

Early Detection - Rapid Response (EDRR)



Suncoast CISMA June Workshop

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What is EDRR?

- Early detection-find it early.
- Rapid response-contain it before the problem gets bigger.
- Importance
 - Prevent widespread infestation.
 - Florida climate favors rapid spread and growth of plants.
 - Potential for invasion of sensitive and rare habitats.
 - Prevent widespread damage invasive plants can cause-blocked waterways, altered fire behavior, effects on habitat, and property values.
 - More efficient use of time, effort, and money.



<https://treasurecoastnatives.wordpress.com/2017/06/23/you-cant-keep-a-good-fern-down/>



Early Detection

- Monitoring-Can be formal or informal:
 - Formal
 - Defined areas.
 - Standardized protocol.
 - More labor intensive, but maybe doable with volunteers, interns, etc.
 - Informal
 - Spend time in the field.
 - Pay attention when a plant looks “new to you.”
 - Pay special attention after major alterations-construction projects, mechanical treatment, prescribed fire.
 - Look across the fence.
 - Less labor intensive-more incidental sightings



Early Detection

- Identification/
 - New is not automatically bad-make sure you correctly identify!
 - It could be a good plant.
- Risk assessment
 - If not native, what is the risk?
 - Where is it and what is it doing?
 - Plant behavior other places-invasive anywhere else?
 - What is current distribution in Florida/your area?
 - Does plant have invasive relatives?
 - Check the FISC List
 - UF/IFAS Assessments - <https://assessment.ifas.ufl.edu/assessments/>
 - Has this species been assessed anywhere else?



Filter Results

Search by species name

(981 RESULTS)

ALL ASSESSMENTS

EXPORT TO EXCEL



Abelia x grandiflora
Glossy abelia, Largeflower abelia



Abrus precatorius
Rosary pea



Abutilon hirtum
Indian mallow, Flor Mallow



Eulophia graminea

SHARE



COMMON NAMES	Beautiful Crown Orchid, Chinese crown orchid
SYNONYMS	No known synonyms
FAMILY	Orchidoceae
CONCLUSIONS BY ZONE	CENTRAL, NORTH, SOUTH Caution For Status Assessments: Caution - manage to prevent escape. May be recommended by IFAS. Will be reassessed in two years. Assessment Status: Complete
GROWTH HABIT	Forb/Herb
ORIGIN	Asia Temperate, Asia Tropical
TOOL USED	Status Assessment
PREDICTIVE TOOL SCORE	N/A
ASSESSMENT DATES	2010, 2012
COUNTIES	Brevard, Broward, Collier, Hillsborough, Lee, Miami-Dade, Okaloosa, Orange, Palm Beach, Pinellas, St. Lucie, Pasco

https://www.aphis.usda.gov/plant-pests-diseases/noxious-weeds/noxious-weeds-program-risk-assessments



Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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Noxious Weeds Program Risk Assessments

Reference Files

- [APHIS-PPQ Weed Risk Assessment Guidelines](#)  (1.43 MB)
- Summary of WRA results (except old formats): [\(MS Excel\)](#)  (18.25 MB) or [\(PDF\)](#)  (253.66 KB)

Weed Risk Assessments

CSV

Print

Search:

Scientific Name 	Common Name 	PDF 	FNW/NAPPRA 	Date Posted 
Acacia nilotica 	Thorny acacia	92	FNW	6/6/2014
Acalypha australis 	Asian copperleaf	279		6/6/2014
Acanthospermum hispidum 	Bristly starbur	420		1/31/2015
Achyranthes japonica 	Japanese chaff flower	321		6/6/2014
Adonis aestivalis 	Summer pheasant's-eye	1651		10/24/2019

Documentation-Critical Step!

- Map and photograph occurrence.
- Submit to a sharing platform.
- Share locally-CISMA, other site managers, IPM professionals.
- Make herbarium specimen.
- Consult botanists.

iNaturalist

Inaturalist.org



EDDMapS
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Eddmaps.org



invasivespecies.ifas.ufl.edu/plants/



floridainvasives.org/



fnai.org/species-communities/invasives/invasives-main



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floridainvasives.org/suncoast/



florida.plantatlas.usf.edu/

Rapid Response

- Based on research, determine best course of action.
 - Remember IPM!
 - Contain/treat infestation appropriately.
 - Call for help if necessary-if you reported it, help may be on the way.
- Scout area-did you get it all?
- Monitoring/follow-up.
 - How do you know if you were successful?
 - Don't skip this step!



<https://www.istockphoto.com/photos/bad-lawn-mower>



https://en.m.wikipedia.org/wiki/File:Air_Potato_Leaf_Beetle.jpg



Should you have a formal EDRR plan?

