United States Department of the Interior
FISH AND WILDLIFE SERVICE
Ecological Services
Twin Cities Field Office
4101 American Boulevard East
Bloomington, Minnesota 55425-1665
Phone: (612) 725-3548 Fax: (612) 725-3609

October 6, 2015

Chequamegon-Nicolet National Forest
Paul Strong
Forest Supervisor
500 Hanson Lake Road
Rhinelander, Wisconsin 54501

FWS No. 03E19000-2015-F-0177 Batched Land Management Projects (BLP) 2015-2017
Formal Consultation on Northern Long Eared Bat

Dear Mr. Strong:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion and is based on our review of the Chequamegon-Nicolet National Forest's (CNNF) Biological Assessment of Batched Land Management Projects (BLP) 2015-2017 and potential effects to the northern long-eared bat (*Myotis septentrionalis*; NLEB). The biological assessment and letter, dated July 7, 2015, requesting formal consultation on the BLP, were received in our office on July 9, 2015. The Service has reviewed your BA and is providing a biological opinion per section 7(a)(2) of the ESA of 1973, as amended (50 CFR §402.14), as described below.

This biological opinion is based on the best available scientific and commercial data including meetings, electronic mail and telephone correspondence with CNNF officials, Service files, pertinent scientific literature, discussions with recognized species authorities, and other scientific sources. A complete administrative record is on file at the Twin Cities Ecological Services Field Office.

Please contact the Service if the project changes or new information reveals effects of the proposed action to proposed or listed species or critical habitat to an extent not covered in your biological assessment. If you have any questions or comments on this biological opinion, please

contact Ms. Ann Belleman, Fish and Wildlife Biologist, at 307-421-5839, or via email at *ann_belleman@fws.gov*.

Sincerely,

Peter Fasbender
Field Supervisor

Enclosure

cc: Dan Eklund, Fish and Wildlife Program Manager, USFS
Brian Heeringa, Biologist, USFS

BIOLOGICAL OPINION

Effects to the
Northern Long-eared Bat
from the Batched Land Management Projects (BLP) 2015-2017
on the
Chequamegon-Nicolet National Forest

FWS No. 03E19000-2015-F-0177

Prepared by:
U.S. Fish and Wildlife Service
Twin Cities Field Office

September 2015

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INTRODUCTION

This document transmits the U.S. Fish and Wildlife Service's (Service) Biological Opinion (BO) based on our review of the U.S. Forest Service's proposed activities on the Chequamegon-Nicolet National Forest (Forest or CNNF), and their effects to the northern long-eared bat (*Myotis septentrionalis;* NLEB) in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The biological assessment (BA) and letter, dated July 7, 2015, requesting formal consultation on the BLP were received in our office on July 9, 2015. The CNNF determined that all activities addressed in the BA would have "no effect" to Canada lynx (*Lynx canadensis*) or Kirtland's warbler (*Dendroica kirtlandii*); therefore, this BO addresses only NLEB and is based on information provided in the BA. A complete administrative record of this consultation is on file at the Service's Twin Cities Field Office.

Interim 4(d) Rule for the NLEB

On April 2, 2015, the Service has published a species-specific rule pursuant to section 4(d) of the ESA for NLEB (80 FR 17974). Section 4(d) of the ESA states that:

> *Whenever any species is listed as a threatened species ... the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species* (16 U.S.C. 1533(d)).

The Service's interim 4(d) rule for NLEB exempts the take of NLEB from the section 9 prohibitions of the ESA, as follows:

(1) Take that is incidental to forestry management activities, maintenance/limited expansion of existing rights-of way, prairie management, projects resulting in minimal (<1 acre) tree removal, provided these activities:
   a. Occur more than 0.25 mile (0.4 km) from a known, occupied hibernacula;
   b. Avoid cutting or destroying known, occupied roost trees during the pup season (June 1–July 31); and
   c. Avoid clearcuts (and similar harvest methods, *e.g.*, seed tree, shelterwood, and coppice) within 0.25 (0.4 km) mile of known, occupied roost trees during the pup season (June 1–July 31).

(2) Removal of hazard trees (no limitations).

(3) Purposeful take that results from:
   a. Removal of bats from and disturbance within human structures and
   b. Capture, handling, and related activities for NLEBs for 1 Year following publication of the interim rule.

Thus, any take of NLEB resulting from activities that are implemented in compliance with the conservation measures, as necessary, is exempted from section 9 prohibitions by the interim 4(d) rule, and does not require further incidental take authorization. Note that no conservation measures are required as part of the interim 4(d) rule for forest management actions that would affect only areas with no known roost trees and no known hibernacula. The Forest currently contains no known hibernacula but identified one summer roost site during summer 2015 (Eklund 2015, pers. comm.) and will incorporate the above conservation measures into its proposed action where NLEB are identified by survey efforts.

However, interim 4(d) rules do not afford exemption from the ESA's section 7 procedural requirements. Therefore, consultation remains appropriate when actions (even those within the scope of the interim 4(d) rule) are funded, authorized or carried out by a federal agency. This is because the purpose of section 7 consultation is broader than the mere evaluation of take and issuance of an Incidental Take Statement; such consultations fulfill the requirements of section 7(a)(2) of the ESA, which directs that all federal actions insure that their actions are not likely to jeopardize the continued existence of any listed species, or result in the destruction or adverse modification of designated critical habitat.

Consultation History

The CNNF's biological assessment and letter, dated July 7, 2015, requesting formal consultation on the BLP, were received in our office on July 9, 2015. The CNNF, along with the Superior and Chippewa National Forests, had prioritized a list of projects in spring 2015 that would subsequently undergo ESA section 7 consultations for NLEB. That list was revised in June 2015 and again in September 2015, and this project is #1 out of 20 prioritized projects.

DESCRIPTION OF PROPOSED ACTION

As defined in the ESA Section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas." The "action area" is defined as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present federal, state, or private activities, as well as the cumulative effects of reasonably certain future State or private activities within the action area. The Service has analyzed the effects of the proposed actions considering that the projects will be, or continue to be implemented as proposed, including the conservation measures listed below.

The following project background and area descriptions are summarized from the BA. Additional information on the CNNF background and description can be found in the BA, which is incorporated by reference.

The Forest proposes to implement 10 different land management projects with varying types of activities within the Forest boundary, which includes five Ranger Districts (Eagle River-Florence (ERFL), Great Divide (GD), Lakewood-Laona (LKLN), Medford-Park Falls (MPF), and Washburn (WRD)). All but three of the projects are in various stages of implementation, ranging from approximately 25 to 75 percent completion (see Table 1 below) and are scheduled through 2017. All of the projects involve non-regenerating forest harvest (e.g., single tree removal) activities on approximately 9,950 acres (ac) per year of suitable NLEB habitat. The proposed types of activities were summarized from the 2015 BA, pp. 8–18, as follows.

Firewood Harvest
Individual permit holders can harvest dead standing and down trees up to 18 inches (in) in diameter at breast height (DBH) and no more than 12 cords (1 cord = 4x4x8-foot pile) for firewood in areas within 150 feet (ft) of the road edge per year, for those roads open to public travel. The BA indicated that 97,000 ac of the CNNF are suitable for gathering of firewood and of these, approximately 55,900 ac have suitable timber species preferred for use as firewood (hardwood species such as ash, oak, maple, and birch). Annually, the CNNF sells up to 1,500 firewood permits with an estimated harvest of approximately 2,785 CCF (CCF equals 100 cubic ft or 0.79 cords) of wood, which likely would be harvested across approximately 600 to 1,000 ac. Firewood gathering is conducted mostly in the early spring and mid- to late-fall.

Rights of Way Clearing – Forest System Roads
The CNNF maintains jurisdiction on approximately 2,200 miles of Maintenance Level 3, 4, and 5 Forest System Roads that bisect National Forest lands. (This sum does not include State or County Highways that may pass through or along the Forest's edge that already have cleared rights of way; the CNNF shares maintenance responsibility on these roads with the corresponding Townships.) These Forest System Roads are 1.5 to 2-lanes wide with standard 66-ft rights of way (ROW) (they are not two-track or logging roads). The ROWs are primarily maintained by the local townships under agreement with the US Forest Service to remove hazards from trees falling across roads and onto adjacent utility lines, and to "daylight" roads. Annually, approximately 80 to 100 acres of road ROWs are cleared by local townships, generally year-round. Clearing consists of hand cutting and piling along the road or via a logging operation that harvests and removes the merchantable trees from the 44- to 72-ft clearing limit associated with the roadway. The clearing limit may slightly exceed the 66-ft ROW width depending on the timber species, height, topography, and other factors.

Utilities Rights of Ways and Special Use Roads
The CNNF has 865 miles of utility and pipeline ROWs, which are maintained frequently by permitted entities with utilities or access across National Forest Lands. There are also 318 miles of permitted access roads to private inholdings on the CNNF. These ROWs are linear corridors with open grass/forb to brush and sapling conditions, or two-track roads through forested areas. Corridor maintenance consists of mechanical treatment of woody vegetation within and directly adjacent to the corridor to reduce/prevent trees from falling on and/or growing into the line or across the access. Most (estimated at greater than (>) 75%) of this removal involves woody

vegetation less than (<) 3 in DBH, but trees larger than this are also removed when necessary to reduce hazards.

Trail Maintenance - Hazard Trees
The CNNF currently maintains 1,050 miles of all-terrain (ATV/UTV) and snowmobile trails through the Forest (including roads open to this use). Trails have an average ROW design-clearing limit of 12 ft, with clearing of an additional 8 to 10 ft on curves or turning points along the trail. Clearing consists of cutting and scattering the trees and brush in the adjacent forest. The maximum distance of cumulative tree removal along trails will likely be 80 to 100 miles, covering approximately 12 ac/year, and usually occurs in the spring and fall.

