Sustainable Turf

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Sustainable vs. Stewardship

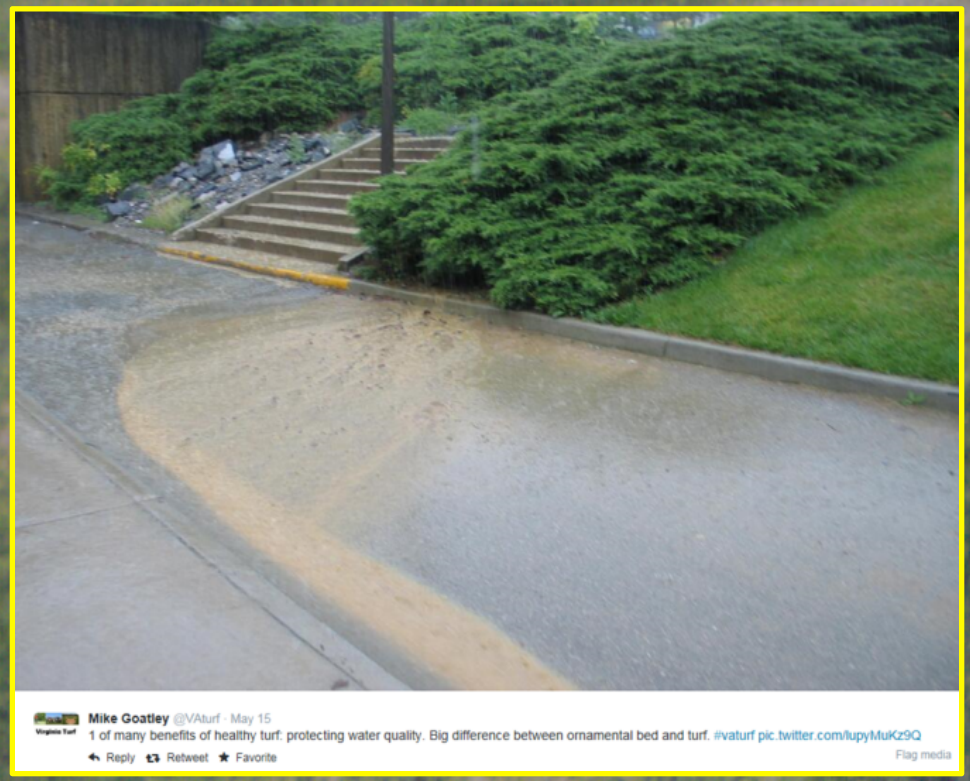
Philosophical Questions

- What is sustainable?
- Whose definition?
- What are the criteria to be sustainable?
- What practices are associated with stewardship?
- Can science substantiate stewardship practices?
- Is either term better than the other?
- Can either term apply to an “organic” concept?

Why Turfgrass?

Benefits

- ☆ Permanent Vegetative Cover
  - ✓ Filter
  - ✓ Protect water quality
    - Bare soil – a 2-inch rain event can generate 5 tons of soil loss / acre
  - ✓ Slows down runoff
  - ✓ Traps dust & smoke



Issues & Concerns

Questions

- Is landscape water use an issue?
- Is the grass species, or cultivar, solely responsible for water use?
- Does site preparation play a role in water use?
- How can site preparation be improved to enhance turfgrass water use?
- Is proper site preparation routinely practiced by turfgrass installers?

Turfgrass Selection

Adaptation & Species

Native vs. Best Adapted

Turfgrasses for Southeastern U.S.

