

Bog Turtle

Conservation in the Northeast



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Bog turtle

At only about 4 inches long, the bog turtle (*Glyptemys muhlenbergii*) is North America's smallest turtle.

This species typically shows a bright yellow, orange or red blotch on each side of the head. The nearly parallel sides of the upper shell—known as its carapace—give bog turtles an oblong appearance when viewed from above. These small, semi-aquatic turtles consume a varied diet of primarily insects, snails and worms.

Bog turtles usually occur in small, discrete populations, generally occupying open-canopy, unpolluted, herbaceous sedge meadows and fens bordered by wooded areas. Fens are freshwater, bog-like wetlands that are a mosaic of open and shrub habitats with grasses, sedges, and small spring-fed streams. Bog turtles depend upon this diversity of habitats for foraging, nesting, basking and hibernating.

The northern population of bog turtles ranges from New York and western Massachusetts south to Maryland.

The greatest threats to the bog turtle are the loss, degradation and fragmentation of its habitat from wetland alteration, development, pollution, invasive species and advanced plant growth. The species is also threatened by poaching—collection for illegal wildlife trade.

The bog turtle has been protected under the Endangered Species Act since 1997, when it was listed as a federally threatened species. The U.S. Fish and Wildlife Service oversees the recovery of this species.

Working toward recovery

Habitat protection

- The Service works with many partners toward habitat protection.
 - The National Wildlife Refuge System allows the Service to protect habitat on federally owned properties, including Great Swamp, Wallkill River and Cherry Valley national wildlife refuges in New Jersey and Pennsylvania.
 - The Service also provides grant money to others, such as states and private organizations like The Nature Conservancy, to buy land for habitat.

Habitat restoration

- Service staff and biologists work to restore the water quality and open canopy habitats that are essential for the bog turtle.
 - Open habitat was originally maintained by wildlife, fire and grazing, but now forests have grown up with invasive plants unsuitable for bog turtles.
- Service staff works with private landowners through the Partners for Fish and Wildlife Program.



Gary Peeples/USFWS

An example of bog turtle habitat – open canopy, unpolluted, herbaceous sedge meadows and fens.



Rosie Walmes/USFWS

A newly hatched bog turtle in northern New Jersey with yolk sac still attached.

- Grants provided by the Service help states and landowners restore bog turtle habitat.

Monitoring and research

- The Service assists, through its field biologists and state grants, with the conservation of the endangered bog turtle by:
 - Monitoring populations;
 - Supporting research projects on habitat and living populations; and
 - Understanding and improving the knowledge of the turtle's ecology to best work toward overall recovery.

Highlights of Northeast Region conservation

U.S. Fish and Wildlife Service, Law Enforcement

- Officers are trained extensively on turtle species and work closely with state environment police officers. They investigate cases of habitat destruction and are involved with interstate commerce for the purpose of stopping pet trade collection.

New England Field Office

- Staff is planning habitat restoration work in Connecticut and Massachusetts and surveying Connecticut to find more bog turtle sites.

Cherry Valley and Wallkill River National Wildlife Refuges

- Biologists are working with partner organizations and volunteers to conduct a mark-recapture study—a strategy that monitors population sizes—at Cherry Valley, along with habitat restoration, tracking turtles through radio telemetry, and invasive species control.
- Cherry Valley is also surveying refuge-owned lands for bog turtles and will be adding new potential habitat.

Chesapeake Bay Field Office

- Biologists are using goats to maintain wetlands through managed grazing. For a few months in 2008, 19 goats were placed on a 5-acre bog turtle site in Carroll County to control unwanted vegetation, including the invasive multiflora rose.
 - Partners include a private landowner, the USDA-Natural Resources Conservation Service, and the Environmental Defense Fund. The U.S. Department of Agriculture holds a permanent easement for the wetland portion of this property.
 - Learn more: <http://www.fws.gov/chesapeakebay/Newsletter/Fall08/Goats/Goats.htm>
- Additional projects through the Coastal Program and the Endangered Species Program with private landowners and other partners include:
 - Installing fences on 6 acres at two sites in Maryland and a 3-acre site in Delaware to protect these sites from overgrazing.
 - Working with a Maryland landowner and USDA-NRCS to protect 30 acres of bog turtle habitat through the Wetland Restoration Program.
 - Prioritizing 65 bog turtle sites in Maryland for future restoration efforts based on population size, reproduction and connectivity to other bog turtle sites.
 - Learn more: <http://www.fws.gov/chesapeakebay/Newsletter/Spring11/bogturtle/bogturtle.html>

New Jersey Field Office

- Biologists with the Partners for Fish and Wildlife Program are working with the Conservation Wildlife Foundation. More than 80 percent of New Jersey land is privately owned, so partnership with private landowners is essential to help improve bog turtle habitat.
- Projects include placing electrical fencing around privately owned lands. Cows, sheep and goats control vegetation to help eliminate invasive plant species, including reed canary grass and phragmites. This results in 15 acres of habitat restoration per year.
- Biologists also work with the State of New Jersey Endangered and Nongame Species Program for habitat restoration. They work to create more open-canopy nesting habitat by removing some red maple trees and poison sumac shrubs through mechanical and herbicide removal methods. These are native species with dominating, invasive species qualities.
- Learn more: <http://www.youtube.com/watch?v=rc6P4INbwTE&>

New York Field Office

- Service biologists work with partners for habitat restoration, including prescribed grazing projects with private landowners and funds from the USDA-NRCS.
- The New England Field Office is working with veterinarians from the Wildlife Conservation Society's Bronx Zoo as they conduct health assessments of bog turtles in Massachusetts and New York.
- This office also works with contractors for bog turtle conservation and recovery.

- A doctoral student recently created assessment models at different sites that will tell whether a site can be suitable habitat over a long period of time.
- Another partner is working to identify new sites for potential habitat, assist in landowner outreach efforts, supervise new projects and conduct population surveys.
- With help from the Great Lakes Restoration Initiative, two professors from the State University of New York are finding more suitable habitat for bog turtles.

The Service is dedicated to the conservation and recovery of the bog turtle and continues to work with partners to protect and restore habitat, curb poaching and learn more about North America's smallest turtle.



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Bog turtles are darkly colored with a bright yellow, orange or red blotch on each side of the head.

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1 800/344 WILD
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A group of biologists discuss their efforts to survey bog turtles in this habitat.