



Commonwealth of Massachusetts

Division of Fisheries & Wildlife

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Vegetation Management of Existing Right-of-Ways (ROW) in State-listed Reptile and Amphibian Regulatory Habitat

The routine vegetation management of existing electrical/transmission lines (ROW) are exempt from review pursuant to the revised MA Endangered Species Act Regulations (MESA) (321 CMR 10.00) that are administered by the Natural Heritage and Endangered Species Program (NHESP) of the MA Division of Fisheries and Wildlife (Division). The exemption, which became effective July 1, 2005, is conditional based on the NHESP's annual review and approval of a Vegetation Management Plan (VMP) (321 CMR 10.14 (12)). For additional information about the revised MESA regulations, please visit our website (www.nhesp.org, Regulatory Review tab). If ROW vegetation management activities occur in *Priority Habitat* (PH), measures must be taken to minimize the mortality of state-listed species, including rare reptiles and amphibians. Below is a list of reptile and amphibian species which may be impacted by ROW vegetation management activities. This document is meant to accompany shapefiles, also provided by NHESP, of known state-listed reptile and amphibian habitat and is meant to provide guidance to ROW managers preparing VMPs for these areas. It includes an outline of procedures that shall be implemented to safeguard these species.

STATE-LISTED TURTLES

There are 11 species of turtles that are officially listed as "Endangered", "Threatened" or of "Special Concern" in Massachusetts and tracked by the NHESP. State-listed turtles can occur in a variety of habitats across the Commonwealth of Massachusetts, including along utility ROW. Use of heavy machinery, vehicles, and the alteration of wetland hydrology which may occur during vegetation management activities can negatively impact state-listed turtles found within utility ROW. Below, the NHESP provides information on rare turtle species which may be found in utility ROW, and guidance on protecting them during vegetation management activities. In the accompanying shapefile, the NHESP provides site specific management recommendations for areas within ROWs identified to contain habitat for state-listed turtles.

Turtle Habitat Descriptions and Identification

While many turtles occur primarily in wetlands, most species will spend at least a part of their lives in uplands, and the Eastern Box Turtle spends the majority of its life in upland habitats. ROWs primarily provide nesting (e.g. open, well-drained, and sandy soils), basking (sun-exposure for warmth), and foraging (e.g. slugs, fruiting shrubs, mushrooms, etc.), habitat for state-listed turtles, but these areas sometimes also provide migratory, estivation, and breeding habitat for turtles. The Eastern Box Turtle, breeds in upland habitat(s) while the other referenced state-listed turtle species breed exclusively in wetlands. All of these species nest in open-canopy and loose sandy loam upland habitats. Further details regarding habitat descriptions can be found in the rare species fact sheets for each species.

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- Semi-Aquatic Turtles

Northern Red-bellied Cooter (*Pseudemys rubriventris*) – “Endangered”

These turtles utilize freshwater ponds that have abundant aquatic vegetation and largely reside within aquatic habitats, except during the nesting season. This species is only documented to occur within Plymouth County. The Northern Red-bellied Cooter overwinters in freshwater ponds including coastal plain ponds. This species is similar in appearance to the Eastern Painted Turtle, a very common species in MA. The Northern Red-bellied Cooter can be distinguished most readily by the red or pink coloration on the bottom (plastron) of the shell, the lack of a yellow spot that is prominent near the eye of E. Painted Turtle, and the flat or slightly depressed top of the shell, unlike the rounded or domed shell of the E. Painted Turtle.

Blanding’s Turtle (*Emydoidea blandingii*) – “Threatened”

These turtles use a variety of wetland (e.g. marsh, vernal pool, river/stream, shrub swamp, forested wetlands, etc.) and upland (e.g. forest, shrubland, field, orchards, grasslands, etc.) habitats. This species has been documented to move greater than two kilometers (> 6,700 feet) between wetlands (upland and aquatic movement) and overland to upland nesting habitat in Massachusetts. The Blanding’s Turtle overwinters in deep marsh habitats and areas of deep open water. This species is most easily recognized by the yellow coloration of the chin and neck and the highly-domed “helmet” shape of the shell.

Wood Turtle (*Glyptemys insculpta*) – “Special Concern”

The primary habitats of the Wood Turtle are rivers/streams followed closely by early successional/non-forested habitats. Usually, the migratory corridor between all utilized upland and wetland habitats is the primary river/stream. This species utilizes early successional shrub/field habitat between early May and October before returning to the primary river/stream to hibernate. The Wood Turtle overwinters in perennial streams and rivers, preferring less steeply inclined streams. This species is recognized by the coarse texture of the shell (resembling wood) and the orange/bronze coloration of the throat and legs.

