
WILDLIFE BOX - REPORT

City of Unley - Monitoring and Servicing for 2019



Two Galah chicks reared in a Medium Parrot Box at Goodwood Oval. All photos contained within this report were taken during 2019, associated with surveying or maintenance activities, unless otherwise noted.

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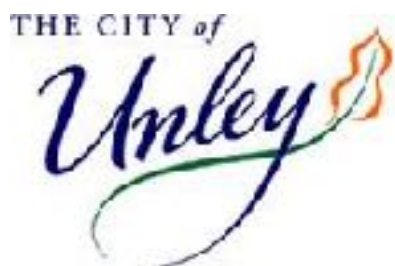


TABLE OF CONTENTS

WILDLIFE BOX - REPORT	1
TABLE OF CONTENTS	2
SUMMARY	3
HISTORICAL DEVELOPMENTS	4
LOCATION & IDENTIFICATION	6
MONITORING & MAINTENANCE	7
ARTIFICIAL HOLLOW USAGE	8
<i>Fauna recorded during survey</i>	9
<i>Wildlife Box usage by Location</i>	10
<i>Other Fauna</i>	12
<i>Maintenance</i>	13
CONCLUSIONS	14
REFERENCES	16

Three Ringtail Possums in a Small Parrot Box in Ridge Park.



SUMMARY

The City of Unley's wildlife box programme has been operating since 2009. The wildlife boxes were designed, together with the council's indigenous planting programme, to support biodiversity across the council area. The aim of the programme is to enhance habitat for, and management of hollow dependent urban fauna, within the city.

This report details the wildlife and maintenance activities that took place during 2019. The boxes were serviced during March-May 2019, then surveyed for breeding activity in Late September-October 2019.

One hundred and seventy-six boxes were surveyed. The wildlife boxes are located within council parks, in street trees, on school grounds and private homes across the city (three boxes were installed on private property, these are excluded from servicing or surveys).

The Wildlife Box Programme has gone from strength to strength, with 2019 being another strong year. Occupancy within wildlife boxes was 53% 'In Use', over the servicing and survey periods. This represents an increase over recent years, and total box of over 90% when 'In Use' over the year and 'Used in Last 12 Months' are both considered (Table 2; page 9). This is the highest usage on record.

The numbers of Rainbow lorikeets (Figure 1), Eastern Rosellas, Galahs and Adelaide Rosellas, using wildlife boxes over 2019, were all strong. Total numbers of eggs and chicks were at record levels (111 and 70, respectively), for the year. Possum numbers were consistent with previous years for Brushtails, though Ringtails were slightly down.

The program has expanded over the past 12 months, with an additional 12 wildlife boxes being added to Goodwood Oval, two of which were donated by a resident.

The Wildlife Box Program has supported greater numbers of native species and also allowed Unley residents to observe, appreciate and even learn a little more about the cities native wildlife. The programme continues to assist The City of Unley in meeting its biodiversity objectives.



Figure 1: Two Rainbow Lorikeet chicks, in a Medium Parrot Box, Everard Park.

HISTORICAL DEVELOPMENTS



Figure 2: Montage of student painted WBs from DPTI installation phase (2013).

Unley Council (UCC) engaged *fauNature*[®] to install, then subsequently service and monitor artificial hollows/wildlife boxes (WBs) across the city. The installations were staged in phases and the wildlife activity associated with the WBs is reported on annually.

The first installation took place in May 2009. Initially 28 boxes were placed in Ridge and Heywood Parks, with a single box on Windsor St, Parkside (Figure 3). These WBs were monitored and serviced for the next two years, with progress reports submitted in 2010¹ and 2011².

The Wildlife Box Monitoring and Evaluation Reports^{1,2} were presented to the elected members, who endorsed an expansion of the programme. An additional 24 WBs were installed, across the city during 2012, and a report detailing monitoring and maintenance activities for the year was submitted³.



Figure 3: Early installation of a Small Parrot Box, on Windsor St.

