



# 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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## BAT MORTALITIES FROM WIND TURBINES CAUSED BY BAROTRAUMA

By Jennifer Smith

As we move forward into the 21<sup>st</sup> century, we are exploring more and more options for alternative power. Wind turbines are popping up all over the world, including the United States.

One of the pros is that there is clean, renewable energy being generated. However, there is also a serious downside to wind turbines that has conservationists concerned: they have caused the deaths of thousands upon thousands of bats and birds.

Bats have been dying in greater numbers than birds. It was once thought that, like birds, bats were dying from direct impact with the blades. New studies have shown that over half the bats that are found dead at the base of wind turbines are dying from barotrauma.

Barotrauma is a condition very similar to the "bends" that humans may encounter when scuba diving. This is

due to a drop of pressure on the tips of the blades when revolving. Bats fly through this pressure drop and the lungs expand, causing the capillaries to burst. Liquid fills the lungs and the bats essentially drown in their own fluids.



Bats can detect pressure changes that are large-scale and slow moving, such as storm fronts. However, wind turbines are completely different, and cause an unnatural and radical pressure change.

Bats that are being impacted the most from wind turbines are the "tree" bats, including the hoary, eastern red, and

silver-haired bats. The majority of the mortalities are occurring in the late summer and early fall during migration periods.

Although it is understood that wind turbines are impacting bats, the big question right now is what is causing the bats to become attracted to the wind turbines in the first place. Bats

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## FBC IN THE COMMUNITY

**January 21-26: Space Coast Birding and Wildlife Festival - Titusville.** Sponsored by Nikon and the Brevard Nature Alliance, this 12th Annual event features keynote presentations, seminars, workshops, field trips, art competition, wildlife exhibits, and vendors. FBC will be giving two bat programs: Jan. 23<sup>th</sup> at 10:15 and Jan. 24<sup>th</sup> at 11:30. We will also have a booth in the exhibit hall and be selling bat merchandise throughout the festival. Visit [www.nbbd.com/fly/](http://www.nbbd.com/fly/) for more information and registration.



**February 7: Orlando Wetlands Festival - Ft. Christmas Park, Christmas, 9 AM—3 PM.** Co-sponsored by the Orange Audubon Society, this 10th Annual Event will include guided birdwatching excursions and expert-guided nature photo shoots, native plant identification hikes, wilderness hikes, and much more! Visit [www.nbbd.com/festivals/OrlandoWetlands](http://www.nbbd.com/festivals/OrlandoWetlands)

**February 28: Bat Program at Dupuis Management Area—Canal Point.** (23500 SW Kanner Highway). Contact Kim Kanter at 561-686-8800, ext. 3339 for more information or to RSVP. Visit [www.ces.fau.edu/dupuis](http://www.ces.fau.edu/dupuis)

**February 28: Bat Program at Crowley Museum and Nature Center—Sarasota, 7 PM;** Barbeque at 6 PM. (16405 Myakka Road). For reservations (required) call: (941) 322-1000. Visit [www.cmncfl.org](http://www.cmncfl.org).

*For more information on any program, you may also call FBC: 727-710-2287*

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normally do not collide with man-made structures because they use echolocation when foraging for insects. Do the bats think the turbines are big roosting trees? Does their curiosity cause them to fly near the blades? Or is there some other attraction? The answer to this question has yet to be determined.

Several studies are being conducted to determine what can be done to reduce the amount of bat mortalities and still allow the wind turbines to produce energy. Some studies include determining the migration routes of bats so that the wind turbines will not be located in their direct path. A current study being conducted in Oregon (with the help from Bat Conservation International) is experimenting with shutting down the turbines a few hours every night during the late summer and early fall. A large portion the mortalities occur when the turbines are rotating at slow speeds and consequently producing low levels of energy output. It is thought that mortalities can be reduced from shutting down the turbines during the few hours when the bats are most active and when the turbines are at their slow period for producing power.

The results of this study have not yet been published. It is hoped that through the efforts of conservationists, we can strive to find a solution to eliminate bat mortalities and continue to reap the benefits of a renewable energy source.

