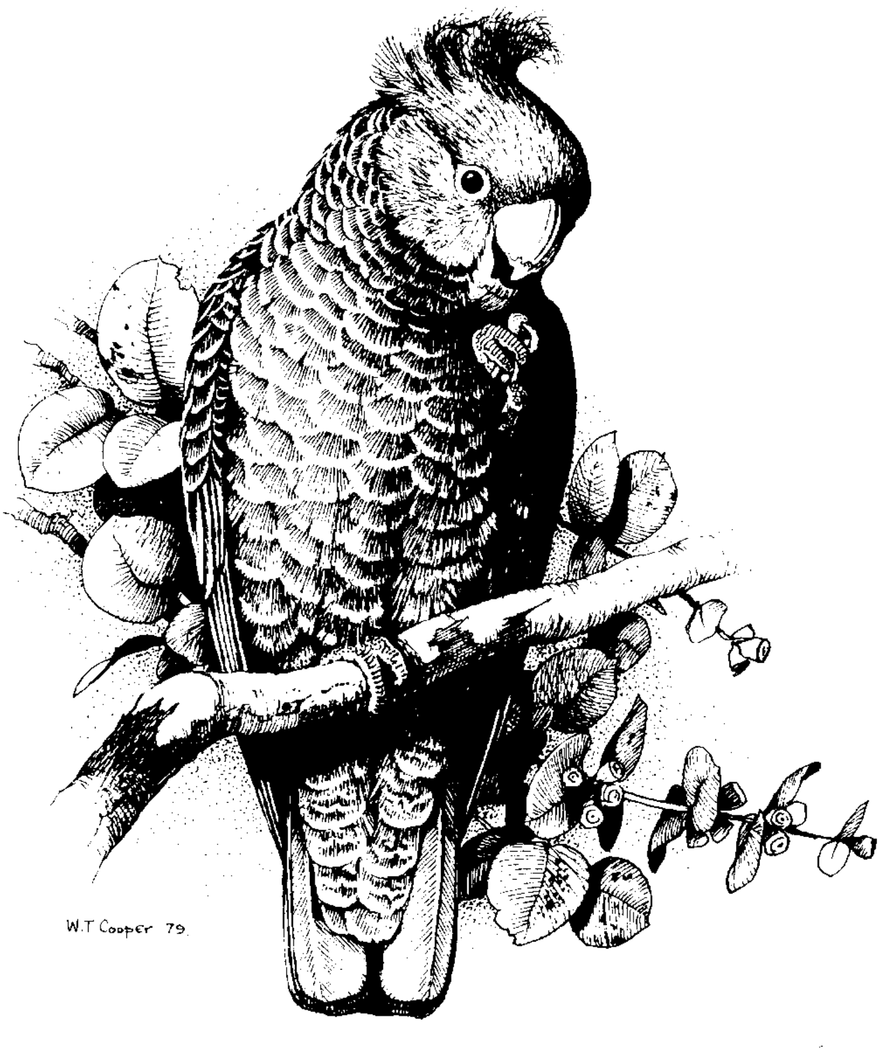
canberra bird notes

ISSN 0314-8211

Volume 35
Number 2
June 2010



Registered by Australia Post – Publication No. NBH 0255

CANBERRA ORNITHOLOGISTS GROUP

PO Box 301 Civic Square ACT 2608

2009-10 Committee

President	Chris Davey	6254 6324 (h)
Vice-President	vacant	
Secretary	Sandra Henderson	6231 0303 (h)
Treasurer	Lynley Rees	6242 4517 (h)
Conservation	Jenny Bounds	6288 7802 (h)
Field trips	Daniel Mantle	6287 7860 (h)
Newsletter	Sue Lashko	6251 4485 (h)
Member	Tony Lawson	6161 9430 (h)
Member	Con Boekel	
Member	David Rees	6242 4517 (h)
Member	Lia Battison	
Member	Beth Mantle	
Member	Michael Robbins	

Website

www.canberrabirds.org.au

Email contacts

Canberra Bird Notes:	cbn@canberrabirds.org.au
COG membership:	membership@canberrabirds.org.au
Conservation inquiries:	conservation.officers@canberrabirds.org.au
Gang-gang monthly newsletter:	gang-gang@canberrabirds.org.au
GBS coordinator:	martinflab@gmail.com
General inquiries:	cogoffice@canberrabirds.org.au
Sales desk:	harveyroy1@gmail.com
Unusual bird reports:	rarities@canberrabirds.org.au
Website:	webmaster@canberrabirds.org.au

Other COG contacts

Canberra Bird Notes	Anthony Overs	6254 0168 (h)
Webmaster	David Cook	6236 9153 (h)
Databases	Paul Fennell	6254 1804 (h)
GBS coordinator	Martin Butterfield	6238 2637 (h)
Rarities Panel	Barbara Allan	6254 6520 (h)
Records officer	Nicki Taws	6251 0303 (h)
Waterbird survey	Michael Lenz	6249 1109 (h)
COG library	Barbara Allan	6254 6520 (h)

LITTLE EAGLES, WHISTLING KITES AND SWAMP HARRIERS IN THE AUSTRALIAN CAPITAL TERRITORY 2009

Jerry Olsen [A,B], Mark Osgood[C], Michael Maconachie[D], Geoffrey Dabb[E] and Martin Butterfield[F]

[A]Institute for Applied Ecology, University of Canberra, ACT 2601
[C]32 Bertel Crescent, Chapman, ACT 2611
[D]128 Duffy Street, Ainslie, ACT 2602
[E]24 Brockman Street, Narrabundah, ACT 2604
[F]101 Whiskers Creek Rd, Carwoola,, NSW 2620
[B]To whom correspondence should be addressed. Jerry.Olsen@canberra.edu.au

Abstract: *In 2009 we surveyed Little Eagle, Whistling Kite and Swamp Harrier territories in the Australian Capital Territory by searching former territories and soliciting reports from COG members and ACT Parks, Conservation and Lands personnel. We found three successful Little Eagle nests - Uriarra East, the Lions Youth Haven property at Kambah, and Black Mountain. Each pair fledged one young. Of three previously known Whistling Kite nests only one was found, on the eastern edge of Lake Burley-Griffin. One breeding pair of Swamp Harriers was found at Gudgenby and a single harrier was found in the Orroral Valley. We recommend that the Whistling Kite be listed as Vulnerable in the ACT and that Swamp Harriers be closely monitored. We also recommend that Pindone and other chemicals used to control rabbits in the ACT be investigated as possible causes of declines in these raptor species.*

Introduction

In previous reports (Olsen & Fuentes 2005, Olsen & Osgood 2006, Olsen et al. 2007, 2008, Debus and Ley 2009) the collapse of breeding Little Eagles *Hieraaetus morphnoides* in the ACT was discussed. Since then we have also noted a decline in breeding pairs of Wedge-tailed Eagles *Aquila audax*, Whistling Kites *Haliastur sphenurus* and Swamp Harriers *Circus approximans*.

Our aims in the current study were to a) search for successful nests (defined as fledging at least one young) of these raptor species by organising three survey teams: 1) J. Olsen & M. Osgood, 2) COG members networked through G. Dabb, M. Butterfield, Chris Davey and Barbara Allan, 3) ACT Parks, Conservation and Lands rangers networked through M. Maconachie; b) make recommendations to the ACT Government based on our findings.

Methods

In 2009 JO, GD and MO searched by foot and car the Little Eagle and Whistling Kite territories found in 2005-2008, and two sites containing single individuals found in 2005. GD and MB vetted any reports of sightings from COG members and MM vetted reports from the ACT

Parks, Conservation and Lands. We also began a search for Swamp Harrier nests.

Results

Little Eagles

Though nests at Kelly's Swamp, Duntroon, Pegasus Riding School and Dunlop (Roger Curnow pers. comm.) were abandoned in 2009, a new nest was found at Uriarra East (Bill Mannan and Felicity Hatton) that we believe to be an alternative nest of the Pegasus pair. Another nest was found on Black Mountain (Con Boekel), and the pair nested again at Lions Youth Haven (Nicci Webb). The total then, for 2009, was three young fledged from three territories, lower than the productivity for 11 territories in the early 1990s (see Olsen 1992), and lower than the four young from four territories in 2008. There was a single Little Eagle on the northern edge of Mount Majura (JO) but no nest was found. A pair of LEs was sighted in the Kelly's Swamp/Duntroon area and we searched there but no nest was found.

Whistling Kites

Previously, at least three pairs of Whistling Kites bred in the ACT, around Pialligo and Duntroon. Fuentes et al. (2007) analysed prey from two of these nests and European Rabbit *Oryctolagus cuniculus* was an important prey. Only one nest was found in 2009 (Rod Mackay and GD) on the eastern edge of Lake Burley-Griffin, close to where the construction of a trench is planned by the ACT Government. Dead Whistling Kites had been found under the Duntroon nest on 17 September 2004.

Swamp Harriers

Previously Swamp Harriers had bred at Mitchell, Jerrabomberra Wetlands and in the Orroral Valley (Olsen 1992, and unpublished). In 2009, one breeding pair was found in the ACT, at Gudgenby (Oliver Orgill). A single resident harrier was found in the Orroral Valley (JO), so this species is apparently breeding at very low numbers in the ACT. Swamp Harrier prey has not been assessed in the ACT, but in other parts of Australia they rely heavily on rabbits (Marchant & Higgins 1993).

Rabbit numbers

Though rabbit numbers in the ACT have remained high, Little Eagles, Wedge-tailed Eagles, Swamp Harriers and Whistling Kites have continued to decline, suggesting that rabbit control measures could be implicated. Bird specialists like Peregrine Falcons *Falco peregrinus* have not declined. MO asked ACTEW workers about their rabbit control programme at Kelly's Swamp close to the Little Eagle nest, and they reported that Pindone (2-pivalyl, 3-indandione) was being used. Signs posted around other control sites in the ACT indicate that Pindone is commonly used for rabbits in the ACT. At higher doses, Pindone is fatal to raptors, (Martin et al. 1994) or disables them for a time, which can also be fatal if the raptor is incapacitated and cannot forage or evade other predators. Other chemicals sometimes used include '1080' (sodium fluoroacetate), and illegal chemicals such as strychnine may be used in bordering New South Wales.

In a study of Wedge-tailed Eagle and Little Eagle diet in the ACT there was little overlap in prey used by the two eagle species. Wedge-tailed Eagles captured significantly larger prey than Little Eagles, a mean weight of 1298 g for prey species used by Wedge-tailed Eagles and 249 g for prey species used by Little Eagles, reflecting the fivefold difference in weight between male Little Eagles and male Wedge-tailed Eagles. European Rabbit was the most common prey species used by both Wedge-tailed and Little Eagles, but it made up a higher proportion of Little Eagle diet by biomass (LE: 52.4%; WTE: 12.5%), so Little Eagles may be more affected by rabbit control measures than are Wedge-tailed Eagles, if rabbit control is related to their decline. By biomass, Wedge-tailed Eagles took 34.8% Eastern Grey Kangaroos *Macropus giganteus*, but Little Eagles tended to avoid macropod carrion (Olsen et al. in press).

Discussion and conclusions

Three successful nests (fledged young) of Little Eagle, one of Whistling Kite, and one of Swamp Harrier were found in the ACT in 2009. The Little Eagle territory at Uriarra East is probably the same territory as the Pegasus territory, but it is unclear why the Kelly's Swamp/Duntroon and Dunlop territories were abandoned. It is important to begin radio-tracking studies to determine home-range sizes and habitat use, and press the ACT government to retain woodland where eagles nest and hunt. Pindone and other poisons need to be investigated and, if appropriate, ruled out as causes for the decline in rabbit-eating raptors. Swamp Harriers should be monitored, and Whistling Kites should be listed as Vulnerable in the ACT.

Acknowledgements

Thanks to COG members, especially Con Boekel, Steve Holliday, Chris Davey, Barbara Allan, Michael Lenz, Roger Curnow, Rod Mackay and Graeme Clifton. Thanks also to Oliver Orgill, Nick Webb, and John McRae who passed along Little Eagle and Swamp Harrier sightings for the survey and Christie Gould, David Shorthouse, Murray Evans, Bernard Morris, Brett McNamara, Tony Bell, Mark Rodden, Marty Gardner, Trish D'Abrera, Monica Muranyi, Paul Higginbotham, Kate Boyd, Meg Doepel and Darren Roso, and to the New South Wales Parks and Wildlife Service especially Luke Bond and Greg Hayes. Sue Trost and Les Boyd gave invaluable assistance in the field. Stephen Debus and McComas Taylor gave much appreciated advice.

References

Debus, S.J.S. and Ley, A.J. (2009. Aspects of the breeding cycle of the Little Eagle *Hieraaetus* *morphnoides. Australian Field Ornithology* 26:76-99.

Fuentes, E., Olsen, J. and Rose, A.B. (2007) Diet, occupancy, and breeding performance of Wedge-tailed Eagles *Aquila audax* near Canberra, Australia 2002-2003: Four Decades after Leopold and Wolf. *Corella* 31: 65-72.

Marchant, S. and Higgins, P.J. (Eds) (1993) *Handbook of Australian, New Zealand and Antarctic birds, Vol. 2*. Oxford University Press, Melbourne.

Martin, G.R., Kirkpatrick, W.E., King, D.K., Robertson, I.D., Hood, P.J and Sutherland, J.R. (1994) Assessment of the potential Toxicity of an anticoagulant, Pindone (2-pivalyl, 3-indandione), to some Australian birds. *Wildlife Research* 21: 85-93.

Olsen, J. (1992) Raptors in Namadgi, Canberra Nature Parks, the Murrumbidgee River Corridor and on the Googong Foreshore, ACT with special emphasis on the Peregrine Falcon. *Report to the ACT Parks & Conservation Service*.

Olsen, J. and Fuentes, E. (2005) Collapse in numbers of breeding Little Eagles in the Australian Capital Territory. *Canberra Bird Notes*. 30: 141-145.

Olsen, J. and Osgood, M. (2006) Numbers of breeding Little Eagles *Hieraaetus morphnoides* in the Australian Capital Territory in 2006. *Canberra Bird Notes* 31: 178-182.

Olsen, J., Judge, D., Fuentes, E., Rose, A.B. and Debus, S. (in press). Diets Of Wedge-tailed Eagles (*Aquila audax*) and Little Eagles (*Hieraaetus morphnoides*) breeding Near Canberra, Australia. *J. of Raptor Research* 44.

Olsen, J., Osgood, M., Maconachie, M. and Dabb, G. (2007) Numbers of breeding Little Eagles *Hieraaetus morphnoides* in the Australian Capital Territory in 2007. *Canberra Bird Notes* 32: 77-80.

THE EFFECT OF TRAPPING PRESSURE ON TRAP AVOIDANCE AND THE ROLE OF FORAGING STRATEGIES IN ANTI-PREDATOR BEHAVIOUR OF COMMON MYNAS (*STURNUS TRISTIS*).

Daryl H. King

6 Miranda Place, Melba, ACT 2615

Abstract: *A preliminary study of foraging behaviour at a suburban live-trapping site and in the catchment of the trap indicated that Common Mynas learned within two breeding seasons to recognise aspects of the trapping system as dangerous, including the foraging trap, the trap site and the human trapper, and they adapted their behaviour to avoid the dangers. Before intensive trapping began, the abundance of Common Mynas within the trap catchment was low, but conspicuous behaviours including group foraging were common. The success of trapping at the study site was directly related to the incidence of group foraging there. Trapping success was high initially and, after 12 months of trapping, myna abundance in the trap catchment was depressed compared to pre-trapping levels. It appears that Common Myna foraging strategies are plastic, and include classical antipredator behaviour options that allow them to efficiently exploit food resources in dangerous places while avoiding dangers that operate in a foraging context. Common Mynas in the study area appeared to balance the ecological advantages of conspicuous group-foraging against predation risk from high trapping pressure at the trap site and in adjacent suburbs: (1) by foraging in smaller groups and adopting cryptic foraging behaviour in areas where risk was high, and; (2) by habitat shifts to other parts of the study area where trapping pressure was lower, and where conspicuous group-foragers were at lesser risk of predation. The findings predict that, in the absence of other control methods, sustained high-intensity trapping pressure in urban and suburban Canberra could lead to widespread stable populations of inconspicuous trap-avoiding mynas via strategy (1), and to the increased incidence of conspicuous group foraging on the suburban fringe, and possibly accelerated range-expansion, via strategy (2). Further research on myna foraging under a range of trapping pressures is required to test these predictions*

Introduction

Feral populations of Common Mynas (*Sturnus tristis*) are established throughout urban Canberra, parts of the surrounding countryside, and elsewhere in eastern Australia. Community concern about the myna's potential negative impacts on public amenity, human health and native wildlife has provided support for a control program in Canberra, and surrounding areas, based on an extensive network of selective live-catch foraging traps operated by volunteers of the Canberra Indian Myna Action Group (CIMAG). CIMAG collates information from many Canberra myna trappers, and has reported a tally of 28,800 myna captures during the past four years (CIMAG 2010). Handke (2007) reported that myna capture rates declined in Canberra suburbs where trapping pressure had been intensive and sustained. Handke was uncertain about the reasons for this decline, noting that capture rates were high in previously untrapped areas, and raised the possibility, supported by the observations of other experienced trappers, that trap avoidance behaviour may have developed in some local populations (Handke 2007, CIMAG 2007a, 2007b). Since Common Myna control in Canberra relies almost exclusively on foraging traps, the development of trap avoidance among Canberra mynas could jeopardise future control measures.

Foraging traps are used around the world for Common Myna control (ISSG 2009). They are humane and simple to operate, and are particularly useful in an urban context, where other proven control methods such as shooting and poisoning are unacceptable. The method is most successful where traps are set in open space, with minimal human disturbance, plentiful attractive baits, and with other socially active mynas (live captive decoys or mirror decoys) present (ANU 1998, Jones 2008). Thus, foraging traps appear to directly exploit the Common Myna's natural habit of foraging in social groups in open grassy habitats (Pell and Tidemann 1997, Crisp and Lill 2006, Newey 2007). The extent to which a foraging trap arrangement resembles a natural group-foraging situation may be an important factor in the success of myna trapping.

By foraging in groups, many bird species are able to efficiently exploit variable foraging environments where foods are seasonal (clumped in time) and patchy (clumped in space) – the urban and reserve spaces of Canberra are good examples. When food occurs in clumps, and birds forage in groups, the food discoveries of a few lead to the feeding of many (McMahon and Evans 1992, Ranta et al. 1993, Estok et al. 2009). By joining a foraging group, an individual bird can improve its own foraging success or protect itself from predators by paying attention to the behaviour of other group members and adjusting its own behaviour accordingly (Midford et al. 2000, Galef and Giraldeau 2001, Lefebvre and Bouchard 2003, Bouchard et al. 2007). Behavioural change in these groups is efficient; individual group members do not randomly model their behaviour, but pay attention to particular others. Animal foraging groups commonly include a social hierarchy, with a few 'leaders' and many 'followers'; each follower modelling its behaviour on that of a particular leader (Krause et al. 2000, Fischhoff et al. 2007). Leadership may be determined by body size (Reebs 2001), activity levels (Beauchamp 2000), boldness (Leblond and Reebs 2006, Harcourt et al. 2009), or ability (Nagy et al. 2010), and not necessarily by social dominance (Beauchamp 2000). Where behavioural change by just a few individual leaders is sufficient to initiate change in the whole group, extremely rapid collective decisions are possible. Fast-flying pigeon flocks, for example, undertake hierarchically organised group movements. The average spatial position of an individual within the flock correlates with its place in the leader/follower hierarchy, birds higher in the hierarchy are more influential in determining the direction of the flock's movement, and changes in direction by leaders are copied by followers in a fraction of a second (Nagy et al. 2010).

The social structure of Common Myna foraging groups has not been studied in detail, but it is possible that these groups contain a social leader/follower hierarchy. Common Mynas are intelligent, long-lived, territorial, and characteristically bold. Foraging groups are likely to include a range of abilities, experience, social dominance, and boldness – characters on which a social modelling hierarchy might be based. Assuming that a group of Common Mynas foraging at a trap site includes a hierarchy of leaders and followers, it can be expected that the behaviour of a high-ranking leader who solves the puzzle of the entrance valve, and gains access to the clumped food inside, will be rapidly copied by many followers. If, on the other hand, a low-ranking myna is the first to enter the trap, it is likely to be followed by fewer birds (its traditional followers), with untrapped mynas continuing to model the behaviours of higher-ranking leaders outside – behaviours that may include walking or flying away instead of entering the trap. The probability of an individual leader entering a trap or moving away could be biased by (1) its genetically-determined personality type, (2) its previous individual experience of traps, or (3) its observation of the fate and behaviour of others in relation to traps.

