

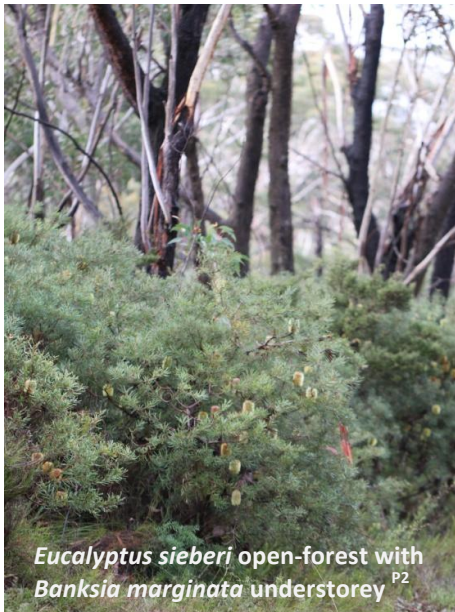
# Birds and the Katoomba Airfield

It is a great privilege on a crisp autumn morning to stand quietly in the bush in the vicinity of Katoomba Airfield to watch an array of noisy squabbling birds dashing hungrily from one flowering Banksia to the next fuelling up for the day on abundant nectar and insects. Overhead flocks of small torpedo-like birds purposefully head to the north and east as they continue their autumn migration and there is constant chattering and feasting in the tree canopies.



## The Setting

Katoomba Airfield is located on a narrow sandstone plateau that extends in a north-easterly direction from Medlow Bath to Point Pilcher and Carne Wall from where there are dramatic views over the tributary valleys of the Grose River. The edges of the plateau are much dissected so that deep valleys are never far away. The iconic Grand Canyon is a 20 minute walk to the north, the escarpment of Katoomba Creek sits in places just metres to the south of the airfield fence and the popular Minnehaha Falls is only 1.3km south-south-west of the centre of the main runway.



Highly diverse **World Heritage bushland** completely surrounds the airfield. The variety of plant communities reflects the different micro-environments produced by the range of landforms. *Eucalyptus sieberi* open forest and woodland is widespread on the plateau while deep, sheltered places support ancient rainforest and the iconic tall open forests of *Eucalyptus oreades*. Heaths clothe windy exposed places, *E. sclerophylla* Bench Woodland inhabits places of tough soil and Blue Mountains Swamps (a Threatened Ecological Community) prefer seepage zones from where they channel water to waterfalls and valley streams.

## Habitat Diversity

The variety of good quality vegetation types promotes habitat diversity and the ability to sustain substantial numbers of birds as required during the year. Autumn is a special time; it is then that the Banksias are in full bloom. Abundant with nectar *Banksia cunninghamii*, *B. ericifolia*, *B. spinulosa* and especially *B. marginata* attract honeyeating birds and insects (that are also a food source) to the forests, woodlands and heaths.

Equally as important are the Eucalypts found everywhere except the swamps. From the low mallee, *Eucalyptus stricta* to the tallest *E. oreades* birds can be found sipping nectar, crunching on seed-filled capsules, feasting on insects and harvesting sugary lerp.

**Good bird habitat** requires more than just food plants. There also needs to be nesting hollows in trees, materials for nest making, dense understorey in which to hide those nests, litter to be scratched for invertebrates, bark to forage beneath, branches to perch on and to provide refuge, open valleys with good thermals, and the **absence of sudden or continuous loud noise**. All of these requirements are currently well provided for on the plateau and in its associated valleys. So let's investigate the birds.



## Birds in the vicinity of Katoomba Airfield

A great diversity of birds visit or are resident in the World Heritage bushland in the vicinity of Katoomba airfield. Table 1 provides a starter list of **94 bird species** that might be seen. The list includes:

1. Many **birds that are resident** in the area in one or more of the vegetation communities all year around. This long but incomplete list includes everything from the well-known Australian Magpie, Crimson Rosella and Eastern Spinebill to the less commonly seen Chestnut-rumped Heathwren, Pilotbird and Mistletoe Bird.

Birds of prey including the Goshawks – Grey and Brown, Peregrine Falcons and the majestic Wedge-tailed Eagle haunt the cliff edges or glide over the valleys. Birds of the night include the Australian Owlet Night-jar, Southern Boobook, Tawny Frogmouth and Powerful Owl. Channel-bill Cuckoos noisily make their way home from Indonesia, New Guinea and northern Australia to breed here in spring.



