

# Changes in the bird populations of Blackbutt Reserve, 1973–2011

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This paper examines changes in species diversity and qualitative measures of their frequency of occurrence, for birds recorded in Blackbutt Reserve, New Lambton, New South Wales over a 38-year period. The paper draws on the 1973 records of A.J. Bailey, which were reviewed by W. Barden *et al.* in 1982 and again by G. Winning in 1985. These records are compared with the most recent listing for Blackbutt Reserve covering the period 2009–2011 which was compiled by Joy Nicholls with the assistance of Paddy Lightfoot and Judith Thomas of the Hunter Bird Observers Club and the Staff of Blackbutt Reserve. The 1982 list involves 106 species compared with 125 species in 2009–2011.

## INTRODUCTION

Blackbutt Reserve is an intra-urban Nature Reserve managed by Newcastle City Council. It was established in the 1930s on degraded land considered uneconomical for farmlets. With land prices as low as 10 pounds per acre, the New Lambton Progress Association and New Lambton Council purchased the land for a public reserve. 144 acres was gazetted as a Public Recreational Reserve in 1948. In 1949 another 70 acres were added. Richley Reserve, formerly the Borehole Colliery, was developed by the determined effort of a few committed individuals, notably Joe Richley after whom it is named, and the area slowly rehabilitated (Gilligan 1982).

With additional land parcels the Reserve today is over 200 ha in size (**Figure 1**). It is vigorously managed with a permanent service staff of nine supplemented by around 35 volunteer staff. There is an ongoing effort to remove lantana and other weeds, regenerate rainforest and establish suitable fire regimes. Richley Reserve is now renovated to picnic grounds and ponds, which sustain a number of waterbirds and animals. A similar site has been established off Carnley Avenue on the southern side of Blackbutt Reserve. There are three other smaller, less popular picnic / barbecue areas. Well-maintained tracks traverse the Reserve for the use of walkers. The major area of Blackbutt Reserve, other than the picnic areas, remains thick bush involving both rainforest areas and less thick, dry sclerophyll forest.

At the Carnley Avenue picnic grounds large aviaries have been established. These contain bird species from all over Australia, some of which are being bred and released back into the wild through conservation programs. The Bush Stone-curlew *Burhinus grallarius*, which is endangered in NSW is an example. These captive birds are not discussed here.

This paper considers the changes in species diversity and qualitative measures of their frequency of occurrence and abundance. The 1982 list revised by W. Barden *et al.* from the 1973 list compiled by A.J. Bailey (Winning 1985) contained 106 species, 15 of which have not been recorded for many years. In contrast the recent list just compiled (Nicholls *et al.* 2011) involves 125 species, of which 34 are new to the area. Birds in both lists that were vagrants or may have been recorded only once or twice are not discussed further.

## METHODS

Using available past records of bird species collated by experienced bird watchers, between 1973 and 1982, I have compared the changes with a current 2011 species list; looking specifically at the presence, absence and frequency of occurrence of species found in Blackbutt Reserve over a span of 38 years. I have also drawn on the records provided by Geoffrey Winning (Winning 1985) and the Hunter Region Annual Bird Report series (Stuart 1994-2010). Records from the Annual Bird Reports are subsequently attributed to Hunter Bird Observers Club (HBOC).



Figure 1. Blackbutt Reserve

Exact numbers have not been recorded, only a subjective estimate of the frequency of occurrence and where appropriate abundance of species, recorded as broad classes such as common or uncommon (see Table 1).

This paper looks at those species which over a 38-year period have:

- newly arrived at the Reserve;
- increased in numbers or in their use of the Reserve;
- ceased to be recorded in the Reserve;
- decreased in numbers or in their use of the Reserve;
- acquired an at-risk conservation status as classified by the NSW *Threatened Species Conservation Act 1995* (Roderick & Stuart 2010).

## RESULTS

### Introduced Species

Two species, Australian Brush Turkey *Alectura lathami* and Black Swan *Cygnus atratus* stand out as having been introduced into Blackbutt Reserve from released aviary stock, approximately 10 years ago. While Black Swans are still present in small numbers, the Brush Turkeys have become well established, breeding up into large numbers and now expanding their range into surrounding suburbs.

Corellas were first recorded by Geoffrey Winning in 1985 as escapees (Winning 1985). Both Little *Cacatua sanguinea* and Long-billed *Cacatua tenuirostris* Corellas are now seen; from single birds to large groups visiting the Reserve.

## Waterbirds

There has been limited change in the variety of duck species and their abundance. Chestnut Teal *Anas castanea*, while considered unusual in 1982, currently are frequent visitors in larger numbers. Hardheads *Aythya australis*, now regular visitors, were not recorded in 1982. The only ducks breeding in the Reserve are Pacific Black Ducks *Anas superciliosa* and Australian Wood Ducks *Chenonetta jubata*. Several other duck species are less common visitors, which increase during drought conditions.

