

## NOTICE TO CAVERS

### “White Nose Syndrome – a new threat to cave bats”

#### Background.

In 2007, a mysterious fungus was discovered growing on the muzzles of several bats hibernating in caves near Albany, NY, and the term “White Nose Syndrome” was coined to describe this phenomenon. Between 8,000 and 11,000 bats in one cave died from this condition which appears to be something previously unreported. Several bat species were killed including the federally endangered Indiana bat. In 2008, this condition was observed in additional caves/mines in New York, Vermont, and Massachusetts. **So far, White Nose Syndrome has not been found in West Virginia caves, and we want to do everything possible to keep it that way.** We would like to ask the caving community to assist in keeping this problem out of West Virginia, if that is possible.

There is still much we don't know about this phenomenon, but several top-notch labs across the country are working on this issue. This winter, WV Division of Natural Resources (WVDNR) biologists conducted several bat surveys that were scheduled for Jan-Feb 2008. The caves surveyed were in Randolph, Pocahontas, Greenbrier, Monroe, and Mercer counties and were part of the regularly scheduled bi-annual hibernacula survey protocol (i.e., are usually surveyed every even numbered Jan or Feb). We considered cancelling surveys, but decided it was more important to do the surveys and determine if the caves were affected by White Nose Syndrome. We cleaned gear between surveys, but at that time no disinfecting protocol had been developed. The good news is that, to date, White Nose Syndrome has not been detected at any of these sites nor have any reports of White Nose Syndrome in West Virginia been received from cavers.

#### What we know.

Several species of bats are affected and 1000s of dead bats have been found in New York to date. Most of the dead bats were little brown bats and Indiana bats, but northern long-eared bats and eastern pipistrelles are also affected. So far, big brown bats and small-footed bats, which also hibernate in these sites, have not exhibited White Nose Syndrome. Many, but not all, impacted bats have the white fungus on the muzzle with associated skin irritations. Dead or dying bats recovered from affected caves have very little fat reserves. With reduced fat reserves the bats that are still alive will probably not be able to survive the winter. In fact, affected Indiana bats had so little energy left that they did not even stir when biologists visited sites and collected specimens for analysis. At several sites, bats were noted hibernating closer to the entrance than normal, often within the twilight zone. There are also reports of large numbers of bats leaving the caves and flying in daylight, often when temperatures were below freezing.

Two caves in NY which were affected last winter were visited again this winter. Large numbers of dead bats were observed at these sites in 2007, and when visited in 2008, the bat populations in these caves exhibited declines of 90% and 97%; the remaining live bats were in poor condition. Many of the dead bats collected in 2008 were examined and showed signs of pneumonia and hemorrhaging in the lungs. The live bats in the cave had body weights comparable to the weights the bats should have when leaving the cave in the spring and will likely die before the end of winter. The caves where White Nose Syndrome has been confirmed harbor approximately 400,000 bats including over 44,500 Indiana bats. The prospects for these bats are grim.

#### What we don't know.

At this time we do not know the cause of the problem. A fungus is apparent on the bats, but no one knows if the fungus is the cause of the problem or if it is just a secondary infection of bats weakened by some other condition. The actual cause may be fungal, viral, bacterial, or some other

agent. Several labs, including University of California/Davis, Cornell University, Columbia University, Indiana State University, Boston University, USGS National Wildlife Health Center, and the Centers For Disease Control are currently working on this problem. Techniques being employed include pathological examinations, bacterial, viral, and mycological investigations, testing of immune response in affected bats, and use of thermal imaging to examine the bats' response (or lack thereof) to stimuli.

We do not know how this problem is spread. It is possible that it may be spread from cave to cave by cavers, bat biologists, and others who enter caves. Until we know more, we need to assume this is a possible means by which it is spread. If it is carried from cave to cave by the bats themselves, there may be little that can be done to stop the spread of White Nose Syndrome.

At this time we do not know if there are risks to humans, but the potential risks to humans are being assessed. Potential impacts to other wildlife species are not known.

