

*The Australian***BIRD BANDER****Some Retrap Data On The Brown Thornbill**

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**A regular visual survey of the birds of New Chum's Road in the Brindabella Range was commenced late in 1960 by Don Lamm, formerly of the American Embassy, Canberra.**

At his request Bill Belton (American Embassy) and I commenced mist netting in association with his survey in April, 1961. The major paper on the results of the joint survey at New Chum's Road over a three-year period will appear in *The Emu*. It will include reference to the Brown Thornbill, *Acanthiza pusilla*.

About the same time I started a second netting area at Lee's Creek Road. Max Murn, in 1963, commenced banding regularly at Blundell's Creek Road and more recently at Bull's Head Creek Road. These places are marked on the accompanying sketch map of the area.

As a result of these activities life histories of some species are now commencing to emerge. This paper presents information gathered in respect of the Brown Thornbill.

The four netting locations are all on the easterly slopes of the Brindabella Range which forms the western boundary of the A.C.T. The Bull's Head Creek Road netting location is on one of the upper tributaries of Lee's Creek above the Lee's Creek netting location. Lee's Creek and Blundell's Creek meet about a mile below the netting locations on these creeks. New Chum's Road is on the southern side of the Bull's Head Range, a lower buttress of the main Brindabella Range, and the creeks associated with it flow directly to the Cotter River (see map).

The general area consists of wet sclerophyll forest on the moister slopes and along all the creeks, and dry sclerophyll forest on the exposed ridges. The better timber was milled up

to about 1949 and there is now a mixture of old seed trees unsuitable for milling, poor quality timber trees on the dry slopes, and variable regeneration of eucalypts where the timber has been milled. Undergrowth varies but in the moister places, where large timber has been removed, the disturbance of the area has favoured the undergrowth and it is now probably denser and higher than it was prior to milling.

During the period of approximately three years (ending June 30, 1964) now under review, 37 banding trips were made to New Chum's Road and 17 were made to Lee's Creek Road. For the purposes of this paper the year is taken as July 1 to June 30, and the individual bird is regarded as entering a new year when taken after July 1.

**Results and Discussion**

The numbers of Brown Thornbills banded and retrapped during each year at each netting location are shown in Table 1.

**Table 1**

Numbers of Brown Thornbills banded and retrapped during 1961/64.

Year	New Chum's Road		Lee's Creek Road	
	New birds banded	Total individuals retrapped	New birds banded	Total individuals retrapped
1961/62	106	24	15	3
1962/63	64	23	32	15
1963/64	100	30	42	23
Totals	270	77	89	41

The percentages of retraps at Lee's Creek Road are higher than those at New Chum's Road throughout the study (see Tables 2, 3, 4 and 5). This, to a large degree, can be ascribed to the fact that at New Chum's Road the nets are spaced individually or in pairs over a distance of  $1\frac{1}{2}$  miles along the road, whereas at Lee's Creek Road the nets are spaced along the creek and road over a distance of about  $\frac{1}{4}$  mile, while a few others are spaced quite closely along a second branch of the creek nearby.

Because of the closer placing of the nets at Lee's Creek Road there is a far higher chance of recovery of a banded bird which is in the area on the particular day than there is at New Chum's Road. Unfortunately the sample banded at Lee's Creek Road is small and this too may affect the results.

**Table 2**

Recovery of Brown Thornbills banded in 1961/62.

	New Chum's Road	Lee's Creek Road
Brown Thornbills banded in 1961/62 .....	106	15
Retrapped in 1962/63 .....	13(12%)	6(40%)
Retrapped in 1963/64 .....	15(14%)	6(40%)
Retrapped over the 2-year period 1962/64 .....	23(22%)	8(53%)

**Table 3**

Repeat data for Brown Thornbills banded in 1961/62.

Total times	New Chum's Road	Lee's Creek Road
Once	22	5
twice	11	2
3 times	3	1
4 ..	1	Nil
5 ..	1	1
6 ..	1	Nil
7 ..	Nil	1
Not retrapped	67(63%)	5(33%)

**Table 4**

Recovery of Brown Thornbills banded in 1962/63.

