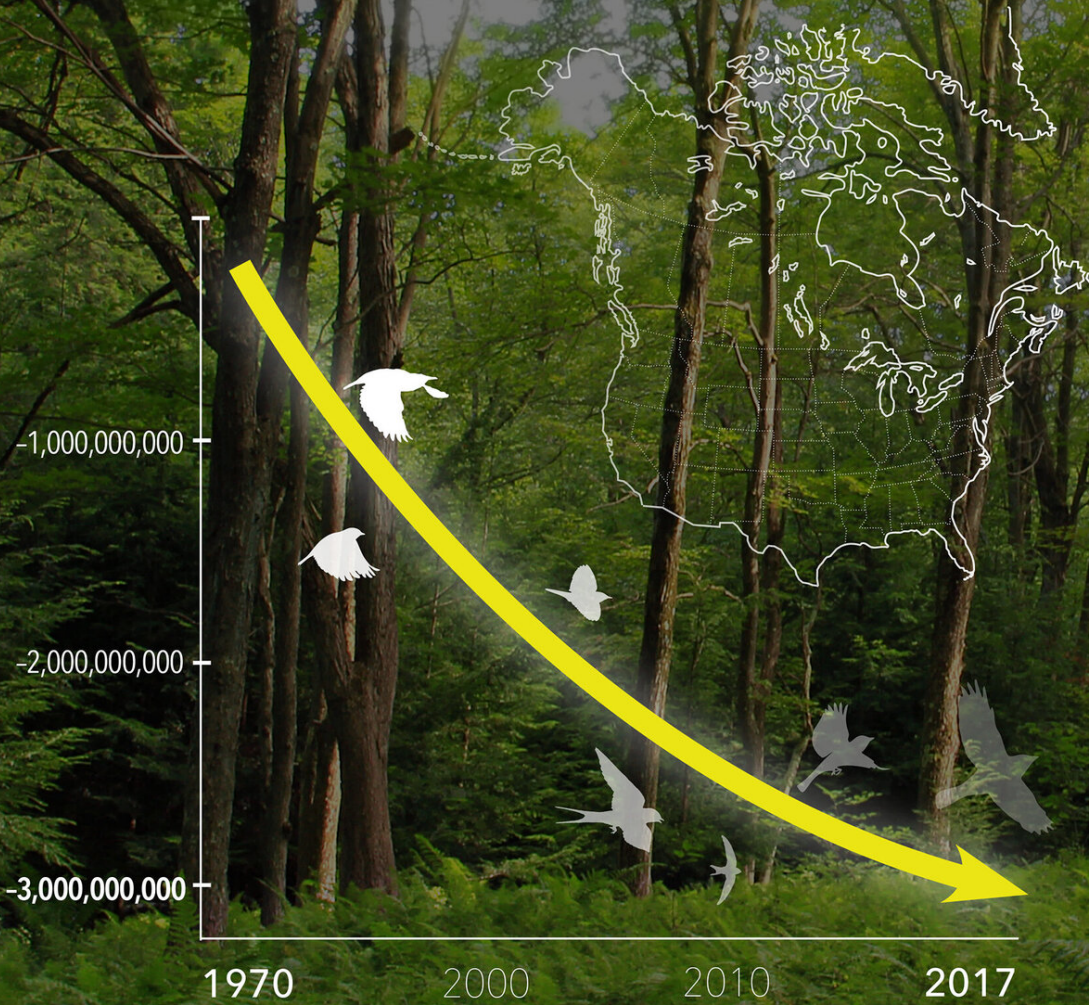


New study finds US and Canada have lost more than 1 in 4 birds in the past 50 years

September 19 2019

2.9 billion

birds gone since 1970



Courtesy of the Cornell Lab of Ornithology. Source: Science, 2019

Forest by Nicholas Tonelli/Creative Commons, Map from Birds of North America birdsna.org

Data show that since 1970, the US and Canada have lost nearly 3 billion birds, a massive reduction in abundance involving hundreds of species, from beloved backyard songbirds to long-distance migrants. Credit: Cornell Lab of Ornithology

A study published today in the journal *Science* reveals that since 1970, bird populations in the United States and Canada have declined by 29 percent, or almost 3 billion birds, signaling a widespread ecological crisis. The results show tremendous losses across diverse groups of birds and habitats—from iconic songsters such as meadowlarks to long-distance migrants such as swallows and backyard birds including sparrows.

"Multiple, independent lines of evidence show a massive reduction in the abundance of [birds](#)," said Ken Rosenberg, the study's lead author and a senior scientist at the Cornell Lab of Ornithology and American Bird Conservancy. "We expected to see continuing declines of threatened species. But for the first time, the results also showed pervasive losses among common birds across all habitats, including backyard birds."

The study notes that birds are indicators of environmental health, signaling that natural systems across the U.S. and Canada are now being so severely impacted by human activities that they no longer support the same robust wildlife populations.

The findings showed that of nearly 3 billion birds lost, 90 percent belong to 12 bird families, including sparrows, warblers, finches, and swallows—common, widespread species that play influential roles in food webs and ecosystem functioning, from seed dispersal to pest

control.

