

NATIONAL
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DEDICATED TO THE EXPLORATION, STUDY, AND CONSERVATION OF CAVES

<http://www.caves.org> nss@caves.org

October 22, 2010

Laurie Ross
Natural Resources Board Liaison
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921
Laurie.Ross@wisconsin.gov

Re: Emergency Board Order IS-49-10(E) - oppose

Dear Ms. Ross,

On behalf of the 11,000 members of the National Speleological Society, we are submitting the following comments in opposition to the requested emergency order number IS-49-10(E).

The NSS is the country's oldest and largest organization devoted solely to the exploration, study, and conservation of caves and cave resources. Cave resources include, but are by no means limited to bats.

We have been intimately involved in the White Nose Syndrome issue since its inception. Our members discovered it; we own and manage caves in which it has killed bats; we have led in the funding of WNS research and public outreach and education. We are actively engaged in the fight against WNS, working in collaboration with numerous federal and state agencies, and other non-governmental organizations. Our WNS Policy and work plan are available on our WNS website: www.caves.org/WNS.

With that brief background, we are strongly opposed to the approach being taken by Wisconsin's Department of Natural Resources toward WNS. As we indicated in our September 20, 2010 communication to the Board, we find the proposals ill-founded in scientific fact, and ill-advised and heavy-handed in terms of public relations and collaboration. They are radical in terms of anything proposed by any other state or federal agency. Further, we don't believe they will work.

Our issues with the Department's approach are reflected in its Summary, right at the beginning of the request for the Emergency Board Order. WIDNR states, "Implementing the proposed rules before WNS has been detected in Wisconsin will allow the department time to work collaboratively with stakeholders to ensure that appropriate conservation measures are in place." Is the Department saying that without the rules, they are not allowed to work collaboratively with stakeholders? What is preventing the Department from working collaboratively now? Why does WIDNR feel it needs warrants, imposed closure measures, and the threats of civil and criminal penalties? Is it because their actions to date regarding WNS have already alienated their most likely, experienced, and conservation-minded allies – the scientific, recreational, and commercial caving community?

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As to the science, WIDNR is correct that WNS is a serious disease and potentially threatening to Wisconsin's bats. They are appropriately concerned about doing what they can to prevent the disease, if possible, and protect the bats, if possible. They are also candid about recognizing the limits of what may be possible: ***"Because we have little control over the natural movements of bats, our main focus in WNS management is on limiting the anthropogenic spread of Geomyces destructans."***

However, the NSS strongly believes WIDNR's approach is ill-conceived and ill-advised, and actually counterproductive. They also make numerous statements implying scientific fact, when either the opposite is true, or the science has reached no conclusion.

It is clear from the first four years of WNS that the predominant, if not sole, means of disease transmission is via bat to bat transfer. This is recognized by the U.S. Fish and Wildlife Service, which has taken the lead in developing a national response: ***"WNS is transmitted primarily by bat to-bat contact."*** There are numerous examples from around the country where caves and mines – gated and inaccessible to humans – have become infected. There are also numerous instances of caver travel from the WNS region (prior to any protocols or attempts to stop the disease) to bat caves, yet no evidence of WNS in those caves. If human transfer is possible, or is happening, it is clearly not easy, and clearly overwhelmed by bat to bat infection.

Let's examine WIDNR's statements:

"Research conducted at the United States Geological Survey (USGS) Wildlife Health Center has shown that *G. destructans* is transferred from bat to bat,"

This is true, although the study is unpublished.

"and a multi-agency project demonstrated bats can develop WNS through infection directly from an affected cave environment in the absence of infected bats."

NY and VT took some 79 health Wisconsin bats and placed them in two sealed mines in Vermont. More than 20 bats died immediately (prior to first check) from unknown causes; the rest of the bats also died within months, many showing signs of the fungus. However, the cause of the bat mortalities has not been determined, and many questions were raised by other scientists about methodologies. This is not published.

"There is also evidence of human transfer of *G. destructans* from site to site and/or bat via contaminated equipment, gear or clothing."

There is not a single documented case of human transfer of G.d. to date. None – not in a published or unpublished report that we are aware of.

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“There have been long-distance jumps in the spread of WNS, beyond the distance bats would likely transmit the disease. These 'jump' sites have been frequently visited caves often with small bat populations. “

There have been long distances between discovered WNS sites. Some of these sites have been popular caves; others have been closed sites. There is also documentation of caver movement from WNS sites to non-WNS sites, and no infection has occurred. This is circumstantial speculation at best, as little other than bat to bat transmission is known.

“The USGS National Wildlife Health Center has detected *G. destructans* fungal spores in cave sediment demonstrating persistence of the fungus in the absence of bats. “

This is patently false. I was one of the principle investigators for this study, arranging for the sampling of sediments in nearly 30 states in the winter of 2008. Fungal samples were present in 3 of 19 samples analyzed from WNS sites. The collection protocol specified taking samples from directly under or near hibernating bats. This demonstrated some, but not overwhelming, existence in the presence of bats. This study was just published on October 7.

“The New York Department of Environmental Conservation, Wildlife Pathology Unit has isolated *G. destructans* fungal spores on equipment and clothing after exiting an affected cave.”

