RINGING AT RONDEVLEI BIRD SANCTUARY AND DURBANVILLE NATURE RESERVE, TWO PSEUDO MEASURED EFFORT SITES

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Measured Effort Sites provide a new opportunity for southern African ringers to describe the seasonality of occurrence of species at their ringing sites (Underhill & Oatley 1989). The purpose of this paper is to give an indication of the type of information it will be possible to extract from Measured Effort Site data.

Ringing at the two sites in the southwestern Cape discussed in this paper, Rondevlei Bird Sanctuary (34°04S, 18°30E) and Durbanville Nature Reserve (33°50S, 18°38E) started before the Measured Effort Site methodology was developed, and there is unfortunately no record of 'effort' for the earlier years in terms of 'net-hours', nor were ringing sessions held on an, at least, once a month basis. However, the numbers of nets used each ringing session were fairly constant, and most of the birds were caught within a few hours of dawn. Thus, in this analysis, we have used the 'ringing session' as the unit of effort, and have grouped data across years. We do not believe that this has seriously distorted this preliminary analysis.

Our ringing at both Durbanville and Rondevlei started in July 1986. By June 1990, there had been 57 ringing sessions at Durbanville and 40 at Rondevlei (Table 1). These sessions took place irregularly at both localities until May 1989. Since then, there has been at least one session per month at Durbanville and at Rondevlei, except that at the latter, no ringing was done in November and December 1989 or February 1990.

TABLE 1

NUMBERS OF RINGING SESSIONS IN EACH MONTH AT DURBANVILLE AND RONDEVLEI

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
DURBANVILLE	5	3	4	4	12	12	3	4	3	3	1	3	57
RONDEVLEI	2		1	2	5	5	3	9	11	2			40

At Durbanville, there was no obvious seasonal trend in the mean number of birds caught per ringing session (Fig. 1) with extremes of 33 birds per session in March and 74 per session in April. In contrast, at Rondevlei, the average catch in August was six times larger than in April (Fig. 1): July, August and September are clearly the best months to go ringing there!

Even though the overall sizes of the catches at Durbanville showed no seasonal pattern, that of individual species did. Cape Sugarbirds were caught mostly in August, September and October (Fig. 2a opposite), Malachite Sunbirds in April, May and June (Fig. 2b), and Cape Sparrows from September to December (Fig. 2c). Cape White-eye catches were relatively small in October, November and December (Fig.3a overleaf). Cape Weavers were trapped throughout the year and showed no seasonality (Fig. 3b).

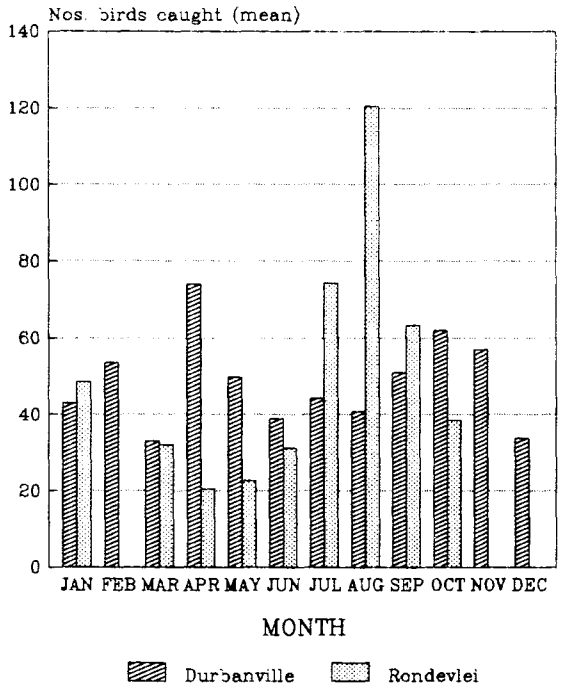
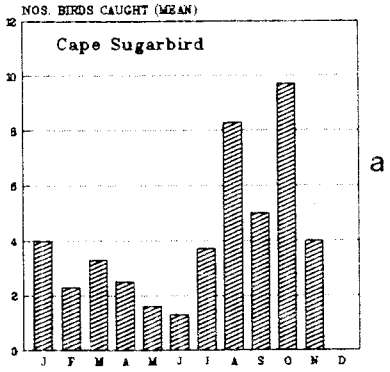
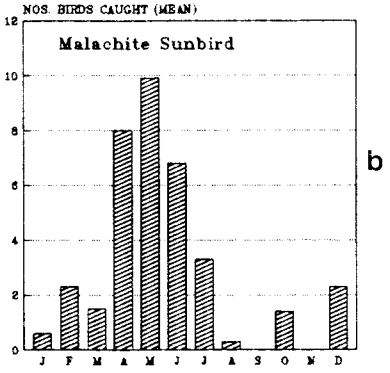
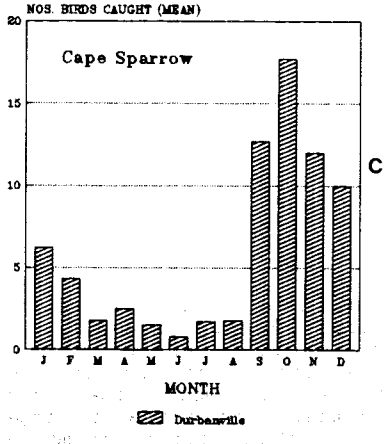