Among the steep declines noted:

- Grassland birds are especially hard hit, with a 53 percent reduction in population—more than 720 million birds—since 1970.
- Shorebirds, most of which frequent sensitive coastal habitats, were already at dangerously low numbers and have lost more than one-third of their population.
- The volume of spring migration, measured by radar in the night skies, has dropped by 14 percent in just the past decade.

1 in 4 Birds Gone Since 1970



Courtesy of the Cornell Lab of Ornithology. Source: Science, 2019

Graphic by Jillian Ditner/Cornell Lab of Ornithology

Data show that since 1970, the US and Canada have lost nearly 3 billion birds, a massive reduction in abundance involving hundreds of species, from beloved backyard songbirds to long-distance migrants. Credit: Cornell Lab of Ornithology

"These data are consistent with what we're seeing elsewhere with other taxa showing massive declines, including insects and amphibians," said coauthor Peter Marra, senior scientist emeritus and former head of the Smithsonian Migratory Bird Center and now director of the Georgetown Environment Initiative at Georgetown University. "It's imperative to address immediate and ongoing threats, both because the domino effects can lead to the decay of ecosystems that humans depend on for our own health and livelihoods—and because people all over the world cherish birds in their own right. Can you imagine a world without birdsong?"

Evidence for the declines emerged from detection of migratory birds in the air from 143 NEXRAD weather radar stations across the continent in a period spanning over 10 years, as well as from nearly 50 years of data collected through multiple monitoring efforts on the ground.

"Citizen-science participants contributed critical scientific data to show the international scale of losses of birds," said coauthor John Sauer of the U.S. Geological Survey (USGS). "Our results also provide insights into actions we can take to reverse the declines." The analysis included citizen-science data from the North American Breeding Bird Survey coordinated by the USGS and the Canadian Wildlife Service—the main sources of long-term, large-scale population data for North American birds —the Audubon Christmas Bird Count, and Manomet's International Shorebird Survey.

Although the study did not analyze the causes of declines, it noted that the steep drop in North American birds parallels the losses of birds elsewhere in the world, suggesting multiple interacting causes that reduce breeding success and increase mortality. It noted that the largest factor driving these declines is likely the widespread loss and degradation of habitat, especially due to agricultural intensification and urbanization.

Other studies have documented mortality from predation by free-roaming domestic cats; collisions with glass, buildings, and other structures; and pervasive use of pesticides associated with widespread declines in insects, an essential food source for birds. Climate change is expected to compound these challenges by altering habitats and threatening plant communities that birds need to survive. More research is needed to pinpoint primary causes for declines in individual species.

"The story is not over," said coauthor Michael Parr, president of American Bird Conservancy. "There are so many ways to help save birds. Some require policy decisions such as strengthening the Migratory Bird Treaty Act. We can also work to ban harmful pesticides and properly fund effective bird conservation programs. Each of us can make a difference with everyday actions that together can save the lives of millions of birds—actions like making windows safer for birds, keeping cats indoors, and protecting habitat."

Grassland Birds

MAJOR DECLINES SINCE 1970

There are very few remaining native grasslands in North America. Grassy livestock pastures can help fill the void if managed properly, but crop agriculture and development continue to eat away at grasslands.

720
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POPULATION LOSS



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Eastern Meadowlark
Sturnella magna

3 IN 4
EASTERN MEADOWLARKS GONE



Eastern Meadowlark by S. Queen/Macaulay Library, Prairie Grasslands by Joshua Mayer/Creative Commons

Courtesy of the Cornell Lab of Ornithology. Source: Science, 2019

The study found 700 million grassland birds have been lost from the United States and Canada since 1970, a 53% decline in the breeding population. Three in four Eastern Meadowlarks are gone. Credit: Cornell Lab of Ornithology

The study also documents a few promising rebounds resulting from galvanized human efforts. Waterfowl (ducks, geese, and swans) have made a remarkable recovery over the past 50 years, made possible by investments in conservation by hunters and billions of dollars of government funding for wetland protection and restoration. Raptors such as the Bald Eagle have also made spectacular comebacks since the 1970s, after the harmful pesticide DDT was banned and recovery efforts through endangered species legislation in the U.S. and Canada provided critical protection.

"It's a wake-up call that we've lost more than a quarter of our birds in the U.S. and Canada," said coauthor Adam Smith from Environment and Climate Change Canada. "But the crisis reaches far beyond our individual borders. Many of the birds that breed in Canadian backyards migrate through or spend the winter in the U.S. and places farther south—from Mexico and the Caribbean to Central and South America. What our birds need now is an historic, hemispheric effort that unites people and organizations with one common goal: bringing our birds back."

More information: K.V. Rosenberg et al., "Decline of the North American avifauna," *Science* (2019). [science.sciencemag.org/lookup/...1126/science.aaw1313](https://www.sciencemag.org/lookup/doi/10.1126/science.aaw1313)

Provided by Cornell University

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