



White-Nose Syndrome Bulletin

Issue 2: July-August-September 2009

Purpose of the Newsletter

Greetings! This newsletter was developed with the intent to: 1. Keep those entities directly involved with the white-nose syndrome (WNS) investigation and the public current with the latest developing information; 2. To have an outlet where consistent information is given to all parties simultaneously; 3. To provide task groups updates or other ongoing scientific research; 4. To provide advisory and outreach updates, as well as other general information; and 5. To announce important dates to remember such as deadlines, meetings, conferences, etc. In no way is this newsletter confined to the five purposes listed above...ANY pertinent information regarding the WNS investigation can be published on a monthly basis. If you have news/updates to share, please send to Noelle Rayman, Assistant White-Nose Syndrome Coordinator, Region 5, New York Field Office, noelle_rayman@fws.gov.

Contents

Announcements:

FY09 Preventing Extinction RFP	1
FY10 State Wildlife Grants Competitive Grant Program	1
New WNS Publication	1

State Updates

Delaware Department of Natural Resources and Environmental Control.....	2
New Hampshire Fish and Game Department.....	2
New York State Department of Environmental Conservation	2
General Update: Reports of Dead Bats.....	2

Current WNS Distribution Map

.....	2
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Federal Updates

USFWS, Great Swamp National Wildlife Refuge	2, 3
USFWS, New York Field Office	3
USFWS, Region 5, Regional Office.....	3

Conference and Meeting Updates

WNS Science Strategy Meeting II	3,4
Senate Hearing	4
2009 WNS Symposium.....	4

Conference and Meeting Dates to Remember.....

.....	4
-------	---

Other Updates

Cave Signs	4
------------------	---

Outreach

Mammoth Cave.....	4, 5
New York State Biodiversity Research Institute Seminar Series.....	5
USFS, Eastern Region.....	5, 6

Press and Publications

Recent news articles/video for July, August, and September.....	5, 6
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FY09 Preventing Extinction RFP

The USFWS has completed review of proposals to fund research projects that focus on the investigation and management of WNS. Projects to be funded will be announced in early October. Priority research areas include finding the cause of WNS, determining how WNS is transmitted, determining treatment strategies, monitoring and surveillance strategies, containment strategies, rapid assessment protocols, susceptibility, captive propagation, captive management/rehabilitation, and the effects of WNS on bat

populations. Other priority research areas included to assist the FWS to conserve Federally-listed bats such as the Indiana, Virginia big-eared, and gray bats, as well as non-listed bats that could be used as surrogates for research.

FY10 State Wildlife Grants Competitive Grant Program RFP

The USFWS is announcing that the RFP for State Wildlife Grants, CFDA Number: 15.634, is posted on grants.gov. The announcement will be open October 1, 2009, to January 8, 2010. Last year, a total of \$940,870 was

awarded to many northeast states for WNS research and monitoring. <http://www07.grants.gov/search/search.do;jsessionid=kM0WKMkCnT2vHmP4s2K4MnMJxnZLXjhgnd0xw7kxbLhTpnjk2hyk!2132672093?oppId=49701&mode=VIEW>

New WNS Publication

Citation: Meteyer, C.U., E.L. Buckles, D.S. Blehert, A.C. Hicks, D.E. Green, V. Shearn-Bochsler, N.J. Thomas, A. Gargas, and M.J. Behr. 2009. Histopathologic Criteria to Confirm White-nose Syndrome in Bats. Journal of Veterinary Diagnostic Investigation.

21: 411-414. This article can be found at <http://www.fws.gov/northeast/wnsresearchmonitoring.html>

State Updates

Delaware Department of Natural Resources and Environmental Control – Division of Fish and Wildlife’s Delaware bat count gets set to take wing, July 6, 2009. <http://www.dnrec.delaware.gov/News/Pages/DelawareBatCount2009.aspx>

New Hampshire Fish and Game Department – WNS affects New Hampshire bats this summer; Peterborough colony decimated, July 10, 2009.

http://www.wildlife.state.nh.us/Newsroom/News_2009/News_2009_Q3/bats_WNS_July_09.html

New York State Department of Environmental Conservation (NYSDEC) – submitted by Carl Herzog (NYSDEC), along with Eric Britzke (U.S. Army Research and Development Center). Documenting apparent mortalities at hibernacula is an important way to track the effects of WNS on bat populations. Some species, though, cannot be adequately monitored in this manner. In an attempt to help address those shortcomings, state and federal agencies have begun monitoring bats during the summer maternity season on a broad geographic scale. The methodology, based on bat monitoring efforts used in Europe for a number of years, employs ultrasonic detectors to record echolocation calls of multiple species as the researcher drives a standard transect along public roadways. Particular care was exercised in the design of the protocol to make it possible for volunteers to collect the field data. To date sampling has taken place in at least 17 states with as many as 50 transects in a single state. It is hoped that repeating these surveys in future years will provide insight into the effects of WNS and other threats to bat populations.



