



This document is scheduled to be published in the Federal Register on 01/14/2016 and available online at <http://federalregister.gov/a/2016-00617>, and on [FDsys.gov](http://FDsys.gov)

## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 17**

**[Docket No. FWS–R5–ES–2011–0024; 4500030113]**

**RIN 1018–AY98**

**Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-eared**

**Bat**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), finalize a rule under authority of section 4(d) of the Endangered Species Act of 1973 (Act), as amended, that provides measures that are necessary and advisable to provide for the conservation of the northern long-eared bat (*Myotis septentrionalis*), a bat species that occurs in 37 States, the District of Columbia, and 13 Canadian Provinces.

**DATES:** This rule is effective [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

**ADDRESSES:** This final 4(d) rule, the final environmental assessment, biological opinion, and list of references are available on the Internet at <http://www.regulations.gov> under Docket No. FWS-R5-ES-2011-0024 and at <http://www.fws.gov/midwest/Endangered>. Comments and materials we received, as well as supporting documentation we used in preparing this final 4(d) rule, are available for public inspection at <http://www.regulations.gov>, and by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Twin Cities Ecological Services Field Office, 4101 American Blvd. East, Bloomington, MN 55425; telephone (612) 725-3548, ext. 2201; or facsimile (612) 725-3609.

**FOR FURTHER INFORMATION CONTACT:** Peter Fasbender, Field Supervisor, U.S. Fish and Wildlife Service, Twin Cities Ecological Services Field Office, 4101 American Blvd. East, Bloomington, MN 55425; telephone (612) 725-3548, ext. 2210; or facsimile (612) 725-3609. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

## **SUPPLEMENTARY INFORMATION:**

### **Executive Summary**

*The need for the regulatory action and how the action will meet that need:* Consistent with section 4(d) of the Act, this final 4(d) rule provides measures that are tailored to our current understanding of the conservation needs of the northern long-eared bat.

On April 2, 2015, we published a document that is both a final rule to list the northern long-eared bat as a threatened species and an interim 4(d) rule to provide measures that are necessary and advisable to provide for the conservation of the northern long-eared bat. At that time, we opened a 90-day public comment period on the interim rule, and we committed to publish a final 4(d) rule by December 31, 2015, and to complete review pursuant to the National Environmental Policy Act (NEPA). Previously, on January 16, 2015, we published a proposed 4(d) rule with a 60-day public comment period. Therefore, we have had two comment periods totaling 150 days on two versions of the 4(d) rule.

*Statement of legal authority for the regulatory action:* Under section 4(d) of the Act, the Secretary of the Interior has discretion to issue such regulations she deems necessary and advisable to provide for the conservation of the species. The Secretary also has the discretion to prohibit by regulation, with respect to a threatened species, any act prohibited by section 9(a)(1) of the Act.

*Summary of the major provisions of the regulatory action:* This final species-specific 4(d) rule prohibits purposeful take of northern long-eared bats throughout the species' range, except in instances of removal of northern long-eared bats from human structures, defense of human life (including public health monitoring), removal of hazardous trees for protection of human life and property, and authorized capture and handling of northern long-eared bats by individuals permitted to conduct these same activities for other bats until May 3, 2016. After May 3, 2016, individuals who wish to capture and handle northern long-eared bats for recovery purposes will need a permit pursuant to section 10(a)(1)(A) of the Act.

Incidental take resulting from otherwise lawful activities will not be prohibited in areas not yet affected by white-nose syndrome (WNS). WNS is a fungal disease affecting many hibernating U.S. bat species. Ninety- to one-hundred-percent mortality has been seen in bats affected by the disease in the eastern United States.

Take of northern long-eared bats in their hibernacula (which includes caves, mines, and other locations where bats hibernate in winter) is prohibited in areas affected by WNS, unless permitted under section 10(a)(1)(A) of the Act. Take of northern long-eared bats inside of hibernacula may include disturbing or disrupting hibernating individuals when they are present as well as the physical or other alteration of the hibernaculum's entrance or environment when bats are not present if the result of the activity will impair essential behavioral patterns, including sheltering northern long-eared bats.

For northern long-eared bats outside of hibernacula, we have established separate prohibitions from take for activities involving tree removal and activities that do not involve tree removal. Incidental take of northern long-eared bats outside of hibernacula resulting from activities other than tree removal is not prohibited. Incidental take resulting from tree removal is

prohibited if it: (1) Occurs within a 0.25 mile (0.4 kilometer) radius of known northern long-eared bat hibernacula; or (2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-meter) radius from the known maternity tree during the pup season (June 1 through July 31). Incidental take of northern long-eared bats as a result of the removal of hazardous trees for the protection of human life and property is also not prohibited.

*Peer review and public comment:* We sought comments on our proposed 4(d) rule from independent specialists to ensure that this rule is based on scientifically sound data, assumptions, and analyses. We also considered all comments and information we received during the comment periods on the proposed and interim 4(d) rules.

### **Previous Federal Actions**

Please refer to the proposed (78 FR 61046; October 2, 2013) and final (80 FR 17974; April 2, 2015) listing rules for the northern long-eared bat for a detailed description of previous Federal actions concerning this species. On January 16, 2015, we published a proposed 4(d) rule (80 FR 2371) for the northern long-eared bat and on April 2, 2015, we published an interim 4(d) rule (80 FR 17974) for this species.

### **Background**

The northern long-eared bat is a wide-ranging species that is found in a variety of forested habitats in summer and hibernates in caves, mines, and other locations in winter. WNS is the main threat to this species and has caused a precipitous decline in bat numbers (in many cases, 90–100 percent) where the disease has occurred. Declines in the numbers of northern

long-eared bats are expected to continue as WNS extends across the species' range. For more information on the northern long-eared bat, its habitat, and WNS, please refer to the October 2, 2013, proposed listing (78 FR 61046) and the April 2, 2015, final listing (80 FR 17974) rules.

The Act (16 U.S.C. 1531 *et seq.*) does not specify particular prohibitions, or exceptions to those prohibitions, for threatened species. Instead, under section 4(d) of the Act, the Secretary of the Interior has the discretion to issue such regulations as she deems necessary and advisable to provide for the conservation of such species. The Secretary also has the discretion to prohibit by regulation, with respect to any threatened wildlife species, any act prohibited under section 9(a)(1) of the Act with respect to endangered species. Exercising this discretion under section 4(d) of the Act, the Service developed general prohibitions (50 CFR 17.31) and exceptions to those prohibitions (50 CFR 17.32) under the Act that apply to most threatened wildlife species.

In addition, for threatened species, under the authority of section 4(d) of the Act, the Service may develop prohibitions and exceptions that are tailored to the specific conservation needs of the species. In such cases, some of the prohibitions and authorizations under 50 CFR 17.31 and 17.32 may be appropriate for the species and be incorporated into a separate, species-specific, rule under section 4(d) of the Act. These rules will also include provisions that are tailored to the specific conservation needs of the threatened species and may be more or less restrictive than the general provisions at 50 CFR 17.31.

## **Definitions**

This final rule uses several definitions and provisions contained in the Act and its implementing regulations.

The Act and its implementing regulations (50 CFR part 17) define take as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct.

The term “harass” (50 CFR 17.3) means 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.

The term “harm” (50 CFR 17.3) means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

“Purposeful take” includes the capture and handling of individual bats. Take in this manner includes both capture and handling to remove bats from human structures and take that is for research purposes (e.g., attaching a radiotracking device). Other purposeful take would include intentional removal of bats from hibernacula or the intentional killing or harassing of bats under any circumstance.

“Human structures” are defined as houses, garages, barns, sheds, and other buildings designed for human entry.

“Incidental take” is defined at 50 CFR 17.3 as any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, an otherwise lawful activity. Examples of incidental take (or non-purposeful take as it is sometimes referred to in this rule) include land-management actions, such as implementation of forestry practices, where bats may be harmed,

harassed, or killed as a result of those otherwise lawful actions. The actions contemplated in this rule include a wide range of actions for purposes such as right-of-way development and maintenance, forestry, land use for development unrelated to wildlife management, management of lands as habitats other than bat habitat (e.g., prairie), energy production and transmission, and other activities.

Incidental take within the context of this rule is regulated in distinct and separate manners relative to the geographic location of the activity in question. For the purposes of this rule, we have developed a map associated with the occurrence and spread of WNS. This map will be updated by the first of each month as the disease spreads throughout the range of the species and posted at <http://www.fws.gov/midwest/Endangered>.

“Known hibernacula” are defined as locations where northern long-eared bats have been detected during hibernation or at the entrance during fall swarming or spring emergence.

“Known, occupied maternity roost trees” are defined as trees that have had female northern long-eared bats or juvenile bats tracked to them or the presence of females or juveniles is known as a result of other methods.

“Tree removal” is defined as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.

## **WNS Zone**



The WNS zone, as mapped, provides the boundary for the distinction of implementation of this rule. To estimate the area impacted by WNS, we have used data on the presence of the fungus causing the disease, called *Pseudogymnoascus destructans*, or *Pd*, or evidence of the presence of the disease (WNS) in the bats within a hibernaculum. Our final listing determination provides additional information concerning *Pd* and WNS (80 FR 17993; April 2, 2015). Confirmed evidence of infection at a location within a county is mapped as a positive detection for the entire county. In addition, we have added a 150-mile (241-kilometer (km)) buffer to the *Pd*-positive county line to account for the spread of the fungus from one year to the next. In instances where the 150-mile (241-km) buffer line bisects a county, the entire county is included in the WNS zone.

Over the past 5 years, an average of 96 percent of the new *Pd* or WNS counties in any single year were within 150 miles (241 km) of a county that was *Pd*- or WNS-positive in a prior year (Service 2015, unpublished data). *Pd* is generally present for a year or two before symptoms of WNS appear and mortality of bats begins to occur. Given the relatively short amount of time between detection and population-level impacts, it is important that we protect those buffer areas and the bats within them with the same regulations as those in known WNS positive counties. Therefore, the positive counties, plus a buffer around them, are the basis for the WNS zone map.

### **Summary Comparison of the Interim 4(d) Rule and This Final Rule**

Based on information we received in comment periods on the proposed and interim 4(d) rules (see **Summary of Comments and Recommendations** below), we revised the provisions of the interim 4(d) rule to better reflect the disproportionate effect that the disease, WNS, has had

and will continue to have, we believe, on northern long-eared bat populations.

In the interim rule, we used the term “white-nose syndrome buffer zone” to identify “the portion of the range of the northern long-eared bat” within 150 miles (241 km) of the boundaries of U.S. counties or Canadian districts where the fungus *Pseudogymnoascus destructans* (*Pd*) or WNS had been detected. For purposes of clarification, in this final rule, we have changed the term “white-nose syndrome buffer zone” to “white-nose syndrome zone” or “WNS zone.” And we state that the “WNS zone” is “the set of counties within the range of the northern long-eared bat” within 150 miles (241 km) of the boundaries of U.S. counties or Canadian districts where *Pd* or WNS had been detected.

The interim 4(d) rule generally applies the prohibitions of 50 CFR 17.31 and 17.32 to the northern long-eared bat, which means that the interim rule, among other things, prohibits the purposeful take of northern long-eared bats throughout the species’ range, but the interim rule includes exceptions to the purposeful take prohibition. The exceptions for purposeful take are: (1) In instances of removal of northern long-eared bats from human structures (if actions comply with all applicable State regulations); and (2) for authorized capture, handling, and related activities of northern long-eared bats by individuals permitted to conduct these same activities for other bat species until May 3, 2016. Under the interim rule, incidental take is not prohibited outside the WNS zone if the incidental take results from otherwise lawful activities. Inside the WNS zone, there are exceptions for incidental take for the following activities, subject to certain conditions: Implementation of forest management; maintenance and expansion of existing rights-of-way and transmission corridors; prairie management; minimal tree removal; and removal of hazardous trees for the protection of human life and property.

This final 4(d) rule does not generally apply the prohibitions of 50 CFR 17.31 to the

northern long-eared bat. This rule continues to prohibit purposeful take of northern long-eared bats throughout the species' range, except in certain cases, including instances of removal of northern long-eared bats from human structures and for authorized capture, handling, and related activities of northern long-eared bats by individuals permitted to conduct these same activities for other bat species until May 3, 2016. After May 3, 2016, a permit pursuant to section 10(a)(1)(A) of the Act is required for the capture and handling of northern long-eared bats. Under this rule, incidental take is still not prohibited outside the WNS zone.

We have revised the interim rule's language concerning incidental take inside the WNS zone. Under this final rule, within the WNS zone, incidental take is prohibited only if: (1) Actions result in the incidental take of northern long-eared bats in hibernacula; (2) actions result in the incidental take of northern long-eared bats by altering a known hibernaculum's entrance or interior environment if the alteration impairs an essential behavioral pattern, including sheltering northern long-eared bats; or (3) tree-removal activities result in the incidental take of northern long-eared bats when the activity either occurs within 0.25 mile (0.4 kilometer) of a known hibernaculum, or cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-meter) radius from the maternity roost tree, during the pup season (June 1 through July 31). Take of northern long-eared bats in their hibernacula may include disturbing or disrupting hibernating individuals when they are in the hibernacula. Take of northern long-eared bat also includes the physical or other alteration of the hibernaculum's entrance or environment when bats are not present if the result of the activity will impair essential behavioral patterns, including sheltering northern long-eared bats. Any take resulting from otherwise lawful activities outside known hibernacula, other than tree removal, is not prohibited, as long as it does not change the bat's access to or quality of a known hibernaculum for the species. This final rule

makes these revisions because, in areas impacted by WNS, the most important conservation actions for the northern long-eared bat are to protect bats in hibernacula and maternity roost trees, and to continue to monitor populations in summer habitat (e.g., identify where the species continues to survive after the detection of *Pd* or WNS and determine the factors influencing its resilience), while developing methods to abate WNS as quickly as possible.

Under this rule, we individually set forth prohibitions on possession and other acts with unlawfully taken northern long-eared bats, and on import and export of northern long-eared bats. These prohibitions were included in the interim 4(d) through the general application of the prohibitions of 50 CFR 17.31 to the northern long-eared bat. Under this rule, take of the northern long-eared bat is also not prohibited for the following: Removal of hazardous trees for protection of human life and property; take in defense of life; and take by an employee or agent of the Service, of the National Marine Fisheries Service, or of a State conservation agency that is operating a conservation program pursuant to the terms of a cooperative agreement with the Service. Regarding these three exceptions, take in defense of life was not included in the interim 4(d) rule, but the other two exceptions were, either through the general application of 50 CFR 17.31 or through a specific exception included in the interim 4(d) rule.

