Imagine That You’re a Lowly Turfgrass Plant

Laurie E. Trenholm
Urban Turfgrass BMP Specialist
UF-IFAS
Is Turfgrass Florida Friendly?
Protecting water resources with my TURF SWAP
Save Water • Add Plants

For more information: MyYardOurWater.org (352)-264-6800
What Role Does Turfgrass Play in Our Landscapes?

**Functional:**
- Filters stormwater runoff
- Traps and filters potential pollutants
- Holds soil in place
- Reduces heat, noise, glare
- Reduces dirt brought into home
- Takes up air pollutants
- Serves as fire break
- Safe play area (pets and humans)

**Aesthetic:**
- Safe play area
- Extends outdoor living space
- Increased property values
- Compliments and ties together the rest of the landscape
How Is Turf Florida Friendly?

Florida Friendly Landscaping Principles

1. Right Plant, Right Place
2. Water Efficiently
3. Fertilize Appropriately
4. Mulch
5. Attract Wildlife
6. Manage Yard Pests Responsibly
7. Recycle
8. Prevent Stormwater Runoff
9. Protect the Waterfront
What Would Happen If We Removed All Turf?
Low cut grass burned in favorable conditions, however additional fuel, called "dead" brush and trees with dry branches, the fire would spread quickly or consume everything would create more favorable conditions.

This area was a planned fuel break that was consistently maintained. It helped save the entire complex during the Diamond Bar fire.
Do Lawns Increase or Reduce Pollution?

• Absorb and filter pollutants in stormwater runoff

• Actively growing turf has strong shoot and root system, providing two layers for filtration
  - Ability to take up pollutants and fertilizer
  - Every fertilization event is not a pollution event
How Cultural Practices Enhance (or not) This Filtering Ability

Fertilization

• Living Organisms Need Nutrients For Health

Including Plants
Fertilization Best Management Practices

• Soil test! What is your pH and how much of the needed nutrients do you have in your soil?
• Apply fertilizer at the correct rate for your lawn species
• Apply fertilizer at the correct time – when the grass is growing
• Know how much fertilizer you are applying
• Clean up spilled fertilizer
• Do not fertilize before a heavy rain
• Leave a 10’ unfertilized buffer strip by water bodies
• Irrigate fertilizer in with approx. ¼” of water
Fertilizer BMPs for Turfgrass

- Do not apply nitrogen fertilizer at excessive rates – stick to the UF-IFAS recommendations
- These recommendations based on nutrient loss data and turf health response
## Recommended N Rates
(lbs. N 1,000 ft\(^{-2}\) yr\(^{-1}\))

<table>
<thead>
<tr>
<th>Grass Type</th>
<th>North</th>
<th>Central</th>
<th>South</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass*</td>
<td>1-3</td>
<td>1-3</td>
<td>1-4</td>
</tr>
<tr>
<td>Centipedegrass*</td>
<td>0.4-2</td>
<td>0.4-3</td>
<td>0.4-3</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>2-4</td>
<td>2-5</td>
<td>4-6</td>
</tr>
<tr>
<td>Zoysiagrass*</td>
<td>2-3</td>
<td>2-4</td>
<td>2.5-4.5</td>
</tr>
</tbody>
</table>

*These are new recommendations based on nitrate leaching and turf health data over 12 years.
# Recommended N Rates

(lbs. N 1,000 ft\(^{-2}\) yr\(^{-1}\))

<table>
<thead>
<tr>
<th>Grass Type</th>
<th>North</th>
<th>Central</th>
<th>South</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass</td>
<td>1-3</td>
<td>1-3</td>
<td>1-4</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>0.4-2</td>
<td>0.4-3</td>
<td>0.4-3</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>2-4</td>
<td>2-5</td>
<td>4-6</td>
</tr>
<tr>
<td>Zoysiagrass*</td>
<td>2-3</td>
<td>2-4</td>
<td>2.5-4.5</td>
</tr>
</tbody>
</table>

*These are new recommendations based on Nitrate leaching and turf quality data over 8 years.*
Does Every Fertilization Event Cause Pollution?
Total N Leached From Established Floratam St. Augustinegrass 2006

![Graph showing total nitrate leached from established Floratam St. Augustinegrass from April 4 to October 31, 2006. The graph displays two lines, one for 1 lb N and another for 1.75 lb N, with peaks and troughs indicating the leaching process over time.](image-url)
Nitrogen Rate Study - Nitrate-N Leaching from Floratam

Nitrogen applied as 100% soluble urea

Trenholm et al. 2009
Nitrate Leaching in Winter Months
Yr 2 (Dec-Mar Cumulative)

N Rate, lbs. 1,000 ft$^{-2}$

2007-08
Irrigation BMPs
Overwatering

• Increased disease issues
• Root rot and stunting
• Weak turf stand
• Increased weeds
How Frequently to Water

Varies due to:
- Season
- Soil type
- Shade
- Rooting depth
- Insect or other pests
- Other stresses
Irrigation Frequency

- Watch grass for signs of stress
- Follow watering restrictions!
- You may water “hot spots” with hose if needed and if not prohibited by local restrictions
How Much to Water

• Apply 1/2” to 3/4” when turf shows symptoms of wilt

• This should not vary- only frequency varies!
Short, frequent irrigations

Longer, less frequent irrigations
Irrigation System Efficiency

• Calibrate systems to ensure uniform coverage
• Check for broken heads, etc
• Check for landscape plants that may block sprinkler from reaching grass
Mowing
Mowing BMPs

• Mow at the correct height for the species
  – Mowing too low stresses the grass and forces it to use up all saved reserves for shoot growth
  – Mowing high increased root depth
Mowing Heights

• St. Augustinegrass Standard Height Cultivars:
  – Floratam, Bitter Blue, Classic, etc.
  – 3.5 – 4”

• St. Augustinegrass Dwarf Cultivars:
  – Captiva, Delmar Seville
  – 2-2.5”

• Bahiagrass: 3-4”

• Centipedegrass:

• Zoysiagrass: ~2”
Mowing

• Only remove 1/3 of the leaf blade at any one time
  – Grass at 6” should have no more than 2” removed

• Keep mower blades sharpened

• Do not mow wet grass

• Commercial mowers should be washed off between properties *(do you ever see this?)*
Diagnosing Brown Spots in Turf
What Are the Brown Spots in My Lawn?

• Is there evidence of a pattern from a spreader, mower, sprayer, irrigation head?
  – Look for mechanical injury or applicator error

• Look at site conditions (shade, compacted soils, wet soils)
What Are the Brown Spots in My Lawn?

• Is the injury random in shape and size or does it recur in multiple locations?
  – Check for insects

• Look at roots – are they black, rotting (fungal disease) or truncated (soil born insect or nematodes)

• Does shoot system have evidence of chewing on leaves (insects) or rotting (fungal disease)

• Is shoot system dried out and chlorotic or necrotic?
Thank you for your attention!

letr@ufl.edu