



ANNUAL VOLUNTEER REPORT

Powerful Owl Project: Greater Sydney 2023



Introduction

Welcome to your yearly volunteer summary for 2023! As we look back on over 10 years of monitoring of Powerful Owls throughout Greater Sydney (and beyond), we are in awe of all of you. All of this work wouldn't be possible without our amazing volunteers. Thank you so much for all that you do to keep watch over these wonderful birds. Without you we simply couldn't protect them.

You can find a recording of our end of season webinar in our volunteer FAQ folder [here](#). Thank you to Lane Cove Council for hosting.

Thank you to those who have provided us with funding for 2023 – the Belalberi Foundation, Ausgrid (through a IFM Investors Community grant), Lane Cove Council, Shapes in the Sand Swimwear and our other individual donors. Thank you!

Please enjoy this short summary of the 2023 season – and what is in store for 2024!

Thank you Jenny!

We want to acknowledge the huge amount of work that Powerful Owl Project Officer Jenny Zvolanek has done over the last couple of years. Anyone who has interacted with Jenny will know just how thoughtful she is and how much she cares about Greater Sydney's Powerful Owls. She has spent countless hours talking with so many of you, doing site inspections and passing on advice to land managers. It really has been a remarkable effort and she has earned a good break. Thank you Jenny!

And a message from Jenny

Thank you!

To all our wonderful volunteers – THANK YOU! Your passion, enthusiasm and perseverance in monitoring our Powerful Owls and for protecting their habitat is inspirational.

Thank you Holly, Annie and Andrew, my fellow BirdLife Powerful Owl colleagues for your support and perpetual good humour.

Thank you to all the land managers who are working towards better understanding and protecting the owls and the owl habitat in your care.

Thank you to the rescuers, vets and carers, who work tirelessly to get sick and injured owls back out to their homes and families in the bush.

And thank you to the members of the public who engage with the project and send in sightings and share anecdotes.

It has been an absolute pleasure working with you all during my time as Project Officer. I wish you all well in the future.

Jenny

Acknowledgement of Country

BirdLife Australia acknowledges that the Powerful Owl Project in Greater Sydney occurs on the lands of the Gadigal, Darug, Dharawal, Jerrinja, Wandj Wandian, Darginung, Guringai, Birpai, Awabakal, and Gundungurra peoples. We pay our respects to elders past and present and acknowledge the long history of indigenous connection to country.

Cover Photo: Mick Carlsson. Photo Above: Aylssa Spisa

Breeding Season 2023

Thankfully the 2023 season has shaped up to be a 'good' year after a really challenging 2022. Here are the major highlights.

Breeding Success

Over the 12 years, a total of 293 sites have been monitored (see Fig 1), with 177 sites observed in 2023 (Table 1). Population densities in our monitoring areas remain the highest in Sydney's north and south, where gullies of remnant bushland are favoured habitat for breeding and roosting. The Northern Beaches LGA holds the most territories across the board – with 37 that we know of over the past 10 years (and 23 active this year, tying with Ku-ring-gai)!

Notably, breeding attempts were recorded at 92 sites overall, resulting in 78 sites fledging a total of 122 owlets (with more confirmations still to come). This gives us a fledgling rate of 1.33, basically right on our seven-year average of 1.3, but definitely up on 2022's 0.98. Despite some challenges, such as failures after egg laying and even after trilling (a total of ten failures), and a pair in Sutherland failing twice, the breeding success this year has surpassed 2022, with a marked increase in double clutches, closely resembling statistics from 2021 (although with fewer owlets) and other successful earlier years (Fig 2).



Photo by Les Brown

Fledging time has been incredibly variable this season. Our earliest known fledging was on July 26, and our latest to date is September 13, although we suspect some are even later than that (and last year we had fledging well into October). This goes to show that conservation planning for these birds really needs to consider individual sites, and the importance of ongoing monitoring to be sure that we are tailoring our efforts.

Table 1: Breeding statistic summaries for the past 8 years of observations.

