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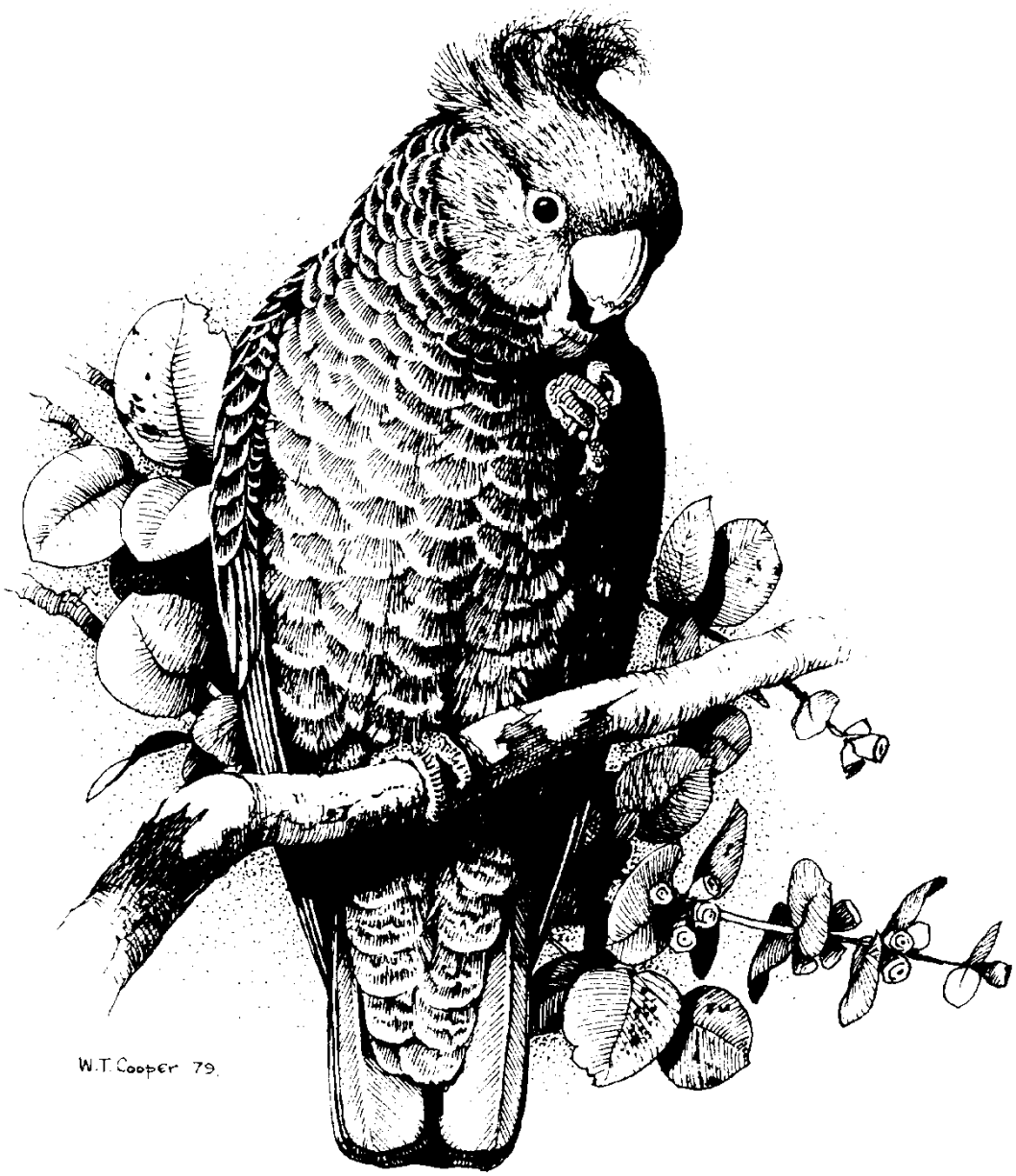

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SILVER GULLS BREEDING ON SPINNAKER ISLAND, LAKE BURLEY GRIFFIN, SPRING 2010

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Abstract: *Silver Gulls were first reported breeding on boats moored on Lake Burley Griffin in 2003 and first reported breeding on Spinnaker Island in 2008. Up to 14 nests were located on the island. We report on a series of visits to Spinnaker Island in 2010 when a maximum of 112 nests were located. The breeding season extended over a three month period starting end of September. The possibility of a further increase in size of the breeding colony is discussed..*

Background

Historically, it was predicted that Silver Gull *Chroicocephalus novaehollandiae* would be likely to breed in Canberra on islands in Lake Burley Griffin once the lake was established (van Tets 1969). Wilson (1999) noted, however, that successful breeding had still not been documented. Holland (2004a) was the first to report breeding by Silver Gulls when he described them nesting on moored boats in Lotus, Yarralumla and Orama Bays during the 2003–04 season. Holland also noted that the yachting fraternity considered the gulls a pest and that by 2004 gulls had been nesting on yachts for at least ten years previously.

At the peak of the 2003–04 breeding season it was estimated that about 30 Silver Gull nests were present on various boats, with breeding occurring from mid-July until the following March but with the last clutches not being successful (Holland, 2004a; 2004b).

Silver Gulls were first reported breeding on Spinnaker Island in Lake Burley Griffin in 2008 by Julian Robinson (Canberra Ornithologists Group, 2010. Note: first record incorrectly assigned to D. McDonald). Spinnaker Island is the only island in this lake that was formed from the top of a submerged hill, all other islands being constructed by landfill before the lake bed was flooded in 1964. On 5 December 2008 one nest with eggs was found and possibly one or two more in a small open grassy area at the eastern end of the island; 55 gulls were counted. Ten days later a more thorough survey noted 74 birds with 14 nests: five nests with eggs, four with chicks and one with a chick and an egg (the status of the remaining nests was unrecorded). There are no reports of visits to the island in 2009.

Responsibility for management of Spinnaker Island rests with the National Capital Authority (NCA). The 'Friends of Spinnaker Island', a group comprising RiverSmart Australia, the Canberra Yacht Club, Greening Australia and the Molonglo Catchment Group, received an agreement from the NCA to clear the thick, tangled and overgrown understory of blackberries, thistles and other woody weeds from Spinnaker Island and to restore the vegetation to its original condition of grassy-box woodland. With NCA funds and volunteer labour from the Canberra Yacht Club the clearing was scheduled to start in spring of 2010. In March 2010 the 'Friends of Spinnaker Island' sought comment on the proposal from the Canberra Ornithologists Group. Concern about the timing of the vegetation clearing was expressed – given the possible presence of breeding gulls. Consequently, with NCA approval, it was agreed that the clearing program would be guided by information supplied by COG to minimise any interference with the gull colony. To provide this information a series

of visits to the island was arranged to determine the location, size, breeding stages, number of nests and length of breeding season.

Observations in 2010

Three early morning visits (0900-1000 Eastern Summer Time) were made to Spinnaker Island in 2010: 22 October, 9 November and 21 December. Our nest content counts are summarised in Table 1.

Table 1. Nest contents and number of Silver Gull nests found on Spinnaker Island, Lake Burley Griffin, 2010.

	Survey Dates		
Nest contents	**22 October**	**9 November**	**21 December**
3 eggs	38	32	7
2 eggs	45	25	8
1 egg	13	19	1
2 eggs + 1 chick	2	3	-
1 egg + 2 chicks	-	-	-
1 egg + 1 chick	-	7	-
3 chicks	1	3	-
2 chicks	2	9	-
1 chick	2	16	-
Summary			
Total nests	103	112	16
Total eggs	221	178	38
Total small chicks	11	39 *	-
Total large chicks	-	8 *	-

* includes chicks found outside of nests.

In October it was estimated that about 275 adult gulls were present at the colony. In November counts from photographs suggested that about 400 adults were present, and in December three counts from a series of photographs gave a best estimate of 362 gulls. In November no runners, that is chicks that had left the nest but were unable to fly, were found but in December at least 10 runners were seen, with at least some of the birds flying at that time being young birds. It was obvious that large numbers of fledged birds were still in the general area and there were no signs of predation in the colony. However, on this visit at least 10 dead chicks were noted within the colony. The area of the colony, estimated from GPS readings in December, was 0.07 ha, which is 9% of the island.

Viewing the island with a telescope from Black Mountain Peninsular and again from the eastern peninsular at Yarralumla Bay on 15 January 2011 indicated that few adults and young were still loafing on the island and there was no indication that any incubating adults remained.

With an incubation period in the Silver Gull of about 24 days, it would appear that the first eggs were laid around the end of September 2010. From our observations, it was clear that egg laying continued up to late December, by which time the number of gulls initiating breeding seems to have declined. Because nest details from each of our visits were largely independent observations, it is reasonable to conclude that about 200 pairs were involved, although possible re-laying could have occurred by some gulls.

Unfortunately, it is not possible to compare the size of the colony in 2008 with that in 2010. In December 2008 there were 14 nests and in 2010 there were 16 nests. There were no visits in October or November 2008 to compare with the 103 and 112 nests recorded in 2010. Even so, the December

count of 55 and 74 birds compared with the count of 362 suggests a much greater number of birds using the colony in 2010. With clearing of the vegetation on Spinnaker Island the entire island can now be regarded as ideal nesting habitat for Silver Gulls. It is also of interest to note that since Silver Gulls have begun breeding on Spinnaker Island they no longer nest on moored boats.

We conclude that it is likely that the number of young gulls produced on Spinnaker Island may greatly increase in the near future. Consideration, therefore, needs to be given to the management of the gulls on the island should they become so numerous as to become a nuisance.

Acknowledgements

We thank Dr. Bill Phillips (CEO, RiverSmart Australia) for organizing our visits to Spinnaker Island in 2010 and to Matthew Owen (CEO Canberra Yacht Club) for providing boat transport to and from the island on each occasion.

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THE CANBERRA BIRD BLITZ 2010

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***Abstract**. This paper describes the conduct of Canberra's sixth 'bird blitz' held on 30-31October 2010, outlines some findings and provides comparisons with the blitzes of the five previous years.*

Introduction

On Saturday 30 and Sunday 31 October 2010, the Canberra Ornithologists Group (COG) conducted its sixth 'bird blitz', a now-annual event held on the last weekend in October.

Our main aims are to record all species of bird present in the ACT over that weekend in all major habitats, to obtain a broad indication of their abundance, and to record breeding status. To achieve this, we set out to conduct a minimum of one 20-minute 2-hectare survey within each of the 165 grid cells covering the ACT (a 2.5-minute grid on lines of latitude and longitude, so each cell measures approximately 3.5 km by 4.5 km). By this exercise, we also hope to encourage more of our members to get out, survey and submit datasheets.

The data collected are entered in the COG Atlas database, and subsequently contributed to the Birds Australia Atlas database. They are available for scientific purposes and as an input to Canberra land use planning.

Conduct of the blitz

Participants register for their preferred locations or grid cells, on a first-in, best-dressed basis. In the allocation process, some site preference is given to members who survey given sites on a regular basis. More tardy volunteers are cajoled by the organiser into surveying the remaining sites. Less experienced birders may accompany more experienced birders who indicate a willingness to take them along. And as a modest inducement to participants, a variety of prizes are on offer, courtesy of our members.

Participants are allowed to choose their preferred methodology from the three Birds Australia Atlas options: a 20-minute/2-ha survey; within 500 m of a central point, for >20 mins; or within 5 km of a central point, for >20 mins (with the proviso that the survey in all cases remains within a given COG grid cell). Incidental records are also welcomed.

Results and discussion

Operational issues

Our chosen weekend in 2010 was marked by heavy rain overnight on the Saturday and early Sunday morning, after which it cleared and enabled most of the Sunday surveys to go ahead. Previous rain however ensured that access to some of the Namadgi National Park trails was prevented.

Level of participation

At least 84 COG members and friends took part in the blitz, plus a number of unnamed 'extras' (a list of known participants is at Table 1). This compares with the 84 participants in 2009, 86 in 2008, 83 in 2007, 62 in 2006 and 75 in 2005. The relatively stable participation level over the last four years shows that COG members have not as yet grown weary of this spring event. As usual, if information gleaned from the 'number surveying' box on the datasheet is taken into consideration, we would have achieved a participation level of well above 100.

Despite the modest level of uncertainty about the numbers participating, we

achieved our aim of encouraging a few more of our members to survey. There were 15 named individuals who participated in the blitz for the first time in 2010. Twenty-three hardy souls warmed to the task and blitzed for part or all of the two days.

Coverage

We achieved a reasonable coverage of the ACT in this sixth blitz, with surveys conducted in 95 of the 165 possible grid cells (58%), compared with 112 in 2009, 118 in 2008, 132 in 2007, 99 in 2006 and 109 in 2005. Total coverage was not possible as, as mentioned above, many grid cells in Namadgi National Park were closed to vehicular access. However, virtually all major habitat types were covered.

The number of datasheets received per grid cell is shown in Figure 1. As usual, the more popular birding spots and/or easily accessed locations attracted greater coverage, with 15 datasheets being received for J13, covering Aranda Bushland and Mt Painter Nature Reserves; nine for M11, particularly Goorooyarroo Nature Reserve; and eight for L14, including Jerrabomberra Wetlands, Molonglo Reach and the Fyshwick sewage ponds. These and other nature parks and reserves proved yet again to be the richest bird areas, notwithstanding the experience of the observers or the time spent surveying. It is possible, and even likely, that this effect is magnified by the familiarity of many participants with the areas they chose to survey.

The possible total of 165 grid cells in the ACT includes cells which are only partly in the ACT. It has been argued that we could legitimately base our grid cell total on those cells totally within the ACT. Many surveys, however, were conducted in the ACT portion of cells only partly in the ACT, and it would have been unfortunate to discount them on a technicality.

Datasheets received in time for analysis

Participants returned 255 eligible datasheets for the 2010 blitz weekend, down from the 270 datasheets of 2009, 338 datasheets of 2008, 316 in 2007, 242 in 2006 and 254 in 2005. The percentage contribution of the

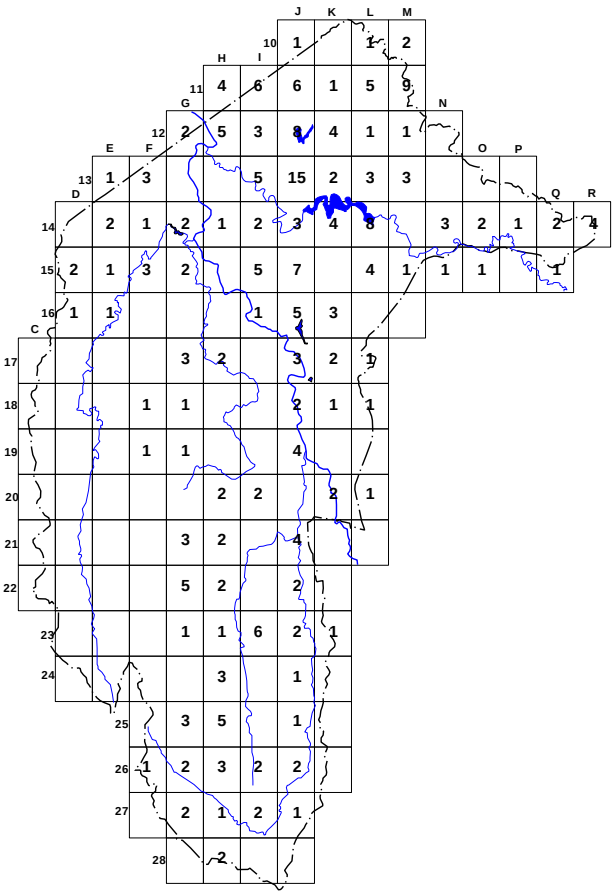

Figure 1: Number of datasheets per grid cell, 2010 blitz.

blitz datasheets to the overall number of datasheets for the COG area of interest will not be known until the full-year figures for datasheets are in for 2010-11. However, it is likely to once again be in the order of 10%.

Type of survey

Participants were given the option of choosing their survey type to best fit the grid cell or location they were surveying, and to allow for personal preference and

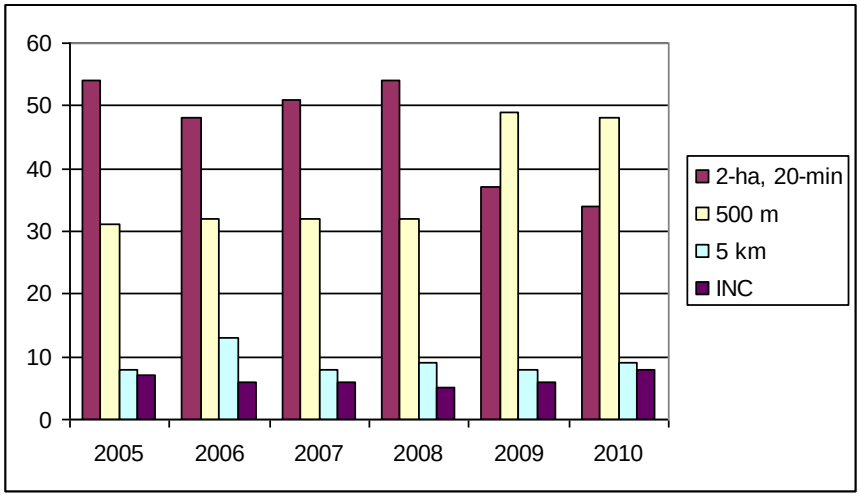

Figure 2. Survey type (percentages) between 2005 and 2010.

time or other constraints. Contrary to the experience of the early blitz years (see Figure 2), more blitzers adopted the Birds Australia Atlas 'within 500 m of a central point' option. Of the eligible datasheets, 88 (35%) were for 2-ha surveys; 123 (48%) were for surveys within 500 m of a central point; 23 (9%) were for surveys within 5 km of a central point (though in effect they had to be within a smaller area, to remain within a COG grid cell); and 21 (8%) were for incidental records. A similar pattern was recorded the previous year and the explanation for it is likely to be the organiser's stressing that if blitzers felt they needed more than 20 minutes to cover their site comprehensively, then the better option would be to choose the 'within 500 m' with a minimum of 20 minutes but no maximum time limit. And some elected to spend hours at their special spot. This almost certainly explained the reduced number of datasheets received, as the total time spent surveying was similar in both years.

