Distribution, abundance and breeding status of the Superb Parrot (Polytelis swainsonii) during the 2010-11 breeding season, Gungahlin, ACT.



Throsby Ridge (Chris Davey)

Prepared for the Canberra Ornithologists Group (COG)

By Chris Davey Date: 10th May 2011



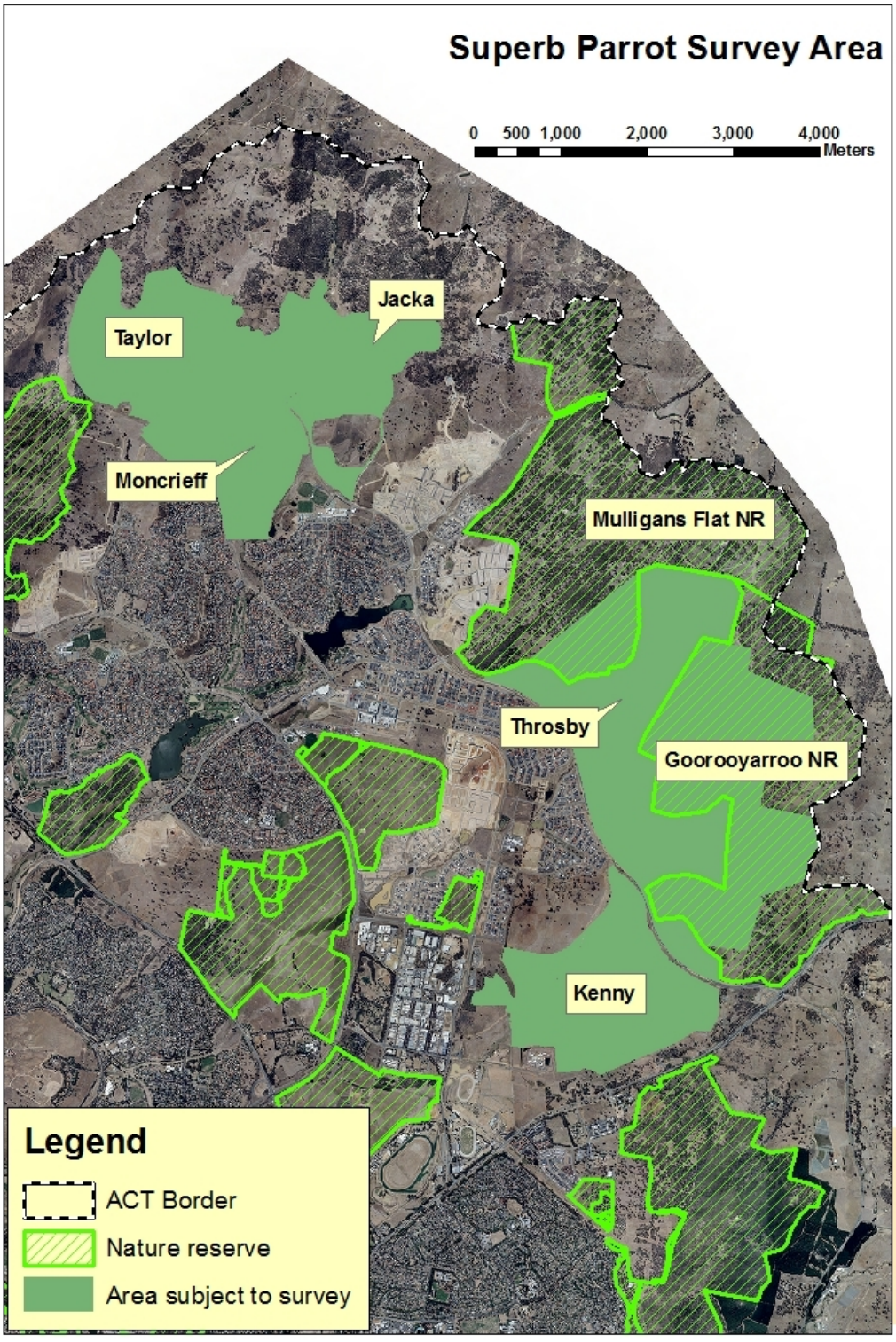
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Background

An unprecedented number of Superb Parrots (*Polytelis swainsonii*), including many dependent young, were observed in the northern Belconnen suburbs over the summer of 2005-06 (Lashko, 2006). Since then increasing numbers have been reported from the northern suburbs of Canberra, the Goorooyarroo/ Mulligan's Flat Nature Reserve and in particular from the Gungahlin suburb of Harrison. Occasional reports are now received from as far south as Hoskinstown, NSW.

Concerned about the possibility of unknown breeding sites within areas set aside for future development within the township of Gungahlin, the Canberra Ornithologists Group (COG) approached the ACT Government for approval and support to survey those areas under consideration for future suburbs. This was provided and surveys were conducted within the proposed suburbs of Kenny, Throsby, Moncrieff, Jacka and Kinlyside between early September and mid-December 2009, that is from the time of arrival of this migrant species to the ACT until the end of the breeding season. In addition, a survey was conducted in selected areas to determine the condition of the tree hollow estate within all areas except Kinlyside. The results of the Superb Parrot survey and the tree hollow survey were provided by COG to the ACT Government in April 2010, see Davey (2010).

In early November 2010 the ACT Government Department of Territory and Municipal Services, Conservation Planning and Research approached COG for an additional survey to determine the distribution and abundance of the Superb Parrot's breeding activity within the Goorooyaroo Nature Reserve-Throsby area, the proposed suburb of Moncrieff and a site under construction for the Harrison School Secondary Campus. In addition, it was agreed that COG would resurvey the proposed suburb of Kenny. The extent of the survey area is shown in Map 1.