MEASURE	2016	2017	2018	2019	2020	2021	2022	2023
Known PO territories	149	181	212	214	237	257	280	293
Potential breeding territories (i.e. where birds seen)	121	105	126	107	128	150	125	138
Pairs breeding	89	82	96	83	109	115	84	92
Total clutches	53	72	85	76	82	100	60	78
Owlets fledged	103	117	137	115	121	164	82	122
Single owlet clutches %	50.9	38.9	38.8	44.7	54.9	36	63	42.3
Double owlet clutches %	49.1	59.7	61.2	52.6	42.7	64	37	57.7

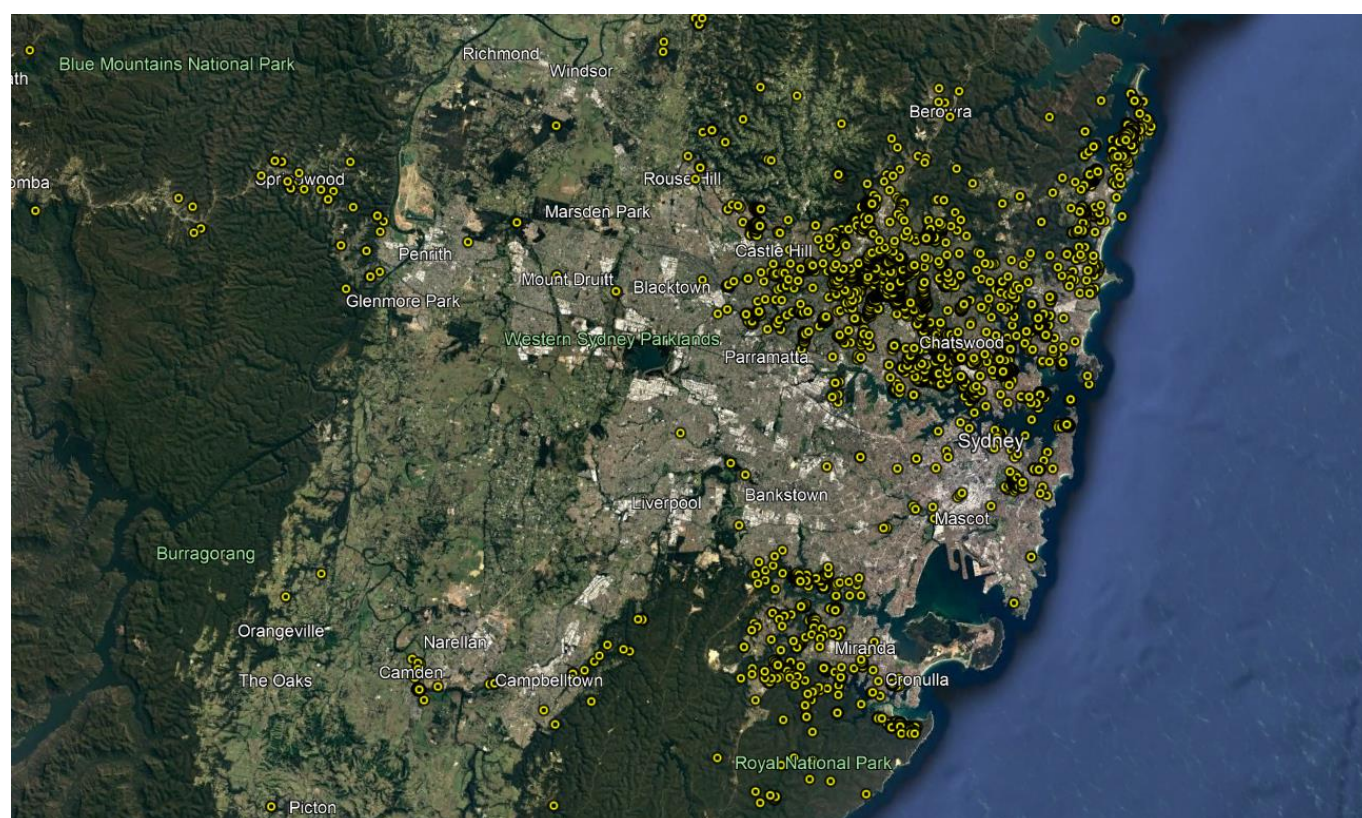


Fig 1: Map showing the locations of all known Powerful Owl territories within the Greater Sydney region over the past decade. Note we also have records of birds in Port Macquarie, Lake Macquarie, Port Stephens, the Central Coast, Illawarra and Shoalhaven.