2. **Endangered species** that are listed as **Vulnerable** under the *NSW Biodiversity Conservation Act 2016* include the Gang-gang Cockatoo, Glossy Black-cockatoo, Powerful Owl, Flame Robin and Scarlet Robin (one was sitting on the airfield gate on a survey day in April 2019).
3. **Birds of the Grand Canyon** and other rainforest and tall eucalypt forests of the valleys. While most species listed also occur on the plateau some like the Brown Gerygone, Crescent Honeyeater and Large-billed Scrubwren prefer the quiet, still shelter of the Canyon. Powerful Owls depend on tall tree breeding hollows in this location, then move across the plateau to hunt.
4. The **only bird endemic to NSW, the Rockwarbler**, may be seen bopping around rocky sandstone spots near cliff edges and in the heaths of the plateau.
5. **Species involved in the great autumn bird migration:** The Greater Blue Mountains World Heritage Area (GBMWA) was declared an **Important Bird and Biodiversity Area (IBA)** by BirdLife International in 2017 (the IBA has now been designated a **Key Biodiversity Area by the I.U.C.N**). A triggering criterion for the original IBA listing was the autumn migration of **Yellow-**



**face Honeyeaters** and their congregation during this event in the higher altitudes of the region. With annual numbers exceeding 200,000 and **accompanied by other species**, these birds sweep up onto the plateau from southern habitats, feed on heath, woodland and forest plants especially *Banksias* and their dependant insects, then continue their flight north across the Grose and beyond or disperse throughout the Mountains.<sup>1</sup>

Every autumn from April to May a group of volunteers under the expert guidance of Carol Proberts count the honeyeaters as they sweep across the southern escarpment (e.g. Narrow Neck and the Shipley Plateau). It has been assumed that some of the birds would then fly towards and around the airfield but that had not been formally investigated. So in April and May 2019 a **survey** was undertaken to determine whether or not the flight paths of the migrating honeyeaters and their companions passed over or near

Katoomba Airfield.<sup>2</sup> Three different types of bushland were investigated starting close to the boundary fence and ranging up to 150 metres away. A post-migration survey was then undertaken in June. The **main findings of the surveys** were that:



5.1 **The three most abundant migrating honeyeaters and two co-migrants were present in substantial numbers at the airfield** in April and May – either flying across it to the north or undertaking stopovers to feed in flowering banksias especially *Banksia marginata*. Insects from all levels in the plant communities and lerp (sticky, sugary, insect exudates) were also sought. In **order of abundance** on the survey days the species were:

- **Yellow-faced Honeyeaters** – large numbers were seen feeding in Banksias and Eucalypts or observed and heard flying overhead
- **White-naped Honeyeaters** – were frequently seen and heard flying just above the tree tops from where they take small insects and lerp; some also snacked on Banksia nectar
- **Red Wattlebirds** – substantial numbers were readily identified from their cacophonous calls as they preferentially fed in the Banksias
- **Silvereyes** – for their small size these birds undertake an incredibly lengthy migration; some arrive from as far away as Tasmania to augment or temporarily displace the local population. They were seen flying in small flocks, occasionally stopping to forage on insects in the Eucalypt canopies.
- **Spotted Pardalotes** – also tiny birds whose small flocks, identified by characteristic calls, were observed flying above the tree crowns where they forage.



**Other birds** may also be caught up in the migratory flocks.<sup>3</sup> Of these the Striated Pardalote, Noisy Friarbird, Fuscous Honeyeater, Mistletoebird, Black-faced Cuckoo-shrike, and Crescent Honeyeaters are recorded in Table 1 as also occurring in the airfield environs.

5.2 **The survey morning in June** showed a decrease in individual numbers of the migrating birds as the main autumn migration had moved on to the north or dispersed throughout the region. This was particularly so with Yellow-faced Honeyeaters and Silvereyes who were absent. Red Wattlebirds, White-naped Honey-eaters and Spotted Pardalotes were detected still but in smaller numbers; they were joined by at least 15 other species.

This observation serves to further emphasise the crucial importance of the habitat fringing the airfield for all species involved in the autumn bird migration between April and May. The returning species will re-appear from spring to early summer. While not in such concentrated numbers the birds will expect to find unhindered access to forage plants to sustain them on long southerly journeys.

5.3 **New Holland Honeyeaters** are also abundant around the airfield in autumn benefiting from the flowering of Banksias. Substantial numbers were still present in June, some then with chicks hidden in the understorey of the woodland within the airfield property.