Map 1. Superb Parrot survey area, 2010-2011

Methods

Survey work did not start until 15th November due to delays in the contractual agreement between the ACT Government and COG. COG members had observed Superb Parrots in the ACT since early September and the breeding season had commenced. All those involved in the survey were familiar with the Superb Parrot and at least one member of each team was familiar with the calls. The location of all Superb Parrots seen was recorded with a GPS unit, their behaviour was recorded and any tree that from behavioural observations suggested a possible breeding site was photographed for identification purposes, see Appendix 1.

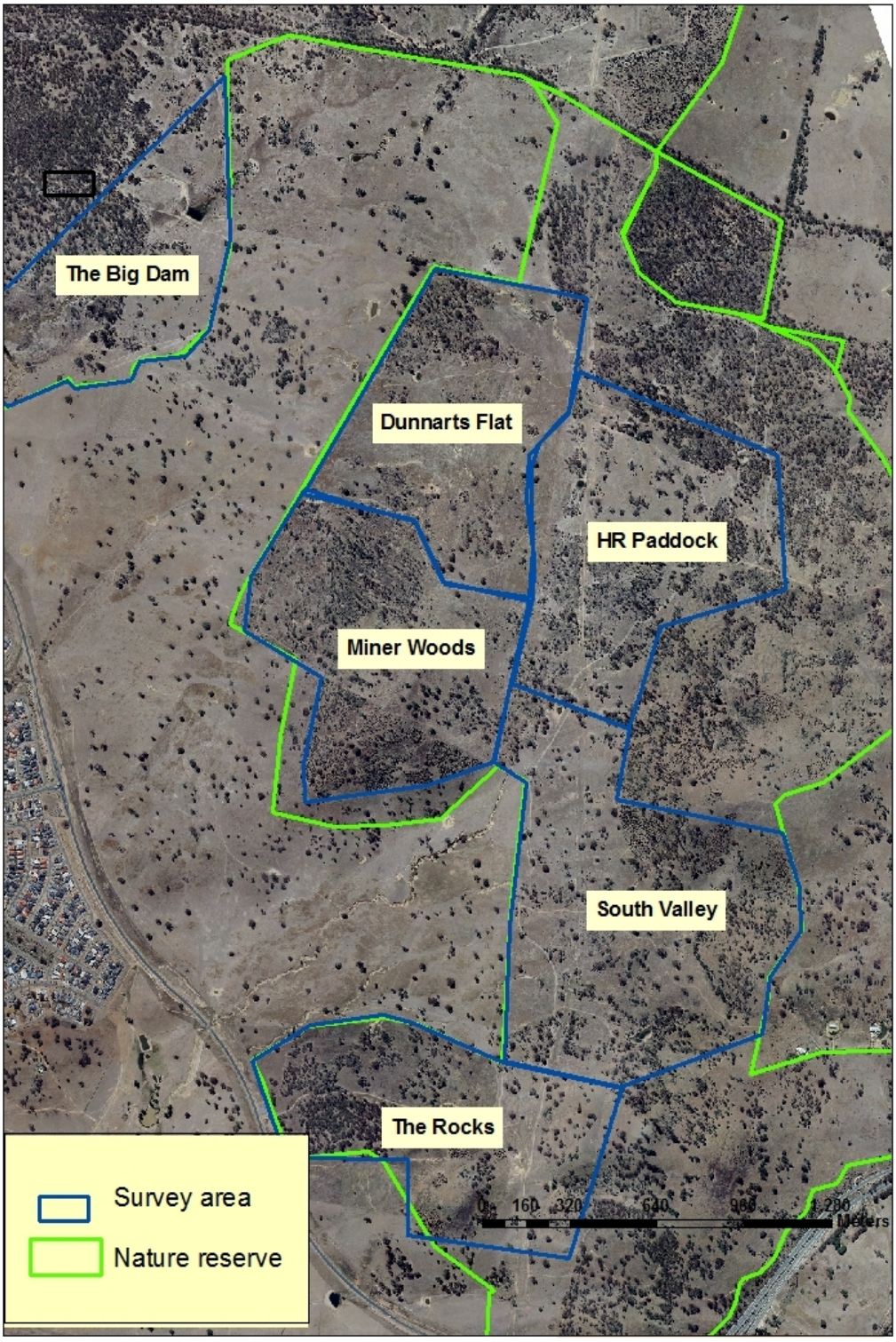
Signs of breeding included the following observations:

- A reluctance by either sex to leave the vicinity of a tree with suitable hollow nearby;
- female or male observed entering or leaving a hollow;
- copulation;
- aggressive interactions between pairs with a potential nest hollow nearby;
- a male 'on station' indicated by the presence of a lone bird perched quietly in a tree occasionally making a soft call with a possible nest hollow in the same or nearby tree; and
- the feeding by adult birds of young with very short tails and limited capacity of flight with a possible breeding hollow in the same or nearby tree.

The sighting of any ACT threatened bird species was recorded during the course of the survey.

Goorooyarroo/ Mulligan's Flat Nature Reserve.
The survey area within Goorooyarroo/Mulligan's Flat focused on those areas where in spring Superb parrots had been observed during general bird surveys, undertaken as part of an ANU research project.

For the last six years, over a 10-day period in October, members of the Fenner School of Environment and Society, Australian National University, with help from members of COG, have conducted bird surveys within the Mulligan's Flat and Goorooyarroo Nature Reserves. Observations on the Superb Parrot from the 2009 and the 2010 ANU surveys were plotted and this determined the areas that were surveyed by COG in 2010 for signs of breeding. The areas included parts of the Goorooyarroo Nature Reserve and an area within Mulligan's Flat that includes the 'Big Dam' located at S 35^0 10' 45.28" E 149^0 09' 30.29", see Map 2.



