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Testimony on "Why We Should Care About Bats: Devastating Impacts White-Nose Syndrome is Having on One of Nature's Best Pest Controllers"
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Chairman Fleming, Ranking Member Christensen, and members of the Subcommittee, thank you for the opportunity to submit testimony. Bat Conservation International (BCI) is a non-profit organization that conducts and supports science-based research, education, and conservation to ensure that bats will still be helping to maintain healthy environments and human economies far into the future. We are based in Austin, Texas, with a membership of more than 10,000 from all 50 of the United States.

WNS poses the gravest threat ever faced by U.S. bats. Since its discovery in 2006, the disease has killed well over one million bats. It is named for the previously unknown, cold-loving white fungus found on faces and wings of infected bats that is believed to cause the disease. WNS-infected bats awaken frequently during hibernation, burning the fat reserves they need to survive the winter. They often emerge early from hibernation, before the return of warm weather and insects, only to freeze or starve to death. The disease or its associated fungus has spread to 19 states and four Canadian provinces in the five years since WNS was first observed in a cave near Albany, New York. The Northeast has borne the brunt of WNS so far, but the disease or its fungus has spread as far south as North Carolina and Tennessee, and as far west as Oklahoma.

Biologists consider the WNS die-off to be North America's most precipitous wildlife decline in the past century. The disease strikes hibernating bats – those that sleep through the winter in caves and mines – and has affected every hibernating bat species in its geographic path. Of the nation's 45 bat species, 25 hibernate, and all of these hibernating species are potentially at risk of the disease. WNS or the fungus currently affects nine species, including the Federally endangered Indiana and gray bats, which could well be even closer to extinction as a result. Some WNS-infected sites experience mortality rates of almost 100%. Losses are so severe that researchers are predicting regional extinctions of the little brown bat – previously one of America's most common mammals – in northeastern states by 2026.

Bats provide many benefits to humankind. As primary predators of night-flying insects, bats are critical to maintaining the balance of nature. A bat can eat half to all of its body weight in insects per night, consuming pests that damage crops such as corn, cotton, soybeans, potatoes, and pecans. A recent article in the journal *Science* estimates the value of bats to U.S. agriculture ranges from $3.7 billion to $53 billion per year. Bats also eat insects that damage forests, such as the emerald ash borer, and that spread disease, such as mosquitoes. Some bat species pollinate crops and disperse seeds. Research of bat biology has yielded important chemical products, including a medication to prevent strokes. Bat droppings in caves support unique ecosystems, including microorganisms that could provide resources for detoxifying industrial wastes and producing pesticides and antibiotics.

The loss of bats would have serious ecological and economic consequences. The one million-plus bats killed by WNS would have eaten more than 700 tons of insects each year. With the bats gone, these insects are surviving to attack crops and forests. The authors of the *Science* article argue that, as a result of WNS, North American agriculture will begin noting economic losses within four to five years, with especially severe impacts to the Midwest and Great Plains regions. In addition to crop losses, farmers will need to use more pesticides, increasing the financial strain on farming families, raising the price of food for consumers, and releasing more chemicals into our environment. Bats are important predators, so their disappearance could have broad, ripple effects on the environment that we cannot yet assess.

The population declines from WNS could well lead to listing more bat species under the Federal Endangered Species Act, as well as state-level statutes, which would cause far-ranging economic costs. The Center for Biological Diversity has petitioned the FWS for listing of the northern long-eared bat and eastern small-footed bat because of WNS and other factors, while BCI and other organizations have requested the FWS to review the status of the little brown bat and to file an emergency listing of the species in the interim. At the state level, Ohio has designated four bat species as species of concern; Wisconsin listed four bat species as threatened; and other states, including New York and New Hampshire, are considering designations. According to the Government Accountability Office (GAO-06-463R), the average cost for recovery of an endangered species is $15.9 million. The highest estimate on record is $125 million to recover the whooping crane. Bat species affected by WNS have broad geographic distributions and complex ecological patterns, which would likely require very high recovery costs. Finally, regulations stemming from listing more bat species would have economic impacts on industries such as mining, defense, energy, forestry, construction, transportation, tourism, and outdoor recreation.