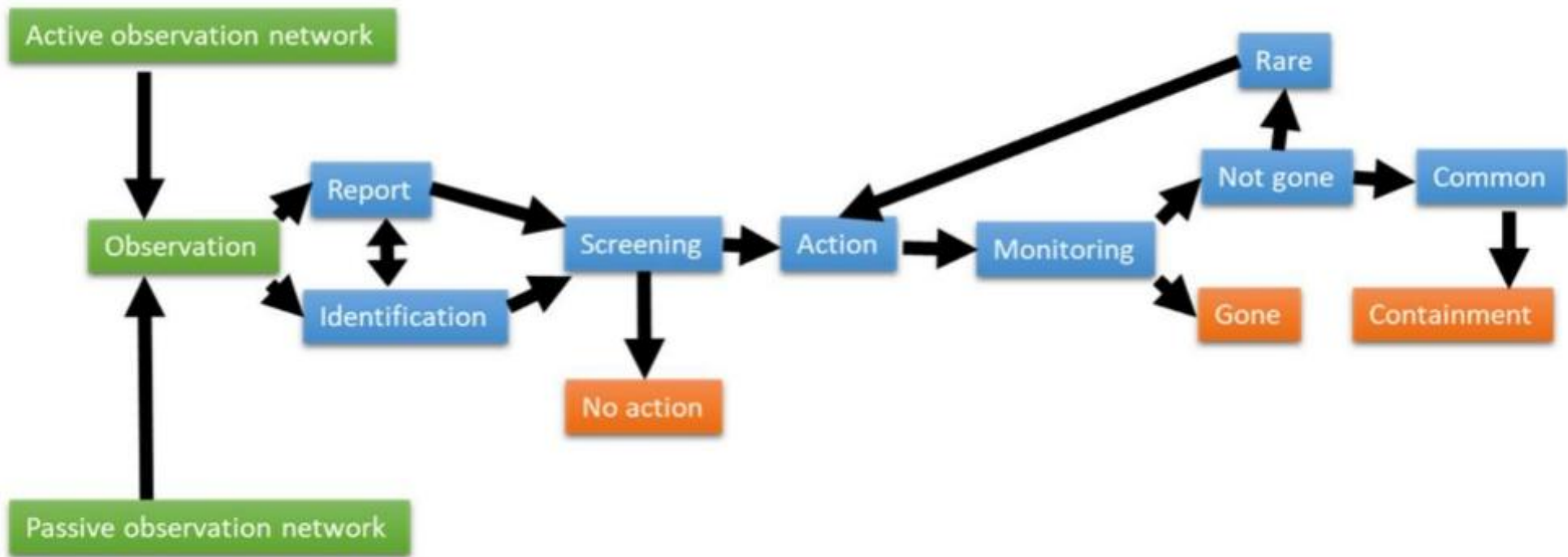


Figure 3. Conceptual model of a simplified approach to EDRR.

<https://edis.ifas.ufl.edu/publication/UW454>

- Can increase probability of detection.
- Standardize the reporting and risk analysis processes-don't reinvent the wheel.
- Streamline the response.
- Provide the resources for monitoring.



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PLANT SPECIES INFO

LOCAL PRIVATE LANDS ASSISTANCE

EARLY DETECTION AND RAPID RESPONSE

10~ entries per page

Search:

Scientific	Common	Learn More
<i>Acacia auriculiformis</i>	earleaf acacia	Plant Profile
<i>Agave sisalana</i>	sisal	Plant Profile
	giant taro	Plant Profile
<i>Antigonon leptopus</i>	coral vine	Plant Profile
<i>Arundo donax</i>	giant reed	Plant Profile
<i>Asclepias curassavica</i>	bloodflower milkweed	Plant Profile
<i>Begonia cucullata</i>	clubed begonia	Plant Profile

Giant water sensitive plant – *Aeschynomene fluitans*

- Floating aquatic herb; rooted or free-floating.
- Native to southern Africa.
- Found in freshwater ponds, lakes, wetlands.
- Recognizable by “feathery” leaves and yellow pea flowers.
- Escaped from aquarium trade.
- No iNaturalist observations in CISMA area.
- Mechanical removal or treat with aquatic safe glyphosate; contact FWC for recommendations/assistance.

Fabaceae



Shaun Winterton, Aquarium and Pond Plants of the World, Edition 3, USDA APHIS PPQ, Bugwood.org



Shaun Winterton, Aquarium and Pond Plants of the World, Edition 3, USDA APHIS PPQ, Bugwood.org

Narrowleaf waterweed - *Egeria najas*

Hydrocharitaceae

- Submerged aquatic herb.
- Native to South America.
- Found in freshwater lakes.
- Can look similar to hydrilla but has longer leaves and lacks small teeth on the leaf midribs, can be hard to distinguish *Egeria* species.
- Spreads vegetatively.
- Escape from aquarium trade.
- No iNaturalist observations; but *E. densa* documented from 17 FL counties, including Hillsborough.
- Treatment with Fluoridone (systemic) or Diquat (contact); contact FWC for recommendations/assistance.



Photo by S. L. Winterton
<https://idtools.org/appw/index.cfm?packageID=2197&entityID=10306#galleryfs-3>

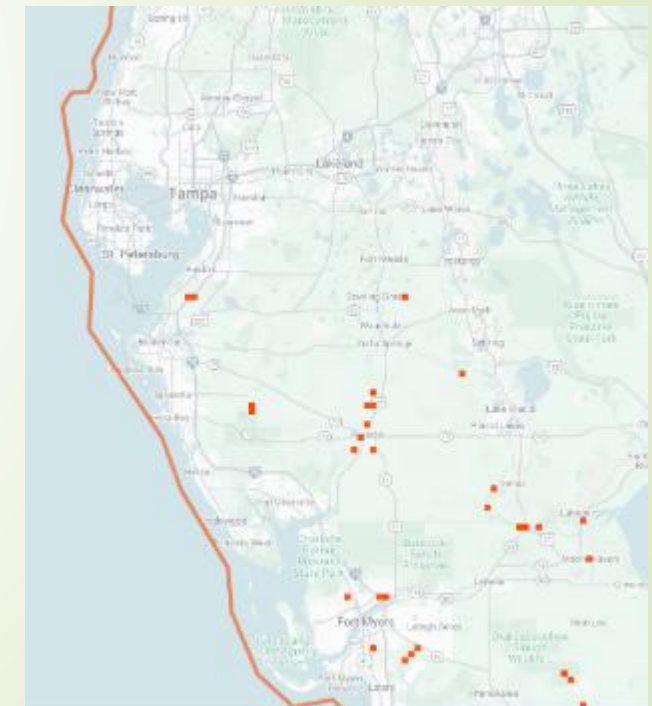
Aquatic soda apple - *Solanum tampicense*

Solanaceae

- Sprawling shrub with a woody base, stems to 15 feet long.
- Native to West Indies, Central and South America.
- Found along riverbanks, marshes, swamps.
- Recognizable by habitat, leaves that are long and deeply lobed, plant covered in prickles, small red tomato-like fruit.
- Treatment should always include removal of fruit if possible.
- FISC I
- Hand pull; dispose of fruit; Glyphosate, triclopyr, Milestone (soil active).



