

License to Kill: Wind and Solar Decimate Birds and Bats

According to a study in the [Wildlife Society Bulletin](#), every year 573,000 birds (including 83,000 raptors) and 888,000 bats are killed by wind turbines — 30 percent higher than the federal government estimated in 2009, due mainly to increasing wind power capacity across the nation.[i] This is likely an underestimate because these estimates were based on 51,630 megawatts of installed wind capacity in the United States in 2012 and wind capacity has grown since then to [65,879 megawatts](#). And, at one solar power plant in California, an estimated [3,500 birds](#) died in just the plant's first year of operation.[ii]

Over the past five years, about 2.9 million birds were killed by wind turbines. That compares to about 800,000 birds that [a Mother Jones Blog](#) estimated to have been killed by the BP oil spill that occurred in April 2010[iii]—5 years ago—despite not all of them showing visible signs of oil.[1] Nevertheless, BP was [fined \\$100 million](#) for killing and harming migratory birds due to that oil spill. In comparison, the nation's wind turbines killed more than 3 times the number of birds than did the BP oil spill over the past 5 years. And, wind turbines routinely kill federally protected birds and eagles.

Since the study estimating bird and bat deaths was completed based on 2012 wind capacity data, U.S. companies have installed more wind power due to federal and state incentives such as the Production Tax Credit that provides 2.3 cents per kilowatt hour of wind generated power over the first ten years of operation. Since 2012, the United States added over 14,000 megawatts of additional wind capacity with total wind capacity at [65,879 megawatts](#) as of the end of 2014 — 16 times higher than wind capacity in 2001.[iv]

The Ivanpah Solar Power Plant

The Ivanpah solar power plant is a 377 megawatt solar facility located in the Mojave Desert in California and is owned by Google, BrightSource Energy, and NRG Energy. The facility has 350,000 heliostat mirrors that reflect heat toward central towers and scorch hundreds of birds in midair—turning birds into “streamers.” Ivanpah is the largest power tower project in the world and it has received a \$1.6 billion loan guarantee from the Department of Energy.

The mirrors at Ivanpah span across an area four times the size of New York’s Central Park and focus sunlight onto receivers atop three 45-story power towers, boiling a liquid that turns turbines to create electricity. Fish and Wildlife Service officials warned that Ivanpah may act as a [“mega-trap,”](#) where insects attract small birds that are killed or incapacitated by the solar flux. Those birds attract larger predators thereby creating a food chain vulnerable to injury and death.[v]

The facility is estimated to have killed 83 different species of birds. The most commonly killed birds were mourning doves (14 percent of fatalities), followed by yellow-rumped warblers, tree swallows, black-throated sparrows and yellow warblers. Of the birds that died from known causes, about 47 percent died from being toasted by the heat of the solar flux. Just over half of the known deaths were attributed to collisions.

Ivanpah is testing ways to reduce bird deaths, including with software to reposition the heliostats to reduce the level of elevated flux and minimize collisions; installation of light-emitting diodes that are not attractive to insects and help reduce the prey base for birds; anti-perching devices; and the use of avian deterrents like foul smells and the sounds of predators.

Fines for Killing Birds

Besides BP being fined \$100 million for killing and harming migratory birds during the 2010 Gulf oil spill, in 2009, Exxon Mobil paid [\\$600,000](#) for killing 85 birds in five states and PacifiCorp, which operates coal plants, paid more than \$10.5 million for electrocuting 232 eagles that landed on power lines at its substations. The first wind farms to be fined took place in November 2013 when Duke Energy paid a \$1 million fine for killing 14 eagles and 149 other birds at [two wind farms in Wyoming from 2009 to 2013](#).^[vi] To date, no solar facilities have been fined. The fines are related to protections in the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The death of an eagle or other protected bird is a violation of federal law, unless a company has a federal permit.^[vii]

The Obama Administration on [December 9, 2013](#), finalized a regulation that allows wind energy companies and others to obtain 30-year permits to kill eagles without prosecution by the federal government. The American Bird Conservancy filed suit in federal court against the Department of the Interior, charging it with multiple violations of federal law. ^[viii] Nonetheless, the Shiloh IV Wind Project in California, for example, [received a permit](#) from the U.S. Fish and Wildlife Service allowing it to kill eagles, hawks, peregrine falcons, owls and songs birds while not being subjected to the normal prohibitions afforded under the federal Bald and Golden Eagle Protection Act and the Migratory Treaty Act.^[ix]

Other Bird and Mammal Deaths

According to a 2014 study by federal scientists in the journal *The Condor: Ornithological Applications*, building collisions are estimated to kill 365 million to 988 million birds annually in the United States. And, according to a 2013 report from scientists from the Smithsonian Conservation Biology Institute and FWS, stray and outdoor pet cats kill a median of 2.4 billion birds and 12.3 billion mammals, mostly native mammals like shrews,

chipmunks and voles, annually. But these deaths do not excuse the wind and solar industry's killing of birds. Unless, of course, BP and ExxonMobil should be excused as well—instead of paying hundreds of thousands of dollars in fines.

Conclusion

Despite bird and bat deaths at wind and solar farms, few have been fined for violating the law while oil and electric generating companies have paid heavily for such violations. It will be interesting to see if this will change as the wind and solar industries grow.

[1] In 2011, the Fish and Wildlife Service reported only 6,147 birds killed. See <http://www.fws.gov/home/dhoilspill/pdfs/ConsolidatedWildlifeTable041711.pdf>

[i] Daily Caller, Wind Turbines Kill More Birds Than the BP Oil Spill, April 20, 2015, <http://dailycaller.com/2015/04/20/wind-turbines-kill-more-birds-than-bp-oil-spill>

[ii] Greenwire, 3,500 birds died at Ivanpah 'power towers' in first year, April 24, 2015, <http://www.eenews.net/greenwire/2015/04/24/stories/1060017406>

[iii] Mother Jones, The BP Oil Spill Happened 5 Years Ago Today. We are Still Paying the Price., April 20, 2015, <http://www.motherjones.com/environment/2015/04/five-year-anniversary-deepwater-horizon-bp-spill>

[iv] American Wind Energy Association, <http://www.awea.org/Resources/Content.aspx?ItemNumber=5059>

[v] National Fish and Wildlife Forensics Laboratory, Avian Mortality at Solar Energy Facilities in Southern California,

http://www.eenews.net/assets/2015/01/19/document_gw_03.pdf

[vi] Forbes, Republicans Develop an Interest in bird deaths, March 29, 2014,

<http://www.forbes.com/sites/jeffmcmahon/2014/03/29/republicans-develop-an-interest-in-bird-deaths/>

[vii] The Christian Science Monitor, Eagle Deaths: Unprecedented \$1 million fine for Wyoming wind farms, November 23, 2013,

<http://www.csmonitor.com/Environment/2013/1123/Eagle-deaths-Unprecedented-1-million-fine-for-Wyoming-wind-farms>

[viii] American Bird Conservancy, American Bird Conservancy Sues Feds Over 30-Year Eagle Kill Rule,

<http://www.abcbirds.org/newsandreports/releases/140619.html>

[ix] Master Resource, Wind Power Slaughter, July 16, 2014,

<https://www.masterresource.org/cuisinarts-of-the-air/windpower-slaughter-shiloh-1/>