### **Provisions of the 4(d) Rule for the Northern Long-eared Bat**

For a threatened species, the Act does not specify prohibitions, or exceptions to those prohibitions, relative to take of the species. Instead, under Section 4(d) of the Act, the Secretary has discretion to issue regulations deemed to be necessary and advisable for the conservation of a threatened species. By regulation, the Secretary has determined that take prohibitions for endangered species are also applicable to threatened species unless a special rule is issued under

section 4(d) for a particular threatened species. Under this 4(d) rule, we have applied several of the prohibitions specified in the Act for endangered species and the provisions of 50 CFR 17.32 (permit regulations) to the northern long-eared bat as described below.

For this 4(d) rule, the Service has completed a biological opinion under Section 7 of the Act on our action of finalizing this rule. In addition, the biological opinion provides for streamlined consultation for all federal agency actions that may affect the northern long-eared bat; therefore, the scope of the biological opinion included the finalization and implementation of the 4(d) rule. The biological opinion resulted in a non-jeopardy determination. Provided Federal action agencies follow the criteria outlined in this rule and implement the streamlined consultation process outlined in the biological opinion, their section 7 consultation requirements will be met. If unable to follow these criteria, standard section 7 procedures will apply.

### **Exceptions to the Purposeful Take Prohibition**

We have exempted the purposeful take of northern long-eared bats related to the protection of human health and safety. A very small percentage of bats may be infected with rabies or other diseases that can be transmissible to humans. When there is the possibility that a person has been exposed to a diseased bat, it is important that they coordinate with medical professionals (e.g., doctor, local health department) to determine the appropriate response. When warranted to protect human health and safety, we have exempted from the take prohibition of northern long-eared bats in defense of one's own life or the lives of others, including for public health monitoring purposes (i.e., collecting a bat after human exposure and submitting for disease testing).

We have also exempted the purposeful take of northern long-eared bats related to removing the species from human structures, but only if the actions comply with all applicable State regulations. Northern long-eared bats have occasionally been documented roosting in human-made structures, such as houses, barns, pavilions, sheds, cabins, and bat houses (Mumford and Cope 1964, p. 480; Barbour and Davis 1969, p. 77; Cope and Humphrey 1972, p. 9; Amelon and Burhans 2006, p. 72; Whitaker and Mumford 2009, p. 209; Timpone et al. 2010, p. 119; Joe Kath 2013, pers. comm.). We conclude that the overall impact of bat removal from human structures is not expected to adversely affect conservation and recovery efforts for the species. In addition, we provide the following recommendations:

- Minimize use of pesticides (e.g., rodenticides) and avoid use of sticky traps as part of bat evictions/exclusions.
- Conduct exclusions during spring or fall unless there is a perceived public health concern from bats present during summer and/or winter.
- Contact a nuisance wildlife specialist for humane exclusion techniques.

We have exempted the purposeful take that results from actions relating to capture, handling, and related activities for northern long-eared bats by individuals permitted to conduct these same activities for other species of bats until May 3, 2016. Under the interim rule, for a period of 1 year from the interim rule's effective date (May 3, 2016), we had exempted the purposeful take that is caused by the authorized capture, handling, and related activities (e.g., attachment of radio transmitters for tracking) of northern long-eared bats by individuals permitted to conduct these same activities for other bats. We have continued the exemption through the expiration date established by the interim rule. After May 3, 2016, a permit pursuant

to section 10(a)(1)(A) of the Act is required for the capture and handling of northern long-eared bats, except that associated with bat removal from human structures. We determined that it was important to regulate the intentional capture and handling of northern long-eared bats through the Act's scientific permit process to help ensure that the surveyor's qualifications and methods used are adequate to protect individual bats and provide reliable survey results.

### **Incidental Take Outside of the WNS Zone Not Prohibited**

Incidental take in areas that have not yet been impacted by WNS (i.e., in areas outside the WNS zone) is not prohibited by this final rule. We believe the level of take associated with ongoing land management and development actions, including all actions that may incidentally take the northern long-eared bat, do not individually or cumulatively affect healthy bat populations. As noted in our decision to list the northern long-eared bat as a threatened species, WNS is the primary cause of the species' decline, and we would not have listed the northern long-eared bat if not for the impact of WNS. In addition, we conclude that regulating incidental take in areas not affected by WNS is not expected to change the rate at which WNS progresses across the range of the species. In other words, regulating incidental take outside the WNS zone will not influence the future impact of the disease throughout the species' range or the status of the species. For these reasons, we have concluded that the prohibition of incidental take outside of the WNS zone is not necessary and advisable for the protection and recovery of the species. Incidental take, therefore, is not prohibited outside of the WNS zone.

### **Prohibitions and Exemptions Related to Incidental Take Inside the WNS Zone**

Our approach to designing the regulatory provisions for the northern long-eared bat inside the WNS zone reflects the significant role WNS plays as the central threat affecting the species. For other threatened species, habitat loss or other limiting factors usually contribute to the decline of a species. In these situations, regulations are needed to address either the habitat loss or the other limiting factors.

The northern long-eared bat is not habitat-limited and has demonstrated a great deal of plasticity within its environment (e.g., living in highly fragmented forest habitats to contiguous forest blocks from the southern United States to Canada's Yukon Territory) in the absence of WNS. For the northern long-eared bat, land management and development actions that have been on-going for centuries (e.g., forest management, forest conversion) have not been shown to have significant negative impacts to northern long-eared bat populations.

As WNS continues to move across the range of the species, northern long-eared bat populations have declined and will continue to decline. Declines in northern long-eared bat populations in WNS-positive regions have been significant, and northern long-eared bats are now relatively rare on those landscapes. As populations decline as a result of WNS, the chances of any particular activity affecting northern long-eared bats becomes more remote. Therefore, in the WNS zone, we focused the regulatory provisions on sensitive life stages at known, occupied maternity roost trees and hibernacula.

We developed regulations that provide some level of protection to the species where it persists in the face of WNS. However, we have provided flexibility so that the regulated public will seek to conserve the species and foster its recovery at sites where it has been lost should tools to address WNS become available or where the species shows signs of resilience. Further,



because we believe recovery of this species will require many partnerships across the species' range, minimizing regulatory impacts on activities inconsequential to northern long-eared bat populations provides an important step in building partnerships for the species' recovery.

The northern long-eared bat is a forest-dependent species, typically roosting in trees. In establishing regulations that are necessary and advisable for the conservation of the species, we have tailored species-specific regulatory provisions toward potential impacts to trees. For the incidental take of bats outside of hibernacula, we have specifically established two sets of provisions: the first set applies to activities that do not involve tree removal and the second applies to activities that do involve tree removal. By tree removal, we mean cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation that is likely to be used by the northern long-eared bat.

In this final 4(d) rule, we have limited the prohibition of incidental take of northern long-eared bats to specific circumstances. This does not mean that all activities that could result in the incidental take of the northern long-eared bat will do so. The relative exposure of the species and the species response to a potential stressor are critical considerations in evaluating the potential for incidental take to occur. For example, under the discussion of tree removal, below, we describe what is prohibited by the final 4(d) rule in the WNS zone and provide examples of how other activities could be implemented in a way that avoids the potential for incidental take.

## Hibernacula

Northern long-eared bats predominantly overwinter in hibernacula that include caves and abandoned mines. For additional details about the characteristics of the hibernacula selected by

northern long-eared bats, see the final listing determination (80 FR 17974; April 2, 2015).

Northern long-eared bats have shown a high degree of philopatry (using the same site over multiple years) for a hibernaculum (Pearson 1962, p. 30), although they may not return to the same hibernaculum in successive seasons (Caceres and Barclay 2000, p. 2).

Hibernacula are so significant to the northern long-eared bat that they are considered a primary driver in the species distribution (e.g., Kurta 1982, p. 302). Northern long-eared bats are documented in hibernacula in 29 of the 37 states in the species' range. Other States within the species' range have no known hibernacula, which may reflect that no suitable hibernacula are present, a limited survey effort, or the northern long-eared bat's use of sites not previously identified as suitable.

In general, bats select hibernacula because they have characteristics that allow the bats to meet specific life-cycle requirements. Factors influencing a hibernaculum's suitability include its physical structure (e.g., openings, interior space, depth), air circulation, temperature profile, and location relative to foraging sites (Tuttle and Stevenson 1978, pp. 108-121).

Overwinter survival can be a particularly challenging period in the northern long-eared bat's life cycle. Hibernating bats appear to balance their physical condition (e.g., fat reserves upon entering hibernation), hibernacula characteristics (e.g., temperature variation, humidity), social resources (e.g., roosting singly or in groups), and metabolic condition (i.e., degree of torpor, which is the state of mental or physical inactivity) to meet overwinter survival needs. The overwinter physiological needs of the species include maintaining body temperature above freezing, minimizing water loss, meeting energetic needs until prey again become available, and responding to disturbance or disease. Because of this complex interplay of hibernacula

characteristics and bat physiology, changes to hibernacula can significantly impact their suitability as well as the survival of any hibernating bats.

In general, northern long-eared bats arrive at hibernacula in August or September, enter hibernation in October and November, and emerge from the hibernacula in March or April (Caire et al. 1979, p. 405; Whitaker and Hamilton 1998, p. 100; Amelon and Burhans 2006, p. 72). However, hibernation may begin as early as August (Whitaker and Rissler 1992b, p. 56). Northern long-eared bats have been observed moving among hibernacula throughout the winter (Griffin 1940a, p. 185; Whitaker and Rissler 1992a, p. 131; Caceres and Barclay 2000, pp. 2–3). Whitaker and Mumford (2009, p. 210) found that this species flies in and out of some mines and caves in southern Indiana throughout the winter.

Human disturbance of hibernating bats has long been considered a threat to cave-hibernating bat species like the northern long-eared bat. Modifications to bat hibernacula can affect the microclimate (e.g., temperature, humidity) of the subterranean habitat, and thus the ability of the cave or mine to support hibernating bats, including the northern long-eared bat. Anthropogenic modifications to cave and mine entrances may not only alter flight characteristics and access (Spanjer and Fenton 2005, p. 1110), but may change airflow and alter internal microclimates of the caves and mines, eliminating their utility as hibernacula (Service 2007, p. 71). For example, Richter et al. (1993, p. 409) attributed the decline in the number of Indiana bats at Wyandotte Cave, Indiana (which harbors one of the largest known population of hibernating Indiana bats (*Myotis sodalis*)), to an increase in the cave's temperature resulting from restricted airflow caused by a stone wall erected at the cave's entrance. In addition to the direct access modifications to caves discussed above, debris buildup at entrances or on cave gates can also significantly modify the cave or mine site characteristics by restricting airflow and the

course of natural water flow. Water-flow restriction could lead to flooding, thus drowning hibernating bats (Amelon and Burhans 2006, p. 72). Thomas (1995, p. 942) used infrared detectors to measure flight activity in hibernating northern long-eared bats and little brown bats in response to the presence of a human observer. Flight activity significantly increased with the presence of an observer, beginning within 30 minutes of the visit, peaking 1.0 to 7.5 hours later, and remaining significantly above baseline level for 2.5 to 8.5 hours. These results suggest that hibernating bats are sensitive to non-tactile stimuli and arouse and fly following human visits. Boyles and Brack's (2009) model predicted that the survival rate of hibernating little brown bats drops from 96 percent to 73 percent with human visitations to hibernacula. Prior to the outbreak of WNS, Amelon and Burhans (2006, p. 73) indicated that "the widespread recreational use of caves and indirect or direct disturbance by humans during the hibernation period pose the greatest known threat to [the northern long-eared bat]."

Hibernacula and surrounding forest habitats play important roles in the life cycle of the northern long-eared bat beyond the time when the bats are overwintering. In both the early spring and fall, the hibernacula and surrounding forested habitats are the focus of bat activity in two separate periods referred to as "spring staging" and "fall swarming."

During the spring staging, bats begin to gradually emerge from hibernation, exit the hibernacula to feed, but re-enter the same or alternative hibernacula to resume daily bouts of torpor (Whitaker and Hamilton 1998, p. 100). The staging period for the northern long-eared bat is likely short in duration (Whitaker and Hamilton 1998, p. 100; Caire et al. 1979, p. 405). In Missouri, Caire et al. (1979, p. 405) found that northern long-eared bats moved into the staging period in mid-March through early May. In Michigan, Kurta et al. (1997, p. 478) determined

that by early May, two-thirds of the *Myotis* species, including the northern long-eared bat, had dispersed to summer habitat.

Beginning in mid to late summer, after their young have gained some level of independence, northern long-eared bats exhibit a behavior near hibernacula referred to as swarming. Both male and female northern long-eared bats are present at swarming sites (often with other species of bats). During this period, heightened activity and congregation of transient bats around caves and mines is observed, followed later by increased sexual activity and bouts of torpor prior to winter hibernation (Fenton 1969, p. 601; Parsons et al. 2003, pp. 63–64; Davis and Hitchcock 1965, pp. 304–306). The purposes of swarming behavior may include introduction of juveniles to potential hibernacula, copulation, and stopping over sites on migratory pathways between summer and winter regions (Kurta et al. 1997, p. 479; Parsons et al. 2003, p. 64; Lowe 2012, p. 51; Randall and Broders 2014, pp. 109–110). The swarming season for some species of the genus *Myotis* begins shortly after females and young depart maternity colonies (Fenton 1969, p. 601). For the northern long-eared bat, the swarming period may occur between July and early October, depending on latitude within the species' range (Fenton 1969, p. 598; Kurta et al. 1997, p. 479; Lowe 2012, p. 86; Hall and Brenner 1968, p. 780; Caire et al. 1979, p. 405). The northern long-eared bat may investigate several cave or mine openings during the transient portion of the swarming period, and some individuals may use these areas as temporary daytime roosts or may roost in forest habitat adjacent these sites (Kurta et al. 1997, pp. 479, 483; Lowe 2012, p. 51). Little is known about northern long-eared bat roost selection outside of caves and mines during the swarming period (Lowe 2012, p. 6).

Based on the importance of hibernacula to northern long-eared bats, take is prohibited in and around the hibernacula within the WNS zone, including activities that may alter the

hibernacula at any time of the year. Further, we have determined that when the conservation measures for the northern long-eared bat included in this final 4(d) rule are applied to areas within 0.25 mile (0.4 km) of the hibernacula, the potential for negative impacts to individuals is significantly reduced.

### **Activities Not Involving Tree Removal Are Not Prohibited**

Under this final 4(d) rule, activities within the WNS zone not involving tree removal are not prohibited provided they do not result in the incidental take of northern long eared bats in hibernacula or otherwise impair essential behavioral patterns at known hibernacula. In our final listing determination (80 FR 17974; April 2, 2015), we identified a number of activities not involving tree removal that may have direct or indirect effects on northern long-eared bats. These activities have the potential to cause the incidental take of northern long-eared bats and include activities such as the operation of utility-scale wind-energy turbines, application of pesticides, and prescribed fire (this is not an exhaustive list; it is merely representative of activities that may result in take of northern long-eared bats).

