

# Life in the Rocks

## Snakeheads – A Monster on the Way?

By Brian Wagner



Bowfin are native to Arkansas.

A “strange-looking creature with the head of a snake and a gaping saw-toothed maw” is how a recent *Washington Post* article describes a Maryland angler’s catch. It looked very similar to a bowfin (*Amia calva*), but was not. In fact, it turned out to be a northern snakehead (*Channa argus*). These fish are voracious predators that grow to 3-foot total length. They can breath surface air, allowing them to survive in oxygen-depleted waters. They can leave the water and move overland, surviving out of water for up to 4 days. Put it all together and these fish seem to be a scourge from a 1960’s horror film, but they’re real!

Snakeheads belong to the Family Channidae, and are related to popular aquarium fish – bubble-nest builders such as betas and gouramis. This family currently includes two genera: *Channa* is native to Asia and *Parachanna* is native to Africa. The

northern snakehead is called “ka-mul-chi” in Korean, and is found throughout China, Korea, and north into Russia. It has been successfully introduced to many countries, including the former Czechoslovakia.



This northern snakehead is native to Asia, not Arkansas.

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Snakeheads are prized as delicacies in China and Korea. They can even be found in fish markets in parts of the United States. It is illegal to possess live snakeheads in Florida, yet they were found alive in two oriental markets in February 2001. Since they are able to live so long out of water, it is easy to get them to market alive – the preferred state for customers to buy them. This also means they are fully prepared to colonize American waters when the chance arises.

An attractive young *Channa bleheri*.



This *Channa pleurophthalma* is also quite nice.



Snakeheads are also sold in the pet trade, and are available over the Internet. They are big, impressive, odd-looking fish. Some species are quite attractive, particularly when young – but when they outgrow their aquarium or their food-budget, there's always the temptation to throw them in a nearby lake or river rather than deal them a cruel death. This has happened repeatedly with aquarium fish, to the detriment of native fishes. *Channa micropeltes*, commonly called red or giant snakehead, has been reported from Maine (1976), Massachusetts (1979, 1990), and Rhode Island (1968), all attributed to aquarium releases.

Warm states like Florida have it worst – at least 31 species of exotic fish are now established in Florida waters. On October 5, 2000, a Florida angler caught a snakehead from a pond in Tamarac, Florida, where follow-up sampling collected over

100 of these fish, ranging from 6 to 28.5 inches long.

Other places have also had snakeheads move in to stay. The chevron snakehead, *Channa striata*, has been established in Hawaii since the 1800's. Snakeheads were introduced to Japan from Korea in 1923 – they've become established, and have had significant ecological effects.

Texas has prohibited some or all species of snakeheads as far back as the mid-1960's, and many other states have prohibited them too. In Arkansas, it is illegal to release any non-native fish into public waters without written permission from AGFC's Chief of Fisheries. While these laws are important, it is still quite possible that these fish will continue to come into our state – by those either unaware of the risk or willing to ignore it.

