



# The Echolocator

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

Volume 3, Issue 1

December 2013



Save the Date!  
Wisconsin Bat Festival  
2014 will take place the  
first weekend in  
October at Urban  
Ecology Center in  
Milwaukee, WI

## New Name, Same Destructive Fungus

Paul White

A recent publication by Andrew Minnis and Daniel Linder in the 2013 September issue of *Fungal Biology* describes the name change of the deadly fungus that causes white-nose syndrome in bats, from *Geomyces destructans* to *Pseudogymnoascus destructans*. Understanding the genetic mechanisms of pathogenicity will help determine why *Pseudogymnoascus destructans* (P.d.) is so destructive while its closest known relatives are not. Finding out what genes are causing harm could lead to gene silencing or other methods that may disrupt the destructive nature of the fungus. This work has not found the fungus to be sexually active (clonal mutations thus far) and if other European fungi were introduced, the fungus could potentially create more problems across a wider range of bat species. This publication reinforces the need for strict decontamination measures to ensure other fungi (from Europe or elsewhere) are not brought into U.S. (both infected and unaffected states).

For more information on the new name, read the paper:

Andrew M. Minnis, Daniel L. Lindner, Phylogenetic evaluation of *Geomyces* and allies reveals no close relatives of *Pseudogymnoascus destructans*, comb. nov., in bat hibernacula of eastern North America, *Fungal Biology*, Volume 117, Issue 9, September 2013, Pages 638-649, ISSN 1878-6146.

## New Acoustic Driving Transects

Paul White

The summer of 2013 marked the first year that the WI Bat Program adopted driving bat survey transects, where surveyors mounted a bat detecting microphone atop their vehicle and traveled about 30 miles at 20 mph. The surveys proved to be very popular as we received data from 37 (97%) of the possible 38 routes which accounted for approximately 6,208 acres surveyed (\*). Ideally each route was to be surveyed once during three periods in the summer: 6/1-15; 6/16-30; 7/1-15. In total, 21 routes had data collected from all three periods. We had two surveyors in particular, one newcomer to the project (Beverly Paulson) and one seasoned veteran (Ben Johnston) who went above and beyond the call of duty with each completing 10 or more driving surveys. A few routes required some minor detours

because of road construction and/or high traffic volume. Surveyors also reported intermittent equipment failure due to an overload of high frequency noise, which in some cases could be traced back to power lines, homes, and/or oncoming vehicles. Overall, the WI Bat Program was excited to be part of the national effort in gathering baseline information prior to WNS arriving, and we know none of this data collection would be possible if not for the amazing people that help us collect this important data. Thank you!  
Continued on page 10.



Vehicle with slow-moving and wildlife survey signs ready to begin a driving survey.

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## Acoustic Project Update

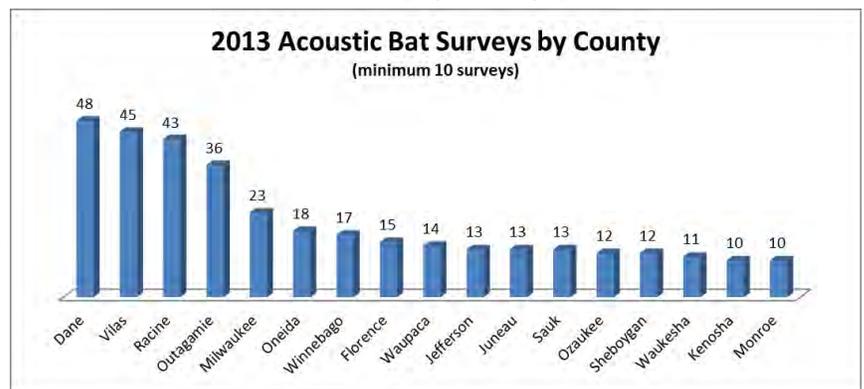
J. Paul White

The 2013 acoustic bat monitoring season started slowly because of the cold spring but quickly gained momentum as the warmer weather set in. We had a total of 491 surveys completed this year with 68 surveys completed in April/May, 282 surveys in June/July and 145 surveys in Aug/Sept/Oct. Of the 72 possible counties in Wisconsin at least one bat survey was completed in 57 counties (or 79%). Over 500 people took part in an acoustic survey in 2013, which is the highest level of participation since the project first began in 2007. Despite being the 7<sup>th</sup> year of the project, we continue to have interest from new areas. In the spring, the acoustic bat monitoring project outfitted two new regional coordinators with bat detection systems in Sheboygan (UW-Sheboygan) and Saukville (Riveredge Nature Center).

Wisconsin remains one of the most active participants in the acoustic bat monitoring arena, especially when you consider the incredible core of volunteers. To put things in perspective, we crunched the numbers for this year and they are staggering: average time spent on surveying for bats was 75 minutes; if you add all the valuable time spent by the 528 volunteers who took part in a survey this year, the total time spent surveying for bats in Wisconsin equals more than 79,400

minutes...which is more than 1,300 hours (or ~55 days). Hands down the best bat volunteers in world! Equipment troubles...

There's a good chance that everyone that has even been on a bat survey has probably experienced technical issues with the equipment, be it with the detector or more likely, the PDA (mini-computer). Unfortunately these technical issues are on-going and will only be remedied when the manufacturer of the bat equipment uses a different/newer device to support the detector. While this may provide little comfort, I've sent in numerous inquiries to the company requesting a different system, one that is more user-friendly and without issue. The company has since stated that they will have something different/better in the near future, so we will keep you informed as to any changes. •  
More acoustics graphics on page 4.



## Roost Project Update

Heather Kaarakka

As spring began this year, many roost monitors and landowners noticed the bats taking their sweet time returning to summer roost sites, but with good reason! A monitor from northern Wisconsin in May noted inches of ice on the lakes just days prior to the count! But the bats returned with good numbers at most sites by early June. Several sites were counted monthly or bi-weekly to give us great information about how the colony size changes from week to week and over the entire summer roosting period.

Currently, all known sites are roosts of little brown and big brown bats in bat houses, attics, barns and other buildings, but there remains the potential to investigate roosts from the other five species in the state as well; we just need to find them. Keep your eyes open and pointed up for furry bodies hanging from tree branches and along tree trunks.

We continued "bat blitzes" this year at Yellowstone Lake State Park and Devil's Lake State Park counting twice at each site. Over 15 volunteers participated in

Yellowstone counts and we had comparable numbers of volunteers for Devil's Lake counts. Devil's Lake chateau roost started at 568 in late May and jumped to 897 in August. Yellowstone started at 3,831 in early June but dropped to 1,976 in late August. This drop does not indicate a die-off, rather the count was probably scheduled too late in the year after the female bats had already started to leave the roost for winter hibernacula.

