

What's in Your Yard?

Managing Invasive Wildlife in Your Florida-friendly Landscape



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Presentation Overview

- Defining “introduced” & “invasive”
- Some of the problems
- Why Florida
- Invasion pathways
- The “Big Picture” in FL
- Focus on herps
 - Frogs
 - Lizards
 - Snakes
- How to help
- Preserved Specimens



Some Terminology

- Exotic
- Invader
- Alien
- Non-native
- Naturalized
- Nonindigenous
- Introduced



Coqui Frog in Hawaii

- These are species that are found outside of their native range; they may not cause problems (many do not)

Introduced species: Examples

- Agricultural crops
- Ornamental plants
- Turf grasses
- Farm animals
- Game animals
- Pets
- Insects
- etc.



Invasive Species

- **Invasives** are species, including their seeds, eggs, spores, or other biological material capable of propagating that species, that are not native to the ecosystem in which they are found (*human mediated movement implied*); and whose introduction *does or is likely to cause environmental or economic harm, or negatively impact human health or quality of life.*

National Invasive Species Council

<http://www.invasivespecies.gov/>

Executive Order 13112: “An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.”

Problems Caused by Invasives

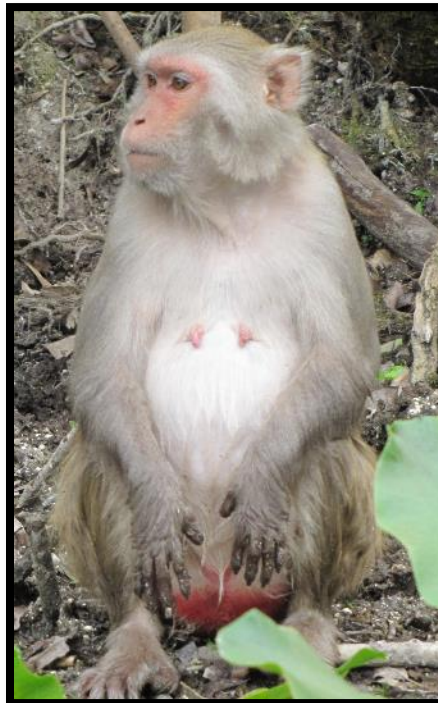
- Ecological

- Pathogens and disease
- Predation
- Competition
- Habitat modification
- Hybridization



- Economical

- Damage
- Control



- Quality of life

- Nuisance
- Disease vectors

?Why Florida?

- Among the top 3 states in the US with regard to numbers of invasive species
- A lot of disturbed and human modified habitats
- Moderate climate—S FL is subtropical
- Booming ornamental horticulture and pet trades
- Miami/Tampa/Jax are major ports of entry
- Florida is hub for tourism
- Great diversity of habitats (terrestrial, freshwater, marine)

Introduced Vertebrates in Florida

- Birds: ~200 species documented in the state
 - About 15 established and breeding species
- Mammals: ~30 species documented
 - About 15 established and breeding species
- Amphibians: ~15 species documented
 - Three established and breeding species
- Reptiles: ~140 species documented
 - About 50 established and breeding species
- Fish: ~100 species documented
 - About 25 established and breeding species
- *Data from FWC website, FLMNH, pers. observations, colleagues*



Invasive Amphib/Reptile Case Studies

- Brown Anole
- Monitor Lizard
- Tegus Lizard
- Burmese Python
- Cane “Bufo” Toad
- Cuban Treefrog



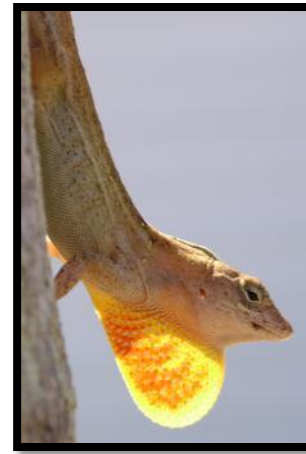
Brown Anole

Anolis sagrei

Identification: 4-7 in. with tail;
brown/gray/tan often w/ variable bands,
flecks, stripes, bars; orange dewlap; F w/
light scalloped band down center of back
FL Range: Much of peninsula; a few isolated
panhandle sites

Habitats: Suburban habitats, disturbed sites,
some natural areas in S FL

Other: First introduced reptile in FL-1887;
males may have thickened crest on back and
head; competes w/ and depredates native
green anole; shrub/trunk and ground sp.;
perches in open to bask and display; very
abundant!; cannot change color like out
native green anole



Nile Monitor

Varanus niloticus

Identification: Large (to 7 ft. TL); gray, brown, cream colored body; numerous small spots/felcks; rows of large spots across back; long powerful tail

