Distribution, abundance and breeding status of the Superb Parrot (*Polytelis swainsonii*) during the 2012-13 breeding season, Throsby Neck, Throsby Ridge and East Throsby, ACT.



Prepared for the Canberra Ornithologists Group (COG)

By Chris Davey

3 April 2013

Distribution, abundance and breeding status of the Superb Parrot (*Polytelis swainsonii*) during the 2012-13 breeding season, Throsby Neck, Throsby Ridge and East Throsby, ACT.

Summary

Areas designated for the suburb of Throsby were surveyed for Superb Parrots between 1st October 2012 and 3rd January 2013 and repeats surveys of the area conducted by members of the Canberra Ornithologists Group during the 2009-10 and 2010-11 breeding seasons.

Observations on breeding behaviours were obtained within the upper section of Throsby Ridge in an area bordering but outside the boundary of the Goorooyarroo Nature Reserve. No indications of breeding were recorded from Throsby Neck or East Throsby. Similar observations were obtained from the Ridge area in the two previous surveys.

Avian nest hollow competitors in the area included the Galah, Little Corella, Crimson Rosella, Eastern Rosella, Red-rumped Parrot and Common Myna (a non-native, introduced species). All, except for the Common Myna, occur as breeding species within the upper section of Throsby Ridge. If urban development encroaches further into the upper Ridge area into the vicinity of Throsby Ridge it is possible that numbers of avian nest hollow competitors will increase placing increased pressure on nesting resources of the Superb Parrot. This report provides a baseline measure of the level of competitive interactions between the Superb Parrot and other hollow nesters, prior to the construction of nearby residential development. At present, the greatest pressure is caused by the Crimson Rosella and the Eastern Rosella with no competition from the Common Myna.

The Common Myna is seen as a possible threatening process to breeding Superb Parrots in the area. Horse Park Drive, which abuts the existing suburb of Harrison some 600 metres from Throsby Ridge, appears to currently provide a deterrent to the penetration of the Common Myna from the suburbs.

A total of 73 bird species was recorded from the survey area and included two ACT threatened species; Superb Parrot and White-winged Triller.

Introduction

In the ACT the Superb Parrot is protected under section 21 of the ACT Nature Conservation Act 1980 and is protected under the federal Environment Protection and Biodiversity Conservation Act, 1999. Under both Acts the species is listed as Vulnerable. Both the Action Plan for the Superb Parrot under the Nature Conservation Act (ACT Government, 1999) and the Recovery Plan under the EPBC Act outline the threats, major conservation objectives and intended Management Actions.

Since 2005, there has been a change in the local distribution and abundance of the Superb Parrot with the species now being regularly reported throughout the northern suburbs of Gungahlin and Belconnen.

The Action Plan identifies the need to locate and map all known and potential Superb Parrot habitat in the ACT region as an essential first step to address the local decline of the species. Between September and December 2009, with support of the ACT Government, members of the Canberra Ornithologists Group (COG) surveyed areas proposed for the suburbs of Kenny, Throsby, Moncrieff, Jacka and Kinlyside to identify and map the breeding distribution of the Superb Parrot within the area, (Davey, 2010).

In early November 2010, the ACT Government approached COG for an additional survey to determine the distribution and abundance of the Superb Parrot's breeding activity in the Goorooyarroo Nature Reserve-Throsby area, the proposed suburb of Moncrieff and Kenny and a site under construction for the Harrison School Secondary Campus, (Davey 2011).

In mid-September 2011, COG was again contracted to conduct a survey within the central and lower Molonglo Valley to document the distribution and abundance of the Superb Parrot's breeding activities during the 2011-12 breeding season, (Davey, 2012).

In early September 2012, COG was contracted to revisit the Throsby area surveyed previously in 2009 and again in 2010-11, and to map the nest sites and breeding status of the Superb Parrot during the 2012-13 breeding season within an area known as Throsby Ridge and extending to and including the Throsby Neck and East Throsby. This report documents the results of the 2012-13 survey and compares the findings with the 2009 and 2010-11 surveys of the area.

The report also provides information on the present competitive pressure for nesting resources between the Superb Parrot and Galah, Little Corella, Crimson Rosella, Eastern Rosella, Red-rumped Parrot and Common Myna.

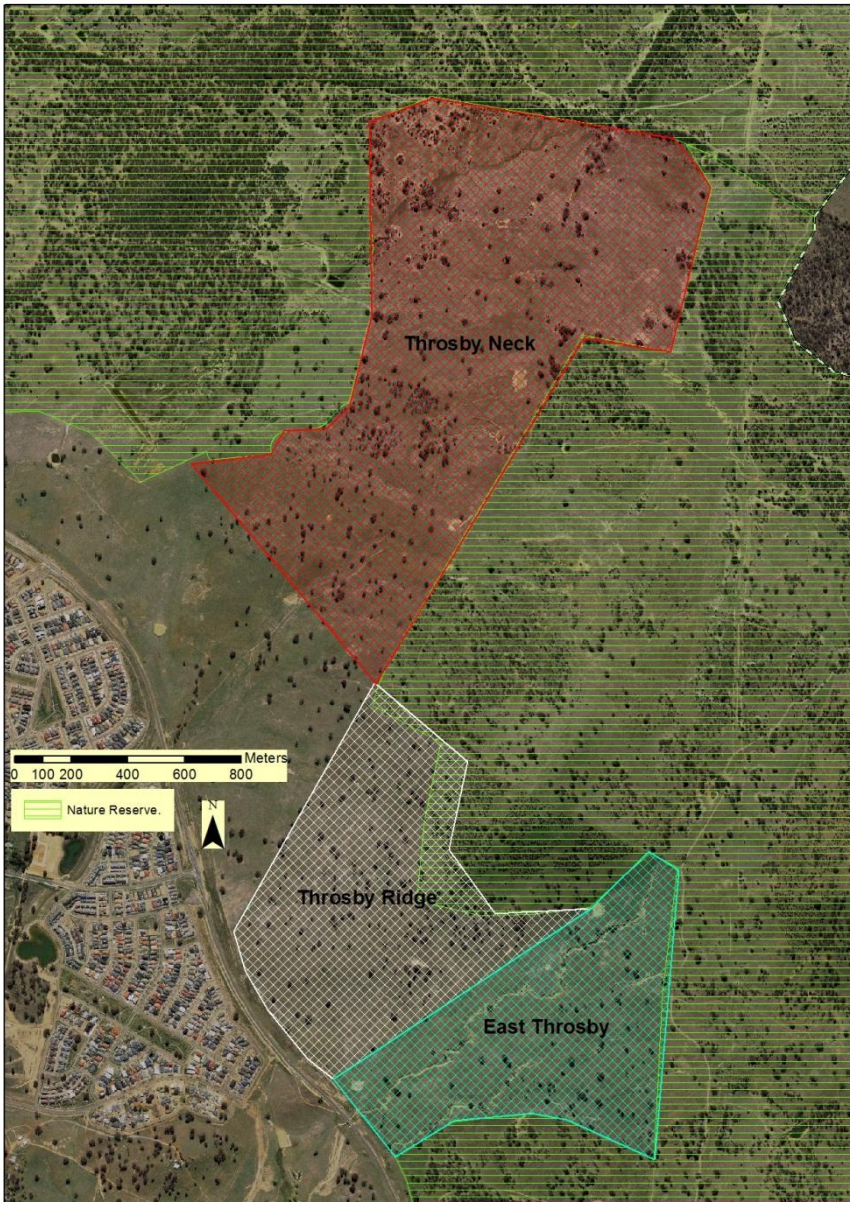
Methods

The study was undertaken for the Environment and Sustainable Development Directorate (ESDD) and was in accordance with the following:

