

Raptor protection efforts vital to Western's environmental focus

Ah, if only raptors could speak; they might make **John Bridges'** job a little easier.

But until they do, this Western biologist continues to focus on the job at hand—making the agency's nearly 17,000 miles of transmission lines as safe as possible for his feathered friends.

Bird collisions with overhead wires have been logged since 1876. Collisions, electrocutions and habitat alteration are the known downsides for animals living amidst manmade electricity-carrying structures. Yet to Bridges, even with the passing of time, there is no single answer for harmoniously linking the two.

"Never say 'always' to a solution," said Bridges. "I don't think we will ever find any one thing that works for everything, for every species."

What do we know?

Bridges said that reasons for exposure to danger are many. Most bird electrocutions occur at a voltage of less than 69 kv. Western has about 600 miles of line under this voltage, and for 17,000 miles of line that's a pretty small exposure. So one would think.

But thousands of metering sites along our transmission lines provide exposed wires and, in turn, another danger to the birds.

In collisions, birds spread their wings up

to avoid more visible conductors only to strike less visible ground wires. Most problems arise in spring and fall migration.

"During migration, birds aren't paying attention," said Bridges. "They are thinking about food, about mating and bad weather that makes for poor visibility and increases the danger of collisions." In cases of electrocution, nesting and hunting play the main roles.

"Birds are energy conservators. They use their time sitting and watching for prey. In areas of the West where there are few trees, we provide perches," says Bridges. "The problem is not just the presence of electricity, the bird has to want to be there."

"The biggest factor in electrocution is prey-based. If there is something to eat, they will come."

Power poles also act as nesting sites for birds. High above the ground, poles serve as natural wards against predators.

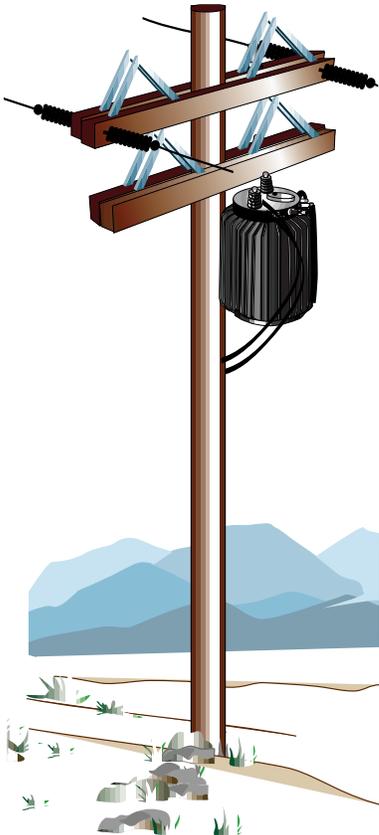
What to do

Western has implemented several solutions. Bird diverters that come in the form of wire spirals, marker balls or streamers are installed on lines crossing migration flyways. The spirals are placed at varying intervals on the overhead ground wire to warn birds as they fly toward the wire. The same theory applies to yellow or orange marker balls or bright colored streamers or neoprene strips attached to conductors. Perches added to poles keep birds away from the dangers of phase to phase contact posed by conductors. Artificial nesting platforms have also proven effective if placed away from the exposed area of currents.

But nature is fickle, and Bridges harks back to his motto of no one answer for everything.

"It is important to be aware of the species involved," he says. Not all anti-electrocution measures proved equally effective for all species. The ferruginous hawk and the great horned owl prefer different types of artificial nesting platforms. Raptor models or silhouettes did not deter other birds from perching on the same pole. The Newell's

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Triangles meant to prevent perching, do little to deter birds from resting on outer edge of pole beams and closer to live wires.

Environmental Specialist Rick Harness of EDM International in Fort Collins, Colo., inspects a juvenile golden eagle killed by electrocution. (Source: EDM International)





Even with webbed feet, pelicans have been known to perch on transmission lines. (Source: Rick Williams, Duke Engineering and Services, Sacramento, Calif.)

shearwater was more apt to avoid marker balls than spirals. And then there is the web-footed pelican that doesn't know its feet were never intended to grasp an electric line. There it sits nonetheless.

Violators beware

There is good reason for paying attention to the issue.

Last August, Moon Lake Electric Association, a Western customer serving parts of eastern Utah and western Colorado, was cited by the U.S. Fish and Wildlife Service for violating Federal protection laws relating to the deaths of 17 birds in 1996 and 1997. The cooperative was fined \$100,000 and placed on three years of probation, during which it will complete a program of retrofitting its distribution poles. This program had begun long before the fine was levied; however, the U.S. Fish and Wildlife Service deemed the cooperative moved too slowly in protecting birds from the dangers of electrical exposure.

This was the first time a utility was cited under the Migratory Bird Treaty Act. Fish and Wildlife usually concentrates its enforcement efforts on private enterprises for killing endangered species by using pesticides or waste matter.

