



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

**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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# 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.

