

# Invasive plants: What you need to know!



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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.**



USDA/Flickr



UGA5275066

- 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* •

UGA0002100

# 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



<http://wildlifeofhawaii.com/flowers/698/schinus-terebinthifolius-brazilian-peppertree/>



[http://pesticide.ifas.ufl.edu/Lygodium/images/photo\\_gallery/fertile-leaf.jpg](http://pesticide.ifas.ufl.edu/Lygodium/images/photo_gallery/fertile-leaf.jpg)

# Efficient Dispersal



Andres Cadena Mireles



USDA-ARS



<http://aquaplant.tamu.edu/plant-identification/visual-index/water-hyacinth/>

# 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**



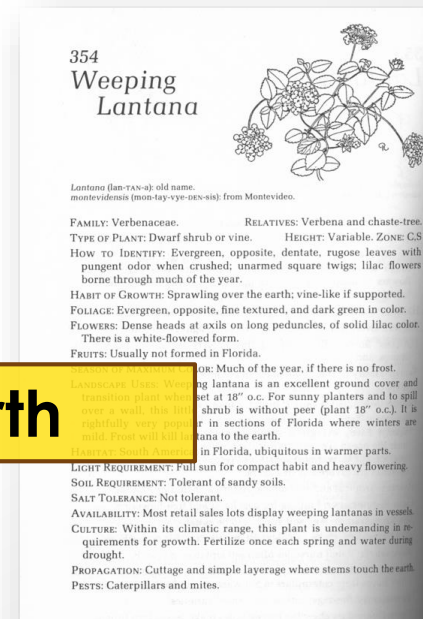
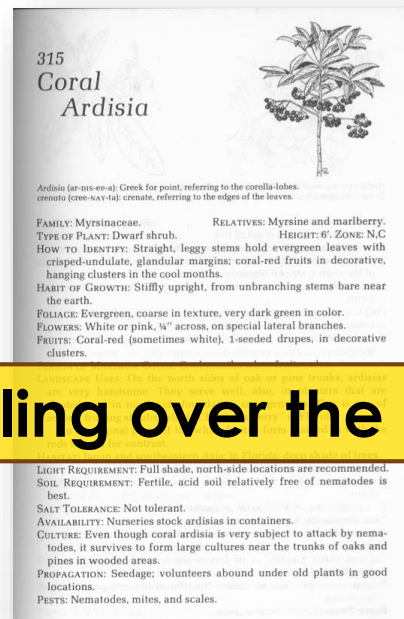
# Ties to Horticulture

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...



Photo by Scott Zona



Photo



5457486



<http://www.onlineplantguide.com>



UGA0001063



# ...but the majority are not bad

Many non-native species are economically beneficial



[http://www.cuyamaca.net/oh170/Thumbnail\\_Pages/Calistemon\\_viminalis.asp](http://www.cuyamaca.net/oh170/Thumbnail_Pages/Calistemon_viminalis.asp)

Weeping bottlebrush



[http://upload.wikimedia.org/wikipedia/commons/9/91/Bougainvillea\\_glabra.JPG](http://upload.wikimedia.org/wikipedia/commons/9/91/Bougainvillea_glabra.JPG)

Bougainvillea



<http://www.agricultureguide.org/planting-citrus-trees-where-when-and-how/>

Citrus species

# What is The Assessment?

- Tool to assess the status of species currently present in the state
  - Reduce cost & increase efficiency of management efforts

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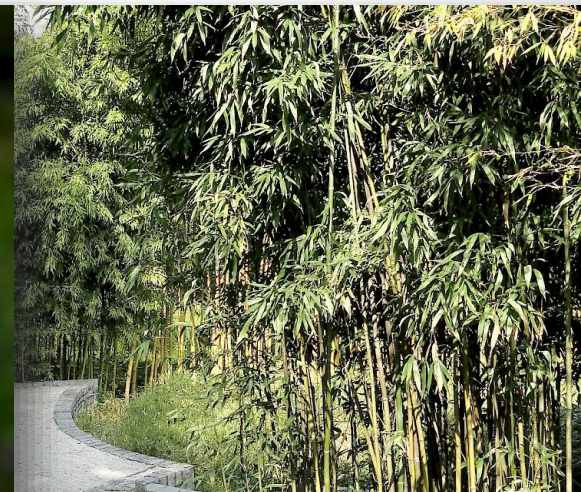