Trapping removes large numbers of mynas from local populations (CIMAG 2010), and may selectively remove those mynas whose behavioural traits make them more likely to enter a trap, leaving behind mynas whose behaviour makes them less likely to be trapped. It is possible that, as less-trappable mynas become more common in the population, their genes will dominate, and in time the population will shift towards less-trappable phenotypes. It was recognised more than a century ago that human predation can cause genetic shifts in populations of wild animals (reviewed by Allendorf and Hard 2009). Darimont et al. (2009) showed that genetic shifts in certain morphological and life history traits due to human predation can proceed faster than shifts due to natural events or other anthropogenic effects such as habitat change. There is some evidence that mynas in more recently established suburbs of Canberra have different behavioural traits to those in longer established inner suburban and urban areas, and that a genetic shift may account for the difference (Andrea Griffin, pers comm.). Further work is necessary to determine whether the apparent genetic shift is due to trapping, and whether it is proceeding at a rate and in a direction that can explain the rapid development of trap-avoidance in Canberra.

Rarely, individual mynas escape or are accidentally released from traps in Canberra (Bill Handke pers comm.), but there is no evidence that the experiences of these individuals introduce significant biases in myna responses to traps at the population level. Individual responses to being trapped vary within animal populations, with some individuals becoming 'trap-shy' while others become 'trap-happy' (Williams et al. 2002). Saavedra (2009) reported no evidence of trap-shyness on Ascension Island, where nine of ten trapped and banded juvenile Common Mynas were retrapped 21-32 days later. It is plausible that the experiential learning of a few individual mynas could influence the behaviour of other mynas at a local level, but individual learning is an unsatisfactory explanation for rapid and widespread trap avoidance behaviour at the scale of the Canberra myna population. Where the potential costs associated with individual learning are high, many social species rely instead on observational (social) learning, which can influence the behaviour of many individuals at once, and which has the important benefit that information can be acquired and transmitted without putting the learner at risk (Griffin 2004, Kendal et al 2005).

Many animal species learn to avoid danger by observing the behaviour of conspecifics. Fish learn to avoid places and the odours of predatory fish by association with alarm chemicals produced from the damaged skin of conspecifics that warn of a possible predator attack (Chivers and Smith 1995a, 1995b, Mathis et al. 1996, Ferrari et al. 2005, Ferrari et al. 2007a). In laboratory experiments, amphibians tutored one another to recognise danger – the chemical indicators of a predatory Tiger Salamander (*Ambystoma tigrinum*). Salamander-naïve Woodfrog (*Rana sylvatica*) tadpoles and Boreal Chorus Frog (*Pseudacris maculata*) tadpoles paired with a salamander-experienced Woodfrog tutor successfully learned to recognise the salamander odour as a threat, whereas observers paired with salamander-naïve tutors did not (Ferrari et al. 2007b, Ferrari and Chivers 2008). Reader et al (2003) trained wild Trinidadian guppies (*Poecilia reticulata*) to escape from a trawl-net via a particular escape route. In subsequent trials, naïve guppies escaped more quickly and more often through the same route when trained demonstrator guppies were present. Common Blackbirds (*Turdus merula*), able to observe mobbing behaviour by a conspecific together with a harmless Noisy Friarbird (*Philemon corniculatus*), learned to mob the harmless friarbird and transmitted the mobbing behaviour along a social learning chain of at least six blackbirds (Curio et al. 1978).

Island populations of wild Common Mynas learn to avoid armed myna shooters (Millett et al. 2004) and places where myna shooting is carried out (Dhami and Nagle 2009), and can recognise unarmed marksmen (and mob them) after an absence of many months (Millett et al. 2004). In laboratory experiments, Common Mynas learn quickly to avoid places where they hear the distress calls of another myna or observe a human pursuing and catching one (Griffin 2008, Griffin and Boyce 2009, Griffin et al. 2010). Griffin and Boyce (2009) suggested that the Common Myna's observational memory of dangerous places has the potential for complete trap avoidance where the offsetting foraging benefits of bait are low (e.g. other food sources are available, or bait is not a preferred food).

If, in a hierarchical foraging group, the behaviour of a leading myna is biased away from a trap by an aversive cue, such as observed distress (or possibly something more subtle), the behaviour of its followers is also likely to be biased away from the trap. Foraging trap systems contain a number of elements with which learning cues might be associated, including the trap, the trap site, the human operator, and the behaviour of trapped birds, decoys and other wild mynas. Seemingly minor departures from best-practice procedures (ANU 1998, CIMAG) might provide learning cues sufficient to elicit behavioural change that, once widely transmitted by social learning, could fix trap avoidance behaviour within the myna population in the catchment of a trap.

Further detailed research on trap avoidance is needed to inform myna trapping strategies in Canberra. As a first step, I conducted a preliminary study to examine the following hypotheses:

1. The ongoing success of myna trapping is inversely proportional to trapping pressure, so sustained, intensive trapping will result in declining trapping success.

2. Changes in trapping success indicate changes in myna behavioural responses to traps, so declining trapping success indicates development of trap avoidance.

3. Foraging traps exploit myna foraging behaviour, so trap avoidance will be reflected in changes in myna foraging behaviour in the catchment of the trap.

4. Trap avoidance is mediated by social learning, so avoidance behaviour will be reflected in aspects of myna social behaviour in the catchment of the trap.

Methods

Common Myna foraging behaviour was monitored between January 2008 and March 2010 by observation and trapping in the Canberra suburb of Melba, and by observation in the Ginninderra Creek corridor and adjacent suburbs.

Study area

The trap site (35°12’34” S, 149°02’55” E) was in a domestic garden of raised beds enclosed by tall and low shrubs, sedges and ferns intersected by narrow paths. Open spaces sufficient for a foraging trap and a decoy cage were available seasonally in fallowed beds and in a fenced compost yard. The area was regularly used as a group foraging site by Common Starlings (*Sturus vulgaris*). Common Mynas foraged there occasionally in ones and twos, but not in larger groups. Groups of mynas regularly foraged in neighbouring gardens with open lawn areas and at other locations in the vicinity of the trap, particularly at a schoolground 300m from the trap site.

Field observations were made along cycleways in the Ginninderra Creek corridor and adjacent suburbs from about 500m downstream of Lake Ginninderra (35°13'06" S, 149°04'02" E) in the east to Jarramlee Pond (35°12'14" S, 149°00'48" E) in the west (Figure 1). The selected areas included extensive open grassy habitats on suburban margins – areas likely to be used by Common Myna foraging groups (Pell and Tidemann 1997). The creek corridor comprised periodically mown native and introduced grasslands interspersed with ribbons of trees, shrubs, tall grasses and reeds on the creek margins and clumps of trees with grassy understorey elsewhere. The urban areas included nature strips and greenbelts of periodically mown native and introduced grasses and scattered trees, connecting with sports grounds, grassy schoolgrounds and the creek corridor.

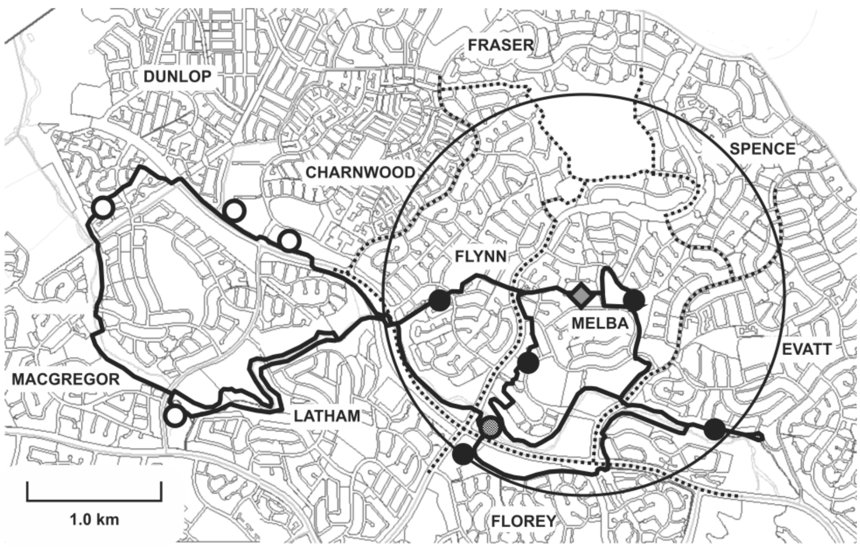


Figure 1. Study area. The Melba trap location is marked by a diamond. The large circle is the theoretical trap catchment. The dotted lines are partial suburb boundaries. The solid lines are the routes followed by belt transects. Locations where social foraging groups of five or more Common Mynas were recorded on two or more occasions in consecutive calendar quarters are represented by small circles. Closed small circles are locations where group foraging was present in each calendar quarter from January 2008 to June 2009, but not subsequently. The stippled small circle is a location where group foraging was present in each calendar quarter from January 2008 to June 2009, but observed only once subsequently. Open small circles are locations where group foraging was present in every calendar quarter from January 2008 to December 2009.

Seasonally fruiting trees and vines were present in some gardens adjacent to greenbelts and the creek corridor. Most of the study area had unimpeded visibility for at least 50m on either side of the cycleway and was reasonably remote from traffic noise that might otherwise mask bird calls.

The study area included a range of trapping pressures, from low-intensity suburbs with no registered traps and no captured mynas, to relatively high-intensity suburbs.

Trapping at the Melba trap site

Common Mynas were trapped intensively at the Melba site over 276 trap-days from April 2008 to January 2010 using a Mynamagnet foraging trap (http://www.mynamagnet.com.au). As the trap site was not previously used by Common Mynas for group foraging, it was enhanced by the addition of caged decoy mynas. Initially, nine adult mynas accustomed to captivity were introduced. They were replaced after two weeks by wild mynas trapped on site. Groups of 2-4 decoys were maintained continuously on site from April 2008 to November 2009 in a modified Mynamagnet trap (volume: 1.1 m^3) with a sheltered roost, food and drinking and bathing water.

Trapping was carried out in every month between April 2008 and February 2010. Free-feeding bait training of wild Common Mynas was undertaken 1-3 days each week in prominent locations near the trap, on the roof of the trap, and inside the catching chamber. The trap was baited and its one-way valves were put in place when wild mynas were observed to visit the decoys and/or the free-feeding stations or when bait at the free-feeding stations was disturbed. Drinking water was available in both chambers of the trap at all times. Bathing water was added when trapped birds were held overnight. The soil under the trap and decoy cage was cultivated regularly and covered with a substrate of compost and straw or shredded leaves. The trap and the decoy cage were relocated within the site six times in the course of the study (mean distance moved = 3.2 ± 1.9 m). The trap, cages and procedures for handling and euthanasing captive mynas were chosen to maximise myna welfare and minimise distress (Tidemann 2010). As much as possible, other precautions were taken to minimise potential aversive learning cues in line with recommended guidelines (ANU 1998, CIMAG). Efforts were made to minimise human presence near the trap in daylight but, as the garden was used for other purposes, human presence could not be eliminated. Trapped mynas were removed from the trap without handling by allowing them to escape from a port in the roof of the trap into a 98 litre cage for euthanasia on site or into 220 litre transportation cages for use in other studies (Tidemann and King 2009). Trapped mynas were removed at dusk to minimise wild mynas observing the procedure, except on 15 May 2008 when nine mynas were removed in daylight, 128 min after sunrise.

Mynas were euthanased at dusk on site by carbon monoxide (Tidemann and King 2009) in a ventilated building out of sight of the trap and the decoys. No mynas escaped or were released.

Observation of free-feeding

In February 2010, three months after the removal of decoys, free-feeding was observed by automatic digital cameras (Moultrie MFH-DGS-100V2, Moultrie Feeders, Alabaster, Alabama). All birds visiting bait stations were recorded for eight days. For the first two days, free-feeding followed normal procedures (Figure 2) – the roost chamber was set at an angle to the catching chamber, the one-way valves were removed and bait was presented on the closed roof of the trap and inside the catching chamber. On days 3-8 a novel arrangement was introduced – the trap roof was opened half way and bait was added to the roost chamber, accessible through the partly open roof (Figure 2).

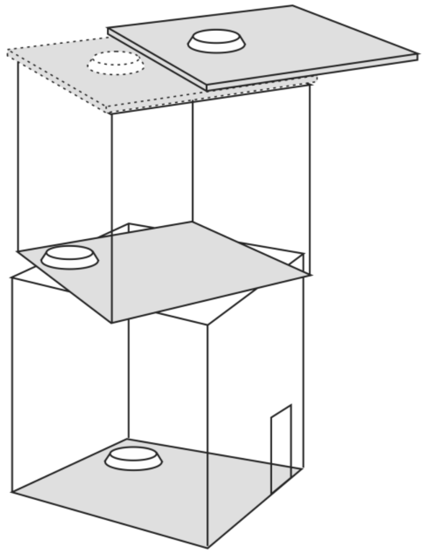


Figure 2. Arrangement of Mynamagnet foraging trap during free-feeding bait training observations in February 2010. On days 1-8 bait was presented in the catching chamber (funnel valve removed). On days 1-2 bait was presented on the closed trap roof. On days 3-8 the roof was opened half-way and bait was presented on the roof and the roost chamber (accessible through the partly open roof).

Field surveys

Common Mynas were counted and the presence of myna foraging groups was recorded by bicycle surveys in the Ginninderra Creek corridor and adjacent suburbs (Figure 1). Surveys were conducted on 100m wide belt transects, beginning and ending at the trap site, and following a loop route to minimise double-counting. Preliminary surveys were undertaken between June and December 2007 to identify group-foraging sites for subsequent monitoring.

Two types of monitoring surveys were undertaken between January 2008 and March 2010. During ‘slow’ surveys, all Common Mynas seen or heard were counted, and the locations of myna foraging groups (groups of five or more mynas feeding on the ground or in vegetation) were recorded. Group foraging locations were also recorded by ‘rapid’ surveys during which detection and counting of individual mynas was impractical. Between January 2008 and March

2010, 104 slow surveys on short transects (7.3km long) sampled an area within 1.5km of the trap site (Figure 1). This area was defined as the trap catchment. Assuming that Common Mynas move less than 3km between roosting and foraging areas (Counsilman 1974), mynas whose foraging ranges lay inside the theoretical catchment were likely to encounter the trap during normal foraging movements while those outside the catchment were not. Between October 2009 and March 2010, 14 slow surveys on long transects (9.5-15.6km) sampled 4.1-8.4km inside the trap catchment and 2.3-11.4km outside the trap catchment. An additional 78 rapid long surveys were undertaken between January 2008 and December 2009 to record the presence of foraging groups inside and outside the catchment. Surveys were undertaken at various times of day, ranging from 49 minutes to 13 hours after sunrise (mean = 244 ± 129 minutes).

Treatment of data

This was a preliminary study, designed to refine questions for possible further study, and did not include external replication. Accordingly, detailed statistical analysis has not been carried out. Where I have drawn tentative conclusions from data that were not replicated, I also outline relevant likely sources of bias. Where I have drawn conclusions from data with adequate replication, I report the number of samples and an indication of variability among the data.

Results

Myna trapping at the Melba site

Eight mynas and 395 starlings were trapped by baited foraging trap without decoys between June 2006 and December 2007 (Table 1). Myna trapping success increased from 0.06 captures per trap-day before the introduction of decoys to an average of 0.74 captures per trap-day after their introduction (Table 1).

Common Mynas had been captured in foraging traps in eight of the ten suburbs in the study area during the preceding two years (CIMAG 2008). Table 2 provides a simple estimate of trapping pressure (or 'trapping intensity' *sensu* Handke 2007) in those suburbs.

	Trap days	Common Mynas	Common Starlings
Trapping without decoy mynas	131	8	395
Trapping with decoy mynas	276	205	112

Table 1. Trapping effort (trap days) and total captures of Common Mynas and Common Starlings at Melba: (1) without decoy mynas prior to the present study (June 2006 - December 2007), and (2) with decoy mynas during the present study (April 2008 - January 2010).

The study area included a range of trapping pressures, from low-intensity suburbs with no registered traps and no captured mynas, to relatively high-intensity suburbs. Trap numbers ranged from 0 to 6 traps per suburb (mean = 2.6 ±2.07 SD). Trapping success in individual suburbs ranged from 0 to 38 captures per trap (mean = 23.69 ±17.25 SD).

	All suburbs inside Melba trap catchment n = 4		All suburbs outside Melba trap catchment n = 6		All suburbs in study area n = 10	
	Registered traps: total; (range)	Captures per registered trap	Registered traps: total; (range)	Captures per registered trap	Registered traps: total; (range)	Captures per registered trap
March 2008	17 (2-6)	23.35	9 (0-4)	23.78	26 (0-6)	23.5
January 2010	32 (5-10)	16.25	20 (0-10)	52.95	52 (0-10)	30.37
Monthly rate of change	0.68	-0.32	0.5	1.33	1.18	0.31

Table 2. Trapping pressure in the ten suburbs in the study area. Capture data for March 2008 includes all records from July 2006 – March 2008. Capture data for January 2010 includes all records from April 2008 – January 2010. Suburbs in which trap locations (domestic backyards) were wholly or largely inside the Melba trap catchment were Evatt, Flynn, Melba, Spence. Suburbs in which trap locations (domestic backyards) were wholly or largely outside the Melba trap catchment were Charnwood, Dunlop, Florey, Fraser, Latham, MacGregor. (Sources of data: CIMAG 2008, 2010, Bill Handke pers comm.)

Trapping success fluctuated over the first 12 months of the study, with peaks in June 2008, September 2008 and January 2009, and a trough in November 2008 (Table 3). These peaks and troughs corresponded with peaks and troughs in the presence of social groups visiting the trap site (see next section below). In 2009, no mynas were trapped from February to May when social groups were not present at the trap site. There was a further peak in trapping success in June 2009, corresponding with a peak in social group presence. The peaks in trapping success and foraging group visits recorded in September 2008 and January 2009 were not repeated in September 2009 or January 2010. No mynas were trapped after September 2009.

		J	F	M	A	M	J	J	A	S	O	N	D
2008	Captures/ trap-day				1.83	0.69	2.17	0.96	0.48	0.88	0.36	0	0.85
	Trap-days				12	26	24	28	27	17	14	19	13
2009	Captures/ trap-day	1.55	0	0	0	0	1.36	0.86	0.5	0.12	0	0	0
	Trap-days	11	9	5	13	6	11	7	4	17	0	4	5
2010	Captures/ trap-day	0	0										
	Trap-days	4	3										

Table 3. Trapping success (captures per trap-day) at the Melba trap site between April 2008 and February 2010

Foraging behaviour at the trap site

Prior to the introduction of decoy mynas, Common Mynas were rare visitors to the study site although they were conspicuous nearby. After the introduction of socially active decoys in April 2008, mynas began to visit regularly in groups of five or more. Visitors were little disturbed by people moving in sight of the trap, and their behaviour was generally relaxed, noisy and conspicuous. Visiting mynas spent long periods of time socialising with the decoys. Mynas continued to visit the site in substantial social groups from April to September 2008, with a peak in June (including one group >30). Between October and December 2008, mynas seldom visited the trap site in groups larger than two, and their behaviour was generally less conspicuous. During this period visitors were seen less often socialising with the decoys, except in November when a pair of adult mynas directed agonistic (presumably territorial) behaviour at the decoys over a period of three days. Larger groups (up to nine), including juveniles, visited in late December 2008 and early January 2009. These visitors spent considerable time socialising with the decoys by close contact near the cage and by calling from nearby vegetation. Between February and May 2009 single mynas and small groups were regularly seen in the air around the trap site. Some passing mynas answered the contact calls of the decoys, and briefly occupied a high perch (pole, wire, roof or tree) from which they could see the trap and free-feeding stations, but few visited the site itself, and the behaviour of visitors was less conspicuous than at the beginning of the study. They generally arrived in silence and often sat quietly in nearby vegetation for several minutes before approaching the trap position, and visitors were seen less often socialising with the decoys at close quarters than before. In June and July 2009 mixed flocks of Common Mynas and Common Starlings occasionally occupied vantage points near the trap site and visited neighbouring gardens in groups of up to 20. Small groups (<5) approached the trap, and some were trapped, although they interacted only occasionally with the decoys. After September 2009, the only mynas seen in the vicinity of the trap were single birds, either flying over or briefly occupying a nearby vantage point, and only one myna was seen to approach the trap. They seldom answered the decoys' contact calls, except in late October when a single myna was seen on four occasions directing agonistic behaviour at the decoys, similar to that observed in the 2008 breeding season.