Gravel Pit Expansion/Establishment
The CNNF maintains three active gravel pits and all are proposed for expansion for production of gravel and rock as follows:

- Ludington Pit expansion, 1 ac of mixed hardwood/aspen (Lakewood-Laona District)
- Reservoir Lake Road Pit, 1 ac northern hardwoods (Eagle River-Florence District)
- Forest Road 720 Cranberry Pit, 1 ac of red pine (Great Divide District)

Expansions involve clear cutting approximately 1 acre of forest, followed by removing overburden to access the gravel/rock for crushing and use. The number of trees removed varies by the site but the CNNF assumes 25 trees per ac (based on the average stocking density of these forest types). The maximum tree removal could reach 100 to 200 trees over the total 3 ac of expansion.

Bridge/Culvert Replacement
Road bridges and large stream crossing culverts are maintained, repaired, and replaced as necessary and include the following proposed locations within the next two years:

- Hay and Squaw Creeks – Medford-Park Falls Ranger District
- Long Lake – Washburn Ranger District
- Morgan and Whiskey Creeks – Great Divide Ranger District
- North Country Trail crossing – Great Divide Ranger District
- Porcupine Creek – Great Divide Ranger District

This work generally is completed from late spring through late fall (May-November) depending on contracting timeframes and the work to be accomplished. A maximum of approximately 10 ac of trees per year could be treated.

Mechanical Fire Fuels Reduction Activities
Hazardous wildfire-related fuels are reduced using mechanical methods in areas of wildfire concern such as in the Wildland Urban Interface or Cooperative Wildfire Protection Zones near communities or facilities, or in specific fuel types such as conifer stands in wildfire prone

landscapes. These are areas where the danger from catastrophic wildfire is considered to be "at risk." The CNNF has four fuel reduction projects that could indirectly affect summer roosting habitat for the NLEB: Clam Lake, Moose Lake, Drummond, and Phelps.

Specifically, ladder fuels are reduced by cutting and scattering small diameter trees such as balsam fir, pine and spruce that exist along highway corridors beyond the normal ROW clearing limit. Additionally, small trees growing under red/white pine or other conifer stands are also removed to reduce the risk of catastrophic crown fire. Small diameter trees and ladder fuels > 3 in DBH covering approximately 350 ac scattered across the Wildland Urban Interface area are proposed for treatment.

Forest-Wide Wildlife Opening Maintenance

Wildlife openings are scattered throughout the Forest and can vary in size from < 2 to 8,000 ac. They are maintained on an on-going basis by mechanical methods and/or prescribed fire to eliminate encroaching shrubs and tree seedlings/saplings and to encourage or maintain grass/forb communities. Large openings (averaging > 200 ac) are dominated by grass/forbs communities but may have scattered patches of scrub shrubs and saplings – some of which may be > 3 in DBH and range to 10 ft in height. Portions of these areas receive mechanical brushing and mowing treatments and occasional prescribed fire annually to ensure that full treatment of the wildlife opening is achieved approximately every 5 years. The number of treated acres varies from year to year depending on what portion of the site is in need of management.

Smaller openings average from < 2 to 10 ac in size and are maintained by the same methods as the larger openings. While the small openings are typically dominated with grass/forb communities and generally do not meet the criteria for NLEB summer roosting habitat, they may have some scattered saplings that are > 3 in DBH and up to 10 ft tall. The CNNF treats 100 to 300 ac of these small openings annually on a 3- to 5-year rotational basis.

Fisheries Habitat Improvement

This work involves cutting and placing trees (tree drops) in targeted lakes that lack suitable structure and habitat for fish and associated aquatic life. Up to 50 trees per lake are cut and placed or anchored along the shoreline. The CNNF plans to conduct up to four projects in 2015 and 2016, with a maximum placement of 400 trees in identified lakes across the Forest. From early spring to late summer, selected trees are cut by hand from adjacent shoreline and placed into a lake, either by hand or mechanically. Large pine trees are preferred but other tree species are also used, and they typically exceed the 3 in DBH size considered suitable for NLEB roosting.

Facilities Management

The CNNF has a number of administrative, recreational, and acquisition facilities that require routine maintenance or were part of land acquisitions with the intent to remove or demolish.

Administrative: These sites contain trees and building characteristics that can facilitate use by bats as day, night, and/or maternity roosts. There are approximately 10 sites with up to 5 buildings per site. These buildings and grounds require frequent maintenance, such as roof replacements, siding replacement, hazardous tree removal and general maintenance that could disturb roosting bats. In some instance, trees may be removed if they become a hazard to the facilities or to the public using the facilities. Up to 10 trees per site that may be suitable for bat roosting may be removed annually (maximum of 50 trees).

Recreation: The CNNF maintains 167 developed recreation facilities (campgrounds, picnic areas/beaches, campground trails) that have both trees and public use buildings such as toilets/bath houses, rental cabins, or picnic shelters. Routine maintenance, removal of hazard trees, and repairs to structures occurs annually. Many of these buildings have characteristics such as open walkways, rafters, and chimneys that provide features suitable for use by roosting bats and frequently, bat use is observed. General maintenance and repairs to structures often involves replacement of roofing, damaged or rotten siding, cleaning and repair of chimneys, and painting/staining of the exterior. Also, annual hazard tree removal occurs at these sites, generally prior to or after the recreation use season.

Special Use: The Forest maintains two special facilities known as Forest Lodge and the Northern Great Lakes Visitor Center. Each of these facilities requires routine building and grounds maintenance. Forest Lodge is a historic property that contains at least 10 buildings on the National Register of Historic Places. Because of its unique architecture and sighting on the shores of Namekagon Lake, these buildings provide capable roosting habitat within and upon the walls, siding, roof, and attic spaces of the buildings and the adjacent old growth trees on the grounds. The Forest annually works with groups to restore these historic buildings and work entails repairs and replacement to roofs, siding, and structural components.

Northern Great Lakes Visitor Center is located near Lake Superior and is a modern facility such that NLEB are not expected to be roosting in this facility but cannot be ruled out. The surrounding grounds routinely have hazard tree removal and the Forest estimates approximately 15 trees/year may be removed along public hiking trails. Removal of hazard trees is generally completed during the spring prior to NLEB emergence, unless a wind or other storm event causes damage that needs immediate remediation.

Demolition/Removal: The CNNF currently sustains 21 facilities identified as surplus and in need of removal or demolition. These sites are generally surrounded by forestlands suitable for bat roosting and each site has unique needs regarding tree removal and placement of bat boxes (if any). Like all facilities on the Forest, these buildings are screened for bat use prior to any demolition or removal. The Forest assumes that up to 10 trees per demolition site could be removed as part of the demolition/removal process for a maximum estimated removal of 210 trees for all 21 sites. Actual removal is likely to be much less than this assumed amount, as only those directly necessary are removed (if any).

Table 1. Summary of on-going CNNF projects that may occur within northern long-eared bat summer roosting habitat (adapted from 2015 BA Table 6, p. 19).

PROJECT (Forest-wide)	TREATMENT/ HARVEST	ACRES PER YEAR (MAXIMUM)	ACTIVITY PERIOD	OVERALL PROJECT COMPLETION TO DATE (%)
Firewood Gathering	Single tree	1,000	Year-round	75
Road ROW Clearing	Linear clear cut	100	Year-round	50
Utilities/Special Use Roads	Single tree	29	Year-round	50
Rec Trail Maintenance	Single tree	12	Apr-Oct	50
3 Gravel Pits	Clear cut	1 ac each (total 3 ac), once	Apr-Nov	0
Bridge/Culvert Replacement	Single tree	10	Apr-Oct	0
Mechanical Fuels Reduction	Multiple tree thin	350	Year-round	25
Wildlife Opening Restoration	Rx Fire Single tree	8,000 300	Apr-Oct	50
Fisheries Tree Drops	Single tree	16	Year-round	50
Facilities Management	Single tree/ select buildings	130	Year-round	0
Total Acres		**9,950/year**		

Incorporated into the proposed actions (where applicable) are the CNNF's Land and Resource Management Plan (Forest Plan) Goals, Objectives, Standards, and Guidelines (see BA Appendix A, pp. 26-44), Forest Service Region 9 Conservation Measures (below), and the Service's conservation measures from the NLEB interim 4(d) rule (see pp. 1 and 11). While the NLEB is not directly addressed in the Forest Plan, several of the Forest-wide Goals and Objectives, and Standards and Guidelines that are included (e.g. snag retention and recruitment, reserve areas, permanent forest openings, watershed protection, etc.) deal with many key habitat characteristics and are beneficial to the bat species.

The Forest Service's Region 9 conservation measures proactively address threats and stressors facing NLEB to provide for their long-term needs, including abundant, high-quality habitat. The conservation measures described below were developed to provide a set of recommendations to assist National Forests in carrying out agency responsibilities to conserve, restore, or enhance current and potential habitat for Threatened/Endangered/Sensitive bat species while also minimizing the potential to harass, injure, and/or kill bats as an incidental result of conducting management actions. These measures will be applied for all new projects (where applicable).

1. Designate caves and mines that are occupied by bats as smoke-sensitive targets. Avoid smoke entering these hibernacula when bats are present.

2. Within 0.25 miles of known, occupied NLEB hibernacula, timber harvest will be designed to maintain, enhance, or restore swarming, staging, roosting, and foraging habitat. The future desired condition is that these areas will feature structurally complex, resilient forest communities with a continuous supply of snags, culls, cavities, and other quality roosts.

3. Application of herbicides and other pesticides should be planned to avoid or minimize direct and indirect effects to known, occupied Threatened, Endangered, or Sensitive (TES) bat hibernacula and maternity roosts.

4. Before old buildings, wells, cisterns, and other man-made structures are structurally modified or demolished, they will be surveyed for bats. If TES bat roosting is found, demolition or modification of these structures will not occur when bats are present and the need for alternative roosts will be evaluated.

