



# The Echolocator

<http://wiatri.net/inventory/bats/index.cfm>

Volume 1, Issue 2

December 2011

## Save the Date

Next year's

## WISCONSIN BAT FESTIVAL

will be held Saturday, May 12, 2012 at Warner Park in Madison.

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## Bat Condo Built at Devil's Lake State Park

Heather Kaarakka

For many years, a large colony of little brown bats has roosted in the attic of the historic chateau on Devil's Lake's north shore. In spring of 2010, it was decided for the health of both the bats and the people using the building, that the colony should be excluded from the attic. With help from a professional excluder, and the Wisconsin Bat Program, the bats were successfully excluded and moved to the 19 bat houses the Bat Program installed in early April of this year.

Due to the future plans to reside the building the currently occupied bat houses are only temporary fixtures. The Park and the Bat Program have worked together to build the bat colony a brand new bat condo as an alternate home.

Bat Program & Parks staff, with the help of volunteers from the Park's friends group constructed the condo in early October. The interior of the bat condo contains 160 roosting chambers, similar to the narrow spaces inside a bat house.

You can see the bat condo on the north shore of the lake along the road to the boat landing. The current bat houses will stay on the chateau until winter of 2012, or spring of 2013. This will allow the bats to discover the bat condo on their own and make a smooth transition when the old bat houses are removed.

We encourage you to visit Devils Lake State Park and observe the evening exodus throughout the summer months. Watching 900 bats exit in 40 minutes is quite the spectacle! •

Many thanks go to volunteers Doug Quam, Dana Quam-White, Paul Kaarakka, Donna Meier, and Jyll Schultis for their help building the condo.



Bat condos like this one at Devil's Lake State Park can serve as important maternity colonies for thousands of bats during summer months.

## Bat Counts in the Elroy-Sparta State Trail Tunnels

Jennifer Schehr

Three former railway tunnels punctuate the Elroy-Sparta State Trail. In fact, you can walk through these (very) dark historic sites if you visit the trail. What you may not have known is that each year the three Elroy-Sparta trail tunnels serve as important bat hibernacula for all four of our state's cave bat species. Historic wooden doors are closed at the ends of each tunnel each winter, buffering temperatures enough to provide suitable

hibernation conditions for large numbers of bats. In cooperation with the Friends of the Elroy-Sparta State Trail and Kickapoo Valley Reserve, the WI Bat Program recently received a Citizen Based Monitoring grant to develop interpretive signage relating to White nose syndrome (WNS) for the Elroy-Sparta State Trail tunnels and to conduct fall bat counts in the three tunnels located along the trail.

Citizen monitoring of the tunnels at the beginning and end of the hibernation period will provide the necessary data to determine when different bat species enter hibernation within the tunnels. The resulting data will be used to help determine best management practices for the tunnel hibernacula and serve as important baseline information for hibernation trends within the state.

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## The Pulse— Words From Wisconsin's Bat Ecologist

David Redell

Hello bat crew volunteers, friends interested in reports from the bat world, colleagues, cave and mine hibernacula landowners, and our valued WI Bat Conservation Fund donors. I am using this space to discuss the current pulse of the WI Bat Program. My intent for this and future echo-news is to give you an update on what we are currently experiencing in the office and in the field, provide a summary of the past and upcoming seasons work, and invite you to join us for any upcoming events. As always, I am interested in hearing feedback about what you would like to see reported in future issues as well as encourage you to relay all bat related stories or photographs that you are willing to share. We will try to post as many stories as we can in each newsletter. Send your questions to any one of our crew and we will respond in our next issue.

We are at the change of seasons and entering November's start of hibernation. Most of the tree bats have moved out of

and through the state and they are most certainly enjoying more comfortable weather than what we are experiencing here in Wisconsin. The acoustic and roost monitoring projects experienced another successful summer season and we are still feeling the relief of last winters surveillance results of not detecting White-nose syndrome (WNS). After the herculean effort that our crew completed last year in finding nearly every hole in the ground that may serve as a hibernaculum, we are positioned quite well for an efficient underground surveillance and monitoring field season this winter. Our office planning has been ongoing to prioritize and schedule site visits, identify equipment needs and site specific safety procedures, timelines, and prepare our implementation & response strategy should we happen to detect the disease within any of our hibernacula. There is an extensive amount of work that goes with all of this but I'm happy to report that our hardworking crew remains dedicated to our goal of preventing and minimizing the spread of the  
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## Fall Swarm Field Trip at Neda Mine

Charlie Luthin (Executive Director, Natural Resources Foundation of Wisconsin)

Words are inadequate to express the physical and emotional sensation of having thousands of bats whisking and whirling around you as they emerge from their safe underground haven for a night of foraging (and mating!). My wife, Nancy Piraino, and I had that experience at Neda Mine near Horicon in early September at the invitation of the DNR Bat Crew, together with a handful of individuals who had come from all corners of the state. We are among the lucky few who will ever have that powerful and enriching experience—hearing and feeling the wind of the bat wings as

they come out of their cave entrance to begin their nighttime activities, watching their silvery silhouettes as they flit and dodge around us, pirouetting through the moonlight.

We learned from Dave Redell, DNR Bat Biologist, and his colleagues that these bats had only recently come from throughout the region and are not year-round residents at Neda Mine. They congregate “swarm” in the fall at the Mine, still emerging each evening at sunset to fill their bellies before the seasonal cold temperatures reduce the insect abundance and

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**DNR staff navigate through the maze of underground tunnels at Neda Mine during a winter WNS surveillance visit. The former iron mine is a State Natural Area, hosting 143,000 hibernating bats each winter. (L to R: Dave Redell, Bob Bultman)**



## Bat Roost Monitoring Project Update

Heather Kaarakka

It was another successful season for monitoring the little brown and big brown colonies living in bat houses, attics and barns around the state. Several new sites were added to the database giving us a total of 62 monitored roosts in Wisconsin. The majority of the sites are on private land, however we continually learn of roosts on public land. If you do not have a roosting colony on your land, but would like to participate in monitoring, contact Heather Kaarakka and she can find you a public site to monitor.