Carl Herzog - NYSDEC



Carl Herzog - NYSDEC

Detectors used for acoustic transect sampling.

General Update: Reports of Dead Bats

Many reports came in regarding the discovery of dead and dying pups across several states during the summer months. Reports consisted of unusual bat mortality (i.e. higher numbers than one would expect), moribund bats, or unusual bat behavior (i.e. bats clinging to building facades or crawling on the ground during the day). Biologists reported multiple pup deaths in western Massachusetts and New Hampshire consisting of 12-30 emaciated pups dropping out of colonies with some adult mortality as well. In New Hampshire, landowners who have had bat colonies in their barns over the last 50 years were seeing large numbers of deaths for the first time. Biologists reported dead bats in the Midwest, as well as in the western states. Biologists in Oregon and Montana reported unusually high numbers of pup deaths. Anecdotal information was reported from the public through our Region 5 WNS Website. Many emails have reported

dead and dying bats from Tennessee, New Jersey, Virginia, Maine, Kentucky, New York, and Maryland.

Wildlife disease specialists at the U.S. Geological Survey’s National Wildlife Health Center have collected samples for necropsy and histopathology to determine the cause of the mortalities. It is unlikely that these deaths were caused by WNS as the dead bats were not reported to have any wing damage (i.e. lesions, holes, scarring) that have been typically associated with WNS in adult bats. However, additional research is needed to determine if WNS is transmissible between adults and their young. The more likely scenario is that, for the northeast at least, there was an increase in precipitation over the summer months from previous years and colder temperatures that may have made it more difficult for the adults to care for their young. Adult big brown bats were reported to have higher than usual numbers of twins, possibly making it difficult to take care of both pups due to the adverse weather conditions resulting in pups “dropping out of colonies.”

Current distribution map of WNS affected states:

http://www.fws.gov/northeast/whitenose/maps/WNSMapping_08-07-09_DS.jpg

Federal Updates

U.S. Fish and Wildlife Service, Great Swamp National Wildlife Refuge (GSNWR), NJ – submitted by Annette Scherer (New Jersey Field Office) and Marilyn Kitchell (GSNWR). Page 3 shows a summary table with the most recent year-to-year comparison of the capture efforts (maternity colony work) of several bat species at the GSNWR. The columns highlighted in yellow (2008-2009) reflect what was caught to-date in each of the last two years, before and after WNS. The most dramatic decline is found in little brown bats (*Myotis lucifugus*) captured this year as compared to past years.

Spring telemetry results showed that at least some of the GSNWR Indiana bats (*Myotis sodalis*) came from WNS affected hibernacula. Indiana bats did decline by a few individuals, but clearly not as dramatic as little brown bats. There was a noticeable increase in big brown bats (*Eptesicus fuscus*), while Hoary bats (*Lasiurus cinereus*) were newly observed for the refuge.

The field crew saw quite a bit of wing damage early in the summer (most with wing scores of 1), but did not see much as the summer progressed. There were a few big brown bats with wing damage, one with a score of 2, and not many northern long-eared bats (*Myotis septentrionalis*) showed damage. Notable captures this year were two hoary bats (a first), one big brown bat with a terrible case of what appeared to be mange (and a few others that seemed to be losing hair but not quite as badly), and a recaptured Indiana bat banded two weeks earlier with a pierced wing membrane where the band wore straight through (a first). Cal Butchkoski (Pennsylvania Game Commission) stated that hair loss is typically found in maternity colonies when lactation begins. Al Hicks (NYSDEC) states that pathology results indicated mites may be the cause of hair loss. Other scientific names referenced in the table: eastern pipistrelle, *Pipistrellus subflavus* and eastern red bat, *Lasiurus borealis*.