### **Implications for WV bats.**

Several West Virginia caves are important to bats, including two federally endangered species, the Indiana bat and the Virginia big-eared bat. In addition, some caves contain regionally significant numbers of the more common species, such as the little brown bat and eastern pipistrelle.

West Virginia has more Virginia big-eared bats than any other state (about half the global population) including the largest known maternity colony and the largest hibernating concentration in the world. A serious concern is that although there are several caves with summer colonies of Virginia big-eared bats in West Virginia, these colonies mix together during the fall and winter. Therefore, if this problem shows up in one cave, it is likely to spread to all big-eared bat caves in the area.

Populations of Indiana bats in West Virginia caves have been increasing for almost two decades thanks to cave protection efforts. However, Indiana bats continue to decline in many other parts of their range. The most recent surveys of major Indiana bat hibernacula showed a range-wide increase in bat numbers. However, this increase was largely due to increases in New York and West Virginia. It appears that all but one population of Indiana bats in New York are currently being impacted by this Syndrome. If populations in West Virginia become effected, the likelihood of recovery for this species could be greatly reduced.

### **What can you do?**

1. The WVDNR and USFWS have prepared a list of important bat caves in West Virginia that we feel should be closed until more is known about how to contain this problem. Some of the caves are already closed year round or seasonally to protect bats or for other reasons. We ask cavers to not enter these caves. This is the best precautionary step we can take at this time.

The list of caves is attached, but updated lists will be posted on the USFWS web site:

[http://www.fws.gov/northeast/white\\_nose.html](http://www.fws.gov/northeast/white_nose.html)

and on the Virginia Region's Limited Access Cave List:

[www.VAR-caves.us](http://www.VAR-caves.us) .

Please check for updates before planning a trip. Note that not all the cave owners have expressly closed their caves, but we still ask you to avoid them at this time.

2. Follow the containment and decontamination procedure on the USFWS web site to reduce the risk of spreading the Syndrome to new sites. Check for updates.
3. If you have been caving in the affected area (NY, VT and MA at this time) in the past two years, please do not use gear that has been used in these areas in West Virginia caves. This is particularly important for gear that may carry cave dirt (boots, coveralls, etc.). If you have been caving in the affected area and may have been in an affected cave, please visit [www.necaveconservancy.org](http://www.necaveconservancy.org) and complete a simple questionnaire regarding affected caves you have visited and caves you visited subsequently. This may help target caves that should be surveyed for White Nose Syndrome.
4. Pendleton County contains a large number of bat caves, including some of the most important hibernacula in the region. The county has the state's most important bat hibernaculum (Hellhole) which is the only cave designated as critical habitat for both the Indiana bat and Virginia big-eared bat and three other caves designated as critical habitat for the Virginia big-eared bat. Pendleton County caves hold 72% of the Virginia big-eared bats in maternity colonies in West Virginia, including the largest maternity colony in the world. The county also contains caves with smaller number of bats that are not included on the closed cave list. Many of these minor bats caves are located in close proximity to the major bat caves, and bats are known to move from cave to cave. If WNS were introduced into the county, either by cavers or bats moving between caves, it could quickly spread to major bat caves, and have devastating impacts. For this reason, cavers should be especially vigilant in using decontamination procedures when visiting any cave in the county and we would encourage cavers to consider avoiding caves in Pendleton County if you have other options.
5. If you are aware of any other significant bat caves that should be closed until we learn more, please contact Craig Stihler or Barbara Douglas (contact information below). This would include caves with large numbers of common bats as well as caves with endangered species.
6. If you see affected bats or dead and dying bats, please follow the procedure listed on the USFWS web site and report the observations to Craig or Barb ASAP. Also report observations or reports of large numbers of bats near cave entrances and other unusual bat activities (i.e., large numbers of bats flying in daylight outside of caves, especially in cold weather – it is not unusual to see an occasional bat flying on a warm winter day).