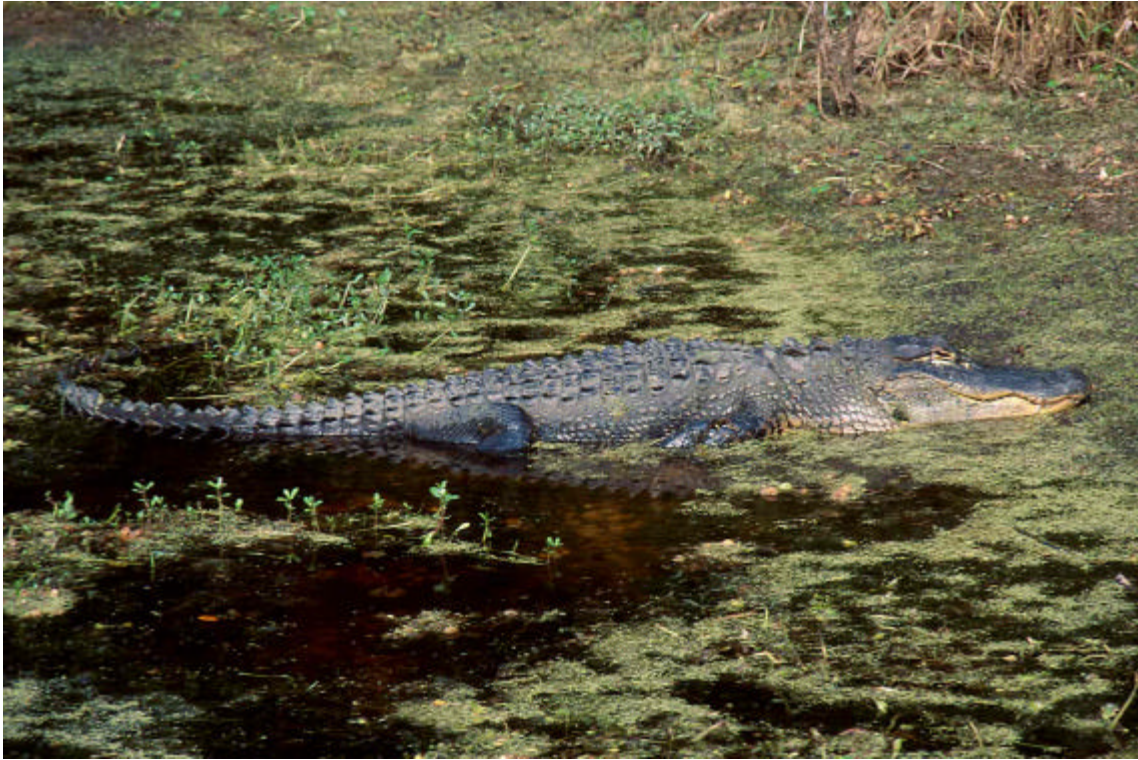
Everyone needs to understand the threat posed by introduction of non-native species, such as snakeheads. It may seem that releasing an overgrown aquarium fish in a lake or river is the kindest thing to do. However, think of the hundreds of native Arkansas fish you may be dooming by introducing your alien into new happy hunting grounds. I urge you – don't do it!

You have options for dealing with a fish you can no longer keep. Return it to a local pet shop for resale or trade. Give it to another hobbyist, an aquarium in a professional office, a museum, or a public aquarium or zoo. Donate it to a public institution, such as a school, nursing home, hospital, or prison. If these options are not available, a veterinarian or fishery biologist can euthanize it (put it to sleep). You can also do this at home by placing the fish in a container of water and putting it into the freezer. Because cold temperature is a natural anesthetic to tropical fishes, this is considered a very humane method of euthanasia. So, keep your fish, give it away, sell it, or even humanely kill it – it's really the kindest thing to do.

For more information check out:

<http://floridaconservation.org/whatsnew/region01/snakehead-so.html>  
<http://nas.er.usgs.gov/fishes/fishes.htm>  
<http://www.fishace.demon.co.uk/snake/title.html>  
<http://www.snakeheads.org/>

## The American Alligator in Arkansas: A Brief Overview



The American Alligator (*Alligator mississippiensis*) has long been a component of Arkansas' natural heritage. Strangely, few early accounts speak to the presence of alligators in Arkansas. One of the earliest recorded accounts is from the *Arkansas Gazette*, May 1828, which reported the killing of an 11-foot specimen on the north side of the Arkansas River at Little Rock. Between 1860 and 1960 alligator populations throughout Arkansas and the southeast were severely depleted, primarily due to habitat loss and unregulated hunting. Alligator populations have since recovered through state and federal protection and restocking efforts.

