

Hidden Hazards Background Information



With some populations of Neotropical migrants already in decline, these added stresses may push them closer the edge to extinction.

Collisions

Estimates of the annual number of bird deaths caused by collisions with windows vary among ornithologists. In the United States alone, the numbers are between 100 million and one billion. Reflective glass windows may be aesthetically pleasing to humans, but many birds cannot distinguish the difference between real sky and a reflection of the sky in a window. Non-reflective window coating, window screens, flash tape, awnings, or netting on the outside of a window can break up the reflection. Bird silhouette stickers on windows may scare birds away.



Many birds migrate at night. A low cloud ceiling forces birds to migrate at lower altitudes than they normally would when skies are clear. This makes birds very susceptible to flying into tall towers and their guy wires, which they cannot see in the dark. Following bad weather events during spring and fall migration, biologists often pick up hundreds of dead migratory birds under these towers. They estimate that as many as one million birds die each year from colliding with tall structures. Birds also are attracted to the bright lights on the towers. Lighthouses, spotlights, lighted bridges, and illuminated skyscrapers lure birds to their deaths. As they circle the lights, confused, they run into something or run out of precious energy. A group called FLAP (Fatal Light Awareness Program) is working with building managers to encourage them to turn off unnecessary lights at night. American Birding Conservancy has produced a book, *Bird-Friendly Building Design*, to assist developers, architects, and building owners. The book is available as a free download at <http://collisions.abcbirds.org/>. Of all the problems faced by Neotropical migrants, the confusion from building lights is a preventable one.

Cowbirds

The Brown-headed Cowbird is a native, migratory bird that used to follow bison herds to eat insects they stirred up. As the bison disappeared, cowbirds adjusted to the change in scenery and began associating with domestic cattle in open pastures. The cowbird is a *nest parasite*. The females lay their eggs in other bird species' nests, then leave. The host species is left to raise baby cowbirds along with their own young. Cowbird eggs have a shorter incubation time and hatch before most of the host's eggs. Cowbird chicks are often larger than the host's chicks and out-compete them for food and space.

Grassland bird species historically associated with the cowbird do have some defenses. Some species recognize cowbird eggs, abandon that nest and start over. Others throw the cowbird eggs out of their nest. The Neotropical migratory species adapted to nesting in interior forest habitat or outside traditional grassland zones are most affected by cowbird nest parasitism. With the fragmenting of large tracts of forest, cowbirds now have access to areas where forest-interior birds (such as the Wood Thrush, American Redstart, Yellow-throated Vireo, and Ovenbirds) are attempting to nest. These birds have not developed the same defenses as the grassland and forest-edge nesting species, and end up raising large numbers of cowbirds and few of their own young.



BROWN-HEADED COWBIRD

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Cats

Americans keep an estimated 60 million cats as pets. If each one of those cats killed only one bird a year—60 million birds would die each year! Scientific studies show that each year cats do kill hundreds of millions of migratory songbirds and more than a billion small mammals.

Predation by domestic cats is not part of the natural food chain. After being domesticated by ancient Egyptians and taken throughout the world by the Romans, cats were brought to North America in the 1800s to control rats (although they have proven ineffective at consistently killing adult rats). However, it has been documented that cats do kill birds—even when well-fed, de-clawed, and wearing a bell-collar.

Besides having a devastating effect on bird populations (fledglings and ground nesting birds being the most susceptible), cats compete with native predators (hawks, owls, coyotes, foxes, and others). Some cats have the advantage of being fed at home if unsuccessful in hunting, thus the cat population is not regulated by prey numbers as are most native predators' populations. Cats also are prolific breeders, having up to three litters per year, with four to six kittens per litter. Free-roaming cats can transmit diseases (such as rabies, feline leukemia, and feline distemper). These outdoor cats usually lead short lives, being exposed to injury and disease or hit by cars. The solution to this problem is to keep all pet cats indoors for the safety of wildlife and the cat.



Exotic and Invasive Species

When it comes to getting resources, several species of native American birds face tough competition from “outsiders.” For various reasons, people sometimes bring plant or animal species from other parts of the world and introduce them to a new habitat or a new continent where they had never appeared before. While it may sound like a nice idea at the time, these introduced exotic species often become intrusive by greatly disrupting the lives of previously existing populations, eventually causing serious threats to entire ecosystems.

One example among North American birds is the introduction of House Sparrows to the United States in the late 1800s. At that time, a small number of these little birds were brought from Europe because they were known for eating agricultural pests such as wireworms. However, the House Sparrows actually took up residence in urban spaces, where they began to compete with native bird species for what limited housing was available, such as small crevices under eaves of buildings and in backyard nesting boxes. Similar in size to native species such as bluebirds, chickadees, and swallows, the feisty house sparrows proved to be tough competitors for limited nesting spaces—often attacking and even killing their native competitors.



For birdwatchers who try to offer safe nesting places to native species, the tenacious House Sparrows—which now number in the millions—are a constant source of frustration. In addition, in some cases of “invasion” by exotic species, the newcomers become so prominent that they may eventually cause the extinction of native species, which in turn affects entire ecosystems.

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Chemicals

Chemicals used by people to control weeds and pests can greatly impact bird populations. DDT was linked to the devastation of bird populations and has been banned from use in the U.S. since 1972. This chemical, however, is still used in several countries where Neotropical migratory birds winter. The effects of exposure can be, and often are, lethal. DDT is not the only pesticide problem for birds.

Take a close look at the labels on the chemicals found on the shelves at hardware and garden stores. Several other popular pesticides still used in the U.S. are lethal to birds. Over 40 active ingredients in pesticides used today have been linked to an estimated 60 million to as low as 15 million bird deaths of migratory and resident birds. Given their proven toxicity to wildlife, six chemicals (all organophosphates or carbamates) are of particular concern to the U.S. Fish and Wildlife Service. All are used in crop production and one in particular, Diazinon, is commonly used for home lawn care. The others are Aldicarb, Azinphos-methyl, Carbofuran, Ethyl Parathion, and Phorate. All of these insecticides kill pests by damaging their central nervous systems. Unfortunately, these insecticides have the same action on non-target invertebrates, fish, and wildlife.

Another insecticide group that has seen increased use recently is the pyrethroids. These are synthetic formulations of naturally occurring pesticides and have low to medium toxic effects; birds and mammals can break the chemicals down and pass them through their bodies rapidly. However, pyrethroids are highly toxic to fish, which have shown a high sensitivity to this chemical.

Many pesticides may not kill birds on contact, yet they can contaminate food and water. The non-target animal may then ingest them and exhibit a sub-lethal effect that impairs the bird, preventing it from avoiding a predator, feeding its family, or finding shelter from inclement weather. The chemicals of concern can affect a bird's nervous system and can disorient it enough so it cannot find its way to its wintering ground. Pesticides also are blamed for weakening immune systems, and causing reproductive failure or birth defects in surviving offspring (such as twisted beaks or abnormal estrogen levels). Many Americans consume low levels of pesticides in their drinking water at some time each year. Health effects are unknown for these low levels of pesticide consumption, as are the effects of the interaction of different pesticides found together in water.



Care and timing in applying pesticides by land managers can greatly reduce their effects on wildlife and water quality. When using pesticides, land managers should avoid any water areas; use unsprayed buffer areas to protect wetlands; avoid applying when wind speeds are greater than 5 miles per hour; and use integrated pest management systems to apply pesticides only where and when they are needed. In addition, land managers should use the least toxic type of pesticide available for the necessary application. There also are alternatives to pesticides. Mechanical and biological control for pests can work just as well as chemicals in certain circumstances.



Hidden Hazards Diagram

