

THE NORTHERN WATER SNAKE

A Historical Perspective



photo-Brandon Ruhe



Editor's Note: As we celebrate our 150th anniversary, it's a great time to reflect on the Commission's past. Some ideas have greatly changed including the Commission's perspective on Northern Water Snakes. Once thought to have been destructive nuisances and killers of too many sport fish, these snakes are an important part of today's aquatic ecosystem. Take a look at some of the historic materials that were published in the past. Then, read about the Northern Water Snake and how our views of snakes have changed for the better.

Pennsylvania Angler article from the August 1934 issue

PENNSYLVANIA ANGLER

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EDITORIAL

KILL THE WATERSNAKE

WITH low water general in many of our trout and bass streams, the menace of natural destroyers of fish life becomes increasingly serious. When water levels are high, or even at normal stages, trout, bass and other fish have a fairly good chance of eluding natural enemies. The reverse applies under low water conditions. Concentrated in shallow pools and riffles, fish afford an easy prey, and the toll taken on them is extremely heavy. This month, thousands of female watersnakes will bring forth their young, and if only a small proportion of the season's brood survive they will represent just that much additional drain on the fish supply.

One of the most commendable features in the drive for better fishing here in Pennsylvania has been the whole-hearted cooperation of our sportsmen, Boy Scouts and others in thinning down the number of watersnakes. Real progress has been made on some of our outstanding bass and trout waters. But the snake-killing campaign is now only well under way. This month and September should mark extensive destruction of these reptiles on our fishing waters. Under present conditions it will mean the saving of thousands of fish for the fishermen.

Increased fishing on practically all of our waters in recent years has served to stress the need of predator control. The inland waters, as the red man knew them, teemed with fish. The presence of thousands of fish destroying reptiles, birds, and animals was an essential feature in the scheme of things. Uncontrolled by natural predators, the vast supply of fish in the streams would eventually have brought about a state of over-population of the waters. In primitive Pennsylvania, the balance of nature was a vital factor in all of our streams. It is just as important today insofar as retaining the proper balance between species of fishes is concerned.

However, modern conditions in our fishing waters are almost in direct contrast to those prevailing when William Penn founded his colony. Today, thousands of fishermen invade the streams for sport. Pollution has drastically curtailed waters capable of sustaining fish life. Natural reproduction of fish is augmented by the stocking of suitable waters with millions of fish from hatcheries maintained by the licensed fishermen. Obviously, the present day fishing problem is one demanding a maximum number of fish in every stream being fished. It is at this point that the watersnake enters the picture. Not only is it destructive to forage fishes such as the minnow, but its toll on bass spawn, young bass, and other game fish as well as food fish represents a direct loss to the anglers of the Commonwealth.

Watersnake control, if drives are organized, is not difficult. Covering a snake-infested trout stream or bass fishing area in a single day, five sportsmen armed with small calibre rifles may destroy dozens, and possibly one hundred of the reptiles. Shooting watersnakes is ideal practice with small arms and perhaps the most effective method by which they may be thinned down.

Pennsylvania fishermen during the past few years have demonstrated one fact with emphasis—they are conservation-minded. The sportsman's code is a by-word with the majority of our anglers and their efforts to improve fishing conditions are worthy of highest praise. Through stream improvement they have bettered natural conditions under which trout may live on a number of our trout waters. To make stream improvement even more effective, it is necessary that watersnake control be rigorously carried out.

Just how many fish a watersnake of medium size may destroy from the time it leaves hibernation in the spring until it again enters a dormant state in the autumn is not definitely known. It is adept at catching fish and frogs and voracious in appetite. Assuming that it will capture and consume on an average one fish of medium size a day—and this is an extremely low figure when its habits are taken into consideration—a watersnake during its season of activity would destroy 200 fish. Probably a more accurate figure would place the number of fish consumed at 500 or more. Multiply this seasonal prey of an individual snake by the thousands of watersnakes on our fishing streams and the annual toll taken from the inland waters is staggering.

Should low water, prevalent in virtually all sections of the state, continue through September, the cooperation of sportsmen in saving fish of all species in the fresh water will be highly essential. If we are to have the kind of fishing that is the desire of every angler, our army of fishermen will be an outstanding factor in deciding the issue. Destruction of watersnakes on a statewide scale is a major step in the campaign for better fishing.