<https://florida.plantatlas.usf.edu/plant/species/273#plant-photos>



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=169084

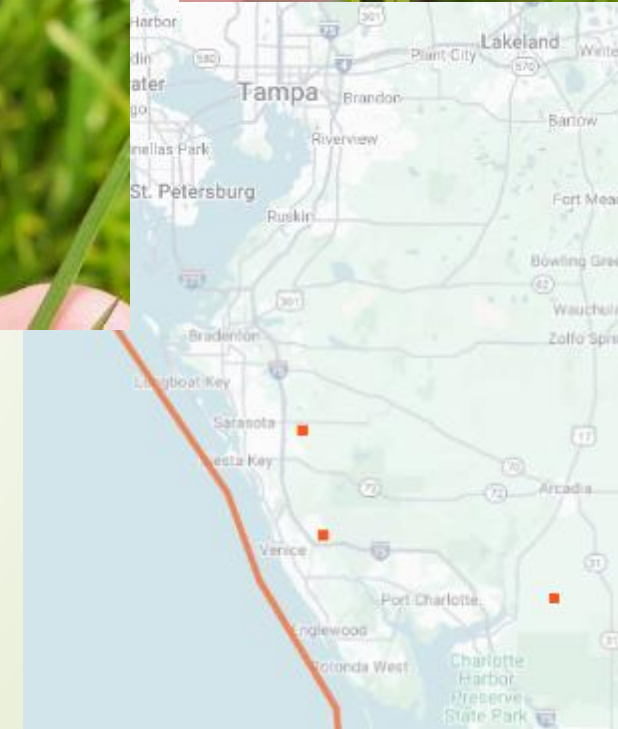
Limpoggrass – *Hemarthria altissima*

Poaceae

- Perennial, matt-forming grass.
- Native to tropical Africa.
- Planted in improved pasture, escapees usually found in moist areas like swamps, wet flatwoods, ditches, canals, streams.
- Often has red-tipped leaves/inflorescence; distinctive infl.
- Spreads vegetatively through stolons.
- FISC II
- Treatment with aquatic glyphosate. Imazapyr?



iNaturalist photos by jayhorn



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=157491

Lax panicgrass – *Steinchisma laxum*

Poaceae

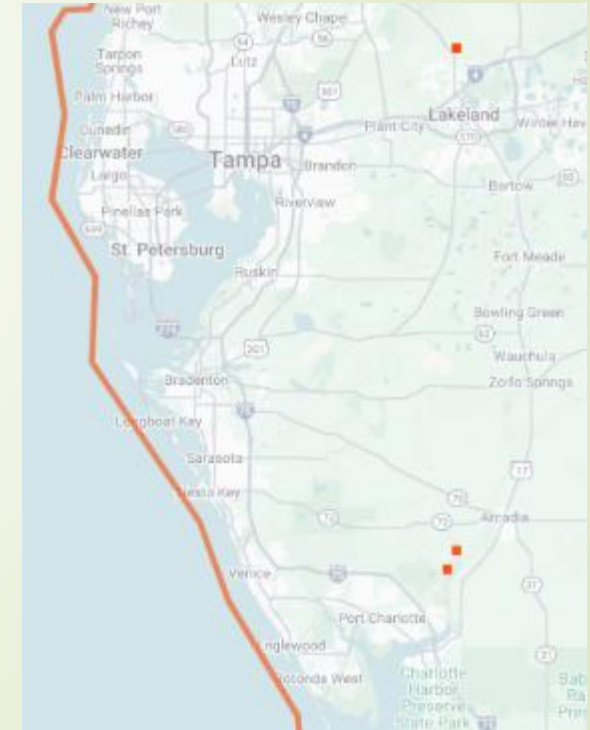
- Perennial grass.
- Native to West Indies, Mexico, Central and South America..
- Soft-leaved, stems often laying over (think lax).
- Can be confused with beaked panicum (more upright; has scaly rhizomes, usually drier habitat) or gaped panicum (has an irregularly shaped infl.).
- Spread by seed or stolons.
- Has shown glyphosate resistance so herbicide rotation should be used.



http://www.floridagrasses.org/Grass_data/St_laxa.html



http://www.floridagrasses.org/Grass_data/St_laxa.html



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=918117

Elegant spikerush- *Eleocharis elegans*

Cyperaceae

- Emergent aquatic sedge, to ~3 feet tall
- Native to Central and South America
- Found in wet soils surrounding cypress domes.
- Recognizable by septate stems, leafless; achenes (seeds)-need magnification
- Seek confirmation from expert
- Spread by seed or rhizome
- Treatment?



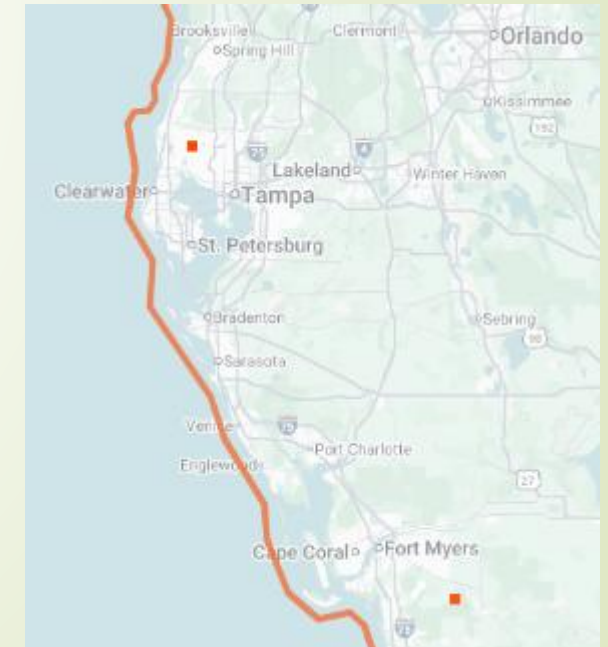
<https://florida.plantatlas.usf.edu/plant/species/4874#plant-photos>



