

The Peaceful Dove and the Diamond Dove at Mount Isa

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The Peaceful Dove *Geopelia placida* and the Diamond Dove *G. cuneata* are both relatively common in the Mount Isa district (Queensland) and some 600 of the former and 1,200 of the latter species have been banded by the Mount Isa Banding Group in the area since May 1963. Banding results have highlighted differences in behaviour of the two species. These results are presented in this paper together with comments also on the observed and indicated differences in behaviour.

Trapping and Banding

The majority of birds were captured in standard gauge mist nets set around water holes, the birds being caught as they flew in to drink. Appreciable numbers however, were netted in town gardens and W. (Bill) Horton had some success in trapping both species in funnel traps in his garden using seed and water as bait. He also captured a small number using funnel traps over small springs and remnant water holes in the creeks. This latter method was less successful than expected. The less timid and cautious birds such as the Yellow-fronted Honeyeater *Meliphaga plumula* and the Zebra Finch *Taeniopygia castanotis* usually crowded out the trap before the doves could enter.

Time of the day was not a major factor in catching the two species. However the best results were normally obtained during the warmer part of the day with a peak catching rate around noon. The range of catching time for the Peaceful Dove was generally wider than for the Diamond Dove and catches of Peaceful Doves were made up until dusk.

Consequently no special trapping times had to be adopted and banding was usually done in the course of normal full-day banding operations with two or three nets set specially in positions favourable for catching the doves.

Results

With the exception of certain retrap data banding figures for the other members of the Mount Isa Group were not available for this report though it is estimated that about 600 Peaceful Doves and 1,200 Diamond Doves were banded by the Group. My own results which are based on about half the estimated number banded by the Group are generally representative of Group results. These are set out in Table 1 and Table 2.

All retraps obtained by me were caught at the banding place. The retrap pattern for each species was also as distinctly different as the percentages of retraps as shown in Tables 1 & 2. With the Peaceful Dove 16 individuals (6%) were re-trapped 12 months or more after banding, 7 (2.5%) 24 months or more after banding, 3 (1%) 36 months or more after banding and

TABLE 1

Summary of the banding results for Peaceful and Diamond Doves in the Mount Isa district, May 1963 to March 1968.

Species	Number Banded	Number Individuals	Retrapped Times	Percentage Individuals	Retrapped Times
Peaceful Dove	270	94	110	35.0	41.0
Diamond Dove	693	29	29	4.2	4.2

TABLE 2

Annual banding results for Peaceful and Diamond Doves in the Mount Isa district, 1963 to 1968.

Year	Peaceful Dove			Diamond Dove			Seasonal Conditions
	Number Banded	Number Retrapped	Per cent Retrapped	Number Banded	Number Retrapped	Per cent Retrapped	
1963-64	57	23	40	248	13	5	Good
1964-65	85	41	48	208	12	4.5	Bad from Jan. 65
1965-66	44	10	23	98	2	2	Very bad
1966-67	34	17	50	30	2	6	Fair
1967-68	52	19	36	49	0	—	Fair
Total	270	110	41	693	29	4.2	Fair

• *Diamond Doves.*

Photo: A. D. Trounson

one probably 48 to 50 months after banding. In the last instance the aluminium band was so worn that two digits were completely obliterated and the exact banding date could not be established. Seven individuals were retrapped by members of the Group three times over periods up to 37 months.

With the Diamond Dove I obtained no retraps more than four months after banding and no individual was retrapped more than once. By comparison A. T. Brennan retrapped one individual (050-50114) in his garden five times during 1963 and 1964, the last occasion being 14 months after banding.

One instance of significant movement of a Peaceful Dove was obtained by another Group member (see Recovery Round-up, vol. 3, no. 3, p. 58). The bird (050-55733) was banded by

TABLE 3

Numbers banded at various sites, 1963 to 1968.

Location	Number Peaceful Dove	Number Banded Diamond Dove	Comments on Location
Home Garden	2	86	Couch lawns, gardens, water, fowl food.
Mica Creek	11	159	Casual water after rain (for 2-3 months).
Stone Axe Creek	129	166	Permanent water, good food.
Leichhardt River	28	87	Semi-permanent water; farm nearby.
East Leichhardt Dam	34	19	Permanent water, hilly, very limited food.

me on the Leichhardt River about five miles south of Mount Isa; it was retrapped by Dr P. A. Peirce at Spear Creek about seven miles north of Mount Isa 11 months later.

There was considerable variation in results at different banding locations for the two species. This is illustrated in Table 3.

Observations

In addition to the banding data, observations were obtained which add to the understanding of the behaviour of, and the banding results obtained from the two species. These observations follow:

- *G. placida* normally feeds within a few hundred yards of its watering place.
- *G. cuneata* normally feeds well away from its watering place.
- *G. placida* normally occurs in pairs or small parties of from four to six birds.



