
JAMES RIVER
SOIL AND WATER
CONSERVATION DISTRICT
Yards of Tomorrow

Yards today

- Since 2010, Chesterfield County's population has grown by over 10%. Hannover & Henrico counties have grown by over 7% each
- Urban and suburban development have skyrocketed in central Virginia
- Sub-divisions and their home-owners associations perpetuate the stereotypical turfgrass lawn and ornamental plants

Impacts of tradition

- Conservative estimates put the average cost per year of professional landscaping services at $2,500.00 or more
- According to the Chesterfield County Utilities Department, household water consumption in the County doubles in the summer months
  - This is mostly the result of lawn irrigation, car washing, and other activities that don’t require using the drinking water supply

Credit: Jim McDonnell

Turfgrass monoculture

- Tall Fescue & Kentucky Bluegrass mixtures comprise most Virginia lawns
  - Hardy and fast-growing; however, they are VERY thirsty plants
    - On average, Bluegrass varieties require 25-inches of supplemental irrigation per year and Fescue varieties require an additional 7-inches
  - In a residential setting, fescue and bluegrass provide little ecological benefit and no real wildlife habitat.
  - Turfgrass certainly has a place in the *Yard of Tomorrow*, but too much is a detriment to biodiversity and our piggybanks.

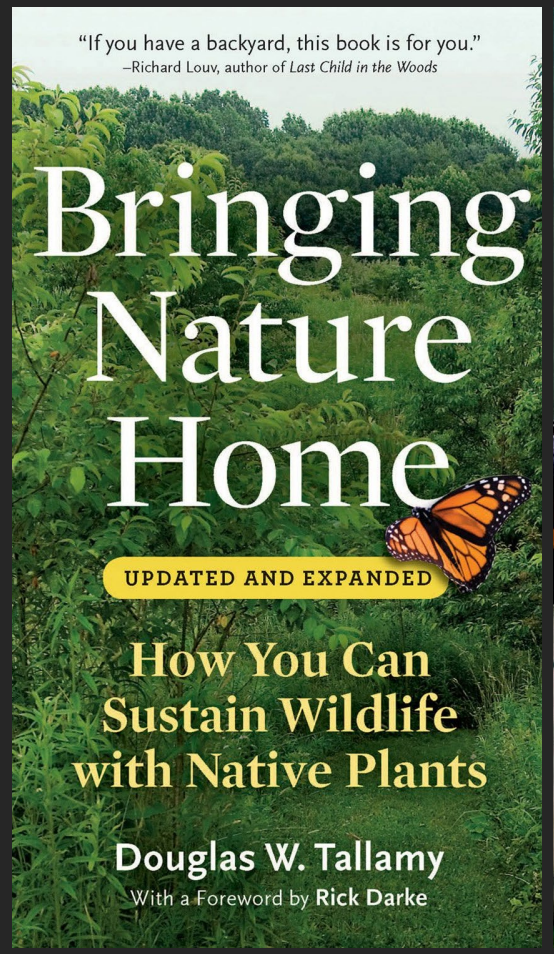
The Ecological Landscape Alliance wants you to ask three questions about your turfgrass lawn

- 1. Where could you lose the lawn and not miss it?
- 2. Where do you desire a green groundcover, but not necessarily turf grass, for aesthetic reasons?
- 3. Where is a lawn of some sort useful, say, for kicking around a soccer ball or stretching out to read a book?

Credit: Ecological Culture Initiative

A changing mindset…

- A 2019 study published in the journal *Biological Conservation* found that 40% of the world's insect species are at risk of extinction, including; beetles, butterflies, and bees
  - The biggest drivers of this decline were found to be habitat loss, pollution (from herbicides and fertilizers), and introduced species.
- In 2009 Doug Tallamy, a University of Delaware professor of entomology, wrote *Bringing Nature Home.*
  - Native wildlife need native plant hosts



Backyard ecosystem

- Think of your yard as an ecosystem
- The best ecosystems are robust and diverse, so that no one problem can have a large impact
- Incorporate plants from all growing/flowering seasons to attract wildlife year-round

Credit: Buncombe Master Gardeners

Creating your Yard of Tomorrow

- **1. Assess**
- 2. Plan
- 3. Implement & Install
- 4. Maintain

What to look for in your assessment…

- Soils
- Slope & topography
- Ground cover
- Impervious surfaces
- Invasive plants

Soils

- Web Soil Survey
  - https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
  - Soil types & drainage capacity
  - https://www.youtube.com/watch?v=rEN0NtMsvsg
- Soil Testing
  - Chesterfield Cooperative Extension – Soil Test Boxes
  - Specific soil conditions: pH & nutrients
  - More on that in a minute…

Slope
& Topography

- Identify the natural high and low points in your yard
- Look for natural rainwater flow paths and erosion/rills
- Identify depressions and areas prone to flooding

Credit: Antonio Jordán

Ground Cover

- Identify bare patches
  - What might be causing these?
    - Too much shade? Too much rainwater runoff from uphill?
  - Look back at your soil test results. Be sure to take a multiple samples: soil conditions can very dramatically even across 1 acre
  - Many sub-divisions become compacted during construction. Is it hard to dig here?