### **Natural History and Ecology**

The American Alligator is the largest reptile in the United States. Adult males rarely exceed 4.5 m (14.5 ft) in maximum length, and can weigh up to 455 kg (1000 lbs.). The all time

record length is 5.8 m (19 ft). Adults are known to live for more than 30 years, yet can probably exceed 50 years of age. In Arkansas, alligators inhabit oxbows, lakes, ponds, cypress-tupelo swamps, bayous, and sluggish backwaters of rivers and streams. Adult alligators are opportunistic feeders and will feed on anything that they can overpower and swallow including a variety of mammals, birds, reptiles, amphibians, fish, and crustaceans. Juveniles feed primarily on insects, small fish, crustaceans, and snails.

Sexual maturity is reached at 8 to 13 years of age and 1.8 to 2.1 m (5.9 – 6.8 ft) in length. Breeding takes place in the warm spring months when males “bellow” or “roar” to attract mates and to ward off other would be suitors. In June, the female lays from 20 – 60 eggs in a nest composed of mud, leaves, and other organic debris, then guards the nest from

predators until hatching. When the eggs hatch, about 65 days later, the young emit a high-pitched croaking noise alerting the female to come dig them out; she then carries them to water. The young may remain together for extended periods, up to a year or more.

Alligators are tertiary consumers and play a vital role in maintaining the balance of wetland animal communities. Alligators excavate cavities or burrows into overhanging banks as far as 6 m (20 ft) to escape winter weather and drought conditions. They also create “gator holes”, depressions excavated over the years, which provide a crucial source of water and act as refuges for many species during extreme droughts. It has been shown that translocated alligators will home great distances back to their original home range. The historic and recent distribution of alligators in Arkansas includes the Gulf Coastal Plain, Mississippi Delta, and associated wetlands of the Arkansas River valley above Little Rock.

### **Regulatory History**

For over one hundred years extensive habitat loss through the draining of wetlands, coupled with the added pressures of direct take by hunters, caused alligator population numbers to reach an all time low by 1960. As a result, the Arkansas Game and Fish Commission enacted a regulation to protect the alligator in 1961. The federal government passed legislation in March of 1967 listing the alligator as an endangered species, thus protecting the animal from take, six years before enactment of the Endangered Species Act of 1973. In January 1977, the alligator was down-listed to threatened status. In June 1987, it was de-listed to recovered status and subject to a five-year monitoring program. At present, it remains on the federal listing as “Threatened due to Similarity of Appearance”. This was done to ensure proper regulation of the legal trade in alligator skins or products made from them, to protect other

endangered crocodylian species with skins that are similar in appearance.

With the advent of de-listing to recovered status, regulatory jurisdiction has been deferred to the state level: *Code of Federal Regulations: Title 50, Part 17. §17.42 Special rules – reptiles*. The exception to this is the U.S. Fish and Wildlife Service regulation of traffic in alligator hides or products made from them, whether from wild or captive stock. Arkansas Game and Fish Commission regulations that pertain directly to alligators include; *Section 18.00 General Hunting Regulations, Code 18.14 Taking of Alligator Prohibited; Section 40.00 Alligator Farmer Regulations*.

### **History of Restocking Efforts**

By the mid-1960's, Arkansas' alligator population was severely depleted. At that time the greatest populations persisted in the southwestern quarter of the state. It was estimated from a survey conducted in 1973 that only 1900 alligators occurred in Arkansas, in Hempstead, Lafayette, and Miller counties. Prior to this, in 1970 or 1971, the Arkansas Game and Fish Commission attempted a restocking effort, utilizing native stocks taken from Grassy Lake in Little River County, however these efforts proved unsuccessful. Shortly thereafter, an agreement between the Louisiana Department of Fisheries and Wildlife and the Arkansas Game and Fish Commission was established. This agreement provided sub-adult alligators taken from the wild in Louisiana, by AGFC personnel, to restock areas within their historic range in Arkansas. Between 1972 and 1984, 2,841 alligators were captured in Louisiana and released in Arkansas. It has been reported that approximately 80% of restocked alligators were released on private lands, at the owner's request, in the belief that they would control nuisance animals such as beaver, rough fish, snapping turtles, and venomous snakes.