5. Avoid cutting or destroying known, occupied NLEB maternity roost trees unless they are an immediate safety hazard.

6. Where needed to provide drinking sources for bats, create small wetlands or water holes.

Projects/Actions that Will Have No Effect or Are Not Likely to Adversely Affect the NLEB

Planning for these projects, including section 7(a)(2) consultation for other listed species and NEPA decisions has already been completed and many of the individual projects have been partially implemented (see Table 1 above). All of these projects involve activities that will affect forested areas either directly or indirectly, including replacement of man-made structures that may provide roost sites for NLEB. The CNNF provided the maximum number of acres proposed for treatment. However, many of these acres will be treated outside the summer roost period and the final number of acres is typically less than what is proposed. The Forest determined that its proposed activities may affect NLEB; however, not all may be adverse effects.

The 10 different projects and associated activities included in the BLP involve some type of tree removal: 2 consist of small clearcuts (ROWs and gravel pits), 1 includes mechanical fuels reduction of multiple trees, 6 consist of single tree removals scattered across varying acreages, and 1 includes prescription burns (wildlife openings) (see Table 1 above for acreages). The Service has identified the different projects' activities that may affect, but are not likely to adversely affect NLEB to include the smaller wildlife opening restorations, the structural portion of facilities management, and bridge/culvert replacements.

The potential effects from cutting small trees and prescription burning in the smaller wildlife openings (average 2 to 10 ac) may include temporary disturbance or displacement due to human

presence or smoke in the vicinity of potential roost trees. One roost site with multiple trees was identified during summer 2015 and because there is abundant habitat on the Forest, we anticipate additional roost sites will be identified in the future. However, these activities are conducted in areas with unsuitable NLEB habitat, so it's unlikely that any roost trees will be affected. For the same reasons, the risk of impacts to NLEB from smoke during burning is also expected to be low. The BA indicated that the CNNF treats 100 to 300 acres of these small openings annually on a 3- to 5-year rotational basis. Therefore, we assume that a maximum of 300 ac will be treated in a given year, with a total of up to 900 ac within the timeframe of the BLP.

Bridge/culvert replacement type of work was not covered under the 4(d) rule. Bridge/culvert replacements involve very limited, single tree removals as needed (average of 2 ac per site) and appropriate bat surveys of bridge structures will occur prior to commencing work. Should surveys reveal NLEBs present on site, the Forest will reevaluate and implement additional actions, such as humane exclusion measures during the periods when there are no flightless young present, in order to safely remove bats prior to work beginning. Similarly, facilities maintenance and demolition activities will include pre-work surveys and implementation of additional measures as needed. If bat use or any maternity colonies are found and considered recent, the Forest will re-schedule the start of the project after July 31st. For these reasons, activities related to bridge/culvert replacements and structural facilities maintenance and demolition may affect, but are unlikely to affect NLEB.

We determined that the remaining project activities may affect and are likely to adversely affect NLEBs. We recognize that some of the tree cutting will be single trees in very limited amounts scattered across wide areas, some cutting will occur outside the summer roosting period, and that most individual project acres overall are small. However, the effects from tree cutting for these projects are similar to larger projects with adverse effects, regardless of size. Because the locations of these different projects are most likely in summer roost and foraging habitat, the tree cutting and removal will include many trees > 3 in DBH with some clearcutting, and/or the proposed numbers of individual project acres are greater than 10 ac/year, these activities could result in adverse effects to roosting NLEBs and flightless pups.

The different proposed projects comply with the conservation measures that are contained in the interim 4(d) rule for NLEB (80 FR 17974). The entire CNNF is in the area affected by white-nosed syndrome (WNS), as defined in the 4(d) rule – i.e., the WNS "buffer zone." The 4(d) rule exempts incidental take that would occur as a result of "forest management" – which includes prescribed fire.

No further consultation or coordination under the ESA is required for the above-listed activities that will have no effect or are not likely to adversely affect the NLEB. Should project plans change, or if additional information on listed and proposed species become available, this determination may be reconsidered.

Projects/Actions that Are Likely to Adversely Affect the NLEB

The BLP projects involving single or multiple tree removal (described above and displayed in Table 1), total approximately 9,950 acres, some of which will occur during the summer roost period, and thus have the potential to adversely affect roosting and/or foraging habitat for the NLEB. The individual projects include firewood gathering, road ROW clearing, utilities/special use roads, recreation trail maintenance, gravel pit expansion, mechanical fuels reduction, large wildlife openings restoration, fisheries habitat improvements, and tree cutting associated with facilities management.

The interim 4(d) rule (80 FR 17974) states that in areas affected by WNS, all incidental take prohibitions apply except that take attributable to forest management practices, maintenance and limited expansion of transportation and utility rights-of-way, removal of trees and brush to maintain prairie habitat, and limited tree removal projects shall be excepted from the take prohibition, provided these activities protect known maternity roosts and hibernacula. The proposed types of tree cutting are all included under the definition of forest management and limited tree removal used for the rule, which states:

"(F)orestry management is the practical application of biological, physical, quantitative, managerial, economic, social, and policy principles to the regeneration, management, utilization and conservation of forests to meet specific goals and objectives (Society of American Foresters (SAF)(a), *http://dictionaryofforestry.org/dict/term/forest_management*). Forestry management includes the suite of activities used to maintain and manage forest ecosystems, including, but not limited to: timber harvest and other silvicultural treatments, prescribed burning, invasive species control, wildlife openings, and temporary roads."

Therefore, all proposed tree cutting and other activities in the BLP and described above that may adversely affect NLEB are within the scope of activities covered by the interim 4(d) rule. Moreover, any incidental take that results from their implementation is exempt from the section 9 prohibitions as long as they include the interim 4(d) rule's conservation measures. The Service concurs that these activities are likely to adversely affect the NLEB and the remainder of the BO will address the tree cutting/removal activities and prescribed fire in large wildlife openings.

Conservation Measures

Conservation measures are those actions taken to minimize any adverse effects of a proposed action and to benefit or promote the recovery of the species. These actions taken by the federal agency that serve to minimize or compensate for project effects on the species under review and are included as an integral portion of the proposed action.

To be in compliance with the interim 4(d) rule for northern long-eared bat, the USFS has committed to the following conservation measures as part of the project description:

1) All proposed activities will occur more than 0.25 mile (0.4 km) from a known, occupied hibernacula.

2) The USFS will avoid cutting or destroying known, occupied roost trees during the pup season (June 1–July 31).

3) The USFS will avoid clearcuts (and similar harvest methods, *e.g.*, seed tree, shelterwood, and coppice) within 0.25 (0.4 km) mile of known, occupied roost trees during the pup season (June 1–July 31).

While there are no known hibernacula within 0.25 mile of the CNNF, one roost site has been identified thus far. Therefore, the first measure would only be implemented if hibernacula are identified, whereas the second and third measures will be implemented as appropriate.

STATUS OF THE SPECIES

Refer to the final rule (80 FR 17974) for the best available information on NLEB life history and biology, threats, distribution, and overall status. The following is summarized from that rule.

Life History and Biology

The NLEB is a temperate, insectivorous, migratory bat that hibernates in mines and caves in the winter and spends summers in wooded areas. The key stages in its annual cycle are: hibernation, spring staging and migration, pregnancy, lactation, volancy/weaning, fall migration and swarming. NLEB generally hibernate between mid-fall through mid-spring each year. Spring migration period likely runs from mid-March to mid-May each year, with timing varying depending on the portion of the range. Females depart shortly after emerging from hibernation and are pregnant when they reach their summer area. Parturition (birth) occurs in late May or early June (Caire et al. 1979, p. 406; Easterla 1968, p. 770; Whitaker and Mumford 2009, p. 213) but may occur as late as July (Whitaker and Mumford 2009, 213). Nursing continues until weaning, which is shortly after young become volant in mid- to late-July. Fall migration likely occurs between mid-August and mid-October.

Summer habitat and ecology

Suitable summer habitat[1] 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, as well as linear features

[1] See the Service's current summer survey guidance for our latest definitions of suitable habitat: http://www.fws.gov/midwest/Endangered/mammals/inba/inbasummersurveyguidance.html.

such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure.

Many species of bats, including the NLEB, consistently avoid foraging in or crossing large open areas, choosing instead to use tree-lined pathways or small openings (Patriquin and Barclay 2003, Yates and Muzika 2006). Further, wing morphology of the species suggests that they are adapted to moving in cluttered habitats. Thus, isolated patches of forest may not be suitable for foraging or roosting unless the patches are connected by a wooded corridor.

Upon emergence from the hibernacula in the spring, females seek suitable habitat for maternity colonies (typically consisting of females and young). NLEB actively form colonies in the summer (Foster and Kurta 1999) and exhibit fission-fusion behavior (Garroway and Broders 2007), where members frequently coalesce to form a group (fusion), but composition of the group is in flux, with individuals frequently departing to be solitary or to form smaller groups (fission) before returning to the main unit (Barclay and Kurta 2007). As part of this behavior, NLEBs switch tree roosts often (Sasse and Pekins 1996), typically every 2 to 3 days (Foster and Kurta 1999; Owen et al. 2002; Carter and Feldhamer 2005; Timpone et al. 2010). NLEB maternity colonies range widely in size, although a maximum of 30 to 60 individuals may be most common early in the season, with the colony size decreasing post-lactation of young (Service 2014). NLEB show some degree of interannual fidelity to single roost trees and/or maternity areas. Male NLEB are routinely found with females and young in maternity colonies. NLEB use networks of roost trees often centered around one or more central-node roost trees (Johnson et al. 2012). NLEB roost networks also include multiple alternate roost trees, and male and non-reproductive female NLEB may also roost in cooler places, like caves and mines (Barbour and Davis 1969, Amelon and Burhans 2006).