1. The survey will be undertaken in accordance with the Superb Parrot survey guidelines, see Appendix I
2. Survey of the Throsby area will be once in late September-early October, once in late October-early November and once in December (unless otherwise agreed);
3. All eucalypt trees within the study areas with diameter greater than 30cm will be inspected and any Superb Parrot sightings and breeding activity recorded. Breeding activity can include any of the following:
    a. a reluctance by either sex to leave the vicinity of a tree with suitable hollow nearby;
    b. female or male observed entering or leaving a hollow;
    c. copulation;
    d. aggressive interactions between pairs with a potential nest hollow nearby;
    e. 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
    f. 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.
4. Within the core breeding area the use of hollows for breeding by any other bird species will be noted for all hollow bearing trees, with the bird species, probable number of breeding pairs of each breeding species and tree location given.
5. The location of any ACT threatened bird observed during the survey will be recorded and an breeding activity noted. These birds include the Brown Treecreeper, Hooded Robin, White-winged Triller, Varied Sittella, Painted Honeyeater and Regent Honeyeater.

Areas will be intensively surveyed on foot by members walking up and down, zigzagging across designated areas, or where practical by driving amongst paddocks. In the report COG will document observed breeding behavioural characteristics and whether the species is observed outside of survey areas.

For the purpose of the survey the Throsby area was divided into three sections, see Map 1; Throsby Neck, Throsby Ridge and East Throsby. Although the contract required the area to be surveyed on three occasions over the survey period it was decided that in order to determine the details required the areas needed to be surveyed more frequently at approximately two week intervals. The survey dates for each area are shown in Table 1.



Map 1. Survey area for 2012-13 Superb Parrot breeding survey in the proposed suburb of Throsby, ACT.

Table 1. Survey dates for the 2012-13 Superb Parrot survey within the proposed suburb of Throsby, ACT.

Throsby Neck	Throsby Ridge	East Throsby
	1-Oct	1-Oct
2-Oct	2-Oct	
	15-Oct	15-Oct
16-Oct	16-Oct	
	30-Oct	30-Oct
31-Oct	31-Oct	
	3-Nov	
	13-Nov	13-Nov
14-Nov	14-Nov	
29-Nov	29-Nov	
	30-Nov	
	11-Dec	
13-Dec	13-Dec	
	21-Dec	
	3-Jan	

The survey area is used for the lambing and grazing of sheep and the survey could not commence until the end of the lambing season in late September.

The Throsby Ridge area was surveyed by one person (Chris Davey) to ensure a standard count of interactions between Superb Parrots and nesting competitors, Throsby Neck and East Throsby were surveyed by Chris Davey and other members of COG. Apart from the two final visits and the visit on 3rd November the Throsby Ridge area was surveyed on two consecutive days. Throsby Neck and East Throsby were surveyed on one day only during a survey period. By 14 November it became apparent that there was no breeding activity by Superb Parrots within the East Throsby area so there were no further surveys after that date in that area.

On each day of the survey period the number of Superb Parrots using the Throsby Ridge area was estimated. With individuals flying to and from the area and flying over the area to travel further north this was difficult. The estimate was, therefore, based on the maximum number of individuals using the area at any one time. Those individuals flying over the area were not regarded as 'using' the area. The need to provide data on all other hollow nesting species within the Throsby Ridge area required a greater detail of study than was possible in the current exercise. This was mainly due to the presence of European Starlings which were extremely common throughout the area. Instead, details on those species that would directly compete for nesting hollow with the Superb Parrot were

noted. These species included Galah *Eolophus roseicapillus*, Little Corella *Cacatus sanguinea*, Crimson Rosella *Platycercus elegans*, Eastern Rosella *P. eximius*, Red-rumped Parrot *Psephotus haematonotus* and Common Myna *Sturnus tristis.* For these species, the location of possible nesting locations was not mapped but rather a count of the number of breeding behaviours observed and the number of interactions between Superb Parrots and nesting competitors was recorded which can then be compared in future years.

There were 75 person hours involved with the field work. All bird names are taken after Christidis and Boles (2008) and all photographs were taken by the author.

