Assessment of Need and Enforcement Plan Checklist
Order Number – R2-11-02

Purpose of Order – Describes the problem, why the Order is proposed, and what should be accomplished by implementation of the Order. The appropriate staff prepares the Order and ensures all required supporting information is documented by completing this plan.

Scope of Order – Defines the affected area, the regulated use or user group, exempted persons, and duration of the Order.

Enforcement Plan – Described action to be taken to inform the affected public and effectively implements the provisions of the Order in a manner that results in public acceptance and safety (e.g., planned patrol dates and locations, staffing needs, enforcement strategies, posting and public notifications, media contacts, and coordination with local public agencies).

Action to be Completed	Responsible Official	Date
Prepare Proposed Order Prepare Revised Order	Brian Reilly/Peter McDonald	Done 6/17/11 Done 7/22/11
NEPA Requirements Completed	36 CFR 220.6(d)(1) – No project/case file or DM needed for this emergency order	N/A
CRIA (signed)	Peter McDonald/Jerome Romero	Done 7/18/11
Prepare Enforcement Plan	Brian Reilly	Done 6/17/11; Pending RF signature by 7/26/11
OGC Review of Proposed Order & Revised Order	Lois Witte	Done 6/17/11 and 7/22/11
Approve Order	Regional Forester	Pending by 7/26/11
Post Order (36 CFR 261.51)	Region 2 Forest Supervisors	Pending by 7/26/11

Approve Enforcement Plan for Implementation:

Randall Karstaedt

TBD RANDALL KARSTAEDT
Acting Deputy Regional Forester
Rocky Mountain Region

July 25, 2011
Date

ORDER NO. R2-10-02

ORDER OF THE REGIONAL FORESTER CLOSING AN AREA TO ENTRY, TO WIT:

Emergency Closure

All Caves and Abandoned Mines on National Forest System Lands in the Rocky Mountain Region

Pursuant to 16 U.S.C. § 551 and 36 C.F.R. 261.50(a), the following acts and omissions are prohibited on all National Forest System lands, administered by the Rocky Mountain Region in the states of Colorado, Kansas, Nebraska, South Dakota and Wyoming.

1. Entering any cave or abandoned mine, regardless of distance or depth, except those areas listed in Exhibit A. 36 C.F.R. § 261.53 (a), (b) and (d).
2. Going into any cave or abandoned mine on National Forest System lands listed in Exhibit A or pursuant to the exemptions listed below, without decontamination prior to entry to, and departure from, said cave or abandoned mine consistent with those guidelines hereby attached and incorporated into this Order as Exhibit B.

For purposes of this Order "abandoned mines" are defined as those inactive mine openings and adits that are not situated on an unpatented claim under the 1872 Mining Law, and which are situated on National Forest System lands.

These restrictions are necessary to protect bat species from White-nose Syndrome. They are in addition to the general prohibitions set forth in 36 CFR Part 261. This emergency closure will be effective for one year, from July 26, 2011 through July 25, 2012, unless terminated earlier by the Regional Forester.

Pursuant to 36 C.F.R. § 261.50 (e), the following persons are exempt from this order while still subject to the procedures under Exhibit B:

1. Persons entering those caves listed in Exhibit A, which is attached and hereby incorporated into this Order.
2. Any Federal, State or local law enforcement officer, or member of an organized rescue or firefighting force working in the performance of an official duty.
3. Persons operating under the 1872 Mining Law are exempt from Prohibition 1.
4. Forest Service employees, contractors of the Forest Service, and persons with a written authorization from a Forest Service Officer specifically authorizing cave entry to conduct research, inventory, or monitoring as needed to understand and manage White-nose Syndrome and to contribute to the nomination of cave resources as significant under the Federal Cave Resource Protection Act (16 U.S.C. 4301 – 4309 and 36 C.F.R.290), provided said activities are consistent with Exhibit B.

Violation of these prohibitions set forth above is punishable by a fine of not more than $5,000 for an individual and $10,000 for an organization, or imprisonment for not more than six (6) months, or both. (16 U.S.C. § 551, 18 U.S.C. §§ 3559 and 3571).

Dated this 26th day of July 2011, at Golden, Colorado.

Jerome Thomas 7/26/2011

Jerome Thomas
Regional Forester (Acting)
Rocky Mountain Region, USDA Forest Service

EXHIBIT A

LIST OF AREAS NOT SUBJECT TO EMERGENCY CLOSURE

The following area is exempt from the prohibition on entry but is subject to the decontamination procedures in Exhibit B.

A. Wonderland Cave, Black Hills National Forest

Legal description: Section 27 of Township 4 North, Range 5 East, Meade County, South Dakota

EXHIBIT B

Decontamination Procedures for National Forest System Lands To Help Prevent the Spread of White-Nose Syndrome (WNS) Associated with Cave and Abandoned Mine Entry

USDA Forest Service
Rocky Mountain Region
July 26, 2011

Refer to and use these Decontamination Procedures for NFS Lands in the Rocky Mountain Region (Region 2). Also refer to the U.S. Fish and Wildlife Service's White-Nose Syndrome Decontamination Protocols for Researchers supplement at: http://www.fws.gov/WhiteNoseSyndrome/pdf/WNSDecon_Researchers_v012511.pdf. These procedures are subject to change as national procedures are updated and released.

