

OBSERVATIONS OF A BREEDING COLONY OF FOUR PAIRS OF REGENT HONEYEATERS AT NORTH WATSON, CANBERRA, IN 1995-96

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In the spring of 1995 there was a flush of sightings of Regent Honeyeaters *Xanthomyza phrygia* reported on the Canberra Ornithologists' Group Hotmail from five different sites in and around Canberra. These included a report, in late September, of two feeding in cultivated Mugga Ironbarks *Eucalyptus sideroxylon* along the perimeter of the National Capital Village Motel (NCV), North Watson¹. Several weeks later, Murray Delahoy reported four adults, two of which were a pair at a nest, in the Mt Majura Nature Park (MCNP) opposite the NCV.

Based on these and other sightings reported to the hotline and to Jenny Bounds, it is estimated that in the spring of 1995 there were at least 15 adult Regent Honeyeaters in the Canberra area, at sites which had flowering Yellow Box *E. melliodora*, cultivated Mugga Ironbark, or in one case Red Box *E. polyanthemos*. In addition to North Watson, the species was recorded at Black Mountain Peninsula and the Canberra Yacht Club near Lake Burley Griffin (possibly the same birds), the Campbell Park woodlands and the Newline Quarry near Canberra airport. This is the largest number reported in the ACT for many years.

Although breeding was suspected, no nests or other signs of breeding activity were reported from any of these sites except for North Watson.

On 1 November Jenny Bounds surveyed the North Watson site for several hours and estimated that seven adult Regent Honeyeaters were present and found a second nest. At that time there were two pairs with females on nests within 50 m of each other, and about 150 m away three different birds seemed to be establishing territories. A few days later, a third nest being built was found just outside the MCNP in the grounds of the Australian Heritage Village (AHV). As the birds were not individually identifiable at this time, it took some time to establish that there was indeed a fourth pair breeding. Regular observations were made at the site from 25 October 1995 to mid-February 1996. Sexes were distinguished on the assumption that females constructed the nest and did the incubation (see also Davis and Recher 1993).

¹ Trevor Kerr of Melbourne first reported the presence of two Regent Honeyeaters to Muriel Brookfield. The observation was later published in *The Bird Watcher* No. 761, March 1996, p.14, in "Interesting Sightings".

In the past there have been only four published records of Regent Honeyeaters breeding in the ACT. All involved single pairs of birds, of which two bred successfully:

- 12 December 1966 to 10 January 1967, an unsuccessful breeding attempt by one pair at O'Connor-Belconnen (Wilson 1968);
- 29 September to 8 October 1987, a nest was abandoned after a fun run of a few thousand people passed directly under the nest tree at Kings Park, Lake Burley Griffin (Veerman et al. 1989);
- 21 to 29 November 1987, two birds at a nest with young, Lake Ginninderra (Veerman et al. 1989); and
- 4 to 29 January, two birds successfully fledged three young in the grounds of the CSIRO, Gunghalin, and later were recorded in the ground of the Norwood Park Crematorium (Anon. 1994, Mark Clayton pers. comm..).

The North Watson site

The site (Figure 1), which is particularly rich lowland woodland with breeding populations of many bird species, is situated on the edge of the north-eastern urban area of Canberra, adjacent to the suburb of Watson. Part of the site is an entrance to the MCNP and part encompasses a horse paddock in the grounds of the AHV. There is a large dam immediately adjacent to the site in the grounds of the AHV. The woodland contains mostly Yellow Boxes and Blakely's Red Gums with a few Apple Boxes *E. bridgesiana*. The area mainly used by the Regent Honeyeaters has approximately 15 mature Yellow Boxes which were in profuse flower progressively over the spring and early summer, and a large number of sapling Yellow Boxes, which also came into flower. A few of the Blakely's Red Gums also flowered in the period during which the Regent Honeyeaters were present, but the flowering was sparse. The Blakely's Red Gums were mostly small to moderately sized; epicormic growth indicated that they may have suffered environmental stress in the past, possibly caused by drought or insect attack (as is common in this species in the ACT), but had regenerated with good winter/spring rains.

