SUSTAINABLE FORESTRY INITIATIVE PENNSYLVANIA
SFI-01141

pennsylvania DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

SFI Biodiversity Species Fact Sheet

Northern Long-Eared Bat (Myotis septentrionalis)

Globally Critically Imperiled/Vulnerable Animal Species; State Rank: S1 (critically imperiled) Global Rank: G2G3 (imperiled/vulnerable)

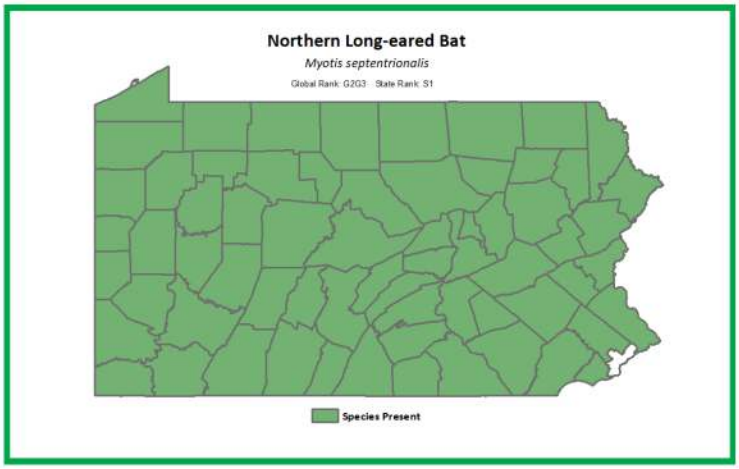
Identification

Northern long-eared bats are small, with a body about 3-4 inches in length, and a small tail that is about 1-1.5 inches. The wingspan is about 9-10.5 inches. Females are slightly larger than male bats. These bats are medium to dark brown on their back with a paler brown go blonde underside. As the name implies, although similar in size, northern long eared bats have narrower and larger ears (0.6-0.75 inches) than little brown bats or Indiana bats (both have ears approx. 0.5 inches long). Indiana bats also have a keeled calcar, or a ridge of cartilage between their foot and tail.


Photo Credit: C. Fichenburger

Biology-Natural History

Northern long-eared bats are relatively long lived (18 years) and emerge from their winter hibernation in caves or mines in mid-spring as insects become more abundant. They favor mines with high humidity, relatively constant temperatures, and few air currents. These bats will wedge themselves into small crevices or cracks with just the nose and ears showing. Breeding occurs in late or summer or early fall during swarming events near hibernacula. After breeding in the fall, females hibernate and store the sperm during winter. After spring emergence females ovulate and the stored sperm then fertilizes the egg—this is termed delayed fertilization. Pregnant bats then migrate to summer areas where they often roost in maternity colonies. In Pennsylvania, bats are born in July and start to fly about 3 weeks after birth. Northern long eared bats use echolocation to navigate through the forest understory to feed on insects. Some think their large ears may help them use echolocation to better locate motionless insects on the underside of leaves.



Distribution and Habitat

Once abundantly found across 37 states and 8 Canadian provinces, populations have dropped by over 90% across the U.S.; and in Pennsylvania, when main hibernation sites were contaminated with white nose syndrome, 99% of northern long-eared bats died. Some suggest that surviving long-eared bats may be showing a behavioral difference for solitary, non-traditional hibernation sites. Current U.S. distribution is limited to a core corridor of habitat in the Appalachians and hardwood forests.

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Conservation Concerns

By far, the greatest conservation concern is white nose syndrome which has devastated populations since first being discovered in a New York cave in 2006. This fungus likely was introduced from Europe; because bats do not migrate between continents many suspect that cavers unwittingly transported the fungus on contaminated gear or clothing. Wind farms can also have important local impacts depending on the farm proximity to summer foraging habitat, maternity colonies, fall migration corridors, or winter hibernation habitat. Collisions can be mitigated by using 'feathered blades' which reduce the blade angle to cease or slow rotating speeds during periods of high risk. Vehicle collisions and disturbance while hibernating are also known threats.

Management Practices

The Pennsylvania Game Commission conducts annual bat population research. This research includes hibernating bat counts, banding and recapture, migration telemetry, mist-netting, alternative roost installation, and hibernacula and habitat protection. The Pennsylvania Game Commission and the Department of Conservation and Natural Resources are jointly implementing a PA Forestry Habitat Conservation Plan for Indiana and Northern Long-Eared Bats. For more information, see either agency's website. For further conservation and management, more research is needed, including on maternity sites, environmental pollutants and human conflicts. Other good management practices include:

- Protect hibernacula from disturbance. Avoid activities around caves where bats hibernate during wintertime because bats are very sensitive to changes in their environment during hibernation.
- Minimize impacts to preferred roosting trees. During a timber sale, reserve several snags or dead/dying trees especially those that are 11" to 20" dbh or larger, if present. Reserve shag or shellbark hickory trees, and larger trees with peeling bark or cavities. This allows suitable habitat for mother bats to rear their pups.
- Protect baby bats. Avoid harvesting potential roost trees (snags, shag/shellbark hickory, loose or peeling bark) from early June to late July, when pups are still too young to fly.
- If you see a bat fleeing a tree, stop cutting operations and call the PA Game Commission.
- Maintain a healthy forest in a variety of stages. Bats make use of patchiness, vertical height diversity and a mix of tree sizes along with dead or hollow trees in each management unit.
- Maintain good water quality by avoiding pollutant spills from vehicles or equipment. This keeps bats' prey base of insects healthy.

If anyone observes this species they should call the jurisdictional agency, Pennsylvania Game Commission Headquarters at 833-742-4868.

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