## *Pebbles...*

- Brian, Bill, and Kelly attended the Arkansas Academy of Science meeting and helped man an AGFC career booth.
- Kelly conducted fieldwork to collect salamanders for researchers at University of Texas-Arlington who will be describing several new species of the Many-ribbed Salamander group.
- Brian worked with GIS Coordinator Tracy Moy to host four employee-training classes on the use of GPS units, one of which Bill also attended.
- Bill attended a Mississippi Interstate Cooperative Resource Agreement (MICRA) meeting in St. Louis.
- Kelly attended an informative presentation on Caddo Indian archeology of the Grandview Prairie WMA.
- Brian conducted a safety meeting on chemical use.
- Bill surveyed approximately 8 miles of Fifteen Mile Bayou for endangered mussel species.
- Kelly worked in the field with Enforcement and Wildlife Management Division personnel from the Monticello Office to generate step-by-step capture and handling photographs for the Nuisance Alligator Handling Procedures safety-training workshop.
- Brian attended public meetings in Lonoke, Lake Village, and Jonesboro related to development of an approved aquaculture species policy.
- Bill relocated mussels from a bridge construction area on the St. Francis River.
- Brian and Bill attended the annual AGFC – USDA Forest Service coordination meeting in Heber Springs.
- Kelly hosted Joe (co-author) and Suzanne (wildlife photographer) Collins, of the Peterson Field Guide to Reptiles and Amphibians of Eastern North America, to conduct fieldwork and update photographs for the fourth edition of this most popular guide to amphibians and reptiles.
- Brian and Bill attended an employee CPR class.
- Kelly worked with the contracted alligator population survey biologist from throughout the southern portion of the state to initiate a long-term alligator population survey.
- Bill conducted an endangered mussel survey in the Ouachita River for the Operational Services Division.
- Brian conducted a stream ecology field trip for AGFC Office Managers on Frog Bayou near Fort Smith.
- Bill presented a mussel presentation at the Hoxie High School's "Natural High Day".
- Kelly worked with Brian Infield, Biologist II to survey alligators on Kingfisher Lake, Petit Jean WMA.
- Bill conducted an endangered mussel survey in the Little River.
- Brian visited a cave on private land near Calico Rock with Fisheries Biologists Mark Oliver and Ken Shirley and Private Lands Biologist Ted Zawislak.
- Bill attended an Arkansas Freshwater Mollusk Council meeting to discuss conservation status of mussels in Arkansas.
- Bill has relocated his residence and office in June. He will now be working out of the Perryville Regional Office of AFGC. His new contact information is AGFC, P.O. Box 6740, Perrytown, AR 71801, Phone 877-777-5580.

### Crooked Creek Crayfish



Biologist Mark Oliver, Mountain Home Office Secretary Toni Dean, and I made a foray to Crooked Creek a couple weeks ago looking for crayfish. Since it is summer, male crayfish are not in form-I and thus cannot be keyed out to species. Our goal on this trip was to collect live specimens of *Orconectes longidigitus*, the longpincer crayfish. This native Ozark species may be the largest crayfish in North America. In a short time of snorkeling we had seen what are probably at least 4-5 different species (I must return in the fall!), including several *longidigitus*. There were several nice sized crayfish, but no show-stoppers (I sure wished we could have a crawfish boil though!). We had seen a larger one in the open water, but it proved too fast for us to catch by hand. We moved on to a second site and continued our search. Then I flipped and saw it – with the magnification of the water, it looked like a lobster! He scooted away, but I was determined. I chased him into the nearby plants and eventually seized him. It was a male *longidigitus*. It had recently molted (shed it's outer shell to grow, and the new shell was still soft) and was about 8-inches long (including the claws). He made it home alive and I plan to bring him to displays and classes I do. If I can work out a way to keep him cool (my last one died when our office got into the low-80's over a weekend), I hope to have him at Game and Fish Day August 3<sup>rd</sup> at Wild River Country.



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