Mud Puppy (Necturus)

Species: *maculosus*
Genus: *Necturus*
Family: Proteidae
Order: Caudata
Class: Amphibia
Subphylum: Vertebrata
Phylum: Chordata
Kingdom: Animalia

Conditions for Customer Ownership

We hold permits allowing us to transport these organisms. To access permit conditions, click here.

Never purchase living specimens without having a disposition strategy in place.

An end-user permit is required in order to receive *Necturus maculosus* into Oregon. Shipments of *Necturus maculosus* are restricted in Ohio. In order to protect our environment, never release a live laboratory organism into the wild.

Primary Hazard Considerations

- Always wash your hands thoroughly after you handle your organism.
- Handle your mud puppy with care—they don't bark (as once believed) but they can bite! If the skin is broken from a mud puppy bite, disinfect the wound, using soap and warm water.

Availability

- Mud puppies are wild collected from Lake Erie and are generally available late December through April. Larger than most salamanders, mud puppies can reach a length of 30 centimeters, have external gills, and are dark colored.
- Mud puppies will arrive in a sealed plastic bag (double-bagged) filled with water and oxygen. Since oxygen will be continuously depleted, your mud puppy's good health will be best preserved by moving it into its new home as soon as you receive it.
- Open the shipping bag and float it in the aquarium the mud puppy will inhabit. When the water inside the bag is the same temperature as the water in the aquarium (after about 15-30 minutes), transfer the mud puppy from the bag to the tank.
- During warm conditions, a mud puppy's gills may lose their red coloration and may be contracted.

Captive Care

Habitat:

- To house your mud puppy, set up a large freshwater aquarium (20-Gallon Tank 21 W 5243 is suitable for three mud puppies). Cover the floor of the aquarium with several centimeters of rinsed Aquarium Gravel 21 W 1800. Fill the tank to a depth of at least 20 cm of dechlorinated water (let the water stand for 48 hours to allow any chlorine to dissipate, or treat with a water conditioner, such as Stress Coat 21 W 2338 before introducing the mud puppy). It is not necessary to heat the aquarium—mud puppies are best kept in cool water, as it holds more dissolved oxygen than warm water.
- Use an aquarium Filtration System 21 W 3535 to prevent pollution and provide aeration. If the water isn't filtered, it should be changed every two or three days. Replace it with dechlorinated aged water of the same temperature; a 33% water change should be performed. Never change the entire amount of water.

Care:

- Mud puppies will eat a variety of foods including Earthworms 87 W 4660 and Small Fish 87 W 8100. Any dead, uneaten food should be removed after feeding to prevent pollution of the water. Two to three small fish a week is sufficient food for one mud puppy.

Information

- Method of Reproduction: Sexual. Mud puppies mate in the fall. Fertilization is internal, with sperm being transferred to the female in a small capsule called a spermatophore. The female lays up to 200 eggs in the spring, attaching them to underwater rocks and logs, and guards the eggs from predators. Eggs are about 1 cm in diameter.
- Determining Sex: Males and females are not well differentiated. The female cloaca is slit shaped and pale, while the male cloaca has two lateral papillae.

Life Cycle

- It takes nine weeks for eggs to hatch into larvae of about 2 cm. Sexual maturity takes four to six years and their adult life span around twenty-five years.

Wild Habitat

The mud puppy, *Necturus maculosus*, is a large, aquatic salamander found in southern Manitoba, Ontario, and Quebec, and the central and eastern United States. It inhabits freshwater lakes and rivers where it feeds on crayfish, fish, insects, and other small, aquatic creatures. It is mostly nocturnal and tends to be found during the day under logs and rocks. Large fish and large water birds are its major predators. It remains active all year and does not hibernate.

Disposition

- Do not release this organism into the environment.
- Adoption is the preferred disposition of a vertebrate.
- If the animal cannot be adopted as a pet by a capable owner, it may be surrendered to your local humane society.
- If the animal is to be euthanized, we recommend consulting the AVMA guidelines on euthanasia (American Veterinary Medical Association, http://www.avma.org/issues/animal_welfare/euthanasia.pdf.
- According to these guidelines, acceptable methods of euthanasia for an amphibian includes exposure to CO_2 at >60% or treatment with tricaine methane sulfonate (also known as TMS, MS-222 and Biocalm 947 W 2100). TMS is an anesthetizing agent that will cause fish and amphibian death due to central nervous system depression and hypoxia with overexposure. Wear personal protective equipment (gloves, safety glasses, labcoat) when handling TMS. The fish or amphibian is placed in a solution of 5 g of TMS per 5 gallons of water for 30 minutes or until all motion has ceased. To make sure the animal is dead, check for reflexive movement when the eye is touched. If movement occurs, place the animal in the TMS solution for another 30 minutes
- A dead animal should be disposed of as soon as possible. Consult your school's recommendations for disposal. In general, a small dead vertebrate should be handled with gloves, wrapped in something absorbent (like newspaper), then wrapped again in an opaque plastic bag that is sealed (tied tightly) and placed in a general garbage container away from students.

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