Map 2. Location of Superb Parrot survey areas within Goorooyarroo Nature Reserve

Starting 15 minutes after sunrise on 20th November and again on 11th December 2010 five teams of two to three individuals each searched allocated areas within the Goorooyarroo Nature Reserve for a four hour period or until each team was satisfied the areas had been thoroughly covered. For the November survey it was possible to drive to the allocated areas. This was not possible in December as roads within the Reserve were impassable due to wet conditions, so observers walked in to their respective search areas.

Superb Parrots were infrequently recorded from Mulligan's Flat Nature Reserve during the ANU surveys and these observations are confirmed from ad hoc reports collected by COG members. Breeding has occurred in the past around the 'Big Dam' and this area was surveyed on 23 November and 5 December. During the latter visit the COG quarterly woodland bird survey was conducted with survey teams scattered throughout the reserve and sanctuary. Any observations on Superb Parrots were noted by team members.

Moncrieff

The entire area covered by the proposed suburb of Moncrieff was searched on foot over a period of four hours starting at 6:30am on 26 November and again on 14 December 2010.

Kenny

Similar to 2009, Kenny was surveyed as two areas defined by likely Superb Parrot habitat. The smaller western area adjacent to the Mitchell Recycling Centre was surveyed in a similar manner to Moncrieff on 24 November and again on 9 December. The larger eastern and northern section of Kenny was surveyed on 24 November and again on 11 December.

Harrison School Secondary Campus

The construction site was visited on 24 November, 3 December and again on 9 December with a minimum of 45 minutes spent during each visit recording any activity of Superb Parrots visiting the construction site. On each occasion the Heritage Lane to as far south as the end of the suburb and as far north to where the Gungaderra Creek flows below Horse Park Drive was surveyed.

Throsby

In this report an area where the majority of breeding was found in 2009-10 is referred to as 'Throsby Ridge' located in the general area of S 35^0 11' 43" E 149^0 10' 15". An area of woodland between Mulligan's Flat and Goorooyarroo Nature Reserves in the general area of S 35^0 10' 46" E 149^0 10' 10" is referred to as 'Throsby Neck'.

The area north of a fence running north-east, south-west and stretching from Horse Park Drive to the north-western facing Goorooyarroo boundary fence and including the 'Throsby Neck' area was searched on 17 November, 25 November and 15 December. This area is referred to as North Throsby. The area to the south of the fence and involving the 'Throsby Ridge' area was searched on 16 November, 18 November, 12 December and 22 December. This area is referred to as South Throsby.

During early November 2009, two areas on ‘Throsby Ridge’ were assessed for tree hollows, see Map 2, areas 2b and 4 in Davey (2010). On 4th and again on 6th January 2011, an addition survey was conducted to ensure that the area between 2b and 4 was also assessed as were two additional areas adjacent to area 2b and 4 respectively. These additional surveys ensured that all trees within Throsby Ridge were assessed. The abundance, activity and location of Superb Parrots were also recorded at that time.

All surveys at Moncrieff, Kenny, the ‘Big Dam’ at Mulligan’s Flat Nature Reserve, Throsby and Harrison School were conducted by Chris Davey with occasional help from other COG members.

Results

Superb Parrot observations

Goorooyarroo Nature Reserve

During the 20 November survey there were 12 sightings of between one or two birds in the general area of Dunnarts Flat, see Table 1 for details. There was much general activity but no conclusive signs of breeding were observed.

Table 1. Goorooyarroo Nature Reserve Superb Parrot observations, 20 November 2011. Number in brackets (#) refers to photo number.

Location	Time	Number	Number	Flight	Lat:			Long:			Behaviour
		birds	males	direction	Deg	Min	Sec	Deg	Min	Sec	
Dunnarts Flat	7:25	1	0	NE	35	10	38.1	149	10	43.7	Flying chased by others
Dunnarts Flat	7:30	1	1	SW	35	10	38.1	149	10	43.7	Flying
Dunnarts Flat	7:38	2	1	SW	35	10	40.0	149	10	37.9	Flying to tree
Dunnarts Flat	7:40	1	1	NE	35	10	39.2	149	10	40.6	Flying
Dunnarts Flat	7:41	1	1	NE	35	10	39.2	149	10	40.6	Flying
Dunnarts Flat	7:42	1	0	SW	35	10	39.2	149	10	40.6	Flying, chased by Miners
Dunnarts Flat	8:28	2	1	SW	35	10	54.5	149	10	31.7	Roosting
Dunnarts Flat	8:32	1	0	SW	35	10	52.2	149	10	30.2	Flying
Dunnarts Flat	8:34	1	0	SW	35	10	52.2	149	10	30.2	Flying
Dunnarts Flat	8:43	1	0	SW	35	10	38.1	149	10	43.2	Flying
Dunnarts Flat	9:01	1	?		35	10	39.3	149	10	49.0	Heard calling
Dunnarts Flat	9:45	1	1	NW	35	10	49.9	149	10	35.8	Flying
Miner Woods	7:20	1	1		35	11	13.0	149	10	32.0	Male on station (# 1)
Miner Woods	7:50	1	?	NE	35	11	12.0	149	10	13.0	Flying
Miner Woods	8:10	1	1	S	35	11	5.0	149	10	28.0	Flying
Miner Woods	9:15	1	1		35	11	13.0	149	10	32.0	Male still on station (# 1)
H R Paddock	7:40	1	?	SW	35	11	7.0	149	10	44.0	Fly to tree
H R Paddock	8:00	4	3	E	35	11	10.2	149	10	40.6	Fly from tree copse
H R Paddock	8:20	1	1	NW	35	11	5.6	149	10	54.6	Fly from tree (# 2)
South Valley	7:12	?	?		35	11	56.9	149	10	57.2	Heard
South Valley	8:12	1	?	SE	35	12	4.9	149	11	18.8	Fly to tree
South Valley	8:16	2	1	SE	35	12	5.7	149	11	17.7	Fly to tree, enter hollow (# 3)
The Rocks											No sightings

In the Miner Woods area there were four sightings of single birds with one observation of a male on station which was still present just under two hours later, see Photo # 1.