O. M. Deibler
Commissioner of Fisheries.

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photo-PFBC archives

photo-Brandon Ruhe



Northern Water Snakes are quite common in Pennsylvania and live in and around nearly every body of water that occurs in Pennsylvania including small and large streams, lakes, ponds and marshes.

by Chris Urban
Nongame & Endangered Species Coordinator,
Pennsylvania Fish & Boat Commission

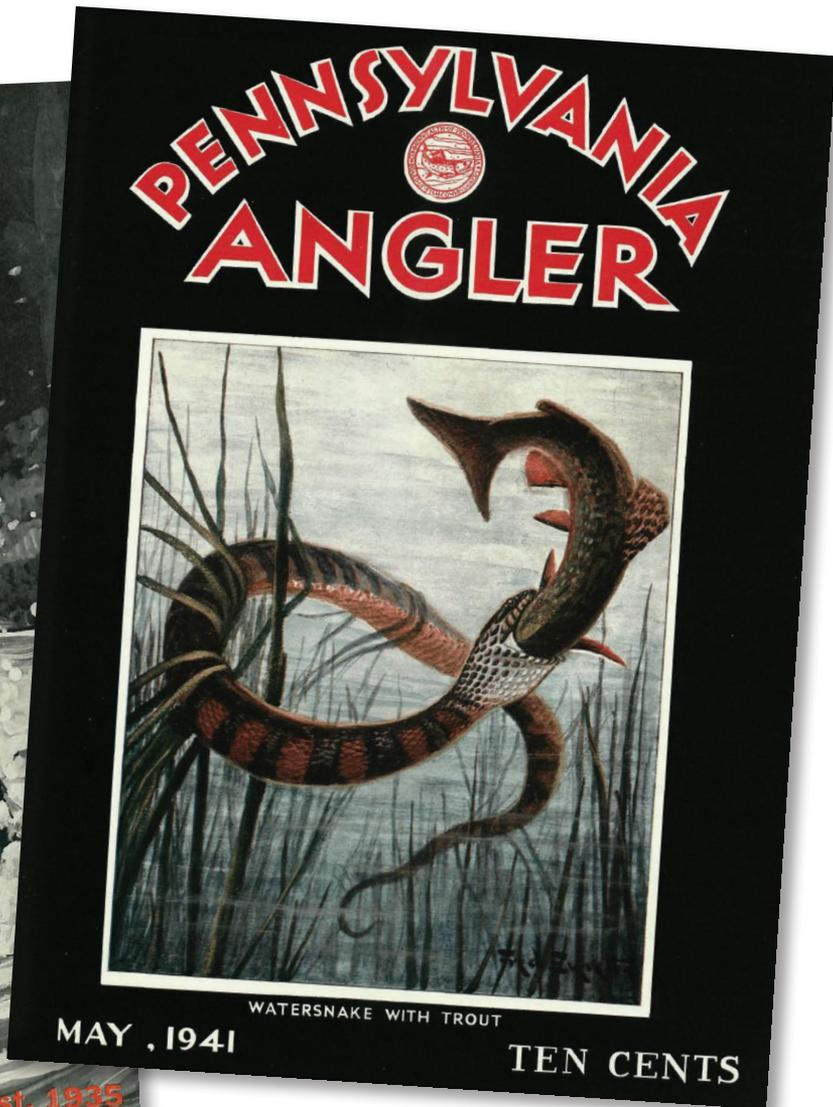
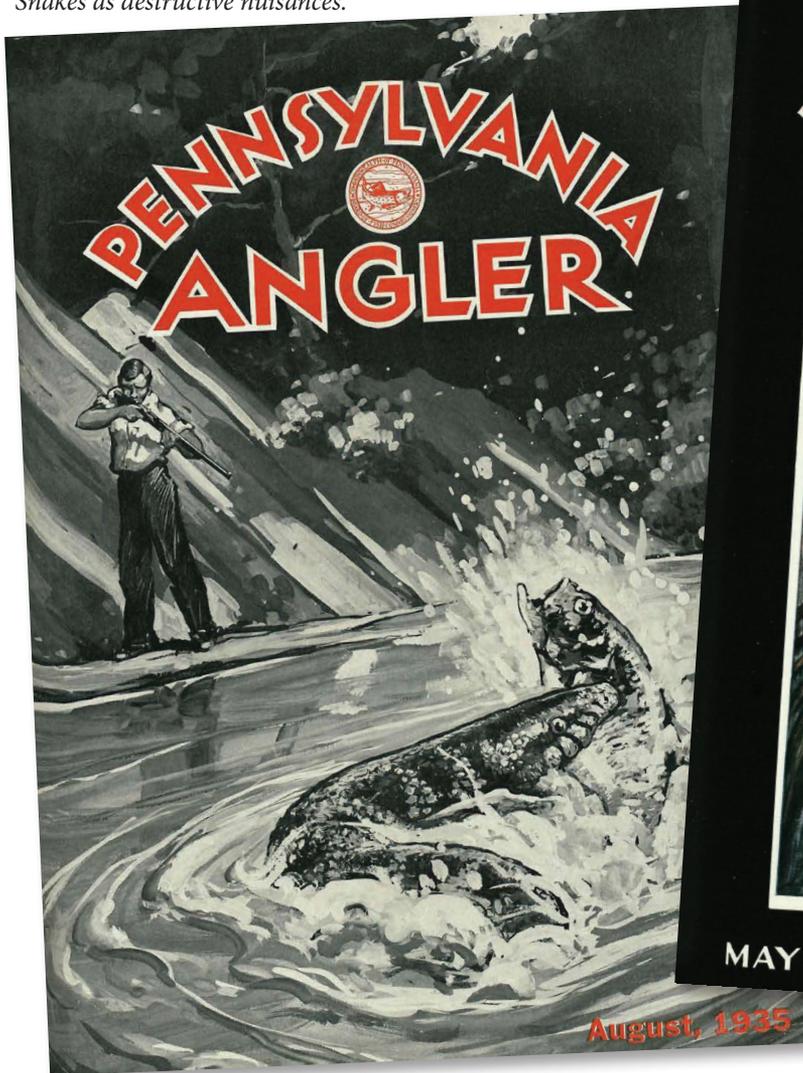
Once considered a pest, and even thought to pose a significant threat to the aquatic life in our waterways and hatcheries, the Northern Water Snake (*Nerodia sipedon sipedon*) is now regarded with interest and fascination. This mostly brown to reddish-colored snake, with large darker-colored banding, grows to approximately 3 feet long. Older snakes lose their banding and appear all brown or black. The Northern Water Snake is often confused with the Copperhead or Eastern Milksnake. Copperheads have a narrow neck, triangular-shaped brown to coppery head,