During 2013 the Department for Planning, Transport and Infrastructure (DPTI) approached *fauNature*[®] to deliver a number of Wildlife Box Building Workshops. These workshops and associated activities, undertaken by Unley primary school students, produced an additional 42 WBs, which were installed in late 2013 (Figure 2). Once installed, the majority of the boxes became the property of Unley Council; further details can be found in the Wildlife Box Monitoring and Evaluation Report⁴ (2013) and DPTI - Community Wildlife Project report.⁵

In late 2013 *fauNature*® added the management of ten Brushtail Boxes in Fullarton Park, installed some years previously by a pest controller, to the ongoing WBs program; further details can be found in the Wildlife Box Monitoring and Evaluation Report⁶ (2014).



Figure 4: Kookaburra and Pardalote Boxes at Heywood Park.

Habitat enhancement in Heywood Park, together with the need to protect remnant grey box (*Eucalyptus macrocarpa*) saw the installation of an additional 17 WBs installed in August 2015. These boxes included the traditional brushtail, medium parrot and bat boxes, but also large parrot, kookaburra and pardalote boxes (Figure 4), installed in the interests of increasing biodiversity. The total number of WBs associated with the Unley Wildlife Box Program then stood 121. These were included in the 2015 and 2016 Monitoring and Evaluation Reports^{7, 8}.

Opportunities for expanding the WB program were identified during 2016/17. Using biodiversity off-set stock, from the Ferguson Ave tree replacement project, 25 WBS were installed, primarily off Ferguson Ave (5; Myrtle Bank) and in Orphanage Park (11; Goodwood), with the remainder added to the smaller parks across the city. Resident requests also prompted the installation of eight boxes in the park off Fern Ave (Fullarton) and along Windsor St South. The 2017 Monitoring and Evaluation Report (2017)⁹ recorded a total of 157 WBs in-service across the city.

The City of Unley Biodiversity Officer (Kat Ryan) supported a wildlife box building project undertaken at Goodwood Primary School during Terms 3 & 4, of 2017. The majority of these WBs were installed within the school grounds (8), with the rest installed in Orphanage Park (2), in June 2018. A total of 164 WBs were in-service across the City of Unley in 2018¹⁰.

UCC were approached by a resident in Myrtle Bank, and were gifted two Small Parrot Boxes. These WBs were installed in Ridge Park (June 2019), at the request of Joel Ashforth. A second resident who lives near Goodwood Oval, offered to pay for a couple of Large Parrot Boxes, and providing a couple of memorial plaques to be attached. In conjunction with this offer, Kate Ryan had Goodwood Primary School produce another 10 WBs, and paint all 12 for installation. Construction took place in May 2019, with installation in August/October 2019, bringing the number of boxes under management to 178.

LOCATION & IDENTIFICATION

One-hundred and seventy-eight WBs are currently maintained across the UCC and it is essential to keep track of these assets. For each WB, the following information has been recorded: location (park/road), box type, box orientation, tree type, GPS coordinates and a unique identifying number (Appendix A).

During the 2017 survey period replacement of the identification numbers commenced using a formally designed numbering system (Figure 5). This process was completed during 2018 and will be included for future installations.

GPS locations are recorded for each box (e.g. -34.96059S : 138.60158E) to ensure council staff or contractors can locate the boxes, as necessary.



Figure 5: Identification number (025) on a Bat Box, in Heywood Park.



Most of the WBs are painted a pale green (Figure 5). By contrast, the boxes provided by DPTI and Unley Council funding, constructed with the assistance of local Goodwood and Black Forest Primary School students have been individually decorated, so each is unique in its own way, as can be seen from the collection of images displayed (Figures 2 & 6).

Figure 6: Identification number, on a painted Medium Parrot Box, at Goodwood Primary School.

MONITORING & MAINTENANCE

Specific wildlife observations were made for each of the WBs. Additionally, general wildlife observations were made for the area where the WBs were located, during servicing and monitoring. Species present were noted, particularly those taking an interest in or utilising these WB resources.

