CORELLA

(formerly The Australian Bird Bander)

Journal of the Australian Bird Study Association

VOLUME 1 **JUNE, 1977** **NUMBER 2**

Results from Banding Little Ravens

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Banding of Little Ravens *Corvus mellori* has been carried out on the Mount Mary Plains, South Australia, as part of an Area Survey. Although the species is generally nomadic, breeding pairs do not appear to wander great distances. Some locally-bred birds either remain in, or return to, the region in which they were reared. Information is given on trapping procedures and the reaction of Little Ravens to sheep carcases used for bait when there is abundant other food available nearby. Some aberrant individuals with white feather-bases could possibly be mistaken for the Little Crow *C. bennetti.*

The Little Raven is the common species of *Corvus* on the Mount Mary Plains, South Australia, and it is likely that it has increased in numbers during the period of European settlement because of favourable changes in the ecology (Boehm, 1952 and 1957). It now nests widely where the Little Crow occupied sites for breeding 30-40 years ago. Greater adaptability and aggressiveness seems to have enabled it to replace the Little Crow over the entire region. Banding* of Little Ravens commenced in the western portion of the Plains in 1963, when Mr R. M. Gibbs banded several nestlings. I banded some nestlings in the spring of 1964. These birds and others banded in the next few years were recorded as Australian Raven *C. coronoides,* but they were actually the type of Raven with well-feathered interramal region and having bifurcated medium-sized hackles on the throat. This species was recognized as distinct by Rowley (1967) and recently the habits and ecology of Little Ravens summarized (Frith 1976).

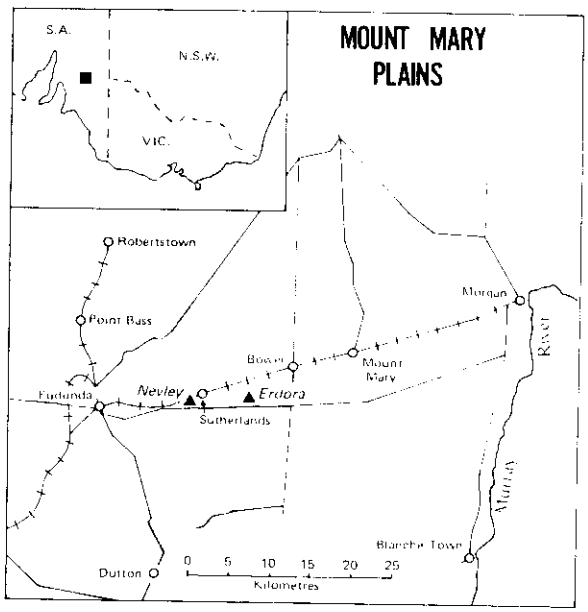
* Bands used were provided by the Australian Bird-banding Scheme, Division of Wildlife Research, CSIRO.

Methods

I started trapping free-flying Little Ravens at my property "Erdora", 5 km east of Sutherlands township (Fig. 1) with the aid of a drop-net baited with a sheep carcase. It was slow and time-consuming work with such cautious and unpredictable birds, and after 13 had been caught and banded it was decided to build a fixed large maze trap equipped with both roof-funnel entrance and a ground-funnel entrance. Experiments with a baffle-door on the ground-funnel have shown that the funnel does encourage larger catches of Ravens, compared with the roof-funnel alone. Ground-funnels in maze traps have the disadvantage of enabling unwanted creatures, such as foxes, cats and magpies, to enter the trap (Rowley 1968). However, they have the advantage of much greater catches of birds, particularly at times when Ravens are very numerous and hungry, or are either trap-shy or indifferent to the bait. These findings are at variance with the experience of Rowley (1973a) who stated that ground-level entrances were not found to increase the speed of catching. I do not recommend the use of ground-funnels when trapping is being carried out at some distance from the bander's home and the trap cannot be kept under observation.

Some large catches of Little Ravens have been secured with this trap. There have been times, however, when the birds completely ignored attractively displayed fresh sheep carcases in the traps. This occurs when there is abundance of insect food, such as caterpillars, moths or grasshoppers, or when there are carcases of sheep on property within a radius of 8-10 km of the trapping station; then it is sometimes difficult or impossible to trap Little Ravens. Periods when cereal crops are being sown, or are germinating, and when spilled grain is available in crops and stubbles are poor times for trapping.

