



\*Eric Roscoe

## Common Mudpuppy (*Necturus maculosus*)

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### Aquatic Water Dogs

Common mudpuppies are a species of large, primarily aquatic salamander occurring within permanent waterbodies over much of the Eastern United States and southern Canada. They, along with several other species of both adult and juvenile larval salamanders, are a paedomorphic species, meaning they retain many of their juvenile larval traits and characteristics into adulthood. They may be confused with other aquatic salamander species, but mudpuppies possess 4 toes on their hind feet while most other salamanders have five toes on the hind feet. Unlike sirens and amphiumas, mudpuppies have two pairs of well developed, functional legs. Mudpuppies are large salamanders with broad, flattened heads with faint dark ocular stripes and a set of bushy reddish colored gills designed for aerobic respiration. Mudpuppies can range in color from tan, brownish, grayish, olive-gray, yellowish, or grayish brown with darker mottling. The tails are also rounded and laterally compressed for swimming. Juveniles may also often have light and dark colored stripes present that are lost with age. Also frequently known as “waterdogs”, mudpuppies earn their name from their clicking or squeaking vocalizations made whenever members of this genus of salamanders are handled, threatened, or disturbed which is said to sound somewhat like barking. They are also frequently captured through ice by ice fishermen, where they are erroneously believed to be poisonous, venomous, or otherwise dangerous. Mudpuppies are not widely bred in captivity, but are often available as wild caught specimens or from biological/research supply companies.

### Taxonomy

**Life:** All living, physical, and animate entities

**Domain:** Eukaryota

**Kingdom:** Animalia

**Phylum/Sub Phylum:** Chordata/Vertebrata

**Class:** Amphibia

**Order:** Caudata/Urodela

**Suborder:** Salamandroidea

**Family:** Proteidae

**Genus:** *Necturus*

**Species:** *Necturus maculosus*\*

\*Taxonomy subject to change and revision.

### Lifespan and Longevity

Captive and wild longevity of mudpuppies has ranged from 10 to 20 years or more.

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### **Distribution and Habitat**

Mudpuppies are aquatic salamanders with a widely distributed range over much of southern Canada and the Eastern United States depending on the 9 subspecies. They can be found in most types of permanent waterbodies with submergent cover (such as rocks, logs, overhangs, and other debris) including lakes, reservoirs, large ponds, rivers, and streams in water depths as much as 88 feet!

### **Conservation Status**

IUCN Red List Least Concern (LC).

### **Legal and Regulatory Status (\*Subject to Change)**

Consult with your local, municipal, and state ordinances and regulations for any ownership restrictions.

### **Experience Level Required**

Intermediate/Moderate.

### **Size**

Mudpuppies can be variable in size depending on the subspecies. They typically reach 8 to 12 inches in size, although some of the larger subspecies can be as much as 20 to 24 inches. Some of the smaller subspecies may only range from 4 ½ to 7 ½ inches.

### **Housing and Enclosure**

Mudpuppies are primarily aquatic, and should be provided a secure, escape proof aquarium or terrarium designed to hold water. They do not require any dry land space. Although they are aquatic, mudpuppies can escape through an unsecured enclosure. Depending on the size and species, and number of mudpuppies to be housed, a 15 to 20 gallon long or larger aquarium is of sufficient size depending on the number of animals being housed. Mudpuppies can be housed together, but they can be territorial towards one another if adequate space and hides are not provided, and some care should be required during feeding to prevent them from biting or injuring one another. In general, it is also preferable that mudpuppies not be housed with fish or other species, since they may compete for food and resources as well as possibly predate upon one another depending on their sizes and circumstances. Provide an appropriate filtration system as well as water heating, which will assist in maintaining water clarity and quality as well as sufficient water temperatures for these salamanders. Although they respire, or breathe primarily through their skin and gills, they will also require several inches of air space in the enclosure. Other furnishings to increase safety and security in the enclosure can also be provided, including live plants, rocks, driftwood, slabs, logs, and other suitable hides. Ensure that any furnishings used are not treated with any harmful chemicals or have sharp edges which could cause injury. Ideally, at least three of four hides per animal should be provided for them to select without competition. Substrates that allow for burrowing should also be included, and can include fine organic topsoil and dried leaves/vegetation, or otherwise non-ingestible rocks or pebbles. They can also be maintained on bare substrate as well if viewing is important, but should still be given access to hides or shelter. Any live or floating plants in the enclosure should be firmly and securely planted to prevent uprooting. Also ensure that any hides set up cannot fall and injure them animal and/or damage the glass of the enclosure. Unlike many aquatic salamanders, mudpuppies can also tolerate a slow to moderate current generated by a filter as well. In order to prevent substrate from being stirred up and clogging any filters that may be used, a sponge filter and weekly 10 to 20% water changes are recommended. All water used in mudpuppy enclosures

