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## Banding the Yellow-plumed Honeyeater on the Mount Mary Plains, South Australia

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Yellow-plumed Honeyeaters *Lichenostomus ornatus* have been banded\* and retrapped over a number of years in the Sutherlands and Bower districts 110 km N.E. of Adelaide, as part of the Mount Mary Plains Survey in South Australia. Numbers of the species present fluctuate seasonally more than is indicated by the very limited movements recorded between banding stations. Results are presented on habitat preferences, relative abundance, longevity and on variation in the weight of birds in the population studied. Changes in the colours of soft parts and in the plumage from juveniles to the adults are described.

The Yellow-plumed Honeyeater is the most common and widely distributed member of the genus on the Mount Mary Plains (Boehm 1957). It takes the place of the Yellow-faced Honeyeater *L. chrysops* and the White-plumed Honeyeater *L. penicillatus* of the sclerophyll forest and woodland regions of the state (South Australian Ornithological Association 1977). It prefers virgin mallee and tall regrowth mallee, but will congregate in large numbers in Black Oak *Casuarina cristata* scrub when flowering *Eremophila oppositifolia* shrubs yielding a plentiful supply of nectar (and attracting numerous insects). Flowering mallee, particularly White Mallee *Eucalyptus gracilis* attracts many Yellow-plumed Honeyeaters during some seasons. In some very dry years food is scarce because there

are either few blossoms or the blossoms may contain little or no nectar, and therefore also do not attract insects. At such times the species is generally scarce. There have been times when the longer-billed honeyeaters such as the Spiny-cheeked Honeyeater *Acanthagenys rufogularis* and the White-fronted *Phylidonyris albifrons* have been common and apparently were able to obtain the limited nectar from the bottom of the tubular *Eremophila* blossoms while shortbilled species such as the Yellow-plumed Honeyeater possibly could not do so. This subject has been investigated and discussed by Ford and Paton (1976) and Ford (1977). Yellow-plumed Honeyeaters also feed on sugary scale occasionally found abundantly on the foliage of coppiced mallee shoots in late autumn and early winter of some dry years. The role of habitat in the abundance of four common honeyeaters of the area is indicated in Table I.

\* Bands used were provided by the Australian Bird-banding Scheme, Division of Wildlife Research, CSIRO.

TABLE 1

Habitat composition of the five banding stations showing locations, numbers of catching days and totals of four species of honeyeaters caught including retraps.

Site	Habitat	Principal food source	Locality	Catching days	Honeyeaters			
					Yellow-plumed	Singing	Spiny-cheeked	White-fronted
1	<i>Casuarina</i> and mallee woodland. <i>Eremophila</i> and Bluebush.	Blossom of <i>Eremophila</i> , <i>Hakea</i> , <i>Lycium</i> and mallee. Insects.	Bower. 5 km West	181	448 (154)	94 (24)	154 (29)	161 (7)
2	Regrowth Mallee <i>Lepidium</i> and <i>Zygophyllum</i> shrubs.	Mallee and other blossoms. Insects including scale.	Sutherlands. 5 km North-east	94	182 (55)	0 (0)	3 (0)	9 (0)
3	<i>Geijera</i> shrubland and regrowth mallee. Bluebush.	<i>Geijera</i> and mallee blossoms. Insects.	Bower. 5 km South-west	44	59 (2)	32 (2)	33 (0)	12 (0)
4	Tall mallee and <i>Zygophyllum</i> shrubs.	Mallee and <i>Zygophyllum</i> blossoms. Insects.	Southerlands. 3 km East	84	19 (9)	0 (0)	0 (0)	0 (0)
5	Shrubland gully and mallee scrub.	<i>Lycium</i> blossoms and berries. Mallee blossoms. Insects.	Bower. 5-6 km South-west	39	8 (0)	23 (3)	23 (2)	6 (0)

Numbers of retraps shown in parentheses.

### Methods

Local banding of Yellow-plumed Honeyeaters commenced in 1963 by Messrs R. M. Gibbs and M. H. Waterman of Adelaide during visits to the district when they banded 4 birds, and I have banded from 1964 through to 1974. Five main banding stations have been operated and from 5 to 11 standard mist nets (32 mm mesh) were used at each station. Nets have been operated on 530 days by me, and there have been 442 operating days at the five main sites shown in Table 1. It has been customary to erect nets in groups about suitable flowering shrubs or coppiced regrowth mallee shoots to constitute a maze of nets.