Observation of free-feeding

The results of the free-feeding observations are summarised in Table 4.

	Trap roof (closed)		Trap roof (open)		Roost chamber		Catching chamber	
Species	Visits	Maximum birds/visit	Visits	Maximum birds/visit	Visits	Maximum birds/visit	Visits	Maximum birds/visit
Common Myna	18	2	0	0	0	0	0	0
Common Starling	64	5	16	1	11	1	14	1
Other species	95	2	31	2	1	1	0	0

Table 4. Birds visiting the trap location during eight days of free-feeding bait training in February 2010. On days 1 and 2 bait was presented in the catching chamber and on the closed trap roof. On days 3-8 the roof was opened half way and bait was added to the roost chamber. Visits were monitored by automatic digital cameras. Other species visiting the bait station on the trap roof were Australian Magpie *Gymnorhina tibicen* (21 visits), Australian Magpie-lark *Grallina cyanoleuca* (11 visits), Australian Raven *Corvus coronoides* (70 visits), and Pied Currawong *Strepera graculina* (24 visits). A juvenile Pied Currawong visited the bait station in the roost chamber.

The automatic cameras revealed that myna visits to the trap site were more common than indicated by casual observation. During the eight days of the experiment, seven adult Common Mynas were observed on a nearby power pole or on wires, but none of these mynas was seen to approach the bait stations. In contrast, the cameras recorded adult Common Mynas visiting the bait station on the closed roof of the trap on 18 occasions during the first two days. Three of the seven visual sightings of Common Mynas were recorded after the trap roof was opened on Day 3 to provide access to the roost chamber, but the cameras recorded no further visits by mynas to any of the bait stations. No juvenile Common Mynas were seen during the observation period. Common Starlings visited all of the bait stations during the experiment.

Trapping pressure and success in the study area

Table 2 summarises changes in trapping pressure and success in the study area between 2008 and 2010. Trapping pressure was higher and success lower in suburbs within the Melba trap catchment. Pressure was lower and success higher outside the catchment. Trap numbers across all suburbs in the study area doubled between 2008 and 2010. A greater proportion of the increase occurred in suburbs within the theoretical catchment of the Melba trap than in suburbs outside the catchment. Inside the catchment, trap numbers increased in each of the four suburbs. Outside the catchment, most of the increase occurred in Fraser (0 traps in 2008 – 10 traps in 2010), while trap numbers in three other suburbs increased slightly but remained low. Numbers declined in the other two suburbs from an already low level to zero. Trapping success in the study area increased during the study period. Much of the increased success occurred in suburbs outside the Melba trap catchment (especially in Fraser which recorded 35% of all captures in the study area), while trapping success within the catchment declined (Table 2). The data support the observations of Handke (2007) of high trapping success in previously untrapped areas and declining trapping success in areas with intense and sustained trapping pressure.

Myna abundance in the trap catchment

Common Mynas were present in the trap catchment throughout the study (Table 5). The counts during January to March 2008 estimated the pre-trapping baseline population density at 6.16-16.01 mynas per km^2. These estimates fall within the range reported by Davey (1991) for suburban ACT populations in 1990, and are higher than Davey's 1990 estimated range for Belconnen, but lower than estimates for central Canberra suburbs (Pell and Tidemann 1994, 1997) and recent estimates for Belconnen (Davey et al. 2009). The Melba trap catchment population of Common Mynas was considered therefore to have been at low density in 2008-2010 (*sensu* Davey et al. 2009).

		J	F	M	A	M	J	J	A	S	O	N	D	
Inside catch-ment	Mynas/ km^2	16.01	12.43	6.16	7.72	7.19	17.03	7.15	5.48	10.96	-	-	-	2008
	Surveys	16	14	4	11	8	7	9	2	3	-	-	-	
Inside catch-ment	Mynas/ km^2	5.75	8.22	3.28	-	11.64	19.63	19.18	13.7	-	4.79	2.74	9.43	2009
	Surveys	5	1	2	-	2	3	1	1	-	2	1	5	
Outside catch-ment	Mynas/ km^2	-	-	-	-	-	-	-	-	-	8.7	8.49	12.15	
	Surveys	-	-	-	-	-	-	-	-	-	1	2	2	
Inside catch-ment	Mynas/ km^2	6.16	14.04	4.11										2010
	Surveys	2	4	1										
Outside catch-ment	Mynas/ km^2	7.57	14.78	4.67										
	Surveys	5	1	3										

Table 5. Monthly abundance of Common Mynas inside and outside the catchment of the Melba trap as measured by bicycle belt transects. Surveys were not conducted in October to December 2008, April 2009 and September 2009.

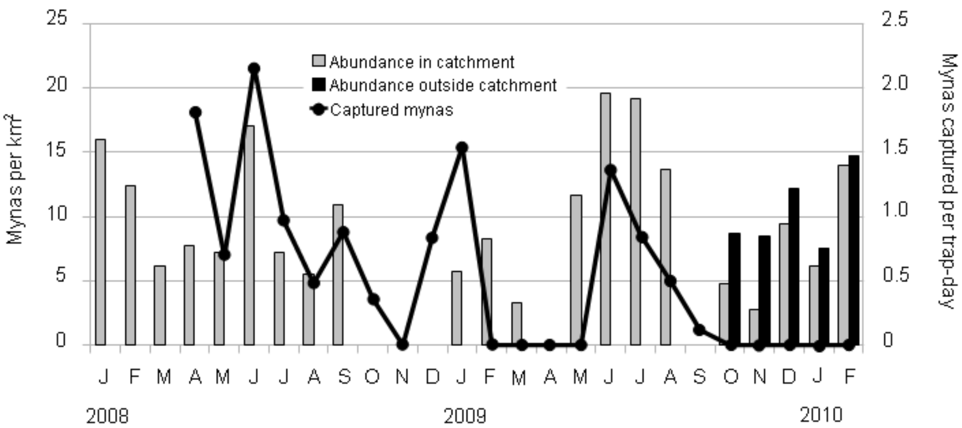


Figure 3. Trapping success (mynas captured per trap-day) at Melba in each month between April 2008 and February 2010 (points connected by solid line), and monthly abundance of Common Mynas (mynas per km^2) within and outside the catchment of the Melba trap as indicated by survey counts between January 2008 and February 2010 (vertical bars).

Myna abundance in the catchment fluctuated over the course of the study, with peaks in June and September 2008 that corresponded with peaks in trapping success (Figure 3) and with peaks in the presence of foraging groups at the Melba trap site in those months (see *Foraging behaviour at the trap site* above).

Catchment abundance peaked again in February 2009, coincident with peaks in trapping success and group-foraging at the Melba site, but abundance was lower than at the beginning of 2008. Abundance peaked again in June 2009, coincident with peaks in trapping success and group-foraging at the Melba site, and was higher than in 2008, while trapping success was lower. Abundance of mynas within the catchment reached a further peak in February 2010 which corresponded in time and in magnitude with the pre-trapping abundance in January-February 2008 and with the February 2010 abundance outside the catchment (Table 5 and Figure 3). There were no corresponding February 2010 peaks in foraging group presence or in trapping success at the Melba site (Figure 3).

Foraging behaviour in the trap catchment

Foraging groups were recorded during formal surveys in the study area in each calendar quarter of 2008 (Table 6). While the presence of group foraging was highly variable, it was more common inside the Melba trap catchment than outside. Between the first and second halves of 2009, group foraging declined inside the trap catchment and increased outside the catchment. In the fourth quarter of 2009, no foraging groups were observed inside the catchment, while foraging groups were recorded in all surveys outside the catchment (Table 6).

Survey period	Foraging groups per survey inside trap catchment (Mean ± SD; number of surveys)		Foraging groups per survey outside trap catchment (Mean ± SD; number of surveys)	
Q1 2008	0.96 ± 0.56	23	0.48 ± 0.59	12
Q2 2008	0.93 ± 0.46	15	0.60 ± 0.74	8
Q3 2008	1.06 ± 0.57	16	0.50 ± 0.52	9
Q4 2008	1.07 ± 0.70	15	0.67 ± 0.82	15
Q1 2009	0.69 ± 0.63	13	0.69 ± 0.75	11
Q2 2009	0.75 ± 0.62	12	0.50 ± 0.67	8
Q3 2009	0.13 ± 0.35	8	1.00 ± 0.53	7
Q4 2009	0	9	1.00 ± 0.00	8

Table 6. Presence of foraging groups in the study area in each calendar quarter between January 2008 and December 2010.

Locations where foraging groups of mynas were observed on two or more occasions in consecutive calendar quarters are shown in Figure 1. Between January 2008 and June 2009, social foraging groups of 8-18 mynas were regularly observed at six sites inside the Melba trap catchment, and social foraging groups (5-15 mynas) were observed at four locations outside the trap catchment. One group of five foraging mynas was observed at a monitored site 1.25km from the trap site in July 2009. Otherwise all foraging mynas recorded by surveys within the trap catchment after June 2009 were single birds or pairs, while foraging groups of 8-13 mynas were present outside the trap catchment as they had been previously (Figure 1). While formal surveys did not detect foraging groups near survey routes inside the trap catchment after June 2009, groups were present elsewhere in the catchment. By casual observations from a motor vehicle, I located a group of five in March 2010, 1.4km from the trap site and 300m from the nearest monitored group-foraging site, and a group of seven in April 2010, 1.0 km from the trap site and 700m from the nearest monitored group-foraging site. These groups were smaller than foraging groups observed concurrently outside the catchment. For example, a foraging group of 37, the largest during the study, was observed on three consecutive days at Jarramlee Pond in April 2010.

Common Myna foraging behaviour inside the trap catchment followed a similar pattern to that at the trap site. At the beginning of the study, mynas were conspicuous and bold throughout the study area. During surveys, mynas were commonly detected at a distance by their calls from prominent perches. Mynas foraging close to the cycle path generally held their ground as I passed or moved a short distance and resumed foraging. After July 2009, single mynas or pairs foraging near the cycleway within the trap catchment appeared more wary than before, often flying to cover or to elevated perches at my approach. Foraging mynas outside the Melba trap catchment remained conspicuous and bold, especially at Jarramlee Pond, the foraging site most distant from the Melba trap site. After October 2009 the behaviour of mynas in the trap catchment was cryptic, while conspicuous behaviour continued outside the trap catchment. During some surveys inside the catchment, mynas were detected only by their alarm calls from cover. It was apparent that at least some of the alarm calls were directed at me. During two surveys in early February and early March 2010, alarm calls were initiated by juveniles, and they and adult mynas foraging nearby flew to elevated perches.

Discussion

Trapping pressure at the Melba trap site was substantially increased at the beginning of the study and was sustained for two years. Over the same period, trapping success at Melba declined from high levels to zero. Meanwhile, in the four higher trapping-pressure suburbs within the catchment of the Melba trap, combined trapping pressure increased above already high levels, and the combined trapping success there declined. In contrast, in the six lower trapping-pressure suburbs outside the catchment, combined trapping pressure increased from a lower base and at a slower rate, and combined trapping success there continued to rise. These results support the observations of Handke (2007) and my first hypothesis.

The decline in trapping success at the Melba site was tracked by changes in myna foraging behaviour observed there – from numerous, conspicuous and bold at the beginning of the study, to rare, inconspicuous and cryptic at the end – lending support to my second hypothesis. Casual observation of myna foraging behaviour after trapping suggested that mynas no longer visited the trap or the trap site, but this proved to be unreliable. Camera records indicated that adult mynas continued to forage cryptically at the trap site while avoiding detection by me. The camera records also suggested that mynas had developed a sophisticated understanding that danger was associated only with the trap interior. While mynas did not forage in the interior of the trap during the camera observations, they readily foraged on its roof when its configuration was normal and presumably familiar to them, but avoided the trap after a novel reconfiguration of the roof provided new access to the interior. Another Canberra trapper has observed an adult myna producing alarm calls when a juvenile foraging near a trap approached the entrance valve (Bill Handke pers comm.). Griffin and Boyce (2009) found that Common Mynas learned to avoid the interior of cages of similar dimensions to the Mynamagnet foraging trap but, because of the design of their experiments, they interpreted their findings as avoidance of place rather than of apparatus. Further research on myna intelligence would be valuable in exploring the limits of mynas' capacity to understand trap mechanisms.

The synchrony of changes in foraging behaviour at the Melba trap with changes in trapping success there provides support for my third hypothesis, and suggests that the primary effect of live-catch foraging traps is to disrupt foraging behaviour. Trapping success (and the correlated incidence of group foraging behaviour) also appears to vary seasonally. Figure 4 compares monthly myna captures at the Melba trap between June 2008 and December 2009 with the combined monthly myna captures by 320 Canberra trappers between June 2006 and December 2007, and shows a similar strong seasonal signal in both data sets. These findings suggest that foraging traps might be most effective in Canberra if deployed infrequently but strategically so as to target seasonal and spatial variations in myna group foraging behaviour. They also predict that other myna management goals assigned to forage trapping in Canberra, such as disruption of breeding behaviour, might be achieved only as indirect effects of disrupted foraging. This prediction should be tested experimentally and, in the meantime, effort should be invested in methods that directly address such goals (e.g. Tidemann et al. submitted).

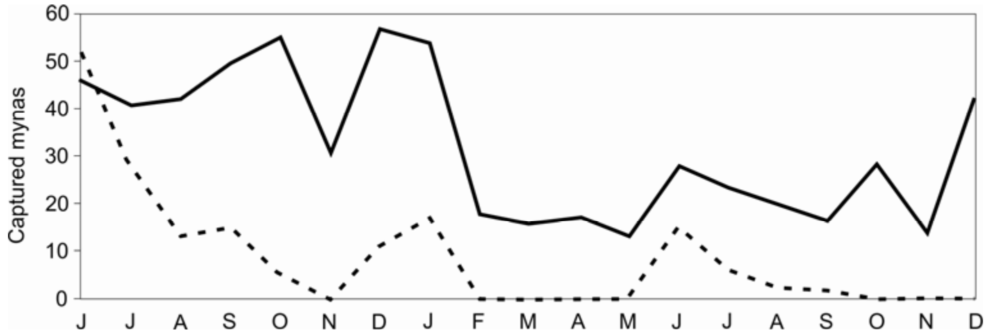


Figure 4. Comparison of total monthly captures at the Melba trap site in 2008-2009 (dashed line) with total monthly captures compiled by CIMAG from 320 trappers in the Canberra area in 2006-2007 (solid line). CIMAG data have been transformed by a factor of 0.05 for presentation on the same scale as Melba data. CIMAG data after Handke (2007).

The repeated territorial interactions between wild mynas and the decoys at Melba during the 2008 and 2009 breeding seasons also suggested that live-catch traps baited with mirrors (Jones 2008) rather than food, together with live decoys or recorded myna calls, have promise for disrupting myna breeding success at a local level, and should also be trialled.

In my study, complex changes emerged in myna foraging behaviour in the catchment that appeared to involve avoidance of several elements of the trapping system. Avoidance of the trap and the trap site are discussed above. I also found evidence that mynas had learned to avoid me. The Common Myna is a commensal species throughout its range, and has a long association with human settlements. Newey (2007) found that foraging mynas were more vigilant at times of day when they were likely to be disturbed by humans. Human hunters have probably represented a threat to mynas over evolutionary time, and mynas may be pre-adapted for recognising individual humans who behave in a predatory manner (cf. Millett et al. 2004, Griffin and Boyce 2009). The decline in conspicuous foraging behaviour within the Melba trap catchment was not uniform. Foraging groups disappeared from areas regularly surveyed by me, but persisted elsewhere, and mynas within the surveyed area adopted cryptic and alarmed behaviours when I was present. These findings suggest that mynas in the Melba catchment had learned to recognise me as a potential predator through my continuing association with the trap and trap site, and avoided me by changing their foraging behaviour in parts of the catchment frequented by me. A vast literature discusses how animals trade off the benefits of foraging opportunities against the costs of increased predation risk, and how prey animals will abandon resource rich habitats associated with high predation risk and shift to other habitats where the cost of shifting (lower energy intake) is offset by reduced predation risk (Gilliam and Fraser 1987, Lima and Dill 1990, Dickman 1992, Lima 1998, Biro et al. 2003). It is likely that, by wearing a distinctive helmet and by patrolling regularly on fixed routes in the trap catchment, I facilitated the mynas' selection of other habitats where they could forage in groups with minimal risk of being disturbed by me. A habitat shift on this scale could be costly in terms of lost foraging opportunities. After all, the 100m wide belt transects contained 14% of the total area of the trap catchment. But other evidence indicates that mynas were able to continue exploiting resources in all parts of the catchment, and maintained recruitment and population density there by employing cryptic foraging behaviour in those areas with the highest predation risk.

The changes in social interaction between wild mynas and decoys at the trap site, and the trend towards larger foraging groups outside the trap catchment and smaller foraging groups in lower risk habitats inside the catchment, provide tentative support for my final hypothesis. Foraging groups probably facilitate aspects of myna ecology additional to food discovery and predator avoidance. Social foraging groups are likely to be important for integration of juveniles into the social structure of the local population and, together with communal roosts, may play roles in mate selection (Pell and Tidemann 1997) and maintenance of pair bonds (Newey 2007). The presence of foraging groups throughout the mynas' range may also be important for the transmission of learned behaviours throughout the population (Curio et al. 1978, Chivers and Smith 1995a, Turner and Montgomery 2003, Page and Ryan 2006, Horner et al. 2006, Dindo et al. 2008). The development of an apparent gradient in group foraging between the higher, and intensifying, trapping-pressure suburbs inside the Melba trap catchment and the lower, and relaxing, pressure suburbs near Jarramlee Pond, for example, suggests that temporal and spatial transmission of social learning by Common Mynas is worth investigation. Of course, it is also possible that the gradient was influenced by my own movements; the lower level of antipredator behaviour outside the catchment may have been, in part, a function of the lower frequency of my surveys there (mean surveys per calendar quarter = 10.38 ± 2.83 SD; n=83) compared to my surveys inside the catchment (mean surveys per calendar quarter = 22.50 ± 12.12 SD; n=180).

I conclude that further research on Common Myna foraging behaviour is essential for Canberra's network of foraging traps to be optimally deployed. It appears that Common Myna foraging behaviour is highly plastic and includes a range of foraging options for efficient exploitation of resource-rich urban habitats where predation risk is high.

It is apparent that mynas respond to intense and sustained trapping pressure by adopting cryptic foraging behaviour in the most dangerous parts of their foraging range, with an attendant improvement in human amenity, and by habitat shifts to foraging areas of lower trapping pressure. Canberra myna trappers are familiar with fine-scale antipredator habitat shifts where Common Mynas, having become untrappable in their own gardens, are trappable for a time in neighbouring gardens. My study suggests that myna habitat shifting may also operate on a broader scale, and raises the possibility that an arms race, in which sustained trapping pressure is increasingly applied in urban and suburban places where mynas forage conspicuously, could encourage mynas to select group foraging habitats that are increasingly remote from centres of high trapping pressure. I suggest that research on rates of range expansion by mynas, focusing on the suburban margins and employing experimentally-manipulated levels of trapping pressure, is a high priority in considering both the potential impacts of Common Mynas on nearby nature reserve ecosystems and agricultural lands and the efficacy of forage trapping for protecting those places.

Acknowledgements

I am pleased to take this opportunity to thank Dr Chris Tidemann for his ongoing support and encouragement, and for his generous sharing of information, ideas and other resources. I am grateful to Dr Chris Tidemann, Dr Andrea Griffin and Kate Grarock for their helpful comments on drafts of the manuscript.

References

ANU (1998) Common Indian Myna web site. Dr Chris Tidemann, Australian National University. http://fenner school-associated.anu.edu.au/myna/

Allendorf, F.W., Hard, J.J. (2009) *Human-induced evolution caused by unnatural selection through harvest of wild animals*. Proceedings of the National Academy of Sciences 106: 9987-9994.

Beauchamp, G. (2000). Individual differences in activity and exploration influence leadership in pairs of foraging Zebra Finches. *Behaviour* 137: 301-314.

Biro, P.A., Post, J.R. and Parkinson, E.A. (2003) Population consequences of a predator-induced habitat shift by trout in whole-lake experiments. *Ecology* 84: 691-700.

Bouchard, J., Goodyer, W. and Lefebvre, L. (2007) Social learning and innovation are positively correlated in pigeons (*Columba livia*). *Animal Cognition* 10: 259-266.

Chivers, D.P. and Smith, R.J.F. (1995a) Chemical recognition of risky habitats is culturally transmitted among fathead minnow, *Pimephales promelas* (Osteichthyes, Cyprinidae). *Ethology* 99: 286-296.