Choice of day

Considerably more surveys were conducted on the Saturday, 162 (63%), compared with 94 (37%) for Sunday. The weather obviously had an influence here.

Species recorded

As Figure 3 and Table 2 shows, 155 species of bird were recorded in the ACT over the two blitz days. This compares with 176 in 2009, 173 in 2008, 164 in 2007, 161 in 2006, and 157 in 2005. When the six blitz years are considered, 196 species have been recorded in any of the six blitz years, while 132 species have been recorded every year. By way of comparison, the species total for all of the financial year 2009-10 and for the whole of COG's area of concern, as recorded in COG's annual bird report, was 234 species from 235 grid cells (COG 2011).

As Table 2 shows, eight species not recorded in 2009 were recorded in 2010. Some of these, such as the Indian Peafowl, were inadvertent omissions in 2009, when their known location was not surveyed. Records of some high country specialties such as Pilotbird came thanks to a researcher who desisted from his banding work sufficiently long to complete a blitz datasheet.

Forty-one species which had been recorded in previous blitzes were not recorded in 2010. Some of these misses were arid zone specialists such as the Black-tailed Native-hen; their absence was to be expected, given more clement conditions in the inland of Australia. Others such as the Great Crested Grebe and Glossy Ibis cannot be relied on to appear in the ACT on a regular basis. Based on previous experience, we might have expected to find more quail, crakes and rails, Restless Flycatcher, and Black-shouldered and Whistling Kites. We again missed out on recording nightbirds such as the Australian Owlet-nightjar and the Powerful Owl.

A surprising highlight of the 2010 blitz was the appearance of a Channel-billed Cuckoo, a very occasional visitor to the ACT. Another first for the blitz was the Chestnut-rumped Heathwren, though the location of a small group of this species has been known for some time.

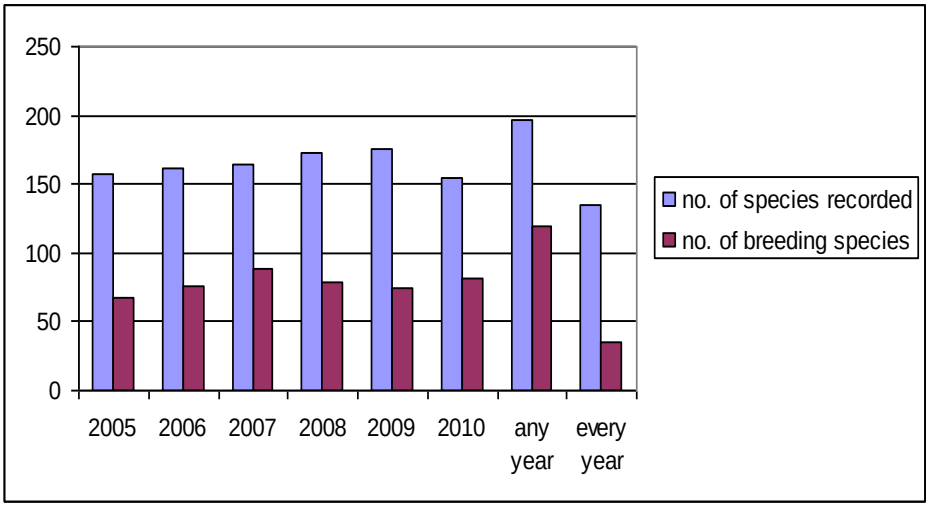

Figure 3. Numbers of species recorded, and recorded breeding, between 2005 – 2010.

It was encouraging to see the continued resurgence of several species badly affected by the aftermath of the 2003 fires: Superb Lyrebird, Eastern Whipbird, Spotted Quail-thrush and Cicadabird.

The expected cuckoo species were mostly recorded, and in increasing numbers: Pallid Cuckoo (11 records), Brush Cuckoo (7), Fan-tailed Cuckoo (43), Horsfield's Bronze-Cuckoo (5) and Shining Bronze-Cuckoo (14). By contrast three possible raptor species, the Whistling Kite, the Black-shouldered Kite and the White-bellied Sea-Eagle, were not recorded and raptor numbers were relatively low overall; only the Nankeen Kestrel, with 35 records, and the Wedge-tailed Eagle (16) could be deemed 'common'.

During the 2010 blitz, 83 species (54% of the 155 species recorded) were recorded as breeding, when the broadest possible indicators of breeding were used. As shown in Table 2, this compares with 75 breeding species in the 2009 blitz, 77 in 2008, 87 in 2007, 76 in 2006 and 67 in 2005. Although not strictly comparable, across all of COG's area of concern in 2009-10, 128 species were recorded as breeding (COG 2010).

The species most commonly recorded as breeding was once again the Australian Magpie, with 55 breeding records. This is no surprise, as the maggie is common, easily recognisable, breeds early and the dependent young are particularly vocal. And again in second place, regrettably, was the introduced Common Starling with 32 indications of breeding. Other relatively common breeding species were the Pied Currawong (with 11 breeding records), Red Wattlebird (9), Magpie-lark (12), Crimson Rosella (11), Galah (9), Black Swan (12), Striated Pardalote (12) and White-winged Chough (11). Three species were recorded as breeding during the blitz surveys for the first time: Black-fronted Dotterel; Eastern Koel and Golden-headed Cisticola. Breeding highlights for 2010 included records for three species listed as vulnerable in the ACT: Little Eagle (on); Varied Sittella (on and ny); and Superb Parrot (ih).

Most frequently recorded species

The ten most frequently recorded species overall in the 2010 blitz, in rank order (with the 2009 blitz ranking in parentheses) were:

Australian Magpie – 181 records (1)
Superb Fairy-wren – 148 records (6).
Crimson Rosella – 140 records (2)
Pied Currawong – 135 records (5)
Grey Fantail – 133 records (4)
Sulphur-crested Cockatoo – 131 records (9)
Red Wattlebird -122 records (6)
Australian Raven – 122 records (8)

Galah – 117 (outside top ten)
Striated Pardalote – 117 records (10)

Nine of the above species made the top ten last year as well, with only the Yellow-faced Honeyeater dropping out, to be replaced by the Galah. The modest jockeying for rank is probably more a reflection of the proportion of habitats surveyed than of relative abundance. Comparing the blitz top ten with the Annual Bird Report top ten for 2009-10, we find that eight of the species overlap.

Species recorded only once in 2010 blitz
Eighteen species were recorded only once in the 2010 blitz, and usually in low numbers:

1. Indian Peafowl
2. Australasian Shoveler
3. Hardhead
4. Hoary-headed Grebe
5. Spotted Dove
6. Australian Spotted Crake
7. Painted Button-quail
8. Long-billed Corella
9. Red-browed Treecreeper
10. Chestnut-rumped Heathwren
11. White-fronted Chat
12. Crescent Honeyeater
13. Spotted Quail-thrush
14. Cicadabird
15. Crested Shrike-tit
16. Red-capped Robin
17. Rose Robin
18. Hooded Robin

While some are relatively uncommon species and one record is in itself an achievement, the low number of records of others are more puzzling. The ducks may have been profiting from more suitable conditions inland, while the high-country specialists may hopefully be present in greater numbers but were simply not picked up on the survey days.

Species not recorded
As indicated above, some of the 2010 omissions included species known to be present in the ACT at the time and which simply proved elusive on the blitz weekend. Others, such as the Glossy Ibis and Cattle Egret, are species whose presence cannot be relied on in the ACT. Species unrecorded in all six blitzes include bitterns, Olive Whistler and Zebra Finch. Nocturnal birds are particularly likely to be under-recorded.

Vulnerable species
No endangered species was recorded in the 2010 blitz, but six species regarded as vulnerable in the ACT were: Little Eagle, Hooded Robin, Superb Parrot, Brown Treecreeper, Varied Sittella and White-winged Triller. One newly listed vulnerable species, the Glossy Black-Cockatoo, was not recorded.

There was only a single record of the Hooded Robin, a lone male at Goorooyarroo. This compares with three blitz records in 2009 and 26 for the overall COG area of concern in the year 2009-10.

Superb Parrots (7 records, of 1-2 birds) were seen in three grid cells in their now-usual haunts in the north and north-west of the ACT. One possible indicator of breeding (ih) was recorded. While this result is fewer than last year's 10 blitz records, these well-named parrots are becoming a reassuringly regular sight each year in Canberra's north.

Brown Treecreepers were recorded seven times, with a range of 1-8 birds, from Glendale Depot, Goorooyarroo, Castle Hill, "Kama", and three locations along the Old Boboyan Rd. There were no breeding records, however.

There were nine records of Varied Sittella, from eight distinct grid cells, with abundances ranging from 1-6 birds. Breeding (on and ny) was recorded.

The three White-winged Triller records of 1-2 birds, from three distinct areas, showed another decline, compared with last year's 14, 24 in 2008 and 41 in the 2007 blitz. This was an expected decline, however, given

more suitable conditions in their core habitat.

Little Eagles (1-2 birds) were recorded seven times, from Jerrabomberra Wetlands, Campbell Park, Shepherds Lookout and West Macgregor. This probably represents only two breeding pairs, however. West Macgregor was again the site of a breeding event, with a bird recorded on a nest.

Conclusions and lessons for the future

In terms of our aims, the blitz has increased significantly the amount of available data about Canberra's birds. It is likely that several of the grid cells surveyed would not have been covered other than through the targeted efforts of the blitz. The blitz data will be made available to the managers of the Canberra nature reserves and Namadgi National Park. Over time, we anticipate that the annual blitz will help to establish trends. A major lesson to be drawn from the blitzes to date is that, when prompted, more of our members will get out, survey, and submit datasheets. And as in previous years, many blitzers took the opportunity to spend longer than their regular 20 minutes surveying their special spots.

As for the results, there was, inevitably, an element of 'luck of the day' and the final species total is not of huge significance. The blitz breeding observations, however, contribute disproportionately to our overall knowledge of bird breeding in Canberra. Given the tendency of our vulnerable species to have a patchy distribution, any information about their distribution, numbers and breeding status is valuable, particularly in those areas which are due to have significant land use decisions made in the near future. The blitz results reinforce the critical importance of the contribution of Canberra's nature parks and reserves to bird conservation.

Acknowledgments

First and foremost, thanks must go to all COG members who participated in the blitz (Table 1), and particularly to those who put in two full days in sometimes challenging areas in sometimes less than ideal weather conditions. The assistance of staff at Namadgi National Park in providing advice, and access to areas behind locked gates, is greatly appreciated. Nicki Taws' expertise with mapping software is greatly appreciated, as always. And sincere thanks go to all those COG members who donated prizes.

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Table 1. Known blitz participants 2010

Barbara Allan	*Ian Anderson*	*Frank Antram*
Shaun Bagley	*Lia Battison*	*Sue Beatty*
Darryl Beaumont	*Jamie Begg*	*Terry Bell*
Tim Birch	*Rosemary Blemings*	*Con Boekel*
Jenny Bounds	*John Brannan*	*Muriel Brookfield*
Erin Brown	*Martin Butterfield*	*Jean Casburn*
Grahame Clark	*Roger Curnow*	*Geoffrey Dabb*
Chris Davey	*Marthijn de Kool*	*Eva de Kool*
Paul Fennell	*Matthew Frawley*	*Peter Fullagar*
Malcolm Fyfe	*Rob Geraghty*	*Phyl Goddard*
Bill Graham	*Jim Graham*	*Jeannie Gray*
Jane Green	*Horst Hahne*	*Kay Hahne*
Stuart Harris	*Roy Harvey*	*Tobias Hayashi*
Sandra Henderson	*Jack Holland*	*Anne Holmes*
Shirley Kral	*Meryl Joyce*	*Julienne Kamprad*
Bruce Lindenmayer	*David Landon*	*Sue Lashko*
Paul Mackerras	*Rod Mackay*	*Alison Mackerras*
Duncan McCaskill	*Dan Mantle*	*Sue Mathews*
Pat Moffat	*Peter Milburn*	*Martyn Moffat*
Gail Neumann	*Miranda Moffat*	*Terry Munro*
Lucy Randall	*Vivien Pinder*	*Stuart Rae*
Michael Robbins	*Laura Rayner*	*David Rees*
Susan Robertson	*Bill Robertson*	*Margaret Robertson*
Kathryn Smith	*Julian Robinson*	*David Rosalky*
Nicki Taws	*Karen Stagoll*	*Ingrid Stirnemann*
Philip Veerman	*Julian Teh*	*Meredith Teh*
Louise Wangerer	*Ben Walcott*	*Ros Walcott*
Marnix Zwankhuizen	*Tony Willis*	*Kevin Windle*

Table 2. Species recorded during the 2005 - 2010 blitzes [X=present;*=breeding].

Common name	Scientific name	2005	2006	2007	2008	2009	2010
Emu	*Dromaius novaehollandiae*	X		X	X		
Stubble Quail	*Coturnix pectoralis*		X			X	
Brown Quail	*Coturnix ypsilophora*		X	X	X	X	
Indian Peafowl	*Pavo cristatus*	X			X		X
Magpie Goose	*Anseranas semipalmata*				X	X	
Musk Duck	*Biziura lobata*	X	X*		X*	X*	
Black Swan	*Cygnus atratus*	X*	X*	X*	X*	X*	X*
Australian Wood Duck	*Chenonetta jubata*	X*	X*	X*	X*	X*	X*
Pink-eared Duck	*Malacorhynchus membranaceus*		X	X		X	
Australasian Shoveler	*Anas rhynchotis*	X	X*	X	X*	X	X*
Grey Teal	*Anas gracilis*	X*	X	X*	X*	X	X*
Chestnut Teal	*Anas castanea*	X	X	X*	X	X	X
Pacific Black Duck	*Anas superciliosa*	X*	X*	X*	X*	X*	X*
Hardhead	*Aythya australis*	X	X	X*	X	X	X
Blue-billed Duck	*Oxyura australis*	X	X		X	X	
Australasian Grebe	*Tachybaptus novaehollandiae*	X*	X	X*	X*	X	X*
Hoary-headed Grebe	*Poliocephalus poliocephalus*	X	X	X	X	X	X
Great Crested Grebe	*Podiceps cristatus*	X					
Rock Dove	*Columba livia*	X	X	X	X	X	X
Spotted Dove	*Streptopelia chinensis*				X	X	X
Common Bronzewing	*Phaps chalcoptera*	X	X	X	X*	X	X*
Brush Bronzewing	*Phaps elegans*					X	
Crested Pigeon	*Ocyphaps lophotes*	X*	X*	X*	X*	X*	X*
Peaceful Dove	*Geopelia striata*	X	X		X	X	
Wonga Pigeon	*Leucosarcia picata*	X			X		
Tawny Frogmouth	*Podargus strigoides*	X*	X*	X*	X*	X*	X*
Australian Owlet-nightjar	*Aegotheles cristatus*				X		
Australasian Darter	*Anhinga novaehollandiae*	X	X*	X*	X*	X*	X*
Little Pied Cormorant	*Microcarbo melanoleucos*	X	X	X*	X*	X*	X*
Great Cormorant	*Phalacrocorax carbo*	X	X	X	X	X	X
Little Black Cormorant	*Phalacrocorax sulcirostris*	X	X	X	X	X	X*
Pied Cormorant	*Phalacrocorax varius*			X	X	X	
Australian Pelican	*Pelecanus conspicillatus*	X	X		X	X	X
White-necked Heron	*Ardea pacifica*		X	X		X	
Eastern Great Egret	*Ardea modesta*		X	X	X	X	X
Intermediate Egret	*Ardea intermedia*				X		X
Cattle Egret	*Ardea ibis*		X				

Common name	**Scientific name**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
White-faced Heron	*Egretta novaehollandiae*	X*	X*	X*	X	X	X*
Little Egret	*Egretta garzetta*				X		
Nankeen Night Heron	*Nycticorax caledonicus*	X	X	X	X	X	X
Glossy Ibis	*Plegadis falcinellus*		X	X			
Australian White Ibis	*Threskiornis molucca*	X	X	X*	X*	X*	X*
Straw-necked Ibis	*Threskiornis spinicollis*		X	X	X	X	
Royal Spoonbill	*Platalea regia*		X	X	X	X	X
Black-shouldered Kite	*Elanus axillaris*	X	X	X	X	X	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*			X	X		
Whistling Kite	*Haliastur sphenurus*	X	X	X*	X	X	
Brown Goshawk	*Accipiter fasciatus*	X*	X*	X*	X*	X*	X*
Collared Sparrowhawk	*Accipiter cirrhocephalus*	X	X	X*	X	X	X
Swamp Harrier	*Circus approximans*	X	X	X	X		X
Wedge-tailed Eagle	*Aquila audax*	X	X	X	X	X*	X*
Little Eagle	*Hieraaetus morphnoides*	X	X	X	X*	X*	X*
Nankeen Kestrel	*Falco cenchroides*	X*	X*	X*	X*	X	X
Brown Falcon	*Falco berigora*	X	X	X*	X	X	X
Australian Hobby	*Falco longipennis*	X	X	X*	X*	X*	X*
Peregrine Falcon	*Falco peregrinus*	X	X	X	X	X	X*
Purple Swamphen	*Porphyrio porphyrio*	X*	X*	X*	X*	X*	X*
Buff-banded Rail	*Gallirallus philippensis*		X		X	X	
Baillon's Crake	*Porzana pusilla*				X	X	
Australian Spotted Crake	*Porzana fluminia*			X		X	X
Black-tailed Native-hen	*Gallinula ventralis*					X	
Dusky Moorhen	*Gallinula tenebrosa*	X*	X*	X*	X*	X*	X*
Eurasian Coot	*Fulica atra*	X*	X	X*	X*	X*	X*
Black-winged Stilt	*Himantopus himantopus*			X		X	
Black-fronted Dotterel	*Elseyornis melanops*	X	X	X	X	X	X*
Red-kneed Dotterel	*Erythrogonys cinctus*		X	X	X	X	
Banded Lapwing	*Vanellus tricolor*					X	
Masked Lapwing	*Vanellus miles*	X*	X*	X*	X*	X*	X*
Latham's Snipe	*Gallinago hardwickii*	X	X	X	X	X	X
Bar-tailed Godwit	*Limosa lapponica*			X			
Sharp-tailed Sandpiper	*Calidris acuminata*	X		X		X	
Painted Button-quail	*Turnix varius*	X			X	X	X
Whiskered Tern	*Chlidonias hybrida*				X	X	
Silver Gull	*Chroicocephalus novaehollandiae*	X*	X*	X*	X	X	X
Glossy Black-Cockatoo	*Calyptorhynchus lathami*	X	X		X		

