

White Nose Syndrome (WNS): Impacts to Oregon Bats

What is White nose syndrome?

White nose syndrome (WNS) is a recently-emerged fungal infection present in bats of the United States and Canada. The fungus, *Geomyces destructans*, that lives in cold caves and mines where bats hibernate in areas known as hibernacula. The disease was first noted in 2006 in New York and has resulted in mortality rates from 40- 100% in affected hibernacula sites.

What are the clinical signs of WNS?

Bats are often observed with “white fuzz” around the nose and muzzle, which may also be present on the wings, ears, and tail. Researchers believe the fungus causes severe disruption of important physiologic actions provided by the wing membranes, and may act as a chronic irritant, causing them to repeatedly wake from hibernation, prematurely use up all their winter fat reserves, and ultimately die of starvation. The external fungus can be absent, but infection may manifest in altered behavior such as abnormal roosting (near cave/mine openings, frequent arousals, or flying during the day in cold winter weather). Due to the fungus’ preferred growth at low temperatures during winter, evidence of disease is also seen as scars and damage to the wing membranes during the summer months. The presence of the powdery fungus, abnormal behavior, and dead bats at hibernacula will be more noticeable in the winter.



Little brown bat with white-nose syndrome, New York Credit: Al Hicks, NY

Where is it located?

The signs of disease were first seen by a photographer in a cave located in Howes Cavern near Albany, New York. As of mid-April, 2011 it has since spread to 18 states in the Northeast, Mid-Atlantic, and Midwest US, and 3 provinces in Canada. There is an updated map of the known distribution of disease on the [US Fish and Wildlife website](#).

Is the fungus in Oregon?

Currently the fungus is not present in Oregon. However, it’s current spread is in a westerly direction across the country so multiple agencies are joining forces to promote education, surveillance, and preventative measures. Bat populations in Oregon and Washington are closely being monitored by researchers at select summer and winter locations. Surveyors inspect residual wing damage of captured bats for WNS during summer bat surveys in Oregon and Washington.

How is the fungus transmitted?

Bat-to-bat transmission has been the most studied means of transmission and is thought to be the primary means by which white-nose syndrome is spread. Scientists also have

shown that the fungus can be spread by people on contaminated gear, clothing, and other equipment used in caving activities. Other related *Geomyces* species have been found in soil, although the specific origin or the role of these species has not been identified. Based on other related and invasive fungi, it is thought that this organism can survive in sediment, and potentially in cave air and rock surfaces. Research has shown evidence that other pathogenic fungi can persist for weeks on clothing.

What is the significance to bat populations?

WNS affects cave-hibernating bats and has caused devastating consequences to bat populations in the eastern US, resulting in many millions of bat deaths and local extinctions at hibernacula sites. We have 15 species of bats living in Oregon. Twelve of these are hibernating species that may be susceptible to the disease, including 6 species listed as sensitive species in the Oregon Conservation Strategy. There are fewer known hibernacula sites with large numbers of bats in the Pacific Northwest compared to east coast hibernacula where bats have contracted the disease. Therefore the spread and effects of the disease in the western US is presently not known but managers are remaining vigilant and planning accordingly.

What are the implications for humans?

Scientists believe that some of the consequences of a widespread bat die-off could include population explosions of insect pests, such as moths and beetles that plague agricultural crops. Increased pest numbers could cost farmers billions of dollars per year and increased insect disease emergence. In addition, the spread of WNS could cause potential extinction of certain western bat species and may require limiting human access to caves to reduce the spread of WNS.

How can you help?

- Report usual bat behavior or unexplained bat deaths to the Wildlife Health Hotline: 1-866-968-2600
- Avoid entry into caves or abandoned mines. If entry into these site does occur, thoroughly decontaminate clothing, shoes, and equipment prior to and following to caves and mines. More detailed information regarding decontamination procedures are described on the USFW website:
 - o [Decontamination protocols](#)
- Please observe all cave closures, visit <http://www.fws.gov/WhiteNoseSyndrome/cavers.html> for a up-to-date list of cave closures
- Do not use any equipment that has been used in caves or mines with known exposure to WNS.
- Stay out of caves to avoid disturbance of bats during critical hibernation periods.

Useful websites:

[USGS National Wildlife Health Center](#)
[US Fish and Wildlife Service](#)
[Bat Conservation International](#)