



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R3–ES–2016–0052]

[4500030113]

RIN 1018–AZ62

Endangered and Threatened Wildlife and Plants; Determination that Designation of Critical Habitat is Not Prudent for the Northern Long-eared Bat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Critical habitat determination.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), have reconsidered whether designating critical habitat for the northern long-eared bat (*Myotis septentrionalis*) is prudent. We have determined that such a designation is not prudent. We listed the northern long-eared bat as a threatened species under the Endangered Species Act of 1973, as amended (Act), on April 2, 2015. At the time the species was listed, we determined that designation of critical habitat was prudent, but not determinable. Since that time, information has come available that demonstrates that designating the wintering habitat as critical habitat for the bat would likely increase the threat from vandalism and disturbance, and could, potentially, increase the spread of white-nose syndrome. In addition, designating the summer habitat as critical habitat would not be beneficial to the species, because there are no areas within the summer habitat that meet the definition of critical habitat. Thus, we have determined that the

designation of critical habitat is not prudent for the northern long-eared bat.

DATES: The determination announced in this document was made on [INSERT DATE OF FEDERAL REGISTER PUBLICATION].

ADDRESSES: This document is available on the Internet at <http://www.regulations.gov> at Docket No. FWS-R3-ES-2016-0052. Supporting documentation we used in preparing this document will be available for public inspection, by appointment, during normal business hours at the Twin Cities Ecological Services Office, U.S. Fish and Wildlife Service, 4101 American Blvd. E., Bloomington, MN 55425.

FOR FURTHER INFORMATION CONTACT: Peter Fasbender, Field Supervisor, 952-252-0092, extension 210. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Background

The northern long-eared bat (*Myotis septentrionalis*) is a wide-ranging species that is found in a variety of forested habitats in summer and hibernates in caves and mines (or habitat with similar conditions to suitable caves or mines) in winter. The fungal disease, white-nose syndrome (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, provided no cure to the disease is found. 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.

Summer Habitat

Suitable summer habitat for the northern long-eared bat consists of a wide variety of forested and wooded habitats where they roost, forage, and travel (Foster and Kurta 1999, p. 668), and may also include some adjacent and interspersed non-forested habitats (Yates and Muzika 2006, p. 1,245). This includes forests and woodlots containing potential roosts, as well as linear features such as fence rows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure (Lacki and Schwierjohann 2001, p. 487; Perry and Thill 2007, p. 223; Sasse and Pekins 1996, p. 95; Timpone *et al.* 2010, p. 118).

After hibernation ends in late March or early April (as late as May in some northern areas), most northern long-eared bats migrate to summer roosts. The spring migration period typically runs from mid-March to mid-May (Caire *et al.* 1979, p. 405; Easterla 1968, p. 770; Whitaker and Mumford 2009, p. 207). The northern long-eared bat is not considered to be a long-distance migrant (typically 40–50 miles (64–80 kilometers)). Males and non-reproductive females may summer near or in their winter habitat (hibernacula), or migrate to summer habitat some distance from their hibernaculum.

After emerging from hibernacula in the spring, female northern long-eared bats actively form colonies in the summer (Foster and Kurta 1999) and exhibit fission-fusion behavior (Garroway and Broders 2007), where members frequently coalesce to form a group, but composition of the group is in flux (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). Northern long-eared bat maternity colonies range widely in size (reported range of 7 to 100; Owen *et al.* 2002, p. 2; Whitaker and Mumford 2009, p. 212), although colonies of 30–60 individuals may be most common, at least prior to the onset of WNS (Whitaker and Mumford 2009, p. 212; Caceres and Barclay 2000, p. 3; Service 2014, p. A16).

Northern long-eared bats show interannual fidelity to roost trees and maternity areas. They use networks of roost trees often centered around one or more central-node roost trees (Johnson *et al.* 2011, p. 228) with multiple alternate roost trees. Northern long-eared bats roost in cavities, crevices, hollows, or underneath bark of both live and dead trees and snags (typically ≥ 3 inches (in) (8 centimeters (cm)) in diameter at breast height (dbh)). Northern long-eared bats are known to use a wide variety of roost types, using tree species based on presence of cavities or crevices or presence of peeling bark. Northern long-eared bats have also been found roosting in structures such as buildings, barns, sheds, houses, and bridges (Benedict and Howell 2008, p. 5; Krochmal and Sparks 2007, p. 650; Timpone *et al.* 2010, p. 119; Service 2014, p. 2).

