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Introduction

1.1 INTRODUCTION TO BIRD RINGING

Having decided to embark on training for a bird-ringing permit, it is appropriate that you:

- ❑ Gain insight into the activity.
- ❑ Know how bird ringing originated.
- ❑ Know how the activity is controlled and monitored.
- ❑ Know how South African and international activities are organised.
- ❑ Know what has and is still being achieved.
- ❑ Know what is expected of you both as a trainee and a qualified ringer.
- ❑ Know why you need to undergo a training phase.
- ❑ Know the reasons why we mark or ring birds.

1.2 HISTORY

Man has been marking birds on and off for over 2000 years. The following account (Fisher & Peterson 1964) illustrates this:

> The earliest man known to mark a bird was one Quintus Fabius Pictor. Sometime between 218 and 201 BC, when the second Punic War was on, this Roman officer was sent a swallow, taken from her nestlings, by a besieged garrison. He tied a thread to its leg with knots to indicate the date of his relief attack, and let the bird fly back. In the later Roman days of Pliny (first century AD), a certain knight fond of chariot racing in Rome used to take swallows with him to Volterra, 135 miles away, and releasing them with the winning colours painted on them, no doubt enabling his friends at home to confound the local bookmakers.

During the Middle Ages, falconers fitted metal plates or bands to the legs of their birds. These bands bore the aristocratic seals of their owners and trainers. Falconry originated in the Far East sometime between 2000 BC and 244 AD. (The first indisputable evidence is from Japan.) There was an injection of Arabic techniques into Europe during and after the Crusades (Campbell & Lack 1985: 203), so it may be that ringing of falcons was in existence earlier. The word ‘swan mark’ dates from the year 1560 and describes the practice of putting a nick on a swan’s bill to denote ownership; ‘swan-upping’ was the custom of annual roundup of swans for marking. Later in the seven-

teenth and eighteenth centuries ducks and swans were marked with metal collars by landowners. Later marks were placed on pigeons, both carrier and racing pigeons. There is evidence in Izaak Walton's *The Complete Angler* that by 1653 young salmon had ribbons attached to their tails to establish that after their migration out to sea they returned to their natal streams to breed. The Russians were the first to attempt to mark mammals; Northern Fur Seals were marked on the Pribilof Islands. The ears of young seals were cut off.

The marking of birds for scientific purposes was started in 1899 by a Danish schoolteacher Christian Mortensen. He placed zinc rings on European Starlings. He then changed to aluminium and the rings bore a return address and date. Before ringing, the rings were carried in sand boxes to smooth the cutting edges! Within a year he had accumulated a substantial number of recoveries. The first national ringing scheme was established as the 'Vogelwarte' at Rossitten, on the Baltic coast in Germany in 1903. This scheme was the model followed by many other countries before the First World War: Hungary (1908), Great Britain (1909), Yugoslavia (1910), Holland and Sweden (1911) and Denmark and Norway (1914) (Spencer 1985).

The first ringing of birds in southern Africa, and possibly all of Africa south of the Sahara, was undertaken by the Witwatersrand Bird Club (WBC) in 1948 (Ashton 1979). Members of the WBC scaled the cliffs of Skeerpoort and ringed nestling Cape Vultures. One of these birds was recovered later near Bulawayo in Zimbabwe.

1.3 ORGANISATION

The coordinating body for bird ringing in South Africa is the South African Bird Ringing Unit (SAFRING). SAFRING provides bird-ringing services to ringers throughout southern Africa, and SAFRING rings are routinely used as far north as Malawi. SAFRING is part of the Avian Demography Unit (ADU) in the Department of Statistical Sciences at the University of Cape Town. Because all legal forms of wildlife capture are strictly controlled, the provincial nature/environmental conservation bodies are responsible for the issuing of the required permits to individuals. This should only take place upon the recommendation of SAFRING, who in turn act upon the recommendation of active, recognised ringers in the field. Qualified ringers are issued with an 'authority card' by SAFRING, which states the ringing skills that they have, and which authorises them to use SAFRING rings and equipment. The authority cards are also useful in establishing *bona fides* with landowners, the public and occasionally the police.

