



Florida Department of Environmental Protection

Invasive Plants of NE Florida

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What is an Invasive Plant?

- A species of plant that usually comes from some other place* (state, country, continent, or ocean) and becomes a problem in its new location by impacting human health, the economy and/or the environment.
- Invasive, noxious, pest plant, exotic.....

*** Not all non-native species are considered invasive ***



Some definitions...

- **Exotic** - from another country or region
- **Introduced** - to place an individual species of plant or animal in a new habitat or environment
- **Established** - introduction resulting in continuation or permanence of a population
- **Invasive** – aggressive expansion of an established population which outcompetes native organisms



The Eco-nomics

- Florida's ecosystem deterioration due to invasive plants is greater than all other states with the exception of Hawaii. (TNC)
- 42% of the nation's endangered species have declined as a result of encroaching invasive species (USFWS)
- It is estimated that more than **1.7 million** acres of Florida's remaining natural areas have become infested with non-native plant species. (USFWS)
- The cost of managing invasive plants in Florida is estimated at **\$100 million** each year. (TNC)



How Do Invasive Plants Spread?





Some general characteristics...

- Weather tolerant: drought, heat, cold
- Can tolerate many soil types
- Fast growing
- Prolific reproducer (by seed, or vegetatively)
- Lack of natural predators in introduced environment
- Allelopathic



One definition:

Allelopathy - refers to the beneficial or harmful effects of one plant on another by the release of chemicals from plant parts by leaching, root exudation, residue decomposition and other processes in both natural and agricultural systems. It can affect many aspects of plant ecology including occurrence, growth, plant succession, the structure of plant communities, dominance, diversity, and plant productivity.



Some categories to keep in mind...

- FLEPPC CAT I: Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives.
- FLEPPC CAT II: Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species

But.....



FLEPPC has no teeth





Regulations

- **Federal Noxious weed act of 1974** - *Federal Noxious Weed List. i.e.* Hydrilla, Cogon Grass, Melaleuca, Tropical Soda Apple
- **(FDACS) Florida Noxious Weed List: 5b-57.007** - Plants require a permit to possess, restricted for sale or commercial use. Australian Pine, Chinese Tallow, Air Potato
- **(DEP) F.A.C. Chapter 62C-52. Aquatic Plant Rule** Water Hyacinth, Brazilian Pepper, Australian Pine, Melaleuca



Invasive Plant Management Strategies

- **Prevention!!!**
- **Cultural** – manipulation of the habitat to discourage the invasive plant. i.e. burning, flooding, supporting the native vegetation.
- **Physical or Mechanical** – physically removing the plant by pulling or using a mechanical method such as mowing.
- **Biological** – introducing a natural predator of the problem species to control it. This can be an animal, pest, or pathogen.
- **Chemical** – the use of herbicides to cause mortality to the targeted invasive plant.



- Land managers must assess sites and decide on the most effective and ecologically sound strategy.
- Often involves an integration of strategies. Other important considerations are seasonality and weather.



Early Detection Rapid Response (EDRR)

- Our goal for invasive species is to EDRR
- New sightings can be reported
 - EDDMaps (eddmaps.org) – For anyone
 - FNAI – For land managers and professionals
 - FCIWG – Contact FCIWG for site assessment
- Find, confirm and treat



Old World Climbing Fern (*Lygodium microphyllum*)

- New EDRR – 2 in Duval, 2 in St. Johns and 1 in Putnam
- Blankets entire tree islands and even climbs over sawgrass in standing water. Poses management problems for both wildfires and prescribed burns because growth into canopy creates an avenue for fire to spread.
- Origin – Africa to Southeast Asia
- On Federal and Florida Noxious Weed Lists



Old World Climbing Fern (*Lygodium microphyllum*)

