



# Echoes From SOUTH DAKOTA

**SOUTH DAKOTA BAT WORKING GROUP**

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## Unanswered Questions: WIND ENERGY and WILDLIFE by Silka L.F. Kempema and Travis Runia

The following excerpt is from SDGFP's March/April 2011 issue of *Conservation Digest*. Our thanks to Silka, Travis, & GF&P for allowing us to include it here.

In 2001, the National Energy Policy reported that "if energy production increases at the same rate as during the last decade, our projected energy needs will far outstrip expected levels of production." This succinctly summarizes the burgeoning demand for energy in the United States. Each of us needs to pursue ways to efficiently use and conserve energy, but this alone will not be enough. Additional sources of energy need to be developed and clean, renewable, and sustainable sources, such as wind energy, are appealing for obvious reasons. Commercial production of wind energy in North America began in the 1970s. Despite its start over 40 years ago, the recent and rapid development of large-scale wind energy projects has generated a multitude of questions as to how it will influence wildlife. Research investigating the effects of wind energy on wildlife has only begun to provide insights and answers as many questions still remain.

Large numbers of bat fatalities at wind farms have been recorded in both the United States and Europe. Eleven species of bats are known to suffer mortality at wind farms. Many of the mortalities are of migratory bat species: hoary bat, eastern red bat, and silver-haired bat. Documented mortalities peak during late summer and fall, but it is still uncertain if they are more susceptible during this time; monitoring efforts during the spring are often limited. (CONTINUED ON PAGE 2)

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See You There!

**BAT FESTIVAL - AUGUST 13TH**

## Echoes From South Dakota

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### **WIND ENERGY and WILDLIFE** (cont'd. from cover)

Bats are known to collide with other structures, but with much less frequency than at wind farms and it is uncertain why so many bats are being killed at wind farms. Bats are long-lived with low reproductive rates and provide a valuable ecological service as a major predator of night-flying insects. The effects on bat populations are thought to potentially be much greater than for other wildlife species. Bats are experts at detecting things in motion using echolocation. This is one reason why bat mortality from direct strikes with moving turbine blades is puzzling. Bats primarily use echolocation when feeding, however. Researchers have documented that one cause of death is a result of the rapid reduction in air pressure near a moving wind turbine blade. Barotrauma is the tissue damage caused by excess air not being accounted for through exhaling. Despite documenting this cause, not all bats found under turbines exhibit signs of barotrauma. Post-construction mortality monitoring needs to continue and much work remains to further understand bat migrations and the reasons for bat mortality at wind farms. Pre- and post-construction monitoring protocols need to be standardized and occur at the appropriate times (from April through November) to further assess temporal patterns of bat fatalities. Existing methods to study bat behavior in and around turbines needs to be evaluated, improved, and diversified. More information on the geographic and temporal patterns of bat activity in relation to topography and land cover would provide additional guidance when siting turbines. Further research should also determine potential population effects and develop mitigation strategies to lessen potential impacts.

Information can be gleaned from other studies that have investigated the effects of other types of energy development on wildlife as there are similarities, but studies that look specifically at the influence of wind farms on wildlife are necessary to provide the science behind the conservation. The Great Plains is a unique landscape; regionally-based research needs to be conducted to fully understand what influence wind energy projects have on wildlife. The goal of this research should be developing solid solutions for mitigating potential negative effects of wind farms on wildlife and habitat while ensuring the responsible development of wind energy.

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**COME TO SEE US AT THE  
BAT FESTIVAL THIS YEAR!**



# Bats Finally Getting Some Credit...

Speak to many people about bats and you will frequently hear something akin to “Well, what good are they anyway?” A recent article in the journal *Science* will provide you with some excellent information to respond to such questions. The article, entitled *Economic Importance of Bats in Agriculture*, suggests bats may be responsible for saving U.S. agriculture over 3 billion dollars per year. That was 3 *billion* over the course of a *single* year!