In the global scene, SAFRING is one of many national ringing schemes which exchange ringing, recovery and recapture information on a regular basis. Much of this information is generated by a loose collection of people known as bird ringers.

SAFRING has several important functions:

- Coordinating the bird-ringing effort in southern Africa.
- Collating ringing, recapture and recovery data when submitted by various sources.
- Supplying, at minimum cost, bird-ringing requirements such as nets, rings and other specialised equipment.
- Advising ringers on methods and means when targeting species.
- Acting as a clearing house for recapture and recovery data to and from foreign ringing schemes.

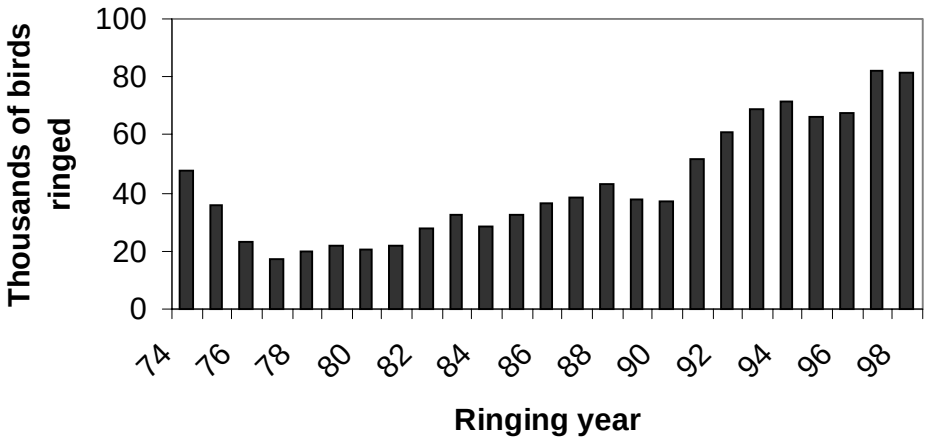

Fig.1.1. Number of birds ringed per ringing year with South African rings from 1974/75 to 1998/99.

- Through *Safring News*, provide a regular medium for the publication of results, information, views, techniques, achievements and other relevant information useful to ringers.
- Coordinate colour ringing and resighting data.

1.4 ACHIEVEMENTS

Ornithology would still be in the Dark Ages were it not for bird ringing or marking! Bird ringing has been described as the research tool that produced the most important results in ornithology during the 20th century. Much of our insight into bird movements and migration, and our knowledge of population dynamics, exists because individual birds have been uniquely marked and subsequently found either at the place of original capture or at another location. It is only by making a bird individually identifiable that we can learn about that individual's movement, longevity and social associations.

In this way aspects of the life histories of a large number of bird species have gradually been unravelled, giving new understanding of the movement of birds as well as raising a whole new set of questions relating to causes and factors contributing to population movement, dynamics and behaviour.

At the start of the 21st century, bird ringing remains the most cost-effective method of studying many aspects of the biology of most common bird species.

1.5 CHALLENGES FACING THE BIRD-RINGING COMMUNITY

Bird ringing in southern Africa has had its ups and downs. Annual totals grew to reach 70 000 birds in the early 1970s. A population crash in bird ringers in the mid-1970s reduced the annual total to around 17 000 towards the end of that decade (Fig. 1.1). Subsequently, there has been steady growth and, by the late 1990s, the annual total was hovering around 70 000 once again. This is not to say that more is necessarily better, but it is rather an indication of levels of activity.

Bird ringers consist of three groups of people: individual ornithologists or researchers, corporate ringers (e.g. Marine and Coastal Management) and amateur ornithologists. The first two groups are mainly academics and researchers based at universities, museums, various government departments and institutes, and environmental NGOs. The third group, forming the bulk of bird ringers, contribute up to 80% of the regional ringing effort and are drawn from all walks of life. These are generally members of BirdLife South Africa who have progressed from birdwatching to bird ringing as their original interest and love for birds has expanded. The groups are not mutually exclusive; many amateur ringers work closely with professional ornithologists and are gradually becoming involved in their projects. Research benefits, from the use of willing and experienced assistants, and the scale of the research projects can be increased. Ringers benefit by having their insights of research broadened, and from a sense that they are contributing their time and skills to a worthwhile project. Such cooperative ventures include projects on Redbilled Quelea, European Swallow, Redbilled Oxpecker, Bald Ibis and African Black Oystercatcher. These ventures have proven to be successful and cost effective and will probably expand in future. Likewise, professional ornithologists can guide amateur bird ringers into independent ringing projects of their own, which will yield valuable research results. A list of research projects involving bird ringing has been produced by the ADU (Underhill *et al*. 1995).

