

## Highlights:

- Vanishing Mammals
- Seagoing Pythons
- Python Detector Dog Update
- Large Constrictors Lacey-Listed
- Plant Bestows Toxin Tolerance

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## Focal Species: Purple Swamphen

### Scientific name:

*Porphyrio porphyrio*

### Size:

Usually 18 in. long,  
35 - 40 in. wingspan

### Native range:

Europe, Asia, Australia

### Notes:

Appearance very similar to native Purple Gallinule



(Photo by J.M. Garg, courtesy of the Wikimedia Project)

Purple Swamphens are large, shy birds that belong to the rail family, and are similar in appearance to Florida's native Purple Gallinule and Common Moorhen. Like Purple Gallinule, introduced swamphens have blue/purple bodies, green wings and red beaks. However, native gallinules have yellow, rather than red, legs, pale blue foreheads, and yellow-tipped beaks. Common Moorhens are blue/black.

Purple Swamphens were introduced to South Florida through the exotic pet trade in the early 1990s, possibly due to accidental releases during Hurricane Andrew.

Purple Swamphens inhabit marsh wetlands and have been found in the greatest numbers near Pembroke Pines, on Lake Okeechobee, and in the stormwater treatment areas (STAs) just north of the Everglades, but they have also been found in smaller numbers in several other areas of Palm Beach, Broward, and Miami-Dade counties.

Purple Swamphens are now established beyond hope of eradication, yet the impacts of this introduction are not yet known. Purple Swamphens are aggressive, territorial birds that could com-

pete with native species for resources, and are habitat generalists capable of invading new areas. The Florida Fish and Wildlife Conservation Commission (FWC) hopes to analyze stomach contents of captured birds in the future to study potential impacts.

Currently, management efforts are limited. Because this species is native to U.S. Samoa and thus protected under the Migratory Bird Treaty Act, hunters cannot keep birds for personal use, and permit hunting programs have had low return.

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## Science: Everglades Mammal Declines

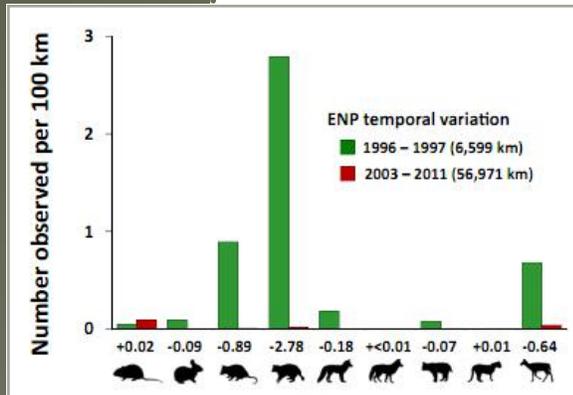


Figure from Dorcas et al. 2012

For the past 15 million years, Florida's medium-sized mammals have not had to contend with snake predators. Native snakes are too small to prey on any mammal larger than a gray squirrel. However, introduced pythons have been proliferating in Everglades National Park

(ENP), for more than thirty years, and recent evidence suggests that they are exerting significant pressure on native mammal populations.

By the year 2000, pythons were considered "established" in ENP because they had been present and breeding for the past ten years. Roadkill surveys conducted by the park in the late 1990s found not only pythons, but also large numbers of raccoons, opossums, and other mammals. However, a recent study by Dorcas et al. compared historical records to the results of roadkill surveys during the 2000s and

found severe declines in mammal sightings. Naturalists also report that sightings of rabbits are now very rare in the core of ENP where pythons are most firmly established. The authors found that mammal sightings were more common in areas where pythons are only newly established, and claim that this is not coincidental. These results suggest that python predators may be having devastating impacts on native mammals.

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## Science: Python Salt Tolerance



Python spotted swimming in Florida Bay, Nov. 2011

Burmese pythons have invaded the freshwater marshes of Everglades National Park, where they are thriving. Pythons are believed likely to spread to new regions to the north by moving through Florida's canal

systems or rivers. However, reptiles typically have a low tolerance for salinity, thus brackish coastal marshes have been generally considered uninhabitable, and the saline waters of Florida Bay were believed to pose a barrier to dispersal to the Florida Keys.

Researchers at the U. S. Geological Survey recently published a study which tested this hypothesis. They captured hatchling pythons in the Everglades, maintained them in cages with water bowls filled with either fresh, brackish, or marine salinity water, and recorded

how long they survived. Surprisingly, they found that hatchling pythons could survive for a month in marine salinity, and five months or more in brackish water. Presumably, adult pythons would be even more tolerant of saline conditions. These results suggest that pythons in the Everglades may be capable of dispersing to the Keys or through coastal mangrove habitats. Moreover, dispersal to Caribbean islands on floating vegetation might even be possible.