NLEB roost in cavities, underneath bark, in crevices, or in hollows of both live and dead trees and/or snags (typically ≥3 in DBH). NLEB are known to use a wide variety of roost types, using tree species based on presence of cavities or crevices or presence of peeling bark. NLEB have also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable).

Parturition (birth) occurs in late May or early June (Caire et al. 1979, p. 406; Easterla 1968, p. 770; Whitaker and Mumford 2009, p. 213) but may occur as late as July (Whitaker and Mumford 2009, p. 213). Lactation then lasts 3 to 5 weeks, with pups becoming volant (able to fly) between early July and early August (with timing often depending on location within the species' range).

Migration

Males and non-reproductive females may summer near hibernacula, or migrate to summer habitat some distance from their hibernaculum. NLEB is not considered to be a long distance migrant (typically 40 to 50 miles). Migration is an energetically demanding behavior for the

NLEB, particularly in the spring when their fat reserves and food supplies are low and females are pregnant.

Winter habitat and ecology

Suitable winter habitat (hibernacula) includes underground caves and cave-like structures (e.g. abandoned or active mines, railroad tunnels). There may be other landscape features being used by NLEB during the winter that have yet to be documented. Generally, NLEB hibernate from October to April depending on local climate (November or December to March in southern areas and as late as mid-May in some northern areas).

Hibernacula for NLEB typically have significant cracks and crevices for roosting, relatively constant, cool temperatures (0-9 degrees Celsius) and with high humidity and minimal air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible.

NLEB tend to roost singly or in small groups (Service 2014), with hibernating population sizes ranging from a just few individuals to around 1,000 (Service unpublished data). NLEB display more winter activity than other cave species, with individuals often moving between hibernacula throughout the winter (Griffin 1940, Whitaker and Rissler 1992, Caceres and Barclay 2000). NLEB have shown a high degree of philopatry to the hibernacula used, returning to the same hibernacula annually.

Spring Staging and Fall Swarming habitat and ecology

Upon arrival at hibernacula in mid-August to mid-November, NLEB "swarm," a behavior in which large numbers of bats fly in and out of cave entrances from dusk to dawn, while relatively few roost in caves during the day. Swarming continues for several weeks and mating occurs during the latter part of the period. After mating, females enter directly into hibernation but not necessarily at the same hibernaculum as they had been mating at. A majority of bats of both sexes hibernate by the end of November (by mid-October in northern areas).

After hibernation ends in late March or early April (as late as May in some northern areas), most NLEB migrate to summer roosts. Females emerge from hibernation prior to males. Reproductively active females store sperm from autumn copulations through winter. Ovulation takes place after the bats emerge from hibernation in spring. The period after hibernation and just before spring migration is typically referred to as "staging," a time when bats forage and a limited amount of mating occurs. This period can be as short as a day for an individual, but not all bats emerge on the same day.

In general, NLEB use roosts in the spring and fall similar to those selected during the summer. Suitable spring staging/fall swarming habitat consists of the variety of forested/wooded habitats

where they roost, forage, and travel, which is most typically within 5 miles of a hibernaculum. This includes forested patches as well as linear features such as fencerows, riparian forests and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are < 1,000 ft from the next nearest suitable roost tree, woodlot, or wooded fencerow.

Threats

No other threat is as severe and immediate for the NLEB as the disease white-nose syndrome (WNS). It is unlikely that NLEB populations would be declining so dramatically without the impact of WNS. Since the disease was first observed in New York in 2007 (later biologists found evidence from 2006 photographs), WNS has spread rapidly in bat populations from the Northeast to the Midwest and the Southeast. Population numbers of NLEB have declined by 99 percent in the Northeast, which along with Canada, has been considered the core of the species' range. Although there is uncertainty about how quickly WNS will spread through the remaining portions of these species' ranges, it is expected to spread throughout their entire ranges. In general, the Service believes that WNS has significantly reduced the redundancy and resiliency of the NLEB.

Although significant NLEB population declines have only been documented due to the spread of WNS, other sources of mortality could further diminish the species' ability to persist as it experiences ongoing dramatic declines. Specifically, declines due to WNS have significantly reduced the number and size of NLEB populations in some areas of its range. This has reduced these populations to the extent that they may be increasingly vulnerable to other stressors that they may have previously had the ability to withstand. These impacts could potentially be seen on two levels. First, individual NLEB sickened or struggling with infection by WNS may be less able to survive other stressors. Second, NLEB populations impacted by WNS, with smaller numbers and reduced fitness among individuals, may be less able to recover making them more prone to extirpation. The status and potential for these impacts will vary across the range of the species.

Bats affected but not killed by WNS during hibernation may be weakened by the effects of the disease and may have extremely reduced fat reserves and damaged wing membranes. These effects may reduce their capability to fly or to survive long-distance migrations to summer roosting or maternity areas.

In areas where WNS is present, there are additional energetic demands for NLEBs. For example, WNS-affected bats have less fat reserves than non-WNS-affected bats when they emerge from hibernation (Reeder et al. 2012; Warnecke et al. 2012) and have wing damage (Meteyer et al. 2009; Reichard and Kunz 2009) that makes migration and foraging more challenging. Females that survive the migration to their summer habitat must partition energy resources between foraging, keeping warm, successful pregnancy and pup-rearing, and healing and may experience

reduced reproductive success. In addition, with wing damage, there may be an increased chance of WNS-affected bats being killed or harmed as a result of proposed action. Again, this is particularly likely if timber harvest or burns are conducted early in the spring (April – May) when bats have just returned, have damaged wings, and are exposed to colder temperatures when torpor is used more frequently.

Over the long-term, sustainable forestry benefits NLEB by maintaining suitable habitat across a mosaic of forest treatments. However, forest practices can have a variety of impacts on the NLEB depending on the quality, amount, and location of the lost habitat, and the time of year of clearing. Depending on their characteristics and location, forested areas can function as summer maternity habitat, staging and swarming habitat, migration or foraging habitat, or sometimes, combinations of more than one habitat type. Impacts from tree removal to individuals or colonies would be expected to range from indirect impact (e.g., minor amounts of forest removal in areas outside NLEB summer home ranges or away from hibernacula) to minor (e.g., largely forested areas, areas with robust NLEB populations) to significant (e.g., removal of a large percentage of summer home range, highly fragmented landscapes, areas with WNS impacts).

Lastly, there is growing concern that bats, including the NLEB (and other bat species) may be threatened by the recent surge in construction and operation of wind turbines across the species' range. Mortality of NLEB has been documented at multiple operating wind turbines/farms. The Service is now working with wind farm operators to avoid and minimize incidental take of bats and assess the magnitude of the threat.

Rangewide Status

The NLEB ranges across much of the eastern and north central United States, and all Canadian provinces west to the southern Yukon Territory and eastern British Columbia (Nagorsen and Brigham 1993; Caceres and Pybus 1997; Environment Yukon 2011) (Figure 1). In the United States, the species' range reaches from Maine west to Montana, south to eastern Kansas, eastern Oklahoma, Arkansas, and east through the Gulf States to the Atlantic Coast (Whitaker and Hamilton 1998; Caceres and Barclay 2000; Amelon and Burhans 2006). The species' range includes the following 37 States (plus the District of Columbia): Alabama, Arkansas, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming. Historically, the species has been most frequently observed in the northeastern United States and in Canadian Provinces, Quebec and Ontario, with sightings increasing during swarming and hibernation (Caceres and Barclay 2000). However, throughout the majority of the species' range it is patchily distributed, and historically was less common in the southern and western portions of the range than in the northern portion of the range (Amelon and Burhans 2006).

Although they are typically found in low numbers in inconspicuous roosts, most records of NLEB are from winter hibernacula surveys (Caceres and Pybus 1997). More than 780 hibernacula have been identified throughout the species' range in the United States, although many hibernacula contain only a few (1 to 3) individuals (Whitaker and Hamilton 1998). Known hibernacula (sites with one or more winter records of NLEBs) include: Alabama (2), Arkansas (41), Connecticut (8), Delaware (2), Georgia (3), Illinois (21), Indiana (25), Kentucky (119), Maine (3), Maryland (8), Massachusetts (7), Michigan (103), Minnesota (11), Missouri (more than 269), Nebraska (2), New Hampshire (11), New Jersey (7), New York (90), North Carolina (22), Oklahoma (9), Ohio (7), Pennsylvania (112), South Carolina (2), South Dakota (21), Tennessee (58), Vermont (16), Virginia (8), West Virginia (104), and Wisconsin (67). NLEB are documented in hibernacula in 29 of the 37 States in the species' range. Other States within the species' range have no known hibernacula (due to no suitable hibernacula present, lack of survey effort, or existence of unknown retreats).

