White-Nose Syndrome Alert

BAT CONSERVATION FACT SHEET I SPRING 2010

DID YOU KNOW A WILDLIFE HEALTH CRISIS MAY AFFECT BATS IN B.C.?

SPECIAL POINTS OF INTEREST:

- **WNS is a fungal disease that has been associated with mass die-off of hibernating bats**
- **WNS has not yet been detected in B.C.**
- **You can help by learning more about WNS and what you can do to prevent its spread**

INSIDE THIS ISSUE:

What is White-Nose Syndrome (WNS)?

White-nose Syndrome (WNS) is a fungal disease that has been associated with mass die-off of hibernating bats in North America. The name refers to a white fungus that grows on the muzzles and bodies of bats found in mass die-offs since 2006. More than one million bats have died and mortality rates at affected sites are 80-100%. All North American bat species that hibernate are thought to be at risk, with extinctions of some species likely.

As of Spring 2010 White Nose Syndrome had been found in Ontario, Quebec, and 14 US states (eastern, mid-west, and west south central).

The newly discovered fungus associated with WNS is called *Geomyces destructans*. This morphologically distinct fungus is now known from countries across Europe although bats do not appear to be dying there.

The fungus grows best at the low temperatures associated with bat hibernation (4–10°C). As the fungus starts to grow, bats awaken from hibernation to groom to remove the fungus. The energy required to arouse from hibernation and groom uses overwinter fat reserves, resulting in extreme weight loss. Starvation seems the likely cause of death.

Transmission is not well understood at this point in time; while bat-to-bat contact seems to be the main mode of transmission, some evidence suggests human transmission is possible (eg. humans going into mines, caves).

Little brown bats with White-Nose Syndrome, New York. Photo courtesy Nancy Heaslip, New York Dept. of Env. Conservation

What does WNS look like?

Bats with WNS exhibit some or all of the following symptoms (descriptions adapted from USGS, National Wildlife Center):

- White, powdery fungus seen around the muzzle, ears, wing/limbs, and/or tail;
- Excessive/unexplained bat mortality at the winter hibernacula;
- Thin and/or dehydrated bats (wrinkled and flaky appearance of furless areas);
- Delayed arousal from torpor following disturbance;
- Aberrant behaviours (e.g. found on ground inside or outside the hibernaculum, roosting near hibernaculum entrance, increased bat activity outside the hibernaculum during cold weather especially during daylight hours)

Fungal growth on ear. Photo courtesy of Greg Turner, Pennsylvania Game Commission

Does White-Nose Syndrome pose a threat to humans?

No. There is no indication of human health risk from this fungus.

Little brown bats: single bat in center has white-nose syndrome
Photos courtesy of Ryan von Linden, New York Dept. of Environmental Conservation

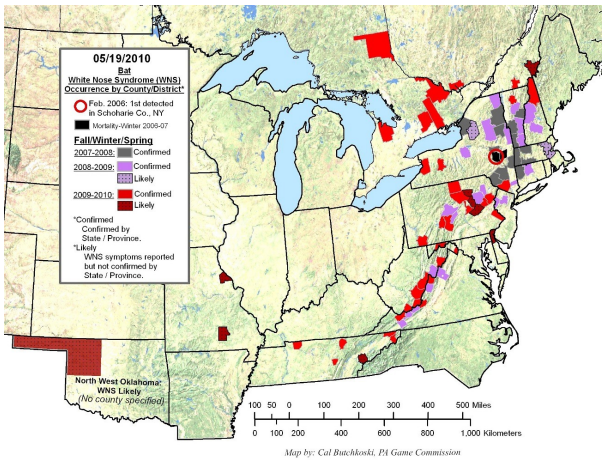
How is WNS transmitted?

Little is known about this disease. WNS may be spread from bat to bat during winter months at hibernation sites, but its route of transmission in the summer months is unknown. It is speculated that WNS is also spread by human transporting of fungal spores. For example, cavers, other recreationists such as geocachers, people frequenting mines, and bat biologists, may spread the disease through spores on boots, clothing, or equipment. Human transmission is suspected in some sites, such as in West Virginia and Missouri where cave visitors had been in WNS - affected sites. The appearance of the fungus in sites hundreds of miles from other affected sites may indicate human transmission.

The Southeastern Cave Conservancy, National Speleological Society, US Forest Service, Alberta Parks and others have closed some of their caves/mines as a precaution to avoid spreading the fungus.

Where is WNS found?

WNS was first discovered in a cave in New York State in the winter of 2006 and is now found in 2 Canadian provinces (Quebec and Ontario) and 14 US states.



What is the risk of WNS in B.C.?

Ecological Cost

Bats are the primary consumers of night-time insects, and play an integral role in our ecosystem. Bats are important predators on insect pests. A mass die-off of bats is likely to have far-reaching effects on the ecosystem and industries such as forestry and agriculture.

Impact on Bat populations

In the NE US where WNS was first found, all cave hibernating species of bats are affected (6 species). Several of these same bat species are found in B.C. Potentially, all cave and mine hibernating species in BC could be vulnerable to this disease (14 of 16 B.C. bat species).

Bats are long-lived mammals, with some species known to live 35+ years. Bats of most species have only one young per year; population sizes will therefore be slow to recover from mass die-off. Populations are unlikely to recover in our life times, if ever. Some bat species extinctions in North America are anticipated.

