Invasive plants: What you need to know!

Acacia auriculiformis

Deah Lieurance
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Invasive species:
an organism (plant, animal, fungus, or bacterium) that is not native and has negative effects on our economy, our environment, or our health.
• Unique geography makes Florida particularly susceptible
• ~85% of all non-native plants enter through Florida
• 1400 non-native species established in Florida
• 1.5 million acres public lands invaded
• Significant impacts to recreation/expensive to manage
• Cost >$50 million/year to control on public land

- Dioscorea bulbifera
- Melaleuca quinquenervia
- Eichhornia crassipes
Biological Traits of Invasive Plants

- Higher relative growth rates
- Longer flowering & fruiting periods
- Greater seed production/Efficient dispersal
- Fast germination/short minimum generation times
- Tolerant to a wide range of habitats/conditions
- Efficient resource utilization

Presence of these traits allows us to identify potential & actual invasive species
Fast Growth
High Reproduction
Tolerance

Photo by Jason Ferrell
Ecosystem Effects

• Erosion/sedimentation
• Changes in water & nutrient cycling
• Altered disturbance regimes
• Reduction of native species
• Increases in resource competition

=Changes in stand structure

http://tame.ifas.ufl.edu/
Ties to Horticulture

60% invasive non-native species linked to the ornamental plant trade, forestry, & agriculture (Grotkopp et al. 2010)

82% of the invasive trees & shrubs in US introduced through horticulture/landscaping (Reichard 1997)

Sprawling over the earth
No one wants to be responsible for the next big (bad) thing…
...but the majority are not bad

Many non-native species are economically beneficial

Weeping bottlebrush  Bougainvillea  Citrus species
What is The Assessment?

• Tool to assess the status of species currently present in the state
  
  o Reduce cost & increase efficiency of management efforts
What is The Assessment?

- Tools to predict the potential invasiveness of species proposed for release
  - Preemptively prevent future invasions
History & Purpose

- Developed in 1999
- UF/IFAS Invasive Plants Working Group
- Descriptions & recommendations for use/management
- 2008 New tools added to evaluate species new to Florida
>850 species evaluated

- **Ok to recommend**: 72.6%
- **Caution/evaluate**: 15.6%
- **Invasive, not recommended**: 6.8%
- **Prohibited**: 4.8%
Status Assessment

• Describe the status of the species
  o Ecological impacts
  o Potential for expanded distribution
  o Management difficulty
  o Economic value

• Incorporates field data from experts
Status Assessment

1. **Not considered a problem** species at this time & may be recommended (reassess in 10 years)

2. **Caution** – may be recommended but manage to prevent escape (reassess in 2 years)

3. **Invasive & not recommended** – may not be recommended (reassess in 10 years)
Factors contributing to conclusions

- Occurs in natural areas
- Alterations in ecosystem processes
- Impacts T&E species
- Difficult to control without damaging native species
- Control costs >$1,500 per acre
- Economic value >$50,000 per year
Predictive Tool

Evaluates species

• New to state

• Causes problems elsewhere

• Proposed for new use

_Urochloa humidicola_ (creeping signal grass)
Predictive Tool

• Series of 49 questions
  o Domestication/cultivation
  o Climate/distribution
  o Weed elsewhere?
  o Weedy traits
  o Plant type
  o Reproduction
  o Dispersal mechanisms
  o Persistence attributes

  History/biogeography

• Scoring
  <1 Low Risk for Invasion
  1-6 Evaluate Further
  >6 High Risk for Invasion

Life history/ecology
Traits increasing invasion risk

- History of invasiveness elsewhere
- Broad climate suitability
- Prolific seed production
- Production of viable seed
- Forms dense thickets
Infraspecific Taxon Protocol

- Cultivars, varieties, or subspecies
- Determine if recommendations for resident species apply
- Request submitted to IFAS Assessment staff
  - Evidence indicating the taxon is a distinct entity
  - Evidence the taxon will behave differently than parent species
Many advertised “non-invasive” cultivars marketed on limited data (e.g., buckthorn, burning bush, Japanese barberry)

Sterility > reduced viability
  - Large reduction in fecundity results in small changes in population growth rates
  - For trees and shrubs 95%–100% reduction in fecundity to reduce the population growth rates
ITP questions

• Will botanists/field personnel be able to distinguish the taxon?
• Regress, revert, or hybridize to characteristics of resident species?
• Invasive traits that cause greater ecological impacts?
• Increased or decreased propagule pressure?
What can you do to help?
Get involved
Cooperative Invasive Species Management Areas

A partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage noxious weeds or invasive species in defined area.