iNaturalist photo by Steve Dickman



iNaturalist photo by Steve Dickman



https://www.inaturalist.org/observations?place_id=21&subview=map&taxon_id=290522

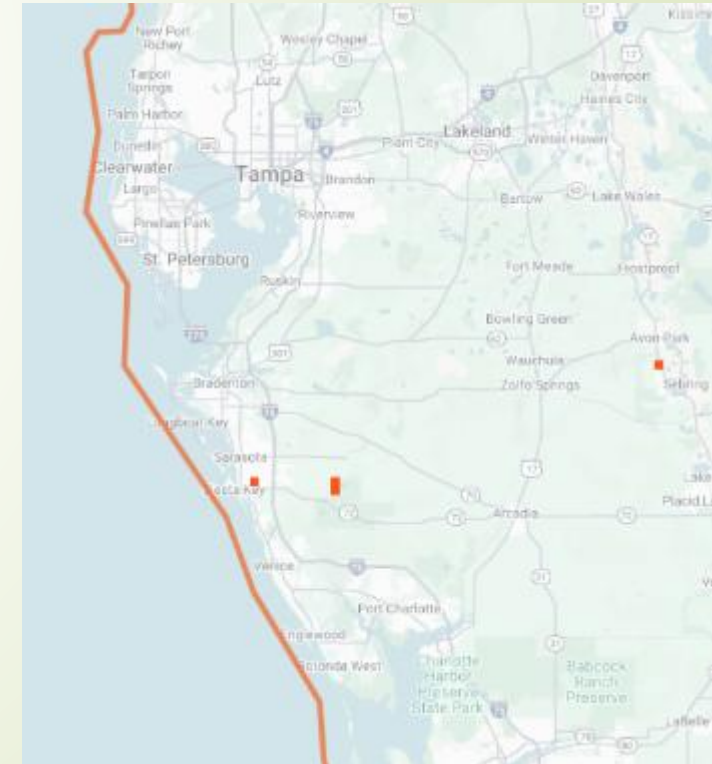
Chickenspike- *Sphenoclea zeylanica*

Sphenocleaceae

- Emergent semi-aquatic to aquatic herb
- Native to Africa, tropical Asia, Australia
- Found along freshwater shorelines, creeks, rivers, and ditches.
- Recognizable by pyramidal inflorescence with small, white, rounded flowers.
- Spread by seed
- Treatment?? Hand removal or aquatic safe....



iNaturalist photo by swampphiker



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=156037m

Simpleleaf chastetree (Beach vitex)

Vitex trifolia

Lamiaceae

- ▶ Woody shrub to small tree
- ▶ Native to S.E. Asia, Pacific Islands
- ▶ Found on coast, mostly in back dune and coastal berm
- ▶ Recognizable by silvery appearance from hairs, leaves that are both simple and trifoliate, and lavender flower spikes; make lots of fruit!!
- ▶ FISC II
- ▶ Treat with triclopyr



iNaturalist photo by seanpatton



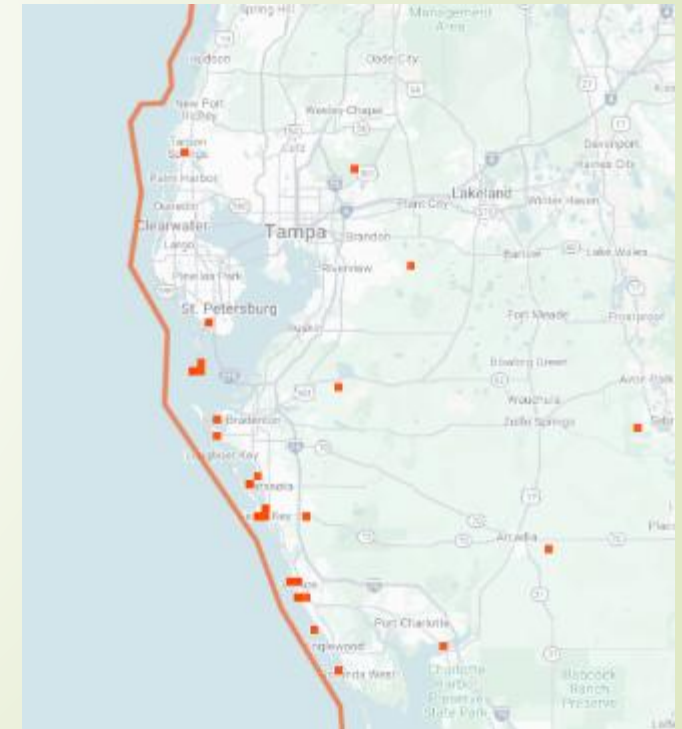
iNaturalist photo by seanpatton



iNaturalist photo by seanpatton



iNaturalist photo by mikeyhubbs



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Sisal hemp - *Agave sisalana*