Common name	**Scientific name**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*	X	X	X	X*	X	X
Gang-gang Cockatoo	*Callocephalon fimbriatum*	X	X	X	X	X*	X
Major Mitchell's Cockatoo	*Cacatua leadbeateri*			X			
Galah	*Eolophus roseicapillus*	X*	X*	X*	X*	X*	X*
Long-billed Corella	*Cacatua tenuirostris*				X		X
Little Corella	*Cacatua sanguinea*	X*	X*	X*	X*	X	X
Sulphur-crested Cockatoo	*Cacatua galerita*	X*	X*	X*	X*	X*	X*
Cockatiel	*Nymphicus hollandicus*					X	
Rainbow Lorikeet	*Trichoglossus haematodus*	X	X	X	X*	X	X
Australian King-Parrot	*Alisterus scapularis*	X	X	X	X*	X	X*
Superb Parrot	*Polytelis swainsonii*	X	X*	X*	X	X*	X*
Crimson Rosella	*Platycercus elegans*	X*	X*	X*	X*	X*	X*
Eastern Rosella	*Platycercus eximius*	X*	X*	X*	X*	X*	X*
Red-rumped Parrot	*Psephotus haematonotus*	X*	X*	X*	X*	X*	X*
Turquoise Parrot	*Neophema pulchella*					X	
Eastern Koel	*Eudynamys orientalis*			X	X		X*
Channel-billed Cuckoo	*Scythrops novaehollandiae*						X
Horsfield's Bronze-Cuckoo	*Chalcites basalis*	X	X*	X	X	X*	X
Shining Bronze-Cuckoo	*Chalcites lucidus*	X*	X*	X	X	X	X
Pallid Cuckoo	*Cacomantis pallidus*	X	X	X	X	X	X
Fan-tailed Cuckoo	*Cacomantis flabelliformis*	X	X	X*	X	X	X
Brush Cuckoo	*Cacomantis variolosus*	X	X	X	X	X	X
Powerful Owl	*Ninox strenua*					X	
Southern Boobook	*Ninox novaeseelandiae*	X			X		X
Laughing Kookaburra	*Dacelo novaeguineae*	X*	X*	X	X	X*	X
Red-backed Kingfisher	*Todiramphus pyrrhopygius*			X	X		
Sacred Kingfisher	*Todiramphus sanctus*	X*	X*	X*	X	X*	X*
Rainbow Bee-eater	*Merops ornatus*	X	X	X*	X*	X	X*
Dollarbird	*Eurystomus orientalis*	X	X	X*	X	X*	X*
Superb Lyrebird	*Menura novaehollandiae*	X	X	X	X	X	X
White-throated Treecreeper	*Cormobates leucophaea*	X	X*	X*	X*	X*	X*
Red-browed Treecreeper	*Climacteris erythrops*	X	X	X		X	X
Brown Treecreeper	*Climacteris picumnus*	X	X	X*	X*	X*	X
Satin Bowerbird	*Ptilonorhynchus violaceus*	X	X	X	X*	X*	X
Superb Fairy-wren	*Malurus cyaneus*	X*	X*	X*	X*	X*	X*
Pilotbird	*Pycnoptilus floccosus*	X				X	X

Common name	Scientific name	2005	2006	2007	2008	2009	2010
White-browed Scrubwren	*Sericornis frontalis*	X*	X*	X*	X*	X*	X
Chestnut-rumped Heathwren	*Hylacola pyrrhopygia*						X
Speckled Warbler	*Chthonicola sagittata*	X*	X	X*	X*	X*	X*
Weebill	*Smicrornis brevirostris*	X*	X	X*	X*	X	X*
Western Gerygone	*Gerygone fusca*	X	X	X	X	X	X
White-throated Gerygone	*Gerygone albogularis*	X*	X	X*	X	X	X*
Striated Thornbill	*Acanthiza lineata*	X*	X*	X*	X	X*	X*
Yellow Thornbill	*Acanthiza nana*	X	X	X	X	X*	X*
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	X*	X*	X*	X*	X*	X*
Buff-rumped Thornbill	*Acanthiza reguloides*	X*	X*	X*	X*	X*	X*
Brown Thornbill	*Acanthiza pusilla*	X	X*	X*	X	X*	X*
Southern Whiteface	*Aphelocephala leucopsis*	X	X*	X	X	X	X
Spotted Pardalote	*Pardalotus punctatus*	X*	X*	X*	X*	X*	X*
Striated Pardalote	*Pardalotus striatus*	X*	X*	X*	X*	X*	X*
Eastern Spinebill	*Acanthorhynchus tenuirostris*	X*	X*	X	X	X	X
Yellow-faced Honeyeater	*Lichenostomus chrysops*	X	X*	X	X*	X*	X
White-eared Honeyeater	*Lichenostomus leucotis*	X*	X	X*	X*	X*	X
Fuscous Honeyeater	*Lichenostomus fuscus*	X*	X	X*	X*	X	X*
White-plumed Honeyeater	*Lichenostomus penicillatus*	X*	X*	X*	X*	X*	X*
Noisy Miner	*Manorina melanocephala*	X*	X*	X*	X*	X*	X*
Red Wattlebird	*Anthochaera carunculata*	X*	X*	X*	X*	X*	X*
White-fronted Chat	*Epthianura albifrons*					X	X
Crescent Honeyeater	*Phylidonyris pyrrhopterus*				X	X	X
New Holland Honeyeater	*Phylidonyris novaehollandiae*	X	X*	X*	X	X	X
Brown-headed Honeyeater	*Melithreptus brevirostris*	X	X	X	X*	X	X
White-naped Honeyeater	*Melithreptus lunatus*	X	X	X	X*	X*	X
Noisy Friarbird	*Philemon corniculatus*	X*	X*	X*	X*	X*	X*
Spotted Quail-thrush	*Cinclosoma punctatum*	X	X	X	X	X	X
Eastern Whipbird	*Psophodes olivaceus*		X	X	X	X	X
Varied Sittella	*Daphoenositta chrysoptera*	X*	X*	X*	X	X*	X*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	X	X*	X*	X*	X*	X*
Cicadabird	*Coracina tenuirostris*				X	X	X
White-winged Triller	*Lalage sueurii*	X*	X*	X*	X	X	X
Crested Shrike-tit	*Falcunculus frontatus*	X	X*	X	X	X	X
Golden Whistler	*Pachycephala*	X	X	X	X	X	X

Common name	Scientific name	2005	2006	2007	2008	2009	2010
	pectoralis						
Rufous Whistler	*Pachycephala rufiventris*	X*	X*	X*	X*	X	X*
Grey Shrike-thrush	*Colluricincla harmonica*	X	X*	X*	X*	X	X*
Olive-backed Oriole	*Oriolus sagittatus*	X	X	X*	X*	X	X*
Masked Woodswallow	*Artamus personatus*		X	X	X	X	
White-browed Woodswallow	*Artamus superciliosus*		X*	X*	X	X	
Dusky Woodswallow	*Artamus cyanopterus*	X*	X*	X*	X*	X*	X*
Grey Butcherbird	*Cracticus torquatus*	X*	X*	X	X	X*	X*
Australian Magpie	*Cracticus tibicen*	X*	X*	X*	X*	X*	X*
Pied Currawong	*Strepera graculina*	X*	X*	X*	X*	X*	X*
Grey Currawong	*Strepera versicolor*	X	X	X*	X*	X*	X*
Rufous Fantail	*Rhipidura rufifrons*	X		X	X	X	X
Grey Fantail	*Rhipidura albiscapa*	X*	X*	X	X*	X*	X*
Willie Wagtail	*Rhipidura leucophrys*	X*	X*	X*	X*	X*	X*
Australian Raven	*Corvus coronoides*	X*	X*	X*	X*	X*	X*
Little Raven	*Corvus mellori*	X*	X	X*	X*	X*	X*
Leaden Flycatcher	*Myiagra rubecula*	X*	X*	X*	X*	X	X*
Satin Flycatcher	*Myiagra cyanoleuca*	X	X	X	X	X	X
Restless Flycatcher	*Myiagra inquieta*	X	X	X		X	
Magpie-lark	*Grallina cyanoleuca*	X*	X*	X*	X*	X*	X*
White-winged Chough	*Corcorax melanorhamphos*	X*	X*	X*	X*	X*	X*
Jacky Winter	*Microeca fascinans*	X	X*	X	X	X	X
Scarlet Robin	*Petroica boodang*	X*	X*	X	X*	X*	X
Red-capped Robin	*Petroica goodenovii*	X	X*	X*	X	X	X*
Flame Robin	*Petroica phoenicea*	X	X*	X*	X*	X*	X*
Rose Robin	*Petroica rosea*	X	X	X	X	X	X
Hooded Robin	*Melanodryas cucullata*	X*	X*	X*	X	X*	X
Eastern Yellow Robin	*Eopsaltria australis*	X*	X*		X	X	X
Eurasian Skylark	*Alauda arvensis*	X	X	X	X*	X	X
Golden-headed Cisticola	*Cisticola exilis*	X	X	X	X	X	X*
Australian Reed-Warbler	*Acrocephalus australis*	X*	X	X	X	X*	X*
Little Grassbird	*Megalurus gramineus*	X	X	X	X	X*	X
Rufous Songlark	*Cincloramphus mathewsi*	X	X	X	X	X	X
Brown Songlark	*Cincloramphus cruralis*	X*	X	X*	X	X	
Silvereye	*Zosterops lateralis*	X	X	X*	X	X	X*
Welcome Swallow	*Hirundo neoxena*	X*	X*	X*	X*	X*	X*
Fairy Martin	*Petrochelidon ariel*	X	X	X*	X*	X*	X*
Tree Martin	*Petrochelidon nigricans*	X*	X*	X*	X*	X*	X*
Bassian Thrush	*Zoothera lunulata*	X	X		X	X	
Common Blackbird	*Turdus merula*	X*	X	X*	X	X	X

Common name	**Scientific name**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Common Starling	*Sturnus vulgaris*	X*	X*	X*	X*	X*	X*
Common Myna	*Sternus tristis*	X*	X*	X*	X*	X*	X*
Mistletoebird	*Dicaeum hirundinaceum*	X*	X	X	X	X*	X*
Double-barred Finch	*Taeniopygia bichenovii*	X	X*	X*	X*	X	X
Red-browed Finch	*Neochmia temporalis*	X*	X*	X*	X*	X*	X*
Diamond Firetail	*Stagonopleura guttata*	X	X	X	X	X	X
House Sparrow	*Passer domesticus*	X*	X*	X*	X*	X*	X*
Australasian Pipit	*Anthus novaeseelandiae*	X	X	X*	X*	X*	X*
European Goldfinch	*Carduelis carduelis*	X	X*	X	X	X	X
Common Greenfinch	*Chloris chloris*	X				X	X
Mallards, Black Duck-Mallard hybrids and variants		X	X	X	X	X	X

Notes:
Domestic ducks and geese, which frequent the lakes, have been excluded, as have domestic chickens even when recorded far from civilisation. The peafowl have been included as they appear to be a naturally reproducing "wild" population, in suburbia. The "mallard" group has been lumped as their exact identity cannot be assured – it probably includes crosses with domestic birds. The Emu and Magpie Geese are part of the semi-captive population at Tidbinbilla Nature Reserve.

CENTRAL CANBERRA GANG-GANG CENSUS: 5TH JUNE 2011

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Background

A census of the central Canberra Gang-gang population was arranged for Sunday 5 June 2011, from 11am-12pm, as a sequel to the 2010 Gang-Gang Census, held on 1 August 2010 (Leonard 2010). The reader is referred to that paper for the background and assumptions behind the initiation of the Gang-Gang Census.

Methods

The methods for the 2011 Gang-Gang Census followed closely those of 2010 (Leonard 2010).

The time of day was chosen from knowledge of Gang-gang and other cockatoo behaviour; it was anticipated that at this time the Gang-gangs would be feeding in groups and not flying around. This would help to eliminate duplicate counting of birds.

Observers were recruited from the Canberrabirds mailing list and selected or were assigned areas to survey during the Census period. The area designated was Central Canberra (Figure 1) as the likely number of volunteers was not anticipated to be large enough to cover a wider area and Central Canberra is thought to have a more concentrated population of Gang-gangs than other urban areas of the ACT (Veerman 2002).

The area covered was slightly different from last year in that the suburb of Lyons had two observers covering it, whereas in 2010 the only report from Lyons was from a householder who commonly has large numbers of Gang-Gangs frequenting her backyard. The suburb of Narrabundah did not have an observer in 2011, in contrast to 2010.

The 18 areas were surveyed during the Census and are listed (1-18) in Table 1.

Observers were asked to move around in their area for the hour, noting groups of Gang-gangs, their location, and their composition (male/female/immature male). Observers were also asked to note Gang-gangs heard calling but not seen, and Gang-gangs flying (with time and direction, to help eliminate duplicate reporting).

In 2010 only those observations that were made by observers doing the Census were admitted, with only the large concentration of Gang-Gangs reported from the householder in Lyons as an extra observation. In 2011 casual observations were also invited from the same hour as the Census.

Results

The morning of 5 June 2011 was cold and misty, but still. Around 11am in the Red Hill area the mist lifted and the sun came out. In other areas the sun emerged some time during the Census hour. After midday a north-westerly wind started; however during the Census hour conditions were mainly still and favourable for bird-censusing (certainly better conditions than 2010).

The results for the areas surveyed and two casual observations were:

All these observations were of adult male and female pairs expect for the ANBG record which was of an immature male and one bird unidentified as to age and sex, and the Federal Golf Course record, a single female.

Table 1:

Site No.	Location	No. Gang-Gangs Observed
1	Mt Ainslie/Majura saddle	0
2	Mt Ainslie southern slopes	0
3	Bruce Ridge	0
4	Turner north from Barry Drive	0
5	ANBG	2
6	ANU Campus	0
7	Commonwealth Park	0
8	Black Mtn Peninsula and Acton Peninsula	0
9	Weston Park	0
10	Parliamentary Triangle	0
11	Molonglo Reach and Jerrabombera Wetlands	0
12	Red Hill Suburb	2
13	Red Hill north	
14	Red Hill west	
15	Federal Golf Course	1
16	Federal Golf Course south	2
17	Oakey Hill	0
18	Lyons	2
19	(Casual ob) Lyons	2
20	(Casual ob) Curtin	2
Total		**15**

Discussion

In 2010 in much worse conditions 12 Gang-gangs were observed in the areas surveyed (19 areas were surveyed in 2010 as opposed to 18 in 2011).

The figure of 15 Gang-Gangs observed in 2011 is consistent with the 2010 results. The main difference between the two years is that in 2010 a householder in Lyons reported 13 Gang-Gangs from her backyard, bringing the 2010 total to 25. This year the same backyard produced only 2 Gang-Gangs to add to the total.

Another difference between 2010 and 2011 is that in 2011 the birds reported were mainly adult male and female pairs, in 2010 5 of the birds reported from Lyons were immatures.

These results support the view that Gang-Gangs, whilst conspicuous and present locally in high concentrations, are generally present in low numbers in the Central Canberra area.

In 2010 the Gang-Gang Census was held on 1 August, in 2011 it was held earlier (5 June) to test whether the peak of abundance for the species in Central Canberra was earlier in the year, as suggested by the Garden Bird Survey (Veerman 2002). In fact, as noted, results were much the same from the two Censuses.

Despite these somewhat disappointing results from the two Censuses it remains important to continue monitoring the central Canberra population of this species so long as there is still interest amongst Canberra bird-watchers in doing so.

However, in recognition of the fact that Gang-Gangs seem to be in lower numbers than might be suspected, it would be better to devise an alternative Census methodology for 2012 and subsequent

years, probably involving the collection of records from a longer time period.

Thanks to all observers: Ian Andersen, Terry Bell, Tim Bull, Jean Casburn, Elizabeth Compston, Peter Cranston, Roger Curnow, Felicia Fletcher, Roy Harvey, Robin Hide, Daniel Hoops, Tony Howard, Tony and Charmian Lawson, Bruce Lindenmayr, Rod Mackay, Alison Mackerras, Duncan McCaskill, David Rosalky, Rosalind Walcott, Maurits Zwankhuisen (and anyone whose name I have inadvertently omitted).

