



**MA Department of Conservation and Recreation
Bureau of Resource Protection
Best Management Practices**

Stewardship and Protection of Bats

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Goal: To provide guidance for the stewardship of bats and their habitats in DCR managed facilities (parks, buildings, dams, etc.).

Overview:

As insectivores, bats in Massachusetts provide a vital role in ecosystem health and function, contributing to pest management in forested and open habitat. The unique adaptations we see in bats today, including [selection of roosting and foraging habitat](#), wing morphology, and echolocation characteristics specific to individual species, speak to the ingenuity of the taxa and fierce competition in a dynamic landscape.

There are nine (9) species of bats found in Massachusetts, five (5) of these are listed as Endangered by the Massachusetts Endangered Species Act (MESA) and two (2) are also listed under the Federal Endangered Species Act (ESA). The entire state is currently mapped as habitat for the endangered northern long-eared bat (*Myotis septentrionalis*). All nine (9) bats are listed in the MA Division of Fish and Wildlife State Wildlife Action Plan ([SWAP](#)). Existing bat populations in MA are those that have avoided mortality events related to anthropogenic disturbance (e.g., wind turbines) and mass population declines following the spread of White-nose Syndrome (WNS) in 2007.

White-nose syndrome is a disease that affects hibernating bats and is caused by a fungus. As it grows, the White-nose fungus causes changes in bats that make them become active more than usual and burn up fat they need to survive the winter. The little brown bat (*Myotis lucifugus*) was once the most abundant bat species in Massachusetts, but its population declined by more than 99% after the onset of WNS.

Recommended stewardship strategies and best management practices focus on the **conservation of summer habitat** and the **protection of winter hibernacula**.

Bats of Massachusetts

Common Name	Scientific Name	Status	Summer Habitat (April 1- Oct 31)	Winter Habitat (Nov 1 – March 31)
Big brown bat	<i>Eptesicus fuscus</i>	Common	Buildings, trees	Buildings, caves, mines
Little brown bat	<i>Myotis lucifugus</i>	MA: Endangered	Buildings	Caves, mines
Northern long-eared bat	<i>Myotis septentrionalis</i>	MA: Endangered Federal: Endangered	Trees, building exteriors	Caves, mines
Indiana Bat	<i>Myotis sodalis</i>	MA: Endangered Federal: Endangered	Caves, mines, hollow trees, under tree bark	Caves, mines
Eastern small-footed bat	<i>Myotis leibii</i>	MA: Endangered	Under tree bark; in rock (talus, fissures, crevices)	Caves, mines
Tricolored bat	<i>Perimyotis subflavus</i>	MA: Endangered	Trees	Caves, mines, rock crevices
Hoary bat	<i>Lasurius cinereus</i>	Common	Tree foliage	Migratory
Silver-haired bat	<i>Lasiorycteris noctivagans</i>	Common	Trees, rock crevices	Migratory; buildings, trees
Eastern red bat	<i>Lasurius borealis</i>	Common	Tree foliage	Migratory

Best Management Practices:

Before beginning work that may disturb bats, DCR staff should evaluate the area for their presence. Easily observable signs of bats include: guano piles, audible bat vocalizations, urine smell, and bats flying nearby

Types of activities that may require consultation with bat biologist:

- Building maintenance
- Demo of structures
- Hazardous tree removal
- Forest management
- Bridge maintenance/repair

Guidelines:

Potential impacts to bats and their habitat can be avoided or minimized through a variety of management practices, including:

- Surveying for potential bat populations
- Timing tree removal activities outside of roosting season (October - April)
- Conserving riparian areas
- Leaving snags and live or diseased trees with known roost tree characteristics (peeling bark, large crevices, cracks or cavities)
- Minimizing disturbance to other summer roosting features between April and October

Bats in Natural Areas

Bat roosts are commonly found close to surface water resources, such as ponds and lakes

- Common roost tree characteristics:
 - DBH ≥ 8 inches, preference of large DBH snags;
 - crown reaching upper canopy (dominant or co-dominant);
 - peeling bark;
 - large crevices, cracks, or cavities; and
 - sun exposure;
- Check rock features commonly used by bats, such as:
 - south facing talus slopes or riprap piles;
 - crevices within rock faces with steady sun exposure; and
 - caves/mines.

Bats in Structures

If bats are found roosting in a structure, please contact the wildlife biologist or the Office of Natural Resources.

- Investigate areas where bats are known to roost. Areas include:
 - Dams and bridges with exposed rip rap and cracks;
 - culverts;
 - old buildings;
 - slate roofs; and
 - bat houses
- Bats are protected by law in Massachusetts and may not be killed or captured except under permit, when they are creating a risk to public health, or when they are damaging property.
- When necessary, staff from DCR Office of Natural Resources in concert with Natural Heritage will provide guidance to evict a colony of bats from a building.

If a bat is found in a building:

- Please **contact DCR's wildlife biologist immediately**, if plausible. If unable to make contact with the biologist, please attempt to document the species with photographs.
- In most cases, the presence of bats is not an emergency. However, if the bat needs to be removed immediately follow the guidelines below:
 - Flying - Open the windows, turn out the lights, and close the door. The bat will leave on its own.
 - Landed - Place a jar or can over the bat, cover the opening with cardboard and release outside.

OR

 - Landed – Gently place a thick towel over the bat to pick up and release outside
 - Never handle bats without guidance from DCR wildlife biologist or staff from DCR Office of Natural Resources.
 - If a bat appears injured- contact the wildlife biologist and [a licensed wildlife rehabilitator](#)

Regulatory Review

Massachusetts Endangered Species Act (MESA)

- State listed bats are protected from any harm or “take” and all projects or activities located within Priority Habitat must file with the NHESP and gain approval, unless exempt.
- Take, in reference to animals, means to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct.
- Prior to conducting a management or maintenance activity or project on DCR property, it’s important to determine if the site is within [Priority Habitat](#). If it is within Priority Habitat, a MESA review may be required; however, some activities and habitat management plans may be exempt.
 - Although manmade structures are not recognized as priority habitat by Natural Heritage, prohibition against incidence of take still apply to bats within those structures.
- MESA and northern long-eared bats- Incidental take resulting from tree removal is prohibited **if**:
 - Tree removal occurs within a 0.25-mile radius of known northern long-eared bat hibernacula.
 - Tree removal cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius from the known maternity tree during the pup season (June 1 through July 31).
 - Known hibernacula and roost areas are mapped by NHESP.
- Please contact the Office of Natural Resources for additional guidance. Also please see DCR’s “Compliance with MESA” BMP

Federal Endangered Species Act (ESA) regulations for the northern long-eared bat (**Regulations only apply to Federally funded projects including FEMA funding**)

- Projects that result in tree removal and other activities shall comply with the 4(d) rule under the ESA. Please note that the ESA considers trees ≥ 3 ” DBH as potential roost trees.
- ESA streamline project review is available through [IPac](#). Please contact the Office of Natural Resources for support.

For more detailed information regarding bats in the home please see [the Massachusetts Homeowner’s Guide to Bats](#) provided by Massachusetts Division of Fisheries and Wildlife