The best available information indicates that northern long-eared bats seem to be flexible in roost selection, using varying roost tree species and types of roosts throughout their range. They do not depend on certain species of trees for roosts; rather, they opportunistically use many tree species that form suitable cavities or retain bark (Foster and Kurta 1999, p. 668). Additionally, the bats may use either live trees or snags; the use of live trees versus snags may reflect the availability of such structures (Perry and Thill 2007, p. 224) and the presence of sympatric bat species (*e.g.*, Indiana bat (*Myotis sodalis*)) (Timpone *et al.* 2010, p. 120), as opposed to a specific preference of tree or

other habitat characteristics. Results from studies have also found that the diameters of roost trees selected by northern long-eared bats vary greatly (Sasse and Pekins 1996, pp. 95–96; Schultes 2002, pp. 49, 51; Perry 2014, pers. comm.; Lereculeur 2013, pp. 52–54; Carter and Feldhamer 2005, p. 263; Foster and Kurta 1999, p. 663; Lacki and Schwierjohann 2001, pp. 484–485; Owens *et al.* 2002, p. 3; Timpone *et al.* 2010, p. 118; Lowe 2012, p. 61; Perry and Thill 2007, p. 223; Lacki *et al.* 2009, p. 1,171) and that northern long-eared bats can forage in a variety of forest types (Brack and Whitaker 2001, p. 207; LaVal *et al.* 1977, p. 594; van Zyll de Jong 1985, p. 94). Northern long-eared bats change roost trees frequently (*e.g.*, Cryan *et al.* 2001, p. 50; Foster and Kurta 1999, p. 665) within their summer home range; this behavior suggests they are adapted to responding quickly to changes in roost availability and ephemeral roosts. For a more detailed discussion on summer habitat, refer to the April 2, 2015, final listing rule (80 FR 17974).

Winter Habitat (Hibernacula)

Northern long-eared bats hibernate during the winter months to conserve energy from increased thermoregulatory demands and reduced food resources (Thomas *et al.* 1990, p. 475; Thomas and Geiser 1997, p. 585; Bouma *et al.* 2010, p. 623). Suitable winter habitat includes caves and cave-like structures (*e.g.*, abandoned or active mines, railroad tunnels) (Service 2015, unpublished data; Goehring 1954, p. 435; Kurta *et al.* 1997, p. 478). Other landscape features may be used by northern long-eared bats during the winter, but they have yet to be documented. Generally, northern long-eared bats hibernate from October to April, depending on the local climate (November/December through March in southern areas, with emergence as late as mid-May in some northern

areas) (Caire *et al.* 1979, p. 405; Whitaker and Hamilton 1998, p. 100; Amelon and Burhans 2006, p. 72).

Hibernacula used by northern long-eared bats vary in size (Raesly and Gates 1987, p. 20; Kurta 2013, in litt.), and these hibernacula have relatively constant, cooler temperatures (0 to 9 degrees Celsius (°C) (32 to 48 degrees Fahrenheit (°F))) (Raesly and Gates 1987, p. 18; Caceres and Pybus 1997, p. 2; Brack 2007, p. 744), with high humidity and minimal air currents (Fitch and Shump 1979, p. 2; van Zyll de Jong 1985, p. 94; Raesly and Gates 1987, p. 118; Caceres and Pybus 1997, p. 2). The sites favored by northern long-eared bats are often in very high humidity areas, to such a large degree that droplets of water are often observed on their fur (Hitchcock 1949, p. 52; Barbour and Davis 1969, p. 77). Within hibernacula, northern long-eared bats are typically found roosting in small crevices or cracks in cave or mine walls or ceilings, sometimes with only the nose and ears visible (Griffin 1940, pp. 181–182; Barbour and Davis 1969, p. 77; Caire *et al.* 1979, p. 405; van Zyll de Jong 1985, p. 9; Caceres and Pybus 1997, p. 2; Whitaker and Mumford 2009, pp. 209–210).