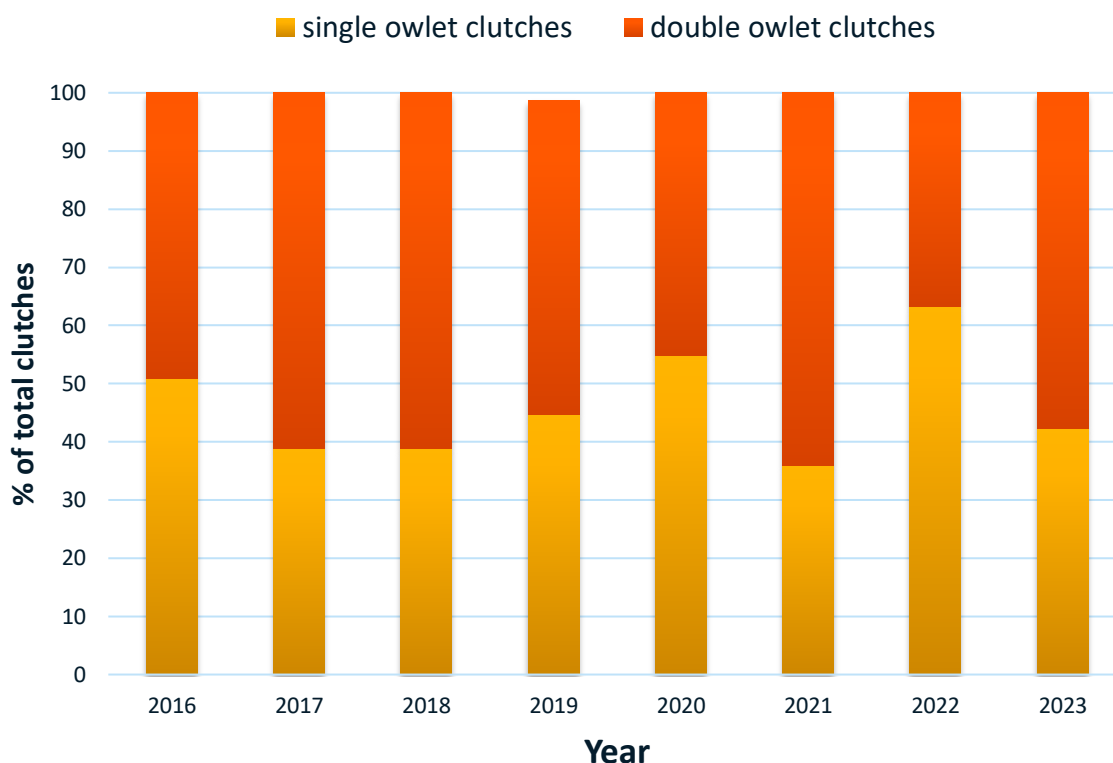


Fig 2: Percentage of clutches where one owlet fledged versus two owlets fledged.

Mortality and Injury

Regrettably, the project also recorded 35 reported deaths, primarily among adults although we did see the deaths of two fledglings as well. Causes varied, with motor vehicle accidents (MVAs) being, once again, the most prevalent at 14, followed by collisions with glass (6), other unknown collisions (3), animal attacks (4), entanglement (1), electrocution (1), and unknown causes (4). There were some good news stories, with four fledglings that were taken into care being able to be released, and likewise five adults were also able to be rehabilitated successfully.

Remember, if you come across any injured or deceased Powerful Owls you can log them with us via a simple form: <https://forms.office.com/r/c5LDLWTdqD>

Special appreciation is extended to Shaun Warden for his invaluable necropsy work, shedding light on the causes of mortality within the population.

