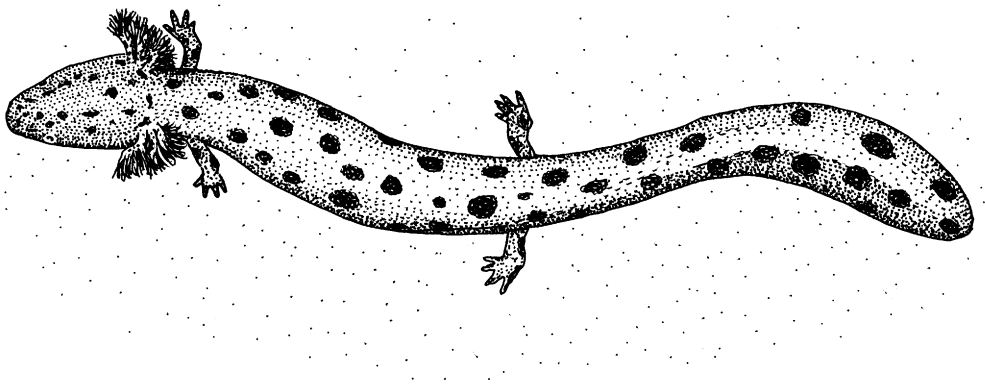


Neuse River Waterdog

Necturus lewisi

The Neuse River waterdog, also called Carolina mudpuppy, is one of three species of mudpuppy occurring in the state. The common mudpuppy (*Necturus maculosus*), the largest and actually the least common of the three in the state (though widespread and much commoner farther north), occurs only in a few river systems in our Mountains. The dwarf mudpuppy (*N. punctatus*), the smallest of the three, is widely distributed throughout the Coastal Plain.

Mudpuppies are fully aquatic salamanders, never leaving the water. They lack lungs, deriving oxygen from the water via external gills.

The origins of the names "mudpuppy" and "waterdog" seem uncertain, but a mudpuppy's head somewhat resembles a dog's. Another possibility is that the name may have been first applied to sirens (*Siren* spp.). These eel-like amphibians sometimes emit squeaks or yelps when handled, sounds that could have led to the dog or puppy comparison. The usage of the names may then have been expanded to include similar-looking creatures. The names are sometimes also applied to other salamander species, but they are properly applied only to those salamanders in the genus *Necturus*.

History and Status

The Neuse River waterdog is found only in North Carolina. First described by C. S. Brimley in 1924 as a subspecies of *N. maculosus* and elevated to species status by Percy Viosca Jr. in 1937, it was given the name *lewisi* in honor of Frank B. Lewis, who collected many of the specimens—including the holotype—upon which Brimley's description was based.

Though still fairly common in some of the more pristine sections of the Neuse and Tar drainages, this salamander has suffered serious declines in some areas, particularly in the Neuse River around Raleigh. Because of its limited range and sensitivity to pollution and habitat alteration, the Neuse River waterdog was listed as a species of special concern by the state in 1990. Specimens may not be legally killed, collected or possessed without a special permit from the Wildlife Resources Commission.

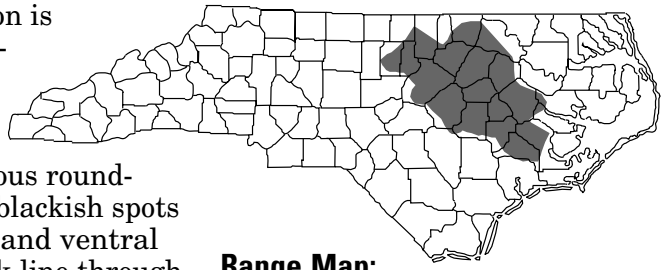
The Neuse River waterdog has been suggested as a possible candidate for designation as the North Carolina state amphibian.

Description

Neuse River waterdogs have somewhat stocky, cylindrical bodies and rather flattened, elongate heads with squared-off noses. The dorsal coloration is a light rusty brownish, with the belly being a paler brown or grayish. There are conspicuous roundish, dark brown or blackish spots on both the dorsal and ventral surfaces, and a dark line through the eye. The skin is smooth and slimy. The limbs are rather small, and the front and hind feet have four toes each (unlike most salamanders, which have five toes on each hind foot). The laterally compressed tail is finned dorsally and ventrally. Three dark red, feathery gills project from either side of the head. The sexes are similar in appearance, and adults can be distinguished externally only by the shape and structure of the cloacal area.

Habitat and Habits

Neuse River waterdogs inhabit rivers and larger streams, where they prefer leaf beds in quiet waters. They are carnivorous, foraging along the bottom for invertebrates, small vertebrates or carrion. Much activity apparently takes place at night. They are most active during winter and are difficult to find during the summer months, when they typically burrow in deep leaf beds. Larvae and juveniles are often collected by seining or dip netting in leaf beds. Adults readily



Range Map:
Occupied range

enter minnow traps baited with chicken livers, shrimp, crushed crayfish or similar bait.

Like many other amphibians, waterdogs produce skin secretions that are probably distasteful to some potential predators. Few records of predation are available, but they are almost certainly preyed upon by various fishes.

Range and Distribution

This salamander occurs only in the Neuse and Tar river systems in North Carolina. It is found nowhere else on earth.

People Interactions

Neuse River waterdogs are seldom encountered except by those who specifically seek them out. Occasional specimens are caught on hook and line by fishermen using live bait (most of the specimens upon which Brimley based his description of the species were taken in this fashion). They are completely harmless to humans and do not bite. Any specimens accidentally captured should be released unharmed.

References

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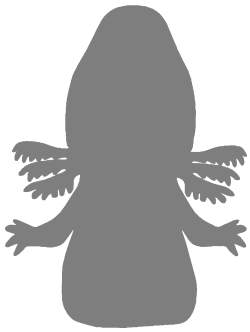

Waterdog larva (head)

Credits

Written by Jeff Beane.

Illustrated by J. T. Newman.

Produced January 1996 by the Division of Conservation Education, N.C. Wildlife Resources Commission.

WILD Facts

NEUSE RIVER WATERDOG

Classification
Class: Amphibia
Order: Caudata

Average Size
Length: 6 to 9 in. (record 11 in.).

Food
Worms, arthropods, mollusks, occasionally small vertebrates. Larvae feed largely on small aquatic arthropods.

Breeding
Mating normally takes place in spring. Like most salamanders, male waterdogs deposit a gelatinous capsule known as a spermatophore. It is picked up by the female and used to fertilize the approximately 30 to 50 eggs that are normally attached to the underside of a flat rock or other submerged object and guarded by the female until they hatch in June or July.

Young
Newly hatched larvae average slightly less than an inch in total length and are paler than adults, lacking the distinctive dark blotches and having well-developed forelimbs, rather poorly developed hind limbs and a much more rounded head than adults. Older larvae more closely resemble adults. Sexual maturity is reached in about six years.

Life Expectancy
Unknown.