We discovered several more roost sites this year, including the first ever recorded bat roost in a silo.

The bat roost project would not be possible without the countless dedicated volunteers and landowners braving mosquito swarms on summer evenings to watch their bats. **THANK YOU** to everyone who reported a roost, counted bats or built bat houses this summer!

Look for a 2013 roost report this winter on our website. If you would like to participate in roost monitoring in any capacity (bat blitzes or other), or you know of bat roosts in your area, please feel free to contact me. (Contact info on back.) •



## Cave and Mine Catalogue Update

Jennifer Redell

Last winter we conducted disease surveillance and winter counts at over half of the known cave or mine hibernacula in the

state. Sites were selected based on a number of factors including overall population, species diversity, safety and accessibility, and WNS risk (determined by location and likelihood of human visitation).

In addition to our surveillance visits, a small number of sites were selected to participate in a WNS study being conducted by the University of California-Santa Cruz. A subset of bats at these study sites were swabbed in late fall and early spring to be tested for the DNA of the fungus. Although last winter's results of all bat swab samples were negative for the WNS fungus, the swab study will continue this winter.

During the spring and fall a number of cave gating projects were initiated, to be completed next spring. A small number of new hibernacula were added to the catalogue again this year and we continue to establish baseline environmental conditions in a number of hibernacula locations statewide.

We are beginning to feel the nervous knot in our stomachs that occurs as snow begins to fall. Another surveillance field season is on its way we feel we are being pushed closer to the edge of the WNS precipice. We don't know for certain what lies beyond but we have a pretty good idea of what it will be like to tip over the edge into the label of "WNS Affected". We feel vulnerable; the bats are vulnerable.

Winter is a muddy and exhausting time of year for us. While cave and mines are warm enough once we are inside with the bats, driving on less than ideal road conditions, changing our cave clothing outdoors in below freezing wind chills, and cleaning nearly frozen mud from helmets and lights makes for gripped knuckles, gritted teeth, and numb fingers and toes. The cab of our truck nearly explodes with the multiple changes of warm winter clothing we've each brought with us (decontamination between sites means wearing a lot of outfits on any given field day). The bed of the truck is crammed with bins of either clean or dirty cave gear, and a variety of equipment necessary for an abundance of scenarios... snow shoes to hike to the cave, a crowbar to chip and loosen the ice blocking the entrance, a blow torch to melt a frozen cave gate lock, and extension poles to delicately retrieve bats from the ceiling for inspection should we detect suspicious signs of disease.

Hiking to our sites through a winter wonderland helps to make up for the discomfort of the cold. Cave entrances occasionally vent steam as the (relatively) warm underground air vents to the surface, occasionally forming delicate, feathery hoar frost in and around the opening. When we enter a cave, everything is still and silent except for the occasional drip of water and distant tiny squeaks of a pair of mating bats. The fine individual hairs on the bodies of hibernating bats collect tiny dew drops which reflect the searching beams of headlamps like miniature disco balls in grand pitch black ballrooms. We know what to expect from certain species and at this point, certain individuals are becoming familiar to us. Bats exhibit hibernacula fidelity—returning to the same cave—and in many cases the same

Continued on page 12

## 2013 WNS Symposium

Paul White

The US Fish and Wildlife Service provided funds this year for Wisconsin Department of Natural Resources (WDNR) representation at the 6<sup>th</sup> annual wns symposium held in Boise ID on September 3-6. Over the last six years, over 36 million dollars has been spent (USFWS, State Agencies, USGS, USFS, NPS) on white-nose syndrome (WNS) research, which equates to about 5% of the National Recovery Budget for endangered species. Although the "silver bullet" in the form of an effective, field appropriate cure for WNS has not yet been found, officials were quick to recognize the accomplishments that have occurred because of this devastating disease:

- Development of a national response plan (US & Canada);
- Effective decontamination procedures;
- Better understanding of *Pseudogymnoascus destructans*

(P.d.), the causative agent of WNS;

- National coordination by state and federal agencies;
- Increased education and awareness of the public and support from legislators.

Participation in the WNS symposium illustrates that the WDNR is an active and important partner of those agencies who actively manage their bat populations. As it stands, Wisconsin and Michigan are the only Midwestern states that have not observed signs of WNS and collectively house the largest remaining little brown bat populations in the world. For this reason, Wisconsin remains a hotbed for research activity which continues to help inform the national WNS community. The Wisconsin Bat Program will continue to engage with researchers and agencies alike, to use the best available science to prepare and react to a seemingly inevitable WNS landscape. •

## 2013 Wisconsin Bat Festival

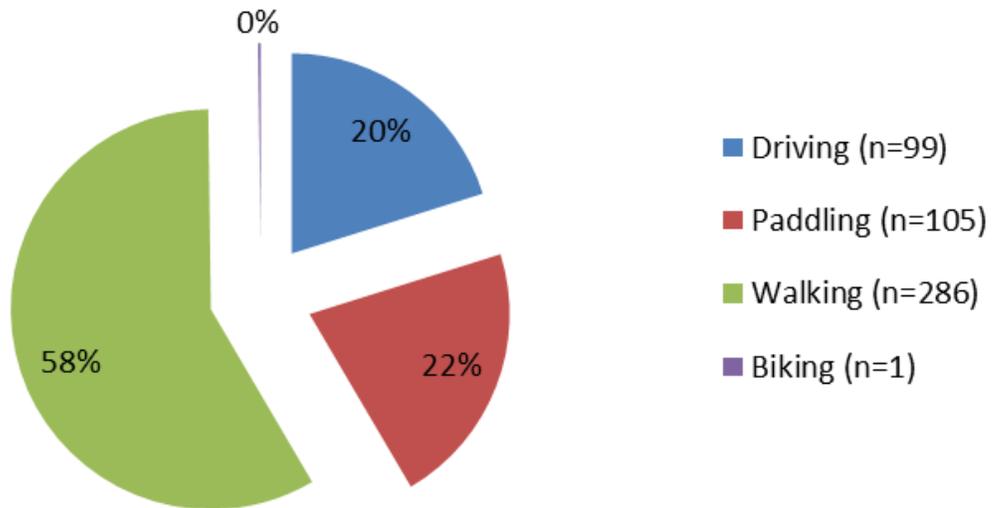
Over 1,500 adults and children attended this year's Bat Festival and Bat Science Night. Attendees had personal encounters with numerous live bat species from around the world. Speakers from USGS-National Wildlife Health Center presented information about white-nose syndrome research, and professors from UW System campuses shared results of regional bat monitoring efforts. Children explored the inflatable cave and practiced their field techniques in the "be-a-bat-biologist" station and other activities. The festival concluded with a summer bat field techniques demonstration including mist-netting and acoustic monitoring. Over 75 volunteers helped make Bat Festival a success.