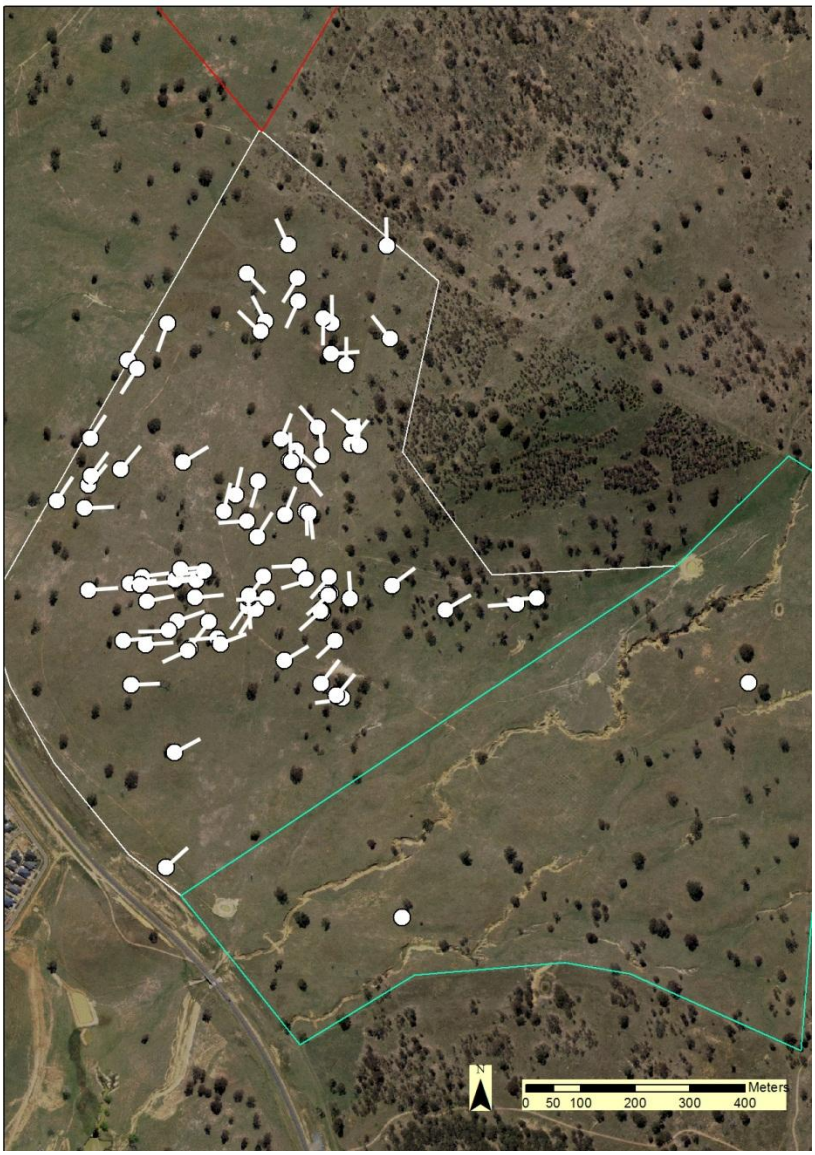
Results

Superb Parrots

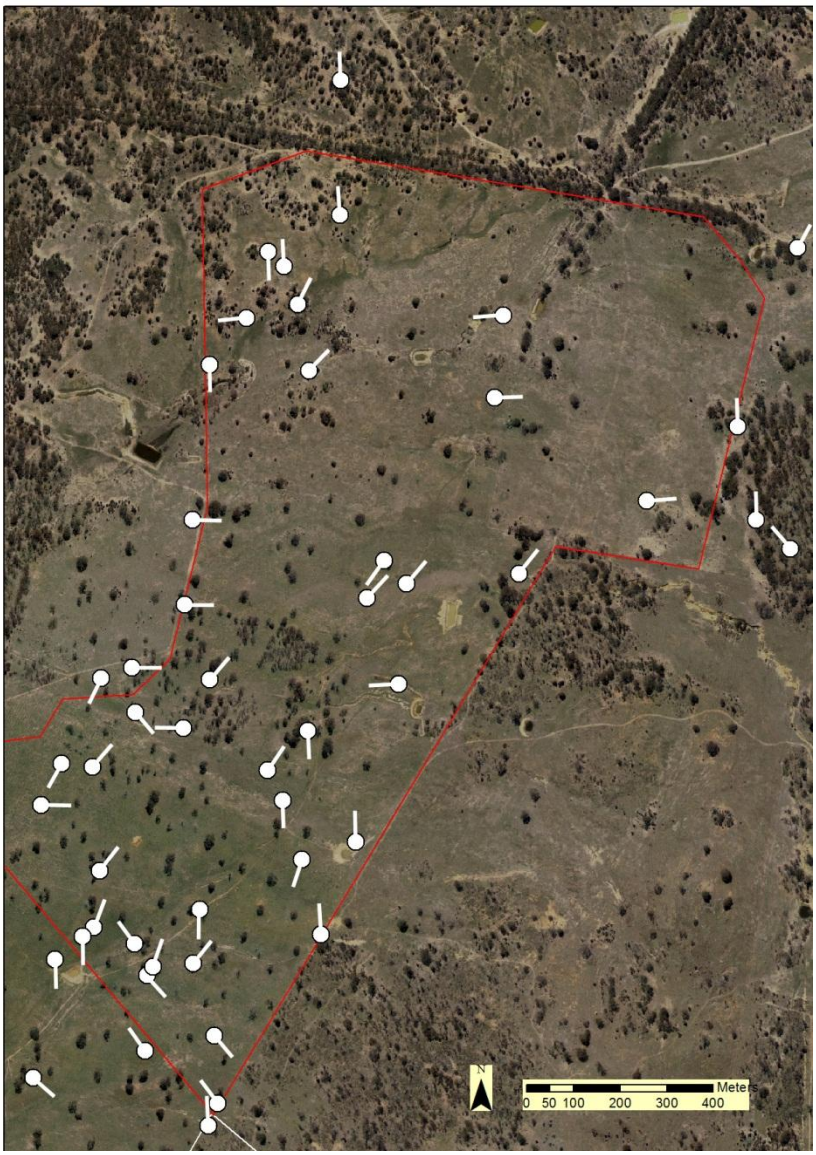
Movement patterns

Observations of Superb Parrots within the survey area consisted of birds flying over, into or departing from the area and of birds in the area perching, interacting, hollow inspecting and other behaviours indicating an intention to breed (see Methods).

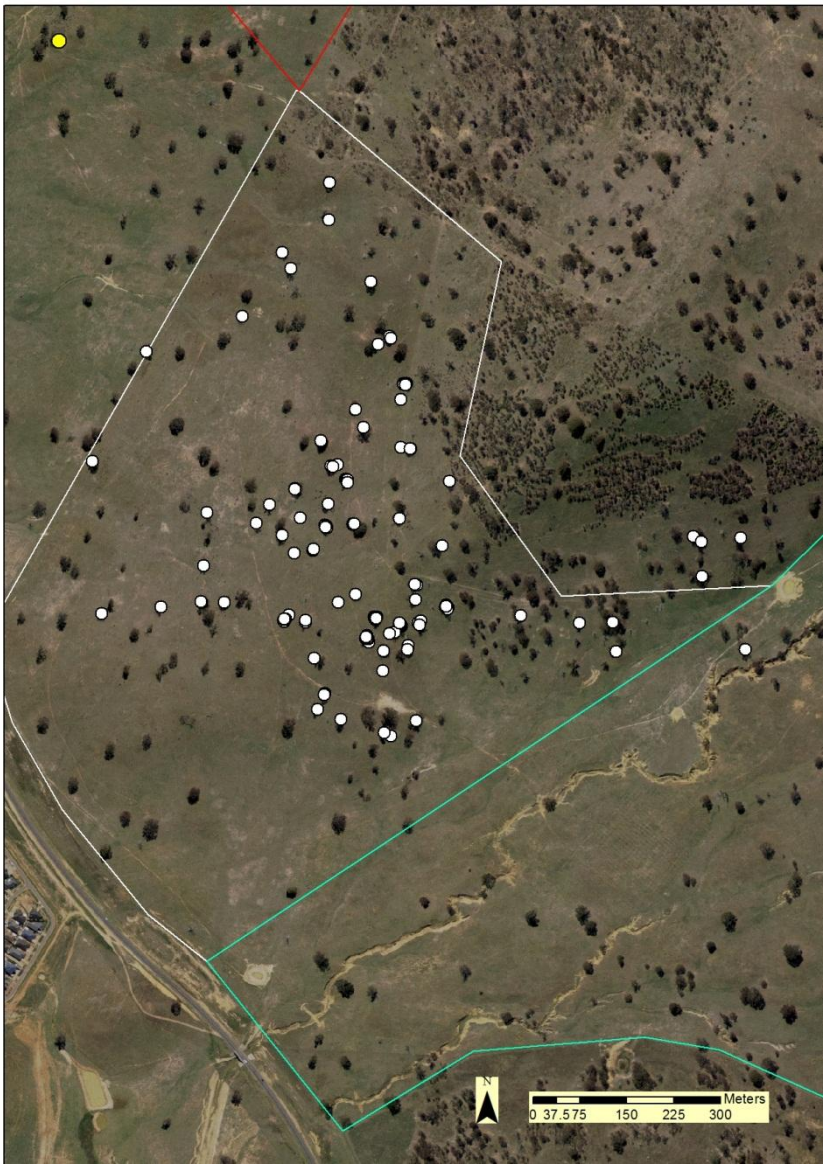
The location of all Superb Parrots flying over the survey area and their direction of flight are shown in Map 2. In some cases birds were seen flying over and then landing or were first recorded already perched. These locations are shown in Map 3.