Chivers, D.P. and Smith, R.J.F. (1995b) Fathead minnows (*Pimephales promelas*) learn to recognize chemical stimuli from high-risk habitats by the presence of alarm substance. *Behavioral Ecology* 6: 155-158.

CIMAG web site. Canberra Indian Myna Action Group Inc. http://www.indianmynaaction.org.au/

CIMAG (2007a) Myna Matters Bulletin #9, 1 May 2007. Canberra Indian Myna Action Group Inc.

CIMAG (2007b) Myna Matters Bulletin #10, 3 July 2007. Canberra Indian Myna Action Group Inc.

CIMAG (2008) Myna Matters Bulletin #13, 16 May 2008. Canberra Indian Myna Action Group Inc.

CIMAG (2010) Myna Matters Bulletin #18, 14 March 2010. Canberra Indian Myna Action Group Inc.

Counsilman, J.J. (1974) Waking and roosting behaviour of the Indian Myna. *Emu* 74: 135-148.

Crisp, H. and Lill, A. (2006) City slickers: habitat use and foraging in urban Common Mynas *Acridotheres tristis*. *Corella* 30: 9-15.

Curio, E., Ernst, U. and Vieth, W. (1978) Cultural transmission of enemy recognition: one function of mobbing. *Science* 202: 899-901.

Darimont, C.T., Carlson, S.M., Kinnison, M.T., Paquet, P.C., Reimchen, T.E. and Wilmers, C.C. (2009) *Human predators outpace other agents of trait change in the wild*. Proc Natl Acad Sci USA 106: 952-954.

Davey, C. (1991) Numbers and distribution of the common myna in Canberra in July, 1990. *Canberra Bird Notes* 16: 41-50.

Davey, C., Stol, J. and Langridgen, J. (2009) Issues in developing a successful trapping program for low density Common Myna populations in rural areas. *Canberra Bird Notes* 34: 158-168.

Dhami, M.K. and Nagle, B. (2009) Review of the biology and ecology of the Common Myna (*Acridotheres tristis*) and some implications for management of this invasive species. Pacific Invasives Initiative, The University of Auckland.

Dickman, C.R. (1992) Predation and habitat shift in the House Mouse, *Mus Domesticus*. *Ecology* 73: 313-322.

Dindo, M., Thierry, B. and Whiten, A. (2008) *Social diffusion of novel foraging methods in brown capuchin monkeys* (*Cebus apella*). Proceedings of the Royal Society B 275: 187-193.

Estók, P., Zsebők, S. and Siemers, B.M. (2009) Great tits search for, capture, kill and eat hibernating bats. *Biology Letters* doi: 10.1098/rsbl.2009.0611

Ferrari, M.C.O. and Chivers, D.P. (2008) Cultural learning of predator recognition in mixed-species assemblages of frogs: the effect of tutor-to-observer ratio. *Animal Behaviour* 75: 1921-1925.

Ferrari, M.C.O., Trowell, J.J., Brown, G.E. and Chivers, D.P. (2005) The role of learning in the development of threat-sensitive predator avoidance by fathead minnows. *Animal Behaviour* 70: 777-784.

Ferrari, M.C.O., Gonzalo, A., Messier, F. and Chivers, D.P. (2007a) *Generalization of learned predator recognition: an experimental test and* *framework for future studies*. Proceedings of the Royal Society B 274: 1853-1859.

Ferrari, M.C.O., Messier, F. and Chivers, D.P. (2007b) First documentation of cultural transmission of predator recognition by larval amphibians. *Ethology* 113: 621-627.

Fischhoff, I.R., Sundaresan, S.R., Cordingley, J., Larkin, H.M., Sellier, M. and Rubenstein, D.I. (2007) Social relationships and reproductive state influence leadership roles in movements of plains zebra, *Equus burchellii*. *Animal Behaviour* 73: 825-831.

Galef, B.G. and Giraldeau, L. (2001) Social influences on foraging in vertebrates: causal mechanisms and adaptive functions. *Animal Behaviour* 61: 3-15.

Gilliam, J.F. and Fraser, D.F. (1987) Habitat selection under predation hazard: test of a model with foraging minnows. *Ecology* 68: 1856-1862.

Griffin, A.S. (2004) Social learning about predators: A review and prospectus. *Learning & Behaviour* 32: 131-140.

Griffin, A.S. (2008) Social learning in Indian mynahs, *Acridotheres tristis*: the role of distress calls. *Animal Behaviour* 75: 79-89.

Griffin, A.S. and Boyce, H.M. (2009) Indian mynahs, *Acridotheres tristis*, learn about dangerous places by observing the fate of others. *Animal Behaviour* 78: 79-84.

Griffin, A.S., Boyce, H.M. and MacFarlane, G.R. (2010) Social learning about places: observers may need to detect both social alarm and its cause to learn. *Animal Behaviour* 79: 459-465.

Handke, B. (2007) Tackling Indian Mynas in Canberra; successful community-action approach. In: Proceedings of Indian Myna Workshop, NSW North Coast Indian Myna Action Group, Coffs Harbour, 23 October 2007.

Harcourt, J.L., Ang, T.Z., Sweetman, G., Johnstone, R.A. and Manica, A. (2009) Leadership, personality and social feedback. *Communicative & Integrative Biology* 2: 335-336.

Horner, V., Whiten, A., Flynn, E. and de Waal, F.B.M. (2006) *Faithful replication of foraging techniques along cultural transmission chains by chimpanzees and children*. Proceedings of the National Academy of Sciences 103: 13878-13883.

ISSG (2009) Global Invasive Species Database: *Acridotheres tristis*. Invasive Species Specialist Group, IUCN. http://www.issg.org/database/species/ecology.asp?si=108&fr=1&sts=sss&lang=EN.

Jones, J. (2008) Major Step for Myna Problem. Lake Cathie LANDCARE Group Inc. http://www.fauna.org.au/news0812_Myna_Problem.htm.

Kendal, R.L., Coolen, I., van Bergen, Y. and Laland, K.N. (2005) Trade-offs in the adaptive use of social and asocial learning. *Advances in the Study of Behavior* 35: 333-379.

Krause, J., Hoare, D., Krause, S., Hemelrijk, C. and Rubenstein, D. (2000) Leadership in fish shoals. *Fish & Fisheries* 1: 82-89.

Leblond, C. and Reebs, S. (2006) Individual leadership and boldness in shoals of golden shiners (*Notemigonus crysoleucas*). *Behaviour* 143: 1263-1280.

Lefebvre, L. and Bouchard, J. (2003) Social learning about food in birds. In: D.M. Fragaszy and S. Perry (Eds). *The Biology of Traditions: Models and Evidence*. Cambridge University Press.

Lima S.L. (1998) Stress and decision making under the risk of predation: recent developments from behavioral, reproductive, and ecological perspectives. *Advances in the Study of Behavior* 27: 215-290.

Lima, S.L. and Dill, L.M. (1990) Behavioural decisions made under the risk of predation. *Canadian Journal of Zoology* 68: 619-640.

Mathis, A., Chivers, D.P. and Smith, R.J.F. (1996) Cultural transmission of predator recognition in fishes: intraspecific and interspecific learning. *Animal Behaviour* 51: 185-201.

McMahon, B.F. and Evans, R.M. (1992) Foraging strategies of American White Pelicans. *Behaviour* 120: 69-89.

Midford, P.E., Hailman, J.P. and Woolfenden, G.E. (2000) Social learning of a novel foraging patch in families of free-living Florida scrub-jays. *Animal Behaviour* 59: 1199-1207.

Millett, J., Climo, G. and Shah, N.J. (2004) Eradication of common mynah *Acridotheres tristis* populations in the granitic Seychelles: successes, failures and lessons learned. In: C.J. Feare and D.P. Cowan. (Eds.) Advances in Vertebrate Pest Management, Volume III. Filander Verlag: Furth.

Nagy, M., Akos, Z., Biro, D., and Vicsek, T. (2010) Hierarchical group dynamics in pigeon flocks. *Nature* 464: 890-893.

Newey, P. (2007) Foraging behaviour of the Common Myna (*Acridotheres tristis*) in relation to vigilance and group size. *Emu* 107: 315-320.

Page, R.A. and Ryan, M.J. (2006) Social transmission of novel foraging behavior in bats: frog calls and their referents. *Current Biology* 16: 1201-1205.

Pell, S. and Tidemann C. (1994) Population Densities of Common Mynas, Common Starlings, Crimson Rosellas and Eastern Rosellas in Oakey Hill Nature Park and Adjacent Suburbs. *Canberra Bird Notes* 19: 58-66.

Pell, A.S. and Tidemann, C.R. (1997) The ecology of the Common Myna in urban nature reserves in the Australian Capital Territory. *Emu* 97: 141-149.

Ranta, E., Rita, H. and Lindstrom, K. (1993) Competition versus cooperation: success of individuals foraging alone and in groups. *American Naturalist* 142: 42-58.

Reader, S.M., Kendal, J.R. and Laland, K.N. (2003) Social learning of foraging sites and escape routes in wild Trinidadian guppies. *Animal Behaviour* 66: 729-739.

Reebs, S. (2001) Influence of body size on leadership in shoals of Golden Shiners (*Notemigonus crysoleucas*). *Behaviour* 138: 797-809.

Saavedra, S. (2009) First control campaign for Common myna

(*Acridotheres tristis*) in Ascension Island 2009. Live Arico Invasive Species Department, Canary Islands, Spain.

Tidemann, C.R. (2010) *Investigation into the potential for broad-scale control of mynas by trapping at communal roosts – Final report*. Fenner School of Environment & Society, Australian National University, Canberra.

Tidemann, C.R. and King, D.H. (2009) Practicality and humaneness of euthanasia of pest birds with compressed carbon dioxide (CO^2) and carbon monoxide (CO) from petrol engine exhaust. *Wildlife Research* 36: 522-527.

Tidemann, C.R., Grarock, K. and King, D.H. (Submitted) Euthanasia of pest sturnids in nestboxes. *Corella*.

Turner, A.M and Montgomery, S.L. (2003) Spatial and temporal scales of predator avoidance: Experiments with fish and snails. *Ecology* 84: 616-622.

Williams, B.K., Nichols, J.D. and Conroy, M.J. (2002) *Analysis and management of animal populations*. Academic Press: San Diego, California.

NESTING AND ROOSTING BY TAWNY FROGMOUTHS

Martin Butterfield

101 Whiskers Creek Rd, Carwoola,, NSW 2620

Abstract: *For 2008 and 2009 breeding seasons a pair of Tawny Frogmouths* Podargus strigoides *nested in a large Yellow Box* Eucalyptus meliodora *tree in our lawn. This note discusses some aspects of the behaviour of these birds and compares it where possible with some other pairs nesting in the Canberra area (particularly a pair nesting in Corroboree Park in Ainslie). Since the nest is clearly visible from my study window it had been hoped to develop a full chronology of the breeding cycle. Unfortunately I was overseas when the hatching occurred so that crucial date was, I believe, missed.*

Background

Both the Atlas of Australian Birds (Blakers et al. 1984) and the New Atlas of Australian Birds (Barrett et al. 2003) show Tawny Frogmouth to be widely distributed across Australia, being reported in both projects from approximately 55% of one degree grid squares.

The species is described (Wilson 1999) as inconspicuous. It is noted that it may be more abundant than records suggest because of the difficulty of locating the birds. The ACT Atlas (Taylor and COG 1992) shows them to be widely distributed across the ACT. A presentation to COG by Stuart Rae showed that careful searching detected several breeding pairs in the woodlands around Canberra. Three nest sites in gardens (Corroboree park, Ainslie and Fraser in the ACT and the author's site at Carwoola NSW) were active in both 2008 and 2009. In the Garden Bird Survey undertaken by COG, the reporting of the species varies considerable between years: in two years it was not reported at all and is on average only reported from 6% of sites (although more recent years show higher rates of around 14%). It is recorded in all weeks of the year.

A range of detailed observations of the species in New England is given in Kaplan (2007) and references to points of interest are given in the text below.

Summary of 2008 experience at Carwoola

When our interaction with these birds commenced it wasn't realised how interesting they would become. Thus many details are missing from the early periods.

The initial observation of the frogmouths was made by my wife (Frances) when a bird, hunting swift moths (*Oxycanus silvanus*, identified by Glenn Cocking pers. comm.) swooped her study window one evening in May. They were seen to hunt on the wing several times, supporting the view of Kaplan (2007, p. 64). This was repeated a few times, but the roosts of the birds were not located. A few weeks later I noticed a Pied Currawong (nesting in the Yellow Box) swooping something in the tree. To my surprise it was a Tawny Frogmouth sitting in a very exposed position. Even more surprising, the next day I looked at the bird from my window and found it to be sitting on a nest. Since the nest is located in an area of the tree some five metres off the ground it was not possible to see into the nest.

The nest site is a horizontal fork in a branch of the tree. As shown in the photograph below (image from directly under the fork) the branches are substantial and, although the nest itself is not substantial, the site provided good security for the chicks. The problems of flimsiness described by Kaplan (2007, p. 76) are not evident here.

Young birds were first noticed in the GBS week beginning 6 November 2008. The two chicks eventually left the nest on 4 December 2008. For the next few weeks the birds were occasionally seen roosting as a group around the property, usually close to the house but on one occasion a group of the same size was reported by a neighbour living 300m away.

Summary of 2009 experience at Carwoola

Two birds were first noticed in the GBS week beginning 11 June 2009 in a small Yellow Box located some 40m from the nest tree. The birds were seen in this position every day on which they could be located from then until the male was observed on the nest, and this position became designated the 'favourite roost'. Both male and female were roosting together; when the weather was cold they snuggled up, but when warmer they generally left a bit of space between them. On other occasions (typically when the weather was wet or very windy) they were absent – i.e. I could not locate them – altogether. On 16 August 2009 I began to systematically record where the birds were located.

On 2 September 2009 I noticed that fresh twigs had been added to the old nest site and three days later the male bird (identified by larger size and less tawny colouration) appeared on the nest for the first time. He remained there – whether roosting or incubating was not always known – throughout daylight hours in the breeding season. I could not be certain which bird was on the nest after dark apart from rare occasions when both were seen there. I was absent overseas from 22 September to 16 October. Chicks were first noticed on 18 October. On 19 October the female moved from the favourite roost to the first of two other positions closer to the nest site. This was designated the lower roost, since it was only 2m above the ground and was located about 15m horizontally from the nest site. As the chicks developed the female preferred to move to a twisted hazel *Corylus avellana contorta* at approximately the same height but about 3m closer to the nest tree.

Date	Event	Comment
16 Aug 2009	Commence recording	
2 Sept 2009	Nest rebuilding first noticed	May have started earlier
5 Sept 2009	Male roosts on nest, Female stays in favourite roost	
22 Sept to 16 Oct		Observer absent on OS trip
18 Oct 2009	Two Chicks seen in nest	
19 Oct 2009	Female moves to low roost	
30 Oct 2009	Female observed in Hazel tree for first time	Closer to nest tree
5 Nov 2009	Chicks left alone and exposed at night	
12 Nov 2009		Buzzing call at night
14 Nov 2009		Currawong chicks fly. Frogmouth chicks flap wings vigorously
15 Nov 2009	Nest empty at 6.00am	
9 Dec 2009		Family of four located on Acacia branch
30 Dec 2009		Juveniles hunting independently
15 Jan 2010		Adults roosting on Acacia

Table 1. Timing of breeding events at Carwoola.

Although it was not possible to see into the nest to determine when laying started, nor how many eggs were laid, there was no evidence that more than two eggs were laid. Higgins (1999) quotes a range of 30 to 32 days as the fledging period so counting back from departing the nest on 15 November implies first hatching on 13 October. The incubation period is quoted in Higgins (1999) as close to 30 days suggesting egg laying commenced about 13 September. This implies that either the incubation or brooding periods were longer than those quoted in HANZAB, or the male ‘assumed the position’ on the nest approximately a week before the first egg was laid.

		2007	2008	2009
incubation start		25 Aug	10 Sep	26 Aug
birth	actual (est)		10 Oct	23 Sep
	first see chicks		18 Oct	1 Oct
fledge		27 Oct	9 Nov	31 Oct
no.chicks		2	2	1

Table 2. Timing of breeding events for a frogmouth breeding pair in Corroboree Park, Ainslie for the last three years (Robin Hide pers. comm.).

Timing of events in other sites

Robin Hide (pers comm.) provided a table of dates for the pair breeding in Corroboree Park, Ainslie.

Rosemary Blemings (pers. comm.) advised that she first saw a chick in a nest near Mt Rogers on 18 October 2009. The last sightings of the birds on the nest were 'prior to the weekend of 7th & 8th November'. Again, using the length of the period to fledging cited in Higgins (1999), the implication is that the chicks were in the nest approximately a week before they were able to be seen.

Roost preferences

The photograph below shows the relative position of the various trees referred in the following discussion.

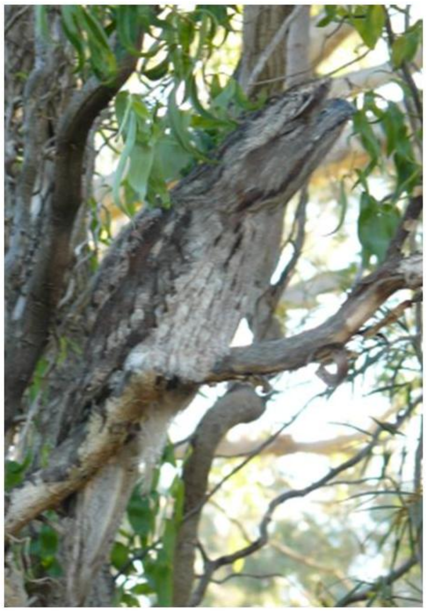
To give a broad scale the longer side of our house is approximately 30m in length and is oriented west (left end of image) to east. It may also be relevant to note that it is at an elevation of 770m. The meaning of the letters in the image is specified in the following paragraphs.

I began to record the locations in which I found the birds on 16 August 2009 when they were both located in a Yellow Box some 10m north of the favourite roost. This was the only time I found them in that tree. For 14 of the next 21 days (4-5 days at a time) both birds were found in the favourite roost (F) and neither was found on the other seven days when they presumably selected a more sheltered location.

From 5 to 21 September the male was always located on the nest platform (N) during daylight. On two occasions during that period both birds were observed on the nest at about 10.00pm. The female was found to spend the daylight period at the favourite roost on 14 occasions (and could not be located on three occasions).

This fidelity to roost sites is in marked contrast to the statement by Kaplan (2007, p. 52) that '… it is relatively rare to see them roost in the same place for more than three days running'. However in early 2010, the birds were much more variable in their roost sites switching every one to three days between five known sites and being absent on other days. It will be interesting if roost fidelity increases closer to the breeding season.

There was no preference for dark coloured branches for the roost site. The favourite roost was a bark-free light coloured branch of a Yellow Box and the branches used in the twisted hazel were also lighter (see photograph below) than many branches in trees a similar distance to the nest site.



On returning from overseas on 17 October the male was always on the nest and the female was found either in the twisted hazel (H) or a low branch of a small eucalypt next to it (L). These locations were maintained until the chicks finally left the nest on 15 November. It was interesting that the larger chick briefly left the nest, and sat on one of the large branches on which the nest was built, on 5 November. However it returned to the nest and stayed in it for the following 10 days.

Upon leaving the nest the family was sighted sporadically. On 9 December they all reappeared perched on a horizontal branch of a Silver Wattle *Acacia dealbata* (A). This was also the case in the previous year, when in this position the male adult and both chicks perched touching each other with the female approximately 2m further out on the branch. As the weather became very hot the smallest bird moved up to 30cm from the other two.

On 23 February 2010 a single male bird appeared after dark in a Red Stringybark *E. macrorhynca* close to the house. An 'ooming' call was heard in early March; this may be pair-bond maintenance or courting (Higgins 1999). Since 29 March a pair of frogmouths have been roosting in various trees (including at least one place I had not previously seen them) around our garden, in an area roughly centred on the nest tree. I hope this means they will nest again.

Interaction with Currawongs and other entities

Currawongs

Although the presence of the nest was first indicated by aggression by a Pied Currawong, during the 2008 breeding season the currawongs were only recorded as displaying particular aggression when the frogmouth chicks fledged.

In contrast, the Pied Currawongs often undertook swoops at the nest during the 2009 event. It appeared (specific logging of such events was not made) that this was most evident when the female frogmouth joined the male on the nest or when the chicks were large. The male frogmouth often ignored the swoops but when too close would respond by leaning its head back and fully opening its beak. This display – which not only revealed the impressive size of the gape but suggested the strength of the beak – seemed to get the currawong's full attention leading to a prompt (albeit temporary) cessation of hostilities. This bird did not display the trance behaviour discussed by Kaplan (2007, p. 83).

