



January 21, 2010

**VIA FIRST CLASS MAIL**

Kenneth Salazar, Secretary of the Interior  
U.S. Department of the Interior  
1849 C Street, N.W.  
Washington, D.C. 20240

Thomas Vilsack, Secretary of Agriculture  
U.S. Department of Agriculture  
1400 Independence Avenue, S.W.  
Washington, DC 20250

Robert Gates, Secretary of Defense  
U.S. Department of Defense  
1000 Defense Pentagon  
Washington, DC 20301-1000

**Re: Petition for rulemaking to enact immediate cave closures to protect bat species from white-nose syndrome; to promulgate a rule governing the “take” of endangered bat species; and to designate as significant all caves on federal lands in the continental United States.**

Dear Mr. Salazar, Mr. Vilsack, and Mr. Gates,

This Petition is submitted by the Center for Biological Diversity (“the Center”) pursuant to the Administrative Procedures Act (“APA”), 5 U.S.C. § 553(e); the Endangered Species Act (“ESA”) 16 U.S.C. §§ 1533(b)(4 and 5), 1540(f); and the Federal Cave Resources Protection Act, 16 U.S.C. §§ 4301, *et al.* Due to the rapid and lethal spread of white-nose syndrome (“WNS”) and the Secretaries’ mandatory duties and obligations pursuant to the ESA, Federal Cave Resources Protection Act, National Forest Management Act, Federal Land Policy and Management Act, National Wildlife Refuge Administration Act, National Park Service Organic Act, and the Sikes Act, the Center hereby petitions the Secretaries of Interior, Agriculture, and Defense, pursuant to the APA, to immediately close all caves and mines on federal lands within the continental United States. The Center further petitions the Secretary of the Interior, pursuant to the APA and ESA, to immediately promulgate a rule governing the unlawful take of endangered bats to specify that transferring materials, whether knowingly or unknowingly, between caves and mines in areas where WNS is known to occur, to caves and mines in areas where WNS has yet to occur and could potentially spread to threatened and endangered bat species, constitutes a violation of the ESA prohibition against “take” of listed species. 16 U.S.C. § 1538(a)(1)(B). The Center further petitions the Secretaries of Interior and Agriculture to immediately identify and designate as significant all caves located on federal lands pursuant to the Federal Cave Resources Protection Act, due to spread of WNS and its devastation of bat

populations. Because of the swift and ongoing spread of WNS, please consider this an emergency petition in which time is of the essence. We look forward to your prompt response.

**I. Summary of the Center's Requests**

**A. Closures of caves and mines**

The Center hereby petitions, under the APA, 5 U.S.C. § 553(e), to the United States Departments of Interior, Agriculture, and Defense, to immediately close to entry all caves or mines known or suspected to harbor bats, on Fish and Wildlife Service, Bureau of Land Management, National Park Service, U.S. Forest Service, Department of Defense, and other federal lands throughout the continental United States, for the purpose of protecting bat species, including the federally listed **gray bat (*Myotis grisescens*); Indiana bat (*Myotis sodalis*); Ozark big-eared bat (*Corynorhinus (Plecotus) townsendii ingens*); Virginia big-eared bat (*Corynorhinus (Plecotus) townsendii virginianus*); lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*); and Mexican long-nosed bat (*Leptonycteris nivalis*), along with currently unlisted but at-risk bat species, including **little brown bat (*Myotis lucifugus*), eastern small-footed bat (*Myotis leibii*), northern long-eared bat (*Myotis septentrionalis*), and tri-colored bat (*Perimyotis subflavus*),** from the spread of the lethal, newly emergent bat disease known as white-nose syndrome (WNS). The immediate closure of these caves and mines is required by the Secretaries' mandatory duties and obligations pursuant to the ESA, Federal Cave Resources Protection Act, National Forest Management Act, Federal Land Policy and Management Act, National Wildlife Refuge Administration Act, National Park Service Organic Act, and Sikes Act.**

**B. Publication of guidelines specifying those actions constituting take of endangered bats**

The Center hereby petitions, under the APA, 5 U.S.C. § 553(e) and ESA, 16 U.S.C. §§ 1533(b)(4), (5), 1540(f), the Secretary of Interior to promulgate a rule governing "take" of endangered bat species in order to specify that transferring materials, whether knowingly or unknowingly, between caves and mines in areas where WNS has occurred to caves and mines in areas where WNS has yet to occur and could potentially spread to threatened and endangered bat species, constitutes a violation of prohibitions in the ESA against "take" of listed species by any person. 16 U.S.C. § 1538(a)(1)(B). This rule should specify that persons traveling between caves may be engaging in an illegal activity and therefore subject to penalties specified in the ESA, that these restrictions apply to state and private landowners that permit persons to travel to caves under their jurisdiction, and that these restrictions apply not just to caves known to harbor listed bat species, but to all caves harboring bats because of the possibility that the pathogen could be spread from bat to bat after initial anthropogenic spread. The rule should further specify the necessary actions to avoid take, including cave closures, avoiding travel between caves, and the disposal of clothes, equipment or other materials used within caves located in regions where WNS is known to occur.

**C. Significant cave designation**

The Center hereby petitions and recommends, pursuant to the Federal Cave Resources Protection Act, 16 U.S.C. §§ 4301, *et al.*, that the Secretary of Interior and Secretary of Agriculture

immediately designate as “significant” all caves on federal lands that are inhabited by bats, seasonally or yearlong, under the jurisdiction of the Department of Interior or the Department of Agriculture.

**D. Fish and Wildlife Service advisory**

In addition to the above rule governing take, the Center requests that the U.S. Fish and Wildlife Service (“FWS”) issue a general advisory to all state, other public, and private owners of caves and bat-inhabited mines throughout the United States, including commercial caves, that year round closure to recreational and/or commercial use is strongly advised for all bat-inhabited caves and mines to stem the spread of WNS, regardless of whether such sites are currently known to be affected or not by the disease. We ask that the FWS specifically recommend to state governments that they close all state-owned caves and mines used by bats, and further, we ask that the FWS recommends to states that they issue their own advisories to private land owners, strongly recommending closure for private caves and mines to protect bats.

**E. Fish and Wildlife Service notification to private cave owners**

The Center further requests that the FWS provide written notice to all owners of caves and mines harboring federally-listed endangered bats, including commercial caves, of the threat of WNS and the potential for human transmission on gear or clothing. The FWS should communicate that WNS is an extremely serious threat to cave-dwelling bats; affected caves and mines have lost 90-100 percent of their colonies within 2-3 years; and WNS threatens both federally-listed bats as well as non-listed bat species. FWS’ communication should include a statement that affirmative actions to open caves to public visitation, where such caves provide habitat for federally-listed bats, may be in violation of Section 9 of the ESA. We request that the agency work directly with owners of caves harboring federally-listed bats to implement and maintain bat-safe closures that bar human access, except for authorized research staff, wildlife agency personnel, or for emergency purposes. FWS should develop a recommended protocol of visitor decontamination and other measures aimed at minimizing the risk of spread of WNS for those commercial caves that remain open. We request that this protocol be disseminated to commercial cave owners and commercial cave associations throughout the United States.

**F. Public acquisition of caves to protect bats**

Finally, the Center requests that the FWS include in its national WNS action plan the establishment of a fund to purchase privately-owned bat caves and mines with particularly high ecological and/or strategic value in the effort to contain WNS, especially bat sites that currently have inadequate protection from potential human introduction of WNS.

**II. Petitioner’s Interests**

The interests of the Center and its members are implicated and impaired by the threat of WNS to federally-listed bat species, and all bat species affected by WNS. The interests of the Center and its members in the well-being of other cave-dwelling species, including other federally listed species, and the health of cave ecosystems generally, as well as that of other natural communities of which bats are a part, are further implicated.

The Center is a non-profit corporation dedicated to the preservation, protection, and restoration of biodiversity, native species, and ecosystems. The Center has more than 255,000 members and online activists, including members in states presently affected by WNS. A great deal of the Center's work is focused on protecting endangered and threatened species and their critical habitat under the ESA. The Center is working to reduce and eliminate the impacts to listed bats and to ensure the conservation of the ecosystems in which they live. The Center's members use and enjoy the lands where WNS-affected bats are located, as well as other lands inhabited by bats but not yet afflicted by WNS. The Center's members will be harmed if these bats are diminished in number, regionally extirpated, or become extinct. The Center's members will also be harmed if the loss of bats diminishes or destabilizes cave ecosystems, or otherwise jeopardizes other species dependent on the presence of bat populations.

### **III. Origins of White-Nose Syndrome and Its Impacts on Bats and Cave Ecosystems**

#### **A. WNS origins and spread in eastern U.S.**

WNS has devastated bat populations in the Northeast United States over the last three winters. From its origins in caves near Albany, New York, the syndrome has spread throughout New England, and to Pennsylvania, Virginia, and West Virginia. Scientists believe the disease is likely to appear among bats hibernating in Kentucky, Tennessee, and other southern and midwestern states in the next year or two, and it may reach the West Coast within 2-3 years at the current rate of spread.

Mortality rates of bats in affected caves have been documented as high as 90-100 percent. Throughout the Northeast this past summer, both scientific and informal observations support the conclusion that bat numbers have been reduced to a small fraction of what they were just three years ago.

To date, biologists have documented six different species as affected and killed by WNS: little brown bats, federally endangered Indiana bats, tri-colored bats, eastern small-footed bats, northern long-eared bats, and big brown bats (*Eptesicus fuscus*). With the disease's appearance in the southern Appalachian region, white-nose syndrome has the potential to afflict the extremely rare, federally listed Virginia big-eared bat, whose range is limited to West Virginia, Virginia, Kentucky, and North Carolina.

If WNS continues to spread west and south, as biologists believe it will, other bat species may be exposed to the disease and prove susceptible. Among those potentially in the pathway of the disease are federally listed gray bats and Ozark big-eared bats in the Midwest and South, and lesser long-nosed bats and Mexican long-nosed bats in the Southwest. Several bat species not currently on the federal endangered species list may warrant listing in the future, because of the devastating impacts of WNS.