U.S. Fish and Wildlife Service (USFWS), New York Field Office – submitted by Anne Secord. The USFWS is conducting a study to evaluate whether contaminants may play a role in WNS or other mortality and adverse effects in bats. This study is being jointly conducted by the New York, Pennsylvania, Indiana, and New England Field Offices. We are evaluating pesticide use, particularly in New York, where data are more readily available, focusing on newer classes of pesticides that have been more recently used. We have submitted a number of New York bat samples for

Comparison of Great Swamp Bat Work 2008-2009					
	2006 GSNWR	2007 GSNWR	2008 GSNWR	2009 GSNWR	2009 Airport
Number of Net Nights	25	44	29	35	3
Number of Sites Netted	7	11	10	13	2
Number of bats caught	238	297	276	231	45
M. lucifugus	98	134	114	3	2
E. fuscus	63	75	82	151	34
M. sodalis	40	46	35	26	
M. septentrionalis	20	28	24	33	4
P. subflavus	8	5	8	8	
L. borealis	9	9	13	8	5
L. cinereus				2	

chemical analysis for pesticides such as neonicotinoids, pyrethroids and a variety of fungicides/herbicides. Additional samples from across the affected region will be submitted for chemical analysis once initial results are evaluated. We also have begun an effort to collect insect samples from bat maternity and swarm sites using various insect trapping methods (see photo at right). Samples will be analyzed for pesticides and other environmental contaminants.

U.S. Fish and Wildlife Service (USFWS), – submitted by Region 5, Regional Office.

Funded Research Projects Update: As of September 2009, the USFWS has allocated more than \$3.9 million for WNS work, including:

- \$1.4 million in fiscal years* 2008 and 2009 from the Endangered Species program for research into the cause and transmission of WNS and potential control measures.
- \$315,000 for a three-year investigation (starting in FY 2009) looking for a potential link between WNS and environmental contaminants.
- \$940,870 in state wildlife grants to 11 states for collaborative investigations into WNS, awarded in FY 2009.



Insect collection apparatus - Onandaga Lake, July 2009

We have proposed more than \$900,000 in WNS research through the U.S. Geological Survey's Science Support Partnership program; and we have evaluating grant proposals for \$800,000 in WNS research funded by Endangered Species. Grant awards will be announced by early October. * The Service's fiscal year runs from Oct. 1 through Sept. 30.

Conference and Meeting Updates
White-nose Syndrome Science Strategy Meeting II: May 27-28, 2009 – Biologists searching for solutions to WNS met in Austin, TX, to review the latest research results and discuss critical priorities for the next three years. A dozen researchers and 14 state and federal wildlife managers attended the WNS strategy session, which was sponsored by Bat

Conservation International, Boston University, Disney Rapid Response Fund, National Caves Association, the U.S. Department of Defense, and the National Park Service. Proceedings from this meeting are now available for download at:

<http://www.batcon.org/index.php/what-we-do/white-nose-syndrome/subcategory/468.html>

Senate Hearings: July 8, 2009 – Subcommittee on Water and Wildlife and Subcommittee on Oversight joint hearing entitled, “Threats to Native Wildlife Species.” WNS testimony was given by Gary Frazer, USFWS Assistant Director for Fisheries and Habitat Conservation and Bill Clay USDA-APHIS Acting Associate Administrator. Time – 46:33. Archived video is available at: http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_id=38009204-802a-23ad-4d13-f2bfbfd089682

2009 White-nose Syndrome

Symposium: August 11-13, 2009 – the U.S. Fish and Wildlife Service hosted a White-nose Syndrome (WNS) Symposium in Pittsburgh, PA. Seventy-two people, representing 33 nationwide partners from the Department of Interior, Department of Agriculture, Department of Defense, state natural resource agencies, Canadian agencies, universities, and non-governmental organizations participated in the event. The overall goal of the symposium was to advance WNS research and management through communication, facilitated discussion, and collaboration. The main objectives of the meeting were to update the WNS community on current research and management being conducted and planned; to develop the framework for a surveillance plan for WNS to be implemented during the fall season; to identify new strategies and improve existing plans for WNS management, research, and outreach; to expand participation and

collaboration, especially with those researchers/biologists working in the leading edge and unaffected states. There were several presentations on the first day, but the majority of time was spent in breakout sessions designed to accomplish specific tasks to move the investigation forward. To view the agenda and research updates, please visit <http://www.fws.gov/northeast/wnsabout.html>

Conference and Meeting Dates to Remember

November 1-4, 2009: 63rd Annual Southeastern Association of Fish and Wildlife Agencies Conference in Atlanta, GA. <http://www.seafwa2009.org/>

November 4-7, 2009: North American Society for Bat Research (NASBR) meeting in Portland, OR. <http://www.nasbr.org/meetings/39/portland/>

December 6-9, 2009: 70th Midwest Fish and Wildlife Conference in Springfield, IL. <http://dmr.state.il.us/MIDWEST/>

February 18-19, 2009, 2010: Southeast Bat Diversity Network Annual Meeting in Asheville, NC. <http://www.sbdn.org/meetings.html#anchor4>