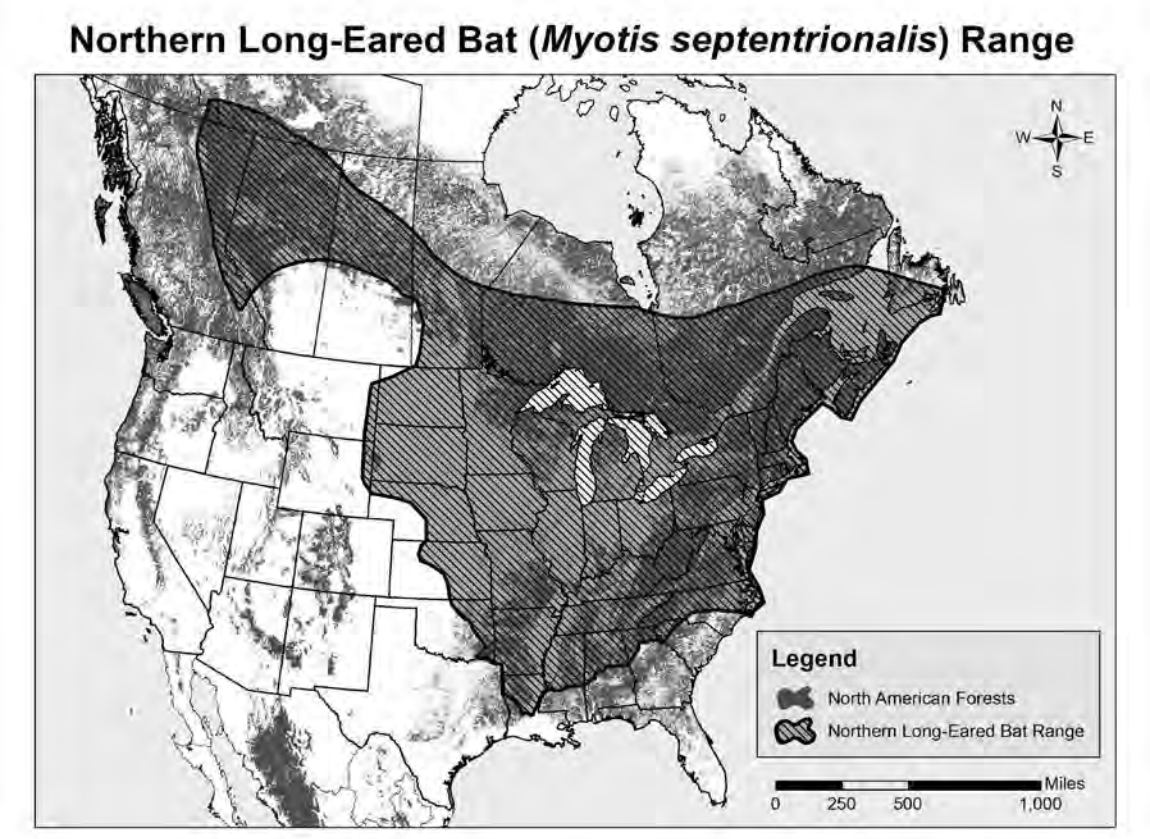

Figure 1. Range of the northern long-eared bat.

The current range and distribution of NLEB must be described and understood within the context of the impacts of WNS. Prior to the onset of WNS, the best available information on NLEB came primarily from surveys (mostly focused on Indiana bat or other bat species) and some

targeted research projects. In these efforts, NLEB was very frequently encountered and was considered the most common myotid bat in many areas. Overall, the species was considered to be widespread and abundant throughout its historic range (Caceres and Barclay 2000).

WNS has been particularly devastating for NLEB in the northeast, where the species was believed to be the most abundant. There are data supporting substantial declines in NLEB populations in portions of the Midwest due to WNS. In addition, WNS has been documented at more than 100 NLEB hibernacula in the southeast, with apparent population declines at most sites. WNS has not been found in any of the western states to date and the species is considered rarer in the western extremes of its range. We expect further declines as the disease continues to spread across the species' range.

Status of the Northern Long-eared Bat in Wisconsin

Prior to listing under the ESA, NLEB (and all cave bats) were listed as state threatened in 2011 due to previously existing threats and the impending threat of WNS (78FR61068). NLEB can be found in many parts of Wisconsin but based on data from hibernacula counts, acoustic surveys, mist-netting in summer foraging areas, and harp trap captures, it is reported to be uncommon (78FR61053). Acoustic and mist-net data were collected by a pipeline project proponent in 2014, which surveyed an approximately 125-ft wide and 300-mile-long (483 km) corridor from the northwest corner of the state diagonally to the southeast corner. Positive detections were recorded in Adams, Chippewa, Clark, Columbia, Dane, Douglas, Jefferson, Marathon, Marquette, Rock, Rusk, Sawyer, Taylor, Washburn Counties, and NLEBs were the third most common (14.5 percent) species captured by mist-net (Brown et al. 2014). Based on the Service's current records, 28 counties in the state have identified NLEB presence. The NLEB is known from 45 hibernacula sites in Wisconsin (78 FR 61052).

WNS was first confirmed in southwestern Wisconsin during the winter of 2013/2014 and at additional sites in southern and eastern Wisconsin during winter 2014/2015. Currently, there is one county in southwest Wisconsin with confirmed WNS; and one county in the central portion of the state where the fungus that causes WNS (*pseudogymnoascus destructans*) has been found. At this time, WNS has not been confirmed on the CNNF.

Critical Habitat

Critical habitat has not been proposed for the NLEB.

Conservation Needs of the Species

The species' conservation needs define what is needed in terms of reproduction, numbers, and distribution to ensure the species is no longer in danger of extinction. The conservation needs should be defined in the species' recovery outline or plan. Since there is no recovery plan or

recovery outline available at this time, we will outline the conservation needs based on our current understanding of the species.

We find that the primary conservation need of the NLEB is to reduce the threat of WNS. This includes minimizing mortality in WNS-affected areas and slowing the rate of spread into currently unaffected areas. In addition, NLEB that continue to exist within WNS-affected areas need to be able to continue to survive and reproduce in order to stabilize and/or increase the populations. This can be done by reducing the other threats to the species, as listed above.

Therefore, efforts to protect hibernacula from disturbances need to continue. These should include restricting human access to hibernacula particularly during the hibernation period, constructing/installing suitably designed gates where appropriate and maintaining the gates, and restoring microhabitat conditions in hibernacula that have been altered. Efforts should also be made to protect and restore (in some cases) adequate fall swarming habitat around hibernacula. Known maternity habitat should be maintained, and the removal of known roost trees, particularly when pregnant females and/or young are present should be reduced. Research to identify important hibernacula and summer areas and to delineate the migratory relationship between summering and wintering populations is also recommended.

ENVIRONMENTAL BASELINE

The Environmental Baseline analyzes the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and the ecosystem within the action area.

Action Area

Action area, as defined by the ESA's implementing regulations (50 CFR 402.02), is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (our emphasis). Action is defined in the regulations as "…all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas. Examples include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.

For the Forest's BLP, the area where "land, water, or air" that is likely to be affected is land administered by the USFS where actions authorized by the Forest would occur. The proposed BLP projects are dispersed throughout the Forest; therefore, we consider the lands within the entire Forest boundary as the action area. The Forest has five Ranger Districts and encompasses 1.5 million acres in 11 counties – of which about 858,400 acres in large contiguous blocks are on the Chequamegon side of the forest (Ashland, Bayfield, Price, Sawyer, Taylor and Vilas Counties) and 661,400 acres are interspersed with private lands on the Nicolet side (Florence, Forest, Langlade, Oconto, Oneida and Vilas Counties).

Status of the Species in the Action Area

NLEB population trends are undetermined on the CNNF. However, mist net surveys conducted on the Forest since 2006 have documented the presence of NLEB on all five Ranger Districts. Additionally, the CNNF is actively contributing to joint inventory and monitoring efforts to evaluate summer bat population trends. A qualitative and quantitative analysis of over 22,000 bat calls collected from 17 mobile acoustic monitoring routes on-Forest since 2009 was recently completed. Based on information in the BA (p. 5), approximately 80 percent were from the summer roost period (June 1 – July 31) and the remainder during the fall period (August 1 – September 30). NLEB were rare and comprised only 0.2 percent of summer calls and 0.1 percent of fall calls. These data will allow the CNNF to identify baseline bat activity levels and observe how those levels potentially change in response to the arrival of WNS. The CNNF is expecting to continue with mist netting and acoustic transects.

The CNNF is also working in partnership with the Wisconsin Department of Natural Resources and others to increase knowledge of NLEB distribution and habitat use in northern Wisconsin. Surveys have not been completed in all portions of the CNNF, but presence is assumed based on relatively widespread distribution of mist net survey observations and the presence of potential summer habitat in the project areas. Because survey data analyses are not yet complete, we cannot estimate roost tree density or the proportion of the Forest that is inhabited by NLEB within a useful level of precision.

Currently, there are no known hibernacula in the action area; the closest are approximately 10 to 50 miles from the Forest boundary. Therefore, suitable hibernacula sites would not be affected by the BLP. Mist-net surveys conducted since 2006 have documented presence of NLEB on all five Ranger Districts and one roost site with multiple trees was identified in summer 2015. Based on those detections and others in Wisconsin, and the prevalence of suitable habitat for the species on the Forest, it is reasonable to assume that the species may be widespread in the action area.

Habitat Conditions in the Action Area

The CNNF has an abundance of well-distributed, potential summer habitat on U.S. Forest Service (USFS) and adjoining public ownership lands (see BA). (Note: because lands occur in a checkerboard pattern of ownership, summer habitat on State/County lands was included in their assessment.) The BA defined suitable NLEB summer habitat as all forested habitat ≥ 10 years old (trees > 3 in DBH). Unsuitable summer habitat is all forested habitats < 10 years old.

Table 2 shows the amount of habitat in the project area on USFS and State/County lands. Most of the forested lands on the USFS and State/County lands currently provide suitable summer habitat.

Table 2. NLEB summer habitat on all public lands within the CNNF proclamation boundary area (adapted from BA Table 4, p. 7).

Landowner	Potential Summer Habitat	Currently Suitable Summer Habitat	Currently Unsuitable Summer Habitat	Percent of Habitat in Currently Suitable Condition
USFS land	1,290,640	1,261,591	29,049	98%
State, County, Private land	328,379	236,667	91,712	72%
Total Acres	1,619,019	1,498,258	120,761	93%

NLEB summer habitat includes both conifer and hardwood tree species and acres are presented in the Table 3 below. In summary, the Forest has a large area of well-distributed summer habitat that provides suitable roosting and foraging opportunities for NLEB.