The servicing and monitoring processes involve the WBs being inspected, initially from the ground, then at the height of the WB externally and finally internally (Figure 7). The WBs are assessed for evidence of use by wildlife, as well as overall condition. Details of the findings are recorded.



Figure 7: Rainbow Lorikeet chicks in a Small Parrot Box; Soutar Park.

Servicing/maintenance for WBs is recommended once per year, to ensure WBs offers:

- 1) A safe resource for both people and animals using the area/WBs;
- 2) Minimise potential impact on the tree;
- 3) To maximise the useful life of the WB.

February to May is an ideal time to service the WBs, as by this time most birds will have completed their nesting. Species like Brushtail Possums or micro-bats may be present year round, so while servicing can still be undertaken, it might only be partially completed. When there is fauna occupying a WB, additional precautions are taken.

During the servicing, besides recording wildlife activity, the WBs are cleaned out, and new nesting material is added. The securing mechanisms for the WBs are also adjusted, to allow for tree growth and maximise safety.

The monitoring surveys take place during spring (Sept-Nov), so assessment is made during the period of highest nesting activity.

Photographs are taken during both monitoring and maintenance activities. These highlight the various signs of wildlife utilising the WBs (e.g. adults, chicks, eggs, fur, feathers, chewing, staining, etc) and the condition of the boxes. Some of these photos have been used within the report itself, with a selection of additional images displayed in Appendix B.

ARTIFICIAL HOLLOW USAGE

The WBs were serviced in April-May and then monitored in September-October 2019. One hundred and seventy-six (176) WBs were serviced and/or monitored in 2019, plus two WBs were installed during the spring survey. The WBs are distributed across seventeen locations - throughout the city (Table 1; Appendix A). Of these, twelve WBs were installed at Goodwood Oval during the the year; with 10 in August and two in October. Two additional privately installed boxes were observed in Forest Avenue Reserve. Six damaged WBs were replaced in 2019.

Table 1: Details the number of artificial hollows installed and monitored across the City of Unley during 2019.

Locations	Number
Ridge Park, Myrtle Bank	22
Heywood Park, Unley Park	27
McLeay Park, Parkside	3
Henry Codd Reserve, Parkside	2
Windsor St, Parkside (North & South)	15
Forestville Reserve, Forestville	16
Jellicoe Ave, Kings Park	5
Hillsley Ave, Everard Park	3
Soutar Park, Goodwood	4
Goodwood PS, Goodwood	12
Black Forest School, Black Forest	9
Devon St & Railway Tce, Millswood	4
Cromer Pde, Millswood	14
Goodwood Oval, Millswood	15
Fullarton Park Centre, Fullarton	10
Ferguson Ave, Myrtle Bank	5
Orphanage Park, Millswood	12
Private Boxes, Forest Ave Res., Black Forest	2

The WBs collectively included:

- 62 Brushtail Possum Boxes (BPB)
- 52 Medium Parrot Boxes (MPB)
- 42 Small Parrot Boxes (SPB)
- 4 Large Parrot Box (LPB)
- 2 Kookaburra Boxes (KbB)
- 3 Pardalote Boxes (PdB)
- 13 Bat boxes (BtB)
- Plus, 2 Non-fauNature WBs.



Figure 8: Two Rainbow Lorikeet chicks in a Small Parrot Box, Henry Codd Park.

