



# How to Identify the Neuse River Waterdog

The Neuse River waterdog is a freshwater salamander also known as a mudpuppy. It belongs to the proteidae family, a family of aquatic salamanders having prominent external gills and four legs.

The family consists of the genus *necturus* (with seven North American species), and *proteus* (with one European species).

Taxonomy is currently under review and there could be even more species.

*Necturus* is a genus of aquatic salamanders found in the eastern United States and Canada. They are commonly known as waterdogs and mudpuppies. *Necturus* have four toes on each hind foot (whereas most — though not all — salamanders have five). The number of toes can be helpful in distinguishing *necturus* from larval salamanders of most other species.

Mudpuppies are neotenic (permanent larvae). Even when they reach sexual maturity, they still exhibit the physical attributes that other amphibians lose when they reach adulthood. They change a lot as they grow, but never lose or partially absorb their tails. They keep three pairs of external gills throughout life and are permanently aquatic even though lungs are also present.

## **Range: Neuse and Tar River Basins, North Carolina**

In the wild, the Neuse River waterdog only overlaps with the dwarf waterdog.

Neuse River waterdogs occur only in the Neuse and Tar drainages, whereas dwarf waterdogs are found in several other Coastal Plain drainages—they overlap only in some portions of the Neuse and Tar.

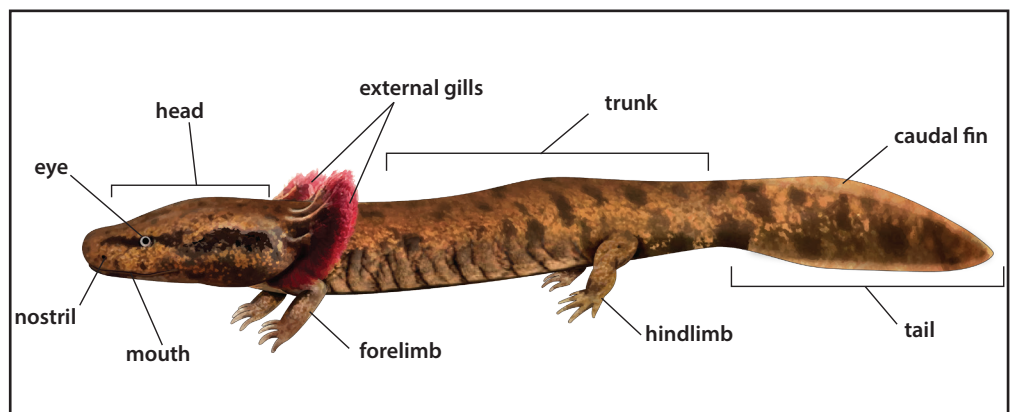
Adult Neuse River waterdogs display dark spots throughout their entire bodies and can grow up to 11 inches long. The adult dwarf waterdog is dark and generally smaller, reaching a maximum adult length of 7.5 inches. Some dwarf waterdogs can and do have small light dots in many cases, and those from the Lumber and Cape Fear drainages often have small dark spots. The dwarf



*A young Neuse River waterdog from the Little River; Johnston County, North Carolina, credit: Jeff Beane, North Carolina Museum of Natural Sciences.*



*An adult dwarf waterdog from Contentnea Creek, Wilson County, North Carolina, credit: Jeff Beane, North Carolina Museum of Natural Sciences.*





waterdog's scientific name, *punctatus*, literally means spotted/dotted/punctuated, but those in the Neuse and Tar, where they overlap with the Neuse River waterdog usually lack obvious spots, and even the most spotted individuals will not have spots nearly as large and distinct as those of the Neuse River mudpuppy. Juvenile dwarf mudpuppies are also darker than juvenile Neuse River mudpuppies.

### More Information Online:

Neuse River mudpuppy:

<https://www.fws.gov/southeast/wildlife/amphibians/neuse-river-waterdog/>

Dwarf mudpuppy:

<http://herpsofnc.org/dwarf-waterdog/>

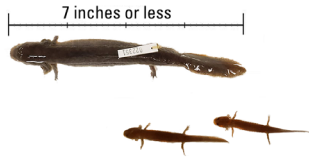
### Mudpuppies in the Neuse and Tar River Basins of NC

Adults and metamorphs

Neuse River waterdog  
*Necturus lewisi*



dwarf waterdog  
*Necturus punctatus*



Adult and juvenile mudpuppies. These preserved specimens are part of the North Carolina Museum of Natural Sciences' herpetology collection, credit: USFWS/Lilibeth Serrano.

