MORE THAN JUST THE MALL: TURFGRASS IS A MODERN CROP

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@UTTURFWEEDS
13,841 SQUARE MILES
(MILESI ET AL. 2005)

Turfgrass is in every congressional district
More than 6.6 million football fields!
WHAT IS THE TURFGRASS INDUSTRY?
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LAWNS
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LAWNS

PARKS & REC. AREAS
WHAT IS THE TURFGRASS INDUSTRY?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace
WHAT IS THE TURFGRASS INDUSTRY?

- LAWNS
- PARKS & REC. AREAS
- URBAN GREENSPACE
What is the turfgrass industry?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace
- Golf Courses
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- Lawns
- Parks & Rec. Areas
- Urban Greenspace
  - Golf Courses
  - Cemeteries
WHAT IS THE TURFGRASS INDUSTRY?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace

- Golf Courses
- Cemeteries
- Athletic Fields
What is the turfgrass industry?

- Lawns
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Golf Courses
Cemeteries
Athletic Fields
What is the Turfgrass Industry?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace
- Golf Courses
- Cemeteries
- Athletic Fields
- Utility
What is the turfgrass industry?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace
  - Golf Courses
  - Cemeteries
  - Athletic Fields
- Utility
  - Roadsides
WHAT IS THE TURFGRASS INDUSTRY?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace
- Utility

Golf Courses  Cemeteries  Athletic Fields
Roadsides  Airports
WHAT IS THE TURFGRASS INDUSTRY?

- Lawns
- Parks & Rec. Areas
- Urban Greenspace

- Golf Courses
- Cemeteries
- Athletic Fields

- Roadsides
- Airports
- Military Bases
Do more people live in urban or rural areas?, United States

Share of the population which live in urban versus rural areas. Here, 'majority urban' indicates more than 50 percent of the population live in urban centres; 'majority rural' indicates less than 50 percent. Urban populations are defined based on the definition of urban areas by national statistical offices. This is based on estimates to 2016, combined with UN projections to 2050.

Source: OWID based on UN World Urbanization Prospects (2018) & Historical Sources (see Sources tab)
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WHAT ARE THE

BENEFITS

OF TURF?
IMPROVE CLIMATE

- Emits oxygen
- Lawn (250 ft²) supplies enough oxygen for a family of four
- Cools the atmosphere
  - Eight lawns = 70 tons of air conditioning
- Reduces pollutants in soils and enhances ground water

(Su et al. 2007; Milesi et al. 2005; Parton et al. 1987; Qian and Follett 2002; Bandaranayake et al. 2003; Dousset and Gourmelon 2003; Parker 1983; McPherson et al. 1989)
PUBLIC HEALTH

- Less vandalism, graffiti, litter, and overall crime in urban areas with mowed grass (Kuo and Sullivan 2001; Nassauer 1988; Bedimo-Rung et al. 2005)

- Safer for end-users in sports and recreation (Coady and Micheli 1997; Klempner et al. 2007)
TURF BRINGS GREEN TO TENNESSEE

The Tennessee Turfgrass Industry's total 2013 estimated economic contribution was $5.8 billion out of $582.5 billion of the total state economy.

There is a 166% return on investment to the state economy for every dollar spent on turfgrass.

Total 2013 employment contribution was over 67,000 jobs.

Homeowners contribute the greatest % of the estimated economic contributions.
Weeds Are An Issue in Turfgrass Management
WHAT ARE THE EFFECTS OF WEEDS IN TURF?
Large Crabgrass, White Clover, and Hybrid Bermudagrass Athletic Field Playing Quality in Response to Simulated Traffic


ABSTRACT
Athletic field playing quality encompasses both aesthetics as well as athlete-to-surface interactions that can affect injury incidence. Legislation restricting the use of herbicides on athletic fields may lead to increases in problematic weeds, such as large crabgrass (*Digitaria sanguinalis* L.) and white clover (*Trifolium repens* L.), which

Hybrid bermudagrasses [*C. dactylon* (L.) Pers. · *C. transvaalensis* Burtt Davy] are commonly used as athletic field playing surfaces throughout the transitional and warm climatic

Crop Science (2014) 54: 1838-1843
~50% chance of head injury
Simulated Foot Traffic
Tifway Bermudagrass After 15 Simulated Games
LESS SUPPORT THAN ROW CROP SYSTEMS
Herbicide Applications are Primary Means of Control
Epidemic of Herbicide Resistance
URGENT AND CRITICAL NEED

• To provide stakeholders an outlet for diagnostic testing of weeds found in both crop and non-crop systems

• Ensure that diagnostic results are accompanied by research-based recommendations for management in the field
Critical Need for Weed Diagnostics Information
USDA-NIFA-SCRI
(AWARD# 2018-51181-28436)

- Five-year project (2018-2022), $5.2 million

- Address the epidemic of HR in *Poa annua*

- Provide integrated strategies for management — more than just chemical

- Largest collaborative turfgrass research project ever, with cooperators from 14 different universities

- All aspects — chemical, biological, mechanical, psychological — integrated solutions
SUMMARY

- USDA-NIFA-SCRI funding is making an impact on a crop that affects a growing percentage of the United States on a daily basis.

- Example of federal government addressing an urgent and critical need

- Reduced chemical use and more informed citizens

- Continued support is needed — many turfgrass issues to focus on that affect citizens every day
Jim Brosnan, Ph.D.
@UTTurfWeeds

Professor, Univ. of Tennessee (@UTturfgrass) Director, UT Weed Diagnostics Center (@WeedDiagnostics) #Turf #Grass #Weeds #Science #Golf #Lawn #Resistance

University of Tennessee  tnturfgrassweeds.org
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Those who missed #PoaDay can view the full broadcast here thanks to support from @Solutions4Turf: buff.ly/2UDn3kG @ResistPoa @TNturfAssoc @TennesseeGCSA #TNTurf