- 5.4 The **most popular bird location** surveyed in autumn was along the **Medlow Airstrip Trail** that fringes the southern boundary of the airfield. There is a great diversity of plants here including many Banksias (*Banksia marginata* in particular) that have already been noted as preferred food plants in this season. Migrating birds were particularly abundant where the trail initially runs close to the northern edge of the deep Katoomba Creek Valley. The valley is narrow here so it would be a short flight from the previous landfall and updrafts may also carry the birds that have perhaps come from the Katoomba, Narrow Neck and Radiata Plateau escarpments, above and/or into the woodland of the edges of the airfield plateau.
- 5.5 Further research is required to determine precise travel routes for the honeyeaters and their travelling companions who cross the southern escarpments but it is clear that **the airfield is on the flight path for at least some of the birds undertaking this amazing migration.**

### The Impact of Aircraft on Birds around Katoomba Airfield

It is well-established internationally that all types of aircraft including small fixed wing planes and helicopters impact on bird populations.<sup>4</sup> The physiological and behavioural impacts of helicopter activity that is considered to be of greatest concern have not been specifically investigated in the Blue Mountains but studies suggest that an increase in daily aircraft movements that exposes these birds to sudden and repeated physical intrusions would be detrimental in a range of ways:



1. **A combination of loud noise and sudden and rapid movement** of helicopters **causes the greatest negative effects** on wildlife. Sudden, noisy, intermittent helicopter intrusions would constitute bursts of alarm-filled harassment. Noise would reverberate around the sandstone walls of narrow valleys, particularly of the close-by Grand Canyon. Birds of all sizes from Superb Fairy-wrens to Superb Lyrebirds that are reliant on vocal communication for feeding opportunities, mating, care of young and predator avoidance would be particularly affected.
2. **Helicopters** are particularly associated with **lethal rotor downwash and brownouts**: high velocity wind vortices are generated by helicopter blades when the machine is hovering above a runway or bushland. This generates smothering blankets of airborne dust particles, reduces habitat values and exposes vegetation and wildlife to lethal wind velocities. Tiny birds like the 11g Silvereeye and the equally small Red-browed Finch would not survive this force.



3. Aircraft can **collide** with any individual bird flying at the same height (with possible catastrophic results for the vehicle and its occupants), as well as with the flocks of migratory birds that are heading directly from the southern escarpment towards the airfield. **Avian consequences** could include the death of struck birds, dislocation of flight paths, and disruption to feeding patterns resulting in decreased strength of birds engaged in a lengthy migration.
4. First-hand accounts from participants in the autumn honeyeater migration counts indicate behavioural impacts that occur when birds encounter machines in the Blue Mountains. In 2018 helicopters involved in the site preparation for the Mt Solitary hazard reduction fire had an

immediate negative impact on some migrating flocks. Birds ‘disappeared from the sky’ and numbers counted dropped when the helicopters flew by. Flocks of birds rising from southern Mountains valleys have also been seen to turn back when trains or heavy highway traffic created noise, and visual and air current disturbance across their flight paths; whether these birds return to continue their preferred flight path is not known. During the June survey morning at the airfield a light aircraft circled the facility a number of times and the noise drowned out the bird song; when the aircraft left the bushland remained quite silent and bird activity had noticeably declined.

## Conclusions

1. **Autumn migratory birds are found in significant numbers in the vicinity of the Katoomba Airfield.** Surveys conducted in April and early May 2019 indicate that **at the current very infrequent usage** of the airfield each of the species of migrating birds, including all of the honeyeaters, fly across and around the airfield and feed in surrounding bushland habitats.<sup>5</sup>
2. **The bushland of the airfield and the adjacent plateau,** especially where it supports species of Banksias should be considered to be **Critical Migrating Honeyeater Habitat.**
3. The **vegetation communities surrounding the airfield also support a substantial population of other birds** either as resident populations, altitudinal ‘migrants’, occasional visitors or international travellers returning to breed in the spring (Table 1) and they must also be considered in any proposed increase in commercial activity at the Katoomba Airfield.
4. The well-documented negative consequences of light aircraft and helicopters are likely to impact on all birds in the immediate vicinity of the airfield and under flight paths, if a commercial operating licence is granted and the facility opens to increased air traffic.
5. There is particular concern about the disruption that increased air traffic would cause to the annual autumn migration of honeyeaters and associated birds. **Increased flights at this time will negatively impact on this internationally known and ecologically important annual event. If the flight paths of the birds and the flight paths of the aircraft clash it will usually be the birds that will suffer,** though the safety implications for the aircraft and occupants must also be considered.



