

# Final White-nose Syndrome Interagency Response Plan for New Mexico

November 5, 2010

## Cooperators:

### Federal:

Bureau of Land Management (BLM) – New Mexico State Office  
US Forest Service (USFS) – Southwestern Region (R3)  
National Park Service (NPS) – Carlsbad Caverns National Park  
El Malpais National Monument

### State:

New Mexico Department of Game and Fish (NMDGF)  
New Mexico State Land Office (NM SLO)

## Interested Parties:

US Fish and Wildlife Service (USFWS) – Region 2  
Bureau of Indian Affairs (BIA)  
Department of Defense (DOD)  
New Mexico Abandoned Mine Land Program (NM AML)  
New Mexico State Parks (NMSP)  
National Speleological Society (NSS)  
Southwest Region of the NSS (SW NSS)  
New Mexico Bat Working Group (NMBWG)  
Bat Conservation International (BCI)  
Private landowners

## Introduction:

The purpose of this document is to articulate the collaborative and cooperative land management actions that will be taken by the agencies in face of the possible arrival of White-nose Syndrome in New Mexico bat populations. This Interagency Response Plan reflects a commitment from each agency to use their authorities together and separately to protect New Mexico's bat populations, as described in this and subsequent versions of this plan. The agencies have also committed to making the actions in this plan consistent across differing land jurisdictions as much as possible. Agency missions are not identical however; therefore there may be some lands that require different management actions based on agency responsibility. Communication among agencies, stakeholders, and the general public is a critical part of this Interagency Response Plan. The agencies are striving for consistency in message as well as action and are working together to foster understanding of and compliance with the actions needed to protect New Mexico's bats.

## Background:

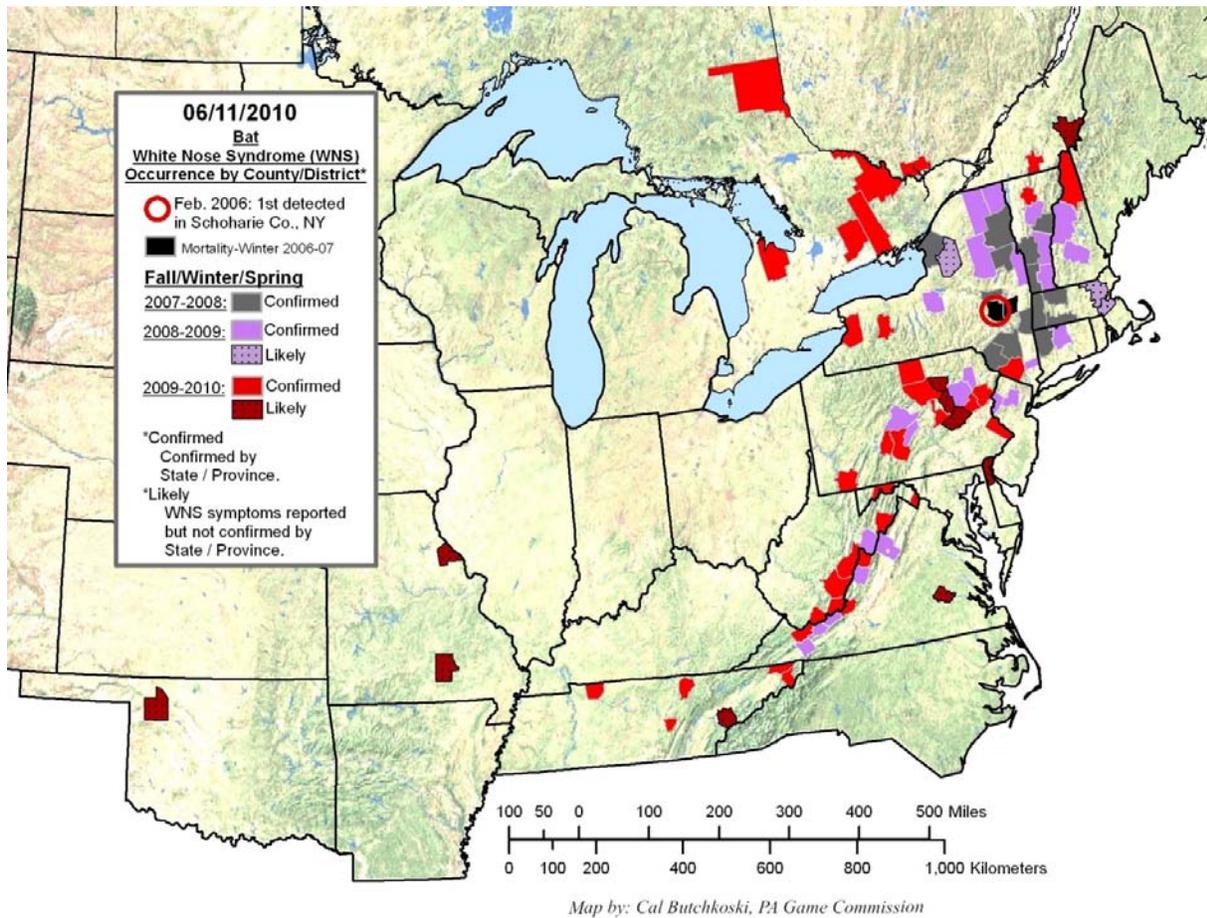
White-Nose Syndrome (WNS) is an emerging disease that is afflicting hibernating bats. The disease is often characterized by a white fungus (*Geomyces destructans*) on the membranes, ears, and noses of affected bats. The fungus was first observed in a cave in upstate New York

