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Wildlife Control Technology

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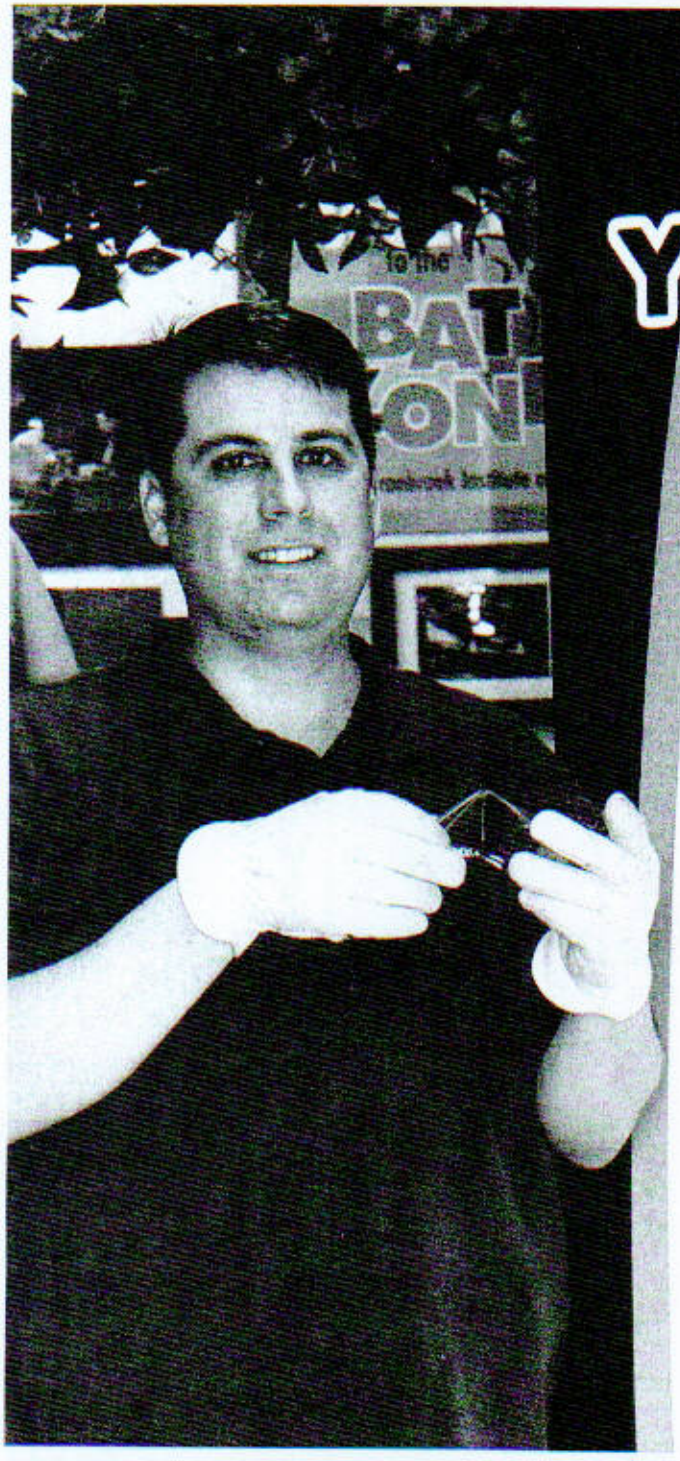

BATS IN YOUR HOUSE

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MAY - JUNE 2011

Hibernating Bats at Risk

By David Kugler

There is a serious epidemic that is impacting many bat species in the eastern United States and it will likely affect your business. White nose syndrome is fatal to bats and is responsible for decimating approximately 1 million bats (thus far) as it makes its assault across much of the country. The syndrome was first discovered in a New York cave in 2006, and has rapidly spread. Since the discovery, the fungus has impacted bats in Connecticut, Delaware, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, Oklahoma, Pennsylvania, Tennessee, Vermont, Virginia, West Virginia and the provinces of Ontario and Quebec, Canada. On Jan 23, 2011, the fungus was discovered on two Little Brown Bats in Indiana.

White Nose Syndrome is thought to be caused by a newly discovered cold loving fungus aptly named *Geomyces destructans*. The name foreshadows scientists anticipated impact to bats, and describes the urgency of the problem. Although the fungus has also been found in European caves, it does not result in European bat mortality. At the March 2010 Michigan Animal Damage Control Association (MADCA) meeting, Dan O'Brian, MDNRE Veterinarian surmised that the European bats might have evolved to be resistant to the effects of the fungus. After all, there are many different species of Geomyces fungus and the European bats may have been exposed a very long time ago. However, it is still unclear if the fungus is the cause of disease or an abnormal growth of a naturally occurring fungus resulting from infection with some other pathogen. One thing is clear, bats with Geomyces destructans on the nose or other skin membranes are experiencing 90% mortality – each year.