White-nose Syndrome (WNS) has been documented across the eastern United States and Canada and suspected most recently in Missouri and Oklahoma based on the discovery of the *Geomyces destructans* fungus believed to be the causal agent of WNS. The U.S. Fish and Wildlife Service recommends that recreational caving should not occur in WNS-affected and adjacent areas, to reduce the risk of human transmission of the fungus *Geomyces destructans* into new areas until WNS is better understood.

The Rocky Mountain Region is continuing to temporarily restrict access to caves and abandoned mines under its jurisdiction. A "cave" includes all caves and fissures whether they are known to be used by bats or not. A cave is defined under the Federal Cave Resources Protection Act of 1988 as "any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other manmade excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance." "Abandoned mines" include inactive open adits, tunnels, and shafts, but do not include active mines where ongoing mining activities are being conducted. If entry into these caves and/or abandoned mines is necessary, take the following precautions to prevent the possible spread of the fungus *Geomyces destructans*.

You should not handle bats unless specifically authorized to do so**.** However, if you should observe live or dead bats that may be exhibiting characteristic signs of WNS, report this immediately to the nearest Forest Service office (http://www.fs.fed.us/r2/contact/), state wildlife agency (http://www.fws.gov/offices/statelinks.html), or U.S. Fish and Wildlife Service Ecological Services Field Office (http://www.fws.gov/offices/). Visit http://www.fws.gov/whitenosesyndrome.html for the most current information about the spread of this disease.

General Guidelines to Prevent the Spread of WNS

- **Avoid entry** into all caves and abandoned mines, and observe closures and advisories.
- **Do not use gear that was used in a WNS-affected state** outside that affected state.
- **Decontaminate previously-used gear** immediately, store gear away, **and thoroughly** wash and decontaminate any surfaces with which these items may have come into contact (e.g., car trunk, duffle bag, etc.).

Caves. Avoid cave entry if possible. Clothing (including outerwear), boots, socks, harness/ropes, helmet, hardhat, fannypack/daypack, headlamp, flashlight, camera, and other gear should not be used in m**u**ltiple entries in the same day unless the cleaning and decontamination described below can be performed between each entry. In situations where caves are known to be interconnected and have multiple entrances, decontamination is not required between entry at the various entrances, within the same day.

Abandoned Mines. For the purposes of this discussion a "site" may consist of one or more related underground mine openings and may be as large as several square miles. Under situations where surveys are being conducted in association with abandoned mine closures for human safety, and multiple sites are being visited in a single day in states currently undocumented as affected by WNS, containment and decontamination between each site may be impractical. Specifically for abandoned mine entry associated with human-safety closures, follow these guidelines:

- Avoid entry if possible. Limit entry to that necessary to safely perform required work. For construction this is typically less than 50 feet inside the adit or shaft.
- Follow the decontamination and containment protocol between sites if feasible. If decontamination is not feasible between sites, identify feasible opportunities for decontamination at the smallest possible geographic unit to minimize risk of contamination between locations. These geographic units could be hydrologic unit code boundaries (HUCs) or bat habitat use areas.
- Decontamination must occur no less frequently than at the end of each day.
- Protect the interior of vehicles with tarps, sheets, etc. if driving between sites without decontaminating clothing and gear.

Containment and Decontamination Procedures for Caves and Abandoned Mines:

- Entry will only occur with clothing (including outer clothing), boots, socks, harness/ropes, helmet, hardhat, fannypack/daypack, headlamp, flashlight, camera and other gear that have been *fully cleaned following the protocol below and rinsed prior to entry* to remove residue of chemical product used.
- *Minimize gear* taken in to a site.
- *Air monitors* are required safety equipment for underground abandoned mine entry. The manufacturer of your air monitor (ESPECIALLY THE SENSORS) must be consulted with prior to applying any decontaminant chemicals, to ensure that the sensors and electronic components are not compromised in any way. Follow the manufacturer's recommended procedures.
- Tyvek® or other disposable outerwear, rubber boot covers, and latex rubber gloves may be used for each entry in lieu of decontamination procedures for clothing.
- *Companion animals* should be kept out of caves and mines as fungal spores could adhere to fur and be transferred to another cave.

Step #1 upon exiting a cave or abandoned mine:

- 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.
- Remove outer clothing prior to entering a vehicle and after/between site visits. A clean change of clothing is recommended.
- Surface-clean exposed skin with antibacterial hand sanitizer prior to entering the vehicle's cab.
- Place disposable items (e.g., Tyvek® outerwear, rubber boot covers, and latex gloves) in sealable containers, to be appropriately decontaminated and disposed of off-site.

Step #2 after exiting a cave or abandoned mine:

A. **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. Washing can be done in cold, warm or hot water. Laboratory testing has found Woolite® fabric wash to be the best detergent for this procedure. Rinse thoroughly, and then follow by soaking for a minimum of 10 minutes in one of the recommended decontaminating products listed below, then rinse and air dry. *Boiling items for 15 minutes followed by thorough air drying can be done in lieu of chemical treatment.*

   1. *Footwear:* When safety permits, 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 below for a minimum of 10 minutes, then rinse and air dry.