- Upland Turtle Species

Eastern Box Turtle (*Terrapene c. carolina*) – “Special Concern”

The primary habitats of the Eastern Box Turtle include a variety of mostly upland (early successional/shrublands, grasslands, forest, etc.) habitats. This species also occasionally visits shallow wetland (vernal pool, shrub swamp, marsh) habitats for brief periods of time between April and October to hydrate, feed, and estivate. This species will primarily occur in forested habitat from the late spring and to early fall. The Eastern Box Turtle overwinters in burrows or otherwise underground or in a protected area in forested areas. This species’ shell is highly domed and very colorful with a gradient of yellow, orange, light browns, and gold resembling oak leaves on the forest floor.

Turtle Biology

The general annual activity cycle of turtles is as follows:

- In the early spring, turtles emerge from hibernation and move to breeding, foraging, and basking habitat (overland and aquatic migration).

- Throughout June, female turtles nest in upland habitats with open canopy, loose, and usually sandy soil (overland migration).
- During mid to late summer (after nesting), turtles have a period of reduced activity or dormancy called estivation that occurs in wetlands and forested habitat that may surround wetland habitat utilized earlier that year (overland and aquatic migration). Eastern Box Turtles primarily estivate in cooler forested habitat during peak summer (overland migration).
- In early to mid fall, turtles move to hibernation habitat (overland and aquatic migration).
- Late November through late March turtles are in hibernation (inactive).

State-listed turtle species referenced above have a range in their amount of time spent upland, which for a single species may collectively exceed two to three months for semi-aquatic turtles (Wood, Blanding's, and Northern Red-bellied Turtles) and upwards of seven months for upland turtles (Eastern Box Turtle) during the annual activity period. All state-listed turtle species can be observed on land from late March through November in upland non-forested (e.g. field, shrubland, ROW, etc.) and forested (e.g. oak and mixed forest) habitats. Eastern Box Turtles primarily utilize upland habitats throughout their active period, but occasionally hydrate and feed in shallow wetlands (<5 ft) for short periods of time during the year. In general, turtles are relatively easy to detect when moving, for example when traveling overland and nesting, however when estivating or at rest, they can be hard to detect (well-camouflaged with leaf litter and vegetation and enclosed in shell).

Turtle nesting occurs largely during the month of June, as females travel to open-canopy habitat with well-drained, loose, sandy-loam soils. Turtle nesting may occur in small open areas along trails, fields, grasslands, stream banks, and within the ROW. Usually, turtles will nest between dusk and dawn hours when light is low and they are most protected against mammalian predators. Once eggs are deposited in the ground, turtles vacate the nesting habitat and in most cases hydrate in nearby wetlands. The majority of hatchling turtles will emerge between mid August and late October, however some hatchlings may overwinter within the nest cavity.

Management Recommendations

1. Vegetation Management Conducted between 1 November and 1 April: In general, maintenance activities associated with VMPs that are conducted between 1 November and 1 April will pose minimal or no risk to state-listed turtles and can proceed as described in the submitted YOP or VMP.
2. Vegetation Management Conducted between 2 April and 31 October: Vegetation management activities occurring between 2 April and 31 October may cause harm to state-listed turtles, and certain steps must be taken to avoid such harm. The management recommendations for state-listed turtles, found in the "Mgmt_rec1" and "Mgmt_rec2" columns of the shapefile table, are clarified below.

Detailed descriptions of "Mgmt_rec1" and "Mgmt_rec2" guidelines

"Raise mower blades": If mowing is to occur between 1 April and 1 November, raising the height of mower blades to 8-12 inches above the ground will reduce the likelihood of turtle mortality.

"Remove turtles from work area": For all other annual vegetation management activities occurring between 1 April and 1 November—including mowing without raising the height of mower blades—visual inspections of the ground in front of equipment will be required at the

time of work. Any turtles found must be removed from the path of vehicles or heavy equipment. State-listed turtles that are encountered shall be photographed and reported to the NHESP on Rare Animal Observation Forms (available at www.nhesp.org). A Scientific Collection Permit is required to handle state-listed species, and appropriate training of crews will be required if mowing in state-listed turtle habitat will occur without raising the mower blades. Previous experience searching for turtles or appropriate hands-on training with such an experienced person will be required.

Handling Turtles

To protect state-listed and other turtle species, caution and vigilance should be exercised when traveling in ROW which may attract turtles during the active season. Turtles should only be relocated or otherwise disturbed if they are in harm's way. If a state-listed turtle is observed during management operations, than a completed Rare Species Observation Form and photograph should be submitted to the NHESP.

