

nectar quandary

Surviving the suburbs

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We all delight in seeing a colourful sunbird flit into our garden to visit some flowers, especially when one of the shyer species comes through. Have you thought about why some sunbirds are common in gardens while others are so rare? And whether they will disappear as urban development increases?

These questions are important to us if we are to enjoy the presence of sunbirds and other nectarivorous birds in our gardens. But the questions are far more important to plants, because nectar-feeding birds pollinate specific plants, enabling them to produce seeds. This mutual relationship fosters plants dependent on the birds, while the birds in turn rely on the plants for food.

As cities grow, they tend to crowd out natural areas, and residential areas are often avoided by birds. If the development of towns and cities means that nectar-bearing plants and nectar-feeding birds become isolated in small fragments of natural habitat, both birds and plants will suffer. However, urban areas with gardens can be made less hostile and some brave or adaptable birds will enter and use these new habitats.

Urban environments that allow nectar-feeding birds to move between fragments of natural habitats are especially important in the Western Cape, for two reasons. Firstly, Cape Town and the greater Boland suburbs are interwoven with natural fynbos habitat. Secondly, more than 300 fynbos plant species depend on only five specialist nectar-feeding bird pollinator species. Thus, nectar-feeding birds play a uniquely important ecological role in the fynbos biome.

In addition to nectar specialists, there are birds such as weavers, starlings and bulbuls that feed on nectar



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opportunistically. A different suite of plant species is adapted to pollination by these nectar-opportunists.

We at the FitzPatrick Institute of African Ornithology at UCT, the University of Stellenbosch and the South African National Biodiversity Institute gained valuable insights into the relationship between garden traits and nectar-feeding birds from questionnaires distributed at bird clubs in the Cape Town metropolitan and Drakenstein municipal areas. We specifically asked for information about nectar-specialist birds, namely Cape Sugarbird and Orange-breasted, Malachite, Southern Double-collared and Amethyst sunbirds, and nectar opportunists such as Cape Weaver, Cape Bulbul, Red-winged Starling and Cape White-eye.

above *A male Southern Double-collared Sunbird attracted to an artificial nectar feeder.*

opposite *A sunbird heads towards a red hot poker to feed on the copious nectar it produces.*

We found that nectar-opportunistic birds were more common in gardens. Of the nectar specialists, Southern Double-collared and Malachite sunbirds were the most abundant. This may be because they can occupy different habitats; they use seven different habitat types, including fynbos, grasslands and forests, and thus are more likely to venture into a new habitat such as urban gardens. Cape Sugarbirds and Orange-breasted Sunbirds, on the other hand, are far more choosy, >



ANTON CRONE



above left *A male Southern Double-collared Sunbird enjoying nectar from a wild dagga Leonotis leonurus plant.*



above right *Specialist nectar feeders like the Cape Sugarbird are attracted to bird baths to maintain their water and energy balances.*

OLIVER S PLOKHOOPY (2)

using only two or three habitat types and rarely visiting gardens, especially those further from fynbos habitats.

Considering how important a bird's habitat is to it, we can understand why they don't like crossing large urban areas. The number of nectar-feeding birds found in gardens therefore drops off dramatically as you move deeper into suburbia and away from large, natural protected areas. Consequently these birds are more likely to frequent gardens that are surrounded mainly by parks, greenbelts or small reserves with less-developed areas around them.

Although there are intrinsic biological traits that hinder nectar-feeding birds from adjusting to suburbia, we can make it easier for them by providing food resources. Specifically, we found more species of nectar-feeding birds and higher numbers of nectar-specialist birds in gardens with both natural and artificial nectar. Artificial nectar is sugar water provided in feeders, while natural nectar is provided by bird-pollinated plants such as proteas, ericas, strelitzias, aloes, wild dagga and Cape honeysuckle.

Sugar-water feeders on their own did not attract many birds, suggesting that these feeders cannot replace nectar-producing plants as a food source. However, it is not just the presence of bird-pollinated plants that is important, but also their diversity. The more different types of plants you have, the more birds and the more species of birds you can attract. Some bird species are also a bit picky about which plants they prefer; for example, you are more likely to attract Cape Sugarbirds with proteas and Orange-breasted Sunbirds with ericas. The other advantage of having a diversity of plants is that they produce flowers at different times of the year, so the food supply is not limited to one season. Interestingly, bird baths also attract more of the nectar specialists, since although they take in lots of fluid through nectar feeding, they also drink water to maintain their water and energy balances.

The pros and cons of sugar-water feeders have not yet been formally tested. On the one hand, feeders provide food where natural resources have been removed, and also 'stepping stones' to enable birds to cross urban areas, which is essential for their adaptation to climate and land-use change. On the other hand, sugar-water feeders may increase the rate of disease transmission between birds. And if feeders are more attractive to birds than flower nectar, they could lure them

away from natural plants, reducing seed production and lowering survival rates of bird-pollinated plants.

To address the health-related concerns, sugar-water feeders should be cleaned daily. Also, remember to only use diluted cane sugar (1 part sugar: 4 parts water). Xylitol and other artificial sweeteners can be deadly poisonous to nectar-feeding birds.

Overall, nectar-feeding fynbos birds seem to be adjusting to our cities and towns, but some of their biological traits limit this adaptation. The sensitive nectar-specialist birds are very important pollinators and we need to make extra efforts for them, especially in the areas within three kilometres of natural habitats. We can each contribute to their survival by having bird-friendly gardens, especially by planting a diversity of locally indigenous and water-wise, bird-attracting plants that provide natural foods. ♦

ACKNOWLEDGEMENTS

Many thanks to everyone who participated in the questionnaire survey and to the bird clubs that helped to distribute the questionnaires.

Reference

Coetzee A et al. 2018. 'Urban nectarivorous bird communities in Cape Town, South Africa, are structured by ecological generalisation and resource distribution.' *Journal of Avian Biology*. DOI: 10.1111/jav.01526