in 2006 (US Fish and Wildlife Service 2008). Since that time, WNS has spread across the eastern half of the continent, and the fungus has recently been documented in western Oklahoma (Figure 1) {USGS, National Wildlife Health Center 2010}. This cold-loving fungus is thought to be the causal agent of WNS (Castle and Cryan 2010). The skin infections caused by *G. destructans* may act as a chronic disturbance, causing bats to awake from hibernation (USGS 2010). Each time a bat arouses from hibernation, it uses the limited supply of fat reserves it has built up to survive over winter. If anything increases the frequency or duration of such arousals during winter, a bat's fat reserves can be depleted, resulting in starvation.

More than a million bats have died from the disease in the eastern U.S., including some species of high conservation concern (Bat Conservation International 2010). Population declines in some eastern colonies have exceeded 95%, sometimes over a 2-3 year period after initial observations (Blehart et al. 2009). This dieoff represents the most extreme decline of North American wildlife caused by infectious disease in recorded history (USGS NWHC 2009). Recent population modeling has predicted the regional extinction of the little brown bat (*Myotis lucifugus*) in the northeastern U.S. within 16 years (Frick et al. 2010).

In May 2010, the fungus associated with WNS was confirmed in caves in MO and northwest OK. These occurrences are notable for several reasons: 1) *G. destructans* was documented on live bats; however the pattern of infection was inconsistent with the WNS infections observed in eastern bats. There also were no mortality events attributable to the findings (D. Blehart, pers. comm., Sept. 2010). 2) The OK occurrence represents the first discovery of the fungus on a bat species that does not occur in the eastern United States. The range of the cave myotis (*Myotis vellifer*) extends from central Oklahoma and Kansas, south and west into Texas, New Mexico, Arizona, California and Mexico. Another concern is that cave myotis tend to congregate in large groups, and share caves with migratory species such as the Mexican free-tailed bat (*Tadarida brasiliensis*) (Bat Conservation International 2010). Mexican free-tailed bats are one of the most widely dispersed and far-ranging species of bats in the Americas, and could potentially help spread the fungus across its distribution. 3) This finding is the most western report of *G. destructans* to date, and puts it approximately 250 miles from New Mexico.

Figure 1. White-nose Syndrome and/or *G. destructans* affected counties across North America. Map courtesy of Cal Butchkoski, Pennsylvania Game Commission, June 11, 2010.



WNS has currently been confirmed in six eastern U.S. bat species (big brown bat, tri-colored bat, and the little brown, eastern small-footed, northern, and Indiana myotis) and the associated fungus has been documented in the gray and southeastern myotis, as well as the newest record of cave myotis in Oklahoma. However 25 of the 46 U.S. bat species hibernate in caves and mines and thus could be affected by WNS in the future (USGS 2010). Of the 28 species of bats that occur in New Mexico, 16 are hibernating bats (Table 1), and three of those species have been confirmed with either WNS or the fungus in the East.