- ☆ Native to where?
  - ✓ Not introduced
  - ✓ Here prior to settlers arriving
  - ✓ Little to no improved breeding
- ☆ Best adapted
  - ✓ Introduced
  - ✓ Improved breeding
  - ✓ Enhanced characteristics

Considerations

Usage & Expectations

- ✯ Traffic
  - ✓ Wear
  - ✓ Soil Compaction
- ✯ Soil Stabilization
  - ✓ Roadsides
- ✯ Turf Quality
  - ✗ Bahiagrass is not a high quality turf

Adaptation

Warm-season Grass Species

- Active Growth - Summer
  - ✓ Air temperatures - 80° to 95° F
  - ✓ Night Temperatures – high 60s to low 70s
  - ✓ Root activity – 65° F
- Dormancy
  - ✓ Soil Temperatures – 50° to 55° F
- Tropical & Subtropical Regions

Adaptation

Cool-season Grass Species

- ☆ Active Growth - Spring & Fall
  - ✓ Air temperatures - 60° to 75° F
- ☆ Stress Periods – Summer & Winter
  - ✓ Slow growth
  - ✓ May go dormant
- ☆ Cooler Temperatures & Subarctic Regions

Native Turfgrasses

Native vs. Best Adapted – Southeastern U.S.

- ☆ Native Warm-season species
  - ✓ Buffalograss
  - ✓ Carpetgrass
  - ✓ St. Augustinegrass
- ☆ Native cool-season species
  - ✓ Texas bluegrass

Buffalograss

Best Adapted Turfgrasses

Naturalized to the Southeastern U.S.

- ☆ Warm-season species
  - ✓ Bermudagrass
  - ✓ Centipedegrass
  - ✓ Seashore paspalum
  - ✓ Zoysiagrass
- ☆ Cool-season species
  - ✓ Tall fescue

Celebration Bermudagrass Lawn

Papa John's Approach

Better Grasses Better Lawns

- ✯ TWCA – www.tgwca.org
  - ✓ Primarily seeded grasses
  - ✓ 13 trial locations
  - ✓ Relies on the 3rd party peer review of data
  - ✓ Turfgrasses that demonstrate a statistically significant water savings
  - ☹ Warm-season species

Georgia Turfgrass Cultivars

A Brief History

Bermudagrass

- ✓ 1952 – Tiflawn (4X)
- ✓ 1953 – Tiffine (3X)
- ✓ 1956 – Tifgreen (3X)
- ✓ 1960 – Tifway (3X)
- ✓ 1965 – Tifdwarf (3X)
- ✓ 1990 – Tifton 10 (6X)
- ✓ 1997 – TifSport (3X)
- ✓ 1999 – TifEagle (3X)
- ✓ 2010 – TifGrand (3x)
- ✓ 2015 – TifTuf (3x)