The title of largest known roost in the state continues to be held by Devils Lake State Park, which housed over 900 bats in

summer of 2010, and over 600 in summer of 2011. However, there are several other sites in the state that house between 400 and 600 bats including Welcker's Point in Peninsula State Park, and several privately owned sites.

In 2010 and 2011 16 sites were monitored over three times in one year. This gives us useful data, because the number of bats exiting day-to-day can vary greatly depending on weather and other conditions. Having multiple data points allows us to better estimate the number of bats that actually inhabit a roost. The project will continue in April of 2012. If you know of a roosting colony of bats please contact me. •





## Cave & Mine Catalogue Update

Jennifer Schehr

The Wisconsin Cave & Mine Catalogue is a single database that will ultimately combine precise cave location information and site specific environmental parameters, including species, bat numbers, temperature, maps, photos, and general condition information. Last year we identified approximately 120 open cave/mine sites to be investigated. Upon visiting the sites we were able to identify specific bat conservation needs for certain locations. After wrapping up last winter's intense WNS surveillance efforts at the Catalogue locations we could then focus on individual projects at several of these sites in addition to our busy summer field work schedule.

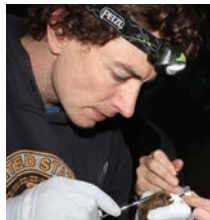
Working with private landowners and land managers of the Catalogue sites has been truly rewarding. The majority of hibernacula in Wisconsin are privately owned, making cooperative partnerships with landowners extremely important for accomplishing bat conservation goals. We are truly grateful for the general interest, outright enthusiasm, and overwhelming cooperation that the vast majority of hibernacula owners have shown. Receiving volun-

tary cooperation from 90% of Wisconsin's hibernacula owners allowed us to gather a great deal of new data for the Catalogue.

New data collected last winter has been used to prioritize the state's hibernacula based on total numbers of bats present and species richness at each site. Categorizing hibernacula in this way guides our WNS surveillance efforts for this winter during the limited time frame in which bats may exhibit the presence of the WNS fungus or symptoms of WNS (Dec– May). We are able to focus our efforts on early detection of the disease at the most important sites.

Despite the many caves and mines located last year, there is still a great deal we don't know about our state's hibernacula. This fall we've been playing "history detectives", tracking down leads from papers and historic bat data in order to locate a few remaining "lost" cave & mine sites. Thanks to these efforts we recently added two new Priority I hibernacula to the Cave & Mine Catalogue. We will continue to gather information about other sites for the next month or so.

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## Acoustic Monitoring Update

J. Paul White

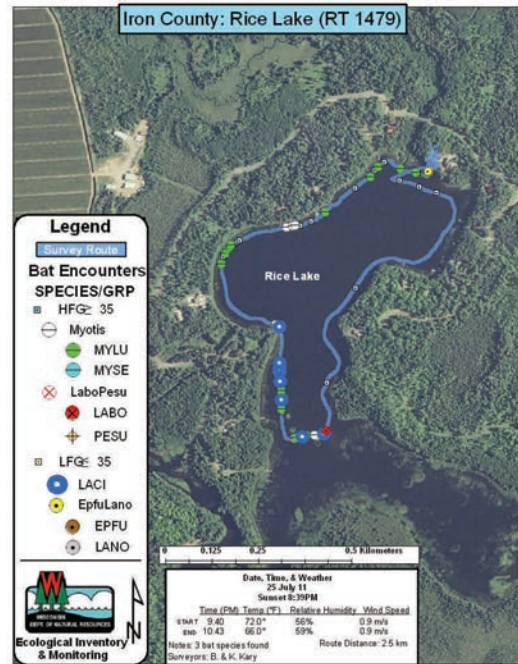
First and foremost, THANK YOU to all the volunteers and regional coordinators that have spent their nights chasing bats for the acoustic bat monitoring project. Lately we have been producing maps and sending them out to coordinators for distribution. While we currently have a backlog of data that needs to be analyzed, we should be up to date with all the citizen-collected data by the beginning of December. What does this mean for you? It means that once we have analyzed all the surveys turned in from 2008 through 2011, we will now be able to bring you results in the form of maps within a 1-2 week period from when your survey is uploaded. Hopefully this faster turnaround time will mean a continued effort from all those involved. This continued effort will be important as ever because as White-nose syndrome creeps closer to our borders, acoustic surveys will serve an important tool to measure the impact of WNS on the bats of Wisconsin.

199 volunteer bat surveys were uploaded in the 2011 season, which is up from last year. A cold spring slowed initial monitoring efforts, but as the bats

finally emerged from their wintering sites so did our volunteers with a strong effort in both the summer and fall seasons. Our bat monitoring volunteer base has continued to grow every year. To date, over 500 people from across the state have taken part in an acoustic bat survey. Our most active coordinators in the 2011 monitoring seasons were the Urban Ecology Center (Milwaukee), Trees for Tomorrow (Eagle River), North Lakeland Discovery Center (Manitowish Waters), Beaver Creek Reserve (Fall Creek) and Hunt Hill Audubon Sanctuary (Sarona).

The Wisconsin Bat Program recently received an anonymous donation to purchase 5 additional acoustic bat detection systems. We have found locations for three of the five systems but still have two available for interested parties. In an effort to fill in monitoring gaps we are currently looking for coordinators in the Lacrosse area and in the central part of the state, perhaps in Marathon or Portage counties.

The three bat detection systems will be placed in Eagle River at Trees for Tomorrow (TFT), Crex Meadows DNR center in Burnett County and Whitefish Dunes State Park/Ridges Sanctuary in Door County. •



Acoustic survey conducted by boat in Iron County.