Bat Festival visitor poses in front of the bat ears.

### Acoustic Surveys Cont.

## Acoustic Bat Survey Methods in Wisconsin



## Wisconsin Bat Program Outreach and Education

Every year WBP staff conduct educational and outreach programs about bats to spread awareness and support for bats in Wisconsin.

- In 2013 staff of the Wisconsin Bat Program provided bat education to more than 40 different audiences in 17 counties in Wisconsin.
- 5,000 people attended bat programs, with radio and news specials featuring the Wisconsin Bat Program reaching a wide audience around Wisconsin and neighboring states.
- Program and field trip fees and donations generated over \$15,000 for NRF's WI Bat Conservation Fund and NHC's WI Bat Conservation (Society) gift account.
- Over 1,500 adults & children attended the 2013 Wisconsin Bat Festival (June 1 in Madison). The night before the Festival 40 guests attended the "Wisconsin Bat Conservation Soiree", a fundraiser for the Bureau of Natural Heritage Conservation. During "Bat Science Night" DNR staff demonstrated summer bat field techniques including mist-netting and acoustic monitoring for more than 200 attendees.



Kindergarten students at Iowa-Grant schools prepare to enter the inflatable cave as part of the school's Earth Day events.

## WBP's Wish list

The Wisconsin Bat Program relies heavily on grants and donations from Wisconsin's citizens. If you do not have the time or interest in volunteering for the WBP, but would still like to contribute, please consider donating to the gift account so the program may purchase much needed supplies and equipment to complete bat research and conservation in Wisconsin.

- Roost PIT tag reader- \$2,950 per site
  - Track PIT tagged bats at summer roost sites to investigate movement and site fidelity.
- Hibernaculum remote PIT tag reader-\$2,950
  - Remotely track midwinter, spring and all bat movement at hibernacula
- Roost infrared camera- \$299 per camera
  - Remotely observe bats at a maternity roost and record behavior



Footage from a bat cam installed in spring 2013. Full video of active bats can be viewed here: <http://www.youtube.com/watch?v=3vjWez2lO7g&sns=em>

# WNS Update

Minnesota Department of Natural Resources, released 8/9/2013

## Fungus dangerous to bats detected at two Minnesota state parks

A fungus dangerous to bats has been confirmed at Soudan Underground Mine State Park and Forestville/Mystery Cave State Park, according to the Minnesota Department of Natural Resources (MDNR). The fungus is known to cause white-nose syndrome (WNS), a disease that is harmful and mostly fatal to hibernating bats, and has decimated bat populations in the eastern portions of the United States and Canada. While only a few bats have tested positive for the fungus, the discovery has serious implications. If Minnesota follows trends of other states, the disease is likely to be present in Minnesota bats within two to three years. "This is bad news for an important mammal in our ecosystem," said Steve Hirsch, director of the MDNR's Ecological and Water Resources Division, which oversees the agency's non-game wildlife program. "We're prepared with special protocols to help keep the fungus from spreading."

Public tours of Soudan Underground Mine and Mystery Cave will continue, but visitors will begin each tour with a brief lesson on how they can prevent the spread of the fungus. After tours, visitors will be required to walk across special mats designed to remove spores from footwear. They will be advised not to visit other caves or mines with any clothing, footwear or gear they have used in areas where WNS or the associated fungus is present because washing alone cannot sufficiently disinfect clothing.

Ed Quinn, natural resource coordinator for the

DNR's Parks and Trails Division, said, "Education is one of the most effective tools we have to slow the spread of the disease."

Minnesota has seven species of bats, four of which hibernate during the winter and are at greatest risk of contracting the disease. Mystery Cave, located in southeastern Minnesota, has about 2,300 bats. Soudan Underground Mine, in the northeastern part of the state, has 10,000 to 15,000 bats.

Gerda Nordquist, Minnesota Biological Survey Mammalogist, said the DNR will continue to monitor Minnesota's bat populations closely, because healthy bat populations are important both ecologically and economically. •

### Where is WNS now?

White-nose syndrome has continued to spread rapidly. At the end of the 2012-2013 hibernating season, bats with WNS were confirmed in 22 states and five Canadian provinces: Alabama, Connecticut, Delaware, Georgia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia. Canada: New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Quebec. The fungus that causes WNS, *Pseudogymnoascus destructans*, has been confirmed in four additional states: Arkansas, Iowa, Minnesota & Oklahoma.

Current map for WNS is on page 14



WNS infected bat

## New Species Guidance Documents for Bats in Wisconsin

The Wisconsin Bat Program has recently produced species guidance documents for each of the bat species in the state. These guidance documents are designed to aid the Endangered Resources Permit Review Team and landowners in management of current bat colonies and habitat. The documents include basic life history, habitat requirements and identification of species. The new guidance documents can be viewed on the DNR's website. Use: <http://dnr.wi.gov/topic/endangeredresources/animals.asp> and select mammals at the bottom. The four cave bat species (little brown bat, big brown bat, eastern pipistrelle and northern long-eared bat) are posted with the tree bats (silver-haired bat, hoary bat and eastern red bat) coming soon.

**Little Brown Bat (*Myotis lucifugus*) Species Guidance**  
 Family: Vespertilionidae - the evening bats

State Status: [Endangered](#)  
 State Rank: [1376](#)  
 Federal Status: [State](#)  
 Global Rank: [G1](#)

Wildlife Action Plan Area of Importance Score: [None](#)

Map of Wisconsin with Wisconsin highlighted in blue.

**Species Information**

**General Description:** The little brown bat is a member of the genus *Myotis*, which is represented by three species in Wisconsin. This bat weighs between 5.5 and 12.2 g (0.19-0.44 oz), and individual bats' weights vary seasonally and are lowest in the spring as bats emerge from hibernation (WI Bat Program unpublished data). Adult forearm lengths range from 35 to 40 mm (1.4-1.6 in), and total body length is 60-65 mm (2.4-2.7 in) (Stans 1995). Adult little brown bat wingspan is 222-249 mm (8.75-10.2 in; Barbour and Davis 1969). Body color ranges from pale tan to reddish to dark brown, and is lighter on the ventral side. Feet have long toe-bats that extend to the tips of the toes.