Maternity colony of Big brown bats.

The fungus thrives on hibernating bats in cold damp caves. According to the US Geological Survey website, cave conditions that support the fungus range in temperature from 40 to 50 °F and have a humidity level greater than 90%. The fungus establishes itself on the bats as

they lower their body temperature during torpor. Bats use this semi-hibernation strategy to survive periods when food is not readily available. By reducing their body temperature, they can conserve energy and survive long periods by utilizing stored fat reserves. In fact, during hibernation, the immune system is suppressed, which may provide the opportunity for the disease to become established. Unfortunately, the fungus appears to cause stress on the animal resulting in increased metabolism, which quickly depletes fat reserves. Once the bat is sufficiently impacted, it attempts to fly out of the cave in search of food that isn't readily available. One of the first signs, to the public, that the bats have been affected is observation of large numbers of bats flying during the daylight or near the mouth of a cave or mine.

Bats reproduce slowly and many only produce 1-2 offspring per year. Prior to the introduction of White Nose Syndrome, many species of bats had life expectancies greater than 10 years. In fact, the longest recorded lifespan of a Little Brown Bat was 34 years. For many bats, times are changing rapidly. It appears that all bats, including the Little Brown Bat, that over-winter in caves are at risk.

There is some level of debate as to whether the Big Brown Bat will be impacted in a similar fashion as the Little Brown Bat. In some portions of the country, the Big Brown Bat has adapted to hibernate above ground in homes – rather than caves. Since homes are designed to be dry and would not support a humidity of greater than 90%, it is not anticipated that *Geomyces destructans* would grow and affect the hibernating bats. To illustrate this point, the Big Brown Bat is a common species in Michigan. However, the largest colony of Big Brown Bats found hibernating in a Michigan cave, in the last 40 years, included 178 members. Residents of Michigan encounter Big Brown Bats flying inside their home during the winter months, which demonstrates that they must be hibernating in homes. Although the behavior and habits of this species may differ in other areas of the country, this habit provides hope that the species will not incur complete decimation by the disease.

States are implementing new laws and guidelines to protect the bats. For example, Michigan DNRE is reaching out to wildlife operators in the State to report any signs of the disease. The MDNRE in coordination with the Michigan Animal Damage Control Association (MADCA) has published a guidance document to educate operators and to help protect the bats in the State. Additionally, the State has developed a White Nose Syndrome response plan. The State is hoping to slow the spread of the disease by humans, but does not expect to be able to stop eventual impact of the disease. The response plan is geared toward conserving the few remaining bats and their habitat after the die off has occurred.

The State anticipates placing many bats including the Little Brown Bat on the endangered species list, adding to the urgency of the matter. Wildlife operators can help bat populations by following recommended decontamination measures and by supporting state and federal funding to slow or stop the spread of White Nose Syndrome. Installing bat houses will not provide alternate hibernacula; however, it can provide suitable shelter for maternity colonies during the summer months. This habitat may help the remaining bats raise their young in a safe environment; a critical step in re-establishing the future bat population.

Wildlife operators need to assess their business and plan for anticipated impact. Those that focus on Little Brown Bats might be most at risk. Some operators are diversifying their services and expanding into areas such as pesticides or gutter protection. However, operators must prepare for calls from the public. It is important to educate the public that the disease cannot be transmitted to humans. It is not advisable to handle sick bats, due to other risks such as rabies. Homeowners that live near the mouth of a cave or mine are most at risk to observing their yard littered with sick bats especially in the middle of the winter. Wildlife operators must be able to respond to the customer and be knowledgeable where to report the disease. Authorities are looking for instances where:

- Large numbers of sick or dead bats are observed near an opening of a cave or mine
- Bats are observed flying during the day, in the middle of the winter.
- Bats are observed to have difficulty flying.
- Hibernating bats with white fungus on the face or wings observed during winter.

Resources:
US Fish and Wildlife: http://www.fws.gov/WhiteNoseSyndrome/
MDNRE:http://www.michigan.gov/emergingdiseases/0,1607,7-186-56206---,00.html
Organization for Bat Conservation: http://www.batconservation.org/ ■

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