

THE CAVE CONSERVATIONIST

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The Cave Conservation and Management Section of the NSS

Volunteer Value Online Data Base

2005 NSS Conservation Division Report

Cavers give significantly to the protection, exploration, scientific investigation, conservation, and preservation of cave and karst resources. The volunteer value database will create a single location to collect and document volunteer value throughout the NSS. Volunteer value statistics can be used by public and private landowners to augment resource management and by cavers in grant application processes, cave management proposals, and karst protection battles.

Volunteer Value forms and information are available on the NSS Conservation Division website.

Plans:

Phase 1 - Determine the needs and requirements.

Phase 2 - Implement online Volunteer Value Input Form on NSS Web Site

Phase 3 - Publish static reports on website

Phase 4 - Possible interactive online mapping/GIS component to retrieve data

Progress: We have completed Phase 1, determining data fields and contacting NSS IT to determine software and compatibility issues. We are now in progress on Phase 2, we have a mock-up database and a web form has been developed. Once it is tested, we can get it on the Conservation website to start to collect data. Final data validation testing on the form is progressing.

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Vision for the NSS Conservation Division:

Heighten awareness of the importance of cave and karst conservation. Develop strategies to serve a greater diversity of audiences throughout the United States.

Mission:

- Develop programs to strengthen public knowledge about the benefits of cave and karst protection. Promote common knowledge about protecting karst systems, ground water quality and cave values. Advance general understanding and appreciation of cave ecosystems.

- Partner with other cave and conservation organizations, agencies, associations, and institutes that provide cave and karst outreach programs to landowners, land managing agencies, show cave interpreters, educators, and the public. Develop cooperative programs, distribute information, and network projects to promote awareness and conservation of karst terrains, cave ecosystems, the perpetuation of speleological processes, and the protection of spelean resources and values.

- Strengthen and extend common knowledge among cavers on cave/karst protection, conservation, and ethics.

<http://caves.org/committee/conservation>



Cave Conservation and Management Section of the National Speleological Society



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Kilowatts and Killed Bats

Jim Balow, Charleston Gazette Staff Writer

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Researchers alarmed at large number of dead bats at Tucker wind turbine site

The whirling blades of the 44 wind turbines atop Backbone Mountain in Tucker County killed more than 2,000 bats and nearly 200 birds last year, according to estimates from researchers hired to study bird and bat deaths at the site.

While many say the bird deaths are relatively insignificant, the bats are something else, something totally unexpected, and something totally unexplained.

"It's by far the biggest bat mortality event I know of worldwide, and, as far as I know, the biggest mortality event of any animal," said Merlin Tuttle, director of Bat Conservation International in Austin, Texas.

Tuttle has been studying bats for 45 years and founded the research group 22 years ago. He read the February report, "A Study of Bird and Bat Collision Fatalities at the Mountaineer Wind Energy Center, Tucker County, West Virginia." He's trying to raise money to conduct a follow-up study this year.

Tuttle and other critics have questions about the methodology and conclusions of the first study. He thinks the number of estimated dead bats, as alarming as it already is, could easily be twice as high.

"The reality, I think, is closer to 4,000," Tuttle said this week. "I believe that to be the consensus of other experts. One of the things experts have said: This sampling wouldn't pass scientific peer review."

As required by the state Public Service Commission, the wind power site owners, FPL Energy, hired a consulting firm to study bird and bat deaths in the first year after the turbines went into operation. They hired Paul Kerlinger of Curry & Kerlinger LLC, who has done similar studies at a number of wind power sites across the country.

Kerlinger designed the study and hired Jessica Kerns, a doctoral candidate at the University of Maryland's Center for Environmental Science Appalachian Laboratory in Potomac, Md., to do most of the field work.

Between April 4 and Nov. 11, 2003, Kerns and an assistant searched the site 36 times, mainly in the spring and fall. Because it normally took two days to search all 44 towers, they spent 61 days in the field. Rounds were spaced about nine days apart in the spring, seven days in the fall.

They walked concentric circles around each turbine and two weather towers, usually just after dawn, looking for dead

birds and bats on the ground. They found 69 birds and 475 bats, which they picked up, bagged, froze and sent off for identification. (The species and numbers of dead birds and bats found are shown in tables accompanying this article.)

Most of the birds killed were small common migrant songbirds, including 21 red-eyed vireos.

Very small numbers of other bird species were killed, usually just one or two - a robin here, an indigo bunting there, one red-tailed hawk and two turkey vultures.

Researchers found 33 dead birds on one night. They learned that someone had left on bright sodium vapor lights outside an electrical substation on a foggy night, which they believe attracted birds to their deaths. They discounted those results and warned people to keep the lights off.

Seven species of bats were identified, none of them endangered.