## Cave is Closed to Protect Bats

Charlie Preusser (Originally published in the Crawford County Independent 9/15/2011)

A well-known local cave has been closed to the public, as a measure to help save the bat population that uses it for winter hibernation.

The Star Valley Cave, located in Utica Township, has long drawn the interest of cave explorers locally and, sometimes, not so locally. The entrance to the cave is essentially a hole in the ground on property owned by Hans Verick. A couple of weeks ago, Verick with help from DNR workers and some neighbors installed a steel gate that allows the bats free access to the cave while keeping humans out.

The move to install a “bat friendly gate” became necessary as a response to combating a fungal disease, known as white nose syndrome, that has devastated bat populations in other parts of the country, according to Jennifer Schehr, a Cave and Mine Spe-



**L to R: David Redell, Hans Verick, Tom Kesselhon, and Gary Emerson work to install a bat-friendly gate over the small entrance to the Star Valley Cave.**

cialist in Ecological Inventory and Monitoring with the Bureau of Endangered Resources Wisconsin Department of Natural Resources.

The disease has been found as close as 200 miles from Wisconsin at sites in Missouri, Indiana and Ontario, according to Schehr.

White nose syndrome was first identified in New York and Vermont in 2006 and 2007. The result there has been devastating. A recent study predicted with a 99 percent chance of certainty that the little brown bat will become regionally extinct in the Northeast within the next 16 years.

Bats suffer from disease more than some other mammal species because of some unique characteristics. Bats are long-lived for their size and produce just one offspring annually.

They also tend to be concentrated in just a few places particularly during their hibernation from October to May. There are four species of bats in Wisconsin.

Why is the survival of bats of particular importance?

Well, they are the primary predator of night flying insects and that includes mosquitoes.

“They are the major consumer of agricultural and forest insect pests,” Schehr noted. “A recent economic assessment judged bats’ value to agriculture in the state as between \$658 million and \$1.5 billion.”

The DNR bat expert said that without bats, farmers face an increased cost in pesticides to try to control the flying insects, which bats eat. The impact on organic farmers with a more limited access to acceptable and affordable pesticides can be even greater. Some of the agricultural pests controlled by bats include cucumber beetles and the corn rootworm, in its larval stage.

“Organic farmers rely on bats,” Schehr said. “I really can’t say what a world without bats would be like.”

Why are caves like the one in Star Valley so important?

The caves serve as bat hibernacula from October to May. While bats may disperse to outbuildings, trees and other places to roost during the summer season, they return to places like the Star Valley cave with moderated temperatures during the winter months to hibernate.

The local cave, like many others, was gated because of a fear that people could bring the fungal disease known as white nose syndrome to the cave on clothing or shoes, particularly if it had been worn in other caves.

Beyond the transference of the dreaded bat disease, Schehr pointed out that the mere presence of people, even engaged in quiet activity, may unnecessarily arouse bats causing them to use 30 to 60 days worth of precious fat reserves that are necessary to sustain them until their insect diet is again available.

“Bat hibernacula that become gated with bat-friendly gates often see a dramatic increase in hibernating bat numbers,” Schehr noted.

The DNR has been in contact with a large number of landowners around the state in an effort to preserve bat hibernacula and keep it free from white nose syndrome. The department works with resources in a variety of ways to provide help to the landowners, according to Schehr.

Another good thing in combating the disease and preserving tranquil bat hibernacula is that most people don’t know the location of caves and mines, Schehr noted.

“We are interested in locating large numbers of bats, either in summer roost habitat or in caves and mines,” Schehr said. “If people have questions or want information, they can call the bat hotline at 608-266-5216 or e-mail [DNRbats@wisconsin.gov](mailto:DNRbats@wisconsin.gov)”

For his part, local property owner Hans Verick is satisfied with the bat-friendly gate placed over the entrance to the Star Valley Cave on his property in Utica Township.

“I am in full support of it,” Verick said when contacted about the work done on the entrance of the cave. Verick, along with his neighbors John and Roger Weeks, worked side-by-side with the DNR personnel in installing the bat-friendly gate.

Verick hopes by telling this story to the public now, people, who don’t realize the cave is closed and gated, will be saved a trip to the site. He believes the lack of visits will help in not waking the bats and disturbing their hibernation.

Verick said while some cave visitors left garbage and graffiti  
(continued on page 6)

## Caving with Wisconsin Bats— how new rules affect caving activities

Jennifer Schehr

### **New rules related to bats & White-nose Syndrome (WNS) in Wisconsin**

- Wisconsin's four cave (hibernating) bat species have been listed as threatened species.
- *Geomyces destructans* (the fungus associated with WNS) is now listed as a prohibited invasive species.
- The state of Wisconsin has adopted provisions to ss. NR 40.04 and 40.07 (the invasive species law) relating to early detection and prevention of the spread of WNS due to anthropogenic activities.

#### **A plain language analysis of these provisions follows:**

1. For purposes of early detection, with permission or pursuant to an inspection warrant, department staff may access caves and mines in order to monitor, survey, and inspect for the presence of *G. destructans*.

2. Equipment, gear, clothing and other objects may not be brought or placed into or near a cave or mine if they have been in or near a cave or mine located outside of Wisconsin.

3. Equipment, gear, clothing and other objects that have been in or near a cave or mine located in this state must be cleaned following department-approved protocols before they can be brought into another cave or mine in this state.

4. The cleaning process for all equipment, gear, clothing and other objects that have been in or near a cave or mine in Wisconsin must begin immediately upon exit following department-approved protocols.

5. All equipment, gear, clothing and other objects that will be or have come in contact with bats (including, but not limited to nets, traps, weighing tubes, bat bags, wing punches, rulers, clothing, gloves, electronic equipment and exclusion materials) and all individuals handling bats must be decontaminated prior to and immediately after contact.