**Similar Species:** Three bat species in Wisconsin - the little brown bat, the northern long-eared bat (*Myotis septentrionalis*) and the Indiana (*Myotis grisescens*) bat - are best distinguished by cave (or band) suspensions. The northern long-eared bat has longer ears than the little brown bat, and a pointed, open-like tragus. Tips of little brown bat ears, when seen are folded alongside the head, should extend no more than 3 mm beyond the tip of the nose. In contrast, the northern long-eared bat's ears extend 3 mm or more. Little brown bat ear length in Wisconsin, however, can be highly variable, and tragus shape and length in relation to the rest of the ear are the two best features to use to distinguish these two species. The little brown bat also appears similar to the Indiana bat, but the little brown bat has long hair that extends beyond the eye, and also lacks the Indiana bat's beaded collar, a spur of cartilage extending from the neck and supporting the acromioclavicular joint (Barbour and Davis 1969; Frazee and Barclay 1992). Little brown bat fur is also generally glossier and lighter-colored than that of the greater Indiana bat (see Figure 1). The little brown bat can also be identified by its echolocation call (Figure 2), but northern long-eared and Indiana bats share similar call characteristics and are not treated. Individuals should positively identify bat species through echolocation calls.

**Figure 1:** Little brown bat (left) and Indiana bat (right). The little brown bat has a brownish color and a light ventral side. See Bates Wisconsin 2012.

**Figure 2:** Echolocation call. The little brown bat produces high frequency calls (20-30 kHz). These calls are more of a pulse train and are very similar to those of the greater Indiana bat. The little brown bat produces a single call and the greater Indiana bat produces the call to 30 pulses (calls) to produce a sequence of 100 pulses in the feeding call (Barbour and Davis 1969). The little brown bat produces a single call of the northern long-eared bat and the Indiana bat.

© 2012 Wisconsin Department of Natural Resources

## Calling All Bat and Volunteer Photos!

Occasionally landowners, managers and naturalists capture great photos of bats in their natural environment. For example, the photo, right, is an eastern red bat that was photographed while UW Arboretum managers and students were out looking for galls on oak trees.

Do you ever find and photograph bats? If so, consider sending the photos to the WBP! We can use the photos in publications and talks, and we will always credit the photographer. WBP can also use photos of volunteers and monitors conducting acoustic and roost surveys.

**Keep in mind you should never disturb or handle bats if you find them. Be careful when taking your photos to not move them or disturb the bats with bright camera flashes.**

Send us an email with details about your bat and bat monitoring pictures at [DNRbats@wisconsin.gov](mailto:DNRbats@wisconsin.gov) and we'll discuss the species of bat, where we can use the photo, and what kind of resolution the program will need.

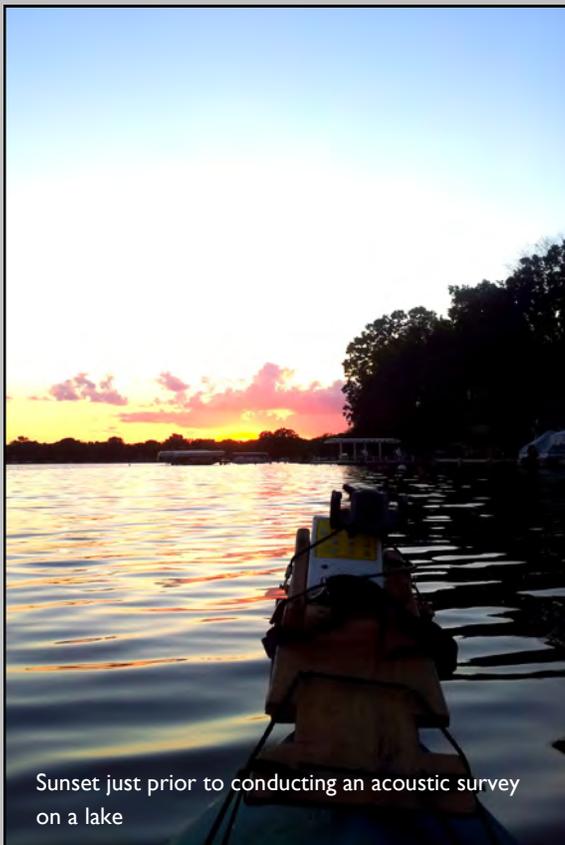


© Molly Fifield-Murray

## Bat Enthusiast Donates \$10,000 to the WI Bat Conservation Fund

Many thanks go to Carol Gainer from La Crosse WI, who donated \$10,000 to the Bat Conservation Endowment in 2013. This donation helps build the endowment towards the eventual goal of \$2,000,000 when it will sustain a WI Bat Program indefinitely. Thank you Carol!

### Images from the field



Sunset just prior to conducting an acoustic survey on a lake



Paul White releasing a bat after capture in a mist net



Spot the big brown bat in the tree cavity

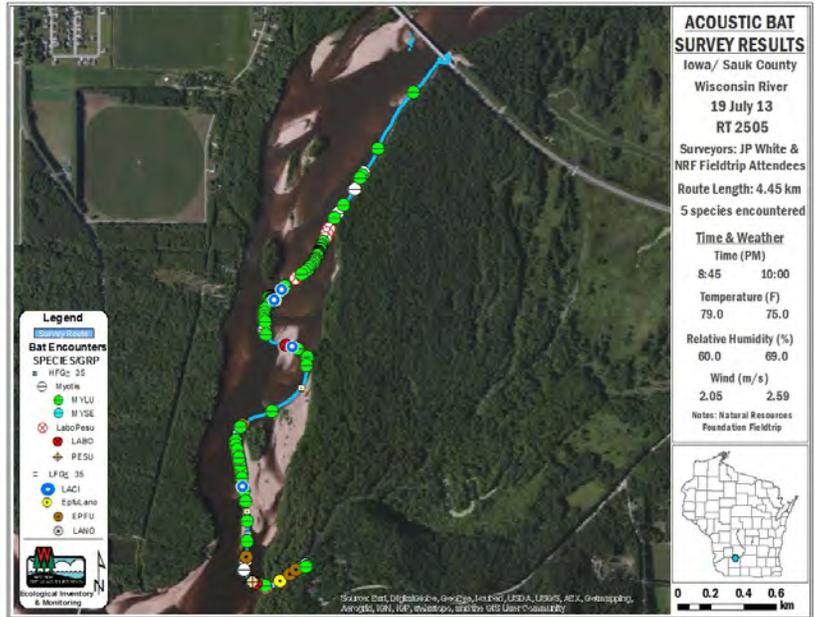
## Natural Resources Foundation Bat Fieldtrips

The Wisconsin Natural Resources Foundation and Wisconsin Bat Program coordinated five field trips this year. Each were fundraisers for the Wisconsin Bat Conservation Endowment. Participants got to paddle the Wisconsin river at night with bat detectors, or observe fall swarm at Maiden Rock mine or Neda mine.