At the time of our listing determination and the interim 4(d) rule (80 FR 17974; April 2, 2015), we stated that we had no compelling evidence that these activities would have significant effects on the northern long-eared bat when considered alone. However, we thought these factors may have a cumulative effect on this species when considered in concert with WNS. After additional consideration and our review of public comments received on the proposed and interim 4(d) rules, we did not find compelling evidence that regulating these potential cumulative effects would result in significant impacts at the species level. Effects to relatively small

numbers of individuals are not anticipated to impair conservation efforts or the recovery potential of the species.

### Wind-energy Facilities

Wind-energy facilities are found scattered throughout the range of the northern long-eared bat, and many new facilities are anticipated to be constructed over the next 15 years (United States Department of Energy 2008, unpaginated). We reviewed post-construction mortality monitoring studies conducted at various times from 1998 through 2014 at 81 unique operating wind-energy facilities in the range of the northern long-eared bat in the United States and Canada (Service 2015, unpublished data). In these studies, 43 northern long-eared bat mortalities were documented at 19 of the sites. The northern long-eared bat fatalities comprised less than 1 percent of all documented bat mortalities. In most cases, the level of effort for most post-construction monitoring studies is not sufficient to confidently exclude the possibility that infrequent fatalities are being missed, but finding none or only small numbers over many sites and years can suggest the order of what may be missed. Thus while sustained mortality at particular facilities could potentially cause declines in local populations of the northern long-eared bat, if that is in fact occurring, it does not appear to be wide-spread at least when compared to other bat species which are nearly always found in fatality monitoring at wind facilities. At those sites with a northern long-eared bat fatality where multiple years of monitoring data were also available for review (n=12), fatalities of northern long-eared bats were only reported in multiple years at two of the sites and for the other 10 sites only a single fatality was reported over multiple years of monitoring. For example, one site reported one northern long-eared bat fatality in 2008, but none in 2009, 2010, or 2011. Further, the number of fatalities of northern

long-eared bats found at any given site has been relatively small (e.g., most often a single fatality was found, but in all cases no more than six), and typically most sites (62 out of 81) found no northern long-eared bat fatalities at all. There is a great deal of uncertainty related to extrapolating these numbers to generate an estimate of total northern long-eared bat mortality at wind-energy facilities due to variability in post-construction survey effort and methodology (Huso and Dalthorp 2014, pp. 546–547). Further, bat mortality can vary between years and between sites, and detected carcasses are only a small percentage of total bat mortalities. However, even with those limitations, northern long-eared bats were rarely detected as mortalities, even when they were known to be common on the landscape around the wind-energy facility.

We recognize that several wind energy facilities have completed, or are currently working to complete, habitat conservation plans (HCPs; permit pursuant to section 10(a)(1)(B) of the Act) for other listed bat species where the number of fatalities reported is also very low. When the take of an endangered species is reasonably certain to occur, we recommend that a project proponent secure incidental take coverage pursuant to section 10 of the Act. Over the operational life of a wind energy facility (typically anticipated to be at least 20 to 30 years), the take of listed species may be reasonably certain to occur, even if the level of mortalities annually is anticipated to be quite low. However, this does not mean that prohibiting that incidental take in the case of a threatened species is necessary and advisable for the conservation of such a species. For the northern long-eared bat, we do not anticipate that the fatalities that will be caused by wind energy would meaningfully change the species' status in the foreseeable future.

In addition, the wind industry has recently published best management practices establishing voluntary operating protocols, which they expect “to reduce impacts to bats from



operating wind turbines by as much as 30 percent” (AWEA 2015, unpaginated). Given the large numbers of other bat species impacted by wind energy (Hein et al. 2013, p. 12) and the economic importance of bats in controlling agricultural or forest pest species (Boyles et al. 2011, pp. 41-42; Maine and Boyles, 2015, p. 12442), we anticipate that these new standards will be adopted by the wind-energy sector and ultimately required by wind-energy-siting regulators at State and local levels. We recommend that wind facilities adopt these operating protocols.

Our primary reason for not establishing regulatory criteria for wind-energy facilities is that the best available information does not indicate significant impacts to northern long-eared bats from such operations. We conclude that there may be adverse effects posed by wind-energy development to individual northern long-eared bats; however, there is no evidence suggesting that effects from wind-energy development has led to significant declines in this species, nor is there evidence that regulating the incidental take that is occurring would meaningfully change the conservation or recovery potential of the species in the face of WNS. Furthermore, with the adoption by wind-energy facilities of the new voluntary standards, risk to all bats, including the northern long-eared bat, should be further reduced.

#### Environmental Contaminants

Environmental contaminants, in particular insecticides, pesticides, and inorganic contaminants, such as mercury and lead, may also have detrimental effects on individual northern long-eared bats. However, across the wide-range of the species, it is unclear whether environmental contaminants, regardless of the source (e.g., pesticide applications, industrial waste-water), would be expected to cause population-level impacts to the northern long-eared bat either independently or in concert with WNS. Historically, the most intensively-studied

contaminants in bats have been the organochlorine insecticides (OCs; O'Shea and Clark 2002, p. 238). During wide-spread use of OCs in the 1960s and 1970s, lethal pesticide poisoning was demonstrated in gray bats (*Myotis grisescens*), Mexican free-tailed bats (*Tadarida brasiliensis*), and Indiana bats (*Myotis sodalis*) (O'Shea and Clark 2002, p. 239, 242). Since the phasing out of OCs in the United States, the effects of chemical contaminants on bats have been less well studied (O'Shea and Johnston 2009, p. 501); however, a few recent studies have demonstrated the accumulation of potentially toxic elements and chemicals in North American bats. For instance, Yates et al. (2014, pp. 48-49) quantified total mercury (Hg) levels in 1,481 fur samples and 681 blood samples from 10 bat species captured across 8 northeastern U.S. States and detected the highest Hg levels in tri-colored bats (*Perimyotis subflavus*), little brown bats (*Myotis lucifugus*) and northern long-eared bats. More recently, Secord et al. (2015) analyzed tissue samples from 48 northeastern bat carcasses of four species, including northern long-eared bats, and detected accumulations of several contaminants of emerging concern (CECs), including most commonly polybrominated diphenyl ethers (PDBEs; 100 percent of samples), salicylic acid (81 percent), thiabendazole (50 percent), and caffeine (23 percent). Digoxigenin, ibuprofen, warfarin, penicillin V, testosterone, and N,N-diethyl-meta-toluamide (DEET) were also present in at least 15 percent of samples. Compounds with the highest concentrations were bisphenol A (397 ng/g), PDBE congeners 28, 47, 99, 100, 153, and 154 (83.5 ng/g), triclosan (71.3 ng/g), caffeine (68.3 ng/g), salicylic acid (66.4 ng/g), warfarin (57.6 ng/g), sulfathiazole (55.8 ng/g), tris(1-chloro-2-propyl) phosphate (53.8 ng/g), and DEET (37.2 ng/g).

Although there is the potential for direct and indirect contaminant-related effects, mortality or other population-level impacts have not been reported for northern long-eared bats.

Long-term sublethal effects of environmental contaminants on bats are largely unknown; however, environmentally relevant exposure levels of various contaminants have been shown to impair nervous system, endocrine, and reproductive functioning in other wildlife (Yates et al. 2014, p. 52; Köhler and Triebkorn 2013, p. 761; Colborn et al. 1993, p. 378). Moreover, bats' high metabolic rates, longevity, insectivorous diet, migration-hibernation patterns of fat deposition and depletion, and immune impairment during hibernation, along with potentially exacerbating effects of WNS, likely increase their risk of exposure to and accumulation of environmental toxins (Secord et al. 2015, p. 411, Yates et al. 2014, p. 46, Geluso et al. 1976, p. 184; Quarles 2013, p. 4, O'Shea and Clark 2002, p. 238). Following WNS-caused population declines in northeastern little brown bats, Kannan et al. (2010) investigated whether exposure to toxic contaminants could be a contributing factor in WNS-related mortality. Although high concentrations of polychlorinated biphenyls (PCBs), PBDEs, polybrominated biphenyls (PBBs), and chlordanes were found in the fat tissues of WNS-infected bats in New York, relative concentrations in bats from an uninfected population in Kentucky were also high (Kannan et al. 2010, p. 615). The authors concluded that the study's sample sizes were too small to accurately associate contaminant exposure with the effects of WNS in bats (Kannan et al. 2010, p. 618), but argued that additional research is needed. Despite the lack of knowledge on the effects of various contaminants on northern long-eared bats, we recognize the potential for direct and indirect consequences. However, contaminant-related mortality has not been reported for northern long-eared bats. Additionally, Ingersoll (2013, p. 9) suggested it was unclear what other threats or combination of threats other than WNS (e.g., changes to critical roosting or foraging habitat, collisions, effects from chemicals) may be responsible for recent bat declines.

## Prescribed Fire

Prescribed fire is a useful forest-management tool. However, there are potential negative effects from prescribed burning, including direct mortality to the northern long-eared bat. Therefore, when using prescribed burning as a management tool, fire frequency, timing, location, and intensity all need to be considered to lower the risk of incidental take of bats. Carter et al. (2002, pp. 140-141) suggested that the risk of direct injury and mortality to southeastern forest-dwelling bats resulting from summer prescribed fire is generally low. During warm temperatures, bats are able to arouse from short-term torpor quickly. Northern long-eared bats use multiple roosts, switch roost trees often, and could likely use alternative roosts in unburned areas, should fire destroy the current roost. Non-volant pups are likely the most vulnerable to death and injury from fire. Although most eastern bat species are able to carry their young for some time after they are born (Davis 1970, pp. 187-189), the degree to which this behavior would allow females to relocate their young if fire threatens the nursery roost is unknown. The potential for death or injury resulting from prescribed burning depends largely on site-specific circumstances, e.g., fire intensity near the maternity roost tree and the height above ground of pups in the maternity roost tree. Not all fires through maternity roosting areas will kill or injure all pups present.

Bats are known to take advantage of fire-killed snags and continue roosting in burned areas. Boyles and Aubrey (2006, pp. 111-112) found that, after years of fire suppression, initial burning created abundant snags, which evening bats (*Nycticeius humeralis*) used extensively for roosting. Johnson et al. (2010, pp. 115) found that after burning, male Indiana bats roosted primarily in fire-killed maples. In the Daniel Boone National Forest, Lacki et al. (2009, p. 5) radio-tracked adult female northern long-eared bats before and after prescribed fire, finding more

roosts (74.3 percent) in burned habitats than in unburned habitats. Burning may create more suitable snags for roosting through exfoliation of bark (Johnson et al. 2009a, p. 240), mimicking trees in the appropriate decay stage for roosting bats. In addition to creating snags and live trees with roost features, prescribed fire may enhance the suitability of trees as roosts by reducing adjacent forest clutter. Perry et al. (2007, p. 162) found that five of six species, including northern long-eared bat, roosted disproportionately in stands that were thinned and burned 1 to 4 years prior but that still retained large overstory trees.

The use of prescribed fire, where warranted, will, in any given year, impact only a small proportion of the northern long-eared bat's range during the bats active period. In addition, there are substantial benefits of prescribed fire for maintaining forest ecosystems. For example, the U.S. Forest Service's Southern Region manages approximately 10.9 million acres (4.4 million hectares (ha)) of land, and the maximum estimate of acres where prescribed fire is employed annually during the active period of northern-long eared bats (April through October) was 320,577 acres (129,732 ha), which is less than 3 percent of the National Forest regional lands. Similarly, the Forest Service's Eastern Region manages 15 Forests in 13 States that include about 12.2 million acres (4.88 million ha), of which 11.3 million acres (4.52 million ha) are forested habitat. The U.S. Forest Service anticipates applying prescribed burning to 107,684 acres (43,073 ha) or about 1percent of the forested habitat across the eastern region annually. In addition, only 17,342 acres (6937 ha) (i.e., 0.15 percent of the forested habitat) of prescribed burning annually is anticipated to occur during the non-volant period on the eastern forests.

Further, there are substantial benefits of prescribed fire for maintaining forest ecosystems, such as providing the successional and disturbance processes that renew the supply

of suitable roost trees (Silvis et. al. 2012, pp.6-7), as well as helping to ensure a varied and reliable prey base (Dodd et. al. 2012, p. 269). There is no evidence that prescribed fire has led to population-level declines in this species nor is there evidence that regulating the incidental take that might occur would meaningfully change the conservation status or recovery potential of the species in the face of WNS.

### **Hazardous Tree Removal Is Not Prohibited**

Under this final 4(d) rule, incidental take that is caused by removal and management of hazardous trees is not prohibited. The removal of these hazardous trees may be widely dispersed, but limited, and should result in very minimal incidental take of northern long-eared bats. We recommend, however, that removal of hazardous trees be done during the winter, wherever possible, when these trees will not be occupied by northern long-eared bats. We conclude that the overall impact of removing hazardous trees is not expected to adversely affect conservation and recovery efforts for the species.

### **Activities Involving Tree Removal**

We issued the interim species-specific rule under section 4(d) of the Act in recognition that WNS is the primary threat to the species' continued existence. We further recognized that all other (non-WNS) threats cumulatively were not impacting the species at the population level. Therefore, we apply the take prohibitions only to activities that we have determined may impact the species in its most vulnerable life stages, allowing for management flexibility and a limited regulatory burden.

In this final 4(d) rule, we have determined that the conservation of the northern long-eared bat is best served by limiting the prohibitions to the most vulnerable life stages of the northern long-eared bat (i.e., while in hibernacula or in maternity roost trees) within the WNS zone and to activities, tree removal in particular, that are most likely to affect the species. We have also revised some of the conservation measures. To further simplify the regulation, we have established separate prohibitions for activities involving tree removal and those that do not involve tree removal. Within the WNS zone incidental take outside of hibernacula that results from tree removal is only prohibited when it (1) Occurs within 0.25 miles (0.4 km) of known northern long-eared bat hibernacula; or (2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-meter) radius from the known occupied maternity trees, during the pup season (June 1 through July 31).

## Forest Management

Forest management maintains forest habitat on the landscape, and the impacts from management activities are, for the most part, temporary in nature. Forest 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 specified goals and objectives (Society of American Foresters, [http://dictionaryofforestry.org/dict/term/forest\\_management](http://dictionaryofforestry.org/dict/term/forest_management)). It includes a broad range of silvicultural practices and this discussion specifically addresses tree-removal practices (e.g., timber harvest) associated with forest management. Timber harvesting includes a wide variety of practices from selected removal of individual trees to clearcutting. Impacts to northern long-

eared bats from forest management would be expected to range from positive (e.g., maintaining or increasing suitable roosting and foraging habitat within northern long-eared bat home ranges) to neutral (e.g., minor amounts of forest removal, forest management in areas outside northern long-eared bat summer home ranges, forest management away from hibernacula) to negative (e.g., death of adult females or pups or both resulting from the removal of maternity roost trees).