## COMMUNITY BAT HOUSE BLUEPRINTS NOW AVAILABLE

A community bat house is designed to house thousands of bats and serve as a natural form of insect control for a community. The concept of community bat houses is not new, and was first attempted by developers in Florida during the 1920's. In those days, they were referred to as bat towers. The bat tower erected in Temple Terrace has been the subject of articles in two of our past newsletters (Autumn 2007 and Summer 2008). The tower built in the Florida Keys still stands on Sugar Loaf Key and is worth visiting if you ever get down that way. Unfortunately, these designs did not prove successful in Florida. Over the past fifteen years, however, designs have been developed that have proven to be highly successful in Florida. The first was constructed at the University of Florida in 1991 and now serves as home to over 100,000 bats, which perform insect control for much of the campus and surrounding areas. Others based on the same internal design, but constructed on a smaller scale, have been built at a number of locations in Florida, and many have proven quite successful.



Over the past several years land owners, parks departments, community leaders, and state agencies have approached the Florida Bat Conservancy requesting plans for large community bat houses. The problem was that no such plans existed. All of the community bat houses had been constructed by people familiar with bat roosting behaviors, but without the benefit of plans. A set of plans was greatly needed to expedite the construction of community bat houses in Florida. Although the Conservancy was anxious to develop a set of plans, an architect was needed to handle the construction details and create the final drawings. A major breakthrough occurred while working with Grant Rimbey on the promotion and fundraising for the reconstruction of the Temple Terrace bat tower, designed by Dr. Campbell in 1924. Grant is a registered architect with Elements Architects and Interior Designers based in Tampa, and he agreed to work with us in developing a set of project blueprints.

We formed a team consisting of Steve Barlow and Jayde Roof who had built a number of successful bat houses on preserved lands in Florida; Mark and Selena Kiser both of whom had worked for Bat Conservation International and wrote the *Bat House Builder's Handbook, Second Edition*; Cyndi and George Marks of the Florida Bat Conservancy; and Grant Rimbey as the architect and design consultant. Together the team developed a set of plans based on the lessons learned from both successful and unsuccessful bat houses built in Florida. The resulting plans are now available to land owners, community leaders, governmental agencies, and others interested in constructing a community bat house. The first one was built by Counts Construction near Ocala Florida. A photograph is included with this article.

The bat house is 8 ft. by 8 ft. square and designed to house a colony of approximately 40,000 bats. The interior of the bat house consists of 4 ft. by 8 ft. sheets of exterior siding spaced approximately 3/4 inches apart. The bats enter and emerge from beneath the bat house and scurry up between the partitions. The bat house was constructed in October and we are now anxiously awaiting the arrival of the first occupants. We take this opportunity to thank the team members who worked with us on the design. If you would like a copy of the plans, please contact the Florida Bat Conservancy by phone or email.



## MIAMI METRO ZOO: BAT FRIENDLY!



FBC President George Marks helping with the bat exclusion at the Miami Metro Zoo

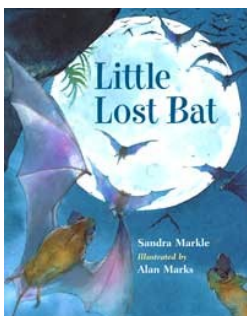
In addition to housing exotic animals from around the world, the Miami Metro Zoo also serves as home to hundreds of native Florida bats. These bats have been roosting in a number of the zoo buildings for many years. The zoo has been willing to share their facilities with the bats until this past summer when a colony moved into the gift shop. The bats had entered through a crevice that leads to an area above the ceiling where a large beam runs to the peak of the building. Bat guano was falling from a gap between the ceiling and the beam onto the counter tops. This, along with the musky odor emitted from the scent glands of the Brazilian free-tailed bats, made them unwelcome guests.

Miami-Dade County Pest Control Manager, Jude Plummer, contacted the Florida Bat Conservancy about the situation, and the Conservancy agreed to help by performing the exclusion. The zoo patiently waited until the end of the maternity season to insure all of the pups would be able to fly well and not be trapped inside. The zoo staff did their best to accommodate the bats by only excluding them from the gift shop ceiling and allowing them remain in the exterior areas of the building.

In 2006, a dead Florida bonneted bat was found at the zoo near the Elephant Barn. This prompted FBC volunteers to request permission to survey for bats at the zoo. Dr. Chriss Miller, DVM and other zoo staff assisted with the survey as we quietly roamed through the zoo at night with bat detectors careful not to disturb the sleeping animals. While no bonneted bats were recorded during the survey, we did record the echolocation calls of Brazilian free-tailed and evening bats emerging from roosts and foraging for insects over the zoo.

## Our Favorite Bat Books For Children

Here are some of our bestselling books! These excellent books help educate young people about bats. If purchased through the Florida Bat Conservancy profits will help fund our conservation efforts.