The bat paddle started in Spring Green and floated a short distance to Tower Hill State Park where mist nets were set up to capture bats. Attendees got to observe bats up close as they were measured and marked with bands. See right for results of the acoustic survey on the Wisconsin River.

Both the Maiden Rock and the Neda fieldtrips were great successes. All filled to capacity and an extra Neda trip was added to accommodate a waiting list. In addition to enjoying the quiet bats swarm in the moonlight, infrared cameras allowed attendees to observe the bats in detail as they moved through the night sky. See right for a still shot of attendees watching the culvert entrance at Neda mine. A single bat can be seen in the far upper right corner of the photo. Technology like the cameras used on the fieldtrips allow for passive monitoring of bats during hibernation and summer roosting.

**Sneak Preview of next year's fieldtrips: early morning roost swarms and mist netting!**



## Volunteer and Regional Coordinator Profile: Ben Johnston

By Ben Johnston

### Volunteer projects you are involved with:

I perform roost counts and acoustic surveys. I am part of the Elroy-Sparta Tunnel Bat Counters.

On behalf of the WI DNR, I also participate in the Frog and Toad Survey, the Turtle Survey and the Western Great Lakes Owl Survey.

Other CBM efforts.....International Crane Foundation's Crane Count (mid April), Audubon Society's Christmas Bird Count (late December), and new for 2013, the Bird Watchers Digest's The Big Sit (October 12<sup>th</sup>).

### Why you volunteer:

I find volunteering for CBM programs (bats, turtles, birds, frogs) gives not only an excuse but a purpose to go outside. Not that I wouldn't go out otherwise, but the CBM programs provide a mission or a reason for a hike, a canoe trip, or a sit. It's similar to having a dog giving motivation to take a walk each day. With CBM, the data collection is the motivation. Continued on next page.



Ben Johnston alongside his bat house. Ben Johnston, WDNR

## Volunteer Profile Cont.

C. Wes Drye, a La Crosse Area Batter, said something to the effect....“it’s more about the process of collecting the data, than the actual data”. After we lost the data from a river acoustic survey in 2012, someone stated that we did the trip “all for nothing”. It is true that I probably would not have gone down a river, under the cover of darkness, without the need for data, but the experience itself was worth the trip. To quote Kickapoo Valley Batter Susan Cushing who said (with enthusiasm) when told of the data glitch “Does this mean we get to survey the river again?”

Although my part is small, I believe my efforts are valuable for conservation. When I am asked how the data are used, I shrug my shoulders. “That is not my department”, I reply. My job is to collect the data and let others interpret the information. Furthermore, I love baseline data. When I learned that there was little data from the Kickapoo Valley, I was determined to correct this problem. And with the start of the driving surveys, I was excited to be the first to collect data from the routes; however, I did get lost on two routes. Baseline is the most important part of any monitoring effort. It is hard to know if there is a decline or rebound of a species if there is no starting point for reference.

Another reason I volunteer is that I have come to appreciate the value of the volunteer. At the Kickapoo Valley Reserve, we rely heavily upon volunteers for our events. By me volunteering for other activities and programs, I feel this is a way to show gratitude towards the KVR volunteers. It just doesn’t seem right to expect so much from a volunteer if I am not willing to do the same.

### What do you get out of it:

Through my CBM involvement, I have learned a lot about the subject of the programs and ecology in general. The programs have increased my awareness and interest of the natural surroundings. I notice more sounds and I feel I am more observant. Many questions come up and many unidentifiable birds, flowers, insects, etc, are encountered, all inspiring me to learn more. Some of these can be answered from simple field guide or internet searches, whereas other answers require a bit more effort (like an email to Paul). Regardless, I learn from each CBM survey, and after each, I seem to notice more. Once I have nothing left to learn from the bat program, I will quit.

From the bat program, I have enjoyed experiencing nature at night during the acoustic surveys. Not many people consider hiking at night. I have seen owls, opossums, flying squirrels, muskrats, beavers, skunks, raccoons and have heard numerous unidentifiable creatures (Sasquatch?) lurking in the shadows. Furthermore, the bat detector has given me “superhero ears” to hear sounds otherwise not detected. One such example was during an acoustic survey; I passed a cedar tree, which was “screaming”. That is, something was in the tree, presumably an insect, perhaps a monster, making a whole bunch of racket, but it was only audible through the detector. I would have not known there was any sound otherwise. I have learned that cemeteries do not emit ultrasounds.

“...the bat detector has given me ‘superhero ears’ to hear sounds otherwise not detected.”

### What is your favorite part of the program:

I like being able to say I am a “batter”. Few people can make such a claim. I like feeling part of the team. I have a small role in bat conservation, but I like to think the data I collect will be of value for years to come. No pressure from bat headquarters. As long as I keep sending data, I am still in the club. I set my own goals to keep me motivated.

I like that the bat program lasts all summer long. Many of the other CBM programs are one day events. But I can bat the summer away. Batting can be done alone or with others and must be done when the weather is good. I like that batting is easy. There definitely was a learning curve for the detection system, but otherwise the tasks are easy. Roost counts only get difficult when bats can’t make up their mind if they want to be in or out of the roost. And the tunnel counts- the bats rarely ever move, making it even easier.

### What you tell others to get them excited about volunteering:

Truth be told, I use others to motivate me. I find that with each person I tell about any of the CBM programs, I become more determined to participate. It’s almost as if I need to prove my commitment. I guess it is similar to a compliment on your weed free garden, creating the determination to maintaining the effort.

However I do my best to recruit new volunteers for CBM. When I mention my bat or other CBM activities to others, I explain the tasks, and try to share my enthusiasm for the effort(s). I tell what I know about the program and the subject. I attempt to make the program sound exciting and glorious through tales of “adventure”. I emphasize it’s an opportunity to learn about bats, frogs, turtles, and things; they don’t need to be an expert, just willing to help. And if they seem interested, I extend an invitation. Then, when I am planning the next bat survey or an another CBM event is coming up, I send out an email to those I feel might be interested in the activity and let them decide if they will participate.

Ben Johnston is an acoustic regional coordinator, invaluable volunteer and all around great guy based out of Kickapoo Valley Reserve in Vernon County.