photo-Brandon Ruhe



The pupils of the eyes of non-venomous snakes, including the Northern Water Snake, are round.

Vintage Pennsylvania Angler covers depicted Northern Water Snakes as destructive nuisances.



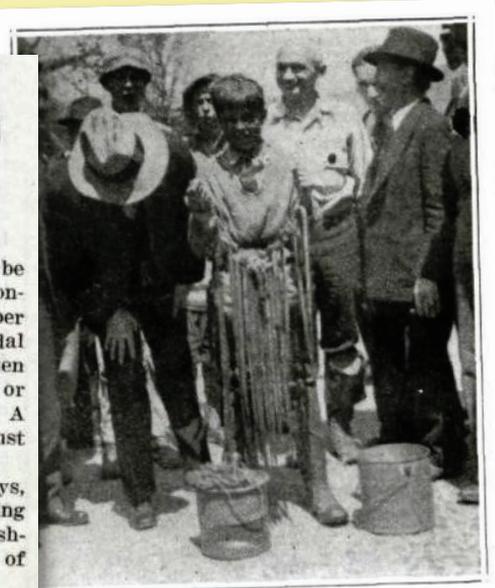
Fish Commission Sponsors Campaign Against Watersnakes

PENNSYLVANIA boys are key figures in the Fish Commission's campaign to thin down the number of watersnakes this year, Oliver M. Deibler, Commissioner of Fisheries, has announced. Appropriate medals will be awarded to each Boy Scout or any boy, who kills ten or more of these destructive reptiles and furnishes proper proof of his achievement.

Simple rules govern the snake-killing campaign now under way. Any Boy Scout who kills his quota of snakes will report the killing to the scoutmaster in charge of his troop. In turn, the scoutmaster will notify

the Fish Commission and the boy will be given a fine medal inscribed "Junior Conservationist." A boy who is not a member of a Scout troop will be awarded a medal if he reports, on his honor, the killing of ten snakes to a fish warden, game warden, or official of a sportsman's organization. A snake, to be entered in the total killed, must be twelve inches long.