While the Australasian Grebe *Tachybaptus novaehollandiae* was recorded in 1982 as an uncommon resident, it is now present in increased numbers and breeding.

Straw-necked Ibis *Threskiornis spinicollis* were not mentioned in 1982 records. Winning (1985) records them as uncommon visitors. Today they are a small but persistent population.

Eurasian Coot *Fulica atra* and Dusky Moorhen *Gallinula tenebrosa* were not recorded in the earlier records, but are now common and known to breed in the water habitats. Purple Swamphens *Porphyrio porphyrio* are occasional visitors.

A factor contributing to the increase of waterbird species is the upgraded habitat with larger ponds, improved water flow, as well as better reed and plant coverage.

## Raptors

Only five raptors were recorded as present in 1982 and all were classed as uncommon. Of the five 1982 species, Black-shouldered Kite *Elanus axillaris* have not been recorded in recent years.

Winning (1985) recorded for the first time Pacific Baza *Aviceda subcristata*, Grey Goshawk *Accipiter novaehollandiae* and Australian Hobby *Falco longipennis*, all classed as uncommon visitors.

In the 2011 surveys, Pacific Baza, Grey Goshawk and Brown Goshawk *Accipiter fasciatus* were frequently recorded and all are known to breed in the Reserve. A lone White-bellied Sea-Eagle *Haliaeetus leucogaster* has frequented the Reserve for a number of years. Australian Hobbies and Peregrine Falcons *Falco peregrinus* are less common residents.

## Pigeons

There has been considerable change in the pigeon species. Rose-crowned Fruit-Dove *Ptilinopus regina*, Wompoo Fruit-Dove *Ptilinopus magnificus*, Wonga Pigeon *Leucosarcia melanoleuca* (now *picata*) and Topknot Pigeons *Lopholaimus antarcticus* were all recorded as uncommon visitors in the 1982 records and again by Winning in 1985. Emerald Doves *Chalcophaps indica* were classed as common winter migrants. Crested Pigeons *Ocyphaps lophotes* were absent from the 1982 list, but were listed as common residents by Winning (1985), as they are today.

Current surveys show Topknot Pigeons are still a rare visitor. The first Emerald Dove since 1998 was present this winter (i.e. 2011). Wonga Pigeons and Rose-crowned and Wompoo Fruit-Doves have not been reported since 1985. Recent records show Brown Cuckoo-Doves *Macropygia amboinensis*, formerly a rare visitor, are now one of the more common pigeons seen in the Reserve. White-headed Pigeons *Columba leucomela* are another common visitor whose presence was not recorded in former years.

## Parrots

Although not mentioned in the 1982–1985 records, Yellow-tailed Black-Cockatoos *Calyptorhynchus funereus* are now frequently seen in flocks of four to twenty birds and feed in the Reserve. Long-billed and Short-billed (now Little) Corellas initially recorded by Winning (1985) as escapees, are now frequently seen, from single birds to large groups. This begs the question whether they originate from the escapee birds. Galahs *Cacatua roseicapilla* are recorded more frequently, though they are still not one of the more common species. Rainbow Lorikeets *Trichoglossus haematodus*, Eastern Rosellas *Platycercus eximius* and Crimson Rosellas *Platycercus elegans* formerly recorded as unusual visitors are now all resident and breeding within Blackbutt Reserve. Rainbow Lorikeets, in particular, are in large numbers.

## Cuckoos

Seven species of cuckoo were recorded as summer migrants in the 1982 list. The biggest change to this group is in the larger numbers of Channel-billed Cuckoo *Scythrops novaehollandiae* and Eastern Koel *Eudynamys orientalis*, which breed parasitically in the area. Brush Cuckoos *Cacomantis variolosus*, considered uncommon in 1982, have not been recorded in recent years.

## Owls

Two species of owl, both having a conservation status of “Vulnerable” occur. The Powerful Owl *Ninox strenua* was considered an occasional visitor in 1982. In 2011 it is frequently recorded both by sight and by call, with several breeding records over the past 15 years. This increase may be influenced by the plentiful supply of Grey-headed Flying Foxes *Pteropus poliocephalus* on which these owls feed.

The other vulnerable owl species, the Masked Owl *Tyto novaehollandiae*, is a rare visitor to Blackbutt. Because this owl feeds on smaller mammals, of which Blackbutt Reserve has relatively few, it is unlikely to establish a territory.

