow frequently enough so that no more than one-third of grass blade is removed each time.
* Research shows that when turf height is reduced by 50% or more, root growth is slowed or even stopped.



Don’t Bag the Clippings!

(Unless there’s a good reason)

Virginia Cooperative Extension
Virginia Tech • Virginia State University

Publication 430-521

"Leave" Them Alone: Lawn Leaf Management

Mike Goatley Jr., Extension Turfgrass Specialist, Virginia Tech

While we enjoy the beautiful colors associated with fall foliage, we also realize that most of those leaves will soon be on the ground. At this time of year, many turf managers quit managing grass and shift their focus instead to managing leaves. In some situations, leaf removal by way of blowing, raking, or vacuuming is essential because of turf use (e.g. golf course turf where either finding or playing a ball in leaves can be next to impossible). Another reason to mulch or remove leaves is to improve the turf-growing conditions. A thick layer of leaves blocks sunlight, reducing turf growth because of the shading effect. The leaves also trap and hold moisture in the turf canopy, increasing the potential for turf disease. However, treatment and/or disposal of leaves can be time consuming and costly. In some areas, it is actually illegal to place bagged leaves at curb-side for pickup due to restrictions on placing lawn waste in landfills.

Are there reasonable alternatives in leaf management? The answer is yes. Of course one method is to collect

Figure 1. A thick layer of leaves blocks sunlight and increases turfgrass disease potential.

Figure 2. If your locality does not provide leaf disposal services, consider the environmental benefits of composting or mulching leaves on site rather than sending them to the landfill.

the leaves and compost them. Many homeowners are committed to this environmentally friendly process, and if you are interested in how to effectively compost yard waste, consult Making Compost from Yard Waste, Virginia Cooperative Extension publication 426-703. Some of us are fortunate enough that our local governments provide leaf pick-up and removal to municipal composting facilities as one of the standard services, many times simply requiring you to get the leaves curbside for removal. But there is also a technique that can be less labor intensive (especially if you have a riding mower), and many of you have used it for years – mulching the leaves directly into the turf.

Numerous university research reports have detailed how leaf mulching affects turf performance. In almost every instance, the results show that chopping up deciduous leaves as part of a regular mowing schedule is an effective means of managing these leaves without harming the turf. "Leaf Mulching Effects on Turf Performance," a research report from Purdue University turfgrass researchers (http://www.agry.purdue.edu/turf/report/1999/page24.htm), does an excellent job detailing the responses of a perennial ryegrass lawn turf to the appli-

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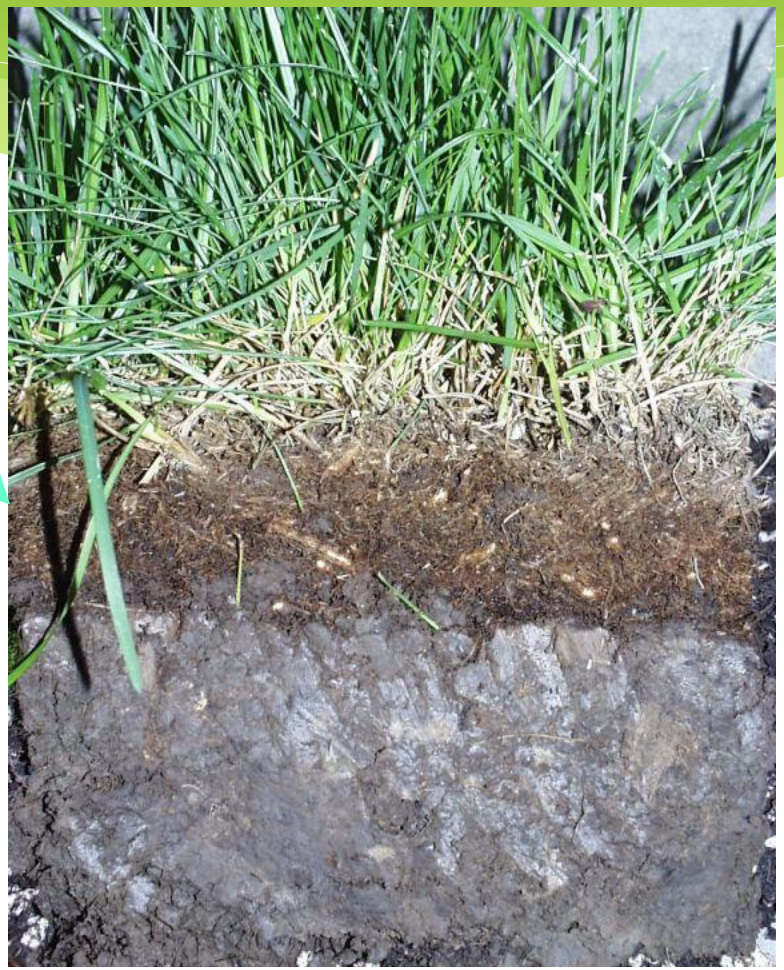
What is Thatch?