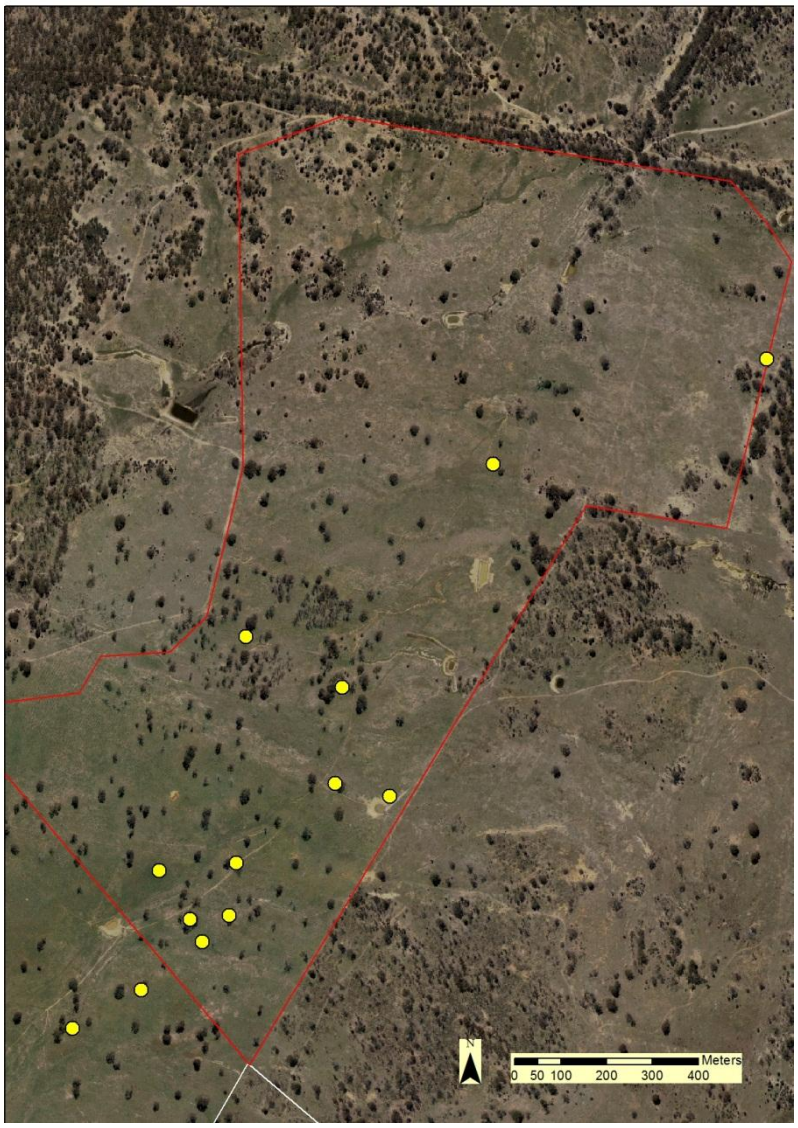
Map 2a. Location and direction of flight of the Superb Parrot over Throsby Ridge observed during the 2012-13 breeding survey. See text for flight directions of observations at East Throsby



Map 2b. Location and direction of flight of the Superb Parrot over Throsby Neck observed during the 2012-13 breeding survey.



Map 3a. Location of perching Superb Parrots at Throsby Ridge and East Throsby observed during the 2012-13 breeding survey.



Map 3b. Location of perching Superb Parrots at Throsby Neck observed during the 2012-13 breeding survey.

The movement patterns across the survey area were complex although the majority of movements were to and from the suburb of Harrison. Birds were regularly seen flying northeast-southwest and appeared to be following the fence line separating the Ridge from the Throsby Neck either into or out of Harrison. This movement pattern was detected from Throsby Ridge and from Throsby Neck.

It is not known where the birds were heading, but in most cases the birds did not land in the Throsby Neck. Ad hoc observations suggested that at least some of the birds continued into Mulligan's Flat along the Pipeline Road and hence into New South Wales (Jenny Bounds, Ian Baird *pers.comm*.). Most observations were of birds flying to and from the upper section of Throsby Ridge where most were seen to land or depart from. There were occasions when birds continued along the Ridge and disappeared into the Goorooyarroo Nature Reserve following the fence line separating Throsby Ridge from East Throsby.

On only two occasions were Superb Parrots seen flying over the East Throsby area. On 1st October a pair flying in a northeast-southwest direction from Goorooyarroo landed in a tree and then

continued into Harrison. On 13 November a single bird was recorded flying in a southeast-northwest direction and into Harrison.

Movement within the upper section of the Ridge had no particular pattern with birds generally milling about the area. Typical behaviour was for birds to land, having flown in from Harrison, perch or chase each other or interact with other bird species and on occasions enter or defend tree hollows. In most cases, after a while the birds would then return to Harrison crossing Horse Park Drive. Feeding on the ground or in trees was only occasionally noted. There were no eucalypt species apart from a small patch of *Eucalyptus dives* in flower at the time.

On occasions birds would depart the upper Ridge and either veer off to the northwest and up into Throsby Neck or into the direction of the large dam at Mulligan's Flat.

Breeding observations

East Throsby. As noted previously on only two occasions were Superb Parrots seen within the area either flying over or on one occasion landing and then departing. There were therefore no indications of an interest to breed in the East Throsby area.