To a lesser extent, northern long-eared bats have also been observed overwintering in other types of habitat that resemble cave or mine hibernacula, including abandoned railroad tunnels (Service 2015, unpublished data). Although similar bat species (*e.g.*, big brown bats (*Eptesicus fuscus*)) have been found using non-cave or non-mine hibernacula, including attics and hollow trees (Neubaum *et al.* 2006, p. 473; Whitaker and Gummer 1992, pp. 313–316), northern long-eared bats have only been observed overwintering in suitable caves, mines, or habitat with the same types of conditions found in suitable caves or mines.

Northern long-eared bats tend to roost singly or in small groups (Service 2013, unpublished data), with hibernating population sizes rarely recorded in concentrations of more than 100 bats in a single hibernaculum (Barbour and Davis 1969, p. 77). Northern long-eared bats display more winter activity than other cave species, with individuals occasionally moving between hibernacula throughout the winter (Griffin 1940, p. 185; Whitaker and Rissler 1992, p. 131; Caceres and Barclay 2000, pp. 2–3). Northern long-eared bats have shown a high degree of philopatry (*i.e.*, using the same site multiple years) to the hibernacula used (Pearson 1962, p. 30).

Northern long-eared bat hibernacula have fairly specific physical and biological requirements that make them suitable for northern long-eared bats. 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). For a more detailed discussion on winter habitat, refer to the April 2, 2015, final listing rule (80 FR 17974).

Previous Federal Actions

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 April 2, 2015, we published in the **Federal Register** (80 FR 17974) a final rule listing the northern long-eared bat as a threatened species. In the April 2, 2015, rule, we also established an interim rule under section 4(d) of the Act (16 U.S.C. 1531 et seq.). The final listing rule and the interim

4(d) rule both became effective on May 4, 2015. On January 14, 2016 (81 FR 1900), we published a final 4(d) rule, which became effective on February 16, 2016.

Critical Habitat

Background

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be an endangered or threatened species. Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 defines the geographical area occupied by the species as: An area that may generally be delineated around species' occurrences, as determined by the Secretary (*i.e.*, range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.*, migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

Conservation, as defined under section 3 of the Act, means to use, and the use of,

all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Critical habitat designation does not allow the government or public to access private lands, nor does it require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult under section 7(a)(2) of the Act, but even if consultation leads to a finding that the action would likely cause destruction or adverse modification of critical habitat, the resulting obligation of the Federal action agency and the landowner is not to restore or recover the species, but rather to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the

geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features, we focus on the specific features that support the life-history needs of the species, including but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed if we determine that such areas are essential for the conservation of the species. For example, an area that is currently occupied by the species, but was not occupied at the time of listing, may be essential to the conservation of the species and may be included in the critical habitat designation.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the Federal Register on July 1, 1994 (59 FR

34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. For example, they require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

Critical Habitat Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when any of the following situations exist: (i) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (ii) such designation of critical habitat would not be beneficial to the species. The regulations also provide that, in determining whether a designation of critical habitat would not be beneficial to the species, the factors the Services may consider include but are not limited to: Whether the present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or whether any areas meet the definition of "critical habitat" (50 CFR 424.12(a)(1)(ii)).

We have determined that both situations when a critical habitat designation would not be prudent apply to the northern long-eared bat. With respect to summer habitat, we

have determined that designating critical habitat would not be beneficial to the species. Further, with respect to wintering habitat, we have determined that the species is threatened by taking or human activity and identification of critical habitat could be expected to increase the degree of this threat to the species. An explanation of these determinations follows.

Designating Summer Habitat Would Not Be Beneficial to the Species

The northern long-eared bat is widely distributed throughout much of its range during the summer months and is considered to be flexible with regards to summer habitat requirements.

The best scientific information available on summer habitat suggests that where the northern long-eared bat is found, it is widely distributed in a variety of wooded habitats (ranging from highly fragmented forest habitats to contiguous forest blocks from the southern United States to Canada's Yukon Territory), with generally non-specific habitat elements. There are elements of summer habitat that the northern long-eared bat needs (forests for roosting, raising young, foraging, and commuting between roosting and foraging habitat); however, the best available information indicates that the species' specific needs and preferences for these habitat elements are relatively flexible, plentiful, and widely distributed. Thus, summer habitat for the northern long-eared bat does not have specific physical or biological features that are essential to the conservation of the species and, therefore, does not meet the definition of critical habitat.

