

## Where the Birds Are Going

Author: Timothy M. Beardsley

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# BioScience

Organisms from Molecules to the Environment

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## Where the Birds Are Going

**F**or those who see science as an ever finer parsing of causes and effects, the article in this issue of *BioScience* on changes in bird abundance in eastern North America might seem less than completely satisfying.

The authors, Ivan Valiela and Paulina Martinetto, crunched a huge amount of data gathered over decades by the thousands of observers who participate in the North American Breeding Bird Survey. Valiela and Martinetto used these data to paint an impressionistic portrait of multidecadal trends in the recorded abundance of species classified by habitat preference and migratory habit. The survey is susceptible to a variety of possible biases, acknowledged by the authors, which would make it hard to reach definite conclusions about the actual trend in abundance for many individual species. Nonetheless, Valiela and Martinetto's results yield striking patterns from more than 300 species, amply justifying the exercise.

Although the total number of birds recorded as nesting in the eastern and central United States has—no surprise—steadily decreased since 1966, the decreases were heavily concentrated among species that either resided or migrated within the United States and Canada; nesters that migrated farther south after the nesting season did not in general decrease, and a substantial number increased in abundance. Decreases were especially common among birds preferring open, edge, and wetland habitat, a fact the authors tentatively ascribe to the spread in North America of industrial, suburban, and other human-affected land cover—loosely, “urban sprawl.”

Forest-loving species, in contrast, often increased in abundance, an observation that finds a likely explanation in the expansion of northern forests during much of the 20th century. The increases among forest-loving birds were most pronounced, however, among species that migrate south of the United States, which is a surprise, given the well-publicized loss of forest in the Neotropics; likewise, open-habitat birds that migrate south for the northern winter did not by and large increase as a result of the growing amount of pasture in the Neotropics. A possibly related surprise is the relative lack of declines among wetland-loving birds that migrate south of the United States. All told, the patterns prompt Valiela and Martinetto to suggest that alterations in the northern part of the ranges of migrant birds dominate over the effects of changes further south. Readers are referred to the article, which begins on p. 360, for complete details.

This sort of broad-brush description of trends cannot unambiguously identify causes, but it can help suggest further research. Despite the limitations of the data set, the patterns can hardly all be the result of observational bias. The notion of an expanding ecological footprint of changes in North America (and the apparently smaller effects of land-use changes further south) is a nonobvious idea that deserves more detailed study.

TIMOTHY M. BEARDSLEY  
Editor in Chief

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