

# About Wind Farms, Birds & Bats

As the threats of global warming increase, alternative energy sources like wind power are being promoted as an essential new source of energy. Montana ranks as one of the best places in the United States to build new wind farms. A few large-scale wind farms have already been built in the state—and many new industrial scale wind projects are slated for construction.

Montana Audubon is working to ensure that wind energy producers do not locate their farms in critical habitat for birds and other wildlife. This article attempts to answer a few of the questions on the siting of wind farm in Montana.

**How can wind farms impact wildlife?** Research shows that wind farms can impact wildlife in 2 principal ways: 1) they can eat up—or fragment—habitat and/or 2) they can directly kill birds and bats.

Habitat fragmentation occurs when wind farms—and their associated roads, power lines, and other structures—displace wildlife. The impacts of habitat fragmentation go far beyond the immediate “footprint” of the wind farm, because some wildlife—particularly prairie species—will avoid areas with high towers. The solution? Keep wind farms close to established roads, cropland, and other developed areas—and away from large blocks of crucial wildlife habitat.

Bird and bat deaths occur in two ways. Birds die when they collide with turbines, power lines, and other structures. Although bat collisions can occur (sometimes bats turn off their echolocation and can run into things), recent scientific studies indicate that barotrauma may be a significant cause of bat deaths at wind farms. Barotrauma occurs as bats chase the turbine blade (their echolocation detects a moving object). As the bat gets close to the blade, it is pulled into a low pressure area immediately behind the blade. This low pressure area causes the bat's lungs to expand into its body cavity, exploding the blood capillaries in the bat's lungs. This phenomenon was recently established as a significant killer of bats at an Alberta wind farm. The solution? For both birds and bats it is important to avoid putting wind farms in areas that attract a lot of these animals—including streamsides areas, migration corridors, and crucial habitat for species of conservation concern.

**How Does Montana Regulate Wind Farms?** Currently Montana has virtually no ability to regulate wind farms. Consequently, wildlife concerns may only be addressed if a wind farm is located on public land. When this happens, an environmental review must be conducted under either the Montana Environmental Policy Act (MEPA) for state land, or under the National Environmental Policy Act (NEPA) for federal land (forest service, BLM, etc.).

**What Do We Know About the Impacts of Montana Wind Farms on Wildlife?** Established in 2006, the Judith Gap Wind Energy Project is the largest wind farm in the state, with 90 turbines producing approximately 135 megawatts (MW) of electricity. Because the site includes state (public) land, an Environmental Assessment (EA) under MEPA was conducted. As part of that EA, both wildlife studies were conducted prior to construction of the wind farm, as well as after the wind farm was built. The pre-construction studies revealed that there were no Threatened or Endangered species using the area; no significant water bodies (large wetlands, streams, ponds, etc.); and no prairie dogs and only low densities of ground squirrels within 5 miles of the site (which reduces the number of raptors using the area). Additionally, habitat fragmentation was minimized because the wind farm is next to a major road (U.S. Route 191), and only 23 of the 90 turbines were placed in native prairie. The owner of the project, Invenergy, also established a Technical Advisory Committee to review its wildlife studies. Both Janet Ellis of Montana Audubon and Robert Lubbers of Yellowstone Valley Audubon sit on this committee.

What have we learned at Judith Gap? The bird deaths predicted in the EA are accurate—3 bird deaths per megawatt of electricity, or approximately 406 birds killed per year. This rate is considered acceptable for a wind farm project. Bat deaths surprised everyone. Although the EA

predicted that 2.5 bats would be killed/MW, post-construction studies revealed that 8.9 bats/MW were dying, or 1,206 bats per year. Interestingly, both species of bats killed—hoary and silver-haired bats—are generally found in the forests of Alberta. It appears that Judith Gap is a migration corridor for these little-understood animals, with most of the dead bats found in August and September, during their migration and breeding season. Because of the high number of bat deaths, Invenergy has agreed to do additional bat research to determine if the bats deaths were either a 1-year phenomena or if a situation exists that should be addressed through mitigation.

In addition to Judith Gap, several other large wind farms are currently being planned, including:

❶ The **Coyote Wind** project overlooking the Yellowstone River, just downstream from Livingston near Springdale. This project is close to the Yellowstone River, has Bald Eagles nesting nearby, and contains a prairie dog town that could attract hawks.

❷ The **Martinsdale Wind Power Project** located near Judith Gap. Although much of this project is located on cropland, there are Bald and Golden eagles nesting in the vicinity, as well as at least one active Greater Sage-Grouse lek.

❸ The **Kevin Rims** wind project located north of Shelby. It is the proposed wind farm we have the most concern about because it would be located in a globally significant Important Bird Area (see IBA article on page 13). Ultimately the company wants to install up to 900 turbines in the area. Kevin Rims contains the highest known density of nesting Ferruginous Hawks in Montana. The area has been designated as an Area of Critical Environmental Concern and as a Key Raptor Area by the Bureau of Land Management. Ten species of raptors breed within the IBA, four of which are of Global (Ferruginous Hawk), Continental (Swainson's Hawk, Prairie Falcon), or State (Golden Eagle) conservation concern.

#### **What Can be Done for Wildlife?**

Although Montana Audubon recognizes the need for renewable energy to combat climate change, we are concerned about the potential impact of power generating facilities on wildlife. To guide us in our work, we have developed a policy on wind farm siting. This policy describes what wind companies should do to minimize impacts on wildlife. For a copy of our wind policy, visit <http://mtaudubon.org/issues/energy/index.html#wind> or contact Janet Ellis at [jellis@mtaudubon.org](mailto:jellis@mtaudubon.org). Additionally, we are currently working to introduce wind farm siting legislation before the 2009 Montana Legislature.

