

Diet found to contribute to urban-induced alterations in bird gut microbiota

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A team of researchers from Ghent University, the University of Antwerp and UMR 5174 CNRS-Université Paul Sabatier-IRD has found that diet location can contribute to urban-induced alterations in bird gut

microbiota. In their paper published in the journal *Proceedings of the Royal Society B*, the group describes their study of urban and rural house sparrow eating habits and what they learned.

Curious about the results of prior research efforts that showed birds of the same species with large differences in [gut biota](#) that depend on where they live, the researchers embarked on a study of their own. They devised an effort geared toward learning more about the impact of an urban versus rural diet on wildlife.

The study involved feeding house sparrows in southwestern France different foods over a six-week period and then catching and collecting gut biota samples for analysis. In all, the team fed 114 of the birds at six different locations—half urban, half rural. Gut samples were collected by catching the birds, inserting a needle and extracting a small sample from their gut with a syringe.

The researchers found that feeding the birds a diet similar to what they would find in a natural environment resulted in increases in gut [biodiversity](#). Doing the opposite—feeding the birds breadcrumbs and other human leftovers such as those found in an urban [diet](#)—led to a decrease in gut biodiversity. Birds that lived in rural settings given urban food were found to have the least diverse gut biota of all those tested.

The researchers note that gut biodiversity has been shown to have a major impact on birds—those with less diversity tend to produce less offspring—and those that are born have a lower survival rate. Prior research has also shown that lower gut biodiversity reduces the ability to digest a host of nutrients in food. Without them, animals can slowly die of malnutrition. The researchers suggest lower gut biodiversity will also likely make it more difficult for creatures such as [birds](#) to survive the coming changes due to climate change.

More information: Aimeric Teyssier et al. Diet contributes to urban-induced alterations in gut microbiota: experimental evidence from a wild passerine, *Proceedings of the Royal Society B: Biological Sciences* (2020). DOI: [10.1098/rspb.2019.2182](https://doi.org/10.1098/rspb.2019.2182)

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