Furthermore, as discussed in the final listing rule (80 FR 17974; April 2, 2015), northern long-eared bat summer habitat is not limited or in short supply, and summer

habitat loss is not a rangewide threat to the species. Based on a compilation of the total forested acres for each State in the northern long-eared bat's range (from the U.S. Forest Service's 2015 State and Private Forestry Fact sheets (available at <http://stateforesters.org/regional-state>)), there are an estimated 281,528,709 acres (113,213,960 hectares) of available forested habitat for the northern long-eared bat throughout its range in the United States (Service 2016, p. 28). This is assuming that all forested acres are suitable for the northern long-eared bat, which probably overestimates habitat availability, but such an assumption is not unreasonable given the northern long-eared bat's flexible selection of summer habitat and ability to use very small trees (≥ 3 in (8 cm) in dbh) (Service 2016, p. 18).

As we documented in the final listing rule (80 FR 17974; 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 future 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, the U.S. Forest Service expects only 4 to 8 percent of the forested area found in 2007 across the conterminous United States to be lost by 2060 (U.S. Forest Service 2012, p. 12). Additionally, as discussed above, the northern long-eared bat has been documented to use a wide variety of forest types across its wide range (living in highly fragmented forest habitats to contiguous forest blocks from the southern United States to Canada's Yukon Territory). Because summer habitat for the northern long-eared bat is not limiting, and because the northern long-eared bat is considered to be flexible with regards to summer habitat, the

availability of forested habitat does not now, nor will it likely in the future, limit the conservation of the northern long-eared bat.

The critical habitat regulations at 50 CFR 424.12(a)(1)(ii) provide two examples of when designating critical habitat may not be beneficial to the species and, therefore, may be not prudent: where the present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or where there are no areas that meet the definition of critical habitat for the species. The summer habitat for the northern long-eared bat falls within both examples. First, there are no areas of summer habitat that meet the definition of critical habitat for the northern long-eared bat. Second, the present or threatened destruction, modification, or curtailment of summer habitat is not a threat to the species; rather, disease is the primary threat to the species within its summer habitat. In the final rule revising the critical habitat regulations (81 FR 7414; February 11, 2016), the Services expressly identified this situation as an example where designating critical habitat may not be beneficial to the species: "in some circumstances, a species may be listed because of factors other than threats to its habitat or range, such as disease, and the species may be a habitat generalist. In such a case, on the basis of the existing and revised regulations, it is permissible to determine that critical habitat is not beneficial and, therefore, not prudent" (see 81 FR 7425; February 11, 2016). Therefore, we conclude that designating the summer habitat of the northern long-eared bat as critical habitat is not prudent.

Increased Threat to the Taxon by Designating Critical Habitat in Their Hibernacula

Disturbance of hibernating bats (as discussed under Factor A of the final listing rule (80 FR 17974, April 2, 2015; see 80 FR 17989–17990)) has long been considered a threat to cave-hibernating bat species, including the northern long-eared bat. Northern long-eared bats hibernate during the winter months to conserve energy from increased thermoregulatory demands and reduced food resources. To increase energy savings, individuals enter a state of torpor, when internal body temperatures approach ambient temperature, metabolic rates are significantly lowered, and immune function declines (Thomas *et al.* 1990, p. 475; Thomas and Geiser 1997, p. 585; Bouma *et al.* 2010, p. 623). Each time a bat arouses from torpor, it uses a significant amount of energy to warm its body and increase its metabolic rate. These arousals during hibernation cause the greatest amount of energy depletion in hibernating bats (Thomas *et al.* 1990, p. 477). The cost and number of arousals are the two key factors that determine energy expenditures of hibernating bats in winter (Thomas *et al.* 1990, p. 475). Human disturbance at hibernacula can cause bats to arouse more frequently, causing premature energy store depletion and starvation (Thomas 1995, p. 944; Speakman *et al.* 1991, p. 1103), leading to marked reductions in bat populations (Tuttle 1979, p. 3) and increased susceptibility to disease.