The best available data indicate that the northern long-eared bat shows a varied degree of sensitivity to timber-harvesting practices. For example, Menzel et al. (2002, p. 112) found northern long-eared bats roosting in intensively managed stands in West Virginia, indicating that there were sufficient suitable roosts (primarily snags) remaining for their use. At the same study site, Owen et al. (2002, p. 4) concluded that northern long-eared bats roosted in areas with abundant snags, and that in intensively managed forests in the central Appalachians, roost availability was not a limiting factor. Northern long-eared bats often chose black locust and black cherry as roost trees, which were quite abundant and often regenerate quickly after disturbance (e.g., timber harvest). Similarly, Perry and Thill (2007, p. 222) tracked northern long-eared bats in central Arkansas and found roosts were located in eight forest classes with 89 percent occurring in three classes of mixed pine-hardwood forest. The three classes of mixed pine-hardwood forest that supported the majority of the roosts were partially harvested/thinned, unharvested (50 to 99 years old), and group-selection harvested (Perry and Thill 2007, pp. 223–224).

Certain levels of timber harvest may result in canopy openings, which could result in more rapid development of young bats. In central Arkansas, Perry and Thill (2007, pp. 223–224) found female bat roosts were more often located in areas with partial harvesting than males, with more male roosts (42 percent) in unharvested stands than female roosts (24 percent). They



postulated that females roosted in relatively more open forest conditions because they may receive greater solar radiation, which may increase developmental rates of young or permit young bats a greater opportunity to conduct successful initial flights (Perry and Thill 2007, p. 224). Cryan et al. (2001, p. 49) found several reproductive and non-reproductive female northern long-eared bat roost areas in recently harvested (less than 5 years) stands in the Black Hills of South Dakota in which snags and small stems (diameter at breast height (dbh)) of 2 to 6 inches (5 to 15 centimeters) were the only trees left standing; however, the largest colony (n=41) was found in a mature forest stand that had not been harvested in more than 50 years.

Forest size and continuity are also factors that define the quality of habitat for roost sites for northern long-eared bats. Lacki and Schwierjohann (2001, p. 487) stated that silvicultural practices could meet both male and female roosting requirements by maintaining large-diameter snags, while allowing for regeneration of forests. Henderson et al. (2008, p. 1825) also found that forest fragmentation affects northern long-eared bats at different scales based on sex; females require a larger unfragmented area with a large number of suitable roost trees to support a colony, whereas males are able to use smaller, more fragmented areas. Henderson and Broders (2008, pp. 959–960) examined how female northern long-eared bats use the forest-agricultural landscape on Prince Edward Island, Canada, and found that bats were limited in their mobility and activities are constrained when suitable forest is limited. However, they also found that bats in a relatively fragmented area used a building for colony roosting, which suggests an alternative for a colony to persist in an area with fewer available roost trees.

In addition to impacts on roost sites, we considered effects of forest-management practices on foraging and traveling behaviors of northern long-eared bats. In southeastern Missouri, the northern long-eared bat showed a preference for contiguous tracts of forest cover

(rather than fragmented or wide open landscapes) for foraging or traveling, and different forest types interspersed on the landscape increased likelihood of occupancy (Yates and Muzika 2006, p. 1245). Similarly, in West Virginia, female northern long-eared bats 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, p. 355). When comparing use and availability of habitats, northern long-eared bats preferred diameter-limit harvests and forest roads. In Alberta, Canada, northern long-eared bats avoided the center of clearcuts and foraged more in intact forest than expected (Patriquin and Barclay 2003, p. 654). On Prince Edward Island, Canada, female northern long-eared bats preferred open areas less than forested areas, with foraging areas centered along forest-covered creeks (Henderson and Broders 2008, pp. 956–958). In mature forests in South Carolina, 10 of the 11 stands in which northern long-eared bats were detected were mature stands (Loeb and O’Keefe 2006, p. 1215). Within those mature stands, northern long-eared bats were more likely to be recorded at points with sparse or medium vegetation rather than points with dense vegetation, suggesting that some natural gaps within mature forests can provide good foraging habitat for northern long-eared bats (Loeb and O’Keefe 2006, pp. 1215–1217). However, in southwestern North Carolina, Loeb and O’Keefe (2011, p. 175) found that northern long-eared bats rarely used forest openings, but often used roads. Forest trails and roads may provide small gaps for foraging and cover from predators (Loeb and O’Keefe 2011, p. 175). In general, northern long-eared bats appear to prefer intact mixed-type forests with small gaps (i.e., forest trails, small roads, or forest-covered creeks) in forest with sparse or medium vegetation for forage and travel rather than fragmented habitat or areas that have been clearcut.

Impacts to northern long-eared bats from forest management would be expected to vary depending on the timing of tree removal, location (within or outside northern long-eared bat home range), and extent of removal. While bats can flee during tree removal, removal of occupied roosts (during spring through fall) may result in direct injury or mortality to some percentage of northern long-eared bats. This percentage would be expected to be greater if flightless pups or inexperienced flying juveniles were also present. Forest management outside of northern long-eared bat summer home ranges or away from hibernacula would not be expected to affect the conservation of the species.

Forest management is not usually expected to result in a permanent loss of suitable roosting or foraging habitat for northern long-eared bats. On the contrary, forest management is expected to maintain a forest over the long term for the species. However, localized temporary reductions in suitable roosting and/or foraging habitat can occur from various forest practices (e.g., clearcuts). As stated above, northern long-eared bats 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 northern long-eared bat colonies to continue to occur in managed landscapes. However, in areas with WNS, northern long-eared bats may be less resilient to stressors and maternity colonies are smaller. Given the low inherent reproductive potential of northern long-eared bats (one pup per female per year), death of adult females or pups or both during tree felling could reduce the long-term viability of some of the WNS-impacted colonies if they are also in the relatively small percentage of forest habitat directly affected by forest management.

As we documented in the interim 4(d) rule, forestry management and silviculture are vital to the long-term survival and recovery of the species. Based on information obtained during

comment periods, approximately 2 percent of forests in States within the range of the northern long-eared bat are impacted by forest management activities annually (Boggess et al., 2014, p.9). Of this amount, in any given year, a smaller fraction of forested habitat would be impacted during the active season when female bats and pups are most vulnerable. Therefore, we have determined that when the prohibitions for the northern long-eared bat included in this final 4(d) rule are applied to forest management activities, the potential impacts will be significantly reduced.

#### Forest Conversion

In our listing determination for the northern long-eared bat, we noted that current and future forest conversion may have negative additive impacts where the species has been impacted by WNS (80 FR 17991; April 2, 2015). Our assessment was based largely on the species' summer-home-range fidelity and the potential for increased energetic demands for individuals where the loss of summer habitat had been removed or degraded (e.g., fragmentation). We noted that forest conversion "can result in a myriad of effects to the species, including direct loss of habitat, fragmentation of remaining habitat, and direct injury or mortality" (80 FR 17993; April 2, 2015). In the interim 4(d) rule we exempted most forest-management activities except for the conversion of mature hardwood or mixed forest into intensively managed monoculture-pine plantation stands, or non-forested landscape (80 FR 18025; April 2, 2015).

Many of the comments on the proposed and interim 4(d) rules noted that habitat is not limiting for the northern long-eared bat. As we documented in the final listing determination (80

FR 1802; April 2, 2015), the extent of conversion from forest to other land cover types has been fairly consistent with conversion to forest (cropland reversion/plantings). Further, the recent past and projected amounts of forest loss to conversion was, and is anticipated to be, only a small percentage of the total amount of forest habitat. For example by 2060, 4 to 8 percent of the forested area found in 2007 across the conterminous United States is expected to be lost (U.S Forest Service 2012, p. 12). The northern long-eared bat has been documented to use a wide variety of forest types across its wide range. Therefore, we agree that the availability of forested habitat does not now, nor will it likely in the future, limit the conservation of the northern long-eared bat.

We have determined that when the prohibitions for the northern long-eared bat included in this final 4(d) rule are applied to forest-conversion activities, the potential for negative additive impacts to individuals or colonies is significantly reduced. As WNS impacts bat populations, unoccupied, suitable forage and roosting habitat will be increasingly available for remaining bats.

#### Tree-Removal Conservation Measures

Under this final 4(d) rule, incidental take within the WNS zone involving tree removal is not prohibited if two conservation measures are followed. The first measure is the application of a 0.25 mile (0.4 km) buffer around known occupied northern long-eared bat hibernacula. The second conservation measure is that the activity does not cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot (45-m) radius around the maternity

roost tree, during the pup season (June 1 through July 31). The rationale for these measures is discussed below.

*Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula*

“Known hibernacula” are defined as locations where one or more northern long-eared bats have been detected during hibernation or at the entrance during fall swarming or spring emergence. Given the documented challenges of surveying for northern long-eared bats in the winter (use of cracks, crevices that are inaccessible to surveyors), any hibernacula with northern long-eared bats observed at least once, will continue to be considered “known hibernacula” as long as the hibernacula remains suitable for the northern long-eared bat. A hibernaculum remains suitable for northern long-eared bats even when *Pd* or WNS has been detected.

We have adopted the 0.25-mile (0.4-km) buffer around known northern long-eared bat hibernacula for several reasons: (1) It will help to protect micro-climate characteristics of the hibernacula; (2) for many known hibernacula, bats use multiple entrances that may not be reflected in the primary location information (e.g., bats may use other smaller entrances that are often spread out from the main entrance accessed for surveys or other purposes) and the hibernacula may have extensive underground features that extend out from known entrances; (3) in the late summer and fall when bat behavior begins to center on hibernacula (swarming), it appears that northern long-eared bats may roost in a widely dispersed area, which may reduce the potential that any activity outside of this buffer would significantly affect the species; (4) outside of the maternity period, northern long-eared bats have demonstrated the ability to adapt to forest-

management-related and other types of disturbances; and (5) regardless of the buffer size, bats will remain fully protected from take while in the hibernacula, when they are most vulnerable.

The microclimate, temperature, humidity, and air and water flow within a hibernaculum are all important variables that could potentially be impacted by forest management or other activities when conducted in proximity to a hibernaculum. A 0.25-mile (0.4-km) buffer will protect the hibernaculum's microclimate. Studies that have evaluated the depth of edge influence from forest edge or tree removal on temperature, humidity, wind speed, and light penetration suggest that although highly variable among forest types and other site-specific factors (such as aspect and season), the depth of edge influence can range from 164 feet (50 m) (Matlack 1993, p. 193) to over 1,312 feet (400 m) (Chen et al. 1995, p. 83). However, the hibernacula often selected by northern long-eared bats are "large, with large passages" (Raesly and Gates 1987, p. 20), and may be less affected by relatively minor surficial micro-climatic changes that might result from the limited exempted activities outside of the 0.25-mile (0.4-km) buffer. Further, bats rarely hibernate near the entrances of structures (Grieneisen 2011, p. 10), as these areas can be subject to greater predation (Grieneisen 2011, p. 10; Kokurewicz 2004, p. 131) and daily temperature fluctuations (Grieneisen 2011, p. 10). Davis et al. (1999, p. 311) reported that partial clearcutting "appears not to affect winter temperatures deep in caves." Caviness (2003, p. 130) reported that prescribed burns were found to have no notable influence on bats hibernating in various caves in the Ozark National Forest. All bats present in caves at the beginning of the burn were still present and in "full hibernation" when the burn was completed, and bat numbers increased in the caves several days after the burn. There were minute changes in relative humidity and temperature during the burn, and elevated short-term levels of some contaminants from smoke were noted.

Northern long-eared bat hibernacula can be large and complex and, spatially, may not be fully represented in locational information contained in species records by State or Federal agencies or by natural heritage programs. A 0.25-mile (0.4-km) buffer will help protect the spatial extent of many known hibernacula. For example, one limestone mine in Ohio used by northern long-eared bats had approximately 44 miles (71 km) of passages and multiple entrances (Brack 2007, p. 740). In northern Michigan, bats (including northern long-eared bats) occupied mines that were more structurally complex and longer (1,007 ft +/- 2,837 ft (307m +/- 865 m) than mines that were unoccupied, and the occupied mines had a total length of passages that ranged from 33 feet to 4 miles (10 meters to 6.4 kilometers) (Kurta and Smith 2014, p. 592).

Only a relatively small proportion of the areas where swarming northern long-eared bats may occur are likely to be affected by tree-removal activity. There are over 1,500 known hibernacula for the species in the United States (Service 2015, unpublished data), several known in Canada, and potentially many others yet to be identified. Lowe (2012, p. 58) reported that the roosts of northern long-eared bats were evenly distributed over distances within 4.6 miles (7.3 km) from a swarming site. If the northern long-eared bat's potential swarming habitat (including foraging habitat during that period) can be approximated as the forest habitat within 5 miles (8.1 km) of hibernacula, that equates to a 50,265 acre (20,342 ha) area per hibernaculum. In any given year, only a small proportion of the forest habitat within the potential swarming habitat is likely to be impacted by tree-removal activities (e.g., generally 2 percent of forests are managed in any given year and over 1,500 hibernacula documented as used by the species). Similarly, forest conversion is anticipated to be relatively small compared to available habitat; therefore, based on our current understanding of potential swarming-habitat, on the scale of 50,000 acres (20,342ha) per hibernaculum, the relatively small foot-print of activities not prohibited by this



final rule are unlikely to affect the conservation or recovery potential of the species. Raesly and Gates (1987, p. 24) evaluated external habitat characteristics of hibernacula and reported that for the northern long-eared bat the percentage of cultivated fields within 0.6 miles (1 km) of the hibernacula was greater (52.6 percent) for those caves used by the species, than for those caves not used by the species (37.7 percent), suggesting that the removal of some forest around a hibernacula can be consistent with the species needs.

Outside of the maternity period, northern long-eared bats have demonstrated the ability to respond successfully to forest-management-related and other types of disturbances. Therefore, the limited disturbance associated with incidental-take exceptions outside of the 0.25-mile (0.4-km) buffer on hibernacula is consistent with the conservation of the species. For example, Silvis et al.'s (2015, p.1) experimental removal of roosts suggested that the “loss of a primary roost or 20 percent of secondary roosts in the dormant season may not cause northern long-eared bats to abandon roosting areas or substantially alter some roosting behaviors in the following active season when tree-roosts are used.”

Prior to WNS, the most significant risk identified for northern long-eared bat conservation was direct human disturbance while bats are hibernating (e.g., Olson et al. 2011, p. 228; Bilecki 2003, p. 55; Service 2012, unpublished data). This final 4(d) rule (within the WNS zone) addresses these impacts.