Acacia  
*auriculiformis*  
by Ann Murray  
University of Florida



# 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

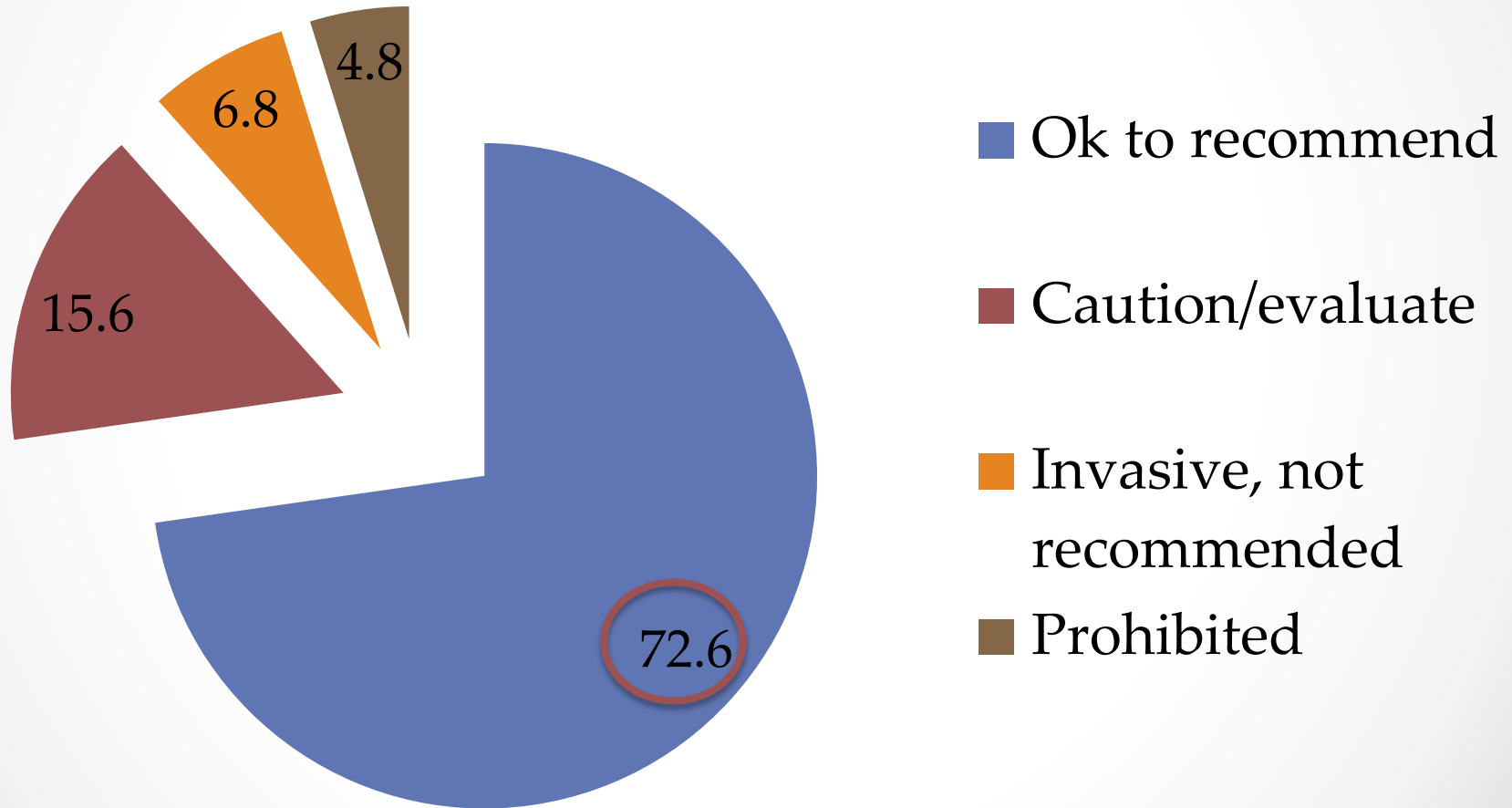


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IFAS EXTENSION

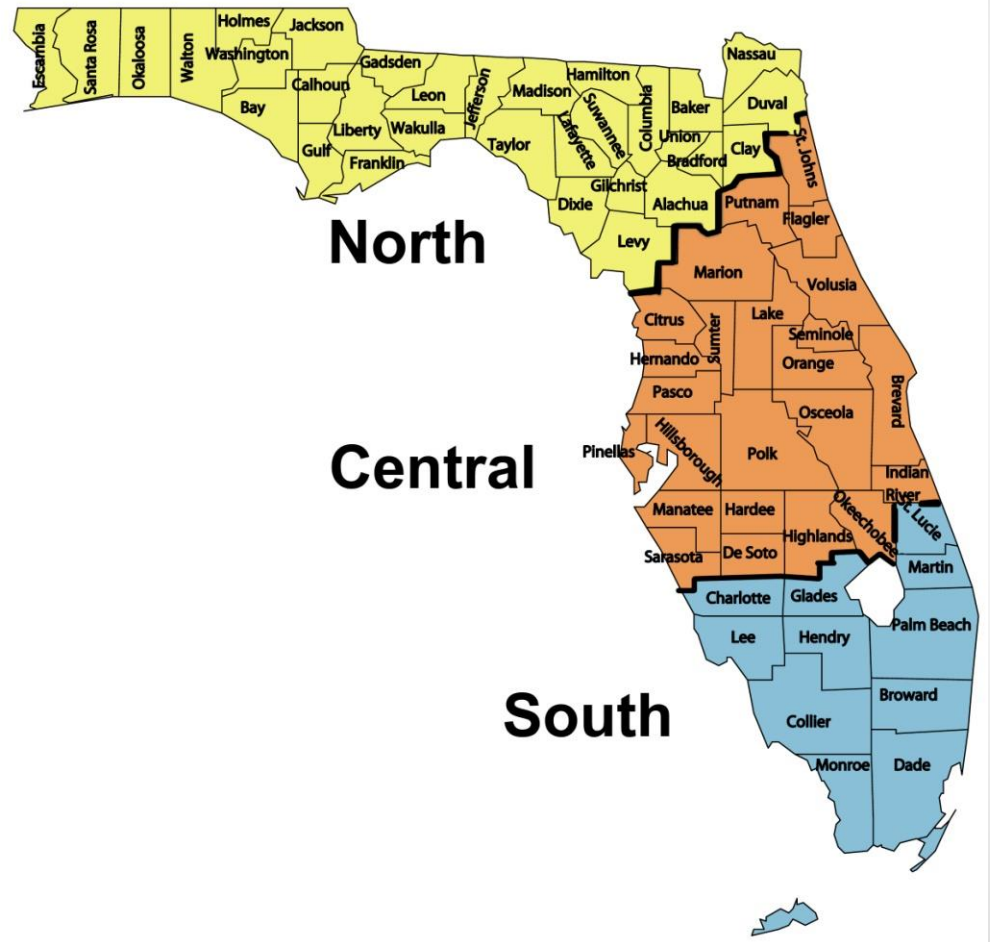
# >850 species evaluated





# Status Assessment

- Describe the status of the species
  - Ecological impacts
  - Potential for expanded distribution
  - Management difficulty
  - 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



# Predictive Tool

- Series of 49 questions

- Domestication/cultivation
- Climate/distribution
- Weed elsewhere?



**History/biogeography**

- Weedy traits
- Plant type
- Reproduction
- Dispersal mechanisms
- Persistence attributes