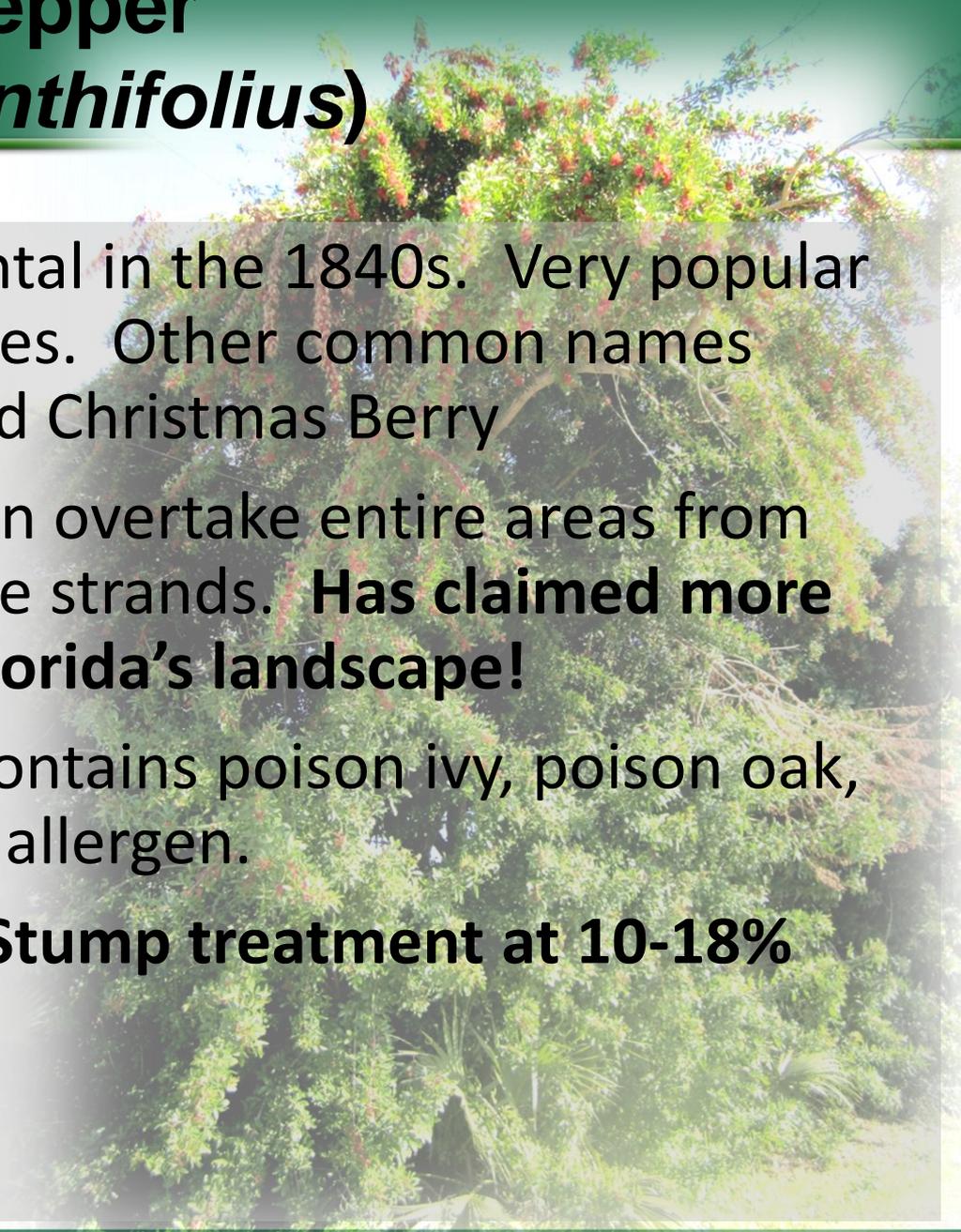
- OWCF is a fern with climbing fronds
- Each frond can become up to 100 feet long
- Vegetative leaflets are oblong and 2-5 inches long
- Reproductive leaflets are similar in size but are fringed with tiny rolled lobes containing sporangia
- Spore are carried by wind or rain and can germinate in 6-7 days and are long lasting with 5 month old spores having an 80% germination rate
- Report through the First Coast Invasive Working Group for treatment