The primary forms of human disturbance to hibernating bats result from recreational caving, vandalism, cave commercialization (cave tours and other commercial uses of caves), and research-related activities (Service 2007, p. 80). Fire building is also a common form of disturbance that, in addition to elevating interior temperatures (which is detrimental during hibernation) and accumulating smoke, can deposit soot on ceilings and eventually result in site abandonment by bats (Tigner and Stukel 2003, p. 54). In

addition to unintended effects of commercial and recreational caving, intentional killing of bats in caves by shooting, burning, and clubbing has been documented (Tuttle 1979, pp. 4, 8). Intentional killing of northern long-eared bats has been documented at a small percentage of hibernacula (*e.g.*, one case of shooting disturbance in Maryland, and one case of bat torching in Massachusetts where approximately 100 bats (northern long-eared bats and other species) were killed) (Service, unpublished data).

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 this species (northern long-eared bat).” In addition, human disturbance at hibernacula has been identified by many States as the next greatest threat to the bat after WNS. Of 14 States that assessed the possibility of human disturbance at bat hibernacula within the range of the northern long-eared bat, 13 identified at least 1 known hibernacula as having been negatively affected by human disturbance (Service 2012, unpublished data). Eight of these 14 States (Arkansas, Kentucky, Maine, Minnesota, New Hampshire, North Carolina, South Carolina, and Vermont) indicated the potential for human disturbance at over 50 percent of the known hibernacula in that State. Nearly all States without WNS identified human disturbance as the primary threat to hibernating bats, and all others (including WNS-positive States) noted that human disturbance either is of significant concern or is the next greatest threat after WNS (Service 2012, unpublished data).

Since the time of listing (April 2, 2015), additional information has become available that demonstrates that designating critical habitat for the northern long-eared bat would likely increase the threat from vandalism and disturbance, and could,

potentially, increase the spread of WNS. In November 2015, we sought information from State fish and wildlife agencies and other public landowners with known bat caves or mines to determine: (1) How prevalent accounts of disturbance to bats and vandalism to hibernacula are throughout the species' range; and (2) the level and types of concerns that State fish and wildlife agencies and other landowners with known bat caves or mines have regarding the release of known bat hibernacula location information.

Prevalence of Disturbance—State and other agency or organization personnel provided information regarding specific incidents of disturbance of hibernating bats within their State or area of jurisdiction. Incidents were reported throughout the range of the northern long-eared bat. Evidence of vandalism of caves and mines and disturbance of bats included: dead bats, graffiti, trash, evidence of camp fires, bottle rockets, fireworks, digging or excavation, attempts to remove rock or minerals, alteration of cave or mine entrances, and damage to and breach of gates. There were also a few reported incidents of intentional killing of bats, including clubbing, thrown rocks, and burning. In addition, materials found in hibernacula, such as tennis rackets and blow torches, indicate harm inflicted on bats (NJDFW 2015, pers. comm.). There are few law enforcement reports regarding these incidents, either due to a lack of law enforcement actions or because reporting these incidents would publicize mine or cave locations (SCDNR 2015, pers. comm.).

Examples of incidents of vandalism and disturbance to bats at publicly known hibernacula have been found throughout the range of the northern long-eared bat; we received examples of vandalism and disturbance to bats from 20 State fish and wildlife agencies and 9 other public landowners (including Federal, State, and local agencies and

organizations) with known northern long-eared bat hibernacula. Due to the large number of specific incidents, a small, representative subset of the examples we received is presented below. For purposes of illustrating that these incidents occur throughout the species' range, the information is organized into four geographic areas: northeast, southeast, midwest, and west.

Northeast: In northeastern States such as Pennsylvania and New York, vandalism and disturbance to bats within hibernacula occurs frequently. Evidence of human use of caves and mines in Pennsylvania, including digging for new passage, waste, all-terrain-vehicle use, guns being shot, and burning, are common. There are also many examples of people trying to cut, remove, or get around gates to access gated hibernacula (PGFC 2015, pers. comm.). Due to the large numbers of people trespassing in Pennsylvania caves and mines, especially during winter months while bats are hibernating, the Pennsylvania Game Commission installed cameras at many caves to capture visual proof of those illegally entering caves and send automated messages to alert a wildlife conservation officer of the entry. Since January 2015, conservation officers have confronted at least 50 suspected trespassers, resulting in more than 20 citations (PGFC 2015, pers. comm.). Similarly, in New York, nearly all un-gated hibernacula, both on public and private lands, are visited by people, and many gated caves and mines have been compromised. Some sites have signs informing visitors that caves and mines are closed to visitation in the winter; however, this does not stop individuals from accessing those sites (NYDEC 2015, pers. comm.).