**Life history/ecology**

- Scoring

**<1 Low Risk for Invasion**

**1-6 Evaluate Further**

**>6 High Risk for Invasion**

# Traits increasing invasion risk

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



# Intraspecific 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



# Will the Use of Less Fecund Cultivars Reduce the Invasiveness of Perennial Plants?

TIFFANY M. KNIGHT, KAYRI HAVENS, AND PATI VITT

- 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



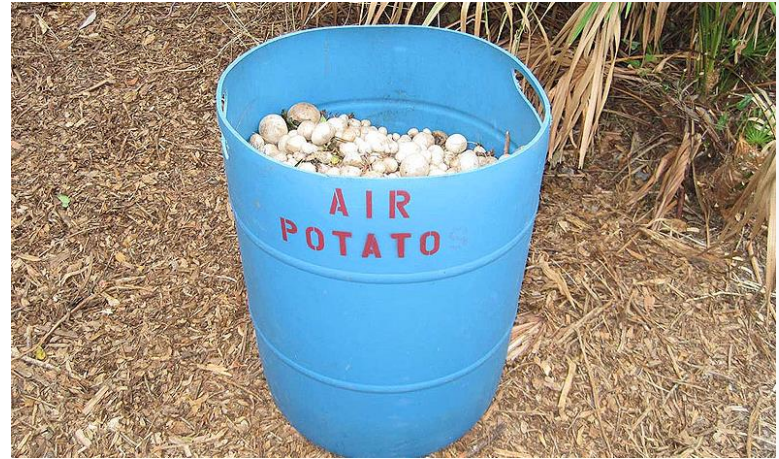
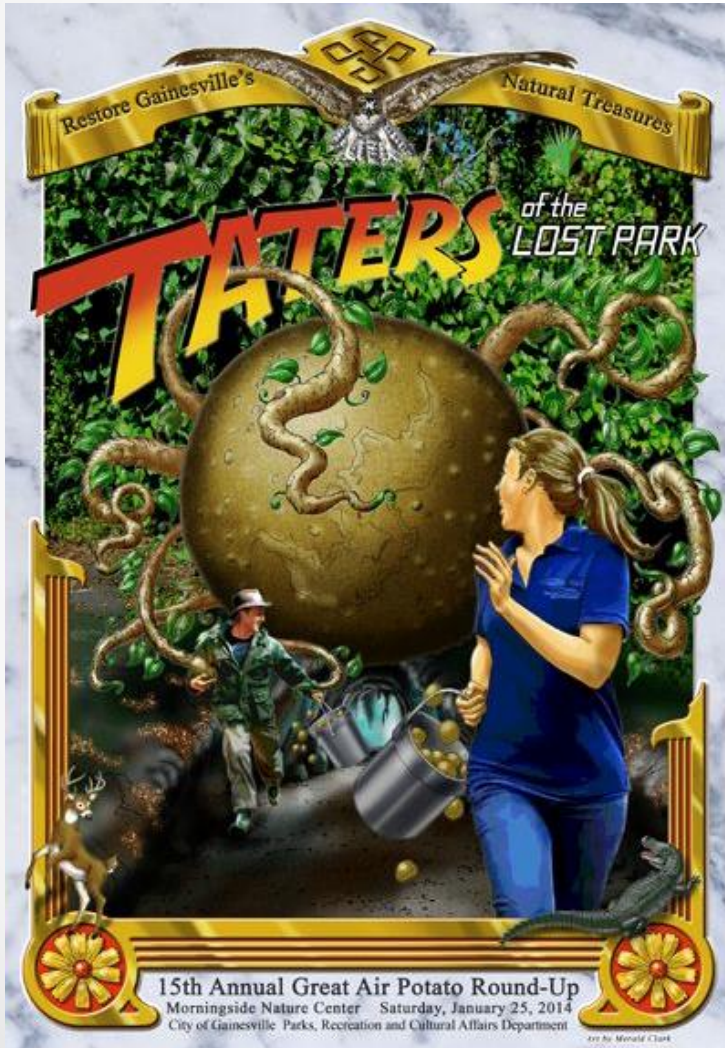
# ITP questions