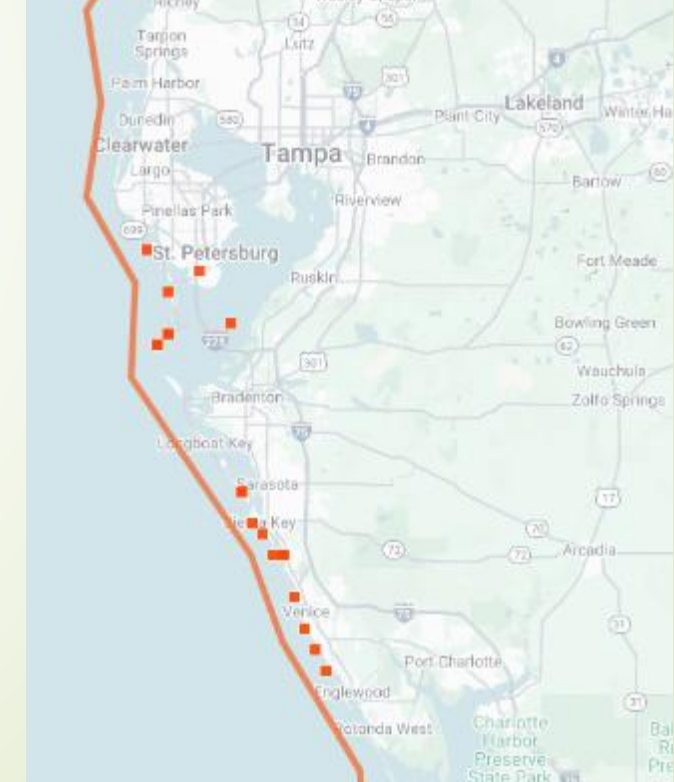
Agavaceae

- Shrub to 2m tall.
- Native to Mexico.
- Found almost exclusively on coast in sandy soil.
- Leaves fleshy, long and pointed, to 4 inches wide, green to gray/green, with or without marginal teeth.
- Flowers and dies, reproduces vegetatively.
- FISC II
- Remove pups before they get big, cut leaves back and treat with high concentration glyphosate or triclopyr.

John Ruter, University of Georgia, Bugwood.org



Joy Viola, Northeastern University, Bugwood.org



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=158103

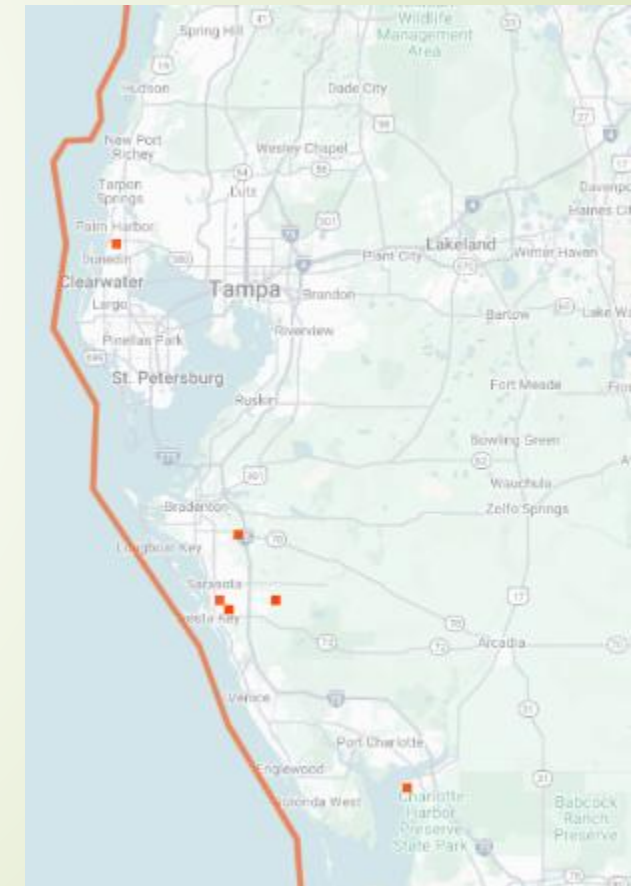
Java cinnamon - *Cinnamomum burmanni*

Lauraceae

- Tree to 20 feet tall.
- Native to China and Vietnam.
- Usually in subcanopy of mesic hammocks.
- Identifiable by leaf venation, young leaves pinkish, strong cinnamon odor when crushed.
- Lauraceae family-related to camphor tree, bay trees, avocado.
- Fruit likely spread by birds.



https://en.wikipedia.org/wiki/Cinnamomum_burmanni

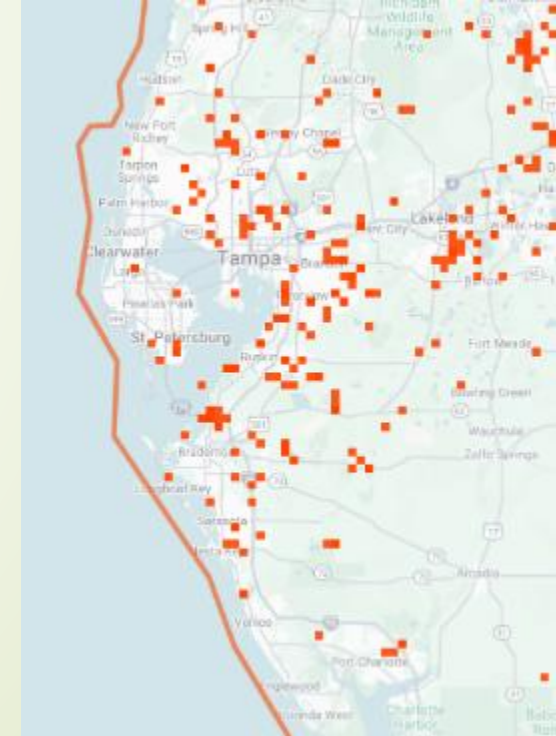


https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=160583

Praxelis clematidea

Asteraceae

- Annual or short-lived perennial herb; can grow to about 3 feet tall
- From South America, first reported in Florida in 2006
- Often in disturbed areas, but can be in hammocks or moist sites
- Recognizable by the very strong cat urine odor when leaves are crushed
- Easily confused with mistflower and *Ageratum* spp.-look for pappus with bristles
- Treat by hand pulling or glyphosate