#### **B. Regional extirpation and possible extinctions**

Scientists believe WNS could cause the extinction of several North American bat species, if it

continues to spread unchecked. Even common species are at risk. The little brown bat, once the most common bat in the Northeast, appears to have suffered the highest mortality rates from WNS, and based on summer acoustical surveys and fall swarming surveys in 2009, the little brown bat now appears to have been virtually wiped out in the region. Other, less common species, such as the small-footed bat, which is state-listed in a number of states, are now likely to be extremely rare if not also nearly extirpated from the Northeast. As WNS spreads south and west, other, currently abundant bat populations are likely to also be decimated by the disease, expunging bats rapidly from the North American landscape. For those most vulnerable species, such as the Virginia big-eared bat, which hibernates in only a handful of sites located in a geographically restricted region of southern Appalachia, global extinction could occur within one or two winters.

### **C. Impacts of bat extirpation on cave ecosystems**

WNS threatens not only bats, but also other cave-dwelling species that depend on the presence of bats for their survival. Caves are energy limited because of the lack of sunlight. The guano of bats provides an important energy input for cave ecosystems, and some cavernicolous species appear to depend directly on bat guano for their survival.<sup>1</sup>

Cave obligates—those that can live only in cave environments—show a high degree of endemism and are some of the most rare and vulnerable species in the United States.<sup>2</sup> In fact, terrestrial and aquatic cave obligates represent more than 50 percent of the imperiled (G1-G2) animal species in the United States.<sup>3</sup> The Appalachian region—now squarely within the range of WNS—hosts some of the most biodiverse cave fauna in the world, and many of these species are invertebrate cave obligates dependent on the energy and nutrients that bats bring into caves from above-ground environments.<sup>4</sup> Other regions with high levels of cave species diversity and endemism are northeast Alabama, the Edwards Plateau of Texas, and the Ozarks in Oklahoma. However, other parts of the country, especially areas west of the Rocky Mountains, also host relatively diverse cave fauna.<sup>5</sup>

According to a recent report on WNS management by the U.S. Fish and Wildlife Service: “[Cave obligate] [i]nvertebrate populations would likely be affected indirectly by whatever major impacts WNS might have on bat numbers and nutrient cycling, and directly if any species are susceptible [themselves] to WNS.”<sup>6</sup> Among the species at risk from the loss of bats due to WNS are 19 cave obligate invertebrates listed as species of special concern in Maryland, and 13 invertebrate Species of Greatest Conservation Need in Pennsylvania.<sup>7</sup>

Relative to their numbers and the degree of their imperilment, few cave obligates are listed under

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<sup>1</sup> Fenolio, D.B. et al. 2006. Coprophagy in a cave-adapted salamander; the importance of bat guano examined through nutritional and stable isotope analyses. *Proc. R. Soc. B* 273, 439–443; Szymanski, J. et al. 2009. White-Nose Syndrome Management: Report on Structured Decision Making Initiative, FWS, Ft. Snelling, MN.

<sup>2</sup> Culver, D.C. et al. 2000. Obligate cave fauna of the 48 contiguous United States. *Conservation Biology* 14: 386-401.

<sup>3</sup> Culver, *id.*

<sup>4</sup> Culver, *id.*; Szymanski, *id.*

<sup>5</sup> Culver, *id.*

<sup>6</sup> Szymanski, *id.*

<sup>7</sup> *Id.*

the federal Endangered Species Act, reflecting an historic bias toward listing vertebrates and above-ground fauna.<sup>8</sup> Nonetheless, federally endangered species that appear to be dependent on the energy inputs provided by bats include the endangered Alabama cave shrimp (*Palaemonias alabamiae*),<sup>9</sup> cave crayfish (*Cambarus zophonastes*),<sup>10</sup> and cave crayfish (*Cambarus aculabrum*).<sup>11</sup>

#### **IV. White-Nose Syndrome's Causative Agent And Means Of Transmission**

##### **A. A new fungus**

A growing consensus among scientists points to the newly identified fungus, *Geomyces destructans*, as the causal agent of WNS. The pathogen has been consistently identified among affected animals and sites.<sup>12</sup> Fungal growth on hibernating bats is often, but not always, visible as a fuzzy, white bloom around the muzzle, as well as white spots or blotches on wings. The fungal hyphae often penetrate the superficial epidermal layer, and may cause discomfort or irritation to bats. Emaciation, abnormal winter arousal patterns, and flight out of hibernation sites onto the winter landscape, are all characteristic of white-nose syndrome. Bats appear to be immunosuppressed and unable to mount an effective physiological defense against the invading fungus. However, immunosuppression may be a normal correlate of bat hibernation, and not the result of infection with *G. destructans*. The fungus' tolerance for low temperatures—it thrives at 5-10° C<sup>13</sup>—appears to facilitate its growth on hibernating bats, whose body temperatures, when in a torpid state, drop close to ambient temperature of the hibernacula.

Hopes that the fungus would be geographically limited to colder, moister regions faded last year, as scientists discovered that the fungus appears to grow even faster at warmer temperatures, with an upper limit to growth of 20° C. Dr. David Blehert of the USGS/National Wildlife Health Center testified at a June 4, 2009 hearing to Congress that based on laboratory findings, it was theoretically possible that *G. destructans* could spread as far south as northern Florida.

##### **B. Suspected means of transmission**

###### *1. Bat transmission*

Bats are probably carrying WNS from cave to cave, and possibly from bat to bat. WNS has shown up in caves where there has been no known human access dating back prior to the first appearance of the disease in North America in 2006, ruling out in those cases the possibility that humans were a vector.

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<sup>8</sup> Culver, *id.*

<sup>9</sup> Elliott, William R. 1998. Conservation of the North American cave and karst biota. Subterranean Biota (Ecosystems of the World). Elsevier Science. Electronic preprint at [www.utexas.edu/depts/tnhc/www/biospeleology/preprint.htm](http://www.utexas.edu/depts/tnhc/www/biospeleology/preprint.htm); FWS, 2005, Alabama Cave Shrimp 5-Year Review: Summary and Evaluation, <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K01V>.

<sup>10</sup> <http://www.epa.gov/espp/arkansas/stone.htm>

<sup>11</sup> Graening, G.O. 2005. Trophic structure of Ozark cave streams containing endangered species. *Oceanological and Hydrobiological Studies* 34(3): 3-17.

<sup>12</sup> <http://www.fort.usgs.gov/WNS/>

<sup>13</sup> Blehert, D.S. et. al. 2009. Bat white-nose syndrome: An emerging fungal pathogen? *Science*: 9 January 2009: 227

Hibernating bats cluster together in dense assemblages numbering hundreds or even thousands of individuals. This colonial behavior, which can include mixing of multiple species, seems highly conducive to the spread of WNS among bats.

Bats may also be carrying the fungus on their bodies and “infecting” cave surfaces and soils. Some bats may become infected directly from contact with cave substrates; this seems likely if human transmission is another means of the *Geomyces* organism moving from one site to another (see below).

Biologists believe that it may take a wintering bat colony a year or two after initial exposure to the WNS pathogen to fully develop and display the symptoms of the disease, including abnormal arousal patterns, obvious fungus on bat muzzles and other body parts, and high mortality rates. The likelihood that these conclusive symptoms are delayed following initial exposure complicates researchers’ ability to determine the source of the infection. Nonetheless, bat-to-bat and/or bat-to-cave transmission appear to be at work in the spread of WNS.

## 2. Human transmission

Biologists suspect that humans are at least partially responsible for the spread of WNS. The March 26, 2009 cave advisory issued by the FWS states that:

Bats are likely the primary vector for WNS based on the rate of spread through 2008 and the behavior of the species affected. *There is mounting evidence, however, that human activity may also be responsible for spreading the causative agent(s) of WNS, even during seasons when bats are not occupying caves.* The fungus can grow on many different organic materials, and appears to persist in caves and mines year-round. Fungal spores, and/or other microscopic organisms, can easily become attached to skin, hair, clothing and equipment, and it is possible that such elements could remain viable for weeks or months after leaving a subterranean environment. The discontinuous nature of the rapid spread of WNS, especially to the most recently discovered sites in West Virginia and Virginia, suggests that something other than bat-to-bat transmission is contributing to the spread of WNS. The potential for the human-assisted spread of WNS is further supported by the fact that many of the recently affected sites are also popular destinations for recreational cavers, while many bat hibernacula in less-popular or inaccessible caves between the newly affected caves and those affected in 2008 remain unaffected. Records of caver movements also reveal a connection between sites in these affected regions, additionally suggestive of a link to human activity.<sup>14</sup> [Emphasis added.]

WNS was first discovered in a cave that hosts tens of thousands of visitors a year.<sup>15</sup> It has since spread outward rapidly and with severe lethality to affected bats, suggesting that the fungal organism is an invasive species to which North American bats have not previously been exposed.

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<sup>14</sup> U.S. Fish and Wildlife Service WNS Cave Advisory. March 26, 2009.  
<http://www.fws.gov/northeast/wnscaveadvisory.html>

<sup>15</sup> <http://www.fort.usgs.gov/WNS/>

*G. destructans* was recently confirmed by genetic analysis as present on a bat in France.<sup>16</sup> A similar fungus has been observed elsewhere on hibernating bats in Europe, but it does not appear to cause mortality there. Therefore, it has been theorized that *G. destructans* was somehow transported to North America from a European site,<sup>17</sup> potentially by cavers.