Bridges said Western had its own problems on a 5-mile stretch of line near Dolores, Colo., during the early 1980s. Between 12 and 14 birds each year died while seeking a hunting view higher than the local gamble oaks provided. The initial solution was to install perching irons above the live wires. But this forced the birds to move onto the insulators and closer to phase-to-ground electrocution danger.

Adding to the problem, bird droppings accumulated on the insulators, reducing their insulating ability. The solution was to place perches back onto the few poles most used by the raptors. The death rate has dropped to one bird every two to three years.

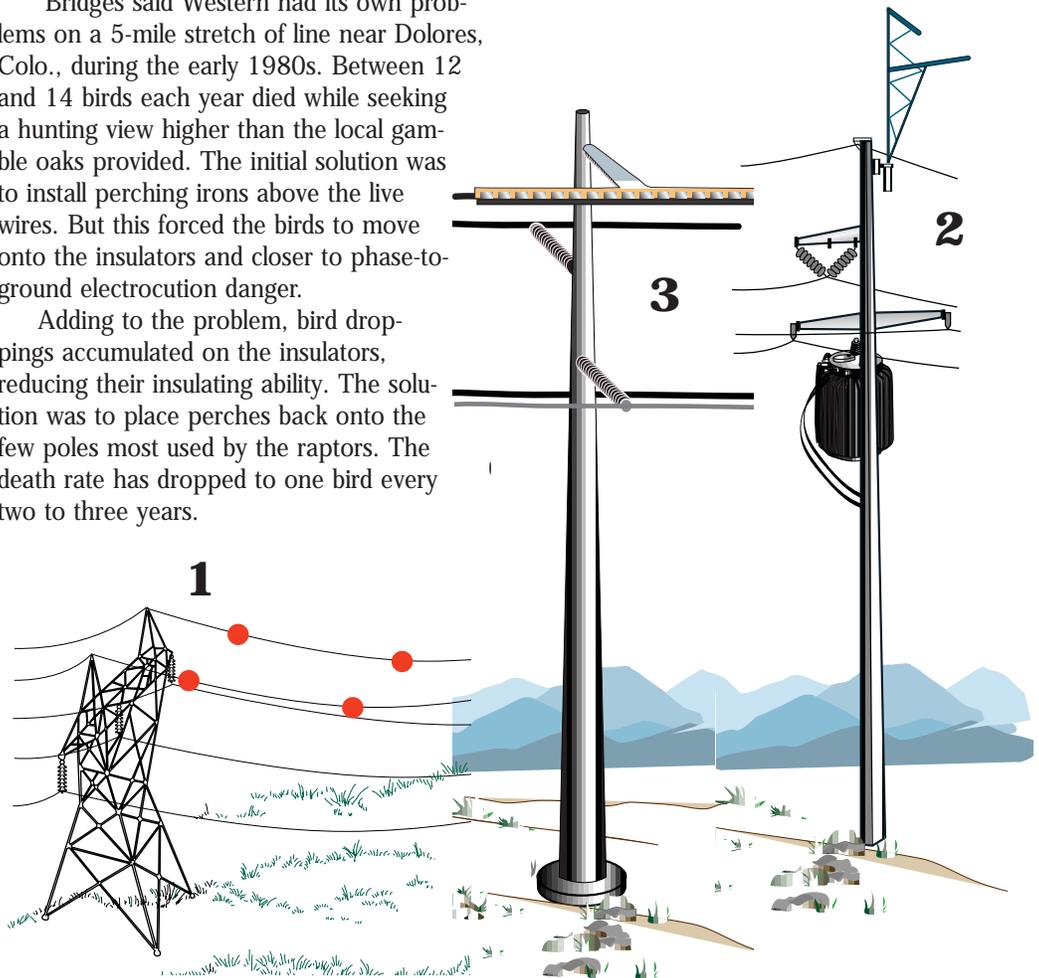
What's a biologist to do?

Bridges remains upbeat, even if one singular solution may not be in sight. "My job is to bring awareness and to keep outages from happening by advising our employees on preventive measures. They want to do the right thing. They just need to know what that is. So my job is to help them do their job."

Recently, Bridges presented information to field managers and linemen in workshops held in Arizona, South Carolina and Colorado. This month he was a featured presenter at a workshop in Alaska that specifically addressed the issue of raptor electrocution and collision.

During such workshops Bridges talks of prohibitions and penalties as outlined by three Federal statutes enacted in 1978—the Endangered Species Act, the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Penalties can include fines, jail time and the confiscation of any equipment in connection with the violation.

Since August, dispatchers have reported seven outages Westernwide due to "animals or unknowns." Many of these might be preventable by covering bare wires or increasing distances between hot wires and grounded equipment.



Collision and electrocution deterrents include:

1. marker balls on wires
2. perches above lines
3. fiberglass insulation of wires