FL Range: Homestead, Cape Coral, West Palm Beach; isolated locations elsewhere in peninsula

Habitats: Near water, along canal banks

Other: Quickly escapes into water or burrows—very wary; carnivore—reptile eggs, lizards, birds, small mammals; documented attacking Burrowing Owl control efforts underway; potential threat to pets; regulated by FWC as a “conditional species” (cannot purchase)



Argentine B&W Tegu

Salvator merianae

Identification: Large (to 5ft. TL, 15 lbs); robust lizard with heavy body and strong claws, black and white bands, spots & flecks; young with green caste on head and upper body; rows of rectangular scales across belly;

FL Range: breeding near Homestead near edge of ENP, Balm SE of Tampa, other isolated records

Habitats: Varied, dense vegetation

Other: Native to SA; diurnal, retreat to burrows at night and when dormant in winter; omnivore: berries, insects, vertebrate eggs (Alligators/Crocs), birds, lizards, rodents; inhabit GT burrows; still legal to posses and sell in FL!!!



Burmese Python

Python bivittatus

Identification: Large—to 18 ft. in FL; tan/brown body w/ giraffe-like pattern down back and sides

FL Range: Extreme southern FL but spreading N; isolated records in peninsula

Habitats: Everglades, mangrove swamps, densely vegetated canal banks, tropical hardwood hammocks

Other: Eat many native species including deer, alligators, wood storks, wood rats; linked w/ declines of mesomammals; Lacey Act—no import or transport across state line, FWC—cannot possess w/o permit



Invasive Reptile Management

Capture and euthanize these non-native invaders!!!!

- **Brown Anoles:** hand capture, noose
 - Chill then freeze to euthanize
- **Monitors, Tegus, Pythons:** Live trap or hand capture on private land—must be properly trained, permit required on public land, request assistance from FWC or USDA, call private trapper (\$\$), get **REDDy**
 - FWC: <http://myfwc.com/contact/report/exotic-species/>
 - USDA: Google “USDA Wildlife Services Gainesville”

REPORT SIGHTINGS—EDDMapS



Cane/Marine Toad

Bufo marinus (*Rhinella marina*)



Identification: Large brown to grayish toad, warty skin, large parotoid glands, ridge over nose and eyes, no cranial crests

Habitats: Suburban and agricultural settings; ditches, canals, ponds

Other: Lethal to dogs and cats, these things get huge—to 9 in., call is a melodious drumming sound, eats a variety of native species, ecological impacts have not been studied in FL, a MAJOR pest in Australia

Call: Melodious drumming 



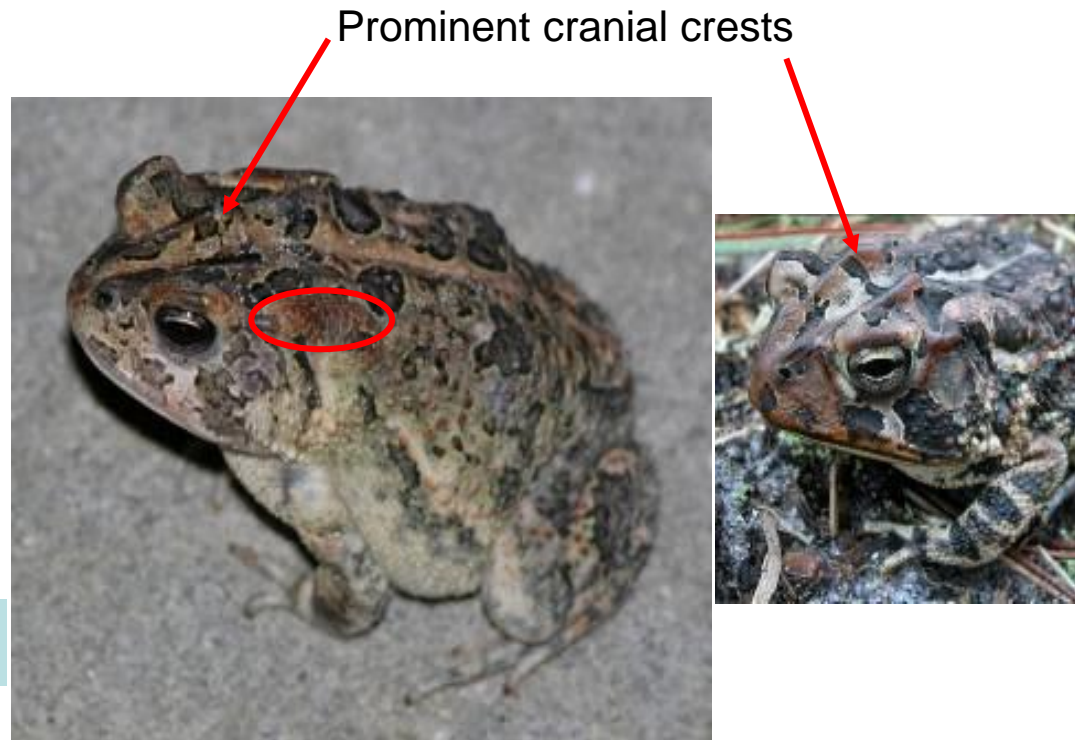
Don't misidentify native toad!

