

Northern Long-Eared Bat

How Its Listing Under the Endangered Species Act Affects Alabama Forest Landowners

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Recently federally listed as a *threatened species* under the Endangered Species Act, northern long-eared bats may now be significant to Alabama forest landowners. In the following paragraphs, we discuss in detail the forest management implications resulting from this listing. ‘Threatened species’ are those that are likely to become endangered in the future, and ‘endangered species’ are those that are in danger of becoming extinct. The US Fish and Wildlife Service published the final listing and interim rule to the Federal Register on April 2, 2015. The rule took effect on May 4, 2015.

Being able to identify and having some background knowledge about this particular bat is important for forest managers and landowners. The northern long-eared bat (*Myotis septentrionalis*) is small to medium-sized with a body length of 3 to 3.75 inches long and a wingspan of 9 to 10 inches. The bat’s fur is dark to medium brown on the back, and tawny to pale brown on its underside. The two species it is most commonly confused with are little brown bat and western long-eared bat; however, the easiest way to distinguish this species from others in its genus is by its long ears. The Greek word *myotis* means ‘mouse-eared.’ When the northern long-eared bat lays its ears forward, they extend past its nose up to two-tenths of an inch.

During the winter, these bats hibernate in caves and mines, called hibernacula. They utilize areas in the hibernacula that have a constant temperature, high humidity, and no air currents. The bats will hibernate in small cracks and crevices, sometimes with only the nose or ears visible. During the summer, they will roost under the bark of trees, in cavities, in crevices of live or dead trees, or in snags (dead standing trees). They may roost singly or in colonies. Males and non-reproductive females will continue to roost in mines or caves, if convenient. It is very uncommon for this species of bat to roost in human structures.

The northern long-eared bat was recently listed as a threatened species because of a disease causing significant mortality that affects hibernating bats. White-nose syndrome, caused by the fungus *Pseudogymnoascus destructans*, is so named for the white fungus that appears on the muzzle and other parts of the bat. It is estimated that this disease has killed over 5.5 million bats in the United States and Canada. Northern long-eared bat

populations have declined sharply, up to 99 percent, across a large portion of its range. First documented in New York around 2006, the disease has since spread west as far as Missouri, as well as south to Mississippi and Alabama. While the range of this bat extends across 33 counties in Alabama, only seven counties in the state currently have infected hibernacula.

White-nose syndrome causes bats to behave strangely during winter months, flying outside during the middle of the day or clustering at the entrance of a cave or mine. White-nose syndrome has been confirmed in the following species of bats: big brown bat, eastern small-footed bat, gray bat (endangered), Indiana bat (endangered), little brown bat, northern long-eared bat (threatened), and the tri-colored bat.

Section 4(d) of the Endangered Species Act (ESA) allows the US Fish and Wildlife Service to establish special regulations for **threatened** species, subspecies, and Distinct Population Segments. [Section 4(d) rules do not apply to **endangered** species.] These 4(d) rules take the place of the normal protections of the ESA and may either increase or decrease the ESA’s normal protections. The ESA specifies that 4(d) rules must be “necessary and advisable to provide for the conservation of such species.” One use of 4(d) rules is to relax the normal ESA restrictions to reduce conflicts between people and the protections provided to the threatened species by the ESA.

The provision in the Endangered Species Act 4(d) rule states that all purposeful take is prohibited within the range of the northern long-eared bat. The ESA defines ‘take’ as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The ESA defines ‘incidental take’ as take that results from, but is not the purpose of, carrying out an otherwise lawful activity. There are two exceptions to the rule. The first is the removal of northern long-eared bats from human structures. The second exception is actions related to capture, handling, and related activities for northern long-eared bat by individuals permitted to conduct these same activities (typically researchers and scientists) for species of bats (for a period of a year).

While the northern long-eared bat covers a large range, white-nose syndrome has not yet spread throughout its entire range.



Photo by Al Hicks (NYDEC)/USFWS

Therefore, a buffer has been established around areas that have infected hibernacula, known as the white-nose syndrome buffer zone. For areas of the country outside of the white-nose syndrome buffer zone, the interim 4(d) rule exempts incidental take from all activities. For areas within the white-nose syndrome buffer zone, take from hazardous tree removal is exempt from the ESA prohibitions. The 33 counties in Alabama that are within the range of northern long-eared bat are also located in the white-nose syndrome buffer zone.

For areas of the country within the white-nose buffer zone, the interim 4(d) rule exempts incidental take from the following activities (with provisions*): forest management practices; maintenance and limited expansion of transportation or utility lines; prairie habitat management; and limited tree removal projects, provided these activities protect known maternity roosts and hibernacula. *The following measures are required in order for the exemption to apply:

1. Activity occurs more than one-quarter mile from known, occupied hibernacula.
2. Activity avoids cutting or destroying known, occupied roost trees during pup season, which is June 1 – July 31.
3. Activity avoids clear-cuts and similar harvest methods, seed tree, shelter wood, and coppice regeneration within one-quarter mile of known, occupied roost trees during pup season.



Photo by Steve Taylor/University of Illinois/USFWS

Northern long-eared bat showing signs of white-nose Syndrome (WNS).

The conversion of mature hardwood or mixed forests into intensively managed monoculture pine plantations is not exempt under the 4(d) rule. This is because monoculture pine plantation stands provide very poor quality bat habitat. The 4(d) rule does not require landowners to conduct a survey for northern long-eared bat, but a survey would help identify whether bats utilize the area. The landowner has added certainty that incidental take resulting from the exempted activities is not prohibited under the 4(d) rule.

Forest managers must be aware of the required measures stated above for exempted activities to be valid. Recommendations include identifying any potential roost trees on a property and being mindful of conducting harvest operations during the bats' pup season. Pleading ignorance will not provide a strong defense if found out of compliance with the ESA 4(d) rule. General forestry considerations when northern long-eared bats are present or presumed present include avoidance of roost sites, leaving wooded corridors between roosting and feeding sites, and protecting known hibernacula. Leaving a wooded buffer around hibernacula will help insulate the bats from the rest of the harvesting operation. Utilization of herbicides and pesticides in areas adjacent to foraging and roost sites should be carefully controlled and monitored for unanticipated adverse effects.

Northern Long-Eared Bat Distribution in Alabama by County: Bibb, Blount, Calhoun, Cherokee, Clay, Cleburne, Colbert, Cullman, Dekalb, Etowah, Fayette, Franklin, Greene, Hale, Jackson, Jefferson, Lamar, Lauderdale, Lawrence, Limestone, Madison, Marion, Marshall, Morgan, Pickens, Randolph, Shelby, St. Clair, Sumter, Talladega, Tuscaloosa, Walker, and Winston.

Alabama Counties with White-nose Syndrome-Infected Hibernacula: Colbert, Jackson, Lauderdale, Lawrence, Limestone, Marshall, and Morgan.

Information utilized to write this article came from the Federal Register Volume 80 Number 63, the US Fish and Wildlife Service, and the white-nose syndrome website. For additional information on northern long-eared bat or white-nose syndrome, please visit the US Fish and Wildlife Services website and whitenosesyndrome.org.