Interesting Happenings

Family Mix-up

Once again the packing of territories in the north of Sydney has led to family mix-ups – that makes it now 4 years of chaos! Simon Zhu captured this great photo of 4 owlets (2 from each neighbouring territory) together with an adult back in the beginning of November. Since then, our vollies report (thanks Jenny S), that things appear even more complicated, with up to 3 owlets reported at two neighbouring territories sharing this creekline (with a third that likely has had an owlet move out to one of these territories as well) at different stages over the past month – so some movement back and forth between territories may be happening. In total all 3 nest trees are within about 1.5km of each other (2 within less than 500m). We have previously speculated that owlets whose parents have gone out hunting, hear some interesting activity and trilling nearby and head off for a visit. Well done to the vollies trying to keep tabs on all the owlets moving around this spot!



A total of 4 owlets ended up in this territory in early November. Photo: Simon Zhu

A Botanic Gardens First!

The Royal Botanic Gardens has been a spot where Powerful Owls have been sighted for as long as the Powerful Owl Project has been running. It is one of the more 'famous' locations to spot a Powl, with gardens staff and vols keeping a close eye on the birds. However there has been quite high turnover of birds (including a few deaths of individuals using the gardens), and the Powerful Owls have never bred there. Until now!

This season the pair did successfully fledge two owlets, but it was a very stressful few months. The male was very reactionary, swooping not people, but dogs that were being walked nearby. A massive thank you to the gardens staff that implemented fencing to attempt to minimise the swooping. Amongst all of this we also had the Sydney marathon occurring, with one of the owlets literally fledging the night before the event. Hats off to Jenny, Neil and Steve who kept a close eye on them during the marathon to make sure they were doing ok. It's an important reminder that in urban areas Powerful Owls are subject to really stressful situations and it is the reason that we don't disclose exact nest locations (hard to do with such a public site).

Postcard from the Powerful Owl Project in Sydney's Eastern Suburbs

A huge thank you to Neil Boyd-Clark for pulling together this summary of the goings-on in the eastern suburbs of Sydney! All photos below are Neil's.

This year has been a breakthrough year for the Powerful Owl Project in the eastern suburbs of Sydney. Not only has the area enjoyed the arrival of five young owlets, four of which continue to do very well, but the number of registered Powerful Owl Project volunteers has more than doubled.

Through all of the ups and downs, we have benefited from the wonderful, measured and considered advice, support and friendship of Jenny Zvolanek, our Powerful Owl Project officer, who has been tireless in providing guidance and quite literally showing the way in all things Powerful Owl!



The first owlet peering out of the nest hollow 15 August 2023, would not survive its first flight. (Note the white down feathers of the second owlet (which survived two rescues) visible through a hole in the tree trunk, just below the main entrance!)

We have been monitoring Powerful Owls roosting in the Woollahra Local Government Area since 2021, but it was not until the end of May 2023, when we identified the nest trees for two pairs of Powerful Owls. Both nest trees were Cottonwood Poplars and were very exposed with little surrounding cover. Both were also popular locations for dog owners to let their dogs run off-leash and one was visited by a local fox most evenings. Thankfully the trees were also located on public land, and we were grateful for the co-operation of senior staff at Woollahra Council and Museums of History New South Wales, who immediately supported our efforts to protect our newly discovered nest trees.

We estimate that our females entered their nest hollows close to the end of May and 6 weeks later we heard the first trilling from inside a nest hollow. It would however take exactly 4 more weeks, before we heard any trilling from the other nest hollow. By this time we were able to discern that there were at least two owlets trilling in the first nest hollow, excitement began to build!

Only a few days later, on 15th August we were thrilled to see one of the pair of owlets peering from the top of the nest hollow for the first time. Sadly, this owlet did not survive its

first flight. A subsequent necropsy established that its wings were not developed enough to enable flight.

