

# Laboratory and Field Testing of Treatments for White Nose Syndrome: Immediate Funding Need for the Northeast Region



**Project funded in 2011; study just beginning and will run through 2012.**

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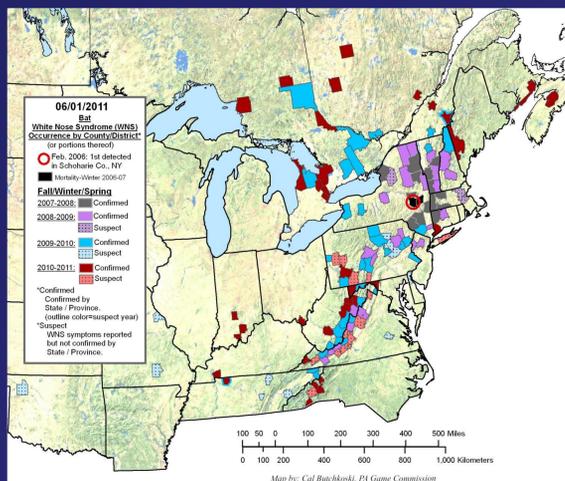
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Map illustrating the spread of WNS over time.

**Problem Addressed:**

Bats in the Northeastern North America are dying in large numbers due to 'White-nose Syndrome'.

**Need:** to determine how to mitigate the effects of WNS.

**Objective:** to develop and test potential treatments for WNS and, if possible, to optimize field treatment protocols.

**Methods for treating bats:**

Preference is for treatments that only need to be administered once.

Collaborative research team is in the process of determining what agents will be tested (based upon ability to kill *Geomyces destructans* - the putative causative agent – and upon safety profiles)

**Current Candidates include:**

**1. Terbinafine-based treatments (this drug is the safest of the commonly used antifungal pharmaceuticals)**

- Slow-release terbinafine subcutaneous implants (in collaboration with new research partner Marcy Souza (University of TN, Knoxville)).
- Single use long acting terbinafine cream
- Terbinafine/citral spray



Terbinafine subcutaneous implant (arrow), which is smaller than, but similar in size to, a transponder microchip (PIT tag). (From Marcy Souza, University of TN College of Veterinary Medicine).



A special formulation of terbinafine-containing lamisil (only available in Europe), that forms a film upon application and does not need to be reapplied.

**2. Compounds identified in sebaceous glands of 'resistant' species (Barton lab)**

**Status/Utility:**

Project still in developmental stage. While field trials may eventually be warranted, initial testing will take place in controlled captive conditions

- Will use the environmental chambers in the bat vivarium at Bucknell University.
- Naturally infected little brown bats will be collected in November and transported to Bucknell



- Bats will receive real or sham treatments and will be placed into hibernation for ~ 4.5 months.
- Outcome measures will include: survivorship, change in body mass index over the winter, degree of fungal infection

**Status/Utility**

The development of successful treatment regimes will allow for the design of mitigation strategies for bats affected by WNS

These include:

- Treatment of bats in free-ranging conditions
- Treatment of bats in support of 'captive assurance populations' – should they be initiated.