

numbers locally. The returns also showed that individual farmers can catch fairly large numbers of birds (up to 6 400 per season), and reports indicate that satisfactory reductions in crop damage have resulted in some cases.

Because of the labour intensiveness of mistnetting, it is evident that those farmers who do not materially benefit from it, will discontinue their actions. Farmers are not enforced to control problem birds, and it is in their own interest to ensure the cost-effectiveness of their efforts.

Nevertheless, it is acknowledged that mistnets could potentially be harmful if used injudiciously. There is especially a concern about control operations involving Red Bishops, which breed in aquatic habitats where rare species such as bitterns, crakes and flufftails may occur. The CDNEC's officials have up to now experienced a responsible attitude from the farmers. However, should evidence come to light that mistnetting has a deleterious effect on the populations of non-target species, this concession could be suspended.

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CSIRO BIRD BANDING PROGRAMME

KELLERIN, WESTERN AUSTRALIA

Perry de Rebeira

This is an outline of the work carried out by the Division of Wildlife and Ecology of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and provides some details of the bird banding programme at Kellerberrin.

The aim of the Division is to understand the nature of Australia's ecological systems and their component species and to provide a sound scientific basis for the management and conservation of wildlife, plants and land resources.

The Division's laboratory in Western Australia is studying the effects of habitat reduction and fragmentation on the distribution and abundance of native animals in the grain-producing area of Western Australia. This work is based at Kellerberrin in the central wheatbelt.

Kellerberrin is 200 km east of Perth on the Great Eastern Highway. Transcontinental train and bus services pass through the town, which is a service centre for the shire (county). Over 93% of the original woodland, mallee and heath vegetation has been cleared for farming. Our research programme focuses on the ecology of remnants of native vegetation to see if they constitute a conservation network.

The avian population study is supervised by Dr. Denis A. Saunders, Officer-in-Charge of our regional laboratory at Helena Valley near Perth. I am the Senior Technical Officer responsible for conducting bird-banding in the 625 km² study area. The aim is to identify the habitat requirements and movement patterns of individual species in a patchy environment. Some species are confined to isolated "islands" of remnant bush while others utilise a range of seasonally available resources, using road verge corridors to move around the region. This is one of the few studies of birds at landscape level.

The banding programme began in March 1985 and has continued with 4-day banding sessions each month between March and November inclusive. Low catch rates and high temperatures preclude banding during summer months.

I have been working with volunteer assistants since 1987. Some of these are skilled amateur banders but the majority had no prior experience of handling birds in mistnets. I have devised a teaching procedure that enables beginners to quickly become proficient with safe handling techniques of birds and equipment. Volunteers are not left unsupervised and are expected, in fact encouraged, to recognise limitations and to request assistance should difficulties arise. The welfare of the birds is my first priority; all else flows from that.

To date over 5 000 birds have been banded with a recovery (retrap) rate of about 18%. Mortalities are low, less than 0,4% and I strive to have it lower. None of these casualties can be attributed to handling error.

The most commonly encountered species are honeyeaters. Because trapping is confined to the use of 30 mm mesh mistnets, most of the birds caught weigh less than 300 g. This means that a lot of small to medium-sized passerines are banded, occasionally parrots and, rarely, nightjars, swallows, martins, cuckoos and kingfishers. We have netted only one raptor - a Brown Goshawk.

An attempt is made to find nests. To date very few pulli have been banded. Observations of colour-banded birds supplement our retrap data, and a bird list is recorded for each study site used.

The pattern of activity for field trips is stereotyped but not inflexible. I have to commit myself to a year-long timetable

in January but there is scope for field work outside these dates. The dates for 1992 field trips are given in a separate note (see page 26). The most productive times are April to June and August to October, the latter being the best time for wildflowers in Western Australia.

Field trips commence with departure from Helena Valley at about 0830 hrs on a Monday morning with 3 volunteers who each receive A\$10 allowance per day. Volunteers are expected to supply their own food, bedding and personal gear. Beds, mattresses, cutlery, crockery, cooking facilities and cold storage are all provided on site free of charge; food cost-sharing can be arranged.

Arrival at the field station, 40 km north of Kellerberrin is about midday. After sorting gear and eating lunch the team will set nets at a chosen study site and operate there until dusk, when the nets will be furlled and tied before returning to the field station for the night.

Lights on is about 45 minutes before dawn - 0430 to 0545 hrs depending on the season. Breakfast is simple with the least noise possible. Other research teams share the field station and some of them work late at night, so they do appreciate a sleep-in.

Nets are opened before sunrise and are operated until about 1100 hrs, when they are closed, packed and the site cleared before lunch at the field station. After lunch a new study site is used. This pattern is repeated each day with time set aside on Friday to clean the field station before departure to Perth at about 1400 hrs. Arrival at Helena Valley is about 1630-1700 hrs.

Transport to and from Helena Valley is the responsibility of volunteers.

Should you have any further questions about the programme, conditions and facilities, please do not hesitate to let me know.

Perry de Rebeira, Senior Technical Officer, CSIRO Bird Banding Programme, Kellerberrin, WESTERN AUSTRALIA

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