A more recent report by the FWS on WNS management (October 2009) demonstrates that scientists still believe human transmission may be one mode of WNS' spread:

Another potential mode of transmission is by anthropogenic processes. Fungal spores and/or other microscopic organisms can readily attach to skin, hair, clothing, and equipment, and it is possible that such elements could remain viable for extended periods after leaving a subterranean environment. Unequivocal evidence that people have transported WNS to uninfected hibernacula is lacking; however, the sometimes discontinuous pattern of spread does suggest that something other than bat-to-bat transmission may be responsible. It has been observed that many of the recently affected sites are popular destinations for recreational users of caves and mines – in fact, the site where WNS was first photographed, Howe's Cave, is connected to one of the most visited commercial cave systems in the Northeast. Overall, the evidence, albeit anecdotal, suggests that the spread of WNS may be multifactorial.<sup>18</sup>

A December 2009 USGS Wildlife Health Bulletin reported preliminary findings from a study in which the genetic signature of *G. destructans* was found in sediments collected in WNS-infested hibernacula, but not in sediments or from bats outside the known zone of WNS infection. "Identification of *G. destructans* genetic material in environmental samples suggests that the fungus is present, and the potential exists for fungus to be transmitted between bat hibernation caves as an unwanted hitch-hiker upon humans, their clothing, or caving gear."<sup>19</sup>

## **V. The Need For Cave Closures To Protect Bats**

### **A. Closures prevent potential human transmission of WNS**

Closure of bat-inhabited caves and mines is an important precautionary measure to prevent the possible human transmission of WNS. Human transmission is suspected as one of the means by which the *G. destructans* fungus has traveled from one cave to another. Because WNS is extremely lethal and has the potential to extirpate entire bat colonies within 2-3 years; because

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<sup>16</sup> Puechmaille SJ, Verdeyroux P, Fuller H, Ar Gouilh M, Bekaert M, Teeling EC. White-nose syndrome fungus (*Geomyces destructans*) in bat, France. *Emerg Infect Dis*. 2010 Feb; available at <http://www.cdc.gov/eid/content/16/2/pdfs/09-1391.pdf>.

<sup>17</sup> "Bat man vs. white nose: Thomas Kunz is fighting a killer disease." *BU Today*, Sept. 10, 2009. <http://www.bu.edu/today/2009/09/03/bat-man-vs-white-nose>

<sup>18</sup> Szymanski J.A., M.C. Runge M.J. Parkin, and M. Armstrong. 2009. White-nose syndrome management: Report on structured decision making initiative. U.S. Fish and Wildlife Service, Fort Snelling, MN. 51 pp. Available at: <http://www.fws.gov/northeast/wnsplanning.html>.

<sup>19</sup> USGS Wildlife Health Bulletin 2009-03: Update on White-Nose Syndrome, December 11, 2009. USGS NWHC, Madison, WI.

scientists still do not fully understand the disease and how it spreads; and because there is no known cure for WNS, it is crucial that all feasible preventive steps be taken immediately to minimize the chance of further spread. Restricting recreational, commercial, and other non-essential human entry into caves and bat-inhabited mines is a reasonable step to diminish the rate of spread and the number of new sites affected by the disease. It buys time for scientists to develop a better understanding of the disease, and possibly to find a cure. It reduces the chances that WNS will leapfrog hundreds or thousands of miles to new locations, where it could infect other, highly vulnerable bat populations, including populations of federally listed bats. It diminishes the possibility that a new regional epicenter of WNS contamination, from which resident bats can fly to nearby caves and mix with nearby populations, will be created far from the original epicenter in the Northeast U.S.

Scientists may ultimately conclude that the early institution of cave closures and the issuance of closure advisories when WNS was still known only in New York and Vermont, in the winter of 2007-08, could have slowed the spread of WNS. Unfortunately, these steps were not taken. The Center, in fact, requested precautionary hibernacula closures in a January 2008 letter to the Department of Interior and FWS<sup>20</sup>, but no action was taken until more than a year later, after WNS had spread into seven more states.

The FWS eventually did demonstrate that it supports cave closure as an important precautionary measure, by issuing its cave closure advisory on March 26, 2009. The advisory described strong circumstantial evidence that some cases of WNS were due to caver transmission. The advisory read, in part:

WNS has been found in caves a significant distance from WNS-affected hibernacula, leading scientists to believe that something else [besides bats] is moving WNS...“We suspect that white-nose syndrome may be transmitted by humans inadvertently carrying WNS from cave to cave where bats hibernate,” said Northeast Regional Director Marvin Moriarty of the U.S. Fish and Wildlife Service.

The advisory went on to state that:

...the leapfrogging pattern of WNS spread suggests that humans may be contributing to the spread. In some areas, caves known to be popular destinations for cavers have bats with WNS, while bats in nearby caves not frequented by cavers do not show WNS symptoms. Records of caver movements also show a connection among sites in WNS-affected areas.<sup>21</sup>

The case for cave closure has been significantly strengthened by a recent document produced by the FWS in cooperation with other federal agencies. The November 2009 report, entitled “White-Nose Syndrome Management: Area 3 Implementation Guide,” (“WNS Area 3 Guide”) focuses on preventing the spread of WNS into as-yet unaffected areas adjacent to those already known to be affected.<sup>22</sup> The report recommends full closure year round at affected sites, year round

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<sup>20</sup> Open letter for Emergency Action, January 29, 2008, from Leigh Haynie, Center for Biological Diversity, to Dirk Kempthorne, Secretary of the Interior and Dale Hall, Director of the United States Fish and Wildlife Service.

<sup>21</sup> FWS Cave Advisory, *id.*

<sup>22</sup> “Area 3 includes caves and mines that are 250 miles or more from the nearest known occurrence of WNS.

prohibitions on commercial and recreational use of caves within 75 miles of affected sites, and prohibitions on non-commercial, recreational use of caves and mines more than 75 miles from affected sites but within Area 3.

These guidelines represent a significant step forward for management of WNS. Nonetheless, they are not sufficient to bar a disastrous leapfrogging of the disease far from currently affected regions. For example, the new guidelines apply only to the states surrounding WNS-affected states (i.e., “Area 3.”). Yet scientists theorize that WNS was carried across the Atlantic Ocean from Europe on caving gear or clothing. And the new closure recommendations are premised on evidence suggesting that WNS was carried by cavers from affected to unaffected caves separated by distances of tens to hundreds of miles. If the pathogen associated with WNS can be carried, and quite possibly has already been carried, by people hundreds, and even thousands, of miles, then bats in caves far beyond currently affected sites are potentially at risk. Thus, the geographic scope of the WNS Area 3 Guide is not nearly great enough. Cave closures must be enacted on a national level.

### 1. *Affected Sites*

All WNS-affected sites, including those in the earliest zone of infection (i.e., New York, Vermont, and other areas of the Northeast) should be closed to non-essential human entry to protect unaffected bats and caves both nearby and far away. WNS-affected caves should be closed because humans entering caves may pick up fungal material and transport it to new sites or bat populations, even with close adherence to decontamination procedures (see below).

### 2. *Unaffected Sites*

Currently unaffected sites, both those close to and far from affected sites, should be closed to all non-essential human access. If the evidence suggesting human transport of WNS is borne out, it seems highly likely that caves in areas now distant from affected caves will eventually be subject to introduction of the *Geomyces* fungus, as well, if they remain open to human access.

At least one federal cave very distant from currently affected sites has already been closed to recreational use due to the threat of WNS. Mystery Cave in Montana is a hibernaculum for several bat species, and probably also important summer roosting habitat.<sup>23</sup> The Bureau of Land Management official in Montana who made the closure decision explained it in this way: “With a strong inclination to error [sic] on the side of caution to prevent an irreversible contamination,

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Although the boundaries of Area 3 may shift as newly affected sites are confirmed, for the coming hibernation season the area includes western Ohio, western Kentucky, Indiana, Michigan, Illinois, Iowa, Wisconsin, Minnesota, Missouri, western Tennessee, Arkansas, Georgia, and Alabama.” P. 2, White-Nose Syndrome Management: Area 3 Implementation Guide. FWS and State Natural Resource Agencies, Nov. 2009. <http://www.fws.gov/northeast/wnsplanning.html>

<sup>23</sup> Worthington, D.J. and H.N. Ross, 1990, Abundance and distribution of bats in the Pryor Mountains of south central Montana, Montana Natural Heritage Program, Helena, MT. <http://www.worldcat.org/wcpa/oclc/35737499>

Mystery Cave has been closed to casual use.”<sup>24</sup> This particular cave closure is discussed in more detail below, in Section VI(A)(4).

### 3. *Decontamination Not Sufficient*

Decontamination of caving equipment does not substitute for cave closure as a means of eliminating the potential for human transmission of WNS. There is to date no published research on the efficacy of the currently recommended decontamination protocol<sup>25</sup> in eliminating *G. destructans* from caver gear and clothing. Initial investigations into potential methods of decontamination have determined that a number of substances, such as 10 percent bleach solution, will kill the fungus on nonporous surfaces. However, it is not clear if porous surfaces can be made completely free of the fungus after chemical treatment.

Thermal treatment is not a promising means of eliminating the fungus, either. *G. destructans* has remained viable after being subjected to a wide range of temperature regimes (e.g., clothes dryer treatment at 120° F appears to increase spore germination and does not kill the fungus).<sup>26</sup> In any event, some caving gear, such as ropes and harnesses, cannot be treated either chemically or with heat without compromising their integrity and safety.

Beyond the technical problems with decontamination, there is currently no way to enforce the decontamination protocol. The FWS has posted the procedures on its website<sup>27</sup>, but these are advisory only and do not have the force of law. Cavers are not subject to penalty if they disregard decontamination protocol, partially or completely.

Full compliance of even well-meaning cavers with the protocol may be unlikely, due to the inconvenience and expense involved. The WNS decontamination procedures are fairly complex and could be costly for those cavers who recreate in more than one cave, and especially for those who visit caves in geographically disparate areas. Because some caving gear cannot be effectively decontaminated at all, the FWS recommends restricting their use to one cave only. Ropes and harnesses are expensive equipment, and many cavers will not be able or willing to buy new sets of ropes for each cave they visit.

Even gear such as packs and clothing that can be put through the decontamination procedure may still harbor viable *Geomyces* spores or parts. Thus, the FWS advises “clothing, footwear, and gear used in a cave in a WNS affected state within the past 3 years... not be used in caves anywhere.”<sup>28</sup> An even more cautious approach would be to restrict *all* porous gear and materials to use in one cave only. This would prevent gear used in a WNS-affected cave, but not yet known to be such, from being taken into an unaffected cave, and introducing fungal materials into the “pristine” cave. Again, however, it seems unlikely many cavers will have the ability or willingness to obtain and use all new gear and clothing for each cave they visit.

