

INFORMATIONAL RELEASE



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SCIENTISTS CHALLENGE **SNAKEHEAD** MYTHS

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BOCA RATON—Recent press accounts of the Asian snakehead fish ‘invading’ New York City continue to perpetuate the distorted doomsday image earlier media accounts fostered when this story first broke following the discovery of a few Northern Snakehead in a small Maryland pond in 2002.

Such stories often contain far more Hollywood-like hype than science according to a group of learned scientists in Florida who collectively have more than 100 years of professional experience working with exotic freshwater fishes. Unfortunately, accuracy

has frequently been abandoned in pursuit of sensational headlines and quotations. Even the highly respected *New York Times* referred to snakeheads in an August 9, 2005 story as “devilish” and “nightmarish creatures from Asia,” playing off of earlier accounts, such as the *Washington Post*’s July 3, 2002 story that describes snakeheads as “something like killer bees that swim” and “diminutive whiskered land sharks, gobbling up every fish snack in sight.”

In reality, the name ‘snakehead’ refers to a group of 29 freshwater fishes that are native to China, Thailand, Sri Lanka, the Philippines, India, and parts of tropical Africa. Although snakeheads have recently been illegally introduced into several States, only two species are reproducing in the continental United States. These are the Northern Snakehead, which is reproducing in the Potomac River and a South Philadelphia pond, and the Bullseye Snakehead, which is reproducing in a southeast Florida urban canal system.

“Unfortunately, the public is reading, hearing, and seeing reports describing these fishes as ‘Frankenfish’ or the ‘fish from hell,’ said Paul Shafland, a fisheries scientist who has spent more than 30 years studying exotic fish at the Florida Fish and Wildlife Conservation Commission’s (FWC) Non-Native Fish Laboratory in Boca Raton. But Shafland urges the public to be skeptical about some of the things they have heard and read about these fishes, and most notably the Northern Snakehead.

According to some accounts “This alleged monster eats anything in its path, can walk on land, survive up to three days out of water, and will even attack and kill people when guarding its young!”

“That’s great story lines for Hollywood movies, but it is not accurate news”
Shafland said.

Dr. Walter R. Courtenay (Professor Emeritus and leading federal expert on snakeheads) agrees, and tells everyone who will listen that “I assure you that the Northern and Bullseye snakeheads are incapable of overland movements.” Moreover, Courtenay adds that any such ‘land’ movements by any snakehead “must occur during the monsoon season so snakeheads can keep their bodies and breathing organ moist or else these fish will die in a matter of hours, not days!”

Dr. Jeffrey Hill (Lead Fish Researcher at the University of Florida’s Tropical Aquaculture Laboratory) agrees, adding that “Snakeheads cannot survive drying out nor can they make extended overland migrations across dry ground, although that seems to be the message popularized in media accounts.” Remember, he said “Snakeheads are fish, fish need water, and even though snakeheads can use atmospheric oxygen unlike most other fishes, they must remain moist to do so.”

“The appearance of any illegally introduced exotic fish is cause for concern, but not the recent hysteria we’ve been reading about with the snakehead. This is not a short-term crisis, but a long-term problem with less than catastrophic but no less real and unpredictable consequences” said Jon R. Fury, FWC Senior Fisheries Scientist for the South Florida Region.

The legend of snakehead voraciousness is built upon very few, if any hard facts, many of which have in turn been taken out of context and grossly exaggerated. Trying to debunk some of these snakehead myths Courtenay, Fury, Hill, and Shafland all agree that:

- Yes, snakeheads can ‘breathe’ air and live out-of-water longer than most fish can, but suggestions that these fish can live without water for up to three days is a gross exaggeration.
- Yes, snakeheads can move through shallow water, swampy conditions, and even semi-fluid mud that would immobilize many native fishes. But on dry land they only flop, wriggle, and squirm their way along for short distances, after which they will die in a matter of hours, not days.
- While there have been some local reports of snakeheads being found alive on land in their native ranges, none of the 29 Snakehead species possess the ‘land-walking’ attributes and abilities of the Walking Catfish, which has been in Florida since 1967. And even the Walking Catfish cannot live unless kept in a moist environment.
- Neither the infamous Northern Snakehead nor its cousin the Bullseye Snakehead are capable of making overland migrations or land movements of any kind.
- Yes, snakeheads are predators with small sharp teeth that are very similar to the native Bowfin but, NO, it is not some finned tiger waiting to pounce upon every living thing, nor is it able to single-handedly wipe out native fish communities.
- Another truth is that the illegal introduction and presence of reproducing snakeheads in Florida, the Potomac River, and a South Philadelphia pond is a serious concern, one that should be dealt with in a commensurately serious manner.

“Let me assure you that the discovery of the Bullseye Snakehead in Florida waters is not something to dismiss lightly,” Fury said. “In some cases, the presence of an exotic species can alter the ecosystem to the detriment of native species.”