Southeast: In southeastern States such as South Carolina, North Carolina, and Kentucky, vandalism and disturbance to bats within hibernacula occurs often. For

example, in South Carolina reports exist of bottle rockets being shot into a gated mine, missing locks on bat-friendly gates, litter inside a cave, and individuals barricading an entrance to a cave (SCDNR 2015, pers. comm.). In North Carolina, there are multiple incidents of vandalism to caves and mines. One particular mine in North Carolina has had repeated vandalism issues over several years, and multiple security fences, gates, and locks have been compromised by vandalism (NCWRC 2015, pers. comm.). In Kentucky, 82 of 118 total hibernacula where northern long-eared bats have been observed are exposed to human disturbance; in 2007, two people were convicted of intentionally killing more than 100 federally-listed Indiana bats in a Kentucky cave (USFWS 2010).

Midwest: There are multiple records of vandalism and disturbance of bats in Midwestern States, including Michigan, Indiana, Wisconsin, Missouri, and Minnesota. The first mine to have WNS-associated bat mortality in Michigan had been illegally accessed in 2013, when people used a torch to break the gate. The WNS-associated mortality was “likely as a direct result of this disturbance” (MIDNR 2015, pers. comm.). Winter visitation to caves in Indiana is relatively common, and in one particular incident, hibernating Indiana bats were intentionally burned (INDNR 2015, pers. comm.). In Wisconsin, five State-owned underground sites were sealed for use if there was a need for artificial hibernacula for WNS treatment trials; all five were breached (welded doors were ground off) during the spring of 2015. Additionally, one private landowner filled in a cave on their property when they learned it was occupied by bats (WDNR 2015, pers. comm.). In Missouri, there has been evidence of digging at cave entrances, parties, fires, fireworks, graffiti, off-highway vehicle use, gate damage, and trash left behind at caves throughout the State. In fact, there is an ongoing investigation and prosecution regarding

illegal entry at a Missouri cave (MDC 2016, pers. comm.). Issues with breached gates and broken locks occurred at several Minnesota caves; approximately 4 years ago, surveyors found bat bones and shotgun shells in one cave.

West: In States such as South Dakota, Arkansas, and Oklahoma in the western portion of the northern long-eared bat's range, there are several records of incidents of vandalism and disturbance to bats as well. The South Dakota Department of Game, Fish, and Parks provided literature with evidence of both historical and ongoing vandalism at their State's hibernacula. Increasing disturbance of known hibernacula throughout the Black Hills area is noted as one of the greatest threats to bat populations in the area (Tigner and Stukel 2003, p. 11). Some of the more disruptive and damaging activities inside caves and abandoned mines include discharging firearms and fireworks, spray-painting, campfire construction, and intentionally killing bats and other wildlife (Tigner and Stukel 2003, p. 54). At one particular cave, campfires are common during hibernation, and only a small fraction of the bats identified in the cave in the early 1990s still use the cave (Tigner 2002, p. 7). In Arkansas, approximately 200 endangered gray bats (*Myotis grisescens*) were killed at a major gray bat hibernaculum on National Park Service land (AGFC 2015, pers. comm.). In Oklahoma, there have been multiple incidents involving cutting fences around gate entrances, breaching cave gates (by cutting, digging under, or removing structures around gates to gain access), and campfires near cave entrances (Service 2015, pers. comm.).

Summary: As illustrated by the examples above, which are only a small subset of the reported incidents, we have extensive rangewide evidence that indicates known northern long-eared bat hibernacula have been, and are likely to continue to be, disturbed

and vandalized. These acts not only lead to increases in disturbance during the northern long-eared bat's sensitive hibernation period, which, in turn, leads to decreased survival, but also may lead to direct mortality of northern long-eared bats.