Fauna recorded during survey

Utilisation of the WBs by native fauna was again high in 2019. The wildlife actually recorded, numerically and as a percentage, using the WBs was slightly higher than seen over the last few years (Table 2). Various fauna species used 93 WBs (53%), on at least one of the two servicing/monitoring days. Eighty-one WBs were “in-use” during Spring, 33 in Autumn and 33 “in-use” during both observation periods. Four

Table 2: UCC Year-on-Year Comparison 2016-18

Year	No. Wildlife Boxes “Available”	‘In Use’ ¹	Used in Previous 12 Months ²	Empty/ Unused ²
2017 No.	144	73	45	-
2017 %		44.8%	27.6%	-
2018 No.	163	72	74	17
2018 %		44.2%	45.4%	10.4%
2019 No.	175	93	67	15
2019 %		53.1%	38.3%	8.6%
		1: Full year	2: Exc. In Use & Empty	

different bird and two possum species were recorded. The maximum number of wildlife species observed using the WBs over the two periods included:

- Possums (individuals): Six Common Brushtail (*Trichosurus vulpecula*) in spring and 13 Ringtail (*Pseudocheirus peregrinus*) also in spring, represent good usage across the year.
- Birds: the WBs were inhabited by 44 pairs of Rainbow Lorikeets (*Trichoglossus haematodus*; Figure 8), ten Eastern Rosellas (*Platycercus*

eximius), eight Galahs (*Eolophus roseicapilla*), seven Adelaide Rosellas (*Platycercus elegans*), and three nests of unidentified Rosellas. Collectively over 181 chick and eggs were observed specifically associated with the WBs, again a new record, eclipsing 2018.

- Bats: suspected bat droppings (Figure 9) were recorded in two Bat box (#25 & 27), in Heywood Park. Historically Chocolate Wattle Bats (*Chalinolobus morio*) have been recorded at this Park. The species could not be determined from the droppings.



Figure 9: Bat droppings in a Bat Box (#27), at Heywood Park.

An additional 66 (38%) WBs displayed evidence of activity in Spring and 84 (54%) in Autumn, ranging from remains of eggs, chewing and scratching, disturbed bedding material, faecal matter, dead chicks, a dead possum, insect castings, fur and feather (Figure 10). One contained bees (0.6%) and six damaged WBs (3.4%) were replaced during 2018.



Figure 10: Medium Parrot Box well used by Rainbow Lorikeets, in Forestville Reserve.

Assessment was made on 175 WBs, available during the peak period of the year, in Spring. Boxes “In Use” is up compared to recent years (2017 & 2018), while boxes “Used in the Last 12 Months” is down on previous years. However, when the “In Use” and “Used in the Last 12 Months” data are combined, the number of WBs used in both numerical and percentage terms is at the highest ever level (91.4%). Additionally,

the overall numbers of parrot’s chicks and eggs observed, were the highest on record (111 & 70)!

Wildlife Box usage by Location

Considering the larger parks containing between nine and 27 WBs, occupation rates including ‘In Use’ and “Used in last 12 Months” varied between 76-100%, except for Goodwood Oval, which contained 10 recently installed WBs. Five of the eight larger parks recorded usage of 90% or more.



Figure 11: Three Galah chicks in a Medium Parrot Box, at Black Forest Primary School.

Black Forest Primary School and Forest Avenue Reserve contains nine WBs, of which seven (78%) supported two pair of Galahs (Figure 11), two pair of Rainbow Lorikeets, two pair of Eastern Rosellas and a pair of Adelaide Rosellas. An additional two WBs (22%) were “Used in the Last 12 Months”, giving 100% usage.

Sixteen WBs are distributed along Windsor St (North & South), of these nine (56%) were in use during spring and seven used in the previous 12 months. Again demonstrating 100% usage across the year. Species recorded included Rainbow Lorikeets, Eastern Rosellas, Adelaide Rosellas (Figure 12) and one unidentified Rosella nest.

Forestville contains 16 WBs, of these eleven (69%) were ‘In Use’ and four (25%) had been ‘Used in the Last 12 Months’, with 94% having been used during the spring recording period. Seven pair of Rainbow Lorikeets, two pair of Eastern Rosellas, a pair of Galahs and a pair of Adelaide Rosellas recorded.