	New Chum's Road	Lee's Creek Road
Brown Thornbills banded in 1962/63 .....	64	32
Retrapped in 1963/64 .....	11(17%)	9(28%)

**Table 5**

Repeat data for Brown Thornbills banded in 1962/63.

Total times	New Chum's Road	Lee's Creek Road
Once	14	4
twice	2	5
3 times	2	1
4 ..	Nil	Nil
5 ..	Nil	1
6 ..	Nil	1
Not retrapped	46(71%)	20(63%)

In an endeavour to ascertain whether there was a regular movement of Brown Thornbills through the netting locations, or whether there was a greater probability of retrapping among birds banded in a particular month, an analysis was made for each area on a monthly basis, i.e. birds banded in each month were totalled for each area and the percentage of these birds retrapped on subsequent occasions in the same localities was calculated (Table 6).

**Table 6**

Monthly totals and subsequent retraps of Brown Thornbills banded during the period 1961/64.

Month	New Chum's Road		Lee's Creek Road	
	Banded	No. & % retrapped	Banded	No. & % retrapped
January	12	5(42%)	2	—
February	39	13(33%)	4	—
March	31	3(10%)	22	2(9%)
April	25	10(40%)	4	3(75%)
May	20	7(35%)	5	1(20%)
June	20	4(31%)	2	—
July	7	—	—	—
August	4	—	—	—
September	35	10(28%)	16	8(50%)
October	39	12(31%)	12	2(18%)
November	13	4(31%)	18	8(42%)
December	25	—	4	2(50%)
TOTALS	270		89	

Although the monthly samples are as yet too low to provide a reliable guide on the questions of regular movement or the probability of retrapping among Brown Thornbills banded in a particular month, the higher percentage of retraps among birds banded in April may be significant. As will be discussed later, five Brown Thornbills known to have moved between netting localities in the area were either banded or retrapped in April.

Also in the retrapping records there is a small incidence of retrapping in the same month. Two



birds banded in April were retrapped in April two years later but were not taken in any other month. Four birds, all banded at Lee's Creek Road, were not only banded in September and retrapped in September a year later but in addition were retrapped in other months as well.

These four birds were handled in February (once), May (twice), September (eight times), October (twice) and November (four times). Five others taken in other months were retrapped not only in the same month a year later but also in other months. In these cases the incidence of handling of these birds was January (twice), March (twice), April (twice), May (five times), September (five times), October (three times), November (three times) and December (twice).

Despite the frequent visits to both areas it is not unusual for the first retrapping of an individual to occur more than two years after banding.

Table 7 gives examples of Brown Thornbills banded in 1961/62 and illustrates the variability

• *Brown Thornbill at nest* — Photo N. Chaffer of retrapping results with individuals. Again the higher retrapping probability at Lee's Creek Road is evident.

**Table 7**

Banding and retrap data for individual Brown Thornbills.

Band No. (10—	Banded		Last Re-trapped	Total No. of Re-trappings	No. of visits after banding	
	At	On				
33875	New Chum's Rd.	15.10.61	31.3.63	5	21	
38103	" "	" "	15.10.61	11.4.64	2	32
41512	" "	" "	21.4.62	7.6.64	1	30
46170	" "	" "	1.4.62	17.11.63	6	23
46518	" "	" "	13.5.62	9.5.64	1	25
38158	Lee's Creek Rd.	11.11.61	30.3.64	7	14	
46198	" "	" "	4.4.62	24.5.64	2	12

It is evident that while the number of Brown Thornbills in the New Chum's Road area is high, it is not easy to retrap an individual on subsequent occasions. For this reason the figure of 23 individuals (22%) retrapped in subsequent years of the 106 banded in 1961/62 is

considered most satisfactory (Table 2). Except for the White-browed Scrub-Wren (*Sericornis frontalis*) the retrapping rate for Brown Thornbills has been higher than that for any other species netted in any numbers.

