

YOUR CUP OF COFFEE IS BROUGHT TO YOU BY THE BIRDS AND THE BEES

The birds and the bees both do it. That is, they team up to protect and pollinate coffee bean plants.

Without the duo, as researchers recently found, coffee plants would be far less successful. In fact, [a study](#), published earlier this month in the scientific journal *Proceedings of the National Academy of Sciences*, found that without the help of birds and bees, the coffee industry would see a 25-percent drop in annual crop yields. This would be the equivalent of a \$1,066 loss for nearly every 2.5 acres of field.

A loss that size for the \$26-billion coffee industry would be particularly tough after last year, when coffee supplies hit a [six-year low](#) thanks to brutal drought across growing regions in Brazil—the world’s largest producer of the beans.

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For their research, a team from both Latin America and the US manipulated coffee bean crops across 30 farms, excluding birds and bees from their growing process using large nets and small lace bags. They then tested four different circumstances: solo bird activity; bee activity alone; no bird and bee activity at all; and, finally, a natural environment, with both bees pollinating plants and birds controlling pests.

The impact of having birds or bees present proved positive for both fruit weight and fruit uniformity—key factors in coffee beans quality and price. And their effects together were far better for the fruit than singularly.

One particularly surprising find for the team was just how far the birds had come, some migrating to Costa Rican farms all the way from Canada and the US—including some birds from Vermont, where the US research team was based at the University of Vermont (UVM).

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The research is the first of its kind to demonstrate how two separate species’ behaviors impact the success of a single crop. The bees take the task of pollinating the plant, while birds act as pest control, snacking on insects that could potentially harm the crop, such as the [coffee berry borer](#), the most damaging bug to coffee production worldwide.

“Until now, researchers have typically calculated the benefits of nature separately, and then simply added them up. But nature is an interacting system, full of important synergies and trade-offs,” said Alejandra Martínez-Salinas of the Tropical Agricultural Research and Higher Education Center, lead author of the study.

The research highlights just how important the connectivity of ecosystems and species symbiosis is to support agriculture and our ways of life. “One important reason we measure these contributions is to help protect and conserve the many species that we depend on and sometimes take for granted,” said Natalia Aristizábal, a PhD candidate at UVM’s Gund Institute for Environment and Rubenstein School of Environment and Natural Resources. “Birds, bees and millions of other species support our lives and livelihoods but face threats like habitat destruction and climate change.”