

**Conservation Plan for Franklin Bog Mitigation/Conservation Area
Henderson County, NC
NC Department of Transportation & NC Wildlife Resources Commission**

Goal

The goal of this conservation plan is to manage the Franklin Bog Mitigation/Conservation Area for the perpetual conservation of the bog turtle (*Glyptemys [Clemmys] muhlenbergii*).

Objectives

The objectives of this conservation plan are to:

1. Establish a permanent Conservation Area,
2. Describe the current understanding of the habitat requirements and management needs of *Glyptemys muhlenbergii*,
3. Provide for the regular monitoring of the *Glyptemys muhlenbergii* population, its habitat, and the Conservation Area,
4. Provide timely reports,
5. Assign responsibilities to appropriate parties, and
6. Allow for adaptive management.

Conservation Measures

The following measures will be implemented as part of, and shall constitute the conservation plan:

1. Conservation Area Establishment. The deed for the acquired site will identify that this area was purchased for conservation purposes in perpetuity. No future transportation/development projects or other activities with negative impacts to the *Glyptemys muhlenbergii* population will be allowed in the Conservation Area. The Conservation Area consists of approximately 9 acres identified as parcel numbers 9963597 and 9973895, in Henderson County.
2. Management. Management is to be conducted by the North Carolina Wildlife Resources Commission (NCWRC). Management will consist primarily of protection and direct manipulation of habitat as recommended in the attached management plan (Attachment A). Maintenance of the natural community types may require annual intervention. Maintaining the boundaries of the Conservation Area against any harmful trespass (i.e., ATV use) will be the responsibility of NCWRC.

Deed restrictions will include a provision that all management recommendations for the *Glyptemys muhlenbergii* population will be determined by the North Carolina Department of Transportation (NCDOT) and NCWRC based on the management plan completed by Earth Tech (Attachment A). Any proposals to modify the habitat, in full or part, shall be submitted in writing NCDOT for consideration of consistency with the intent of the Conservation Area and the goals and objectives of this conservation plan.

3. Monitoring. NCDOT (Biological Survey Group biologists) will assist the NCWRC in the monitoring of the Conservation Area and producing of a report each monitoring year. To maintain data consistency throughout the monitoring and reporting periods, documentation of results for individual *Glyptemys muhlenbergii* captures will be referenced to the map (Figure XXX).

- 3.1 Interval: monitoring will occur every 3 years, beginning during calendar year 2008 and continuing for 3 monitoring periods for a total of 9 years.
- 3.2 Data collected: data collected will include a population estimate for *Glyptemys muhlenbergii*, age classes observed, behavior, gender, and other pertinent capture data. Individual turtle captures will be GPSed and a map of these locations will be generated. An assessment of the boundary of the Conservation Area will be performed to determine whether any harmful trespass or encroachment has occurred. If so, it will be included in the monitoring report, and will be reported to the Natural Environment Unit, NCDOT, Raleigh, NC.
- 3.3 Personnel qualifications: persons monitoring details of the turtle population and habitat conditions shall possess an understanding of the species' habitat and life history requirements. Preference should be given to data collection and analysis by a trained bog turtle surveyor. Boundary assessments shall be performed by an individual with knowledge of the boundary lines.
- 3.4 Reporting: The NCWRC shall be responsible for submitting the annual report to the Natural Environment Unit, NCDOT, Raleigh, NC by June 30 of each year. Incident reports shall be filed when special circumstances or incidents involving threats to the viability of the *Glyptemys muhlenbergii* population and/or adverse modification to more than 1/10-acre of the Conservation Area. Incident notification shall occur in writing within 7 calendar days of occurrence. Copies of the incident report shall be provided to the Natural Environment Unit, NCDOT, Raleigh, NC.
4. Adaptive Management. This conservation plan shall be considered a living document, subject to modification for the purposes of carrying out the original goals of the plan to perpetuate a viable population of *Glyptemys muhlenbergii* in perpetuity. Modifications to this plan shall occur as needed, and as determined by consensus of an Advisory Committee. The NCWRC will be responsible for managing the site and maintaining conditions needed by the *Glyptemys muhlenbergii* population, using required methods as described in the Management Plan (Attachment A). The NCWRC will organize staff and volunteer groups to assist in the management of the site.
5. Modifications to Land Uses. The Conservation Area is designed for the perpetual management of *Glyptemys muhlenbergii*. Additional and/or alternate uses of the Conservation Area may be duly proposed, considered, and allowed, if consistent with the original intent of the Conservation Area, or if such proposed uses would not compromise the goals and objectives of the Conservation Plan. An example of such uses would be the potential environmental education opportunities in the Conservation Area. Because the Conservation Area contains a notable example of a rare mountain bog natural community and a significant population of a rare turtle, *Glyptemys muhlenbergii*, an interpretive hike could be developed in a manner to benefit students, naturalists, and other interested parties, without compromise to the Conservation Area or damage to *Glyptemys muhlenbergii* habitat or population. Existing roads or trails will be used where applicable, and limit access only to the wetland periphery. BMP's will be employed to control erosion, trampling, transporting invasive plant species (seed, etc.) into the wetland community, and