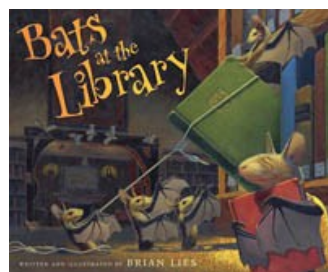


*Little Lost Bat*

A tender story about a baby Mexican free-tailed bat.  
Hardback, 32 pages, 11 x 9  
full-color illustrations.

Ages 4-8

\$15.95



*Bats at the Library*

By Brian Lies

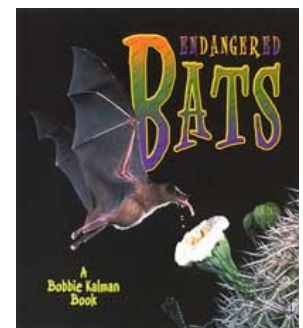
Both are hardback, 32 pages,  
11 x 9 with full-color illustrations.

Ages 5-8

\$16.00



*Bats at the Beach*



*Endangered Bats*

Paperback, 32 pages,  
8 1/2 x 9 1/2. Full color  
photos and illustrations.

Ages 6-10

\$ 6.95

***Call us to order at: 727-710-2287***

## WELCOME NEW MEMBERS...

**Bat Conservationist:** Christine Sutter

**Bat Friends:** Fran and Larry Norman, Billy Boothe,  
Ed and Theresa Frederick, Al Manassa

**Regular:** Jane D. Baker, Michelle Burton,  
Cindy Boschetto

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

**Bat Patron:** Ann Harris Walker

**Bat Supporter:** Lynn Huber

**Bat Friends:** Michele Mann, Debbie Fritz-Quincy,  
Gertrude Zekowski, Ann Rebois, Joe Maier

## COMING SOON....

### The Bat Store



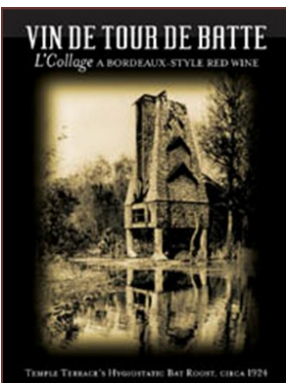
FBC is in the process of setting up an online store on our website. We have great bat merchandise available but in the past have only sold items at

environmental and wildlife festivals when we have set up the bat educational booth.

We hope you will soon be able to purchase bat books, T-Shirts, jewelry, bat houses and much more through the website. Proceeds from sales will help support the Florida Bat Conservancy.

Check the FBC website in early 2009!

## GIFTS THAT GIVE TWICE! SUPPORT THE TEMPLE TERRACE RESTORATION

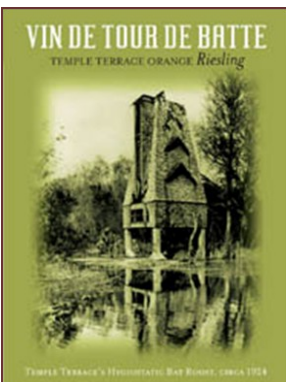


Enjoy a bottle of wine and help rebuild a landmark! A group of residents committed to rebuilding a piece of the Temple Terrace's history hopes others in the community will help them toast to its success.

At \$12 a bottle, these wines are an affordable gift or regular indulgence, and a percentage of the sales go towards rebuilding the iconic bat tower in Temple Terrace.

The winery's owner, Michael Rice, is offering two wines under the *Vin de Tour de Batte* label: the Bordeaux-style red L'Collage and the orange-infused Temple Terrace Orange riesling, in honor of the Temple orange. The vintner says of this wine: "This delightful riesling is fermented as usual, and is then married with the juice from fresh Florida oranges. The result has been described as a mimosa without the fizz. The orange flavor provides both a nice, refreshing flavor as well as a bit of nostalgia."

*The wines are now available in Tampa at: Aspirations Winery, 5116 E. Fowler Ave.; Olde World Cheese Shop, 11001 N. 56th St.; Chuck's Natural Marketplace, 11301 N. 56th St.; and the Empress Tea Room, 6810 E. Fowler Ave.*





HELPING FLORIDA'S BATS

*Florida Bat Conservancy*

*Post Office Box 516*

*Bay Pines FL 33744*

## NEWS FROM THE FLORIDA BAT CONSERVANCY



### ***Join us and 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

Name: \_\_\_\_\_ Email: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

*Make checks payable to: Florida Bat Conservancy, P.O. Box 516, Bay Pines, FL 33744*