

Unnatural Predation

By Frank Graham Jr.

Raccoons, cowbirds, and cats threaten once-stable populations of birds.

BRUCE BARBOUR knows what happens when the natural world turns unnatural. Barbour manages the National Audubon Society's Alkali Lake Sanctuary, near Jamestown, North Dakota, in a region long known as North America's duck factory. Historically, waterfowl and grassland birds have nested here in astonishing abundance, but of late the complex ecosystem has threatened to unravel.

Droves of bulldozers and

gangplows have roared onto the scene in the decades since World War II, draining or filling in ponds and breaking up the sod to replace the prairie with horizon-to-horizon fields of wheat and sunflowers. Brushy fencerows and other patches of ground cover, natural havens that provide protection for nesting birds, have disappeared. Predators followed the bulldozers and contributed to an appalling statistic: In some recent years,

fewer than 10 percent of the region's waterfowl have nested successfully.

Says Barbour, "Unnatural predation is having a catastrophic effect on certain species of wildlife."

What Barbour observes in

North Dakota is hardly unique. At Audubon sanctuaries and elsewhere throughout the country, wildlife managers are finding that predation now ranks second to habitat destruction as a roadblock to the breeding of wildlife. To an unprecedented de-

gree, raccoons, skunks, domestic cats, and even other birds have become serious threats to many populations of wild birds, chiefly because of human changes in the environment. This phenomenon often forces biologists to make unpleasant choices: control predators (i.e., kill them) or watch helplessly as wildlife diversity crashes.

"The European settlers eliminated large predators such as wolves and grizzlies, which relieved the pressure on smaller predators," says Barbour. "Adaptable, scappy creatures like raccoons moved in; they can be especially destructive to nesting birds. In recent decades, modern farm-

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ing and forestry practices and suburban development have split forests into smaller and smaller plots and made them more accessible to raccoons, blue jays, skunks, and other nest predators."

Added to predation in these fragmented woodlands

is brood parasitism—particularly that of brown-headed cowbirds, which lay their eggs in the nests of other birds. When the young hatch, they push from the nest or otherwise dispatch the smaller chicks of the proprietary parents. Cowbirds, creatures of open places, have discovered new feeding areas as farms and houses have replaced the forest.

Prominent among the cowbird's many victims are neo-

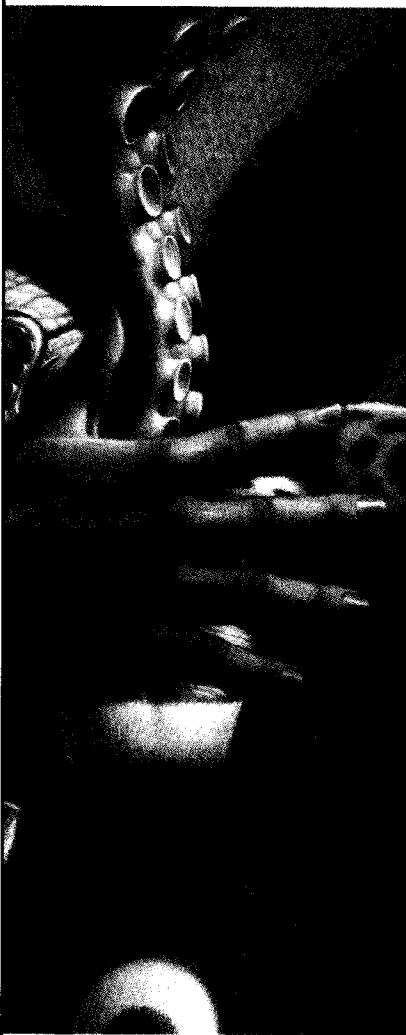
An unsuspecting bird falls prey to a cat.



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tropical migrants like warblers. The best known is the Kirtland's warbler, which nests almost entirely in a limited area of jack pine forest in Michigan. A count in 1961 turned up 502 singing male warblers, but as cowbirds invaded, they parasitized more than 70 percent of the warbler nests. When biologists found only 201 singing males in 1971, extinction seemed to be a genuine possibility. State and federal agencies, with the help of the Detroit and Pontiac Audubon societies, began trapping large numbers of cowbirds and killing them (mostly by carbon monoxide poisoning). In 1995 observers counted more than 766 singing male warblers.

"The habitat of the Kirtland's warbler is so limited that any added parasitism could push it over the brink," says ecologist Terry Cook of the Nature Conservancy. "If we stop trapping cowbirds, we'll lose the species."

The National Audubon Society, with the encouragement of the chairman of its board of directors, Donal C. O'Brien Jr., plans a closer look at predator problems on its sanctuaries. The ultimate solution, many biologists agree, would be a social one, concentrating on changes in the way people treat the land.

There are few places predation has been more exhaustively studied than in the prairie states, which provide habitat for much of North America's waterfowl. Agriculture there—wheat but also, ironically, the sunflowers that supply America's backyard bird feeders—has changed land patterns drastically. As natural plant cover has disappeared, predators historically scarce or absent from the prairie region have flooded in.