The link below will take you to a page where you can view the article [just click on the topmost link “Complete publication (PDF)”. If it gets moved, drop an email to us (see back page for addresses) and we’ll find it for you.

It’s well written and worth the time to read! Letting people know about bats’ important roles can be an important contribution to their conservation. Go to:

[http://www.fort.usgs.gov/Products/Publications/pub\\_abstract.asp?PubID=23069](http://www.fort.usgs.gov/Products/Publications/pub_abstract.asp?PubID=23069)

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# BAT FESTIVAL - AUG. 13th

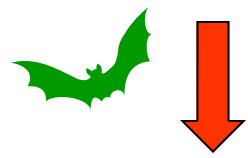
The 6th ANNUAL BAT FESTIVAL will again be held in and around the Tatanka Theatre in beautiful Custer State Park. (There is no charge for the Festival although the Park does charge an entry fee.) Bring the whole family this year for the displays, crafts, light refreshments, and learn or share something new about SD’s bats!

We’ll have different bat house styles displayed and we’ll hopefully get to watch a colony emerge from a house near the theatre at dusk. We’ll again have bat echolocation detectors on hand enabling you to hear the calls bats make when they are flying around hunting for their insect prey.

Everything will be setup and ready to go at 6:30 pm and, depending upon the weather, wraps up around 10-10:30 pm. It can get cool after dark, so we recommend you bring a jacket and wear closed shoes as the grass can get wet. While there are lights around the Tatanka Theatre’s exterior, we also recommend you bring a flashlight as the ground is uneven around the site.

We try to provide something for everyone and the cookies alone are worth the trip!





# POETS' CORNER



**Attention young and old!** We are looking for your poems about bats- poems that teach, poems that celebrate, and poems that make us laugh. If you have submissions for future editions of *Echoes of South Dakota*, please send them to me at [Cary.Roller@k12.sd.us](mailto:Cary.Roller@k12.sd.us). You may also send them through the mail to me, C/O Knollwood Elementary, 1701 Downing Street, Rapid City, SD 57701. Just tell us how you would like to be published (first name, grade, and school or first name and city, for example). Please make sure that the poems are original pieces of work and not copyrighted by someone else. **-Cary Roller**

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## Ballet in the Sky

Accompanied by the music of the night,  
The soft hoo-hoo-hoo-hoo of the Great Horned Owl,  
Aspen leaves rustling in the breeze,  
The whistles and howls of the wind,  
The symphony of chirping crickets and katydids;  
Bats take center stage,  
Precise acrobatic movements,  
Twists, turns, and somersaults,  
Cartwheels and high speed turns,  
Flying as fast as 30 miles an hour and never bumping into one another;  
A beautiful dance,  
Graceful and eloquent,  
A masterpiece,  
Exquisite art,  
Poetry in motion;  
A ballet in the sky.

Cary Roller, Rapid City

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## **Bats**

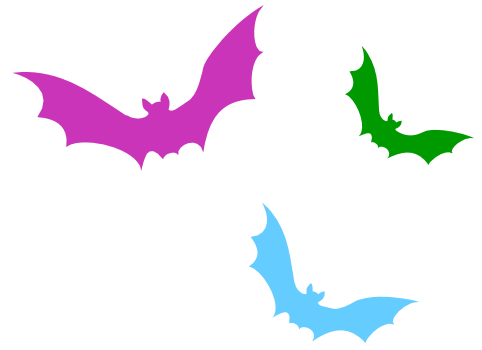
**Furry little creatures are we.  
We use echolocation to see.**

**We come out at night.  
Fish, fruit, and insects are our delight.**

**We hang upside down from caves and trees.  
Flying mammals are what we are classified to be.**

**Seeing you is a fright  
so we like to stay out of your sight.**

**-Amanda DiMaria, Rapid City**



## **Vampire Bats**

**Vampire bats  
Suck blood  
Out of cows, chickens, and pigs,  
Not you- not people.  
They're not scary.  
They're cool.**