John Leonard

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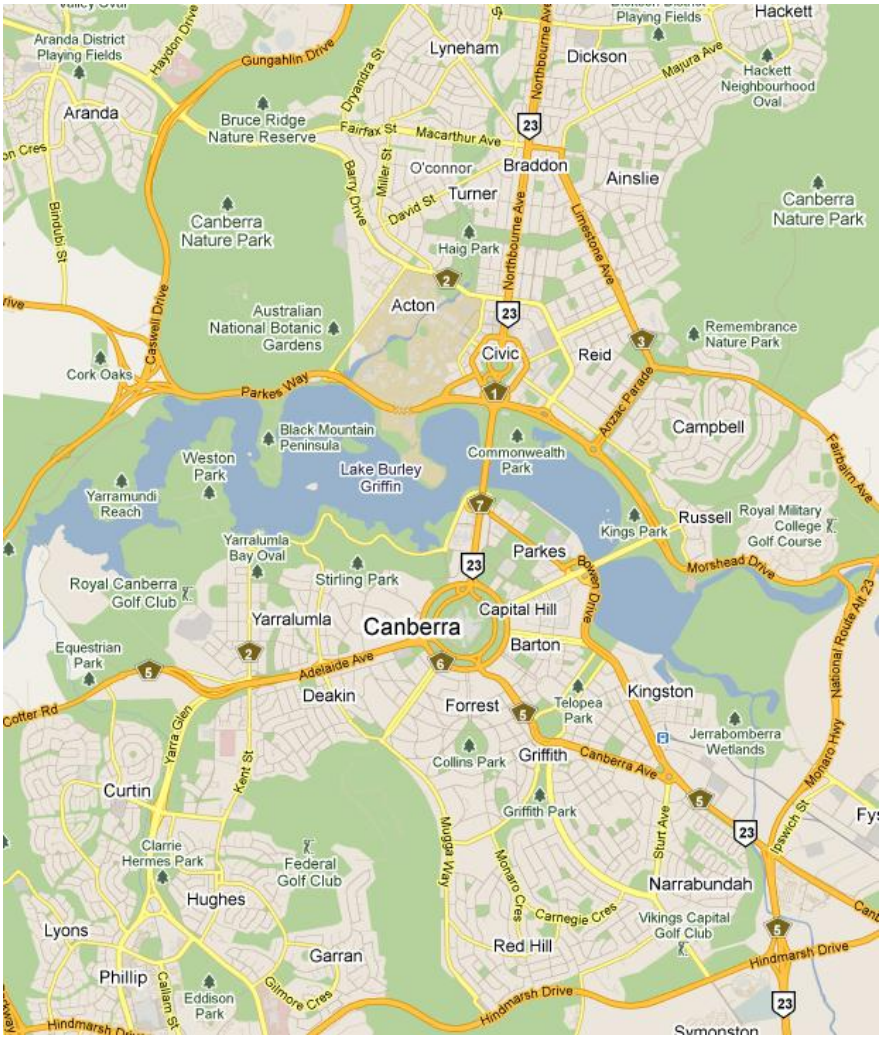

Figure 1. Map of Central Canberra (courtesy of Google Earth™).

GLOSSY BLACK-COCKATOO *CALYPTORHYNCHUS LATHAMI* DECLARED A THREATENED (VULNERABLE) SPECIES IN THE ACT

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Abstract: *In July 2009, the Canberra Ornithologists Group (COG) submitted to the ACT Flora and Fauna Committee a nomination of the Glossy Black-cockatoo as a threatened species under the ACT's Nature Conservation Act 1980. Following consideration by the Committee, the ACT Minister for the Environment, Climate Change & Water declared the Glossy Black-cockatoo a 'vulnerable' species on 22 October 2010. COG nominated the cockatoo, which is reliant on casuarina seeds as a food source, for several reasons. Firstly, concerns about the protection of its remaining habitat due to threatening processes such as grazing, prescribed burning in reserves (under bushfire management plans) and wildfires. Secondly, to increase awareness of the species and to encourage management actions to assist in making the species more resilient, by increasing the amount of feeding habitat and the number of feeding sites in the ACT. Some positive steps have been taken to-date with the Canberra International Arboretum undertaking a planting of Drooping Casuarina* Allocasuarina verticillata *on one of its blocks, and plans by the ACT Government for plantings at suitable sites. The following is the COG nomination; note that the referred attachment (map from Atlas of NSW Wildlife Database) is not included.***

Nomination of an Endangered or Vulnerable Species to the ACT Flora and Fauna Committee

Glossy Black-cockatoo

(a) Name, address and signature of nominator

Nominator:	Jenny Bounds, for Canberra Ornithologists Group (COG)
Address:	PO Box 301, Civic Square, ACT 2608
Contact:	Jenny Bounds
Phone:	02 6288 7802
Email:	cogoffice@canberrabirds.org.au
Date:	31 July 2009

(b) Nominated item

Category of nomination: Endangered or Vulnerable species
Scientific name: Calyptorhynchus lathami (Temminck 1807)
Common Name: Glossy Black-cockatoo

(c) Description

Family Cacatuidae

The Glossy Black-cockatoo is in the Cacatuidae or cockatoo family, which is confined to the Papuo-Australasian region. Cockatoos are regarded as quite distinct from other parrots within the broader Psittaciformes order. The most conspicuous external characteristic of cockatoos is a moveable head-crest which the birds raise after alighting or when alarmed or excited. Affinities within the family are not fully resolved by taxonomists, but the 'black cockatoos', of which the Glossy Black-cockatoo is one, are regarded as one of three groupings within the cockatoo family (Forshaw 2002).

There are three recognized sub-species of Glossy Black-cockatoo, one in South Australia (Kangaroo island - C l *halmaturinus*), the eastern sub-species of SE Australia (C l *lathami*) and the northern sub-species (C l *erebus*) (Schodde et al, 1993).

General Description

The Glossy Black-cockatoo is a black cockatoo, generally the smallest of the black cockatoos, with an average length of 48cm and wingspan of 90cm and an inconspicuous crest (Crome & Shields 1992).

The adult male Glossy Black-cockatoo has mainly dull black plumage that may be tinged brownish. Two bright red/orange-red panels are visible on the tail. The bill, eye ring and legs are dark grey. The female is similar in appearance to the male except for irregular yellow patches around the neck and head, and orange-red and black barred tail panels. Immature birds are similar to the female with more yellow below and on the wings and a paler bill (Crome & Shields 1992).

The flight of Glossy Black-cockatoos is buoyant with shallow, effortless wing-beats. Individuals often fly at considerable height when travelling between feeding areas. They are strong fliers and can average over 45km an hour in sustained flight. Glossy Black-cockatoos have distinctive calls that are soft, wavering and plaintive, a disyllabic *kaa-er* and a harsh alarm screech (Crome & Shields 1992; Cameron & Cunningham 2006).

The Glossy Black-cockatoo differs from another black cockatoo species, the Red-tailed Black Cockatoo (*Calyptorhynchus banksii*) found further inland in more arid habitats, due to its inconspicuous crest and yellow markings in the female.

Breeding

In NSW, breeding takes place in the autumn and winter, from March to August, with one egg being produced. The species nests in hollows found in large, old eucalypt trees. At one location, the Goonoo State Forest, a 62,500 ha woodland remnant 40 km north of Dubbo in central NSW, they have shown preference for nesting in hollows in senescent trees or stags. During the 29 days of incubation, the female is dependent on the male for food as she usually remains on the nest in a large tree hollow, lined with chips and dust. Both parents are known to feed and brood the young (Crome & Shields 1992; Department of Environment & Climate Change, NSW website; Cameron 2006a).

Only one young bird is raised per breeding season with breeding completed by the end of winter/early spring, a period of around 90 days from egg laying to departure of the juvenile bird from the nest. Juvenile birds leave the nest at around 60 days of age, accompany their parents for at least their first year, and may associate with the parents for an indefinite period after fledging. The species generally occurs in pairs or small family groups, but is gregarious and can occur in loose flocks, seldom more than 10. Locally nomadic, small flocks roam in search of feeding areas and roost communally (Crome & Shields 1992; NSW National Parks Service website; Department of Environment, Water, Heritage and the Arts website; Cameron 2009).

The breeding success of the Glossy Black-cockatoo is considered linked to the proximity of food trees with high quality seed cones (*casuarina* and *allocasuarina* species – known commonly as she-oaks) and suitable nest trees. Fragmentation of habitat has a detrimental effect on the successful breeding of the species as food sources and nesting sites are dispersed across the landscape (Garnett 1993; Forshaw 2002; Cameron & Cunningham 2006)

Habitat

The Glossy Black-cockatoo characteristically occurs in low densities in woodlands and forest of eastern Australia, in a variety of habitats from coastal woodlands and dry eucalypt forests, to open inland woodlands and forested watercourses, reflecting the distribution of key *casuarina* and *allocasuarina* species on nutrient deficient soil types. The drier forest types with intact and less rugged landscapes are preferred by the species (Tanton 1994; Higgins 1999).

As well as feeding trees, Glossy Black-cockatoos require large tree hollows in both living and dead trees for nesting, and must compete with other hollow dependent mammals and birds for the available, suitable nesting hollows (Department of Environment & Climate Change, NSW website).

Ecology

The Glossy Black-cockatoo is probably the most specialised member of its family, feeding almost exclusively on seeds extracted from the wooden cones of species of *casuarinas* and *allocasuarinas* (she-oaks). They use their massive, strong bill to extract seeds by crushing and shredding cones held in their claws. The bill is used to remove the tough outer hull while the cone is rotated in the left foot. The exposed seeds are then stripped away and eaten. The art of opening a cone is apparently learned behaviour, as immature birds frequently seem to have trouble manipulating the cones into the correct position. Occasionally, Glossy Black-cockatoos may eat insect larvae and have been observed feeding on seeds of some eucalypts, angophoras, acacias and hakeas. (Crome & Shields 1992; Department of Environment & Climate Change, NSW website; Cameron & Cunningham 2006).

There is evidence from studies that the birds are selective in their choice of feed trees, favouring *casuarina/allocasuarina*-producing seeds with a high nutrient value. They select larger stands of trees with many older/mature trees, then individual trees with many cones, favouring the fresh red/russet coloured cones (those produced in the previous season). The birds may make short visits to various feed trees within an area, checking out the quality of seeds, and may be able to distinguish between cones on the basis of colour and position on the branches. Once satisfied, the birds will settle in a favoured tree and harvest all the preferred cones within reach. The birds also appear to look for the bright orange coloured remains (chewings) on the ground of cones previously chewed, to locate good feed trees (Department of Environment and Climate Change, NSW website; Cameron 2005; Cameron & Cunningham 2006).

Glossy Black-cockatoos will use older, grey cones if there are no fresh ones available. A tree can store several years of cones at different positions in the branches, although they do shed some cones. Compared with older cones, young cones are more nutritious, have higher ratios of seed weight to cone weight and may be softer and easier to process (Clout 1989; Cameron 2005; Cameron & Cunningham 2006).

Studies have shown that the cockatoos prefer to forage at sites where food is abundant and there are larger trees, and avoid open sites where the predation risk (eg from raptor species such as eagles) may be greater. At the Goonoo State Forest, site selection was governed by the available food supply, mediated by predation risk. Females may be more vulnerable to predation than males due to their conspicuous yellowish markings (Cameron & Cunningham 2006).

It has been estimated from studies at Eden in NSW, during the winter breeding season, that the birds spend 88% of their time feeding, that is extracting seeds from cones. So the cockatoos must forage for long hours

each day to find sufficient food. Furthermore, not all suitable habitat provides adequate food value or nutrition to support the birds (Clout 1989; Crome and Shields 1992; Department of Environment and Climate Change NSW website).

In the Canberra region, Glossy Black-cockatoos feed on the Drooping Casuarina, *Allocasuarina verticillata. S*ynonyms of this species are: *Casuarina stricta* (Ait.) and *Casuarina quadrivalvis* (Labill). Other common names of Drooping She-oak are Coast She-oak and Hill Oak. In the ACT, using Drooping Casuarina as the example (a species with large cones), and assuming 60% to 88% of time feeding, it has been estimated that a pair of Glossy Black-cockatoos need between 60,000 to 89,000 cones a year (Lenz 2004).

In coastal and tablelands areas of the east coast, Forest Oak *(Allocasuarina torulosa)* and Black Oak *(Allocasuarina littoralis)* provide food sources. Further west on the tablelands and western slopes, additional *casuarina* species are used by Glossy Black-cockatoos, including Drooping She-oak *(Allocasuarina verticillata),* Belah *(Casuarina cristata)* and Black Oak *(Casuarina pauper).* Some other *casuarina* and *allocasuarina* species are also known to be food resources (Department of Environment & Climate Change, NSW website).

There is a species of tall she-oak that grows along the river systems in the SE of Australia, River Oak (*Casuarina cunninghamiana*), but this species does not appear to be selected by Glossy Black-cockatoos (Matt Cameron pers comm.). There are no COG records in this habitat locally (COG Database). It is noted that this species of casuarina has very small cones. However, Glossy Black-cockatoos have been observed in this habitat in a coastal NSW location, and may use this species if there is no alternative (Henry Nix pers. comm.).

The specialised diet of Glossy Black-Cockatoos increases the potential for populations to be controlled from the bottom up, that is, by the availability of food resources. The quantity and quality of food available to the birds within a region is dependent upon the distribution, abundance and productivity of their feed species. In a recent study in the Goonoo State Forest, cone production was linked to rainfall, with rainfall having a direct impact on the availability of fresh cones in the following cockatoo breeding season. A conclusion from that study is that the Glossy Black-cockatoo appears to be food limited, at least in drought years and probably overall. The specialised diet and low rates of food intake may make the Glossy Black-cockatoo susceptible to even small changes in their food supply (Cameron 2005; Cameron 2006b; Cameron 2009).

Drooping Casuarina Allocasuarina verticillata

Drooping Casuarina is a round-headed, small to medium-sized tree from 5-10 metres tall. The species range is temperate south-east Australia and Tasmania, from the coast to inland locations. Like other *casuarina/allocasuarina* species, it is dioecious, with male and female flowers occurring on different plants; cones occur on female plants.

Drooping Casuarina usually occurs in grassy woodland as pure stands or growing with various eucalypt species, for example, Apple Box (*Eucalyptus bridgesiana*), Yellow Box (*E. melliodora*), Snow Gum (*E. pauciflora*), Brittle Gum (*E. mannifera*), Red Stringybark (*E. macrorhyncha*), Broad-leaf Peppermint (*E dives*) and Mealy Bundy (*E. goniocalyx*).

In the ACT and surrounding region, Dropping Casuarina is locally common in stands at Mt Majura, Mt Ainslie, Mt Stromlo (historically), Red Hill, Mt Taylor, Tharwa, Fitz's Hill, Rob Roy Range, Gale

Precinct (Queanbeyan) and Royalla. These locations are widely dispersed. The Mt Majura/Mt Ainslie reserve complex appears to have the most significant stands of Drooping Casuarina within the ACT (this is also supported by the majority of records of Glossy Black-cockatoos and the highest number of birds observed). On Mt Taylor, Drooping Casuarina grows in association with a locally uncommon eucalypt species, *E. nortonii* (common name Mealy Bundy), and Kurrajongs (*Brachychiton populneus*) (Matthew Frawley pers. comm.).

While Drooping Casuarina trees are known to occur at other sites within lowland Canberra, eg Goorooyarroo NR, Mt Mugga Mugga area, the number of trees at such sites is low in number. It is probable that there were larger stands historically in some hilly areas around what is now urban Canberra, but they have been cleared. There is an observation that this plant species may have been impacted by forest clearance, increasing in occurrence on some sites. Within more remote areas of the ACT, eg suitable parts of Namadgi NP, the extent and condition of Drooping Casuarina is largely unknown.

Drooping Casuarina can be found on dry, rocky hillsides and ridges at lower elevations, including sandy, dry soils, shaly soils within coastal salt spray, cracking clays and basalt plains. It is more often than not associated with poorer, infertile soils. There has been some work on plant/soil relationships that indicates that the distribution of Drooping Casuarina appeared to be controlled by higher potassium and nickel values in the soils of the Coolac Serpentinite Belt in NSW.

In the ACT and region, Drooping Casuarina is very frequent on the Campbell colluvial soil landscape, typified by steep to rolling hills and mountains on volcanic and sediments of the Canberra lowlands. The species is found on all the variant soils of this landscape.

Threats to Drooping Casuarina

The main threats to Drooping Casuarina and the community in which it occurs in the local region are grazing and fire frequency.

In relation to grazing, the branchlets are very palatable to herbivores, both native (eg kangaroos) and domestic grazing stock. In grazed areas, grazing is the main inhibitor of recruitment to the population, with seedlings being eaten off.

Drooping Casuarina is greatly influenced by fire regime, which is the years between successive fires, season of the fire, and fire intensity. Low intensity fires leave mature trees unaffected, but remove younger trees which may or may not reshoot from the base. Mature trees may survive moderate fires, but not without damage, and young trees are usually killed. High intensity fires will kill young and mature trees, and regeneration is dependent on re-establishment from seed.

The seeds have a relatively short viability, so are reliant on suitable conditions to re-establish after a hot fire. The species may produce cones in 7 years or so, but requires up to 10 years to produce reasonable numbers of cones. Too frequent fires or fires of moderate to high intensity may have severe impacts on the survival of this species. Fires that are too infrequent may lead to higher stems numbers/ha, similar to species like Black Cypress Pine (*Callitris endlicheri*).
(Note: References for factual material on Drooping Casuarina are listed separately under ‘References’)

Impacts from Global Warming

Global warming has the potential to significantly impact upon the productivity and abundance of *casuarina/allocasuarina* species. Higher temperatures increase evaporation rates and, unless countered by increased rainfall, lead to a reduction in atmospheric moisture balance, with possible

flow-on effects for seed production. Given the apparent sensitivity of seed production to rainfall, even small changes in moisture balance may substantially impact upon seed productivity (Cameron 2006b; Cameron 2009).

