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Outline

- Introduce ecosystem services
- Explore the importance of pollination
- Refuge Lawn's ongoing research
 - Evaluation of pollinator trapping methods
 - Periodicity of blooming
 - Estimating pollinator visits
 - Understanding the establishment of native weed species within turfgrass lawns
 - Understanding stakeholder perception

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Ecosystem services

- Processes through which natural ecosystems sustain and fulfill human life
- Benefits people obtain from ecosystems

Image source: <https://ecology.fnl.gov/ecosystem-services/>

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Pollinators?

Image source: <https://www.5timesunion.com>

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Unusual pollinators

Image source: <http://www.discoverconservation.org/venicuo-p-o-guaperotto-the-endemic-skink-of-fernando-de-noronha/>

- The Noronha skink found in Brazil drink the nectar found in the flowers of the leguminous mulungu tree


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WHO ARE POLLINATORS?




Insects


AND




Birds




Rodents




Reptiles



Squirrels




Monkeys



...and even
people pollinate


Sources: European Commission, European Red List, United Nations



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Why are pollinators important?


- Reproduce and produce seeds for dispersal and propagation
- Maintain genetic diversity
- Environmental benefits
 - Carbon sequestration
 - Water and soil



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Why are pollinators important?

- Economic benefits
 - Of the 1400 crops, almost 80% require pollination by animals
 - In the United States alone, pollination of agricultural crops is valued at 10 billion dollars annually. Globally, pollination services are likely worth more than 3 trillion dollars.



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Pollinator habitat

- Plants that will enhance pollinator populations throughout the growing season




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Refuge Lawn



- The USDA-AFRI funded Partnership for Pollinator Friendly Lawns in the Southeastern United States project ("Refuge Lawn" for short)
- Collaboration across University of Georgia, Auburn University, and Mississippi State University




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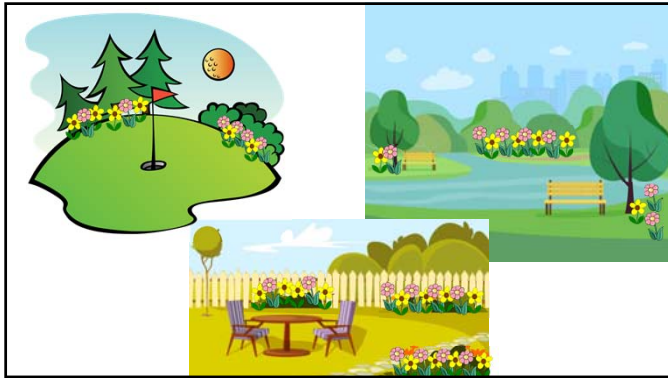
Refuge Lawn



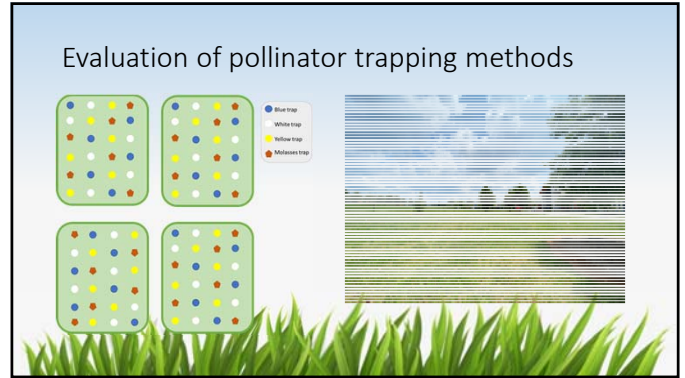
- Principle Investigators:
 - Dr. Gerald Henry
 - Dr. Jay McCurdy
 - Dr. David Held
 - Dr. Edicarlos deCastro



