

## **Non-jeopardy Interim Conference Report**

### **Continued Implementation of Forest Service Southern Region**

#### **Land and Resource Management Plans and Associated Projects**

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The USDA Forest Service (FS) manages eleven National Forests (NFs) and one National Recreation Area in the Southeast U.S. that are within the range of the northern long-eared bat (NLEB), which is proposed for listing under the Endangered Species Act (ESA) (78 FR 61046-61080). Combined they have more than 11.5 million acres of potentially suitable habitat. This is less than one percent of the known range of the species. The NLEB is among the most common of forest bats within at least the northern portions of the Southern Region and are frequently encountered in surveys within its extensive range throughout most of the Region. Due to white-nose syndrome (WNS), the NLEB has experienced a sharp decline in the northeastern part of its range, as evidenced by a combination of hibernacula surveys and summer capture trends. Although the disease has not yet spread throughout the species' entire range (WNS is currently found in 25 of 39 States where the NLEB occurs), it continues to spread. Because of shorter hibernation periods and warmer winters, we do not know if WNS will have the same impact to NLEBs in the southeast as it has in the northeast. The U.S. Fish and Wildlife Service (USFWS) is proposing to list this species as endangered throughout its range.

The FS in the Southern Region conducts many types of routine forest management and prescribed fire actions to manage and improve forest conditions for priority wildlife, including many species of forest dependent bats. Disturbance to NLEB from these activities may occur during times when forests are occupied by these species. In this instance, the ESA requires federal agencies to determine whether proposed actions are likely to jeopardize species proposed for listing, and if so, to confer with the USFWS. Jeopardy actions are those reasonably expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.

USFWS recently released "Northern Long Eared Bat Interim Conference and Planning Guidance" (January 6, 2014, hereafter Guidance), providing recommendations for how to avoid take of any individual northern long-eared bat during the summer roosting period when conducting routine forest management. The following analysis supports our non-jeopardy determination for routine forest management conducted by FS as outlined in the FS Land and Resource Management Plans (Forest Plans) for each NF and serves as an interim conference report. Other potential impacts resulting from FS activities would require separate conference

reports. The Southern Region NFs within the distribution of NLEB are hereby assumed to have the species present, so surveys are not necessary.

### **Listing Factor Analysis:**

The primary factor cited in the proposed listing rule responsible for the decline of NLEB populations is white-nose syndrome, a lethal fungal disease spread while the species inhabits caves and mines during winter hibernation. The primary question that our assessment will address is whether adverse effects resulting from management of NFs in the southeast consistent with current Forest Plans would appreciably diminish the species' reproduction, numbers, or distribution. Although WNS is the primary cause for significant population declines, the activities detailed below may affect NLEB, primarily through disturbance, although direct mortality cannot be ruled out. The Guidance document states, "Although many types of timber management, when properly designed, will not impact (or may improve) NLEB habitat, some types of timber management (clear-cutting) can reduce the viability of NLEB populations if key areas of a home range are removed." The FS Southern Region rarely uses clear-cutting and it is usually associated with ecosystem restoration.

The Forest Plans for each NF provide a framework for integrated resource management and guide project-level decision making. Forest Plans step down forest-specific conservation and multiple-use objectives from broader regional and national goals. A Forest Plan does not authorize projects or activities, but projects and activities must contribute to Plan objectives and conform to its standards and guidelines. Standards and guidelines are adopted, among other reasons, to promote the conservation of listed species and to avoid and minimize potential adverse effects of projects implemented under the plan. Forest Plans describe conservation measures employed to avoid or minimize the effects of routine forest management and prescribed fire actions to priority wildlife, including forest dependent bats.

While there are no range-wide population estimates for NLEB, if one looks at range-wide population trends of Indiana bat, one can get an indication of effects of integrated forest management. Indiana bats were at an all-time low in 2001 with 451, 554 individuals. Six years later in 2007 the population was at 590,875, a 31% increase (FWS Bloomington, IN field office website). Impacts of WNS started showing up in the 2008 surveys. We are conferencing on the same plans that were being implemented during this 31% increase in Indiana bats. The FWS NLEB guidance relied heavily on information relating to Indiana bats. If silvicultural activities were having adverse effects, one would not expect to see a 31% increase in individuals. WNS is the cause of NLEB population declines and we do not anticipate adverse population-level affects from forest management.