The MCNP part of the site has a grassy understorey of native and non-native grasses and a few Native Cherries *Exocarpos cupressiformis*, with some Green Wattles *Acacia mearnsii* and Hickories *A. implexa* as well as a few Briar Roses *Rosa rubiginosa*. In the AHV part of the site there is a horse paddock with little understorey. This horse paddock is about 400 m away from any buildings and the car park of the AHV, and apart from two grey horses, a few rabbits and other birds, nothing else seemed to use the paddock. Occasionally a fox or hare was seen in or near the site and grey kangaroos were regularly around in the MCNP.

Antill Street runs parallel to the site about 30 m away, and across the road and to the south there are several open paddocks, some grazed by sheep and cattle, with scattered,

mature Yellow Boxes, which also flowered profusely. Apparently, some of these paddocks to the south are part of the proposed North Watson urban development which local residents have opposed. Antill Street is a thoroughfare from the Federal Highway into the north-eastern suburbs of Canberra, but does not have heavy or continuous traffic except when there are large events at Exhibition Park.

On the other (western) side of Antill Street, at the northern end of the site, is the NCV where there are extensive plantings of native trees and shrubs across the front and southern boundaries of the property, including numerous Mugga Ironbarks, about 6 m tall, which are estimated to be seven to eight years old. These flowered profusely from at least mid-September through to late December and are mostly the pink-flowered variety. Mugga Ironbark is not native to the ACT, but is a common urban landscaping plant. It is known to be favoured by Regent Honeyeaters in Victoria (Franklin et al. 1987).

The Regent Honeyeaters were concentrated in a small area (referred to as the breeding site) about 300 m by 150 m, bounded on the west by Antill Street, on the east by the slopes of Mt Majura, on the north by the grounds of the AHV and on the south by horse paddocks and the lower slopes of the MCNP. Murray Delahoy regularly walked in the MCNP near the breeding site including to a small dam several hundred metres away up the slopes, but did not record Regent Honeyeaters elsewhere.

Weather conditions

The spring of 1995 was noticeable for its changeable weather with cool to mild conditions building up to warm conditions and regular periods of rain brought in mostly by sub-tropical, low weather systems. There were regular thunderstorms accompanied by strong winds and moderately heavy rain, particularly in late November and in December. The summer months were cooler than normal and the rainfall a little above average, occurring on 28 days; the mean daily temperature was 24.7°C (two below normal) and the highest temperature was 34.3°C on 31 January 1996 (Anon. 1996a).

There were several periods with cool temperatures and constant rain over a couple of days, interspersed with occasional bursts of warm to hot weather in the high 20s and low 30s, especially in late December and January. Night-time temperatures dropped to 6° or 7° on occasions, but no extremes of cold or hot conditions occurred.

The Regent Honeyeaters were not visibly affected by the weather. It was noticed particularly that two of the groups of fledglings experienced very windy or thunderstorm conditions within a day or two of fledging with no ill effects. This contrasts with the experiences in the Chiltern Forest in Victoria in the same spring where storms destroyed many nests (Eileen Collins and Natasha Schedvin pers. comm.).

Food sources

The cultivated Mugga Ironbarks in the NCV were an important food source for the Regent Honeyeaters, as well as other honeyeaters in the area. It is estimated that the

Regent Honeyeaters fed in the ironbarks for at least half or more of their feeding time while those trees were in flower. The birds would move from tree to tree, quickly going over the bunches of flowers to collect nectar. The ironbarks seemed to be neutral or communal territory which all the Regent Honeyeaters used; they did no squabble amongst themselves while feeding there. A preference for nectar from an ironbark was also observed by Davis and Recher (1993) who studied two breeding pairs of Regent Honeyeaters near Armidale, NSW.

The other main nectar source was the flowering Yellow Box at the site. Yellow Boxes in or very near to the two Regent Honeyeater nest territories in the AHV seemed to be favoured by the relevant nesting pair, which fed often in “their” tree and would chase off other Regent Honeyeaters and other bird species which entered the tree. Yellow Boxes outside the nest territories appeared to be used communally by the Regent Honeyeaters without any friction.