6. Owners and operators of active mines and of commercial caves and mines must ensure that individuals entering or leaving their caves or mines comply with department-approved cleaning protocols.

7. Owners and operators of certain caves and mines must develop and implement a department-approved, site-specific plan setting out practices that they will follow for the prevention of the introduction and transmission of *G. destructans*.

### **How the listings & new rules affect cavers**

Landowners of caves and mines with bats are responsible for not allowing the knowing transfer or introduction of the prohibited WNS fungus to their property. Many private cave and mine landowners statewide have partnered with the Department in WNS prevention. Many privately owned caves and mines are currently closed to caving activities at request of the landowner in an effort to prevent any risk of human assisted transfer of the WNS fungus. Landowner permission should always be sought prior to each caving trip.

Even quiet activity may unnecessarily arouse bats from hibernation.

Frequent arousals of bats can cause them to use up valuable energy reserves, which could lead to increased susceptibility to diseases such as WNS and even death (constituting take). It is illegal to take, transport, possess, process or sell any wild animal that is included on the Wisconsin Endangered and Threatened Species List without a valid permit. Caves and mines that serve hibernating bats should not be entered while the bats are hibernating (October-May) to avoid unnecessary disturbance.

Cavers may not use gear that has been used in a cave/mine outside of Wisconsin in a cave/mine within Wisconsin. Caving gear should be dedicated for use in Wisconsin only and should be stored separately from gear dedicated to out-of-state caving activities.



**DNR Bat Program staff take extra precautions during decontamination procedures in the field because they risk transferring WNS between the many sites they visit. (L to R: Bob Bultman, Melissa Ponik, Jennifer Schehr)**

**“When storing or transporting dirty caving gear ensure steps are taken to avoid contaminating clean items. For example, while in storage or in a vehicle gear should remain in a sealed container; after caving dirty gear should be removed outside of the vehicle and placed in a sealed container for transport to an area where it can be decontaminated.”**

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**Cave Closed** (continued from page 4)

in the cave, other visitors were very responsible to the point of bringing garbage out of the cave. After posting and signing the cave against trespassing, Verick saw the gate as the next step in securing it and the bats inside from further disturbance. •

A hearty thank you to volunteers Hans Verick, Roger Weeks, John Weeks, Tom Kesselhon, and Gary Emerson for their help building and installing the cave gate.

**Right: Looking up through the entrance to Star Valley Cave at Tom Kesselhon testing the new bat-friendly gate, which will still allow DNR staff to conduct WNS surveillance in the cave.**

**Fall Swarm** (continued from page 2)

induce hibernation. The mine, with its miles of underground tunnels and but a few openings, serves as the winter home to these winged mammals. Due to its critical importance as the largest bat hibernaculum in the state, Neda Mine has been declared a State Natural Area, and unescorted (by DNR personnel) visitors are not allowed to enter the property.

We learned that evening, as well, that there is a peril faced by the bats at Neda, and throughout the state and country. White-nosed syndrome is a fungal disease that has wiped out entire populations of bats in eastern US caves, and the lethal disease is working its way into the Midwest. The DNR bat team is monitoring known Wisconsin populations of bats for the occurrence of this disease. So far, it has not been detected in Wisconsin. Since bats come from throughout the state to the Neda Mine, this enormous population of winter-

ing bats is particularly vulnerable to potential infestation.

Why were we so lucky to view the bat swarm that lovely evening? We were among a group of folks who participated in the DNR's "WI Bat Festival" in Madison (co-hosted by my organization, Natural Resources Foundation of Wisconsin) last spring, and we all made donations toward the permanent "Bat Fund," an endowment created by the Foundation to provide perpetual support to the DNR Bat Program. Our names were drawn from a group of donors to experience the fall swarm during the special trip to Neda Mine. What an enchanting treat it was to be part of the bat swarm on that clear and calm night, at the largest bat hibernaculum in the state! •

**Did you know?**

**A single Little brown bat can catch more than 1,000 mosquito-sized insects in just one hour!**

**Cave & Mine** (continued from page 3)

Planning and coordinating the winter field season is keeping us busy at the moment. Contacting landowners and scheduling visits that will take us to 120 locations in nearly every corner of the state between January and March is an enormous task. Additionally we need to coordinate our limited staff, equipment, safety plans, and decontamination procedures so we can be as thorough, safe, and efficient as possible.

In other news, we have a super group of highly dedicated volunteers who have been conducting bat counts in the tunnels of the Elroy-Sparta State Trail. They've braved the cold, wet tunnels and sore neck muscles (from a near mile walk while looking straight up at the ceiling) week after week in order to gain information about when bats enter those particular hibernacula during the fall.

We are anxious to begin development of a "cave stewards", Citizen Based Monitoring group consisting primarily of hibernacula owners or citizens who have land adjacent to hibernation sites who will be trained in WNS "entrance surveillance" techniques later this winter. Additionally we are planning informational meetings for landowners in areas surrounding our largest hibernation sites in order to request their help in reporting unusual bat behaviors associated with WNS and answer their questions.

**Left: Coordinating winter WNS surveillance visits in adverse underground conditions is a time consuming but necessary process because it means minimal disturbance to hibernating bats when the "crew" enters the hibernaculum. (L to R: Jennifer Schehr, Paul White, Anna Rossler, Andrew Badje)**

## THANK YOU!!!

The following volunteers contributed greatly to the program with their help conducting acoustic surveys, conducting maternity roost counts, helping at the Wisconsin Bat Festival, or helping with other field work. We apologize if we've inadvertently missed anyone.