Devil's horsewhip - *Achyranthes aspera*

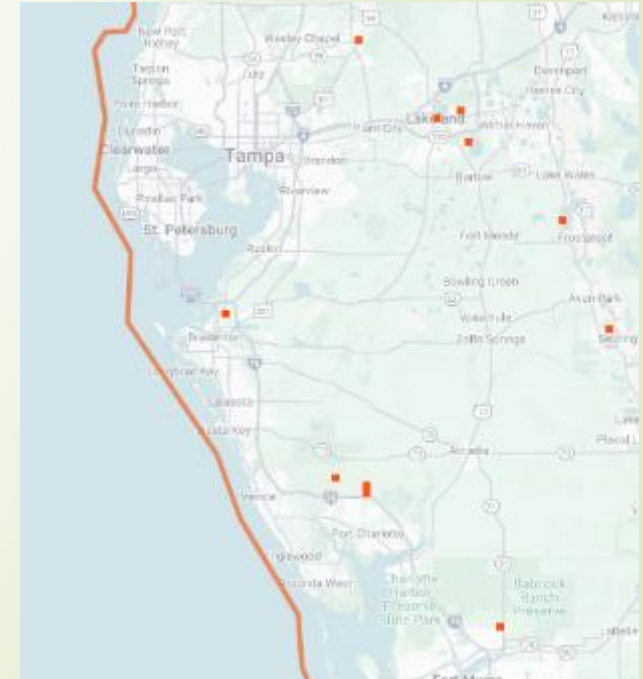
Acanthaceae

- Perennial shrub, stem gets woody with age
- Native to Africa and Asia
- Found in hydric to mesic hammocks and disturbed sites.
- Recognizable by opposite, decussate leaves; infl. If a spike of small pink flowers with spiny bracts
- Spreads by fruit which attaches by bracts
- Hand pull or treat foliar with glyphosate

Photo by Frank Vincentz



Phot by BARAKAT2011



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=157960

Golden trumpet tree-*Handroanthus chrysotrichus* (Syn: *Tabebuia*)

Bignoniaceae

- Semi-deciduous tree, to 25 feet.
- Native to Brazil.
- Very common in cultivation, likely to be found in open uplands.
- Recognizable when in flower by the profusion of yellow, trumpet-shaped flowers; palmate compound leaves; furry fruit with paper thin seeds.
- Spread by seed.
- Treatment? Triclopyr-cut stump?



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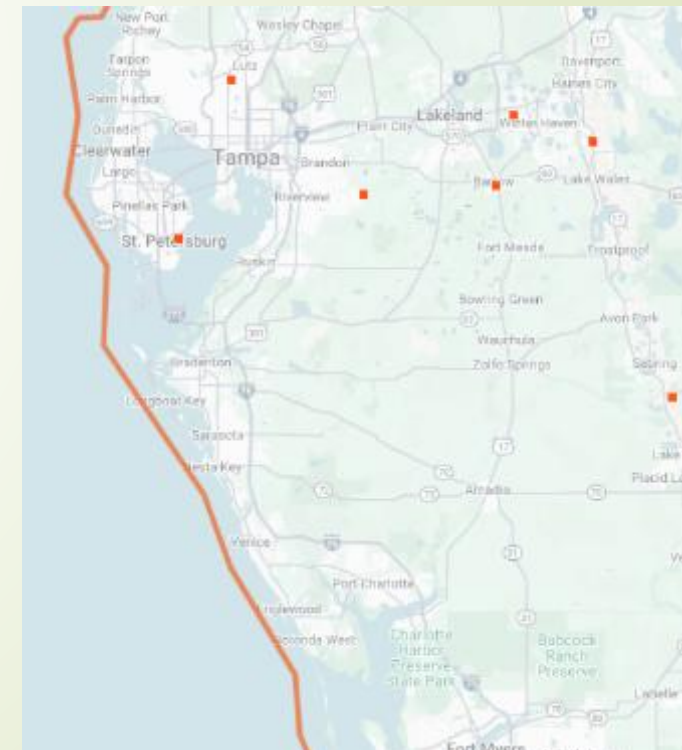
<https://commons.wikimedia.org/w/index.php?curid=25118781>



UF/IFAS



<http://peavytailor.com/product/60-seeds-handroanthus-chrysotrichus-tabebuia-chrysantha-fresh-2024/>



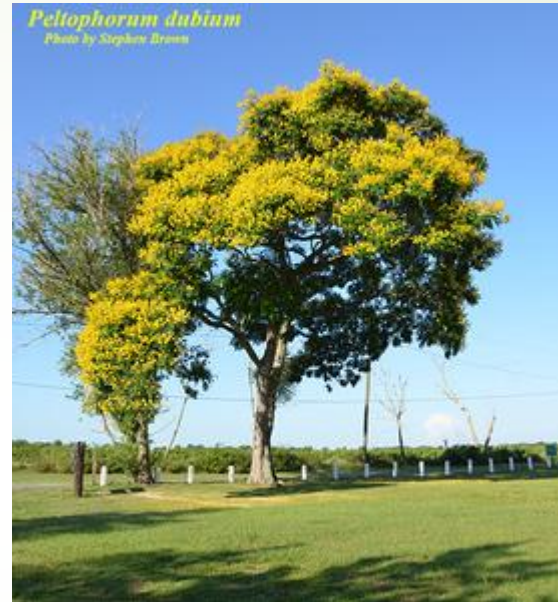
https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=468336

Horseradish tree (Yellow poinciana) -

Peltophorum dubium

Fabaceae

- Large tree, growing over 60 feet tall.
- Native to South America.
- Found in cultivation, likely to do best in moist areas.
- Deciduous tree, leaves compound with many tiny leaflets; flowers are a spike of yellow flowers with irregular margins, fragrant.
- Spread by seed.
- Treatment? Triclopyr?