Brazilian Pepper (*Schinus terebinthifolius*)

- Imported as an ornamental in the 1840s. Very popular for its seasonal red berries. Other common names include: Florida Holly and Christmas Berry
- Extremely aggressive, can overtake entire areas from roadsides to coastal dune strands. **Has claimed more than 700,000 acres of Florida's landscape!**
- Family: Anacardiaceae contains poison ivy, poison oak, poison sumac, potential allergen.
- **Triclopyr herbicide Cut Stump treatment at 10-18% within 10 minutes**





Brazilian Pepper (*Schinus terebinthifolius*)

- Evergreen shrub/tree, multi-stemmed trunks and arching branches create a tangled mess
- Leaves alternate, with 7-9 opposite leaflets
- Prohibited in Florida. On FDACS Noxious Weed List & DEP Aquatic Plant Rule



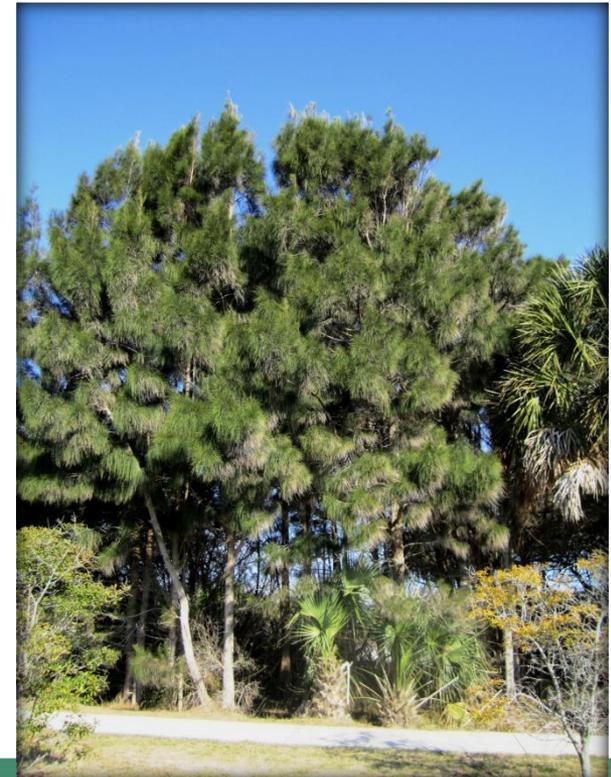
Native Look-alike
Yaupon Holly





Australian Pine (*Casuarina spp.*)

- Introduced to Florida in the late 1800s, planted extensively in the Southern half of the state as windbreaks and shade trees.
- With rapid growth, producing dense shade, and secreting allelopathic compounds it is very efficient at replacing native vegetation.
- Can encourage erosion and topples easily in high winds due to shallow root system.
- Disturbs turtle and crocodile nesting sites.
- Has been found as far north as Cedar Key and St. Augustine
- Evergreen tree, not a true pine, leaves reduced to tiny scales.
- Prohibited in Florida. On FDACS Noxious Weed List & DEP Aquatic Plant Rule
- Triclopyr herbicide cut stump treatment





Beach Vitex (*Vitex rotundifolia*)

- Native to Asia
- Introduced in 90s for erosion control
- Can disturb sea turtle nesting habitat
- Rounded leaf with grey underside
- Long runners
- FLEPPC Cat 1





Salt Cedar (*Tamarix canariensis*)

- Native to Africa and Europe
- Has been found on spoil islands
- Can disturb natural hydrology
- Multi-trunked, deciduous shrub up to 5 m tall
- The leaves are minute and scale like, closely resembling the reduced leaves of cedar trees (*Juniperus* spp.)
- Turn golden-orange in the fall.





