

# AIIS

## Aquatic Invasive Species

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### SNAKEHEAD



Northern Snakehead - *Channa argus* (artist: Susan Trammell 07/02)

**COMMON NAME:** Snakeheads

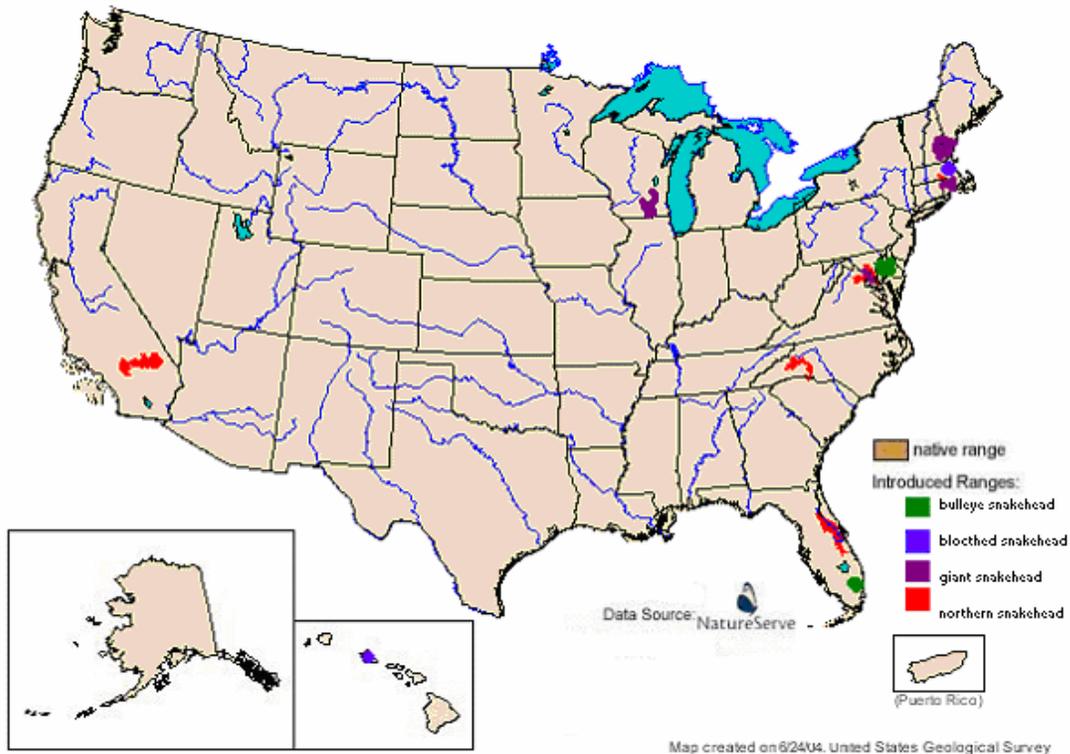
The family of snakeheads is made up of about 28 different species each with a different common name. Some however do not have a common name and others have no English common name.

**SCIENTIFIC NAME:** Channidae

The snakeheads are in the Channidae family. There are two genera recognized in the Channidae family, *Channa* (from Asia, Malaysia, and Indonesia) and *Parachanna* (from Africa). There are currently 28 species recognized.

**DISTRIBUTION:** Each species of snakehead has a slightly different native range but for the most part *Channa* species are from Asia, Malaysia, and Indonesia. The *Parachanna* species are from Africa. They have been introduced into many countries to establish a food source or they were aquarium releases. Those species found in the United States are *Channa argus* (northern snakehead), *Channa micropeltes* (giant snakehead), *Channa marulius* (bullseye snakehead), and *Channa maculate* (blotched snakehead).

**Indiana:** No snakeheads have been detected in Indiana waters but they are on the aquatic nuisance species watch list.

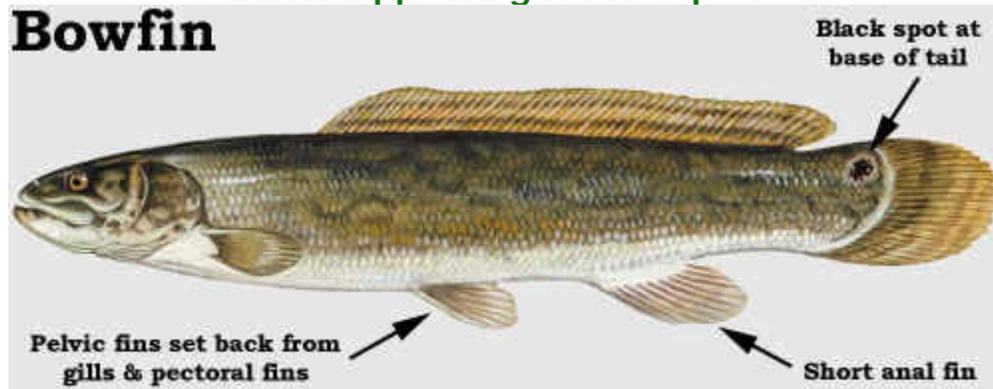


**DESCRIPTION:** Snakeheads have long cylindrical bodies with long dorsal and anal fins. They have no spines in their fins only soft rays. There are large scales on their head that resemble a snake's head. They have tubular nostrils and a large mouth with a protruding lower jaw. They have teeth and most species have canine like teeth on their lower jaw. Some might confuse the snakehead with our native bowfin. The best way to tell the difference is that the bowfin does not have an elongated anal fin as the snakeheads do (See illustrations below).