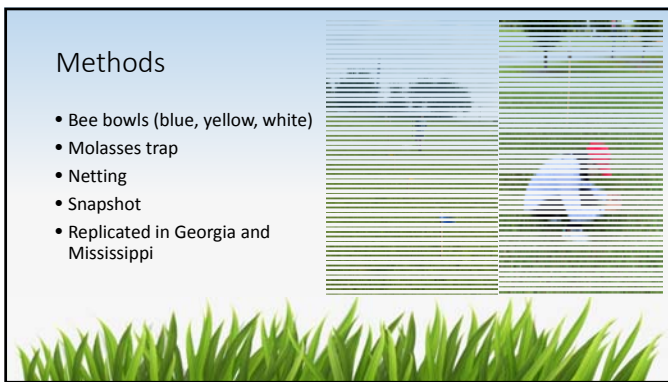

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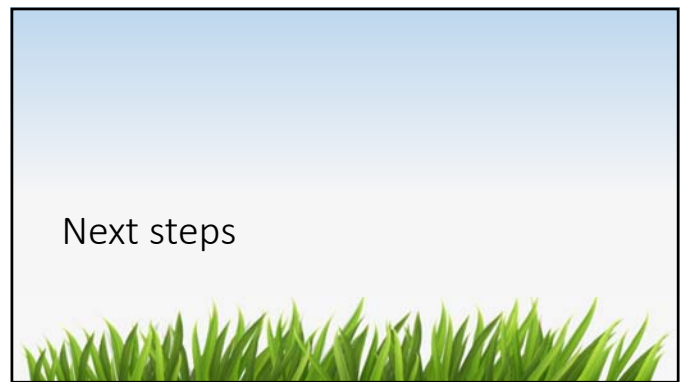
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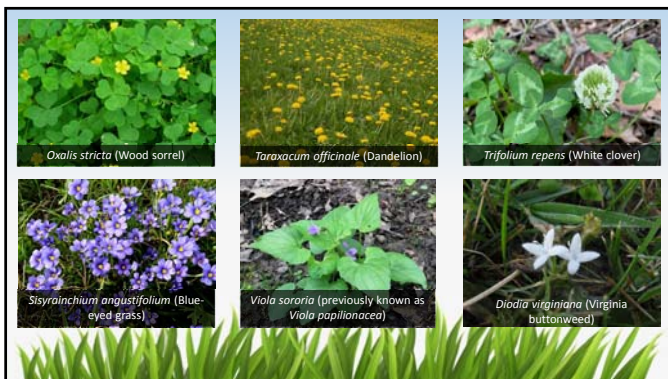
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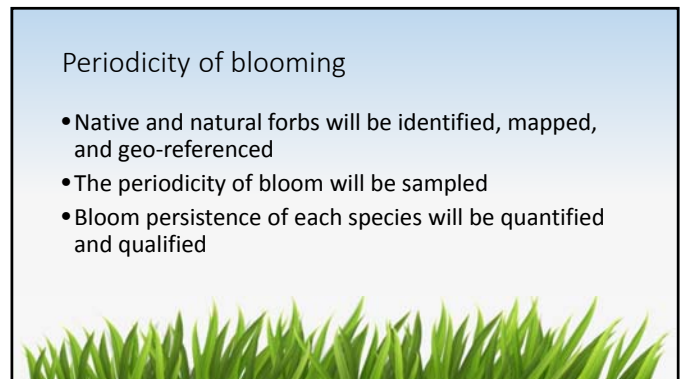
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Estimating pollinator visits

- Pollinator abundance and diversity will be estimated for the chosen native weed species at low input sites (such as municipal parks, research facilities, and home lawns)

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Understanding the establishment of native weed species within turfgrass lawns

Objective:

- What management practices encourage native weed establishment?
- What management practices encourage pollinators?

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Understanding the establishment of native weed species within turfgrass lawns

Objective:

- **What management practices encourage native weed establishment?**
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Interspecific competition between native weeds and turfgrass

- Resource competition
- Interference competition
- Competitive ability in plants:
 - Competitive effects
 - Competitive response

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What management practices encourage native weed establishment?

- Mowing height
- Mowing frequency
- Fertility
- Irrigation frequency

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Understanding the establishment of native weed species within turfgrass lawns


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What management practices encourage pollinators?

- Mowing height
- Mowing frequency
- Fertility
- Irrigation



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Understanding stakeholder perception

- Walking interviews will be conducted with stakeholders to determine their acceptance of the use of native weeds as pollinators and their view on pollinator habitat




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Take home message:

- Pollination is an important ecosystem service
- The USDA-AFRI funded refuge lawn will answer key questions regarding the value of native weeds within southeastern lawns. Stakeholder training and best management practices (BMPs) will be developed to help better manage turfgrass systems to benefit pollinators.






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