Impervious Cover

- Look at the areas around your driveway & downspouts. Do you notice erosion or scouring from runoff?
- Does rainwater from the street come into your yard?
- Impervious surfaces speed up runoff and are often the leading cause of erosion in residential and commercial areas
- Most noticeable during storm events

Invasive Species

- Invasive species are non-native invading plants that will outcompete natives for space and nutrients
- Our Virginia indigenous pollinators and insects do not use most invasive species as hosts or for food
  - No insects = no birds and other wildlife
- Common invasives in VA Backyards
  - English ivy
  - Japanese stiltgrass; honeysuckle; wisteria
  - Tree-of-heaven (alanthus)

Credit: Alabama Cooperative Extension; Virginia Pilot

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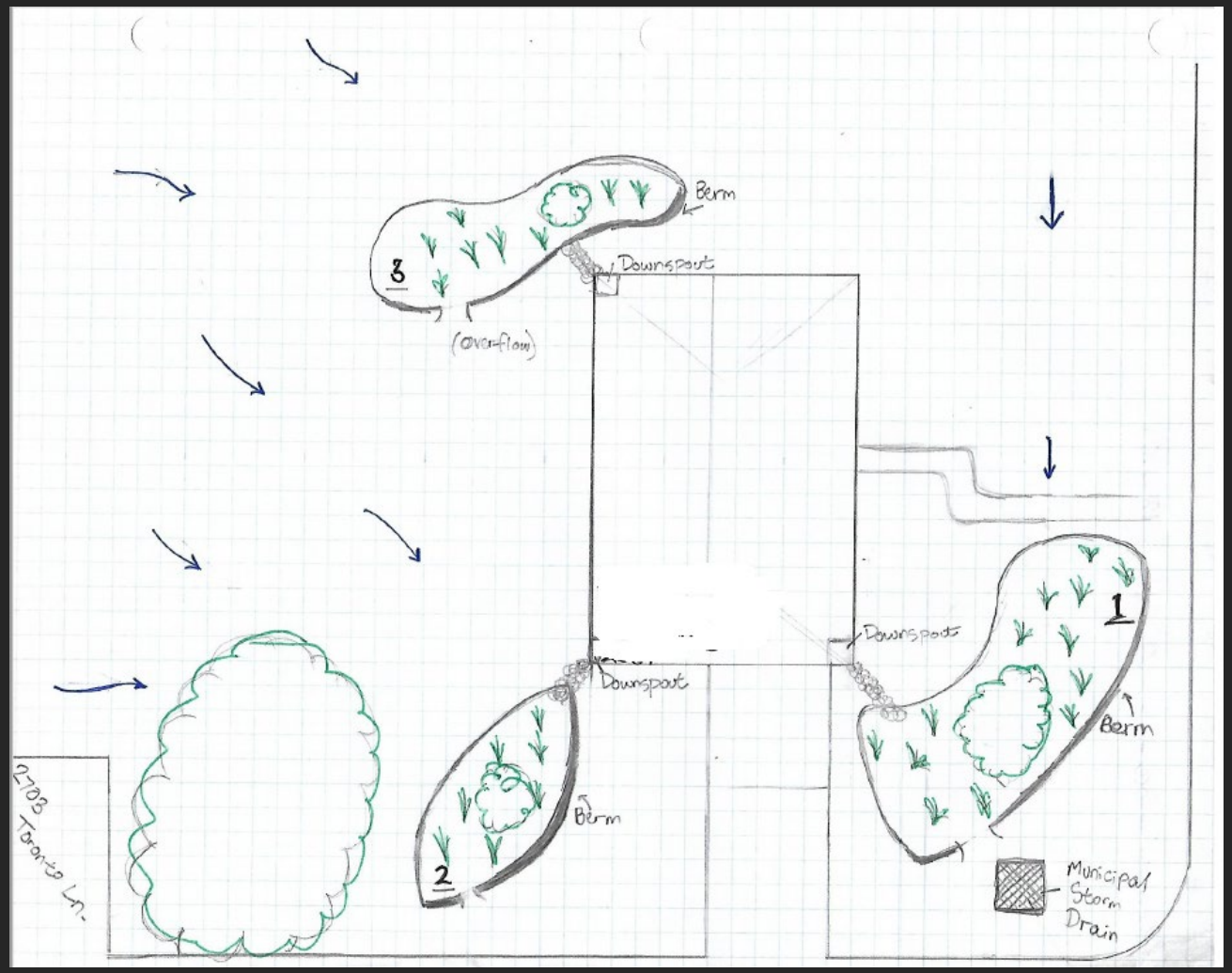
Create a Plan