   2. *Ropes and Harnesses***:** It is the responsibility of each individual relying on life-support equipment, such as harnesses and ropes, to ensure that the decontamination protocols in use are chemically compatible with this equipment. In cases where safety following decontamination has not yet been evaluated, then ropes and webbing should be dedicated to one cave or not used at all to prevent the spread of WNS. **To date, only Sterling rope and webbing have been shown not to be damaged by the following decontamination protocol:** Wash rope/webbing in a front loading washing machine on the gentle cycle using Woolite® Extra Delicates detergent. Treat by immersion in a 1:128 dilution of Lysol IC Quaternary Disinfectant Cleaner for 15 minutes. Rinse in fresh, clean water for a minimum of two rinses and allow to air dry. Other products have yet to be tested for integrity after decontamination.

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

   3. *Cameras and Electronic Equipment*: If possible, do not bring electronic equipment into a cave. If practical, cameras and other similar equipment that must be used in 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 casing should be decontaminated using one of the appropriate products below. The plastic wrap should be discarded after use and followed up by decontaminating the camera surface with Lysol ® Disinfecting Wipes, realizing this could damage the body of the camera.

   4. *Vehicles*: In addition to gear, vehicles used to transport equipment can also harbor spores. Keep vehicles as clean as possible by taking extra precautions (e.g. storing gear in clean containers, bringing a change of clothes, conducting all work outside of the vehicle once in the cave) and decontaminating storage containers along with all other clothing, gear, and misc. equipment using the appropriate decontamination products below.

Recognized 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 *Geomyces destructans*, as well as the hyphae:

1. Lysol® IC Quaternary Disinfectant Cleaner - (A product effective at 1:128 dilution, or 1 ounce of concentrate per gallon of water.)[1]

[1] Use of some products which contain quaternary ammonia, isopropanol, and other potentially harmful chemicals or boiling water in confined spaces needs to be approached carefully due to inhalation or contact risks of the product. Since products/procedures may also cause damage to clothing, gear, and sensitive electronic equipment, all users should be aware of these risks prior to entering cave environments. Use of personal protective equipment to reduce

2. Professional Lysol® Antibacterial All-purpose Cleaner (A product effective at 1:128 dilution, or 1 ounce of concentrate per gallon of water.)[1]
3. Formula 409® Antibacterial All-Purpose Cleaner (Off-the-shelf concentrations as specified by label)[1]
4. A 10% solution of household bleach - (A product effective at 1 part bleach to 9 parts water)[1]
5. Lysol® Disinfecting Wipes (0.28 % di-methyl benzyl ammonium chloride)[1,2]
6. Boiling water

Quaternary ammonium products such as 409 and Lysol cleaner must be properly disposed into a municipal water system (poured down a drain or toilet) or similar system to receive required treatment. It is illegal to dump these products on the ground. Follow the label instructions and do not wipe these products directly on your skin or surfaces that come in contact with humans, pets, bats, or other wildlife.

If using bleach solution, do not store dilution for more than 24 hours as the bleach will begin to break down once it is diluted. Store in opaque bottles as bleach also breaks down when exposed to sunlight.

Product guidelines should be consulted for compatibility before using any decontamination product listed under Section 3 on specific equipment. ***Also, detergents and quaternary ammonium compounds (i.e. Lysol® IC Quaternary Disinfectant Cleaner) should not be mixed directly with bleach as this will inactivate the bleach and in some cases produce a toxic chlorine gas***.

Show caves and tourist mines. For caves or mines identified in Exhibit A, provide education to visitors on caves, bats, and WNS such as is being conducted at Mammoth Cave (http://www.nps.gov/maca/whitenose.htm).

Work with contractors, special use permittees, and concessionaires to enlist a decontamination process for all individuals entering show caves or tourist mines by implementing a combination of the following actions that best fits the situation and will be most effective:

- Closing these sites to entry for anything other than WNS surveillance during hibernation season (roughly from October 1 – May 1).
- Forbidding entry with footwear that has previously been in a cave or mine **OR** require footwear decontamination prior to entry at a provided/supervised decontamination station, **OR** sell disposable rubber booties to be worn in place of footwear.
- Forbid entry with clothing that has previously been in a cave or mine **OR** provide disposable Tyvek suits for sale.
- Forbid carrying accessory items such as water bottles, cameras, cell phones, daypacks in to caves or mines that have previously been in a cave or mine, unless decontaminated on site.
- Provide a decontamination station and personnel to run it.
- Restrict human entry in to portions of caves or mines used by bats any time of year.

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contact with the product is strongly encouraged, particularly if extended contact is anticipated or as recommended by the manufacturer. Always read and follow the MSDS information and all safety/use criteria for every product used.

[2] The active ingredient is considered to be at the effective concentrations known to kill the conidia of *Geomyces* spp.; however, the efficacy of field application remains to be demonstrated. Any equipment decontaminated with this product should be used with extra precaution until laboratory results are finalized.

- Restrict human traffic to well-defined contained pathways that avoid opportunities for human contact with cave features other than the pathway.

As new information becomes available, these decontamination procedures will be updated. The most current decontamination procedures will be made available at Forest Service offices and will be provided to persons obtaining a permit or other administrative authorization in writing from an an authorized Forest Service officer. A separate protocol will be provided to persons handling bats for research purposes.