### **Impacts to Hibernacula:**

White-nose syndrome is a fungal disease known to cause high mortality in bats that hibernate in caves and mines. The fungus causing the disease thrives in low temperatures and high humidity—conditions commonly found in caves and mines where NLEB hibernate. Northern long-eared bats predominantly overwinter in hibernacula that include caves and abandoned mines.

Hibernacula used by NLEB are typically large, with large passages and entrances, relatively constant, cooler temperatures, and with high humidity and little to no air currents.

Cave-dwelling bats are vulnerable to human disturbance while hibernating. Bats use up their energy stores when aroused and may not survive the winter. Properly installed gates on caves and abandoned underground mines are effective at restricting human access while allowing use by bats.

### **Protection Measures at Known Hibernacula on FS Lands in the Southern Region:**

In May 2009, the FS issued a closure order for all caves and abandoned mines in all Southern Region National Forests except El Yunque NF in Puerto Rico and Blanchard Springs Caverns in Arkansas to proactively slow the spread of *Pseudogymnoascus destructans*, the fungal agent that causes WNS. The closure order had been renewed on an annual basis. On June 2, 2014, the FS Southern Region put in place a 5-year closure to minimize potential human spread of *Pseudogymnoascus destructans* and protect bats.

On FS lands with known hibernacula, the forest management activities of potential concern would be: (1) conducting prescribed fire in the close vicinity (within 0.25 mile), whereby smoke could enter the cave causing disturbance of the hibernating bats, and (2) timber harvest in the vicinity of hibernacula entrances, which could disturb bats during spring staging and fall swarming.

With respect to prescribed fire management, some NLEBs during this interim period would be expected to still be in hibernacula in most of the Southeast until March 31 (April 15 in North Carolina). All Forests with known hibernacula treat these as smoke sensitive areas and already have protective measures in place to minimize impacts for northern long-eared bat and other listed bat species from prescribed fire.

All forest plans in the Southern Region have requirements for snag and den tree retention, residual basal area left during timber harvest, and leave tree clumps during timber harvesting. The specific numbers vary by forest, but all protect habitat suitable for NLEB roosting during the spring staging and fall swarming periods. Forests with Indiana bats protect significantly more potential roost trees than non-Indiana bat forests, and these forests are the heart of the NLEB range on southern national forests. In addition to protecting snags and den trees, these forests protect all currently suitable roost trees (lightning scars, splits, cracks, or broken tops) and all shagbark hickory > 6" DBH. Forest Inventory and Analysis Data from the south zone of the Cherokee National Forest in Tennessee indicate an average of 22 snags per acre > 6" DBH. If we assume half this number as an average across the national forests involved, that would yield more than 550,000 snags in a 5-mile radius around any given hibernaculum. Forest cover around hibernacula provide abundant potential roost trees for NLEB at all times of year.

## **Loss or Degradation of Summer Habitat:**

Northern long-eared bats typically occupy their summer habitat from mid-May through mid-August each year. The species may arrive or leave some time before or after this period (in the Southeast Region the range of dates are from mid-March to late November to include spring staging and fall swarming). Whereas some activities (e.g., highway and commercial development, surface mining, and wind facility construction) permanently remove habitat, timber harvest and forest management may remove or alter (i.e., improve or degrade) summer roosting and foraging habitat, but the effect is not permanent.

Suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel, and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts. During summer, NLEB roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically  $\geq 3$  inches diameter at breast height). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1000 feet of other forested/wooded habitat. Northern long-eared bats emerge at dusk and use upland and lowland forested habitats and tree-lined corridors to forage, feeding on insects, which they catch while in flight using echolocation. This species also feeds by gleaning insects from vegetation and water surfaces.

Northern long-eared bat maternity habitat is defined as suitable summer habitat used by juveniles and reproductive (pregnant, lactating, or post-lactating) females. Northern long-eared bat home ranges, consisting of maternity, foraging, roosting, and commuting habitat, typically occur within three miles of a documented capture record or a positive identification of NLEB from properly deployed acoustic devices, or within 1.5 miles of a documented roost tree.

Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are less than 1000 feet from the next nearest suitable roost tree within a woodlot, or wooded fencerow.