### Results

A total of 716 Yellow-plumed Honeyeaters has been banded and there have been 220 retraps, representing 156 individuals (21%). Table 2 shows the totals, including all retraps, bird days, nil bird days and the numbers for each month of the year for four species of honeyeaters. It should be borne in mind that these species were

only some of those being studied in the Area Survey and banding stations have received unequal attention, and some opportunities for catching honeyeaters would have been lost at times. Nevertheless, this would have affected each of the species concerned in the table. Survival data of Yellow-plumed Honeyeaters from each year's banding have been compiled from retrap records, and the results are shown in Table 3.

Six birds have lived longer than five years, and one individual, 021-70062, has been retrapped at the banding place on three occasions, the last time being on 7 May 1976, nine years, 1 month and 12 days after banding. There have been only two cases of birds being retrapped at a banding station other than the one at which they were banded. 021-70277 from Boxthorn Gully, Bower, was retrapped at the Geijera Scrub, Bower, 2 km east, 2 years, 1 month and 18 days after banding. 021-70325 from Black Oaks Block, Bower, was retrapped on the Regrowth Mallee Block, Sutherlands, 3 km south west, 9 months and 13 days after banding.

Considerable fluctuations in the numbers of Yellow-plumed Honeyeaters nevertheless do occur in the local scrubs as general observations made by me over half a century have revealed markedly reduced populations in the spring and summer of some years. Small groups of the species are sometimes seen flying along tree-fringed roads adjacent to open grassland, and some of these groups have passed over my home-stand which is in open grassland. It appears from these observations that food supply governs the movements in the mallee region. Such movements may involve mainly immature and unattached individuals.

### Weight

Weighing of honeyeaters was carried out during a number of years, and their weight was taken to the nearest full gram. Of 456 birds, 395 (86%) ranged from 15-19 g. One adult, probably a female, weighed only 13 g, and two large individuals weighed 22 g.

### Soft Parts and Plumage

In the early stages of the study it was apparent that variation occurred in the colours of the soft parts and in the plumage of birds handled, but it was not until 1966 that records were kept of individual birds. It has been found that birds with yellow orbital rings, nostrils and base of bill acquired black colouration of those parts at a later stage. Furthermore, adult retraps were never found to regain the yellow colouration on the parts concerned. Three age groups are recognised by the author, the plumage and soft part variation being:

### Juvenile

Striations on ventral surface indistinct. Under tail-coverts olive-cream, not striped. Base of bill, nostrils, gape and margins of eyelids bright yellow.

TABLE 2

Banding totals, bird days, nil bird days and month totals for four common honeyeaters on the Mount Mary Plains.

Species	Total	Bird days	Nil birds	J	F	M	A	M	J	J	A	S	O	N	D
Yellow-plumed	935	147	295	23	13	26	41	79	77	12	121	436	44	32	31
Spiny-Cheeked	244	99	343	1	2	4	20	23	20	15	53	57	35	11	3
White-fronted	188	56	386	3	0	5	10	27	8	12	19	84	14	1	5
Singing	179	94	348	6	3	9	23	16	20	6	20	20	46	4	6

TABLE 3

Survival of Yellow-plumed Honeyeaters in years after banding.

Year banded	Number banded	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
1963	5										
1964	11	2	1	1							
1965	86	24	10	8	5	4	4	2	2		
1966	56	5	2	1							
1967	114	14	6	5	2	2	2	2	2	1	1
1968	81	16	8	8	2	2					
1969	101	20	9	6	4	3					
1970	31	7	4	4							
1971	97	33	16	10							
1972	9	1									
1973	112	31									
1974	13	3	3	1							
Totals	716	156	59	44	13	11	6	4	4	1	1

### Immature

Striation on ventral surface more pronounced than on juvenile. Under tail-coverts olive-cream with grey central stripe; the longest under tail-coverts acquire this stripe first. Base of bill, nostrils, gape and margins of eyelids olive-yellow. Nostrils and gape turn greyish-olive, then black; while margins of eyelids are still yellowish-olive. Base of bill and nostrils become black before angle of gape. Orbital eye ring turns black anteriorly, the posterior portion of the eye ring remains yellowish-olive, then becomes speckled and finally black. There may be some yellow in posterior part of orbital eye ring while gape and nostrils are still yellowish in some birds.

### Adult

Striation pronounced on ventral surface, including under tail-coverts. Bill, including base and nostrils black. Bare orbital eye ring black.

### Conclusions

The Yellow-plumed Honeyeater is subject to fluctuations of the local population, and apparently is less sedentary than some passerines in the mallee region. Food requirements seem to be the most likely reason for the fluctuations. Retrap data from long-banded individuals may indicate that those birds are more sedentary members of the population. Dark coloured soft parts seem to indicate that birds are adult and the light (yellow) colouration characteristic of the immature phase is not regained. The weight of most adult individuals ranges from 15 to 19 g.

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