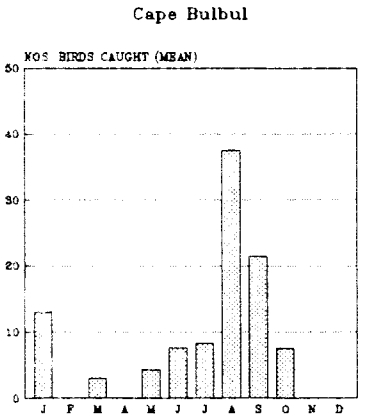
FIGURE 1

MEAN MONTHLY CAPTURES









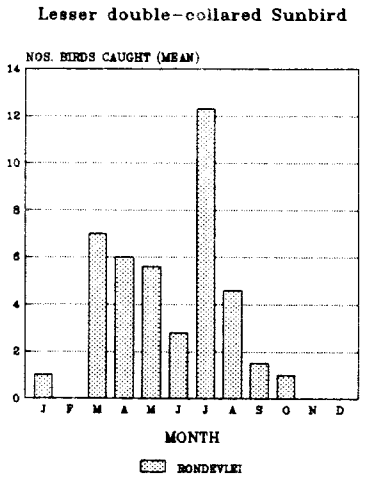


FIGURE 2

CAPTURE RATES OF 3 SPECIES AT DURBANVILLE AND 2 SPECIES AT RONDEVLEI

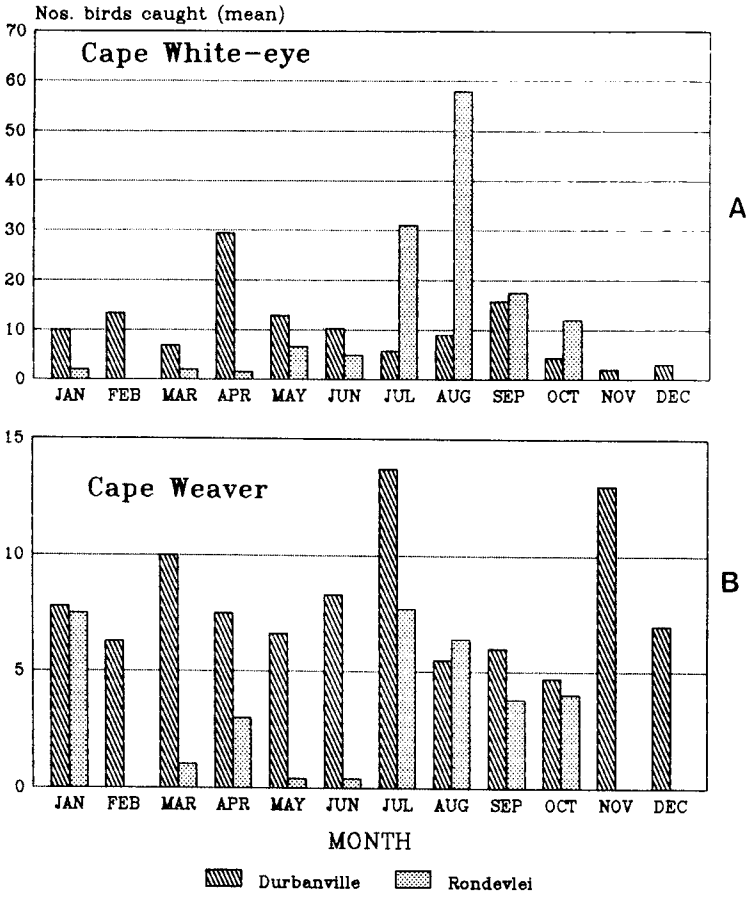


FIGURE 3

COMPARATIVE CAPTURE RATES OF 2 SPECIES AT DURBANVILLE AND RONDEVLEI

In contrast, the four most frequently caught species at Rondevlei all showed essentially the same seasonal pattern (Figs. 2 and 3): Cape Bulbuls were caught mostly in August and September, and Lesser Doublecollared Sunbirds, Cape White-eyes and Cape Weavers mostly in July and August. The explanation for this strong seasonality at Rondevlei is simple: the shrub Salvia flowers between July and September, and attracts large numbers of nectar-feeding birds. This plant forms a substantial component of the vegetation at the ringing site.

The intriguing question is, of course, where do these birds go for the rest of the year? They don't simply curl up and die, because we have made many retraps at approximately one year intervals. In an attempt to solve this problem, colour rings were put on 280 Cape Bulbuls in August/September 1989; a few were retrapped there over the following months, and one was retrapped at the adjoining Strandfontein Sewage Works. But fairly intensive searches of the southern suburbs of the Cape Peninsula failed to locate any concentrations of Cape Bulbuls, let alone any of the colour-ringed birds! We therefore still have no idea how far or where the bulk of this transient population moves.

The pattern at Durbanville suggests that the Nature Reserve provides different food resources through the year. The gardens are managed so that several species of protea and/or erica and other plants with nectar-rich flowers are in bloom at any one time, and fruit and seed are also available seasonally.

All the species in Figs. 2-3, except the Cape Sparrow (Fig. 2c), are either obligate nectarivores (sunbirds and sugarbirds) or mixed-feeders (omnivores), opportunistically taking nectar. This emphasizes the importance, in interpreting the data from Measured Effort Sites, of making a record of food plants in flower or fruit during each ringing session.