It was also noticed that the currawongs were far more aggressive to the author (but interestingly not to his wife or dog) in 2009 than had been the case in 2008. The position of the currawong nest (about 5m above the Frogmouth nest) was close to identical in both years.

Other birds

The only other birds seen to interact with the frogmouths were a flock of approximately 12 Yellow-rumped Thornbills *Acanthiza chrysorrho* which mobbed the family when roosting in the Acacia. Although Grey Butcherbirds (listed by Kaplan as frequent assailants of frogmouths) are in the area, during the breeding season the butcherbirds had usually moved higher up our block to undertake their own procreative activities.

Humans

The Frogmouths essentially paid no attention to humans during the pre-nesting roosts, while on the nest or on the occasions that the family turned up after fledging. This applied regardless of the human activity, including driving a ride-on mower on the lawn directly under the nest on several occasions. The most recent roost is directly above a cattle grid in our drive and the passage of cars (or mountain bikes) does not seem to disturb them.

I recall the Fraser nest was very close to a dwelling and the Corroboree Park one very close to a street and an area where people played in the park. In neither case did these indications of humanity seem to stress the birds.

Dog

By way of contrast when we walked our small dog near the adults (whether roosting or brooding) they immediately assumed the stretched out 'full camouflage' posture. They did not react further, and the small dog did not react to them in these situations. She has however responded agonistically to frogmouths hunting near her at other times.

Post Brooding

Typically, the birds seem to take a tour of their territory which may well be teaching the chicks how to be Frogmouths. In Bald Eagles *Haliaeetus leucocephalus* this learning can take five years, with the young birds ranging thousands of kilometres observing various other eagles (NYCDPR 2006). With Tawny Frogmouths, the process seems to be completed in well less than a year. On 12 December the whole family turned up again in the Silver Wattle. At first, the temperature was low (about eight degrees Celsius) and the adult male and chicks were snuggled together, with the adult female about 2m away. An hour later the temperature had risen to about 15 degrees and the female chick had moved about 50cm away from the two males (not towards the female adult). By the late afternoon the female chick was about 150cm from the males (who continued to huddle). An effect of this is that the family required a branch at least 3m long to accommodate them!

On 26 December, two frogmouths appeared at 10.00pm calling (growling, possum-like call). From the birds' size I believe this was the chicks. They sat in branches of the nest tree which had previously been used as hunting perches by the adults.

References

Barrett, G., Silcocks, A., Barry, S., Cunningham, R. and Poulter, R. (2003) *The New Atlas of Australian Birds*. Royal Australasian Ornithologists Union, Melbourne.

Blakers, M., Davies. S.J.F. and Reilly, P.N. (1984) *The Atlas of Australian Birds*. Royal Australasian Ornithologists Union, Melbourne.

Canberra Ornithologists Group (various years), Annual Bird Report, *Canberra Bird Notes*.

Higgins P.J. (Ed.) (1999) *Handbook of Australian, New Zealand and Antarctic Birds, Vol. 4: Parrots to Dollarbird*. Oxford University Press, Melbourne

Kaplan, G. (2007) *Tawny Frogmouth*. CSIRO Publishing.

NYCDPR (New York City Department of Parks and Recreation) (2006) http://itsmypark.com/sub_about/parks_divisions/urban_park_rangers/eaglecam/blog/index.html

Taylor. I.M. and Canberra Ornithologists Group (1992) *Birds of the Australian Capital Territory: an Atlas*. COG and NCPA, Canberra.

Wilson, S. J. (1999) *Birds of the ACT – Two centuries of change*. Canberra Ornithologists Group. p. 76.

INWARD MIGRATION OF HONEYEATERS ACROSS THE BREDBO BADLANDS – SPRING 2009

Henry Nix

22 Syme Crescent, O'Connor ACT 2602

Introduction

The autumn migration of honeyeaters (and of the Yellow-faced Honeyeater *Lichenostomus chrysops* in particular) through the Canberra region is now well known and documented (Taws 1999). However, a review of early records (Wilson, 1998) showed that it took decades for these movements to be recognised as a regular annual phenomenon. The return movements in spring were less well documented, but in September 2000, Muriel Brookfield (2000) observed 'a concerted mass movement of honeyeaters' back into the region for the first time. This was in the Shoalhaven Valley some 70km south-east of Canberra.

A year later in September 2001 a more intensive effort was organised and this confirmed mass movement of honeyeaters from east to west across the largely cleared Shoalhaven Valley and into the wooded ranges to the west (Compston et al. 2001). While numbers varied from small groups to thousands of birds per hour, movement occurred along the entire 35km length of road and track surveyed. Later, on 21 October 2001 Muriel Brookfield observed honeyeaters continuing to move across the Shoalhaven Valley. Where were they going? The following observations made in October 2009 extend honeyeater mass movements some 50km further west and beyond.

Through the week of 19-23 October 2009, I was assisting my colleague Sandy Gilmore in the annual task of monitoring bird species and numbers at 'Scottsdale' an Australia Bush Heritage property north of the small township of Bredbo. This is the epicentre of the Bredbo Badlands, so designated by staff of the NSW Soil Conservation Service in the 1950s. Massive sheet and gully erosion has made this locality one of the major sources of sediment in the entire Murrumbidgee catchment. Very early logging for construction timbers, fencing and firewood removed much of the Yellow box *Eucalyptus melliodora* from the grassy woodlands of the footslopes and low rises. Ringbarking and felling removed trees from the steep valley sides and overgrazing by sheep and later, rabbits, removed essential ground cover. Later still, clean cultivation for annual cropping compounded the damage. Ironically, much of the former cropland on 'Scottsdale' now has a protective cover of African Lovegrass *Eragrostis curvula*, a declared weed species. Restoration of these landscapes will be a very long term operation, but Australian Bush Heritage has accepted the challenge.

Observations

These observations were made by Henry Nix while traversing the Monaro Highway between Canberra and Bredbo on Monday 19 October, Tuesday 20 October, Thursday 22 October and Friday 23 October 2009 and while surveying fixed sites on ‘Scottsdale’. Duplicate efforts at all sites made by Sandy Gilmore and his wife Maree added to our sightings. The local weather had a similar pattern each day, with early low cloud, fog and icy winds from the WNW that gradually morphed into the forecast weather by late morning.

Monday 19 October 2009

Fog lifted while driving south from 0900 to 1030 then warm sunny with light winds

I observed small (<10) groups of honeyeaters crossing from east to west wherever both sides had tree cover between Williamsdale and Bredbo on the Monaro Highway. Checking in to ‘Feathers Bed and Breakfast’ (highly recommended) at Bredbo a Yellow-faced Honeyeater was in full song in the garden, while small parties of the species were tree-topping overhead with the ‘quick quick’ calls so characteristic of this species while on the move.

Later that morning at Scottsdale woolshed (35°34’40” S, 149°09’04” E) a Yellow-faced Honeyeater was in full song in an abandoned orchard down slope while streams of its fellows tracked overhead. At 1200 hours the flow was 34-40 birds/minute coming from the ESE and heading WNW down the eastern, wooded side of the Gungoandra Creek valley towards the Murrumbidgee River and the wooded slopes of the Clear Range beyond. Returning to Bredbo by 1525 hours the movement there had ceased, but the resident Yellow-Faced Honeyeater remained in full song.

Tuesday 20 October 2009

Low cloud, icy WNW wind.

Despite the very unpleasant conditions, small flocks (5-18 birds) were observed, averaging >400 birds per hour at all five sites down the Gungoandra Creek valley between the Woolshed and the Murrumbidgee River. We were recording from 0700 to 0950 hours with the numbers increasing as the cloud lifted and the day warmed. White-naped Honeyeaters *Melithreptus lunatus* were a very small component of the total. All three observers heard, but did not see, a Channel-billed Cuckoo, further to the north.

Wednesday 21 October 2009

Low cloud, icy WNW wind.

All five sites that we sampled were in the uplands to the west of the central valley. The summit plateaux were extensively cleared, but the eastern escarpment had tree cover, albeit disturbed. At the site SCT004 (35°59'02" S, 149°07'28" E) at the top of the escarpment, struggling flocks (60, 30, 5, 2, 5, 20, 7, 10) in successive minutes came up and over, maintaining the general ESE to WNW direction. This time there were a significant number of White-naped Honeyeaters with the Yellow-faced Honeyeaters (31 WNH and 140 YFH in the 20 minute count). At the next site SCT005 (35°53'38" S, 149°07'16" E) the flow continued (8 WNH and 60 YFH in a 20 minute count). These point counts at some distance apart along the incoming front are indicative of a mass movement that must have exceeded thousands of birds per hour.

Thursday 22 October 2009

Low cloud fog icy winds WNW.

Very unpleasant conditions for both man and bird with the counts lowered and the birds generally subdued. No major movements of honeyeaters observed, but as noted from the first day, all wooded sites had resident Yellow-faced Honeyeaters in full song, i.e. one bird or sometimes two in better habitat.

Friday 23 October 2009

Very low cloud, fog, icy winds WNW with cloud lifting and sun warming by late morning.

Most of the remaining sites were in the broad valley floor with few trees apart from some old *Pinus* plantings. At the last site SCT001 (35°54'44' S, 149°08'23" E) Maree Gilmore drew my attention to a large flock (60+) of Red Wattlebirds *Anthochaera carunculata* milling about in the upper canopy of a small block of *Pinus* some 500m away.

The birds would sally forth heading for a row of *Pinus* some 600m away in the preferred WNW direction, but the powerful headwind soon turned them back to cover. We witnessed at least ten attempts before the flock abandoned the preferred WNW course and headed crosswind directly west where remnant tree cover was marginally closer. They were right to be nervous and careful because an Australian Hobby *Falco longipennis*, a Brown Falcon *Falco berigora* and a Brown Goshawk *Accipiter fasciatus* were on patrol that morning.

Overview and Discussion

First, these observations were not the result of a focused survey on honeyeater movements in either space or time. Taken together they indicate a broad front of honeyeater migration continuing westward to the higher ranges and wetter open forests of Namadgi and Koszciusko National Parks in late October in 2009. The Scottsdale sites were surveyed at the same time in October 2008, but no mass movements were detected then. However, the numbers of resident Yellow-faced Honeyeaters and Red Wattlebirds was much higher. Perhaps any mass movements had been earlier in that year. In both years, the wooded sites had Yellow-faced Honeyeaters and

Red Wattlebirds in territorial mode, but White-naped Honeyeaters were recorded only within some of the moving flocks in 2009.

Second, while it is clear from both spring and autumn movements through Canberra that there is significant year to year variation we are no closer to resolving patterns of movements and the key drivers. Systematic surveys in September and October along carefully selected east-west and north-south salients, that are centred on Canberra, would be a start.

References

Brookfield, M (2001) Autumn migrations of Honeyeaters across Shoalhaven valley. *Canberra Bird Notes* 26: 52-53.

Compston, E., Compston, W., Perkins, H. and Brookfield, M. (2001) Inward migration of honeyeaters across the upper Shoalhaven Valley – Spring 2001. *Canberra Bird Notes* 26: 77-83.

Taws, N. (1999) Murrumbidgee River Corridor Honeyeater Survey 1997. *Canberra Bird Notes* 24: 145-166.

Wilson, S.J. (1998) Our early knowledge of honeyeater migration in the ACT. *Canberra Bird Notes* 23: 1-2.

THE CANBERRA BIRD BLITZ 2009

Barbara Allan

47 Hannaford St, Page ACT 2614

Abstract: *This paper describes the conduct of Canberra's fifth 'bird blitz' held on 24-25 October 2009, outlines some findings and provides comparisons with the blitzes of the four previous years.*

Introduction

On Saturday 24 and Sunday 25 October 2009, the Canberra Ornithologists Group (COG) conducted its fifth '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 3.5km by 4.5km). 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 blitzes

Participants register for their preferred 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 2009 was remarkably clement until mid-afternoon on the Sunday, when the heavens opened. Most adopters of grid cells managed to conduct their surveys, and quite a few did optional extra surveys, contributing to the satisfactory overall coverage we achieved.

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 86 participants in 2008, 83 in 2007, 62 in 2006 and 75 in 2005. The participation level is pleasing. 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 level of uncertainty about the numbers participating, we achieved our aim of encouraging a few more of our members to survey. There were eight named individuals who participated in the blitz for the first time in 2009. Thirty-two hardy souls warmed to the task and blitzed for part or all of the two days, again an increase on previous years.

Coverage

We achieved a reasonable coverage of the ACT in this fifth blitz, with surveys conducted in 112 of the 165 possible grid cells (68%), compared with 118 in 2008, 132 in 2007, 99 in 2006 and 109 in 2005. The number of datasheets received per grid cell is shown in Map 1. Total coverage is never going to be possible with the number of blitzers available, as some of the grid cells in Namadgi National Park require a strenuous bush-bash to reach. However, virtually all major habitat types were covered.

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.

Habitats surveyed

While specific habitat types have not yet been analysed, a broad land use division of datasheets has again been attempted. Last year's figures are provided for comparison, in parentheses. Urban areas, including 28 covering lakes and ponds, were covered in 50 surveys (49 last year); rural or semi-rural 42 (49); national parks 99 (120); Canberra Nature Park or nature reserves 60 (65); the Murrumbidgee River Corridor 9 (13); the Australian National Botanic Gardens 1 (3); sewage ponds 1 (2); and Tidbinbilla Nature Reserve 8 (5).

The richest bird areas, notwithstanding the experience of the observers or the time spent surveying, were once again the nature parks and reserves. It is possible, and even likely, that this effect is magnified by the familiarity of many participants with the areas they chose to survey. Mulligans Flat, Callum Brae, The Pinnacle, Mt Majura and Jerrabomberra Wetlands Nature Reserve were standouts, with between 40 and 80 species recorded by many observers.

Datasheets received in time for analysis

Participants returned 270 datasheets for the 2009 blitz weekend, down from the revised total of 338 datasheets of the previous year, 316 in 2007, 242 in 2006 and 254 in 2005. (More than 270 datasheets were submitted but some, based on the latitudes and longitudes provided, proved to be just outside the ACT borders.)

The percentage contribution of the blitz datasheets to the overall number of datasheets for the COG area of interest will not be known until the full-year figures for data sheets are in for 2009-10. However, it is likely to 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 they were surveying, and to allow for personal preference and time or other constraints. Contrary to the experience of previous years (see Figure 1), more blitzers adopted the Birds Australia Atlas 'within 500 m of a central point' option. Of the eligible datasheets, 99 (37%) were for 2-ha surveys; 133 (49%) were for surveys within 500 m of a central point; 21 (8%) 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 17 (6%) were for incidental records.

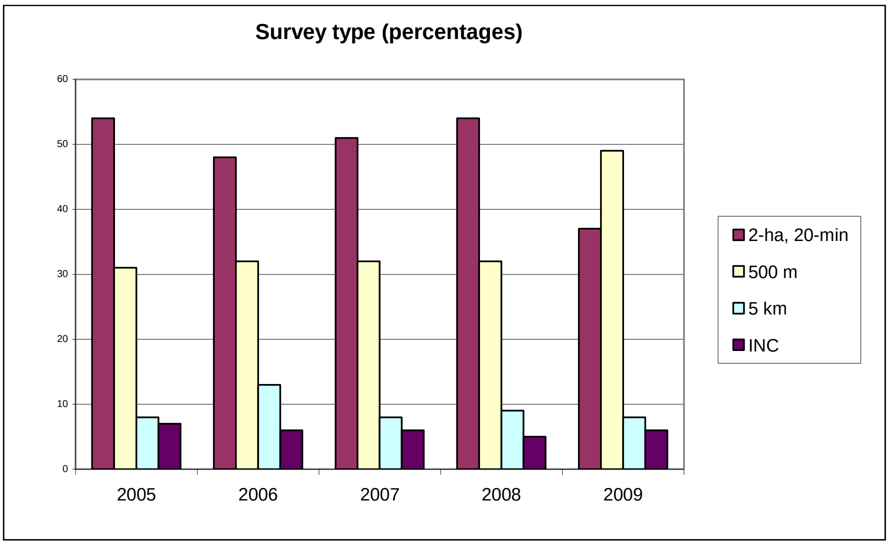


Figure 1. Survey type (percentages)

There may be a simple explanation for this change in preference for survey type, as the organiser stressed 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 limit. And some elected to spend hours at their special spot. This almost certainly influenced the reduced number of datasheets received and may have influenced the increase in numbers of species recorded.

Choice of day

Considerably more surveys were conducted on the Saturday, 173 (64%), compared with 97 (36%) for Sunday. The weather forecast for rain on the Sunday afternoon obviously had an influence here.

Species recorded

As Table 2 shows, 176 species of bird were recorded in the ACT over the two blitz days. This compares with 173 in 2008, 164 in 2007, 161 in 2006, and 157 in 2005. When the five blitz years are considered, 194 species have been recorded across all five blitz years, while 135 species have been recorded every year. By way of comparison, the species total for all of the financial year 2008-09 and for the whole of COG's area of concern, as recorded in COG's annual bird report, was 232 species from 280 grid cells (COG 2010).

As Table 2 shows, 18 species not recorded in 2008 were recorded in 2009. Some of these species such as the White-fronted Chat were inadvertent omissions in 2008, when their known location was not surveyed.

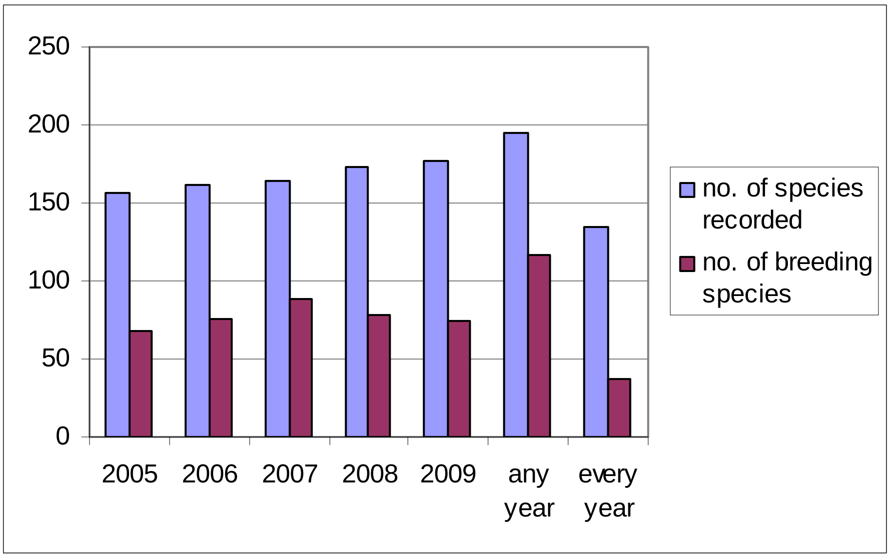


Figure 2. Numbers of species recorded, and recorded breeding

Records of some high country specialties such as Pilotbird and Bassian Thrush came thanks to a CSIRO researcher who desisted from his banding work sufficiently long to complete a blitz datasheet. A particular highlight was the first record for many years in the ACT of the Banded Lapwing; the first too for some time of a Brush Bronzewing. And the Powerful Owl obligingly put in an appearance at the botanic gardens.

Species not recorded in the 2009 blitz but which we might have expected to find, based on previous experience, include Wonga Pigeon, Swamp Harrier and most of the egrets. The Long-billed Corella, the Indian Peafowl in Narrabundah and the Eastern Koel were clearly overlooked, and we missed out on recording nightbirds such as the Australian Owlet-nightjar and the Southern Boobook. Some species, such as the Great Crested Grebe, cannot be relied on to appear in the ACT on a regular basis. A few species, including the bitterns, continue to elude blitzers.

A surprising highlight of the 2009 blitz was the appearance of flocks of White-browed and Masked Woodswallows, which were recorded in 16 widespread grid cells. While these irruptive species are not rare in the ACT, their appearance cannot be relied upon and is always greeted with pleasure by our birders.

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, Bassian Thrush, and Cicadabird.

The expected cuckoo species were mostly recorded, and in increasing numbers: Pallid Cuckoo (37 records), Brush Cuckoo (6), Fan-tailed Cuckoo (53), Horsfield's Bronze-Cuckoo (34) and Shining Bronze-Cuckoo (15). By contrast two raptor species, the Swamp Harrier and the White-bellied Sea-Eagle, were not recorded and raptor numbers were relatively low overall; only the Nankeen Kestrel, with 30 records, and the Wedge-tailed Eagle (19) could be deemed 'common'.