There were also large numbers of insects in the Yellow Box, mostly flies, small butterflies, moths and beetles which were attracted to the nectar. These insects were used as food, especially for the nestlings and fledglings. Insects appeared to be a substantial part of the diet of the young birds, but what percentage they formed of their total food was not determined. Adult birds occasionally hawked to the ground and around the base of trees and also skimmed the surface of the dam for insects. One bird was seen on one occasion hanging on a tree trunk like a treecreeper collecting insects from the bark.

A few Blakely’s Red Gum in sparse flower did not seem to be used as a nectar source, but attracted insects on which the birds fed. This was observed in the nest 2 tree where the adults caught insects to feed to their nestlings and again in the nest 7 tree where the same pair re-nested. Interestingly, the male of pair 2 often returned to the nest 2 tree for insects for the second brood, and also caught insects in the grass near the nest 7 tree (see Figure 1).

The eucalypts put on new growth following rain periods, and the Regent Honeyeaters were observed gleaning insects in this new growth (e.g. lerp, mini scarab beetles). The birds were also seen in clumps of Box Mistletoe *Amyema miquelii* feeding from a few flowers which came slowly into bloom from December, but mistletoe at the site was of low density.

Nest sites

In total, seven nests were known to be built. Six were in Blakely’s Red Gums which were generally not in flower; although the nest 2 tree had a small number of flowers during the nestling and early fledgling period. These nests, except for nest 2, were sited in epicormic growth; nest 2 was built in a fork of dead branches. The other (nest 6) was atypical in that it was built in epicormic growth, in a stunted Yellow Box.

Nest 1. This belonged to pair 1 and failed in the final stage of incubation on about 11/12 November. It was sited on the eastern side of a small to medium sized Blakely’s Red

Gum (trunk diameter at breast height (TDBH) = 30 cm), c. 5 m above the ground in a fork where leaves were regenerating, and beside a path used by people visiting the MCNP. The foliage of a Native Cherry, which was growing near its base, covered the lower part of the tree. The nest site was open from above and the regrowth was fairly sparse.

Nest 2. This was the first nest to fledge young, producing two on 27 November. It belonged to pair 2 and the nest, in a large Blakely's Red Gum (TDBH = 35 cm), was c. 15 m above the ground in a fork of upward pointing dead branches on the outer perimeter of the tree. This position was rather exposed to the westerly winds and also to rain during bouts of wet weather. The site was in the MCNP, only a few metres from the road verge and car park, but was not easily visible because of its height and position. The tree started to flower in the third week of November when the nestlings were about a week old, but the flowering was light. This tree was at the southern edge of the breeding site about 50 m from nest 1. A Noisy Friarbird *Philemon corniculatus* was nesting in a nearby tree.

Nest 3. This was the second nest to fledge young, producing two on approximately 14 December. It belonged to pair 3 and the nest, in a medium-sized Blakely's Red Gum (TDBH = 25 cm), was c. 6 m above the ground on a slender branch about 40° off the vertical, in a bunch of thin regenerating stems and leaves. The tree was in the AHV horse paddock, about 40 m from the fence beside the road verge and about 150 m from nest sites 1 and 2. A Noisy Friarbird nested in the opposite side of the tree.

Dusty Woodswallows *Artamus cyanopterus* and White-plumed Honeyeaters *Lichenostomus penicillatus* also nested nearby.

Nest 4. This was the third nest to fledge young, producing three on approximately 21 December. The nest, in a medium-sized Blakely's Red Gum (TDBH = 40 cm), was c. 8 m above the ground on a slender, horizontal branch in a bunch of regenerating stems and leaves. The tree was in the grounds of the AHV, only 10 m from nest 3, but on the side of the tree which faced away from the nest 3. This pair seemed to be very competent breeders as they fledged three young, the highest brood, and the male in particular was an energetic food collector.

Nest 5. This nest failed for no apparent reason on or about 1 December during the last few days of incubation. It has been assumed that this was the second failed nest of pair 1. It was in the MCNP, in a similarly sized Blakely's Red Gum (TDBH = 30 cm) as nests 1, 3, 4 and 7. The nest was c. 8 m above the ground, in a fork surrounded by a thick clump of leaves and was very difficult to see. The tree was only a few metres from the fence bordering Antill Street and was in the middle of the breeding site.