Invasive "Bufo" Toad



Very enlarged poison glands

Native Southern Toads



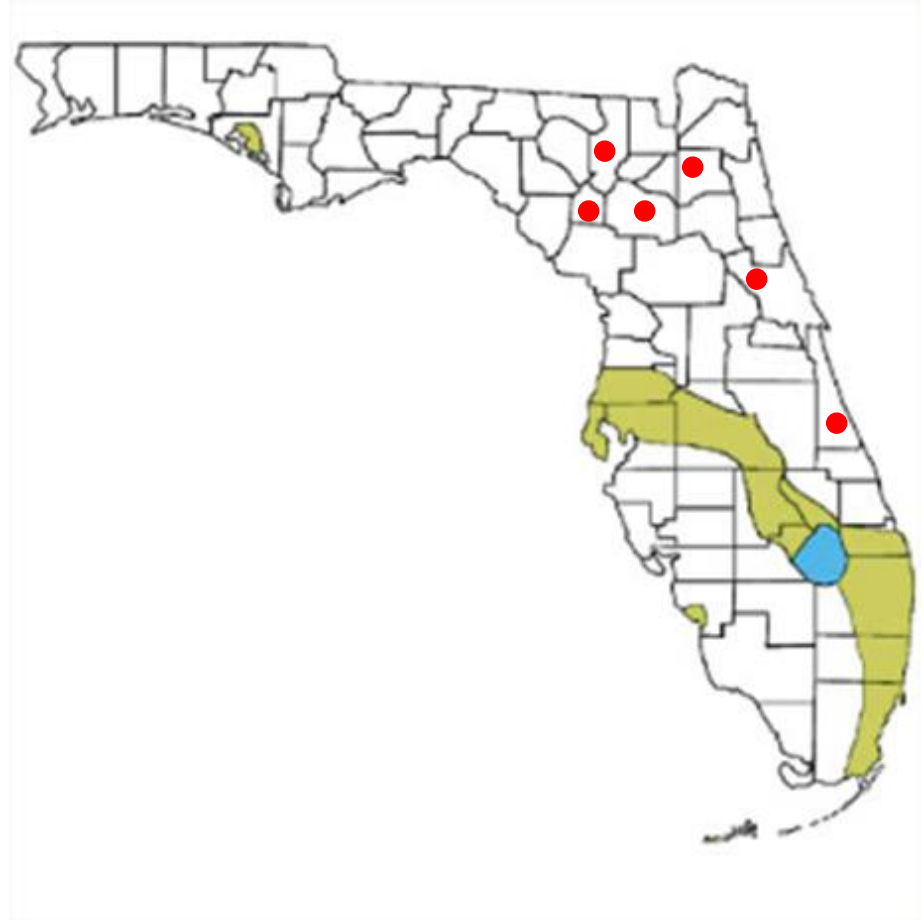
Prominent cranial crests

Cane Toad

- My student and I need records of Cane Toads in Florida!

- Digital image
- Date
- Specific location
- Habitat
- Observer name

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Cuban Treefrog

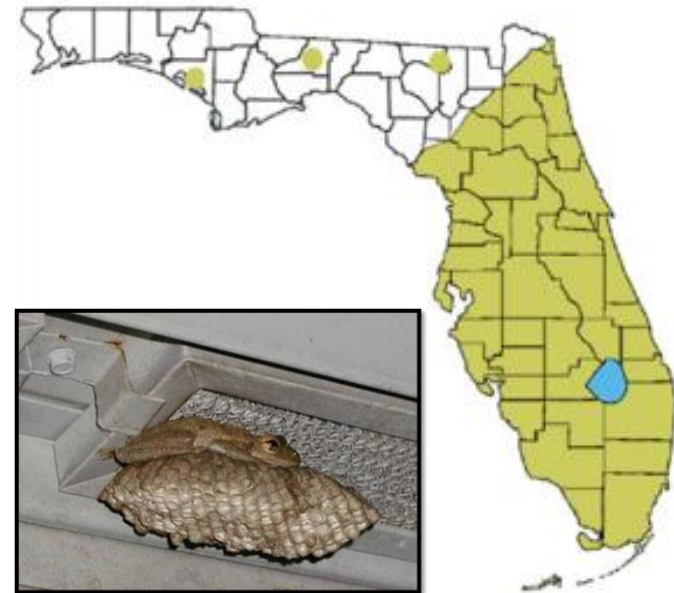
Osteopilus septentrionalis

Identification: Expanded toe pads, variable color/pattern-often beige, large adults, skin fused to skull