Throsby Neck. There were 62 records of Superb Parrots within the Throsby neck area, all of birds either flying over the area or of birds perched in trees. No signs of breeding were recorded from the Throsby Neck area.

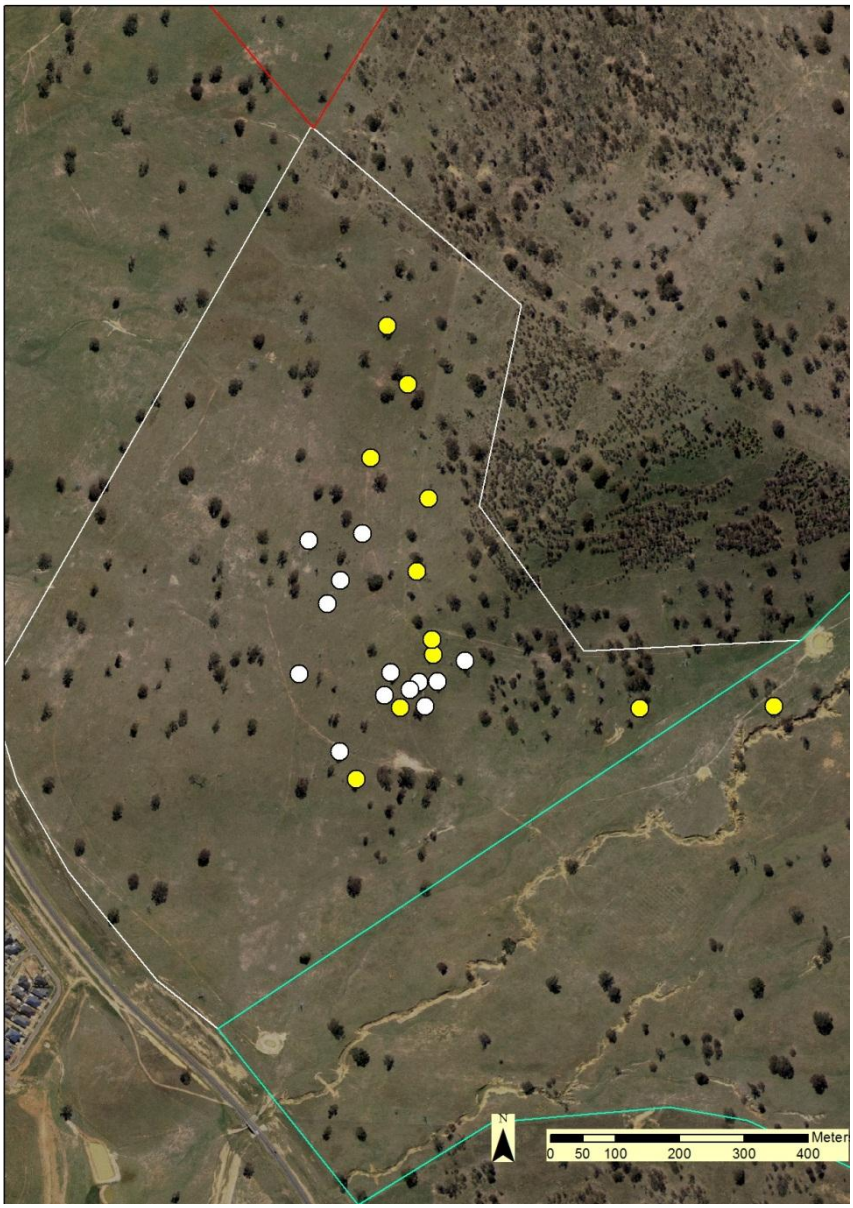
Throsby Ridge. There were 50 records of birds showing signs of an intention to breed. All observations were from the upper section of the Ridge near the present boundary of the Goorooyarroo Nature Reserve. Due to the increased number of visits to the area when compared with previous years it was possible to obtain multiple observations at the same location. Thirty-nine of the observations were based around 13 trees whilst the remaining eleven records were single observations, see Table 2 and Map 4.

Table 2. Date of observation, location, tree species and observed behaviour of 24 possible breeding sites at Throsby Ridge. For ease of reading alternate trees listed are shaded.

Date	Location		Easting	Northing	Tree type	Behaviour
1-Oct	55	H	697506	6103309	E. blakelyi	Pr hollow inspect
30-Nov						Fem out of hollow
11-Dec						Male on station
29-Nov	55	H	697422	6103299	E. blakelyi	Fem out of hollow
30-Nov						Fem on station
1-Oct	55	H	697471	6103237	E. rossii	Fem hollow inspect, defend area
3-Nov						Male on station
30-Nov						Fem into hollow
30-Nov	55	H	697451	6103200	E. blakelyi	Fem into hollow
11-Dec						Pr defend area

2-Oct	55	H	697665	6103112	E. rossii	Pr defend area
16-Oct						Male on station
3-Nov						Fem inspect hollow
14-Nov						Begging calls from hollow
30-Nov						Male on station
1-Oct	55	H	697622	6103080	E. rossii	Pr hollow inspect
16-Oct						Male feed fem
3-Nov						Fem inspect hollow
30-Oct	55	H	697593	6103078	E. rossii	Male on station
14-Nov						Male feeds fem
13-Dec						Fem hollow inspect, defend area
14-Nov	55	H	697549	6103093	E. rossii	Pr defend area
14-Nov						Male feeds fem
13-Dec						Fem hollow inspect, defend area
21-Dec						Pr defend area
2-Oct	55	H	697407	6103091	E. blakelyi	Male out of hollow
16-Oct						Male on station
13-Nov						Fem defend hollow
31-Oct	55	H	697540	6103058	E. rossii	Fem sit next to hollow
29-Nov						Fem into hollow
13-Dec						Pr defend area
21-Dec						Fem inspect hollow
3-Jan						Pr look into hollow
13-Nov	55	H	697579	6103067	E. rossii	Fem defend hollow
21-Dec						Fem into hollow
1-Oct	55	H	697603	6103041	E. rossii	Fem hollow inspect
14-Nov						Inspect hollow
29-Nov	55	H	697470	6102970	E. rossii	Fem inspect hollow
13-Dec						Fem in/out hollow
1-Oct	55	H	697576	6103541	E. rossii	Pr hollow inspect
1-Oct	55	H	697519	6103427	E. rossii	Pr hollow inspect
1-Oct	55	H	697590	6103251	E. rossii	Pr hollow inspect
1-Oct	55	H	697564	6103039	E. rossii	Male feeds fem, fem into hollow
15-Oct	55	H	697496	6102928	E. rossii	Fem inspect hollow
15-Oct	55	H	697544	6103632	E. blakelyi	Fem inspect hollow + fem from

						hollow
31-Oct	55	H	697616	6103121	E. rossii	Male on station
14-Nov	55	H	697937	6103038	E. blakelyi	Inspect hollow
29-Nov	55	H	697614	6103145	E. rossii	Pr defend area
29-Nov	55	H	698145	6103041	E. blakelyi	Fem into hollow, male on station
21-Dec	55	H	697608	6103364	E. rossii	Fem inspect hollow



Map 4. Location of 13 trees with multiple breeding observations (white dots) and 11 trees with single observations (yellow dots) at Throsby Ridge

The most frequently recorded breeding behaviour was of birds inspecting hollows or of males '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. Surprisingly, there were no observations

of successful breeding apart from begging calls heard on a single occasion from a tree hollow. On no occasions were juvenile birds or begging young seen in the area however, a lack of successful breeding observations does not necessarily mean that breeding was unsuccessful.

