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Wildlife and Environmental Impacts of Wind Projects: Myths and Facts

MYTH: Wind turbines are a major threat to birds and other wildlife.

FACT: All energy generation has some impact upon wildlife, but the life cycle impacts of wind energy are among the most benign.

The New York State Energy and Research Development Authority (NYSERDA) conducted a comprehensive cradle-to-grave analysis of wildlife impacts associated with energy production from nuclear, coal, natural gas, oil, hydroelectric dams, and wind. Wind energy was the only generation technology that was found to pose no population-level threats to wildlife.¹

The Department of Interior estimates that each year 234,000 birds are killed in collisions with turbines in the US, while 880,000,000 birds are killed in collisions with buildings, cars, and power lines.² The National Audubon Society supports properly sited wind farms.³

North Carolina is home to 12 species of birds federally listed as endangered or threatened under the Endangered Species Act,⁴ and many migratory birds protected by the Migratory Bird Treaty Act.⁵ North Carolina House Bill 484 addresses the protection of endangered and migratory bird species by requiring wind developers to do a preliminary analysis of impacts on protected species before seeking a permit.⁶

MYTH: Wind projects devastate local bat populations.

FACT: Data regarding wind turbine-bat collisions is highly variable both across and within regions, but measures are available to reduce risks for bats.

Bat conservation is a challenge due to a lack of data regarding all bat-human interactions, population sizes,⁷ white nose syndrome, and habitat loss. Data regarding wind turbine-bat collisions is highly variable across and within regions (from 2 to 30 bat fatalities per installed megawatt measured at different facilities).⁸ Turbines may pose population-level risks to bats in certain areas,⁹ but there is insufficient baseline data for a strong scientific consensus.¹⁰

Despite this lack of data, several measures to reduce risks for bats have been developed.¹¹ Managers at Casselman Wind Power Project in Pennsylvania adjusted wind turbine operations and decreased bat

fatalities between 44 and 93%.¹² In southwestern Alberta, Canada it was found that by altering turbines so that blades were near-motionless in low wind speeds, bat fatalities could be reduced by 60%.¹³ Additionally, General Electric has developed a “boom box” that deters bats from approaching active turbines by disrupting echolocation, while Lite Enterprises has worked to create an UV-light emitting device that deters bats.¹⁴

MYTH: Wind projects disrupt hunting & recreation.

FACT: Limited empirical evidence is available on this subject, but available evidence shows that wind projects do not significantly disrupt hunting.

There are some claims that wind turbines will disrupt hunting, but there is very little evidence to support this claim. Evidence from the wind farms near protected areas¹⁵ and scientific studies show that wind power can increase access for recreation, hunting and leisure traffic.¹⁶ Ducks Unlimited, a national nonprofit dedicated to protecting waterfowl, holds the position that properly sited wind turbines will lead to healthy duck populations.¹⁷

MYTH: Pollution from wind turbine manufacturing outweighs the environmental benefits of wind energy.

FACT: Wind turbines have significant positive environmental impacts because the cradle-to-grave pollution impacts of wind turbines are minimal compared to conventional generation.

All energy generation options create pollution during manufacturing and construction, but unlike conventional generation sources, wind energy produces virtually no pollution during operation.¹⁸ Because wind energy almost always displaces fossil fuel energy and rarely displaces nuclear, it reduces SO₂, NO_x, particulate matter (PM), and other chemicals harmful to human health and the environment.¹⁹ In 2013 wind energy displaced an estimated 157,000 metric tonnes of SO₂ and 97,000 metric tonnes of NO_x.²⁰

Unlike fossil fuel generation, wind energy produces no CO₂ and requires no water during operation. Wind energy saved an estimated 36.5 billion gallons of water and displaced 115,000,000 metric tonnes of CO₂ in 2013.²¹ A wind turbine emits an average of 10 grams of CO₂ per kilowatt-hour over its lifetime compared to 1000 grams per kilowatt-hour for a coal-fired power plant over the same period.²²

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