Lynn Ackley  
Alane & Jim Agens  
Tim Allen  
Xavier Al-Mateen  
Peter Altenbach  
Cary Anderson  
Iler Anderson  
Angela Anderson  
Paula Anich  
Howard Aprill  
Jane Arps  
Karen & Mike Austad  
Thomas Baden  
Andrew Badje  
David Balestri  
Anne Ballman  
Jackie Bassett  
Alyssa Beck  
Ismat Bhuiyan  
Andria Blattner  
David Blehert  
Liz Boeckmann  
Kit & Gary Bogenschneider  
Julia Bower  
Owen Boyle  
Tyler Brandt  
Arie Brenner  
Chris Brunner  
Eric Brunner  
Bob Bultman  
Jorja & Jeff Burke  
Sharon Bussard  
Trevor Butkiewicz  
Deanna Byrnes  
Rob Cahalan  
Cullom Cahill  
Jennifer Callaghan  
Tom Carlson  
Don Carpentar  
April & Edward Carroll  
John Chancellor  
Josh Chrisman  
Nancy Christel  
Ronan Christman  
Stacie & Ben Clark  
Kelsey Clinton  
Jeanne Coffin  
Chris Coleman  
Cayla Cook  
Kelly & Ahren Crotty  
Mari Dallapiazza  
Jo Desmond  
Nancy & John Diekelmann  
Cindy Dillenschneider  
Diana & Jay Dombrowski  
Gary Dunsmoore  
Jeff Durbin  
Rebecca Dwyer  
Robert Eady  
Jim Eldhuber  
Gary Emerson  
Rhonda Enge  
Ann Engelman  
Eric Erdman  
Sara Exum  
Jack Fedell  
Jamie Fedell  
Stephanie Franczak

Nate Frenczak  
Paul & Mazie Fretschel  
L. Frey  
Lainet Garcia Rivera  
Kati Garness  
Rich Geboy  
Jeanna Giese  
Norm Gunder  
Katie Halmo  
Ben Hammelman  
Marilyn Hansotia  
Victor Harley  
Kathleen Harris  
Sam Hein  
Thomas Heindel  
Jeffrey Henderson  
Whitnee Herrling  
Gwen Herrewig  
Julie & Gil Hoel  
Steve Hoffman  
Sue Holloway  
Jim Holsworth  
Bob Holt  
Steve Horvath  
Jeff Huebschman  
Steve Hunger  
Jill Hunger  
Anna Jahns  
Terri & Ray Jay  
Glen Johnson  
Karen Johnson  
Licia Johnson  
Ben Johnston  
Heather Kaarakka  
Paul Kaarakka  
Rita & Bob Kary  
Jeanette Kelly  
Erin Kelsey  
Ronan Kerl  
Tom Kesselhon  
Laura Kirch  
Errin Koehler  
Tracey Koenig  
Maria Kopecky  
Tina Kroening  
Jeff Lang  
Ken Lange  
Liz Lavender  
C. Lee  
Lisa & Ted Ludwig  
Mark Lukow  
Charlie Luthin  
Kaitlyn Lynch  
Dennis Mack  
M. Mallum  
Anna & Jeff Mares  
Alan Martens  
Mark Martin  
Cathy Martinelli  
Laura Martinelli  
Pam & Patrick McGranahan  
Donna Meier  
Jill Metcoff  
Rob Mies  
Jessie Miller

Mick Mlinar  
Cora Mollen  
Joey Moore  
Pat Morton  
Carol & Don Nelson  
Nikki Nelson  
Nicole Nelson  
Josh Nemec  
Caitlin Newman  
Hank Nisiewicz  
Rich Novy  
Laura Olah  
Laurie Osterndorf  
Jane Ostrenga  
Rori Paloski  
Hannah Panci  
Andy Paulios  
Melinda Pearce  
Kallie Pechacek  
Mike Peczinski  
Phil Peterson  
Brittany Pietrantonio-Davis  
Peggy Popp  
Shana Popp  
Cathy Prescott  
Kat Prince  
Jessie Pucel  
Taylor Pulvermacher  
Doug Quam  
Dana Quam-White  
Lillis & Bill Raboin  
Nathan Ramsey  
John Randolph  
Mark Rasmussen  
Liz Rasper  
Jane & Dale Reilley  
Kate Reis  
Mike Reis  
Anne Reis  
Katie Roehl  
Jill Rosenberg  
Noreen & Lloyd Rossa  
Anna & Shawn Rossler  
Maria Sadowski  
Margaret Sarafiny  
Larry Sauer  
Jakki Saunders  
Jessie Schalkowski  
Jennifer Schehr  
Dave Scheider  
Lisa Schelling  
Al & Kathy Schema  
Mark Schleicher  
Steve Schroeder  
Jyll Schultis  
Matt Schumaker  
Gregor Schuurman  
Jonathan Seaman  
Jodi Sedlock  
Jessie & Jason Sevener  
Quita Sheehan  
Frank Shepard  
Joe Shepard  
Jamie Shorts  
Alex Singer  
Pam Skaar  
Willam Sloey

Anne Small  
David Snell  
Zach Snell  
Jessica Soine  
Mike Solymossy  
G. Sonnier  
Kate Stewart  
Justin Strawther  
Heather Stricker  
Jake Struensee  
Joshua Sutton  
Bryan Sysocki  
Mary Szepi  
Denise Thornton  
Kim Tisler  
Jim Toth  
Catherine Tracy  
D. Trest  
Marie Trest  
Bethany Vanderhoof  
Tim Vargo  
Michelle Verant  
Hans Verick  
Anna Vodenlich  
Troy Walters  
Melissa & Jay Warner  
John Weeks  
Roger Weeks  
Kay Wegner  
Deb Weitzel  
Emily Wendorff  
Sarah Western  
Angela & Paul White  
D. Wilcox  
Tim Wilder  
Linda Winn  
Dave Winston  
David Wittlinger  
Tara Woodman  
Tracy Woodman  
Jackie Yearly  
Lee Zelasko  
William Zimmerman  
Megan Zopfi