Higher temperatures, more severe and prolonged droughts, reduction in moisture availability, more variable rainfall and more frequent and intense fires, are predicted to have significant impacts on the two critical resources of Glossy Black-cockatoos, food and nest hollows.

In terms of food, from studies in the Goonoo State Forest (where *Allocasuarina diminuta* is the primary food species, along with *A. gymnanthera*), drought conditions over 2002-2003 were associated with limited seed production and wide-spread die-off of significant numbers of trees and parts of trees. These studies have shown that rainfall in spring determines the availability of cones in the following year. Also Glossy Black-cockatoos must have fresh (red/russet) cones to breed successfully, and all the cones which will be required to support the birds and feed a nestling through the breeding period, need to be on the trees prior to the breeding season. In the drought period of 2002-2003 in the Goonoo State Forest, there was little breeding of Glossy Black-cockatoos (Cameron 2005; Cameron 2006b; Cameron 2009).

In relation to breeding hollows, wildfire can destroy nest trees or potential nest trees (younger trees which would develop suitable hollows), and extreme fires cause catastrophic hollow loss. In 2007, in the Goonoo State Forest, half the forest was severely burnt, over 30,000 hectares, with many trees disintegrating to ash with catastrophic loss of the nest hollows of Glossy Black-cockatoos (Matt Cameron pers. comm.).

Historically, there would have been cyclical fluctuations in rainfall (as occurs under the El Nino southern oscillation phenomenon), but it is apparent that the intervals between higher rainfall cycles are becoming longer and the rainfall peaks are reducing. Dietary specialists are particularly vulnerable under these scenarios. Any increase in aridity will reduce the productivity and abundance of *casuarina/allocasuarina* populations, causing inland Glossy Black-cockatoo populations to oscillate more strongly than they do at present. Careful management of their inland habitat will be required if these populations are to persist in the long term (Cameron 2006b; Cameron 2009).

d) Distribution

Historically, the Glossy Black-cockatoo occurred in low densities across most of the SE of Australia. However, it is now restricted to a broad area extending from the coast near Eungella in eastern Queensland, (around 26 degrees south latitude), to easternmost Victoria, (Mallacoota area). Within this range, the major population is distributed more or less continuously along the Great Dividing Range and the contiguous coastal plain (Garnett 1993; Forshaw 2002; Department of Environment & Climate Change, NSW website).

In the south-eastern part of Australia, there are broadly two groups/sub-species of the population, an eastern group extending from Mitchell in Queensland to Mallacoota in Victoria, and a northern group in east-central Queensland from the Dawes Range north to Eungella National Park. The northern group may possibly include an isolated population west of the Paluma Range (Forshaw 2002).

Most records of Glossy Black-cockatoos in NSW occur on the coast and the Dividing Range. In NSW west of the Dividing Range, peripheral populations occur in fragmented areas of suitable habitat as far west as Cobar-Hillston-Griffith, in isolated hills and mountain ranges. At least one, possibly more, of these populations may be isolated. The inland distribution of the

Glossy Black-cockatoo is restricted by the occurrence of the various *casuarina/allocasuarina* species within a largely cleared landscape, and is not well documented (Pizzey 1997; Garnett 1993; Forshaw 2002; Department of Environment & Climate Change, NSW website).

The Glossy Black-cockatoo is now rare or has become locally extinct in many parts of its former range, including in parts of Western Victoria and SE South Australia (Mt Lofty Ranges). In the Riverina, NSW, there has been a major decline in the population due to the removal of habitat (Garnett 1993; Forshaw 2002; NSW National Parks and Wildlife service website).

An isolated population of the Glossy Black-cockatoo inhabits Kangaroo Island off the coast of South Australia. The Kangaroo Island sub-species is in a precarious situation with a small number of birds, in 2001 estimated at 180 adults, but this has increased to around 310-330 with management interventions (nest boxes and protection of nest trees from possums), and the population continues to grow steadily (Forshaw 2000; Olsen 2008; Department of Environment, Water, Heritage and the Arts website).

The eastern 'sub-species' of Glossy Black-cockatoo which has a range from Mitchell, Queensland to Mallacoota, Victoria, and extends into inland eastern NSW and the Riverina, is believed to have "contracted its range at the edges, and coastal development and clearance of land for agriculture are thought to have reduced its density by at least half". It was estimated (prior to 2000) the extent of occurrence of the species was 450,000 square kilometers, the area of occupancy 50,000 square kilometers (and decreasing), and the number of breeding birds at 12,000 (and decreasing) (Garnett & Crowley 2000).

Note: In this context, "extent of occurrence" is defined as the outer perimeter of all populations; "area of occupancy" is defined as the number of 1km square grid squares in which the species is thought to occur at a time when its population is at its most constrained.

It is suspected that in coastal SE Australia, breeding pairs are largely resident, however in other areas they are locally nomadic or undertake regular long-distance movements. Irregular local movements appear to occur in relation to food availability, and in relation to outlier populations in the inland, changes in often fragmented food resources probably are responsible for seasonal local movements and for wider irregular movements when the birds turn up as unpredictable visitors (Forshaw 2002).

The Glossy Black-cockatoo is probably on the periphery or fringe of its range in the ACT. The species is commonly found on the NSW coast and coastal ranges east of the ACT, but in low numbers, although there is some indication that numbers may be increasing at some coastal locations, eg the Hawkesbury north of Sydney. The species can fly long distances and forages over a very large area in order to find stands of feed trees (Forshaw 2002; Joseph Forshaw pers. comm.).

It is not known for certain if the birds that are recorded in the ACT are from a sub-group of the population on the east coast or from the Riverina population inland, but there is a strong view that they are a "spillover from the coast/coastal ranges" (Joseph Forshaw pers. comm.).

Possibly, the local *allocasuarina* species is a secondary food species that is visited when the coast/coastal ranges species of casuarinas fail to produce viable seed. The fact that the numbers of birds are variable in the ACT, going up and down, supports the view that they come to the ACT when there are seed failures elsewhere. There would be

some justification in treating the birds that come to the ACT as an inland sub-group/population or the ACT as an inland refuge for a sub-group of the species (Joseph Forshaw pers. comm.).

It has not been possible, within the scope of this nomination, to undertake broader research/inquiry into the occurrence of *casuarina* seed failures in the SE region of Australia, and whether there is any correlation with influxes of Glossy Black-cockatoos in the ACT. See later comments about seed abundance in relation to birds in the ACT.

Given that *casuarina/allocasuarina* species have been cleared and fragmented significantly in inland locations, such as the Riverina to the west of the ACT, it is likely that Drooping Casuarina in the local region (including nearby NSW), has also been cleared to some extent. This is borne out locally by remnant trees or small patches of Drooping Casuarina remaining around various hills of what is now urban Canberra. So historically, it is likely there would have been more Drooping Casuarina in the region, more Glossy Black-cockatoos and more breeding.

COG Records

The Canberra Ornithologists Group maintains databases (general records and woodland project) of observations of birds from the Canberra region, an area that includes the ACT and surrounding NSW, ranging from around Yass to Goulburn and south to Adaminaby and Duea National Park. COG members and other individuals contribute observations to these databases. A number of COG members live in suburbs abutting the Mt Majura/Mt Ainslie NR complex where most records of Glossy Black-cockatoos are reported from, and these members are active in reporting the birds when they are around that area.

It should be noted that the COG records are for the most part, ad hoc observations rather than systematic survey data. An exception is the years 1986 to 1989 when an Atlas survey was conducted in the ACT by COG members; these data include repeated observations at the same sites by individuals as well as incidental/ad hoc records A second exception is the period 1998 to 2002 when the National Atlas survey was conducted by Birds Australia; COG members who participated similarly undertook repeated surveys at regular sites as well as reporting incidental records.

It is noted that during the ACT Atlas survey 1986 to 1989, the Glossy Black-cockatoo was not recorded, although it was noted in the report that there were historical records of the species (Taylor & COG 1992).

In 1943, an ACT bird list compiled by a local ornithologist, records Red-tailed Black Cockatoo, but not Glossy Black-cockatoo (Mathews 1943). The Red-tailed Black-cockatoo is a different species to the Glossy Black-cockatoo, and is found in more northern inland, arid habitats. The ACT is well south of the recognised range of the Red-tailed Black-cockatoo (Wilson 1999). Most likely, the 1943 list is a first reference in the ACT to Glossy Black-cockatoo.

A survey in 1946 provides the first published report of the Glossy Black-cockatoo in the ACT, indicating that it was regarded as appearing "once in a while". After that, the species was reported occasionally through the 1970s and 1980s with a maximum number of 14 birds observed, in areas such as Tharwa-Tidbinbilla, Red Hill NR, Mt Ainslie NR and the Tinderries Range. Based on records up to 1983, it was noted that the species might be a regular visitor. In 1992, the eastern sub-species that occurs in the ACT region was regarded as uncommon or rare (Daley 1946; Wilson 1999; Garnett 1992; Frith 1984; Holliday 2004).

Table 1 shows a summary of sightings (reports) of Glossy Black-cockatoos within

the ACT as reported to the COG database (since 1992), as well as some recent sightings reported to the COG email chat line which have not been submitted formally to COG for the database. Table 2 shows the records for NSW within the COG area of interest and includes some additional records from Burra Creek not in the COG database. A small number of observations in the list do not appear in COG database records, and have been obtained by personal communications from COG members.

The available records confirm that Glossy Black-cockatoos are an uncommon visitor and occasional breeder in the ACT and surrounding region (Holliday 2004). These records also support anecdotal information that there are birds, numbering up to 16 in any one observation, which visit habitat patches within the ACT and surrounding areas at certain times. The observations are predominately in autumn and winter, but occur in all months of the year. The numbers also go up and down. The species may be under-reported, being quiet, unobtrusive and difficult to locate even when known to be in the area (Holliday 2004).

The records also show that the Mt Majura/Mt Ainslie NR complex is an extremely important area or refuge for the species in the ACT (Holliday 2004).

There appear to have been influxes of larger numbers of birds at times, in 1992/93, in 1995, in 1998, from late 2003 through to 2005, and another large group in early 2009. The influx over 2003/04 of relatively high numbers of sightings (minimum16 birds) was a significant one. It has been speculated that factors such as drought were related to this influx, or that the birds use large areas in a cyclic fashion (Holliday 2004). Seed failures of coastal *casuarina* species may also be a likely factor explaining influxes of the species to the ACT region (Joseph Forshaw pers. comm.).

In relation to the key site at Mt Ainslie/Mt Majura NR, it has been observed that over the 2004/2005 years when there was an influx of Glossy Black-cockatoos in the ACT and a breeding event, there had been good cone production in the relevant spring seasons. In subsequent years, the cone production has been poor, most likely as a result of drought periods/inadequate rainfall in the critical spring months. Although the spring of 2006 had good flowering of Drooping Casuarina, hardly any cones were produced. Since 2004/2005, any birds that have been seen, usually in small numbers or if in larger numbers (as in 2009), did not stay around for any length of time (Michael Lenz pers. comm.).

It has been observed in the Mt Ainslie/Mt Majura NR, (although no measurements have been undertaken), that *allocasuarina* cones of recent years (post the 2004 breeding year) have been noticeably smaller compared to the cones the birds previously fed on. Also, there have not been *allocasuarinas* with large numbers of large cones, as was the case in the breeding year 2004 when birds could settle in such a tree and have food for a couple of days. Searches in the last 2 years of the habitat area on Mt Ainslie (upper eastern slopes down from the lookout road) failed to find any casuarinas with cones that would sustain Glossy Black-cockatoos (Michael Lenz pers. comm.)

It is interesting that the maximum number of birds observed at any one time over the years of records, at the two main locations known in the Canberra area (Mt Majura/Mt Ainslie NR complex and Burra Creek area in NSW), are in the order of 16 birds and 10 birds respectively. It is not known if these birds are part of the one loose flock, or if the same birds which visit Mt Majura/Mt Ainslie NR also travel to Burra Creek in the southern Burra Valley or exactly how many

Table 1: ACT Records (1992 to 2009), from COG database, additional sightings reported on the COG email chat line, and some personal communications.

Site	Year	Month	Number of birds
Mt Majura	1992	May-June, August	2-11 See note 1
Mt Ainslie	1992	June	6
Mt Majura	1993	May	10
Red Hill	1993	May, August	3-4 See note 6
Mt Majura	1995	March-May	3-11
Tharwa Hill	1995	July	3-4 See note 4
Mt Taylor	1995	September-December	3-6 See note 8
Watson	1996	March	2 and 7; 2 sightings birds flying overhead
Mt Majura	1996	March, July-August, November	1-5
Manuka	1996	March	2 (seen flying overhead)
Mt Majura	1998	June, August-November	1-9
Mt Ainslie	1998	July-August	6-7 (saddle area)
Mt Majura	1998	November	9
Mt Ainslie	1999	November-December	2-3
Mt Majura	2000	October	3
Gibraltar Falls	2000	November	3
Lower Molonglo River	2003	May	1
Mt Majura	2003	October	2
Mt Majura	2004	January-June	1-12
Mts Majura/Ainslie	2004	July-August	2-16 See notes 2 & 3
Rob Roy NR	2005	February	1 (number unconfirmed)
Mt Majura	2005	February-March, June-November	1-14 (including copulation observed)
Goorooyarroo NR	2005	August	1
Mt Ainslie	2006	October	2
Mt Majura	2007	February	2
Mt Majura	2008	March	4
Mt Ainslie (western side)	2008	April	1
Mt Ainslie	2009	February	2
Mt Majura	2009	February-March	2-10
Mt Ainslie – Campbell Park	2009	April	6

Note 1: Most COG records of Glossy Black-cockatoos are from the Mt Majura/Mt Ainslie NR complex, and clearly the whole of this large area is an extremely important habitat for the birds, with feeding, nesting and drinking sites. There are significant stands of Drooping Casuarina for feeding, old eucalypts with good hollows and a number of water sources. Birds, including large groups, are often observed coming in to drink late in the day to regular drinking sites. Dams uphill from the car park off Mackenzie St, Hackett have been frequently used, but this area is also where people using the reserves pass by and there have been problems there with disturbance by dogs allowed off- leash. The birds are also known to use other dams in the reserves including on the eastern slopes, farm dams adjacent to the reserve (eg the winery to the NE), and small creeks when flowing. A critical feature of this reserve complex, is the availability of several alternative water sources; the birds will tend to prefer those where there is less human disturbance; in general if there is more than one water source, they will probably go to the one with the least human disturbance (Holliday 2004; Lenz pers. comm.).

Note 2: This is the first confirmed breeding record of 2 adults with a young, recently fledged bird which had just left a breeding hollow (Lenz et al, 2004).

Note 3: 16 birds is regarded as an accurate count of the number of birds present on the Majura Range in this period. Several coordinated dam watches were undertaken to count the birds and it was in a dry period (Holliday 2004; Holliday pers. comm.).

Note 4: Tharwa Hill record - Casuarina trees 600 metres SW of General Store were reported as heavily fruiting.

Note 5: In addition to the records in the table, there are a small number of records in COGs Garden Bird Survey outside the suburbs adjacent to Mt Ainslie/Mt Majura NR: Curtin and Hughes (not too far from a known food location Red Hill NR, and Holder, Page and Melba. These are most likely birds seen flying overhead between habitat patches, although it is also possible there could be some misidentification with the more common Yellow-tailed Black-cockatoo *(Calyptorhynchus funereus)*.

Note 6: Red Hill NR has had at least one sighting of Glossy Black-cockatoo (Michael Mulvaney pers. comm.); the COG database does not show this record.

Note 7: The Mt Majura/Mt Ainslie NR records in the table do not provide a complete/comprehensive list of all sightings of Glossy Black-cockatoos there. It is known from one regular observer who does not report all sightings, that there have been small numbers of this species in the Mt Majura/Mt Ainslie NR complex on and off over many years, including periods for which there are no records in the COG database (Holliday 2004). It is, therefore, quite likely that a small number of birds, possibly a pair or two, are around that reserve complex much of the year.

Note 8: The Mt Taylor record emerged only recently in June 2009, from the Coordinator of the Mt Taylor Landcare Group, Anne I'Ons, (per Matthew Frawley a COG member); it was reported the birds stripped the cones on trees on the SW side of the reserve over this period. There is a reasonable amount of Drooping Casuarina on Mt Taylor, so it is surprising that there are not more reports/ records of Glossy Black-cockatoos there. A recent, quick estimate of the Drooping Casuarina on the western face of Mt Taylor is around 10 hectares; the majority of the mature trees were burnt and killed in the January 2003 bushfires (estimated 250 mature trees dead), but there are still some mature trees alive (in the order of 60) and thousands of saplings are regenerating (from 50cm to 4 metres in height). There is also some Drooping Casuarina on the east face of Mt Taylor near a new track (Matthew Frawley pers. comm.).

birds visit the region. From observations at these two sites in 2004, it is evident that there were two different groups of birds at that time (Steve Holliday & Ian Anderson pers. comm.). As the birds are strong fliers, it is quite possible the same birds visit both locations. Those maximum numbers may also be related to the amount of food habitat available (and cone production in particular years) within the ACT and immediate region. Studies at other locations have concluded that Glossy Black-cockatoos are probably food limited overall (Cameron 2009).