This is correct, but the result must be read in context. NYDEC's Joe Okoniewski did culture viable G.d. from gear used in a WNS-affected site. This is the only documentation to date of the viability of the fungus from gear outside an affected site. However, transmission did not occur, as the fungus went only to the lab. Re-infection has not been proven here, or anywhere, for that matter (see later statement on Koch's postulates). Okoniewski's work has also not yet been published, but he did present an abstract and oral presentation at the May WNS Symposium, in Pittsburgh. That abstract also said, "All of the 33 samples collected at six hibernacula outside of the hibernation season have been negative. Microscopic searches of swab samples collected from surfaces in hibernacula on which airborne conidia are likely to be deposited have, so far, yielded mostly negative results. In contrast, swab samples from drill-holes at one mine (where direct contact with bats is likely) were mostly positive. Attempts to culture *G. destructans* from swabs of the same surfaces failed due to rapid growth of other fungi. Conidia can frequently be found on decomposed bat remains in WNS-affected hibernacula, although numbers decline rapidly with time and the growth and activity of other organisms."

“All available evidence indicates that WNS is caused by an infectious agent and can therefore potentially be spread by all known modes of disease transmission, including direct contact, inhalation, ingestion, fomites (inanimate objects), and human or animal vectors.”

Only the first phrase is true: that all evidence indicates an infectious disease. However, there is scant evidence of anything other than bat to bat contact, and no evidence of some of the potential vectors listed.

“*Geomyces destructans* has been identified as the fungus that causes WNS in cave bats.”

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This is incorrect. Although the evidence points that way, Koch's Postulates have not been proven, and scientists have not made a determination that the fungus is the cause of the disease. Too many other factors remain unresearched or insufficiently researched to make such a determination. Indeed, if it does turn out to be true that the Geomyces destructans fungus is the causal agent, it would be unusual. Most fungi are not pathenogenic; rather they are opportunistic. It does remain possible, however.

So, the question before the Board is, if the Department isn't focusing on the most prevalent and likely method of WNS infection in Wisconsin's bat population, is it worth the effort to head down such a radical path?

Regarding the decontamination protocols, the NSS favors following the protocols of the U.S. Fish and Wildlife Service. We have funded some of the research that has gone into the protocol development, and believe there should be only one protocol nationwide. This promotes consistency, reduces confusion, and increases compliance.

That said, application of the protocols bears discussion, as their use requires expenditure of money on chemicals that are dangerous to humans and the environment, as well as causing degradation of gear and clothing. They do kill the fungus, however, so balance is required.

If a Wisconsin cave or mine has no WNS, and the researcher, caver, or other visitor has not been in a WNS site, what is gained by the expense and time involved in cleaning and disinfecting gear and equipment before going in, and after coming out, as proposed by the Department? What is accomplished? This is unnecessary.

Given the unlikelihood of human transfer, the single most effective precaution against even such potential transfer is to prohibit the use of any gear, equipment, or clothing that has been in a WNS site. The NSS strongly supports this approach; it has been part of our policy for years. It is relatively easy to comply with. The expansiveness of the WIDNR language is overkill, and unnecessary to accomplish the intended purpose.

Regarding the exclusion of bats from caves, the NSS has some serious concerns with this approach. The major concern has to do with conservation of the entire cave ecosystem. Bats are the primary source of energy for other life forms within the cave. The nutrients provided through their guano, and occasionally their carcasses (by natural causes), are essential for many cave biota.

Why is WIDNR sealing and excluding bats from caves? Our understanding is that some of this has already occurred. We sent a series of questions to Erin Crain, but have only received an acknowledgement thanking us for our questions and promising information in a future report.

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Where are the bats going once excluded? Why exclude bats at the time of year when they should have gone into hibernation? The Department denied they were operating an artificial hibernaculum or a captive breeding colony (none has even been successful for insectivorous bats, by the way), but has not answered the question as to where these bats are now overwintering.

WIDNR also makes a statement that it would cost between \$100 and \$500 to exclude bats from a cave. We see no basis in this cost estimation, and the Board should be concerned about the impact of this proposal on the Department's budget for several of these strategies. For context, the NSS built a bat gate for one of our caves – a single entrance cave in West Virginia – costing over \$22,000. This was a typical bat gate, with bars spaced so bats could enter and exit freely. Keeping bats out of a cave entirely requires an extremely tight sealing, as the animals are capable of moving through very tiny spaces.

Sealing would also require a major change in airflow for a cave, causing unknown repercussions for the rest of the ecosystem. While a lesser consideration, it also can ruin the esthetics and beauty of a cave entrance.

The example set by WIDNR, and concerns by private landowners of running afoul of regulations, with the threat of civil and criminal penalties, could also inspire some landowners to seal their own caves, a sure death knell for anything living within. The NSS has worked for decades with private cave owners to educate about the cave and its resources, including cave formations, archeological and paleontological relicts, groundwater protection, and cave life, including bats. These resources can be quickly and irrevocably lost.

In conclusion, the NSS is deeply concerned and dismayed at the approach being taken by WIDNR. While we share the concern about the bats and WNS, there are other ways to accomplish the same goals. These methods are in use by others, and do not cause the same alienation among stakeholders nor threats to the bats and cave environments we are both striving to protect.

If WNS is coming to Wisconsin, the bats will bring it. Nothing proposed by the Department will prevent that. However, what is proposed by the Department can cause a lot of harm – to bats, to the environment, and to relationships with the public.

We strongly urge the Board to reject this request. Further, as the Department wishes this proposal to be considered along with the prior two Emergency Board Orders for permanent order, we urge the withdrawal of the others, as well. Thank you for the opportunity to comment.

Sincerely,

Peter Youngbaer
WNS Liaison