February 19-21, 2010: 2nd International Berlin Bat Meeting: Bat Biology and Infectious Diseases, Berlin, Germany. <http://www.izw-berlin.de/de/veranstaltungen/index.html?sypm%20on%20bat%20biology/1Symposium%20on%20Bat%20Biology.htm~rechts>

March 9-11, 2010: Southeast Bat Diversity Network, Symposium on Conservation and Management of Big-eared Bats in the Eastern U.S. in Athens, GA. http://warnell.forestry.uga.edu/big_eared_bats/

March 22-27, 2010: 75th North

American Wildlife and Natural Resources Conference in Milwaukee, WI. http://www.wildlifemanagementinstitute.org/index.php?option=com_content&view=article&id=348&Itemid=61

April 25-27, 2010: 66th Annual Northeast Association of Fish and Wildlife Agencies Conference in Newton, MA. <http://www.neafwa.org/>

Other Updates

Cave Signs – Cave closure and WNS advisory signs have been ordered and printed for Alabama, Kentucky, Pennsylvania, Tennessee, Vermont, Virginia, and Wisconsin. Additional signs may be ordered in the future if funding is secured. **Please adhere to these closures and advisories to minimize the spread of WNS.**



Outreach

Mammoth Cave – Mike Armstrong (USFWS, Region 4) reported that he and Brooke Slack (Kentucky Department of Fish and Wildlife Resources) have been working with Mammoth Cave to set up outreach posters at the “Staging Area” for cave tours. A summer outreach specialist was hired through the duration of the summer tour season to answer questions about WNS, provide information, and to support the park if any individuals answer yes to the first three questions on

the “Attention” poster (see photos at right). The summer tour season covers approximately 80% of all Mammoth Cave visitations. For those individuals that answered “yes” to the three questions, they are asked to allow park staff to help them decontaminate whatever clothing/gear they had with them that had been in an affected state. Through this process, a couple of people were identified as having been in affected caves in affected states and were wearing the same shoes. The park has a couple of foot baths set up for individuals that “screened” as wearing the same shoes. Brooke stated that there was still a mix of people who knew about WNS and others who had not. Mammoth Cave is working to have a television streaming a WNS informational video.

New York State Biodiversity Research Institute Seminar Series – The New York State Biodiversity Research Institute (BRI) and New York State Museum sponsored a Biology and Conservation lecture series in October. Bat expert Al Hicks from the New York State Department of Environmental Conservation presented “White-nose Syndrome – the Darkest of Nights for North American Bats” October 7, 2009. Al spoke of the history, current status, and future conservation efforts regarding the WNS investigation.

U.S. Forest Service, Eastern Region, Milwaukee, WI – submitted by Becky Ewing, Regional Wildlife Biologist. The poster (page 6) was presented at the Great Lakes Bat Festival at the Milwaukee County Zoo August 28-29, 2009. There were hundreds of bat enthusiasts, families, and local residents that attended the event, of which, the majority of attendees had heard of WNS primarily through newspapers and television. The Midwest media outlets covered the cave

Bats Are Dying. Help Us Protect Them.

WNS is a disease that has been identified in the eastern United States for the first time. It has caused the deaths of thousands of bats. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states.

How can I help?

Screened from many organizations and agencies, including the National Park Service, have been working to protect the bats of WNS, and to help many of the bats that have died. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states. It is a deadly disease that can be spread by humans who have visited caves or mines in affected states.

Mammoth Cave/NPS

Attention!
Help protect our bats

You can help us slow or stop the advance of White-Nose Syndrome, a disease deadly to bats, by following the simple flowchart below.

Have you been in caves or mines in one of the shaded states below at any time during the last four years, for work or for recreation?

No → Enjoy your cave tour!

Yes → Are the caves or mines you visited outside the south-central Kentucky cave area?

No → Enjoy your cave tour!

Yes → Are you wearing or carrying with you any article you took into the caves or mines you visited in the affected states? (Clothing, footwear, jewelry, watches, flashlights, cameras, cell phones, etc.)

No → Enjoy your cave tour!

Yes → Visit the White-Nose Syndrome Station → Then → Enjoy your cave tour!

Shaded states: Maine, Vermont, New Hampshire, New York, New Jersey, Massachusetts, Rhode Island, Connecticut, Pennsylvania, Ohio, West Virginia, Virginia, Maryland, Delaware, Kentucky, Tennessee, North Carolina.

Mammoth Cave/NPS

closures very well back in April and May. The Battle for Bats: WNS video was also playing at the event for people to view.

Press and Publications
WNS News Articles and Video for July

Rutland Herald – Article regarding Stantec, Inc., to install five acoustic bat detectors on Grandpa’s Knob in Castleton, VT, to assist with monitoring the effects of WNS in Vermont.

