

Birds prefer to live in luxury than in poor areas, study finds

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African Olive Pigeon. Credit: Dom Henry

A unique study of birdlife in South African cities has found that birds prefer wealthy areas to poorer ones but will move out if things get too cramped. The study was conducted by a team of scientists from the

University of Turin, Italy and the Universities of Cape Town (UCT) and the Witwatersrand, South Africa. Their findings were published this week in the international journal of *Global Change Biology*.

Co-author on the study, UCT Associate Professor Arjun Amar said: "This work is of particular importance because it is one of the few studies conducted in a [developing country](#), and the only study of its kind in Africa, where urbanisation is predicted to occur at a faster rate than any other region on the planet."

The researchers studied the occurrence of [bird species](#) in 22 urban areas across South Africa and found that the number of species present increased according to the income levels of residents, i.e. the more affluent the neighbourhood, the more bird species are found there—provided there are still enough good habitats for the birds to spread their wings. However, this was not true for highly urbanised areas where vegetation has all but disappeared.

The so-called 'luxury effect,' well-documented in the developed world, also applies to relatively low-density [urban areas](#) in South Africa, where wealthy areas have a greater diversity of bird species than found in less wealthy areas. This is probably due to greater investment in gardens, parks and other [green spaces](#) which are hot-spots of urban biodiversity in wealthier neighbourhoods. However, birds have no appetite for heavily built-up areas even when they have wealthy inhabitants.

It is the first time the 'luxury effect' in birds has been documented for an African country. The study authors believe such findings could help shape future urban planning in the interests of both biodiversity and environmental justice, particularly in the rapidly urbanizing developing world.



Malachite Sunbird Male. Credit: Peter Ryan

Lead author Professor Dan Chamberlain from the University of Turin said: "This study shows that rich, leafy suburbs have more bird species, and probably higher biodiversity in general, than poor areas of the city or areas that have too much asphalt and concrete. Understanding the factors which drive the 'luxury effect' will help us to design more biodiversity-friendly cities in the future, thus promoting environmental justice for all urban inhabitants."

The findings were based on careful analysis of four years of data from the Southern African Bird Atlas Project across a range of urban environments, from peri-urban outskirts to high-rise city centres, where average income varied from \$1,000 to \$30,000 per year according to the South African census.

While researchers also confirmed a predictable link between the amount of urban tree cover and bird diversity, they concluded that tree cover alone does not fully explain the "luxury effect."

South Africa is described by the authors as "an extremely valuable case study" of the relationship between wealth and biodiversity due to the country's species richness (10 percent of the world's terrestrial plants and 7 percent of terrestrial reptiles, [birds](#) and mammals) as well as infamous levels of income inequality.

According to the study, "maintaining green space in at least an equal proportion to the built environment is likely to provide a development strategy that will enhance urban biodiversity, and with it, the positive

benefits that are manifest for urban dwellers."

The authors hope that the "findings can form a key contribution to a wider strategy to expand urban settlements in a sustainable way to provide for the growing urban population in South Africa, including addressing imbalances in environmental justice across income levels and racial groups."

More information: Dan E. Chamberlain et al. The relationship between wealth and biodiversity: A test of the Luxury Effect on bird species richness in the developing world, *Global Change Biology* (2019). [DOI: 10.1111/gcb.14682](https://doi.org/10.1111/gcb.14682)

Provided by University of Cape Town

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