Tropical Soda Apple (*Solanum viarum*)

- Native to South America
- Flatwoods and pastures
- Causes issues in pastures and rangelands
- Identified by the large thorns on leaves and stems
- Round 1" fruit watermelon colored to yellow – contains ~400 seeds
- FLEPPC Cat 1





Skunk Vine (*Paederia foetida*)

- Native to Asia
- Florida Noxious Weed List
- Will grow in any type of forest
- Creates dense canopies that smother natives
- Leaves are opposite (rarely in whorls of 3), oval to lance-shaped, and often lobed at the base
- Leaves have bad odor when crushed





Kalanchoe – Mother of Millions (*Kalanchoe xx houghtonii*)

- Currently awaiting FLEPPC listing
- Has been disturbing beach dunes and coastal sites
- Reproduces vegetatively and by seed
- Sends up stalk of red bell shaped flowers
- Each leaf produces leaflets at every tooth which grow into new plant





Coral Ardisia (*Ardisia crenata*)

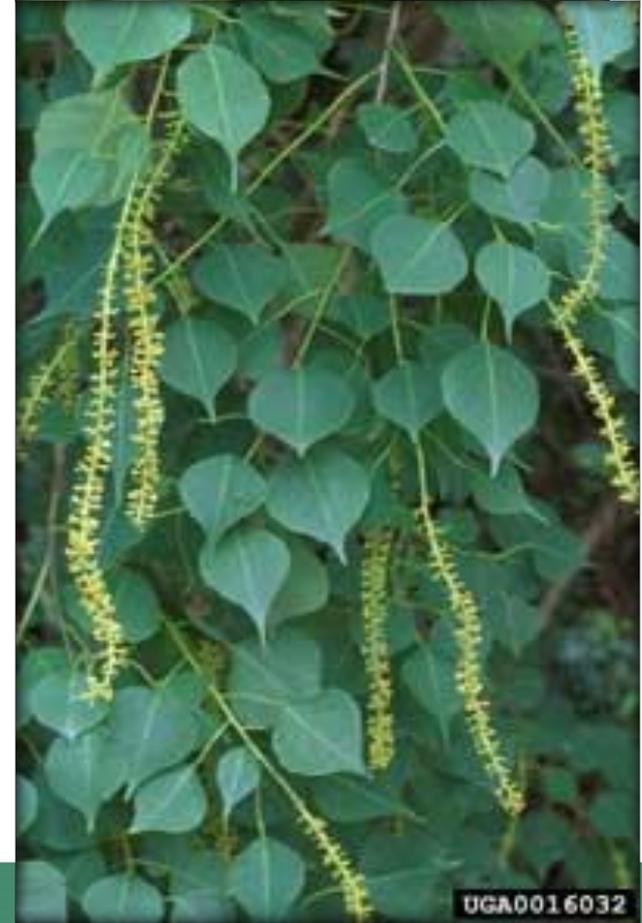
- Pending Approval on Florida Noxious Weed List
- Brought from Japan and Asia as an ornamental
- High density growth & prolific seeding natural areas has potential to shade out native seedlings and understory plants.
- Shrub up to 6 feet tall grows in clumps can be multi-stemmed
- Dark green leaves are glossy, 8 inches long and scalloped
- Hand pull or triclopyr based Foliar application at 5%





Chinese Tallow (Popcorn) Tree (*Sapium sebiferum*)

- Imported from China in the 1700's and then in significant numbers in the 1900s as a potential seed oil crop. Recommended by the USDA during the 1920s to 1940.
- Grows in wet areas and in well-drained uplands, prolific seeder and allelopathic.
- Deciduous tree, leaves – simple, alternate
- Listed as a Noxious Weed by FDACS
- Triclopyr herbicide cut stump treatment





Giant Reed (*Arundo donax*)

- Probably first introduced to California in the 1800s.
- Many uses: Ornamental, widely planted for erosion control, instruments, and a potential bio-fuel source
- It is considered a major invasive in the Southwest. Increases fire threat and interferes with flood control among other negative impacts.
- Reproduction is primarily vegetative, through rhizomes. It does produce seeds but they are rarely viable.
- Glyphosate 2-5% Foliar during flowering!