The Federal government recognizes how much is at stake from WNS and, in conjunction with state, local, and tribal agencies, academic institutions, and nonprofits, has mounted an admirable response to the disease. WNS and its associated fungus were unknown to science until discovered in New York, but since then, Federal dollars have enabled researchers at USGS and elsewhere to isolate, identify, and develop a test for the WNS fungus, to map its genome, and answer some basic questions about the nature, transmission, and diagnosis of the disease. The FWS, the lead agency for WNS response, coordinates government and other entities in order to maximize efficient use of resources, prevent redundancy, and facilitate an effective national response. In this role, the agency has funded scientific research and on-the-ground disease surveillance and management, developed recommendations to help prevent disease spread, and created the *National Plan for Assisting States, Federal Agencies, and Tribes in Managing White Nose Syndrome in Bats* in collaboration with all involved Federal agencies, as well as State and other entities. Land-management agencies have been at the forefront in developing disease-monitoring techniques, gathering bat-survey data, managing resources to increase bat survival, and producing materials to educate the public about WNS. The NPS's Mammoth Cave National Park has developed a site-based response plan that is being used as a model for public lands throughout the country; USFS is testing ways to improve bat habitat to boost post-disease survival rates; and DoD is refining acoustical bat-monitoring methods. All of these agencies provide technical support to, and collaborate and pool resources with, State, Local, and Tribal agencies as well as academic institutions and non-profits.

The *National Plan for Assisting States, Federal Agencies, and Tribes in Managing White Nose Syndrome in Bats* represents a commendable step in combating WNS and addressing the urgent need for a national approach to our WNS response. BCI agrees with the overall framework described in this plan as a preliminary step toward guiding and coordinating WNS work nationwide. We recognize that details will appear in subsequent implementation plans developed by State and Federal agencies to meet specific needs, but we must stress that implementation is critical. We encourage the agencies to quickly identify detailed, concrete actions for fighting WNS. BCI is also pleased with the plan's acknowledgment that effective response requires adequate capacity. While we patiently await the development of permanent funding mechanisms, we emphasize that federal funding to fight WNS is desperately needed. We encourage agencies to include adequate funding requests in their FY2013 budgets to ensure that their response is not hampered by lack of capacity. Additionally, BCI: underscores the importance of involving the academic and professional conservation community (in addition to State and Federal employees) in developing the implementation plan; urges agencies to fund immediate and definitive research to determine relative risk of activities and establish levels of acceptable risk (for example, research on WNS transmission); encourages an extremely cautious approach to removing infected or uninfected bats from the environment, limiting bat access to hibernacula, and deploying treatments into natural environments; supports expanding outreach and education efforts to include all scientific and recreational communities that may pose a risk of transmitting fungal spores or may expect to have their activities hampered by management decisions due to WNS; and applauds acknowledgement of the importance of collecting baseline data on bat communities outside the current WNS-affected area, and of assessing the ecological impacts that may result from dramatic losses of insectivorous bat populations.

Despite progress made by the Federal government as described above, the need for WNS-response funding continues and, in fact, is increasing. As the disease spreads, the number of entities involved and the scale of the response grows. While scientists have learned much about the disease, they cannot yet stop its spread. Critical research topics aimed at finding solutions include the susceptibility of different bat species to WNS, possible biological-control agents, and the disease-producing interface of the fungus, bats, and the cave environment. In FY 2010, FWS awarded $1.6 million for WNS research through a granting process for which the agency received $10.5 million in proposals. The demand for research funds clearly outstrips the supply. On-the-ground monitoring and management is required in both previously and newly infected areas. Overall coordination and communication is needed to ensure efficiency and the sharing of information and resources. The westward spread of WNS is sharply increasing the need for a Federal response. Western states have a higher proportion of public land than those in the East. Beyond that, much less is known about western bat populations than eastern ones, and the rugged western terrain makes data-gathering more difficult. To this point, FY 2012 is the first year for which BLM anticipates significant WNS expenses, many of which will go toward surveying approximately 400 western caves and abandoned mines for baseline data on bats.

