

Flattened Musk Turtle

Sternotherus depressus



photo: CCR Environmental, Inc.



Endangered Species Act

The Endangered Species Act was passed by Congress in 1973 to protect species of plants and animals in danger of becoming extinct. The law provides protection from direct human threats such as killing and trapping as well as for the protection of the ecosystems on which the species depends. Animals listed as endangered or threatened by the Department of Interior are protected by the law on both public and private lands.

On June 11, 1987, the United States Fish and Wildlife Service listed the flattened musk turtle offering it protection under the Endangered Species Act as a threatened species.

Description

The flattened musk turtle is a small aquatic turtle with a distinctly flattened carapace (upper shell) up to 4.7 inches long. The vertebral keel (longitudinal ridge) is virtually, if not altogether, lacking. The carapace is dark brown to orange with dark bordered seams and is slightly serrated along the back edge. The plastron (lower shell) is pink to yellowish. The head

is greenish with a dark network pattern which often breaks up to form spots on the top of the snout. Stripes on the top and sides of the neck, if present, are narrow. There are two barbels on the chin. All four feet are webbed, and males have thick, long, spine-tipped tails.

Biology and Life History

The flattened musk turtle is believed to live for at least 50 years. The turtle is active during the months of April to October. Adult flattened musk turtles are primarily nocturnal. While, juveniles are more likely than adults to be active at day, they are also more active with darkness

The diet consists primarily of mollusks and aquatic insects. Adults appear to target and feed primarily on gastropods (aquatic snails), clams (including the exotic Asiatic clam) and mussels, while juveniles (less than 2.75 inches) primarily prey upon softer-bodied aquatic insects.

Female flattened musk turtles reach sexual maturity at 6-8 years, while males require only 4-6 years.

Females lay two clutches of eggs per year, with clutch size ranging from 1-3 eggs. Ovulation occurs in May (1st clutch) and in June (2nd clutch). Eggs in the first clutch are usually laid in May, while eggs in the second clutch are laid in the middle of June through early July. The incubation period is not known, although, one natural nest that contained two eggs took at least 1.5 months to hatch. The nesting season is May through September. While very little is known about nesting preference of the flattened musk turtle, it is thought that they nest within 100 feet from the river bank in full to partial sun areas such as woodlands and roadsides.

Population Status and Distribution

The flattened musk turtle is endemic to the upper Black Warrior River system in Alabama. An evaluation of U.S. Geological Survey water quality records, collections, field observations, and habitat characterizations, suggest that only 15 percent of the Black

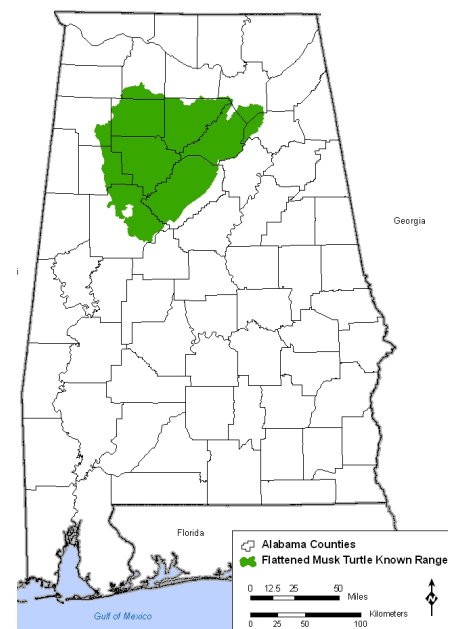


Figure 1: Known range of flattened musk turtle.

Warrior system (streams and impoundments) support viable flattened musk turtle populations. It is estimated that the turtle may have been extirpated from 25-30 percent of its former range. The creation of Bankhead Lake and Lewis Smith Lake (the largest impoundments in the species' range) may be responsible for a loss of much of the historic habitat, as water now covers habitat once preferred by the turtle. However, portions of Lewis Smith Lake still support populations.

Habitat

Although the flattened musk turtle is capable of living in a variety of streams and lakes, its optimum habitat appears to be free-flowing large creeks or small rivers with vegetated shallows about 2-ft deep alternating with pools 3.6 to 5-ft deep. These pools have a detectable current and an abundance of crevices and submerged rocks, overlapping flat rocks, or accumulations of boulders. Habitats with high amounts of sand are also suitable as long as plenty of bedrock, boulder, and cobble

substrate exist with suitable food supply. In impounded systems, the turtle can be found in the headwaters and around the margins of lakes. Turtles in lake habitats often prefer areas along the bank that have an abundance of shelf like rocks. Other factors that indicate good habitat quality for this turtle include abundant molluscan fauna, low silt load and deposits, low nutrient and bacterial counts, moderate temperature, and minimal pollution.

Threats

Siltation has been identified as the biggest threat to populations of flattened musk turtles. The primary source is from coal mine operations, but runoff from agriculture, forestry and construction also contribute to the siltation problem. Portions of habitat have been eliminated by impoundments, and agricultural, residential, and industrial development. The turtle has also been threatened by over collecting (collectors/pet trade) and disease.

Literature citations for this fact sheet are available upon request.

References

Close, D.K. 1982. The reproductive cycle of *Sternotherus minor depressus*. M.S. thesis, University of Alabama Birmingham. 101pp.

Dodd, C.K. Jr. 1988. Disease and population declines in the flattened musk turtle, *Sternotherus depressus*. American Midland Naturalist 119:394-401.

Dodd, C.K. Jr., K.M. Enge, and J.N. Stuart. 1988. Aspects of the biology of the flattened musk turtle, *Sternotherus depressus*, in northern Alabama. Bulletin of the Florida State Museum. Biological Sciences. 34-1-64.

Marion, K.R., W.A. Cox, and C.H. Ernst. 1991. Prey of the flattened musk turtle, *Sternotherus depressus*. Journal of Herpetology 25:385-387.

Mount, R.H. 1981. The status of the flattened musk turtle, *Sternotherus minor depressus*, Tinkle and Webb. Report prepared for the U.S. Fish and Wildlife Service, Atlanta, Georgia. 119pp.

Rogers, S.R.H. and K.R. Marion. 2004. Assessment of the population status of the flattened musk turtle (*Sternotherus depressus*) in the Sipsey Fork and Brushy Creek Branches of Lewis Smith Lake, Alabama. Report prepared for Alabama Power Co., U.S. Forest Service, and The Nature Conservancy. 19pp.

Schnuelle, K.A. 1997. Demography, diet and prey availability of the flattened musk turtle, *Sternotherus depressus*. M.S. thesis, Auburn University. 81pp.

U.S. Fish and Wildlife Service. 1990. Flattened Musk Turtle Recovery Plan. Jackson, Mississippi. 15pp.