## Thornbills

Both Yellow Thornbills *Acanthiza nana* and Buff-rumped Thornbills *Acanthiza reguloides* were recorded as common in the early surveys. Less than five Yellow Thornbills were recorded by HBOC in 2005 and there have been no reports since. Buff-rumped Thornbills have not been recorded since the 1985 review. Weebills *Smicrornis brevirostris*, considered uncommon in the early lists, are absent from subsequent reports.

## Honeyeaters

The White-eared Honeyeaters *Lichenostomos leucotis* and White-cheeked Honeyeaters *Phylidonyris nigra* (now *niger*), listed in 1982 and 1985, are no longer recorded in Blackbutt Reserve. Uncommon visitors on that early list, Yellow-tufted Honeyeaters *Lichenostomos melanops* are no longer seen in Blackbutt Reserve although HBOC recorded a sighting of less than five birds in 2007.

Bell Miners *Manorina melanophrys* and Noisy Miners *Manorina melanocephala* were both considered uncommon visitors in 1982. These species are now dominant, resident and breeding in large numbers with recent increases in Bell Miner colonies causing displacement of less aggressive species.

## Finches

Early studies showed House Sparrows *Passer domesticus* to be resident in small numbers in Blackbutt Reserve, but they are no longer present.

## Other Species

White-throated Gerygones *Gerygone albogularis* have not been noted since recorded by HBOC in 1995.

Varied Sittella *Daphoenositta chrysoptera*, a vulnerable species, was last recorded by HBOC in 1995.

Rufous Whistler *Pachycephala rufiventris*, once a common visitor in summer, was last seen in 1997.

White-throated Treecreeper *Cormobates leucophaea*, previously considered an uncommon visitor, is now a common and breeding resident in Blackbutt Reserve.

Pied Currawongs *Strepera graculina*, formerly considered to be common only in winter, are now present all year round, brooding not only their own young, but Channel-billed Cuckoo's chicks as well.

Welcome Swallow *Hirundo neoxena* was listed in 1982 as an uncommon visitor. Today it is ubiquitous at any water site in the region including Blackbutt Reserve where it is present in good numbers.

Common Myna *Sturnus tristis* has only recently been recorded and its presence is restricted to the eastern boundary of the Reserve adjacent to a residential street. Its absence from open picnic areas may be due to the dominance of the more aggressive Noisy Miner in those areas. In future years it is likely this species will intrude into the Reserve.

Two species that might be expected to be found in Blackbutt Reserve are absent. The Mistletoebird *Dicaeum hirundinaceum*, recorded as a rare vagrant in 1982, has been surprisingly absent from all records since, which may be a consequence of a lack of mistletoe growing on trees in the Reserve.

Australian Owlet-nightjar *Aegotheles cristatus* is another species one would expect to be present. A recent targeted survey failed to locate this species which has never been recorded in the Reserve.

## DISCUSSION

### Habitat Upgrades

Wooded areas have increased over the sixty years since Blackbutt was gazetted as a Reserve. Water habitats have also been upgraded over the past two years with better water flows, reed plantings and increased cover for waterbirds. It is likely that more waterbird species will utilise these areas in the future, particularly in drier years.

The demise of open grass areas probably accounts for the loss of Black-shouldered Kites, while the increase in forested areas appears to favour a number of other raptor species.

### Vegetation

Weed control is practised throughout the Reserve, but this is a massive job. Lantana, privet, exotic garden plants, introduced palms and banana trees are targeted along with multiple weeds. For many of the smaller species of bush birds weeds provide a safe habitat and food source.

### Fire

Major bushfires in Blackbutt have been few, the last occurring in 1994. A fire-control strategy, which involves small controlled burns for fuel reduction, usually conducted in late winter, commenced in 2009.

### Flying Foxes

Since the early 1990s Grey-headed Flying Foxes have colonised one of the pockets of rainforest in Blackbutt Reserve. Averaging 15,000 (counts range from 5,000 to 30,000), they have altered the dynamics affecting birds in two ways:

- providing a major food source for owls and raptors; and
- possibly displacing fruit-eating birds such as doves which feed on rainforest fruits and nuts.

### Climate Change / Weather

The effects of climate change are yet to be recognised. At this time there is no data to suggest that any changes in bird populations within Blackbutt Reserve in recent years are due to climate change other than the usual variations resulting from drought or wet cycles. Bird species certainly vary during periods of drought.

## Surprising Records

Historical records of Weebill and White-eared Honeyeater at Blackbutt are surprising in that they lie well outside the usual range and habitat of these species within the Hunter Region.

## CONCLUSIONS

Since 1973–1982 some 20 species have ceased to be recorded at Blackbutt Reserve, while 34 new species are included on the 2011 list. With few records from the interim years it is difficult to know when changes occurred. Those on the recent list which have been seen only infrequently for a short period, are considered to be vagrant and for that reason are not discussed here.

