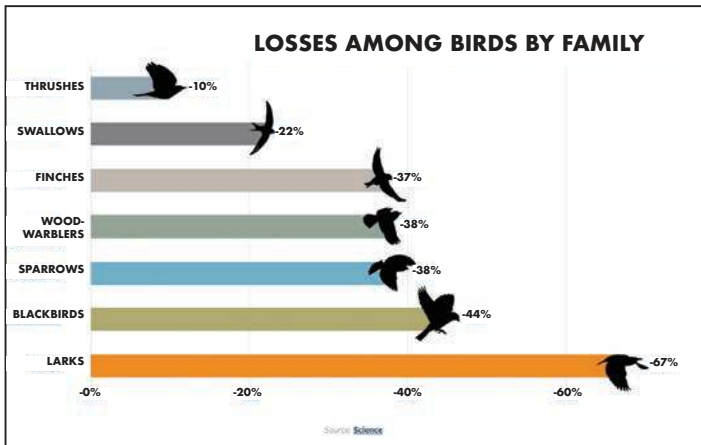


Declining Bird Populations

The publication of the paper “Decline of the North American Avifauna” in the journal *Science* in October of 2019 caused a stir in the press. In this paper authors K.V. Rosenberg et al. document a decline of 29% of the overall bird populations in North America from 1970 through 2018. There have been criticisms of the paper, but none have raised significant challenges to the overall picture.



Losses among birds. From *Science* magazine

The authors note that ornithologists have been using radar to track large-scale bird migrations in North America for years. A 14% decrease in the biomass of birds, recorded on the National Weather Service NEXRAD radar from 2007 through 2017, was reported by Adriaan Dokter in a 2018 report in the journal *Nature Ecology and Evolution*. The most significant declines have been in the eastern half of the United States. This report referred to species such as Rose-breasted Grosbeaks, Wood Thrushes, and Indigo Buntings that nest here but go south for the winter.



European starling

A criticism of the 2019 paper notes that the declines in European Starlings and House Sparrows account for 15% of the losses. Since these are introduced species, they

could be of less concern; on the other hand, they associate closely with humans. The cause of their declines is probably not only habitat destruction, but also other factors such as pesticide ingestion and inhalation of pollutants that may be affecting humans as well.

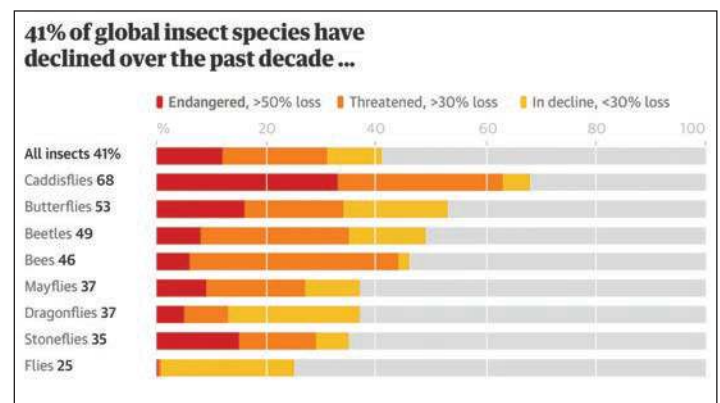
Effect of Pesticides and Herbicides

Locally, lawn maintenance that uses pesticides and broad-leaf herbicides is having an effect on avian and insect life. Several bird families are present in our neighborhoods only when we allow conditions to be free of toxins. Toxic lawns drive American Robins, a thrush, away, or kill them. The last *Massachusetts Breeding Bird Atlas*, finished in 2013, documented the decline of breeding American Robins in our state, but with some increase in overwintering American Robins from the north. Another local thrush, the Wood Thrush, has experienced a precipitous decline in Massachusetts. The Wood Thrushes, with lovely rising and fluid songs, have almost vanished from Cold Spring Park, where they nested in greater numbers just a few years ago.