In the general area of the HR (Hooded Robin) Paddock there were three sightings of between one and four birds. A male appeared to be reluctant to leave a tree and although the tree had no hollows it is possible that some nearby tree contained a breeding site, see Photo # 2.

Within the South Valley area there were three sightings of one or two birds. A single bird was observed flying into a tree then four minutes later a pair flew in to a nearby tree and after an altercation with a pair of Crimson Rosella the birds took turns to enter a tree hollow, sees Photo # 3. Interest in the tree hollow lasted for over 15 minutes. The pair eventually departed towards the suburb of Harrison, in the direction they came from.

No Superb Parrots were seen in The Rocks area

The following day, the area around Photo # 1 was revisited but no signs of activity were observed. At 35° 11' 06.7" 149° 10' 59.76" approximately 120m away from site Photo # 2 a male Superb Parrot was observed in a tree flying to the ground to feed, then on being disturbed returned to the tree from which it was most reluctant to leave, see Photo # 4. This observation would confirm that there is a high probability of at least one breeding site in the area.

During the survey of the Goorooyarroo Nature Reserve on 11 December there were six sightings of between one and two birds in the general area of Dunnarts Flat, see Table 2. As with the November survey there was much activity but no conclusive indications of breeding (but see later, North Throsby, 25 November and 15 December).

Table 2. Goorooyarroo Nature Reserve Superb Parrot observations, 11 December 2011.
Note: Geo-locations were not taken in the Miner Woods area.

Location	Time	Number	Number	Flight	Lat:			Long:			Behaviour
		birds	males	direction	Deg	Min	Sec	Deg	Min	Sec	
Dunnarts Flat	7:08	1	1	SW	35	10	51.0	149	10	33.0	Flying
Dunnarts Flat	7:18	1	1	NE	35	10	46.0	149	10	29.0	Flying
Dunnarts Flat	7:33	2	1	NE	35	10	39.0	149	10	41.0	Fly from tree
Dunnarts Flat	7:46	2	1		35	10	34.5	149	10	47.0	Roosting
Dunnarts Flat	8:28	1	0		35	10	47.0	149	10	34.0	Roosting
Dunnarts Flat	8:42	1	1	NE	35	10	41.0	149	10	35.0	Flying
Miner Woods	7:00										Heard
Miner Woods	7:05	2	2	SE							Flying
Miner Woods	7:07	2	2	NE							Flying
Miner Woods	7:12	3	2	NE							Flying
Miner Woods	7:25	2	2	SE							Flying
Miner Woods	7:32	4	2	NE							Flying
Miner Woods	7:50	3	1	SW							Flying, juvenile?
Miner Woods	7:55	2	1	E							Flying
Miner Woods	9:00	1	1	NE							Flying
H R Paddock	7:38	1	1	E	35	11	7.3	149	11	1.0	Perch in tree briefly
H R Paddock	7:50	3	1	W	35	11	7.3	149	11	1.0	Flying
H R Paddock	7:40	1	1	NE	35	11	18.0	149	11	8.0	Flying
H R Paddock	7:50	3	2	SW	35	11	18.0	149	11	8.0	Flying
H R Paddock	7:51	1	1	NE	35	11	18.0	149	11	6.0	Flying
H R Paddock	8:45	1		SW	35	11	0.0	149	11	3.0	Flying
H R Paddock	8:50	1	1	NE	35	11	0.0	149	11	3.0	Flying
South Valley											No sightings
The Rocks											No sightings

In the Miner Woods area there were nine sightings of between one and four birds but all were flying overhead and no signs of breeding were reported.

There were seven sightings of Superb Parrots in the HR Paddock area. None of the sightings give any indication of breeding.

Despite an intensive search of the South Valley and The Rocks areas there were no signs of Superb Parrots and there was no activity at the site where birds had been seen entering a hollow, (photo # 3) in November.

Mulligan's Flat

During a visit to the 'Big Dam' area on 23 November over one hour period from 8:20am no Superb Parrots were observed. On 5 December during the COG Woodland Survey of Mulligan's Flat over a 1 ½ hour period from 7.50am there were no signs of breeding and

the only Parrots seen were of a group of eight flying overhead in a north-east-east direction. No other observers recorded any Superb Parrots except for a single observation of one bird flying west to east over Mulligan's Flat.

Moncrieff

Despite a visit on 26 November and again on 14 December, with a total of eight hours spent in the area, there were no signs of Superb Parrots. These observations support those of the previous year when no Superb Parrots were observed.

Kenny

Despite four visits to the general area there was only one observation of a Superb Parrot heard on 11 December in the general area of S 35° 13' 10" E 149° 10' 00". An examination of the area did not locate the bird which may well have been passing through. These observations support those collected in 2009-10 and confirms that breeding within the surveyed area of Kenny is unlikely.

Harrison School Secondary Campus

During the COG survey on 20 November a team of observers walked the Gungaderra Creek from Horse Park Drive to the Harrison School construction site via the Heritage Lane and no Superb Parrots were reported.