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<sup>24</sup> Letter to Richard Rhineheart, July 20, 2009, from Charles Ward, Billings Field Office.  
<http://www.forums.caves.org/viewtopic.php?f=58&t=8973>.

<sup>25</sup> “Recommended Procedures to Prevent the Spread of White-Nose Syndrome,” FWS, June 2009.  
<http://www.fws.gov/northeast/wnscavers.html>

<sup>26</sup> *Id.*

<sup>27</sup> <http://www.fws.gov/northeast/wnscavers.html>

<sup>28</sup> *Id.*

Thus, the FWS' decontamination protocol is far from a failsafe method of preventing human transmission of WNS. Given the enormous threat WNS poses to bats and cave ecosystems, more restrictive measures are needed. Cave closure is a critically important preventive step in management and containment of WNS.

## **B. Closures are needed to protect endangered species**

The need for cave closures to protect federally listed endangered species, both bats and other cave-dwelling organisms, is urgent. WNS threatens to wipe out not only several species of bats within the next few years. Cave obligate species such as the cave crayfish (*Cambarus zophanastes*)--dependent on bat guano for its survival--are also at grave risk if WNS strikes bats where they live. The possibility of human-transmission of WNS can be greatly reduced with cave closures. Closures, at minimum, can buy time for scientists to better understand WNS, and find effective means of preventing endangered cave obligates from disappearing if WNS eventually reaches their habitats.

### *1. Endangered Bats*

One federally listed bat species, the Indiana bat, has already been hit by WNS. All known hibernacula of this species in New York, Vermont, and New Jersey, with the exception of one newly discovered hibernaculum, are now afflicted with WNS. The mortality rate in individual hibernacula has ranged from near normal rates to 99 percent. Overall, the Northeastern population of Indiana bat has declined 30 percent over two years since 2007.<sup>29</sup> Scientists believe loss of Indiana bats will continue with ongoing mortality in currently affected areas and spread to new areas. Northeast populations of the species could disappear completely in the near future, representing a significant loss of genetic diversity for the species.<sup>30</sup> The states harboring the largest numbers of hibernating Indiana bats are Indiana, Kentucky, Missouri, and West Virginia.<sup>31</sup> WNS has already reached West Virginia, and scientists believe it will show up in neighboring states, such as Kentucky, by this winter or within the next couple of years. Human entry into Indiana bat hibernacula, where not already restricted, must be stopped to prevent the potential spread of WNS to unaffected sites, and to minimize disturbance to survivors in sites already affected by the disease.

The endangered Virginia big-eared bat is extremely vulnerable to a catastrophic mass mortality event, due to its small global population, and the concentration of large numbers of individuals at relatively few sites. The total global population of the Virginia big-eared bat is estimated between roughly 11,000<sup>32</sup> and 20,000<sup>33</sup> individuals. No cases of WNS have yet been documented for the Virginia big-eared bat. However, WNS was confirmed last winter (2008-09)

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<sup>29</sup> Szymanski, *id.*

<sup>30</sup> *Id.*

<sup>31</sup> Clawson, R. 2006. National Status of the Indiana Bat. pp 1-6.

[www.mcrc.org/osmre.gov/PDF/Forums/Bat%20Indiana/1-1.pdf](http://www.mcrc.org/osmre.gov/PDF/Forums/Bat%20Indiana/1-1.pdf)

<sup>32</sup> FWS. 2008. Virginia Big-Eared Bat 5 Year Review,

<http://www.npwrc.usgs.gov/resource/wildlife/recoprogram/species/plectowv.htm>

<sup>33</sup> Johnson, J.B. et al. 2005. Virginia Big-eared Bats (*Corynorhinus townsendii virginianus*) roosting in abandoned coal mines in West Virginia. *Northeastern Naturalist* 12: 233-240.

at sites in West Virginia used by the species.<sup>34</sup> Scientists are anticipating that “[l]arge-scale reductions in the overall population of VBEB are likely imminent.”<sup>35</sup>

The fate of the Virginia big-eared bat may become a case study in how delayed precautionary measures can lead to the demise of a species. If caves had been closed early on, after scientists first began to document WNS in the Northeast, it is possible that the disease would not have leapfrogged as it did, possibly due to transport of *G. destructans* on caver gear. Petitioner made a formal request to the Department of Interior for preventive cave closures in early 2008.<sup>36</sup> A reply was never received. While it may be too late to spare the Virginia big-eared bat from exposure to WNS, other vulnerable bat species may yet be safeguarded by cave closures.

The range of the endangered gray bat is now perilously close to the leading edge of WNS. The disease was recently discovered in a cave in Smyth County, Virginia, 11 miles from a bachelor colony of roughly 2,000 gray bats, and 22 miles from a second bachelor colony of another 2,000 gray bats. The closest gray bat hibernaculum is 300 miles away; gray bats are known to migrate distances up to more than 400 miles between summer and winter sites. Gray bats, like other colonial hibernating bats, regularly mix with other bat species at roosting sites, increasing the potential for transmission of the fungal pathogen. The total population estimate for the gray bat was estimated in the 1980s at around 1.5 million. However, the highly colonial nature of the species makes it very vulnerable to catastrophic loss from infectious disease. Only nine caves are believed to host 95 percent of the total population in the winter; one cave is host to 50-60 percent of this total.<sup>37</sup> Scientists believe that “The spread of WNS to gray bats would likely be catastrophic and could result in an immediate reversal in the recovery progress that has been achieved across the range of the species.”<sup>38</sup>

Farther west in Arkansas and Oklahoma, the estimated population of endangered Ozark big-eared bats has hovered between 1,500 and 1,900 in recent years. The species would be extremely vulnerable if hit by WNS. According to the recent 5-Year Status Review, “WNS would represent a highly significant threat to the OBEB [Ozark big-eared bat] should it appear in bat populations in the Ozarks due to the high mortality rate of affected bats, small population size, limited range of the OBEB, and because females produce only one pup per year.”<sup>39</sup>

Other endangered bats within the continental United States are the lesser long-nosed and Mexican long-nosed bats, both of which are found in the American Southwest and Mexico. Neither of these species are hibernators, but they do roost in caves and abandoned mines.<sup>40</sup>

Cave closures are important to protect endangered bats. It is not sufficient to close off only those

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<sup>34</sup> Szymanski, *id.*

<sup>35</sup> *Id.*

<sup>36</sup> Open letter, Center for Biological Diversity, 1/29/08, *id.*

<sup>37</sup> Ozier, J. 2008. *Myotis grisescens*. georgiawildlife.dnr.state.ga.us/assets/documents/.../myotis\_grisescens.pdf

<sup>38</sup> Szymanski, *id.*

<sup>39</sup> FWS. 2008. Ozark Big-Eared Bat 5 Year Review: Summary and Evaluation.

<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A075>

<sup>40</sup> FWS. 1994. Lesser Long-Nosed Bat Recovery Plan, Arizona Ecological Services State Office, Phoenix.

[www.fws.gov/southwest/es/Documents/R2ES/LesserLongNoseBat.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/LesserLongNoseBat.pdf);

<http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Leptoncyteris+nivalis>

caves harboring federally listed bats. Individuals of various species mix at winter, summer, and fall swarming sites, and then disperse to widely disparate and distant locations. Therefore, *all* bat-inhabited caves over a broad region must be closed to protect endangered bats found within it. To the greatest extent possible, human access into bat-inhabited caves must be restricted across the continental United States, to stem the potential spread of WNS, and to minimize the chances that it will strike highly vulnerable endangered bat populations.

## 2. *Other Endangered Cave-Dwelling Species*

Closure of bat-inhabited caves is necessary to protect other endangered species found in caves. This action is especially urgent for cave obligates that depend directly or indirectly on the presence of large bat colonies for survival. However, the same logic as above applies to protection of endangered cave obligates: in order to protect endangered cave species it is not sufficient to close only those caves in which they are found. Human-mediated transmission may be the means by which the disease has and can first appear in a new area, but WNS is almost certainly spreading from cave to cave and from population to population via bat transmission.

The high degree of endemism among obligate cave species in the United States makes them especially vulnerable to catastrophic events. For endangered cave species whose existence is linked to the energy inputs transported to caves by bats, a massive bat die-off may spell their own decline, and possibly extinction.

All possible preventive measures should be taken to protect endangered cave obligates from the effects of WNS. It is vital that cave closures be instituted as soon and widely as possible, before the disease reaches farther into the southern Appalachians, South, and Midwest, where some of the richest cave fauna in the world is found.

## **VI. All Caves on Federal Lands Must be Immediately Closed**

The need for immediate cave closures across the United States, based on current science and conservation imperatives, is clear. Where federal land and wildlife management agencies have the legal duty and obligation to act in order to prevent the further loss of endangered bat and other species, the further imperilment of currently unlisted species, and the possible ecological collapse of entire subterranean natural communities, they must do so. Federal agencies must act immediately to close all bat-inhabited caves on federal lands within the continental United States in order to slow the spread of WNS and minimize the ecological losses and disruption that will follow in the wake of massive bat die-offs.

### **A. Due to continuing and enormous threats presented by WNS, the Secretaries' failure to close caves on federal lands is contrary to mandatory duties and obligations**

Federal departments and agencies are bound by various laws and regulations directing them to act for the benefit of species and natural resources. Moreover, the APA recognizes the "failure to act" as a challengeable agency action. 5 U.S.C. §551 (13). In the case of WNS and the enormous threat it poses to several species of bat in the United States, the failure of federal agencies to act to protect as-yet undiseased bat populations, where the agencies have the ability

to do so, constitutes agency action in conflict with statutes and regulations calling for active conservation efforts and protection of federal lands and natural resources.

Federal agencies cannot sidestep or ignore a pressing conservation need, such as the protection of bats threatened by WNS, by remaining silent or passive when a potential conservation action is supported by law, precedence, and scientific evidence. To fail to act in these circumstances is an arbitrary and capricious action, and subject to corrective measures as established by the ESA, National Forest Management Act, Federal Land Policy and Management Act, and other laws, as discussed below.

