

Urban Cooper's hawks outcompete their rural neighbors

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Cooper's Hawks in urban Albuquerque, New Mexico, are so successful that they're outcompeting their rural neighbors. Credit: B. Millsap

Depending on whether a species flourishes in a city environment, urban wildlife populations can be "sources" or "sinks," either reproducing so quickly that individuals leave to colonize the surrounding area or needing constant immigration from outside to stay viable. A new study from *The Condor: Ornithological Applications* examines the population dynamics of Cooper's Hawks in urban Albuquerque, New Mexico, and finds that city-born birds aren't just thriving—they're actually forcing their rural neighbors out of their nest sites.

New Mexico State University's Brian Millsap collected data on Cooper's Hawks living in a 72 square kilometer area of northeast Albuquerque from 2011 to 2015, monitoring each year's nests and tracking newly fledged [females](#) with radio transmitters. He found that 30 times more hawks emigrated out of the [urban area](#) than immigrated into it, suggesting it was a source [population](#) for the surrounding region. However, the details didn't fit neatly with the traditional source-sink model. While the surrounding exurban [hawk](#) populations were breeding and surviving well enough to sustain themselves without immigration, females moving out of the urban area were able to beat them to their nesting sites—unlike their exurban neighbors, they didn't migrate south for the winter.

White-winged Doves, which first became established in the area in the 1980s, provide an abundant food source for city-dwelling hawks. "Individuals living in urban Albuquerque actually have a fitness advantage over their neighbors living in natural habitats. This advantage

comes from the higher prey populations in urban areas, which allow urban female Cooper's Hawks to spend the winter near their eventual breeding sites, as opposed to rural females that migrate south in winter," explains Millsap. "The urban female hawks begin searching out and claiming nesting territories before the rural hawks return in spring and thus obtain nesting sites without direct competition from migrants. Because of this advantage, the urban Albuquerque Cooper's Hawk population not only supports itself but also serves as a substantial source of immigrant females for surrounding native habitats."

Changes in migratory behavior that lead to segregation between different groups can have profound effects on populations, altering how they interact both with each other and with other species in a community. According to the Peregrine Fund's Chris McClure, an expert on raptor ecology, "This study is a great example of how solid field work and sophisticated modeling can yield new insights in basic and applied ecology."

More information: "Demography and metapopulation dynamics of an urban Cooper's Hawk subpopulation"

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