It is believed that a great many boys, who have taken keen interest in the killing of watersnakes to better Pennsylvania fishing, are already qualified to receive one of these Conservation Medals.



WM. PINKERTON, 12, OF FAIRMOUNT PARK, PHILADELPHIA, WITH A "STRING" OF WATERSNAKES

Pennsylvania Angler article (above) and photograph (right) from the August 1934 issue

PENNSYLVANIA ANGLER

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Palmerton Girl Wins Snake-Killing Medal

During the watersnake killing campaign conducted by the Fish Commission last summer, boys interested in this phase of Pennsylvania's program for better fishing did not monopolize the limelight by any means. That feminine outdoor enthusiasts played an important part in the drive to rid Pennsylvania streams of these predators is illustrated by the interest taken by Miss Jean Brown, of Palmerton, R. No. 1, whose picture accompanies this article.

Outdoor sports, hunting and fishing, are hobbies with Jean. Like her father, Elmer Brown, a member of the Palmerton Rod and Gun Club, she is interested in everything pertaining to conservation. When she was six years old, she killed her first watersnake, and since that time has been active in thinning down the number of these reptiles.

Writes Ira J. Bleiler, secretary of the Palmerton Rod and Gun Club:

"This year, when Jean learned from a Palmerton Rod and Gun Club officer of the Junior Conservation medals being given by the Fish Commission to any boy or girl killing ten or more watersnakes, she immediately became interested and proceeded to qualify. As soon as she had killed ten snakes, she applied for her medal, although she has since that time killed many more. A few of the watersnakes killed this year were in a small feeder stream in which local sportsmen had last spring stocked fingerling trout furnished by the Fish Commission, so we felt that she certainly deserved some recognition for this splendid work.

"She has also during the past few years



killed three copperhead snakes which she herself skinned and then mounted the skins. Jean has likewise preserved the skins of some of the larger watersnakes. Incidentally, she is an honor student in her class in the Palmerton High School."

Pennsylvania Angler article from the February 1936 issue

photo-PFBC archives

elliptical pupils (“cat-like” eyes) and a distinctive hourglass pattern running the length of the snake’s body. Milksnakes appear shiny or smooth and have a reddish-colored base along their bodies with gray to tan colored banding. Milksnakes have red eyes, and their heads are patterned, with a distinctive light-colored “Y” on the back of their heads. Water snakes are also sometimes confused with the venomous Cottonmouth (or Water Moccasin), which occur only as far north as southeastern Virginia.

Northern Water Snakes are quite common in Pennsylvania and live in and around nearly every body of water that occurs in Pennsylvania including small and large streams, lakes, ponds and marshes. Never far from water, they can be seen basking on stream or lake edges, shorelines (sometimes in groups), rocks or logs, and they will sometimes deftly climb nearby shrubs and trees overhanging stream or pond edges, where they will stretch out to maximize the warmth of the sun. Water snakes are completely adapted to their watery world. They are at home in the water, unlike other snakes. When swimming, their bodies are submerged just under the surface, and their heads are above water. They readily submerge into the water when disturbed or while hunting and can stay submerged for significant amounts of time (over 60 minutes). These heavy-bodied snakes are known to consume other “cold blooded” creatures including small fish, frogs, toads and salamanders. Will they take an occasional trout or bass? Yes, but they mostly take sick, injured or recently killed fish. Gamefish are not their staple, smaller fish like minnows are their standard. Water snakes are active hunters, searching out their quarry using their vision and keen sense of smell. Water snakes have recurved teeth, used to grip their slippery prey. Once their prey is captured, they hold on and begin chewing. They are known to have an anti-coagulant in their saliva, which keeps their prey bleeding, so they can track their blood in the water. Many reptile and amphibian enthusiasts can attest to their bloody bites, received when they have cornered or mishandled this grumpy critter.

Northern Water Snakes are also food for other aquatic species, especially their brightly patterned young. Predators include larger fish, Bullfrogs, Snapping Turtles, herons, egrets, raccoons, mink and numerous hawk species. Anglers often encounter water snakes while fishing. Some snakes will approach anglers and often intimidate the surprised angler. This behavior is more curiosity than intimidation. Water snakes will quickly escape if given the chance, but if cornered, they will defend themselves vigorously with repeated strikes. However, when approached, most water snakes will quickly exit into the water and disappear from site, hiding in the brush or debris in the edges of the pond or stream.

