

# Researchers, wind energy companies seek more bird-friendly turbines

7 January 2014, by Jeremy Thomas

They're touted as the future of energy production - clean, efficient and renewable. But there's a dark side to wind turbines for local wildlife - towers and spinning blades kill thousands of birds and bats on the Altamont Pass east of Livermore each year.

While the hazards there aren't unique, recent studies suggest up to twice as many birds are killed every year at the Altamont Wind Resource Area than previously indicated by official estimates. Independent researcher Shawn Smallwood, head of ongoing mortality surveys in the Sand Hill area and other parts of the Altamont, estimates 10,000 birds are killed each year. It's particularly dangerous for golden eagles; about 60 die annually, he said, making it among the most lethal zones for the species in the country, based on available records.

"The old (turbine) technology is terrible," Smallwood said. "It kills a lot of birds and bats. It's like a person running across a very busy street. You make it some of the time, but once in a while, you don't."

Nationwide, investors put \$25 billion into wind energy in 2012, with U.S. wind farms reaching 60 gigawatts of capacity, according to the American Wind Energy Association. California is second only to Texas in total wind capacity, with \$11 billion in capital investment.

Altamont Pass - one of the largest concentrations of wind farms in the country - is in the middle of decommissioning 4,000 old turbines that use 1970s and '80s technology; nearly all will have to be removed or replaced by 2018. The world's most heavily studied area for wildlife impacts could also be the proving ground for a new type of turbine that county officials and ecologists hope will be less deadly.

Since 2012, Smallwood and his team have been studying flight behavior and counting dead birds

every four days for wind energy company Ogin Inc. The company is seeking Alameda County's approval to install 40 of its "shrouded" turbines in the Sand Hill area to test its theory that the turbine's unique design will help prevent golden eagles, red-tailed hawks and other species from colliding with the blades, hopefully reducing deaths.

The key is the shroud - two concentric covers around the blades - which the company says not only make them more efficient than older turbines, but also less accessible to approaching birds and bats. At less than 200 feet, they're shorter and smaller than most "next-gen" turbines, which can reach almost 500 feet.

"It's a visual and physical obstacle that, in theory, will prevent birds from flying into the rotor zone," explained John Howe, Ogin's vice president of public and environmental affairs.

The three-year avian impact study could influence how conventional turbines are phased out from the Altamont and elsewhere. According to Alameda County Assistant Planning Director Sandra Rivera, its objectives fall in line with a 2007 settlement reached with [wind energy](#) companies, the Golden Gate Audubon Society and Californians for Renewable Energy, in which the companies agreed to reduce deaths among four raptor species - the golden eagle, burrowing owl, American kestrel and red-tailed hawk - by 50 percent from 2005 figures.

"Hopefully there is an improvement with regards to mortality rates," Rivera said. "If it's positive, we can presume the technology will be used not just at Altamont, but at other locations as well."

A report produced for the Altamont Scientific Review Committee - a five-member research group that makes recommendations to the Alameda County Planning Director - shows an average of 5,000 birds died annually in the Altamont area from 2005 through 2011. County officials said there's no

way to tell how many fatalities were directly related to [turbine](#) collisions, but evidence shows bird strikes have been the single biggest contributing factor.

Smallwood says the official figures underestimate the true impact on mortality rates. He calls the Sand Hill study the "first controlled experiment in any wind farm," saying it will produce more accurate data than ever before.

While Altamont remains dangerous for birds, Smallwood said, conditions are improving, thanks to technological advances and better positioning of turbines - out of common flight paths and into areas where birds are less likely to hover.

With county approval, Ogin could begin its initial 4-megawatt repower by early summer. Smallwood's team would study the shrouded turbines for a year, making before-and-after comparisons of fatalities, concluding in 2015.

The Golden Gate Audubon Society in Berkeley, Calif., is supportive of the study.

"We're always cautious about any new turbines or structures that are going to be installed in the landscape, but we're optimistic," said Executive Director Mike Lynes. "Our goal is to create a balance between renewable energy and maintaining local wildlife populations."

A decision on the project's environmental report is tentatively scheduled for March. A second phase calls for 300 more shrouded turbines at a future date, contingent on the study's results. While the design is promising, Howe cautioned the company isn't making any claims.

"We want to do our homework on this technology," Howe said. "We're approaching this with an open mind."

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