



THE NIGHT FLYER

NEWS FROM THE FLORIDA BAT CONSERVANCY



OUR MISSION

To preserve & protect native bat populations within the state of Florida.

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WHITE NOSE SYNDROME: A BLEAK FUTURE FOR NORTH AMERICAN BAT POPULATIONS

By Cyndi Marks

February 2006 marked the beginning of a catastrophe of epic proportions, unlike anything seen before in North America. In Howe Caverns near Albany, New York, a caver photographed a few bats that had a white, powdery substance on their noses. Several dead bats were also noticed, but the situation was not reported. The following winter (January 2007), bats were found in nearby Schoharie Cavern also with a white, powdery substance on their noses. Later that winter, bats at three other nearby caves were discovered with the white substance on their noses. All of these caves were within 10 miles of Albany, NY and served as winter hibernacula for bats. By March 2008, bats in hibernacula in four states (New York, Massachusetts, Vermont, and Connecticut) were observed to have what is now called the **"White-Nose Syndrome (WNS)."**

Bat researchers tried to identify what the organism was, where it came from, and how it was contributing to the death of bats. Early research determined that the white, powdery substance was a fungus genetically similar to the genus *Geomyces*, which are found in soils throughout most of the world, particularly at higher latitudes. *Geomyces* are psychrophilic (cold-loving) species found primarily in northern temperate regions and are also associated with Arctic permafrost soils. Caves in the northeastern states maintain year-round temperatures between 35 and 59 degrees Fahrenheit, which are well within the reproductive range for the fungus.

The most obvious symptom of the white nose syndrome is the presence of the fungus on the nose, ears and wing membranes of bats. However, researchers also noticed that bats in areas where WNS had been found were going into hibernation with insufficient stored body fat, and that by mid-winter their fat stores were depleted. As a result, the bats would arouse from hibernation and attempt to forage for insects. But, because there are essentially no insects during the winter in these regions, their attempts would further reduce the fat stores needed to survive until spring.



Photo: West Virginia Department of Natural Resources



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GOLDEN LEEF AWARDED TO FBC LEADERS

The League of Environmental Educators of Florida (LEEF) presented FBC founders, George and Cyndi Marks, with the Golden LEEF Award at their annual conference which was held in Clewiston in March. Cyndi and George, who have been providing bat education around the state for more than 20 years,



were given a framed photograph of a Florida bonneted bat with a plaque inscribed, *For their outstanding contribution to Environmental Education in Florida.*

"We were so honored to receive this award," Cyndi said. "And, LEEF Board members surprised us at the award presentation by coming through the door dressed in batty costumes, wearing bat wings, bat noses, and large bat ears!"

BATS AND RABIES

A note from FBC member Tom Craven:

For those of you who have an interest in Bats and Rabies you will want to read Denny G. Constantine's publication, *Bat Rabies and Other Lyssavirus Infections*. This is a publication of the USGS. Constantine has been involved in research relating to bats and rabies since the 1960's, and is considered to be one of the most authoritative individuals on the subject on the planet. The publication is 84 pages in length and contains numerous graphs, illustrations and photographs. If you wish to be able to respond knowledgeably to someone who brings up the topic of bats and rabies, then this publication is a must read. The publication is referred to as USGS circular # 1329 and can be purchased for \$5.00 from the USGS. Better yet, you can download it as a pdf for free at the following URL: <http://pubs.usgs.gov/circ/circ1329/pdf/irc1329.pdf>



FBC MOVES INTO NEW OFFICE

The Florida Bat Conservancy now has a new home base. We recently moved into a small office near Bay Pines. We do not have regular office hours, since much of the bat work is done out of the office. Members are welcome to visit the office, just call to check when we will be there, or make an appointment. It's small, but the rent is very affordable. Bats are not housed at the office, but if you are coming to visit, we can arrange to bring some bats in for you to meet. There is also a gift shop with bat houses, T-shirts, books, and other bat merchandise available for purchase. Our mailing address will remain the same (at the nearby Bay Pines post office).

BAT MONITORING PROGRAM LAUNCHED IN PICAYUNE STRAND

By Kathleen Smith, FWC Biologist

Located in the heart of the Big Cypress Basin, Picayune Strand State Forest and Wildlife Management Area (Picayune) is 78,615 acres of preserved forest nestled between the city of Naples and Fakahatchee State Park in Collier County. Picayune is co-managed by the Division of Forestry and the Florida Fish and Wildlife Conservation Commission (FWC). Picayune is part of the Everglades restoration project that will reinstate freshwater sheet flow into Ten Thousand Islands National Wildlife Refuge and Rookery Bay National Estuarine Research Reserve.