A portable maze trap was built and used in September 1966 by a local school-boy, who had seen how Ravens could be trapped. Master Grantley Doecke, then aged ten years, constructed a simple gable-roof trap from scrap pieces of timber and wire-netting on his father's property "Nevley", 5 km west of the main operating station (Fig. 1). For bait he used offal and dead sheep found on the property. Subsequently, in 1970, he built and operated a large steel-frame portable maze trap which was very effective for catching Little Ravens, both new birds and retraps.



● Figure 1. *Map of Mount Mary Plains showing banding locations.*

Results

At the main trapping station, "Erdora", aged sheep were specially retained and slaughtered for bait, and in several years over 30 such animals were used each year during the winter and spring months. A total of 1 131 birds was banded at "Erdora" and "Nevley", with 943 retraps of 314 individuals (27%). At "Nevley" 195 free-flying Little Ravens were banded, with 166 retraps of 104 individuals. Of the retraps 31 (15%) were locally banded ones; 61 were from "Erdora", and 10 birds were ones that had been banded as nestlings in various parts of the district. In addition, 17 birds banded at "Nevley" were later retrapped at "Erdora", 5 km east. Of 314 Ravens banded as free-flying birds at the two banding stations near Sutherlands, and retrapped locally, 37 (11%) have lived longer than four years. Three have exceeded 10 years. No distant recoveries (16 km or more) have been recorded for birds that have been retrapped at least 12 months later at the place of banding. Such birds are probably local breeding individuals that do not move far outside the general region, excepting when scarcity of food compels them to do so in times of drought. This need not disagree with the conclusions of Rowley (1973b) regarding post-breeding nomadism.

Table 1 sets out the survival data from bandings in various years. Ten Little Ravens banded as free-flying birds have been recovered at distances of from 20-309 km (Fig. 2), of which only three exceeded 100 km; all three were adult when banded. One of the three (100-52068), banded at "Erdora" on 14 June 1966, was recovered on 21 February 1967 at Telopea Downs, Kaniva, Victoria, 309 km south-east of the banding place. It is the most distant recovery obtained in the course of the study, and although the bird concerned was recorded as adult, it may in fact have been sub-adult and non-breeding.

In the case of nestlings banded, five were recovered at distances of 100-180 km as shown in Figure 2. Between 1963 and 1975 a total of 303 nestlings was banded on the Mount Mary Plains. Seven of these were later recovered away from the trapping area (Fig. 2). Of 12 young birds recovered locally, nine were recovered dead soon after leaving the nest. Twenty-two locally banded nestlings were subsequently retrapped (7%); six after an interval of more than two years and one after four years.

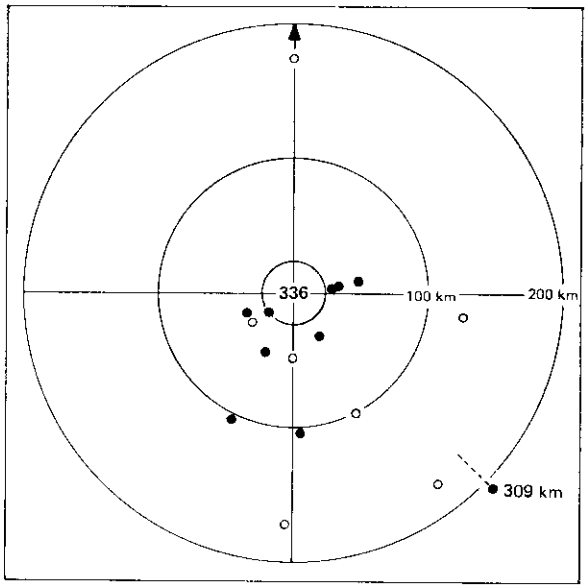


Figure 2. *Rose showing movements of Little Ravens from banding area. Birds banded as Adults are shown by solid dots. Birds banded as Juveniles are shown by open dots. The number of banded birds recovered within 25 km of the banding area is given in the central ring of the rose. The arrow at 12 o'clock represents the direction of true north. The single recovery over 200 km is shown by broken radial line terminating in the exact number of kilometres.*

The general trend of the movements away from the region, as indicated by recoveries, has been in the direction of higher rainfall country, and with only one recovery from a northern locality. One Little Raven (100-43400), banded as a nestling near Sutherlands on 19 October 1974, was recovered at Minburra Station, via Orroroo, South Australia, on 15 June 1975, 180 km north. The paucity of recoveries from dry pastoral country may be due to both the arid nature of those regions and the sparse human population from whom bands could be obtained. Figure 2 shows the movement of Little Ravens away from Sutherlands in respect of direction and distance.