WNS represents an extreme danger to bats in the eastern United States, and it has the potential to spread rapidly to other parts of the country. Scientists, including federal biologists, believe that human transmission is a potential means by which WNS spreads.<sup>41</sup> Federal officials have already demonstrated, through federal land closures executed in 2009, and the FWS advisory issued March 26, 2009, that they believe cave closures are an important and justifiable conservation measure.

What the federal government has failed to do thus far, however, is to logically extend these actions geographically and to additional federal agencies. Extension of federal cave closures and the federal closure advisory is necessary to protect species and federal lands, and to conform to legally-dictated responsibilities.

### 1. *The Endangered Species Act*

The Endangered Species Act is the nation's preeminent wildlife conservation law and requires federal agencies to preserve threatened and endangered species. 16 U.S.C. § 1531 *et seq.* The ESA declares that it is "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." 16 U.S.C. § 1531(c)(1). "Conservation" means "...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 this Act are no longer necessary." 16 U.S.C. § 1532(3).

The rapid spread of WNS necessitates pro-active steps on the part of federal agencies. Endangered bat populations not yet affected by WNS are, nonetheless, at risk. Once WNS has arrived, wildlife managers have, at present, no means of treating it, and affected colonies will likely decline precipitously. All reasonable actions should be taken to keep WNS from moving into new hibernacula and into new parts of the country. The ESA establishes a duty on the part of federal agencies to act to conserve listed species. Closure of caves and mines on federal lands is a significant, precautionary step which agencies should take to reduce the likelihood of WNS being transported into new sites. It should be kept in mind that once WNS is established in a new site, resident bats are likely to carry WNS themselves to other locations and other bat colonies. Endangered bat species mix with non-listed species in hibernating sites, necessitating that federal managers act to protect all bat colonies on federal lands.

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<sup>41</sup> FWS cave advisory, *id.*

Section 7(a)(1) of the ESA states that the Secretary of Interior must review "...other programs administered by him and utilize such programs in furtherance of the purposes of the Act." 16 U.S.C. § 1536(a)(1). The ESA provides authority to the Secretary to utilize departmental programs to protect listed bats. Closure of bat caves and mines is clearly in furtherance of the purposes of the ESA, because it is a protective measure against a highly lethal bat disease, for which there is no known remedy. Cave closure has already been recognized by the federal government as an important conservation action to reduce the likelihood of WNS' spread to new and distant bat populations.

The Secretary of Interior also has authority under the Act to "promulgate such regulations as may be necessary" to enforce the ESA. 16 U.S.C. § 1540(f). The ESA provides the basis for the Secretary to establish a new administrative rule to protect listed bats threatened by WNS. Again, cave closure of caves on all federal lands is an important conservation action, with established federal precedent, to reduce the risk of the spread of WNS.

Section 7(a)(1) requires all other federal agencies—in consultation with FWS—to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of threatened and endangered species. 16 U.S.C. § 1536(a)(1). Closure of bat caves and mines on federal lands is a significant conservation measure that federal agencies should carry out to further the purposes of the ESA. Already, one federally listed bat species is affected by WNS, and the disease is likely to spread to the range of several other endangered bats (as described above) within the next one to two years.

## *2. The Federal Cave Resources Protection Act*

The Federal Cave Resources Protection Act provides an additional legal basis and obligation for regulating or restricting the use of caves on federal lands, and WNS presents a need to utilize this Act in order to protect bats threatened by this lethal contagion. The purpose of the FCRPA is to "secure, protect, and preserve significant caves on federal lands for the perpetual use, enjoyment, and benefit of all people" and to "foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, education, or recreational purposes." 16 U.S.C. 4301-4309 §2 (b). The law applies to all federal lands administered by the Secretary of Agriculture (therefore including national forests and grasslands) and the Secretary of Interior (therefore including Bureau of Land Management lands, National Wildlife Refuges, and National Parks).

Pursuant to the Federal Cave Resources Protection Act, the Secretaries must take such actions as may be necessary to further the purposes of the Act, including (1) the identification of significant caves on federal lands (which must be developed after consultation with private sector interests, including cavers); and (2) the regulation or restriction of use of significant caves, as appropriate. 16 U.S.C. § 4303(b). The Act directs the Secretaries to issue regulations, including criteria for the identification of significant caves, necessary to achieve the purposes of the act. 16 U.S.C. § 4303(a). "Each cave recommended to the Secretary by interested groups for possible inclusion on the list of significant caves shall be considered by the Secretary, and shall be added to the list if

the Secretary determines that the cave meets the criteria for significance as defined by regulations.” 16 U.S.C. § 4303(b)(1)(B). In updating the list of significant caves, the Secretary must “assure that caves under consideration for the list are protected during the period of consideration.” *Id.*

The U.S. Department of Agriculture has promulgated regulations in accord with FCRPA. The purpose and scope of the rules are that “National Forest System lands will be managed in a manner which, to the extent practicable, protects and maintains significant cave resources...” 36 C.F.R. § 290.1. The threat posed by WNS to bat populations adds import and urgency to the cave designation and protection measures for national forest lands. Populations of eastern bats are rapidly diminishing due to WNS, and WNS threatens to afflict and severely reduce other bat populations across the country (including those of federally listed species). Bat populations that remain will become increasingly important as holdouts against extirpation. They may also serve in future as population reservoirs for recolonization of areas devastated by WNS. The immediate designation of bat-inhabited caves on national forest lands will confer another layer of protection to bats and the cave ecosystems of which they are a part.

The Department of Interior has promulgated regulations under the Federal Cave Resources and Protection Act that are largely the same as those for National Forest System lands. “It is the policy of the Secretary that federal lands be managed which, to the extent practicable, protects and maintains significant caves and cave resources.” 43 C.F.R. § 37.1. Importantly, all caves on lands administered by the National Park Service fall within the definition of “significant cave,” 43 C.F.R. § 37.11(d), and caves are also automatically “significant” where they are located within special management areas that are designated wholly or in part due to the cave resources found therein. 43 C.F.R. § 37.11(e).

Caves on BLM lands have also been designated as significant under Federal Cave Resources and Protection Act, and closed seasonally to recreational access for the purpose of protecting hibernating bats. For example, Crockett’s Cave in the Roswell, New Mexico district of the BLM, is designated significant. It is closed from November 1 to April 15 during the bat hibernation period.<sup>42</sup> Crystal Cave in the BLM Salt Lake district, Utah, was designated significant under FCRPA in 1994. A 2005 management plan recommended “BLM...modify seasonal closure dates and/or visitor use regulations at Crystal Cave to ensure effective protection and survivability of sensitive bat populations.”<sup>43</sup>

All federal caves harboring bats, whether on National Forest System lands or lands within the jurisdiction of the Department of Interior must be promptly designated as significant. This added layer of protection will provide another basis for implementing closures and other measures to protect bats at risk. The Center includes a petition and recommendation for the designation of federal caves as significant, in VIII, below.

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<sup>42</sup> BLM Roswell Field Office, New Mexico, 1991, Crockett’s Cave Management Plan.

<sup>43</sup> BLM Salt Lake Field Office, Utah, 2005. Crystal Cave Management Plan.

<http://www.docstoc.com/docs/18492336/Crystal-Cave-Management-Plan-Salt-Lake-Field-Office>

### 3. *The National Wildlife Refuge System Administration Act*

The 1966 National Wildlife Refuge System Administration Act applies to national wildlife refuges. The U.S. Fish and Wildlife Service, which administers the refuge system, derives authority from the Act to maintain refuges as closed unless access is explicitly permitted. 50 C.F.R. § 25.21. Permitted activities can be suspended on an emergency basis if necessary to protect the health and safety of a wildlife population. 16 U.S.C. § 668dd(k). Currently accessible caves within refuges must be immediately closed in order to protect bats through the provisions of this Act and its implementing regulations.

While the FWS may open refuges to compatible uses through regulation, permitting, or public notice, the management assumption is “closed until open.” 65 Fed. Reg. 62,460 [2000]; 50 C.F.R. § 25.21. In the event of a threat or emergency endangering the health and safety of the public or property or to protect the resources of the area, the Refuge Manager may close or curtail refuge uses of all or any part of an opened area to public access and use without advance notice. 50 C.F.R. § 25.21 (e).

In addition, compatibility of permitted, wildlife-dependent recreational uses will be re-evaluated “when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or concurrently with the preparation or revision of a comprehensive conservation plan, or at least every 15 years, whichever is earlier. In addition, a refuge manager always may re-evaluate the compatibility of a use at any time.” 50 C.F.R. § 25.21 (f). If cave recreation is considered non-wildlife dependent, compatibility determinations for this activity will be re-evaluated at least every 10 years, or “when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use,” whichever is sooner. 50 C.F.R. § 25.21 (g).

Caves currently open on refuge lands must thus be closed immediately and without advance notice, to protect bats from the threat of WNS. Such action is clearly in keeping with the mission of the National Wildlife Refuge System, which exists to conserve wildlife and habitat.

In fact, the FWS already maintains closures on certain sensitive caves within the National Wildlife Refuge System in order to protect bats and other cave resources. Ozark Plateau National Wildlife Refuge, in Oklahoma, was established to protect the federally listed endangered Ozark big-eared bat and the gray bat.<sup>44</sup> To protect the fragile habitats provided by the caves and the forests surrounding them, the refuge is closed to the general public.<sup>45</sup>

In Missouri, the Ozark Cavefish National Wildlife Refuge, which provides habitat for the endangered Ozark cavefish as well as the gray bat, is also closed to the public.<sup>46</sup> In Indiana, caves within the Big Oaks National Wildlife Refuge are closed to protect a number of rare species,

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<sup>44</sup> Ozark Plateau NWR Proposed Refuge Expansion Environmental Assessment 2002, U.S. Fish and Wildlife Service, Southwest Region.

<sup>45</sup> <http://www.fws.gov/Refuges/profiles/index.cfm?id=21645>.