The challenges facing the bird-ringing community are many. Some of these are:

- ❑ Recruitment of new ringers.
- ❑ Effective training of new ringers.
- ❑ Retention of existing funding and sourcing of new funding for:
  - ✧ Administration costs of SAFRING.
  - ✧ Financial support of existing ringers, notably trainers.
  - ✧ Assisting newly qualified ringers with start-up costs.
- ❑ Expansion of ringers into areas not covered at present.
- ❑ Resumption of the trapping and ringing of waterbirds. Most waterbird ringing was done prior to the mid-1970s, and it is likely that patterns of movement of waterbirds have changed since then.
- ❑ Ongoing computerisation of ringing administration, from ringer to SAFRING and vice versa, cutting down on administration time and related costs.
- ❑ Recruitment and involvement of members of formerly disadvantaged communities. Bird ringing is a powerful tool which can assist in establishing an appreciation for birds and the environment in general. Involvement in bird ringing in their school days has led many youngsters into a career in biology and conservation.
- ❑ Liaison with the media, expansion of public awareness of bird ringing, improving the probability that ring recoveries and sightings of colour-marked birds are reported.

1.6 PUBLIC RELATIONS

Bird ringing can be a controversial aspect of ornithology and is opposed by some members of the public, to the extent that capture equipment has occasionally been wilfully damaged. As bird ringers, it is in our interest to correct misconceptions regarding this activity among critics and the public at large. By using the guidelines listed below, you will find it easier to deal with both critical and curious members of the public. Always

be willing and able to demonstrate and explain what you are doing. As a bird ringer, always operate to the highest possible standards that you can attain, and continually seek to improve your knowledge and your techniques.

1.7 REQUIREMENTS FOR BIRD RINGERS

An aspirant bird ringer's ability to operate independently needs to be assessed by the ringers responsible for the candidate's training, who will ultimately recommend the trainee for an AA-permit. To this end, essential areas of proficiency have been identified as being the minimum standards to be achieved by the trainee.

- ❑ A ringer must be competent to operate the equipment used to capture birds in a safe way. This includes the planning, siting, handling and monitoring of nets and traps in different situations.
- ❑ A ringer must be able to capture and handle birds and store them, and fit rings to wild birds, without causing undue stress or injury to the birds.
- ❑ A ringer must have a high level of competence in bird identification of the birds in the hand. A ringer shall not normally ring any bird that cannot be positively identified.
- ❑ A ringer must be able to undertake accurate, repeatable standard anatomical measurements.
- ❑ A ringer must be able to record information accurately, understand and conform to the administrative procedures of SAFRING, submit schedules in good time and store data in the long term.

Permits to ring birds should be issued on the recommendation of SAFRING, which in turn will act on the advice of experienced ringers.

The development of the above-mentioned areas of proficiency and competency is partly linked to the numbers of birds and species processed. However, many of the minor 'crises' an independent ringer has to be able to handle occur rather rarely, so it can take a long time before you are fully competent to operate solo. Your trainer will inform you of the requirements in force in the area in which you are training.

While the preceding standards are very important, the ringing trainer will also assess the trainee's feeling or passion for birds entrusted to his care as well as the trainee's attitude to bird ringing. Should the trainer be of the opinion that a trainee does not have an acceptable attitude towards birds and bird ringing, training can be discontinued if the trainee cannot respond to remedial coaching and advice.

1.8 ETHICS OF BIRD RINGING

- ❑ The well-being of any bird caught and handled for ringing is the paramount consideration.
- ❑ A ringer may not operate more equipment than he/she can properly manage.
- ❑ No ringer may allow unqualified persons to use his/her equipment to capture and handle birds, or fit rings, except under close supervision.
- ❑ No capture of birds should be attempted under conditions that could result in birds becoming severely stressed, subject to potential injury or death, or result in birds

abandoning occupied nests.