Carthage College Biology Students  
Conserve School Biology Students  
Northland College Biology Students  
UW-Platteville Biology Students

**WAYS TO GET INVOLVED**

The Wisconsin Department of Natural Resources' Wisconsin Bat Program relies heavily on grants and funding support from citizens who are interested in bat conservation. Get involved and help Wisconsin's bats in one of several ways:

- Become an acoustic monitor
- Conduct a summer roost count
- Put up a bat house in your yard
- Help out at the WI Bat Festival
- **Donate** to the *Wisconsin Bat Conservation Fund*— your gift is tax deductible (<http://www.wisconservation.org/>)

### Elroy-Sparta State Trail *(continued from page 1)*

Ben Johnston, a volunteer bat counter for the project, says, “bat counting is in some ways better than crane counting, simply that I don’t need to be up at 5 am.... Bat counting is nice in that we can count any time, during the day light hours. If the outside weather is bad, at least the tunnel remains the same...dark and drippy. I know what to expect every time.”

Both people and bats use the tunnels. Educating the public about WNS prevention is needed due to large numbers of human visitors that travel through the hibernacula each season. WNS prevention consists of educating visitors about preventing human transmission of WNS (i.e.



**L to R: Volunteers Karen & Mike Austad and Mary Szepi conduct a bat count in one of the Elroy-Sparta State Trail tunnels.**

not transferring clothing or gear between caves and the trail tunnels) through interpretive signage. The signs will be placed at ten parking/ access points for the trail and fliers will be distributed by trail pass vendors. Johnston often encounters people biking and hiking on the trail while conducting counts, “most people ask a question like ‘are you looking for gold?’ or ‘did you lose something?’ They seem to want to know what we are doing...[some] seemed quite educated on bats and aware of WNS.”

Specific data related to the times at which bats enter hibernation may be critical to managing bat populations after the anticipated introduction of WNS to Wisconsin hibernacula. Data loggers that record changes in temperature and humidity have been installed in the tunnels and will provide information about bat hibernation needs and could be critical in understanding the reasons why some hibernacula appear to be more affected by WNS than others. •

### Caving *(continued from page 5)*

When storing or transporting dirty caving gear ensure steps are taken to avoid contaminating clean items. For example, while in storage or in a vehicle gear should remain in a sealed container; after caving dirty gear should be removed outside of the vehicle and placed in a sealed container for transport to an area where it can be decontaminated.

Most commercial cave & mine sites in Wisconsin have developed WNS prevention plans in cooperation with the Department and do not allow visitors to wear clothing or gear on tours that has been in other caves or mines, even if it has been washed. These sites request that such items be left at home or in a vehicle during the visit and can also provide decontamination sprays for shoes if needed.

Further information about the listings and rules may be found online at <http://dnr.wi.gov/org/land/er/bats/>. Please contact the Wisconsin Bat Program directly with specific questions: 608-266-5216. •

### **Bat Friendly Tourist Caves & Mines**

*Wisconsin sites participating in WNS prevention through education, visitor screening, and dedicated gear use.*

#### **Badger Mine & Museum**

[www.shullsburgwisconsin.org/shullsburgbadgerminemuseum](http://www.shullsburgwisconsin.org/shullsburgbadgerminemuseum)

#### **Cave of the Mounds**

[www.caveofthemounds.com](http://www.caveofthemounds.com)

#### **Crystal Cave**

[www.acoolcave.com](http://www.acoolcave.com)

#### **Eagle Cave**

[www.eaglecave.net](http://www.eaglecave.net)

#### **Ledge View Nature Center**

[www.co.calumet.wi.us/departments2.iml?dept\\_id=219](http://www.co.calumet.wi.us/departments2.iml?dept_id=219)

#### **Maribel Caves County Park**

[www.maribelcaves.com](http://www.maribelcaves.com)

#### **Platteville Mining Museum**

[www.mining.jamison.museum](http://www.mining.jamison.museum)



**The Pulse** (continued from page 2)

disease through our state. I do not hesitate to declare that we have the best bat crew in North America. Our job, we willingly accept, is to conserve and maintain this valuable natural resource for generations to come.

WNS research results continue to provide important information that will help us consider new management options. For example, research has now confirmed that the fungus *Geomyces destructans* is in fact the cause of WNS. Demonstration of causality is an instrumental step in guiding management actions to preserve bat populations against the novel threat posed by this devastating infectious disease (Lorch et al 2011). Another exciting study released this year indicates that infected bats removed from hibernacula and brought up to room temperature where they could receive supportive care of food and water were able to shed the fungus and its detrimental effects (Meteyer et al 2011). However, there are many follow up questions and we may ultimately pursue them here in WI to determine if this may be a possible treatment option for WNS affected bats when the disease is detected in the state.

I am often asked why bats are important and what we can expect to happen if their populations are drastically reduced or if they become extinct. I suspect these questions are from individuals that want or need an answer explaining how it may directly affect themselves or humans in general. Until recently, putting a monetary value on bats ecosystem services has been difficult. However, here is some news you may relay to your friends as well as local and state politicians: a team of scientists conducted an economic assessment quantifying the importance of bats and estimated the annual value of bats to the agricultural industry in North America to be between \$3.7 billion and \$53 billion. For Wisconsin alone, they calculated that the value of bats' consumption of insect pests equates to between \$658 million dollars up to more than \$1.5 billion dollars per year. These figures are the annual avoided-cost value that bats bring to the ecosystem that may otherwise be spent on applying chemical pesticides to crops in Wisconsin (Boyles et al, 2011). Organic farmers do not have this as an alternative option.

In future newsletters, we will provide space for 1) Reader submissions and questions, 2) Bat equipment wish list, 3) All volunteer opportunities in addition to the acoustic and roost monitoring projects, and 4) Introductions to the Bat Crew.