Next, based on the samples, the researchers tried to estimate the total bird kill over the entire year. They performed a searcher efficiency test, where Volunteers put out random bird carcasses to see how many the searchers could find - about one in four.

They also did a test to estimate how many dead birds got carried off or eaten by predators. They put all those results into a formula to extrapolate total kill numbers.

Kerns, a biologist who is doing her Ph.D. dissertation on the Mountaineer site, said she is more concerned about the bat kills than the birds. "The birds were pretty minimal ... when you consider the large-scale impacts elsewhere, like windows and cats," she said.

"Are 150 significant? Red-eyed vireos make up one-half of the deaths. The rest are one or two per species. Red-eyed vireos tend to hit the turbines. I don't know why. Maybe it's the higher population.

"I don't like to find 500 bats. It was quite a surprise. When we started seeing bats last fall, we started putting out feelers to other wind facilities. Is that significant? We don't know. Most of the bat populations are in the hundreds of thousands or millions."

(Continued Page 4)

Killed bats

Paul Kerlinger, the designer of the study, said he's been doing bird/turbine research for 10 years. He said the results of the Mountaineer study are "pretty much what I expected with respect to birds. It doesn't appear there were significant bird impacts.

"With bats, I did not expect the numbers," he said. "I'm not a bat expert. At other sites, the numbers are not large...

"I don't like the fact these projects kill birds, but it's not biologically significant. People say 'How do you know?' I say 'show me the numbers.'

"Bats? I really don't know the answer to that. I'm not a bat expert."

Environmentalists in West Virginia are divided on their support of wind energy.

Some say the towers are ugly and a threat to wildlife. Others view it as an alternative, non-polluting energy source.

The West Virginia Highlands Conservancy, after much debate, agreed not to fight a proposed wind project in 2002, but asked the Public Service Commission to set up a process for determining good sites.

Some of its members have formed splinter groups to oppose wind energy projects.

Peter Shoenfeld, chairman of the Conservancy's wind energy committee, serves on the technical review committee of the Mountaineer bat and bird study.

"I just don't think the problem with birds amounts to anything compared to large mortality that occurs all the time - running into windows, running into cars," he said.

A national study in 2001 said between 60 million and 80 million birds die after hitting vehicles and at least 98 million die after crashing into buildings or windows in the United States alone.

"With bats, there does appear to be a serious problem," Shoenfeld said. "I'm not in a position to say how serious."

Shoenfeld, a semi-retired mathematician, questioned the study's methodology.

"I was concerned about the sampling issues, the extrapolating." He said the number of birds found - 36, not counting the one-time incident - is too small a sample. He wondered why researchers didn't do a separate predator test for bats."

He provided follow-up projections that show the bat kill could be twice as high - 4,000 - using formulas used by other scientists.

Bird and bat deaths

Researchers found 69 bird carcasses of 24 species and nine unknown birds during their study last year in Tucker County. Nearly half were found on a single day and may have been attracted to bright sodium vapor lights at a substation. They are listed below.

Species	Number
American Robin	1
American Redstart	2
Black-billed Cuckoo	2
Blackpoll Warbler	3
Black-throated Blue Warbler	1
Canada Warbler	1
Chestnut-sided Warbler	1
Common Yellowthroat	1
European Starling	1
Hooded Warbler	1
House Sparrow	1
Indigo Bunting	1
Magnolia Warbler	5
Red-eyed Vireo	21
Red-tailed Hawk	1
Rock Dove	1
Rose-breasted Grosbeak	3
Ruffed Grouse	1
Swamp Sparrow	1
Turkey Vulture	2
Veery	1
Wood Duck	1
Wood Thrush	3
Yellow-billed Cuckoo	4
Unidentified small bird	9
TOTAL	69

Researchers found 475 bat carcasses of seven species and four unidentified bats during their 2003 study in Tucker County. They are listed below.

Species	Number
Red bat	200
Hoary bat	88
Eastern Pipistrelle	87
Little brown bat	60
Silver-haired bat	28
Northern long-eared bat	6
Big brown bat	2
Unidentified	4
TOTAL	475

Source: Kerlinger and Kerns, Bird and Bat Mortality Study at Mountaineer Wind Energy Center for 2003. ANDRIA L. RUNBERG Sunday Gazette-Mail

"Something that's gone on through the history of the project, I expect there will be unfair criticism of the report."

Unfair or not, after hearing a reporter was writing about the study, two people called the Sunday Gazette-Mail to offer their opinions.

Dan Boone, who identified himself as a wildlife biologist who owns a farm in Garrett County, Md., questioned the estimate of about 2,000 dead bats. "That in my opinion is a grossly underestimated figure. "The issue is what is the impact from these facilities if they're to be located on these ridges, and the failure to do studies before construction. The industry's own guidelines call for preconstruction studies of wildlife impact."