Table 1. Bat species known or thought to hibernate in NM (USGS 2010, Findley et al. 1975).

Species Name	Common Name
<i>Myotis auriculus</i>	Southwestern (Mexican long-eared) myotis
<i>Myotis californicus</i>	California myotis
<i>Myotis ciliolabrum</i>	Western small-footed myotis
<i>Myotis evotis</i>	Western long-eared myotis
<i>Myotis occultus</i>	Occult (Arizona) myotis
<i>Myotis thysanodes</i>	Fringed myotis
* <i>Myotis velifer</i>	Cave myotis
<i>Myotis volans</i>	Long-legged myotis
<i>Myotis yumanensis</i>	Yuma myotis
<i>Parastrellus hesperus</i>	Canyon bat (Western pipistrelle)
* <i>Perimyotis subflavus</i>	Tri-colored bat (Eastern pipistrelle)
* <i>Eptesicus fuscus</i>	Big brown bat
<i>Antrozous pallidus</i>	Pallid bat
<i>Euderma maculatum</i>	Spotted bat
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Idionycteris phyllotis</i>	Allen's big-eared bat

\* - WNS and/or *Geomyces destructans* confirmed

Laboratory experiments conducted by the National Wildlife Health Center have shown that bat-to-bat transmission of *G. destructans* can occur in a controlled environment (Castle and Cryan 2010, USGS 2009). *Geomyces destructans* genetic material has been identified in cave sediments collected from hibernation sites within WNS-infected areas, indicating that WNS is also likely spread by contacts among bats and their cave and/or mine environments (USGS 2009). There is also circumstantial evidence to support the potential for transmission by humans from cave to cave (Castle and Cryan 2010, USGS 2009). Based on previous patterns and rates of spread, WNS could appear in southwestern bat populations as early as winter 2010-2011.

#### **Prior to documentation of *G destructans* in NM, or WNS in NM or an adjacent state**

##### Objectives:

The overriding management objective for the cooperating agencies in New Mexico is to prevent the arrival of WNS by effectively controlling transmission from already-affected areas.

Recognizing however that the spread of WNS to the Southwest may be unavoidable, our primary objective is to implement management for the winter of 2010-2011 that will focus on the need to prevent potential human transmission of the fungus into New Mexico, as well as contain any novel occurrence discovered within the state. In addition to this primary objective, the following supplementary objectives are identified:

Minimize direct bat mortality  
Provide WNS-related research opportunities  
Minimize impacts on other cave biota  
Work cooperatively with the caving community  
Minimize restrictions on the public  
Educate the public about WNS and the importance of bats

Increase Awareness:

- Interagency Communication Team will announce the completion of the Response Plan through a press release and social media venues, and get media coverage.
- Interagency Communication Team will create an e-mail list of interested parties to provide the most updated information in a timely manner.
- Interagency Communication Team will develop “Bats and WNS” presentations and make them available to all cooperators for presentations to grottos, the general public and other interested groups.
- BLM will develop a WNS ‘web-presence’ with information on current southwestern cave closures, links to other sites and a section for reporting unusual die-offs or WNS suspect bats (with directions on how to access).
- Each Agency will develop a protocol for disseminating WNS information to agency personnel.

Prevent the Spread of the Disease / Early Detection:

- It is mandatory that anyone entering non-commercial caves or mines on federal lands in NM must follow the most current USFWS White-Nose Syndrome Decontamination Protocols and gear dedication procedures (Appendix A). It is highly recommended that these protocols be used on other properties including private lands.
- It is highly recommended that anyone working with wild bats in NM should follow the *USFWS WNS Decontamination Protocol for Researchers* (Appendix A) when examining bats. NMDGF is responsible for the issuance of scientific collecting permits to biologists/ researchers who work on wildlife in NM. Permits issued to bat researchers include requirements and recommendations for the prevention of WNS transmission. However, permittees are also required to comply with any other requirements that land management agencies may implement when conducting wildlife research on those agency lands.
- Each agency will assemble information internally as well as from the research and caving communities to document significant bat roosts (timelines vary by agency). Agencies will work cooperatively with research and caving communities and other interested parties to develop a WNS monitoring/ surveillance plan, which will be completed by mid-November. Monitoring of significant hibernacula will be implemented during winter 2010-2011.