Twelve WBs installed in Orphanage Park (Goodwood), of these four were ‘In Use’ during the spring survey and eight had been ‘Used in the last 12 months’, so all boxes had been used during the recording period. The four WBs ‘In Use’ contained two pair of Rainbow Lorikeets, one pair of Eastern Rosella and a pair of unidentified rosellas. Evidence of Ringtail Possums use was also recorded.



Figure 12: Five Adelaide Rosella chicks in a Small Parrot Box, on Windsor St.

Fourteen WBs are installed along Cromer Pde, of these nine (64%) were ‘In Use’ when surveyed four contained nesting Rainbow lorikeets, two Adelaide Rosellas, two Eastern Rosellas and one unidentified rosellas. Additionally, four WBs had been ‘Used in the last 12 Months’ including Rainbow Lorikeets and unidentified parrots.

Ridge Park contains 21 WBs, high Ringtail Possum occupancy, was again observed during 2019. Ten Ringtail (Figure 13) and a Brushtail Possum were recorded across the spring observation period. Two pair of Rainbow Lorikeets and a pair of Galahs were recorded as nesting in 2019. Thirteen Marbled Geckoes were observed in one



Figure 13: Three Ringtail Possums in a Medium Parrot Box, Ridge Park.

of the five Bat Boxes (Figure 14) and at least one was observed in each box.

Only four WBs were ‘In Use’ at Heywood Park during the spring survey period. Two Brushtail Possums were recorded in two WBs, while fur, chewing or faeces were recorded in nine others. Two WBs, were present, containing Adelaide Rosellas and Rainbow Lorikeets, with feathers and/or scratching recorded in five additional WBs. Bats droppings were recorded in two WBs this year (Figure 9). Three Marble Gecko (*Christinus marmoratus*) were also seen.

The WBs in the smaller locations across the city consist of a mix of Parrot and Brushtail Boxes. Evidence of parrot nesting or roosting activity was recorded in the majority of WBs whether they were located in schools, streets or parks during the Spring period. A Ringtail and a Brushtail Possum were also recorded at Fullarton Park and evidence of possum activity was seen at Forestville.

Seven failed breeding events were observed in Spring 2019, the majority involved Rainbow Lorikeets, but also Galahs and Rosellas. Such failures are relatively common in studies of wild populations¹¹. There was also a dead Brushtail Possum, recorded in a WB in Heywood Park. Such failures occur in natural and artificial hollows.

Other Fauna

Marbled Gecko were found in or behind numerous boxes. They typically live under bark or in natural hollows and takes advantage of WBs, when present, particularly if the boxes are unoccupied (Figure 14).



Figure 14: Marbled Gecko in a Bat Box, at Ridge Park.

Spiders were recorded throughout the survey and are common in WBs, particularly Huntsmans (Sparassidae; Figure 15) using bat or pardalote boxes; where bird and possum movement is limited.

Bees were recorded in one WBs, at Goodwood Oval. This hive needs to be removed and the WB replaced (*as do and additional 15 bee hives recorded during the maintenance work, which has just been completed for autumn 2020*).

Thirteen of 175 WB (7.4%) were not used during 2019. These included ten Bat Boxes (77%), two Pardalote Boxes (15%) and a single Brushtail Box (8%). The Brushtail Box was installed in August 2019, so local fauna may not as yet, have been comfortable using it. Pardalote Boxes were introduced about five years ago in an attempt to broaden species diversity, unfortunately to date these boxes have not been used by the target species. Bats are occasional visitors to the boxes. They have only ever been recorded in a single box in any year, but bat droppings have been found most years in one or two boxes, as happened again this year. Bat Boxes represent the largest group of WB, to be vacant annually.



Figure 15: Huntsman spider in a Bat Box, Heywood Park.

Maintenance

Various boxes have been damaged by wildlife each year. The three key areas necessitating replacement include: 1) compromised roof allowing water ingress, 2) compromised door (hinge or securing pin) and 3) compromised base. fauNature has recently developed replacement bases, for where a boxes in generally good condition, but where the base/



Figure 16: Damaged Possum Box, Windsor St South, replaced with a sacrificial floor.

floor has been chewed to a point where all the bedding material can fall out. A replacement floor, can now be installed on top of the original (Figure 16), extending the life of the WB. With this development, only WB (#008) was compromised to the point where, the box needs to be replaced in 2020 year.