Initial observations by the Site Manager (Mr. Paul Bogazattai) suggested that Superb Parrots had been observed visiting the tree at S 35° 12' 3.24" E 149° 9' 11.13" during the period September-October 2010 where breeding had been reported in previous years, see Photo # 5. Subsequent events indicate that these observations by the Site Manager may well have been of Red-rumped Parrots (*Psephotus haematonotus*). There is no doubt though that Superb Parrots were flying into and out of the wooded area on the school grounds. During a morning visit on 24 November over a period of 1 ½ hours a single bird was observed entering the woodland copse and another heard in the general area about 10 minutes latter. A walk up and down the Heritage Lane revealed no signs of activity.

During a second visit to the area on 3 December over a two hour period starting 7.30 am, singles and pairs of a total of nine birds was observed flying to the copse from the area of the Franklin Woods and then departing across Harrison to the general area of 'Throsby Ridge'. A total of 13 birds were recorded flying in the opposite direction and again landing in the copse. No birds were seen on walking the Heritage Lane.

During a visit on 9 December starting at 8.15 am for 45 minutes, three Superb parrots were seen flying from 'Throsby Ridge' to the copse , one was observed leaving the copse heading towards Franklin Woods whilst eight birds were seen flying from the Franklin Woods into the copse and then on to the 'Throsby Ridge'.

Throsby

North Throsby. In 2010, there were no signs of any breeding activity within the North Throsby area in contrast to sightings in three trees in 2009 where signs of breeding

activity had been recorded, see Davey (2010). Despite this, there was much activity in the general area with Superb Parrots regularly seen flying back and forth from the 'Big Dam' area in Mulligan's Flat through the 'Throsby Neck' area and on to the general area of Dunnarts Flat in Goorooyarroo and again back and forth from the 'Big Dam' area through the copse and on to 'Throsby Ridge'. In contrast to 2009, there were no signs of birds flying from the North Throsby area along Gungaderra Creek and into Harrison.

On 17 November over a 3 ½ period from 6.15am a total of 11 birds were seen as individuals or pairs flying over the wooded area. No signs of breeding activity were observed.

On 25 November over a 4 hour period from 6.00am the only observations were of a single male on station disturbed from a tree next to the Goorooyarroo boundary fence at 35° 10' 40.6" 149° 10' 30.8", see Photo # 6. On climbing through the fence into the Reserve, a second male was disturbed from a tree at S 35° 10' 43.6" E 149° 10' 35.0", see Photo # 7 and was most reluctant to leave. The male eventually flew to a nearby tree where it remained.

On 15 December over a 3 1/4 hour period from 6.50am a total of 14 birds in singles or as pairs were recorded in trees and/or flying back and forth between the 'Big Dam' and Dunnarts Flat or between the 'Big Dam' and 'Throsby Ridge'. At the site of Photo # 7 an adult pair was observed feeding two young with very short tails and just able to fly. This tree is most likely to be the breeding site.

South Throsby. On 16 November over a 3 ½ hour period from 6.20am, a total of 10 individuals were recorded in the area with individuals flying into or reluctant to leave five trees, see Table 3. Individual birds were either disturbed and then flew a short distance reluctant to leave or individuals flew in, landed in a tree and again were reluctant to leave. All activity was confined to the 'Throsby Ridge' area.

Table 3. Possible nest sites of Superb Parrots in South Throsby
Number in brackets (#) refers to photo number.

Date	Time	Lat:			Long:			
		Deg	Min	Sec	Deg	Min	Sec	
16-Nov-10	8:36	35	11	39.7	149	10	0.87	Male interested in tree, photo taken (# 8)
16-Nov-10	9:02	35	11	44.9	149	10	0.58	Male interested in tree, photo taken (# 9)
16-Nov-10	9:07	35	11	45.7	149	10	11.2	Male interested in tree, photo taken (# 10)
16-Nov-10		35	11	44.7	149	10	11.7	Male interested in tree, photo taken (# 11)
16-Nov-10	9:16	35	11	43.3	149	10	10.4	Male interested in tree, photo taken (# 12)
18-Nov-10	8:50	35	11	41.9	149	10	17.9	Male into hollow (# 13)
18-Nov-10	9:16	35	11	44	149	10	16.3	Male into and fem out hollow (# 14)
18-Nov-10	9:29	35	11	43.6	149	10	14	Pair fly out of tree, photo (# 15)
12-Dec-10		35	11	45	149	10	13.4	Pair sit quietly in tree (# 16)
12-Dec-10	7:40	35	11	37.5	149	10	9.6	Fem not want to leave tree, male nrby (# 17)
22-Dec-10	8:34	35	11	44	149	10	16.3	Fem fly into tree and disappears (# 14)
22-Dec-10	8:42	35	11	43.5	149	10	14	Pair feeding young just out of hollow (# 15)
22-Dec-10	9:21	35	11	46.1	149	10	26.9	Pair drive off another pair, return to sit quietly (# 18)

On 18 November over a period of 3 ½ hours from 6.20am nine birds were recorded in the general area flying into or out of Harrison. Birds were interested in three trees. In one case a male was seen entering and leaving a hollow (photo # 13), in a second case a male flew in , entered a hollow, a female appeared from the same hollow flew off and quickly returned (photo # 14) and in the third case a pair was most reluctant to leave (photo # 15). As with the previous visit to the area all activity was confined to the 'Throsby Ridge' area.

On 12 December over a 3 ½ hour period starting 6.30am again all activity was concentrated around the 'Throsby Ridge' area. A total of 22 individuals, some with young, with about 12 bird seen at any one time. Some birds were passing through, others had young and at least two pairs were likely to have nest sites as they were most reluctant to leave the area.

On 22 December there was much activity in the area of 'Throsby Ridge'. From 7.50am for a period of two hours approximately 8-10 pairs, some feeding young, were observed. Pairs were reluctant to move from three trees containing hollows. In one tree, where a pair had been observed entering a hollow on 18 November, a female arrived and disappeared into a hollow, see photo # 14, whilst in a second tree a pair that had been observed leaving a tree on 18 November was now feeding newly emerged young in the same tree, see photo # 15. At a third tree a pair was sitting quietly next to a hollow, they then aggressively chased off a nearby pair and returned to the tree (photo # 18).

