



NFWF

Bats for the Future Fund 2017 Grant Slate

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Little brown bat | Credit: Ann Froschauer, USFWS

OVERVIEW

The National Fish and Wildlife Foundation (NFWF), in partnership with the U.S. Fish and Wildlife Service, U.S. Forest Service, Shell Oil Company and Southern Company, announced a 2017 round of funding for the Bats for the Future (BFF) Fund. Six grants totaling \$1.36 million were awarded to help prevent and slow the spread of the disease called white-nose syndrome (WNS), advance management tools and treatments to minimize WNS, promote the survival and recovery of WNS-affected bats, and support innovative research leading to WNS management solutions. The grants generated \$1.15 million in match from the grantees, providing a total conservation impact of \$2.51 million.

More than 6 million bats have died over the past decade from WNS. In some sites, 90 to 100 percent of bats have disappeared. Since the first observed signs of the disease in New York in 2006, WNS has spread rapidly from the Northeast to the Midwest and eastern and southeastern Canada. Additionally, in the spring of 2016, WNS was found in Washington state.

The Bats for the Future Fund will focus grant funding on existing and novel disease treatments urgently needed to stem the impacts of WNS at the leading edge of the disease, and in areas with a mosaic of contaminated and uncontaminated sites on the front line of the fungus' invasion. This includes areas where WNS is currently causing the greatest bat population declines, such as the Midwest. By funding potential treatments and new approaches to managing WNS the BFF Fund hopes to defeat this devastating disease.

(continued)

ABOUT NFWF

The National Fish and Wildlife Foundation (NFWF) protects and restores our nation's fish and wildlife and their habitats. Created by Congress in 1984, NFWF directs public conservation dollars to the most pressing environmental needs and matches those investments with private funds. Learn more at www.nfwf.org

NATIONAL HEADQUARTERS

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Little brown bat | Credit: Ann Froschauer, USFWS

Development and Testing of Vaccine Candidates to Reduce White-Nose Syndrome in Bats (WI)

Grantee:

U.S. Geological Survey National Wildlife Health Center
 Award Amount:\$360,342
 Matching Funds:\$570,000
Total Amount: \$930,342

The U.S. Geological Survey National Wildlife Health Center will further develop, test and evaluate three or more promising vaccines and methods for vaccine delivery to reduce mortality from WNS in bats in Wisconsin. One potential method for controlling WNS is to vaccinate bats with specific antigens that produce a protective immune response. The project aims to develop at least one potential vaccine candidate, and to determine practical methods for delivering vaccines to large numbers of bats.

Developing a Probiotic Approach to Reduce Severity of White-Nose Syndrome in Bats (Canada)

Grantee: Thompson Rivers University

Award Amount:\$149,921
 Matching Funds:\$259,288
Total Amount: \$409,209

Thompson Rivers University will develop and test a probiotic cocktail derived from anti-*Pseudogymnoascus destructans (Pd)* bacteria and fungi found on bat wings, and apply it to bat roosts to prevent WNS in Canada. The project builds on evidence that natural microbes on bat wings may increase resistance to WNS by inhibiting the growth/reproduction of *Pd*, the fungus that causes WNS. Researchers are hopeful a probiotic-type treatment could provide a long-lasting solution for managing WNS.



Tri-colored bat | Credit: Pete Pattavina, USFWS

Development of Ultra-Violet Light as a Treatment for White-Nose Syndrome in Bats (PA, WI)

Grantee: U.S. Forest Service
 Award Amount:\$155,947
 Matching Funds:\$82,118
Total Amount:\$238,065

The U.S. Forest Service will test the effectiveness of ultra-violet (UV) light to selectively kill *Pd* in Wisconsin and Pennsylvania. One of the most pressing needs is to develop new, cost-effective treatments to help manage WNS that may be employed with minimal disturbance to bats, and with few non-target effects on associated species and the environment. Previous studies have shown that UV light may be an effective tool for management of *Pd*.

Field Application of Chitosan to Halt the Progression of White-Nose Syndrome in Bats (MI, TX)

Grantee: Western Michigan University
 Award Amount:\$278,225
 Matching Funds:\$117,780
Total Amount:\$396,005

Western Michigan University will test the effectiveness of chitosan — an antifungal agent — in halting the progression of *Pd* in Michigan and Texas. Chitosan also stimulates wound healing with anti-inflammatory properties, and is a candidate to decrease infection rates and limit tissue damage incurred by WNS-infected bats. The project will test if chitosan is able to halt the progression of *Pd* in Texas, and if it is able to improve bat survival and decrease fungal loads in already established sites in Michigan.

Testing Polyethylene Glycol (PEG) 8000 in Inhibiting Growth of *Pseudogymnoascus destructans* (PA)

Grantee: Lock Haven University of Pennsylvania
 Award Amount:\$91,795
 Matching Funds:\$65,962
Total Amount:\$157,757

Lock Haven University of Pennsylvania will study the effectiveness of the antifungal agent polyethylene glycol 8000 (PEG) to inhibit the growth of *Pd* in Pennsylvania. Many treatments currently focus on the bat, not the environment where the *Pd* pathogen occurs. PEG has previously been used in agriculture to control fungal plant pathogens, and suggests it may inhibit *Pd* growth in bat roosts. If PEG proves successful, the project will ultimately develop a tool for inhibiting the growth of *Pd* in bat hibernacula.

Manipulating Microclimates in Texas to Reduce Disease Severity from White-Nose Syndrome in Bats

Grantee: Texas Tech University
 Award Amount:\$321,846
 Matching Funds:\$60,000
Total Amount:\$381,846

Texas Tech University will investigate the feasibility of manipulating environmental conditions in caves as a strategy for reducing the severity of WNS in tri-colored bats in Texas. This project will assess whether specific microclimate conditions, including temperature and humidity, minimize the severity of the disease in tri-colored bats, as well as how bats’ behavioral responses affect their survival. The project will also determine whether it is possible to predict which individuals will be most severely affected by WNS, and assess the impact of microclimates on the growth of *Pd*.