CONCLUSIONS

The approach UC is taking continues to have a positive impact on the local hollow dependant wildlife. These WBs supply much-needed habitat for a range of wildlife species. This year has again been very successful, with over 90% of the available WBs being utilised over the previous 12 months (Table 2; Figures 17, 18 & 19). The WBs enhance local biodiversity and expose UCC residents to some of the wildlife that are able to co-exist with us, across the City.

The numbers of WBs that are now installed across Unley is 181. This includes includes 162 WBs in council parks, reserves or verges, 16 in schools (Goodwood PS and Black Forest PS) and three on private property. Plus an additional two private WBs in Forest Ave Reserve.

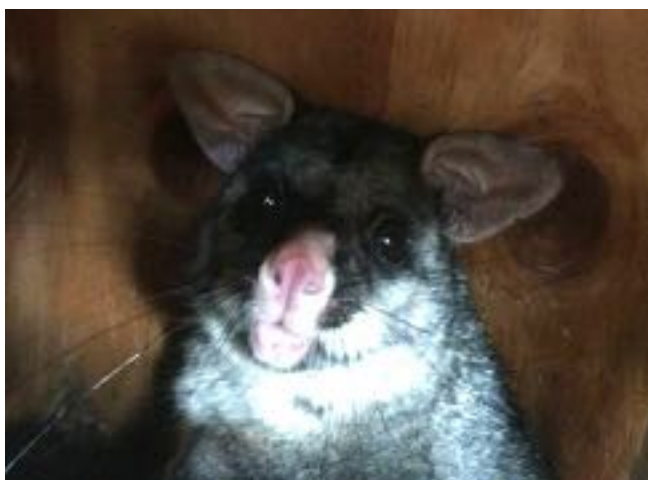


Figure 17: A Brushtail Possum in a Possum Box, at Jellicoe Reserve.

The WBs are serviced (& monitored) between March and May annually (when usage is at its lowest) and a second monitoring

occurs during the September-November breeding peak, each year. Annual servicing will continue to maximise the safety and functionality of the WBs, minimise the impact to host trees and enable WB damage or occupation by feral bees to be identified, and these resources to be maintain. This approach is working well and producing the very successful results.



Figure 18: Two Rainbow Lorikeet Chicks in a Small Parrot Box, Windsor St North.

It is recommended reporting continues annually.

Feral bees will need to be removed from one box identified in the 2019 observations (plus 15 just observed in the 2020 servicing). Feral bees are the second greatest threat to hollow dependant fauna, after habitat clearance. It is recommended

that boxes with active hives, simply be removed and replaced, as this approach is the most cost effective option.

Only one WB has deteriorated to the point where it requires replacement in 2020. This is a Brushtail Box (#008) in Ridge Park. It can be replaced at the same time as the bees are removed.

Since 2017 *fauNature* has implemented an electronic locating and recording system. The boxes are also 'located' on Google Maps, this information can be supplied in either hand copy or electronic form, as required (see Appendix C).



During 2019 twelve additional WBs were installed at Goodwood Oval, at the request of Kat Ryan, two of these were *Figure 19: Seven Eastern Rosella eggs in a memorial gifts from a local resident. newly installed Brushtail Box, Goodwood* Kat also discussed the possibility of expanding installations through the central section of the city, in conjunction with the local schools in the area. This has not progressed to date, possibly due the the current impact of COVID-19.

The ongoing assessment continues to be very positive, which reinforces the strategy for enhancing wildlife by Unley Council. *fauNature*® will investigate additional areas across the city where the installation of WBs is likely to increase the presence of native species, this will be appreciated by wildlife and local residents alike.

fauNature® would welcome any questions regarding this report.

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