Birds were still present during the tree survey conducted 4 January 2011 with an estimate of 15-20 birds with young not specifically associated with any tree but feeding in the

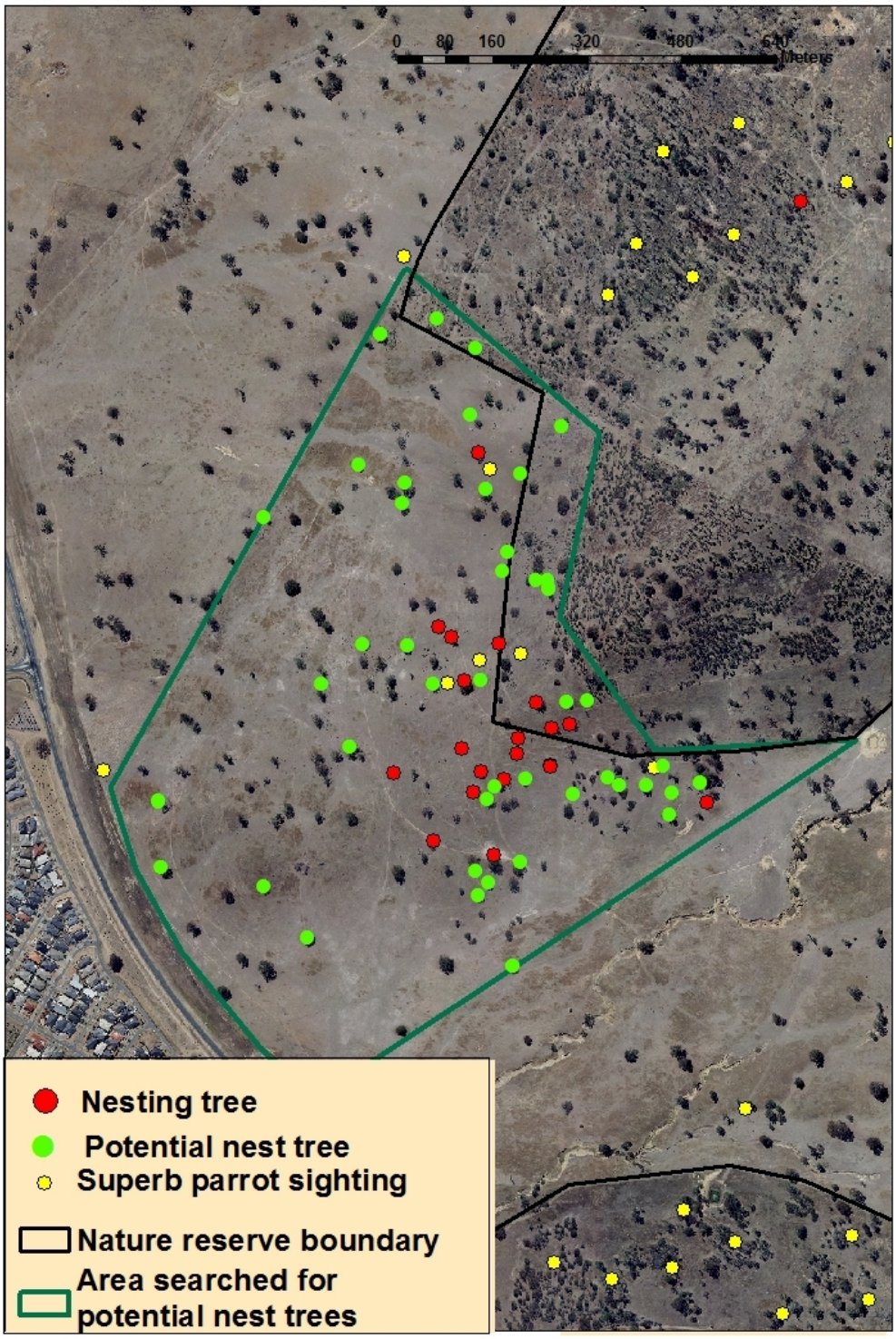
canopy within the general area. On 6 January, whilst finalizing the tree survey and despite being in the area for 2 ¼ hours, no Superb Parrots were seen or heard.

Potential Superb Parrot nesting sites on 'Throsby Ridge'

With the additional tree survey conducted in January 2011 at 'Throsby Ridge', all trees on the Ridge had been assessed for diameter at breast height (DBH), height to first main branch, tree species and number of hollows of varying size, see Davey (2010) for details of Methods. In addition, the site of all trees with a DBH > 30 cm were located off Google Earth and a geo-location recorded.

Manning et al. (2004) investigated the nest tree requirements for the Superb Parrot. After modeling the various measured attributes they concluded that the best predictor for Superb Parrot nest hollows was DBH, Blakely's Red Gum and Dead trees and tree condition; the latter attribute was not recorded in the present survey.

Taking the 25% quartile as 90 cm, (see Figure 2, Manning et al. 2004), 75% of nests were found in trees with a DBH greater than 90 cm. Excluding multi-stemmed trees, there were 67 trees with a DBH of greater than 90 cm and with at least one hollow of more than 5 cm diameter at 'Throsby Ridge', see Map 3.



Map 3. ‘Throsby Ridge’ showing potential Superb Parrot nesting trees (green) and trees that probably contained nesting hollow during the 2009-10 and 2010-11 breeding seasons (red).