Interactions with other bird species

The successful breeding by Superb Parrots at Throsby Ridge is influenced by many factors including competition for nesting hollow resources, both within individuals of the same species and between species. The bird species recorded in the area that are most likely to compete directly with the Superb Parrot are the Galah, Little Corella, Crimson Rosella, Eastern Rosella, Red-rumped Parrot and Common Myna. Within the Throsby Ridge area, the number of competing species was estimated whilst zig-zagging across the site looking for Superb Parrots. The only systematic part of the estimation was that the area was covered in a similar way, for a similar length of time and during similar hours after sunrise for each survey so the data may be regarded as a relative index for comparison rather than as an indication of numbers. In addition, for each survey the same categories for breeding behaviours as that for the Superb Parrot was used with the addition of territorial disputes between pairs or between individuals. A record of the number of aggressive interactions between Superb Parrots and nesting competitors was also noted, see Table 3.

Table 3. Estimated number of Superb Parrots on each day of a survey period, estimated number of competitors on day of count of other species, total number of observed interactions between Superb Parrots and competitors, total number of competitor breeding observations and the total number of hours spent at Throsby Ridge. nc= no count.

	Superb Parrot	Little Corella	Galah	Crimson Rosella	Eastern Rosella	Red-rumped Parrot	Common Myna	Time (hours)
1/2 Oct								
Number	16-20	4	30	30	40	10	3	6.5
Interactions		0	0	7	1	0	0	
Breeding		1	4	8	15	5	0	
15-16 Oct								
Number	16-25	3	30	25	24	20	0	6.25
Interactions		0	0	0	0	0	0	
Breeding		2	3	17	13	4	0	
30-31 Oct								
Number	12-18	5	20	20	35	10	2	5.75
Interactions		0	0	0	1	0	0	
Breeding		2	3	13	13	4	2	
13-14 Nov								
Number	16-20	4	20	25	20	10	4	5.25
Interactions		1	0	3	4	0	0	
Breeding		0	3	5	6	1	1	
29-30 Nov								
Number	16-16	2	20	30	20	20	2	5.5
Interactions		0	0	5	0	0	0	
Breeding		1	1	7	7	2	1	
11-13 Dec								
Number	16-16	5	15	15	15	10	1	5.5
Interactions		0	1	5	1	0	0	
Breeding		2	0	11	4	2	1	
21-Dec								
Number	11	nc	nc	nc	nc	nc	nc	2.75
Interactions		0	0	4	0	0	0	
Breeding		nc	nc	nc	nc	nc	nc	
3-Jan								
Number	2	nc	nc	nc	nc	nc	nc	1.5
Interactions		nc	nc	nc	nc	nc	nc	
Breeding		nc	nc	nc	nc	nc	nc	

The estimated number of Superb Parrots remained stable throughout the survey period, dropping off considerably by the beginning of January. For the Superb Parrot, the greatest number of aggressive interactions with potential competitors occurred with Crimson Rosella and Eastern Rosella. On virtually all occasions it was the Superb Parrots that were displaced with interactions occurring throughout the breeding season. Breeding behaviour was observed in all competing species with the most frequently recorded behaviours from the Crimson Rosella and Eastern Rosella. Apart from the Common Myna, breeding behaviours by all competitors was observed within the upper section of Throsby Ridge. In the case of the Common Myna breeding behaviour was recorded at the edge of the Ridge bordering Horse Park Drive, see Map 5.



Map 5. Location of observation of Common Myna at Throsby Ridge, ACT.

Other bird species

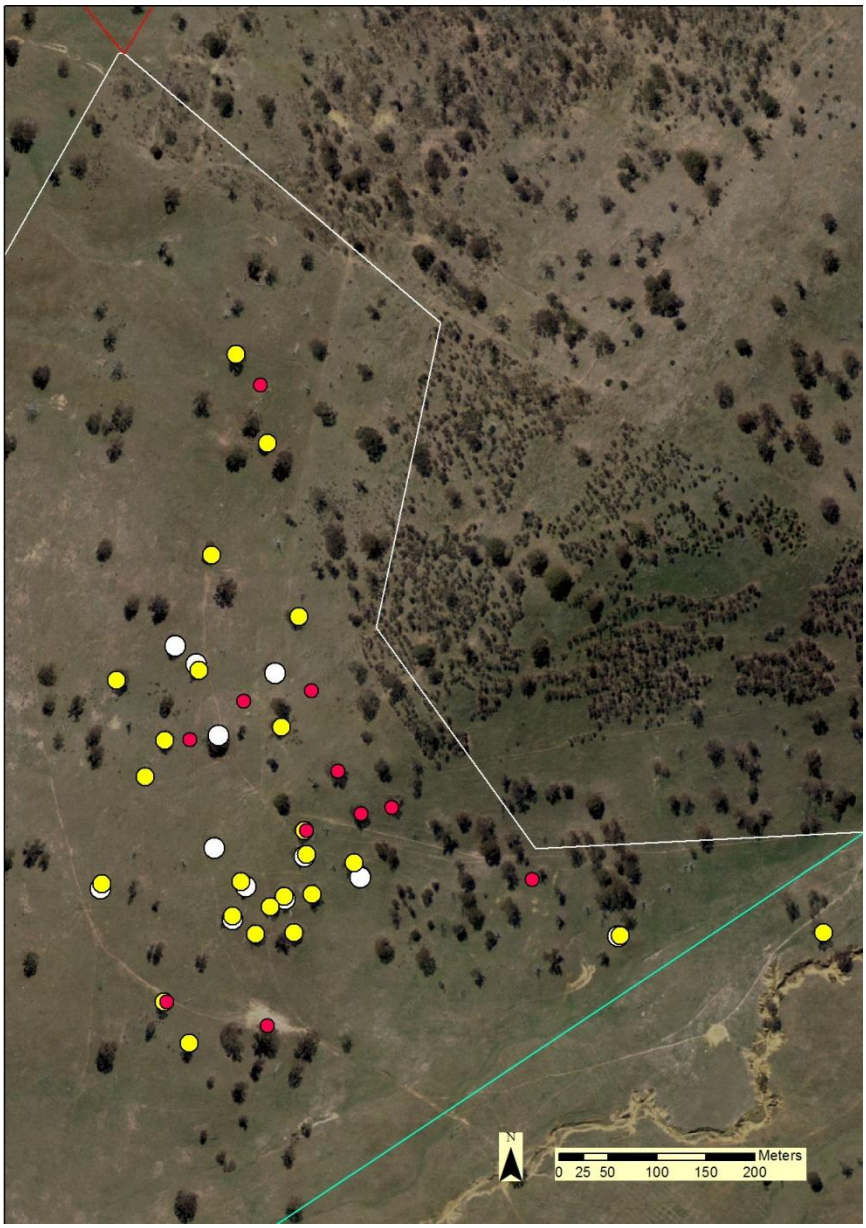
Seventy-three bird species were recorded in the survey area at Throsby Neck, Throsby Ridge and East Throsby. There were eleven species that were recorded on each survey whilst there were 15 species recorded on one survey only, see Appendix II.

