

Building bird-friendly cities

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(Phys.org)—Australian cities can keep their native wildlife – but only if they can kick their habit of urban sprawl.

That's the finding of a new study by leading Australian environmental researchers Jessica Sushinsky, Professor Hugh Possingham and Dr Richard Fuller of The University of Queensland.

"While urban development usually reduces the number of [birds](#) in a city, building more compact cities and avoiding urban sprawl can slow these reductions significantly," says lead author Jessica Sushinsky. "Compact housing developments leaves birds' homes untouched, leading to fewer local extinctions."

The researchers surveyed native and feral birds in Brisbane's urban areas, including residential and industrial suburbs, public parks and gardens, major roadways, outdoor shopping centres and airports. They then used statistical modelling to find out what will happen to the birds as the city grows.

The first scenario was compact growth – where multiple homes are built on land that previously had only one house.

The second scenario was sprawling growth – a familiar pattern where low density suburbs straggle beyond the city's current boundaries.

The team's forecasts showed that a much greater diversity of species was lost over 20 years under the sprawling scenario compared to the more

compact strategy.

"Urban sprawl resulted in the disappearance of many urban-sensitive birds – birds that only live in areas where there is [native vegetation](#), such as parklands and woodlands," Ms Sushinsky says. "It also led to an increase in feral birds such as the common myna or the spotted turtle dove, as they tend to thrive in low density suburbs.

"On the other hand, we found the city with the compact development retained more birds, including species such as Lewin's honeyeater, grey shrike-thrush, the red-backed fairy-wren and the striated pardalote, because it kept more of its parks and green areas."

To reduce [land conversion](#), the Queensland Government has adopted a more compact urban growth strategy, which—this study confirms—is better news for Australia's native birds, the researchers say.

"These birds are habitat specialists – they need a particular environment to do well," says Prof. Possingham. "So instead of having only 'classic' parks with short grass and scattered trees, we need 'high quality' green spaces with dense vegetation, including denser thickets, tall trees, low-growing shrubs and scraggly grass."

"While compact development means smaller backyards, it can also make our entire cities more biodiverse," according to Dr Richard Fuller. "The study shows that we should hold on to our green spaces instead of clearing them for sprawling development."

This is the first time science has modelled the effects of different urban growth strategies on birds, the researchers say. "Statistical models like these are important because they help decision makers understand the ecological consequences of a particular decision," says Dr Fuller.

The team's paper "How should we grow cities to minimize their biodiversity impacts?" by Jessica Sushinsky, Jonathan Rhodes, Hugh Possingham, Tony Gill and Richard Fuller appears in the latest issue of *Global Change Biology*. See: bit.ly/QQgsNv

Provided by University of Queensland

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