Table 3. NLEB summer habitat on all public lands and suitable/unsuitable summer habitat on USFS lands, by forest type within the CNNF (adapted from BA Table 5, p. 8).

Forest Type	**USFS Lands**	**State, County and Private Lands**	**Currently Suitable Summer Habitat (USFS lands)**	**Currently Unsuitable Summer Habitat (USFS lands**	**Percent of Habitat in Currently Suitable Condition (USFS lands)**
Pine	159,676	9,022	153,480	6,196	96%
Spruce/Fir	56,514	3,720	51,805	4,709	92%
Lowland Conifer	189,047	40,549	189,047	0	100%
Upland Hardwood	488,716	150,389	484,012	4,704	99%
Lowland Hardwood	41,317	23,482	41,317	0	100%
Aspen/Birch	355,370	101,217	341,930	13,440	96%
Total Acres	**1,290,640**	**328,379**	**1,261,591**	**29,049**	**98%**

Conservation Needs of the Species in the Action Area

The conservation needs of the species in the action area are similar to the needs range-wide. The CNNF provides habitat for migrating and summering NLEB. Therefore, within the action area the conservation needs include: 1) providing suitable habitat conditions for NLEB foraging and roosting; 2) reducing the removal of roost trees; 3) searching for previously unidentified areas of maternity and hibernation activity; and 4) supporting or conducting research to understand the migration patterns of NLEB that use the area during the summer or winter.

The BA indicated that the CNNF has initiated bat (includes NLEB) acoustic monitoring routes to identify baseline bat activity levels and observe how those levels change over time; the number of acoustic surveys will be continued across the Forest in 2015. As mentioned above, the CNNF

is also working in partnership with the Wisconsin Department of Natural Resources and others to further their knowledge of NLEB distribution and habitat use in northern Wisconsin. These measures, in addition to the continued implementation of conservation measures required under the Forest Plan, will contribute to conservation needs of the NLEB in general and within the action area.

EFFECTS OF THE ACTION

This BO evaluates the anticipated effects of 10 land management projects on the CNNF. These projects will affect up to 9,950 ac/year of potential NLEB habitat on the Forest, and include single tree cutting (linear or scattered), multiple tree thinning, small (1 ac) clearcutting, and prescribed burning treatments for various projects, as well as bridge/culvert replacement and management of facilities and buildings (bridge/culvert replacements and structures were already addressed). Potential effects to the NLEB include direct and indirect effects. Direct effects occur when bats are present while the activities are being conducted; indirect effects occur later in time. Effects will vary based on the type of the proposed activity.

Our analysis of effects for NLEB entails: (1) evaluating individual NLEB exposure to action-related stressors and the bats' likely responses; (2) integrating those individual effects (exposure risk and subsequent response) to discern the consequences to the populations to which those individuals belong; and (3) determining the consequences of any population-level effects to the species rangewide. If we find that the actions are unlikely to affect the rangewide numbers, reproduction, and distribution of the species in a way that can be measured or described, we conclude that the agency's actions are not likely to jeopardize the continued existence of the species.

Effects to Hibernating Bats At or Near Hibernacula

The nearest known hibernacula are 10 to 50 miles from the CNNF; therefore, neither direct nor indirect effects are anticipated to wintering NLEB or their hibernacula from the proposed action. Fall swarming typically occurs within 5 miles of a hibernaculum. Because the nearest known hibernacula are at least 10 miles away, neither direct nor indirect effects are anticipated to fall swarming and/or fall swarming habitat from the proposed action.

Effects to Bats during Spring/Summer and/or to Spring/Summer Habitat

Tree Removal Associated with All Activities

Tree removal will be completed using non-regeneration harvest methods with one exception. Trees removed for gravel pit expansions will be clearcut, but in this case, the removal will not be for regeneration purposes. Tree cutting and other associated activities (including firewood gathering, ROW and special use road clearing, hazard tree removal, facilities maintenance tree removal, etc., and general human presence and noise) are proposed on a maximum of 9,950 ac.

As mentioned above, some of those acres will be harvested outside the summer roosting season. Therefore, the total number of acres proposed for future harvest during the summer roosting period is likely < 9,950 acres.

Death/Injury

Risk of death or injury of individual NLEB from timber harvest or other tree removal varies depending on the timing of activities, their location, type of harvest or removal, and extent of the area affected.

The timing of forest management activities greatly influences the likelihood of exposure and the extent of impacts on individual bats and their populations. Female NLEB typically roost colonially, with their largest population counts occurring in the spring or early summer, presumably as one way to reduce thermal costs for individual bats (Foster and Kurta 1999). Although bats may flee their roosts during tree removal, removal of occupied roosts during the active season while bats are present (spring through fall) is likely to cause injury or mortality to some roosting bats. Bats are likely to be injured or killed as a result of tree felling in the spring when bats often use torpor (temporary unresponsive state) to survive periods of cool weather and low prey availability. Bats are also likely to be killed or injured during early to mid-summer (approximately June to July) when flightless pups or inexperienced flying juveniles are present. Removal of trees outside these periods is less likely to result in direct injury or mortality when the majority of bats can fly and are more dispersed.

The likelihood and extent of impacts are influenced by the type of the timber harvest or tree removal relative to the amount of remaining suitable roosting and foraging habitat from which affected bats may select. NLEBs use multiple roosts throughout the season. Therefore, only a certain number of roosts are anticipated to be occupied in a single day or year. Larger areas of treatment have greater risk than when smaller areas are affected. Similarly, clearcuts have greater risk than selective harvest treatments (individual or group) because more trees will be removed in the treatment area.

As mentioned, some trees will be removed outside the summer roosting period, which would reduce the direct effects from summer cutting/harvest. Considering the different types of tree removal, varying levels of tree retention, and remaining percentage of canopy cover, roosting trees/sites within areas subject to cutting in summer may continue to be suitable for NLEBs during and soon after harvest. In addition, NLEBs may be affected by the immediate loss of suitable habitat on significantly less acres proposed for treatments because tree removal will not occur simultaneously in all treatment areas, but will be distributed both spatially and temporally across the Forest through 2017. NLEB habitat is abundant and well distributed throughout the CNNF and there will be large areas of intact forested habitat adjacent to each treatment area. As shown in Table 2 above, there are approximately 1.6 million acres of potential NLEB habitat in the action area, of which 93 percent (all ownerships) is currently considered suitable for NLEB use.

Response to Removal or Alteration of Roosting/Foraging Habitat

The best available data indicate that the NLEB shows a varied degree of sensitivity to timber harvesting practices (Menzel et al. 2002, Owen et al. 2002). In central Arkansas, the three classes of mixed pine-hardwood forest that supported the majority of the roosts were partially harvested or thinned, unharvested (50–99 years old), and group selection harvest (Perry and Thill 2007). Forest size and continuity are also factors that define the quality of habitat for roost sites for NLEB. Lacki and Schwierjohann (2001) stated that silvicultural practices could meet both male and female roosting requirements by maintaining large-diameter snags, while allowing for regeneration of forests.

In addition to impacts on roost sites, timber harvest practices can also affect foraging and traveling habitat, and thus, NLEB fitness. In southeastern Missouri, the NLEB showed a preference for contiguous tracts of forest cover (rather than fragmented or wide open landscapes) for foraging or traveling and, different forest types (rather than monoculture) interspersed on the landscape increased likelihood of occupancy (Yates and Muzika 2006). Similarly, in West Virginia, female NLEBs spent most of their time foraging or travelling in intact forest, diameter-limit harvests (70 to 90 year-old stands with 30 to 40 percent of basal area removed in the past 10 years), and road corridors, with no use of deferment harvests (similar to clearcutting) (Owen et al. 2003). In Alberta, Canada NLEB avoided the center of clearcuts and foraged more in intact forest than expected (Patriquin and Barclay 2003). On Prince Edward Island, Canada, female NLEBs preferred forested areas more than open areas, with foraging areas centered along forest-covered creeks (Henderson and Broders 2008). In general, NLEBs prefer intact mixed-type forests with small gaps (i.e., forest trails, small roads, or forest covered creeks) in forests with sparse or medium vegetation for foraging and traveling, rather than fragmented habitat or areas that have been clearcut.

Sustainable timber harvest activities do not typically lead to permanent losses of suitable roosting, foraging, or traveling habitat for NLEB. On the contrary, sustainable timber harvest activities are compatible with the long-term maintenance of suitable forested habitat for the species. Many sustainable timber harvest practices will result in little change in terms of the amount or quality of roosting or foraging habitat for NLEB. For example, selective harvest regimes are not anticipated to result in alterations of forest to the point where NLEB would be expected to significantly alter their normal behaviors within the affected areas. The treatment areas will still be forested with only small openings left by the harvest treatment. Similarly, small patch cuts, wildlife openings, and forest roads would be expected to serve as foraging areas or travel corridors and not as barriers to movement. Therefore, the only impacts of concern from many forest treatments are the potential for death or injury during active season tree removal.

However, localized long-term reductions in suitable roosting and/or foraging habitat can occur from various forest practices. For example, large clearcuts (that remove a large portion of a known or assumed home range) would result in a temporary “loss” of forest for NLEB. In these

cases, "temporary" would be for many years (amount of time to reproduce suitable roosting/foraging habitat). Foraging would be possible prior to roosting depending on the juxtaposition of cuts to other forest regimes. As stated above, NLEB have been found in forests that have been managed to varying degrees and as long as there is sufficient suitable roosting and foraging habitat within their home range and travel corridors between those areas, we would expect NLEB colonies to persist in managed landscapes.