**-Elijah, age 5**

**Artwork below is also by this young poet.**



**Some are scary;  
and some are a little hairy.**

**Some are fat;  
like a cat.**

**Their home is a cave;  
sometimes they misbehave.**

**They fly at night;  
and have great sight.**

**Guess what it is...a bat!**

**-Hannah,  
soon-to-be 3rd Grader  
at Corral Drive**



## Echoes From South Dakota

# BATS AND BRIDGES

Did you know that bridges can provide critical roosting habitat for bats? It makes sense if you think about it....Bats eat flying insects...flying insects are more plentiful around water or wet areas... bridges are often found over water or wet areas...bats like to roost close to where they will be feeding...and there you go.

The best known example in the U.S. is probably the Congress Avenue bridge in Austin, TX. Once considered to be a blight on the city (the bats not the bridge), the nightly exodus of 1.5 million Mexican free-tailed bats from the bridge during the summer months has become a major not-to-be-missed attraction for many of Austin's visitors.

(While not having experienced this emergence first hand, we are told, depending upon your viewing vantage point, when gazing upward into the sky, it is recommended to keep one's mouth closed.....



— makes an awfully tempting target and with 1.5 million bats, you just *know* one of them will get lucky.)

Another of the attractions of bridges for bats is temperature. All that concrete and steel heats up during the course of the day and then radiates warmth during the cool of the evening. This is very important to females during the reproductive season. Warm temperatures speed up the pregnancy and the maturation of the pup once it's born. Here in SD, it is not unusual for the temperature beneath a concrete highway bridge to be 30-35° warmer than the surrounding ambient air!

And not just concrete bridges are used by bats. The picture above shows a bridge constructed of steel beams on which wooden planks are set on edge a couple of inches apart. The traffic surface is then laid on top of these planks, creating lots of small compartments perfect for roosting bats.



This bridge is located on the Buffalo Gap National Grasslands right here in South Dakota and is used as a maternity/nursery roost by the western small-footed bat (*Myotis ciliolabrum*).

For more information on bats and bridges, see Bat Conservation International's web site at:

<http://www.batcon.org/index.php/what-we-do/bats-in-bridges.html>

ALSO-

Below is a link provided us by a reader to a program designed to encourage bat use of bridges in Oregon:

<http://www.betterroads.com/better-bridges-3/>

Visit us on the web!  
[www.sdbwg.org](http://www.sdbwg.org)



**SOUTH DAKOTA BAT WORKING GROUP**

Primary Contacts:

BRAD PHILLIPS  
SDBWG Chair  
[bphillips@goldenwest.net](mailto:bphillips@goldenwest.net)

DR. SCOTT PEDERSEN  
SDBWG Vice-Chair &  
Webmaster  
[Scott.Pedersen@sdstate.edu](mailto:Scott.Pedersen@sdstate.edu)

JOEL TIGNER  
Newsletter Editor &  
Bat Books For Schools  
[joeltigner@gmail.com](mailto:joeltigner@gmail.com)  
605-390-2061

Postal address:  
SDBWG NEWSLETTER  
C/O  
Joel Tigner  
2416 Cameron Drive  
Rapid City, SD 57702

The purpose of the SD Bat Working Group is to work to protect bats and bat habitat through action, education, and cooperation with Federal, State, Tribal, and private landowners.

Our objectives are two-fold: to raise awareness about the role bats play in maintaining healthy ecosystems; and to work with public land managers and private landowners and provide alternatives that will reduce possible adverse affects to bats or bat habitat.

Everyone is welcome to become a member of the SD Bat Working Group!

The only requirement is an interest in bats and their conservation.

There are no membership dues, so it's priced right for everyone!

**Get Involved....because bats need friends.**

**SDBWG's 6th ANNUAL  
BAT FESTIVAL**

**at**

**Custer State Park**

**SATURDAY, AUGUST 13, 2011**

**6:30-10:30pm**

**MAKE PLANS TO ATTEND!**