Assessment of Need

Order Number – R2-11-02

Purpose of the Order

This Order is necessary to slow the spread of White-Nose Syndrome (WNS), a disease that has killed an estimated one million bats in the eastern, southern and midwestern regions of the United States and eastern Canada. By June 2011, WNS had been confirmed in four Canadian provinces and at least 16 American states, ranging throughout the eastern seaboard states, south along the Appalachian Mountains into eastern Tennessee and western North Carolina, as far west as Kentucky and southern Indiana, and north into the Canadian provinces of Quebec, Ontario, New Brunswick, and Nova Scotia (Figures 1 and 2 next page). Fourteen additional U.S. counties remain suspect for WNS, meaning the *Geomyces destructans* fungus was detected though as yet there is no histological confirmation of WNS (*pers. comm.*, D. Krusac, USFS, Southern Region).

WNS is believed to develop in bats from a newly-described cold-loving fungus, *Geomyces destructans*.[1] The fungus is suspected of originating from Europe, where bats there appear to coexist with it but without the mass bat mortalities like observed in eastern North America.[2] The best available science shows that the *G. destructans* fungus thrives in the cold and wet conditions common to subterranean caves and abandoned mines. The fungus and WNS appears to be readily transmitted bat-to-bat and bat-to-cave/mine once it becomes established locally. To-date it appears to primarily affect hibernating bats.

The ramifications of WNS in affected areas in North America based on the nature of the outbreak over the past 4^{+} years, include the potential for regional collapse of bat populations and ultimately extinction of even once-common bats.[3] Of 45 bat species in the United States, at least 6 of the approximately 25 that hibernate have been affected by WNS, including the little brown bat, the northern longeared bat, the eastern small-footed bat, the federally-endangered Indiana bat, the tricolored bat, and the big brown bat. Three of these species—little brown, tricolored, and big brown—occur in Rocky Mountain Region states. Because approximately half the bat species of the United States are obligate hibernators, another 19 species are at risk for infection

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[1] Gargas A., M.T. Trest, M. Christensen, T.J. Volk, and D.S. Blehert. 2009. *Geomyces destructans* sp. *nov*. associated with bat white-nose syndrome. *Mycotaxon*. Vol. 108, pp. 147–154. http://botit.botany.wisc.edu/toms_fungi/147gargas9-73.pdf

[2] G. Wibbelt, A. Kurth, D. Hellmann, M. Weishaar, A. Barlow, M. Veith, J. Prüger, T. Görföl, L. Grosche, F. Bontadina, U. Zöphel, H-P. Seidl, P.M. Cryan, and D.S. Blehert. 2010. White-nose syndrome fungus (*Geomyces destructans*) in bats, Europe. *Emerg Infect Dis*, 16(8). 2010 Aug [accessed 11 July 2011]. http://www.cdc.gov/EID/content/16/8/1237.htm.

[3] Frick W.F., J.F. Pollock, A.C. Hicks, K.E. Langwig, D.S. Reynolds, G.G. Turner, C.M. Butchkoski, T.H. Kunz. 2010. An emerging disease causes regional population collapse of a common North American bat species. *Science*. 329(5992): 679-682. 2010 Aug [accessed 11 July 2011]. http://www.sciencemag.org/content/329/5992/679.full.

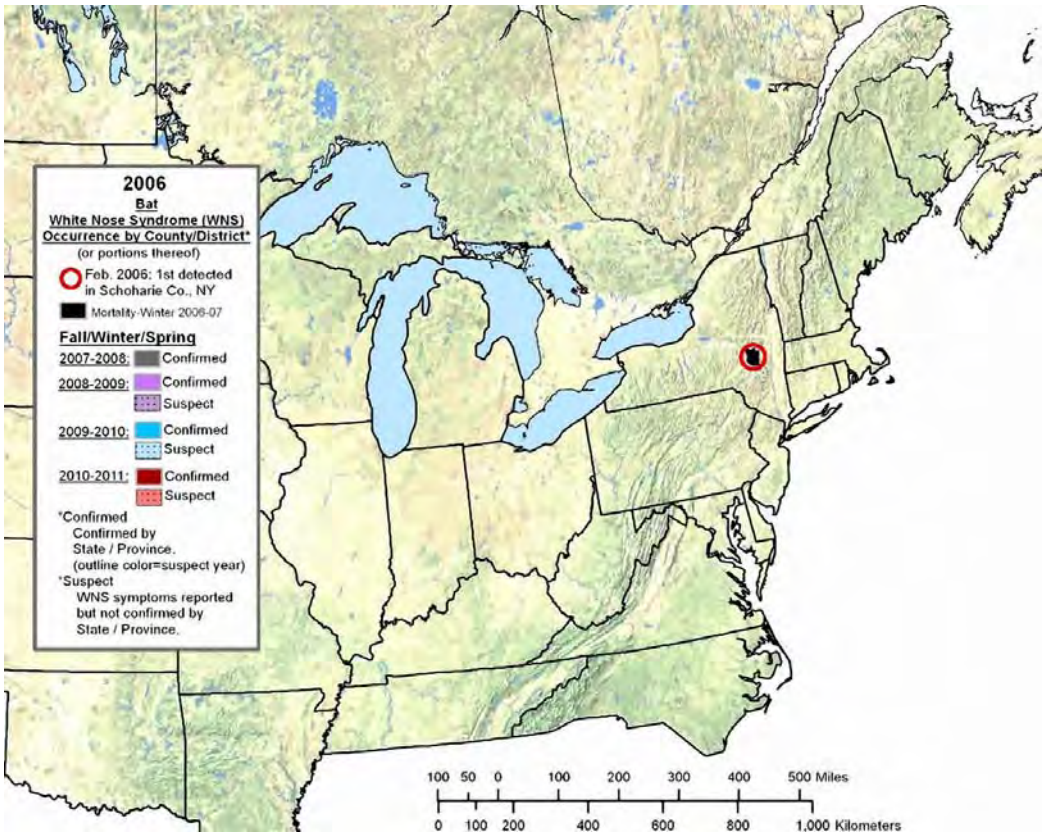

Figure 1. WNS discovered near Albany, New York, in 2006.
(maps by Cal Butchkoski, PA Game Commission)

