net gains

The value of ringing

TEXT & PHOTOGRAPHS **DIONNE MILES**

A Cape Sugarbird enmeshed in a net waits its turn to be ringed, weighed and measured.

PETER RYAN

It is 06h00 and the sun's rays are just starting to sift through the trees on a perfectly still summer morning at Helderberg Nature Reserve (HNR) in Somerset West in the Western Cape. Husband-and-wife team Francis and Cathy Hannay and friend Jacqui Badenhorst are busy unpacking poles, laying out ultra-fine mist nets and unfolding tables and chairs near HNR's 'Pete's Pond'. On a table Francis carefully sets out his tools: metal rings of different sizes, digital callipers, scales, metal rulers, magnifying glass and ringing pliers. It is a routine they repeat regularly on Fridays, weather permitting, volunteering their time and expertise for the love of birds. Their purpose is to tag each bird with a unique number that will allow it to be identified in future. First though, they need to catch the birds.

This is where the mist nets come in. Francis and Jacqui fasten each net between a set of two poles that they place in three locations likely to be traversed by birds as they wake up and begin to forage. Although birds struggle to see the ultra-fine nets if they are placed in the shade, they will avoid them if placed in the sun or if they are blowing in the wind. Ringers therefore net only on calm days, make sure that they open the nets before sunrise and position them among shading vegetation. The nets are equally difficult for humans to see unless they are viewed at a specific angle to the rising sun. Fortunately the net gently slows the bird's flight as it hits the mesh, allowing it to drop safely into a pocket created by the net strings.

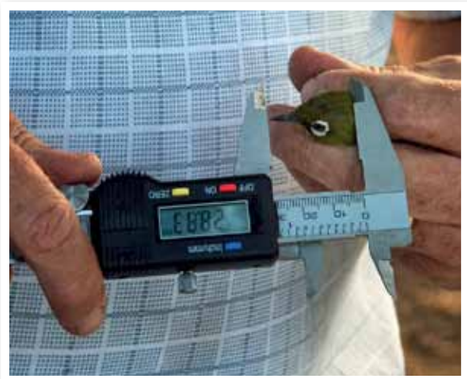
With all the preparation done, we sit and wait. It's not long before we hear the first flutter of wings: a Cape White-eye caught in net No. 2. Francis and Jacqui carefully untangle the bird's claws from the net strands and place the white-eye in a cotton drawstring bag for weighing, before taking it out to begin the first of the day's measurements.

I am amazed at the effect Francis has on the birds and how expertly he handles them. I had expected them to panic, wildly fluttering their wings and struggling to break free. And yet the white-eye is perfectly calm in his grip as, with ringing pliers in his free hand, he attaches a 2.3-mm metal ring stamped with a unique number to its leg, measures the length of its beak, head, legs and feet, and checks its primaries for moult.

All the while he calls out measurements to Cathy, who meticulously jots them down in a ledger containing hundreds of similar such data entries and then checks the measurements against published data for this species.

So what happens to these data and what are they used for? Francis and Cathy submit their findings to SAFRING, the bird-ringing unit based at the University of Cape Town, where they are added to data collected by thousands of other bird-ringers throughout southern Africa. This provides valuable information on species numbers, survival rates, regional movements and lifespans. While the crucial task for the day is to ring the bird so that it can be recognised again, important additional information gathered includes the bird's moulting status and, if the bird-ringer is sufficiently experienced, even its age and sex. >

above *Francis Hannay (left) holds up a bag containing a bird he is about to weigh, while Cathy Hannay (middle) and Jacqui Badenhorst (right) look on.*



below *Francis measuring a Cape White-eye's head and beak length using digital callipers.*

Releasing the bird to continue its day.

A bird's feathers need to be kept in prime condition to help regulate its body temperature, protect it from environmental damage, display its breeding status and, above all, to enable it to fly. Since feathers deteriorate with time, most passerines replace them at least once a year through moulting. Juvenile passerines usually moult their body feathers in their first year and adults undergo a complete post-breeding moult at about the same time. A bird's plumage therefore tells you about its age, sex and breeding status. (Read more about moult in *African Birdlife* 2(3): 36–40; 2(4): 36–40; and 2(5): 56–60.)

The best way to determine a bird's age is to ring a nestling whose age is known, but second best is a fledged juvenile (by definition juveniles are in their first year of life). If a bird ringed as a juvenile is re-caught as an adult, its age can be approximated to within a few months. During our morning at HNR, Francis rings a juvenile Fiscal Flycatcher that will hopefully survive to be caught again as an adult. He also catches two previously ringed Cape White-eyes. One was first ringed in November 2014. The other, originally ringed in October 2011, was recaptured on 7 February 2014, 6 February 2015 and now, 19 February 2016. This individual clearly does not move far from its territory – nor has it learnt to avoid nets!

Among Francis's most memorable captures at HNR is a nine-year-old Cape Robin-chat and an Orange-breasted Sunbird that was seven-and-a-half years old. Considering *Roberts* 7 cites the oldest ringed Orange-breasted Sunbird as being almost six years old, Francis may have something of a record here!

Sexing the bird

Apart from obvious signs, such as differing male and female breeding plumages, there are other, more subtle hints to a bird's sex. One of these is the shape of the cloaca (the body cavity into which the intestinal, urinary and genital canals empty), which differs between males and females.