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### Photographic credits:

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|---|---|
| P1 Wendy Pepper: ‘Gang-gang Cockatoo’   | P2 Mark Baker: ‘ <i>Eucalyptus sieberi</i> open-forest’ |
| P3 Robyn Tattam: ‘ <i>Banksia marginata</i> ’   | P4 Jill Dark: ‘Glossy Black-cockatoo’                   |
| P5 fir0002/flagstaffotos 2008, ‘Yellow-faced Honeyeater’, <a href="https://en.wikipedia.org/wiki/File:Yellow_faced_Honeyeater_nov07.jpg">https://en.wikipedia.org/wiki/File:Yellow_faced_Honeyeater_nov07.jpg</a> |   |
| P6 Birdlife Australia: ‘White-naped Honeyeater’, <a href="http://birdlife.org.au/bird-profile/white-naped-honeyeater">http://birdlife.org.au/bird-profile/white-naped-honeyeater</a>                              |   |
| P7 Jill Dark: ‘Juvenile Red Wattlebird’   | P8 Jill Dark: ‘Spotted Pardalote’                       |
| P9 Tracy Walker: ‘New Holland Honeyeater’   | P10 Jill Dark: ‘Red-browed Finches’                     |
| P11 fir0002 flagstaffotos [at] gmail.com 2012, ‘Silvereeye’, <a href="https://commons.wikimedia.org/wiki/File:Silvereeye_Jan_2010.jpg">https://commons.wikimedia.org/wiki/File:Silvereeye_Jan_2010.jpg</a>        |   |

### Other credits and references:

- 1 & 3 Proberts, C. 2006, *An Autumn Phenomenon*, <http://www.bmbirding.com.au/hemig.html>
- 2 & 5 BMRM Ecological Surveys 2019, *Bird surveys in the vicinity of Katoomba Airfield 2019*, unpublished report
- 4 For more detail on these issues refer to: <https://www.bluemountains.org.au/documents/campaigns/katoomba-airfield/katoomba-airfield-impact-of-helicopters-on-bm-world-heritage-values-summary.pdf>
- 6 **Table 1** was developed with the much appreciated assistance of the *BMRM Ecological Surveys* field team, the *Atlas of Living Australia* records (online), and experienced bird observers *Wendy Pepper, Di Shanks, Ian Olsen* and veterinarian *Mark Hocking*. Dr Hocking generously made available an extensive bird list for the area but only those species found within the target range of the airfield are noted in the table including most of the Grand Canyon birds.

**Table 1: Birds recorded within 1km of Katoomba Airfield Medlow Bath <sup>6</sup>**

| All birds recorded near Katoomba Airfield | Within 1km | Autumn Surveys 2019 | Grand Canyon Birds |
|---|------------|---------------------|--------------------|
| Australian King-Parrot                    | X          |                     | X                  |
| Australian Magpie                         | X          | X                   | X                  |
| Australian Owlet-nightjar                 | X          |                     | X                  |
| Australian Raven                          | X          | X                   | X                  |
| Bassian Thrush                            | X          |                     | X                  |
| Beautiful Firetail                        | X          |                     | X                  |
| Bell Miner                                | X          |                     | X                  |
| Black-faced Cuckoo-Shrike                 | X          | X                   |                    |
| Black-faced Monarch                       | X          |                     | X                  |
| Brown Cuckoo-dove                         | X          |                     | X                  |
| Brown Gerygone                            | X          |                     | X                  |
| Brown Goshawk                             | X          |                     |                    |
| Brown Thornbill                           | X          | X                   | X                  |
| Brown-headed Honeyeater                   | X          | X                   | X                  |
| Brush Cuckoo                              | X          |                     |                    |
| Buff-rumped Thornbill                     | X          |                     |                    |
| Channel-billed Cuckoo                     | X          |                     |                    |
| Chestnut-rumped Heathwren                 | X          |                     |                    |
| Collared Sparrowhawk                      | X          |                     |                    |
| Common Bronzewing                         | X          |                     |                    |
| Crescent Honeyeater                       | X          |                     | X                  |
| Crested Shrike-tit                        | X          | X                   | X                  |
| Crimson Rosella                           | X          | X                   | X                  |
| Eastern Spinebill                         | X          | X                   | X                  |
| Eastern Whipbird                          | X          | X                   | X                  |
| Eastern Yellow Robin                      | X          | X                   | X                  |
| Fan-tailed Cuckoo                         | X          |                     | X                  |
| Flame Robin                               | X          |                     | X                  |
| Fuscous Honeyeater                        | X          |                     |                    |
| Galah                                     | X          |                     |                    |
| Gang-gang Cockatoo                        | X          | X                   | X                  |
| Glossy Black-cockatoo                     | X          |                     | X                  |
| Golden Whistler                           | X          | X                   | X                  |
| Grey Butcherbird                          | X          | X                   | X                  |
| Grey Currawong                            | X          | X                   | X                  |
| Grey Fantail                              | X          | X                   | X                  |
| Grey Goshawk                              | X          |                     |                    |
| Grey Shrike-thrush                        | X          | X                   | X                  |
| Large-billed Scrubwren                    | X          |                     | X                  |
| Laughing Kookaburra                       | X          | X                   | X                  |
| Lewin's Honeyeater                        | X          | X                   | X                  |
| Little Wattlebird                         | X          | X                   | X                  |
| Mistletoebird                             | X          |                     |                    |
| Nankeen Kestrel                           | X          |                     |                    |
| New Holland Honeyeater                    | X          | X                   | X                  |
| Noisy Friarbird                           | X          |                     |                    |
| Noisy Miner                               | X          |                     | X                  |