### Northern Snakehead



## Similar-Appearing Native Species



**LIFE CYCLE BIOLOGY AND LIFE HISTORY:** The majority of snakehead species live in freshwater streams and rivers. Others can occur in freshwater swamps, ditches, ponds, and rice paddies. For most species breeding occurs between June and August. Some species can breed up to five times a year. Snakeheads form monogamous pairs that remain throughout the spawning season. The snakeheads build elaborate nests by clearing an area of vegetation and weaving some vegetation into a column. During spawning the pair move up the column they built and the male wraps his body around the female. The eggs are then released and fertilized and they rise to the surface of the nest column. One or both parents fiercely guard the eggs. There has been reports of attacks against humans who approach a snakehead egg mass. *Channa gachua* and *Channa orientalis* are the only two species of snakehead that are mouthbrooders. In this case the male is the mouthbrooder of the fertilized eggs and the fry.

Snakehead fry start out feeding on zooplankton but quickly reach a juvenile stage and begin to eat small crustaceans, insects and insect larvae. Adult snakeheads feed mostly on other fishes but will eat crustaceans, frogs, smaller reptiles, and the larger species of snakehead may consume birds and small mammals. They are voracious predators and have been known to attack and kill prey and then not eat them.

Snakeheads are highly evolved and all species have the ability to breath air and many are capable of overland migrations. What enable these fish to breath air are their suprabranchial chambers for air respiration plus their ventral aorta is divided into two portions to permit aquatic and aerial respiration. This gives the snakehead the ability to stay out of water for a significant amount of time as long as it stays moist.

**PATHWAYS/HISTORY:** The first known report of a snakehead in the United States came from Hawaii. There is an established population of blotched snakeheads on the island of Oahu that has been there since the 1800's. In 1968 a giant snakehead was taken from Johnston Pond in Rhode Island. A fisherman claimed to have taken a giant snakehead in 1976 from the Mousam River in Maine, but that claim was never verified. In 1977 a northern snakehead was caught from Silverwood Lake in California. Massachusetts has had three locations where snakeheads have been found: giant snakehead from Poms Pond in 1990, northern snakehead from Newton Pond in 2001, and a blotched snakehead in the Charles River in 2002. Two northern snakeheads were

found in the St. Johns River in Florida in 2000. An established population of bullseye snakehead was discovered in residential lakes in Florida in 2001. In 2002 two northern snakeheads were caught in Lake Wylie, North Carolina. An established population of northern snakehead was found in July of 2002 in a Crofton, Maryland pond. The Maryland department of Natural Resources eradicated the population with the use of a fish toxicant. There have been other reports; one bullseye snakehead captured in the Baltimore Inner Harbor and three giant snakeheads taken from different locations in Maryland. The Rock River in Wisconsin has had reports of giant snakeheads being caught, but the exact dates are unknown.

**DISPERSAL/SPREAD:** Snakeheads have been imported into the United States for two reasons, as aquarium fish and for use as food. The fish found in the wild were either stocked in an effort to establish a local food source, or aquarium owners released them once they no longer wanted to care for them. One threat for further spread is from an established population of bullseye snakehead in ponds in Florida that adjoin with canals in the Everglades National Park. There are many species of Channidae that can tolerate a wide range of temperatures so neither the warm waters of the south nor the cold waters of the north would stop the snakeheads from becoming established. Once established, they can expand their range by swimming to adjoining waterways or can move overland to nearby waters.

**RISKS/IMPACTS:** At all life stages the snakehead competes with native fishes for food. Native fish and wildlife populations that rely upon fish, crustaceans, frogs, snakes, lizards and young waterfowl could face reductions resulting from the loss of food. If the snakehead becomes established in a body of water it can disrupt the ecosystems predator-prey balance. The snakehead can instinctively move to a new body of water through waterway connections or across land once food becomes scarce which puts all waters at risk for invasion. There is always the potential of a new species to bring with it new diseases and parasites and the same is true for any species of snakehead. The snakehead puts all of our endangered species of amphibians, fishes and crustaceans at risk of extinction. There does not need to be a large population of snakeheads to become a problem, even just one snakehead poses a threat because of its voracious feeding behavior. There is also a threat to humans. At least one species of snakehead, *Channa micropeltes*, has been known to attack humans when someone has approached the snakehead nest or young.

**MANAGEMENT/PREVENTION:** The key to managing snakeheads is to prevent them from becoming established in the first place. In 2002, the U.S. Fish and Wildlife Service added snakeheads to the list of injurious fish. With this listing, snakeheads are prohibited from being imported into the country. Many states including Indiana prohibit the possession of live snakeheads. If snakeheads were found in the wild, the only means of eradicating the population would involve the complete eradication of the fishery with a piscicide. This can be effective in small, isolated bodies of water. However, if a snakehead population becomes established in a river system or a large lake, the complete eradication would be nearly impossible. In addition, there would likely be great public outcry if a large body of water were suggested for a complete eradication of the fishery.

Preventing the introduction of snakeheads into Indiana is the main management objective. There are a few things that you can do to help prevent introducing snakeheads and other invasive fish species.

- ✓ Learn how to correctly identify snakeheads and other invasive species.
- ✓ Do not release aquarium fish into the wild.
- ✓ If you have a snakehead in an aquarium, it must be euthanized. IT IS THE LAW!
- ✓ Kill all snakeheads caught, do not release them alive.
- ✓ Immediately report the sighting of snakeheads to the Indiana Department of Natural Resources, Division of Fish and Wildlife and freeze fish for identity verification.
  - (317) 232-4080
  - [dkeller@dnr.IN.gov](mailto:dkeller@dnr.IN.gov)
  - 402 W. Washington St., Rm W273  
Indianapolis, IN 46204

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