We have prohibited incidental take of northern long-eared bats under specific tree-removal circumstances; however, that does not mean that all activities involving tree-removal activities within the 0.25-mile (0.4-k) buffer of hibernacula will result in take. For example, a timber harvest might be conducted within 0.25 miles (0.4 km) of a hibernaculum at a time when

bats are unlikely to be roosting in trees within the buffer (e.g., winter), which fully protects any bats in the hibernaculum as well as the hibernaculum's suitability for bats (i.e., access, microclimate), and does not significantly change the suitability of the habitat for foraging by northern long-eared bats or perhaps even improves prey availability. In such a case, the timber harvest, although closer than 0.25 miles (0.4 km) to the hibernaculum, is not likely to result in incidental take so we would not recommend that the harvester seek authorization for incidental take pursuant to the Act. For activities planned within 0.25 miles (0.4 km) of hibernaculum, we encourage you to contact the local Ecological Services Field Office (<http://www.fws.gov/offices>) to help evaluate the potential for take of northern long-eared bats.

#### *Conservation Measure 2: Tree Removal Near Known Maternity Roost Trees*

Female northern long-eared bats roost communally in trees in the summer (Foster and Kurta 1999, p. 667) and exhibit fission-fusion behavior (Garroway and Broders 2007, p. 961), where members frequently roost together (fusion), but the composition and size of the groups is not static, with individuals frequently departing to be solitary or to form smaller or different groups (fission) (Barclay and Kurta 2007, p. 44). As part of this behavior, northern long-eared bats switch tree roosts often (Sasse and Pekins 1996, p. 95), typically every 2 to 3 days (Foster and Kurta 1999, p. 665; Owen et al. 2002, p. 2; Carter and Feldhamer 2005, p. 261; Timpone et al. 2010, p. 119). In Missouri, the longest time spent roosting in one tree was 3 nights (Timpone et al. 2010, p. 118). Bats switch roosts for a variety of reasons, including temperature, precipitation, predation, parasitism, sociality, and ephemeral roost sites (Carter and Feldhamer 2005, p. 264).

Maternity colonies, consisting of females and young, are generally small, numbering from about 30 (Whitaker and Mumford 2009, p. 212) to 60 individuals (Caceres and Barclay 2000, p. 3); however, one group of 100 adult females was observed in Vermilion County, Indiana (Whitaker and Mumford 2009, p. 212) and Lereculeur (2013, p. 25) documented a colony of at least 116 northern long-eared bats. In West Virginia, maternity colonies in two studies had a range of 7 to 88 individuals (Owen et al. 2002, p. 2) and 11 to 65 individuals, with a mean size of 31 (Menzel et al. 2002, p. 110). Lacki and Schwierjohann (2001, p. 485) found that the number of bats within a given roost declined as the summer progressed. Pregnant females formed the largest aggregations (mean=26) and post-lactating females formed the smallest aggregation (mean=4). Their largest overall reported colony size was 65 bats.

Northern long-eared bats change roost trees frequently, but use roost areas repeatedly and to a lesser extent, reuse specific roosts (e.g., Cryan et al. 2001, p. 50; Foster and Kurta 1999, p. 665). The northern long-eared bat appears to be somewhat flexible in tree-roost selection, selecting varying roost tree species and types of roosts throughout its range. Females tend to roost in more open areas than males, likely due to the increased solar radiation, which aids pup development (Perry and Thill 2007, p. 224). Fewer trees surrounding maternity roosts may also benefit juvenile bats that are starting to learn to fly (Perry and Thill 2007, p. 224). Female roost-site selection, in terms of canopy cover and tree height, changes depending on reproductive stage; relative to pre- and post-lactation periods, lactating northern long-eared bats have been shown to roost higher in tall trees situated in areas of relatively less canopy cover and lower tree density (Garroway and Broders 2008, p. 91).

The northern long-eared bat's tendency for frequent roost switching may help them avoid or respond effectively to disturbance by people outside of the maternity season. The frequent-

roost-switching behavior of northern long-eared bat suggests that they are adapted to responding quickly to changes in roost availability (ephemeral roosts), changing environmental conditions (temperature), prey availability, or physiological needs (torpor, reproduction). In a study of radio-tracked northern long-eared bats responding to the disturbance from prescribed fire (Dickinson et al. 2009, pp. 55-57), the bats appeared “to limit their exposure to conditions created by fire. At no point did they fly outside of their typical home range area, nor did they travel far from the burn itself.” While some of the bats soon returned to areas recently burned, by day 6 and 7 post burn, they “appeared to return to pre-burn norms in terms of emergence time, length of foraging bouts, and use of the burn unit and adjacent habitats.” Carter et al. (2000, pp 139-140), noted that “During the summer months, bats are able to arouse quickly as the difference between the ambient temperature and active body temperature of bats is less. Most bat species utilizing trees and snags have multiple roosts throughout the forest (Sasse and Pekins 1996; Callahan et al. 1997; Menzel et al. 1998; Foster and Kurta 1999, Menzel et al. 2001), providing alternate roosts should the current roost be destroyed by fire.” Sparks et al. (2008, pp. 207-208) documented that northern long-eared bats released in the open during the day demonstrated a successful rapid “flight-to-cover” response.

Adult females give birth to a single pup (Barbour and Davis 1969, p. 104). Birthing within the colony tends to be synchronous, with the majority of births occurring around the same time (Krochmal and Sparks 2007, p. 654). Parturition (birth) likely 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). Upon birth, the pups are unable to fly, and females return to nurse the pups between foraging bouts at night. In other *Myotis* species, mother bats have been documented carrying flightless young to a new roosting location

(Humphrey et al. 1977, p. 341). The ability of a mother to move young may be limited by the size of the growing pup. Juvenile volancy (flight) often occurs by 21 days after birth (Krochmal and Sparks 2007, p. 651; Kunz 1971, p. 480) and has been documented as early as 18 days after birth (Krochmal and Sparks 2007, p. 651). Prior to gaining the ability to fly, juvenile bats are particularly vulnerable to tree-removal activities. Based on this information, we have determined that the most sensitive period to protect pups at maternity roost trees is from June 1 through July 31 (the “pup season”).

Known occupied maternity roost trees are defined as trees that have had female northern long-eared bats or juvenile bats tracked to them or the presence of female or juvenile bats is known as a result of other methods. Once documented, northern-long eared bats are known to continue to use the same roosting areas. Therefore, a tree will be considered to be a “known, occupied maternity roost” as long as the tree and surrounding habitat remain suitable for northern long-eared bats. The incidental take prohibition for known, occupied maternity roosts trees applies only during the during the pup season (June 1 through July 31).

In addition to protecting the known roosts, we have also included in this conservation measure avoiding the cutting or destroying of any other trees within a 150-foot (45-meter) radius from the known, occupied maternity roost tree during the pup season (June 1 through July 31). Leaving a buffer of other trees around the maternity roost tree will help to protect the roost tree from damage or destruction that may be caused by other nearby trees being removed as well as helping protect the roost tree from wind throw and micro-climate changes. O’Keefe (2009 p. 42) documented that a 39-foot (12-meter) buffer around a maternity roost tree during a harvest in May allowed the roost to be successfully used through late July and that one buffered tree was used 2 years in a row. We have adopted a standard for exception of take that is almost four times

that which proved effective in this example, in order to better account for the variation in forest types used by the northern long-eared bat and a variety of slopes that might influence how large a buffer may need to be in order to prove effective. Roost trees used by northern long-eared bats are often in fairly close proximity to each other within the species' summer home range. For female northern long-eared bats, the mean distance between roosts was reported as 63m to 600m from a variety of studies published 1996 through 2014 (Foster and Kurta 1999 p. 665; Cryan et al. 2001, p. 46; Swier 2003, pp. 58-59; Jackson 2004, p. 89; Henderson and Broders 2008, p. 958; Johnson et al. 2009, p. 240; Badin 2014, p. 76; Bohrman and Fecske, unpublished data). Further, within that data, the distance between roosts was reported as small as 5 meters in one study (Badin 2014, p. 76) and 36 meters in another (Jackson 2004, p. 89). As Sasse 1995, p. 23, noted "some roost sites appeared to be 'clustered' together." Therefore, even this modest additional buffer may also protect other roosts trees used by female northern long-eared bats during the maternity period that have not yet been documented. In addition, because colonies occupy more than one maternity roost in a forest stand and individual bats frequently change roosts, in some cases a portion of a colony or social network is likely to be protected by multiple 150-foot buffers during the maternity season.

Currently, since most States and natural heritage programs do not track roosts and many have not tracked any northern long-eared bat occurrences, we recognize that not all northern long-eared bat maternity roost sites are known. Therefore, this measure will not protect an unknown maternity roosts unless it falls under one of the buffers related to protecting a known roost or hibernaculum.

Although not fully protective of every individual, the conservation measures identified in this final rule help protect maternity colonies. This final species-specific rule under section

4(d) of the Act provides the regulatory flexibility for certain activities to occur that have not been the cause of the species' imperilment, while allowing us to focus conservation efforts on WNS, promoting conservation of the species across its range.

### **Additional Prohibitions and Exceptions**

In this final 4(d) rule we carry forward other standard prohibitions and exceptions that are typically applied to threatened species and are currently applicable under the interim rule for the northern long-eared bat. These prohibitions included the possession of and other acts with unlawfully taken northern long-eared bats, as well as import and export. We also included standard exemptions, including all the permitting provisions of 50 CFR 17.32 and the exemption for employees or agents of the Service, of the National Marine Fisheries Service, or of a State conservation agency when acting in the course of their official duties to take northern long-eared bats covered by an approved cooperative agreement to carry out conservation programs.

### **Summary of Comments and Recommendations on the Proposed and Interim 4(d) Rules**

The northern long-eared bat was listed as a threatened species under the Act, with an interim rule under section 4(d) of the Act, on April 2, 2015 (80 FR 17974). At that time, the Service invited public comments on the interim 4(d) rule for 90 days, ending July 1, 2015. The Service had already received comments for 60 days on its proposed 4(d) rule (80 FR 2371, January 16, 2015). In total, the Service received approximately 40,500 comments on the proposed and interim 4(d) rules. We discuss them below.

## Peer Reviewer Comments

1. *Comment:* Peer reviewer(s) commented that the 0.25-mile (radius) around hibernacula is an inadequate buffer. There were additional suggestions for alternative buffer distances as well as more detail on how activities might be limited within those buffers. A specific suggestion of a 1.6-mile buffer was made, with a statement that most forest practices could occur within the buffer provided that the trees were not completely removed (conversion). In addition, a suggestion of 0.5-mile buffer was made.

*Our Response:* We have revised the approach used in this final 4(d) rule to ensure that hibernating northern long-eared bats in the WNS zone are protected from incidental take independent of the buffer size used in the conservation measure. In addition, all northern long-eared bats both in and outside of the WNS zone are protected from purposeful take (e.g., killing or intentionally harassing northern long-eared bats), including while in the hibernacula where they are most vulnerable. We have retained the 0.25-mile buffer (0.25-mile radius around known hibernacula entrance/access points used by bats) to further protect the hibernaculum and associated forested habitat for several reasons (see discussion above under *Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula*). Some of the peer-reviewers recommended that within the hibernacula buffer that certain limited activities should be allowed (e.g., timber harvest that only removes a small percentate of the forest habitat when bats are not active). As discussed above under *Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula*, not all tree-removal activities within the buffer of hibernacula will result in take. For example, a timber harvest might be conducted within the buffer when bats are unlikely to be roosting in trees (e.g., winter) that fully protects any bats in the hibernaculum as well as the hibernaculum's suitability for bats (i.e., access,



microclimate), and does not significantly change the suitability of the habitat for foraging by northern long-eared bats or perhaps even improves prey availability. In such a case, the timber harvest, although within the buffer, is not likely to result in incidental take so we would not recommend that the harvester seek authorization for incidental take pursuant to the Act. Because the buffer only applies to actions that result in incidental take of the northern long-eared bat, we determined that there was no need to attempt to exempt activities (e.g., a limited timber harvest) where incidental take is unlikely.

2. *Comment:* Peer reviewer(s) commented that the WNS buffer zone should be removed and protections should occur throughout the range of the species.

*Our Response:* We have established prohibitions on the purposeful take of northern long eared bats throughout the species range. However, because WNS is the most significant threat known to be imperiling the species, we have determined that in areas where WNS has not been detected, additional prohibitions are not warranted. We recognize that the WNS zone will change over time. We remain committed to regularly updating the WNS zone map as new information about the spread of the *Pd* fungus becomes known.

3. *Comment:* Peer reviewer(s) commented that the WNS buffer zone should be expanded and/or changed to accommodate a more site-specific approach, based on proximity to hibernacula, for example.

*Our Response:* We reevaluated the approach to the WNS zone in this final rule and determined that the 150-mile buffer used for the interim 4(d) rule appears to be very effective in capturing counties where new *Pd* detections are reported, in particular when looking at the new

occurrences over the last 5 years. For more details of this analysis, please see our discussion in the **WNS Zone** section of this rule.

4. *Comment:* Peer reviewer(s) commented that the Service's definitions relative to forestry practices should be more precise and should use silviculture terminology.

*Our Response:* We have revised the prohibitions to no longer use specific forestry practices or silviculture terminology. Take of the northern long-eared bat within the context of forest management is not prohibited provided that conservation measures to protect hibernacula and known maternity roost trees are implemented as described in this rule.

5. *Comment:* Peer reviewer(s) recommended that the seasonal restrictions for the northern long-eared bat "pup season" be expanded and/or based on climate and geography within the species' range.

*Our Response:* We recognize that in some areas or in some years the period when young northern long-eared bats are non-volant may be earlier or later than the June and July timeframe. The timing of when northern long-eared bats give birth is likely a complex interplay of a variety of factors affecting fetal development (e.g., condition of the mother, temperature, prey availability), and similar factors may also influence the time required for young to develop the ability to fly. In addition, a study in West Virginia documented that the peak pregnancy and lactation dates shifted post WNS (Francl et al. 2012, p. 36). However, looking across a variety of studies, the June and July timeframe appears to generally capture what is typically reported as the non-volant period for northern long-eared bats across much of their range within the United States. We have determined that a single timeframe for implementing the prohibition on maternity roost tree removal provides clarity for the regulated public. In addition, while it does

not modify the incidental take prohibition established in these regulations, our local field offices may be able to provide more refined local estimates of the non-volant period for specific areas. Project planners may choose to use these local estimates for planning purposes where they are available.

6. *Comment:* Peer reviewer(s) recommended year-round protections for maternity roost trees or conversely that we remove entirely the protections for maternity trees because it is ineffective and serves as a disincentive for conducting surveys.

