

# City living may make male song sparrows more doting 'super' fathers

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A song sparrow singing in Delaware, USA. Credit: Wikimedia Commons, [CC BY 2.0](#)

New behavioral traits are often the first response of animals to changing environmental conditions. As cities increasingly become habitats of wildlife, researchers have studied behavioral changes in birds and examined how urbanization impacts parental care behavior of male song sparrows. The team found that in cities, where male song sparrows are known to be more aggressive than in rural surroundings, male birds visited nests more often than rural conspecifics visited countryside nests. The study is published in *Frontiers in Ecology and Evolution*.

When animals settle in new environments, or when their [natural habitats](#) are rapidly changed by human influence, their behaviors change. One such behavioral change that has been observed in several bird species that settled in cities is increased aggression, born out of the need to defend territories.

"Male songbirds in temperate zones are thought to reduce parental care when they are more aggressive. Yet in this study, we show that urban male song sparrows provided more care for their young," said Dr. Samuel Lane, currently a postdoctoral research fellow at North Dakota State University and lead author of the study completed in the Sewall Lab at Virginia Tech. "Against our expectations, we found that they visited nests more frequently and were more successful parents than rural males."

## **Super songbirds**

Many songbird species have readily adapted to cities, yet in these new environments they face challenges not found in their native habitats. One way that animals can cope with those changes is by balancing behaviors to manage energy and time resources better.

If urban male songbirds spend more time securing their territory, it would imply that they have less time to invest into the care of their offspring. Therefore, the researchers expected that more aggressive urban male sparrows were sacrificing [parental care](#) for territorial aggression, which in turn was expected to have a negative impact on the survival of their young. To test their thesis, they studied six sites in southwest Virginia characterized by recent urban sprawl over four breeding seasons.

Lane and colleagues observed that urban males visited their nests significantly more often than their rural fellows. They also began feeding nestlings earlier in the day. "It turns out urban males are super males—able to defend their territories and care for their young," Lane said.

## **Born and raised in the city**

The researchers also found that hatching and fledging success was significantly higher in urban habitats—despite certain challenges city birds faced. For example, [brood parasitism](#)—a behavioral pattern where certain [bird species](#), such as the brown-headed cowbird, use nests of other birds to lay their eggs—was higher in cities. This phenomenon can negatively impact development and survival of the offspring belonging in a [nest](#). On the upside, nest predation rates were significantly lower in the city, contributing to overall higher nesting success.

"It is often assumed that urban areas are more challenging for wild animals," Lane said. "Our study adds to growing evidence that certain species of songbirds even benefit from living in urban environments when there is sufficient green space for them to find food and nest locations." The scientists hope ongoing research in this field will contribute to designing urban environments that support wildlife better.

These results, however, should not be generalized to all locations, or other species and animals. The researchers pointed out that studying sites of more intense urbanization or species that cope worse with urbanization might have produced different outcomes.

**More information:** Indirect effects of urbanization: Consequences of increased aggression in an urban male songbird for mates and offspring, *Frontiers in Ecology and Evolution* (2023). [DOI: 10.3389/fevo.2023.1234562](#)

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