At Audubon's Alkali Lake, manager Barbour has worked persistently to repair damage to sanctuary land. He has burned hundreds of acres of exotic plants to encourage the growth of native ones, used federal funds to create wetlands, and, in winter, placed bales of flax straw on the frozen lake. After the spring melt, the bales remain above water, forming preda-

tor-proof nesting islands for geese.

He also works with other private organizations, including the Delta Waterfowl Foundation, which has conducted research on predator problems for 20 years. In 1994, when Delta researchers trapped nearly 300 foxes, skunks, and raccoons on a 16-square-mile study plot in North Dakota, 71 percent of the resident waterfowl nested successfully. Those on an untrapped plot had only 14 percent nesting success.

"We turn to trapping in nesting areas on the sanctuary when predation becomes a serious problem," Barbour says, pointing out that the rapid influx of rac-



The red-eyed vireo (top), one victim of cowbird parasitism. The culprit (below): The brown-headed cowbird.

coons and foxes to the region has overwhelmed the birds' defenses. "Predator control is labor-intensive and costly. But when Audubon and other conservation groups buy land at high prices, improve the habitat, and still find low waterfowl reproduction, it may be cost-effective to spend a little more on control."

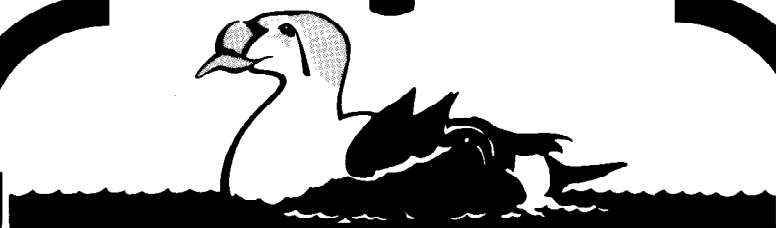
Birds, of course, have always been targets of predators. Falcons and foxes are especially well-known for preying on birds of all kinds, and the literature of predation also refers to bird-eating spiders in the Amazon and praying mantises that kill hummingbirds at feeders in the southwestern United States. Much of

the evidence of the effects of predators comes from studies done in the tropics. Beginning in the 1930s, Alexander Skutch, an ornithologist writing in *Audubon* and other publications, documented the tremendous toll taken on eggs and chicks in Latin America by snakes. More recently, biologists have described victimization by predatory birds.

By the late 1970s the decline of tropical migrants in North American forests was beginning to attract attention. Loss of habitat was an obvious culprit, but there were few detailed studies implicating predators other than cowbirds until David Wilcove, an ornithologist now with the Environmental Defense Fund, published the results of his research in 1985. Working mainly in Maryland, he had set quails' eggs out in artificial nests in rural and suburban woodlots, then compared the results with those from eggs "planted" on large, remote tracts in the Great Smoky Mountains National Park. Predators had destroyed nearly 100 percent of the nests on the smaller tracts but only 2 percent in the "wilderness." The conclusion: Fragmentation was the villain, opening smaller woodlands to predators and allowing them to become concentrated in ways that would not be possible in vast forest tracts.

Islands are as vulnerable as fragmented woodlands. By the early 20th century many seabird colonies on Maine's islands had been wiped out by hunting and, to a lesser extent, by the arrival of dogs, cats, and rats. During the 1970s Audubon biologist Stephen Kress set out to re-create some of those colonies, importing Atlantic puffin chicks from Newfoundland and raising them by hand in artificial burrows. "When chicks become adults, they often return to the island colony where they were reared," Kress says. "Meanwhile, man has changed the environment in this century. By giving gulls protection from hunters and providing them with food at dumps and sardine canneries, humans have triggered a gull population explosion."

Kress would not have been able to restore seabird colonies and some measure of biodiversity without killing predatory gulls. Supported by the National Audubon Society's board of directors, which authorized limited gull-control programs "where necessary to protect vulnerable species and to maintain...



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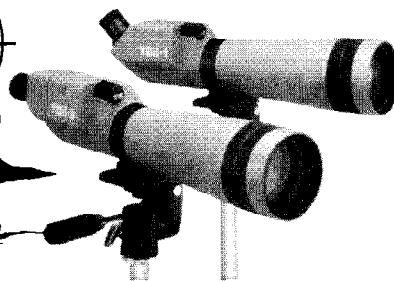
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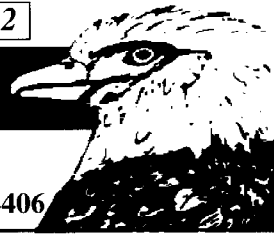
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diversity," he used a highly selective poison to clear gulls from key islands. Since seabirds became established, the presence of his field crews has helped to keep gulls away from new colonies during the critical summer months.

More recently, Kress has experimented with nonlethal means of predator control. He has used sheep and goats to increase tern habitat and to crop the higher vegetation preferred by laughing gulls, which rob fish from the islands' nesting terns and cause their chicks to starve. And on an island where predators were taking tern chicks, he experimented with "taste aversion" techniques, attaching tablets containing an emetic to the chicks' leg bands.

