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

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.

Most introduced species do not become invasive!
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


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
- Tegu 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)
**Argentina 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
  - 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

Native Southern Toads

Very enlarged poison glands

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
  – IveGot1 app

• Become educated & educate others
  – REDDy [http://ufwildlife.ifas.ufl.edu/reddy.shtml](http://ufwildlife.ifas.ufl.edu/reddy.shtml)

• Get involved—CISMAs
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