Nest 6. Incubation commenced at this nest, which is attributed to pair 1, during the second week of December, but ultimately produced a Pallid Cuckoo *Cuculus pallidus* which fledged on about 15 January 1996. The Pallid Cuckoo is known to occasionally parasitise Regent Honeyeater nests (Longmore and the National Photographic Index of

Australian Wildlife 1991). This nest was in the MCNP c. 200 m from nests 3 and 4, and seemed to be adjacent to the nest territory used by pair 2, the nearest nesting pair. The nest was in a bunch of epicormic growth at the end of a large, horizontal, broken branch in a mature but stunted Yellow Box (TDBH = 60 cm). It was c. 6 m above the ground and rather open as there were no other bunches of foliage immediately near it. This spot was at the southern edge of the breeding site, some distance from the communal ironbark feeding area. It was a quieter area, with fewer nesting birds. Fledgling Australian Magpies *Gymnorhina tibicen* were often nearby.

Nest 7. This was situated in the MCNP, in the middle of the breeding site about half way between nests 1 and 2, and nests 3 and 4. The nest, in a medium-sized Blakely's Red Gum (TDBH = 30 cm), was in a fork with regenerating foliage, c. 6 m above the ground. A Noisy Friarbird was nesting on the other side of this tree and the nest of a Black-faced Cuckoo Shrike *Coracina novaehollandiae* with young was only 3 m away in an adjacent tree. This was the second nest of pair 2. Two nestlings were raised, but one apparently perished on 21 or 22 January due to unknown causes, a day or two before the expected time of fledging. The second, an undeveloped fledgling, was observed on 22 January, c. 15 m from the nest site, perched in a shrub close to the ground, being attended by the anxious parents. This young bird later managed to fly up into a nearby Yellow Box and survived. Nest details and breeding results of the four pairs are summarised in Table 1.

Table 1. Summary of nest details and breeding results

Pair No.	Nest No.	Tree Species (trunk diameter at breast height)	Position of Nest in Tree	Height above ground	Number Fledged	Date
1	1	<i>E. blakelyi</i> (30 cm)	Vertical fork –sparse leaf growth	5 m	Failed	11/12 Nov
	5	<i>E. blakelyi</i> (30 cm)	Vertical fork – thick leaf growth	8 m	Failed	1 Dec
	6	<i>E. melliodora</i> (60 cm)	Large, broken, horizontal branch in bunch of foliage at end	6 m	1 Pallid Cuckoo	15 Jan
2	2	<i>E. blakelyi</i> (35 cm)	Vertical fork high in tree – no leaf growth	15 m	2	27 Nov
	7	<i>E. blakelyi</i> (30 cm)	Vertical fork – moderate leaf growth	6 m	1 1 perished	21/22 Jan
3	3	<i>E. blakelyi</i> (25 cm)	Slender branch, 40° to vertical in stem and leaf growth	6 m	2	14 Dec
4	4	<i>E. blakelyi</i> (40 cm)	Slender, horizontal branch in stem and leaf growth	8 m	3	21 <u>Dec</u>

Nesting behaviour, displays and calling

The Regent Honeyeaters established territories around their nest sites. In the case of nests 1 and 2 (pairs 1 and 2 respectively), the nests were about 50 m apart and the boundary appeared to be 20 m from nest 1, near some fallen timber. In the early stages of breeding, the two males could be seen interacting at the boundary as if in a stand-off, in a display where they faced each other, stretched their necks forward, called and then flew up briefly and settled again. The birds also bill snapped while calling. Nests 3 and 4 (pairs 3 and 4) were even closer to each other and there was a spot on the edge of a tree roughly half way between the nests where the males did a similar display to those from pairs 1 and 2.

The females collected nesting material of bark and other vegetable matter and built the nests, often with the males accompanying them. Material from old nests, such as Noisy Friarbird nests, was utilized. Pair 1 probably used the material from their first nest (nest 1) which had failed, to build their second nest (nest 5) as the first nest completely disappeared over a day or two after it had failed. Regent Honeyeaters are known to recycle their own nest material (Natasha Schedvin pers. comm.). The pair 3 female was observed collecting small feathers from the ground to line her nest (nest 3) with the male in close attendance. Nest appeared to take between five and seven days to build; the shorter time applied following a nest failure where old nest material was likely to have been re-used.

