

### **Implementing Cave Closures to Slow the Spread of White-nose Syndrome**

White-nose Syndrome (WNS) has caused the most precipitous wildlife decline in the past century in North America, devastating bat populations across the eastern United States. Since its discovery in New York in February 2006, an estimated million or more bats of six species, including one federally listed endangered species, have been killed by the disease. WNS affects hibernating bats, with mortality rates approaching 100 percent at many sites. The disease is spreading rapidly beyond the northeast, reaching south into West Virginia, Virginia and Tennessee. It now threatens some of the largest colonies of endangered Indiana and gray myotis, and has triggered an emergency captive-colony program for the endangered Virginia big-eared bat. Currently, 11 states are impacted by WNS, but bats across North America are at imminent risk.

Unfortunately, neither the cause nor the transmission of WNS are well understood, necessitating strong preventative measures to reduce risks to bats. Hibernating bats are sensitive to both tactile and nontactile stimuli, leading to arousal and flight following human visits. Arousals are energetically costly and have been linked to increased winter mortality due to premature depletion of fat reserves. Conservation strategies typically encourage limiting disturbance of roosting bats. For example, recovery plans for both federally endangered Indiana and gray myotis emphasize reducing disturbance and suggest that population estimates in hibernacula should be limited to every other year. With the increased risk of WNS, disturbance during hibernation is an even greater threat.

Recent suggestions to close all bat-inhabited caves in the United States have raised concerns regarding management of caves and mines, disturbance of bats in hibernacula and transmission of the fungal pathogen believed to cause WNS. Bat-to-bat interactions are believed to be the primary route of transmission for spores of the fungus *Geomyces destructans* (*Gd*), which causes the skin infection that is the hallmark of WNS. However, the possibility of new disease epicenters emerging (beyond the range of bat movement) have highlighted concerns about the risk of human transmission. Although human transmission has not been clearly documented, current understanding of *Gd* life history and recent documentation of its presence in both Europe and North America suggest that transmission through fungal spores carried on gear and clothing is possible.

#### **Bat Conservation International's position on cave closures:**

- **Limit disturbance to hibernating bats.** Some disturbance may be necessary to conduct essential research or to monitor bat populations, but every effort should be made to minimize disturbance and to combine research and monitoring activities into efficiently coordinated visits at hibernacula. Cumulative impacts of well-intentioned efforts may have unintended consequences. Necessary research/monitoring – and therefore disturbance – should be limited to state or federal agency personnel or researchers with proper permits.
- **Implement *targeted* regional or site-specific cave closures** to reduce disturbance to hibernating bats, reduce the possibility of WNS transmission and address other conservation priorities. Broad-based closures of all bat-inhabited caves in the United States may not be warranted at this time and thus be inefficient, potentially diverting resources, polarizing the conservation community, or reducing the number of other conservation actions that benefit cave and bat

conservation. Such an approach may also inadvertently reduce proactive conservation measures currently occurring on private lands due to fear of federal involvement.

- **Follow USFWS recommended guidelines for decontaminating clothing and equipment.** Research results from Northern Kentucky University were used to update the USFWS guidelines for cleaning clothing and equipment used for caving and bat research. Carefully cleaning clothing and equipment prior to applying disinfectant is critical for successful decontamination. Implementing decontamination procedures between site visits and/or using site-specific clothing and equipment will reduce the likelihood of WNS transmission. Updated decontamination protocols can be found at [www.fws.gov/northeast/wnsresearchmonitoring.html](http://www.fws.gov/northeast/wnsresearchmonitoring.html)
- **Proactively manage caves and mines through collaboration** among natural resources professionals, the caving community and the public, with decision-makers at all levels of government. Maintaining partnerships with caving organizations and privately owned commercial caves will be important in establishing additional practices to reduce the risk of WNS transmission through voluntary actions, selective access restrictions and public awareness. The caving community has been instrumental in cave and bat conservation for many years. More recently, the National Speleological Society and regional grottos have actively engaged and supported the war against WNS through provision of research funding and assistance, voluntary caving moratoriums, personal decontamination between caves and the identification and surveillance of WNS-affected sites.
- **Support research to understand the ecology of *Geomyces destructans*** and the role it plays in WNS. Understanding the mechanisms and risk for WNS transmission among sites is important to develop possible strategies for minimizing bat mortality at WNS affected sites. Without understanding these mechanisms, it is difficult to evaluate the risks and benefits of cave closures as a management tool for slowing the spread of WNS.
- **Broaden education and outreach to foster collaboration** among government agencies, educational institutions, nongovernmental organizations, industry and the public.

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**Bat Conservation International (BCI)** is committed to working with state and federal agencies, organizations and individuals to understand and combat WNS. BCI believes that collaborative partnerships are the key to enhancing bat conservation, improving scientific understanding of the cause, transmission and effects of WNS and increasing stakeholder involvement in all aspects of research, monitoring, education, assessment and decision-making.

Inquiries about BCI or this position statement should be directed to BCI's White-nose Syndrome Rapid Response Program Coordinator, Mylea Bayless, at 512-327-9721 x34 or [mbayless@batcon.org](mailto:mbayless@batcon.org) or [www.batcon.org/wns](http://www.batcon.org/wns)



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*Bat Conservation International (BCI) is a non-profit organization dedicated to conservation, education, and research initiatives involving bats and the ecosystems they serve. For more information visit: [www.batcon.org](http://www.batcon.org)*