Concerns over Release of Location Information—Northern long-eared bats that are infected with WNS are believed to be less resilient to disturbance and resulting arousal, and the northern long-eared bat is one of the most highly susceptible bat species to WNS (Langwig *et al.* 2014). As discussed in the final listing rule (80 FR 17974, April 2, 2015; see 80 FR 17993–17998), WNS-causing fungal spores can be transmitted not only by bat-to-bat transmission, but also by human actions (USGS National Wildlife Health Center, Wildlife Health Bulletin 2011–05), and decontamination remains one of the only management options available to reduce the risk of human-assisted transmission. State, Federal, and local agencies and organizations are especially concerned with the spread of WNS if cave and mine locations are made public, especially in sites where WNS has not been found or in areas that have not yet been inundated with the disease. Several agency and organization personnel expressed concern regarding those visiting caves and mines and not properly decontaminating after leaving hibernacula, which may result in these visitors spreading WNS fungal spores by using contaminated gear in uninfected caves or mines (ANHC 2015, pers. comm.; CDEEP 2015, pers. comm.; KDFWR 2015, pers. comm.; NBSRP 2015, pers. comm.; NJD VW 2015, pers. comm.; WDNR 2015, pers. comm.; WGFD 2015, pers. comm.). It is possible that the spread of WNS was enhanced by human transfer of fungal spores in some States, such as Connecticut (CDEEP 2015, pers. comm.).

State, Federal, and local agencies that gather specific location information exercise extra efforts to protect hibernacula location information from becoming readily available to the public. In fact, many States reported that they are concerned that release of location information could significantly increase human visitation, thereby increasing disturbance to bats, and, therefore, they do not share hibernacula location information with the public. For example, the Wisconsin Department of Natural Resources stated, “we have not shared locational information as to maternity sites and hibernacula. Under state law, locations deemed critical to the survival of the species may be withheld from the public. All data in the WI Natural Heritage Inventory are exempt from State open records laws” (WDNR 2015, pers. comm.). Some agencies and organizations state that when location information is disclosed, an agreement typically must be in place with those requesting the location information to protect the data, and point data are buffered to conceal the specific locations. Similarly, in Missouri, the Missouri Department of Conservation (MDC) does not release hibernacula locations to the general public, and location information for caves not owned by MDC cannot be disclosed by the State (MDC 2016, pers. comm.).

In addition to protecting location information, State, Federal, and local agencies and organizations use other means to protect bat hibernacula, such as installation of bat-friendly gates. Direct protection of caves and mines can be accomplished through installation of bat-friendly gates that allow passage of bats while reducing disturbance from human entry as well as reducing changes to the cave microclimate from air restrictions. Bat-friendly gates are generally thought to be effective in preventing disturbance of hibernating bats and vandalism of hibernacula (AGFC 2015, pers. comm.;

ANF 2015, pers. comm.; ANHC 2015, pers. comm.; BNR 2015, pers. comm.; CDEEP 2015, pers. comm.; DMCC 2015, pers. comm.; IADNR 2015, pers. comm.; ILDNR 2015, pers. comm.; INDNR 2015, pers. comm.; KDFWR 2015, pers. comm.; MANG 2015, pers. comm.; MDC 2016, pers. comm.; MIDNR 2015, pers. comm.; NBSRP 2015, pers. comm.; NGDFW 2015, pers. comm.; NYDEC 2015, pers. comm.; ONF 2015, pers. comm.; ONSR 2015, pers. comm.; OSFNF 2015, pers. comm.; PGC 2015, pers. comm.; SCDNR 2015, pers. comm.; SDGFP 2015, pers. comm.; SMP 2015, pers. comm.; WDNR 2015, pers. comm.), although attempts to protect hibernacula from disturbance have varying degrees of effectiveness. In most States for which we have information, a small percentage of caves and mines are gated, and a majority of State agencies indicated that there is a need to gate additional caves and mines used by bats. For example, in Missouri, less than approximately 2 percent of known hibernacula have bat-friendly gates Statewide (MDC 2015, pers. comm.). Attempts to remove gates at hibernacula are numerous and pervasive throughout the northern long-eared bat's range, although the success of removal attempts varies. Some State and Federal agencies and other organizations state that attempts to remove gates are rarely successful; others, such as the Kentucky Department of Fish and Wildlife Resources, state that removal attempts are almost always successful: "When parties wish to gain access, they are very resourceful and come prepared to cut, dig, pry, or use any other means necessary to enter. The remote nature of some sites does not seem to deter vandalism either" (KDFWR 2015, pers. comm.). See *Prevalence of Disturbance*, above, for more examples of attempts to remove gates.

