

# Mountaintop windmills kill bats

By Josh Lipton

Bat fatalities at wind generation facilities has been documented world wide in all sorts of habitats. Although the studies to date are incomplete, there appears to be a correlation between eastern wooded sites especially on high ridges and higher than usual bat mortalities. Below are the resulting estimates for the three eastern sites where bats were studied. Researchers point out that actual numbers are likely to be much higher.

- Mountaineer, WV 2003 (44 turbines) 47.53 2,090 per year
- Mountaineer, WV 2004 (44 turbines) 38.0 1,672 per year
- Buffalo Mt. Tennessee (3 turbines) 20.8 62 per year
- Meyersdale, PA 2005 (20 turbines) 23.0 460 per year

*The first figure listed represents estimates of bats killed per turbine per year; the second figure represents bats killed at that wind facility per year for the year listed.*

## Why are scientists so concerned?

In a *Washington Post* article, Merlin D. Tuttle, president and founder of Bat Conservation International was quoted, "Take the most conservative estimates of mortality and multiply them out by the number of turbines planned and you get very large, probably unsustainable kill rates. One year from now we could have a gigantic problem."

At the proposed Beech Ridge Windfarm, on a forested ridge in Greenbrier County 124 turbines are planned. If you use an average of the above rates for eastern forested sites the probable rate per year would be in excess of 4,000 bat fatalities this wind generating facility alone. The actual number is likely to be higher since the studies where rates have been estimated have been short term and vary in scavenger removal rates and searcher efficiency. The actual number is impossible to know, but most

RESEARCHERS BELIEVE THAT THESE sorts of mortality rates will be found at sites where similar conditions exist. What concerns researcher the most is the bigger picture, if you calculate an estimated kill rate for the turbines in place or proposed for the region the numbers jump into the tens of thousands. No one believes that bat populations can sustain that sort of loss year after year.

## How many wind turbines?

As reported by the recent GAO report the Department of Energy is aggressively promoting wind power. They are proposing that 15 times the current installed capacity be in place by the year 2020. This increase would be equivalent to 62,000 additional turbines added to the existing 16,000 turbines in operation making a total of 78,000 wind turbines. It is difficult to predict due to the lack of research on the subject what the national average kill rate per tower is for either bats or birds. However even if you use a fairly low projected estimate the total mortality to bats and birds is enormous.

## Why bats are more at risk

Contrary to popular belief, bats are not flying mice. Mice are capable of having many litters with multiple offspring. Bats however typically have only one or two offspring per year. Bats compensate for low reproductive rates by having longer life spans. Many populations of bats are already showing declines. By the introduction of wind turbines as an additional cause of mortality bat populations will have an even harder time surviving.

## Protection of bats

Bats as a group are given no special status or protection. In theory the Fish and Wildlife Service is charged with the protection of all wildlife species however it is only when bats have the dubious distinction of being threatened or endangered that they are given any

real protective status. The question has to be asked, will unprotected species of bats being impacted by wind turbine installations have to have their numbers dwindle to a point that they become a listed (endangered or threatened) species before any action is taken? What action will be possible at that point in time? At Altamont Pass in California post construction studies revealed some of the highest bird mortalities ever recorded. Many of the birds collected were Golden eagles and Red-tailed hawks. That was 20 some years ago. Though attempts have been made to mitigate collisions, turbines still spin and birds are still being killed at high rates. Once in place turbines will remain as long they are making their owners a profit. Mortality of wildlife even protected species is considered an "incidental taking" by an otherwise legal action and while the problem may be noted by regulatory agencies there does not appear to be the political will to take much action.

## Endangered species

Given the existing laws and the political climate for regulation it is up to those species of bats that have already been designated as threatened or endangered to represent, in a legal sense, the interests of bats as a whole. If an endangered species is at risk then regulators have a legal responsibility to act. While no endangered bat species have been collected in mortality surveys so far we must view this evidence in light of the fact that very few bat surveys have been conducted. Of the total number of bats killed by wind turbines only a small percentage have been collected and identified. If a species has been designated as endangered it goes without saying that species numbers have already declined and that this decline decreases the probability of detection. It appears that migratory bat species are the most likely to collide with turbines.

NOVEMBER 12, 2005

P. 5B

## BATS - (CONT.)

In southeastern Appalachia the Indiana myotis a migratory bat is the most probable endangered bat species to be effected at wind turbine facilities.

### **The problems with existing studies**

Most mortality studies at wind generating facilities have been designed to track mortality of birds. Estimates for bats have been less precise or incidental. Overall there is just not much quality information on bat mortality resulting from wind turbines. Bat Conservation International publication states that only 12 of the 200 U.S. turbine facilities (with a nationwide total of 16,000 turbines) had been examined for bat kills—and only six of those attempted to estimate total bat mortality. The post-construction mortality study at the Mountaineer project in Tucker County WV did look specifically at bat mortality at the urging of WV DNR biologist. Is the outcome of that study, high mortality of bats, the result of its focus being the mortality of bats as well as birds? An important factor in these studies is whether scavenger removal rates and searcher efficiency rates are incorporated. The mountaineer study did address these contingencies while in many other studies on record they were overlooked. When these factors are overlooked or underestimated, numbers for both birds and bats appear lower than they actually are. Finally it must be noted that most studies to date are conducted by and for wind generating companies with little or no peer review. The resulting bias is inevitable. There is a definite need for more thorough studies that are long term, ongoing and properly peer reviewed.

*(Josh Lipton has been a Greenbrier County resident for 27 years.)*