“In such cases as this, we follow our well-established protocol for dealing with these matters rather than running about shouting: ‘The sky is falling! The sky is falling!’” Shafland said. “And this is not the first time that an exotic fish has stimulated such an end-of-the-ecosystem-as-we-know-it type of hysteria; in fact, it is very reminiscent of the same distorted coverage the Walking Catfish received back in the late 1960s and 70s.”

“Now we know that all the gloom and doom predictions about the Walking Catfish in 60s and 70s were unfounded,” Courtenay said. “Do we still have Walking Catfish in Florida? Yes. Are they a problem? Yes, but their documented negative impact on native freshwater species has been negligible compared to the catastrophe they were projected to be in media accounts.”

“These stories never seem to die; they just seem to lie dormant until a new species is reported that has an especially unusual appearance, behavior, and/or even just a strange name” Hill said. A few years ago similar stories surfaced about the Asian Swamp Eel that generated similar concerns by the public.

The real story here is that numerous unwanted exotic animals continue to be released into North America and elsewhere by well-meaning but misinformed individuals. Not only is this illegal, it is ecologically irresponsible, and often harmful to the animal itself.

“How would you like to be dumped in the Antarctic or in the middle of a rain forest far from anything you were familiar with, to fend for yourself” Shafland rhetorically

asks. Most of these illegally released animals die premature deaths because they are unable to adjust to their new surroundings. But those that do survive and reproduce can create serious problems for species and wildlife managers.

Shafland points out that 32 exotic fish species have been found reproducing in Florida's freshwaters, and 22 of these are considered permanent residents. In few cases, FWC has been able to quickly eliminate new exotic species, but because most are found in open and interconnected waterways, eradication is not generally feasible.

"Preventing exotic species from gaining a foothold is the only sensible approach, it's our first and most important line of defense," Shafland said. "During the past 40 years, the FWC has developed comprehensive and multifaceted programs to deal with this problem which includes specialized law enforcement personnel who enforce the various prohibitions and controls governing exotic fish and wildlife in the State."

Once the wall of prevention is breached by a new exotic, the options are limited, he admits. The Bullseye Snakehead, for instance, cannot be eradicated or trapped out of existence. "It's here to stay, unless they somehow disappear on their own, something no one is expecting them to do" Shafland said.

"In the meantime, we are trying to learn as much as we can about the Bullseye Snakehead by studying its life history, environmental limiting factors, and associations with other fish species," he said. These studies started immediately after the discovery of this fish in October of 2000, "but this process is a long way from being completed," he added.

Shafland explains the FWC continuously looks for management approaches that minimize the risks snakeheads and other exotic fishes might have, while at the same time

developing methods to utilize these unwelcome resources. He points out that Oscar and Mayan cichlid, exotic fishes native to Central and South America, are now targeted by some anglers fishing in the Everglades, and wild tilapia are commercially harvested for food from many central Florida lakes. Although none of these exotic species are considered desirable by Shafland, he adds that “the idea here is to get the public involved in helping us to reduce their numbers by using them for recreational and/or food purposes.”

Bullseye Snakehead were first documented in Florida on October 5, 2000 when an angler brought his catch to Shafland for identification. The Bullseye Snakehead is very similar in appearance and behavior to our native Bowfin, but just different enough to make this alert angler suspicious. There are actually 29 different species of African and Asian snakeheads currently recognized by scientists, all of which are air-breathing fish, but only two—the Northern and Bullseye—are known to be reproducing in North America.

Florida scientists have collected and observed thousands of Bullseye Snakehead during the last few years, with the largest of these weighing just over nine pounds and measuring up to 33.5 inches long, according to Shafland. Interestingly, the heaviest Bullseye ever collected in Florida was collected more than two years ago.

One reference indicates Bullseye Snakehead grow to four feet in length and weigh more than 60 pounds, but again Shafland responds by saying “show me the data,” then adding that if they truly grew this large, surely we would have seen fish larger than nine pounds by now.

Adult Bullseye Snakehead typically have red eyes and the body is a gold-tinted brown in contrast to younger fish that are pale gray. Older fish sometimes have a two-toned pattern with a lighter more orange-colored lower body and several large black blotches in front of small groupings of silver-edged scales called rosettes.

In Florida Bullseye Snakehead occur only in eastern Broward County, but they are expected to spread and could eventually occupy much of south Florida.

“Bullseye Snakehead are easily recognized by their torpedo-shaped body, toothy jaws, and long dorsal and anal fins that don’t have any spines,” Fury said. The most distinctive marking on the Bullseye is its prominent eyespot or ocellus, which is a black spot rimmed with orange near the base of the tailfin. The long anal fin that runs from the anus to the tail of the Bullseye Snakehead readily distinguishes it from the native Bowfin.

All four of these experienced scientists emphasized that Florida and the rest of the United States has a serious and continuing problem with illegally introduced freshwater exotic fishes. But, after more than a hundred years of collective professional experience, Courtenay, Fury, Hill, and Shafland all agree that while there is a big need to educate the public about these fishes, there is no need to sensationalize or exaggerate their effect, especially in the manner that has become so commonly associated with Asian snakeheads.