Centipedegrass

- ✓ 1998 TifBlair

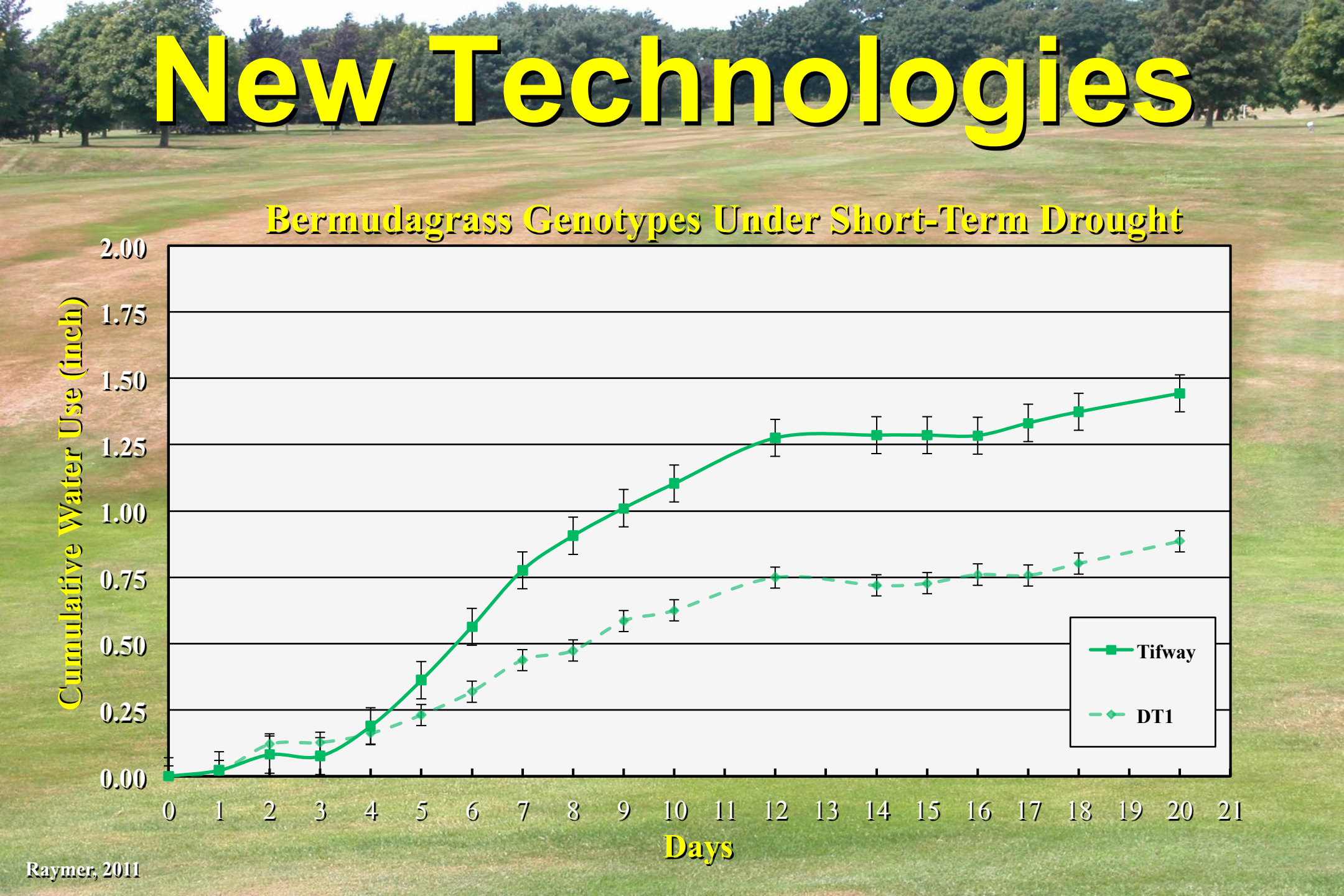
Seashore Paspalum

- ✓ 1999 – Sea Isle 1
- ✓ 1999 – Sea Isle 2000
- ✓ 2003 – Sea Spray
- ✓ 2005 – Sea Isle Supreme
- ✓ 2011 - SeaStar

