

Decreasing backyard bird diversity flies under the radar

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A deep dive into bird survey data has found that some of Australia's favourite backyard visitors considered 'common' are actually on the decline as cities and suburbs opt for less greenery.

The study, led by Griffith University and published in *Biological Conservation*, used citizen science data to examine the prevalence and diversity of bird species across Greater Brisbane, Greater Sydney, Greater Perth and Greater Melbourne.

The team found that [introduced species](#), historically prominent in Australian urban [bird communities](#), were decreasing in prevalence in all four regions, while a small group of native urban exploiters were becoming more prevalent.

The results also showed that many species perceived to be "iconic" or "common" were experiencing declines in prevalence in urban areas, highlighting the importance of monitoring and conservation action in suburbs.

Ph.D. candidate in Griffith's Centre for Planetary Health and Food Security Carly Campbell said she wanted to get a broader look at bird communities across Australia see how they're changing with the changing urban landscape.

Campbell said in the process, her research also highlighted the "support is crucial to ensure the conservation of some of our favourite backyard bird species".

"It's often the really rare or threatened species or the really charismatic ones that get a lot of research attention, but sometimes what's happening to their communities as a whole can fly under the radar," she said.

"So a lot of those considered common or non-threatened species might not necessarily have a lot of check ins, and the worry is that this kind of complacency about the conservation of these species might result in us missing some declines that are happening as our environments are changing so rapidly."

Which species have been impacted?

The team used two databases with records spanning 1954 to present: Birddata which includes over 18 million records, and Cornell Lab of Ornithology's eBird project, which is a global programme containing over 600 million observations.

Examining Australia's four most populous urban regions—Brisbane, Melbourne, Sydney and Perth—the team pulled together all relevant bird survey records from the databases and their increases and declines over time using statistical modelling.

"We found that there are many species experiencing changes across the board. There was a really strong increase in noisy miner and the rainbow lorikeet. These birds are doing really well in cities and urban areas. This is bad for other species, as birds like the noisy miner are very aggressive and drive other species out of urban areas" Campbell said.

"We also found a lot of species going through declines, and it wasn't just the rare and threatened ones—some were those considered common or iconic. So, in several of the areas, the galah and kookaburra were experiencing relative declines.

"What this paper overall highlights is that as much as we assume that a really large set of birds do well in urban areas and are still present, they're actually starting to make up less of the diversity of species that are there.

"This might indicate that cities are moving towards a more homogenized set of species that you see there, to the loss of many others."

Why is this happening?

Australians have been afforded a unique experience in being able to have frequent and richly diverse interactions with [native birds](#) in their own backyards, but Campbell said the concern was that not only are cities and suburbs expanding, but more and more people in [urban areas](#) were subdividing and removing trees, plants and bushes in the process.

"Birds act as a signal of ecosystem health—if there are lots of insect-eating birds around, usually that means you've got a lot of insects around, which indicates there's healthy biodiversity," she said.

"Also, our birds are really, really important pollinators in Australia, and they do a lot of work spreading seeds. Brush turkeys will turn over the soil and tend to leaf litter, and lyrebirds actually reduce fire risk by turning over leaf litter and help it break down.

"There are really important but unseen functions that birds play in our environments. So the loss of bird biodiversity is not only an indication of a breakdown of ecosystem functions, it's also a loss for humans."

Campbell also said there was a lot of evidence to suggest that larger birds have more competitive advantages in cities, and this is echoed in the paper which highlighted that smaller species bird were more likely to decline.

"This is usually because they can exploit more resources and are probably less vulnerable to predators. Birds that nest on the ground tend to have a much worse time as they have cats, dogs, cars and people to deal with so without the supporting plant life it's a challenging place for small birds.

What can we do?

While Australia is currently experiencing a lot of housing development

compounded with a lack of affordable shortages, Campbell said it was important for planners and homeowners to think about the best ways to not overly impact the habitats of "our amazingly diverse bird species that co-inhabit our backyards and suburbs".

"We need to change how we're structuring our vegetation, because what we do with the vegetation in cities and suburbs is really important as to what species thrive," she said.

"For example, the aggressive noisy miners are thriving in our suburbs, and this is because of us. They love isolated tall trees and nectar-rich flowering plants, and we have provided these in abundance. So city planners and homeowners should consider having a variety of different size and height native trees and shrubs to encourage other species.

"Planting more diverse forms of natives vegetation, particularly less nectar-rich species like wattles and she-oaks, can help maintain a diverse ecosystem that keeps encouraging a diversity of bird life to thrive in our cities and suburbs."

The findings 'Big changes in backyard birds: An analysis of long-term changes in bird communities in Australia's most populous urban regions' have been published in *Biological Conservation*.

More information: Carly E. Campbell et al, Big changes in backyard birds: An analysis of long-term changes in bird communities in Australia's most populous urban regions, *Biological Conservation* (2022). [DOI: 10.1016/j.biocon.2022.109671](https://doi.org/10.1016/j.biocon.2022.109671)

Provided by Griffith University

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