- Before nesting season (late March-late May)
When state-listed turtles are encountered in the ROW, field crews should immediately relocate the turtle a safe distance (e.g. 500 feet > 250 feet) outside of the limit of work to the edge of the ROW or nearest wetland. Additionally, turtles should be moved in the same direction that they were oriented when observed by field crews. Please note turtles should not be relocated by field crews across any paved road.
- During nesting season (late May-early July)
If the turtle is not actively digging a nest, then immediately relocate the turtle per the description above. In general, the majority of state-listed turtle nesting activity will occur in the dusk to dawn hours, however if a state-listed turtle is determined to be actively digging a nest with their hind legs, then work should be avoided within 250 feet of the turtle to avoid disrupting nesting behavior. It may be possible to plan ahead and avoid prime nesting habitat during the annual nesting period (e.g. June 1 through June 30).
- After nesting season (Mid July through November)
When turtles are encountered in the ROW, they should be relocated to areas of suitable habitat outside of the limit of work. Turtles should be relocated in the same direction that they were oriented at the time of the observation. Please note turtles should not be relocated by field crews across any paved road.

Turtle Observations and Reporting

All observed state-listed turtles will be identified, reported, and moved a safe distance in the direction the turtle was oriented when observed and outside of the limit of work (e.g. 250 ft > 500 ft). Observations of state-listed species will require the submittal of an NHESP Rare Species Observation Form, including photographs, characters used for identification, observer contact information, locus map and signature. A copy of the Rare Wildlife Observation Form is attached.

STATE-LISTED AMPHIBIANS

There are 5 species of amphibians (4 salamanders and 1 toad) that are officially listed as "Threatened" or of "Special Concern" in Massachusetts and tracked by the NHESP. State-listed amphibians can occur in a variety of habitats across the Commonwealth of Massachusetts, including along utility ROW. Use of heavy machinery, vehicles, and the alteration of wetland hydrology which may occur during vegetation management activities can negatively impact state-listed amphibians found within utility ROW. Below, the NHESP provides information on rare amphibian species which may be found in utility ROW, and guidance on protecting them during

vegetation management activities. In the accompanying shapefile, the NHESP provides site specific management recommendations for areas within ROWs identified to contain habitat for state-listed amphibians.

Amphibian Habitat Descriptions and Biology

Three of the four state-listed salamanders are in the same family of mole salamanders (Ambystomatidae): the Blue-spotted Salamander (*Ambystoma laterale*), Jefferson Salamander (*Ambystoma jeffersonianum*), and the Marbled Salamander (*Ambystoma opacum*). These species are often thought of in association with their aquatic breeding habitat, which is primarily in ephemeral vernal pools. Although these aquatic habitats are essential for reproduction, these salamanders are only in the breeding pools for a few days to a couple of weeks per year. It is the surrounding upland forest habitat where the juvenile and adult salamanders spend 90% of their lives. Breeding migration to and from aquatic habitat occurs in the early spring for Blue-spotted and Jefferson Salamanders, while for Marbled Salamanders it occurs in the late summer and fall. Outside of these breeding periods, the adult salamanders reside in underground burrows and tunnels and beneath moist coarse woody debris. The fourth state-listed salamander, the Four-toed Salamander (*Hemidactylium scutatum*) is in the lungless salamander family (Plethodontidae) and is the smallest salamander found in Massachusetts. It breeds in wetlands such as swamps, bogs and marshes that have hummocks of sphagnum moss. Although these aquatic habitats are essential for reproduction, it is the surrounding terrestrial forested habitat where the juvenile and adult salamanders spend the majority of their time. Breeding migration of nesting females to and from aquatic habitat occurs in the early spring while courtship and mating occurs in the late summer and fall.

The final state-listed amphibian is the Eastern Spadefoot Toad (*Scaphiopus holbrookii*) and is the most fossorial species of frog or toad in Massachusetts. These toads live in areas with dry sand or sandy loam. They spend most of their time up to eight feet underground—hibernating during the cold months and avoiding desiccation during the rest of the year. In warmer months, from April to September, the Eastern Spadefoot Toad comes up at night to breed in temporary ponds after prolonged warm and heavy rains.

Management Recommendations

3. Vegetation Management Conducted between 1 December and 15 March: In general, maintenance activities associated with VMPs that are conducted between 1 December and 15 March will pose minimal or no risk to state-listed amphibians and can proceed as described in the submitted YOP or VMP.
4. Vegetation Management Conducted between 16 March and 30 November: Vegetation management activities occurring between 16 March and 30 November may cause harm to state-listed amphibians, and certain steps must be taken to avoid such harm. The management recommendation for state-listed amphibians, found in the “Mgmt_rec1” column of the shapefile table is clarified below.

Detailed descriptions of “Mgmt_rec1” and “Mgmt_rec2” guidelines

“No equipment in vernal pool”: If mowing is to occur between 15 March and 1 December, no equipment shall enter the vernal pool.