## Driving Transects Cont.

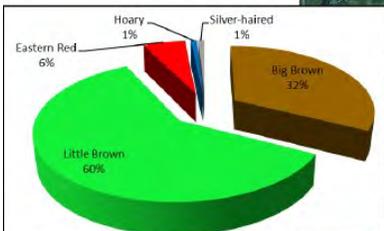
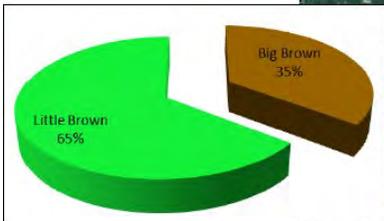
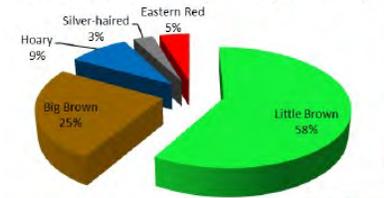
**\*Anabat Acoustic Transects (courtesy of Brian Heeringa U.S Forest Service):**

[Transect length (miles) x 5280 feet/1 mile x Width of the Anabat field of detection\* (feet)] divided by 43,560 feet/acre = **X** acres

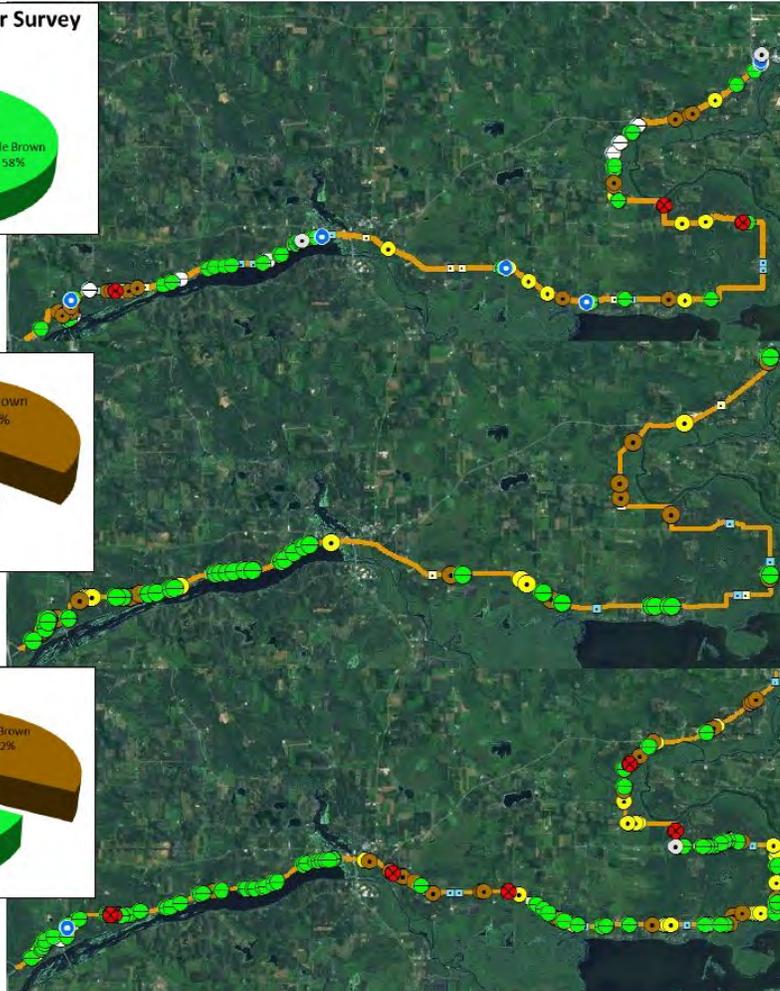
\*Assuming a 50 foot field of detection

*As of 2011, in order to standardize accomplishment reporting for the acoustic transects, acres completed will be counted only once.*

**Percentage of Bat Species per Survey**



Summary of three surveys of route CSH1 in Marquette County.



### ACOUSTIC BAT SURVEY RESULTS

Marquette County  
**CSH 1 - Driving Rt  
 10 June 13  
 RT 2292**

Surveyors: B. Paulan  
 Route Length: 67.55 km  
 5 species encountered

**CSH 1 - Driving Rt  
 27 June 13  
 RT 2383**

Surveyors: B Paulan  
 Route Length: 65.8 km  
 2 species encountered

**CSH 1 - Driving Rt  
 5 July 13  
 RT 2410**

Surveyors: B Paulan  
 Route Length: 65.95 km  
 5 species encountered

## Wisconsin Bats in the News

Every year, newspapers, TV stations, radio stations and other newsletters talk to or come out into the field with the Wisconsin Bat Program. Here is a selection of stories about Wisconsin's bats from this year.

The Why Files: <http://whyfiles.org/2013/stopping-the-slaughter-of-the-bats/>

Poyntette Press: [http://www.hngnews.com/poyntette\\_press/news/local/article\\_d5f26ac4-100e-11e3-96ad-0019bb30f31a.html](http://www.hngnews.com/poyntette_press/news/local/article_d5f26ac4-100e-11e3-96ad-0019bb30f31a.html)

NBC 11 Minneapolis: <http://www.kare11.com/news/article/1040219396/White-Nose-Syndrome-closes-in-on-Wisconsin-bats>

Ravenswood Media- Battle for Bats, : <http://vimeo.com/76705033>

# WISCONSIN BAT PROGRAM VOLUNTEERS- THANK YOU!!!

In the past 6 years, the WPB has had help from more volunteers than can be listed on this page.

## Acoustic Monitoring

Thank you to the countless nature centers, universities, regional coordinators and volunteers who help make hundreds of acoustic surveys happen every year.



Conducting acoustic surveys by bike.  
Jessica Schalkowski, WDNR

## Roost Monitoring

Thank you to the landowners and bat counters who keep both eyes on their residents over the summer.

## Bat Festival

Thank you to the volunteers who help coordinate, run and plan the Bat Festival and without whom, the festival could not happen.



