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CONSERVING THE SMALLEST TURTLE SPECIES IN NORTH AMERICA



OVERVIEW

The Endangered Species Act is a vital tool used to determine the status of species and their populations. The bog turtle (*Glyptemys muhlenbergii*) is currently listed as endangered within the state of Connecticut and other areas of the US. This species has been of particular interest because of the decline of protected wetland areas in Western CT. Maintaining wetland ecosystems to preserve the bog turtle is essential for cleaner water and pollutant filtering in Fairfield County. Adequate funding for endangered species from stakeholders, local and federal government agencies, the public, and scientists are necessary to conserve bog turtles.

BACKGROUND

BOG TURTLE GENERAL INFORMATION & THREATS TO THE SPECIES

Herpetologists advocate for the preservation of wetland habitats and the protection of endangered species, such as amphibians and reptiles. Wetlands have often been disregarded and have been used to build new construction. According to the US Fish and Wildlife Service, more than 110 million acres of wetlands have been destroyed since the 1700s. Currently, there are about 2,500 to 10,000 bog turtles left in the US with only 5 known locations of bog turtles found in Connecticut². Specifically in western CT, wetland habitats have become isolated from each other resulting in smaller habitats overall. This isolation has impacted bog turtles in the area because of limited habitat availability.

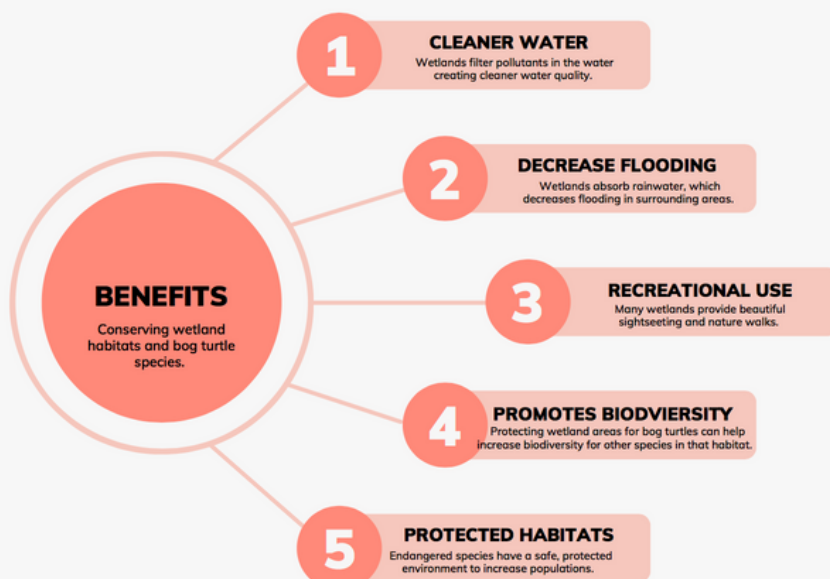
Bog turtles are typically found between the Housatonic River and New York border in Connecticut. They are smallest turtles in North America with an average length of 4.5 inches. The species was officially added to the Endangered Species Act in 1997 and has remained on the list since then³. Typically, their optimal habitat consists of wetland areas with scattered dry land and water availability. Numerous problems have caused declined in bog turtle populations in Western CT. The most important problems include:



- *Human Activity*: Humans disrupt wetland areas by walking through them, causing damage, and removing bog turtles from these habitats₄. During breeding season between March and April, turtles have higher mortality rates as they travel on roads to lay eggs in nearby habitats₅. These disruptions prevent optimal environments for bog turtles to live in. The less human activity associated with the species, the more likely they are to survive.
 - *Illegal Pet Trade*: It is illegal to remove a bog turtle from the wild. There is an illegal pet trade of the species and limited regulations to prohibit this from occurring. Bog turtles can sell anywhere from \$200-\$2,000 dollars after being illegally captured from the wild. Countries in Asia will pay more money to have turtles shipped and used for food, ornaments, and medicine₂.
- *Habitat Loss*: Wetland areas in CT have been used for draining and filling for construction, making them unsuitable environments for bog turtles. These wetlands have also become isolated from new construction, residential developments, and fragmentation₆. As new roads are built and expanded, wetland areas are separated and increase mortality risks when bog turtles cross these roads to reach another habitat for breeding.
 - *Genetic Loss*: Smaller and isolated wetland habitats have caused a loss of genetic variation for bog turtles because of the limited amount of males in one habitat. Turtles are poor long-distance dispersers and typically mate within their habitat to avoid travel and the risk of dispersal mortality₇.
- *Climate Change*: Wetland ecosystems have been impacted by climate change resulting in loss of plant diversity, unstable water flows, reduced water availability, decrease of bird/amphibian species, and more₃. As climate change continues to worsen, wetland habitats will become dryer, making them unsuitable for bog turtles because they are sensitive to changes in the environment.

WHY BOG TURTLES SHOULD MATTER TO YOU!

There are several benefits to conserving wetlands and protecting the bog turtle species. Within western CT, there are two locations where bog turtles can be protected. The Great Hollow Nature Preserve and Squantz Pond are optimal areas for bog turtles to live in. Wetlands in these locations are beautiful for hiking and offer the opportunity to appreciate the beauty of nature. Below are benefits to protecting bog turtles and their respected habitats:



Having more wetlands in Western CT will ultimately result in cleaner water, a decreased amount of flooding, and less pollution₁. Public health is an important aspect in regards to environmental conservation and protecting endangered species. Additional recreational use in the area would also allow more residents of Fairfield County to enjoy nature and sightseeing. Imagine taking your family or friends to walk along wetland trails that are above water



Not only will you get the chance to see a small, cute bog turtle, but you will also see different bird and amphibian species including gorgeous aquatic plant species as well. This would bring more public awareness to the importance of wetlands and how this could help the endangered bog turtle.

WHAT CAN WE DO TO SOLVE THIS ISSUE?

There are several cost effective solutions that lead to increasing bog turtle populations within Western CT. Listed below are ways we can conserve this endangered species:

- Local organizations, such as Great Hollow Nature Preserve and Squantz Pond, can have signs posted about bog turtle endangerment and to not disrupt wetlands nor remove turtles from their habitats. Any after school or summer programs can have bog turtle information implemented to teach younger generations.
 - Benefits: public awareness about the issue and indirect impact of spreading this information to other Fairfield County Residents
- Conservation and protection of wetland areas should be incentivized as well. Increasing the amount of acres of wetlands to be protected under federal law will ensure no new construction or developments in that area. Adding turtle crossing signs near these wetlands can also decrease turtle road mortality.
 - Benefit: more wetland for recreational use, optimal habitat for bog turtles to increase populations and have less isolated habitats for breeding
- Regulations and fines for the illegal pet trade should be increased to reduce the amount of bog turtles illegally captured and sold. Currently, capturing a bog turtle results in a \$2000 fine⁸. This fine should be increased with the possibility of jail time and/or other consequences.
 - Benefits: fewer poachers would capture bog turtles because of the increase in regulations resulting in a decrease in the illegal turtle trade industry

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