[Learn More...](#)



## News Updates: Python-detection Dogs



Click image to see YouTube video

One year ago, we brought you a story about an innovative approach to locating invasive pythons in the Everglades. Dr. Christina Roma-

gos and Melissa Miller, a doctoral student at Auburn University, have continued to work with EcoDogs to explore the potential for detector dogs to assist with python eradication. The dogs were successful at locating pythons, finding a total of 19 individuals, including one gravid (with eggs) female. Although the dogs were extremely successful, Romagosa and colleagues do not

consider this to be a “silver bullet” for pythons. Rather, they suggest that detection dogs can be used to suppress population expansion, and perhaps to eradicate populations in small areas. The next step in this research will involve working with the Everglades Cooperative Invasive Species Management Area to develop a strategy for using detector dogs. (See Resources on pg. 4)

“The ultimate use for detection dogs is to suppress the expanding python population and to eliminate them in small areas, such as on an island”

## Legislation: Constrictor Ban

In January 2010, the U.S. Fish and Wildlife Service announced a proposed rule that would list Burmese pythons and eight other large constrictor snakes as injurious wildlife under the Lacey Act. This rule would not only prohibit importation of these species, but would also prevent interstate transport. In essence, this would reduce trade of

these popular pet species among states, in the hopes of preventing additional pet releases. After two years of consideration and public comments from both sides of the issue, Secretary of the Interior Ken Salazar announced passage of the rule in modified form in January 2012. The USFWS rule lists Burmese pythons, North African pythons, South African

pythons, and yellow anacondas as injurious species. Although some would argue that this is too little too late, it is at least a step in the right direction. In order to prevent releases of the newly-restricted species, the [Burmese Python Initiative website](#) offers to find homes for unwanted constrictors. [Go to News Archives...](#)



## Noteworthy: Toxin Tolerance

Invasive species research has often shown that one introduced species facilitates the establishment of another introduced species. However, in this notable study, researchers in the Shine lab at the University of Sydney in Australia found that exposure to an

invasive plant actually prepared native lizards to tolerate the deadly toxins of the invasive cane toad. In Florida, where cane toads are also invasive, native animals have evolved with less toxic, native toads and are therefore similarly preadapted to tolerate

the invasive toads’ toxins. In Australia, this is not the case, and the toxins are often fatal. However, Price-Rees et al. found that toads that ate mother-of-millions flowers were exposed to similar toxins and developed tolerance to toad toxin. [Learn More...](#)

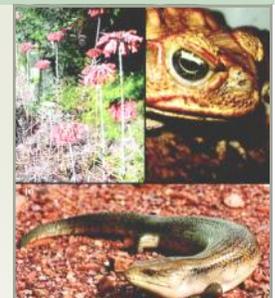


Figure from Price-Rees et al. 2012



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suggestions, or an In Focus photo?  
Want to be added to the mailing list?

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## In Focus...

This photo of an invasive Cuban Treefrog (*Osteopilus septentrionalis*) is one of many such photos emailed to us by concerned citizens, and is a great example of this species. For smaller, less distinctive specimens, the large, warty bumps seen on the back of this animal are a key characteristic, as is the yellow wash of color in the groin area.



Photo © Buck Nottingham, 2012

The Invader Updater is a quarterly newsletter focused primarily on providing information on invasive vertebrate animals in Florida and the southeastern U.S., and was first published in Fall 2009.

## Resources

- ◆ [Florida's Introduced Birds: Purple Swamphen \(\*Porphyrio porphyrio\*\)](#), by Steve A. Johnson and Monica McGarrity, UF/IFAS EDIS Fact Sheet
- ◆ [A Natural History of the Purple Swamphen \(\*Porphyrio porphyrio\*\)](#), by Elise V. Pearlstine and Juan Sebastian Ortiz, UF/IFAS EDIS Fact Sheet
- ◆ [Purple Swamphen - \*Porphyrio porphyrio\*](#), Florida's Nonnative Wildlife. Species detail.
- ◆ [A giant battle: Auburn canines help in search for Everglades' pythons](#) – Auburn University featured story
- ◆ [Auburn researchers conduct python-tracking study using specially trained dogs \(video, photos\)](#) – Al.com
- ◆ [Python import ban announced, but boa constrictors still allowed](#) – WUSF NPR News
- ◆ [Python imports banned by U.S. after harming Florida Everglades habitats](#) – Bloomberg
- ◆ [Interacting impacts of invasive plants and invasive toads on native lizards](#), by Price-Rees et al., in *The American Naturalist*, 2012
- ◆ [How animals prepare for an alien invasion](#) – Smithsonian Magazine
- ◆ Know of an important resource not listed here or in our archives? Let us know – email a description and URL to [monicaem@ufl.edu](mailto:monicaem@ufl.edu).