Raptors and waterbirds are among those increasing in numbers and species diversity due to improved food sources and, for waterbirds, the development of their habitat has provided safer nesting sites.

Bush birds, including some of the smaller honeyeaters, fruit-doves and birds of the drier forests such as Varied Sittellas and Rufous Whistlers have been lost. Increases in the more aggressive species such as the Bell and Noisy Miners, currawongs, and raptors are displacing the more placid species.

## REFERENCES

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**Table 1.** Bird species changes in Blackbutt Reserve 1973 to 2011

(C : Common; U : Uncommon; V : Visitor; R : Resident; M : Migratory; B : Breeding; E : Escapee; I : Introduced to Reserve.)

Species	Scientific Names	1973 - 82	1985	2011
Australian Brush-turkey	<i>Alectura lathami</i>	-	-	C R B I
Black Swan	<i>Cygnus atratus</i>	-	-	C R B I
Australian Wood Duck	<i>Chenonetta jubata</i>	C V	C V	C R B
Chestnut Teal	<i>Anas castanea</i>	U V	U V	C M
Hardhead	<i>Aythya australis</i>	-	-	C V
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>	U R	U R	C R
White-headed Pigeon	<i>Columba leucomela</i>	-	-	C M
Brown Cuckoo-Dove	<i>Macropygia amboinensis</i>	U M	U M	C R
Emerald Dove	<i>Chalcophaps indica</i>	C M	C M	U V
Crested Pigeon	<i>Ocyphaps lophotes</i>	-	C R	C R
Wonga Pigeon	<i>Leucosarcia picata</i>	U V	U V	-
Wompoo Fruit-Dove	<i>Ptilinopus magnificus</i>	U V	U V	-
Rose-crowned Fruit-Dove	<i>Ptilinopus regina</i>	U V	U V	-
Straw-necked Ibis	<i>Threskiornis spinicollis</i>	-	U V	C R
Black-shouldered Kite	<i>Elanus axillaris</i>	U V	U V	-
Pacific Baza	<i>Aviceda subcristata</i>	-	U V	C M B
Grey Goshawk	<i>Accipiter novaehollandiae</i>	-	U V	R B
Australian Hobby	<i>Falco longipennis</i>	U V	U V	R B
Peregrine Falcon	<i>Falco peregrinus</i>	-	-	U V
Purple Swamphen	<i>Porphyrio porphyrio</i>	-	-	U V
Dusky Moorhen	<i>Gallinula tenebrosa</i>	-	-	C R B
Eurasian Coot	<i>Fulica atra</i>	-	-	C R
Yellow-tailed Black-Cockatoo	<i>Calyptorhynchus funereus</i>	-	-	C V
Galah	<i>Eolophus roseicapillus</i>	U V	C R	C R
Long-billed Corella	<i>Cacatua tenuirostris</i>	-	C E	C V
Little Corella	<i>Cacatua sanguinea</i>	-	C E	C V
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	U V	U V	C R B
Crimson Rosella	<i>Platycercus elegans</i>	U V	U V	C R B
Eastern Rosella	<i>Platycercus eximius</i>	U R	U V	C R B
Eastern Koel	<i>Eudynamis orientalis</i>	U M	U M	C M
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	U V	U V	U M B
Brush Cuckoo	<i>Cacomantis variolosus</i>	U M	U M	-
Powerful Owl	<i>Ninox strenua</i>	U R B	-	U V
White-throated Treecreeper	<i>Cormobates leucophaea</i>	C R B	U V	U V
Weebill	<i>Smicromis brevirostris</i>	U V	U V	-
White-throated Gerygone	<i>Gerygone albogularis</i>	C M	C M	-
Yellow Thornbill	<i>Acanthiza nana</i>	C R	U V	U V
Buff-rumped Thornbill	<i>Acanthiza reguloides</i>	U V	U V	-
White-eared Honeyeater	<i>Lichenostomus leucotis</i>	U R	U R	-
Yellow-tufted Honeyeater	<i>Lichenostomus melanops</i>	U R	U R	-
Bell Miner	<i>Manorina melanophrys</i>	U V	U V	C R B
Noisy Miner	<i>Manorina melanocephala</i>	U V	U V	C R B
White-cheeked Honeyeater	<i>Phylidonyris niger</i>	U V	U R	-
Varied Sittella	<i>Daphoenositta chrysoptera</i>	U R	U R	-
Rufous Whistler	<i>Pachycephala rufiventris</i>	C M	C M	-
Pied Currawong	<i>Strepera graculina</i>	C M	-	C R B
Common Myna	<i>Sturnus tristis</i>	-	-	U R
House Sparrow	<i>Passer domesticus</i>	U R	U R	-