Sparrows are seed eaters and pesticides in grass seed will harm them. We often see House Sparrows, for instance, feeding on grass seeds around our streets and yards. This may be part of what is responsible for their decline, referred to in the Rosenberg article earlier. Our lovely Baltimore Orioles are in the blackbird family, which is undergoing a 44% loss currently (see figure losses of birds, upper left). They are insect eaters and breed in Newton. They do poorly when we spray to eliminate moth infestations and kill all insects in the process.

Loss of insects

In conjunction with these ominous reports, there are now studies on the loss of insect biomass worldwide. Since many birds eat insects, there is a connection. Of course, the loss of insects is a phenomenon with much broader implications than its effect on birds. Pollinators are responsible for much of what we eat, directly or indirectly.



The *Guardian* graphic. Source_ Sánchez-Bayo & Wyckhuys, *Biological Conservation*, 2019 (1)

In the last thirty years the flying insect biomass has declined by more than 75% in German nature preserves. Carl

Hallman's 2017 article in the *PLoS-ONE Journal* (Public Library of Science) fits into the picture that is gradually becoming more complete worldwide. More studies are now underway as the gravity of this problem dawns on us. We don't think much about the loss of bugs and are inclined to believe that such a decline would make the world a more comfortable place. Yes, and no.

Effects of Climate Change

The recent report by Mass Audubon, "*State of the Birds 2017*," predicts that, in the coming years, our state bird, the Black-capped Chickadee, will vanish from the eastern region of Massachusetts and will be restricted to the higher elevations of the Berkshires and the Worcester hills. The report attempts to predict the effects of climate change on our avifauna. In this vein, the report notes that 305 common bird species in our state now overwinter, on average, 40 miles farther north than in 1966.

"*State of the Birds 2017*" points out that, on average, many plant species here now bloom two weeks earlier than in the recent past. This couples with insect activity on those plants. At the same time, bird species migrating from the south arrive two days earlier than before. Since the timing of nesting is crucial to using insects for feeding young birds, this decoupling of plant blooming and migrant arrival is of concern. Whatever climate change brings, the birds and plants will adjust and so must we.

Citizens Can Make A Difference

The 2019 Science study looked at 529 species of birds that together comprise 76% of the breeding bird species in the United States and Canada. There were increases in some groups of birds, notably the raptors (after the elimination of DDT) and waterfowl such as ducks and geese. The success of the latter is due to the wetland conservation efforts that were led for years by hunters. These two population



Eastern Bluebird

increases show that we can make a difference when we energize enough political will.

The Eastern Bluebird, another thrush, has increased in Massachusetts, due to the efforts

of thousands of people who put up nest boxes for these cheerful and colorful thrushes. This is another example of what can be done on our part with the will to act. Eastern Bluebirds prefer the edges of fields like those that still exist in Nahanton Park, between the upper and lower gardens. The bluebirds were once regular nesters in the boxes there but are now seen there infrequently.

The *Massachusetts Breeding Bird Atlas, 2013* documents that the population of Wild Turkeys is thriving in Massachusetts. They seem comfortable near human habitation, where they are not hunted. Mass Wildlife, the state government bureau, played the principal role in their return. Our local Red-Tailed Hawks have also adapted to human presence and can be seen in Newton, as well as along the highways.

It has become more urgent for all of us to get outdoors more often and become aware of the changes happening right now in our world. The next generations will live in a different world; we need to act locally to send them into the best world possible. The time to act is now.

Note: Sources and tables for this article can be found on NewtonConservators.org/newsletters. ♦

✍️ Pete Gilmore

MISSION

Newton Conservators, Inc.

The Newton Conservators promotes the protection and preservation of natural areas, including parks, playgrounds, forests and streams, which are open or may be converted to open space for the enjoyment and benefit of the people of Newton. It further aims to disseminate information about these and other environmental matters.

A primary goal is to foster the acquisition of land, buildings and other facilities to be used for the encouragement of scientific, educational, recreational, literary and other public pursuits that will promote good citizenship and the general welfare of the people of our community.

The Newton Conservators was formed as a not-for-profit organization 59 years ago in June 1961.