

ADVISORY GUIDELINES FOR CREATING TURTLE NESTING HABITAT

By

The Natural Heritage and Endangered Species Program
Massachusetts Division of Fisheries and Wildlife



Photo by Liz Willey

Open canopy areas with well-drained soils are ideal turtle nesting habitat. One of the major threats to our native turtles is habitat fragmentation and associated adult mortality due to road traffic. Female turtles often travel substantial distances from feeding wetlands to the nearest appropriate nesting habitat in order to lay their eggs. One way to reduce nesting related mortalities is to facilitate access to nesting habitat near feeding and overwintering wetlands, with roadless corridors in between. These guidelines are for creating nesting habitat for turtles on conservation land, where nesting habitat is lacking. Native plant community and all native species, particularly state-listed species, should be considered when developing management plans for conservation lands.

For more information about Wood Turtles and Box Turtles and the types of habitat they use see the NHESP Fact Sheets:

Wood Turtle <http://www.mass.gov/eea/docs/dfg/nhesp/species-and-conservation/nhfacts/glyptemys-insculpta.pdf>

Eastern Box Turtle <http://www.mass.gov/eea/docs/dfg/nhesp/species-and-conservation/nhfacts/terrapene-carolina.pdf>

An information request form can be submitted to the NHESP for persons interested in finding out if they have state-listed turtle species on their property; the form may be found at <http://www.mass.gov/eea/docs/dfg/nhesp/regulatory-review/inforequform-elect.pdf>

For more information on management of these habitats, land managers can refer to the recently released *Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: a Guide for the Northeast* available for download at: http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm.

For more information about Habitat Management for Amphibians and Reptiles see the *Habitat Management guidelines for Amphibians and Reptiles of the Northeastern United States* available for order at <http://www.parcplace.org/parcplace/publications/habitat-management-guidelines.html>

1) Species Specific Requirements (state-listed species are in italics)

- a) Freshwater/Estuary Species (*Wood Turtle*, *Blanding's Turtle*, *Red-bellied Cooter*, *Diamondback Terrapin*, *Spotted Turtle*, *Snapping Turtle*, *Painted Turtle* and *Musk Turtle*)

Location - Nesting habitat should be within 1000 ft of the wetland edge, with a barrier free (e.g. roadless) corridor between the wetland and nesting habitats. It is typically best to have the nesting habitat within 300 ft of the wetland edge, particularly for Red-bellied Cooters, Diamondback Terrapins, and Wood Turtles.

- b) Upland Species (*Box Turtle*)

Location - Nesting habitat should be within a large forested, roadless block. Sites should be within 1000 ft of confirmed Eastern Box Turtle observations.

2) General Guidelines



Photo by Liz Willey

- a) Site Factors - It is best to add to existing nesting habitat or to create nesting habitat near known nesting areas; increasing the probability that females will use the nest site immediately. Nesting sites should be on level ground with full southern exposure. The site should get sun, in a 180 degree arc from east to west, throughout most of the day. Total area of the nesting site should be greater than 20 ft in each direction and the site should be above the spring/summer flood plain. The site may need to be larger to get sun exposure throughout the day, depending on the proximity and height of adjacent forested areas. Larger nesting areas or multiple small ones will likely dilute nest predation. To minimize predation and human related mortality and collection; all nesting sites should be as isolated to the extent possible from housing developments, and human activity areas such as ATV/motorcycle trails, playgrounds, picnic areas, walking paths and other human recreational activities.
- b) Substrate - The original substrate should consist of well drained soil, sand or gravel. If soil is brought to the site it should be washed sand or gravel. Washed substrate will minimize translocation of weeds or invasive plant species and impede rapid growth of vegetation. Ground vegetation should be sparse and include native sedges, grasses, and a few low growing shrubs (less than 2%-5% cover of the site). Shrubs

will provide cover for the gravid females and hatchlings once they emerge from the nest.

c) Procedure -

Step 1 –Where necessary forest cover and tall vegetation should be removed. In these cases refer to the Forestry Conservation Management Practices (<http://www.mass.gov/dfwele/dfw/nhesp/cmpdraft.htm>) for specific guidelines for any of the state-listed turtle species. In addition, these practices should be used to help direct forest removal activities related to the creation of nesting habitat for any common turtle species.