We were comforted by the fact that there was a second owlet in the hollow which was equally keen to discover the outside world, showing itself at the top of the nest hollow for the first time on the 18th August. Just 6 days later we witnessed the first flight of this courageous youngster. It made at least 3 brief flights that evening, closely escorted by both parents, but the very next night this owlet was discovered at the bottom of a small nearby creek, from which it had to be rescued.

On the evening of Tuesday 5th September, 11 days after its rescue, our owlet was reintroduced to the parents in their regular roost tree. Unbeknown to us, while the Powerful Owl pair had been attending to their young in the nest tree 1.75km away, a pair of Magpies and a pair of Noisy Miners had each established nests of their own, within 30m of the owls' usual roost tree and our re-introduction site. As a result, commencing at dawn on Wednesday, 6th September the re-introduced owlet was subjected to the most vicious attack from close range by the Magpie pair. The owlet was soon bleeding from a wound above the eye and the Magpies did not let up until well after dusk.



Owlet under attack early on the morning of 6 September 2023 after first re-introduction.

The next morning the Magpies succeeded in knocking the owlet to the ground. Despite both owl parents being in close attendance it became necessary to rescue the owlet for a second time.



The unfortunate and bloodied owlet on the morning of 6 September 2023, after first re-introduction.

After another 11 days, a second reintroduction was attempted. This time it looked as though the owlet might get some respite with the help of its parents, the Magpies continued their harassment, but there was a sense that the owlet was handling the harassment with less discomfort, moving into slightly thicker cover and slightly further away from the Magpie nest as each day passed.

However despite this early success, on the morning of Friday 22nd September, the owlet was discovered on the ground near a footpath, below a large and threatening dog. Rain the previous night had soaked the owlet's feathers and it was simply not able to fly. Only after drying out in the warmth of the morning sun, was it able to make its way to the safety of a nearby tree, all the while being watched by a parent sitting less than 5m away.

In stark contrast, a single owlet fledged from our other nest tree and it has enjoyed and continues to enjoy a relatively peaceful and incident free start to its life.



The owlet still under attack by a Magpie on 19 September, the day after the second re-introduction.

Since the harrowing events of August and September the Powerful Owls in the eastern suburbs of Sydney have continued to do very well. No doubt there will be challenges in the days and weeks ahead, but for now we feel that this year has provided a much needed breakthrough and a platform on which the Powerful Owl Project can grow in Sydney's eastern suburbs.



Drenched owllet, grounded after rain, just survived a dog attack on morning of 22 September 2023.



The 1st September 2023, the day after fledging, this owlet has had a relatively blissful start to life.



The twice rescued owllet, together with both parents on 13 October 2023, making great progress.

Lane Cove Nest Box.

After last year’s exciting first instance of Powerful Owls using a nest box in Sydney (and only the second record of them using a constructed timber box at all, the first in Vic in 2007 and then also another Vic pair using a supplementary hollow last year as well), we were all on tender hooks hoping for a repeat of 2022 – and boy did they deliver – this time, with video evidence!

A massive thank you to Narawan Williams for designing and installing the nest box, as well as his installation of the camera to monitor this year’s events. And to Lane Cove Council (particularly Michelle and Rob) for allowing us to access and analyse the footage (and ongoing financial support of the Powerful Owl Project). We worked with Macquarie University students Hayley Forbes, Elise Morley and Julianne (Ybarra) Ruizol to investigate the footage as a part of a research project in their degrees. The students studied videos from November 2022 to August 2023 and reported feeding behaviours, prey species, and nocturnal habits of this pair and their owlets. We are keen to dive in and confirm their findings!

In total, 41 provisioning instances were recorded out of 389 records (10.5%). In all instances the prey was already dead when seen in the footage. All provisioning events occurred at night or twilight (between 1700 h to 0600 h; Figure 3) but there appeared to be a preference for that initial early feeding of the previous night’s prey, and/or the bringing of food after midnight to dawn. The students identified three different prey species identified: Ringtail possums (29 events), Rabbit (1 event) and Grey-headed Flying Fox (1 event). There were a further 10 provisioning events identified, but the prey species could not be determined, as it was either obstructed from view or too dismembered to identify confidently.