Japanese Climbing Fern (*Lygodium japonicum*)

- Introduced as an ornamental in the 1930s.
- Fern with climbing, twining fronds. Grows as a vine
- Can grow in sun or shade, damp, disturbed or undisturbed and forms living walls, shading out seedlings and other native vegetation
- Spread very easily by tiny spores
- A major problem in pine plantation and the pine straw industry.
- Prohibited in Florida
- Glyphosate herbicide foliar spray



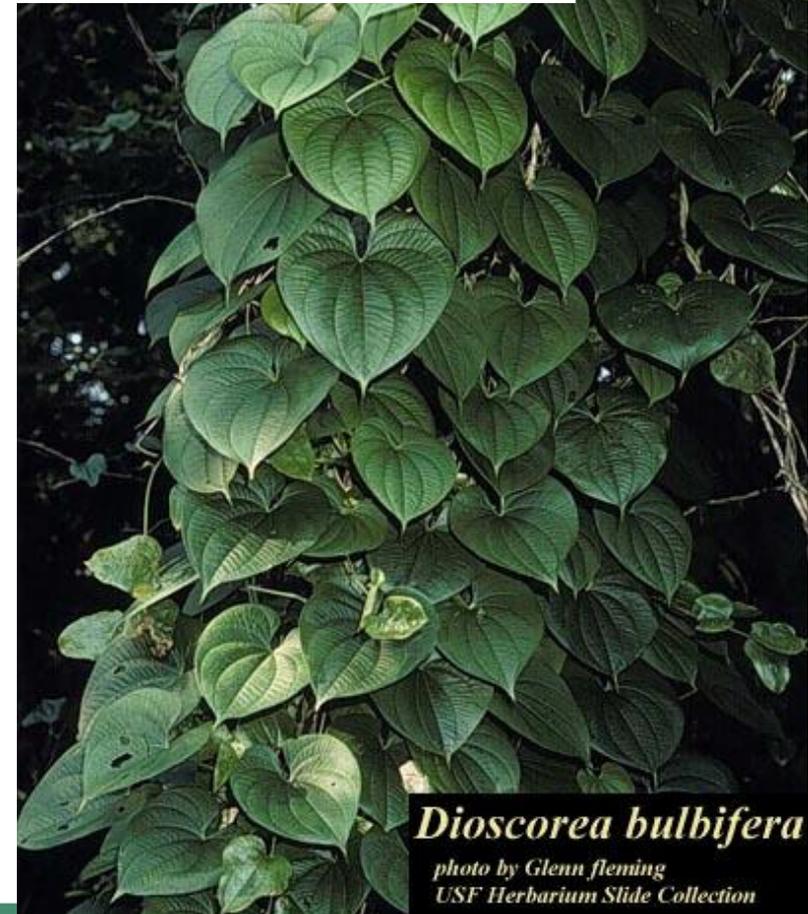
Native Look-alike Peppervine





Air potato (*Dioscorea* spp.)

- Introduced to the Americas from Africa during the slave trade. Introduced to Florida in 1905 as a USDA sample sent to a horticulturalist who remarked on its extremely aggressive tendencies. It is described in 1971 as unwanted but being grown ornamentally.
- Vigorously twining herbaceous vine, with aerial and ground tubers
- Once established it can very quickly overtake a canopy of trees, forest fragmentation also allows the vine to spread.
- Produces prolific aerial tubers which grow into new plants and large underground tubers make it difficult to control
- Listed as a Noxious Weed in Florida
- Air potato beetle bio control and/or pick up potatoes





Mimosa, Silk Tree (*Albizia julibrissen*)

- Introduced from Asia in 1745 as an ornamental.
- Deciduous leguminous tree, feathery leaves with showy pink blossoms. Flowers in May-July
- Can grow in a variety of soils, produce large seed crops, grow rapidly, and re-sprout when damaged.
- Reproduces both vegetatively and by seed. Seeds can be viable for up to 5 years.
- FLEPPC CAT 1
- Triclopyr herbicide cut stump treatment





Cogon Grass

(Imperata cylindrica)