- Agencies, in cooperation with agency Abandoned Mine Land (AML) programs, the caving community, and other interested parties, will develop signs summarizing the WNS issue and decontamination protocols for posting at abandoned mine and cave entrances. These same groups will develop plans for posting signs at frequently visited caves, abandoned mines, significant bat roosts, and other designated sites.

#### Management or Regulatory Actions:

These actions apply to the caves and underground mines that are managed by federal and state land management agencies in NM. However due to differences in agency missions, some caves and mines may require different management actions based on agency responsibility. A bat “roost” is defined as a place where bats rest, sleep, raise young, overwinter, etc.

- As a pre-emptive strategy, access to all caves and/or mines with significant bat roosts will be restricted to approved administrative uses only, e.g. commercial use or research. For the purposes of this document, a “significant” bat roost is a hibernaculum, maternity roost, bachelor roost, day roost, or fall swarming (mating) roost, that is used by 1) bat species that primarily roost in caves and/or mines, or 2) species that use multiple roost types including caves and mines. In addition, a significant bat roost must meet at least one of the following three criteria:
  - a. A roost that is used by a colonial bat species (a grouping of the same bat species) that hibernates over winter.
  - b. A roost that is used by a bat species that is ESA-listed, federal agency sensitive, state-listed, or ranked as High on Western Bat Working Group’s Regional Bat Species Priority Matrix.
  - c. A roost that is used by one or more bat species resulting in a large ( $\geq 30$ ) aggregation of individuals.

(For additional details on how a “significant” bat roost was determined, and for a list of southwestern cave and mine dwelling species that occur in NM, see Appendix B).

- Access to those caves and mines determined to be closed (significant bat roosts) may be allowed to approved researchers and/or others only when appropriate decontamination and gear dedication procedures are followed (See *USFWS White-Nose Syndrome Decontamination Protocols* (Appendix A)). Recreational caving trips may be allowed within known caves that are not significant bat roosts, provided that agency-specific requirements (e.g. permits) are followed, including appropriate decontamination and gear dedication procedures.
- Encourage other landowners to consider closing the caves that harbor significant bat roosts on their properties to recreational caving, and only allowing approved researchers and/or others that will follow USFWS decontamination protocols.
- Encourage cavers and other recreationists to respect public and private land cave closure advisories.

**Post-documentation of WNS in NM or an adjacent state, or *G destructans* in NM:** Once WNS has been documented in NM or an adjacent state, or the fungus has been documented in NM, additional management actions will be implemented. Objectives, reporting protocols, and management or regulatory action alternatives will be developed by the Interagency Biologist/Cave-Specialist Team within the calendar year, and will be available for leadership review no later than early January 2011.

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### **Links for more information**

Bat Conservation International WNS Page: <http://www.batcon.org/index.php/what-we-do/white-nose-syndrome.html>

Bat Conservation and Management WNS Page: <http://www.batmanagement.com/wns/wns.html>

USFWS WNS Page: <http://www.fws.gov/WhiteNoseSyndrome>

USGS Fort Collins Science Center WNS Page: <http://www.fort.usgs.gov/WNS>

USGS National Wildlife Health Center WNS Page:  
[http://www.nwhc.usgs.gov/disease\\_information/white-nose\\_syndrome/](http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/)

USGS National Wildlife Health Center – Wildlife Health Bulletins:  
[http://www.nwhc.usgs.gov/publications/wildlife\\_health\\_bulletins/WHB\\_10\\_04.jsp](http://www.nwhc.usgs.gov/publications/wildlife_health_bulletins/WHB_10_04.jsp)

## APPENDIX A:

### White-Nose Syndrome Decontamination Protocol (v.3) U.S. Fish and Wildlife Service – Draft 7.31.2010

The USFWS strongly recommends compliance with all cave closures, advisories, and regulations in all Federal, State, tribal, and private lands. By disregarding this recommendation, you could potentially promote the transmission of the fungus *Geomyces destructans* (*G.d.*), likely the causative agent for white-nose syndrome (WNS), which is responsible for significant bat mortality in eastern North America. Should you choose to disregard this recommendation, the following protocol outlines the best known procedures to help reduce the spread of the fungus.