In addition to the type of timber harvest, the extent of impact from timber harvest-related habitat modifications is influenced by the amount of suitable habitat available within and nearby NLEB home ranges. Some portions of the NLEB's range are more forested than others. In areas with little forest or highly fragmented forests (e.g., western U.S. edge of the range, central Midwestern states; see Figure 1), impact of forest loss would be disproportionately greater than similar sized losses in heavily forested areas (e.g., Appalachians and northern forests). Also, the impact of habitat loss within a NLEB's home range is expected to vary depending on the scope of removal. Silvis et al. (2014) modeled roost loss of NLEBs and Silvis et al. (2015) removed known NLEB roosts during the winter in the field to determine how this would impact the species. Once removals totaled 20 to 30 percent of known roosts, a single maternity colony network started showing patterns of break-up. As explained in the Status of Species section, sociality is hypothesized to increase reproductive success (Silvis et al. 2014); thus, smaller colonies are expected to have lower reproductive success.

Clearcutting and similar harvest methods that result in low density of potential roost trees may prompt the need for longer flights and increased energetic demands by NLEB at a time when they may already be energetically challenged. NLEB emerge from hibernation with their lowest annual fat reserves and soon thereafter must return to their summer home ranges. The spring staging period precedes migration to summer habitats. During this period, NLEB remain near hibernacula. They feed and reenter hibernacula daily, where they enter torpor to minimize energy loss during the day. Individuals may increase fat reserves during this period, but are unlikely to regain the large amounts of fat lost during hibernation.

For several reasons, winter tree harvest that substantially alters summer roosting habitat for NLEB could result in adverse effects to affected individuals. NLEBs have summer home range fidelity (Foster and Kurta 1999; Patriquin et al. 2010; Broders et al. 2013). Activities that take place during the winter that render summer habitats unsuitable may force NLEB to rely on low energy reserves to find new roosts or foraging areas. This may put additional stress on females that are often pregnant. Hibernation and reproduction are the most energetically demanding periods for temperate-zone bats, including the NLEB (Broders et al. 2013). Bats may reduce metabolic costs of foraging by concentrating efforts in areas of known high prey profitability, a benefit that could result from the bat's local roosting and home range knowledge and site fidelity (Broders et al. 2013).

Cool spring temperatures provide an additional energetic demand, as bats need to stay sufficiently warm or enter torpor (state of mental or physical inactivity). Entering torpor comes

at a cost of delayed parturition, which may affect the fitness of yearling NLEB. Bats born earlier in the year have a greater chance of surviving their first winter and breeding in their first year of life (Frick et al. 2009). Delayed parturition may also be costly because young of the year and adult females would have less time to prepare for hibernation (Broders et al. 2013). Female NLEB typically roost colonially, with their largest population counts occurring in the spring or early summer, presumably as one way to reduce thermal costs for individual bats (Foster and Kurta 1999). Therefore, similar to other temperate bats, NLEB have multiple high metabolic demands (particularly in spring) and must have sufficient suitable roosting and foraging habitat available in relatively close proximity to allow for successful reproduction.

In summary, tree clearing associated with BLP treatments could have both adverse and beneficial effects on habitat suitability for the NLEB. The habitat that will be affected by these activities is scattered throughout the 1.5 million-acre Forest, so there will be large amounts of unaffected, intact forested habitat adjacent to each treatment area. The potential for effects from tree removal will be reduced by cutting outside the summer roosting period. In addition, NLEBs may be affected by the immediate loss of suitable habitat on significantly less than proposed for treatments because tree removal will not occur simultaneously in all treatment areas, but will be distributed both spatially and temporally across the Forest over a period of at least several years. Finally, the proposed maximum 9,950 ac per year of tree removal equals 0.6 percent annually of the 1.6 million ac of NLEB habitat within the CNNF, with a total of 1.8 percent over the 3-year period. During this timeframe, acres of currently unsuitable NLEB habitat will approach or return to suitable condition, thereby offsetting some of the acres of trees removed under the BLP. As a result, we conclude that the overall habitat suitability or availability for NLEB foraging and roosting within the action area should be minimally affected by proposed BLP treatments.

Effects from Noise, Disturbance

Noise and vibration and general human disturbance are stressors that may disrupt normal feeding, sheltering, and breeding activities of the NLEB. Many activities may result in increased noise/vibration/disturbance that may result in effects to bats. Bats may be exposed to noise/vibration/disturbance from various USFS activities (e.g., tree felling, operation of machinery, and human presence) near their roosting, foraging, or swarming areas.

Significant changes in noise levels in an area may result in temporary to permanent alteration of bat behaviors. The novelty of these noises and their relative volume levels will likely dictate the range of responses from individuals or colonies of bats. At low noise levels (or farther distances), bats initially may be startled, but they would likely habituate to the low background noise levels. At closer range and louder noise levels (particularly if accompanied by physical vibrations from heavy machinery and the crashing of falling trees) many bats would probably be startled to the point of fleeing from their day-time roosts and in a few cases may experience increased predation risk. For projects with noise levels greater than those usually experienced by bats, and that continue for multiple days, the bats roosting within or close to these areas are

likely to shift their focal roosting areas further away or may temporarily abandon these roosting areas completely.

There is limited literature available regarding impacts from noise (outside of road/traffic) on bats. Gardner et al. (1991) had evidence that an NLEB conspecific, Indiana bat, continued to roost and forage in an area with active timber harvest. Also see the timber harvest section above regarding other similar studies for NLEB. They suggested that noise and exhaust emissions from machinery could possibly disturb colonies of roosting bats, but such disturbances would have to be severe to cause roost abandonment. Callahan (1993) noted that the likely cause of the bats in his study area abandoning a primary roost tree was disturbance from a bulldozer clearing brush adjacent to the tree. However, his last exit count at this roost was conducted 18 days prior to the exit count of zero. Indiana bats have also been documented roosting within approximately 300 meters of a busy state route adjacent to Fort Drum Military Installation (Fort Drum) and immediately adjacent to housing areas and construction activities on Fort Drum (US Army 2014). Bats roosting or foraging in all of the examples above have likely become habituated to the noise/vibration/disturbance. Novel noises would be expected to result in some changes to bat behaviors.

In summary, NLEB currently present in the forest are expected to be tolerant to a certain degree of existing (prior to initiation of proposed activities) noise, vibration, and disturbance levels. However, temporary and novel noise/vibration/disturbance associated with heavy equipment operation and tree cutting may result in responses by bats that are roosting or foraging in these areas. We expect that affected bats are likely to shift their focal roosting areas further away or may temporarily abandon these roosting areas completely.

Effects from Prescribed Burning

The CNNF has proposed conducting prescribed fires in the wildlife openings, on a maximum of 8,000 ac/year. The size and duration of the burns at a given time will vary considerably, depending on the size of the openings being treated (typically 200 to 8,000 ac). The burn locations are long-term openings, such as old farm fields or barrens habitats that support limited numbers of trees > 3 in DBH (can be up to 6 in DBH and 10 ft in height) and/or forest canopy conditions that would support NLEB roosting. Therefore, the burns will affect much less than 8,000 ac/year of NLEB habitat. Burns will last anywhere from a few hours up to 3 days and smoke generated from the fires may indirectly affect NLEB as a result of smoke exposure. However, these effects are expected to be short-term and localized.

Death/Injury

Conducting prescribed fires in these areas during the summer roost period could result in direct mortality or injury to NLEB by smoke inhalation. Bats may be exposed to elevated concentrations of potentially harmful compounds within the smoke (e.g., carbon monoxide and irritants) (Dickinson et al. 2009). Exposure risk depends on a variety of factors including height

of roosts, timing and behavior of fire, winds, proximity of fire to roosts. Risk of direct mortality and injury to bats from prescribed fire is low as long as fire intensity is low (Dickinson 2010). Waiting until temperatures are a bit warmer in spring reduces more frequent use of torpor and should allow NLEB to more easily flush (Dickinson 2010). Avoiding burns during July will also help prevent loss of pups that may be too heavy for adults to carry. In summary, we expect minimal lethal take from prescribed fires but NLEB may be forced to flee from roosting and foraging areas. However, these adverse effects are expected to be short-term and localized.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Any actions conducted on Chequamegon-Nicolet National Forest lands will either be conducted by the USFS, or will require approval by the USFS and thus will require separate section 7 consultation. Therefore, cumulative effects, as defined in the ESA, are not expected to occur on their Forest lands.

There are 1,619,019 acres of potentially suitable summer roosting habitat inside the National Forest's boundary, which includes state, county, and private lands (see Table 2). Of this, 328,379 acres are non-Forest lands which currently provide 236,667 ac (72 percent) of suitable summer roosting habitat. Timber harvest, commercial thinning, and other related activities occur on these non-Forest lands with varying management objectives based on forest type, season of harvest, and other considerations. The age structure of the forested lands and harvest treatments are similar to the forest cover types and methods on the CNNF, and an abundance of suitable NLEB habitat is available.

Harvest on non-Forest lands may alter available NLEB summer roosting habitat. Based on the same rationale discussed above for Federal lands and because NLEB habitat is abundant and well distributed within the action area, we anticipate that harvest activities on non-Forest lands will result in minimal cumulative effects to the species or its habitat. These cumulative effects may be adverse in some locations, but the overall effect will be to maintain a mosaic of forest types and ages with no indication that habitat for NLEB will become limiting for the species in the foreseeable future.

Summary of Effects

Impacts to Individuals

Potential effects of the action include direct effects to NLEB present within the action area when activities are being conducted, and indirect effects as a result of changes in habitat suitability. The types of tree removal activities that may affect habitat suitability include mechanical

brushing and mowing, and single tree and multiple tree cutting, much of which will be scattered across the Forest, with a very small number of acres (approximately 100 ac) being clearcut (ROWs and gravel pit expansions). Direct effects include mortality, injury, harm, or harassment as a result of removal of roost trees, noise, general human presence, and smoke from prescribed fires.