#### Movement

There are no previously published records of movements of the Brown Thornbill and so it is regarded among ornithologists as a sedentary species. For this reason one of the most interesting aspects in the results of these surveys is the recovery of the few birds which have been retrapped away from the locality where they were banded. One bird was retrapped first at a locality 1 mile from the banding place (in a direct line) and later at the banding place itself.

Table 8 gives in detail the known movements of these birds. The birds referred to in Table 8 have not been taken again on subsequent occasions. Because of the mountainous nature of the area it is probable that distances travelled were much greater than indicated in Table 8.

**Table 8**

Brown Thornbills banded in the Brindabella Range and recovered away from the banding station.

Band No.	Banded		Re-trapped		Distance Travelled (direct line)	Altitudinal Movement
	At	On	At	On		
46189	New Chum's Road	1.4.62	Lee's Ck. Road	14.4.62	2 miles	Down 950ft.
	Lee's Ck. Road	6.10.63	Blundell's Ck. Rd.	11.4.64	1 mile	Up 100ft.
61297	Lee's Ck. Road	30.3.64	Lee's Ck. Road	24.5.64	1 mile	Down 100ft.
	Blundell's Ck. Rd.	4.4.64	Blundell's Ck. Rd.	11.4.64	1 mile	Up 100ft.
82862	Lee's Ck. Road	14.4.62	Lee's Ck. Road	25.4.64	1 mile	Down 100ft.
42613	Lee's Ck. Road	14.4.62	Bull Head Ck. Rd.	15.6.64	1 mile	Up 650ft.

Approximately 4,000 birds of 40 species have been banded in the Brindabella Ranges. It is suggestive that while five out of a total of over 400 Brown Thornbills have moved between four banding stations, only nine individuals of five other species have been retrapped in the Range away from the original netting locality.

The movement of these Brown Thornbills may be due to:

- post-breeding wandering by juveniles leaving their parental territories;
- seasonal movement in response to annual changes in temperature and food supply;
- random exploration for suitable breeding and feeding territories.

Continued work in the area will, it is hoped, give a better indication of this movement.

#### Life Expectancy of a Brown Thornbill

It is of interest to note that of the 29 Brown Thornbills banded at Lee's Creek Road between November, 1961, and October, 1962, 17 were, by retrapping, known to be alive 2 to 30 months after banding.

The average known life of the 29 birds was just under 10 months. Actual life for the 17 retraps would have been longer as they were not banded as nestlings and were all released alive.

The oldest Brown Thornbill retrapped so far in the Brindabella Ranges was less than three years old (by banding and retrapping dates). This contrasts sharply with a bird of this species recently reported by Jack Hood (personal communication) as having been banded on April 8, 1956, and retrapped on May 22, 1964.