Tall Fescue

- ✓ 1999 – Southeast
- ✓ 2003 – Tenacity
- ✓ 2006 – Bulldog-51

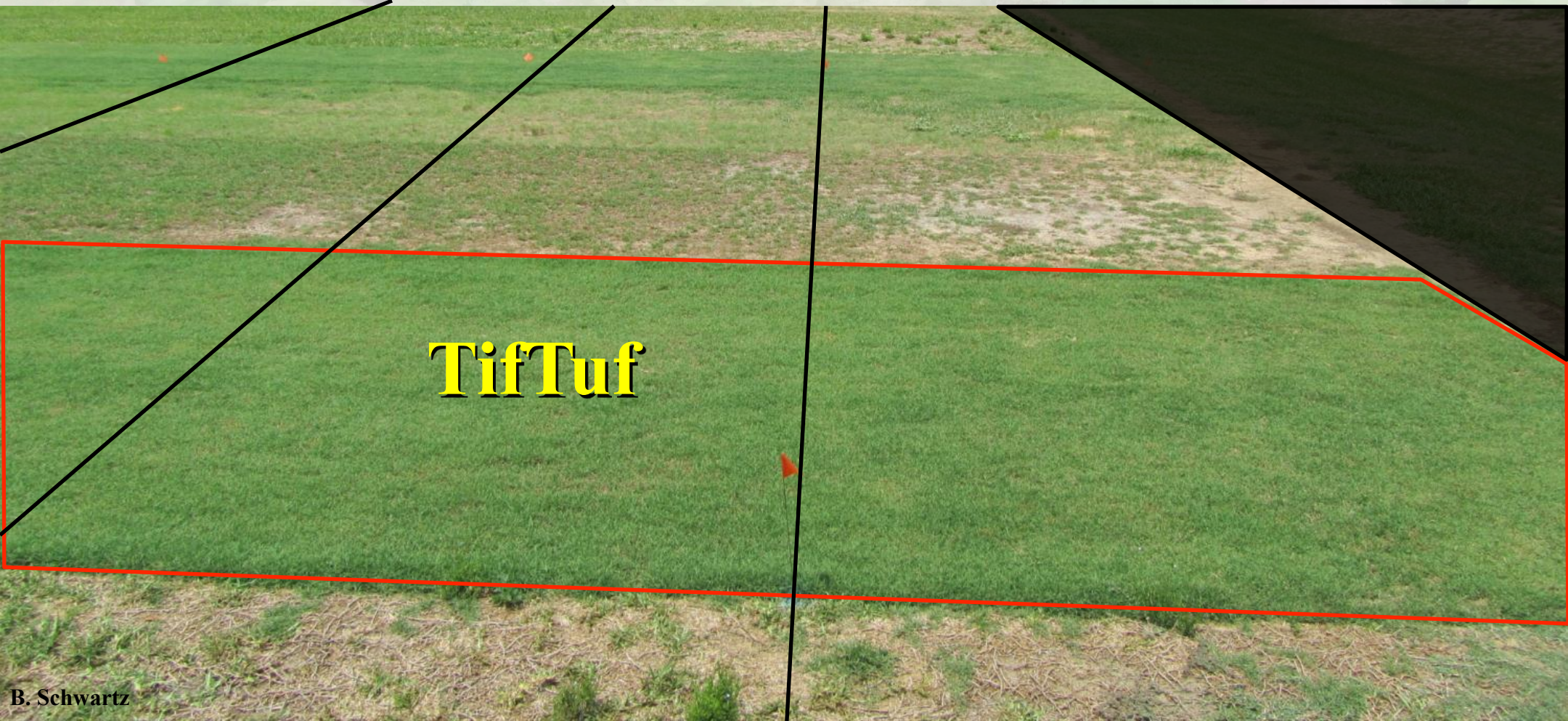
New Technologies



Raymer, 2011

Drought

2011 Univ. of Florida Drought Trial – Jay, FL



Shade Study - 2012

Warm-season species

- Bermudagrass (4)
- Seashore Paspalum (2)
- St. Augustinegrass (2)
- Zoysiagrass (9)

17 Cultivars of 4 Warm-season Species – est. 2012

What is Seashore Paspalum?

Warm-season Turfgrass Species

- ☆ **Tolerates**
  - ✓ Salt / salinity
  - ✓ Poor quality water
  - ✓ Water logging
  - ✓ Overcast conditions
  - ✓ Wide range of soil pH
  - ✓ Sandy and infertile soils
  - ✓ Low mowing height

Site Preparation

Soil Amendment

Materials & Methods

Establishment

- June 2012
- Cecil sandy loam
- Tillage & Incorporation
  - ✓ Tilled
  - ✓ Compost applied to surface
  - ✓ Incorporated – upper 10 cm
  - ✓ Control – tilled, no compost
  - ✓ Smoothed & rolled

Summary

- Zoysiagrass – lowest VWC
- Centipedegrass – highest VWC
- No difference in compost sources
- Compost at 10 kg m^{-2} – highest VWC
  - ? Too wet
- No difference in TQ for species, compost source or rate

Other Aspects to Stewardship

Proper Agronomics & BMPs

- Water
- Fertility
- Pests
- Soil microbiology
- Maintenance – cultivation & cultural practices
- Continued research

Important Dates in 2016

EDGE Expo – December 8

For other local programs contact your CEA

Thank You

Visit

www.GeorgiaTurf.com