should be aged and dechlorinated. Distilled water should only be used to replace evaporated water, as these water types lack sufficient ions and other nutrients required for these salamanders, and may result in calcium loss.

### **Temperature, Lighting, and Humidity**

Mudpuppies do not require any other UVA/UVB special lighting or heating unless live plants are also maintained, and can tolerate a wide range of water temperatures from 41 to 68 degrees F. Water temperatures up to 72 degrees F can also be tolerated, but not for extended periods of time, and any temperatures over 77 degrees F should be avoided. It should be noted, however, that some northern or southern subspecies may tolerate higher or lower water temperatures than other subspecies. They are susceptible to stress and other health and husbandry related issues if water temperatures are too cold or too warm for these unusual amphibians. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

### **Feeding, Diet, and Nutrition**

*Carnivorous*; Mudpuppies are primarily carnivorous in the wild. They will feed on most of any small crustaceans, aquatic insects and insect larvae, worms and other annelids, mollusks, small fish, carrion, small amphibians, or other small aquatic vertebrates and invertebrates that they can catch and ingest.

In captivity, mudpuppies can be fed weekly and will consume appropriately sized feeder fish, scuds (amphipods), redworms, bloodworms, waxworms, earthworms and other annelids, crickets and other feeder insects and larvae, as well as some commercially available pelleted fish foods of appropriate nutritional value and raw or cooked shrimp or crayfish, pre-killed pinkie mice, or other pieces of meat. Any feeder fish that are selected and used should be quarantined and prepared accordingly to reduce the risk of disease transmission, and be of higher nutritional value. Feeder fish can include live bearers, marine, or cool to cold water freshwater species. Variety, as well as whole prey items, are important as well in order to prevent calcium and vitamin D3 deficiencies and for overall health and well-being. Any uneaten foods should be cleaned or removed regularly to maintain water clarity and quality. Mudpuppies may also be cannibalistic, and caution should be used not to house specimens of different sizes together in the same enclosure. Quantity of food, as well as feeding schedules can vary with mudpuppies depending on frequency of feeding and the age/size of the animal. Most mudpuppies can be fed two to three times weekly, although they can survive longer periods of time without food, and can maintain fat reserves to survive for periods of food scarcity. Mudpuppies can also become quite acclimated in captivity, and can even be hand fed, although some care should be taken to prevent a feeding related bite from these aquatic salamanders. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

### **Handling**

As with most other aquatic and terrestrial caudates, mudpuppies are delicate and sensitive skinned amphibians that should not really be handled, and are more suitable for viewing. Handling these salamanders can injure their sensitive gills, which in turn renders them more likely to acquire fungal infections that may prove to be fatal. Use a suitable sized aquarium net to move mudpuppies when cleaning the enclosure or whenever necessary.

**\*\*Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens\*\***

## **Contact**

Authored by Eric Roscoe. For any additional questions, comments, and/or concerns regarding this animal, group of animals, or this care sheet, please email and contact the Madison Area Herpetological Society at [info@madisonherps.org](mailto:info@madisonherps.org)

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