One extremely efficient worldwide predator on birds lies outside the domain of wildlife management—domestic cats. Despite years of firm denial, pet owners are finding it harder to argue that *their* tabby isn't like that at all.

The turn-of-the-century Audubon movement recognized cats as a menace to birdlife. Letters to the press described their toll on birds and compared their depredations with those of the gunners who collected plumage for the millinery industry. In the early 1900s a no-nonsense woman in Massachusetts told the state Audubon Society, "I killed our handsome cat because she killed more birds than two or three women could wear on their hats."

Evidence against cats continues to pile up in our own time. Ornithologist Rich Stallcup, in California's Point Reyes Bird Observatory newsletter, calculates that there are about 55 million cats in the United States. Subtracting those that never go outside or are too old to hunt, he comes up with about 44 million of them on the loose.

"To be very conservative, say that only one in ten of those cats kills only one bird a day," Stallcup hypothesizes. "This would yield a daily toll of 4.4 million songbirds! Shocking, but probably a low estimate (e.g., some cats get multiple birds a day)."

House cats, even those well fed at home, follow their instincts and set out to see what the woods and fields have to offer in the way of sport. Considered an even greater menace to wildlife are feral

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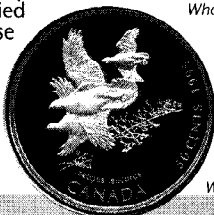
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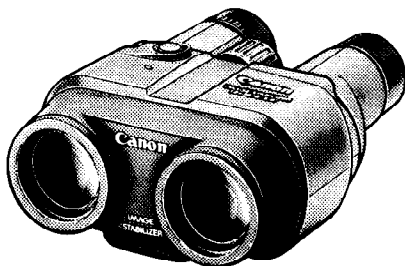
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cats, which are fed and in some areas aggressively defended by cat lovers.

"In California hundreds of cat colonies have been established in recent years by dozens of regional cat-care groups," reports Ronald M. Jurek of the state's Department of Fish and Game. "Many colonies are in parks, open spaces, riparian areas, coastal wetlands, and nesting areas of endangered birds. Well-fed cats kill, injure, or harass vulnerable local wildlife."

Audubon biologist Jesse Grantham, who has dealt with raccoon predation among heronries on Texas islands, has also observed significant cat predation.

"Feral house cats are a real problem along migration routes on the Florida and Texas coasts," Grantham says. "Small birds come down hungry and exhausted after their long flight across the Gulf of Mexico. They're easy prey because they're looking hard for food, not for cats."

Cats or gulls, cowbirds or raccoons, the "fix" for excessive predation on birds will extend beyond wildlife management. "The whole issue of predation on birds," says ornithologist Wilcove, "is intricately bound up with the way we live and the way we shape the world around us."

AUDUBON NOTES

Logging Without Laws

Conservationists may have a new weapon for defending the environment. On August 30 the National Audubon Society, along with 25 other environmental groups from the United States, Canada, and Mexico, submitted an Article 14 petition under the environmental side accord of the 1994 North American Free Trade Agreement (NAFTA). The groups are charging the U.S. government with failing to enforce existing environmental laws.

The petition protests a rider attached to a budget-cutting bill that President Bill Clinton signed in July. The so-called "logging without laws" rider directs the Forest Service and the Bureau of Land Management to go forward with previ-

ously suspended timber sales in northwestern forests and allows the logging of 4.5 billion board feet of salvage lumber nationally. The most potent point of the rider is the phrase "not withstanding any other law," which allows timber companies to bypass all the environmental laws that had halted logging.

"It means they can violate the Clean Water Act, the Endangered Species Act, the Forest Management Act—even the Civil Rights Act," says Brock Evans, the National Audubon Society's vice-president for national issues. "It means, 'Just cut that timber.' It's that simple."

This is the second time Audubon has taken advantage of the side accord. The first NAFTA petition, filed by the society in June, drew international attention when the North American Commission for Environmental Cooperation, which was created under NAFTA, agreed to investigate the deaths of an estimated 40,000 migratory birds at Mexico's polluted Silva Reservoir (see "NAFTA's First Real Test," *About Audubon*, September-October).

What's ironic about the logging petition is that it's directed against the United States, whose president had supported the inclusion of the environmental side accord in the first place. Once the petition passes through the required preliminary steps, the NAFTA commission may present it to the U.S. government. Depending on how the government reacts to the complaint, an investigation could follow. —Amanda Onion

Rescuing Urban Wetlands

The perimeter along the roadside is deceiving: an area of tall reeds and cherry trees, strewn with trash, piles of tires, car parts, a fridge, and junk that volunteers have removed from the Dubos Point Wetlands Sanctuary, on Jamaica Bay in Queens, New York. But then you get inside, and in the fall you can spot raptors such as northern harriers and throngs of yellow-rumped warblers and other songbirds. Spring welcomes snowy egrets, glossy ibis, and American oystercatchers.

In February 1994 the New York City Audubon Society began its three-year Jamaica Bay Coastal Habitat Restoration Project, which aims to clean up the 25-acre, city-owned Dubos sanctuary and a nearby site, Bayswater Point State Park.

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