<sup>46</sup> <http://www.fws.gov/refuges/profiles/index.cfm?id=33541>.

including several invertebrate species new to science. All caves within the refuge are closed to the public.<sup>47</sup>

Moreover, the FWS has closed at least one set of caves within the National Wildlife Refuge System due to the threat of WNS. Caves within the Wheeler National Wildlife Refuge complex, in Alabama, provide habitat for several federally listed species, including the gray bat and Indiana bat. Four caves in the complex were closed March 26, 2009, the same day the FWS issued its cave closure advisory. According to the FWS press release regarding the Wheeler cave closures, “WNS has been found in caves a significant distance from WNS-affected hibernacula, leading scientists to believe that something else [in addition to bats] is moving WNS.”<sup>48</sup>

The primary mission of the National Wildlife Refuge System is the conservation of the nation’s wildlife, plants, and habitat. To this end, the FWS must exercise its authority to close sensitive wildlife habitat on an emergency basis, and declare all bat-inhabited caves on Refuge System lands off-limits to public use, due to the threat of WNS.

#### 4. *Federal Land Policy and Management Act*

The Federal Land Policy and Management Act applies to lands managed by the Bureau of Land Management (“BLM”), within the Department of Interior. In managing the BLM lands, the Secretary of the Interior “shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C. § 1732(b). In addition, to protect public lands and resources, the BLM may issue an order to close or restrict use of designated public lands. 43 C.F.R. 8364.1(a). Each order must identify the lands that are closed or restricted, specify the period of time during which the closure or restriction will apply, and must be published in the federal register. *Id.*

BLM lands lie primarily in the western portion of the United States, and to date, no BLM caves have been known to be affected by WNS. However, the BLM already recognizes the threat WNS poses to bat populations, and has, in at least one instance, formally closed a cave to prevent possible WNS contamination by cavers and other visitors (this case discussed in more detail, below). The BLM has also issued an informational flyer on WNS that is aimed at cavers. It explains decontamination procedures for gear, before and after entering caves. According to the flyer, “There is evidence that people may carry WNS from cave to cave.”<sup>49</sup>

Pursuant to the Federal Land Policy and Management Act, the BLM has historically ordered cave closures to protect hibernating bats. For example, 11 caves in the Upper Snake River District in Idaho are closed through the winter to protect hibernating bats.<sup>50</sup> Several caves in the Roswell District of New Mexico are also closed seasonally to protect hibernating bats from disturbance by cavers. In 1992, 11 caves were ordered permanently closed to recreation during

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<sup>47</sup> <http://www.fws.gov/midwest/BigOaks/karst.htm>

<sup>48</sup> <http://www.fws.gov/southeast/news/2009/r09-014.html>.

<sup>49</sup> [http://www.blm.gov/nm/st/en/prog/recreation/recreation\\_activities/caving.html](http://www.blm.gov/nm/st/en/prog/recreation/recreation_activities/caving.html)

<sup>50</sup> FR Doc. 97-34209, <http://www.gemstategrotto.org/closure.html>.

the hibernation season, after a local caver and bat advocate alerted BLM officials to the need to protect several vulnerable bat species found there.<sup>51</sup>

At least one BLM cave has been closed to date, due to the threat of WNS. Mystery Cave, in the Pryor Mountains of Montana, was closed in the summer of 2009 by the Billings Field Office. The authority cited was 43 C.F.R. 8364.1. According to BLM staff, there was concern that cavers closed out of eastern caves would travel west to engage in caving activity. Because of the presence of bat species of special concern in Mystery Cave, and because staff considered that once contaminated by WNS, a cave cannot be decontaminated, an emergency closure was deemed prudent.<sup>52</sup> Prior to the emergency, yearlong closure, Mystery Cave was already gated and closed seasonally, from November to May, to protect hibernating bats.<sup>53</sup>

A more detailed explanation of the BLM's reasons for the Mystery Cave closure is relevant to this petition. According to a July 20, 2009 letter from Charles Ward, Billings Field Office law enforcement ranger, to a member of the National Speleological Society (posted on [www.cavechat.org](http://www.cavechat.org), a cavers' discussion forum), the risks posed by possible WNS transmission necessitated a cautious approach: "With a strong inclination to error [sic] on the side of caution to prevent an irreversible contamination, Mystery Cave has been closed to casual use."

The BLM officer goes on: "...in regards to the option of allowing access by parties which have completed decontamination of all clothing and equipment, or how they are implementing the restriction. While the concept may be valid, implementation of such a permitting system is problematic. We may prevent contamination of the cave a thousand times, but one failure will be a complete failure. Short of inspecting the clothing and equipment of each person prior to entering the cave there is no way of preventing possibly contaminated materials from being taken into the cave... there would be no way of preventing additional cavers from joining a group prior to entering the cave once a decontamination inspection has been performed." The letter concludes: "Until more is known about the actual routes of transmission of WNS *the only responsible action would seem to be quarantine to prevent further spread.*" [Emphasis added].<sup>54</sup>

While the Mystery Cave closure appears to be the only one implemented by the BLM thus far as a preventive measure against the spread of WNS, this case demonstrates that the agency has the regulatory authority and indeed the obligation under the Federal Land Policy and Management Act to take such a step. Further, this precautionary approach is imperative for all BLM caves, as well as all other federal caves, where hibernating bats are found. As the Mystery Cave letter emphasizes, until more is known about how WNS is transmitted, the only responsible management strategy is to close bat-inhabited caves and prevent possible WNS spread.

##### 5. *The National Park Service Organic Act*

The National Park Service Organic Act applies to National Parks and National Monuments. The fundamental purpose of the nation's parks and monuments is to "conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same

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<sup>51</sup> [http://www.batcon.org/index.php/media-and-info/bats\\_archives.html?task=viewArticle&magArticleID=561](http://www.batcon.org/index.php/media-and-info/bats_archives.html?task=viewArticle&magArticleID=561)

<sup>52</sup> Charles Ward, Billings Field Office, pers. comm.

<sup>53</sup> [http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm\\_information/steward.Par.41480.File.dat/winter06-07.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_information/steward.Par.41480.File.dat/winter06-07.pdf)

<sup>54</sup> <http://www.forums.caves.org/viewtopic.php?f=58&t=8973>

in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” 16 U.S.C. §1. The act and associated regulations provide for management actions, including closures, to protect natural resources.

Based on a determination that a closure or limit on public use is necessary for the protection of environmental values or natural resources, a park superintendent may impose limits or close all or a portion of a park area. 36 C.F.R. § 1.5(a)(1). Except in emergency situations, the closure must be published as rulemaking in the Federal Register if it would result in the significant alternation in the public use pattern of the park area. Except in emergency situations, the superintendent must prepare a written justification prior to implementing a public use limit or closure. *Id.* at § 1.5(b), (c).

A number of national parks, such as Mammoth Cave National Park and Carlsbad Cavern National Park, were established explicitly to protect and highlight spectacular caves. Many of these NPS caves host large numbers of bats, rare bat species, or both. Cave-dwelling bats constitute an environmental value in a national park, all the more so because bats in general have been declining for decades. Through regulations associated with the National Park Service Organic Act, park superintendents have the authority to close caves to public access and use, in order to protect bats at risk from WNS. Because WNS constitutes a wildlife emergency of the highest order, emergency closure (without prior rulemaking) is justifiable. However, an emergency closure may be followed with a closure established through publication in the federal register.

All NPS caves are already designated “significant” under the provisions of the Federal Cave Resources Protection Act, and must be immediately closed in order to protect bats under that statute’s authority. Moreover, the NPS Organic Act and regulations provide an additional, legal obligation for the immediate closure of bat-inhabited caves on NPS lands.

In fact, caves within at least two NPS units have been closed in response to WNS and the threat it poses to bats and cave ecosystems. All caves (with limited, specified exceptions) in the Buffalo River National Recreation Area, in Arkansas, have been closed as of late November 2009.<sup>55</sup>

On April 2, 2009, the NPS announced that all caves within Great Smoky Mountains National Park would be closed to protect bats from WNS.<sup>56</sup>

The NPS has instituted a number of measures in an attempt to prevent human-caused transmission of WNS to bats in Mammoth Cave National Park, in Kentucky. These include the exclusion of gear, clothing, or shoes used in any cave outside a four-county area around the park in the last five years.<sup>57</sup> Two federally endangered bats inhabit caves at the national park: Indiana bat and gray bat. However, no cave closures for WNS have been instituted at Mammoth Cave

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<sup>55</sup> <http://www.nps.gov/buff/parknews/upload/White%20Nose.pdf>;  
<http://harrisondailytimes.com/articles/2009/11/24/news/doc4b0b2dd9f0504423406473.txt>

<sup>56</sup> <http://www.nps.gov/grsm/parknews/cave-closure.htm>

<sup>57</sup> <http://www.nps.gov/macawhitenose.htm>.

National Park.

To date, no other NPS units have ordered closures to protect bats from WNS.

### 6. *The National Forest Management Act*

The National Forest Management Act (NFMA) applies to national forests and national grasslands, and grants Forest Service officials the ability and obligation to close or restrict areas under their jurisdiction. It was under this authority that all caves and mines on National Forest System lands in the Southern and Eastern regions were closed in spring 2009 to protect bats. This same authority must be used to close caves and mines throughout all National Forest System lands in the continental United States.

NFMA requires the U.S. Forest Service to develop regulations which “provide for diversity of plant and animal communities” based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives. 16 U.S.C. § 1604(g)(3)(B). Pursuant to NFMA, the Chief, Regional Foresters, and Forest Supervisors “may issue orders which close or restrict the area over which he has jurisdiction.” 36 C.F.R. 261.50(a). The order may close an area to entry or may restrict use of an area. *Id.* When provided in an order, it is prohibited to go into any area which is closed for the protection of threatened, endangered, rare, unique, or vanishing species; or special biological communities. 36 C.F.R. § 261.53.

On March 13, 2009, the Supervisor of the Shawnee National Forest in Illinois issued an emergency closure of “All Caves and Mines on the Shawnee National Forest with Bat Populations.” This action was taken “[U]nder the authority of the Act of Congress dated June 4, 1897, as amended (16 U.S.C. 551), and pursuant to the Secretary of Agriculture’s Regulations set forth at 36 CFR Part 261, Subpart B (36 CFR 261.50 (a) and (b)...” Order No. 09-01 Shawnee NF, USDA.