In light of these restoration efforts, FWC began the first ever bat monitoring program in Picayune in August of 2009 to collect data on species diversity and provide recommendations for optimal land management practices. Few mist netting studies have been conducted in south Florida and are much needed. In addition to baseline data, FWC is also investigating habitat preferences, seasonal variations of captures, and roosting behaviors of bats. FWC is combining acoustical monitoring, mist netting, and roost surveys to study Picayune's bats.

Since August of 2009, FWC has caught 168 bats and captured 6 of the 7 species thought to reside in Picayune. In addition, even the rare and state endangered Bonneted bat residing in Picayune has been found. The mist netting field season will conclude in May 2010 and resume again in October 2010, but the recordings of bat activity levels will continue year-round. In addition to this on-going project, FWC's future bat research hopes to investigate bats' response to prescribed fire.



Left to Right: Kathleen Smith, Linda Burris, Amanda Peck, Karyn Allman, Marc Griffield, Jean McCollom mist netting bats in Picayune.

EASTERN PIPISTRELLE GETS A NEW NAME

Worldwide there are over 70 bat species in the genus *Pipistrellus*. In the United States, we have only two species that have been listed in that genus: the eastern pipistrelle (*Pipistrellus subflavus*) and the western pipistrelle (*Pipistrellus hesperus*). The western pipistrelle is the smallest bat species in the U.S. and the eastern pip is the smallest in the eastern U.S. Taxonomists have suggested for many years that these two species may not be closely related to the other pipistrelle species. Genetic studies have now confirmed that they do not share a common ancestor with the other pipistrelles nor with each other.



As a result of these studies, our eastern pipistrelle has been placed into a new genus, *Perimyotis*, and retaining its species epithet, it is now named *Perimyotis subflavus*, and given the common name, "tricolored" bat. The western pipistrelle has also been placed into a new genus and is now named *Parastrellus hesperus*.

No matter what its name, it's still a precious, tiny creature with a voracious appetite for insects.

(Continued from page 1)

In the northeastern states, four hibernating species had been affected so far: the little brown myotis, the northern long-eared myotis, the small-footed myotis and the endangered Indiana bat. Mortality was also expected for the big brown and the tricolored bat. These species all gather at hibernacula during winter, but after hibernation they disperse widely to their summer habitat and maternity roosts.

David Blehert, director of microbiology at the National Wildlife Health Laboratory in Madison, Wisconsin, along with colleagues from the University of Wisconsin and Andrea Gargas at Symbiology, LLC have been studying the fungus. In early 2009, they determined that it was a new species of *Geomyces* and named it *Geomyces destructans*. As a result of the fungus, large numbers of bats have also exhibited wing damage. Bats that survive through the winter in WNS infected hibernacula are being found with necrosis, scarring, and atrophy of their wing membranes. The condition of wing membranes is vital for maneuvering and capturing insects in flight, escaping predators, and accessing their roosts. Damaged wings may have less surface area, and may lose their elasticity and dexterity. Besides flight capabilities, the wing membranes of bats are also important for circulatory regulation, thermoregulation, and water balance.

One million bats (the estimated loss so far in the northeastern states) could consume about 700 tons of insects annually.

Despite all efforts, WNS continued to spread. By March 2009, the fungus was confirmed in bat hibernacula in New Jersey, New Hampshire, Pennsylvania, Virginia, and West Virginia bringing the total number of states with WNS to eight. The confirmation of WNS at Hamilton Cave in Pendleton county West Virginia brought a new dimension to an already disastrous situation. Hamilton Cave is a “warm cave.” Previously it was thought that a *Geomyces* fungus would not survive in warm conditions and would be limited to more northern, colder caves. Pendleton County, WV has the highest concentration of the federally endangered Virginia big-eared bats anywhere. It also has the largest remaining Indiana bat hibernaculum in the region, and a cave called Hellhole, which is possibly the most important bat hibernaculum in the East.

Tennessee was added to the list of states with WNS in February 2010 when bats in Worley’s Cave in Sullivan County were found positive for the fungus. Sullivan County is in the northeastern corner of Tennessee, and Worley’s Cave is located 55 miles from the previously southernmost confirmed location of WNS in Smyth County, Virginia. By April 2010, WNS was confirmed at White Oak Blowhole Cave in the Great Smokey Mountains National Park. This cave has the largest Indiana bat hibernacula in Tennessee. As WNS moves farther south, fear also grows for two more species: the gray myotis and the southeastern myotis. Florida has the largest population of southeastern myotis, but their range includes several other southeastern states where WNS is approaching.