boardwalks and observation decks may be utilized wherever possible. As an education program is implemented, with collaboration from appropriate agencies, consideration will be given to signage for public education. Any decisions to include the Conservation Area as gamelands, deletion or addition of trails, or any modifications to the property by NCWRC will be submitted to the Natural Environment Unit, NCDOT, Raleigh, NC.

6. Modifications to Boundaries of the Conservation Area. Where necessary for the goals and objectives of this Plan, the boundaries may be expanded. In some situations, consolidation or acquisition of adjacent tracts may increase the management efficiency of the Conservation Area for *Glyptemys muhlenbergii*. Additional tracts adjacent to or near the Conservation Area, which harbor portions of the same *Glyptemys muhlenbergii* population or may have *Glyptemys muhlenbergii* habitat, may become available; the boundaries of this Conservation Plan may be amended to include these parcels inasmuch as these parcels could contribute to the goals and objectives of this Conservation Plan.
7. Term of the Plan. This plan will be implemented, modified as necessary, and carried out in perpetuity, effective date site is transferred. The site shall remain a conservation area for *Glyptemys muhlenbergii* regardless of the species' status under the Endangered Species Act.
8. References
 - Herman, D.W. and B.W. Tryon. 1997. Land use, development, and natural succession and their effects on bog turtle habitat in the southeastern United States. *In* J. Van Abbema (ed.), Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles – An International Conference, pp. 364-371. July 1993, State University of New York, Purchase. New York Turtle and Tortoise Society, New York.
 - Herman, D.W. 2004. Bog turtle site management: using selective cutting of native and alien plants and grazing as conservation strategies in the southeastern United States. *In*: Lee, D.S., C.W. Swarth, and K.A. Buhlmann (eds.), Proceedings: Bog Turtle Conservation in Maryland: Use of the Public and Private Sectors in Protection and Management of Small Isolated Wetlands, pp. 24-26. Jug Bay Wetlands Sanctuary, February 2001. 60 pp.
 - Herman, D.W. 2003. Status Survey of the Bog Turtle (*Clemmys muhlenbergii* Schoepff 1801) in the Southern Part of its Range, Including Georgia, North Carolina, South Carolina, Tennessee, and Virginia. Prepared for the U.S. Fish & Wildlife Service. Final report on 1996-2002 survey results. 150 pp.
 - Herman, D.W. 2004. Bog turtle population assessment at the Franklin Bog, Henderson County, North Carolina, May 24-28 & June 7-11, 2004. Bog Turtle Population Survey Conducted for Earth Tech, 701 Corporate Center Drive, Suite 475, Raleigh, NC 27607. 20 pp.
 - Palmer, W.M. and A.L. Braswell. 1995. The Reptiles of North Carolina. Univ. North Carolina Press, Chapel Hill. 412 pp.

- Somers, A.B., K. A. Bridle, D.W. Herman, and A.B. Nelson. 2000. The Restoration and Management of Small Wetlands of the Mountains & Piedmont in the Southeast: A Manual Emphasizing Endangered & Threatened Species Habitat with a Focus on Bog Turtles. Watershed Science & Wetland Science Institutes of the Natural Resources Conservation Service, University of North Carolina at Greensboro, and Pilot View Conservation & Development, Inc. pp. 152.