

Invasive Animals in Florida: Problems and Solutions for Your Life

Florida Master Gardener Conference



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Presentation Outline

- Some terminology
- Nonindigenous and invasive species examples
- Getting established
- Problems caused by invasive species
- Focus on Florida
- State regulations
- Some invasive animals: Problems and Solutions
- Useful internet sites

Terminology

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



Puerto Rican Coqui in Hawaii

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

Nonindigenous species: Examples

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



How do nonindigenous species get introduced to new places?

- Human mediated movement
- Intentional vs. Accidental Introductions
 - Intentional introductions
 - These include species imported for: agriculture uses, ornamental plant trade, pet trade, hunting/fishing industry, industrial uses, pharmaceutical uses
 - Accidental introductions
 - Species that are transported unintentionally with cargo, crops, ornamental plants, in ballast water, on cars/airplanes

Some nonindigenous species 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; and whose introduction *does or is likely to cause environmental or economic harm, or negatively impact human health or quality of life.*

Getting established

- Some attributes of invasive species
 - Good dispersal abilities
 - Long growth periods and life spans
 - Lack predators/parasites/pathogens
 - Broad range of physiological tolerance
 - Affinity for disturbed areas
 - Generalists do better than specialists
 - Prior invasion history is a good predictor



Problems Caused by Invasives

- **Ecological**
 - Pathogens and disease
 - Predation
 - Competition
 - Major habitat modification
 - Hybridization
- **Economical**
 - Damage
 - Control
- **Quality of life**
 - Nuisance
 - Disease vectors



Invasive species are a serious problem!

- Invasives rank second only to habitat loss as threats to native ecosystems and species in the US and Florida
- Interactions with nonnative species ranked as top cause of species endangerment in the US
- As much as 80% of imperiled species are threatened by invasive species in other parts of the world
- Threats occur in terrestrial, freshwater, and marine ecosystems—nowhere is safe!



Some economic impacts of invasive species

- Economic damages in the US associated with invasive species is estimated to be approx. \$120 billion/year
 - Purple loosestrife costs \$45 million/year in control costs and forage loss
 - \$100 million/yr spent in the US to control alien aquatic plants
 - Based on estimates of the number of invasive rats in the US and the damage they cause to crops: \$19 billion/yr in damage
 - Estimates of introduced mongoose damage annually in Puerto Rico and Hawaii ~ \$50 million

Examples of Invasive Species Globally



Red Imported Fire Ant



Rainbow Trout



Zebra Mussel



Asian Tiger Mosquito



Black Rat



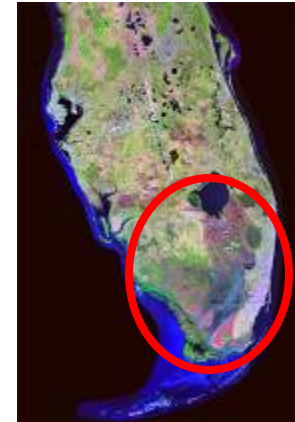
Cane Toad

Nonindigenous 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
- Fish: ~100 species documented
 - About 25 established and breeding species
- Reptiles: ~50 species documented
 - About 40 established and breeding species
- Amphibians: ~ 5 species documented
 - Three established and breeding species
- *Data from FWC website, FLMNH, pers. observations, colleagues*



Florida's Unique Situation



- Florida is among the top 3 states in the US with regard to numbers of nonindigenous species
- A lot of disturbed and human modified habitats
- The southern half of the peninsula is surrounded by water on three sides and a frost line to the north
- A moderate climate
- Booming ornamental horticulture and pet trades
- Miami/Tampa are major ports of entry and Florida is hub for tourism
- Florida has an abundance of lakes and wetlands

Florida Laws

- It is unlawful to import for sale or use, or to release within this state, any species of the animal kingdom not indigenous to Florida without having obtained a permit to do so from the Fish and Wildlife Conservation Commission. (372.265, F.S.)
- **Reptiles of Concern**
 - January 1 2008: ROCs require a \$100 annual permit for personal possession, and any ROC that is 2 inches or greater in diameter must be permanently identified by a microchip (also called a PIT tag). [Several python species, Green Anaconda, Nile Monitor]
- **Conditional non-native wildlife**
 - Red-eared sliders possessed prior to 1 Jan. 2007 are okay
 - Red-eared sliders < 4 in. may not be possessed after 1 Jan. 2008
 - Specialty phenotype are exempt from permit requirements
- <http://myfwc.com/nonnatives/RuleRegs.html>

Some Invasive Mammals in Florida



Feral Hog



Feral Cat



Gambian Rat



Nutria



Armadillo

Potential Solutions

- Feral hogs: trap, shoot, exclude
- Feral cats: trap, NO spay/neuter release programs, keep cats indoors
- Rats/mice: trap, avoid poisons, secure bird seed and pet food, seal homes
- Armadillos: trap, exclude, chemical deterrents



Some Invasive Birds in Florida



Monk Parakeet



House Sparrow



Rock Dove



Starling



Swamp Hen



Sacred Ibis



Muscovy Duck



House Finch



Common Myna

Potential Solutions

- Parrots, Mynas, etc.: do not release pet birds, stronger regulation of pet industry, reproductive inhibitors
- Sparrows, Pigeons: exclude, physical obstacles
- Muscovy ducks: don't feed, shake eggs
- Swamp hens, Sacred ibis: shoot/eradicate, stronger regulation of pet industry



Some Invasive Reptiles in Florida



Red-eared slider



Green Iguana



Burmese Pythons & other large constrictors



Spiny-tail Iguanas



Knight Anole



Tegu Lizards



Nile and other monitors

Potential Solutions

- Red-eared sliders.: do not release pet turtles, Pet Amnesty Days, capture and euthanize
- Lizards: do not release pets, stronger regulation of pet industry, trap, shoot, don't plant favorite food plants
- Large constrictors: do not release pets, stronger regulation of pet industry, research (Judas snakes), report sightings to FWC
- ***DO NOT purchase pets of species known to be invasive—do your homework!***



Invasive Amphibians in Florida



Cane/Marine/Bufo Toad



Cuban Treefrogs



Potential Solutions

- Cane toads: capture and euthanize, do not leave pet food outside, exclude, accompany dogs at night
- Cuban treefrogs: capture and euthanize, exclude from homes, chemical deterrent



How You Can Help

- Do your homework before purchasing an exotic pet
- Never purchase species known to be invasive
- Never release a pet into the wild
- Become better educated and tell others
- Support tougher legislation
- Manage invasive animals on your property
- Florida Friendly yards do not support invasive animals

Useful Internet Sites

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

Dr. Steve Johnson's web page

http://www.wec.ufl.edu/extension/wildlife_info/frogstoads/

UF Extension page for identifying Florida's frogs, information on Cuban Treefrogs and Marine Toads can be found here

<http://www.floridaconservation.org/trappers/>

Nuisance wildlife trappers in Florida by region

<http://edis.ifas.ufl.edu/features/wildlifeindex.html>

UF EDIS Extension site with links to wildlife resource materials

<http://www.floridaconservation.org/nonnatives/index.htm>

Florida Fish and Wildlife Conservation Commission site with information on introduced and invasive animals