



## Common name

white-nose syndrome

## Scientific name

a fungus,  
*Geomyces destructans*

## What's Bugging Wild Critters?

Fact sheet #28:

White-nose  
Syndrome



## Significance

There is unprecedented mortality of hibernating bats in caves and mines in northeastern United States. In some situations, all the bats in individual caves died during the winter months, often with a white ring of fungus around their face. The problem is spreading rapidly. Local bat populations are seriously reduced and the effects will ripple throughout many ecosystems at a broad landscape level.

## What? Where? How?

No one knows exactly what is going on. Hibernating bats are active during the winter, run out of energy, and die of starvation or exposure to freezing temperatures. Mortality is associated with a powdery white fungus on the face, wings, and skin. The fungus often occurs as a white ring around the nose, and the problem has been characterized as "White-nose Syndrome".

Mortality was detected at a cave in New York State in 2006. Dead bats soon were found in other northeast states, and the problem is spreading rapidly. Already, many thousands of bats have died in hibernacula where the fungus occurs. US Fish and Wildlife Service maintains a map of affected areas at [http://www.fws.gov/northeast/white\\_nose.html](http://www.fws.gov/northeast/white_nose.html).

The fungus may attack weakened bats, or it may cause bats to use up limited winter energy reserves.

# White-Nose Syndrome in Alberta

Northern insectivorous bats face severe energy limitations during winter months. Some species solve the problem by migrating to warmer regions. Others hibernate in environments of constant low temperature and high humidity, often in caves, abandoned mines, and rock crevices where they huddle together in dense clusters to conserve heat. Each fall bats return to the same winter roosting sites, and large numbers of bats gather in only a few locations. While this behaviour is an energy-efficient solution to the winter weather, it increases the potential limiting effects of disease or major changes in environmental conditions within the hibernaculum.

There is concern that people may play a role in moving the fungus from cave to cave.

## Transmission Cycle

The fungus likely is spread directly from bat to bat, particularly in the dense populations in wintering sites. However, local, national, and international wildlife management agencies, conservation groups, and caving organizations are concerned that people may play an indirect role in transferring white-nose syndrome to new areas. This could occur from contaminated boots, clothes, or equipment.

Together we are trying to find the cause of the mortality and provide information about precautions to avoid spreading it to new sites and areas.

# White-nose in Alberta

(*Geomyces destructans*)

## Importance for Wildlife Management

Bats are integral components of many ecosystems around the world. Throughout North America, bats are major predators of night-flying insects and essential pollinators of a wide range of native plants, including the distinctive saguaro cacti of the deserts of the U.S. southwest. Foraging bats contribute cheap and effective insect control on a range of agricultural and forest pests and are essential to the success of various crops. Guano deposited in forested areas is an important source of usable nitrogen in the environment. In Alberta, bats provide a cost-free service by consuming millions of insects considered pests to agriculture, forestry, and human recreation.

## Distribution in Alberta

White-nose syndrome has not (yet) been identified in Alberta or in western North America. However given the ongoing rapid spread of the problem in eastern regions, the eventual mingling of bats across the continent, and the potential transfer of fungal spores on bats, people, equipment, and other materials, the problem is likely to arrive.

People can help by alerting wildlife authorities: if you see large numbers of dead bats or bats with fungus on their face, leave the area, disinfect your footwear and clothes, and call your local Fish and Wildlife office toll-free at 310-0000.

## Public Significance

There is no indication that the fungus can infect people. Other species in the genus *Geomyces* do not infect humans and their occurrence is limited to cold damp environments, conditions like those in bat wintering sites.

## Prevention/Control (General)

It is likely that people can spread fungal spores to new caves and thus put more bats at risk of infection. Anyone visiting caves, mines, or other bat hibernacula should be aware of the concerns and take precautions to prevent introducing white-nose syndrome into new hibernacula.

**The US Fish and Wildlife Service has a full set of recommended precautions at [www.fws.gov/northeast/white\\_nose.html](http://www.fws.gov/northeast/white_nose.html).**

In general, visitors to caves and mines with bat populations should:

- observe all seasonal cave closures; and
- look for white fungus on bats or undue mortality **BUT DO NOT TOUCH OR DISTURB HIBERNATING BATS.**

If you see white-nose or dead bats, take a picture if you can, but then leave the cave immediately. Do not visit other parts of the cave, do not contact other bats, and do not visit other caves until you report your findings to the local wildlife authority. In Alberta, call toll free to 310-0000 to connect to any Fish and Wildlife office.

**Until we know more about white-nose syndrome, appropriate precautions and protocols should be applied by anyone repeatedly entering any bat roosting sites or undertaking bat research.**

**If you have visited caves or mines with bats east of the Mississippi River, please do not enter caves or mines with bats in Alberta.**

# White-nose in Alberta

(*Geomyces destructans*)

## Prevention/Control (Specific)

Specifically, if you visit caves and mines with bat populations or conduct bat research or inventory:

- bag and decontaminate clothing and equipment used during any visit;
- use appropriate disinfection protocols as outlined at: [www.fws.gov/northeast/whitenosemessage.html#containment](http://www.fws.gov/northeast/whitenosemessage.html#containment); and
- use amended Fish and Wildlife Division standard protocols for handling bats in Alberta. Check the protocol pages at [www.srd.alberta.ca/fishwildlife/guidelinesresearch/](http://www.srd.alberta.ca/fishwildlife/guidelinesresearch/) for current information.

If the risk to bats increases, public access to hibernacula may be further restricted.

**Until we know more about white-nose syndrome, the precautions and protocols should be applied by anyone repeatedly entering any bat roosting sites or undertaking bat research.**



## Summary

Based on current information, bat specialists believe that all North American bat populations are at risk. The mortality already seen in the north east US is staggering and the absence of bats will affect the basic elements of balance in local and regional ecosystems. While the current outlook is bleak, we can at least minimize the role that people may play in spreading this new agent of death that is attacking sleeping bats.

## Additional Information

For additional information please contact any Fish and Wildlife office OR Lisa Wilkinson, Fish and Wildlife, Edson 780-723 8556.

Alberta Bat Action Team: [www.srd.alberta.ca/fishwildlife/wildlifeinalberta/batsalberta](http://www.srd.alberta.ca/fishwildlife/wildlifeinalberta/batsalberta)

US FWS, white-nose: [www.nwhc.usgs.gov/disease\\_information/white-nose\\_syndrome](http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome)

Bat Conservation International: [www.batcon.org](http://www.batcon.org)

## Prevention/Control (Alberta)

The Alberta Bat Action Team (ABAT), in conjunction with the Fish and Wildlife Division, the Parks Division, and local caving associations, is developing and distributing informational material to increase awareness of white-nose syndrome and trying to prevent its introduction into Alberta. In addition, a passive surveillance program has been initiated among bat researchers, environmental consultants doing bat surveys, and members of Alberta Speleological Society to look for and report occurrences of undue bat mortality or any finding of bats with white fungal growths.

ABAT also is involved in regional initiatives to promote awareness of the problem, inform visitors to caves and mines, encourage appropriate precautions, and monitor for the possible occurrence of white-nose in bats throughout the west. In particular, we are working closely with agencies in British Columbia and the Western Bat Working Group to ensure regional consistency in messages and policy.