

Wind Energy and Wildlife: If Not Wind, Then...?



In the face of traditional energy generation's increasing challenges, clean, fuel-free wind energy can offer some help: wind energy produces no emissions, stabilizes energy prices, and provides electricity for our escalating needs. Like all human invention, wind energy has some impacts; but the choice is not a simple trade-off between wind and nothing. Our society, even with increased energy efficiency, demands a steadily growing amount of electricity. And if some of that new electricity does not come from wind, it is likely to come from another source with far more damaging environmental consequences; for example, 67% of our electricity currently comes from fossil fuels, and many new fossil fuel power plants are being developed. That's a lot of pollution. So the question we must all ask ourselves is: if not wind, then what?

Environmental Impacts of Electricity Sources

	Wind	Nuclear	Coal	Natural Gas
Global Warming Pollution	None	None	Yes	Yes
Air Pollution	None	None	Yes	Limited
Mercury	None	None	Yes	None
Mining/Extraction	None	Yes	Yes	Yes
Waste	None	Yes	Yes	None
Water Use	None	Yes	Yes	Yes
Habitat Impacts	Yes	Yes	Yes	Yes

- A reasonable, conservative estimate is: of every 10,000 human-related bird deaths in the U.S. today, wind plants cause less than one.
- The industry has been conducting avian studies at wind sites across the country for more than twenty years.
- Although wind development may affect the habitat of sensitive grassland birds, it can also support preservation of habitat from suburban sprawl.
- AWEA estimates that in order for wind energy to generate 15% of U.S. electricity, only 0.6% of the land of the lower 48 states would have to be developed.

Consider the following facts:

- Fossil fuel power plants account for about 34% of the carbon dioxide (CO₂) emitted by the United States, itself the largest emitter of CO₂ worldwide; the Energy Information Administration reports that in 1999, U.S. power plants emitted 2.245 billion tons of CO₂. Carbon dioxide is the leading global warming pollutant, threatening habitats for wildlife worldwide. A scientific study published in *Nature* (January 2004) has estimated that global warming may lead to the extinction of one million species by 2050. **Wind farms emit no global warming pollution.**
- Fossil fuel power plants account for 63% of the sulfur dioxide (SO₂) and 22% of the nitrogen oxide (NO_x) emitted in the U.S. according to a 2002 Natural Resources Defense Council (NRDC) study. SO₂ and NO_x acidify rain, snow and fog, and contribute to smog. Acidity damages forest, river and stream habitats, depletes calcium, and results in weaker eggshells for birds. Weaker eggshells harm young chicks' survival in the nest. *National Geographic* reports that acid rain is believed to account for the widespread decline of the wood thrush in the northeastern U.S. **Wind farms emit no air pollution.**



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- Fossil fuel power plants are the single largest source of mercury emissions in the U.S. (48 tons annually) as reported by the NRDC study. The National Wildlife Federation in 1999 found that rain in the Great Lakes region contains as much as 65 times the EPA's 'safe level' of mercury. This affects species such as the common loon, which may hatch 50% fewer young when contaminated from high levels of mercury, according to the National Wildlife Federation. **Wind farms emit no mercury.**
- Mining for fossil fuels threatens wildlife as land is blown up or strip-mined, riverbeds are filled with waste, and acid mine drainage kills aquatic life. The American Bird Conservancy estimates that mountaintop mining/valley fill operations in West Virginia, Tennessee, Kentucky, and Virginia will lead to a massive and permanent impact on mature forest birds including the loss of tens of thousands of breeding Cerulean Warblers and other forest birds in the next decade. To generate the same amount of electricity as does the current fleet of U.S. wind turbines would require burning 9 million tons of coal (a line of 10-ton trucks stretching 3,400 miles, from Seattle to Miami) each year. **Wind energy requires no mining or drilling for fuel.**
- Most new electricity comes from natural gas power plants. Fast-growing demand for that fuel is spurring coal-bed methane extraction of natural gas in the Western U.S., lacing prairie with wells, noisy compressor stations, and wastewater pits, and threatening wildlife habitat. The shortage is also building pressure to drill in protected areas and to import liquefied natural gas (LNG), often drilled and shipped from fragile ecosystems. Accelerated development of wind energy can dramatically reduce demand for natural gas in a feasible, cost-effective, and environmentally-sound way. **Wind energy requires no mining or drilling for fuel.**
- AWEA estimates that in order for wind energy to generate 15% of U.S. electricity, only 0.6% of the land of the lower 48 states would have to be developed-and within that area, as little as 5% of the land would be taken up by turbines and access roads. Farming, ranching, and most existing land use would continue up to the foot of the turbines, although some additional impacts will result from the expanded transmission lines needed to bring that wind capacity on-line.
- A reasonable, conservative estimate is: of every 10,000 human-related bird deaths in the U.S. today, wind plants cause less than one, according to a paper prepared for the 2002 International Partners in Flight conference.
- A reasonable, conservative estimate is: if wind power were developed to the same extent as hydropower today (6% of U.S. power supply), of every 10,000 human-related bird deaths in the U.S. today, wind plants would cause 9.
- The industry has been conducting avian studies at wind sites across the country for more than twenty years. Over this period, post-construction monitoring of bird kills at several wind sites in a wide variety of geographic locations has validated the industry's ability to assess risk to birds and build safe projects.
- Although wind development may affect the habitat of sensitive grassland birds, it can also support preservation of habitat from suburban sprawl and other development that often has devastating impacts on wildlife. In some cases, in places like upstate New York and Kansas, installing a wind project has allowed families to stay on farms and ranches, preserving the open space important to many species.