While the females incubated, the males acted as sentries around the nest sites, sitting in the nest tree or on a branch nearby at a position higher than the nest but with a clear view. The males would swoop down on any birds which ventured close to the nests. The males also seemed to be more active than the females in collecting food and feeding young and took fewer rest periods. Sometimes a female would be observed for ten or fifteen minutes resting or preening while the male continued to collect food.

The birds were highly vocal in October and November when nest territories were being established and incubation was in the early stages. Their calls could be heard in the woodland very clearly. The males had a call like “plick-a-plick” or “plink-ple-plink” which they made from perches near nest sites, and all the birds used a “whi, whi, whi” call to partners or to the other Regent Honeyeaters which seemed to be a recognition or contact call. The pairs used this contact call frequently when the females left the nest and the males flew down from their perches. The males also had a couple of other single note calls, a “plick” or “plink” and some variations of this and a call which sounded like “youp”.

As the breeding period progressed, particularly after the eggs had hatched, the birds called less and less. Pair 2 which nested for a second time used a “plick” or “plink” call frequently at their second nest, possibly a contact call, and they were observed calling similarly to their surviving fledgling to locate it and urge it to fly. At no time were any of the Regent Honeyeaters at the site heard mimicking other species of birds, as has been observed by Jenny Bounds and others (Ley and Williams 1994, Veerman 1994).

Social behaviour and interaction between Regent Honeyeaters

The Regent Honeyeaters often interacted together in a non-aggressive way outside nest territories in common areas; for example, in some feed trees three or four birds would be seen flying around or feeding near each other. On one occasion seven of the adult birds were seen flying around together near the dam.

In nest territories, the pairs were generally aggressive to other Regent Honeyeaters, often chasing them away. Pair 2 was seen physically attacking pair 1 on one occasion when pair 1 had failed in their second nest attempt and were inspecting a new nest site in the nest 2 tree; at that stage pair 2 which had fledged young in the nest 2 tree were feeding the fledglings some 60 m away. Pair 2 flew over and persistently swooped pair 1 until the latter moved on. It is likely that pair 2 was particularly dominant or territorial in the dispute, even though they had ceased to use the particular tree. Pair 1 eventually built their third nest some 60 m away, on the southern edge of the breeding site.

Interactions with other bird species

The most common honeyeater at the site was the Noisy Friarbird, of which there were possibly four or five pairs. There were also at least two pairs of Red Wattlebirds *Anthochaera carunculata*, a few White-plumed Honeyeaters, a few Yellow-faced Honeyeaters *Lichenotomus chrysops* and a pair of Little Friarbirds *P. citreogularis*. The last species is uncommon in the ACT. All these birds foraged for nectar in the flowering ironbarks at the NCV. Occasionally Brown-headed Honeyeaters *Melithreptus brevirostris* moved through the site.

At the end of September, the Red Wattlebirds were particularly aggressive in the cultivated ironbarks at the NCV, and chased all other birds, including the Regent Honeyeaters, for long distances through the feed trees. Small groups of Noisy Friarbirds hassled the Regent Honeyeaters briefly, then left them to have a quick feed. The Red Wattlebirds became less aggressive as the season progressed and there was only occasional aggression in the ironbarks. By then, there seemed to be such an abundance of flowers available that, if on the receiving end, the Regent Honeyeaters would simply move to another flowering ironbark. Leonard (1995) describes similar interactions between a single Regent Honeyeater and a group of Red Wattlebirds feeding in flowering Brittle Gums *E. mannifera* in Belconnen.

The observations show that Regent Honeyeaters can be aggressive and territorial, and are able to hole their own against other bird species in their nest territories, including in flowering Yellow Box trees in nest territories as mentioned earlier. Davis and Recher (1993) also comment on the aggression shown by Regent Honeyeaters to other birds in defence of their nest territories.

Noisy Friarbirds nested near three of the Regent Honeyeater nest sites, but the two species largely co-existed. There was some friction while territories and nests were being established, but this diminished as incubation began. For example, pair 3 selected a nest

site on the other side of a tree where a pair of friarbirds was also nest building. For a couple of days, as the Regent Honeyeater nest was built, the friarbird would frequently perch near the former's nest site, with the Regent Honeyeaters making swoops at it. Finally, the friarbird tired of the unwanted attention and appeared to remain on "its" side of the tree as no further altercations were noticed.