*Our Response:* Although northern long-eared bats have been documented to use some roost trees over multiple years, in many cases it is because the tree is dead or dying or has structural defects that provides the roosting features attractive to the species. Further, maternity roost trees are used only briefly (e.g., northern long-eared bats typically change roosts every few days, and only a relatively small percentage of those are used more than once in any one season). Given that maternity roosts trees are ephemeral on the landscape and used for very short periods of time in the active season, we determined that year-round protections for known, occupied maternity roost trees are not warranted. We considered removing the protections for known, occupied maternity roosts as recommended by another peer reviewer, but instead modify the protection so as to minimize the disincentive for conducting surveys. In developing this final rule, we kept protections for known, occupied maternity roosts for two reasons: (1) While it may be unlikely, in cases where a tree was about to be removed, but was known to be occupied by northern long-eared bats, they would have some protections while the young could not fly; and (2) we wanted known, occupied maternity roosts to be given consideration because they help to signal to project planners an area that is likely to be used by northern long-eared bats in the future (as this species has a high degree of site fidelity). We refined the protection for known,

occupied maternity roosts to make it as practical to implement as possible in order to minimize the disincentive created for conducting surveys. Many forest managers implement similar types of relatively small seasonal buffers to protect other species of sensitive wildlife (e.g., around nesting raptors) and therefore we do not view this provision as a real disincentive to conducting surveys. Please see the *Conservation Measure 2: Tree Removal Near Known Maternity Roost Trees* section of this rule for additional details. We believe that the seasonal restriction helps to protect the most vulnerable life stages, in this case the non-volant pups, and is adequate for the purposes of this rule.

*7. Comment:* Peer reviewer(s) recommended that pregnant females should be protected as part of the seasonal restriction criteria.

*Our Response:* We recognize that pregnant females may be in torpor or less able to flee in early spring. However, we did not have information on how pregnancy in northern long-eared bats influenced the degree of torpor or their ability to flee from disturbance. As discussed in this rule, we expect only a small percentage of the species' forested habitat to be affected by activities (e.g., tree removal, prescribed fire) that might impact a pregnant northern long-eared bats in torpor and, therefore, we expect only small proportion of the species' population to be potentially exposed to these activities. Because of the relatively small exposure and uncertainty about how pregnancy affects degree of torpor or ability to flee, we have not expanded the seasonal protections for this purpose. We believe that seasonal restrictions help protect the vulnerable pup stage, when young pups cannot fly, and are adequate for the purposes of this rule.

8. *Comment:* Peer reviewer(s) stated that the conservation efforts will not be effective because the natural heritage data are limited with respect to known maternity roost trees and hibernacula.

*Our Response:* We agree that the data are limited and this can be challenging from the implementation and/or project planning perspective. However, we have purposefully limited protections where possible, to minimize the potential disincentive to continue to survey for the species. However, we anticipate that information in State natural heritage data bases will continue to improve post-listing.

9. *Comment:* Peer reviewer expressed concern with allowing lethal take of northern long-eared bats from human dwellings.

*Our Response:* We encourage the non-lethal removal of northern long-eared bats from human structures, preferably by excluding them outside of the maternity period, whenever possible. However, because of the potential for human health considerations, we have not required this as part of the exception to the purposeful take prohibition. We have limited this take to houses, garages, barns, sheds, and other buildings designed for human entry.

#### *Public Comments*

##### General

10. *Comment:* Commenters from many development sectors requested that their activities be included in the suite of exempted activities under the 4(d) rule (specific sectors addressed below).

*Our Response:* In general, this final rule has been restructured to clarify prohibitions to take rather than to rely on a list of excepted activities. Prohibitions are applied in this final rule where necessary and advisable for the conservation of the species. Therefore, the various “sectors” do not need to be identified or “excepted” to apply rule provisions.

## Forest Management

11. *Comment:* Several commenters recommended that forest conversion be included as an excepted activity. Comments were specific to conversion of hardwood forests to pine plantations, managed pine forest, pine ecosystem, and the Service’s characterization of pine stands as monoculture stands representing poor bat habitat.

*Our Response:* Incidental take resulting from forest management, including forest conversion, is not a prohibited action pursuant to this final 4(d) rule provided conservation measures to protect known hibernacula and known, occupied maternity roost trees are employed. Please see sections above titled **Forest Management** and **Forest Conversion**.

12. *Comment:* Commenters stated that forest management must occur to avoid habitat deterioration to poor quality bat habitat. They further stated that forest health depends upon active management including tree removal and clearcutting.

*Our Response:* We agree that forest management can be very important in creating or maintaining forest successional patterns that help to ensure suitable trees are available for roosting northern long-eared bats. Further, forest management can help to increase prey availability or suitability of foraging habitat. Please see our discussion above under **Forest**

**Management** for additional details. Incidental take resulting from forest management is not prohibited pursuant to this final 4(d) rule provided conservation measures to protect known hibernacula and known maternity roost trees are employed.

13. *Comment:* Commenters suggested that the Service consider exemptions for sustainable forest practices implemented under a sustainable forest management plan or sustainable forestry certificate program.

*Our Response:* We considered incorporating other possible conservation measures related to forest management and conversion. However, given the overall small percentage of the species' range potentially affected by these activities in any given year, it was not clear that additional conditions related to incidental take from forest management or conversion would meaningfully change the conservation outlook for the species. Further, adding protections with uncertain benefits, but with large potential public impacts can hinder support for species conservation. Incidental take resulting from forest management is not prohibited pursuant to this final 4(d) rule provided conservation measures to protect known hibernacula and known, occupied maternity roost trees are employed.

14. *Comment:* Commenters stated that the Service should focus on the elimination of WNS rather than regulating timber harvest in summer habitat.

*Our Response:* Efforts to address the threat posed by WNS are on-going by the Service and many partners across the species range. Incidental take resulting from forest management or forest conversion is not prohibited pursuant to this final 4(d) rule provided conservation measures to protect known hibernacula and known, occupied maternity roost trees are employed.

15. *Comment:* A commenter stated that the Service should halt commercial timber harvest and another commenter suggested restricting the removal of snags and coarse woody debris in areas populated by the species.

*Our Response:* The northern long-eared bat is not limited in terms of habitat availability for feeding, breeding, and sheltering in the summer (non-hibernating) months. Please see the discussions under **Forest Management** and **Forest Conversion** above in this rule. We have carefully considered the value of habitat protection for the species. We have determined that protection of summer habitat is not required for species conservation except where trees may be occupied by young, non-volant (flightless) pups and for areas immediately surrounding hibernacula where they swarm and feed just prior to hibernation and when they emerge from hibernation in the spring. Due to this swarming behavior and the vulnerability of bats when hibernating, we have determined that take prohibitions are necessary and advisable in winter habitat (hibernacula), where bats are subject to the effects of WNS. In addition, we have determined that protection of known, occupied maternity roost trees is necessary and advisable in order to protect young pups.

16. *Comment:* The Service should increase protections to avoid impacts to bats from the point that they emerge from hibernation to the end of the maternity/pup season. Forest management should only be done in a manner that retains sufficient vegetative cover and protects northern long-eared bats at the maternity colony level.

*Our Response:* We considered incorporating other possible conservation measures related to forest management and conversion. However, given the overall small percentage of the species' range potentially affected by these activities in any given year, it was not clear that



additional conditions related to the incidental take from forest management or conversion would meaningfully change the conservation outlook for the species. Further, adding protections with uncertain benefits, but with large potential public impacts can hinder support for the species conservation. We have determined that protection of known, occupied maternity roost trees during the months of June and July is an adequate conservation measure for the protection of non-volant pups.

*17. Comment:* Commenter(s) suggested an exemption for invasive species management in forested landscapes.

*Our Response:* Outside of hibernacula, this final rule does not prohibit take from activities other than tree removal. Therefore, incidental take associated with management of invasive species using pesticides or other interventions is not prohibited. Where intervention involves tree removal, conservation measures must be followed to comply with this rule. However, entities that cannot apply the required conservation measures have other means to have take excepted, such as section 10 permits or section 7 incidental take authorization.

#### Human Structures

*18. Comment:* Commenters suggested expansion of the definition of human structures/dwellings to include bridges, culverts, cattle passes, and other human-made structures.

*Our Response:* This final rule does not prohibit direct take of northern long-eared bats occupying human structures defined as houses, garages, barns, sheds, and other buildings designed for human entry. While we encourage landowners and project proponents to find other mechanisms to avoid killing or injuring bats that occupy bridges, culverts, and other structures, incidental take is not prohibited by this rule. While bridge and culvert use for the species has

been documented, it is relatively uncommon compared to tree or other types of roost sites (e.g., barns) and, therefore, did not warrant specific provisions in this final rule. Within the WNS zone, however, project proponents must apply conservation measures to avoid habitat removal around hibernacula and to avoid cutting or destroying known, occupied maternity roost trees or any other trees within a 150-foot radius from the maternity roost tree during June and July.

19. *Comment:* Commenters stated that take of northern long-eared bat in human dwellings should not be exempted and requested that the Service provide rationale for determining that this exemption is necessary.

*Our Response:* We encourage the non-lethal removal of northern long-eared bats from human structures whenever possible, preferably by excluding them from the structure outside of the maternity period. However, because of the potential for human health considerations, we have not required this as part of the exception to the purposeful take prohibition. Please see the discussion under **Exceptions to the Purposeful Take Prohibition** in this rule for additional details. Take of northern long-eared bats to remove them from human structures is not prohibited.

#### Hazardous Tree Removal

20. *Comment:* Several comments requested clarification and/or expansion of the exception to take for removal of hazardous trees.

*Our Response:* Our intent is to provide for the removal of hazardous trees for the protection of human life and property. This is not the same as hazard tree removal within the context of forest management or rights-of-way management where hazard trees are identified as trees that are in danger of falling. Incidental take of northern long-eared bats from hazardous

tree removal in the context of rights-of-way management is not prohibited by the final 4(d) rule provided conservation measures to protect known hibernacula and known, occupied maternity roost trees are applied.

#### Minimal Tree Removal

21. *Comment:* Several commenters requested that minimal tree removal be expanded to a larger acreage.

*Our Response:* Conversion of forested cover to alternate uses is not prohibited under this final rule, provided that conservation measures are followed when those activities occur within the WNS zone. For a discussion of this issue, please see **Forest Conversion** section in this rule.

22. *Comment:* Several commenters stated that the exemption for minimal tree removal should be expanded to other (non-forest) industry entities and should include all activities that have a minimal effect on the northern long-eared bat.

*Our Response:* Conversion of forested acreages to alternate uses is not prohibited under this final rule, provided that conservation measures are followed. This is applicable to all entities that may engage in activities that remove trees or convert forested acres. See the **Forest Conversion** section in this rule.

#### Oil and Gas Industry

23. *Comment:* A number of commenters from the oil and gas industry stated that the industry should be included within exemptions from take prohibitions because: (1) Their impact on northern long-eared bat habitat is small compared to forest management impacts; (2) habitat is re-vegetated following pipeline installation; (3) oil and gas exploration and transport are not the

stated primary threat to the species (WNS is the primary threat); and (4) adequate regulatory mechanisms exist for mitigating industry environmental impacts.

*Our Response:* Take of northern long-eared bats attributable to habitat conversion and habitat loss is not prohibited under this final 4(d) rule, provided that developers and project proponents follow conservation measures described herein when activities occur within the WNS zone. See the **Forest Conversion** section in this rule.

#### Rights-of-Way

24. *Comment:* Commenter(s) stated that loss of habitat attributable to clearing for linear projects is miniscule compared to habitat conversion due to forest management.

*Our Response:* Incidental take attributable to maintenance, development, and rights-of-way expansion is not prohibited by this final 4(d) rule, provided conservation measures contained herein are followed when activities occur within the WNS zone.

25. *Comment:* Commenter(s) stated that the exception, as proposed and implemented via the interim rule, should be expanded to greater than 100-feet and should be clarified.

*Our Response:* Incidental take attributable to maintenance, development, and rights-of-way expansion is not prohibited by this final 4(d) rule, provided conservation measures contained herein are followed when activities occur within the WNS zone.

26. *Comment:* Commenter(s) stated that the exception for rights-of-way should be expanded to include new rights-of-way and transmission corridors.

*Our Response:* Incidental take attributable to maintenance, development, and rights-of-way expansion is not prohibited by this final 4(d) rule, provided conservation measures contained herein are followed when activities occur within the WNS zone.

27. *Comment:* Commenter(s) disagree with the Service's assertion that vegetation removal within or adjacent to rights-of-way is a small-scale alteration of habitat.

*Our Response:* It is within the context of the species range and potential for available habitat that right-of-way development, maintenance or expansion are small scale alterations of forest habitat. The extent of conversion from forest to other land cover types has been fairly consistent with conversion to forest (cropland reversion/plantings). Further, the recent past and projected amounts of forest loss to conversion from all sources was and is anticipated to be only a small percentage of the total amount of forest habitat. For example by 2060, 4 to 8 percent of forest area found in 2007 across the conterminous United States is expected to be lost (U.S Forest Service 2012, p. 12). We have not broadened the incidental prohibition related to habitat loss because WNS is the predominant threat to the species. Summer habitat does not now or in the future appear likely to be a limiting factor for the species; therefore, we have focused the protections on vulnerable individuals in summer habitat and protecting the winter habitat, where sensitivity to the effects of WNS is heightened.

28. *Comment:* Commenter(s) requested that the Service expand the rights-of-way exemption to include access roads and infrastructure required to deliver services.

*Our Response:* Incidental take attributable to maintenance, development, and rights-of-way expansion is not prohibited by this final 4(d) rule, provided conservation measures contained herein are followed when activities occur within the WNS zone. This includes related

activities such as access road clearing and facilities related to delivery of services. In the case where tree removal is the activity in question, incidental take is not prohibited provided that the conservation measures herein are followed when those activities occur within the WNS zone.

*29. Comment:* Commenter suggested that the final 4(d) rule should prohibit all tree clearing activities related to the maintenance, repair, and creation of rights-of-way.

*Our Response:* The northern long-eared bat is not limited in terms of habitat availability for feeding, breeding, and sheltering in the summer (non-hibernating) months. We have carefully considered the value of habitat protection for the species. We have determined that protection of summer habitat is not required for species conservation except where trees are known to be occupied by northern long-eared bats when the young are non-volant (flightless) and for areas immediately surrounding hibernacula where they swarm and feed just prior to hibernation and when they emerge from hibernation in the spring.

#### Solar Energy

*30. Comment:* Commenter(s) requested that solar energy development be provided an exemption under the 4(d) rule.

*Our Response:* Solar energy developers will need to consider the impacts of their development and operations in light of the prohibitions of this rule. Incidental take outside of the WNS zone is not prohibited. Incidental take from tree-removal activities within the WNS zone is prohibited under specific conditions related to known hibernacula and known, occupied maternity roost trees (see **Activities Involving Tree Removal** section above for details).

#### Agriculture

31. *Comment:* Commenter(s) requested that agricultural activities be included in the suite of exempted activities under the 4(d) rule.

