Update from the UF/IFAS Assessment of Non-native Plants in Florida’s Natural Areas

Deah Lieurance
• Unique geography makes Florida susceptible
• ~85% of all non-native plants enter through Florida
• >1400 non-native species established
• Significant impacts to recreation
• Expensive to manage
e.g., herbicide application, biocontrol, mechanical control

- **Pre-introduction screening, border security**
- **Containment**
- **Eradication**
- **Prevention**

- Invasive species widespread and abundant; Long-term management aimed at population suppression and asset protection
- Rapid increase in distribution and abundance; eradication unlikely
- Small number of localized populations; eradication possible

**THE INVASION CURVE**

- **Asset Based Protection & Long-term Management**

**Control Costs**

**Area Infested**
What is The Assessment?

1. Predictive Tool to evaluate invasion risk *before* species enters the state
2. Status Assessment to evaluate species *present* in the state
3. Infraspecific Taxon Protocol to evaluate invasion risk of cultivars

*Multiflora rose* (multiflora rose)  
*Indigofera hirsuta* (hairy indigo)  
*Nandina domestica CV.* (harbor dwarf)
History & Purpose

- 1999 UF/IFAS Invasive Plant Working Group
- Recommendations for use & management faculty/staff
- Currently, fulfilling a research & extension role
- Recognized nationally & internationally
1. Predictive Tool

- Weed risk assessment (WRA) modified for Florida
- Evaluates species
  - New to state
  - Causes problems elsewhere
  - Proposed for new use
- >130 species evaluated

- FDACs biomass planting rule

*Vitex rotundifolia* (Beach vitex)

High Risk
2. Status Assessment

- Evaluates species *already* in Florida
- Describe the status of the species
  - Ecological impacts
  - Potential for expanded distribution
  - Management difficulty
  - Economic value
- Incorporates field data from experts
2. Species Re-assessments

We need your help:

**Cynodon dactylon**-Bermuda grass
ALL ZONES

**Medicago polymorpha**-Burr clover
N, C

**Syzygium cumini**-Java plumb
C

**Eulophia graminea**-Ground orchid
C, S (N if present)

**Acacia auriculaformis**-Earleaf acacia
C, S
3. Infraspecific Taxon Protocol

- Cultivars, varieties, or sub-species

- 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

Ruellia simplex
(Mexican petunia)

Ruellia simplex CV.
(Mayan purple)

Mayan pink
Mayan white
Mayan purple
Conclusions

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

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

3. **Invasive & not recommended (or High Risk)** (reassess in 10 years)
Results

857 species evaluated

- **Ok to recommend/Low Risk**: 72.7%
- **Caution/Evaluate**: 15.6%
- **Invasive, not recommended/High Risk**: 4.8%
- **Other**: 6.8%
Research example 1:
Predicted versus actual invasiveness of climbing vines in Florida’s natural areas

- 84 vines in Florida
- 15 non-invaders were predicted high risk (i.e., false positive)
- 4 invaders were predicted to be low risk (i.e., false negative)
- Residence time highly correlated to invasion status
Research example:
Invasion risk of clumping and running bamboo species in the continental United States
Research example: Applications

- Predicted to be a high risk of invasion
- Running rhizomes
- Evidence of invasiveness elsewhere
- Currently being promoted for mass planting in Florida
Future research

• Research on fate of abandoned agricultural lands
  • Invasion risk of alternative crops being promoted to citrus

• Relationship between residence time & the invasion status
  • Assessment dataset provides information on >600 species
Stay tuned for new additions!!

• Currently completing backlog of WRAs
  
  *Agave angustifolia* (Century plant)
  *Morrenia odorata* (Latexplant, strangler vine)
  *Jatropha gossypiifolia* (Bellyache bush)

• Collecting data to complete 31 new assessments
  
  *Praxelis clematidea* (Praxelis?)
  *Cleome hassleriana* (Spider flower)
  *Ludwigia peruviana* (Peruvian water primrose)
  *Pyrus calleryana* (Callery pear)
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