Within the 'Throsby Ridge' area observations obtained during the 2009-10 and the 2010-11 breeding season indicated there are 19 trees identified as likely to have been used as nesting sites by Superb Parrots. Of these, one tree appeared to be used in both seasons. All but one had a DBH of greater than 90 cm, see Figure 1 so falling within the range predicted by Manning et al. (2004). The number of hollow greater than 5 cm diameter in any one tree varied between one and four, see Figure 2.

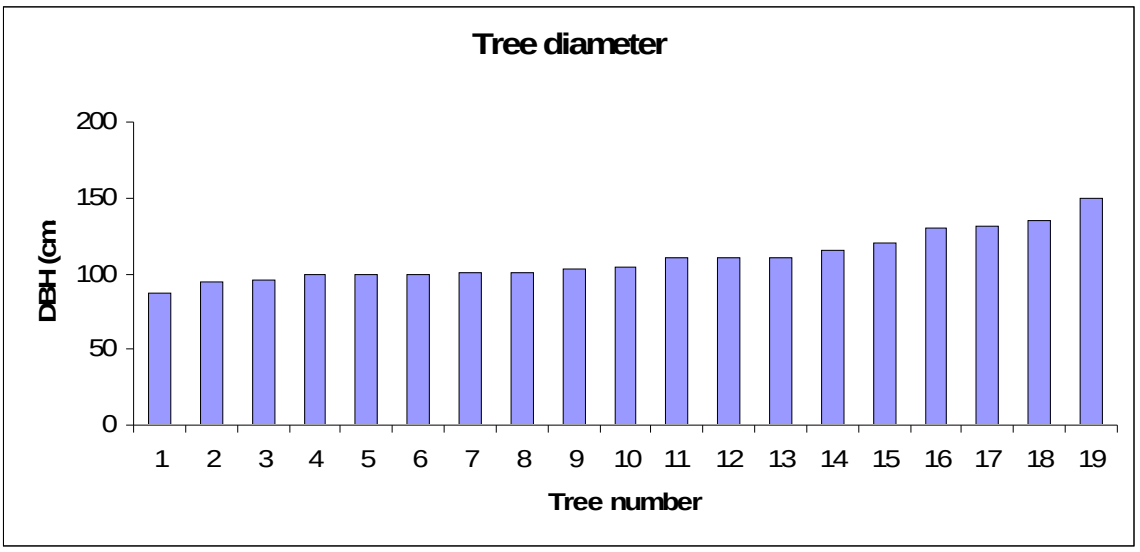


Figure 1. Diameter of nineteen trees identified as possible Superb Parrot nest sites at 'Throsby Ridge'.

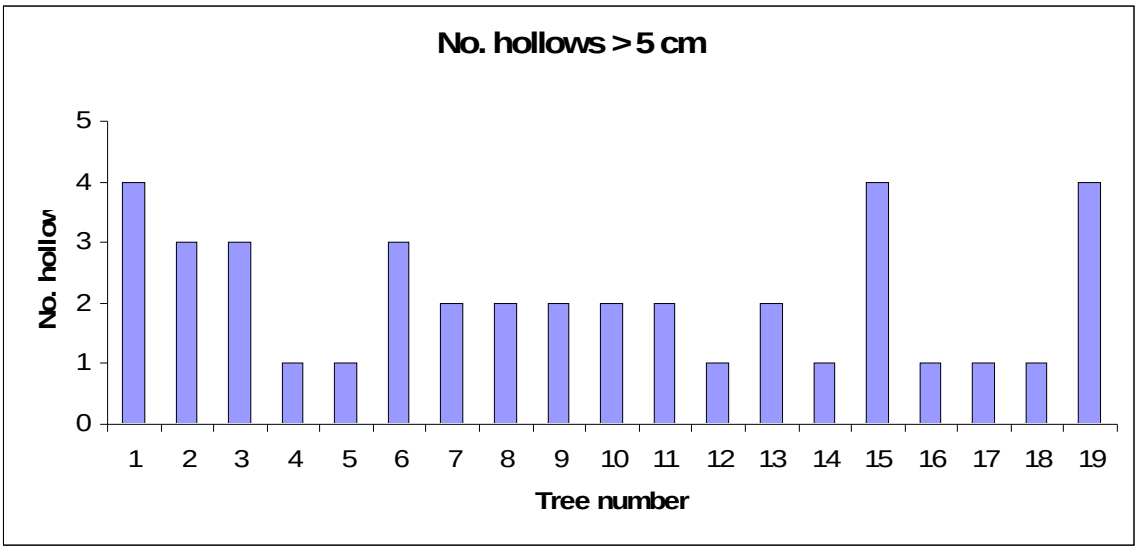


Figure 2. Number of hollows with a diameter greater than 5 cm from 19 trees identified as possible Superb Parrot nest sites at 'Throsby Ridge'.

Other threatened bird species

In addition to the Superb Parrot, there were two other threatened bird species recorded during the 2010-11 survey. Varied Sittella (*Daphoenositta chrysoptera*) was recorded from three sites whilst the Brown Treecreeper (*Climacteris picumnus*) was reported from two sites on two occasions, one of which was of a translocated banded bird released into Goorooyarroo Nature Reserve, see Table 4.

The ACT Flora and Fauna Committee list the Crested Shrike-tit (*Falcunculus frontatus*) and the Diamond Firetail (*Stagonopleura guttata*) on a watching brief of species described as 'insufficiently known'. The species are suspected to be endangered or vulnerable but for which there is inadequate information to make an assessment of risk based on distribution, population status or other attributes.