*Our Response:* We have substantially revised the prohibitions and exceptions in this final rule that may apply to agricultural activities. Agricultural producers/operators will need to consider the impacts of their activities in light of the prohibitions of this rule. Incidental take outside of the WNS zone is not prohibited. Incidental take from tree removal activities within the WNS zone is prohibited under specific conditions related to known hibernacula and known, occupied maternity roost trees (see **Activities Involving Tree Removal**, above, for details). This final rule has been restructured in a manner that it applies prohibitions where necessary and advisable for conservation of the species. Therefore, agricultural development and operations do not need to be specifically “excepted” in order to apply the rule’s provisions.

#### Caves and Mines

32. *Comment:* Commenter(s) requested an exemption for show caves and cave tours.

*Our Response:* Hibernating bats are very sensitive to disturbance as discussed in greater detail under the **Hibernacula** section of this document. This final rule prohibits the incidental take of northern long-eared bats in hibernacula inside the WNS zone as well as the purposeful take (e.g., purposefully harassing or killing) of northern long-eared bats in hibernacula both inside and outside of the WNS zone. When this species occupies caves or mines used by people regardless of the purpose, the provisions of this 4(d) rule apply. Show cave or mine activities inside the WNS zone that do not result in the incidental take of northern long-eared bats are not prohibited. In other words, if northern long-eared bats are not being disrupted from their normal hibernation behaviors (e.g., by avoiding areas with hibernating bats, limiting noise and lighting

in areas used by bats), we do not consider human use of the cave or mine to be a “take” of the bats.

33. *Comment:* Commenter(s) stated that an exemption should be made available for mining, mineral exploration, and coal extraction activities.

*Our Response:* Incidental take of northern long-eared bats that results from tree-removal activity, including mining operations, is prohibited in some circumstances (see **Activities Involving Tree Removal**, above). However, hibernating bats are very sensitive to disturbance, as discussed in greater detail under the **Hibernacula** section of this rule. This final rule prohibits the incidental take of northern long-eared bats in hibernacula inside the WNS zone as well as the purposeful take (e.g., purposefully harassing or killing) of northern long-eared bats in hibernacula both inside and outside of the WNS zone. Inside the WNS zone, the take of northern long-eared bats in mines and man-made tunnels for mineral or coal extraction includes any activity that kills, injures, harms, or harasses the species. Mining, mineral exploration, and coal extraction activities will need to work with the Service to find alternative means to authorize take, such as through a section 10 permitting process or section 7 process where applicable. Mining activities inside the WNS zone that do not result in the incidental take of northern long-eared bats are not prohibited. In other words, if northern long-eared bats are not being killed, injured, or otherwise disrupted from their normal hibernation behaviors by the mining operations, we do not consider those activities to be a “take” of the bats.

34. *Comment:* Commenter(s) suggested that activities designed to re-claim abandoned mines or maintain cave environments for the benefit of wildlife species should be exempt under the 4(d) rule.



*Our Response:* We agree that beneficial reclamation and maintenance should be encouraged. However, exception from take prohibitions through a species-specific 4(d) rule is not the appropriate mechanism for authorizing this activity. Where abandoned mines and cave environments are in use by northern long-eared bats, take associated with maintenance is prohibited; however, we encourage project proponents to work with the Service to implement best management practices to avoid or minimize the effects of their actions in the interest of habitat improvement. We will work with project proponents to determine alternate ways to authorize activities, such as section 10 permits or section 7 incidental take authorization.

#### Mosquito Control

35. *Comment:* Commenter challenges the Service's assertion that chemicals used in mosquito control (malathion and others of comparable risk to mammals) pose a risk to northern long-eared bats; commenter further requests an exemption for mosquito control activities, especially where there is a public health risk.

*Our Response:* Please see the **Environmental Contaminants** section of this rule for details concerning our evaluation of the risks from pesticide applications. After careful consideration of the available information, we do not include in this rule a prohibition on the incidental take of northern long-eared bats as result of pesticide application provided the application is a "lawful activity," that is, it must comply all applicable State laws. Any northern long-eared bat unlawfully taken pursuant to a State pesticide law would be a violation of this final 4(d) rule.

#### *Adequacy and Clarity of 0.25 Mile Hibernacula Buffer*

36. *Comment:* Commenter(s) suggested that this buffer is too restrictive for landowners.

*Our Response:* The Service has determined that a protective buffer around known hibernacula is necessary and advisable for the conservation of the species. Please see the discussion under *Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula* of this rule for our explanation of the need for this buffer. As described in that section, we have prohibited incidental take of northern long-eared bats under specific tree-removal circumstances; however, that does not mean that all activities involving tree-removal activities within the 0.25-mile (0.4-km) buffer of hibernacula will result in take. For example, a timber harvest might be conducted within 0.25 miles (0.4 km) of a hibernaculum at a time when bats are unlikely to be roosting in trees within the buffer (e.g., winter) that fully protects any bats in the hibernaculum as well as the hibernaculum's suitability for bats (i.e., bat's access, microclimate), and does not significantly change the suitability of the habitat for foraging by northern long-eared bats or perhaps even improves prey availability. In such a case, the timber harvest, although closer than 0.25 miles (0.4 km) to the hibernaculum, is not likely to result in incidental take, so we would not recommend that the timber harvester seek authorization for incidental take pursuant to the Act. Further, while incidental take of northern long-eared bats within that buffer is prohibited (in the WNS zone), it may be authorized on a case-by-case basis with further coordination with the Service at a local level. Take may be authorized through section 10 or section 7 of the Act. In addition, it is our expectation that project modifications may be made that would protect the hibernaculum and allow for the project proponent's objectives to be met.

37. *Comment:* Commenter(s) seek clarification on whether the buffer and prohibition to clearcutting (within the buffer) is a year-round restriction.

*Our Response:* Yes, the protection of the hibernaculum and a buffer around it is a year round protective measure and applies to all types of tree-removal activities in the WNS zone.

38. *Comment:* Commenter(s) suggested that the buffer around hibernacula be limited to fall swarming and spring emergence when northern long-eared bats are present.

*Our Response:* We have determined that protective measures must be considered year-round for several reasons, including that habitat lost outside of the spring emergence and fall swarming period could affect the suitability of those habitats later during spring emergence or fall swarming. Further, we have included the buffer on hibernacula for several reasons beyond protecting foraging habitat during fall swarming and spring emergence. In particular, the buffer will help to protect the micro-climate characteristics of hibernacula and other entrances used by bats that may not be reflected in the primary location information for hibernacula. For example, many caves or abandoned mines used may have entrances used by bats that are not reflected in the general location information for those sites that are used by people; a buffer helps to protect less prominent features that may be important to bats. Projects may be able to be planned or modified within those buffer areas to retain sufficient habitat and avoid harm; however, the Service considers coordination on a case-by-case basis to be important to assure necessary conservation.

39. *Comment:* Several commenter(s) suggested an increased buffer area around hibernacula would be more appropriate.

*Our Response:* We have revised the approach used in this final 4(d) rule to ensure that hibernating northern long-eared bats in the WNS zone are protected from incidental take independent of the buffer size used in the conservation measure. In addition, all northern long-

eared bats both inside and outside of the WNS zone are protected from purposeful take (e.g., killing or intentionally harassing northern long-eared bats), including while in hibernacula where they are most vulnerable. We have retained the 0.25-mile buffer (0.25-mile radius from known hibernacula entrance/access points used by bats) to further protect the hibernacula and associated forested habitat for several reasons (see discussion above under *Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula*).

40. *Comment:* Commenter(s) expressed concern with implementing measures when they do not have data/information on known hibernacula.

*Our Response:* The Service recognizes the challenges associated with data sharing and data management. Many states share data management concerns and guard data carefully. We encourage landowners to continue to work with your State natural resources and natural heritage staff to evaluate your ownership for the presence of these important resources. When seeking information on the presence of hibernacula within your project boundary, our expectation is that a project proponent will complete due diligence to determine available data. However, if information is not available, we recognize that the project proponent that has made reasonable efforts to determine whether there are known hibernacula on the property is in the position of not knowing if no data have been provided.

#### *Maternity Roost Tree Restrictions*

41. *Comment:* Commenter(s) expressed concerns about having adequate information to identify maternity roost trees.

*Our Response:* We recognize the challenges associated with data sharing. Please see response to Comment 40. While not required by this rule, the Service recommends summer surveys to definitively locate maternity roost trees.

42. *Comment:* Commenter(s) requested that we clarify that roost trees means maternity roost trees.

*Our Response:* We have made this final 4(d) rule specific to maternity roost trees.

43. *Comment:* Commenter(s) expressed disagreement with the 0.25 mile buffer around known, occupied roost trees. Some commented that this buffer was too small, while some commented that it was too large.

*Our Response:* In the interim 4(d) rule (80 FR 17974; April 2, 2015), the buffer around known, occupied roost trees applied only to some types of tree-removal activities (e.g., forest management, rights-of-ways, prairie management) and excluded only clearcuts (and similar harvest methods). Given the relatively small percent of forest habitat anticipated to be impacted by forest management or conversion (see **Forest Management** and **Forest Conversion**, above of this rule for more details), we revised the buffer around the known maternity roost trees. As explained in more detail under *Conservation Measure 2: Tree Removal Near Known Maternity Roost Trees*, we have made the buffer more broadly applicable to all tree-removal activities, but have narrowed it in size to provide protection for the maternity roost tree, while minimizing the potential that the protective measure would serve as impediment to conducting new surveys. We have reduced the buffer around known, occupied maternity roost trees to a radius of 150 feet around the known, occupied maternity roost tree.

44. *Comment:* Commenter(s) stated that the Service should require surveys to determine where roost trees are located.

*Our Response:* The Act does not require a private landowner to survey his or her property to determine whether endangered or threatened wildlife and plants occupy their land. We encourage landowners to voluntarily seek additional information to conserve natural resources in their land use/land management actions; however, we will not require surveys to locate northern long-eared bats and maternity roost trees on private property.

#### Residential Housing Development

45. *Comment:* Commenter(s) requested that northern long-eared bat take be excepted for the purposes of residential housing development.

*Our Response:* Take resulting from removal of summer habitat (tree removal) is not prohibited provided the conservation measures set forth in this rule are followed when the habitat removal occurs within the WNS zone. The provisions of this final rule have been restructured to clarify prohibitions rather than rely on a list of excepted activities.

#### Wind Energy Development

46. *Comment:* Commenter(s) requested that northern long-eared bat take be excepted for the purposes of renewable energy development and operation (wind energy).

*Our Response:* Incidental take resulting from wind energy development and operation is not prohibited, provided that the conservation measures set forth in this rule are followed to protect hibernacula and known, occupied maternity roost trees. We strongly encourage voluntary conservation measures and best management practices such as feathering or elevated

cut-in speeds to reduce impacts to northern long-eared bats and other bats; however, we have not prohibited incidental take attributable to wind energy in this final rule. Please see the **Wind Energy Facilities** section of this rule for additional details.

#### Natural Resource Management

*47. Comment:* Commenter(s) requested that northern long-eared bat take be excepted when activities are included in Department of Defense integrated natural resource management plans, providing for activities such as recreational activities, burns, and other temporary but insignificant effects on the northern long-eared bat.

*Our Response:* Incidental take resulting from activities described as recreational activities and beneficial wildlife habitat management/maintenance is not prohibited, provided that the conservation measures set forth in this rule are followed when the activity occurs inside the WNS zone. We have completed a section 7 analysis on the provisions of this final 4(d) rule to ensure that actions completed in accordance with the final rule are not likely to jeopardize the continued existence of the species. Where these resource management activities do not fit within the final rule, section 7 consultation would need to be completed to authorize incidental take of the northern long-eared bat.

#### Compliance and Monitoring

*48. Comment:* Commenter(s) recommended that surveys be required and that landowners be required to report on their activities in order to receive the benefits of the 4(d) rule.

*Our Response:* While we welcome landowners' efforts to determine where bats may be located on their property, the Act does not require that a landowner survey his or her property to find species. We are not mandating that surveys be completed as part of this rule.

#### Alternate Section 4(d) Provisional Language

49. *Comment:* One organization commented on behalf of its members and 14 other environmental organizations (collectively referenced as "the Center") in support of the adoption of a different 4(d) rule and in opposition of the Service's proposed and the interim 4(d) rules.

*Our Response:* The remaining paragraphs (under the heading **Summary of Comments and Recommendations on the Proposed and Interim 4(d) Rules**) pertain to the comments we received from the Center. With respect to the overarching comment that our 4(d) rule does not conserve the species, we believe that our final 4(d) rule provides for the "necessary and advisable" conservation of the species, as described herein. For further information, please see our **Determination** section, below.

With respect to the Center's proposed 4(d) language, we note that the proposed language defines specific prohibitions and would make a regulatory determination of "take" to include a number of actions. These include cave and mine entry without implementing decontamination protocols; transporting equipment into caves and mines or between caves and mines between the WNS zone and non-WNS zone; cave and mine entry during hibernation periods; activities associated with hydraulic fracturing within 5 miles of a hibernaculum, within 1.5 miles of an occupied roost tree, or within 3 miles of an acoustic detection or bat capture record; noise disturbance activities within a 0.5-mile radius of a hibernaculum during the hibernation period; and disruption of water sources within hibernacula. With respect to protection of hibernacula,



take of northern long-eared bats is prohibited. Establishing the causal connection between a variety of activities such as those the Center proposed to be defined as prohibitions is beyond the scope of this rule. We have addressed hibernacula protection provisions in this rule under the section entitled *Conservation Measure 1: Tree Removal Near Known Northern Long-eared Bat Hibernacula*. Protections in this final rule are adequate to protect the species.

In addition to the Center's suggested language for hibernacula prohibitions, they recommended language regarding prohibitions for prescribed burning and aerial spraying. Based on our analysis, we conclude that prescribed burning and aerial spraying do not have a measurable population-level impact on the species and regulation of those activities will not meaningfully impact the species' ability to recover. For further information on prescribed fire impacts, see **Prescribed Fire** above. For further information on aerial spraying of pesticides, please see the **Environmental Contaminants** section above.

The final prohibition suggested by the Center was the operation of utility-scale wind projects, specifically during the hours from dusk to sunrise during the fall swarming season, at low wind speeds, and within 5 miles of a hibernaculum. Incidental take resulting from the operation of wind energy facilities is not prohibited by this final 4(d) rule and a complete discussion of known impacts to the species may be found in the **Wind Energy Facilities** section above.

Finally, the Center provided suggested regulatory text for exemptions from prohibitions that included language for seasonal restrictions, clearing restrictions, mandatory measures for hibernacula protection (gate installation), water quality protection measures, and data collection and reporting requirements. We recognize the effort that has gone into the development of this

alternative language. However, we have carefully considered the measures that are necessary for the protection of the species. Our final rule has been developed based on the Service's desire to implement protective measures that will make a meaningful impact on species conservation and recovery. As stated elsewhere in this document (see **Determination** section, below), we have provided regulatory flexibility while implementing protective measures where we have determined those measures to be necessary and advisable for conservation of the species.