- Originally introduced as **packing material** in a shipment of plants from Japan to Alabama in 1911 and again into Mississippi as a **forage crop** before 1920. Introduced to Florida from SE Asia in the early 1900s, initially for **soil stabilization**.
- Now found throughout the SE and considered one of the ten worst weeds in the world
- Aggressive, colony forming dense perennial grass.
- Can flower year round in Florida, seeds in May - June
- Easily invades right-of-ways, new forest plantations, open forests, fields and pastures. Invades dry to moist natural areas including habitats of federally listed endangered plant species
- Promoted by burning, and poses a severe fire hazard because it is highly flammable and will burn very hot.
- Federally Listed

<http://www.cogongrass.org/>



Cogon Grass (*Imperata cylindrica*)





Asparagus Fern (*Asparagus aethiopicus*)

- Native to South Africa, it is widely used as a ground cover and in container gardens.
- Evergreen perennial herb (not a fern!) belongs to the Liliaceae family.
- Easily escapes cultivation, berries spread by birds and other wildlife.
- Can establish itself in dunes and natural areas and quickly choke out native vegetation.
- FLEPPC CAT II

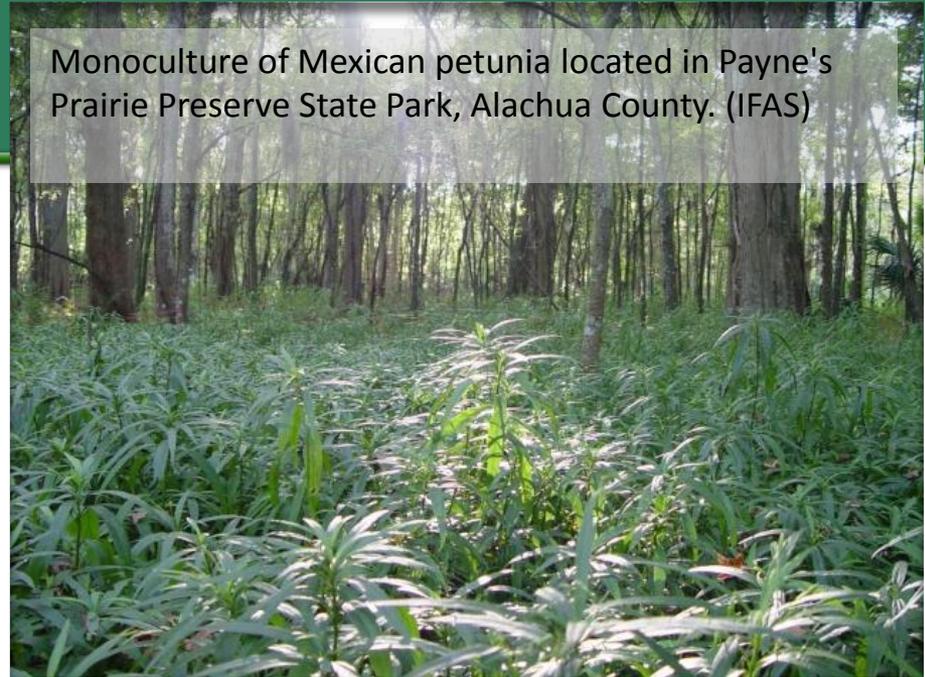




Mexican Petunia (*Ruellia sp.*)

- Introduced sometime in the 1930s, commonly sold as a hardy ground cover or edging plant.
- Has naturalized in various natural communities throughout Florida, including Pine flatwoods, hardwood hammocks, fresh and salt water marshes, and rivers and springs.
- Spreads very quickly, many gardeners struggle to remove or just control it.
- Dense stalks can grow up to 3-4 ft.
- Is a prolific seeder and lacks germination requirements.
- FLEPPC CAT 1

Monoculture of Mexican petunia located in Payne's Prairie Preserve State Park, Alachua County. (IFAS)



Native Look-alike
Ruellia caroliniensis





Lantana (*Lantana camara*)

- Most studied weed in the world
- Native to the West Indies, became common to the ornamental trade worldwide in the 1800s.
- Present as a weed in up to 47 countries.
- Has been known to seriously alter and displace native ecosystems.
- Highly toxic plant to grazing animals (banned in much of Africa to protect valuable livestock), and consumption of unripe berries has caused death in children
- There are over 100 forms, cultivars, and hybrids available
- Multistemmed, deciduous shrub. Leaves opposite
- FLEPPC CAT 1





Native Lantana ???