• *Peaceful Dove on nest with young.*

Photo: R. P. Cooper

- *G. cuneata* when plentiful, travels, feeds and waters in flocks consisting of up to 100 birds. As many as 20 birds have been netted at the one time.
- Both species water together in large numbers and no signs of aggression have been observed between the species.
- Predation on both species is high around the water holes. The main predators are the Little Falcon *Falco longipennis*, Collared Sparrowhawk *Accipiter cirrocephalus* and Australian Goshawk *A. fasciatus*.
- The Pied Butcher-bird *Cracticus nigrogularis* and the Blue-winged Kookaburra *Dacelo leachii* are common in the area and it is probable that both are major predators of young birds.
- Feral cats are also common on the edge of the town and around the Leichhardt and the East Leichhardt Dams. These and domestic cats within the town are also serious predators on the two species of doves.

Discussion

Banding has clearly indicated the differences in status and habits of the Peaceful and Diamond Dove (see Tables 1, 2 & 3). These differences may be summarised as follows:

- *G. placida* tends to be markedly sedentary and is normally only numerous if reasonable food supplies are available near permanent water.
- *G. cuneata* is markedly nomadic and opportunistic; it tends to occur in large numbers only after two or more good seasons when populations have had the opportunity to expand. Then it is found wherever adequate food is available within a reasonable distance of water, permanent or temporary.

The effect of seasonal conditions on the population of *G. cuneata* is clearly illustrated in Table 2. While it is probable that the species has the ability and instinct to overcome dry conditions by movement to more favourable areas, the drought that commenced in January 1965 was so sudden in onset, and so widespread and severe that it almost certainly caused drastic population reduction by mortality. This mortality reduction quite possibly was of the same order as the reduction in numbers banded between 1964-65 to 1965-66 and 1965-66 to 1966-67; i.e. 65 per cent and 70 per cent or 89 per cent over two years.

By comparison, the indicated reduction in population through mortality with *G. placida* was much lower at 48 per cent between 1964-65 to 1965-66 and 23 per cent between 1965-66 to 1966-67, or 60 per cent over the two years.

The drought conditions of course did reduce or modify banding effort to some extent. Despite this it is considered that these figures give a

TABLE 4

Comparative banding data for three species of finch.

Year	Zebra Finch			Double-bar Finch			Long-tailed Finch		
	Number Banded	Number Retrapped	Per cent Retrapped	Number Banded	Number Retrapped	Per cent Retrapped	Number Banded	Number Retrapped	Per cent Retrapped
1963-64	619	23	3.5	42	7	16	29	2	7
1964-65	1,022	54	5	31	18	58	32	2	6
1965-66	256	24	9	30	10	33	34	4	12
1966-67	17*	14		17	2	12	12	2	17
1967-68		1		10	3	30	31	3	10
Totals	1,914	116	6	130	40	31	138	13	9.5

* Four months only—banding of Zebra Finches was discontinued at the end of October 1966.

realistic comparison between the effects of drought on the two species in the Mount Isa district. They probably are a guide to the overall effect of drought on such seed and water dependent species in any arid area.

Similar apparent drastic drought mortality and similar variation in mortality between species was noted in other groups of like habitat preference such as finches. The apparent mortality with this group was again highest in the most nomadic and opportunist of the local species, the Zebra Finch. This is indicated in Table 4 which shows comparative banding data for that species, the Double-bar Finch *Steganopleura bichenovii* and the Long-tailed Finch *Poephila cincta*. The numbers of Double-bar and Long-tailed Finches banded in 1964-65 were almost the same as in 1965-66 while the numbers of Zebra finches banded in the same seasons showed a drop of 75 per cent (766).

It is pertinent to note that the reasonably stable and drought resistant habitat that permitted the relatively high survival rate of the Peaceful Dove only existed around, and was made possible by the development of the major artificial water storages, the Leichhardt and the East Leichhardt Dams.

The movement proved by the retrapping of one Peaceful Dove (050-55733) could indicate that despite its sedentary habit, this species probably attempts to avoid the effects of drought by movement when conditions become very severe. Again the repeated retrapping of a Diamond Dove (050-50114) over a period of 14 months shows that under ideal conditions this normally nomadic species may adopt sedentary habits.

The retrap results and the lack of retraps away from banding place with *G. placida* indicate sedentary habit. Also, the rapid reduction in individuals retrapped with the increase in the period (from date of banding to date retrapped) suggest a relatively short average life span for the species.

Conclusions

The results obtained are considered to be quite significant despite the relatively small number of each species banded. In particular they highlight the difference in behaviour in the two species and the probable difference in their method of drought "defence". Again the results also



- Savannah woodland vegetation on the rich levee soils along Spear Creek, typical of the feeding habitat of the Peaceful Dove.

highlight the drastic effect that severe drought can have on bird populations.

The drought continued in the area, with 1970 another "disaster" year, probably worse than 1965 and 1966. It is hoped that when the drought finally breaks, there will be sufficient banding activity in the area to gauge the rate of build-up of the populations of these two species and to check their behaviour through a cycle of more element seasonal conditions.

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Annual Meeting

The Annual General Meeting is to be held in Canberra, A.C.T. on 22 January 1972. Further details will be included in the next issue.