(Continued Page 5)

Killed bats

Boone noted that the PSC has issued permits for at least two, even larger, wind power facilities in West Virginia before the results of the Mountaineer study were known.

"That's not to say these facilities can't be built. We need to be more judicious in siting facilities."

Linda Cooper of Morgantown, a member of a new multistate group called Citizens for Responsible Windpower, said the group was formed to ensure that wind projects, when built, are done responsibly.

Like Boone, she said she feels the Mountaineer study methodology was flawed. "The level of independence is subject to question. There was no peer review, no statistical analysis. The sampling frequency was inadequate.

"I'm a researcher in human health. I know about the scientific method. If this is the best that can be done, we're really in trouble.

"The point I'd like to make, the turbines are built on what is considered to be a major [bird] flyway. Others are planned in a flyway. We currently have no siting regulations. It's asking a lot of the public to finance projects in a major tourism resource without siting regulations.

"It's difficult," Cooper said. "Wind power has divided the environmental community. To say this is the best solution, that it's something to embrace, is not something we should be doing."

Steve Stengel, a spokesman for FPL Energy in Juno Beach, Fla., said the study's technical review committee met three or four times to provide peer review of the protocol and results of the study.

Members included people from the U.S. Fish and Wildlife Service and West Virginia Division of Natural Resources.

"You can look at it two ways. If you look at the number of collisions of birds, I think you will find the Mountaineer facility is probably consistent with other facilities across the country. We're always looking at ways to reduce collisions.

"Clearly the number of bats was higher than what you'd like to see," Stengel said. "We're committed to finding out more about bat-turbine interaction."

More bat research planned this year

"We're going to continue to study bat-turbine interaction at the Mountaineer facility, specifically this fall," Stengel said. "We're still finalizing our plan. Our study will focus on bats this year."

FPL Energy hosted a two-day conference of bat experts in February to discuss the problem at Mountaineer and other sites. As a result, Tuttle, of Bat Conservation International,

and other bat scientists announced an industry-funded alliance to study the problem.

Tuttle said he's trying to raise \$150,000 to fund research this summer and fall in West Virginia. "FPL and us are trying to find a solution. We're trying to determine what a proper mortality study should be.

"We'll be going from weekly to daily searches. We need to correlate kills with fog, weather and insect catches to determine what is killing bats on our ridgetops. We have to ask: Are we attracting them in? Are we sonically attracting them? Are insects attracting them?"

He hopes to include radar tests. "I have a commitment from a world leading radar technologist who will be there for a week."

The dead-bat searches may begin in late July, he said. Last year, researches missed several weeks of the prime bat migration season.

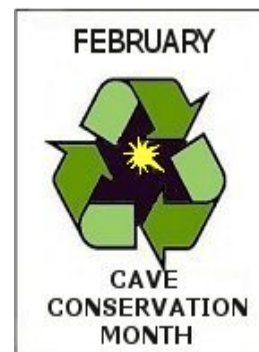
"We didn't know how big an issue bats were until last fall," Tuttle said. "Mortality [elsewhere] was so low. Bat searches were so scanty, and done at two-week intervals."

Bats aren't as well loved as birds, but maybe they should be, Tuttle says. "Bats are as important at night as birds are by day. They just didn't get protected by the migratory act." Some bird species are protected by the Migratory Bird Treaty Act.

"Bats are the primary predator of pests that cost farms and forests billions of dollars of damage annually."

Charleston Gazette: <http://www.wvgazette.com/>
Staff writer: Jim Balow 1-304-348-5102

Editors Note: Although no caves are mentioned in this article an informant made reference to four nearby caves and expressed concern regarding the wind turbine sites and their effects on the bats.



Short Scoops

The January 30, 2006 article in *The Knoxville News Sentinel* reports the most recent survey conducted in two Middle Tennessee caves which are owned by the Nature Conservancy has turned up data that suggests the gray bat, a federally endangered species once thought to be headed for extinction may be recovering and possibly healthy enough to be removed from the endangered species list.

On January 23, 2006 David Doyle alerted the caving community on the *NSS Discussion Board* that a Huge Stalactite Stalagmite Crystal Collection auction was being conducted on Ebay. This collection contained approximately three hundred formations and had a starting bid of \$395,000.00. Members of the caving community promptly responded which resulted in the auction being removed the following day.

An article in the January 18, 2006 edition of *CNN.com* reports biologists say twenty-seven previously unknown species have been discovered in caves beneath two national parks in California's Sequoia and Kings Canyon National Parks. Cave specialist, Joel Despain helped explore thirty of the caves in the two parks.

Jan. 18, 2006 *The Kansas City Star* announced Kansas City's Central Library will host the traveling Smithsonian Institution exhibit on caves, "Caves: A Fragile Wilderness" in February and March.