<https://florida.plantatlas.usf.edu/plant/species/419#plant-photos>



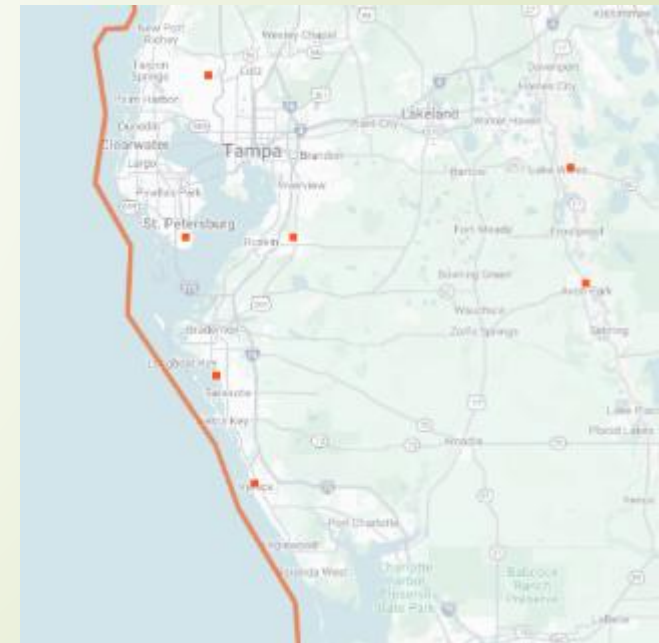
<https://florida.plantatlas.usf.edu/plant/species/419#plant-photos>



<https://florida.plantatlas.usf.edu/plant/species/419#plant-photos>



Identify.plantnet.org



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=290016

Ganges primrose- *Asystasia gangetica*

Acanthaceae

- Creeping herbaceous groundcover, to 3 feet tall or higher if climbing.
- Native to Old World Tropics.
- Cultivated plant, found in old fields and upland sites.
- Recognizable by opposite leaves with wavy margins; tubular flowers that can be white, purple, lavender, or pale yellow.
- Spread by seeds-explosive fruit! Roots at nodes so stem pieces can spread.
- FISC II
- Treatment? Foliar or cut stump (dispose of plant material offsite). Try to get before seeding to prevent spread when fruit are disturbed.



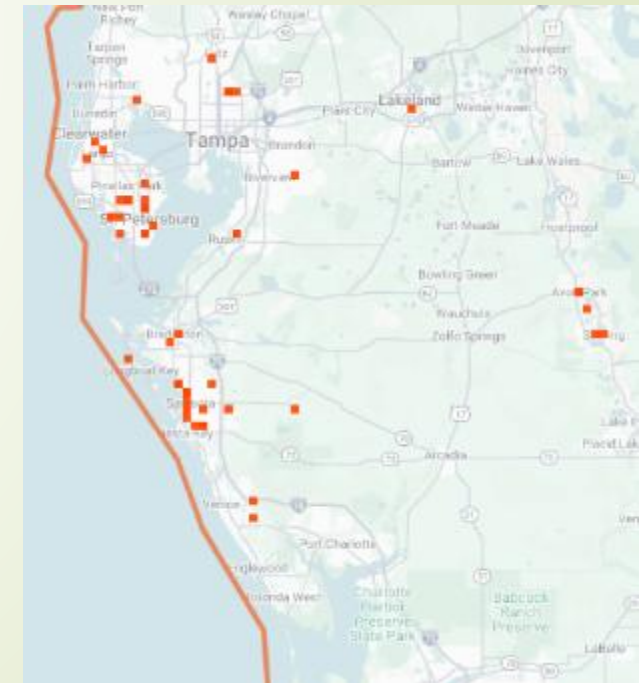
<https://greencoverinitiative.com/flowering-plants/asystasia-gangetica-chinese-violet/>



<https://levypreserve.org/plant-listings/asystasia-gangetica/>



UF/IFAS



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=159049

Senegal date palm- *Phoenix reclinata*

Arecaceae

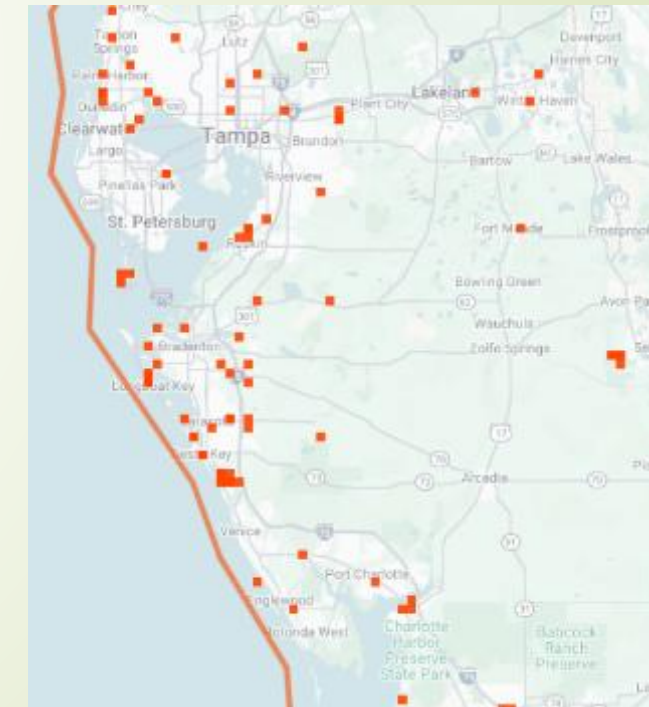
- Clumping palm growing to over 40 feet tall.
- Native to tropical Africa and the Arabian Peninsula.
- Commonly cultivated. Seems to prefer more mesic to hydric habitats, often in hammocks, swamps, and even estuarine marshes.
- Recognizable by the pinnate (feathery) fronds with long spines on the petioles (stems), clumping habit.
- Spreads by seed.
- FISC II
- If small, treat by cutting fronds and if possible, cut the growing tip. If tall, cut and fell all trunk. Apply triclopyr to **all stems. Beware of the spines!**



iNaturalist images by Sean Patton



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Madagascar periwinkle – *Catharanthus roseus*

Apocynaceae

- Perennial, multi-branched herb or sub-shrub.
- Endemic to Madagascar.
- Usually found in sandy, nutrient poor soils, full sun.
- Recognizable by the opposite, somewhat decussate leaves, white sap, five-lobed flowers that are typically pink or white.
- Spread by seed-have hairs on them
- Treat by hand pull or foliar with?