Along with closure to entry, the order prohibited campfires within 200 feet of any entrance of a closed cave or mine, and curtailing the free movement of any animal into or out of a closed cave or mine. *Id.* The order stated that “[T]hese restrictions are necessary to protect endangered, threatened and sensitive bat species.”

On April 24, the Regional Forester for the Eastern Region issued a closure order for all caves and mines on National Forest System in the region (with the exception of the Shawnee, which had already issued a closure order). This order was similar to the preceding one, except that it was even more restrictive, as it prohibited “Entering *any* cave or mine on National Forest System lands within the Eastern Region, unless the cave or mine is posted *open*.” [Emphasis added]. Order No. R-09-01, Eastern Region, Forest Service, USDA. The Shawnee closure order applied only to caves and mines posted and/or gated as closed. Shawnee Order 09-01. The Eastern Region encompasses the states of Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio,

Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin. The 17 national forests covered by the closure orders are: White Mountain, Green Mountain, Finger Lakes, Allegheny, Monongahela, Wayne, Hoosier, Shawnee, Huron, Manistee, Hiawatha, Ottawa, Nicolet, Chequamegon, Superior, Chippewa, and Mark Twain.<sup>58</sup>

The Regional Forester for the Southern Region of the Forest Service issued a closure order for all caves and mines on May 21, 2009. The order applied to all national forests in the region except El Yunque National Forest in Puerto Rico. The Southern Region closure order, as with the one issued by the Eastern Regional Forester, applied to any cave or mine on NFS lands unless posted as open. Order No. 01-2009 Southern Region, Forest Service, USDA. The Southern Region takes in the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. The national forests covered are: Angelina, Apalachicola, Bankhead, Bienville, Chatahoochee, Cherokee, Conecuh, Croatan, Daniel Boone, Davy Crockett, Delta, DeSoto, Francis Marion, George Washington, Holly Springs, Homochito, Jefferson, Kisatchie, Nantahala, Ocala, Oconee, Osceola, Ouachita, Ozark, Pisgah, St. Francis, Sabine, Sam Houston, Sumter, Talladega, Tombigbee, Tuskegee, Uwharrie, Caddo-LBJ National Grassland, Land Between the Lakes National Recreation Area, and the Savannah River special unit.<sup>59</sup>

All three Forest Service closure orders were established for a period of one year from date of signing. Exemptions were made for emergency personnel, or persons with a permit authorizing entry. Violation of the closure orders are punishable by fines of not more than \$5,000 for an individual, \$10,000 for an organization, or imprisonment of not more than six months, under authority of 16 U.S.C. 551 and 18 U.S.C. 3559 and 3571.

### *7. The Sikes Act*

The Sikes Act applies to Department of Defense lands. 16 U.S.C. 670a-670f. The Secretary of Defense must carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. 16 U.S.C. § 670a(a)(1)(A). To facilitate the program, the Secretary of each military department must prepare and implement a natural resources management plan for each military installation in the United States. 16 U.S.C. § 670a(a)(1)(B).

The Secretary of a military department shall prepare each plan for which the Secretary is responsible in cooperation with the Secretary of the Interior, acting through the Director of the U.S. Fish and Wildlife Service, and the head of each appropriate State fish and wildlife agency. The plans must reflect the mutual agreement of the parties concerning the conservation, protection, and management of fish and wildlife resources. 16 U.S.C. § 670a(a)(2).

Each plan must provide for (among other things), fish and wildlife management, and fish and wildlife habitat enhancement or modifications. 16 U.S.C. § 670a(b). The plans should provide for sustainable use by the public of natural resources *to the extent that the use is not*

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<sup>58</sup> <http://www.fs.fed.us/r9/>

<sup>59</sup> <http://www.fs.fed.us/r8/>

*inconsistent with the needs of fish and wildlife resources.* [Emphasis added]. 16 U.S.C. § 670a(b)(1)(F). Plans must be kept current. The law requires that plans be reviewed as to “operation and effect...on a regular basis, but not less often than every 5 years.” 16 U.S.C. 670a(b)(2). In addition, the Secretary of Defense is required to report each year to Congress on, among other things, the extent to which the management plans comply with the Sikes Act . 16 U.S.C. 670a(f)(1)(C).

The routine reporting and review requirements of the Sikes Act provide for a timely assessment of new or developing conservation threats on military lands, such as the threat of WNS to bats. Public use of bat-inhabited caves has become “inconsistent with the needs of ...wildlife resources” due to the threat of WNS and the possibility that it will be spread to new locations by cavers and other cave visitors.

If natural resource conditions change, Department of Defense guidance provides that management plans for military installations should be revised. The threat of WNS to bats in the eastern U.S. and potentially, throughout the country, represents an important natural resource change which management plans must reflect and address. Department of Defense guidance further directs that plans be reviewed annually by the relevant military installation, with the cooperation of the FWS and relevant State agency. The review should verify that “All significant changes to the installation’s mission requirements or its natural resources have been identified.” Memorandum, Deputy Under Secretary of Defense (Installations and Environment), 10 Oct 02, Subject: Implementation of Sikes Act Improvement Act: Updated Guidance. In addition, plans “...shall be revised, if necessary, at intervals of not more than five years, and more frequently if warranted by significant changes to the installation’s mission requirements or its natural resources.” *Id.*

Military natural resource plans must be revised due to the threat of WNS to bats. Annual review of these plans should identify the significant change that WNS represents, and lead to prompt revision. Revised plans should include closure of caves and mines to public access, for all military installations, to protect bats from the possibility of WNS spreading via human transmission. WNS is a “significant change” and needs to be addressed before it actually appears on Department of Defense lands.

## **VII. The Secretary Of Interior Must Immediately Promulgate A Rule To Specify That Traveling Between Caves Risks Violation of The ESA**

As noted previously, the Secretary of Interior has authority under the ESA to "promulgate such regulations as may be necessary" to enforce the ESA. 16 U.S.C. § 1540(f). This provides the basis for the Secretary to establish a new administrative rule to protect listed bat species threatened by WNS. Such a rule is specifically needed to enforce the ESA’s prohibitions on take of listed bat species by specifying that persons moving between caves are potentially in violation of the law.

Section 9(a)(1)(B) prohibits any person from “taking” any endangered species, which under the ESA “means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1538(a)(1)(B) and 16 U.S.C. § 1532(19). The term harm has been broadly interpreted to include habitat destruction and other activities. A

person who knowingly or unknowingly transports materials, such as soil or guano, from a cave in a region where WNS is present to another cave in a region with listed bats is causing harm to an endangered species in violation of the ESA, necessitating promulgation of a rule. Likewise, a private landowner or state that encouraged or permitted entry to a cave by persons who had visited other caves in a WNS affected area could be in violation of Section 9 of the ESA.

The most direct way for state and private landowners to avoid harm to listed bats would be to immediately close all caves and mines harboring bat species listed under the ESA and caves and mines with non-listed bats in regions where listed bats occur and are thus susceptible to bat to bat transfer of WNS. We therefore strongly recommend that this rule specify that entering or allowing entry to caves with bats, or at a minimum entering or allowing entry to caves with endangered bats constitute a violation of the ESA. Short of a closure of all caves with bats, this rule should specify that travel between caves, particularly with the same gear or clothing and between a cave from a region with WNS to another region, is a violation of section 9 of the ESA.

### **VIII. All Caves on Federal Lands Must be Identified and Designated as Significant**

The Center hereby invokes the nomination process under the Federal Cave Resources Protection Act for the designation of federal caves as “significant.” Specifically, the Center hereby nominates all as-yet undesignated caves, on National Forest System lands or lands under the jurisdiction of the Department of Interior, as significant, where those caves are inhabited, whether seasonally or yearlong, by one or more species of bat.

Bat-inhabited caves meet the criteria set forth in the departmental regulations for both agencies. As bat populations decline and disappear from certain regions, WNS increases the conservation value of caves still harboring bats. The added layer of protection provides another basis for implementing new or more restrictive conservation measures, including closures.

The special biotic characteristics of bat-inhabited federal caves are the impetus for “significant” designation. Caves are crucial habitat, either seasonally or yearlong, for multiple species of bat. Many bat species were in decline even prior to the appearance of WNS. As a group, bats—45 species in all in North America—now face an even more precarious future because of the enormous threat of this fast-spreading disease. It behooves all federal land management agencies to recognize the high conservation value of all remaining bat habitat, and in particular, all caves that are not yet known to be affected by the fungal pathogen associated with WNS. In addition to the high importance of protecting bats and bat-inhabited caves, many of the most unusual and endangered animals in the country are found in caves harboring bats, and these cavernicolous organisms are dependent on the presence of bats for their survival.

Petitioner therefore requests that the appropriate officers within the Forest Service, BLM, and FWS, and other land-managing agencies within the Department of Interior, initiate a process of evaluating and designating all bat-inhabited caves within their jurisdictions as significant as soon as possible.

## **IX. FWS Should Expand Its Cave Closure Advisory**

The FWS, in particular, has a crucial role to play in providing scientific information and management guidance on WNS for other federal and state agencies, and this includes the issuance of a national cave closure advisory to all land management agencies. In addition, the FWS must provide revised guidance to private landowners.

### **A. FWS' closure recommendations should apply to all federal lands**

The FWS should issue a revised cave closure advisory, recommending that all bat-inhabited caves and mines on federal lands within the continental United States should be closed to protect bats and to slow or prevent the spread of WNS.

The March 2009 FWS cave closure advisory applied only to the geographic zone that included states with then-known cases of WNS, and adjoining states. The statement recommended that within this geographic zone, all caving activity be curtailed, and that no gear used in the WNS zone be used in caves outside of it. The advisory did not specifically provide recommendations to federal land managers.

The FWS has not issued a revised closure advisory since last spring, but cave closures are specifically addressed in the more recent FWS document, "White-Nose Syndrome Management: Area 3 Implementation Guide."<sup>60</sup> This document was produced as part of a broader effort to develop a national response to WNS, and represents an important step forward in confronting this ecological crisis. Importantly, the zone of management concern has significantly expanded to include western Ohio, western Kentucky, Indiana, Michigan, Illinois, Iowa, Wisconsin, Minnesota, Missouri, western Tennessee, Arkansas, Georgia, and Alabama.

