

Highlights:

- Do introduced Spotted Tilapia bully native sunfish?
- FWC's new amnesty map helps find homes for unwanted ROCs.
- Status update on Florida ROC legislation
- Another non-native lizard in Florida.

In this Issue:

Focal Species: Lionfish	1
Science: Tilapia and Sunfish	2
Legislation: ROCs in Florida	2
Innovation: ROC Amnesty Map	3
News to Know: Asian Carp Saga	3
Noteworthy: Eradicating... Goldfish?	3
In Focus	4
Resources	4

Focal Species: Lionfish

Scientific name:

Pterois volitans
(& also some *P. miles*)

Size:

Up to 18 inches

Native range:

Throughout the western Pacific Ocean

Notes:

Dorsal & anal fins contain potent venom



Lionfish (by Joel Rotunda)

The invasion of the Lionfish is considered the most rapid finfish invasion in history. In 1985, the first Lionfish sighting in Florida waters was confirmed — by 2002 they were considered established. These fish, native to reef habitats of the Indo-Pacific, were common in the exotic pet trade. Aquarium dumps likely resulted in multiple introductions and eventual establishment. Invasive Lionfish have now spread throughout the Caribbean and northward along the eastern seaboard. Individuals are often seen as far north as New England, but are not likely able to over-

Lionfish are established throughout the Caribbean and along the eastern sea-

winter in these cold waters. Recent sightings suggest that Lionfish have already begun to invade the Gulf of Mexico as well.

Lionfish are usually found in water less than 100m deep, in seagrass beds and mangroves and on reefs (natural and artificial). During the day, they remain hidden, relying on crevices for shelter. By night, they move to deeper waters to forage. Lionfish are easily recognizable—their cream-colored bodies are marked with vertical reddish stripes of varying widths, and they have distinctive, elongated dorsal and pectoral spines.

In the Bahamas, these invasive fish are found at ex-

tremely high densities of up to 158 fish per acre—more than eight times the density in their native range. Along the Atlantic Coast, these invasive fish are now as abundant as many native grouper species.

Lionfish are believed to impact native reef communities by preying on small fish and crustaceans (including lobsters). A recent study of patch reefs in the Bahamas found that Lionfish preyed heavily on juvenile reef fish, reducing their overall chances of survival. This also suggests that Lionfish may be competing with other fish-eating species, and could cause serious damage to reefs by reducing populations of herbivorous (plant-eating) fish that would prevent seaweeds and algae from overgrowing the corals.

[Learn More...](#)

Science: Tilapia/Sunfish Interactions



Spotted Tilapia

Photo: Andrew Miller
via Wikimedia

Florida's native sunfish (*Lepomis* species) play important roles in determining the structure of native fish and invertebrate communities. Spotted Tilapia (*Tilapia mariae*) were introduced to Florida in the 1970s, when they escaped from aquaculture facilities, and rapidly became one of the most abundant species in canals. Spotted Tilapia and native sunfishes nest in similar habitats during the same time of year, and aggressive interactions between these species have been observed. Some studies have suggested that the invaders may be displacing native species, and it is possi-

ble that this is the result of these aggressive interactions.

Wesley Brooks and Rebecca Jordan of Rutgers University recently decided to study these interactions in a lab setting. Their research showed that when it comes to "scrambling" to claim territory, the invaders win out—they are bolder (quicker to aggression) and more aggressive overall. When they allowed the fish to set up territories before introducing an intruder, they found that, regardless of species, the resident fish were more aggressive, defending their territory against bolder intruders. However, Spotted Tilapia were much more ag-

gressive overall than the native sunfishes.

In the mid-1980s, Peacock Bass were introduced into South Florida's canal system to help control Spotted Tilapia. However, Peacock Bass are only able to survive in the canals, whereas Spotted Tilapia can invade natural habitats. This study suggests that tilapia could impact native sunfish if nesting sites were limited—the researchers suggest impacts could be greater at natural sites. However, more research is needed to evaluate how these lab studies relate to what is going on in nature. [Learn More...](#)



Green Anaconda—currently a ROC in Florida

Photo: Patrick Lynch, SFWMD

The Florida Legislature unanimously passed CS/SB 318 on 28 April 2010, and sent it to Governor Charlie Crist who has until June 5 to veto or sign it into law. This bill will prohibit future acquisition for personal use of the current Reptiles of Concern (ROCs) and conditional or prohibited species (FWC rules already prohibit personal possession of the latter two categories). The bill will also require FWC authorization for internet sales to Florida. The bill will increase penalties and fines for violations of these rules. Each year, the FWC will be required to report to the Legis-

Legislation: ROCs in Florida

lature the current list of ROC, conditional and prohibited species and by December 2010, the FWC must also consider listing other species, such as iguanas, as ROCs.

The FWC has also drafted proposed rule changes that reclassify the current ROCs as conditional species, which will not allow future personal possession but will allow commercial breeders to keep them for export out of the state of Florida. Breeders will have to adhere to caging requirements set by FWC, keep detailed records, submit to inspections, and label reptile shipments.

