lunch-boxing clever

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A Red-winged Starling perches on a scale at UCT, while Dr Susie Cunningham notes down his weight. The Fitztitute is studying the starling's responses to urbanisation and climate change.

Rampant urbanisation is one of the great challenges faced by wildlife in the 21st century, but only a few bird species are truly at home in urban environments. Feral Pigeons, House Sparrows, Common Starlings and Common Mynas are ubiquitous city residents almost globally. Alongside these cosmopolitan urban exploiters, a tiny minority of local birds also manage the transition to metropolitan life as urban sprawl transforms their habitats. In South Africa, one bold and charismatic passerine has made its way right into the city.

In its natural habitat, the Red-winged Starling is a cliff-dwelling bird with loud, whistling calls evocative of high, rocky places. In cities, it trades its cliff-nesting sites for ledges on buildings and bridges. It also swaps its natural diet of berries, insects and nectar for a junk-food menu heavy in muffin crumbs, Nik-Naks and French fries.

The Fitztitute is housed on the University of Cape Town's Upper Campus, on the slopes of Devil's Peak. This campus is a sprawling concrete complex dotted with fast-food stalls and heaving with students – and starlings – during weekdays in term time. On weekends and during vacation, campus is eerily silent and the food stalls are shut. The resident Red-winged Starlings cling forlornly to the building façades or dumpster dive for scraps left over from the weekday bonanza. These boom-bust cycles of human food waste on campus provide a unique opportunity to study the impact of junk food on the health of this city-adapted species.

We began colour-ringing the campus starlings in 2017. Honours student Miqkayla Stofberg quickly became the 'starling whisperer' as she trained the birds to weigh themselves by hopping onto a scale, which allowed us to monitor their body-mass changes. We instigated a WhatsApp group to encourage the campus community to submit resightings and stories about the colour-ringed birds. The initiative provides a constant stream of valuable location data and great entertainment for all involved, as people share tales of audacious acts of muffin theft and starling versus pigeon wars, alongside the drier information about which birds they saw where and when.

Last year, Miqkayla's Honours thesis showed us that the starlings' diet changes with the fluctuations in student numbers on campus. The birds eat more natural food during weekends and vacations. They also gain less weight each day when junk food is not readily available. Master's student Sarah Catto found that even though the adult starlings are eager to binge on our lunch leftovers, they prefer to feed natural food to their nestlings whenever they can.

This year, Miqkayla and fellow Master's student Johan Jensen from Lund University in Sweden (with which the Fitztitute collaborates on urban bird research) are helping us to better understand the impacts of junk food on the health and breeding success of the starlings. They are assessing immune function, fatty acid profiles and stress physiology using blood samples from adults and nestlings, as well as investigating how diet affects parental decision-making.

In future, we're hoping to gain insight into whether additives in junk food affect the behaviour of the birds in a way similar to that in which they are believed to impact the behaviour of children. Could changes in attentiveness or hyperactivity influence how the starlings respond to predators, for example? Finally, we are concerned about how urbanisation might interconnect with ongoing climate change in Cape Town. Our region is warming rapidly and drying out. Could human-provided food buffer urban birds against this change or does it simply exacerbate their struggles?

Unravelling the secret lives of our campus starlings is a joint effort between the researchers, the campus community and the starlings themselves. These charismatic birds not only provide us with valuable data on the impacts of urbanisation, but also an opportunity for everyone on campus to engage meaningfully in scientific research that is helping us to understand our changing world.

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