* Layer of dead and decaying tissue between green vegetation and soil surface.
* Problems when greater than ½”.
* Roots, rhizomes, stolons major cause.
* Tall fescue has low thatch potential.



Watering
"All or Nothing"

* Avoid light, frequent irrigations
* Turf needs 1 inch of water per week
* Calibrate your irrigation system
* Water early in the day, not late
* Use the "screwdriver test"

Integrated Pest Management for Home Lawns

* Insects
  * white grubs most problematic, but insecticides needed only rarely on home lawns.
* Diseases
  * variety selection and cultural practices
  * Brown patch most problematic, but fungicides seldom needed on home lawns.
* Weeds
  * mowing practices and fertility management
  * herbicide type and timing

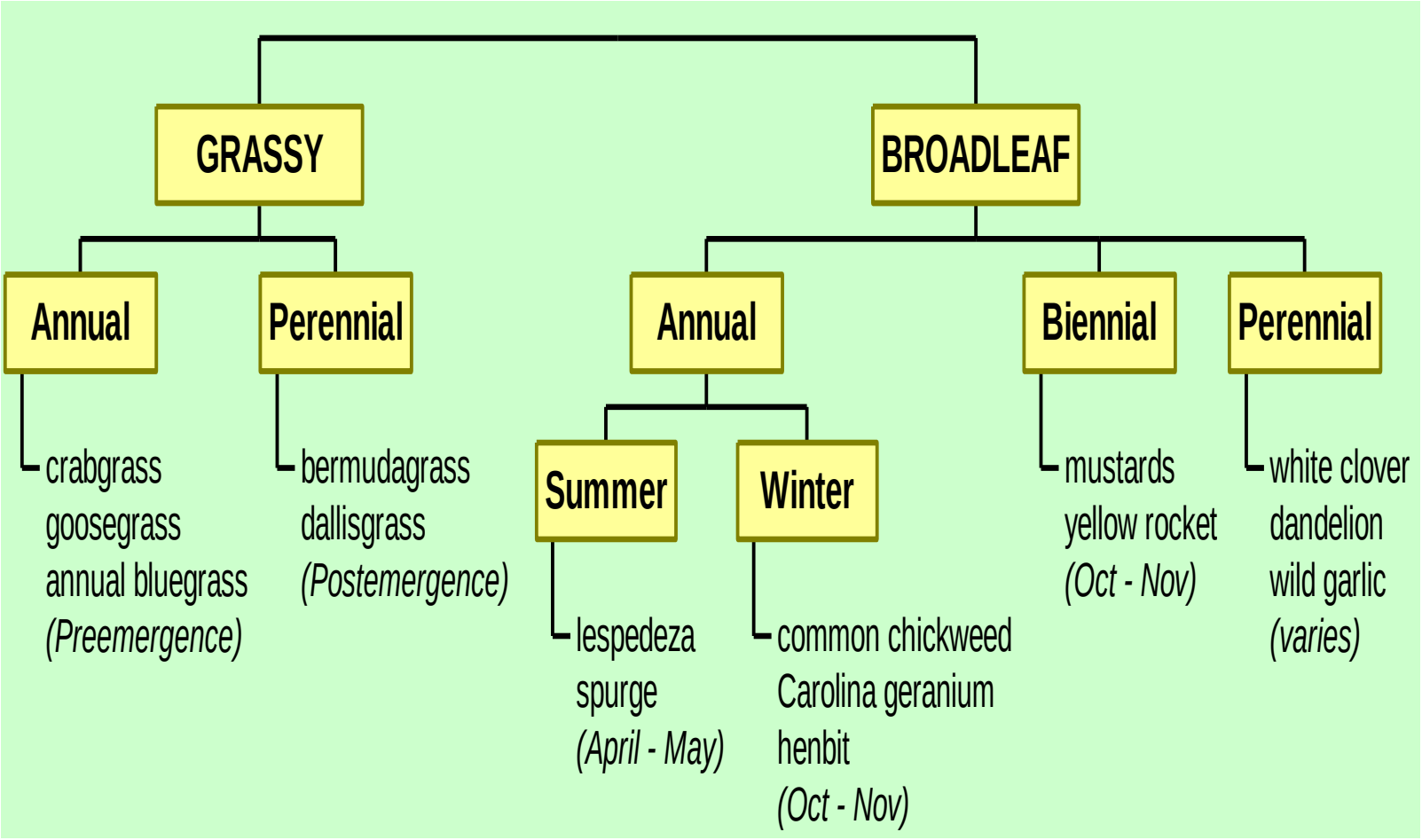
Organic Pest Management for Home Lawns

* Insects – No insecticides needed!
  * white grubs most problematic
* Diseases – No fungicides needed!
  * variety selection and cultural practices
* Weeds – Adjust tolerance!
  * mowing practices and fertility management
  * Naturally derived herbicides available; most have contact activity and result in short-term injury to the turf