- ❑ All traps and mistnets should be carefully inspected every 20 minutes (5–10 minutes during hot weather).
- ❑ Beware of ringing nestlings at too advanced an age (they may 'explode' from the nest). Be careful in mixed colonies with chicks of different ages.
- ❑ A ringer must operate with the necessary ringing permits, as well as the permission from the landowner on whose land ringing takes place.
- ❑ Careful and accurate records of all birds ringed must be kept.
- ❑ A ringer must complete and submit ringing schedules to SAFRING and reply to official requests for ringing data promptly.
- ❑ A ringer must not bring the technique of bird ringing into disrepute by careless, negligent or inappropriate behaviour.
- ❑ If conditions contrary to the above ethics are observed, these should first be brought to the attention of the ringer in a constructive manner. Failing this, the conditions should be brought to the notice of SAFRING, who will then take the matter further with the ringer and, if necessary, the appropriate permit-issuing authorities.
- ❑ Ringers should be willing to explain the methods and purpose of bird ringing to members of the public when necessary.

1.9 RINGERS AND TRAINEES

The following guidelines will make your relationship with your trainer mutually profitable and cordial.

- ❑ Stay in contact; don't expect your trainer to chase after you.
- ❑ Be punctual, keeping to agreed meeting times.
- ❑ Carry out instructions to the best of your ability.
- ❑ When in doubt or uncertain, seek help.
- ❑ Ask questions and make suggestions. Even if they are not applicable or wrong, they do contribute to the learning process.
- ❑ Treat nets and other equipment with care, because these are expensive items to replace.
- ❑ Do not leave the ringing site before all the equipment has been packed and the paper work done to prevent an unnecessary burden on the trainer and fellow trainees.
- ❑ Remember that the welfare of the birds comes first; there might be occasions in the field when little training can take place because the trainer is fully committed to getting birds ringed and released as rapidly as possible.

1.10 WORKING GROUPS

Catching birds with mistnets is the main emphasis of this manual. Several specialist working groups exist in South Africa and most of them include bird ringing as part of their activities. Examples are the South African Crane Working Group, the Raptor Conservation Group, the Vulture Study Group and the Western Cape Wader Study Group. The Southern African National Foundation for the Conservation of Coastal Birds (SANCCOB) rings mainly cleaned African Penguins and Cape Gannets before their release. The ringing of all these species requires special skills and it is broad SAFRING policy that ringing of these groups of species should be done in collaboration with these groups, where appropriate. Ringers interested in these groups are advised to contact the relevant working groups. There are many other species or groups of species which would benefit from the establishment of a formal interest group; for example, a Barn Swallow Study Group could liaise with the EURING Swallow Project, based in Europe.

1.11 CONCLUSION

A great deal is expected of a bird ringer. The standards are high. For those who accept the challenge, bird ringing is a labour of love. It generates a lot of hard work, frequently in unpleasant conditions. It teaches patience and perseverance. Not least, you will learn to tolerate a mosquito biting you while you complete the delicate task of taking a bird out of a mistnet.

Good luck with your training. Having qualified, you will be one of a lucky few who have stumbled across this most rewarding and fulfilling activity.

SAFRING POLICY ON CENSURE OF RINGERS

When a ringer brings SAFRING or bird ringing into disrepute one or more of the following steps may be taken, depending on the severity of the incident(s):

1. A written letter of warning to the ringer.
2. The withdrawal of the ringer's authority to use SAFRING equipment. SAFRING would cease to issue the ringer with any items from SAFRING (i.e. rings, equipment, Safring News); unused rings and stock would have to be returned to SAFRING.
3. A letter to the relevant provincial Nature Conservation department, requesting that the ringing permit issued to the ringer be revoked. A copy of the letter would be sent to all the other provincial Nature Conservation departments.

The decision to censure a ringer will be taken by the Executive Committee of SAFRING, i.e. the Chairman of the Steering Committee, the Director of the Avian Demography Unit and the Ringing Coordinator.

The decision, and the relevant motivation, would be submitted to the Steering Committee as rapidly as possible for confirmation.