- Make a sketch
- Identify constraints: utilities, right-of-way, HoA regulations, ordinances, etc.
- Identify priority areas
  - Active erosion and too much impervious runoff are priority problems
  - Remove invasives from area before planting natives
  - Consider the costs and progress in steps



Soil Report

Lab ID: 20-3324 2020-01-16 CHESTERFIELD / 041

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Chesterfield County Office
6807 Mimms Loop
P.O. Box 146
Chesterfield, VA 23832
804-751-4401

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
185 Ag Quad Ln
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

• SUFF = Sufficient

Ranges
- L- = Low - Low
- L = Low
- L+ = High - Low
- M+ = High - Medium

OWNER [redacted]
CHESTERFIELD, VA 23838

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
003		Native or Unimproved Pasture (42)							1.0	I

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	76	248	56	0.8	4.4	0.4	30.4	0.1	
Rating	L	M-	L	L+	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	6.06	3.0	68.1	31.9	20.9	7.8	3.3	

Want this to be ~6.0

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC		Fertilizer, lb/A → pounds/acre		
Amount	Type	N	P205	K20
2.25	AG	See Comment	175	125

* This is your nitrogen recommendation

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A. Nitrogen/Acre

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

Tiarella cordifolia • Foamflower

- 6–12 in.
- Tiny, white flowers with very long stamens appear in airy racemes in April–June; leaves turn a nice reddish bronze in fall
- Part shade to full shade
- Organically rich, moisture-retentive soils
- Naturally found in cool, moist, deciduous woods; stream banks

A showy, clump-forming perennial.

Foamflower can be used as a groundcover as it spreads by underground rhizomes. Genus name comes from the Greek "tiara" meaning a small crown, in reference to the form of the fruit.

Tradescantia virginiana • Virginia Spiderwort

- 1.5–3' tall
- Blue to purple 1.5" diameter 3 petaled flowers with yellow stamens open for just 1 morning, plants bloom in clusters May–July; clump forming plant with long narrow dark green leaves grow up to 1' long, mid-summer foliage declines
- Part shade to full shade
- Acidic soil in dry loamy, clay, or well drained sites

Flowers pollinated by bumblebees, other bees, flies and butterflies.

Black Walnut tolerant. Virginia Native Plant Society's 2008 Wildflower of the Year.

Native Plants for Virginia's Capital Region

Slope & Topography

- Utilize the natural high and low points of you yard
  - Slowing rainwater uphill will reduce flooding in low points
    - Bunchgrasses (like Lovegrass & Switchgrass)
    - Upland trees (like Oaks, Serviceberry, and Hornbeam) will minimize rainwater reaching the ground and will absorb runoff
    - Berms & terraces on sloping areas
    - Turfgrass on steep slopes is good!

Credit: Johnson Nursery & *MBGargiullo.*

Flat and Low Spots

- Utilize native gardens
  - Keep in mind your soil pH: Most Virginia native plants like slightly acidic to neutral pH (5.5-7.0 range)
    - Sun and shade
  - Infiltration capacity will determine plant selection: moist or dry conditions?
  - Depressions and constantly wet areas are an opportunity for rain gardens

Impervious Surface

- Downspouts can be low hanging fruit
  - Rain Barrels
  - Rain Gardens
  - Dry-well/French drains
- Are there areas of pavement or concrete that could be easily removed?
  - Replace with native gardens or meadows
- Permeable paver driveways and patios
  - Enhances runoff infiltration
  - Aesthetic
- Simply replace with gravel

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Dry Yard – Practice Yard

Wet Yard – Practice Yard

Virginia Conservation Assistance Program

Presented by Virginia Association of Soil & Water Conservation Districts

- Residential & commercial conservation cost-share program
- 12 qualifying practices, including: conservation landscaping, rain-gardens, and dry-wells
- Some projects eligible for up to 75% reimbursement
- 10-year obligation to maintain

Rain Barrel Workshops

- James River Soil & Water Conservation District & Chesterfield County Environmental Engineering is hosting three Rain Barrel Workshops
  - *Saturday, March 28th – 2:45pm @ Chesterfield Central Library*
  - *Wednesday, April 15th – 6:30pm @ Chesterfield Fairgrounds*
  - *Saturday, June 13th – 10:00am @Chesterfield Fairgrounds*