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Let There Be Night: Brightly Lit Buildings Lure Birds to Their Deaths

Light pollution interferes with avian navigation, causing the deaths of millions of birds worldwide
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NASA/Goddard Space Flight Center
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by Ruthanne Johnson

When a friend mentioned the birds dying each night in Toronto's brightly lit downtown district, Michael Mesure had to see for himself if the rumor was true. "The very next morning, I'm down there at 4:30 a.m.," Mesure says. As soon as he parked his car, he spotted a feathered corpse, then another and another: all victims of their fatal attraction to city lights.

Mesure began organizing volunteers to patrol the city, triaging injured birds and documenting the carnage. During fall or spring migration, a typical morning's rounds yielded 20 bodies. After a night of heavy rain or fog, the crew sometimes found hundreds.

Some buildings were obvious death traps, such as a tower that Mesure and his team—who formally organized as the nonprofit [Fatal Light Awareness Program](#) in 1993—monitored in the mid-1990s. Blanketed in intense beams of light, the concrete structure attracted hundreds of birds who collided with each other before hitting the tower. When the lights shut off at 1 a.m. each night, the birds still fluttering about—transfixed in the beams—fell en masse to the ground, Mesure says. Only a few could be saved.

Over the years, FLAP volunteers have collected more than 52,000 dead birds representing 164 species, many of them endangered or threatened. The most common victims are night-migrating songbirds, many of whom journey across all parts of North America, meaning virtually every city represents a threat, says Christine Sheppard, an evolutionary biologist with the American Bird Conservancy.

But as the magnitude of destruction becomes more widely known, concerned citizens are working to take back the night for the planet's birds.

Blinded by the Light

Scientists aren't sure why birds are attracted to artificial lights or how light pollution interferes with navigation. Red-eye travelers lured by urban sky glow appear disoriented, often circling endlessly around light sources. Some die after slamming into buildings; others drop exhausted to the ground. Obscuring the extent of the losses are hungry predators, early-morning street cleaners, and the unknown number of birds who fly off only to die later from their injuries.

Nighttime death tolls are just part of the picture. The American Bird Conservancy estimates that 300 million to 1 billion birds each year perish from building collisions, the leading human-related cause of bird deaths. Particularly dangerous are windows that appear to offer clear flight paths or reflect images of the sky or nearby habitat. By drawing weary travelers into unfamiliar urban environments filled with such risks, light pollution is responsible for a significant number of daytime window strikes, Mesure says.

Many of the deadliest structures combine light and windows: Think glass-and-steel skyscrapers lit up like Christmas trees. Other times, a more innocuous-looking structure can take a large toll. When volunteers with the nonprofit group City Wildlife began documenting avian deaths in a 13-block swath of Washington, D.C., last year, they found 13 live birds and 25 dead ones in one weekend alone. At one building, an exit sign that casts red light into the street has lured many hummingbirds to their deaths. At the federal judiciary building, more than 30 birds have died trying to reach lit trees inside a glass atrium. "Every building has its own pathology," says Anne Lewis, an architect who founded City Wildlife.

Using data from patrols, the group identifies the worst culprits and encourages building managers and government officials to make changes. At the building with hummingbird deaths, a guard had also noticed the bodies. After City Wildlife volunteers explained the cause, he promised to work on a solution. Staff at the judiciary building responded to the group's concerns, too, and began turning off the lights at night.

[Taking back the night: Tips for darkening the skies for migratory birds »](#)

The Unnatural Lightness of Being

Studies show that excess nighttime light disrupts the migration, breeding, and feeding patterns of a variety of species—from sea turtles to salamanders to fireflies. Research also indicates that it inhibits hormone production and disrupts biological rhythms, increasing the risk of certain cancers in some mammals, including humans, says Paul Beier, a conservation biologist with Northern Arizona University.

The consequences don't end there. Light pollution obstructs astronomers, wastes energy, and costs \$2.2 billion a year in the U.S. alone, according to the International Dark-Sky Association.

While light pollution is increasing with development and urban sprawl, the movement to restore darkness to the night sky is gaining momentum. Boston, Chicago, San Francisco, Denver, Houston, Indianapolis, Portland, and other U.S. cities now have Lights Out campaigns, where building managers and individuals pledge to minimize nighttime lighting during migration seasons. Dozens of cities and states have passed or are considering light reduction measures, while a bill recently introduced in Congress would require federal buildings to address lighting and other bird safety issues.

In Toronto, FLAP has worked with more than 100 buildings to dim their lights during migration, including the once deadly tower. The city has adopted mandatory bird-friendly standards for new construction—such as shields on exterior light fixtures—and several owners of existing structures are working to reduce their toll on the feathered set. "Once one or two buildings make changes ... they set an example for others," Mesure says.

FLAP's success has inspired similar efforts in other communities. "I got tired of seeing all these dead birds," says Wendy Olsson, an IT professional who founded Lights Out Baltimore.

Most mornings of the week, Olsson's Baltimore crew and similar groups across the country walk their city streets at dawn, rescuing injured birds and gathering data that may one day ensure their feathered friends a safer journey.

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