Atlas of NSW Wildlife

A map together with data from the Atlas of NSW Wildlife maintained by the NSW Government (National Parks & Wildlife Service/Department of Environment & Climate Change) has been examined regarding the distribution of Glossy Black-cockatoos in the COG area of interest and further east to the coast. This data covers the years 1983 to 2008 and has around 1900 records. Specific location description of the records is not available, but based on the GPS coordinates available, the vast majority of the records are east of the COG area of interest (viz. east of longitude 149° 45'). The numbers of birds range from 1 to 30, with almost all sightings in the order of 1-4 birds. In terms of larger groups of birds, there is one record in December 2006 of 30 birds in a coastal location (possibly around the Moruya area), and a few records (less than 10) of groups in the order of 8 to 12 birds (Atlas of NSW Wildlife database).

The distribution map shows that broadly west of the NSW coastal ranges and within the COG area of interest, there are only a small number of locations, in fact five locations, where Glossy Black-cockatoos have been recorded. These locations are the Mt Majura/Mt Ainslie reserve complex in the ACT, the southern Burra Valley (Burra Creek area) in NSW, a location in Namadgi National Park south of Fitz's Hill (in the Billy Range/Glendale Crossing area), a site near Collector on the Federal Highway, and a location east of Bungendore on the King's Highway. It is possible the location east of Bungendore is in the same area as one of COGs records in 2007, a property east of Bungendore on the Dividing Range (see Table 2 above). It has not been possible to ascertain the numbers of birds recorded at these locations, due to the format in which the data has been provided (Atlas of NSW Wildlife database).

See Attachment**,** a map of the distribution of Glossy Black-cockatoos within the broader Canberra region to the NSW coast, from the Atlas of NSW Wildlife (Atlas of NSW Wildlife database). (Note that the referred attachment is not included)**.**

Birds Australia Data

Birds Australia undertook two national censuses (surveys) of birds, one from 1977 to 1981 and the second from 1998 to 2002. COG members collected data from the Canberra region for both these projects and it is included in the records in Table 1 and Table 2. The analysis of Atlas reporting rates between these two major surveys concluded there was no significant regional variation and no significant difference in reporting rate between the two Atlases (Blakers et al 1984; Barrett et al 2003).

However, given that the Glossy Black-cockatoo is a species in very low numbers, is long-lived, is highly mobile using a large area of the landscape, is unobtrusive and difficult to locate especially in hilly habitats, targeted surveys and studies are needed to fully understand the population and abundance trends, including breeding biology, of this species. These kinds of studies have been limited, essentially on Kangaroo Island and in the Goonoo State Forest in NSW on the mainland (Cameron 2009).

Table 2: Records in adjacent NSW (1992 to 2009), from COG database, additional sightings reported on the COG email chat line, and some personal communications (See note 10).

Site	Year	Month	Number birds
Googong NR	1995	February	3
Burra Creek	1999	July	2 See note 9
3km north Rose's Lagoon	1999	December	2
Burra Creek	2000	February	2
Burra Creek	2001	October-December	2-3
Burra Creek	2002	March-May, August-December	1-7
North of TSR 36	2002	September	3
Burra Creek	2003	January-May, July-August, October-December	1-10
Smith's Road (Murrumbidgee River Corridor)	2003	February	9
Smith's Road (Murrumbidgee River Corridor)	2003	April	3
Burra Creek	2004	February, April-July, October	1-8
Burra Creek	2005	January, March, May to August, December	1-8
Burra Creek	2006	January-May	2-10
Burra Creek	2007	February – March, May, December	1-2
Timber Tops, property east of Bungendore on the Dividing Range	2007	July	2
Burra Creek	2008	July – August, December	1-6
Burra Creek	2009	January-March	1-4

Note 9: The Burra Creek location is a property owned by a COG member (Ian Anderson), around 40km south of Canberra in the southern Burra Valley, where Drooping Casuarina occurs. The stand on the property was largely burnt and killed by a fire around 1980, shortly before the purchase of the block by the current owner. Glossy Black-cockatoos were first recorded on the block in March 1998, about 18 years after burning. There are approximately 100 mature trees on the 17 hectares block; in addition, adjoining properties including a Crown lease, have approx 150 mature trees, with smaller patches in the southern Burra Valley adding another 75 trees approximately. An estimate of trees in the area is 325 (Ian Anderson pers. comm.).

Over time, the birds have been recorded on the Burra Creek block in all months of the year, but mostly in the autumn, winter and spring months, and a young bird was present in 2002. The greatest number of sightings occurred over the years 2002 and 2003 (with sightings over most months of those years); this is around a drier than average period and the January 2003 bushfires in the ACT. It has been speculated that the block may have functioned in those years as a refuge, as other feeding areas failed or were possibly burnt. It should be noted that the owner is not a full-time resident at the property, but does visit regularly; there are some periods of 'no records' where the owner has been absent (Anderson 2004; Ian Anderson pers. comm.)

Note 10: COGs area of interest in NSW extends approximately to Yass and Goulburn to the north, and Adaminaby and Deua area to the south. This is an area bounded by parallels of latitude 34° 45' and 36° 00' S, and meridians of longitude 148° 40' and 149° 45' E.

Atlas of NSW Wildlife

A map together with data from the Atlas of NSW Wildlife maintained by the NSW Government (National Parks & Wildlife Service/Department of Environment & Climate Change) has been examined regarding the distribution of Glossy Black-cockatoos in the COG area of interest and further east to the coast. This data covers the years 1983 to 2008 and has around 1900 records. Specific location description of the records is not available, but based on the GPS coordinates available, the vast majority of the records are east of the COG area of interest (viz east of longitude 149° 45'). The numbers of birds range from 1 to 30, with almost all sightings in the order of 1-4 birds. In terms of larger groups of birds, there is one record in December 2006 of 30 birds in a coastal location (possibly around the Moruya area), and a few records (less than 10) of groups in the order of 8 to 12 birds (Atlas of NSW Wildlife database).

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However, given that the Glossy Black-cockatoo is a species in very low numbers, is long-lived, is highly mobile using a large area of the landscape, is unobtrusive and difficult to locate especially in hilly habitats, targeted surveys and studies are needed to fully understand the population and abundance trends, including breeding biology, of this species. These kinds of studies have been limited, essentially on Kangaroo Island and in the Goonoo State Forest in NSW on the mainland (Cameron 2009).

(e) Criteria satisfied and the reasons why

Based on the criteria for listing, the Glossy Black-cockatoo could meet the requirements for declaration as an endangered species or a vulnerable species (depending on how "population" is interpreted), as follows:

1.2 Species is observed, estimated, inferred or suspected to be at risk of premature extinction in the ACT region in the medium-term future, as demonstrated by:

1.2.6 Extremely small population
OR

2.2 Species is observed, estimated, inferred or suspected to be at risk of premature extinction in the ACT region in the medium-term future, as demonstrated by:

2.2.6 Small population

The number of birds which are known to occur in and around the ACT is probably no more than 26 individuals and possibly less than that, considerably less than the definitions in the criteria guidelines (viz. fewer than 250 individuals for the endangered category/fewer than 1000 individuals for the vulnerable category).

Given the mobility of the species, there is some difficulty in defining a "population" in terms of the criteria; in fact it makes the definition of a "population" problematic.

The number of birds that occur in the ACT and immediate surrounding region is likely to be part of a larger coastal/coastal range population, currently undefined. Based on expert opinion, there would be some justification in treating the birds that come to the Canberra area regularly, as an inland sub-group, or to regard the Canberra area as an inland refuge for a sub-group of a wider population of the species (Joseph Forshaw pers. comm.).

1.2.4 Severely fragmented distribution for a species currently ….having a small area of occupancy within its range

OR

1.2.4 Severely fragmented distribution for a species currently ….having a moderately small area of occupancy within its range.

It is also considered possible that the Glossy Black-cockatoo could meet the criteria above, in either category of endangered or vulnerable, although the applicability of the criteria and guidelines is less clear with respect to these.

In terms of patches of its specialized feeding habitat within the ACT where the birds congregate, it could be argued that the Glossy Black-cockatoo meets these criteria, by virtue of having a small or moderately small area of occupancy.

There is only one known significant patch of feeding and nesting habitat within the ACT, the Mt Majura/Mt Ainslie NR complex, with a limited number of other (mostly relatively small) sites distributed around the immediate Canberra region, where suitable feed trees are known to occur. The patches of feed trees are widely dispersed within a highly fragmented landscape.

The Mt Majura/Mt Ainslie NR complex in the ACT is critical for the species. This is a relatively small "area of occupancy", only one relatively small site, in the context of the ACT.

1.2.2 Imminent risk of severe reduction in population or distribution from evidence based on:

1.2.1.3 severe reduction in quality or quantity of habitat

OR

2.2.2 Imminent risk of serious reduction in population or distribution from evidence based on:

1.2.1.3 serious reduction in quality or quantity of habitat.

Fire potentially represents a severe or serious risk to the local Drooping Casuarina habitat of the Glossy Black-cockatoo, either from inappropriate prescribed burning regimes, including such burns that may get out of control, or wildfire events. Research has shown that global warming impacts are likely to severely or seriously impact on the quantity and quality of Drooping Casuarina habitat:

- Global warming has significantly increased the likelihood/frequency of bushfire events and the likelihood of more severe bushfires (see discussion on pages 5 and 6).
- The 2003 bushfires in Canberra are one such event, and those fires destroyed many of the Drooping Casuarina trees on Mt Taylor, as well as an unknown number within places like Namadgi NP.
- The example from the Goonoo State Forest in NSW of a catastrophic wildfire event in recent years that destroyed much of the feeding habitat and nest trees of Glossy Black-cockatoos illustrates what can occur on a large scale.
- As there is only one major habitat and breeding site in the ACT, indeed a critical site for the species, (the Mt Majura/Mt Ainslie NR complex), it is particularly vulnerable to a wildfire event.
- Global warming, with more frequent droughts, more irregular rainfall patterns etc also has the potential to impact seriously on Drooping Casuarina habitat, causing death of trees and reduced allocasuarina seed production, thus impacting on breeding of Glossy Black-cockatoos.

Many of the criteria applying for nomination are not readily applicable to or are not an exact fit with this highly mobile species, whose movements and population dynamics is not well understood in our region.

There is considerable difficulty in determining whether a species such as the Glossy Black-cockatoo is declining regionally, due to a range of factors, its longevity, highly mobile nature and the very low numbers of birds reported. As well, the species can be difficult to locate for reasons stated elsewhere in this nomination. There would likely need to be investment in a long-term and detailed study, and even this may not provide conclusive evidence of "decline" in population. There is, however, good evidence that the current, inland populations of Glossy Black-cockatoos across NSW are significantly reduced from very much higher historical populations (see below under listings in various jurisdictions), and it is more than likely that there were higher historical populations of the species in the Canberra region.

Given the conservation status of the Glossy Black-cockatoo in NSW (see below) and its vulnerability due to a number of factors, some of which are potentially serious threatening processes, COG believes the Glossy Black-cockatoo warrants listing in the ACT on the basis that there is an "extremely small population" or "small population", (that is a sub-group) of this species regularly found in the ACT and immediate region:

- The species is an ecological specialist (depending on particular diet) utilising largely one locally scarce plant species as food, with only one significant habitat site in the ACT (Mt Majura/Mt Ainslie NR complex)
- The species faces moderate to high threatening processes (clearance of habitat, destruction of habitat by bushfire, impacts on food and

breeding resources from global warming, and inappropriate land management practices including overgrazing and prescribed burning), and
- The species has poor recovery potential.

The almost total dependence regionally on *casuarina* species for food certainly makes the Glossy Black-cockatoo vulnerable, and their extinction from virtually all southern Victoria is stark evidence of the impact of land clearance. In determining their present status, inadequate emphasis is given to the fragmented distribution and the consequent vulnerability of outlier populations, especially isolated ones. "Merely listing the species as rare, threatened or endangered does not reflect the real situation, for in various parts of its range, it may qualify for any or none of those categories" (Forshaw 2002).

If the Glossy Black-cockatoo is unable to be accepted on the basis of an "extremely small population" or "small population", (and/or other criterion/criteria), the species should be placed under a watching brief category, such as "rare" category, so that appropriate protection of local habitat, especially the important habitat in the Mt Majura/Mt Ainslie NR complex, can occur. Whatever category is agreed, one option which COG would support is for the Conservator of Flora and Fauna to issue Directions which Government agencies managing areas of Drooping Casuarina habitat or undertaking activities such as prescribed burning in reserves etc where this habitat occurs, would have to take account of.

COG is particularly worried that proposed, rotational prescribed burning will be scheduled and undertaken at key Glossy Black-cockatoo habitat sites such as the Mt Majura/Mt Ainslie NR complex (see under Threats below). It is known that a burn undertaken around two/three years ago on the eastern upper slopes of Mt Ainslie occurred in a core Drooping Casuarina site (Michael Lenz pers. comm.).

The Committee could further investigate and give consideration to listing potentially threatening processes, such as inappropriate fire management/prescribed burning regimes, using the Glossy Black-cockatoo and the Drooping Casuarina ecological community as the example:

4.1 Threatening process is clearly shown to be a significant cause for declaration of any species as vulnerable or endangered or any ecological community as endangered in the ACT region.

OR

4.2 Threatening process is clearly shown to have potential for causing any species to become vulnerable or endangered or any ecological community to become endangered in the ACT region.

Consideration might also be given to reviewing the criteria so that it can cater for very small populations (that is sub-groups) of highly mobile birds that are potentially very vulnerable due to a range of factors (e.g. global warming impacts, and other threatening processes).

Listings in various jurisdictions

In NSW, the Glossy Black-cockatoo is classified as a 'vulnerable' species under the *Threatened Species Conservation Act 1995*. They are listed due to several factors, a severely reduced population overall, being an ecological specialist with a limited food range, and having poor recovery potential (Department of Environment & Climate Change, NSW website).

The inland NSW, Riverina population of Glossy Black-cockatoo is listed as 'endangered' under the NSW legislation, with a population estimated at less than 40 birds in total. This inland population has

been severely reduced, and is restricted to hills and low ridges within the Narranderra Range, Brobenah Hills, Cocoparra, Lachlan and Naradhan Ranges within the largely cleared landscapes of the Cobar, Carathool, Narrandera and Leeton local government areas (Department of Environment & Climate Change, NSW website).

In relation to the Riverina NSW population, there is anecdotal evidence that in the first half of the 20th century, Glossy Black-cockatoos numbered in the hundreds, with flocks of 40 or more birds not uncommon in the 1940s and 1950s. Habitat loss is seen as the key factor in the historical decline of that population, with feeding and breeding sites greatly reduced, and illegal nest robbing in the past by the avicultural trade also having an impact (Department of Environment & Climate Change, NSW website).

In Victoria, the Glossy Black-cockatoo is listed as 'vulnerable' under the *Flora and Fauna Guarantee Act 1988* (Department of Sustainability and Environment, Victoria website).

In South Australia, the sub-species of Glossy Black-cockatoo (*Calyptorhynchus lathami halmaturinus*), is listed as 'endangered' under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*, and as 'endangered' under South Australia's *National Parks and Wildlife Act 1972*. Glossy Black-cockatoos disappeared from the Mount Lofty Ranges near Adelaide, after most of its habitat was cleared for agriculture and firewood in the early 1900s. It has survived on Kangaroo Island, with only rare sightings on the mainland, the last confirmed mainland sighting being in 1977. In 1995, National Parks and Wildlife SA established the Glossy Black-cockatoo Recovery Program. Researchers found high nest failure to be a major factor in the decline, including predation by Common Brushtail Possums and a shortage of suitable tree hollows. Following the protection of nest trees from possums and the erection of artificial nests, the Glossy Black-cockatoo population on Kangaroo Island has slowly increased, from around 260/270 birds in the early 1990s to an estimated 310-330 birds in the 2006 census (Department of Environment and Heritage, South Australia website; Department of Environment, Water, Heritage, and the Arts, website).

Under Queensland's *Nature Conservation Act 1992*, the Glossy Black-cockatoo is listed as 'vulnerable' (Department of Environment & Resource Management, Queensland website).

Under criteria used officially by the International Union for Conservation of Nature (IUCN), the eastern Glossy Black-cockatoo's conservation status was categorized in 2000 as 'near threatened', which means a species not satisfying the criteria as 'vulnerable' (that is high risk of extinction in the wild in the medium-term future), but close to qualifying in the 'vulnerable' category (Garnett & Crowley 2000).

Threats

Potential threats to the Glossy Black-cockatoo include:

- Natural and other hazards which may fragment habitat
- Loss of habitat through clearing and associated activities, including intensive logging, land clearing, burning and grazing
- Logging or removal of nest trees within the proximity of food resources
- Inappropriate prescribed burning practices which destroy feed trees/habitat
- Impacts from global warming, such as more prolonged droughts and more frequent fire regimes reducing its range by removing nesting and feeding resources

- Nest predation by possums has been an issue for the Kangaroo Island population, and there is a record of a possum in a Glossy Black-cockatoo nest hollow in the Riverina, NSW
- Possibly wind turbines located inappropriately on ridges and hills, eg within the proximity of stands of feed trees or along flyways between habitat patches

(Ayres et al 1996; Crome & Shields 1992; Garnett 1993).

One of the factors precipitating this nomination, is the likelihood of more regular, prescribed burning activities for fuel reduction in and around Canberra Nature Park and Namadgi NP in the ACT, under strategic bushfire management plans in development. COG believes that listing the Glossy Black-cockatoo would assist in focussing more attention on the vulnerability of the Drooping Casuarina and ensuring that management practices in the ACT (on Government controlled land or leaseholds under various Land Management Agreements) protect the patches of this habitat as well as nest trees for Glossy Black-cockatoos.

Rotational patch burning in habitat areas could be damaging and is not an appropriate approach for these sensitive areas. Instead, there needs to be a more careful and considered assessment of the particular areas, informed by expert ecologists and contemporary research, as well as improved management and supervision of controlled burns, to minimise impacts on Glossy Black-cockatoo habitat in locations where feeding habitat or nesting trees occur.

