# Bats Matter!

Bats are an **essential** part of our environment. The loss of our bats could cause a ripple effect with potentially far-reaching consequences.

Bats play critical roles in the environment by eating insects, pollinating plants, spreading seeds, and more. Eating more than half their body weight in insects each night, bats are the primary predators of night-flying insects. Many of these insects are serious crop or forest pests, or can spread disease to humans or livestock. Recent studies concluded that losing our bats could cost us **billions of dollars** in increased pesticide use and agricultural damage each year!

© Michael Durham/Minden Pictures, Bat Conservation International

Bats improve our lives in so many ways. Eating bugs by the millions, night after night, bats keep the natural world in balance and enhance our ability to enjoy the great outdoors. With fewer bats because of WNS, we will have more insects to annoy us, bite us, and to spread disease. We need to help our bats!

Bats also play a significant role in science and medicine. Research on bats has led to advancements in hearing, sonar, vaccine development, how blood coagulates, and more.

If that wasn't enough, even the droppings of bats are important. In caves, these droppings provide vital nutrients for many critters and are often the basis of a cave's food chain.

**WNS not only affects bats, it also affects our environment and economy.**

# Research is Critical

Scientists around the world are urgently studying WNS. Many field and laboratory projects are underway as scientists try to discover how WNS is killing our bats, what we can do to fight it, and how to protect surviving bats.

# You Can Help Bats!

- Stay out of sites where bats are hibernating.
- Decontaminate your gear and clothes whenever you go underground.
- Learn more about bats and their value and share what you know with others.
- Bats may use your property. Consider leaving live and dead trees with cracks and cavities to benefit bats and other wildlife.
- Volunteer! You can help protect bats on public lands by counting bats, using bat call detectors, working on habitat projects, and much more.
- If you find a bat that is sick, injured, or in a place where you don't want it, contact your local wildlife agency.

# More Information

For more information on WNS, including decontamination procedures, visit the national response website: **www.WhiteNoseSyndrome.org**

**For more information on bats and caves, visit:**

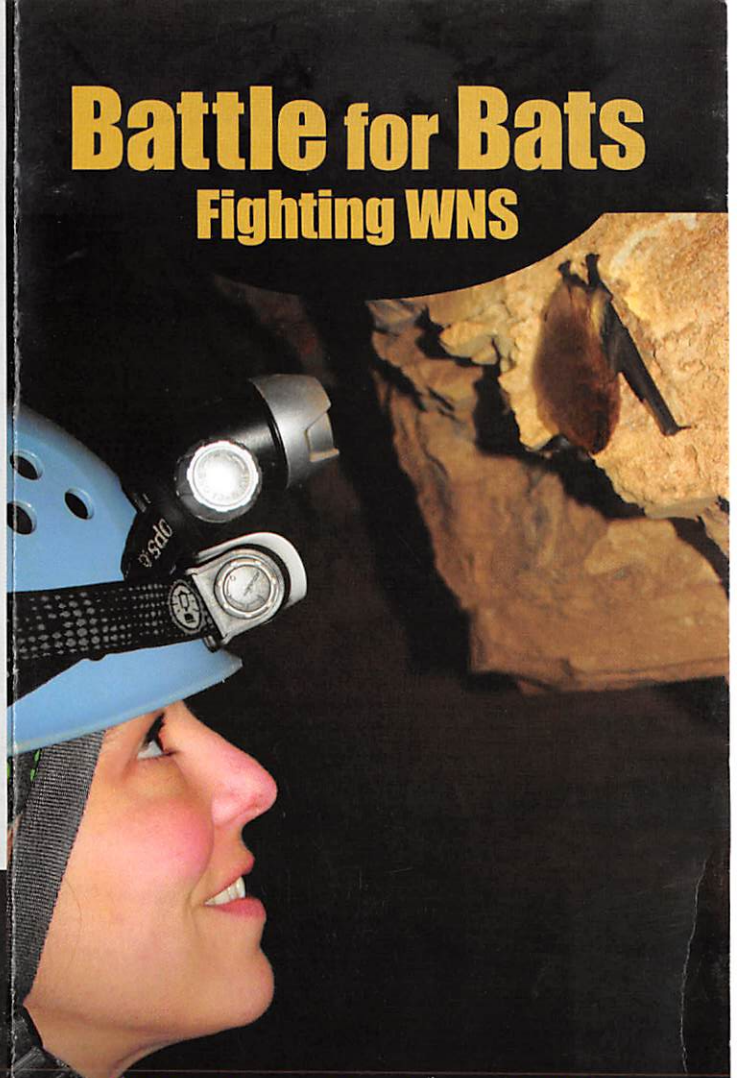
- Bat Conservation International: www.batcon.org
- Project EduBat: http://batslive.pwnet.org/edubat/index.php
- National Speleological Society: www.caves.org

***This brochure was produced in partnership by:***

EDUBAT · Forest Service · National Speleological Society · U.S. Fish & Wildlife Service · USGS science for a changing world · Bat Conservation International · National Park Service

# Battle for Bats

## Fighting WNS



**White-Nose Syndrome (WNS)** has caused catastrophic declines in hibernating bats in the United States and Canada. This previously unknown disease has spread very quickly since it was first discovered and has killed millions of bats. In less than a decade, tremendous progress has been made towards understanding this devastating disease. Yet, there is more work to be done to fight its spread.