During the 2009 blitz, 75 species (43% of the 176 species recorded) were recorded as breeding, when the broadest possible indicators of breeding were used. As shown in Table 2, this compares with 77 breeding species in the 2008 blitz, 87 in 2007, 76 in 2006 and 67 in 2005. Although not strictly comparable, across all of COG's area of concern in 2008-09, 126 species were recorded as breeding (COG 2010). The slight 2009 drop in blitz breeding species is hopefully not a cause for concern.

The species most commonly recorded as breeding was once again the Australian Magpie, with 41 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 31 indications of breeding. Other relatively common breeding species were the Pied Currawong (with 13 breeding records), Red Wattlebird (8), Magpie-lark (14), Crimson Rosella (16), Galah (17), Black Swan (12), Striated Pardalote (11) and White-winged Chough (11). There were breeding records for many of the small passerines, including for the first time in the blitz the Yellow Thornbill, though numbers were generally low. Breeding highlights for 2009 included records for four species listed as vulnerable in the ACT: Little Eagle (on), Varied Sittella (dy), Hooded Robin (on) and Brown Treecreeper (cf and dy).

Most frequently recorded species

The ten most frequently recorded species overall in the 2009 blitz, in rank order (with the 2008 blitz ranking in parentheses) were:

Australian Magpie – 165 records (1)
Crimson Rosella – 154 records (2)
Yellow-faced Honeyeater – 152 records (4)
Grey Fantail – 149 records (5)
Pied Currawong – 149 records (6)
Red Wattlebird -146 records (3)
Superb Fairy-wren – 142 records (7).
Australian Raven – 137 records (8)
Sulphur-crested Cockatoo – 133 records (9)
Striated Pardalote – 128 records

Comparing the blitz top 10 with the Annual Bird Report top 10 for 2008-09, we find that eight of the species overlap.

Species recorded only once in the 2009 blitz

Stubble Quail
Magpie Goose
Pink-eared Duck
Chestnut Teal
Blue-billed Duck
Brush Bronzewing
Pied Cormorant
Eastern Great Egret
Buff-banded Rail
Australian Spotted Crake
Black-winged Stilt
Red-kneed Dotterel
Sharp-tailed Sandpiper
Painted Button-quail
Whiskered Tern
Turquoise Parrot
Powerful Owl
Red-browed Treecreeper
Pilotbird
Crescent Honeyeater
Cicadabird
Crested Shrike-tit
Pied Butcherbird
Jacky Winter
Rose Robin
Bassian Thrush

Most records were of a single bird.

Species not recorded

As indicated above, some of the 2009 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 five 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 2009 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.

There were only three records of the Hooded Robin, from three grid cells, with abundances ranging from 1 to 2. Breeding was recorded once, an 'on'. Locations in which the birds were recorded were Goorooyarroo Nature Reserve, West Macgregor and Brandy Flat trail, all known locations for the species.

Superb Parrots (10 records, of 1-8 birds) were seen in seven grid cells in their now-usual haunts in the north and north-west of the ACT. One possible indicator of breeding (display) was recorded.

Brown Treecreepers were recorded four times, with a range of 1-5 birds, from three grid cells, at Glendale Depot, Newline paddocks and 'Kama', all known locations. There were two breeding records, of carrying food and dependent young.

There were five records of Varied Sittella, from five distinct grid cells, with abundances ranging from 2-20 birds. Breeding (dependent young) was recorded at Goorooyarroo Nature Reserve.

White-winged Triller records too were down on the 24 records in the 2008 blitz and the 41 in the 2007 blitz. There were only 14 records this time, with a maximum of 17 birds, from 10 widespread grid cells from many urban-fringe nature reserves as well as Namadgi National Park. There were no breeding records.

Little Eagles (1-2 birds) were recorded four times, from four grid cells. Locations from which they were recorded were Jerrabomberra Wetlands, Kowen Forest and West Macgregor. The last-named was 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 next decade or so. 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, 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. Sincere thanks go to all those COG members who donated prizes.

References

Allan, B. (2005) The Canberra bird blitz 2005. *Canberra Bird Notes* 30:148-158.

Allan, B. (2007) The Canberra bird blitz 2006. *Canberra Bird Notes* 31:187-197.

Allan, B. (2008) The Canberra bird blitz 2007. *Canberra Bird Notes* 32: 96-108.

Allan, B. (2009) The Canberra bird blitz 2008. *Canberra Bird Notes* 34: 111-125.

COG (2010) Annual Bird Report: 1 July 2008 to 30 June 2009. *Canberra Bird Notes* 35: 1-80.

Table 1. Known blitz participants, 2009.

Barbara Allan
Ian Anderson
Margaret Aston
Lia Battison
Sue Beatty
Darryl Beaumont
Jamie Begg
Rosemary Bell
Catherine Bennett
Rosemary Blemings
Con Boekel
Trish Boekel
Jenny Bounds
Beth Brannan
John Brannan
Muriel Brookfield
Prue Buckley
Phillipa Butcher
Martin Butterfield
Brian Chauncy
Grahame Clark
Kay Clayton
Mark Clayton
Elizabeth Compston
Roger Curnow
Geoffrey Dabb
Chris Davey
Barbara de Bruine
Chris de Bruine
Alex Drew
Wendy Fahy
Paul Fennell
Matthew Frawley
Malcolm Fyfe
Rob Geraghty
Phyl Goddard
John Goldie
Horst Hahne
Kay Hahne
Stuart Harris
Tobias Hayashi
Sandra Henderson
Jack Holland
Steve Holliday
Bill Horrigan
Shirley Kral
David Landon
Matthew Larkin
Sue Lashko
John Layton
Margaret Leggoe
Bruce Lindenmayer
EthelLuff
Noel Luff
Rod Mackay
Alison Mackerras
Duncan McCaskill
Martyn Moffat
Stephen Mugford
Terry Munro
Gail Neumann
Harvey Perkins
Vivien Pinder
Stuart Rae
David Rees
Michael Robbins
Margaret Robertson
Susan Robertson
Julian Robinson
David Rosalky
Michael Sim
Margaret Strong
Nicki Taws
Julian Teh
Meredith Teh
Alan Thomas
Mieke van den Berg
Philip Veerman
Ben Walcott
Ros Walcott
John Waldron
Ben Walmsley
Kathy Walter
Tony Willis

Table 2. Species recorded during the 2005-2009 blitzes.
[X=present;*=breeding]

Common name	Scientific name	2005	2006	2007	2008	2009
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	
Magpie Goose	*Anseranas semipalmata*				X	X
Musk Duck	*Biziura lobata*	X	X*		X*	X*
Black Swan	*Cygnus atratus*	X*	X*	X*	X*	X*
Australian Wood Duck	*Chenonetta jubata*	X*	X*	X*	X*	X*
Pink-eared Duck	*Malacorhynchus membranaceus*		X	X		X
Australasian Shoveler	*Anas rhynchotis*	X	X*	X	X*	X
Grey Teal	*Anas gracilis*	X*	X	X*	X*	X
Chestnut Teal	*Anas castanea*	X	X	X*	X	X
Pacific Black Duck	*Anas superciliosa*	X*	X*	X*	X*	X*
Hardhead	*Aythya australis*	X	X	X*	X	X
Blue-billed Duck	*Oxyura australis*	X	X		X	X
Australasian Grebe	*Tachybaptus novaehollandiae*	X*	X	X*	X*	X
Hoary-headed Grebe	*Poliocephalus poliocephalus*	X	X	X	X	X
Great Crested Grebe	*Podiceps cristatus*	X				
Rock Dove	*Columba livia*	X	X	X	X	X
Spotted Dove	*Streptopelia chinensis*				X	X
Common Bronzewing	*Phaps chalcoptera*	X	X	X	X*	X
Brush Bronzewing	*Phaps elegans*					X
Crested Pigeon	*Ocyphaps lophotes*	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*
Australian Owlet-nightjar	*Aegotheles cristatus*				X	
Australasian Darter	*Anhinga novaehollandiae*	X	X*	X*	X*	X*
Little Pied Cormorant	*Microcarbo melanoleucos*	X	X	X*	X*	X*
Great Cormorant	*Phalacrocorax carbo*	X	X	X	X	X
Little Black Cormorant	*Phalacrocorax sulcirostris*	X	X	X	X	X
Pied Cormorant	*Phalacrocorax varius*			X	X	X
Australian Pelican	*Pelecanus conspicillatus*	X	X		X	X
White-necked Heron	*Ardea pacifica*		X	X		X
Eastern Great Egret	*Ardea modesta*		X	X	X	X
Intermediate Egret	*Ardea intermedia*				X	
Cattle Egret	*Ardea ibis*		X			
White-faced Heron	*Egretta novaehollandiae*	X*	X*	X*	X	X
Little Egret	*Egretta garzetta*				X	
Nankeen Night Heron	*Nycticorax caledonicus*	X	X	X	X	X
Glossy Ibis	*Plegadis falcinellus*		X	X		
Australian White Ibis	*Threskiornis molucca*	X	X	X*	X*	X*
Straw-necked Ibis	*Threskiornis spinicollis*		X	X	X	X
Royal Spoonbill	*Platalea regia*		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

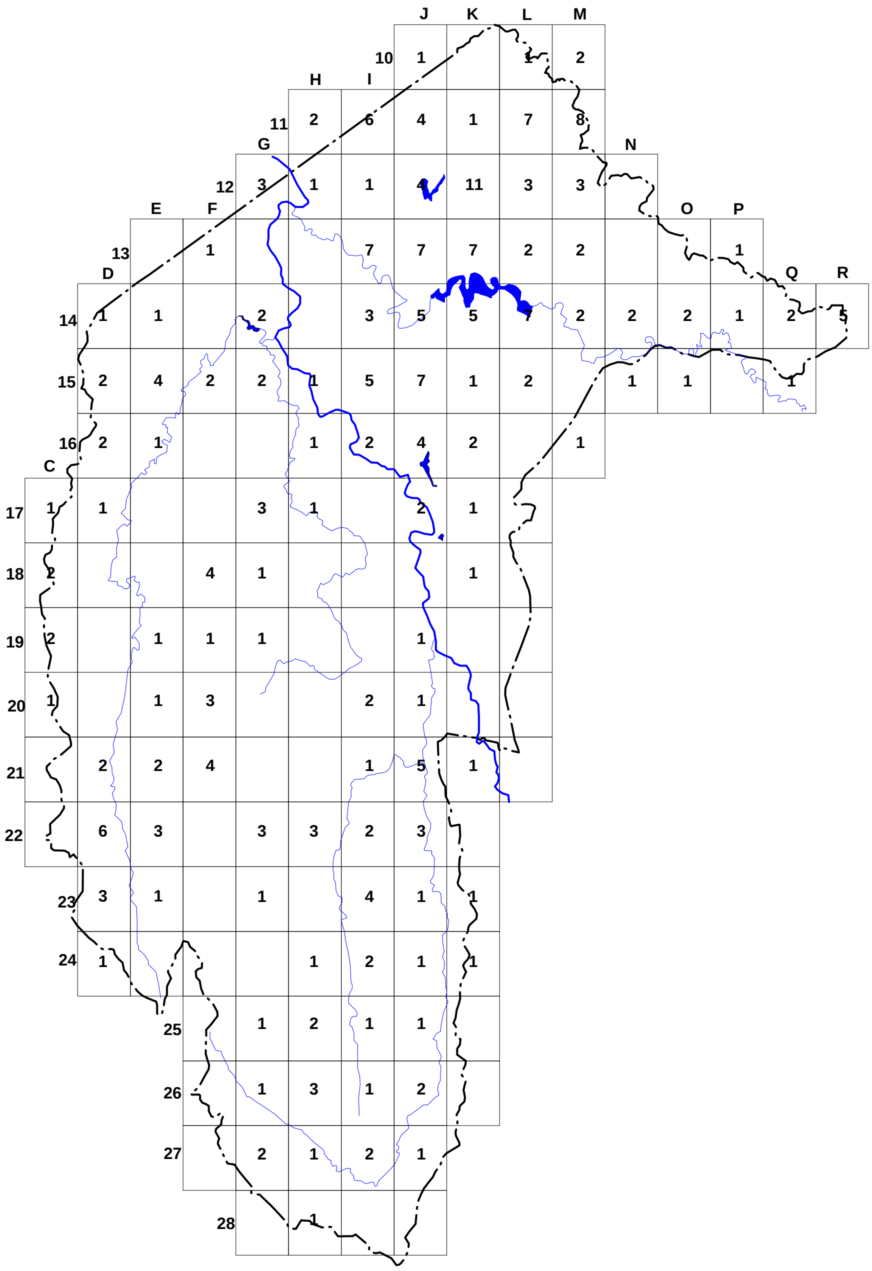
Brown Goshawk	*Accipiter fasciatus*	X*	X*	X*	X*	X*
Collared Sparrowhawk	*Accipiter cirrhocephalus*	X	X	X*	X	X
Swamp Harrier	*Circus approximans*	X	X	X	X	
Wedge-tailed Eagle	*Aquila audax*	X	X	X	X	X*
Little Eagle	*Hieraaetus morphnoides*	X	X	X	X*	X*
Nankeen Kestrel	*Falco cenchroides*	X*	X*	X*	X*	X
Brown Falcon	*Falco berigora*	X	X	X*	X	X
Australian Hobby	*Falco longipennis*	X	X	X*	X*	X*
Peregrine Falcon	*Falco peregrinus*	X	X	X	X	X
Purple Swamphen	*Porphyrio porphyrio*	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
Black-tailed Native-hen	*Gallinula ventralis*					X
Dusky Moorhen	*Gallinula tenebrosa*	X*	X*	X*	X*	X*
Eurasian Coot	*Fulica atra*	X*	X	X*	X*	X*
Black-winged Stilt	*Himantopus himantopus*			X		X
Black-fronted Dotterel	*Elseyornis melanops*	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*
Latham's Snipe	*Gallinago hardwickii*	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
Whiskered Tern	*Chlidonias hybrida*				X	X
Silver Gull	*Chroicocephalus novaehollandiae*	X*	X*	X*	X	X
Glossy Black-Cockatoo	*Calyptorhynchus lathami*	X	X		X	
Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*	X	X	X	X*	X
Gang-gang Cockatoo	*Callocephalon fimbriatum*	X	X	X	X	X*
Major Mitchell's Cockatoo	*Cacatua leadbeateri*			X		
Galah	*Eolophus roseicapillus*	X*	X*	X*	X*	X*
Long-billed Corella	*Cacatua tenuirostris*				X	
Little Corella	*Cacatua sanguinea*	X*	X*	X*	X*	X
Sulphur-crested Cockatoo	*Cacatua galerita*	X*	X*	X*	X*	X*
Cockatiel	*Nymphicus hollandicus*					X
Rainbow Lorikeet	*Trichoglossus haematodus*	X	X	X	X*	X
Australian King-Parrot	*Alisterus scapularis*	X	X	X	X*	X
Superb Parrot	*Polytelis swainsonii*	X	X*	X*	X	X*
Crimson Rosella	*Platycercus elegans*	X*	X*	X*	X*	X*
Eastern Rosella	*Platycercus eximius*	X*	X*	X*	X*	X*
Red-rumped Parrot	*Psephotus haematonotus*	X*	X*	X*	X*	X*
Turquoise Parrot	*Neophema pulchella*					X
Eastern Koel	*Eudynamys orientalis*			X	X	
Horsfield's Bronze-Cuckoo	*Chalcites basalis*	X	X*	X	X	X*
Shining Bronze-Cuckoo	*Chalcites lucidus*	X*	X*	X	X	X
Pallid Cuckoo	*Cacomantis pallidus*	X	X	X	X	X
Fan-tailed Cuckoo	*Cacomantis flabelliformis*	X	X	X*	X	X
Brush Cuckoo	*Cacomantis variolosus*	X	X	X	X	X
Powerful Owl	*Ninox strenua*					X

Southern Boobook	*Ninox novaeseelandiae*	X			X	
Laughing Kookaburra	*Dacelo novaeguineae*	X*	X*	X	X	X*
Red-backed Kingfisher	*Todiramphus pyrrhopygius*			X	X	
Sacred Kingfisher	*Todiramphus sanctus*	X*	X*	X*	X	X*
Rainbow Bee-eater	*Merops ornatus*	X	X	X*	X*	X
Dollarbird	*Eurystomus orientalis*	X	X	X*	X	X*
Superb Lyrebird	*Menura novaehollandiae*	X	X	X	X	X
White-throated Treecreeper	*Cormobates leucophaea*	X	X*	X*	X*	X*
Red-browed Treecreeper	*Climacteris erythrops*	X	X	X		X
Brown Treecreeper	*Climacteris picumnus*	X	X	X*	X*	X*
Satin Bowerbird	*Ptilonorhynchus violaceus*	X	X	X	X*	X*
Superb Fairy-wren	*Malurus cyaneus*	X*	X*	X*	X*	X*
Pilotbird	*Pycnoptilus floccosus*	X				X
White-browed Scrubwren	*Sericornis frontalis*	X*	X*	X*	X*	X*
Speckled Warbler	*Chthonicola sagittata*	X*	X	X*	X*	X*
Weebill	*Smicrornis brevirostris*	X*	X	X*	X*	X
Western Gerygone	*Gerygone fusca*	X	X	X	X	X
White-throated Gerygone	*Gerygone albogularis*	X*	X	X*	X	X
Striated Thornbill	*Acanthiza lineata*	X*	X*	X*	X	X*
Yellow Thornbill	*Acanthiza nana*	X	X	X	X	X*
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	X*	X*	X*	X*	X*
Buff-rumped Thornbill	*Acanthiza reguloides*	X*	X*	X*	X*	X*
Brown Thornbill	*Acanthiza pusilla*	X	X*	X*	X	X*
Southern Whiteface	*Aphelocephala leucopsis*	X	X*	X	X	X
Spotted Pardalote	*Pardalotus punctatus*	X*	X*	X*	X*	X*
Striated Pardalote	*Pardalotus striatus*	X*	X*	X*	X*	X*
Eastern Spinebill	*Acanthorhynchus tenuirostris*	X*	X*	X	X	X
Yellow-faced Honeyeater	*Lichenostomus chrysops*	X	X*	X	X*	X*
White-eared Honeyeater	*Lichenostomus leucotis*	X*	X	X*	X*	X*
Fuscous Honeyeater	*Lichenostomus fuscus*	X*	X	X*	X*	X
White-plumed Honeyeater	*Lichenostomus penicillatus*	X*	X*	X*	X*	X*
Noisy Miner	*Manorina melanocephala*	X*	X*	X*	X*	X*
Red Wattlebird	*Anthochaera carunculata*	X*	X*	X*	X*	X*
White-fronted Chat	*Epthianura albifrons*					X
Crescent Honeyeater	*Phylidonyris pyrrhopterus*				X	X
New Holland Honeyeater	*Phylidonyris novaehollandiae*	X	X*	X*	X	X
Brown-headed Honeyeater	*Melithreptus brevirostris*	X	X	X	X*	X
White-naped Honeyeater	*Melithreptus lunatus*	X	X	X	X*	X*
Noisy Friarbird	*Philemon corniculatus*	X*	X*	X*	X*	X*
Spotted Quail-thrush	*Cinclosoma punctatum*	X	X	X	X	X
Eastern Whipbird	*Psophodes olivaceus*		X	X	X	X
Varied Sittella	*Daphoenositta chrysoptera*	X*	X*	X*	X	X*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	X	X*	X*	X*	X*
Cicadabird	*Coracina tenuirostris*				X	X
White-winged Triller	*Lalage sueurii*	X*	X*	X*	X	X
Crested Shrike-tit	*Falcunculus frontatus*	X	X*	X	X	X
Golden Whistler	*Pachycephala pectoralis*	X	X	X	X	X
Rufous Whistler	*Pachycephala rufiventris*	X*	X*	X*	X*	X
Grey Shrike-thrush	*Colluricincla harmonica*	X	X*	X*	X*	X
Olive-backed Oriole	*Oriolus sagittatus*	X	X	X*	X*	X
Masked Woodswallow	*Artamus personatus*		X	X	X	X
White-browed	*Artamus superciliosus*		X*	X*	X	X