© D Z Johnson

### 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/>)

## Cave and Mine Cont.

spot in the same cave—each year. In searching for signs of fungus we quite literally meet each individual face to face, an awesome experience in all sites, but especially our large mines that host tens of thousands of bats. It's an experience I have always cherished and am intensely grateful for in every moment I have underground. •



*An eastern pipistrelle hangs from a speleothem in a hibernaculum in southwest Wisconsin*



*Banded bat at a hibernaculum in southwest Wisconsin. Applying the small metal bands is one of the techniques the WI Bat Program uses to track bat movement throughout the year.*

## Horseshoe Bay Cave Planning

Jennifer Redell

Physically, Horseshoe Bay Cave is one of the longest of the 100 or so known natural caves in Wisconsin. It boasts nearly 3,000 feet of explored passageway though only the first 100 feet are free from icy water and soupy mud. Like other caves formed in the dolostone of the Niagara Escarpment Horseshoe Bay Cave formed from dissolution by groundwater—a widening of a natural fracture in the bedrock that is periodically intersected by enlarged vertical joints. These enlarged joints have created a series of 50 tall, narrow, and elongated “rooms”—the only spaces capable of allowing a human to stand upright while in the cave. Unlike the labyrinth of passages that form many caves, Horseshoe Bay Cave consists of only one long sinuous passage and one side passage that leads to the “Big Room” – a round room approximately 30 feet high and 40 feet in diameter where most of the cave’s bats sleep the winter away. Navigating to the Big Room involves a tricky vertical descent that requires a person to slide down into a 20 foot deep crevice. Ascending the crevice is necessary to exit the room.

While some smaller speleothems (cave formations) do occur, the cave is relatively free of decoration.

As a Priority 1 bat hibernaculum, Horseshoe Bay Cave is one of Wisconsin’s five largest hibernating bat populations from October to May each year. The cave provides a mating location and protective winter habitat for more than 1,000 individuals representing all four state threatened bat species. Most of the cave’s population is made up of little brown bats.

In addition to sheltering bats, caves like Horseshoe Bay Cave are fragile non-renewable natural resources that have unique scientific and cultural value, serve as conduits for rapid groundwater movement, and can provide key habitats for rare cave-endemic species. Mice, spiders, cave crickets, tiny springtails and amphipods are all known to inhabit Horseshoe Bay Cave. Conservation of these resources needs to be a concern for all who use or impact the cave environment as well as those communities in karst areas which are dependent on ground water.

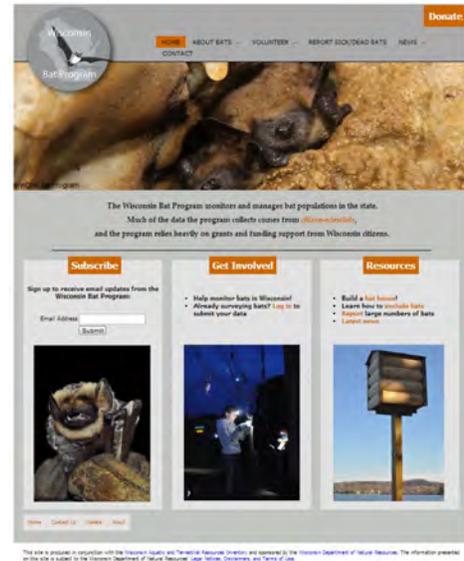
Door County recently acquired the entrance of Horseshoe Bay Cave with the intention of allowing controlled public access as determined by both resource conservation guidelines and need for public safety. Because little is known about the cave as a unique karst and biologic

## Wisconsin Bat Program has a New Website!

The Wisconsin Bat Program recently created a new website, but it still located at the same address: <http://wiatri.net/inventory/bats>. It contains all the links, reports and resources that the old website did, but in a new sleek format. The new menu contains dropdown options, so if you're looking for acoustic or roost project info, select volunteer on the home page or in the menu.

Login for submitting acoustic data is located on the home page in the middle, or on the acoustic project page.

Online submission of roost counts is available on the roost project page. Feel free to explore the site, and let us know if you have suggestions, or comments about the new Wisconsin Bat Program website. Enjoy!



resource, both a cave inventory and management plan are needed. The county is collaborating with the DNR's Bureau of Natural Heritage Conservation to develop a resource inventory and management plan for the cave with funding provided by the WI Coastal Management Program. The plan identifies goals and objectives for managing and maintaining the sensitive cave habitat and will serve as a guide for both state and county resource managers in the future.

Anticipating the possibility of federal listing for these bat species, the planning team is considering actions, research, and strategies that will be compatible with forthcoming federal regulations should that occur. Having an agreed upon plan in place that is adaptable to changing situations and building of additional knowledge, the collaboration between Door County and the WI Department of Natural Resources is considered necessary to help protect this valuable natural resource and meet the goals of the county. A cross-discipline science advisory group consisting of federal and state agency representatives, county staff, and academic experts is providing plan input. Additionally a stakeholder group composed of representatives from tourism, conservation, and recreational caving groups are providing recommendations in the planning process. •



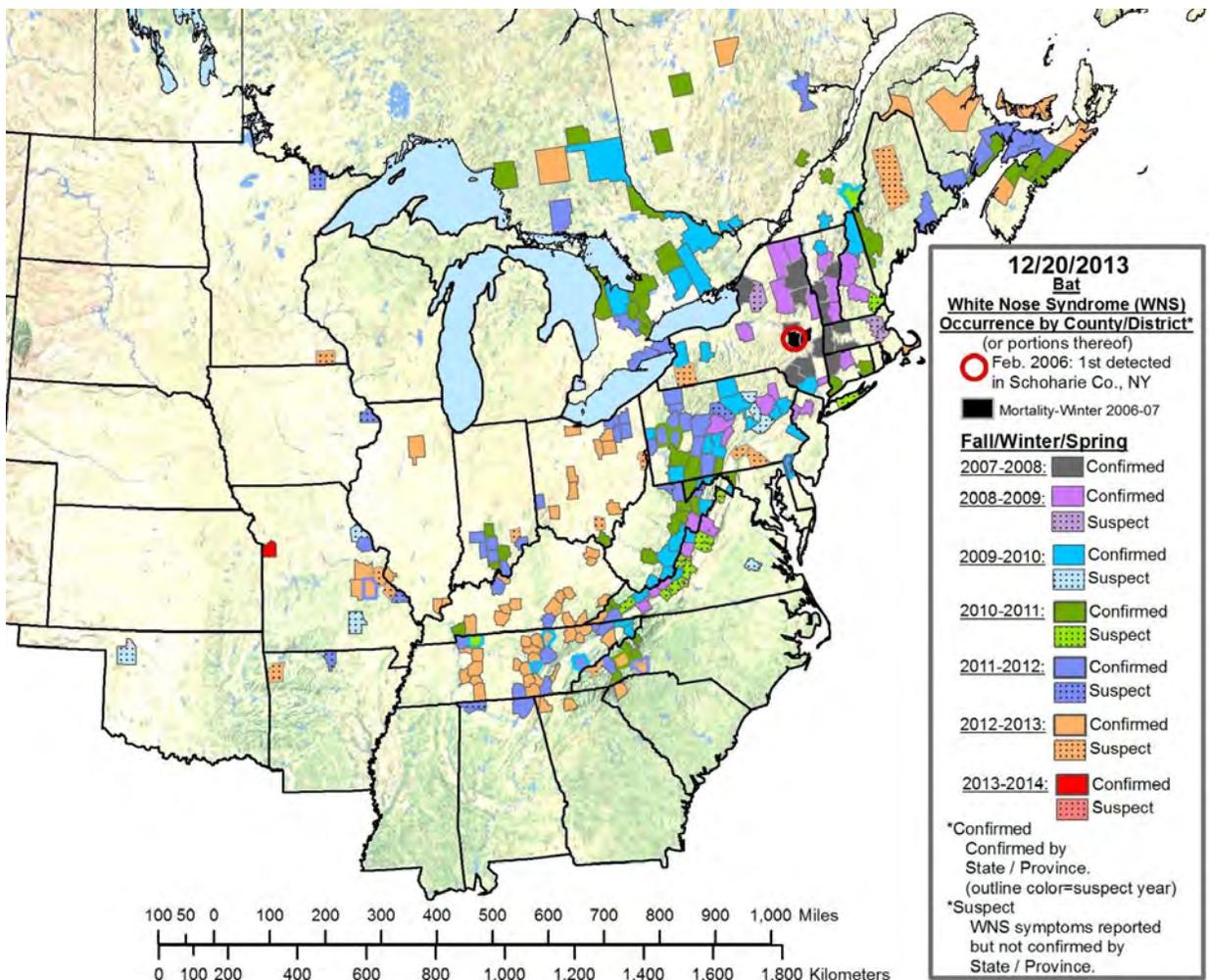
Left- "The Big Room"; Above- a water filled passage, characteristic of the Horseshoe bay Cave system