**You should not handle bats.** If you observe live or dead bats (5 or more individuals in a single location) that may exhibit signs of WNS, contact a wildlife professional in your state wildlife agency (<http://www.fws.gov/offices/statelinks.html>) or contact your nearest USFWS Ecological Services Field Office (<http://www.fws.gov/offices/>). Researchers, contact your state or federal agency for permitting requirements.

**RECOMMENDED DECONTAMINATION PRODUCTS:** The following chemical products were tested in a laboratory setting and were found to be particularly effective against killing the more resistant, spore-form of *G.d.*, as well as the hyphae.

1. **Lysol® IC Quaternary Disinfectant Cleaner** (0.3% quaternary ammonium compound minimum) - 1 part concentrate to 128 parts water or 1 ounce of concentrate per gallon of water;
2. **Lysol® All-purpose Professional Cleaner** (0.3% quaternary ammonium compound minimum);
3. **Formula 409® Antibacterial All-Purpose Cleaner** (0.3% quaternary ammonium compound minimum);
4. **A 10% solution of household bleach** - 1 part bleach to 9 parts water (an estimate of 1:9 is insufficient);
5. **Lysol® Disinfecting Wipes**; or
6. **Boil submersible gear in water for 15 minutes**

**BEFORE CAVING:** In order to effectively reduce the risk of human transfer of *G.d.*, it is imperative that you follow these decontamination procedures any time you plan cave visits, and **under no circumstances should clothing, footwear or gear that was used in a WNS-affected state or region be used in a non-affected state.** If gear **cannot** be thoroughly decontaminated or disposed of, we advise that you not enter caves or parts of caves requiring use of this gear. If gear **can** be thoroughly decontaminated and you must enter a cave, isolate and decontaminate these items after last exiting a cave. Gear should not be used in multiple caves in the same day unless the decontamination procedures below can be performed **between each cave visit.**

**AFTER EACH CAVE VISIT:** Thoroughly scrape or brush off any dirt and mud from clothing, boots, and gear and then place them in a sealed plastic bag or plastic container with lid to be cleaned and disinfected off site. Outer clothing should be removed prior to entering a vehicle after/between a site visit. A clean change of clothing is recommended. To decontaminate clothing, footwear and gear, please follow the procedures listed below.

**For Submersible Gear** (i.e. clothing and equipment that can be submerged without damage):

Wash all clothing and any appropriate equipment in washing machine or by hand using conventional detergents. Use cold, warm, or hot water. Woolite® fabric wash has been found to be highly effective for this procedure. Rinse thoroughly, and then follow by soaking for a minimum of 10 minutes in one of the decontaminating products above, then rinse and air dry. As an alternative to chemical products, boiling submersible gear at a fast boil for 15 minutes is also recommended, followed by air drying.

**For Non-submersible Gear** (i.e. equipment that will be damaged by submersion):

Clean thoroughly with soap and water, and then decontaminate by applying one of the recommended products above to the outside surface for a minimum of 10 minutes, then rinse and air dry.

**For Footwear:**

Where possible, rubber (wellington-type) caving boots (which withstand harsh decontaminating products and are easily cleaned) are recommended. Boots need to be fully scrubbed and rinsed to remove all soil and organic material. Decontaminate rubber and leather boots, (including soles and leather uppers) with a product listed above for a minimum of 10 minutes, then rinse and air dry.

**For Ropes and Harnesses:**

**To date, only Sterling rope and webbing have proved to sustain no damage when using products above.** Wash rope/webbing in a front loading washing machine on the gentle cycle using Woolite® Extra Delicates detergent. Immerse in a dilution of Lysol IC Quaternary Disinfectant Cleaner for 15 minutes. Rinse twice in clean water and air dry. Brands of rope/webbing other than Sterling have not yet been tested for integrity after decontamination. Brands not tested should be dedicated to a single cave or not used at all.