Woodswallow						
Dusky Woodswallow	*Artamus cyanopterus*	X*	X*	X*	X*	X*
Grey Butcherbird	*Cracticus torquatus*	X*	X*	X	X	X*
Australian Magpie	*Cracticus tibicen*	X*	X*	X*	X*	X*
Pied Currawong	*Strepera graculina*	X*	X*	X*	X*	X*
Grey Currawong	*Strepera versicolor*	X	X	X*	X*	X*
Rufous Fantail	*Rhipidura rufifrons*	X		X	X	X
Grey Fantail	*Rhipidura albiscapa*	X*	X*	X	X*	X*
Willie Wagtail	*Rhipidura leucophrys*	X*	X*	X*	X*	X*
Australian Raven	*Corvus coronoides*	X*	X*	X*	X*	X*
Little Raven	*Corvus mellori*	X*	X	X*	X*	X*
Leaden Flycatcher	*Myiagra rubecula*	X*	X*	X*	X*	X
Satin Flycatcher	*Myiagra cyanoleuca*	X	X	X	X	X
Restless Flycatcher	*Myiagra inquieta*	X	X	X		X
Magpie-lark	*Grallina cyanoleuca*	X*	X*	X*	X*	X*
White-winged Chough	*Corcorax melanorhamphos*	X*	X*	X*	X*	X*
Jacky Winter	*Microeca fascinans*	X	X*	X	X	X
Scarlet Robin	*Petroica boodang*	X*	X*	X	X*	X*
Red-capped Robin	*Petroica goodenovii*	X	X*	X*	X	X
Flame Robin	*Petroica phoenicea*	X	X*	X*	X*	X*
Rose Robin	*Petroica rosea*	X	X	X	X	X
Hooded Robin	*Melanodryas cucullata*	X*	X*	X*	X	X*
Eastern Yellow Robin	*Eopsaltria australis*	X*	X*		X	X
Eurasian Skylark	*Alauda arvensis*	X	X	X	X*	X
Golden-headed Cisticola	*Cisticola exilis*	X	X	X	X	X
Australian Reed-Warbler	*Acrocephalus australis*	X*	X	X	X	X*
Little Grassbird	*Megalurus gramineus*	X	X	X	X	X*
Rufous Songlark	*Cincloramphus mathewsi*	X	X	X	X	X
Brown Songlark	*Cincloramphus cruralis*	X*	X	X*	X	X
Silvereye	*Zosterops lateralis*	X	X	X*	X	X
Welcome Swallow	*Hirundo neoxena*	X*	X*	X*	X*	X*
Fairy Martin	*Petrochelidon ariel*	X	X	X*	X*	X*
Tree Martin	*Petrochelidon nigricans*	X*	X*	X*	X*	X*
Bassian Thrush	*Zoothera lunulata*	X	X		X	X
Common Blackbird	*Turdus merula*	X*	X	X*	X	X
Common Starling	*Sturnus vulgaris*	X*	X*	X*	X*	X*
Common Myna	*Sternus tristis*	X*	X*	X*	X*	X*
Mistletoebird	*Dicaeum hirundinaceum*	X*	X	X	X	X*
Double-barred Finch	*Taeniopygia bichenovii*	X	X*	X*	X*	X
Red-browed Finch	*Neochmia temporalis*	X*	X*	X*	X*	X*
Diamond Firetail	*Stagonopleura guttata*	X	X	X	X	X
House Sparrow	*Passer domesticus*	X*	X*	X*	X*	X*
Australasian Pipit	*Anthus novaeseelandiae*	X	X	X*	X*	X*
European Goldfinch	*Carduelis carduelis*	X	X*	X	X	X
Common Greenfinch	*Chloris chloris*	X				X
Mallards, Black Duck-Mallard hybrids & variants		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.

Map 1. Number of datasheets per grid cell, 2009 blitz.



ODD OBS

Nesting attempts by a small group of White-Winged Choughs on Cooleman Ridge 2009-2010.

On the morning of Friday 12 March 2010 I watched a group of five White-winged Choughs *Corcorax melanorhamphos* actively building a nest in a gum tree in the horse paddocks close to the dam at the end of Kathner Street, Chapman.

This was after a significant fall of rain (>80mm) the previous weekend, and represented at least the fourth breeding attempt for the 2009-2010 season for this small group, the nucleus of which I expect is the same as those I described last year (Holland, 2009), as they were the only choughs seen in my quite extensive local patch during this period. As described below it illustrates a very long breeding season for this species.

Compared with the two previous years when the birds arrived and commenced nest building immediately, the build up for this season was much more prolonged. Seven birds were first noted in the area on 27 June 2009, and while building was suspected it was only on 17 July after some searching that what looked like an old nest was found in a tree close to the south-west corner of the old farm dam, where several birds (a maximum of six during this period) were often observed. However, in the first week of August further building was observed by up to three birds. While the nest was substantially bigger after this time, a bird was not observed sitting on the nest until 21 August. This breeding attempt was terminated when the nest blew out of the tree in very strong winds several days later. It was found on the ground on 28 August and examination showed that it appeared not to be very well built, and had split because it was fibrous with quite a lot of plant material incorporated. No egg remains were found in the vicinity.

While several birds seemed still to be in the area, it was not until 12 October that I realised that they had promptly built a second nest in another gum in the horse paddocks about 50 metres away (with the still extant 2008-2009 season nest about half way between). Two chicks could already be seen being fed in the nest, and these had successfully fledged by the end of October. Notably, a maximum of four adults only were ever seen together, the minimum group size accepted for successful breeding (Holland 2009).

After a quiet two months the birds reappeared after the Christmas rain. One bird was regularly seen on this same nest for about three weeks, until they left the area again, possibly due to the hot drying weather and the still dry dam. One very interesting observation during this time was that of the five birds the two juveniles/immatures were still with them, and on a couple of occasions an adult was seen to feed one of these, and shortly after climb up the tree and approach the nest to feed the sitting adult.

Three birds were again seen in the area for a brief period shortly after the significant rain in mid February, but I was surprised to find five birds there on the morning of 12 March, flying to and from this same tree. When I approached it was clear they were going to a slightly different spot. My initial reaction that they were feeding recently fledged young was dispelled when I found them actively building about a half-completed nest at a similar level in the tree but about four metres away from the other one (which was perhaps too wet to use?).

I'm pretty sure the rain event and the now full dam and the very boggy/muddy conditions would have triggered this attempt, and perhaps also the increased food availability after the recent rains. Two other observations of choughs building nests after this rain event were posted on the COG chat line. It is also very interesting that they were one of the few species which have bred on this part of the ridge this season in an otherwise very quiet year.

There were still three birds building a near completed nest on the morning of 19 March 2010, but soon after they abandoned the now complete nest and they were not seen again, until on the morning of 16 April when I saw at least 12 White-winged Choughs within 500 metres of the nest. During the period described above I never saw more than seven birds together, clearly without colour banding or similar marking of individuals it is impossible to rule out that there were not actually more birds around, or whether the same group of birds were involved in the four breeding attempts.

The ACT Bird Atlas (Taylor & COG, 1992) confirms the very long breeding season for this species, with dependent young observed into May during the three year study, but the above extends the nest building period by at least one month.

References

Holland, J. (2009) Successive nesting by the White-winged Chough on Cooleman Ridge. *Canberra Bird Notes* 34: 103-105.

Taylor, I.M. and Canberra Ornithologists Group (1992) *Birds of the Australian Capital Territory: an Atlas*. COG & NCPA, Canberra.

Jack Holland
8 Chauvel Circle
CHAPMAN ACT 2611

Indian Peafowl in Narrabundah

In 1995, I reported (CBN 20: 11) two peacocks that had arrived in different parts of Narrabundah. This note is an update on present peafowl numbers.

The Green Street bird disappeared after a few months. From March 1995 the Brockman Street bird, known as ‘Harry’ among other names, became a familiar sight in the neighbourhood, being resident for over 12 years and roosting each night in the same street tree.

On Christmas day 2006, a new flock, up to seven birds according to reports, appeared in the area. The origin of that group is not certain, but it was probably the group that had been seen in and around the long-stay caravan park in Narrabundah Lane, Symonston. They were possibly attracted by Harry's far-carrying bray. Three of the new birds remained around the area, a sub-adult male and two adult females. All birds were strong and ready fliers, roosting in high trees and using rooftops as vantage points or refuges from occasional free-roaming dogs.

On 1 November 2007 Harry was run down, apparently deliberately, while grazing on a nature strip. By coincidence, he had been videoed by Vivien Lightfoot, just the previous day, copulating with one of the female birds.

In late December 2007, small chicks appeared in the company of the two females. There were nine, from a nest or nests behind houses in Wylie Street. Whether or not there were two broods, they remained a cohesive group, typically foraging through those backyards that lacked dogs. One female in the lead would leap on a fence and, if all seemed safe, hop down the other side. The chicks would then stream over the fence with the other female bringing up the rear.

Surprisingly, all those chicks survived. The chicks were capable of fluttering flight from an early age, and if disturbed would take to the air in all directions, gradually reassembling in response to calling by the adult females. As the chicks matured, the then total population of 12 was occasionally seen together, but tended to split up into separate foraging parties.

In January 2009 there was a further crop of chicks, but this time they were in smaller separate broods, one of four (three surviving), one of three (two) and another of three (one – apparently an inexperienced mother).

In January 2010, there appeared to be at least four new broods, with young of markedly varying sizes being seen at the same time. Wandering family groups were based on home areas spread over several hectares, two in Finniss Crescent.

The total number of peafowl is at least 28, and probably more than 30. For survival they probably depend on a certain amount of feeding by residents, but are free-roaming, not staying long in one place. They eat various garden plants (Harry used to like *Arbutus* fruits) but can also be seen grazing on the reserves on either side of Carnegie Crescent. They also eat grain.

At present, any birds in Brockman Street in the late afternoon are still thrown a couple of handfuls of fruit or birdseed. This can lead to something of an aggregation from time to time, but several of the assembled birds do not take food at all and the general milling and inter-acting seems more like a social occasion than a feeding session.

I have noticed other free-flying peafowl elsewhere in Canberra, at the Pialligo nurseries area for example.

Some Narrabundah residents have complained about the peafowl for various reasons. As they are a non-native species, it seems inevitable that at some stage the ACT government will be motivated to remove them or reduce their numbers. The birds sometimes present a hazard on suburban streets, but the threat that this highly ornamental species offers to the environment has been exaggerated.

Geoffrey Dabb
24 Brockman Street
NARRABUNDAH ACT 2604

Brown Treecreepers on the rocks

On 14 May 2009 the Australian Native Plants Society (ANPS) took a trip to Glendale Depot (35°41'28" S, 149°00'17" E, in COG grid I23).

Amongst the birds seen were a group of four Brown Treecreepers *Climacteris picumnus* feeding on the ground and on the trunks of a clump of Eucalypts near the depot buildings, and a further two birds of the same species a short distance away, also feeding around trees. The ACT Bird Atlas (Taylor and COG 1992) suggests the species is no more than moderately common in this area being seen on 21-40% of visits.

A month later, 18 June 2009, a COG Wednesday Walk visited the same area. A chatline report on this trip included:

'BROWN TREECREEPERS were heard more or less immediately … As we moved off up the hill more BROWN TREECREEPERS (to a total of at least 3) were seen for some reason favouring lichen-covered rocks to timber!'

Higgins et al. (2001) does not include foraging on rocks as part of the behaviour of this species.

The ANPS visited Rendezvous Creek (35°43'20" S, 148°58'24" E), approximately 5kms south-west of Glendale Depot, on 28 April 2009. At this point the valley is almost pure frost hollow grassland, approximately 2.5km wide. A number of isolated granite boulders poke out of the grassland. On spotting birds moving around in one cluster of boulders I was astonished to hear the call of a Brown Treecreeper. Approaching the site it was apparent that at least two treecreepers were present. They climbed up the sides of the rocks and perched briefly on the tops. Unfortunately, they were both extremely active and rather nervous of my approach; this did not permit taking a reproducible image.

References

Taylor, I.M. and Canberra Ornithologists Group (1992) *Birds of the Australian Capital Territory: an Atlas*. COG & NCPA, Canberra.

Higgins, P.J., Peter, J.M. and Steele, W.K. (Eds) (2001) *Handbook of Australian, New Zealand and Antarctic Birds, Vol 5: Tyrant Flycatchers to Chats*. Oxford University Press, Melbourne.

Martin Butterfield
101 Whiskers Creek Rd
CARWOOLA, NSW 2620

COLUMNISTS' CORNER

Home, home in the range

Robert Hall's *Australian Bird Maps* (1922) showed how difficult it was to map bird ranges with the sketchy information then available. There was no further attempt to publish ranges of Australian birds in map form until Peter Slater's tentative offerings in his 'non-passerines' field guide in 1970. Since then, Birds Australia (BA) has produced two comprehensive atlases and maintains the *Birdata* website, a distribution reference with continuous updating. Each of those three BA sources relies strictly on recorded observations, with no extrapolation.

Showing recorded observations is one thing. Producing a map of a species range is much more difficult. What do you do about those records separated by some distance from all the other records? Do you just draw the shaded area around the whole lot? Then there is the 'nomad' problem. How do you distinguish an area where a species has been seen hundreds of times from an area where it was seen just once, perhaps many years ago? What about areas where no or few observers have been? Nonetheless, range maps, for whatever they are worth, now appear in most field guides.

Among the more informative range maps are those produced for the BA *Handbook* (HANZAB) the publishing of which spanned the period 1990 to 2006. In those, if you look closely, there is sufficient detail to give at least an idea of the then occurrence of particular species in and near the COG area.

At this point it should be mentioned for those who do not know that COG records birds for two different areas, one being the Australian Capital Territory itself (2,357 km^2) and the other, the 'area of interest', being much broader (13,675 km^2). There is a current species list *for the ACT* based on work by Steve Wilson who analysed all the old records (see *Birds of the ACT: Two Centuries of Change [1999]*). There is no comprehensive *current* list for the broader COG area beyond what appears in the Annual Bird Reports.

For the COG area there is a list of 51 species designated as 'unusual' and for which any sighting requires a detailed report. Each 'unusual' has been recorded at least once, but less than ten times.

For a surprisingly large proportion of species the distribution limit as shown in the relevant HANZAB map runs very close to, or even cuts through, the Canberra region. This, no doubt, accounts for the number of unexpected species located by the present high level of observing effort by Canberrans – species not recorded for many years or, in some cases, species never before recorded. Some such species are said to be 'out of their range', an uncertain concept given the little that is known about the pattern of distribution of many species.

For some species recorded locally the HANZAB mapped range – called here the 'nominal range' – does *not* include Canberra. One of two reasons might explain this. First, the map might have been drawn before the bird was reported here. Alternatively, it might have been decided for some reason that the Canberra report did not truly reflect the relevant 'range', that is the species was 'out of its range'.

The Swift Parrot is perhaps an example of the first situation. HANZAB shows the range of this Tasmanian breeder as extending to the north and central NSW coast but as absent from a probable transit zone that includes the ACT. On the other hand, the paper by Nicki Taws and Debbie Saunders on the 2004-05 'invasions' [CBN 30: 2] noted that the species had been recorded in Canberra in six out of the previous 11 years. That particular map clearly needs redrawing.

The Black-tailed Native-hen may be in a similar position, and would surely claim a more extensive range if it were to be sketched now. The range shown for the Black-eared Cuckoo must be regarded as too conservative, in view of the historical sightings listed in Steve Wilson's book, now followed by more recent ones.

The range shown for the coastal Brown Gerygone, with a limit to the east of the ACT, can only be explained by a very cautious view of what constitutes a 'range'. The HANZAB text itself recites the records mentioned by Steve Wilson indicating the occasional presence of this species in Canberra.

Another category comprises those species very uncommon in the local area that, when here, are nonetheless squarely in the range given by HANZAB. The most notable of these is the Letter-winged Kite, which is not even on the 'unusuals' list, having been removed, evidently, because it had not been recorded here since 1984. However, it is on Steve Wilson's list, by reason of a few older records.

Also in this 'in range' category are three much-sought-after 'unusuals': Barking Owl, Australasian Bittern and Azure Kingfisher. Other uncommon species on the ACT list are mapped by HANZAB:

(a) as *just within* their nominal range in Canberra (Gull-billed and Caspian Terns; White-backed Swallow – no officially endorsed record since 1984; Scaly-breasted Lorikeet – a record of six at Point Hut crossing in 1987 is mentioned in the COG atlas, with a report of a single at Hoskinstown on Anzac Day 2010; Red-backed Kingfisher; and several honeyeaters – Spiny-cheeked, Scarlet, Lewin's, Singing, Tawny-crowned, Bell Miner; Variegated Fairy-wren).

(b) as *just outside* their nominal range in Canberra (Plumed Whistling-Duck; White-headed Pigeon; Crimson Chat; Blue-faced, Black-chinned, Singing and Striped Honeyeater; Little Friarbird; White-browed Babbler).

(c) showing Canberra as *well outside* the range limit (White-fronted, Black and

Pied Honeyeaters. The curious map for the Little Pied Cormorant should surely be put aside as an aberration).

Finally, there are those species not yet on the COG list that might be expected, in view of their nominal range, to turn up here at some time:

(a) Brown Cuckoo-Dove – reported recently from Wamboin, where it would have been within its nominal range, which is shown as reaching the Murrumbidgee within the ACT. (Another recent turn-up was a single Australasian Figbird, in Curtin, another coastal species but one outside its nominal range.)

(b) Large-billed Scrubwren and Southern Emu-wren – nominal ranges given as reaching Canberra but no confirmed records here. (Contrast Brown Gerygone.)

(c) Sooty Owl – another coastal species with a nominal range that just reaches Canberra. Just slightly more removed is the Masked Owl which is on the ACT list by virtue of a single specimen killed by a car at the site of Lake Burley Griffin in 1960 (Steve Wilson).

If you were to construct an ACT list solely from the HANZAB maps, you would finish up with rather fewer birds than appear on the list that COG observations have generated. Were all those additional species really 'out of their range'?

Stentoreus

Birding in cyberspace, Canberra-style

Over the past year, Birds Australia has made important advances in identifying **Australia's Important Bird Areas**. A visit to http://www.birdsaustralia.com.au/our-projects/important-bird-areas.html will reveal how many, and how widely dispersed, these key locations actually are. In all, 314 Important Bird Areas (IBAs) have been identified across the country. As Birds Australia explains:

> Important Bird Areas (IBAs) are sites of global bird conservation importance. Each IBA meets one of four global criteria used by BirdLife International. IBAs are priority areas for bird conservation—we aim to monitor birds at our IBAs, advocate their importance to government, and work with land-holders and other local people to conserve them.
>
> In partnership with Rio Tinto, Birds Australia has identified and documented almost all of the Australian IBAs. The IBA section of the Birdata website [http://www.birdata.com.au/iba.vm] contains background information on each IBA shown on the map.

The largest of the IBAs is the South-west Slopes of New South Wales, which includes the northern part of the ACT. Another large IBA is the Australian Alps, which includes the southern part of the ACT.

The criteria used to select the IBA's are as follows (a locality must meet at least one of these criteria):

- Threshold (or minimum) numbers of one or more globally threatened species.

- Representative populations of restricted-range species (any protected area supporting more than 5% of the population of a bird with a small geographic range is designated as an IBA).
- More than 1% of the world's population of one or more congregatory species.

Apart from the use of the ridiculous word 'congregatory' ('congregational' is the adjective from 'congregation'), this is an important initiative which is well worth exploring at the Birds Australia and Birdata websites. Birders contemplating field trips can use the information provided there to assist them in planning their trips.

In the past, **Geographic Information Systems (GIS)** have been something beyond that ken of most of us, being an area of science that relied on sophisticated computer software and complex geospatial data. (Geospacial data are entities or events that can be represented in geographical terms.) In recent years, however, GIS has become an everyday tool of birders, largely through our ready access to Google Earth http://earth.google.com/. A particularly valuable feature of the Canberra Ornithologist Group's ongoing atlas of the birds of the ACT and region http://cogatlas.org.au/ is that its contents are geocoded, that is, the latitude and longitude of all observations are recorded in the database. This has hugely enhanced its utility as a tool for monitoring and research. A significant proportion of the birders who contribute to that database provide accurate locational data by turning to Google Earth, noting the exact location of the observations or the centre of an area searched, and reading off the latitude and longitude in the preferred format (degrees, minutes and seconds) which is one of the options available within Google Earth. This has made the task of providing locational data very easy and has reduced the amount of work required for database quality control.