Bat populations are doing well in West Virginia caves thanks to the cooperation and assistance of land owners and the caving community. Great strides have been made in the last 20+ years. We could be taking a giant step backward should White Nose Syndrome appear in West Virginia caves. Once it is here, there may be no going back. We are trying to be proactive in protecting bats in West Virginia and minimizing the potential to transport this problem to our area, while also minimizing the impact to the caving community. Unfortunately, we are not able to provide a specific time table for how long these recommendations will remain in effect. Researchers, resource managers, and cavers from across the country are working together to try to identify the cause of WNS and how it is spread. We have a mutual interest in resolving this situation as quickly as possible. As we learn more about how White Nose Syndrome, we may revise the recommendations including cave closures, disinfection protocols, etc. No one has dealt with this problem before and your assistance and patience at this time is greatly appreciated. The fate of bat populations in the East may be in our hands, let's play it safe until we know what needs to be done. We appreciate your cooperation on this urgent matter.

Sincerely,  
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## West Virginia Closed Cave List for White Nose Syndrome in Bats

Cave Name	County	Status*
Arbogast/Cave Hollow	Tucker	Closed year round for bats.
Big Springs	Tucker	USFS is working on paperwork to close cave. Previously closed in winter for bats.
Blood	Pendleton	No previous closure for bats.
Boar Hole (partial closure)	Greenbrier	Closed by owner. No previous closure.
Caldwell	Mercer	Closed by owner. No previous closure for bats.
Cassell	Pocahontas	No previous closure for bats.
Cave Mountain	Pendleton	USFS is working on paperwork to close cave. Previously closed in summer for bats.
Cornwell	Preston	Previously closed for bats in winter.
Dreen	Randolph	Closed by owner. No previous closure for bats.
Dyers	Hardy	No previous closure for bats.
Elkhorn Mountain	Grant	Closed by owner. Previous summer/fall closure for bats.
Falling Spring	Pocahontas	No previous closure for bats.
Flute	Pendleton	Closed year round for bats.
Fort Lick	Randolph	Previously closed in winter for bats.
General Davis	Greenbrier	Closed by owner. Previously restricted access to protect rare salamander.
Greenville Saltpetre	Monroe	Closed by owners. Previously, partial closure for bats in winter.
Hamilton	Pendleton	Closed by owner. No previous closure for bats.
Hellhole	Pendleton	Previously closed in winter for bats and restricted access rest of year.
Hoffman Pit	Pendleton	Closed year round for bats.
Hoffman School	Pendleton	Closed year round for bats.
Honacker	Mercer	No previous closure for bats.
Izaak Walton	Randolph	Previously closed in winter for bats.
Lambert #1	Pendleton	Previously closed in summer for bats.

Marthas	Pocahontas	Closed by owner. Previous winter closure for bats.
Mill Run	Pendleton	Previously closed in summer for bats.
Minor Rexrode	Pendleton	Closed year round for bats.
Mystic	Pendleton	Previously closed in summer for bats.
New Trout	Pendleton	Closed by owner. No previous closure for bats.
Organ	Greenbrier	No previous closure, although restricted access at certain entrances. Commercial tours will continue.
Patton	Monroe	Closed by owner. Previously closed in winter for bats.
Peacock	Grant	Closed year round for bats.
Piercys	Greenbrier	Closed by owner. Previously closed in winter for bats.
Salt peter	Pendleton	Closed year round for bats.
Schoolhouse	Pendleton	Closed year round for bats.
Simmons-Mingo	Randolph	No previous closure for bats.
Sinnett/Thorn	Pendleton	Closed by owner. Previous summer closure for bats.
Smokehole (cave, not caverns)	Pendleton	No previous closure for bats.
Snedegars	Pocahontas	Previously, restricted access in winter – generally closed Jan-May.
Stewart Run	Randolph	No previous closure for bats.
The Portal	Greenbrier	Closed by owner. No previous closure for bats.
Trout	Pendleton	Closed by owner. Recently, there has been no closure for bats.
Tub	Pocahontas	No previous closure for bats.
Two Lick Run	Randolph	USFS is working on paperwork to close cave. Previously closed in winter for bats.
Upper Marthas	Pocahontas	Closed by owner. No previous closure for bats.

\*If a cave is not specifically listed as closed, the owner may not have closed the cave due to White Nose Syndrome, but the WVDNR and USFWS are still asking people to avoid these caves at this time.

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