

THE PEREGRINE FUND'S POSITION ON WIND POWER GENERATION

August 2010

The Peregrine Fund is sometimes asked its opinion about wind turbine generating plants. These facilities have proliferated since the mid-1980s, and there are projects underway to establish many more of them throughout North America and elsewhere. Wind energy is becoming an important source of clean energy that minimizes production of greenhouse gases and has no impact on rivers. The main environmental downside of wind energy, however, is the widespread tendency of the spinning turbine blades to kill birds and bats.

Two of our scientists, Dr. Tom Cade and Dr. Grainger Hunt, have investigated raptor mortality associated with wind turbines. With support from the wind industry, Dr. Cade convened an advisory board of avian scientists during 1993-1996 to review the problem and offer recommendations. These led to several field studies on bird strikes at the Altamont Pass Wind Resource Area in west-central California, the first large wind energy facility in the U.S. and an area of frequent raptor fatalities. Dr. Hunt, formerly with the Predatory Bird Research Group, University of California, focused a seven-year investigation (1994-2000) on the question of whether blade-strike fatalities at Altamont Pass were seriously affecting the resident Golden Eagle population in the region. The study involved regular aerial monitoring of a sample of 257 radio-tagged eagles. Each transmitter had an expected battery life of four years and contained a mortality sensor. Fatalities detected from the survey airplane were examined to determine the cause of death. Turbine blade strikes accounted for 42 of the 100 fatalities recorded during the study period. Hunt used the telemetry data to estimate the survival probabilities of individuals residing within 30-km of the wind plant and estimated the reproductive rate of the local population based on the annual monitoring of about 60 nesting pairs. Population analysis could not confirm that the Golden Eagle population was declining, but suggested that excessive mortality eliminated the normal reserve of locally produced nonbreeding adults that ordinarily buffer against breeder losses.

Altamont Pass is not an ideal location for a wind turbine plant when one considers the level of raptor mortality still occurring. Dense populations of California ground squirrels and California

voles provide rich habitat for a variety of raptors. Those agencies that originally approved the facility apparently overlooked how attractive the area was as a food source for raptors and the frequency with which turbine blades would kill them. Had more careful evaluation been performed, it is doubtful that the plant would have been constructed; it was not until the early 1990s that evidence had accrued to the point of real concern. As it stands, more than 50 Golden Eagles and several hundred Red-tailed Hawks and American Kestrels continue to be killed there each year by turbine strikes.

We should keep in mind that most forms of electrical energy generation negatively affect wildlife. For example, Hunt recorded twelve electrocutions of radio-tagged Golden Eagles during his study. All were associated with utility lines outside the Altamont wind plant. Such lines occur throughout the eagles' wider range and, overall, must kill far more eagles in California than do wind turbines. Research on raptor electrocutions has yielded a 30-year history of improvement in the way electrical lines are configured so as to reduce raptor mortality, but there is still progress to be made in this regard, and numerous lines throughout California and elsewhere have yet to be retrofitted.

In our opinion, the science of wind turbine design has not properly addressed the issue of bird and bat deaths. The trend toward larger towers with blades further from the ground and slower rotation speeds may offer raptors more room to maneuver around and under them, and the moving blades themselves may be more visible. In addition, the larger and newer turbines apparently kill fewer birds per megawatt hour of energy generation. Given the current state of knowledge and development, however, and the lack of progress toward safer turbine designs, the most important issue is that of carefully considering where turbine plants are built. The Peregrine Fund hopes that the industry will not repeat earlier mistakes of placing wind plants in wildlife-rich locations.