Habitats: Many, prefers forested areas, thrives in suburbia

Other: Eats native treefrogs, invades homes, calls are a nuisance, noxious skin secretion, breeds in pools/ornamental ponds, tadpoles outcompete natives, causes electrical short-circuits

Call: Raspy squeak



Cuban Treefrogs



Invasive Frog Management

Capture and euthanize these non-native invaders!!!!

Cuban Treefrogs: grab with gloves or plastic bags; use PVC pipe refugia, cover standpipes with wire mesh

Bufo Toads: grab with gloves or plastic bags; do not leave pets unattended, especially at night; erect barrier at edge of yard; do not leave pet food outside

Wash your hands after handling these frogs

Remove eggs, eliminate breeding sites

Report sightings



Invasive Frog Management

Euthanize Cuban Treefrogs and Cane Toads

Anesthetize (benzocaine/lidocaine) then freeze

Chill then freeze

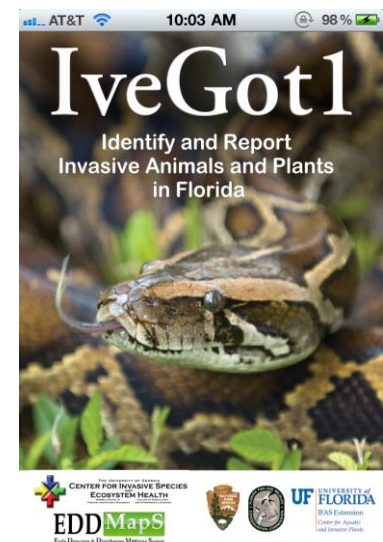
Wash your hands after handling these frogs



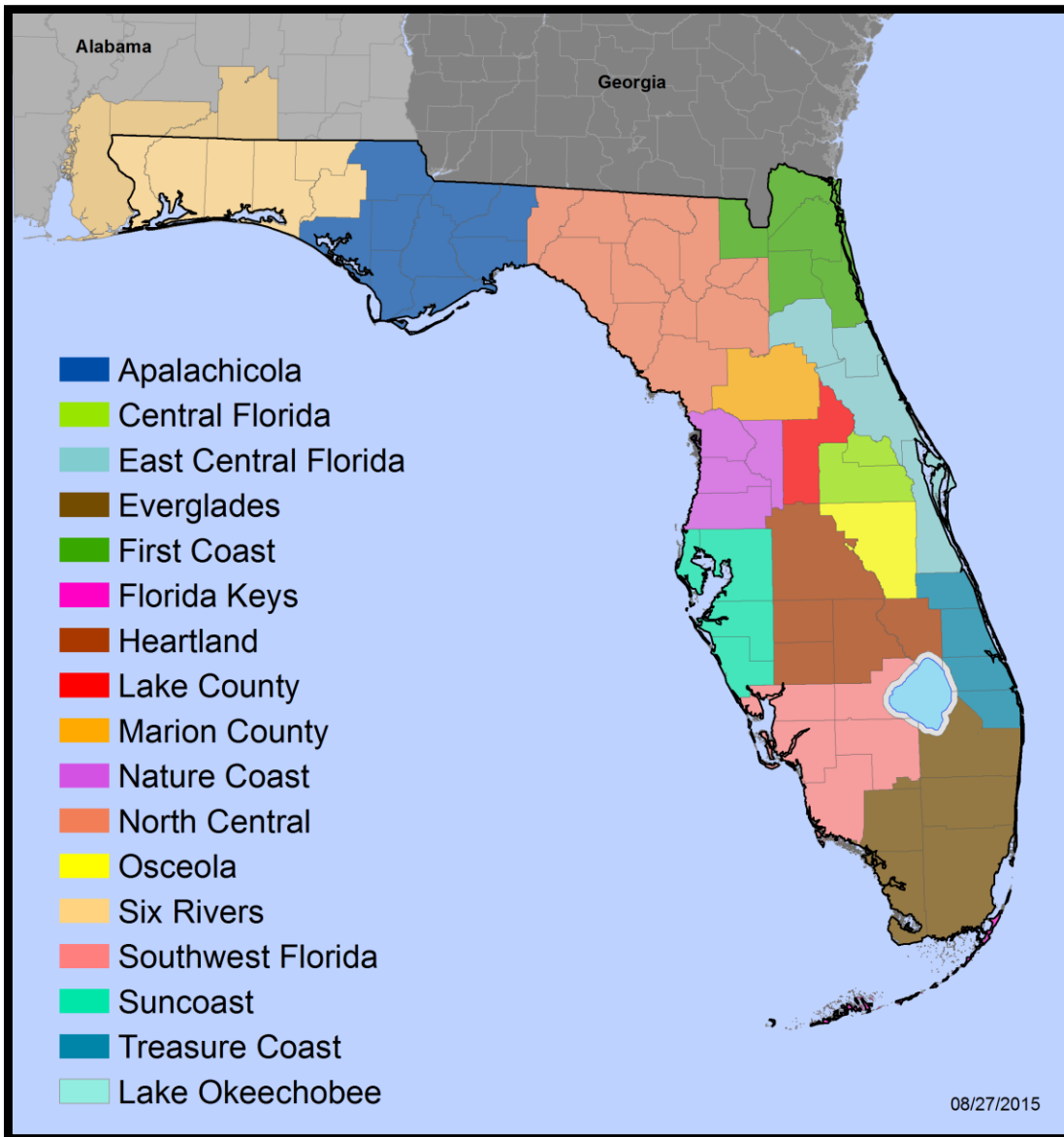
- Be a responsible pet owner
 - *Informed consumer*
 - *Never release exotic pets*— **FWC Pet Amnesty**
- Report invasive reptiles
 - **EDDMapS** <http://www.eddmaps.org/>
 - **IveGot1** app
- Become educated & educate others
 - **REDDy** <http://ufwildlife.ifas.ufl.edu/reddy.shtml>
- Get involved—CISMAs