The random pattern of the movements recognised by Rowley (1971) in connection with four banding stations, including two in South Australia (one being Sutherlands), has been further substantiated by the studies carried out by me over a longer period on the Mount Mary Plains.

Crippled Birds

Among the Little Ravens trapped were several that had sustained leg injuries previously. They included birds which had a foot missing on one leg, only the healed stump of the tarsus remaining. On 26 August 1968 a number of Little Ravens

TABLE 1

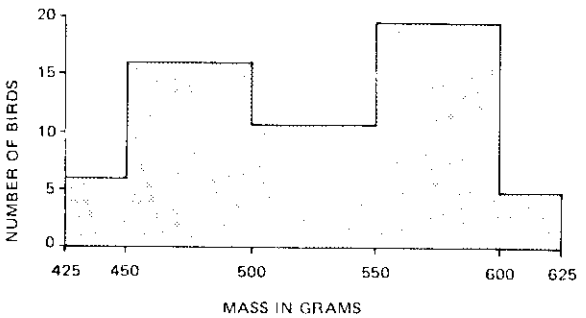
Recoveries of Little Ravens in relation to numbers Banded.

Year	No. Banded	Recoveries in years after banding: 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	Total
1965	9	2	2	2	2	2	1	0	0	0	0	0	11
1966	409	119	110	66	40	24	12	9	6	4	3	2	395
1967	198	39	22	18	8	2	0	0	0	0	0	0	89
1968	228	32	32	18	9	5	2	1	0	0	0	—	99
1969	18	2	2	2	1	0	0	0	0	0	—	—	7
1970	164	19	13	11	10	4	2	0	0	—	—	—	59
1971	29	4	4	4	0	0	0	0	—	—	—	—	12
1972	9	2	2	1	1	0	0	—	—	—	—	—	6
1973	0	0	0	0	0	0	—	—	—	—	—	—	
1974	67	5	5	1	0	—	—	—	—	—	—	—	11
Total	1 131	224	192	123	71	37	17	10	6	4	3	2	689

in a maze trap included two such cripples. One of these had the left foot missing and the other the right. These injuries probably resulted from the bird being caught in a steel-spring rabbit trap, or possibly even from gun-shot wounds.

Mass

Fifty-eight adult Little Ravens were weighed on a metric beam balance graduated in 5 g and their mass was read to the nearest graduation. Of the birds weighed, 47 (81%) ranged from 451-600 g. Figure 3 illustrates the numerical incidence in the various weight categories.



● Figure 3. *Histogram of Mass (58 birds).*

Nictitating Membrane

An observation of interest was made on the nictitating membrane of several Little Ravens. Both adults and immature birds had the membrane grey to dark grey in colour. Cleland and Goodwin (1970) discussed the nature of the nictitating membrane in some *Corvus* species. Its true function in the Australian species, apart from its role of moistening and cleansing the eye, does not appear to have been studied.

Plumage Variation

The most striking variation in the plumage of Little Ravens observed in the course of the study was the occurrence of very pale feather-bases on the nape, crown and chest of a few individuals. These birds were small in size and presumably were females. They had almost pure white bases to the feathers concerned, although these were not so sharply defined as in the Little Crow. The dimensions of these individuals were in the lowest size-range of *C. mellori* for the culmen, tarsus, wing and hackles. One such variant when released gave the typical Little Raven calls. No albino or other extreme aberrant plumage was encountered among the birds handled.

Conclusions

From the results obtained during the study it appears that breeding pairs of Little Ravens do not wander far beyond the Mount Mary Plains during their nomadic non-breeding period. No distant recoveries of such birds have been obtained. Only three adults out of eight Little Ravens were recovered at distances beyond 100 km. On the other hand five birds banded as nestlings were recovered from beyond 100 km within four to eight months of banding. They represent 62% of all distance recoveries, although 1 131 free-flying birds were banded. This indicates that it is juvenile birds that are most likely to wander longer distances from the Mount Mary Plains. The movements away from the Mount Mary Plains seem to be random as to direction and ultimate destination.

Acknowledgements

Banding of nestlings was greatly facilitated by Messrs L. C. Heinicke, N. W. Doecke and G. C. Doecke, who found many nests and climbed trees to obtain nestlings for banding. Mr Heinicke also provided a portable trap which secured some birds, and Mr B. L. Doecke assisted in many ways. Special thanks are due to Mr Ian Rowley, who read a draft of the manuscript and suggested alterations and improvements.

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