**For Cameras and Electronic Equipment:**

If possible, do not bring electronic equipment into a cave. If practical, cameras and other similar equipment that must be brought to a cave may be placed in plastic casing (i.e. underwater camera housing) or wrapped in plastic wrap where only the lens is left unwrapped to allow for photos to be taken. The plastic wrap can then be decontaminated by using Lysol® Disinfecting Wipes and discarded after use or wipes can be applied directly on camera surfaces or plastic casing.

**For Vehicles:**

In addition to gear, vehicles used to transport equipment can also harbor spores. Keep vehicles as clean as possible by storing gear in clean containers, and decontaminate those containers with your other equipment using the decontamination products above.

**Note:** Protocol updated as of 7-31-2010. Please visit <http://www.fws.gov/WhiteNoseSyndrome/> for updated materials and for **comprehensive supplemental documents that detail decontamination procedures for cavers and researchers.**

Appendix B: Defining a “Significant Bat Roost” for New Mexico

**Defining a Significant Bat Roost for bat species occurring in New Mexico**

Standard Criterion: A hibernaculum, maternity roost, bachelor roost, day roost, or fall swarming (mating) roost that is used by obligatory cave or mine dwelling species, or species that use multiple roost types including caves and mines.

Rationale: These types of bat roosts are thought to be critical to the survival of bat populations (Altenbach and Pierson 1995). Only cave and mine roosts are included because the fungus (*Geomyces destructans*) associated with WNS thrives in the darkness, low temperatures, and high humidity characteristic of many caves and mines, and has been a consistent pathogen among affected bats and sites (USGS 2010).

Qualifying Species: Eighteen bat species in NM are either obligatory cave and mine dwellers, or use multiple roost types including caves and mines (Table 1). Three additional species (spotted bat {*Euderma maculatum*}, canyon bat {*Parastrellus hesperus*} and silver-haired bat {*Lasionycteris noctivagans*}) have been found roosting in caves, but too infrequently to be considered cave and mine dwellers.

Table 1 –Bat species occurring in New Mexico that roost in caves and mines.

Scientific name	Common name
<i>*Leptonycteris yerbabuenae</i>	Lesser long-nosed bat
<i>*Leptonycteris nivalis</i>	Greater long-nosed bat
<i>*Choeronycteris mexicana</i>	Mexican long-tongued bat
<i>Myotis californicus</i>	California myotis
<i>Myotis ciliolabrum</i>	Western small-footed myotis
<i>*Myotis velifer</i>	Cave myotis
<i>Myotis evotis</i>	Western long-eared myotis
<i>Myotis volans</i>	Long-legged myotis
<i>Myotis auriculus</i>	Southwestern myotis
<i>Myotis occultus</i>	Occult (Arizona) myotis
<i>Myotis thysanodes</i>	Fringed myotis

<i>Myotis yumanensis</i>	Yuma myotis
<i>Perimyotis subflavus</i>	Tri-colored bat
<i>Eptesicus fuscus</i>	Big brown bat
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Idionycteris phyllotis</i>	Allen's big-eared bat
<i>Antrozous pallidus</i>	Pallid bat
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat

\* = obligatory cave/mine dwelling species. Others roost in multiple roost types including caves and mines.

Additional Criterion A: Roosts that are used by colonial (at some point in their life history) bat species that hibernate over winter.

Rationale: Since the first confirmation of WNS in early 2007, it has been an emerging disease of colonial, hibernating bat species. As of May 2010, most species of hibernating bats in the eastern United States have been affected (USGS 2010).

Qualifying Species: Fourteen of the original 18 cave and mine roosting bat species occurring in New Mexico are known to roost colonially and hibernate over winter (Table 2).

Table 2. Cave and mine roosting bat species occurring in New Mexico that are colonial and obligatory hibernators.