If Herbicides are Necessary

* Identify the weed
  * Grassy vs. Broadleaf
  * Annual vs. perennial
  * Summer annual vs. winter annual
* Determine best time to treat
* Determine most effective product
* Hire a professional?
  * Most consumer products will calculate to 40 to 70% of the standard professional rate.
  * See professional equivalency formula discussion in PMG

Types of Lawn Weeds



Crabgrass vs. Wiregrass

https://weedid.cals.vt.edu/

Some Weeds Can Be Selectively Controlled

Common Lespedeza

Spotted Spurge

Difficult to Selectively Control

Common Bermudagrass

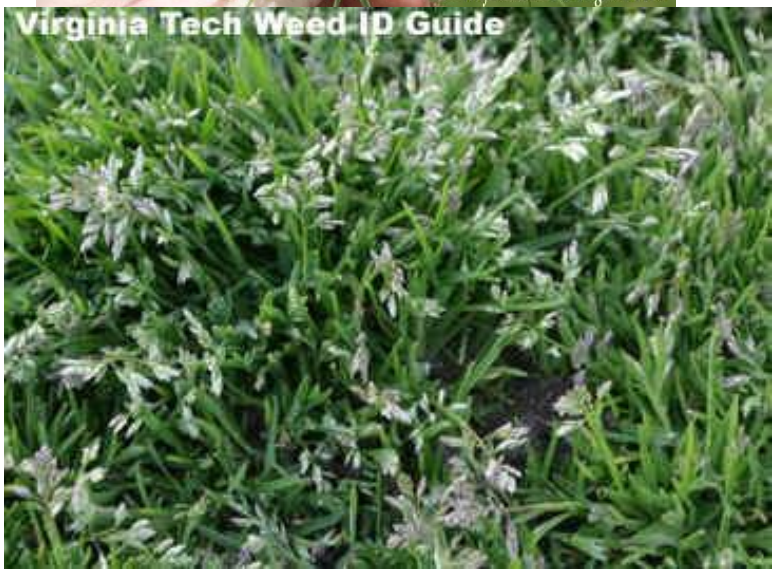
Pre-Emergent Products

Crabgrass

Mid-March

2-3 applications

Annual Bluegrass (Poa annua)



August

Chickweed

Henbit

Winter Annuals

October & November

Common Lespedeza

Spotted Spurge

Summer Annuals

April & May

A Simple Weed Management Plan

* Mid-March
  * Apply a crabgrass preventer
  * Repeat for season-long control
* April and May
  * Broadleaf weed killer for summer weeds
* October and November
  * Broadleaf weed killer for winter weeds

Weed Control Products

* Most broadleaf weed problems
  * 2,4-D + MCPP
  * 2,4-D + MCPP + dicamba
* Harder to control broadleaf weeds
  * triclopyr and carfentrazone
* Lots of weeds or perennial grasses
  * glyphosate (non-selective)
* Read label for wait time before seeding