A new colony of endangered Ozark big-eared bats was recently discovered in an Oklahoma cave by forester Pat Gwin. Funding for a conservation easement was sought by tribal and federal officers. The funds would be used to compensate the landowner to not remove the trees and protection of the newly discovered bat colony. The Cherokee Nation came to the rescue and provided much needed funding to save the bats. (*Live Science*, January 17, 2006)

The January 7, 2006 edition of *The Gainesville Sun* reports groundwork on a Wal-Mart distribution center site was interrupted when a sinkhole opened on the property. According to the Wal-Mart spokesman Keith Morris, the sinkhole will not prevent the development from moving ahead.

According to the January 3, 2006 edition of *The*

San Marcos Daily Record, the Wimberley Valley Watershed Association has purchased Jacob's Well as well as the surrounding 50 acres. The Texas spring is thought to be the states longest underwater cave. The site will now be known as the Jacob's Well Natural Area and be used for research and environmental education.

On December 28, 2005 *The Tennessean* reports that John Noel, a businessman, environmentalist and a caver was not only a key player in saving an eighteenth century forest but also saved a cave and a sulfur spring.

In Bowling Green Kentucky *The Courier-Journal* reports a federal judge threw out a lawsuit by concerned citizens that wanted to halt construction of the Kentucky Trimodal Transpark. Earlier in the year the bones of two ancient Native Americans as well as prehistoric drawings on mud and limestone were discovery in a recently discovered cave under the transpark construction site, which provoked calls for an environmental impact study. (December 18, 2005)

Designated a State Natural Heritage Site by former Governor Zell Miller, Pigeon Mountain attracts cavers to the worlds deepest and best limestone caves each year. The Georgia Department of Natural Resources agreed to proceed with the purchase of 64 acres of land and 2,545 acres of mineral rights on the mountain that Vulcan could have continued mining underground but instead chose to work to develop an equitable plan for adding its land to the Wildlife Management Area. (*Walker County Messenger* December 15, 2005)

Featured in the 2005 National Speleological Society Convention and received an honorable mention in the video competition, "*The Caves of Sinking Valley*" is an hour-long DVD which features the Pulaski County study of the 33 square mile karst drainage basin as well as the results of the 30 years of scientific study of the Sinking Valley Cave System. The video which represents the volunteer efforts of scientists, engineers, cavers, as well as the local community was directed by Christopher Johns, written and narrated by Larry C. Simpson and the original music by Gary Woster was also broadcast on Channel 8, Somerset's Cable TV in September 2005. "*The Caves of Sinking Valley*" DVD is available at the NSS Bookstore. (*Kick 66* Press Release)

The Cave Conservationist

The Cave Conservationist © 2006 is the official publication of the Cave Conservation and Management Section of the National Speleological Society. The contents of the newsletter rely on contributions made by section members and others who are interested in cave conservation and management. Newsletter contributions should be submitted to the Editor, Lynn Roebuck pretzlgirl@charter.net as an attachment formatted to MS Word. Typed/mailed contributions are preferred but handwritten submissions will be accepted only if the item is brief. The Editor reserves the right to edit any and all submissions for length, clarity, style and/ or content. Digital photo contributions for the newsletter may be emailed as an attachment to the Editor. Articles and unsigned materials may be attributed to the Editor. Opinions expressed herein are not necessarily those of the Cave Conservation and Management Section, NSS or the Editor. Permission is granted to NSS publications to reprint articles published in *The Cave Conservationist* providing credit is given to the Author, Editor and *The Cave Conservationist* except where a copyright accompanies a specific item. Others who want to reprint material should contact the Editor. Future Newsletter Deadlines: February issue: January 15; May issue: April 15; August issue: July 15; November issue: October 15.

Membership in the Conservation and Management Section

The Conservation and Management Section is open to all members of the National Speleological Society as well as those interested in the conservation, management and protection of caves. Members receive the newsletter *The Cave Conservationist* and are entitled to vote at the annual meeting. Annual membership dues: \$5.00/ year to receive *The Cave Conservationist* electronically and \$10.00/year to receive *The Cave Conservationist* by regular mail. A section membership application can be found below or on our website <http://www.caves.org/section/ccms> Membership dues may be sent to the Treasurer, Eugene Vale eugenevale@socket.net Newsletter printing or postal distribution information may be obtained from Robert Hoke bob@hoke.net The Section presents two annual awards to a NSS Grotto and a NSS Group that have made significant contributions towards conservation or management of cave or karst resources. For more information concerning The Cave Conservation and Management Section of the NSS please visit our website. <http://www.caves.org/section/ccms>



Cave Conservation and Management Section of the National Speleological Society Membership Form



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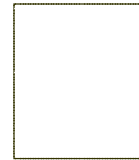
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