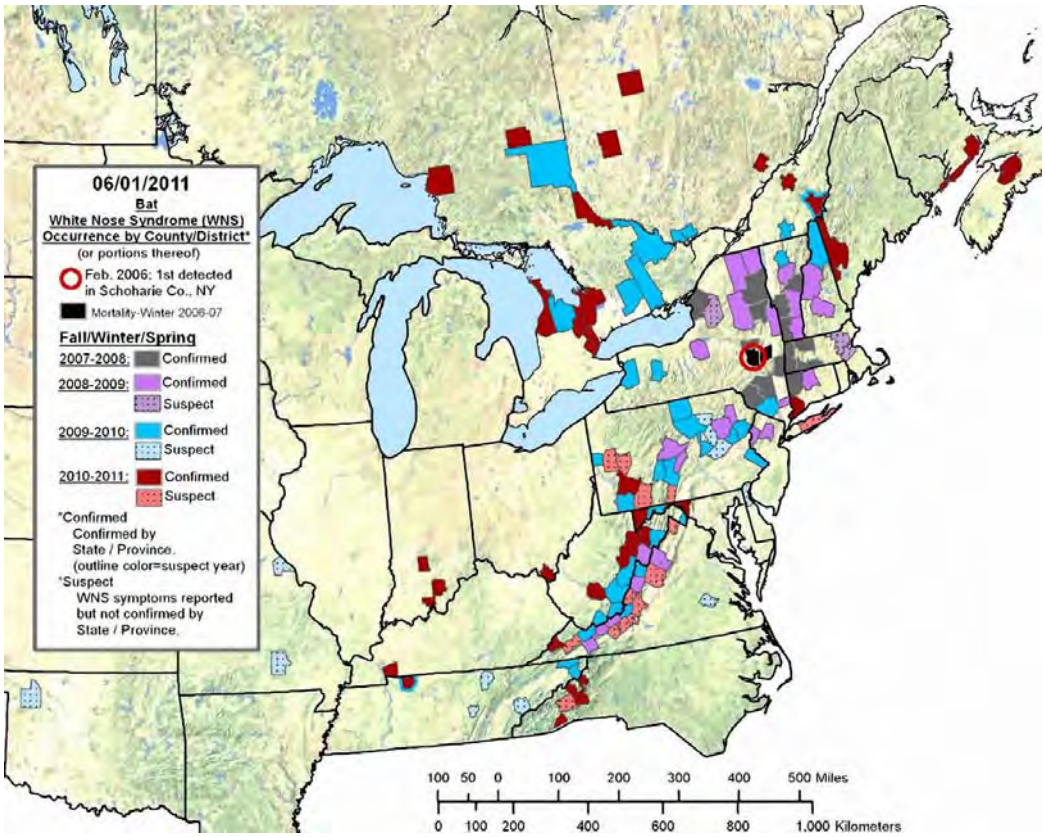

Figure 2. Confirmed and suspected spread of WNS by June 2011.

by *G. destructans* if it spreads beyond its current range.[4] This includes several additional species located in states of the Rocky Mountain Region. The U.S. Fish and Wildife Service recently announced positive 90-day findings on petitions to federally-list the eastern small-footed and northern longeared bats under the Endangered Species Act in response to WNS effects and other factors. Full 12-month reviews will lead to a decision by FWS whether or not to proceed with a listing of one or both species. The Service is also conducting a WNS-related status review of the little brown bat, which has been one of the most common bat species in the U.S. but has declined precipitously in the east since the outbreak of WNS. Several states have also initiated or completed state-listing actions for one or more of these species related to WNS concerns.

In 2010 *G. destructans* was discovered for the first time west of the Mississippi River in several locations in Missouri and western Oklahoma and adjacent to the Rocky Mountain Region. The Oklahoma record was also the first association with the cave myotis species, although the individual affected lacked the pathological invasion of the skin characteristic of the WNS disease. Concerns were raised in national circles about the leap-frog nature of recent WNS and *G. destructans* records including these from Missouri and Oklahoma, as well as specific to the Oklahoma occurrence the known association of the affected cave myotis species with the Brazilian free-tailed bat, a migratory, wide-ranging species that roosts in large numbers and could potentially greatly accelerate spread of WNS in the Americas. The Oklahoma record was within approximately 300 miles of the Supervisor's Office of the Pike and San Isabel National Forests and dispersal distance of some bat species. There has also been professional opinion and several lines of evidence that indicate humans have contributed to the establishment and spread of WNS in North America (though this is likely untestable and cannot be proved with complete certainty)(references cited elsewhere). Based on the cumulative evidence as well as remaining scientific uncertainty about the pathology, spread, and management of this relatively new disease, the Rocky Mountain Region in 2010 implemented an emergency closure to the public of all caves and mines under its administration in an attempt to slow westward spread of the fungus and disease into the Region's national forests and grasslands.