In most cases the surface material will need to be disturbed through scarification. Refer to the species-specific data in the Forestry CMPs for information about dates when these activities should occur. Removal of the surface material, to expose the underlying strata, may also be necessary if the area is infested with invasive and/or weedy species.

In some cases the deposition of sandy soil on top of existing vegetation is all that is necessary.

Step 2 – If the exposed native mineral soil is not acceptable, a fine sand (<5% clay and <25% gravel) should be deposited over the parent material to a depth of approximately 12 inches. A permeable tarp may be placed under the sand to reduce the reoccurrence of remaining vegetation. Sand cover up to 10-12 in depth may also be used to retard growth of some existing unwanted vegetation.

Step 3 – Native, non-spreading bunch grasses (see the list of appropriate species in #5 below) should be sparsely planted; at approximately a 50 ft spacing throughout the site. Planting should not occur during dry months.

- d) Maintenance - Maintenance should not be required frequently. It is recommended that the site is inspected every two years for maintenance issues. If encrusting mosses or other exotic weeds encompass >25% of the intended nesting area, those areas should be raked and accretions should be removed. Herbaceous and woody species should never occupy > 50% of the area. In addition, shrubs should be no taller than 24” in height. If this occurs most of these materials should be removed or trimmed. The removal areas should then be raked and lightly tilled. Additional vegetation plantings may be necessary.

3) Related Policy and Regulatory Process Considerations

- Habitat management/enhancement is exempt from MESA, provided that the proponent has a management plan approved in advance by the NHESP.
- If you are creating the nesting habitat within 100 ft of a wetland or 200 ft of a stream you will need a permit from the Conservation Commission. An RDA (Request for Determination of Applicability) could be filed with the local Conservation Commission. If they perceive the impact as minor and the project as beneficial, they *may* not require a Notice of Intent (NOI) filing. It would be beneficial to have a letter of support from the Natural Heritage & Endangered Species Program before you go to the Conservation Commission.
- If the nesting area is going to be >5000 square ft in area, you will need a permit from the Army Corp of Engineers (ACOE).

- If the site is in an Area of Critical Ecological Concern (ACEC) you'll need to call the ACEC program and if it is also in a wetland buffer area you'll need to file with us. There is an ACEC GIS layer available on MassGIS to see if the site falls within one of these areas.

Some additional things to consider: You should also plan to use a clay berm around the nesting area to avoid erosion and runoff into a local stream. Hay bales and silt fencing should not be used.

4) Research Needs

- a) Size and Configuration - It is still unknown whether creating one large nesting area or multiple smaller nesting sites (spaced approximately 1-3 miles of each other) is the better arrangement to minimize nest predation.
- b) Monitoring of Created Nesting Areas – Information is needed to determine the successfulness of these methods. For example, how quickly do females begin to use these sites and do we see an increase in the nesting activity at the sites over multiple years.
- c) Percent Vegetation for Optimal Turtle Nesting Habitat –

5) Suggested Plant Species Appropriate for Turtle Nesting Habitat

Low Growing Plants,

<i>Carex lucorum</i>	Blue Ridge Sedge
<i>Andropogon(Schizachyrium) scoparius</i>	Little Bluestem, CT ecotype
<i>Carex conoidea</i>	Openfield Sedge
<i>Carex swanii</i>	Swan's Sedge
<i>Chamaecrista fasciculata</i>	Partridge Pea, PA ecotype
<i>Danthonia spicata</i>	Poverty Oatgrass

Shrubs

<i>Comptonia peregrine</i>	Sweet Fern
<i>Vaccinium angustifolium</i>	LowBush Blueberry
<i>Vaccinium pallidum</i>	LowBush Blueberry
<i>Gaylussacia baccata</i>	Black Huckleberry

6) References

- Oxbow Associates, Inc.. 2000. Spotted turtle nesting habitat creation for the preserve at Keeney Pond. Natural Heritage and Endangered Species Program report, Westborough, MA
- Buech, R. R., L. G. Hanson, and M. D. Nelson. 1997. Identification of wood turtle nesting areas for protection and management. Pages 383-391 in J. V. Abbema, editor. Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles – an International Conference. State University of New York, New York, NY.
- Buech, R.R., and M.D. Nelson. 1991. How to create wood turtle nesting areas. USDA Forest Service, St. Paul, MN