The Forest's Objectives, Standards, and Guidelines, which include maintaining/increasing various sizes of large forested patches, retaining closed canopy structure in mature forest within 200 ft of seasonal ponds, and leaving all snags possible in harvest areas, will reduce the potential for direct effects to the NLEB. However, the potential for direct effects from tree cutting and removal, prescribed burning, and associated human presence is greatest during spring and early summer (mid-April through July) when bats return from hibernation, spring temperatures result in periodic use of torpor, and non-volant young may be present. In addition, bats impacted by WNS have additional energetic demands and reduced flight capability. Although WNS has not been detected to date on the CNNF, considering the continued spread of WNS in Wisconsin, it is possible that in the near future impacted bats will be returning to CNNF summer habitat.

Indirect effects from the action may result from habitat modification and primarily involve changes to roosting and foraging suitability. Tree clearing associated with the various BLP projects could have both adverse (such as active season tree removal of a roost tree) and beneficial effects on habitat suitability for the NLEB. Given the scope of the projects in relation to the overall action area, these projects will not substantially alter the overall availability or suitability of NLEB roosting or foraging habitat in the action area.

While none of the CNNF's proposed actions will alter the amount or extent of mortality or harm to NLEB resulting directly from WNS, the Forest's proposed action can be neutral, negative, or beneficial to bats. Their continued implementation of monitoring efforts will provide additional information on the effect of the CNNF's actions on affected bats. Minimal cumulative effects are expected.

While analyzing the effects of the proposed action, we identified the life stages that would be exposed to the stressors associated with the proposed action, and analyzed how those individuals would respond upon exposure to the stressors. From this analysis, we determined that:

1) Neither hibernating bats nor their hibernacula will be exposed to the project stressors as there are currently no known hibernacula within the vicinity of the Action Area.

2) NLEB during the spring-fall period will be exposed to various project stressors and their responses to some of them are likely to be adverse.

We considered the possibility for NLEB to be exposed to the effects of project activities at currently unknown roost sites. If this should occur, we anticipate harassment of NLEB that may flush bats during daylight and cause them to temporarily or permanently abandon their roosts

(which may have pups). In addition, mortality of pups is possible from tree cutting/removal and inhalation of smoke from prescribed fire. In summary, there will be impacts to individual bats in terms of either reduced survival or reproduction.

Impacts to Populations

As we have concluded that individual bats are likely to experience reductions in either their annual or lifetime survival or reproductive rates, we need to assess the aggregated consequences of these effects to exposed individuals as they relate to the population to which these individuals belong.

The action area will continue to provide suitable habitat conditions for NLEB foraging and roosting during the summer while the proposed tree removal activities are implemented and after they are complete. There is potential for direct take of the species. The extent of the area where direct take is likely due to the proposed action in relation to the entire action area, and the current distribution and abundance of NLEB habitat on the CNNF (as described in the Environmental Baseline), the effects of the proposed activities are unlikely to reduce the likelihood that NLEB will continue to survive and reproduce on the Forest.

Impacts to the Species

Many of the Forest's proposed actions are likely to result in benefits to the species over the long term due to the maintenance of a mosaic of forest types. While we recognize that the status of the species is uncertain due to WNS, given the environmental baseline, and the intensity, frequency, and duration of the project impacts, we find that the proposed project is unlikely to have appreciable impacts on the population that inhabits the action area. Thus, no component of the proposed action is expected to reduce the reproduction, numbers, or distribution of the NLEB rangewide. Therefore, we do not anticipate a reduction in the likelihood of both survival and recovery of the species as a whole.

CONCLUSION

After reviewing the current status of this species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the northern long-eared bat. No critical habitat has been designated to date for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is

defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3). Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

On April 2, 2015, the Service published an interim species-specific rule pursuant to section 4(d) of the ESA for NLEB (80 FR 17974). The Service's interim 4(d) rule for NLEB exempts the take of NLEB from the section 9 prohibitions of the ESA, when such take occurs as follows (see the interim rule for more information):

(1) Take that is incidental to forestry management activities, maintenance/limited expansion of existing rights-of way, prairie management, projects resulting in minimal (<1 acre) tree removal, provided these activities:

   a. Occur more than 0.25 mile (0.4 km) from a known, occupied hibernacula;
   b. Avoid cutting or destroying known, occupied roost trees during the pup season (June 1–July 31); and
   c. Avoid clearcuts (and similar harvest methods, *e.g.*, seed tree, shelterwood, and coppice) within 0.25 (0.4 km) mile of known, occupied roost trees during the pup season (June 1–July 31).

(2) Removal of hazard trees (no limitations).

(3) Purposeful take that results from
   a. Removal of bats from and disturbance within human structures and
   b. Capture, handling, and related activities for northern long-eared bats for 1 Year following publication of the interim rule.

The incidental take that is carried out in compliance with the interim 4(d) rule does not require exemption in this Incidental Take Statement. Accordingly, there are no reasonable and prudent measures or terms and conditions that are necessary and appropriate for these actions because all incidental take has already been exempted.

The activities that are covered by the interim 4(d) rule include forest management activities; these activities include various types of timber harvest; road construction and decommissioning; associated noise and general human presence; and, site preparation.

AMOUNT OR EXTENT OF TAKE

If NLEB are present or utilize an area proposed for timber harvest or other disturbance, incidental take of NLEB could occur. The Service anticipates incidental take of the NLEB will be difficult to detect for the following reasons: (1) the individuals are small and occupy summer habitats where they are difficult to find; (2) NLEB form small, widely dispersed maternity colonies under loose bark or in the cavities of trees and males and non-reproductive females may roost individually, which makes finding the species or occupied habitats difficult; (3) finding dead or injured specimens during or following project implementation is unlikely; (4) the precise distribution and density of the species within its summer habitat in the action area is unknown; and, (5) in many cases incidental take will be non-lethal and undetectable.

Monitoring to determine actual take of individual bats within an expansive forested area is unlikely to produce useful information unless every individual tree that may contain suitable roosting habitat is inspected by a knowledgeable biologist when felled. To minimize or avoid take that is caused by felling trees with roosting bats, a similar tree-by-tree inspection would have to occur before trees are felled. Inspecting individual trees is not considered by the Service to be a reasonable survey method and is not recommended as a means to determine incidental take. However, the areal extent of potential roosting and foraging habitat affected can be used as a surrogate to monitor the level of take.

The Service anticipates that no more than 9,950 acres of potential NLEB habitat will be disturbed as a result of these ongoing project activities on the Forest.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to NLEB. No critical habitat has been designated for NLEB, so none would be impacted.

REASONABLE AND PRUDENT MEASURES

Since all anticipated incidental take will be from activities addressed by the 4(d) rule and are therefore already exempted, no reasonable and prudent measures will be required.

TERMS AND CONDITIONS

Since all anticipated incidental take will be from activities addressed by the 4(d) rule and are therefore already exempted, no terms and conditions will be required.

REPORTING REQUIREMENTS

1. The USFS shall provide the Service with a report summarizing the activities completed as part of the proposed actions and the extent of the area affected by each. This report shall be provided to the Service no later than January 31 each year until all activities are complete.

2. The USFS shall make all reasonable efforts to educate personnel to report any sick, injured, and/or dead bats (regardless of species) located on the Chequamegon-Nicolet National Forest immediately to the Forest Biologist. The CNNF point of contact will subsequently report to the Service's Twin Cities Field Office (TCFO; 612-725-3548) and/or the Wisconsin Bat Program bat call line (608-266-5216). Sick, injured, and/or dead bats may also be reported to: http://wiatri.net/Inventory/Bats/Report/. No one, with the exception of trained staff or researchers contracted to conduct bat monitoring activities, should attempt to handle any live bat, regardless of its condition. If an injured bat is found, if possible, effort should be made by trained staff (with rabies vaccination) to transfer the animal to a wildlife rehabilitator.

If needed, TCFO will assist in species determination for any dead or moribund bats. Any dead bats believed to be NLEB will be transported on ice to the TCFO. If an NLEB is identified, TCFO will contact the appropriate Service law enforcement office. Care must be taken in handling dead specimens to preserve biological material in the best possible state. In conjunction with the care of sick and injured fish or wildlife and the preservation of biological materials from dead specimens, the CNNF has the responsibility to ensure that information relative to the date, time, and location of NLEB, when found, and possible cause of injury or death of each is recorded and provided to the Service. In the extremely rare event that someone has been bitten by a bat, please keep the bat in a container and contact the local health department.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid the adverse effects of a proposed action on listed species or critical habitat, to help carry out recovery plans, or to develop information.

The Service has identified the following actions that, if undertaken by the USFS, would further the conservation of the NLEB. We recognize that limited resources and other agency priorities may affect the ability of the USFS to conduct these activities at any given time.

1. Assist with WNS investigations, where feasible. For example:
    a. Monitor the status/health of known colonies;
    b. Collect samples for ongoing or future studies; and,

c. Allow USFS staff to contribute to administrative studies related to WNS (on or off of USFS lands, as appropriate).

2. Monitor pre- and post-WNS distribution of NLEB on the Chequamegon-Nicolet National Forest.
   a. Search for hibernacula within the National Forest;
   b. Conduct inventory surveys;
   c. Conduct radio telemetry to monitor status of NLEB colonies; and,
   d. Participate in North American Bat Monitoring Program (NABat; a national effort to monitor and track bats) through submission of survey data.

3. Encourage research and administrative studies on the summer habitat requirements of the NLEB on the Chequamegon-Nicolet National Forest that:
   a. Investigate habitat characteristics of the forest in areas where pre- and post-WNS NLEB occurrences have been documented (acoustically or in the hand) (e.g. forest type, cover, distance to water).
   b. Investigate NLEB use (acoustics, radio telemetry) of recently managed areas of different prescriptions.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the conservation recommendations carried out.

REINITIATION NOTICE

This concludes formal consultation for the USFS's actions outlined in your request dated March 23, 2015. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over an action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such a take must cease pending reinitiation.

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