

Use of neonicotinoids found to reduce some bird populations

August 11 2020, by Bob Yirka



Credit: CC0 Public Domain

A trio of researchers, two with the University of Illinois, the other Auburn University, has found that the use of neonicotinoid pesticides on farm crops leads to reductions in some bird populations. In their paper

published in the journal *Nature Sustainability*, Yijia Li, Ruiqing Miao, and Madhu Khanna describe their study of neonicotinoid use and its effects on local bird populations.

The work involved obtaining U.S. county-level data on over 3,000 [birds](#) from the North American Breeding Bird Survey. They focused specifically on the years 2008 to 2014, a period during which neonicotinoid use was increasing in the U.S. as other pesticides were banned. The researchers also obtained county-level data describing the use of neonicotinoids from a variety of sources. By comparing [bird populations](#) to neonicotinoid use, the researchers were able to see its impact.

To put the impact in perspective, the researchers divided the birds they studied into four basic categories: grassland birds, non-grassland birds, [insectivorous birds](#), and non-insectivorous birds. They found that increasing county-level use of neonicotinoids by an average of 100 kg resulted in a 2.2% decline in grassland bird populations and a 1.6% decline in insectivorous bird numbers. But they note that the impact of pesticides on non-targeted species has been found to be cumulative. When some birds die, they are no longer there to reproduce, reducing the [population](#) of the next generation—and on and on. Factoring in this cumulative effect, the researchers calculated that adding an average of 100 kg of neonicotinoid use per county led to grassland bird populations dropping by 9.7% by 2014.

The researchers suggest it is likely that [grassland birds](#) suffer more from [neonicotinoid](#) use than those in other areas because they are more likely to consume seeds that have been sprayed with the pesticide—and they are more likely to consume insects that have been sprayed, as well. The researchers also found that the impact of neonicotinoids is more profound in farm regions such as the Northern Great Plains, Southern California and the Midwest.

More information: Yijia Li et al. Neonicotinoids and decline in bird biodiversity in the United States, *Nature Sustainability* (2020). [DOI: 10.1038/s41893-020-0582-x](https://doi.org/10.1038/s41893-020-0582-x)

© 2020 Science X Network

Citation: Use of neonicotinoids found to reduce some bird populations (2020, August 11)
retrieved 19 April 2024 from
<https://phys.org/news/2020-08-neonicotinoids-bird-populations.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.