Apart from the Superb Parrot, the White-winger Triller (*Lalage sueurii*) was the only other threatened species recorded. Unfortunately the geo-coordinates were not taken but they were recorded from Throsby Neck and Throsby Ridge. Sixteen species were recorded breeding.

Discussion

When comparing the records obtained during the 2009 and the 2010-11 survey of the proposed suburb of Throsby with those obtained in 2012-13, the locations of observations are very similar. There were 14 records of breeding behaviour by Superb Parrots in 2009-10 in the area, see Map 3 Davey, 2010. Of these three were in Throsby Neck and eleven from Throsby Ridge. In 2010-11 there were 13 breeding observations, see Table 3 Davey, 2011 from Throsby, all within the Ridge area. In 2012-13 there were 50 breeding observations all confined to the upper section of the Throsby Ridge bordering the present Goorooyarroo Nature Reserve.

Observations obtained in 2009-10, 2010-11 and in 2012-13 from Throsby Ridge are shown in Map 6.



Map 6. Sites of breeding observations at Throsby Ridge, red= 2009-10, white= 2010-11, yellow= 2012-13.

There was an opportunity during the 2011-12 survey to cover the upper section of Throsby Ridge in more detail than in previous surveys. Because of this it was possible to obtain a greater number of breeding behaviour observations. During previous surveys, none of the observations were confirmed during subsequent visits, and was the case for 11 sites in 2012-13 with multiple observations at 13 sites. Given that most of the breeding observations could not be confirmed within surveys, the similarity between years confirms the importance and continued use of the upper Throsby Ridge area. It is interesting that this does not appear to have been the case at Throsby Neck where breeding observations recorded in 2009 could not be confirmed in subsequent years.

Observations on emergent or free-flying, begging young recorded during the 2010-11 survey were not repeated in 2012-13. As at Central Molonglo, see Davey 2012, the lack of observations on successful breeding events could be for various reasons.

It is possible that none of the breeding events were successful for reasons unknown. The final observations on 3rd January of a pair returning to a hollow on the Ridge, both male and female looking into the hollow calling softly, remaining at the site for some minutes and then returning to Harrison, could suggest an unsuccessful breeding attempt.

As observed at Central Molonglo there appears to be very little feeding activity at the breeding site. This could suggest that there are preferred feeding resources elsewhere and that as soon as young appear they leave the breeding area. Given the area was visited at two weekly intervals it is possible that the emergence of young and their dispersal occurred between visits.

To obtain further details on breeding success, a more detailed survey is required involving frequent visits and hollow inspections possibly on marked individuals equipped with radio transmitters.

The Throsby Ridge area is dominated by *E. blakelyi*. There is a relative small area of old *E. rossii* and it would appear that breeding events are centred around these trees. Of the 24 possible sites recorded in 2012-13, 71% of these were in *E. rossii* and the presence of these old trees possibly with deep hollows may be an important reason for the location of this nesting site.

There appears to be an inconsistency between the number of Superb Parrots seen using the Throsby Ridge area and the number of possible nesting sites. The behaviour of Superb Parrots at the breeding site makes an estimate of their numbers using the area very difficult. During the early part of the morning individuals and pairs are continually coming and going and milling about the general area. Added to these complications are birds flying over the area heading elsewhere. In general, it is estimated that there were about 10 pairs using the site yet breeding observations were obtained from 24 sites, eleven of which there was only one observation. There may have been approximately ten pairs breeding in the 13 sites with multiple breeding observations, but without marked individuals and a more detailed study it is not possible to be sure.

One of the many threats to successful breeding is competition for nesting hollow resources by other bird species. Although not specifically recorded, it was noticeable that during the 2012-13 survey there were very few instances of bees using potential Superb Parrot nesting hollows. Nest competitors included Galah, Little Corella, Crimson Rosella, Eastern Rosella, Red-rumped Parrot and Common Myna.

Although the Common Starling (*Sturnus vulgaris*) and Tree Martins (*Petrochelidon nigricans*) were throughout the area, the hollows they tend to use are smaller than those preferred by the Superb Parrot, whilst the Sulphur-crested Cockatoo (*Cacatua galerita*) and Nankeen Kestrel (*Falco cenchroides*) although both breeding in the area use hollows that are larger than those used by the Superb Parrot. Neither the Laughing Kookaburra (*Dacelo novaeguineae*), Sacred Kingfisher (*Todiramphus sanctus*), Dollarbird (*Eurystomus orientalis*) nor Australian Wood Duck (*Chenonetta jubata*) was recorded as having any intention to breed in the area.

Of the potential avian competitors, all apart from the Common Myna, bred within the upper Ridge area. If housing were to encroach to within 100m of the nesting area, there is every possibility that the pressure on nesting hollow resources, especially by the Crimson Rosella and Eastern Rosella will increase. Of particular concern, however, is the Common Myna; a species known to aggressively interact for nesting hollow resources and one that at present does not appear to be using the site, possibly due to the present buffer of 600 m between the edge of the breeding site and the suburb of Harrison on Horse Park Drive.

The opportunity arises to obtain information on the required width and management of a buffer zone for Superb Parrots in an urban situation if development were to occur adjacent to the breeding site on the upper section of the Ridge. This information is not yet available for suburban development within a woodland environment. Data are available, but not yet analysed, that may help to provide information on the relationship between nesting density of Common Myna and distance from suburb edge in areas with different tree densities (Kate Grarock *pers. comm*.). The 2012-13 survey allowed the opportunity to collect information on the present competitive pressure for nesting resources and although of little use in the present survey, this index can be used as a benchmark for the future. Observations indicate that, at present, the greatest pressure is caused by the Crimson Rosella and the Eastern Rosella with no competition from the Common Myna.