The guidelines include much more stringent management recommendations for land managers and private landowners than in the previous cave closure advisory. These recommendations include a prohibition on access into any WNS-affected site, research access only into caves within 75 miles of a WNS-affected site, and research and commercial, but not non-commercial recreational access, into caves more than 75 miles from a WNS-affected site (but still within the Area 3 zone).

However, there are a number of significant problems and limitations with the new FWS guidance on WNS management, and some of the reasons why apply to both federal and non-federal caves. First, there is no reason to believe that caves beyond Area 3 are significantly safer than those within it. The leapfrogging behavior of WNS is the primary evidence biologists have that WNS is at least partly transmitted via humans. It is quite possible that WNS made the leap from its epicenter in New York state to southwest Virginia, a distance of more than 300 miles, due to cavers traveling from one area to the other. Cavers are equally capable of boarding a plane and flying 3,000 miles within a few hours to caving destinations. If *G. destructans* can travel on human gear and clothing, distance alone is not a sufficient barrier to protect cave ecosystems from transmission of WNS.

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<sup>60</sup> WNS Management: Area 3, *id.*

Second, the new guidance specifically fails to account for and protect extremely vulnerable cave ecosystems just south and west of Area 3, namely the Ozark cave systems in Oklahoma, Florida lime sinks, and a bit farther west, the highly biodiverse caves found within the Edwards Plateau of Texas.<sup>61</sup>

Based on the current scientific understanding of WNS, containment of human transmission must logically extend to bat-inhabited caves nationwide. Only such a broad approach is adequate to protect bats and cave ecosystems throughout the United States. Federal land management agencies must play their part in safeguarding these ecological values by prohibiting all non-essential access into federal bat-inhabited caves and mines.

Closure of federal caves is not only scientifically justifiable (as discussed above), and legally necessary and valid, it is already occurring to a limited degree.

The Shawnee National Forest (in Illinois) issued an emergency closure of all caves and mines with bat populations on March 13, 2009. A month later, the Eastern Region of the U.S. Forest Service issued a closure on April 24, and the Southern Region issued a closure May 21. Altogether, national forests in 30 states are covered by the orders. (See more in-depth discussion of cave closures on National Forest System lands in Section VI (A)(6)).

The National Park Service closed all caves in Great Smoky Mountains National Park on April 2, 2009,<sup>62</sup> and caves in Buffalo River National Recreation Area were closed as of late November 2009.<sup>63</sup>

An ecologically important bat cave on Bureau of Land Management land in Montana was closed this past summer (2009) due to the threat of WNS.<sup>64</sup>

Federal agencies have already demonstrated they have the ability and rationale to close caves to non-essential use due to the threat of WNS. These actions need to be logically extended to all federal lands within the continental U.S., and the FWS should take the lead in explicating the scientific and regulatory justifications for doing so.

### **B. FWS should expand its cave closure advisory for non-federal caves nationwide**

A revised and expanded FWS cave closure advisory is needed to increase cave closures on non-federal lands nationwide. FWS needs to send a message to state agencies and private cave owners, explaining the pressing conservation need for restrictions on cave use and entry, and encouraging swift action to protect the nation's bats and subterranean ecosystems. Closures enacted following the March 2009 advisory, on both state and private land, demonstrate that FWS recommendations do carry weight and are an important part of a broader response to WNS.

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<sup>61</sup> Culver, *id.*

<sup>62</sup> <http://www.fws.gov/northeast/wnscavers.html>

<sup>63</sup> <http://www.nps.gov/buff/parknews/upload/White%20Nose.pdf>;

<http://harrisondailytimes.com/articles/2009/11/24/news/doc4b0b2dd9f0504423406473.txt>

<sup>64</sup> Charles Ward, Billings Field Office, pers. comm.)

FWS appears to be embracing this approach with the WNS plan now under development.<sup>65</sup> However, a much broader geographic scope for cave closures is needed.

### 1. *States*

FWS needs to expand its closure advisory to *all* states, recommending that state-owned caves harboring bats should be closed year round to public access until the threat of WNS' spread is no longer a concern. This action, while advisory only, will nonetheless provide states impetus and backing to take steps that may be very unpopular with certain groups. The advisory should include recommendations to state wildlife and natural resource agencies that they, in turn, issue advisories to private land owners within state borders, urging closures of privately-owned caves.

Responses to the earlier FWS advisory this year demonstrate that states will respond to FWS guidance on WNS management. For example, following the March 26 advisory, Indiana and Tennessee issued blanket closure orders for all their state-owned caves.<sup>66</sup> The state of Arkansas closed caves in several state parks.<sup>67</sup> Pennsylvania enacted year round closure for several caves on state forest lands<sup>68</sup> And the Pennsylvania Game Commission issued a cave closure advisory to private landowners (but not commercial cave owners) recommending that they prohibit recreational use in their caves, to stem the spread of WNS.<sup>69</sup>

### 2. *Private Caves*

FWS needs to expand its closure advisory to address private cave owners in all states.

#### a) Cave organizations

Cave groups own a significant number of caves throughout the country, particularly in the eastern and southern U.S. Some of these groups have already enacted cave closures, although some closures are only partial or temporary. A revised FWS advisory needs to recommend the year-round closure of all bat-inhabited caves and mines on private lands throughout the United States. The advisory should stress that closure of caves both within and outside the current WNS-affected zone is vital for the conservation of bats and cave ecosystems around the country. FWS should make sure that these recommendations are communicated to all caving and speleological organizations.

#### b) Commercial caves

FWS needs to address use of commercial caves. FWS should either issue a revised closure advisory that includes commercial caves, or a separate advisory directed only at commercial cave

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<sup>65</sup> <http://www.fws.gov/northeast/wnsabout.html>

<sup>66</sup> [http://www.caves.org/WNS/Cave\\_Closures.htm](http://www.caves.org/WNS/Cave_Closures.htm)

<sup>67</sup> <http://www.arkansasstateparks.com/news/for-media-display.aspx?id=1156>

<sup>68</sup>

[http://www.edportal.ed.state.pa.us/portal/server.pt/gateway/PTARGS\\_0\\_0\\_36636\\_0\\_0\\_43/http://pubcontent.state.pa.us/publishedcontent/publish/global/news\\_releases/dcnr/news\\_releases/bat\\_hibernating\\_sites\\_in\\_fayette\\_\\_\\_westmoreland\\_counties\\_remain\\_closed\\_to\\_visitors.html](http://www.edportal.ed.state.pa.us/portal/server.pt/gateway/PTARGS_0_0_36636_0_0_43/http://pubcontent.state.pa.us/publishedcontent/publish/global/news_releases/dcnr/news_releases/bat_hibernating_sites_in_fayette___westmoreland_counties_remain_closed_to_visitors.html)

<sup>69</sup> <http://www.pgc.state.pa.us/pgc/cwp/view.asp?A=11&Q=176529>

owners and national commercial (or “show”) cave organizations. The advisory should include a recommendation that any commercial cave harboring hibernating bats be closed to public access until WNS is better understood, and it is clear that commercial cave visitation will not spread WNS into new sites or new areas of the country. The advisory should also establish protocol for visitor decontamination, for those commercial cave owners who choose not to heed the closure recommendation. Again, this advisory should be national in scope, in order to protect bats from potential leapfrogging of WNS into currently unaffected regions of the country

**X. WNS Plan Should Include Public Acquisition of Important Private Bat Caves**

The national WNS plan currently under development should include a provision for acquisition of privately-owned bat hibernacula from willing sellers. With WNS threatening the existence of bat populations throughout the eastern United States, and potentially, around the country, conservation and increased protection of private, as well as publicly owned bat hibernacula, is extremely urgent. Government agencies have a limited ability to compel conservation measures on private lands, even in the case of a wildlife crisis like WNS. Where particularly important hibernacula exist on private lands, and closure or other protective measures are not being implemented, whether due to owner resistance, lack of financial resources, or other reasons, a program for funding and acquiring caves from voluntary sellers could be a critically important piece of a national plan for bat conservation. Important caves for acquisition may include those harboring endangered bat species, hibernacula that appear to have lower rates of mortality from WNS than others, and hibernacula far from affected sites, that have the potential to serve as bat refugia.

**XI. Relief Requested**

The Center petitions and requests that the Secretaries immediately undertake the following action:

1. Close all caves and mines known or suspected to harbor bats on federal lands throughout the continental United States to public access, to protect bats and associated cave ecosystems from the dire threat of white-nose syndrome.
2. Promulgate a rule governing take of endangered bats to specify that transferring materials, whether knowingly or unknowingly, between caves and mines in areas where WNS has occurred to caves and mines in areas where WNS has yet to occur and could potentially spread to threatened and endangered bat species, constitutes a violation of prohibitions in the ESA against “take” of listed species by any person.
3. Designate as “significant” all caves inhabited by bats, seasonally or year-round, on all federal lands under the jurisdiction of the Department of Interior and Department of Agriculture.
4. Issue an advisory to all state, other public, and private owners of caves and bat-inhabited mines throughout the United States, recommending year round closure to protect bats from the spread of white-nose syndrome.
5. Notify all owners of caves and bat-inhabited mines of threats to federally listed bats

from cave visitation and associated potential spread of WNS, and of decontamination protocol recommended for caves that remain open.

6. Establish as part of the national WNS action plan a fund to purchase privately-owned bat caves and mines for the purpose of protecting bats.

## **XII. Conclusion**

The threats to bats from white-nose syndrome are severe, widespread, and immediate; and the Secretaries' failure to undertake instant action could cause one or more species to go extinct within two to three years. The loss of bats could threaten other species, including other cavernicolous organisms dependent on the presence of bat populations. Cave closure on all federal lands and other steps are needed without delay to diminish the likelihood that WNS will spread throughout North America, potentially wiping out multiple bat species and leaving disrupted, depleted, and unbalanced ecosystems in its wake.

Respectfully submitted,

Mollie Matteson, M.S., Conservation Advocate  
Center for Biological Diversity