# White-Nose Syndrome

is a disease that is killing populations of bats in the U.S. and Canada as they hibernate in caves and mines. This disease was named "White-Nose Syndrome" because of a white, fuzzy growth on the nose, ears, and wings of some affected bats. Scientists identified a previously unknown species of cold-loving fungus, *Pseudogymnoascus destructans*, as the cause of this infection. *P. destructans* thrives in low temperatures (40–55° F) and high humidity – conditions commonly found in caves and mines where bats hibernate.

White-nose syndrome (WNS) has spread rapidly since it was first documented in a single cave in New York in 2006. As of April 2016, bats with WNS have been found in 29 states and five Canadian provinces. The disease continues to spread across these countries.

More than 6 million bats died in the first 6 years of the WNS outbreak and millions more are in danger! Scientists believe WNS has caused the most dramatic decline of North American wildlife in over 100 years, with potentially dire environmental consequences.

Photo by U.S. Fish and Wildlife Service

# Alarming Death Rate

The impact of WNS is frightening! Up to 99% of bats in some WNS-infected sites die within a few years. WNS has resulted in severe population declines in many bat species, including the northern long-eared bat, the first bat listed under the Endangered Species Act due to WNS. Little brown bats, once the most common bat in the northeastern U.S., may be in danger of regional extinction within the next 10 years because of this disease.

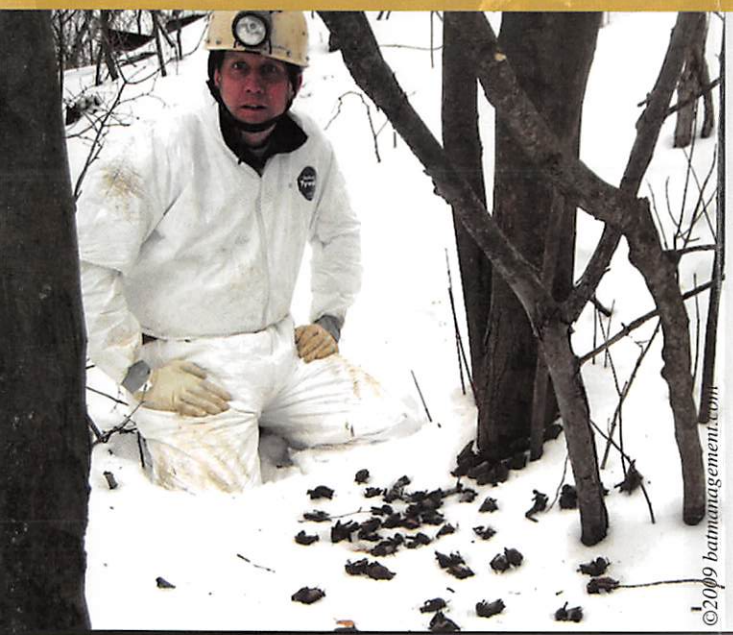
# Other Signs

The white powdery fungus is not always visible on infected bats. Sometimes bats with WNS simply display unusual behavior such as flying outside during the day in near-freezing weather. This quickly uses up their fat reserves at a time when insects are not available. As a result, in winter you may see dead or dying bats on the ground or in buildings or other structures. If you encounter a bat, do not handle it!

# How WNS is Spread

**Bat-to-Bat:** The fungus that causes WNS is transmitted primarily from bat to bat and bat to cave.
**Soil-to-Bat:** *P. destructans* can survive in the soil of caves and mines where bats hibernate for years. Healthy bats entering infected sites may contract WNS from the environment.
**Other Means:** Scientists have demonstrated that it may be possible for humans to inadvertently carry *P. destructans* spores on their clothes or equipment. There is, however, no evidence that the fungus or WNS harms people.

*As WNS continues to spread to new areas, we face the real possibility of losing entire bat species.*



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# Potential Treatments

Scientists are working together and testing a variety of treatment and management options for WNS. Treatments need to be safe for bats, other species, and the environment. The fungus that causes WNS is difficult to eliminate, so we do not expect to find a single cure for this disease.

We are hopeful that treatments will reduce impacts to bats and eventually help populations become stable or even increase. Because most bats affected by WNS have only one pup a year, recovery would be a slow process.

Some treatments that show promise include bacteria and fungi that inhibit the growth of *P. destructans*, vaccines, anti-fungal chemicals, and genetic changes that can be made in *P. destructans* to decrease harmful effects of WNS.

To minimize disturbance to bats, please honor cave closures. Clothes, shoes, and gear used underground should be decontaminated according to the National WNS Decontamination Protocol (www.whitenosesyndrome.org/topics/decontamination). NEVER take clothes or gear used in a WNS-affected area to a site that is not WNS- affected.

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**For more information on WNS, visit the national response website: www.WhiteNoseSyndrome.org**