The larger numbers of Cape Sparrows at Durbanville in late spring corresponds with the end of the breeding season. Rowan (1964) estimated that about 72% of Cape Sparrow nestlings fledge by the end of October each year in the winter rainfall region. It might therefore be predicted that the increase in Cape Sparrow catches from September to December would be a post-breeding increase in population size. However, the percentage of first-year birds caught between September and November was only 8%, while in December and January it was 68%. The sharp increase in the percentage of first-year sparrows at Durbanville coincided with the decrease in catch sizes (Fig.2c)! It therefore appears that most of the Cape Sparrows visiting Durbanville were adults exploiting a temporary food supply for their nestlings.

Comparison of the Cape White-eye histograms for the two sites (Fig. 3a) reveals that the peak numbers are not synchronized. A similar result is true for Cape Weavers (Fig. 3b). This suggests that increases in numbers at a site are operating at a localized scale, and are not constant even across a relatively homogeneous region like the southwestern Cape. A vast amount of effort will be needed to track the movement of birds from resource to resource through the year with a view to determining the period when food supplies are at their lowest. Protecting this food resource becomes the critical factor in conserving the population that passes through a site at some stage in the year.

It seems that Measured Effort Site methodology will provide interesting insights into bird community studies. We encourage ringers to consider adopting this new scheme at their favourite ringing sites.

We are grateful to Mr Howard Langley and Mrs T Dreyer for permission to ring at Rondevlei Bird Sanctuary and Durbanville Nature Reserve respectively.

REFERENCES:

ROWAN, M. K. 1964. Some observations on reproduction and mortality in the Cape Sparrow *Passer melanurus*. Ostrich Suppl. 6: 425-434.

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ANYONE FOR CROW A LA BOIL??

MISDIRECTED

To monitor the migratory movements of birds, the US Department of the Interior tagged some with metal strips marked: 'Wash. Biol. Surv.' (Washington Biological Survey). But the labels were changed when the department received the following letter from an Arkansas farmer: "Dear Sirs, I shot one of your crows the other day. My wife followed the instructions on the leg tag and I want to tell you it was terrible.".

Australian Women's Weekly. December 1989