Grandfathering provisions in the proposed regulations, as well as the legislation, will reduce the likelihood that ROC owners will release their pets to avoid having an illegal animal. Allowing commercial possession provides options for those wishing to surrender their ROC under FWC's Non-native Pet Amnesty Program.

Additional information on the Florida legislation and FWC rules will be posted on the Invader Updater website as it becomes available.

[Learn More...](#)

Innovations: ROC Amnesty Location Map



Nile Monitor

Photo: Patrick Lynch, SFWMD

When circumstances prevent pet owners from being able to house or care for their pet, they surrender it to the humane society or other local

animal shelter—except for exotic pets, that is. Unwanted exotic pets are returned to pet stores, dropped off at zoos, or even worse, released into the wild. Florida and Connecticut are unique in the U.S. for taking the initiative to start “amnesty” programs for exotic pets. On certain days throughout the year, exotic pets can be surrendered at designated locations—no

questions asked. Now, the FWC has taken it a step further, by allowing Reptile of Concern (ROC) permit holders to participate in a ROC amnesty network. Anyone looking for a home for a pet ROC can visit the ROC Amnesty Location Map and find someone who is qualified to care for their pet (and already has the necessary permits).

[Learn More...](#)

The FWC’s ROC Amnesty Location Map makes every day Amnesty Day for ROCs!

News Updates: The Asian Carp Saga...

The Asian Carp is not one, but several species of introduced fishes. Most of these species are filter-feeders, but at least one species eats small shellfish—all have insatiable appetites. For this reason, they were introduced for biological control of algae and mussels in retention ponds at wastewater and aquaculture facilities. The carp escaped, invaded the Mississippi

and Illinois Rivers, and have negatively affected local fisheries. Carp are edible, but are much bonier than the native species. These large fish have also become a danger to humans. They leap out of the water when startled, and at least one woman has been struck and nearly killed. Electric barriers appear to have kept them out of the Great Lakes, but there is concern that

they may be able to trespass, posing a threat to fisheries in the lakes. Attempts to temporarily shut down a Chicago canal linking the river and lakes were rejected by the Supreme Court. Officials are using poison to delay the fish invasion, while politicians seek to create legislation that will permanently close off the lakes. [Learn More...](#)



Noteworthy: Eradication of... Goldfish?

A somewhat unusual story out of Brownsville, Maine, appeared in the news recently—the Maine Department of Inland Fisheries and Wildlife sprayed a backyard pond with rotenone to eradicate goldfish. Many readers commented on the absurdity of the eradication. However,

this story simply illustrates the importance of invasive species education—education is the key to prevention! The unknowing owners of a local lodge had illegally transported the fish across state lines and introduced them into a large, man-made pond on their property, where the fish began to

breed. When the lodge owners were alerted to the effects that fish introductions could have on Maine’s natural ecosystem, they happily complied with wildlife agents and were not fined for their mistake. In fact, the agents even rescued a few goldfish—for indoor display. [Learn More...](#)





This newsletter is produced by:

Dr. Steve A. Johnson

Assistant Professor & Extension Specialist
Dept. of Wildlife Ecology & Gulf Coast REC
and

Monica E. McGarrity, Biological Scientist
Gulf Coast REC

University of Florida/IFAS
1200 North Park Road, Plant City, FL 33563

Do you have questions, comments,
suggestions, or have an In Focus photo to
submit? Email Monica at monicaem@ufl.edu

In Focus...

This photo by Dr. Kenneth Krysko of the Florida Museum of Natural History, University of Florida, shows an African Five-lined Skink (*Trachylepis quinquetaeniata*). These lizards were introduced by intentional releases from a former pet dealer and are now established in a small area in central Florida. Dr. Krysko's full scientific report on this newly established exotic species is being published and will be made available on the Invader Updater website soon.



Photo © Dr. Kenneth Krysko (FLMNH), 2010

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 Winter 2009.

Resources

- [EDDMapS](#) is an online mapping tool for viewing and creating invasive species reports. Users can view the current distribution of invasive species, create and map a new sighting, and upload photos for verification.
- The [Global Invasive Species Database \(GISD\)](#) aims to increase awareness about invasive alien species and to facilitate effective prevention and management activities. It is managed by the Invasive Species Specialist Group (ISSG) of the Species Survival Commission of the IUCN-World Conservation Union.
- Get [invasive species news from the National Invasive Species Information Center](#) via email, web-based news feed (RSS), or web-based news-reader.
- [AsianCarp.org](#) is an official web site established to coordinate the implementation of control and management of Asian carps in the United States. Development and maintenance of this web site is supported by the U.S. Fish & Wildlife Service through a partnership with the University of Texas - Arlington and it contains information and resources derived from a variety of other partners and sources.
- [Google News Alerts](#) can be used to set up news alerts for information YOU need – want to be notified daily or weekly about stories related to pythons in your county? Set up an alert!
- Know of an important resource not listed here or in our archives? Let us know – email a description and URL to monicaem@ufl.edu