Broadleaf Weed Control

Read the Label

MCPA + triclopyr + dicamba

triclopyr

MCPA + triclopyr + dicamba

Broadleaf Weed Control

Read the Label

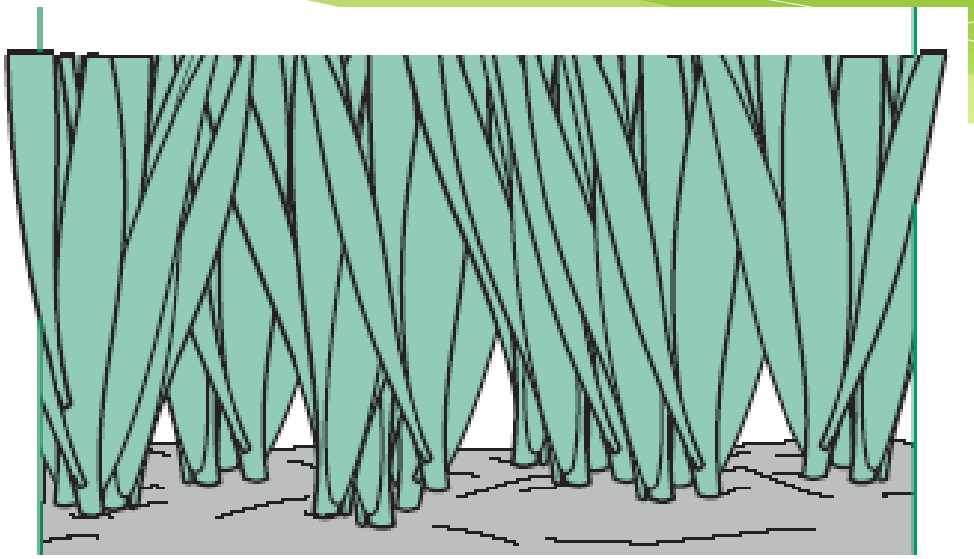
2,4-D + MCPP + dicamba

MCPA + MCPP + dicamba + carfentrazone

carfentrazone+ 2,4-D + MCPP + dicamba

VA Pest Management Guide

www.pubs.ext.vt.edu/456/456-018



Lawn Establishment

Overseed or Start Over?

How Many Weeds? How Much Time?

When to Establish

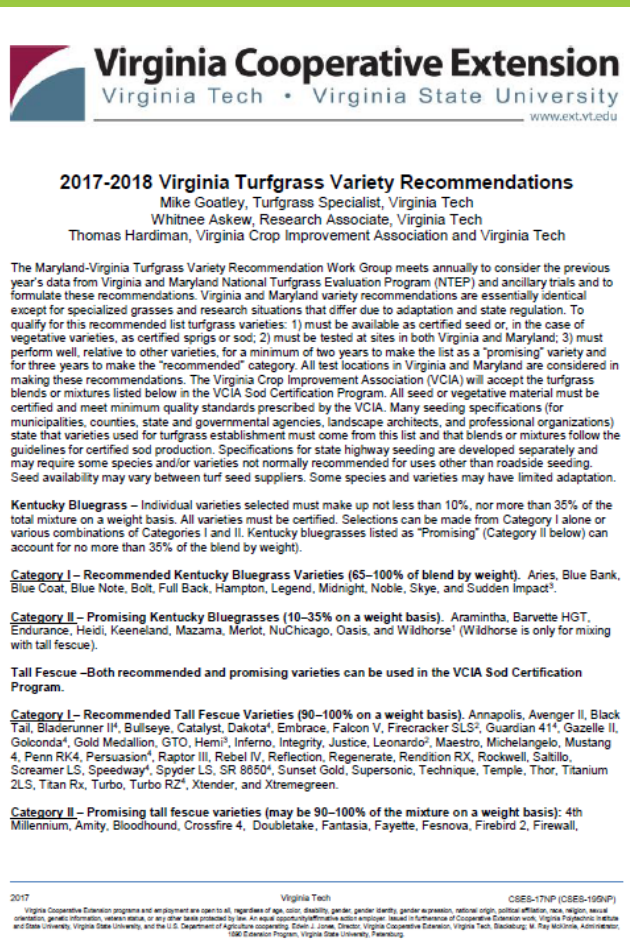
* Cool-season Turf
  * Kentucky bluegrass, tall fescue, perennial ryegrass
  * fall (mid-Sept to mid-Oct)
  * late winter/early spring (mid-Feb to mid-Mar)
* Warm-season Turf
  * Zoysiagrass, bermudagrass
  * May and June

Purchase Quality Seed

* Compare labels, not price
  * Pure Live Seed = Germination % X Pure Seed %
* Certified Seed
  * Blue label guarantees kind and variety of seed named on label

Recommended Tall Fescue Varieties – Annual List

Biltmore, Bingo,
Chochise III, Constitution, Coyote II,
Crossfire II, Endeavor, Fidelity,
Firecracker LS, Grande, Greenkeeper WAF,
Houndog 5, Inferno, Justice,
Magellan, Masterpiece, Matador GT,
Padre, Penn 1901, Raptor,
Raptor II, Rebel Exeda, Rendition,
Spyder LS, Tarheel II, Tombstone



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2017-2018 Virginia Turfgrass Variety Recommendations