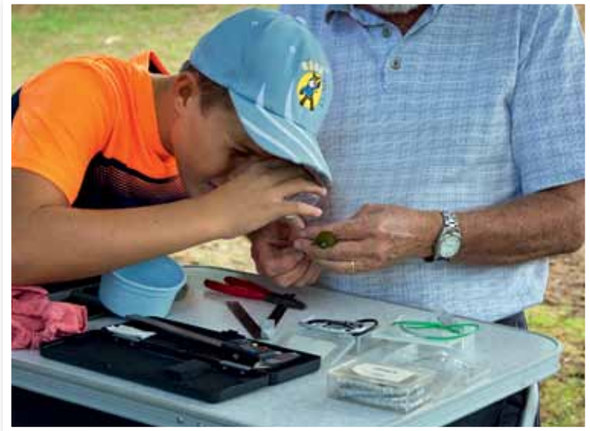
As this can be rather tricky to see, another sign to look for is an incubation or brood patch – featherless skin rich in blood vessels that enables the bird to transfer heat to the eggs while brooding. Since a brood patch is uncommon in many male passerines, it can be used to identify brooding females of species in which only the female incubates.

To check for a brood patch, Francis gently blows the feathers apart. He then releases the bird, having now sexed it, inspected it and recorded all the data he needs.

HOW CAN YOU HELP?

If you find or photograph a ring with a legible number, visit the SAFRING website (*http://safring.adu.org.za/*), click on 'Found a ring?' and fill in the form and submit it.

If you would like to find out more about becoming a bird-ringer, contact Dieter Oschadleus, the ringing co-ordinator for SAFRING, at *doschadleus@gmail.com*



How to become a bird-ringer

Bird-ringing requires skill, patience and practice. As the job comes with a lot of responsibility, a bird-ringer needs to be fully trained and issued a licence by SAFRING. Francis began ringing birds in 2006, with the late Gordon Scholtz as his mentor. After training for two years he gained his ringer's licence in 2010, which allowed him to take over from Gordon as the bird-ringer for HNR. During this training (weather permitting, about five hours a week) he ringed more than 500 birds, in habitats ranging from the beach to the Little Karoo.

Gordon (and later John Clements) also taught him how to handle birds ethically and how to identify species at all stages of their lives. About 80 per cent of bird-ringers are volunteers like Francis, a retired industrial chemist, with the remainder being mainly academics or researchers. Currently, Francis is mentoring Jacqui, who is training for her licence. Apart from helping to set up the nets and untangle the birds caught in the threads, during our morning at HNR Jacqui ringed a Cape Robin-chat as Francis kept a close eye on her technique.

About an hour into our bird-ringing session one of HNR's young rangers, Megan Harvett, joined us. Currently studying nature conservation at the Cape Peninsula University of Technology, she is eager to learn how to ring birds and Francis is just as keen to teach her. For now, she takes over from Jacqui as Francis's assistant, helps Cathy with her record-keeping and practises identifying birds.

In an encouraging sign for the future of birding, a group of home-schooled children, Reynhardt du Plessis among them, gathers round to learn about birds and the importance of ringing them. Their enthusiasm is infectious as they inspect the leg rings with a magnifying glass and listen intently while Francis explains why he is measuring different parts of the bird. By the time they leave, they are already correctly identifying Cape Robin-chats, Cape White-eyes and other garden birds, and will no doubt continue to develop a passion for birds.

By the end of our session, birds caught and ringed include a Black Saw-wing (a first for this area), juvenile Fiscal Flycatcher, Brimstone Canary, Cape Robin-chat, Cape Weaver, Olive Thrush, Swee Waxbill and Cape Bulbul, in addition to six first-time Cape White-eyes and two Cape White-eye recaptures. As we pack up and prepare to go our separate ways, Megan receives a call on her two-way radio to assist with capturing and releasing a caracal in the vicinity. In young conservationists like Megan and nature-loving kids like Reynhardt, I am left with a feeling that our Helderberg birds will be in good hands. ◆

above Reynhardt du Plessis inspects a Cape White-eye's leg ring.

OLD SCHOOL, NEW SCHOOL

We tend to associate bird-ringing with the study of bird movements, so you might think that recent advances in bird-tracking technology are making ringing redundant. Devices such as GPS receivers and light-logging geolocators have revolutionised our ability to track birds over a range of spatial and temporal scales. The information they provide is vastly superior to that obtained from ringed birds, but they tend to be mainly used on adult birds and only a small number of birds can be tracked directly. As a result, rare movement behaviours (for example, long-distance juvenile dispersal events) are unlikely to be detected.

More importantly, however, many benefits from ringing come from being able to identify individual birds. This is essential if we are to estimate survival rates, which is crucial to understanding population dynamics. Individual identification is particularly valuable when birds can be recognised in the field, either through unique colour-ring combinations or through field-readable alpha-numeric bands. It enables other demographic parameters to be estimated, such as age of first breeding, mate fidelity and frequency of multiple brooding. We can also assess home ranges and thus estimate population densities. Such data are crucial for monitoring population health and are thus central to bird conservation and management efforts.

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REFERENCE

SAFRING Bird Ringing Manual (ADU Guide 5): *http://safring.adu.org.za/downloads/ringers-manual.pdf*