By March 2010, Maryland had been added to the list of states with WNS. The fungus has also spread into Canada where bats in three hibernacula in Ontario were confirmed to have the fungus. In mid-April 2010, WNS was confirmed in Missouri. According to the Missouri Department of Conservation, Missouri has over 6,300 caves, and although more than 500 are known to have bat colonies, the number of caves with bats may be as high as 5,000.

Bats are an important component of the ecosystems they inhabit. For their size, bats have the lowest reproduction rate among mammals. Most female bats only have one offspring per year. This slow reproduction rate makes them vulnerable to extinction. Despite all efforts, nothing has been able to slow the spread of WNS. With mortality rates between 92-100% at hibernacula in the northeastern states, it is unlikely that populations will be able to recover.

We are facing an extinction of some of the world’s most diverse mammals in proportions and at a speed never seen before. In fact, within the last few days since I began writing this article, FBC received news that WNS has been confirmed in a cave in Oklahoma, and the first gray bat (a federally endangered species) has been confirmed with WNS in Missouri.

MEMBER NEWS

WELCOME NEW MEMBERS...

Bat Patrons: Edge of the Wild, Stephen Duke

Bat Supporter: Wayne Nelson

Bat Friend: Jeffery Trotta

Regular: H. Alton Lee, Dixie White

... AND A SPECIAL THANKS TO OUR RENEWING MEMBERS!

Bat Patrons: Gwen Burzycki, Susan and Greg Trokey, Harvey Goldstein

Bat Supporters: Laura Manson, Tim Glover, Desta Hansen, Becky Cafiero, Roy Marks

Bat Friends: Michele Mann, Edward Beatty, Harry and Meg Edwards, Melvin Lauderdale, Chuck Holley, DVM, TJ Coburn



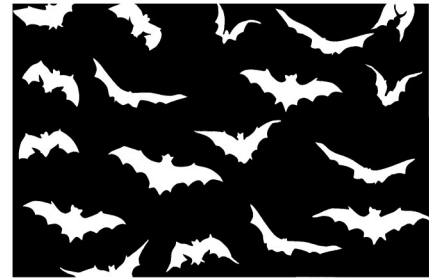
CHECK OUT THE TEMPLE TERRACE BAT TOWER PROJECT WEBSITE!

Read about the history of the original bat tower built in the 1920s and the progress of the new bat tower construction project. Project supporters have been unofficially fundraising for the project over the past year and have raised \$13,000 so far, which demonstrates the strong community support for the project. Architectural drawings are currently underway for the new tower. Sponsorships are now available and you can view the sponsorship levels on the website. Sponsors donating \$500 and higher will receive name recognition on a bronze plaque permanently located on the bat tower viewing pavilion designed and constructed by University of South Florida School of Architecture students in 2008 at the future bat tower site. The Bat Tower Shop on the website offers commemorative and upscale items including apparel, books, wine, and fine art. The Vin De Tour De Batte wines (an orange Riesling and a Bordeaux) were created especially for the bat tower project, and have a beautiful drawing of the original tower on the label. Proceeds from the Bat Tower Shop sales go to support funding the reconstruction of the bat tower.

www.templeterracebattower.com

EXHIBIT IN BRADENTON:

MAY 22—SEPTEMBER 12, 2010



MASTERS OF THE NIGHT

The True Story of Bats

www.southfloridamuseum.org

September 4th - Join FBC volunteers at the Master's of the Night exhibit for a special, batty, family night at the South Florida Museum. There will be bat songs and bat crafts, plus a few of FBC's live bats will be on hand to greet the guests. Call for more information: (941) 746-4131, or visit their website. The museum is located at 201 10th St. West, Bradenton, FL 34205.





HELPING FLORIDA'S BATS

Florida Bat Conservancy

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NEWS FROM THE FLORIDA BAT CONSERVANCY



You can help protect these fascinating, beneficial mammals!

Please consider helping Florida's bats by becoming a member. We are a non-profit 501(c) (3) organization working hard to protect bats by means of public education, conservation projects, rescue, rehabilitation, and research.

☐ *New*

☐ Regular \$15 ☐ Bat Friend \$30 ☐ Bat Supporter \$50

☐ *Renewing*

☐ Bat Patron \$100 ☐ Bat Conservationist \$250 or more

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