The Regent Honeyeaters usually swooped or chased away any birds that went into their nest tree or near the nests. For example, they were observed behaving aggressively towards a juvenile Australian Magpie, a Dollarbird *Eurystomus orientalis*, White-plumed Honeyeaters, Brown-headed Honeyeaters and even a tiny Mistletoebird *Dicaeum hirundinaceum*. The male Regent Honeyeaters took the dominant role in nest defence.

Fledging and dispersal

It was not possible to determine the incubation period or the nestling period with absolute precision. It was observed that the eggs took about 14 to 15 days to hatch, and the total time from commencement of incubation to fledging was probably 28 to 29 days. This is consistent with similar observations of the species in the Armidale district in NSW, where the eggs hatched after 14 or 15 days (Ley and Williams 1994).

On fledging, the young remained together in or near the nest tree for several days, usually sitting quietly in a bunch of foliage and only calling (a single note repeated, "wheet, wheet", rather like young Red Wattlebirds) when the parents were near with food. They rarely called attention to themselves when the parents were away and were often hard to locate. After four or five days out of the nest they began to make short flying sorties following a parent through the canopy of a tree. After seven or eight days they were quite mobile, and were flying freely for short distances at about 11 or 12 days after fledging. However, the fledglings stayed within 50 to 100 m of the nest tree in this time.

At about four weeks old (two weeks out of the nest) the fledglings were near full-sized, semi-independent and foraging for themselves, although they also begged for food from the parents. They seemed to become independent about five weeks of age. The juveniles appeared to disperse from the breeding site at independence or shortly after, as did some of the adult birds. One juvenile with almost adult plumage was seen in the company of pair 2 and their one fledgling on 23 January, possibly one of pair 2's first brood. The pair 3 female was seen on a couple of occasions near pair 2's second nest site when they were present, but was not chased away by pair 2. Groups of fledglings were not seen mingling or interacting; such opportunities were limited as hatching times were staggered over the site.

An interesting observation was made on 25 January 1996 when the Pallid Cuckoo fledgling in the care of pair 1 was seen being fed by a Common Myna *Acridotheres tristis*, which also attempted to exclude the Regent Honeyeater foster parents. It appeared that the cuckoo fledgling, then about a week out of the nest, had perched in a tree near a hollow where the myna probably nested and the cuckoo's begging calls stimulated the

myna to feed it. Secondary adoptions similar to this have been recorded in other places (Ley and Williams 1994).

Nest failure and re-nesting

There were two nests known to have failed, nest 1 which failed on about 11/12 November and nest 5 which failed on about 1 December. No obvious causes for the nest failures were apparent. For a number of reasons, it is concluded that the two failed nests belonged to pair 1, which then fostered a Pallid Cuckoo at their third nesting attempt in nest 6. The three nests of this pair, nests 1, 5 and 6 were all within the same general area, an oblong shape about 80 m in length and it would make sense that a pair would be likely to remain in their territory or nearby to re-nest if they failed. The area where these three nests were located was not in the nest territories of the other Regent Honeyeaters. Pair 1 seemed to be less confident and the male bird less vigilant at the nest compared with other Regent Honeyeater pairs at the site and this may have been a factor contributing to the nest failures. They also appeared to be subordinate to pair 2, which had an adjacent territory and after the first nest failure pair 1 became very quiet and hardly ever used contact calls.

Re-nesting after successful nesting

In the second week of January, a seventh nest which was then believed to have just hatched eggs was discovered in the middle of the breeding site. As by then the birds had been colour banded (see next section), it was possible to confirm that pair 2 had re-nested after successfully raising one brood of two fledglings to independent juveniles. Unfortunately, this pair lost one of their nestlings on about 21 or 22 January from unknown causes, but the second, which appeared to fledge prematurely, did survive.

During the 1995 breeding season, in several places in the Regent Honeyeater's distribution, including the North Watson site, it was positively confirmed for the first time that this species re-nests after successfully fledging young (Natasha Schedvin pers. comm.). In the Armidale district, for example, two pairs were found to have re-nested and produced one young each (Beth Williams pers. comm.). This success rate is consistent with the North Watson pair 2, which also had one surviving young the second time around, a rate lower than the norm of two or three for the first brood.