## **Managing Summer Roosting Habitat on Forests in the Southern Region:**

The management of forested habitat from a variety of actions may affect the northern long-eared bat by reducing the amount of habitat available for roosting, foraging, or commuting. Additionally, bats may also be directly disturbed or killed if such projects are conducted while they are present. Although many types of forest management, when properly designed, will not adversely affect (or may improve) NLEB habitat, some types of forest management (e.g., clear-cutting) can reduce the viability of NLEB populations if key areas of a home range are removed. Burning, although potentially necessary to maintain habitat, could disturb or kill bats by smoke inhalation or scorching.

With respect to national forests in the southeast, both prescribed fire and forest management procedures are designed as much as possible to mimic natural disturbances, especially when conditions are determined to be within the range desired for priority wildlife. Most natural ignition sources for fire in the southeast occur between April and November, so the species evolved under these conditions while summer roosting in forested habitat. While prescribed fire is applied on southeastern national forests between November and March, most often to reduce hazardous fuels, restricting prescribed fire to “dormant” season months is neither desired nor practical for conserving NLEB. Repeatedly applying dormant season burns in fact could lead to reduced habitat quality for this and many other priority species in the long-term depending on the specific habitat type and desired conditions. In the Southern Region, only 20% of prescribed fire occurs during the periods when bat pups could be non-volant, May 1 to July 15.

Some forest management occurs between late November and mid-March, but due to weather-related access and other issues, especially in the northern portion of the Southern Region where NLEB remains most common, the majority of forest management actions are conducted when NLEB are using forests for summer roosts. Forty four percent of timber harvest occurs during the non-volant period of May 1 to July 15. To put this in perspective, this represents 0.6% of the suitable NLEB habitat on southern national forests. If one looks only at forest plan regeneration objectives, only 0.2% of suitable habitat would be regenerated annually during the non-volant period.

Since most of the year NLEB could occur in virtually every stand with potential roost trees  $\geq 3$ ” DBH, the recommendations given in the Guidelines are not implementable for promoting forest habitat improvement for this and many other priority forest dependent species. The following standards and guidelines found in Forest Plans are implemented to minimize the adverse effects of forest management to NLEB.

### **Forest Plan Standards to Minimize Adverse Effects to Bats**

The following are examples of forest plan standards designed to minimize impacts to forest dwelling bats.

- Trees known to have been used as roosts by Indiana bats or other federally protected bat species are protected from cutting and/or modification until they are no longer suitable as roost trees, unless their cutting or modification is needed to protect public or employee safety. Where roost tree cutting or modification is deemed necessary, it occurs only after consultation with the U.S. Fish and Wildlife Service.
- No dead or live shagbark hickory greater than six inches DBH will be cut for fuel wood. No snags (standing dead trees) will be cut for fuel wood from April 1 through August 31.
- Snags are not intentionally felled from April 1 through August 31 unless needed to provide for immediate safety of the public, employees, or contractors. Exceptions may be made for projects such as insect and disease control, salvage harvesting, and facility construction. Exceptions will require evaluation by a qualified individual (i.e. biologist or other individual approved by the district biologist) for current Indiana bat or other

protected bat species use and may require coordination with the U.S. Fish and Wildlife Service.

- For non-silvicultural projects which include, but are not limited to prescribed fire line construction, right of way clearing, hazard tree removal and recreation area management, currently suitable Indiana bat or other protected bat species roost trees will be felled from September 1 through March 31. If tree removal occurs at other times, the trees shall be evaluated by a qualified individual (i.e. biologist or other individual approved by the district biologist) for current Indiana bat or other protected bat species use and may require coordination with the U.S. Fish and Wildlife Service.
- During all silvicultural treatments, retention priority is given to the largest live available trees that exhibit characteristics favored by roosting Indiana bats or other federally protected bat species while still meeting stand prescription objectives.
- Unless necessary for insect or disease control or to provide for public and employee safety, standing snags or den trees will not be cut or bulldozed during vegetation management treatments unrelated to timber salvage. For timber salvage treatments, all live den trees, and an average of five of the largest suitable snags (snags with exfoliating bark) per acre will be left. Snags in the early stages of decay should be selected over older snags whenever possible. If possible, these snags should be clumped into groups instead of spread throughout the harvest area.
  