Table 4. Observations of the Varied Sittella, Brown Treecreeper, Crested Shrike-tit and Diamond Firetail during the 2010-11 Superb Parrot survey

Species	Date	Abundance	Lat:			Long:			Behaviour
			Deg	Min	Sec	Deg	Min	Sec	
Varied Sittella	20-Nov-10	2	35	10	39	149	11	16	Nest building
Varied Sittella	9-Dec-10	6	35	12	50.6	149	9	1.04	4 adult, 2 dependent young
Varied Sittella	11-Dec-10	3	35	10	57	149	11	12	2 adult, 1 dependent young
Brown Treecreeper	24-Nov-10	1	35	12	45.1	149	8	57.7	Banded bird
Brown Treecreeper	26-Nov-10	1	35	9	11.11	149	7	32	
Brown Treecreeper	9-Dec-10	1	35	12	45.1	149	8	57.7	Banded bird
Brown Treecreeper	14-Dec-10	1	35	9	11.11	149	7	32	
Crested Shrike-tit	11-Dec-10	1	35	11	12	149	11	10	
Diamond Firetail	18-Nov-10	1	35	11	42.25	149	10	36.81	

Discussion

Observations collected during the 2009-10 breeding season suggested that the Superb Parrot was widespread throughout the proposed suburb of Throsby with breeding occurring in an area between the 'Big Dam' at Mulligan's Flat and Dunnarts Flat, Goorooyarroo Nature Reserve and referred to here as 'Throsby Neck' and in an area referred to as 'Throsby Ridge', (Davey, 2010). The purpose of the 2010-11 survey was to confirm these observations and to compare with observations collected from within the adjacent lands in Mulligan's Flat and Goorooyarroo Nature Reserves.

General observation from members of the Canberra Ornithologists Group suggest that, for reasons unknown, the Superb Parrot is much more frequently recorded within the Goorooyarroo Nature Reserve than within the Mulligan's Flat Reserve. These observations are supported by data collected from the quarterly Woodland Survey conducted by COG over 24 sites at Mulligan's Flat and eighteen sites at Goorooyarroo in part to satisfy requirements of the ACT Lowland Woodland Conservation Strategy (ACT Government, 2004). These observations are further supported by observations collected by COG members for the Fenner School of Environment and Society, Australian National University, collected once a year in October from 48 sites in Mulligan's and 48 sites in Goorooyarroo. In Mulligan's Flat, with the exception of the area around the 'Big Dam', most records were of birds flying through the area.

It would have been desirable to commence the 2010 surveys earlier in the Superb Parrot breeding season, in September/October, when birds would be more active around selected nesting areas/tees and early breeding signs can be detected. Due to the late start of the survey and the number of observers that would have been required to cover the entire Goorooyarroo Nature Reserve it was decided that the survey would concentrate on those areas where Superb Parrots had been observed during the ANU surveys conducted in October 2009 and October 2010. Observations collected by COG members for the Woodland Survey conducted at a similar time of the year since 1998 confirmed the observations collected by the ANU surveys.

The 2010-11 survey confirmed the observations of the previous year with the Superb Parrot again not being observed in the proposed suburbs of Moncrieff or Kenny, although in both areas the threatened Brown Treecreeper was reported. The Superb Parrot was again reported in the proposed suburb of Throsby, particularly in the 'Throsby Neck' and the 'Throsby Ridge' areas, throughout the survey period.

In 2010-11 signs of breeding were not observed at either the 'Big Dam' or at 'Throsby Neck'. In addition, there were no confirmed signs of breeding at the Harrison School site or along the Gungaderra Creek in Harrison.

There is a general lack of knowledge concerning the nesting habits of the Superb Parrot. No work has been conducted on banded birds so it is unknown whether pairs return to breed in the same hollow as the previous year or whether a failed attempt early in the

season will lead to an abandonment of the site or the relaying of a second clutch. It is unknown whether pairs breed each year or return to the same area and the breeding success is unknown. It is therefore not possible to determine the reasons for the lack of breeding at sites where breeding had been observed the previous year.

From the observations collected in 2010-11 it is possible to say that the 'Throsby Ridge' is a most favoured breeding site and that no other such area existed within the surveyed area of Mulligan's Flat or Goorooyarroo Nature Reserves.

Where resources allow, the Superb Parrot will breed in close proximity to each other. It is known that on occasions there can be more than one nest in a tree. This appears to be the case at 'Throsby Ridge' where old *Eucalyptus rossii* and *E. blakelyi* provide an abundance of hollows, many of which appear to be suitable for Superb Parrot breeding.

There has been no work conducted to examine the association between disturbance and nesting success in eucalypt woodlands similar to that found in the ACT. In the Riverina it is recommended that no logging occurs within 100 m of nesting trees within the Barmah and Millewa State Forests (R. Webster *pers. comm.*). Given the known area for nesting and the location of potential nesting sites along 'Throsby Ridge' it is suggested that the entire Ridge area from the western edge of the Goorooyarroo Reserve to Horse Park Drive be set aside as an extension of the Goorooyarroo Nature Reserve. In addition, the 'Throsby Neck' area situated between the 'Big Dam' and Dunnarts Flat should be set aside as an area where breeding occurred in 2009-10 and as a very important movement link between known breeding sites at the 'Big Dam' and at Dunnarts Flat.

It is unfortunate that observations were not collected during September-October at the Harrison School site. The observations collected later in the season could not confirm whether birds intended to breed earlier in the area but were deterred by construction activity. There were no signs of breeding during November-December but there was no doubt that the construction activity appears to have had little effect on the birds using the area as a feeding site or as a stop-over between the 'Throsby Ridge' area and the suburbs of Harrison and Franklin and beyond.

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Appendix 1



Photo # 1.



Photo # 2.



Photo # 3.



Photo # 4.



Photo # 5.



Photo # 6.



Photo # 7.



Photo # 8.



Photo # 9.



Photo # 10.



Photo # 11.



Photo # 12.



Photo # 13.



Photo #14.



Photo # 15.



Photo # 16.



Photo # 17.



Photo # 18.