| All birds recorded near Katoomba Airfield | Within 1km | Autumn Surveys 2019 | Grand Canyon Birds |
|---|------------|---------------------|--------------------|
| Peregrine Falcon                          | X          |                     |                    |
| Pied Currawong                            | X          | X                   | X                  |
| Pilotbird                                 | X          |                     | X                  |
| Powerful Owl                              | X          |                     | X                  |
| Red Wattlebird                            | X          | X                   | X                  |
| Red-browed Finch                          | X          |                     | X                  |
| Red-browed Treecreeper                    | X          | X                   | X                  |
| Red-capped Robin                          | X          |                     |                    |
| Rockwarbler                               | X          |                     | X                  |
| Rose Robin                                | X          |                     | X                  |
| Rufous Fantail                            | X          |                     | X                  |
| Rufous Whistler                           | X          |                     | X                  |
| Sacred Kingfisher                         | X          |                     |                    |
| Satin Bowerbird                           | X          |                     | X                  |
| Satin Flycatcher                          | X          |                     | X                  |
| Scarlet Honeyeater                        | X          |                     |                    |
| Scarlet Robin                             | X          | X                   |                    |
| Silveryeye                                | X          | X                   | X                  |
| Southern Boobook                          | X          |                     |                    |
| Spotted Pardalote                         | X          | X                   | X                  |
| Spotted Quail-thrush                      | X          |                     |                    |
| Striated Pardalote                        | X          |                     |                    |
| Striated Thornbill                        | X          | X                   | X                  |
| Sulphur-crested Cockatoo                  | X          |                     | X                  |
| Superb Fairy-wren                         | X          | X                   |                    |
| Superb Lyrebird                           | X          | X                   | X                  |
| Tawny Frogmouth                           | X          |                     |                    |
| Tree Martin                               | X          |                     |                    |
| Varied Sitella                            | X          |                     | X                  |
| Variegated Fairy-wren                     | X          |                     | X                  |
| Wedge-tailed Eagle                        | X          |                     |                    |
| Welcome Swallow                           | X          |                     | X                  |
| White-browed Scrubwren                    | X          | X                   | X                  |
| White-cheeked Honeyeater                  | X          | X                   |                    |
| White-eared Honeyeater                    | X          | X                   | X                  |
| White-naped Honeyeater                    | X          | X                   | X                  |
| White-throated Gerygone                   | X          |                     | X                  |
| White-throated Needletail                 | X          |                     |                    |
| White-throated Treecreeper                | X          | X                   | X                  |
| White-winged Chough                       | X          |                     |                    |
| Willie Wagtail                            | X          |                     |                    |
| Wonga Pigeon                              | X          |                     | X                  |
| Yellow-faced Honeyeater                   | X          | X                   | X                  |
| Yellow-rumped Thornbill                   | X          |                     |                    |
| Yellow-tailed Black-Cockatoo              | X          | X                   | X                  |
| Yellow-throated Scrubwren                 | X          |                     | X                  |
| Yellow-tufted Honeyeater                  | X          |                     |                    |