



International Migratory Bird Day (IMBD), held annually on the second Saturday in May, is an invitation to celebrate and support migratory bird conservation.

A Fine Line for Birds

A Guide to Bird Collisions at Power Lines

How are power lines used to carry energy?

Electricity is created for and delivered to the consumer in a 3-part process:

1. A power plant generates energy, then...
2. Transmission lines from tall transmission towers carry high voltage energy (115-500 kV) over long distances to a substation, then....
3. Distribution lines from substations to smaller pole-mounted transformers carry lower voltage energy (less than 69 kV) to businesses and houses.

Both transmission and distribution lines carry enough energy to harm or kill both people and birds.

Why aren't birds electrocuted when they sit on power lines?

Actually, some birds are. Small birds don't usually get electrocuted because they fail to complete a circuit either by touching a grounded wire or structure, or another energized wire, so electricity stays in the line. Larger birds, however- such as the California Condor, which has a wingspan of up to 9.5 feet – are more likely to touch a power line and a ground wire, another energized wire, or a pole at the same time,

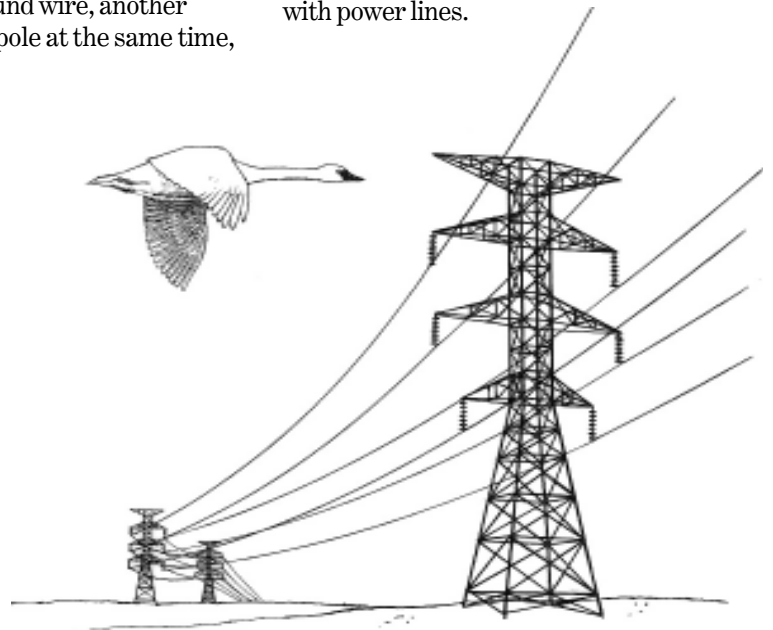
giving electricity a path to the ground. In both situations, the birds are electrocuted and killed, a fuse is blown, power fails, and everyone is impacted.

Why do birds crash into power lines?

It is generally believed that birds collide with power lines because the lines are invisible to them, or because they do not see the line before it is too late to avoid it. Birds' limited ability to judge distance makes power lines especially difficult to see, even as they are flying closer to them. Large birds are especially vulnerable because they are not always quick enough to change their direction before it is too late. Poor weather conditions, such as fog, rain or snow, as well as darkness may make the lines even more difficult to see.

What happens when birds collide with power lines?

Birds can either be killed outright by the impact, or be injured by contact with electrical lines, resulting in crippling which is likely fatal. Electrocutions can also start wildfires and cause power outages. An estimated 5-15 percent of all power outages can be attributed to bird collisions with power lines.



IMBD Information

web - <http://birds.fws.gov/imbd>
phone - 703/358-2318

IMBD Materials

web - <http://www.BirdDay.org>
phone - 1-866/334-3330

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What can be done to help prevent power line collisions?

There are several ways to help make lines more visible to birds. Marking wires and conductors with white wire spirals and black crossed bands in one study reduced mortality by up to 75 percent. Other potentially helpful devices include bird flappers and diverters, such as the Firefly and the BirdMark, which swivel in the wind, glow in the dark, and use fluorescent colors designed specifically for bird vision. More research needs to be conducted on these so-called “deterrent devices” to see if they truly work.

The practice of burying lines underground, though it eliminates collision risks, creates other risks to wildlife habitat and human safety and is often not feasible from technical and cost perspectives. Yet, at times when collision risks to sensitive species are great, placing the line underground through critical habitat may be the best option.



Example technology: BirdMark bird diverter (P & R Technologies)

Power companies have been voluntarily taking steps to help, such as insulating wires to cover exposed connections and increasing the distance between wires so that no contact with ground or another energized wire can be made by the birds. One example is Tampa Electric, whose Avian Protection Plan promises to retrofit equipment to minimize the risk to birds.

Another leader in the electric utility industry is the Avian Power Line Interaction Committee (APLIC), formed in 1989 to deal with collisions and electrocutions nationwide. It was originally composed of ten utilities nationwide, the Edison Electric Institute (EEI), the U.S. Fish and Wildlife Service (USFWS) and the Audubon Society. Today it includes 29 utilities, EEI, USFWS, and other utilities, united in efforts to protect avian resources while enhancing energy delivery.

Websites with more information:

<http://www.aplic.org/>
(information about coalition dedicated to protecting birds while enhancing reliable energy delivery; not much scientific information, but has good links to literature)

<http://www.culverco.com/sseng/wires/>
(very short article about bird safety on wires; website devoted to explaining science and safety of electricity and natural gas)

<http://www.pacificpower.net/Article/Article43391.html>
(published by a power company in western US; good example of voluntary changes by power company to help birds)