Lantana depressa
Photo and © by Roger Hammer
Wildflowers of the Everglades

- ***The old rule of thumb
no longer applies***
- Lantana species native to Florida:
 1. *Lantana canescens*
 2. *Lantana involucrata*
 3. ***Lantana depressa***
- The introduced species of Lantana have extensively hybridized with all 3 distinct endemic varieties of *L. depressa*.
- May be labeled native, but is probably not...AFNN no longer lists *L. depressa* as available in the trade industry
- Roger Hammer's, "The Lantana Mess"

<http://www.afnn.org/docs/lantanamesshammer04.pdf>



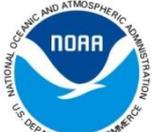
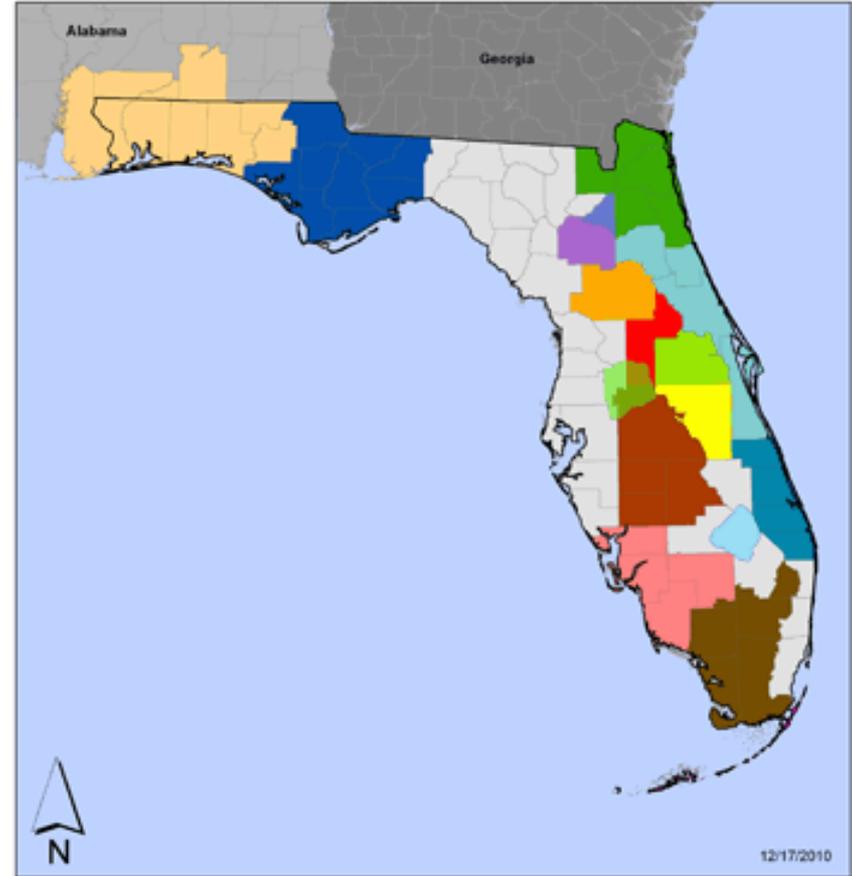


So now what ???



The Florida Invasive Species Partnership

<http://www.floridainvasives.org/>





EDDMaps (I've Got 1 App)

- Create a login and report invasive species
- Check maps or set alerts for new species in your area
- All reports are verified

HalloWeed Count

- Contact the FCIWG to participate
- Go to assigned area, look for and report EDRR species



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Questions?

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