COG believes listing could also facilitate management actions to assist in making the species more resilient, by increasing the amount of feeding habitat and the number of feeding sites in the ACT. Larger stands of trees, with increased age of trees could be encouraged at several different sites. This could include re-vegetation of suitable hilly sites, re-vegetation in sites where Drooping Casuarina previously occurred and has been largely cleared, encouraging regeneration and altering grazing regimes. The Goorooyarroo Nature Reserve where some remnant Drooping Casuarina trees occur, which is close to the Mt Majura/Mt Ainslie NR complex, is one potential location, which could be a second major site, providing alternative habitat in the event of catastrophic wildfire in the Mt Majura/Mt Ainslie NR complex. The Canberra International Arboretum and Gardens is also a potential location for plantings of Drooping Casuarina, and this has been raised by COG with the management board.

One of the priority actions in NSW for the recovery of Glossy Black-cockatoos is to encourage the restoration of foraging habitat that has been cleared or degraded by previous impacts (Department of Environment and Climate Change, NSW website).

Acknowledgements

This nomination was researched and drafted by Jenny Bounds, a non-professional ornithologist and member of COG.

Factual material including references relating to Drooping Casuarina *Allocasuarina verticillata* was provided by Mr Geoff Butler, Environmental Consultant and Horticulturalist.

A draft of this nomination was reviewed by Mr Chris Davey, President, COG and Dr Michael Lenz.

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Department of Sustainability and Environment, Victoria (dse.vic.gov.au).

Department of Environment and Heritage, South Australia
(environment.sa.gov.au).

Department of Environment & Resource Management, Queensland (epa.qld.gov.au).

Personal Communications

Ian Anderson: A member of COG, a non-professional ornithologist, who owns a rural block at Burra Creek where Glossy Black-cockatoos are regularly recorded. (12 Wylly Place, Hughes, ACT, 2605).

Dr Matt Cameron: Employed by the Department of Environment and Climate Change in NSW, working on threatened species. His PhD studies were on the Glossy Black-cockatoo in the Goonoo State Forest north of Dubbo, NSW. (Department of Environment and Climate Change, Albury, NSW).

Joseph Forshaw: A former CSIRO biologist, and one of Australia's foremost ornithologists, recognised internationally as an expert on parrots and cockatoos. (2 Tarrabool St, Amaroo, ACT 2914).

Matthew Frawley: A non-professional ornithologist and COG member. (81/25 Pinkerton Crt, Kambah, ACT 2902).

Steve Holliday: Employed by the Fenner School, ANU, working on woodlands research in the Mulligan's Flat/Goorooyarroo Nature Reserves. A member of COG. (90 Duffy St, Ainslie, ACT 2602).

Dr Michael Lenz: CSIRO Entomologist and non-professional ornithologist, who has been regularly observing Glossy Black-cockatoos in the Mt Majura/Mt Ainslie NR complex for a number of years, and recorded the breeding event there in 2004 (8 Suttor St, Ainslie, ACT, 2602).

Dr Michael Mulvaney: An environmental scientist, expert in native vegetation policy, with 30 years working in conservation management; has been actively involved in the landcare group, Red Hill Regenerators, in the Red Hill Nature Reserve for many years. (Senior Policy officer, Natural Environment, Policy, Department of Environment, Climate Change Energy and Water, ACT Government, PO 158 Canberra, 2601).

Professor Henry Nix: A former Australian National University environmental scientist, and noted ornithologist (22 Syme Cres, O'Connor, ACT, 2602).

COG Email Chat Line – an email discussion list set up by COG for members to discuss bird sightings and bird issues.

Databases

COG database: an area of interest approximately to Yass and Goulburn to the north, and Adaminaby and Deua area to the south, bounded by parallels of latitude 34° 45' and 36° 00' S, and meridians of longitude 148° 40' and 149° 45' E.

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ODD OBS

Reactions to Potential Predators

In March –May 2011 I observed a number of examples of interactions between non-predatory birds and (defining the term widely) raptors:

1. Six Australian Magpies *Gymnorhina tibicens* mobbing a Brown Falcon *Falco berigora* perched in a tree;
2. A White-eared Honeyeater *Lichenostomus leucotis* giving alarm calls around two perched Southern Boobooks *Ninox novaeseelandiae*;
3. Dusky Woodswallows *Artamus cyanopterus* swooping a Wedge-tailed Eagle *Aquila audax* (this interaction was taking place at a considerable altitude – possibly 300m above the observer);
4. Eight Sulphur-crested Cockatoos *Cacuatua galerita* , 12 Galahs *Cacatua roseicapilla* and two Gang-gang Cockatoos *Callocephalon fimbriatum* following a Wedge-tailed Eagle; and
5. 30 Yellow-rumped Thornbills, *Acanthiza chrysorrhoea*, 20 Buff-rumped Thornbills *Acanthiza reguloides*, a White-eared Honeyeater *Lichenostomus leucotis* , and a Grey Shrike-thrush *Colluracina harmonica* mobbing a pair of roosting Tawny Frogmouths *Podargus striodes* perched in a Red Box *Eucalyptus polyanthemos*.

In example 4, the Sulphur-crested Cockatoos changed direction of flight by 180^0 to pursue the Wedge-tailed Eagle. The Galahs were flying closely behind the Eagle, but at the same altitude and maintaining position, so at least appeared to be "escorting the raptor from the premises". The Gang-gangs took off from feeding in a eucalypt to join the other cockatoos.

Example 5 was of particular interest to me as I had not been able to locate the resident Carwoola Tawny Frogmouths for two days. On following the ruckus I found them in a roost not previously identified, some 130m from the last place I had located them.

Overall, the Handbook of Australian New Zealand and Antarctic Birds (HANZAB) indicates that some of these reactions may represent a real threat to the non-raptorial species, while others do not.

Australian Magpie, together with other species of broadly similar size, is included in the list HANZAB Volume 2 (Marchant and Higgins 1993) of prey species of the Brown Falcon.

Prey of the Southern Boobook is described in HANZAB Volume 4 (Higgins 1999) as "mostly small birds and mammals". No honeyeaters are specified in the list of prey but several of the specified species are of a similar size and are found in similar habitats

The Wedge-tailed Eagle is described in HANZAB Volume 2 (Marchant and Higgins 1993) as including birds with a body mass greater than100 g in its diet, with cited examples of prey including Sulphur-crested Cockatoo and Galah. While the Dusky Woodswallow is well below the 100g weight criterion, HANZAB Volume 7 Part A (Higgins, Peter and Cowling 2006) notes that this species is known to mob Wedge-tailed Eagles especially around nests (which would be unlikely to have been the situation in April).

HANZAB Volume 4 (Higgins 1999) refers to Treecreepers (*Climacteris* sp. and specifically Brown Treecreeper *C. picumnus*) in the diet of Tawny Frogmouths. While a White-throated Treecreeper *Corombates leucophaeus* was in the same tree as the frogmouths it was not a participant in the mobbing. Kaplan

(2007) does not include any bird species in her list of frogmouth food items.

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Martin Butterfield

An unusual Australian Reed-Warbler.

On 26 December 2010, at Kelly's Swamp, ACT, I came across and photographed an Australian Reed-Warbler *Acrocephalus australis* with unusual plumage (see Figures 1 and 2). The plumage had such an unusual pattern that I wondered if it was an Australian Reed-Warbler at all. I circulated the photographs to various experts, including Mike Carter, a Victorian authority on unusual sightings.

In the result, there was agreement that it was indeed an Australian Reed-Warbler, albeit with unusual plumage. Danny Rogers was good enough to offer a full comment drawing on his experience of the species. This is reproduced below with his permission.

"I agree with Mike - it's presumably an Australian Reed Warbler, though I can't say I've ever seen one very like this before. The dark crescent on the throat is caused by exposure of dark feather bases - I couldn't say whether that's due to very heavy natural moult, or accidental feather loss, of the kind that might be caused if the bird flew into e.g. some wire-grass or sword-grass. There is certainly heavy natural moult on the bird - lots of pins visible on the head and throat. Another striking feature of the bird is how cold and grey most of the upperparts and head plumage looks - Aussie Reeds do look greyer when worn, but this is nevertheless quite an extreme example. The contrast with much warmer-tinged incoming feathers on the throat and the bend of wing is another indication that it's in earlyish, very heavy body moult.

Figure 1. An unusual Australian Reed-Warbler.

"I am puzzled that the bird is moulting so heavily in December. When I was regularly banding this species in Victoria (where they are summer migrants) at a couple of sites in the 1980s, the general story was they got progressively more worn during the austral summer, and around Feb-March, when we were thinking they were so worn that they'd have to start moulting soon, they'd suddenly disappear from the study site. It was quite bizarre, as their wings really didn't look to be in suitable condition for any substantial migration. Given that we were mist-netting in sites where Reed-Warbler densities were

very high, it didn't seem likely that the sudden disappearance of the birds could be explained by their suddenly becoming more cryptic when moult began. When and where they moult is still a mystery to me. I believe Andrew Silcocks has since caught a few birds moulting in Victorian reed-beds, but only as a very occasional thing, not as something that every bird does. An upshot of this moult mystery is that I'm not very familiar with the appearance of Australian Reed Warblers during the early stages of moult.

"Like Mike, I can't see anything morphological on your bird that makes me think Oriental Reed-Warbler [*Acrocephalus orientalis*] is a serious candidate - though on morphology alone it's really hard to rule out some small female Orientals, which can lack throat streaking. However I think the presence of such heavy moult rules Oriental out - all available evidence suggests that Oriental Reed Warblers do their moult on the breeding grounds before southwards migration.

Figure 2. An unusual Australian Reed-Warbler (close-up).

"Why an Australian Reed Warbler should be starting moult so early is unclear to me. There's nothing about the bird that might suggest it is a youngster - no yellow visible inside the mouth etc. Perhaps they breed and moult earlier in the ACT than they do in Vic? Or perhaps your bird was a central Australian stray which bred some time ago and is now using Kelly's Swamp as a non-breeding area? "

In fact, ACT reed-warblers were still nesting into January, which tends to rule out a significant difference in timing of the nesting and moult cycle between the ACT and southern Victoria.

Geoffrey Dabb

White-faced Herons Nesting in Campbell Park 2010-2011.

White-faced herons *Ardea novaehollandiae* are not-uncommon birds, which are frequently seen near water around Canberra. To my knowledge, no one has previously documented a successful breeding event in Canberra. This observation provides the first documented record of a White-faced Heron breeding event, which occurred at Campbell Park in summer 2010-11.

Saturday, 27 November 2010
As Bill Compston and I left our car at the northern end of Campbell Park car park, we noticed a commotion high in the branches of a tall brittle-gum, which was several metres from the car-park curb. Noisy Miners *Manorina melanocephala* were diving and harassing three White-faced Herons. The herons were not taking much notice and two of them alighted on a branch, about 15 m above the ground. A nest had been started. It was quite small, about 30 cm across and made of thin twigs. Note that the nest was not close to water.

Thursday, 2 December 2010
We visited Campbell Park again. The nest was now considerably bigger, about 50cms wide, and a White-faced Heron was observed sitting on it.

Sunday, 5 December 2010
There had been a significant amount of rain since the previous visit, with more than 80mm received since 3 December 2010 (BOM). The nest was intact and a heron was sitting on it. We think that eggs were probably laid between 2-5 December 2011. I consulted Morcombe's "Field Guide to Australian Birds" (2003), which advised that White-faced Heron incubation time was between 21 and 24 days. From hatching to flying was said to be between 42 and 45 days.

Tuesday, 21 December 2010
Geoffrey Dabb saw a parent carrying a long stick, and giving it to the other parent on the nest. This behaviour has been observed in the Royal Spoonbills.

Monday, 27 December 2010
A pale blue egg shell was found on the ground beneath the nest. A couple of days later, three more were found. The nest was very loosely built and the shells could easily have fallen through. This gives the time of incubation at between 22 and 25 days.

Thursday, 6 January 2011
An adult heron flew in and alighted on a branch above the nest. It was harassed by Noisy Miners but took little notice. It then flew down to the nest where it regurgitated food for its partner and at least two chicks in the nest. A couple of days later, a parent, first seen sitting on the nest, stepped out and stood beside the nest. Two chicks were seen.

Friday, 14 January 2011
Three chicks were observed in the evening on this occasion. The third chick was considerably smaller than the other two. We estimated they were between 20 and 30 cm tall. They did not make begging calls, nor did they argue or dispute among themselves. An adult bird arrived, after being harassed again by Noisy Miners. It regurgitated food for all three chicks. The smallest one was fed last.

Tuesday, 18 January 2011
Margaret Leggoe posted photos of the chicks to the Canberra Birds email chat line. A day or two later, the chicks were sitting low in the nest and there was no sign of an adult protector. We saw a small dead fish, covered by ants, beneath the nest. Presumably one of the birds had dropped it.

Saturday, 22 January 2011
Three chicks were confirmed present in the nest.

Sunday, 23 January 2011
Lindell Emerton photographed the nest. The wings of a dead chick could be seen protruding from beneath it. A day or two later, the head of the chick was protruding. Presumably, this smallest chick lived for about 25 days. It was probably the last egg to hatch and was always smaller than the other two chicks. There is no reason to suppose that one of the other chicks harmed this dead individual.

Figure 1. White-faced Heron chicks perched in the nest at Campbell Park in January 2011 (photograph by Geoffrey Dabb).

Saturday, 5 February 2011
In the evening, both juveniles were standing beside the nest. A wild storm, with strong winds and heavy rain started. The juveniles immediately returned to the nest. At this point it did not seem that the White-faced Heron parent were in near proximity to the chicks, however, they could have been perched nearby and were not seen by us.

Sunday, 6 February 2011
The two juveniles were observed testing their wings, flying in a clumsy manner around their tree. For about 20 minutes, the two birds experimented, finally ending up back at the nest. They were not seen calling to each other or to a parent, who were sometimes perched in a different tree up to 50 m away. The parents were not observed calling to the chicks. It was approximately 42 days since the eggs had hatched

Monday, 7 February 201
The juveniles were watched for an hour by the author. They were beginning to feed themselves, finding grubs or other insects under the bark of the nest tree. Noisy Miners occasionally pestered them.

Tuesday, 8 February 2011
The skeleton of the dead chick was on the ground beneath the nest. Soft parts had been eaten away by insect activity. The skeleton was retrieved and provided to the CSIRO Australian National Wildlife Collection.

Friday, 11 February 2011
The two juveniles White-faced Herons had left the nest tree and flown to an adjacent eucalypt. A parent was perched about 50 m away along the fire trail, parallel to the car park, in the direction of a small pond, just outside the trees. There was no audible or visible communication observed between the adult and the juveniles. However, we hypothesised that the parents might be leading the juveniles to the nearest water body. For the next couple of days, the juvenile birds flew from tree to tree, towards the grassland and pond, and were seen to feed themselves.

Friday, 18 February 2011
The juveniles were observed beside the pond, apparently catching food in the water.

Saturday, 19 February 2011
Robin Eckerman photographed the two birds beside the dam, not far from the horse-gate.

Saturday, 26 February 2011
Robin Eckerman photographed an adult White-faced Heron flying and the young birds feeding nearby at the dam. This was the last occasion that the young White-faced Herons were observed in this locality.

Concluding Remarks
We suggest it likely that at least one White-faced Heron parent watched the young birds at all times. The duration from the first observation of the prospective parents starting the nest until the young birds left the vicinity of the nest was 14 weeks.

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Elizabeth Compston

COLUMNISTS' CORNER

Down With Peddants! (Or does the spelling of bird names matter?)

Correct spelling is now a more complicated issue than it was a few years ago. In a professional field I once worked in, correct spelling was next to godliness. "If you get the spelling wrong", my colleagues would warn darkly, "they'll think you've got something else wrong".

Today there are several areas of word-using where spelling doesn't matter all that much. Colloquial shortenings and new abbreviated words are a sign of the seasoned electronic communicator. It is far too late to complain about that.

I also excuse fat-fingered mis-typings in quick conversational exchanges. The main thing is to get the message across. In the world of quick conversational keyboarding, nobody should care about an occasional (or even frequent) kookaburrz or Scared Kingfisher.

However, there remain areas where it is clear from the context, or the writer's own professed concern for correctness, that the writer would like to get the spelling right. If someone goes to the trouble of carefully typing out 'Black-faced Cuckoo-shrike', rather than 'bfcs' or something of the sort, I would assume that they are particular about using the usual or conventional name for the species.

Moreover, English names for Australian birds are supposed to be standardised on the basis of the recommended Birds Australia (BA) list - supposed to be, that is. In various current contexts you will still find each of 'Reed Warbler', 'Reed-Warbler' and 'Reed-warbler'. The standard (currently BA-recommended) name is 'Australian Reed-Warbler'. However *HANZAB* also refers to a related species, not now on the Australian list, as 'Clamorous Reed-Warbler', thus using a spelling for that non-Australian species different from the standard spelling where that species mainly occurs. Not all standards are the same.

Let's look at some common spelling variations that are incorrect, at least on the basis of the Australian recommended list. For example, the incorrect 'sitella' (for sittella) is often seen. Getting 'myna' right, and using it for the appropriate species, seems to be another challenge.

Another common mis-spelling is 'Horsefield's' for the bronze-cuckoo. Dr Thomas Horsfield (1778-1859) is past caring, but some other people will still care. Personal names can be a little difficult. In Christidis & Boles (2008), 'Saunder's'(misplaced apostrophe) and 'Schrenk's' (missing the second 'c') appear in given bird names, and those wrong spellings were adopted into the recommended BA list.