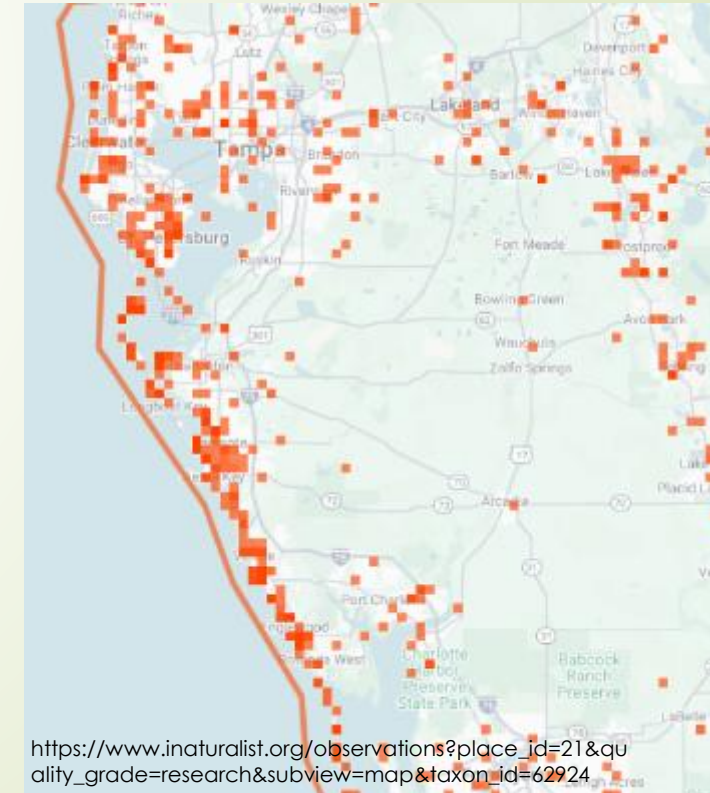
iNaturalist photo by malanture



<https://florida.plantatlas.usf.edu/plant/species/1382#plant-photos>



<https://florida.plantatlas.usf.edu/plant/species/1382#plant-photos>



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=62924

Japanese Cleyera - *Ternstroemia gymnanthera*

Pentaphylacaceae

- Shrub to 10 feet tall.
- Native to Japan, Korea, Taiwan, China, India, and Borneo.
- Cultivated. Prefers some shade, so possibly in understory.
- Recognizable by small leaves with red petioles, leaves often appearing whorled at branch tips, new growth reddish, fruit red.
- Spread by seed.
- Treatment?



<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:830525-1>



Photo by KENPEI
<https://plants.ces.ncsu.edu/plants/ternstroemia-gymnanthera/>



<https://ar.inspiredpencil.com/pictures-2023/ternstroemia-gymnanthera>



https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=452250

Missiongrass - *Cenchrus polystachios*

Poaceae

- Large tufted grass, to six feet tall.
- Native to Africa.
- Escaped from cultivation and usually found in upland areas; often seen escaped in urban areas near landscape plantings.
- Recognizable by clumping habit, inflorescence of densely packed spikelets which are covered in feathery bristles. Bristles fall with the spikelet. May be confused with native *Setaria*, but bristles DO NOT fall with the spikelet.
- Spreads by seed.
- FISC II
- Treatment with glyphosate and imazapyr (if appropriate to site).



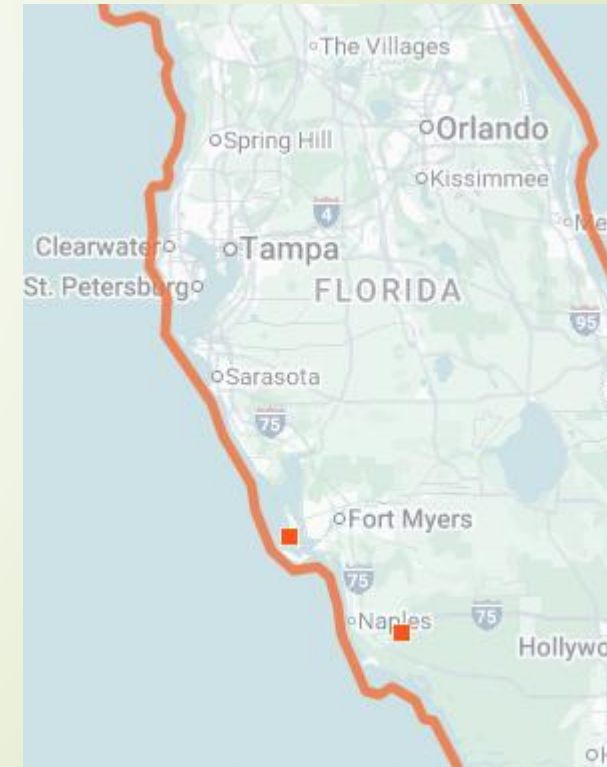
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https://www.inaturalist.org/observations?place_id=21&quality_grade=research&subview=map&taxon_id=1373967

Homework

- Observe and report!
- Practice EDRR for all taxa.
- Remember that even well known, established species should be handled with EDRR when first seen.
- Consider how a warming climate will impact the spread and establishment of species.
- Share your EDRR species with Suncoast CISMA so the list can be updated.