As you know, we are at a critical time in planning for bat conservation needs. We offer three ways for supporters to contribute and hope you are able to find one that suits you best. First, you can sign up to learn how to use a bat detector and conduct acoustic surveys in the state near you. Second, you can install and monitor a bat house or volunteer to monitor any known bat roost. Third, show your commitment to helping protect our bats. That is, you can support the WI Bat Program when you donate funds to our Wisconsin Bat Conservation Fund. This is a conservation endowment that will apply your tax-deductible donation to provide funding in perpetuity to the bat program. After looking at the list of current donors, I see that there are some of you on this list that have made very generous donations already. We all sincerely thank you for your continued support. If you are able to contribute even a small amount to this fund, please contact myself David.Redell@Wisconsin.gov or contact the Natural Resources Foundation of WI and let them know you would like to contribute to the Bat Fund. PO Box 2317, Madison, WI 53701-2317 · (608) 264-6267 wisconservation.org. Until next time, thank you. Dave. •

**Did you know?**

**A recent economic assessment quantified the value of bats to Wisconsin agriculture through consumption of insect pests. The figure equates to \$658 million up to more than \$1.5 billion dollars per year!**

**PARTING SHOTS**

**Above: Field work continued this fall as crew members continued searching for unknown bat hibernacula. The work involves a variety of challenges that take place in near total darkness.**

**Below: Little brown bats hibernate in dense clusters deep underground at Bay City Mine during last year's hibernation season.**



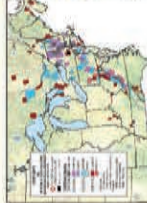
# Wisconsin Bat Program

Wisconsin Department of Natural Resources, Bureau of Endangered Resources, Ecological Inventory & Monitoring Section



## Bats Are Important

- Bats are under-studied, long-lived, reproduce slowly, and concentrate at relatively few locations causing susceptibility to declines.
- They are consumers of agricultural and forest pests and eat millions of insects pests / year.
- An economic assessment quantified the value of bats to WI agriculture through consumption of insect pests. The figure equates to \$658 million up to more than \$1.5 billion dollars per year.
- An emerging fungal disease called **white-nose syndrome (WNS)** is causing unprecedented and devastating losses to North America's hibernating cave bats. Disease results in unsustainable mortality rates around 95%. One study predicts a 99% chance of regional extinction of our most common bat within the next 16 years.



## Accomplishments

**Statewide surveillance gives Wisconsin bats a clean bill of health**

- Cave assessments condensed potential hibernacula from 800 possible sites to 120 suitable hibernacula. Partnerships were established with 90% of cave landowners.
  - 120 caves and mines were surveyed for WNS. Surveillance focused a search for the fungus, colony size estimates, assessing threats and opportunities for management actions. Neither WNS nor the fungus were found in 2011.
  - New bat rules provide management authority and institute prevention and control options for the prohibited invasive fungus that causes WNS.
  - Wisconsin's WNS implementation strategy guides the WDNR response.
- Largest statewide acoustic survey in the nation completed**
- Established baseline abundance and bat distribution. Developed citizen-based monitoring projects for roost locations and acoustic surveys throughout the state.
  - Over 1400 acoustic surveys completed by 500 volunteer citizens. 51 bat roosts are actively monitored annually.

## Wisconsin Bat Conservation Fund

Conservation Endowment managed by the Natural Resources Foundation was created to support the WI bat program in perpetuity.

## Comprehensive Approach to Conserve Bats

The WI Bat Program uses a comprehensive approach to address lack of knowledge for bats. Endangered Resources' dedicated team conducts statewide projects to investigate status, trends, current threats and to monitor bat population health.

- Acoustic bat detector surveys, Bat roost surveys, Citizen-based monitoring, Cave & Mine catalogue, Research & Develop new technologies, while incorporating Adaptive management & conservation are all integrated in the WI Bat Program.
- Identification of cave locations, environmental conditions, bat species and numbers present allows WNS surveillance of Wisconsin's underground hibernacula.
- Acoustic Bat Monitoring applies a bat detector system capable of recording echolocation calls to map distribution, abundance, species diversity, migration timing, and habitat associations.
- Training citizens to collect long-term bat surveys is a cost-effective solution and has shown reliable results.
- Landowners and citizen volunteers report bat locations and assist with emergence counts for Bat Roost Monitoring.