Since the discovery of WNS and implementation of the 2010 closure, substantial progress has been made at the national level in the scientific investigation of *G. destructans* and WNS, and continued research should eventually reveal opportunities to manage the disease and the causes of its spread. For example, the gene sequence of *G. destructans* has been mapped, much understanding about the physiological and physical effects on bats has been clarified, and the fungus is now known to thrive within certain temperature ranges and beyond which does not appear to grow.[4,5] The fungus is also now known to persist in cave soils and environmental conditions for extended periods once established.[6,7] Additionally, survey and monitoring

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[4] Blehert D.S., J.M. Lorch, A.E. Ballmann, P.M. Cryan, and C.U. Meteyer. Bat white-nose syndrome in North America. *Microbe.* 2011 June [accessed 11 July 2011]. http://www.microbemagazine.org/index.php/ 06-2011-home/3462-bat-white-nose-syndrome-in-north-america.

[5] P.M. Cryan, C.U. Meteyer, J.G. Boyles, and D.S. Blehert. 2010. Wing pathology of white-nose syndrome in bats suggests life-threatening disruption of physiology. BMC Biology 8:135. http://www.biomedcentral.com/1741-7007/8/135

[6] Lindner, D.L., A. Gargas, J.M. Lorch, M.T. Banik, J. Glaeser, T.H. Kunz, and D.S. Blehert. 2011. DNA-based detection of the fungal pathogen *Geomyces destructans* in soils from bat hibernacula. *Mycologia*, 103(2), pp. 241–246. http://www.mycologia.org/cgi/reprint/103/2/241

activities have begun and are building including coordination across agencies in the Rocky Mountain Region states, to consolidate and collect baseline information on bats and to look for evidence of the *G. destructans* fungus and WNS. Also, State and Federal agencies are increasingly promoting awareness of the WNS threat and taking pre-emptive management actions in the form of cave and mine closures to the public and implementing mandatory decontamination procedures.

Despite these positive advances, much uncertainty remains about the histopathology, transmission, behavior, potential control, and overall relation to management of WNS, particularly related to unaffected areas like the Rocky Mountain Region and western U.S. Questions also persist about how temperature and humidity differences among caves and mines may affect spread[4], whether different environmental conditions in western caves and mines might influence spread compared to conditions in the east, whether lower bat densities more typical of the west might make western populations less susceptibile to WNS or otherwise slow its spread and diminsh its effects, or whether the Great Plains or the Rocky Mountains might serve as physical barriers to natural westward spread.[2] Encouragingly, no new records of *G. destructans* or WNS were confirmed in or near the Missouri and Oklahoma records or other points further west. Important investigative work and data analyses from Oklahoma are ongoing to attempt to further understand the status of *G. destructans* and/or WNS in areas of that state (*pers. comm.*, Dr. Bill Caire, University of Central Oklahoma). For now, it remains very early to know with any meaningful confidence what the long-term or broader implications are to subsequent emergence of WNS in those two states or in other previously-unaffected areas west of the Mississippi. Due to its geographic position, the Rocky Mountain Region of the National Forest System has a potentially disproportionate role and influence in the continued westward spread of WNS. Once introduced into a cave or mine, WNS has the potential to kill more than 90 percent of the hibernating bats depending on the species. Further, the experience with diseases in free-ranging wildlife like WNS in bats, is that prospects are poor for eradicating the disease once they become established.[4]

The most recent survey information from the eastern U.S. this past hibernation season (2010-2011) also indicates WNS is continuing its rapid spread in North America and at a pace potentially unprecedented in the annals of wildlife disease in our country. Since the Rocky Mountain Region issued its emergency cave and mine closure in July 2010, the disease has spread in all directions to new counties in already-affected states, five additional states and 20 new counties (Maine, Ohio, Indiana, Kentucky, and North Carolina) in the U.S., and two additional provinces and 15 new counties in Canada (New Brunswick and Nova Scotia). The furthest west confirmed WNS sites are now western Kentucky and southern Indiana. Woodward County in northwestern Oklahoma remains the furthest west known location of *G. destructans*. As yet we do not know if the spread west of the Mississippi River and to the western U.S. will continue or be slowed or contained by other factors, such as environmental or species-related barriers, through heightened awareness and pre-emptive education and cave and mine habitat management underway by agencies and non-agency interests, or some combination of these or other factors. There are no new estimates of the number of additional dead bats.

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[7] Dr. David Blehert, USGS National Wildlife Health Center, testimony before the U.S. Congress, Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs, June 24, 2011. http://naturalresources.house.gov/Calendar/EventSingle.aspx?EventID=246794.

It is difficult and perhaps impossible to prove conclusively that human transfer of *G. destructans* has facilitated establishment and spread of WNS in North America. There is also no conclusive evidence that cave and mine closures are an effective management of this form of potential spread, and there are no meaningful quantitative data to support claims in either direction. However, there are several lines of evidence and expert opinion that human-facilitated dispersal of *G. destructans* on clothing and gear is possible and may have contributed to the spread of WNS in the east, if not the establishment of the *G. destructans* fungus on the continent.[2,4,6] Further, WNS spread has the potential to be disproportionately more devastating than bat-driven dispersal, due to the distance that humans can travel quickly and over large geographic areas to potentially disperse the fungus. For example, a single introduction of *G. destructans* by humans into the western U.S. at any time could establish WNS and decimate populations of native bats in the west much sooner than might be expected under current known spread rates in North America.[8] Given the risk and known effects of WNS once established, even several lines of circumstantial evidence and expert opinion become increasingly important in considering current risk and management options against continued WNS spread in the U.S. and into the Rocky Mountain Region and points west.

