



Recommended Conservation Measures to Minimize Adverse Effects to the Federally Listed (Threatened) Bog Turtle (*Clemmys [Glyptemys] muhlenbergii*), and to Known and Potential Bog Turtle Habitat, from Vegetation Management in New Jersey

HABITAT

Bog turtles usually occur in small, discrete populations, generally occupying open-canopy, herbaceous sedge meadows and fens bordered by wooded areas. These wetlands are a mosaic of micro-habitats that include dry pockets, saturated areas, and areas that are periodically flooded. Bog turtles depend upon this diversity of micro-habitats for foraging, nesting, basking, hibernating, and sheltering. Unfragmented riparian (river) systems that are sufficiently dynamic to allow the natural creation of open habitat are needed to compensate for ecological succession. Beaver, deer, and cattle may be instrumental in maintaining the open-canopy wetlands essential for this species' survival. Bog turtles inhabit open, unpolluted emergent and scrub/shrub wetlands such as shallow spring-fed fens, sphagnum bogs, swamps, marshy meadows, and wet pastures. These habitats are characterized by soft muddy bottoms, interspersed wet and dry pockets, vegetation dominated by low grasses and sedges, and a low volume of standing or slow-moving water which often forms a network of shallow pools and rivulets. Bog turtles prefer areas with ample sunlight, high evaporation rates, high humidity in the near-ground microclimate, and perennial saturation of portions of the ground. Eggs are often laid in elevated areas, such as the tops of tussocks. Bog turtles generally retreat into more densely vegetated areas to hibernate from mid-September through mid-April. The greatest threats to the bog turtle are the loss, degradation, and fragmentation of its habitat from wetland alteration, development, pollution, invasive species, and natural vegetational succession. The species is also threatened by collection for illegal wildlife trade.

PROJECT REVIEW UNDER THE ENDANGERED SPECIES ACT (ESA)

- Proposed projects in or near known or potential bog turtle habitat should be reviewed by the U.S. Fish and Wildlife Service (Service) to ensure compliance with the ESA.
- This document does not address commercial, residential, transportation or other development projects; forestry activities; projects involving direct or indirect hydrologic modifications or ground disturbance; or projects undertaken for the primary purpose of habitat restoration or enhancement.
- This document provides recommended conservation measures only for vegetation management in and around known or potential bog turtle habitats where the primary purpose is the maintenance of existing infrastructure such as utility rights-of-way (ROWs) and airports.
- This document only provides examples of typical Conservation Measures frequently recommended by the Service in the course of consultation or technical assistance. Even with adoption of these measures, any particular project or program involving vegetation management in or near bog turtle habitat should still be submitted for site-specific Service review at least 30 days before the start of any work.
- Emergency tree clearing or other measures necessary to protect human safety and/ or public or private property from an imminent hazard should proceed without delay. In an emergency, the recommendations in this document should be implemented only if doing so does not impede the emergency response. The Service should be contacted following the emergency if work took place in or near bog turtle habitat.
- Project proponents are encouraged, and may be required by the New Jersey Department of Environmental Protection, to also follow all applicable provisions of the most current version of the NJDEP "Utility Right-of-Way No-Harm Best Management Practices" (ROW-BMPs). Additional conservation measures may be necessary if other federally or State-listed species occur in the area.

RECOMMENDED CONSERVATION MEASURES

- Identify known bog turtle habitat using the NJDEP Landscape Project¹ maps.
- Within municipalities² with extant, historic or potential occurrence of bog turtle, identify potential bog turtle habitat by using a recognized, qualified, surveyor³ to conduct a Phase I survey⁴. Submit both positive and negative survey reports to the Service.
- Use a recognized, qualified, surveyor to flag known and potential bog turtle habitat, plus a 150-foot buffer, prior to the start of any work. Remove all flagging upon completion of work.
- Have a recognized, qualified bog turtle surveyor on-site during all activities in flagged areas, or work with the Service to develop a project-specific bog turtle monitoring plan.

In Flagged Areas:

- Ensure that workers avoid stepping on hummocks and tussocks (*i.e.*, clumps of vegetation, often slightly higher than surrounding ground), to avoid the possibility of crushing turtle nests or eggs.
- Do not mow or use any motorized vehicles.
- Do not stage or store materials or equipment.
- Remove woody vegetation by hand between October 16 and March 31. Do not pull woody vegetation out by the roots in mucky areas, to avoid destruction of potential hibernacula. Have all such activities monitored by a recognized, qualified bog turtle surveyor. Cutting woody vegetation as early as September 16 to allow for stump treatment with herbicide may be acceptable with careful monitoring and other site-specific conservation measures as may be appropriate.
- Avoid stockpiling vegetation that may attract predators.
- Limit herbicide use to glyphosate-based herbicide applied manually to cut stumps or to the bark along the bottom 12-18” of woody stems, between September 16 and March 31 OR work with the Service to develop a project-specific herbicide plan.
- Do not use herbicide within documented bog turtle hibernation areas. Do not enter or traverse known bog turtle nesting areas (even on foot) between June 1 and September 30.
- Coordinate with NJDEP regarding applicable provisions of the most current version of the “Utility Right-of-Way No-Harm Best Management Practices,” (ROW-BMPs).
- Contact the Service immediately if a bog turtle is found, and note the location. Do not move the animal except to avoid imminent injury. If present, a recognized, qualified, surveyor should collect data as called for in his/her NJDEP Scientific Collecting Permit.

¹ <http://www.state.nj.us/dep/fgw/ensp/landscape/download.htm>

² <http://www.fws.gov/northeast/njfieldoffice/pdf/munlist.pdf>

³ <http://www.fws.gov/northeast/njfieldoffice/pdf/BogTurtleSurveyors.pdf>

⁴ <http://www.fws.gov/northeast/njfieldoffice/pdf/bogturtlesurvey.pdf>