- 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

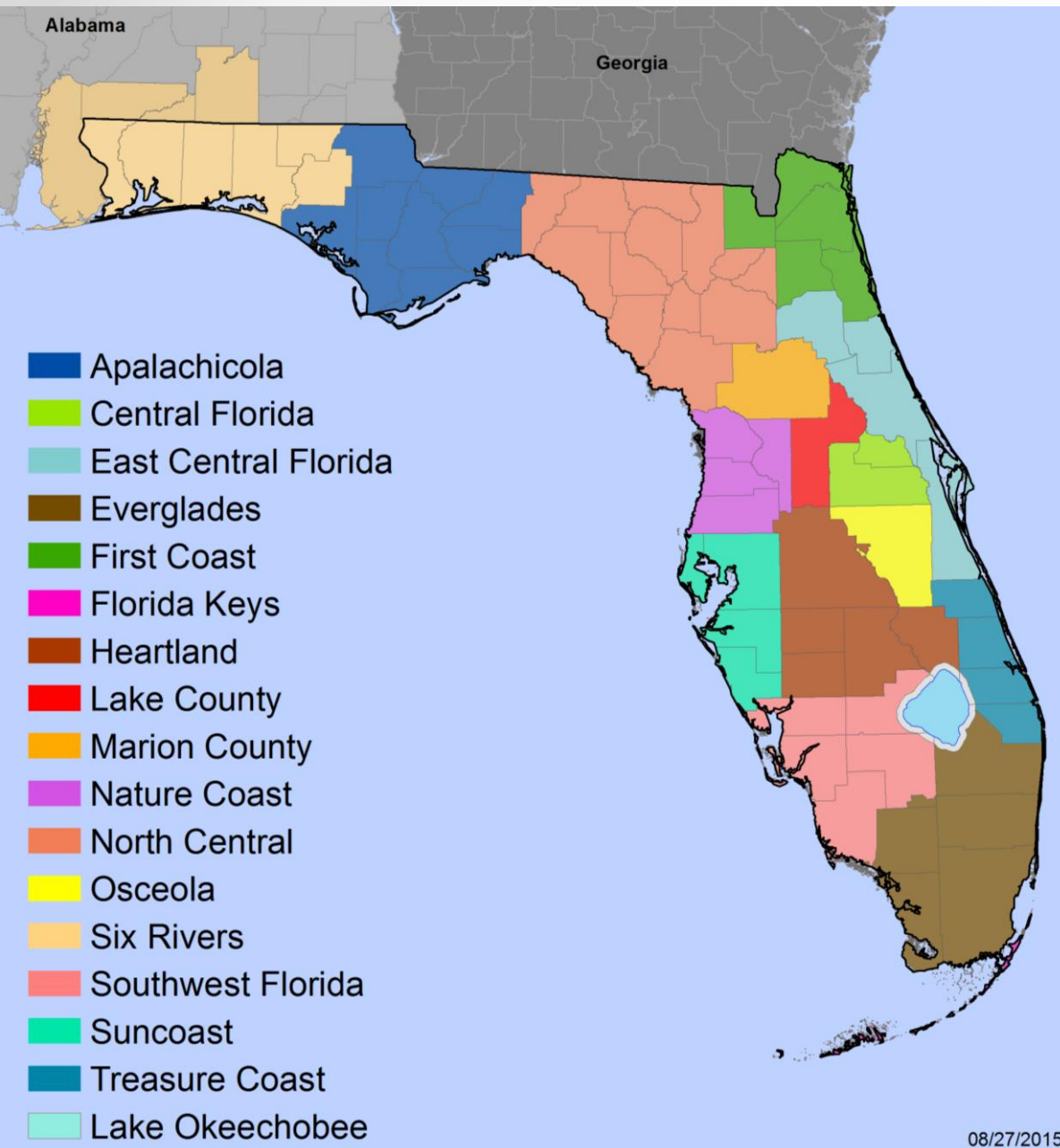
# Florida's CISMAs

## 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.IveGot1.org](http://www.IveGot1.org)

# Make informed decisions

**Florida-Friendly Landscaping™**

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**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  
Recognition & Awards

**Florida-Friendly Landscaping™ PROGRAM**

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<sup>99</sup> a year

Go to app →

<http://assessment.ifas.ufl.edu>

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UF IFAS Assessment

Special thank you to Tom Reno Designs

THE IFAS ASSESSMENT IS FUNDED IN PART BY

**UF** | IFAS Extension  
UNIVERSITY of FLORIDA



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Type here to search by species name



*Acacia auriculiformis*, earleaf acacia — Wikimedia Commons

NOT SURE WHERE TO START?

[View All Assessments](#)

## 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.

[Learn More](#)

### RECENT ASSESSMENT



*Urochloa humidicola*

creeping signal grass, koronivia grass, tully

Apply Filters

ALL ASSESSMENTS

ZONES | 1 SELECTED

 Central North South

CONCLUSION TYPE

ORIGIN

GROWTH HABIT

TOOL USED | 1 SELECTED

 Intraspecific Taxon Protocol Predictive Tool Status Assessment

(849 RESULTS) ALL ASSESSMENTS



*Abelia x grandiflora*  
Glossy abelia, Largeflower abelia



*Abrus precatorius*  
Rosary pea



*Abutilon hirtum*  
Indian mallow



*Abutilon megapotamicum*  
Trailing abutilon



*Acacia auriculiformis*  
Earleaf acacia



*Acalypha amentacea subsp wilkesiana*  
Copperleaf, Jacob's coat, Wilkes' copperleaf



*Acalypha setosa*  
Cuban copperleaf



*Achyranthes aspera*  
Devil's horsewhip



*Acrocomia totai*  
Gru-gru palm



*Adenanthera pavonina*  
Red Sandalwood



*Agave americana*  
American century plant, Century plant



*Agave desmettiana*  
Dwarf century plant

# Vitex rotundifolia

SHARE   



## COMMON NAMES

Beach vitex, Round-leaved chaste tree, Single-leaf chaste tree, Chasteberry, Monk's pepper

## SYNONYMS

*Vitex ovata*, *Vitex repens*, *Vitex trifolia* var. *obovata*, *Vitex trifolia* var. *ovata*, *Vitex trifolia* var. *unifoliolata*, *Vitex trifolia* var. *simplicifolia*

## CONCLUSIONS BY ZONE

### CENTRAL, NORTH, SOUTH

**Invasive**

#### 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:

Predicted 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, Australasia, Pacific

## TOOL USED

Predictive Tool

## PREDICTIVE TOOL SCORE

21

## ASSESSMENT DATES

2015

## DETAILED DATA

 [vitex\\_rotundifolia\\_wra.pdf](#)

## LINKS

[USDA Plants Database](#)  
[EDDMapS](#)  
[Atlas of Florida's Vascular Plants](#)