[Maine firm to contribute research on bat syndrome](#)

USA Today – Article regarding Cory Holliday, a cave expert working for The Nature Conservancy in Tennessee, is taking part in a multiagency effort to protect bats from WNS.
[Bat-killing disease remains a mystery](#)

EcoWorldly – Article regarding heated bat boxes being developed by Justin Boyles and Craig Willis.
[Scientists Develop ‘Heated Bat Boxes’](#)

[to Help Sick Bats](#). The authors reported their modeling results and prospective solution in the March 5, on-line publication of *Frontiers in Ecology and the Environment*.

The Jacksonville News – Article: Jeff Gardner talks to Kiwanians about Talladega National Forest. <http://www.jaxnews.com/news/2009/jn-localnews-0519-jbacchus-9e19p1349.htm>

WNS News Articles and Video for August

Citation: Curry, A. 2009. Deadly Flights. *Science*. 325: 386-387.
Deadly Flights – Massive wind turbines seem to be killing more and more migratory bats, prompting research into these neglected creatures and efforts to minimize the toll. <http://www.sciencemag.org>

Kingsport Times News – Article regarding the Tennessee Wildlife Resource Agency calling for caves to be closed until 2010 as a way to help prevent the spread of WNS. <http://www.timesnews.net/article.php?id=9015694>

WNS News Articles and Video for September

CBS News – Video and article: Fatal Fungus Killing Bats at Alarming Rate <http://www.cbsnews.com/stories/2009/09/07/eveningnews/main5292292.shtml?tag=contentMain;contentBody>

Colorado Environmental Film Festival – The “Battle for Bats” video will be playing at the festival November 5-7, 2009. <http://www.ceff.net/> You can view this video at <http://www.fws.gov/northeast/wnsaudiovideo.html>

BU Today – Article regarding “Bat Man vs. White-nose – Tom Kunz is

White-nose Syndrome

A Wildlife Health Crisis



Over 50 federal and state agencies, universities, and conservation organizations are working together to find the cause of White-nose syndrome, and are actively looking for a treatment.



White-nose Syndrome has spread from New York to Virginia.

It is transmitted by bat-to-bat contact, but it is possible that humans are spreading the fungus to new caves.

Nearly 1 million forest bats have died in the last three years as a result of an affliction known as White-nose Syndrome.

A white fungus, likely introduced to the United States from Europe, can be found growing on the muzzles, wings, ears, and legs of affected bats.

These bats exhibit abnormal behaviors prior to their death:

- Wake more often and remain awake longer
- May exit the cave or mine during midwinter
- Lose almost all of their body fat



Little Green Bat with the characteristic white fungus around its muzzle. This bat was found roosting in the Greenay Tolt Mine in the Green Mountains National Forest, Vermont.

USDA Forest Service
Actively Contributing to the White-nose Syndrome Effort

Slowing the Spread of the Exotic Fungus
Emergency Closure of Caves and Mines on National Forests in the Eastern U.S.



Conducting Research
Genetic identification of the fungus
Culturing cave sediment samples to assess the presence of the fungus
Surveying summer bat populations

Spreading the Word
Production of the Film, The Battle for Bats: White-nose Syndrome
Watch it at www.cavotriota.com

fighting a killer disease” <http://www.bu.edu/today/2009/09/03/bat-man-vs-white-nose>

Mail Online - Stunning shots of thirsty bats swooping down for a drink from garden pond.
Read more: <http://www.dailymail.co.uk/sciencetech/article-1213851/Stunning-shots-thirsty-bats-swooping-lick-water-garden-pond.html>

Other Articles/Videos/Publications

Associated Press – Article: Endangered species’ DNA to be stored at American Museum of Natural History. This article is not specifically bat related, but could involve collecting bat DNA in the future. http://www.silive.com/news/index.ssf/2009/07/endangered_species_dna_to_be_s.html

Article was printed originally by [ens-newswire.com](http://www.ens-newswire.com) – “Scientists Untangle Multiple Causes Of Bee Colony Disorder” – A microscopic pathogen and pesticides embedded in old honeycombs are two major contributors to the bee disease known as colony collapse disorder.

<http://www.mafwa.org/documents/BeeColonyDisorder7-29-09.doc>

UFoxNews.com – “New Clue Found In Disappearing Honey Bees” – Researchers have a new clue to the collapse of honey bee colonies across the U.S, damage to the bees’ internal “factories” that produce proteins. <http://www.foxnews.com/story/0,2933,542361,00.html?test=latestnews>

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