Banding the birds

Soon after the discovery of the nesting birds, Jenny Bounds discussed with Natasha Schedvin, the National Coordinator of the Regent Honeyeater Recovery Program, the possibility of colour banding the birds so that they could be individually identified. It was agreed that this should be attempted. In addition to banding, blood samples were also taken for DNA sequencing as part of a study throughout the range of the Regent Honeyeater to determine whether the population is homogeneous or made up of separate sub-populations. The paperwork for permits etc. was put in train and the banding and blood sampling was undertaken on 15 and 16 December. This was just before the time the first

brood of fledglings would be independent and start dispersing. Natasha, Mark Clayton and a group of experienced Canberra bird banders were involved.

With careful placement of mist nets near the communal feed trees and nest sites, seven of the eight adults were caught and banded (the female of pair 2 was not caught). All were fitted with a numbered metal band and a white coloured plastic band on the left leg, and two bands of different colours on the right leg. The colour of the band on the left leg distinguishes Regent Honeyeaters banded in Canberra from those banded in NSW (red and orange) and Victoria (green). The combination of different coloured bands on the right leg distinguishes the individual birds.

Experience has shown that banding while the birds are incubating or feeding young apparently does no harm to the birds, as they have a strong instinct to return to the nest or fledglings (Natasha Schedvin and Richard Jordan pers. comm.).

Conclusions

The observations made at this site are generally consistent with other published material about the biology of the species (e.g. Franklin et al. 1989), particularly with respect to territorial aggressions, the nectar tree species preferred and the food sources which are exploited. The observations at North Watson are also consistent in many respects with observations of the nesting behaviour of the species in the Armidale district of NSW (Ley and Williams 1994).

The North Watson observations, and those made by Davis and Recher (1993), indicated that Regent Honeyeaters can be quite aggressive in defence of their nest territory, and can hold their own against other honeyeater species both in territorial defence and exploiting available food sources. Whether this may have been influenced by the strength of numbers of the species at this particular site is arguable, as the birds generally operated singly or in pairs, rather than as a concerted group. The abundance of food which was available, both nectar and insects, may have been a factor which limited competition from other species when feeding.

The breeding success at this site, eight young which survived to juvenile stage from four pairs of birds from seven nests, is a good breeding success rate. Put another way, four out of seven nests fledged eight young. Figures from other sites (Anon. 1996*b*) during the same period are:

- Chiltern Forest, Vic., three nests (17%) fledged young out of 23 breeding events*, the poor fledging rate being largely due to storms;
- Capertee Valley, NSW, where an extensive study was undertaken, 47 nests (37%) fledged 83 young out of an estimated 125 nests, nesting failures being due to a wide variety of factors; and

- Armidale district, NSW, 22 nests (73%) out of 30 breeding events* successfully fledged at least one young (28 young in total); extreme cold and hot weather conditions were listed as some possible reasons for nest failure.

*A breeding event is a nest containing eggs or young, or fledglings being attended by adults away from an undiscovered nest.

The Regent Honeyeater is an endangered species (Garnett 1993) and as such there is a need to protect whatever habitat there is available for it in the ACT. However, at the North Watson site there is a possible conflict between the needs of habitat protection for the Regent Honeyeater and urban development. On the western side of Antill Street, about half a kilometre or so to the south of the breeding site, are paddocks containing a substantial number of mature Yellow Boxes, most of which flowered in the 1995 spring. These paddocks have been proposed for urban infill which has been vigorously opposed by local residents. This area was not surveyed for Regent Honeyeaters, although those at the breeding site occasionally foraged in the Yellow Boxes in the grazed paddocks immediately opposite the breeding site.

A preliminary examination of the locations of all previous sightings in the ACT suggests that the Mt Majura and Mt Ainslie Canberra Nature Parks are part of a wider corridor extending to Mulligan's Flat to the north and possibly to the Newline Quarry to the south which is preferred by Regent Honeyeaters (Mark Clayton pers. comm.). There is, therefore, a strong argument for preserving from any further development or disturbance these fringe Yellow Box alliance woodlands at North Watson adjacent to the nature parks and other, similar, unreserved woodlands in the ACT.