### **Determination**

Section 4(d) of the Act states that “the Secretary shall issue such regulations as she deems ‘necessary and advisable to provide for the conservation’” of species listed as threatened species. Conservation is defined in the Act to mean “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the Act] are no longer necessary.”

The courts have recognized the extent of the Secretary's discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, the Secretary may find that it is necessary and advisable not to include a taking prohibition, or to include a limited taking prohibition. See *Alsea Valley Alliance v Lautenbacher*, 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002). In addition, as affirmed in *State of Louisiana v. Verity*, 853 F. 2d 322 (5<sup>th</sup> Cir. 1988), the rule need not address all the threats to the species. As noted by Congress when the Act was initially enacted, “once an animal is on the threatened list, the Secretary has an almost infinite number of options available to him [her] with regard to the

permitted activities for those species. [She] may, for example, permit taking, but not importation of such species,” or she may choose to forbid both taking and importation but allow the transportation of such species, as long as the prohibitions, and exceptions to those prohibitions, will “serve to conserve, protect, or restore the species concerned in accordance with the purposes of the Act” (H.R. Rep. No. 412, 93<sup>rd</sup> Cong., 1<sup>st</sup> Sess. 1973).

Section 9 prohibitions make it illegal for any person subject to the jurisdiction of the United States to violate any regulation pertaining to any threatened species of fish or wildlife listed pursuant to section 4 of the Act and promulgated by the Secretary pursuant to authority provided by the Act. Under this final 4(d) rule, incidental take of the northern long-eared bat will not be prohibited outside the WNS zone. Incidental take also will not be prohibited within the WNS zone, outside of hibernacula, provided that it occurs more than 0.25 miles (0.4 km) from a known hibernacula and does not result from an activity that cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-m) radius from the maternity tree, during the pup season (June 1 through July 31).

Accordingly, we have determined that this provision is necessary and advisable for the conservation of the northern long-eared bat as explained below.

Although not fully protective of every individual, the conservation measures identified in this final rule help protect maternity colonies. This final species-specific rule under section 4(d) of the Act provides the flexibility for certain activities to occur that have not been the cause of the species’ imperilment, while still promoting conservation of the species across its range.

The northern long-eared bat was listed as a threatened species under the Act, with an interim rule under section 4(d), on April 2, 2015 (80 FR 17974). At that time, the Service invited

public comment on the interim 4(d) rule for 90 days, ending July 1, 2015. The Service had already received comments for 60 days on its proposed 4(d) rule (80 FR 2371; January 16, 2015). In total, the Service received approximately 40,500 comments on the proposed and interim 4(d) rules. For a complete discussion of the comments, as well as the Service's response to comments, see **Summary of Comments and Recommendations on the Proposed and Interim 4(d) Rules**, above.

Because the primary threat to the northern long-eared bat is a fungal disease known as WNS, the Service has tailored the final 4(d) rule to prohibit the take of northern long-eared bats from certain activities within areas where they are in decline, as a result of WNS, and within these areas we apply incidental take protection only to known, occupied maternity roost trees and known hibernacula. These protections will help to conserve the northern long-eared bat during its most vulnerable life stages (from birth to flight, or volancy) and during spring and fall swarming (near hibernacula).

In summary, this 4(d) rule is necessary and advisable to provide for the conservation of the northern long-eared bat because it provides for protection of known maternity roost trees and known hibernacula within the WNS zone. In addition, promulgation of this rule allows the conservation community to provide for species conservation where it can affect change, namely during the northern long-eared bat's most vulnerable life stages and where hibernation occurs. This final 4(d) rule allows the regulated public to manage lands in a manner that is lawful and compatible with species' survival, and it allows for protection of the species in a manner that the Secretary deems to be necessary and advisable for the conservation of the northern long-eared bat. By this rule, the Secretary deems that the prohibition of certain take, which is incidental to otherwise lawful activities that take bat habitat, is not necessary for the long-term survival of the

species. Furthermore, she acknowledges the importance of addressing the threat of WNS as the primary measure to arrest and reverse the decline of the species. Nothing in this 4(d) rule affects other provisions of the Act, such as designation of critical habitat under section 4, recovery planning under section 4(f), and consultation requirements under section 7.

## **Required Determinations**

### *Regulatory Planning and Review*

*(Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant. Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this final 4(d) rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C.601 et seq.)*

Listing and status determinations under the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 *et seq.*), and any prohibitions or protective measures afforded the species under the Act are exempt from the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996). However, as this final 4(d) rule is being promulgated following the final listing of the northern long-eared bat, we evaluate whether the Regulatory Flexibility Act applies to this rulemaking.

Under the Regulatory Flexibility Act, whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for “significant impact” and a threshold for a “substantial number of small entities.” See 5 U.S.C. 605(b). Based on the information that is available to us at this time, we certify that this rule will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

On April 2, 2015 (80 FR 17974), we published the final determination to list the northern long-eared bat as a threatened species and an interim 4(d) rule. That rule became effective on May 4, 2015, and the interim 4(d) rule will remain in effect until this final rule becomes effective (see **DATES**, above). The interim 4(d) rule generally applies the prohibitions of 50 CFR 17.31

and 17.32 to the northern long-eared bat, which means that the interim rule, among other things, prohibits the purposeful take of northern long-eared bats throughout the species' range, but the interim rule includes exceptions to the purposeful take prohibition. The exceptions for purposeful take are: (1) In instances of removal of northern long-eared bats from human structures (if actions comply with all applicable State regulations); and (2) for authorized capture, handling, and related activities of northern long-eared bats by individuals permitted to conduct these same activities for other bat species until May 3, 2016. Under the interim rule, incidental take is not prohibited outside the WNS zone if the incidental take results from otherwise lawful activities. Inside the WNS zone, there are exceptions for incidental take for the following activities, subject to certain conditions: Implementation of forest management; maintenance and expansion of existing rights-of-way and transmission corridors; prairie management; minimal tree removal; and removal of hazardous trees for the protection of human life and property.

This final 4(d) rule does not generally apply the prohibitions of 50 CFR 17.31 to the northern long-eared bat. This rule continues to prohibit purposeful take of northern long-eared bats throughout the species' range, except in certain cases, including in instances of removal of northern long-eared bats from human structures and for authorized capture, handling, and related activities of northern long-eared bats by individuals permitted to conduct these same activities for other bat species until May 3, 2016. After May 3, 2016, a permit pursuant to section 10(a)(1)(A) of the Act is required for the capture and handling of northern long-eared bats. Under this rule, incidental take is still not prohibited outside the WNS zone. Within the WNS zone, incidental take is prohibited only if: (1) Actions result in the incidental take of northern long-eared bats in hibernacula; (2) actions result in the incidental take of northern long-eared

bats by altering a known hibernaculum's entrance or interior environment if the alteration impairs an essential behavioral pattern, including sheltering northern long-eared bats; or (3) tree-removal activities result in the incidental take of northern long-eared bats when the activity either occurs within 0.25 mile (0.4 kilometer) of a known hibernaculum, or cuts or destroys known, occupied maternity roost trees or any other trees within a 150-foot (45-meter) radius from the maternity roost tree during the pup season (June 1 through July 31). This approach allows more flexibility to affected entities and individuals in conducting activities within the WNS zone.

Under this rule, we individually set forth prohibitions on possession and other acts with unlawfully taken northern long-eared bats, and on import and export of northern long-eared bats. These prohibitions were included in the interim 4(d) through the general application of the prohibitions of 50 CFR 17.31 to the northern long-eared bat. Under this rule, take of the northern long-eared bat is also not prohibited for the following: Removal of hazardous trees for protection of human life and property; take in defense of life; and take by an employee or agent of the Service, of the National Marine Fisheries Service, or of a State conservation agency that is operating a conservation program pursuant to the terms of a cooperative agreement with the Service. Regarding these three exceptions, take in defense of life was not included in the interim 4(d) rule, but the other two exceptions were, either through the general application of 50 CFR 17.31 or through a specific exception included in the interim 4(d) rule. Therefore, this final 4(d) rule will result in less restrictive regulations under the Act than those set forth in the interim 4(d) rule.

We completed an analysis of the forested land area that may be impacted by this rulemaking. There are approximately 400,000,000 acres (161,874,256 ha) of forested habitat across the range of the northern long-eared bat, which includes 37 States and the District of



Columbia. This rule may restrict land use activities on approximately 200,000 acres (80,937 ha). This area constitutes less than 0.05 percent of all forested habitat across the extensive range of the northern long-eared bat. Any impact in this very small portion of forested habitat is not expected to affect a substantial number of entities in any given sector, nor result in a significant economic impact on any given entity. For the above reasons, we certify that the final rule will not have a significant economic impact on a substantial number of small entities. Therefore, a final regulatory flexibility analysis is not required.

#### *Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. For reasons discussed within this final rule, we believe that the rule will not have any effect on energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

#### *Unfunded Mandates Reform Act*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This final rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both “Federal intergovernmental

mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or [T]ribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and [T]ribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or Tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

(2) This final 4(d) rule will result in less restrictive regulations under the Act, as it pertains to the northern long-eared bat, than would otherwise exist without a 4(d) rule or under the interim 4(d) rule. As a result, we do not believe that this rule will significantly or uniquely affect small government entities. Therefore, a Small Government Agency Plan is not required.

### *Takings*

In accordance with Executive Order 12630, this final rule will not have significant takings implications. We have determined that the rule has no potential takings of private property implications as defined by this Executive Order because this 4(d) rule will result in less-restrictive regulations under the Act than would otherwise exist. A takings implication assessment is not required.

### *Federalism*

In accordance with Executive Order 13132, this final 4(d) rule does not have significant Federalism effects. A federalism summary impact statement is not required. This rule will not have substantial direct effects on the State, on the relationship between the Federal Government and the State, or on the distribution of power and responsibilities among the various levels of government.

### *Civil Justice Reform*

In accordance with Executive Order 12988, the Office of the Solicitor has determined that this final rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order.

### *Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain collections of information that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act. This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor and a person is not required

to respond to a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (42 U.S.C. 4321 et seq.)*

We have prepared a final environmental assessment, as defined under the authority of the National Environmental Policy Act of 1969. For information on how to obtain a copy of the final environmental assessment, see **ADDRESSES**, above. The final environmental assessment will also be available on the Internet at <http://www.regulations.gov> and at <http://www.fws.gov/midwest/Endangered>

*Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

In October 2013, Tribes and multi-tribal organizations were sent letters inviting them to begin consultation and coordination with the service on the proposal to list the northern long-eared bat. In August 2014, several Tribes and multi-tribal organizations were sent an additional

letter regarding the Service's intent to extend the deadline for making a final listing determination by 6 months. A conference call was also held with Tribes to explain the listing process and discuss any concerns. Following publication of the proposed rule, the Service established three interagency teams (biology of the northern long-eared bat, non-WNS threats, and conservation measures) to ensure that States, Tribes, and other Federal agencies were able to provide input into various aspects of the listing rule and potential conservation measures for the species. Invitations for inclusion in these teams were sent to Tribes within the range of the northern long-eared bat and a few tribal representatives participated on those teams. Two additional conference calls (in January and March 2015) were held with Tribes to outline the proposed species-specific 4(d) rule and to answer questions. Through this coordination, some Tribal representatives expressed concern about how listing the northern long-eared bat may impact forestry practices, housing development programs, and other activities on Tribal lands.

## **References Cited**

A complete list of references cited in this document is available on the Internet at <http://www.regulations.gov> and upon request from the Twin Cities Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

## **Authors**

The primary authors of this document are the staff members of the Midwest Region of the U.S. Fish and Wildlife Service.

### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

### **Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

## **PART 17-ENDANGERED AND THREATENED WILDLIFE AND PLANTS**

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.

2. Amend § 17.40 by revising paragraph (o) to read as follows:

### **§ 17.40 Special rules—mammals.**

\* \* \* \* \*

(o) Northern long-eared bat (*Myotis septentrionalis*). The provisions of this rule are based upon the occurrence of white-nose syndrome (WNS), a disease affecting many U.S. bat populations. The term “WNS zone” identifies the set of counties within the range of the northern long-eared bat within 150 miles of the boundaries of U.S. counties or Canadian districts where the fungus *Pseudogymnoascus destructans* (*Pd*) or WNS has been detected. For current information regarding the WNS zone, contact your local Service ecological services field office. Field office contact information may be obtained from the Service regional offices, the addresses of which are listed in 50 CFR 2.2.

(1) *Prohibitions*. The following prohibitions apply to the northern long-eared bat:

(i) Purposeful take of northern long-eared bat, including capture, handling, or other activities.

(ii) Within the WNS zone:

(A) Actions that result in the incidental take of northern long-eared bats in known hibernacula.

(B) Actions that result in the incidental take of northern long-eared bats by altering a known hibernaculum’s entrance or interior environment if it impairs an essential behavioral pattern, including sheltering northern long-eared bats.

(C) Tree-removal activities that result in the incidental take of northern long-eared bats when the activity:

(1) Occurs within 0.25 mile (0.4 kilometer) of a known hibernaculum; or

(2) Cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-meter) radius from the maternity roost tree, during the pup season (June 1 through July 31).

(iii) Possession and other acts with unlawfully taken northern long-eared bats. It is unlawful to possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any northern long-eared bat that was taken in violation of this section or State laws.

(iv) Import and export.

(2) *Exceptions from prohibitions.* (i) Any person may take a northern long-eared bat in defense of his own life or the lives of others, including for public health monitoring purposes.

(ii) Any person may take a northern long-eared bat that results from the removal of hazardous trees for the protection of human life and property.

(iii) Any person may take a northern long-eared bat by removing it from human structures, but only if the actions comply with all applicable State regulations.

(iv) Purposeful take that results from actions relating to capture, handling, and related activities for northern long-eared bats by individuals permitted to conduct these same activities for other species of bat until May 3, 2016.

(v) All of the provisions of §17.32 apply to the northern long-eared bat.

(vi) Any employee or agent of the Service, of the National Marine Fisheries Service, or of a State conservation agency that is operating a conservation program pursuant to the terms of



a cooperative agreement with the Service in accordance with section 6(c) of the Act, who is designated by his agency for such purposes, may, when acting in the course of his official duties, take northern long-eared bats covered by an approved cooperative agreement to carry out conservation programs.

\* \* \* \* \*

Dated: January 7, 2016.

Karen Hyun,

Acting Principal Deputy Assistant Secretary for Fish and Wildlife and Parks.

**Billing Code 4333-15**

[FR Doc. 2016-617 Filed: 1/13/2016 8:45 am; Publication Date: 1/14/2016]