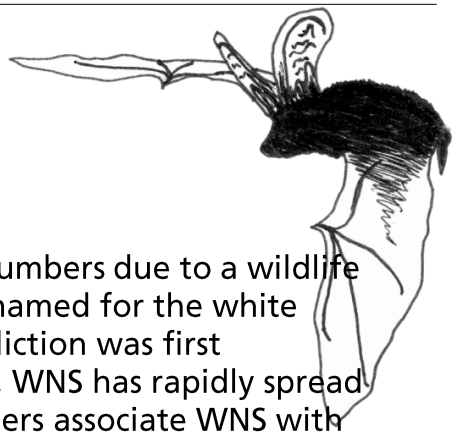
White-nose Syndrome

Frequently Asked Questions



What is white-nose syndrome?

Hibernating bats in the eastern United States are dying in record numbers due to a wildlife health crisis known as white-nose syndrome (WNS). This disease is named for the white fungus evident on the muzzles and wings of affected bats. This affliction was first documented in New York in the winter of 2006-07. Since that time, WNS has rapidly spread to multiple sites throughout the eastern U.S. and Canada. Researchers associate WNS with a newly identified fungus (*Geomyces destructans*) that thrives in the cold and humid conditions characteristic of the caves and mines used by bats. Bats affected with WNS do not always have obvious fungal growth, but they may display abnormal behavior within and outside of their hibernacula (caves and mines where bats hibernate during the winter).

What are the signs of WNS?

WNS may be associated with some or all of the following symptoms and unusual bat behavior:

- White fungus, especially on the bat's nose, but also on the wings, ears or tail
- Bats flying outside during the day in temperatures at or below freezing
- Bats clustered near the entrance of hibernacula
- Dead or dying bats on the ground or on buildings, trees, or other structures

If you see a bat with fungus or exhibiting any unusual behavior while at Lava Beds, please alert a Ranger or staff at the Visitor Center.

What are the effects of WNS on bats?

Over one million bats have died from WNS, and there seems to be no end in sight. Several hibernacula in eastern states have suffered mortality rates of over 90%. The little brown bat (*Myotis lucifugus*), the most common bat in the United States, is now being threatened with regional extinction due to this disease.

White-nose syndrome causes bats to frequently arouse from hibernation due to irritation from growth of the *Geomyces destructans* fungus; this arousal from hibernation burns critical fat reserves that bats need to survive the winter. Bats affected by WNS often leave their hibernacula during the winter and die. As winter progresses, increasing numbers of dead bats are often found in the affected locations. In addition to causing irritation, the fungus invades the wings of bats and can affect their ability to fly, which will ultimately cause them to starve.

The wings of bats also play an important role in water conservation, with wing membranes being used to "breathe" and exchange air and moisture with the environment during hibernation; wing damage caused by white-nose syndrome can lead to death from severe dehydration.

What species of bats are affected?

Little brown bats (*Myotis lucifugus*), northern long-eared bats (*Myotis septentrionalis*), eastern small-footed bats (*Myotis leibii*), Indiana bats (*Myotis sodalis*), big brown bats (*Eptesicus fuscus*), and tri-colored bats (*Perimyotis sublavus*) have died from white-nose syndrome. Two of these species, the little brown bat and the big brown bat, are local residents at Lava Beds. Additionally, Lava Beds is home to several other bat species of the *Myotis* genus that are closely related to species affected by WNS in the east. The potential arrival of WNS at Lava Beds could have devastating effects on our bat populations, thus the current cause for concern.

How is WNS transmitted?

It is believed that WNS is transmitted primarily from bat to bat. There is a strong possibility that the fungus may also be transmitted by humans inadvertently carrying fungal spores from cave to cave on their clothing and gear.

Where has WNS been observed?

As of April 11, 2011, biologists have confirmed WNS in bat hibernacula in New Hampshire, Vermont, New York, Massachusetts, Connecticut, New Jersey, Pennsylvania, West Virginia, Virginia, Maryland, Deleware, Tennessee, North Carolina, Ohio, Indiana, Quebec, Ontario, and New Brunswick. It is also suspected to occur in Missouri and Oklahoma. This list of states will likely increase over time.

Does WNS pose a risk to human health?

Thousands of people have visited affected caves and mines since WNS was first observed, and there have been no reported human illnesses attributable to WNS. We are still learning about WNS, but we know of no risk to humans from contact with WNS-affected bats. However, we urge taking precautions and not exposing yourself unnecessarily to WNS. Biologists and researchers use protective clothing when entering caves or handling bats.

What should you do if you find dead bats or if you observe bats with signs of WNS at Lava Beds?

- **Do not touch a dead bat!** Do not attempt to pick up what may appear to be an injured or "sick" bat. Report the sighting and location to a Ranger immediately.
- If you observe a bat in the winter or early spring flying around and/or exhibiting unusual behavior, contact a Ranger or report the behavior and location to the visitor center staff immediately.

How does white-nose syndrome affect my experience at Lava Beds?

Lava Beds National Monument has instituted a screening process for anyone entering caves within the monument. We are requesting that any caving gear and/or equipment that have been used in caves outside of the monument not be used in Lava Beds caves or that it be properly decontaminated. (For details on the decontamination process, please talk to the staff at the Visitor Center or consult the monument's web page at www.nps.gov/labe.) Lava Beds National Monument's resource management staff monitors our bat populations throughout the year. When necessary to protect bats, caves are being closed. Please honor these closures.

What should Lava Beds cavers know and do?

Please observe all cave closures and advisories at Lava Beds. Avoid caves and mines (including those outside the monument boundaries) containing hibernating bats to minimize disturbance to the bats. If you see bats at Lava Beds, quietly leave the area without disturbing them. Please stay out of all caves and mines in white-nose syndrome affected states and adjoining states to help slow the potential spread of WNS. Local and national cave groups have also posted information and cave advisories on their web sites.

What are Lava Beds National Monument and other federal, state and local agencies doing to find the cause and a cure for WNS?

Extensive networks of state and federal agencies are working to investigate the source, spread and cause of bat deaths associated with WNS and to develop management strategies to minimize the impacts of this syndrome. The overall WNS investigation has three primary focus areas: 1) research, 2) monitoring/management, 3) outreach/education. Lava Beds is collaborating with the California White-nose Syndrome Steering Committee to develop effective communication methods and coordinate agency responses to WNS throughout the state of California. At Lava Beds we are conducting winter surveys to document and track the health of our hibernating bats, initiating acoustic monitoring efforts to establish year-round bat activity levels, and protecting maternity colonies of bats that use our caves to raise their pups in the summer. We continue to work with the caving community and local cave owners to share current knowledge of WNS and to educate the public and community on this important issue.

Is global climate change a possible cause of WNS?

While the many possible causes of WNS are being investigated, there is currently no evidence to support a link between climate change and WNS. Microclimates in caves and mines where bats hibernate have been stable during the time period when WNS emerged, and there are no data indicating changes in insect prey populations in the affected region. Potential impacts of global climate change will continue, however, to be monitored as part of the investigation process.

For More Information:

www.fws.gov/WhiteNoseSyndrome/
www.nps.gov/labe
http://www.batcon.org/index.php/what-we-do/white-nose-syndrome.html
www.nwhc.usgs.gov/disease_information/white-nose_syndrome/