Reports of these records have been submitted to the Rarities Panel for endorsement.

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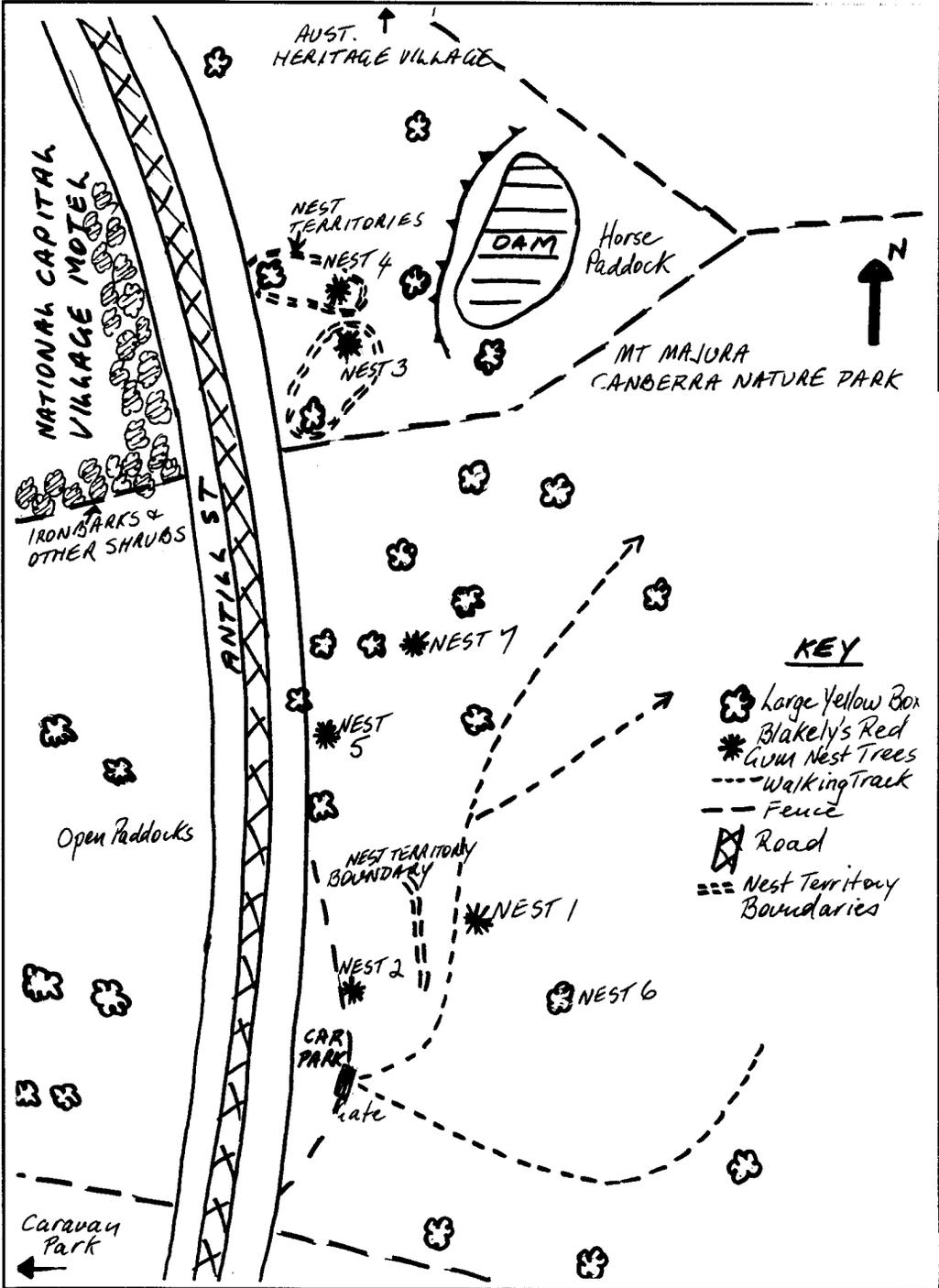


Table 1. Regent Honeyeater breeding site at North Watson (not to scale).