The process of designating critical habitat would increase human threats to the northern long-eared bat by increasing the vulnerability of this species to disturbance during its sensitive hibernation period and by increasing the likelihood of vandalism to its winter hibernacula by publicly disclosing the locations of those hibernacula. Northern long-eared bats are particularly sensitive to disturbance while hibernating, and such disturbance further reduces survival chances of already compromised, WNS-infected bats. Additionally, increased human access to hibernacula may facilitate or accelerate the spread of WNS to uninfected sites, as people may carry the fungal spores from site to site. Designation of critical habitat requires the publication of maps and a specific narrative description of critical habitat in the **Federal Register**. The degree of detail in those maps and boundary descriptions is far greater than the general location information provided in the final listing rule (80 FR 17974; April 2, 2015). Furthermore, a critical habitat designation normally results in the news media publishing articles in local newspapers and on special interest websites, usually with maps of the critical habitat. We have determined that the publication of maps and descriptions outlining the locations of this species' wintering areas would increase awareness and visitation of hibernacula, and thus disturbance of bats, as those interested in accessing caves and mines would then have detailed location information for these hibernacula. As expressed by many State bat biologists and land managers with hibernacula within their area of jurisdiction, there is a strong concern regarding publicizing cave and mine location information due to the increased threat of disturbance to the northern long-eared bat, and bats in general. Furthermore, human disturbance may exacerbate the effect of WNS on northern long-eared bats; providing a literal map of bat hibernacula in the form of critical habitat will

likely facilitate human disturbance and may further compound threats to the species. We, therefore, conclude that the northern long-eared bat is threatened by taking and other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species. Designating critical habitat is therefore not prudent under the regulations at 50 CFR 424.12(a)(1)(i). As discussed earlier, the risk of increased threats from publishing hibernacula locations is significant. The northern long-eared bat, and bats in general, are very sensitive to disturbance while hibernating, and there are numerous known incidents of vandalism, targeted killing, and disturbance of hibernating northern long-eared bats throughout the species' range. The public has great interest in visiting caves and mines for recreational purposes, and human-caused disturbance has clear effects on hibernating bats. Thus, any action that publicly discloses the location of northern long-eared bat hibernacula (such as a critical habitat designation) puts the species in further peril. One of the basic measures to protect northern long-eared bats from vandalism and disturbance while hibernating is restricting access to information pertaining to the location of the species' hibernacula. Publishing maps and narrative descriptions of northern long-eared bat critical habitat would significantly affect our ability to reduce the threat of vandalism and disturbance of hibernacula and hibernating bats and may facilitate or intensify the spread of WNS by humans.

Summary of Prudency Determination

We have determined that designating critical habitat for the northern long-eared bat is not prudent. Designating summer habitat as critical habitat is not beneficial to the species, because there are no areas within the summer habitat of the species that meet the

definition of critical habitat. Further, the primary threat to the species is the disease WNS; the destruction, modification, or curtailment of summer habitat is not a threat to the species as suitable summer habitat continues to exist and is not limited throughout the species' range. Therefore, designating critical habitat in the summer habitat areas would not be beneficial. Moreover, designating winter habitat as critical habitat would disclose hibernacula location information, and thereby increase the threat to the northern long-eared bat from vandalism and disturbance at hibernacula and could, potentially, increase the spread of WNS. Disturbance of hibernating bats has long been considered a threat to cave-hibernating bat species, and has been identified as the next greatest threat to this taxon after WNS. Human disturbance at hibernacula causes bats to arouse more frequently, leading to premature energy store depletion and, possibly, starvation. Further compounding the effects of disturbance, northern long-eared bats that are infected with WNS are believed to be less resilient to disturbance and resulting arousal. Furthermore, increased human visitation of hibernacula could intensify the spread of WNS from infected to uninfected sites. We have, therefore, determined in accordance with 50 CFR 424.12(a)(1) that it is not prudent to designate critical habitat for the northern long-eared bat.

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 Office (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this document are the staff members of the Twin Cities Ecological Services Office.

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Dated: April 12, 2016

Signed: Michael J. Bean

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4333–15

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