WNS risk of arrival

At the current rate of spread WNS may be detected in B.C. in the next five or ten years or not at all if there is population separation between eastern and western bats. However, the disease may appear sooner through human transmission on clothing, boots, and other equipment from WNS infected caves to caves used by bats in BC.

Did you know?

Bats are the slowest reproducing mammals and longest-lived mammals for their size.

What can you do to help?

The first step is to ***prevent human transmission of WNS to B.C.*** WNS could suddenly be introduced into B.C. on clothing or equipment used underground or in contact with bats. We need to prevent the spreading of spores from affected areas in eastern North America (and Europe) to B.C.

The best way to prevent accidental introduction is to not go underground using any equipment or clothing that has been underground or in areas where bats roost in eastern North America or Europe.

Alternatively, decontaminate. Decontamination protocols exist for people recreating or doing work in or around potential bat roosts and cave/mine hibernacula. It is very important that all clothing, boots and equipment be thoroughly decontaminated if they have been in caves in affected states or provinces.

For decontamination protocols, visit the following site and click on the links:
http://www.fws.gov/WhiteNoseSyndrome/cavers.html

It is recommended that a high level of caution be taken until WNS transmission and distribution is better understood. Please always decontaminate when moving between caves or mines that may be used by bats.

At a minimum boots should be thoroughly washed, and clothing and equipment washed in hot water. Large equipment and nonsubmersible gear should be wiped down with an anti-fungal disinfectant.

If you find sick or dead bats, please do the following:

Dead bat collection protocol

1. If possible, photograph the scene and the bats.
2. Record time, date, and exact location.
3. If the bat is covered in obvious white powdery fungus, or there are multiple dead bats (≥ 5) in one location, please do the following:

- Using GLOVES (do not use bare hands, as there is always a risk of rabies transmission from bats when the cause of death is unknown), place each dead bat into its own ziploc bag. Disposable vinyl or nitrile gloves are ideal. If not available, place double plastic bags over your hands and turn inside out into the ziplock bag.
- Label each bag with date, location (including nearest town/city), collector name and phone number. Place in cool storage.
- Throw away gloves, or if not disposable, decontaminate gloves using hot water wash, or a 10% bleach solution.
- Contact any of the people on the back of this newsletter for instructions on what to do with the specimens. If you are unable to reach anyone within 24 hours, freeze the specimens if you can or discard them in the same location where you found them. Please ensure that the animals and site are photographically documented and the directions to the site are clearly recorded. You can also contact your regional Ministry of Environment Biologist or the Conservation Officer Service and inform them of the situation.

Sick bat collection protocol

If you come across a live bat that is showing signs of WNS (covered in white powdery fungus), contact one of the B.C. Ministry of Environment staff listed on page 4 of this newsletter. Do not touch the bat or let your pets near the bat, as there is potential for transmission of rabies.

If you are a bat biologist with current rabies vaccination and come across live bats you suspect of having WNS, you can collect the following samples from the bat(s):

1. At a minimum, collect a tape-lift sample (See USGS National Wildlife Center Submission for Protocol).

2. A wing damage index has been compiled by Boston University and should be used by biologists doing work in the West to monitor for signs of WNS. This wing index key is available from the USFWS site: http://www.fws.gov/WhiteNoseSyndrome/research.html (Protocols, Wing Damage Index link)

3. If the bat is clearly displaying signs of WNS, please contact MOE staff listed on page 4 as soon as possible. If the bat has to be euthanized, please follow the appropriate protocols as recommended by the Canadian Council on Animal Care. Indicate on each bag whether the bat was found dead, or was euthanized.

If you find dead bats, use gloves to collect and send them to your nearest contact (see page 4 of newsletter).

If you find sick or dead bats, please contact any of the following:

Dr. Helen Schwantje
Phone: (250) 387-4285
Helen.Schwantje@gov.bc.ca

Dr. Purnima Govindarajulu
Phone: (250) 387-9755
Purnima.Govindarjulu@gov.bc.ca

Enquiry BC
1-800-663-7867
EnquiryBC@gov.bc.ca

This fact sheet was produced as a collaborative effort between the BC Ministry of Environment, and the B.C. Bat Action Team (BC BAT). BC BAT was formed in May 2009, by a group of biologists, government representatives, naturalists, educators and others who are concerned about the conservation of bats in B.C.

For more information about B.C. BAT, contact bcbats@gmail.com or visit:

http:\\bcbats.tripod.com

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How to learn more about WNS

If you have questions about WNS please contact Dr. Helen Schwantje, or Dr. Purnima Govindarajulu.
If you want to learn more about WNS and the research and monitoring initiatives underway, please visit the following websites:

U.S. Fish and Wildlife Service Northeast Main WNS website:
http://www.fws.gov/WhiteNoseSyndrome/

U.S. Fish and Wildlife Service Northeast
Information including protocols and wing damage index:
http://www.fws.gov/WhiteNoseSyndrome/research.html

U.S. Fish and Wildlife Service Northeast
Procedures and decontamination for recreationists, cavers, people entering mines/caves:
http://www.fws.gov/WhiteNoseSyndrome/cavers.html

National Speleological Society: http://www.caves.org/WNS/

U.S. Geological Survey (USGS) - Main WNS site: http://www.fort.usgs.gov/WNS/

U.S. Geological Survey (USGS) - Submitting of samples: http://www.nwhc.usgs.gov/mortality_events/reporting.jsp

U.S. Geological Survey (USGS) - National Wildlife Health Center site:
http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/index.jsp

Battle for Bats video: http://www.cavebiota.com/

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