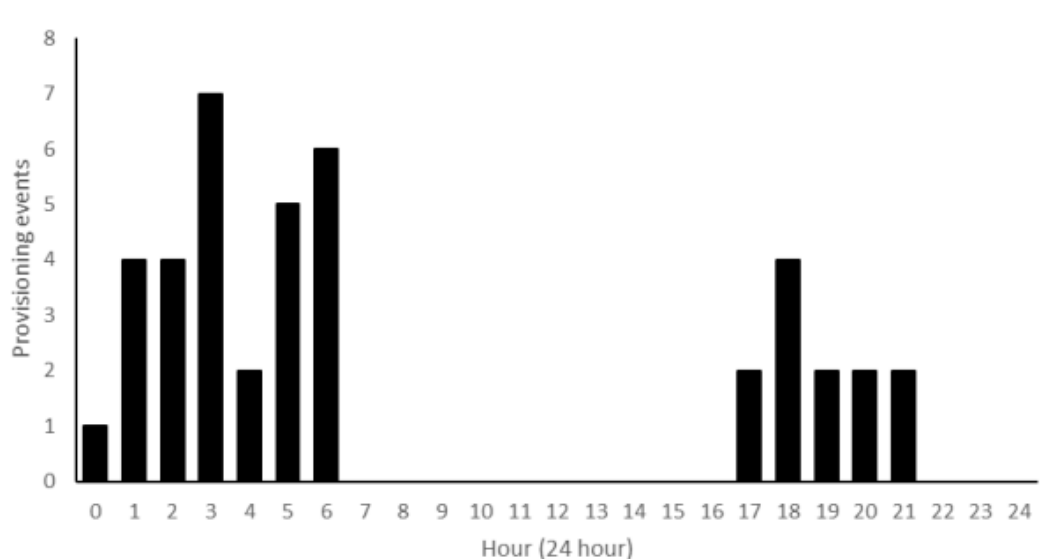


Fig 3: Bar graph counting number of provisioning records observed at each hour of the day.



The videos were also able to capture vocalisations by the adults and owlets. Trilling was first heard in July, and there was also, unsurprisingly, more food being brought into view at the box from that point (Fig 4).

Screenshot of two Powerful Owls sharing a Ringtail Possum tail - 28 May 2023 (Video 230528.1)