REDDy
 Introduced Reptile
 Early Detection
 & Documentation



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
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

Visit My Website

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

Online Frog & Snake ID

Invasive Cuban Treefrog Page

Invasive Vertebrate Page

Links to “Fact Sheets”

Kids Corner



The screenshot shows the homepage of the Department of Wildlife Ecology & Conservation, UF Wildlife - Johnson Lab. The header includes the department name, the University of Florida logo, and navigation links for Home, Dr. Steve A. Johnson, Research, Students, and PDF Library. A search bar is also present. The main content area is divided into several sections:

- Find Out About:** Florida's Snakes, Dealing with Snakes, Florida's Frogs, Invasive Cuban Treefrogs, Invasive Vertebrates, Florida's Introduced Birds, Courses Taught by Dr. J, All Wildlife Topics by Dr. J, Kids' Corner.
- Get Involved:** Take the Reptile Early Detection Training (REDDy), Become a Citizen Scientist, Invader Updater - Subscribe.
- Teach Others:** Invader Updater eNewsletter, Educator Resources & Links, Kids' Corner.
- Dr. J's Research:** Sniff'N'Stop Frog Deterrent, HopStop Euthanasia Spray, Tracking Cuban Treefrogs, Coqui Biological Control, Grad Student Research, See Complete List.

Other sections include:

- New and notable from the Johnson Lab...** Fact Sheets: Options for Unwanted Pets, Florida Invaders Series, Quick Reference Guide: Constrictors, Brochures: Unwanted Pet Amphibians and Reptiles, Buyers' Guide to Pet Reptiles, Research: HopStop® available in Australia!
- Help! I found a ...** Need help identifying an amphibian or reptile? Want to know if it is non-native or venomous? Learn more...
- Are you REDDY?** Learn how to recognize and report large, invasive reptiles. Get REDDY...
- Become a Citizen Scientist!** Help collect data for a University of Florida Cuban Treefrog research study.
- Get the NEW Frog ID Guide** A handy pocket guide to all of Florida's frogs. BUY it at the IFAS bookstore...

Additional links on the right side include:

- Important UF Links:** Dept. of Wildlife Ecology and Conservation, Solutions For Your Life, College of Agriculture and Life Sciences (CALS), Bachelor of Science Degree Programs at UF Plant City, Herpetology at the Florida Museum of Natural History.
- Invasive Species Links:** Florida Invasive Species Partnership, Early Detection & Distribution Mapping System (EDDMaps), Florida's Non-native Species.
- Other Links:** Online Guide to Florida's Snakes (FLMNH), Look Up and Listen to Frog Calls (USGS), RemoteFootprints.org.