Keys Invasive Species Task Force – partner work day

First Coast ISWG – Tamarisk Work Day
Florida’s CISMAs

By the Numbers:
- 17 CISMAs
- 100% of state
- Average 4 counties per CISMA

Examples of Efforts:
- Workdays
- Workshops
- Prioritization
- Outreach
CISMAs and Master Gardeners

1. Get involved in your local CISMA - bridging efforts of CISMAs with your master gardener volunteer efforts with private citizens [www.FloridaInvasives.org](http://www.FloridaInvasives.org)

2. Make sure private citizens are aware of invasive species identified as high priorities by CISMAs

3. Encourage private citizens to report invasive species at [www.lveGot1.org](http://www.lveGot1.org)
Make informed decisions

Florida-Friendly Landscaping™

- FYN Homeowner Program
  - 9 FFL Principles
  - Your County
  - Official Yard Recognitions
  - Florida-Friendly Living
  - Publications & Training
  - Remove Invasives

- FYN Builder & Developer Program
  - Landscape Architect CEU Classes
  - Educational Services
  - Designations & Awards

Florida-Friendly Landscaping™ (FFL) means using low-maintenance plants and environmentally sustainable practices. Learn how you can have a beautiful landscape that could save you time, energy and money while protecting our future. Find out more from your county's FYN program or from this web site and the FloridaYards.org companion web site of the FDEP Springs Initiative. Read more about the program...

Find the Right Plant Anytime, Anywhere

$1.99 a year

Go to app
http://assessment.ifas.ufl.edu

@IFASassessment
UF IFAS Assessment

Special thank you to Tom Reno Designs

THE IFAS ASSESSMENT IS FUNDED IN PART BY
How and why are species assessed?

The UF/IFAS Assessment of Non-Native Plants in Florida’s Natural Areas uses literature-based assessment tools to evaluate the invasion risk of non-native species that occur in the state, new species proposed for introduction, and novel agricultural and horticultural selections, hybrids, and cultivars. Our overarching goal is to reduce non-native plant invasions in Florida and throughout the Southeast US for protection of natural and agricultural areas.
(849 results)  ALL ASSESSMENTS

- Abelia x grandiflora
- Abrus precatorius
- Abutilon hirtum
- Abutilon megapotamicum
- Acacia auriculiformis
- Acacia ameroceae
- Acacia setosa
- Achyranthes aspera
- Acrecentia tatai
- Adenanthos parviflora
- Agave americana
- Agave desmettianna

Filter Results  Search by species name

Zones
- Central
- North
- South

Conclusion Type

Origin

Growth Habit

Tool Used
- Infra-specific Taxon Protocol
- Predictive Tool
- Status Assessment
**COMMON NAMES**
Beach vitex, Round-leaved chaste tree, Single-leaf chaste tree, Chasteberry, Monk's pepper

**SYNONYMS**
*Vitex ovata*, *Vitex nepensis*, *Vitex trifolia var. obovata*, *Vitex trifolia var. ovata*, *Vitex trifolia var. unifoliolata*, *Vitex trifolia var. simplicifolia*

**CONCLUSIONS BY ZONE**

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<tr>
<th>CENTRAL, NORTH, SOUTH</th>
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<td><strong>Invasive</strong></td>
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- For Status Assessments:
  - Invasive and not recommended by IFAS. Will be reassessed every 10 years. Specified and limited uses may be considered by the IFAS Invasive Plants Working Group.

- For the Predictive Tool:
  - Practiced to be invasive. In particular cases, the species may be considered for use under specific management practices that have been approved by the IFAS Invasive Plant Working Group.

  Assessment Status Complete

**GROWTH HABIT**
Shrub

**ORIGIN**
Africa, Asia Temperate, Asia Tropical, Austroasia, Pacific

**TOOL USED**
Predictive Tool

**PREDICTIVE TOOL SCORE**
21

**ASSESSMENT DATES**
2015

**DETAILED DATA**
[vitex_rotundifolia_wra.pdf](#)

**LINKS**
USDA Plants Database
EDDOrganS
Atlas of Florida's Vascular Plants