#### Conclusion

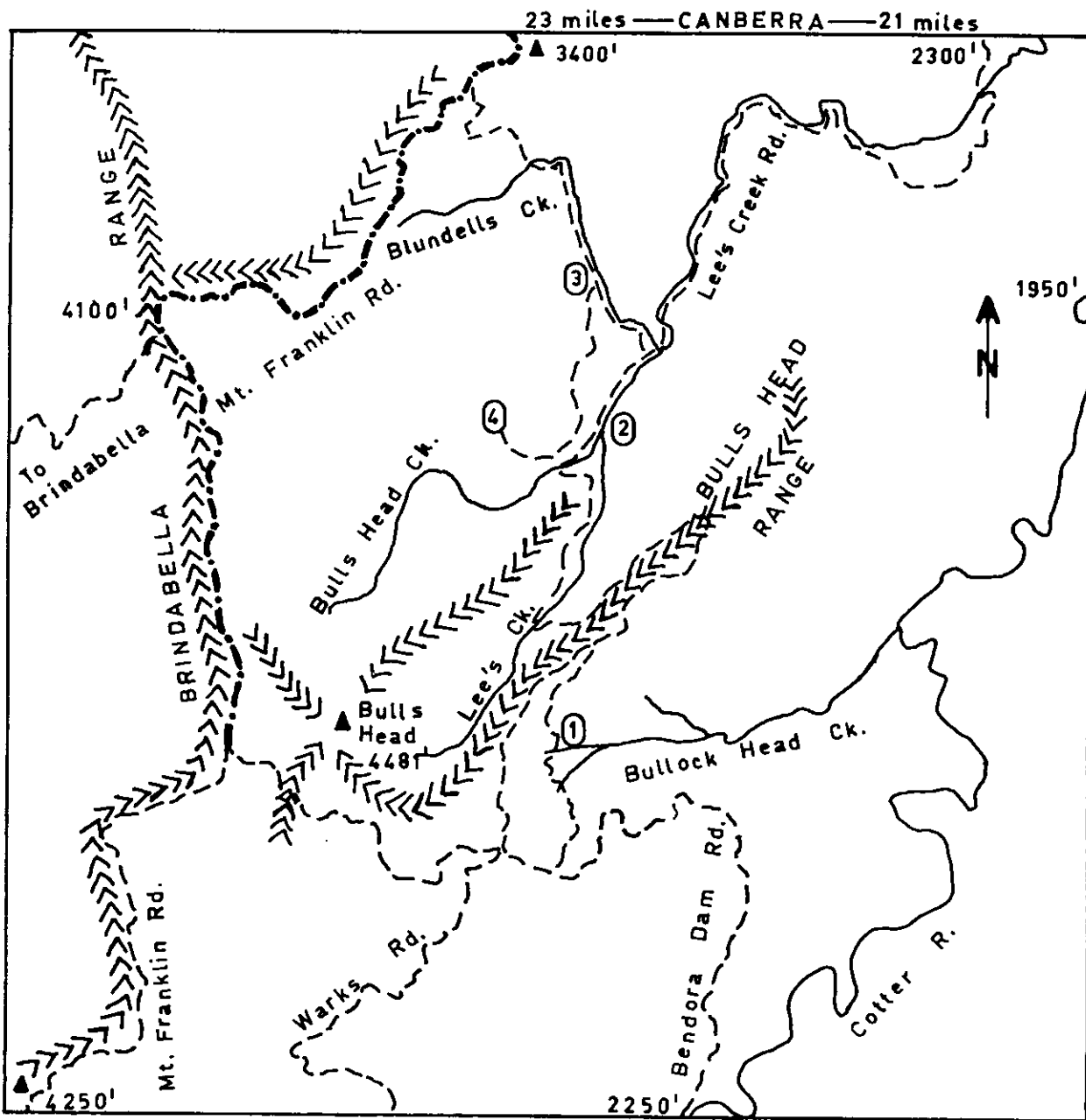
The figures herein must be interpreted with some caution as the samples are not as large as one may desire nor have the surveys been in progress sufficiently long to determine life histories with accuracy. It is considered that the available information does indicate that knowledge of the life histories of Australian birds can be greatly improved by the form of survey being carried out in this area by my team and others.

The results of mist netting on a survey basis are influenced greatly by the fact that even with a species normally found at shrub level, the nets cannot be expected to catch all birds present on the particular day. Regular netting on a three week or once monthly schedule will tend to overcome the problem and so far as has been possible to observe, has no effect on the bird population of the survey area. Operations continued on this basis will give a reasonable chance of occasional netting of a good proportion of the birds of sedentary species such as the Brown Thornbill, and provided the survey is done over a sufficiently long period excellent results may be anticipated.

#### Acknowledgements

Bill Belton (now in Panama) banded a number of Brown Thornbills in the early days of the New Chum's Road work. Max Murn contributed data relating to Brown Thornbills banded or retrapped in his two netting locations. Dr. and Mrs. Gerry van Tets assisted greatly in the preparation of the paper. Warren Hitchcock also made helpful suggestions. Thanks are also due to the Banders who assisted with the mist netting.

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**KEY**

--- Roads; ~~~~~ Rivers Creeks; ▲ Mountains.

**Netting Stations**

- ① NEW CHUM'S ROAD 3700 ft.
- ② LEE'S CREEK ROAD 2750 ft.
- ③ BLUNDELL'S CREEK ROAD 2850 ft.
- ④ BULLS HEAD CREEK ROAD 3400 ft.

**SCALE**