Acknowledgements

I would like to thank Dr. Michael Mulvaney (Conservation, Planning and Research, ESDD) for his role as Liaison Officer between ESDD and COG and for his assistance in map preparation. I would like to thank Frank Kaveney for allowing access to the survey area.

Finally, I would like to acknowledge the members of the Canberra Ornithologists Group Lia Battisson, Jenny Smits, Sandra Henderson, Nick Nicholls, Stuart Rae, Bruce Lindenmayer, Michael Lenz and Michael Robbins for participating in the bird surveys, Jenny Bounds for reviewing the report and Peter Fullagar for help in preparing Map 2.

References

ACT Government, 1999. *Superb Parrot* (Polytelis swainsonii): *A vulnerable species* Action Plan No. 17. Environment ACT, Canberra).

Christidis, L. and Boles, W. Systematics and Taxonomy of Australian Birds. CSIRO, 2008.

Davey, C. 2010. Report on the distribution, abundance and breeding status of the Superb Parot (*Polytelis swainsoni*i) during the 2009-10 breeding season, Gungahlin, ACT. Prepared for the Canberra Ornithologists Group, April 2010.

Davey, C. 2011. Distribution, abundance and breeding status of the Superb Parot (*Polytelis swainsoni*i) during the 2010-11 breeding season, Gungahlin, ACT. Prepared for the Canberra Ornithologists Group, May 2011.

Davey, C. 2012. Distribution, abundance and breeding status of the Superb Parot (*Polytelis swainsoni*i) during the 2011-12 breeding season, central and lower Molonglo Valley, ACT. Prepared for the Canberra Ornithologists Group, April 2012.

Appendix I

Survey Guidelines for Superb Parrot
Conservation Planning and Research
August 2010

Purpose

These guidelines aim to promote a consistent and reliable method for determining the presence of Superb Parrots at sites in the ACT.

Aim

The aim is to determine whether or not the species is present at a site, which may also include determining whether breeding is occurring at the site.

Timing

Surveys should be undertaken during the period when Superb Parrots visit the ACT, which is in the spring/summer breeding season. Most birds will have arrived in the ACT by September and most will have departed by February, thus surveys should be undertaken between September and late December.

Method

Surveys should be undertaken by observers who are experienced in bird surveys (or who are experienced 'bird watchers') and who are familiar with the species. Surveys must be conducted in teams (2 individuals per team) or as single individuals. Single observers and at least 1 member of a team should be familiar with the species' call.

Surveys should be undertaken between 1 hour after sunrise and about mid-morning.

Appendix II. Bird species and dates of observation during the 2012-13 survey at Throsby, ACT.

* Species breeding in area. Bold, threatened species

Species	1/2 Oct	15/16 Oct	30/31 Oct	13-14 Nov	29/30 Nov	11/13 Dec	21-Dec
Stubble Quail				Y	Y		
Brown Quail				Y			
Australian Wood Duck		Y	Y	Y			
Pacific Black Duck	Y	Y	Y		Y	Y	
Hardhead				Y		Y	
Australasian Grebe *			Y	Y	Y	Y	
Rock Dove	Y						
Crested Pigeon		Y		Y	Y	Y	
Little Pied Cormorant			Y	Y			
Little Black Cormorant				Y			
White-necked Heron			Y	Y			
Eastern Great Egret				Y			
White-faced Heron			Y	Y	Y	Y	y
Australian White Ibis			Y				
Straw-necked Ibis			Y	Y			
Black-shouldered Kite		Y					
Brown Goshawk				Y			
Wedge-tailed Eagle					Y	Y	
Nankeen Kestrel *	Y	Y	Y	Y	Y	Y	Y
Brown Falcon						Y	y
Australian Hobby				Y	Y		
Masked Lapwing			Y		Y	Y	
Galah *	Y	Y	Y	Y	Y	Y	
Long-billed Corella *					Y	Y	y
Little Corella *	Y	Y	Y	Y	Y	Y	Y
Sulphur-crested Cockatoo *	Y	Y	Y	Y	Y	Y	Y
Superb Parrot *	Y	Y	Y	Y	Y	Y	Y
Crimson Rosella *	Y	Y	Y	Y	Y	Y	Y
Eastern Rosella *	Y	Y	Y	Y	Y	Y	Y
Red-rumped Parrot *	Y	Y	Y	Y	Y	Y	Y
Horsfield's Bronze-Cuckoo					y		
Pallid Cuckoo			Y	Y			
Laughing Kookaburra			Y	Y	Y	Y	
Sacred Kingfisher						Y	
Dollarbird						Y	
Superb Fairy-wren		Y	Y	Y	Y		

Speckled Warbler	Y						
Weebill		Y		Y	Y	Y	
Western Gerygone			Y			Y	
White-throated Gerygone	Y	Y	Y	Y	Y	Y	
Striated Thornbill		Y					
Yellow-rumped Thornbill	Y	Y	Y	Y	Y	Y	Y
Buff-rumped Thornbill	Y			Y			Y
Southern Whiteface	Y				Y		
Spotted Pardalote		Y					
Striated Pardalote *	Y	Y	Y	Y	Y	Y	
Yellow-faced Honeyeater		Y	Y				
Noisy Miner	Y	Y	Y	Y	Y	Y	
Red Wattlebird	Y	Y	Y				
Brown-headed Honeyeater				Y		Y	
Noisy Friarbird		Y	Y	Y	Y	Y	Y
Black-faced Cuckoo-shrike	Y	Y	Y	Y	Y	Y	
White-winged Triller			Y	Y			
Rufous Whistler			Y	Y	Y	Y	
Grey Shrike-thrush				Y			
Olive-backed Oriole				Y	Y		
Grey Butcherbird	Y		Y	Y	Y	Y	
Australian Magpie *	Y	Y	Y	Y	Y	Y	Y
Pied Currawong				Y		Y	
Grey Fantail	Y	Y		Y	Y	Y	
Willie Wagtail	Y	Y		Y		Y	
Australian Raven *	Y	Y	Y	Y	Y		Y
Leaden Flycatcher						Y	
Magpie-lark		Y		Y			
White-winged Chough				Y			
Rufous Songlark				Y	Y		
Silvereye			Y				
Welcome Swallow							y
Tree Martin *	Y	Y	Y	Y	Y	Y	Y
Common Starling *	Y	Y	Y	Y	Y	Y	Y
Common Myna *	Y		Y	Y	Y	Y	
Mistletoebird	Y			Y		Y	
Australasian Pipit			Y	Y	Y	Y	