While decontamination may be effective in killing the fungus and helping to control its spread for limited cave and mine entries, enforcing broad-scale decontamination requirements while continuing to allow otherwise unfettered cave and mine access by the public represents an unacceptable risk to the WNS objective of the cave and abandoned mine closure. For these reasons together with other information provided in this assessment, we believe human-facilitated transfer of *G. destructans* and WNS remains a substantial and unacceptable risk to the Rocky Mountain Region and bat resources. We believe that a more effective management approach requires a full public closure of caves and abandoned mines, while leaving options open through exemptions under the closure for Forest Service personnel and cooperators to conduct important closure work (e.g. install bat gates) and conduct research, inventory, or monitoring we need to manage the emergency and move from emergency management to more strategic and effective management in the near future.

Cumulatively when reviewing current status of information, the Forest Service concludes that an emergency situation continues to exist regarding the threat of spread of *G. destructans* and WNS into the national forests and grasslands of the Rocky Mountain Region, associated lands, and the west. In summary from the previous discussion, this is based on 1) continued spread of *G. destructans* and WNS since the 2010 closure including further west than previously known, 2) known critical threat to bat populations and associated ecological and economic implications in currently-affected areas, 3) evidence or expert opinion that the *G. destructans* fungus can persist on clothing, gear, and in the cave environment, 4) lines of indirect evidence and expert opinion that human-assisted transfer of *G. destructans* is not only possible but has likely contributed to the establishment and/or spread of WNS in North America, 5) human-assisted transfer could potentially spread *G. destructans* into the Rocky Mountain Region and western hemisphere at much faster rates and consequences to western bat populations 6) uncertainty remaining about the still relatively-recent *G. destructans* occurrences in Missouri and Oklahoma in terms of

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[8] Dr. Justin Boyles, University of Tennessee, testimony before the U.S. Congress, Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs, June 24, 2011. http://naturalresources.house.gov/Calendar/EventSingle.aspx?EventID=246794.

further occurrences in those states or other unaffected areas or transition to WNS, 7) scientific uncertainty remaining about the pathology and ecology of WNS that might otherwise inform different decision-making in the Rocky Mountain Region, and 8) the pivotal geographic position the Rocky Mountain Region holds between areas in the east currently confirmed or suspected for WNS and the western U.S.

The Forest Service must take immediate pre-emptive action to continue our public closure of caves and abandoned mines on National Forest System lands in the Rocky Mountain Region for up to an additional one year. The main objective of the emergency closure is to attempt to help slow the westward spread of WNS by minimizing the potential for human-caused transfer of the *G. destructans* fungal spores to National Forests and Grasslands and associated lands in the Rocky Mountain Region. Because the closure order is being issued in response to an ongoing emergency situation, environmental analysis under NEPA is not required for this action.

Scope of the Order

This Order will close all caves and abandoned mines on National Forest System lands in the Rocky Mountain Region. A Forest Service permit or other agency instrument may be issued for purposes such as the Abandoned Mine Land program and Forest Service-approved scientific and commercial purposes that advance education and information regarding bats, caves, mines, and/or WNS and their management. These would be conditioned on persons agreeing to follow decontamination procedures for themselves, clients and gear prior to entry into the closed caves.

Caves are defined as any naturally formed void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth, including natural subsurface water and drainage systems, which is large enough to permit a person to enter, whether the entrance is naturally formed or manmade (Forest Service Manual 2356.05, in part). For purposes of clarification, this order does not cover voids, cavities, or recesses that occur within a cliff or ledge, such as rock shelters. Only subterranean features are covered because the fungus associated with WNS is known only from underground cave and mine environments.

Abandoned mines are defined as those inactive mine openings and adits on National Forest System lands that are not situated on a valid unpatented claim under the 1872 Mining Law.

Rescue personnel in performance of their official duties as well as other persons specifically authorized or permitted by the authorized Forest Officer will be allowed within the closed area.

Rocky Mountain Region National Forests will ensure the public has access to accurate information about the closure order. Any Forest that identifies caves to remain open will maintain a list and map at that Forest's offices. This same information will be provided to all Law Enforcement officers and patrol captains covering that National Forest.

The Order will be implemented. The Regional Forester has determined that the closure of caves and abandoned mines across the Region is the only means within Forest Service control to slow the spread of White-nose Syndrome to sites on National Forest System lands.

The Order will be in effect for a period of up to one year from the date the Order is signed by the Regional Forester, unless the Regional Forester rescinds the Order earlier.

Prepared by: Peter McDonald and Brian Reilly

Date: June 17, 2011

ENFORCEMENT PLAN
Order Number – R2-11-02

Scope

Order number R2-11-02 signed by the Regional Forester, Rocky Mountain Region, will close all caves and abandoned mines on National Forest System lands, in the Rocky Mountain Region. The order will be in effect for one year, from the date it is signed, unless terminated earlier, by the Regional Forester.

Posting

The order will be posted at all Forest Supervisor and District Offices, as required in 36 CFR 261.51. Copies of the order will also be available in the Regional Office. Notification of the closure order will be publicly released through various media resources.