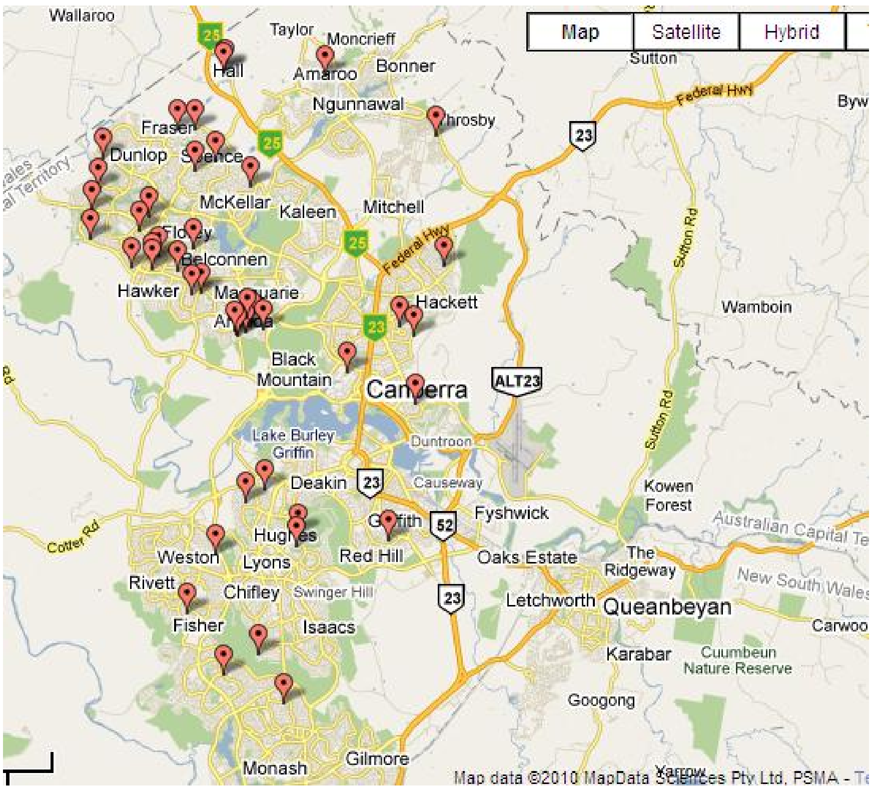
Increasingly, tools are being developed to build upon the inherent functionality of Google Earth and Google Maps http://maps.google.com.au/. For example, if one wishes to identify or mark on Google Earth or Google Maps a particular street address or place in the bush for which the latitude and longitudinal are known, it is simply a matter of typing in that geographical information which will result in it being displayed on the map. But what if you have a number of different addresses or a number of different locations identified by their geographical coordinates (latitude and longitude)? For example, perhaps you covered a transit, recording birds at particular locations along the way. Perhaps you walked or drove along a particular route and wanted to record it on a map or see what it looks like in terms of surrounding geographical features. It is tedious to type in the addresses or coordinates one by one. But now you do not have to do so! A free utility is available online called **batchgeo** http://batchgeo.com/:

> Have locations in a spreadsheet? Well try this free and unique tool to ...

- Map them using Google Maps
- Publish a map on your Web site
- Create a store locator
- Get coordinates, print maps, and more!

A recent, typical application of batchgeo was the coordinator of COG's Garden Bird Survey (GBS), Martin Butterfield, wanting to display on Google Maps the location of sighting of the Superb Parrot in Canberra's GBS sites. This was precipitated by a recent report from the southern suburb of Wanniassa—most of us think of this species as being generally seen in the northern parts of the ACT, rather than the southern suburbs.

All Martin needed to do was to create a spreadsheet (perhaps using the free cloud computing software discussed in my previous column http://tinyurl.com/244gjq5) containing the addresses he wished to map. The addresses were of each GBS site which reported Superb Parrots in any year—he extracted the addresses from the GBS database. He then simply copied those addresses from the spreadsheet and pasted them into batchgeo. The program then automatically produced a map, in Google Maps, showing a marker at each address. He explains that the resulting map can be used directly, or the latitudes and longitudes can be exported as a KML file for use in Google Earth. Here is his product; the recent Wanniassa record is the one furthest south:



The **Atlas of Living Australia (ALA)** http://www.ala.org.au/ is a wonderful initiative that, over the years, is likely to be of great significance to Australian and international birders. It is being developed through a partnership of Australian government and academic institutions, and is described, at its website, as follows:

> The Atlas of Living Australia goes live in October [this year], opening the door to a rich collection of information about Australia's plants, animals and micro-organisms.
>
> Across Australia, people will be able to contribute sightings of plants, animals and micro-organisms; download tools and more…
>
> In the lead up to October, the Atlas is bringing together a huge amount of biodiversity information from research, literature, records and Australia's natural history collections and making it freely accessible online.
>
> As it develops, the Atlas will deliver the most comprehensive information available on Australia's biodiversity, including images, occurence (sic) and distribution data, maps, literature, genetic sequences and taxonomic information.
>
> By integrating this previously dispersed information, the Atlas can support research, education and decision making on issues such as biosecurity, food security, climate change, sustainable farming, global change management and conservation.
>
> The Atlas will also offer a range of analytical tools to assist in the study, identification and management of our native plants, animals and micro-organisms.

Anyone interested in progress with this initiative would do well to subscribe to its monthly newsletter at http://www.ala.org.au/news.html. For example, the June 2010 issue advises that one of the recent achievements has been that 'Birds Australia and Eremaea Birds have agreed to publish their data via the ALA. This will enable the ALA to publish an additional 8^{+} million Australian bird occurrence records. Based on this data, the new ALA website will feature a theme on birds'. It also means that COG's bird observation data that are passed annually to Birds Australia will be incorporated into the Atlas of Living Australia on an ongoing basis.

An important component of this initiative is the establishment of a partnership between the ALA, Museum Victoria and the **Biodiversity Heritage Library (BHL)** http://www.biodiversitylibrary.org/ to establish an Australian BHL node. The ALA newsletter explains that 'BHL Australia will store digitised Australian species-related literature'.

The BHL already contains thousands of digitised books and other key documents relevant to biodiversity. At the time of writing, for example, the website advises that it already has online, in digital format, 42,382 titles, 81,255 volumes and 30,647,779 pages. Birds and birding figure prominently in these totals. This is a wonderful resource that complements the National Library of Australia's resource of digitised materials known as Trove http://trove.nla.gov.au/. For example, I have long wanted to read, in their original form, the sections of a book, published in 1922, that appears to be the first documented use of the word 'jizz' to mean a characteristic impression that a bird gives, leading to birders' technique of 'jizz identification'. Low and behold, there in the Biodiversity Heritage Library is a full-text facsimile of that long-out-of-print volume. As time goes on, and the Australian node of the BHL becomes populated with Australian material, this component of the Atlas of Living Australia will become increasingly valuable and increasingly referred to by both birders and scholars.

T. javanica

This column is available online at http://cbn.canberrabirds.org.au/cbnInfo.htm

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

BOOK REVIEW

Field Guides Revisited (1): The New *Simpson and Day*

The end of June saw publication of the eighth edition of the Simpson & Day field guide (S&D8). Forty years have passed since the first modern 'Field Guide to Australian Birds', Peter Slater's 'Non-passerines'. In that time birdwatchers have been offered an ever-wider range of choices, and the offerings are now strongly competitive. This note will mention some features of S&D8, and make some comparisons.

The first thing the field guide author must do is decide on the size of the book. The S&D series has settled down to a reasonably handy size after the very large early editions – this latest is 830g compared to 1183g for the Morcombe second edition, the biggest of the present crop of four.

Then the writer must decide how best to use the limited available space. The main content must be ID information. Other information is discretionary. S&D7 dispensed with some 80 pages of information about bird families, saving weight and bulk. That was a good decision.

In S&D8, introductory and explanatory material is not excessive and quite helpful, particularly the paragraphs on how light and variable colour affect what you see. The same might be said of the separate end sections on 'vagrants', vegetation, and breeding, in all 50 pages. Some will find useful the separate species lists for Commonwealth island territories and other selected Australian islands.

The heart of the book is the 262 pages on field identification, with the all-important illustrations. The Nicolas Day plates remain a distinctive feature. For a field guide, they are big, bold, colourful pictures. They are the kind of thing that might get a non-birdwatcher interested in birds for the first time, like the illustrations in Arthur Singer's *Birds of the World* (1962) or Robin Hill's *Australian Birds* (1967).

The plates are probably *too* colourful. I think the colours are better in my first edition, although that might be due to fading in the course of 26 years. With such bright sunlit tones there is less room for error by the printer. There seems to me to be some difficulty with the various yellows, and too much yellow in the greens. The drawing of the Buff-rumped Thornbill might be compared with the more realistic counterpart in Slater. You would not think they were meant to be the same species. The Weebill (plainer race) is another example of too much colour.

'Ambitious' is the word for the maps, which, in contrast to the bird pictures, are about as small as they could be. They are satisfactory when not too much information is attempted. However, some aim to show breeding and non-breeding ranges, areas of sparse records, and migration trends. On top of that, lines show boundaries (including 'uncertain' boundaries) between races. In the seventh edition 'all' the races were listed, in the eighth edition 'the majority' – although the dust jacket still says 'all'. All this in three tonings of green on a 2cm-wide map of Australia. Some people will like that kind of concentrated information, even if a magnifying glass is needed; others will prefer something simpler.

S&D8 contains less ID-related information in its text than the other three guides. That is not necessarily a criticism. Some people will prefer a few succinct and helpful comments. The important thing is the accuracy and relevance of the comments.

Main stated differences in S&D8 from its predecessor: 40 new or revised plates, revised distribution maps, and the 'vagrant bird bulletin' up to 85 species from 74. There is the same number of pages, although you get an extra page of seabird bill profiles.

If you take only one guide to unfamiliar country, which one should it be? In the preface to S&D8 Keith Simpson remarks that each of the four guides has a 'different way of looking at and interpreting the avalanche of new information' and advocates 'using all four in conjunction' – not very practical advice for the air traveller or the casual birdwatcher. If you need to fit a volume in a small back-pack, the Slater or the compact Morcombe might suit you best. If you want maximum help on ID and don't mind diagrammatic illustrations, the larger Morcombe might be most useful. If you like big pictures and a breezy style – and you walk along a lot of ocean beaches and pick up beach-washed seabirds – S&D8 might be the best companion for you.

Field Guide to the Birds of Australia, Ken Simpson and Nicolas Day, 8th edition, Viking 2010, rrp $39.95.

Geoffrey Dabb
24 Brockman Street
NARRABUNDAH ACT 2604

Field Guides Revisited (2): The field guides when you need them

Some people get most of their information about birds from consulting a field guide. Different field guides are useful on different points. To test this I chose six points and then checked to see how much help each guide provided. The results are below.

Q: What's the difference in appearance between female Leaden and Satin Flycatchers?

All guides agree that the Leaden is paler ('much' – ***Slater***; 'slightly' – ***Morcombe***). Do not rely too much on the illustrations for the grey upperparts. In each guide the two species are shown as much more alike than the grey used for the *same* species in other guides. Two say the *Leaden's* orange-buff breast is paler; ***Slater*** says the *Satin's* is 'slightly paler' (as shown in the illustrations); ***S&D8*** says the Satin's 'may be brighter'. ***Slater*** says the Satin is 'larger'. ***S&D8*** says the Satin is 'smaller', which, curiously, is not supported by the given measurements.

Q: Do the variable underparts of the Painted Honeyeater indicate gender?

Slater1 says female has ‘no streaks on flanks’; ***Slater2***, has no mention of streaks. ***Pizzey***: no spots in female illustration; text – female ‘fewer spots’. ***Morcombe***: indicates streaks on illustrated male; ‘females and immatures have plain white underparts’. ***S&D1***: female ‘no streaks on flank’ (as highlighted in the b&w illustration). ***S&D7/8***: female ‘underparts plain white’ (illustration shows a few dots on side of breast). ***HANZAB*** says *some* males have little or no spotting and, as regards spotting generally, females are as males. From this reviewer’s observations, some females have more spotting than some males.

Q: Is that a rusty colour on the breast of that Restless Flycatcher?

Answer: Quite possibly. To explain the illustrations, note that some guides recognise a northern sub-species, *nana*, as a separate species, ‘Paperbark Flycatcher’. ***Pizzey***: shows slight buff on adult, a little more on immature, none on *nana*; text – ‘often washed yellow-buff across breast’. ***Morcombe***: shows trace of buff on both races; text – ‘both races ... may have a slight buff tint on breast, lost as fine buff feather tips wear’. ***Slater***: shows slight trace of buff on male, more on the female ‘paperbark form’; text – ‘faintly buff breast ... in female’, juvenile: ‘buff breast’. ***S&D8***: shows no buff on adult male, buff on obviously young juvenile, no illustration of *nana*; text – ‘pale buff wash on breast variable’, juvenile: ‘throat, upper breast, washed creamy buff’. What the guides do not bring out is that the ‘buff’ can be a pronounced rusty colour. ***HANZAB*** says: ‘orange-buff wash to breast appears slightly more prevalent in adult female compared with adult male’. ***DAB*** (Schodde & Mason) says of juveniles: ‘buff on the breast, which disappears with wear, may be carried into adulthood, more in females than males’.

Q: How do you tell female Satin Bowerbirds from immature ones?

Possible indications are bill colour and breast plumage. Mature female has dark bill, yellow-green scalloped breast. However, younger immatures can resemble females. Male SBs do not get adult plumage until year six or seven. ***Pizzey***: 3 and 4 year males ‘acquire green throat ... bill progressively paler’ – shown well in illustrations. ***Morcombe***: year 3 males acquire ‘richer green throat’; year 4 ‘solid green band across breast’. Female shown with ‘dark grey’ bill, but no illustration of immatures or mention of their bill colour. ***Slater***: males in about year 4 get greenish unscalloped breast, bill becomes pale in about year 5; illustrations show female’s black bill, scalloped throat, immature male’s half-pale bill, green throat. ***S&D8***: Mentions dark bill of female; male immature ‘bill paler’, but no illustration of immature, and female is shown with *pale* grey bill. All except ***Morcombe*** mention the dark eye of young immatures, which might be helpful in distinguishing a bird of that age from an adult female.

Q: How do you distinguish juvenile or immature bronze-cuckoos, Horsfield's from Shining?

All guides mention faint or incomplete bars on underparts of both species, so the question is which guide has the most helpful illustrations. ***Morcombe*** has no illustrations of immatures at all. ***S&D8*** has only small b&w drawings, not very helpful. ***Pizzey*** shows both immatures, appearing very similar, no doubt as in the field. ***Slater*** illustrations are best, drawing attention to similarity of Horsfield's to Black-eared and drawing attention to rufous in tail of Horsfield's.

Q: How do you distinguish the two sub-species of Silvereye that occur in the Canberra area?

To make sense of this, the information in ***HANZAB*** and ***DAB*** is summarised first: W (local subspecies) has paler brownish flanks, yellowish throat. L (migrant) has darker (but variable) rust-brown flanks, less (but variable) yellow on (mainly side of) throat, but sometimes resembles W. ***Slater*** says some Ws are at most buff-flanked and the illustration shows these the palest mushroom, compared to L's striking chestnut. L has white throat. ***Morcombe*** conveys the variation in L's flanks, and a white throat, and shows very pale flanks for W. The ***Pizzey*** illustrations suffer in later printings from darkening to the point of muddiness, and early editions are better. These are good at showing both species' flank colours for *dull* light, with again only a whitish throat for L. The illustrations in ***S&D8*** are better, but a bit yellowish overall. The L greyish throat is not caricatured, and L flanks are good, but not enough of W's flanks are shown for comparison. To sum up, all guides make a brave effort on this point. However, they lack the space to show geographic and other variation *within* sub-species, and the consequent oversimplification can be misleading.

Conclusion: Abbreviation is the enemy of accuracy. If you want a reference that you can fit in your backpack or glove-box, don't expect it to tell you everything you might want to know in the field. If a point is important to you, check it in something else before you have an argument about it.

Geoffrey Dabb
24 Brockman Street
NARRABUNDAH ACT 2604

RARITIES PANEL NEWS

The undoubted highlight for this period was a 'first' for the ACT, namely Richard Allen's female or first year Figbird which obligingly stayed around for several weeks to be observed by many. Its close similarity to an Olive-backed Oriole was widely discussed. The dark grey bill of the Figbird was a noted feature, as was the dark iris and small area of grey bare skin in front of and behind the eye. Quite why this coastal species turned up in our region is unclear; perhaps we should all pay more attention to oriole-like birds in future.

Another highlight was the appearance of a flock of 15 Plumed Whistling-Duck on a Bungendore dam on the last day of 2009. This species has been recorded in our region before, most recently on Jerrabomberra Creek in March 1998, and coincidentally by the same observer, but is definitely one of our more unusual 'unusuals'. Two were subsequently seen in February at Lake Bathurst; there were anecdotal reports of the species having been recorded early in 2010 on the south coast.

Banded Lapwing could be found in low numbers in various spots in the ACT from the mid-60s till the mid-80s; thereafter they were only recorded from the eastern lakes, and in his 1999 Birds of the ACT: two centuries of change, Steve Wilson posited that 'the species is presumed to be extinct in the ACT'. Happily, this has proved not to be the case, with the discovery by Con Boekel of a breeding population just outside the Mulligans Flat NR in October 2009. They were subsequently twitched by many. Sadly, their chosen location is slated for development so this may really have been a last hurrah for the species in the ACT.

The arid zone specialists, the Black-tailed Native-hen, put in a reappearance last spring and summer after apparently missing a year. They were seen regularly at Norgrove Park and Kelly's Swamp, also on the western shore of Lake Ginninderra. Another arid zone species, the Black Honeyeater, was recorded again, after a break from 2006-07.

There have been endorsed records in our region of other species here listed from time to time. The Spiny-cheeked Honeyeater was last observed in October 2004; Little Button-quail in December 2009; White-throated Nightjar in March 2007; Black-eared Cuckoo in 2009; Brown Gerygone in 2007; Musk Lorikeet in 2009; Spangled Drongo in 2009.

ENDORSED LIST 76, June 2010

Plumed Whistling-Duck ***Dendrocygna eytoni***

15; 31 Dec 2010; David McDonald; Trucking Yard Lsne, Bungendore GrS13

2; 22 Feb 2010; Michael Lenz; Lake Bathurst SE GrZ8

White-throated Nightjar ***Eurostopodus mystacalis***

1 (deceased); 17 Apr 2010; Peter Milburn; Mulligans Flat NR GrL10

Black-tailed Native-hen ***Gallinula ventralis***

1; 21 Sep 2009; Sandra Henderson; Norgrove Park GrL14

1; 1 Oct 2009; Robin Hide; Lake Ginninderra W GrJ12

5; 24 Nov 2009; Martin Butterfield; Kellys Swamp GrL14

1; 11 Dec 2009; Mat Gilfedder; Norgrove Park GrL14

Banded Lapwing ***Vanellus tricolor***

2 +; 1 Oct 2009 - ; Con Boekel; adjacent to Mulligans Flat NR GrL11

1; 14 Dec 2009; Jenny Bounds; Mulligans Flat NR GrL11

Little Button-quail ***Turnix velox***

1; 3 Dec 2009; Steve Holliday; Urambi Hills NR GrJ16

Musk Lorikeet ***Glossopsitta concinna***

2; 24 Dec 2009; Julian Reid; Dutton St, Dickson GrL13

Black-eared Cuckoo ***Chrysococcyx osculans***

1; 29-30 Dec 2009; Kim McKenzie; Plains Rd, Hoskinstown GrS16

Brown Gerygone ***Gerygone mouki***

1; 17 Jul 2009; Jenny Bounds; Rainforest Gully, ANBG GrK13

Spiny-cheeked Honeyeater ***Acanthagenys rufogularis***

1; 28 Feb 2010; Michael Lenz; Mt Ainslie E GrM13

Black Honeyeater ***Certhionyx niger***

1; 23 Jan 2010; Bill Compston; Birchman Estate, Wamboin GrP12

Figbird ***Sphecotheres viridis***

1; 28 Nov to 18 Dec 2009; Richard Allen; Peacock Pl, Curtin GrJ15

Spangled Drongo ***Dicrurus bracteatus***

1; 31 Dec 2009; Nicolas Margraf; Australian National Botanic Gardens GrK13

1; 8 Jan 2010; Robin Hide; Australian National Botanic Gardens GrK13

Also reported and endorsed, though no longer on the “unusuals” list:

Pied Butcherbird ***Cracticus nigrogularis***

1; 12 Dec 2009; David Rees; “South Jacka”

1; 28 Feb 2010; Jean Casburn; Narrabundah Hill

Canberra Bird Notes is published three times a year by the Canberra Ornithologists Group Inc, and is edited by Anthony Overs. Major articles of up to 5000 words are welcomed 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 or correspondence are also encouraged. All contributions should be sent to cbn@canberrabirds.org.au.

Canberra Bird Notes 35 (2) June 2010

Articles

Odd Obs

Columnists' Corner

Book Review

Printed September 2010