<b>Scientific name</b>	<b>Colonial Roosting?</b>	<b>Obligatory Hibernator?</b>
<i>Myotis californicus</i>	Yes – maternity & hibernacula	Yes
<i>Myotis ciliolabrum</i>	Yes – small clusters for maternity & hibernacula	Yes
* <i>Myotis velifer</i>	Yes	Yes
<i>Myotis evotis</i>	Yes - maternity	Little data available, but some documentations
<i>Myotis volans</i>	Yes	Yes

<i>Myotis auriculus</i>	Yes	Yes
<i>Myotis occultus</i>	Yes - maternity	Yes
<i>Myotis thysanodes</i>	Yes - maternity	Yes
<i>Myotis yumanensis</i>	Yes - maternity	Yes
<i>Perimyotis subflavus</i>	Some small maternity colonies	Yes
<i>Eptesicus fuscus</i>	Yes	Yes
* <i>Corynorhinus townsendii</i>	Yes	Yes
<i>Idionycteris phyllotis</i>	Yes - maternity	Yes
<i>Antrozous pallidus</i>	Yes – small colonies	Yes

\* = cave/mine roosting bats. Others roost in multiple roost types including caves and mines.

Additional Criterion B: Species Status – Cave and mine roosting bat species occurring in New Mexico that are ESA-listed, agency-sensitive, state-listed, or ranked High on Western Bat Working Group’s (WBWG) Regional Bat Species Priority Matrix.

Rationale: Listed species and “species of concern” are included because these bat species are perceived as vulnerable or threatened, or are in need of specific conservation actions separate from the threat of WNS. If WNS continues its westward spread, these species may be at additional risk from the disease.

Qualifying Species: Five of the original 18 cave and mine roosting bat species occurring in New Mexico are ESA listed (2), agency sensitive (3), state-listed (2), or ranked ‘High’ on WBWG’s matrix (5) (Table 3). Townsend’s (*Corynorhinus*) and Allen’s (*Idionycteris*) big-eared bats are known to roost colonially and hibernate. The three other species roost colonially but migrate rather than hibernate. These species were included because they are known to share roosts with hibernating bat species, and therefore may be at risk, or may help spread the fungus across their migratory routes.

--Lesser long-nosed bat (*L. yerbabuena*) – Known to share roosts with pallid bats (*A. pallidus*) (Fleming 1991).

--Greater long-nosed bat (*L. nivalis*) - Known to share roosts with Townsend’s big-eared bat (*C. townsendii*), and may use the same roost as fringed myotis (*M. thysanodes*) and long-legged myotis (*M. volans*), but at different times (WBWG 2005).

--Mexican long-tongued bat (*C. mexicana*) – Known to share roosts with Townsend’s big-eared bat (*C. townsendii*) (California DGF 2000).

Table 3 – Species status of cave and mine roosting bat species occurring in New Mexico.

Scientific name	ESA	USFS	BLM	NM	AZ	WBWG
* <i>Leptonycteris yerbabuenae</i>	X			T	E	H
* <i>Leptonycteris nivalis</i>	X			E		H
* <i>Choeronycteris mexicana</i>		X	X			H
* <i>Corynorhinus townsendii</i>		X	X			H
<i>Idionycteris phyllotis</i>		X	X			H

\* = cave/mine roosting bats. Others roost in multiple roost types including caves and mines.

**Additional Criterion C:** Cave and mine roosting bat species occurring in New Mexico that form roosts of 30 individuals or more.

**Rationale:** Medium to large roosts can be important because they are more vulnerable to human disturbance and persecution. Many caves that were once known to house large concentrations of bats, no longer are used by bats due to disturbance (Tuttle and Moreno 2005). Bats are especially vulnerable to decline because they have a low potential for population growth, generally giving birth to only one offspring per year.

**Qualifying Species:** Twelve of the original 18 cave and mine roosting bat species occurring in New Mexico form medium to large ( $\geq 30$ ) roosts (Table 4).

Table 4 – Cave and mine roosting bat species occurring in New Mexico that form medium to large ( $\geq 30$  individuals) bat roosts.

Scientific name	Medium to Large Colonies?
* <i>Leptonycteris yerbabuenae</i>	Yes
* <i>Leptonycteris nivalis</i>	Yes
* <i>Choeronycteris mexicana</i>	Yes

<i>*Macrotus californicus</i>	Yes
<i>*Myotis velifer</i>	Yes
<i>Myotis occultus</i>	Yes
<i>Myotis thysanodes</i>	Yes
<i>Myotis yumanensis</i>	Yes
<i>Eptesicus fuscus</i>	Yes
<i>*Corynorhinus townsendii</i>	Yes
<i>Antrozous pallidus</i>	Yes
<i>Tadarida brasiliensis</i>	Yes