Birds and power lines

Great River Energy and other electric utilities work hard to minimize harm to birds as a result of contact with a power line or other electrical equipment. Even so, there are instances where power lines can pose a threat to birds, and, in rare cases, birds can be killed. Utilities work to minimize this risk in a number of ways.

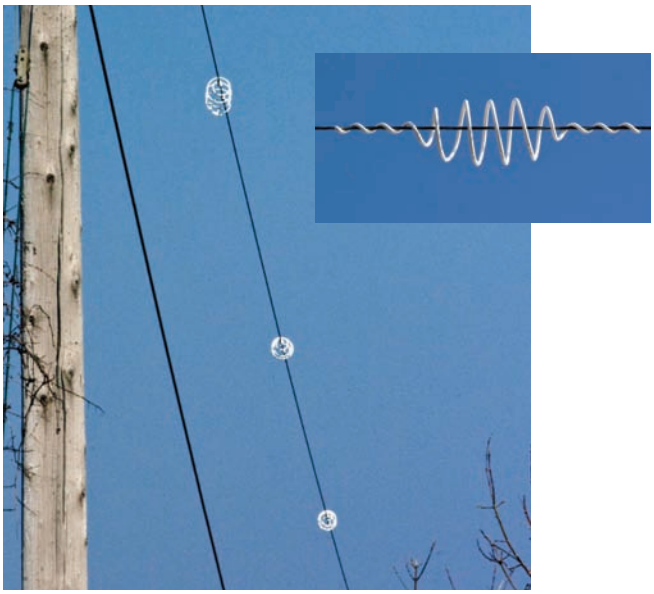
Roosting and nest management

Utility structures and equipment can be attractive to birds for roosting and building nests. Utilities try to minimize the risk of electrocution or injury to birds, damage to electrical equipment, and outages that may result when birds come in contact with power lines and structures. "Perch discouragers" are used to try to keep birds from perching or roosting on utility equipment. Nest management programs include installing nest boxes or platforms in safe areas or on utility structures, when warranted.

Minimizing risks of electrocution

For a bird to be electrocuted, it must contact more than one wire or piece of electrical equipment at the same time, which completes a circuit and causes the electricity to flow through its body. Electrocution of birds is rare with transmission lines greater than 138 kilovolts (kV) because the electrical components are far enough apart that they cannot have their feet on two wires at once. Where problems arise, they can be corrected in two primary ways:

1. Moving the components farther apart to get the necessary clearance
2. Insulating electrical components to prevent contact with the component that would cause the electrocution



Bird flight diverters

Nest management

Factors contributing to collisions

Many factors can affect the possibility of bird collisions with power lines, including:

- Habitat (if the line bisects critical habitat)
- A bird's size and maneuverability
- Flight altitude
- Bird behavior
- A bird's age or gender
- Time of day
- Weather (fog, high winds, heavy precipitation)
- Land use (refuges, agricultural fields, landfills, cooling ponds)
- Topography
- Line configuration (lines configured vertically tend to be less visible than if configured horizontally)
- Human disturbance (hunting, agricultural, and recreational activities)

Collision minimization measures

The following describes actions utilities often take to prevent collisions.

Pre-construction efforts

- Using vegetation, topography or man-made structures to shield lines
- Clustering lines together
- Siting lines away from obvious flyways, if possible

Post-construction efforts

- Modifying habitats
- Creating habitats on the same side of the power line to minimize crossings
- Minimizing human activities/disturbances near the line

Marking lines

Using various types of markers can decrease but not eliminate bird collisions. The different types of markers vary in effectiveness. Devices include bird and swan flight diverters and clamp-on markers.

Utilities use a variety of these markers on power lines. The decision to use them is based on:

- Effectiveness
- A power line's voltage rating
- The marker's weight
- Wind/ice loading factors
- Durability
- Ease of installation
- Effect on the viewshed
- Susceptibility to vandalism

GREAT RIVER ENERGY™

Great River Energy
12300 Elm Creek Boulevard
Maple Grove, MN 55369
763-445-5000

greatriverenergy.com