- For all Even-aged Management and Two-aged Management
  - Retain all snags and shagbark hickory in cutting units unless they are an immediate hazard.
  - Sales will be designed (landing and skid trails) to avoid snag removal when possible.
  - When an average of five snags per acre is not present create snags from the dominant and co-dominant trees to reach an average of five snags per acre throughout the unit.
  - To meet basal area requirements priority will be given to trees that exhibit characteristics favored by roosting Indiana bats or other protected bat species while still meeting stand prescription objectives.
  - Snags closer to the forest edge will be favored over those out in the middle of a large expanse. Snags do not count toward the required residual basal area.
  - Residual basal area will be clumped or left in travel corridors.
  
- For Clearcut (Even-aged Management) and Clearcut with Reserves (Two-aged Management).

A minimum of 15 square feet of basal area will be maintained for units greater than 10 acres. Overwood will not be removed.

- For Seedtree and Shelterwood (Even-aged Management) and Seedtree with Reserves and Shelterwood with Reserves (Two-aged Management).
  - A minimum of 20 square feet of basal area will be maintained. Overwood will not be removed.
  - Windthrow protection will be provided to an average of five snags per acre by retaining all trees within 20 feet of these snags. Trees left for windthrow protection may count towards the required basal area.
  - Snags selected to receive windthrow protection are those most suitable for use by Indiana bats or other protected bat species, i.e., yellow pine and oak snags of the largest size classes with exfoliating bark.
- Forest Regeneration Treatments > 10 Acres. When implementing regeneration treatments in hardwood-dominated forest types, a minimum average basal area of 15 square feet per acre is retained throughout the rotation. In some portion of the treatment area, residual basal area should be clumped or left in travel corridors. All snags and all shagbark hickory over 6 inches dbh are retained except those that are immediate hazards. If additional trees are needed to meet the basal area requirements, priority should be given to hollow/den trees or trees that exhibit, or are likely to develop, characteristics favored by roosting Indiana bats. Snags do not count toward the leave basal area. Borders of clearcut units will be irregularly shaped.
- Maintain flight corridors to water sources with 50-80% canopy cover & open mid-story.
- Maintain >50% forest canopy closure within 100 feet of perennial streams
- Maintain irregular harvest boundaries when possible, with clumps left in harvest areas, & irregular live tree strips
- Retain enough live trees to provide partial shading of about 1/3 of all snags > 12 inches dbh or > 10 feet height suitable for Indiana bat roosting

### **Interim Conference Report Determination**

The Guidelines recognize that prescribed fire and certain forest management practices, such as those described in Forest Plans, can and do improve overall habitat conditions for NLEB. The FS has taken proactive measures to protect hibernacula from the spread of WNS. The FS continues to implement adaptive forest management and prescribed fire activities as described in Forest Plans that are designed to minimize take of NLEB and other forest dependent species. Standards and guidelines have been adopted in Forest Plans, for among other reasons, to promote the conservation of listed species and to avoid and minimize potential adverse effects of projects implemented under the Plan. The implementation of these conservation practices when conducting adaptive forest management form the basis of our No Jeopardy Determination for NLEB.

However, the very broad description of potential habitat makes it virtually impossible to conduct such management between mid-March and late November and avoid the potential for take (most likely in the form of disturbance, harassment, harm, etc.). As mentioned in most outreach materials related to the proposed listing of this species, “significant population declines have not been observed” from activities such as those involving fire and forest management actions, including that occurring on both private and public lands during seasons when the species is occurring widely in forest habitats. However, some forest management activities may directly affect the NLEB while the species is present on NF lands, and indirectly affect the NLEB, through habitat alteration, while the species is absent, either hibernating or in migration to/from hibernacula. The FS will develop the information necessary at the programmatic level to determine the effects of actions implemented after April 1, 2015, for the duration of each Forest Plan, and request a conference opinion from the FWS that would follow the procedures for formal consultation to support effect determinations for all such activities. The FS will consider current, and possibly propose new, standards and guidelines that may reduce the potential for incidental taking associated with some activities, however the year-round nature of our management activities make it difficult to reduce potential adverse effects to an insignificant scale or discountable probability that would support “may affect: not likely to adversely affect” determinations.

During the period between now and when a programmatic conference report is in place, we, the FS, have determined that all forest and prescribed fire management activities on National Forests in the Southern Region, as described in Forest Plans, would not jeopardize the continued existence of the NLEB and we request concurrence from USFWS on this determination.

Concurred by \_\_\_\_\_