## Continuing Efforts & Goal

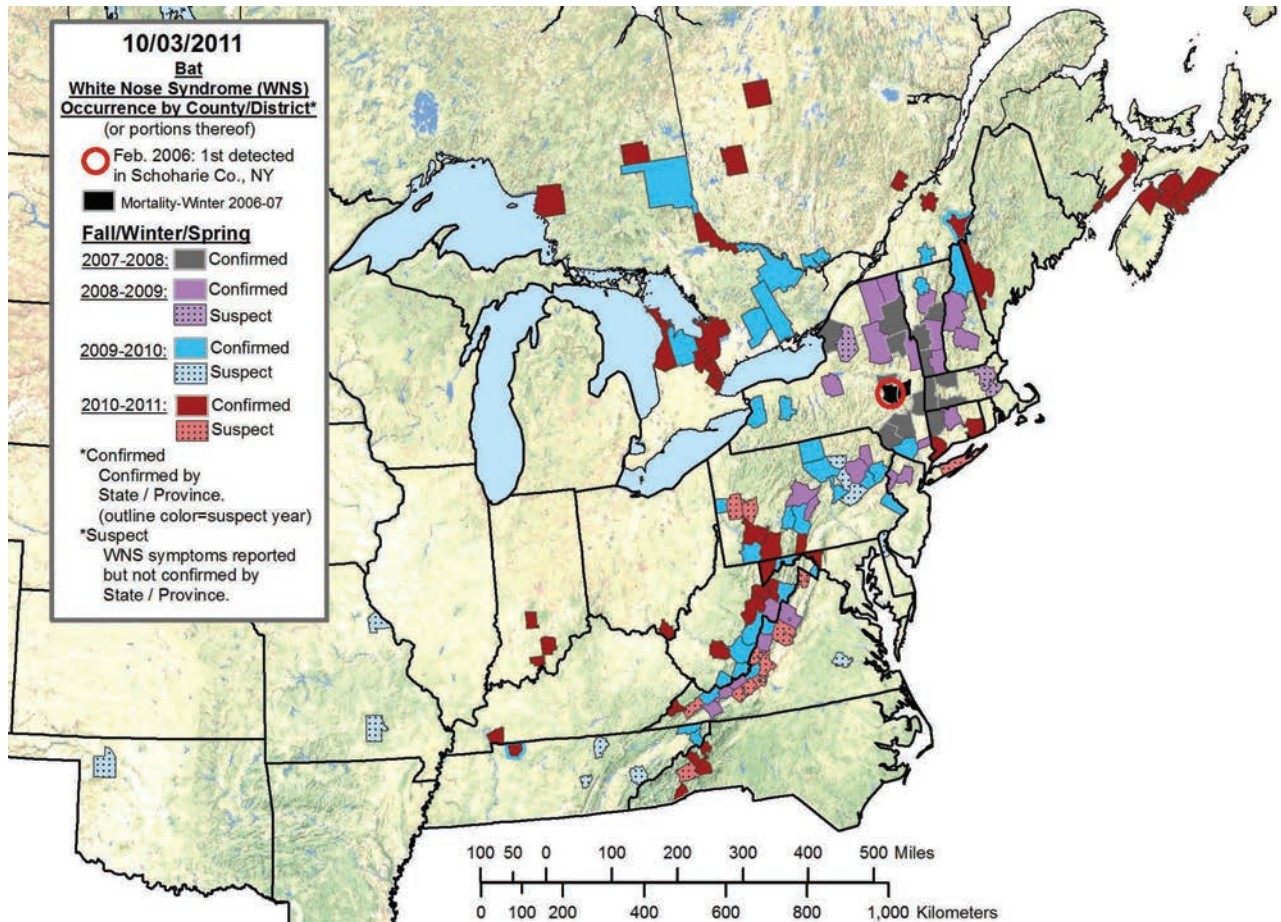
- The Wisconsin Bat Program relies heavily on grants and funding support from citizens who are interested in bat conservation
- The Bat Conservation Endowment through NRF has received \$49,000 in contributions from WI citizens.
- However, to sustain a bat program for the state of WI, the endowed Bat Conservation Fund needs a total of \$2,000,000 in donations. These funds will be used for WNS research, surveillance, monitoring, landowner support in WNS prevention and control, and education about the benefit of bats.
- To increase our knowledge of bats we continue acoustic and roost monitoring projects, and Cave & Mine Catalogue of hibernation sites.
- Partners include WI universities, state and federal agencies, commercial industry, and conservation organizations.
- Goal is to prevent extinction, monitor bat health, status, and trends, while implementing adaptive management actions to sustain or recover one of Wisconsin's greatest natural resources for the benefit of future generations.





### Featured Bat: Eastern pipistrelle (Tricolored bat) *Perimyotis subflavus*

The Eastern pipistrelle is Wisconsin’s smallest bat. It is often described as having a tri-colored appearance because of its multi-colored fur. Eastern pipistrelles are usually the first bats to enter the hibernacula in the fall, and the last to leave in the spring. They give birth to one to two pups in June or July. In summer, reproductive females may band together in small groups of up to 20 bats in tree hollows or buildings. Males roost alone in trees. Both sexes forage over water, along field edges and in the forest canopy. Their preferred diet consists of true bugs, beetles, flies, and moths. In winter Eastern pipistrelles hibernate in caves and abandoned mines. They are usually solitary hibernators, preferring to spend the winter hanging alone instead of in clusters like the Little brown bat. • *Want to know more? Visit our website to download the “Bats of Wisconsin” pamphlet.*



Map by: Cal Butchkoski, PA Game Commission

Program website: <http://wiatri.net/inventory/bats/index.cfm>

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**Report colonies, caves, or unusual bat behavior at [DNRbats@wisconsin.gov](mailto:DNRbats@wisconsin.gov)  
or by calling 608-266-5216**



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**If you have suggestions for articles, or have a story you would like to contribute, contact: [Jennifer.Schehr@wisconsin.gov](mailto:Jennifer.Schehr@wisconsin.gov)**

*The Wisconsin Department of Natural Resources' Wisconsin Bat Program relies heavily on grants and funding support from citizens who are interested in bat conservation*



# Support the Wisconsin Bat Conservation Fund

The Wisconsin Bat Conservation Fund is a permanent endowment managed by the Natural Resources Foundation of Wisconsin. Contributions to the Fund will support bat conservation needs in Wisconsin.

Yes! I would like to make a contribution to the Wisconsin Bat Conservation Fund.

**Gift Amount**

- \$25
- \$50
- \$100
- \$250
- \$500

Other  
 Please send me information on how I can leave a bequest to the Fund through my estate plan.

**Name(s)** \_\_\_\_\_

**Address** \_\_\_\_\_

**Phone** (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

**Email** \_\_\_\_\_

Make checks payable to the Natural Resources Foundation and mail to: Natural Resources Foundation of Wisconsin, Attn: Wisconsin Bat Conservation Fund, PO Box 2317, Madison, WI 53701. The Natural Resources Foundation is a 501(C)3 tax-exempt organization. Receipt of gift will be officially recognized by the Foundation. Contributions are tax deductible to the extent allowed by law. Visit [www.wisconservation.org](http://www.wisconservation.org) to donate online.