Historically, these critters were considered to be destructive and thought to consume too many fish. They were dealt with harshly, killed when seen and often even targeted efforts were used to eradicate them from our waterways. Even bounties were offered for each snake killed. Since then, through research and observation, we have learned that the bulk of their diet is not sport fish but is mostly comprised of small forage fish and other amphibians that share their habitat. Unfortunately, old habits die hard—some still think, “The only good snake is a dead snake.” Understanding their natural history and habits is the key to dispelling the mysteries and negative views on snakes.

Today, we use modern technology to track the whereabouts of water snakes and other Pennsylvania amphibians and reptiles.

The Pennsylvania Amphibian and Reptile Survey (PARS) is a cooperative effort between the Mid-Atlantic Center for Herpetology and Conservation (MACHAC) and the

Commission. The PARS relies heavily on public observations to “atlas” or help build the distributional information of Pennsylvania’s herpetofauna. Compared to years ago, when we used dots on paper maps to track species locations, this new system uses information obtained from smartphones and GPS units. Simply take a picture, get the latitude and longitude of the location where you have seen the critter, and submit the information to the PARS website. If you are interested in looking for herps and helping the Commission learn more about these species, please visit the PARS website and sign up as a volunteer at www.paherpsurvey.com.

We have come a long way in our views of water snakes and the technology used to track them. The future looks promising for water snakes in Pennsylvania. We encourage you to get out to your local waterway to observe these interesting creatures. ☐



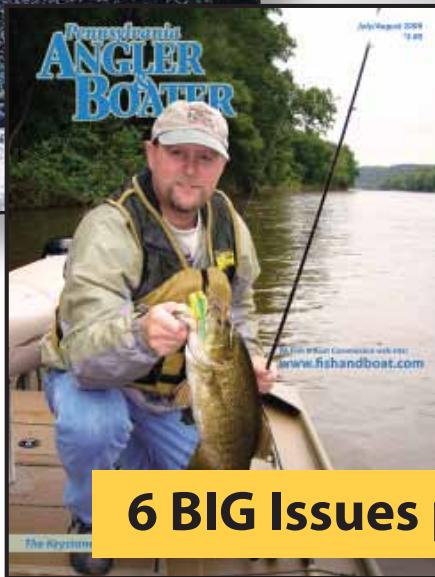
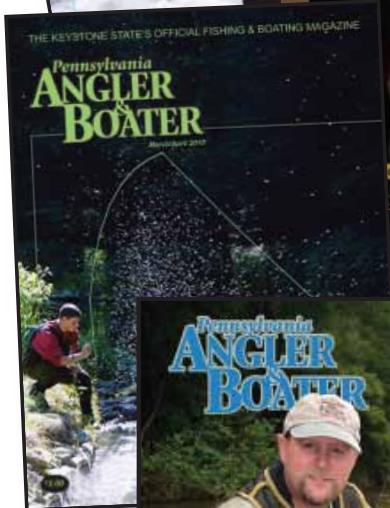
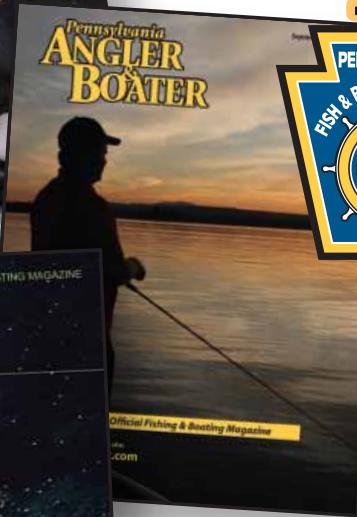
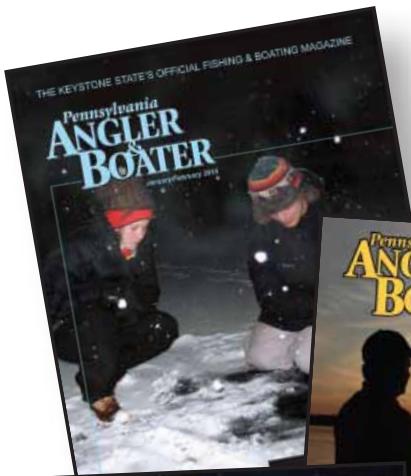
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