



Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Bog Turtle *Glyptemys muhlenbergii*

State Status: **Endangered**
Federal Status: **Endangered**

DESCRIPTION: The Bog Turtle is a small turtle, 7.6-10 cm (3-4 in.), with a mahogany, dull brown, oblong carapace (upper shell), most with a faint yellowish or reddish starburst-shaped pattern centered in each scute. The plastron (lower shell) is mostly brown or black, irregularly marked with yellow. The black head bears the most striking feature of this species, a large bright orange patch behind each ear (the patch may be yellow or red on some individuals). The neck is brown and the tail and legs are brownish yellow or dark brown. In males, the tail is longer and thicker than in females, and the plastron is concave.

SIMILAR SPECIES: This species could be confused with the Spotted Turtle (*Clemmys guttata*). The Spotted Turtle is also found in fens and wet meadows and is about the same size. Spotted Turtles usually have yellow spots on the carapace, and they are slightly larger and rounder, 10-18 cm (4-7 in.) in length. In addition, the Spotted Turtle lacks a prominent mid-line ridge (keel) on the carapace. However, the keel is sometimes worn smooth in older Bog Turtles.

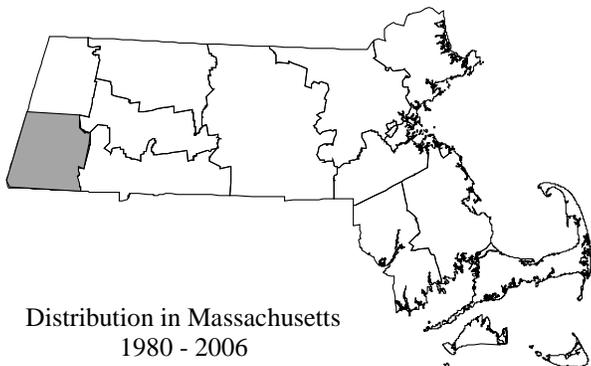


Photo by Lori Erb, NHESP

RANGE: Massachusetts populations lie on the northern periphery of the range. The Bog Turtle has a discontinuous and localized distribution extending from Berkshire County, Massachusetts, through western Connecticut, southern New York, New Jersey and eastern Pennsylvania, and southward in the Appalachian Mountains to Georgia. Disjunct populations occur in the Lake George and Finger Lakes regions of New York and in western Pennsylvania.

HABITAT IN MASSACHUSETTS: Bog Turtles in Massachusetts inhabit low-lying open calcareous wetlands, notably fens. Bog Turtles occur in small patches of optimal habitat within a dynamic wetland system. These patches typically include early successional stages of wet meadow or fens, surrounded by advanced successional stages of freshwater marsh or wooded swamp. New England Bog Turtle habitats are characterized by a mosaic of wetland plants, including many regionally rare species.

LIFE CYCLE & BEHAVIOR: This secretive turtle overwinters from about mid-October to late March, in subterranean seepage areas with a continual source of



Distribution in Massachusetts
1980 - 2006

Based on records in
Natural Heritage Database

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

www.mass.gov/nhesp

flowing water. Bog Turtles may overwinter either individually or communally. They may overwinter with 12 or more individuals and with other species such as the Spotted Turtle. They typically choose a site with some structure such as the root system of a tree. On warm sunny days in the spring, they come up to bask and feed. The Bog Turtle typically confines its wanderings to wetland locations and is more agile in the water. It is often found with its’ “feet wet and its back dry.” When alarmed, the Bog Turtle digs rapidly into the mucky substrate. This species has occasionally been found in upland habitat adjacent to the wetland. On cold days of spring and fall, individuals may remain completely sheltered or burrowed in mud. Bog Turtles often aestivate during the dry summer months of July and August. Most activity occurs in late April, May, June, and September. This turtle maintains a small home range of approximately 1.28 ha (3.16 ac).

The Bog Turtle is an opportunistic omnivore and forages both on land and underwater. The diet consists primarily of invertebrates. Favorites include slugs, beetles, millipedes, insect larvae, earthworms, pondweed, sedge seeds, and other plant material.

Sexual maturity occurs around year ten for females. Mating takes place early May through early June. This is when turtles are most active and spend a significant amount of time above ground. Gravid (egg-carrying) females usually begin to nest at dusk. Clutches of 2-5 white, elliptical eggs are laid on the tops of Tussock Sedge during midsummer; they incubate for 7-8 weeks and hatch in late summer. In Massachusetts, hatchlings may overwinter in the nest. Bog Turtles are thought to live 60 or more years.

THREATS: Bog Turtles have apparently always been uncommon in the state and are known to have gone locally extinct at one site. They are particularly vulnerable to habitat loss and degradation because they are a relatively sedentary species in comparison to other turtle species. Bog Turtles do not reproduce until late in life, they have low nest survivorship, and lay relatively few eggs per year. These traits make them extremely sensitive to even a 1-2% increase in adult mortality. The primary causes of adult mortality are predation, farming equipment, habitat destruction (i.e. wetland draining/filling, development), and cars. Additional indirect threats include natural succession, collection, invasive wetland plants, and natural hydrology changes.

MANAGEMENT RECOMMENDATIONS: Habitat protection is important for the few known populations in Massachusetts. Surveys are needed to determine if additional populations exist in Massachusetts.

Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrade and road-widening projects near or between Bog Turtle populations. Fens and wet meadows should not be ditched or drained at all locations able to support Bog Turtle populations in Berkshire County.

Bog Turtle habitat should be managed in accordance with the federal habitat management guidelines to create and/or maintain quality habitat for hibernating, nesting, and feeding. This should include the control of invasive species, succession, and maintenance of hydrology at the site. While this is most practical on conservation lands (i.e., DFW, DCR, TNC), educational materials should be made available to guide private landowners on the best management practices for Bog Turtle habitat. In addition, private landowners should be provided with information about the Landowner Incentive Program (LIP) and other programs that provide economic incentives for the protection and management of Bog Turtle habitat.

ACTIVE PERIOD

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington and London.

Klemens, M. 1987. Bog Turtle. In T.W. French and J. E. Cardoza (eds.). *Endangered, Threatened and Special Concern Vertebrates of Massachusetts*. Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

Klemens, M. 2001. Bog turtle (*Clemmys muhlenbergii*), Northern Population Recovery Plan. USFWS, Hadley, MA.

Whitlock, A. 2002. Ecology and status of the bog turtle (*Clemmys muhlenbergii*) in New England. Dissertation, University of Massachusetts, Amherst, MA.

Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for ‘endangered wildlife conservation’ on your state income tax form, as these donations comprise a significant portion of our operating budget.