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The Maryland-Virginia Turfgrass Variety Recommendation Work Group meets annually to consider the previous year's data from Virginia and Maryland National Turfgrass Evaluation Program (NTEP) and ancillary trials and to formulate these recommendations. Virginia and Maryland variety recommendations are essentially identical except for specialized grasses and research situations that differ due to adaptation and state regulation. To qualify for this recommended list turfgrass varieties: 1) must be available as certified seed or, in the case of vegetative varieties, as certified sprigs or sod; 2) must be tested at sites in both Virginia and Maryland; 3) must perform well, relative to other varieties, for a minimum of two years to make the list as a "promising" variety and for three years to make the "recommended" category. All test locations in Virginia and Maryland are considered in making these recommendations. The Virginia Crop Improvement Association (VCIA) will accept the turfgrass blends or mixtures listed below in the VCIA Sod Certification Program. All seed or vegetative material must be certified and meet minimum quality standards prescribed by the VCIA. Many seeding specifications (for municipalities, counties, state and governmental agencies, landscape architects, and professional organizations) state that varieties used for turfgrass establishment must come from this list and that blends or mixtures follow the guidelines for certified sod production. Specifications for state highway seeding are developed separately and may require some species and/or varieties not normally recommended for uses other than roadside seeding. Seed availability may vary between turf seed suppliers. Some species and varieties may have limited adaptation.

Kentucky Bluegrass – Individual varieties selected must make up not less than 10%, nor more than 35% of the total mixture on a weight basis. All varieties must be certified. Selections can be made from Category I alone or various combinations of Categories I and II. Kentucky bluegrasses listed as "Promising" (Category II below) can account for no more than 35% of the blend by weight).

Category I – Recommended Kentucky Bluegrass Varieties (65–100% of blend by weight). Aries, Blue Bank, Blue Coat, Blue Note, Bolt, Full Back, Hampton, Legend, Midnight, Noble, Skye, and Sudden Impact[3].

Category II – Promising Kentucky Bluegrasses (10–35% on a weight basis). Aramintha, Barvette HGT, Endurance, Heidi, Keeneland, Mazama, Merlot, NuChicago, Oasis, and Wildhorse[1] (Wildhorse is only for mixing with tall fescue).

Tall Fescue –Both recommended and promising varieties can be used in the VCIA Sod Certification Program.

Category I – Recommended Tall Fescue Varieties (90–100% on a weight basis). Annapolis, Avenger II, Black Tail, Bladerunner II[4], Bullseye, Catalyst, Dakota[4], Embrace, Falcon V, Firecracker SLS[2], Guardian 41[4], Gazelle II, Golconda[4], Gold Medallion, GTO, Hemi[3], Inferno, Integrity, Justice, Leonardo[2], Maestro, Michelangelo, Mustang 4, Penn RK4, Persuasion[4], Raptor III, Rebel IV, Reflection, Regenerate, Rendition RX, Rockwell, Saltillo, Screamer LS, Speedway[4], Spyder LS, SR 8650[4], Sunset Gold, Supersonic, Technique, Temple, Thor, Titanium 2LS, Titan Rx, Turbo, Turbo RZ[4], Xtender, and Xtremegreen.

Category II – Promising tall fescue varieties (may be 90–100% of the mixture on a weight basis): 4th Millennium, Amity, Bloodhound, Crossfire 4, Doubletake, Fantasia, Fayette, Fesnova, Firebird 2, Firewall,

Publication CSES-195NP

Lawn Establishment

* Choose species / variety for site conditions
* Seed, Sprigs, Plugs or Sod
* Soil Test
* Weed Control
* Installation of Irrigation and Drainage
* Soil Preparation
  * final topsoil depth 6 to 8-inch minimum

Lawn Establishment

* Lime
  * pH 6.2
  * incorporate to 4 to 6 inch depth
* Fertilizer
  * correct deficiencies
  * incorporate 2/3; broadcast remaining 1/3 to surface

Seeding, Mulching, Irrigating

* Good seed to soil contact
* Seed lightly covered with soil
* Straw mulch to cover 50% to 75% of soil surface (1 ½ to 2 bales / 1,000 ft^2)
* Light, frequent watering to keep seed and soil surface moist
* Maintain for at least 30 days after seeding

Renovation/Overseeding

* Less expense and mess
* Steps are similar to establishment
* Good seed to soil contact
  * dethatching
  * aerification
* Lower rates for lime, fertilizer and seed

Turfgrass Seeding Rates

Turfgrass	lbs. / 1000 sq. ft.
Kentucky Bluegrass	2 to 3
Tall Fescue	4 to 6
Creeping Red Fescue	3 to 5
Perennial Ryegrass	3 to 5

1

2

3

4

OR

Rototill

4

Incorporate lime, fertilizer, organic matter

5

Rake smooth

6

Seed in 2 directions

7

Drag chain link fence to cover seed lightly

Roll for good seed to soil contact followed by straw mulch

8

Best Lawn in the Neighborhood