Concluding from analysis of past WNS spending and disease-spread trends, we have urged Congressional appropriators to ensure that Federal agencies engaged in the WNS response receive $11.1 million to address WNS in FY 2012. The cross-agency need is broken down as follows:

FY 2012 WNS Needs

USFWS	USGS	NPS	BLM	USFS	DoD	TOTAL
$5,200,000	$2,400,000	$200,000	$1,000,000	$2,000,000	$300,000	$11,100,000

One can compare this to WNS spending from FYs 2007 to 2010 (we do not have reliable expenditure figures for FY 2011):

Estimated expenditures on White-nose Syndrome
(Note: BLM did not report WNS expenditures in past years.)

	USFWS	USGS	NPS	USFS	DoD	
FY10	3,690,000	345,500	207,000	1,815,000	206,300	**6,263,800**
FY09	1,790,000	334,000	162,500	890,000	5,000	**3,181,500**
FY07-08	3,200,000	575,000	162,500	N/A	N/A	**3,937,500**
	8,680,000	**1,254,500**	**532,000**	**2,705,000**	**211,300**	**13,382,800**

The increase for FY 2012 over FY 2010 expenses is $4,836,200, or 77%. We believe this ask is conservative and in fact will barely keep pace with the disease's spread. From 2007 to 2010, the disease moved from one state to 14, and from five sites to at least 157. From 2009 to 2010 alone, the number of affected states increased by 56%, and the number of infected sites by 78%. Overall, the number of affected states and sites increased by 50 to 100+% each year. This year, WNS has been confirmed in five new states, and confirmed or suspected in more than 30 new counties. A 77% increase in WNS spending from FY 2010 to FY 2012 is therefore clearly proportionate to the disease's expected expansion by the start of FY 2012.

Congressional support is critical for addressing WNS. Other funding sources are extremely limited. State budgets have been drastically reduced and, especially given the spread of the disease, Federal agencies' existing resources are not sufficient to meet the need.

Congress is facing a difficult financial climate, so we underscore the fact that money spent on WNS is a wise investment. First, preventing the spread of WNS will spare businesses the regulatory and other impacts of bat die-offs. Show caves – small businesses that provide jobs and contribute to local economies – could also be hurt by WNS. States with many show caves include Missouri, Pennsylvania, Tennessee, and South Dakota. In addition, implementing WNS response generates jobs. The USFS management of forests for bat conservation includes thinning stands of trees. The agency contracts with local businesses to harvest, haul, and process the trees for timber. Finally, conducting WNS research, management, and prevention now will reduce future expenses to the U.S. economy resulting from pest impacts to agriculture and forestry, businesses affected by additional bat listings, and the cost of listed-species recovery. In this case, an ounce of prevention truly is worth a pound of cure.

An issue of debate in the WNS community is whether caves and abandoned mines should be closed to prevent or delay spread of the disease. BCI supports strong preventative measures to reduce bats' risk of WNS. However, the mechanisms of and risk for WNS transmission among

sites is still not fully understood, and without this knowledge, it is difficult to evaluate the risks and benefits of cave closures as a disease-prevention tool. Given this state of knowledge, BCI advocates targeted regional or site-specific cave closures to reduce disturbance to hibernating bats, reduce the possibility of WNS transmission, and address other conservation priorities. As part of this stance, we support efforts such as combining research and monitoring activities into efficiently coordinated visits at hibernacula so as to limit disturbance to bats; following USFWS recommended guidelines for decontaminating clothing and equipment; and managing caves and mines through collaboration among natural-resource professionals, the caving community, the public and decision-makers at all levels of government. BCI also accepts the reality that agencies must sometimes make management decisions with incomplete scientific data. In such cases, an abundance of caution can be justified when the stakes are as high as they are with WNS. We understand that cave closures can impact cavers and other users, but we hope everyone can work together to achieve our common goal of stopping this devastating disease so we will not have to face such challenging decisions in the future.

Without the efforts of the Federal government, WNS will continue to spread across the country unchecked, killing even more bats than have already died. The consequent ecological and economic impacts will affect all of us as consumers, taxpayers, and residents of a planet further impoverished of biological diversity.

Thank you again for the opportunity to share BCI's position on this serious matter.