Coordination with other Agencies

Current data and evidence are being shared amongst state and federal agencies. Closures are being established throughout the Region. The Forest Service is currently working with partners and law enforcement to strengthen coordination and consistency.

Patrol Activities / Enforcement Strategies

Law Enforcement personnel will work with forest staff in identifying the open areas and determining the greatest need for enforcement presence. LEI staff will patrol and monitor high use areas and contact any violators. Officer discretion will be utilized in determining course of action.

It is imperative that the agency puts emphasis on their outreach and public education plan. LEI personnel, Forest Protection Officers, and all field going personnel should be informed of the open areas, assist with public outreach, and communicate any violations that occur.

Violators will be informed of the closure and given a verbal or written warning. Repeat violators will be issued a violation notice. Any persons who refuse to leave the area, or who refuse to identify themselves, will be subject to arrest.

Persons Authorized to Enter Closed Area

1. Persons with a permit from the authorized Forest Service Officer specifically authorizing an otherwise prohibited act or omission.
2. Any Federal, State or local officer, or any member of an organized rescue or firefighting force working in the performance of an official duty.

Media Access

This will be determined by Public Affairs personnel, in conjunction with the Forest Supervisor and/or Regional Forester. If approved for entry, law enforcement personnel should be notified and the individual(s) must be escorted by agency personnel.

Civil Rights Impact Analysis
Order Number – R2-11-02

The Civil Rights Impact analysis (CRIA) analyzes the proposed action of closing caves and abandoned mines on National Forest System (NFS) lands in the Rocky Mountain Region.

1. Description of Proposed Action

The Regional Forester for the Rocky Mountain Region is proposing to issue a closure order that would prohibit entering any cave or abandoned mine on National Forest System controlled lands, waters and administrative units in the Rocky Mountain Region.

This closure order will be in effect immediately upon completion of required analysis and preliminary outreach to potentially-affected parties.

An authorized Forest Service Officer may authorize entry into caves or mines for Forest Service-sponsored research or other activities contributing to knowledge that benefits the Forest and Region and informs bat and white-nose syndrome management. Rescue personnel performing their official duties are exempted from this closure order.

All caves and abandoned mines on NFS lands within the Rocky Mountain Region are closed, unless they are posted open, or an individual(s) have a permit or other written authorization from an authorized Forest Service Officer.

Caves are defined as any naturally-formed void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth, including natural subsurface water and drainage systems, which is large enough to permit a person to enter, whether the entrance is naturally formed or manmade (Forest Service Manual 2356.05, in part). For purposes of clarification, this order does not cover voids, cavities, recesses that occur within a cliff or ledge, such as rock shelters. Only subterranean features are covered because the fungus associated with White-nose Syndrome (WNS) is known only from underground cave and mine environments.

Caves or abandoned mines that will remain open will be signed and maps would be available at the respective Forest offices.

This closure order is an attempt to slow the spread of WNS, a disease resulting in the death of an estimated one million bats in the eastern United States and Canada.

2. Civil Rights Impacts of the Proposed Action

No Civil Rights Impacts are anticipated as a result of this closure order being put into effect at this time. The Closure Order would apply to all users of National Forest System lands within the Rocky Mountain Region.

The closure order would not affect the rights of Tribal governments or owners of Outstanding/Reserved mineral rights.

3. Actions to Reduce Potential Negative Effects

White-nose syndrome is a fungus that appears to be of European origin, that has killed an estimated one million bats across the eastern United States and Canada during the past three years and continues unchecked. This fungus grows best in the cold and wet conditions common to caves and abandoned mines, and there is evidence to suggest that the spores can be transported inadvertently from site-to-site on skin, hair, clothing, boots and gear of cave visitors. The Forest Service hopes that slowing the spread of WNS will buy time that is critical to confirming the cause and potentially implementing management actions to minimize the impacts to native bat populations. The investigation of key elements of the cause and spread of WNS has been underway. Laboratory and field research currently being conducted will require time for analysis and replication.

The closure order is in effect for one year, unless terminated earlier by the Regional Forester. After this period of time, the Forest Service would analyze any new findings about WNS and how it is spread and assess the need to continue or modify the closure order.

Outreach with potentially-affected parties is and will continue to be conducted prior to and after the issuance of the closure order (see Outreach Plan for list of contacts).

Information about the closure will be made available to the public throughout the one-year period. Such information will be available through various media outlets, such as newspapers, web pages, signage, and informational packages at Forest offices. Forest Service employees will be knowledgeable of the closure order and will be able to inform Forest visitors when necessary.

4. Recommendations and Monitoring Actions

Prohibiting access to caves and mines will allow scientists necessary time to gather information on the cause of WNS and how it is spread. The Forest Service will coordinate monitoring to obtain more complete estimates of bat baseline populations and distribution.

5. Line Officer Approval

Randall Karstaedt

RANDY KARSTAEDT

Deputy Regional Forester, Acting
Rocky Mountain Region

July 18, 2011

Date

6. Certification of Civil Rights Director

As the agency's principal Equal Employment Opportunity (EEO) official, the Director of Civil rights (CR) is responsible for administering a full range of EEO and Title VI programs. The Director provides advice and technical guidance on CR matters to the Regional Forester and other Agency management officials. This certifies that the Director of CR was actively involved in the planning and implementation of this action.

Florence R. Navarro 7/18/2011

FLORENCE NAVARRO **Date**

Director, Civil Rights
Rocky Mountain Region