**Featured Bat:  
Big Brown Bat (*Eptesicus fuscus*)**

The big brown bat is a common species in Wisconsin. This bat is one of the larger species in the state and has dark brown or russet colored fur with black skin. This species is found throughout Wisconsin but is more common in the southern



portion of the state, particularly in the southeast. In summer from April through August, this bat roosts in colonies of up to 200 bats in barns, attics and bat houses. In winter, big brown bats hibernate in caves and mines and have also been known to overwinter in buildings where steady temperatures above 32 degrees can be found. Colonies found in buildings over the winter are usually small, numbering fewer than 15 bats. The big brown bat is a beetle specialist, and feeds on many agricultural and forestry pests such as the spotted cucumber beetle.



Map by: Cal Butchkoski, PA Game Commission

## What do I do if I find dead or flying bats this winter?

As white-nose syndrome (WNS) creeps closer to Wisconsin and eventually infects sites in the state, landowners have the potential to find infected bats. Dead bats at summer roost sites in January-February, and flying out of caves and mines in January-February are both signs of WNS. Knowing of these occurrences helps the Wisconsin Bat Program (WBP) track the disease and potentially make management decisions based on the information.

If you see either of these behaviors, please take the following actions:

1. Alert the Wisconsin Bat Program of the occurrence by calling the bat call line: 608.266.5216, emailing [dnrbats@wisconsin.gov](mailto:dnrbats@wisconsin.gov), or submitting a dead bat report on our website: <http://wiatri.net/inventory/bats/Reporting/>. Please describe in detail what you saw. Also note that the call line does not have personnel on 24 hours a day, so please leave a detailed message. Someone will return your call or email as soon as possible.
2. If the bat is still alive, DO NOT pick up the bat. Photograph the occurrence, and take notes on behavior. Alert the WBP by one of the methods listed above. Please also note your location in your message.
3. If the bat is dead, USE GLOVES to double-bag the carcass in plastic bags and place it in a safe, cold place outside or in a freezer. Alert the WBP and someone from the program will arrange to collect the bat from you if it is needed for testing.

Thank you in advance for watching for usual or atypical behavior of bats this winter.



### Peninsula State Park Gets New Bat Condos

With the bat houses at Welckers Point in Peninsula State Park overflowing with bats, the park decided in winter of 2012-13 to build several bat condos to accommodate the colony at Welckers Point as well as a colony currently using a maintenance building at the park. Enter Gibraltar High School Ecology Club and volunteers from around Door County who worked tirelessly to build the two condos. Many thanks go to the Gibraltar Ecology Club and volunteers! Now we sit back in our folding chairs and watch next summer for bats to start using the new condos.

Right-volunteers and condo structure awaiting installation. Kathleen Harris, WDNR



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

### WISCONSIN BAT PROGRAM STAFF

**Erin Crain**

Bureau Director, Bureau of Natural Heritage Conservation  
Erin.Crain@wisconsin.gov

**J. Paul White**

Bat Program Lead and Acoustic Monitoring Coordinator  
John.White@wisconsin.gov

**Heather Kaarakka**

Roost Monitoring Coordinator  
Heather.Kaarakka@wisconsin.gov

**Jennifer Redell**

Cave & Mine Specialist  
Jennifer.Redell@wisconsin.gov

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

Unless otherwise stated, all photos in this document are property of WDNR,  
taken by WI Bat Program staff



State of Wisconsin  
Department of Natural Resources  
Box 7921  
Madison, WI 53707-7921

To subscribe or unsubscribe to the WI Bat Program mailing list, please visit the [GovDelivery site](#) or follow the mailing list link on the Bat Program website.

If you have suggestions for articles, or have a story you would like to contribute, contact:

[Heather.Kaarakka@wisconsin.gov](mailto:Heather.Kaarakka@wisconsin.gov)

Or

[Jennifer.Redell@wisconsin.gov](mailto:Jennifer.Redell@wisconsin.gov)



Scan this barcode with your smartphone to go directly to the Wisconsin Bat Program Website!

NEW!!

**\*If you see sick or dead bats this winter, please contact the program!**

The Wisconsin Bat Conservation Society is an annual membership where groups and citizens can support bat projects that need immediate funding. Specifically, these funds will be used for WNS research, landowner support in WNS prevention and control, surveillance, inventory, monitoring, applied management, and education about the benefits of bats. For details about how to donate head to: [www.dnr.wi.gov](http://www.dnr.wi.gov) keyword <bats>



The Wisconsin Department of Natural Resources' Wisconsin Bat Program (WBP) relies heavily on grants and funding support from citizens who are interested in bat conservation. Please consider donating directly to the WBP through Natural Heritage Conservation program, or to the WI Bat Conservation Fund.



## 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.