American spellings raise another issue. In UK/Australian English a person who shovels is a 'shoveller'. However, for the duck, for some reason, the American spelling 'shoveler' has been adopted, and 'Australasian Shoveller' is technically incorrect. On the other hand the American 'gray' has not been generally adopted, but if you want to write about a Grey Plover for an American publisher you will need to use 'Gray'.

American influence was decisive on another point, which is the main cause of variable spellings. This is the hyphen followed by a capital initial in compound names. We need to go back a bit here. In 1978 a committee recommended that Australian authorities follow North American practice with respect to names like 'Fig-Parrot' where a hyphen was used. Thus: "The second component of the name is capitalized if the species belongs to or is allied to the group,

eg Whistling-Duck, which is a duck ...". Seventeen recommended names were in that category, and 12 in the other (small initial) category (for example 'Cuckoo-shrike', which is not a shrike).

One difficulty with that convention is that not all authorities follow it. The English names recommended by the International Ornithological Congress (IOC) are based on a quite different approach to the hyphen. Moreover, there has been some inconsistency within the Australian list.

The 1978 proposals were a bit vague about what the relevant 'group' was. However, with one exception the *family* seems to have been taken as the group. The exception is 'Scrub-robin'. While this is not 'allied' to the European robins, that should not be material. It is, relevantly, a 'Robin', being in the same family as the other Australian (capital 'R') robins, a relationship that is disguised by the small 'r'.

In the 1978 proposals the 'Pygmy-Goose' was, appropriately, so named, given that it was, as it still is, in the 'geese, swans, ducks' family. In C&B (1994) this was, confusingly, changed to 'Pygmy-goose' as one of a number of changes 'as a result of changes in taxonomic status' (!). The pygmy-goose might not be your usual kind of goose, but it is surely 'allied' to (in the same family as) unquestionable geese, which the small 'g' denies.

The 1978 proposals favoured 'Night Heron', which was followed in C&B (1994). However, with no explanation C&B (2008) adopted 'Night-Heron'. That change moved Australian practice further away from the IOC recommendations, which prefer 'Night Heron'.

Apart from the capital initial, a more basic issue is whether a name should have a hyphen at all. The decision to have one or not is often arbitrary. Should it be 'King Parrot' or 'King-Parrot', 'Button-quail' or 'Buttonquail'? The Australian and IOC lists have gone in different directions on this.

"One must regard the hyphen", Winston Churchill admonished his Private Secretary, "as a blemish to be avoided wherever possible". Most style manuals agree, for ordinary purposes. Because there is no clear rule for use of the hyphen, if you want to conform to the Australian recommended bird name, or any other recommended bird name, you must either remember the prescribed spelling or go and look it up.

People will take various approaches to the spelling of bird names. If you are writing in a professional capacity you might have no choice but to conform to what is prescribed editorially. If you are not so constrained, you might feel less inhibited, and adopt your own preference.

I have a firm view on the Australian Painted-snipe *Rostratula australis*. This, we are told, is not a snipe at all. It is not in the same family as real snipe. What possible justification is there for prescribing 'Painted Snipe' as the recommended name? To me, then, it is one of the painted-snipes.

If you do go with your own preferences, though, be prepared for some nit-picking. There are peddants everywhere. As for 'peddant' itself, I spell it how it's pronounced.

Stentoreus

Birding in Cyberspace, Canberra Style

Much has been written about Internet-based social networking, and this column has followed developments in this domain over the last decade. The rise and rise of **Twitter** continues to be of great interest, and there is evidence of increasing use of this resource among the birding communities.

Perhaps most prominently in Australia is the use of Twitter by Birds Australia (soon to be Birdlife Australia). A visit to their homepage http://birdsaustralia.com.au/ reveals, towards the bottom, the Twitter logo and the text 'Follow us on Twitter' which, in turn, links to http://twitter.com/#!/BirdsOz . The page shows that, at the time of writing, there were 299 people 'following' Birds Australia on Twitter.

For anybody who is not aware of how Twitter works, one simply chooses to follow a particular Twitter feed and, when the person or organisation that you are following wants to communicate to all their 'followers', they send out a tweet. A tweet is a brief message that appears on your Twitter website and, if you have enabled tis option, is sent to your mobile device as a brief text message. This is the option that I prefer as it is much easier and quicker to receive the information by text message than having to remember to keep going back to the webpage.

What sort of information might one get from that source? The day before preparing this column I received from BirdsOz a tweet that read 'Good news Plains-wanderer spotters! The critically endangered bird has been sighted in a new region'. Along with the text was a link to a web page where further details are available, namely a news item at the Trust for Nature website http://www.trustfornature.org.au/news/a-wanderer-returns/ . (The new location of this endangered bird, by the way, is Neds Corner Station in the Victorian mallee.) Other tweets received from Birds Australia in recent weeks have included the fact that the sea-eagles nesting close to their Sydney office has laid eggs, and that all this activity can be observed through the web cam (automated camera) trained on their nest.

Many other applications of Twitter exist in the birding world. A prominent one is to use it for rare bird alerts, a key resource for twitchers. Although the Canberra region twitchers do not (yet) use Twitter to inform members of important birds in our region, this is a well-established process in the United Kingdom. See, for example, **Rare Bird Alert** http://twitter.com/#!/RareBirdAlertUK . That Twitter service has far more traffic than does the Australian BirdsOz Twitter feed, probably reflecting the huge number of birders in the UK. It includes a fair bit of chat as well as actual reports on observations of rare birds.

Another use of Twitter in the birding fraternity is to provide information about new publications. Remaining in the United Kingdom, for a moment, I point to the Twitter feed of what its publisher says is 'The UK's best-selling birding magazine', *Bird Watching* http://www.birdwatching.co.uk/ . Its Twitter page http://twitter.com/#!/BirdWatchingMag has one or two tweets a day, very few of which would be of interest to Australian birders but obviously are to those in the UK, since it has 3,978 followers at the time of writing.

Of course, Twitter is not the only way of distributing birding information using the new media. Here in Australia the popular commercial online birding resource **Bird-O** http://bird-o.com/ provides national rare bird alerts via SMS (text messages). Bird-O describes itself thus:
Bird-O is the biggest and only website in Australia devoted purely to promoting birdwatching experiences. We go out of our way to support bird and wildlife-related tourism and business, because we believe the people who run these businesses have a great deal to offer. We try to print a wide range of articles from beginner birding, to twitching, book and TV reviews and identification guides.

At its homepage is a link 'SMS Alert'. It reads:

If you want to find out about really interesting birds in your region, you can sign up for the SMS alert service. For the coming months this will be FREE then once we've got enough interest, we'll be able to offer this continued service at a very cost-effective rate. We don't just alert you to birds but let you know exactly where they are and how to find them.

Reading Bird-O means you won't be over-whelmed with 1000s of emails but you'll still keep up to date with what is happening.

It will be interesting to see how this initiative involves, particularly in light of the reasonably high level of use of what might be seen as a competing commercial birding resource Eremaea Birds http://www.eremaea.com/ with its Birdlines, information from which is distributed by e-mail rather than SMS.

Years ago we used to call ourselves 'birdwatchers' but the language has changed, with the terms 'birders' and 'bird observers' becoming more prominent. I suspect that part of this shift reflects the acknowledgement that we do not simply look at birds, but also observe them through seeing physical signs (such as the scratchings of lyrebirds) and hearing bird calls. Many fine resources exist to help us learn bird calls, including the excellent CD produced by the Canberra Ornithologists Group http://canberrabirds.org.au/ covering many of the birds regularly found in the Canberra region. COG's *Birds of Canberra Gardens* website http://garden.canberrabirds.org.au/contents/birdGroups/birdIndex.htm , that complements COG's fine book of the same name, contains links to many bird calls accessible simply by clicking on the photograph of the species of interest.

Perhaps you are interested, however, in placing these Australian bird calls into a broader context? This reminds is of the incredible online resources of the **Cornell Lab of Ornithology** at Cornell University http://www.birds.cornell.edu , the delightful street address of which is 159 Sapsucker Woods Road, Ithaca, NY! Among its resources is **The Macaulay Library's Online Archive of Biodiversity Media**, described at http://www.birds.cornell.edu/page.aspx?pid=1676 as '…the world's leading scientific collection of biodiversity media, with more than 175,000 audio and 60,000 video recordings documenting the behavioral (*sic*)diversity of birds and other animals'. The calls of many Australian birds are available there, along with many of your favourite species from across the world. I was recently helping someone to learn to differentiate between the calls of the Australian Raven and the Little Raven, and found the recordings of those species' calls, available free of charge at the Macaulay Library, to be a very helpful resource for that purpose.

In other columns in this series I have referred to online journals, some of which can be accessed free of charge. We normally have to pay huge amounts of money for authoritative text and reference books, so it is excellent to see one being made available, without charge, online. The book is Sodhi, NS & Ehrlich, PR (eds) 2010, ***Conservation biology for all***, OUP, London. The list price for the paperback print edition is $65.00. A visit to http://www.mongabay.com/conservation-biology-for-all.html reveals the book available as a free complete PDF download, or you can choose to download individual chapters, also in PDF format. As the web page explains:

Oxford University Press makes conservation biology textbook by some of the world's most prominent ecologists and conservation biologists available as free download

Conservation Biology for All provides cutting-edge but basic conservation science to a global readership. A series of authoritative chapters have been written by

the top names in conservation biology with the principal aim of disseminating cutting-edge conservation knowledge as widely as possible. Important topics such as balancing conversion and human needs, climate change, conservation planning, designing and analyzing conservation research, ecosystem services, endangered species management, extinctions, fire, habitat loss, and invasive species are covered. Numerous text boxes describing additional relevant material or case studies are also included.

Individual chapters cover the following topics:

1. Conservation biology: past and present Curt Meine
2. Biodiversity Kevin J. Gaston
3. Ecosystem functions and services Cagan H. Sekercioglu
4. Habitat destruction: death by a thousand cuts William F. Laurance
5. Habitat fragmentation and landscape change Andrew F. Bennett and Denis A. Saunders
6. Overharvesting Carlos A. Peres
7. Invasive species Daniel Simberloff
8. Climate change Thomas E. Lovejoy
9. Fire and biodiversity David M. J. S. Bowman and Brett P. Murphy
10. Extinctions and the practice of preventing them Stuart L. Pimm and Clinton N. Jenkins
11. Conservation planning and priorities Thomas Brooks
12. Endangered species management: the US experience David. S. Wilcove
13. Conservation in human-modified landscapes Lian Pin Koh and Toby A. Gardner
14. The roles of people in conservation C. Anne Claus, Kai M. A. Chan, and Terre Satterfield
15. From conservation theory to practice: crossing the divide Madhu Rao and Joshua Ginsberg
16. The conservation biologist's toolbox–principles for the design and analysis of conservation studies Corey J. A. Bradshaw and Barry W. Brook

Eagle-eyed observers will note some Australians among the list of authors. We should all be grateful to all the authors for making available the results of their scholarship free of charge, reflecting their commitment to promoting conservation around the globe.

The **Australasian Wader Study Group** has a website of ongoing interest to birders http://www.awsg.org.au/ . In the past I have drawn attention to the availability there of the Group's newsletter, *Tattler*, its journal, *Stilt*, and its monographs—all of these are accessible via the site's 'Publications' page. In this issue, however, I draw attention to the 'News' page http://www.awsg.org.au/news.php. I imagine that most readers will be aware of the huge advances in our understanding of the migration of birds between the southern and northern hemispheres, and of the threats that the migrating birds face owing to loss of habitat at key points on those fly ways. The maturing of technology enabling satellite and other means of tracking migratory birds, combined with the excellent communication skills of some of the researchers, means that non-specialists are able to gain far deeper understandings, than in the past, about bird migration. The 'News' page of the Australasian Wader Study Group is one of the key resources in this regard. At the time of writing, the latest news item focused on World Migratory Bird Day 2011 which was observed in May. Interesting as that may be, I cannot help but to draw attention to the standout news item on the page, the February 2011 report headed **Ruddy Turnstone's marathon flight repeated twice**:

A Ruddy Turnstone *Arenaria interpres* has completed a 27,000 km round trip migration for the second time, the first time a wader has been tracked with a geolocator on its complete migration in successive years. The data retrieved so far shows that the birds

generally start their northward migration with an initial nonstop flight of around 7,600km in six days to Taiwan or adjacent regions.

One of the interesting findings is that after breeding, the return journey shows considerable variation, no two birds following the same route. Some return through Asia while an amazing alternate route has been demonstrated by these new results.

A fuller exposition is available, from that news item, in the form of a PDF download which has the remarkable filename 'Ruddy-hell.pdf'! It is a two-page briefing which includes a Google map image showing the actual routes covered by these tiny birds as they make these journeys between Australia and their breeding grounds in northern Siberia. The report concludes:
The first record of this flight was in 2009 when the bird spent nearly two months in the Aleutians before setting off southward over the Pacific Ocean and making a nonstop flight of 7,800kms to Kirabati before making the 5,000km trip back to Flinders, Victoria. In 2010 the same bird undertook a similar incredible journey, this time stopping off in the Marshall Islands and Vanuatu in the Pacific before returning to Australia.

Turnstones live up to 20 years and such a bird following this 27,000 km trans-Pacific route would have flown over 500,000 kilometres in its lifetime.

Scientists from the Australasian Wader Studies Group of Birds Australia and Deakin University are still puzzling over why individual Ruddy Turnstones use such widely differing routes for their annual migrations. The study highlights the importance of key regions within the flyway. *Scientists are concerned about the ability of these and similar birds to cope with the massive habitat changes occurring as a result of large reclamation and urban development projects* (my emphasis).

Finally, we have received advice of the redevelopment of the website of the Fivebough and Tuckerbil Wetlands near Leeton. This is a Ramsar site, a 'Wetland of International Importance': http://www.environment.gov.au/water/topics/wetlands/ramsar-convention/index.html . The website is skilfully designed, with much useful content including location information and a detailed bird list.

T. Javanica

This column is available online at http://cbn.canberrabirds.org.au/. There you can access the web sites mentioned in the column by clicking on the hyperlinks in the online version of *CBN*.

Details on how to subscribe to *Birding-Aus*, the Australian birding email discussion list, are on the web at http://www.birding-aus.org/ . A comprehensive searchable archive of the messages that have been posted to the list is at http://bioacoustics.cse.unsw.edu.au/archives/html/birding-aus.

To join the *CanberraBirds* email discussion list, send an email message with the word 'subscribe' in the subject line to canberrabirds-subscribe@canberrabirds.org.au. The list's searchable archive is at <http://bioacoustics.cse.unsw.edu.au/archives/html/canberrabirds.

RARITIES PANEL NEWS

The Panel received nine submissions in the first six months of the year. Two arrived too late for the Panel's most recent meeting and have been held over for consideration. One submission was withdrawn. Five were endorsed, as listed below. The Black-tailed Native-hen was a late submission from the previous drought year when the species flocked to Canberra in considerable numbers. The Little Button-quail have been recorded in TSR 48 previously, while the Lewin's Honeyeater, a wet forest coastal species, can be expected in Deua NP.

The Barking Owl at Shepherds Lookout was a surprise, though the species has been recorded at sites along the Murrumbidgee River. Curiously, the most recent endorsed record for the ACT was also at Shepherds Lookout in autumn, in 1998. The diagnostic features to note for the Barking Owl are its considerable size compared with the more common Southern Boobook, with a proportionately smaller head and longer tail; its bright yellow iris; its yellow feet; its relatively uniform brown streaking on the underbody. The Barking Owl is also more likely than the boobook to be active in daylight hours. This endorsed record has given more credence to some anecdotal reports of owls going "woof woof" in the night in northern Canberra in recent times.

The final record, which the Panel considered at length and which it has not endorsed despite rating it as possible, is outlined here with the agreement of the submitter in the hopes that further searching might result in a better sighting. The bird in question was a juvenile **Logrunner** *Orthonyx temminckii,* observed in the far east of COG's area of interest, on the Mongamulla Trail in Deua National Park, on 23 and 24 Nov 2010 by Con Boekel. The chief problem with the observation is that the species is known to inhabit subtropical and temperate rainforests and adjacent wet sclerophyll forests. It has been recorded in the Illawarra, in Kangaroo Valley and Cambewarra. This record comes from considerably further south and in much drier habitat. In the record's favour is the fact that no other species looks particularly like a logrunner. While the bird was thought to be a juvenile and hence could have been dispersing in the wrong direction, there is still an element of doubt in the Panel's mind which has thus far dissuaded it from endorsing what would be a first record for the species in COG's area of interest. The species is strongly terrestrial and is generally detected by the sounds of scrabbling in leaf litter.

ENDORSED LIST 78, June 2011

Black-tailed Native-hen Gallinula ventralis

1; 20 Sep 2009; Rosemary Blemings; Ginninderra Creek

Little Button-quail *Turnix velox*

2; 19 Jan 2011; Michael Lenz; TSR48
1; 16 Feb 2011; Michael Lenz; TSR48

Barking Owl *Ninox connivens*

1; 18 Mar 2011; Barbara Allan; Shepherds Lookout

Lewin's Honeyeater *Meliphaga lewinii*

1; 23 Nov 2010; Con Boekel; Mongamulla Trail, Deua NP

Canberra Bird Notes

Canberra Bird Notes is published three times a year by the Canberra Ornithologists Group Inc and is edited by Beth Mantle. Major articles of up to 5000 words are welcome on matters relating to the distribution, identification or behaviour of birds in the Australian Capital Territory and surrounding region. Please discuss any proposed major contribution in advance. Shorter notes, book reviews and other contributions are also encouraged. All contributions should be sent to cbn@canberrabirds.org.au.

Please note that the views expressed in the articles published in Canberra Bird Notes are those of the authors. They do not necessarily represent the views of the Canberra Ornithologists Group. Responses to the views expressed in CBN articles are always welcome and will be considered for publication as letters to the editors.

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