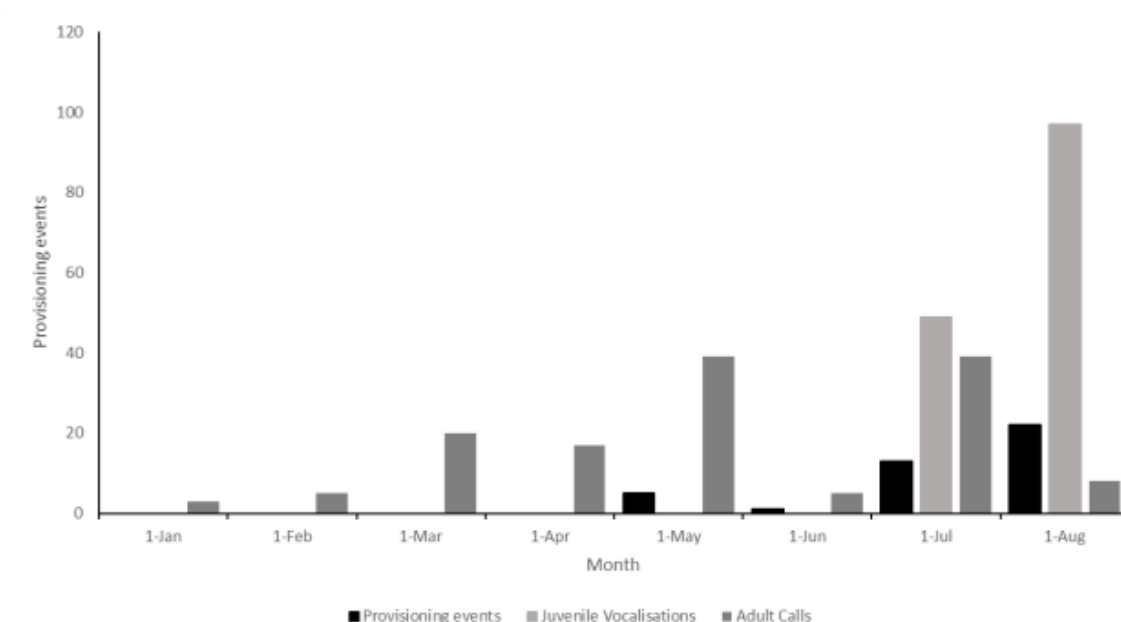


Fig 4: Bar chart of Powerful Owl provisioning events and call incidence from January to August 2023.

Of the videos reviewed, only two occurrences of aggression were identified. In the first, recorded in May, a bird flies by a focal owl that is perched on a branch near the nest box and startles it. This caused the focal owl to make a screeching noise and flap its wings in a frenzy. The swooping bird was likely a Laughing Kookaburra, based on vocalisations in the video; however, the footage is unclear and this remains uncertain.

The second instance took place on July 7 at 17:02. A third owl who is not part of the family unit using the nest box flies in and tries to steal a prey item from one of the focal owls. The focal owl moves the prey from its talons to its beak then aggressively moves its head and flaps its wings towards the third owl.



Just this week we have also seen one of the owlets return to the outside of the box too! Not something we would have expected. See left...

Remember this work on nest boxes is still in its early days and very experimental. It is fantastic that these Lane Cove birds are using this box successfully – but all the other pieces need to be in place in a territory – good canopy cover, abundant prey, and a pair of owls nearby without a natural hollow. Nest boxes also are not ‘the’ solution to increase the

numbers of Powerful Owls (or other hollow nesting birds), instead, they are a potential puzzle piece. They can never be as useful as a big old hollow-bearing tree and the conservation of those needs to be a priority. Instead nest boxes are a stop gap measure, a way to put back a key feature (if we get the characteristics right) but not a justification for removing natural hollows.

What About 2024?

We are looking forward to another breeding season in 2024 and have a lot of things planned. Here are just a few highlights:

- We are spending the summer compiling a nest tree database – looking at the features of around 50 of our known nest trees and the surrounding landscape so we can give some more insight to land managers of key features to look for.
- Putting all our training materials online – we will have a new series of modules for everyone to use to teach volunteers how to monitor Powerful Owls. This will also house all the various pieces of paperwork we all need to complete. Should make things easier for people to come on board and get ready to head out into the field.
- Trialling some acoustic monitoring in key locations with volunteers to fill in some knowledge gaps.
- Installing a camera at a natural hollow with volunteers Georgina Cameron and Michael Bianchino and Sydney Wildlife Rescue to keep a close eye on the action. Will be really interesting to compare the footage to what we are seeing at the Lane Cove nest box.
- Awaiting the outcome of some more funding applications as always...

Thank you once again to all of you for the countless hours you put into monitoring Powerful Owls over the year. It allows us to keep land managers informed of issues with the birds on their patch and put measures in place to better protect them. This year alone, Jenny has responded requests for advice about conservation action from land managers and the general public (many of these required site visits and/or written reports) for more than 60 sites, on top of general identification and information enquiries, 8 talks and or walks for general education and a handful of media interviews. It's enough to keep anyone extraordinarily busy – and just shows how important this project, and the baseline monitoring is. Jenny has been an absolutely superstar and will be missed in her role.

The powerfulowl@birdlife.org.au email address is still being monitored, so please keep in touch and reach out for anything urgent to it. One of the Urban Bird team will get back to you as soon as we can. Please also continue to put your sightings into Birddata. That is our point of truth for keeping track of Powerful Owls and it is what we use to report out to land managers as well.

Have a wonderful end to 2023, enjoy seeing some more Powerful Owls and we look forward to continuing to work with you all in 2024.



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Thank you

Photo: Meredith Aveling

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