



FLORA AND FAUNA SURVEYS 2018

SMALL & MIXED USE BUSHLAND RESERVES

PREPARED FOR THE CITY OF RYDE

DECEMBER 2018



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1 SUMMARY

The City of Ryde commissioned surveys of all bushland reserves in 2006-2008. These surveys have been replicated in 2016-18 with this project replicating the survey undertaken in 2018 by Biosphere Pty Ltd. These surveys focus on 42 smaller bushland reserves and mixed use reserves containing remnant native vegetation within the LGA.

These reserves have been arranged into four groups based on location and/or catchment:

Shrimptons Creek catchment;

Norther Reserves (Lane Cove River Catchment)

Parramatta River Foreshore; and

Western Reserves.

Data was collected using a methodology devised when baseline data was collected in 2008 that is repeatable and suitable for quantitative analysis.

Summary results include:

Vertebrate Fauna

113 vertebrate species were detected during the survey including:

- 6 threatened species
- 3 species listed migratory/marine convention
- 11 exotic species

74 species of bird, 25 mammals, 4 amphibians, 8 reptiles and 2 fish were recorded.

Flora

12 vegetation communities were reported and verified in reserves during the survey, and included:

- Critically Endangered Ecological Communities
- Endangered Ecological Communities
- 2 threatened species
- 403 native flora species
- 301 exotic flora species
- 16 priority control weeds listed for the Greater Sydney region

Considerable turnover in species was noted within many of the reserves surveyed, and can be mainly attributed to bush regeneration and revegetation planting, and increasing pressure on vegetation through changes in land use in the surrounding areas and catchments.

2 THE STUDY SITES OVERVIEW

The study included 42 reserves, some with connectivity outside the LGA, as illustrated in *Figure 1* overleaf consisting of a subset of named reserves as listed in *Table 1* below:

Table 1 Corridor overview

Flora and Fauna Study Sites - 2018						
Area	Park Name	Street Address	Suburb	Area (m2)	Previous survey	Quadrats
Parramatta River Reserves	BANJO PATERSON RESERVE	38 Punt Road	Gladesville	20503	2008	
	BENNELONG PARK	22 Waterview Street	Putney	175	2008	
	BILL MITCHELL PARK	82 Morrison Road	Tennyson Point	4335		
	BREMNER PARK	129 Morrison Road	Gladesville	2631	2008	
	GLADES BAY PARK	45 Glades Avenue	Gladesville	27141	2008	1
	KISSING POINT PARK	24 Waterview Street	Putney	7355	2008	
	KOONADAN RESERVE	163 Wharf Road	West Ryde	358		
	LOOKING GLASS BAY PARK	14 Ashburn Place	Gladesville	18486	2008	
	MALLEE RESERVE	8 Tyagarah Street	Gladesville	5363	2008	
	MAZE PARK	100 - 108 Brush Road	West Ryde	8580		
	MEADOWBANK PARK	Constitution Road	Meadowbank	7280		
	MELROSE PARK	84-86 Lancaster Avenue	Melrose Park	2055		
	MEMORIAL PARK	Meadow Crescent	Meadowbank	8377	2007	
	MORRISON BAY PARK	Frances Road	Putney	3843	2008	
	PUTNEY PARK	Pellisier Road	Putney	13566	2008	
	SETTLERS PARK	10 Waterview Street	Putney	2923	2008	
TYAGARAH PARK	5 Tyagarah Street	Gladesville	4834	2008		
Shrimptons Creek Reserves	BOOTH RESERVE	168 Epping Road	Marsfield	3229	2008	
	ELS HALL PARK	Kent Road	Marsfield	62217	2008	1
	FLINDERS PARK	2a Busaco Road	Marsfield	5118	2008	
	GREENWOOD PARK	37 - 39 Kent Road	North Ryde	25131	2008	

Flora and Fauna Study Sites - 2018						
Area	Park Name	Street Address	Suburb	Area (m2)	Previous survey	Quadrats
	QUANDONG RESERVE	6 Lachlan Ave	Macquarie Park	2604	2008	
	SANTA ROSA PARK	64 Bridge Road	Ryde	12260		
	TINDARRA RESERVE	70 Kent Road	North Ryde	2669	2008	
	WILGA RESERVE	2a Cottonwood Crescent	Macquarie Park	6431	2008	
Northern Reserves	BOOBAJOO RESERVE	Pittwater Road	East Ryde	79698	2008	
	BUNDARA RESERVE	238 Epping Road	North Ryde	3913	2008	
	CHRISTIE PARK	16 - 26 Christie Road	Macquarie Park	7840		
	FIELDER PARK	2a Busaco Road	Marsfield	8602		
	KOBADA PARK	River Avenue	Chatswood West	28463	2008	1
	MARSFIELD PARK	202 Vimiera Road	Marsfield	28392	2008	1
	MYALL RESERVE	372 Pittwater Road	Ryde	1564	2008	
	NORTH RYDE PARK	26 Cressy Road	North Ryde	4027		
	STEWART PARK	186 Vimeria Road	Marsfield	8675	2008	
	TASMAN PARK	11 Tasman Place	Macquarie Park	10895	2008	1
	TRAFALGAR PARK	6 Trafalgar Place	Marsfield	3959	2008	
	WATERLOO PARK	191a Waterloo Road	Marsfield	13112	2008	
	YURRAH RESERVE	27a Fontenoy Road	Macquarie Park	2855	2008	
Western Reserves	DENISTONE PARK	62 Terry Road	Denistone East	57027	2008	1
	LYNN PARK	92 Tarrants Avenue	Denistone West	8320	2008	
	MIRIAM PARK	1A Miriam Road	West Ryde	6256	2008	
	SYMON'S RESERVE	26a Gordon Crescent	Eastwood	4949	2008	

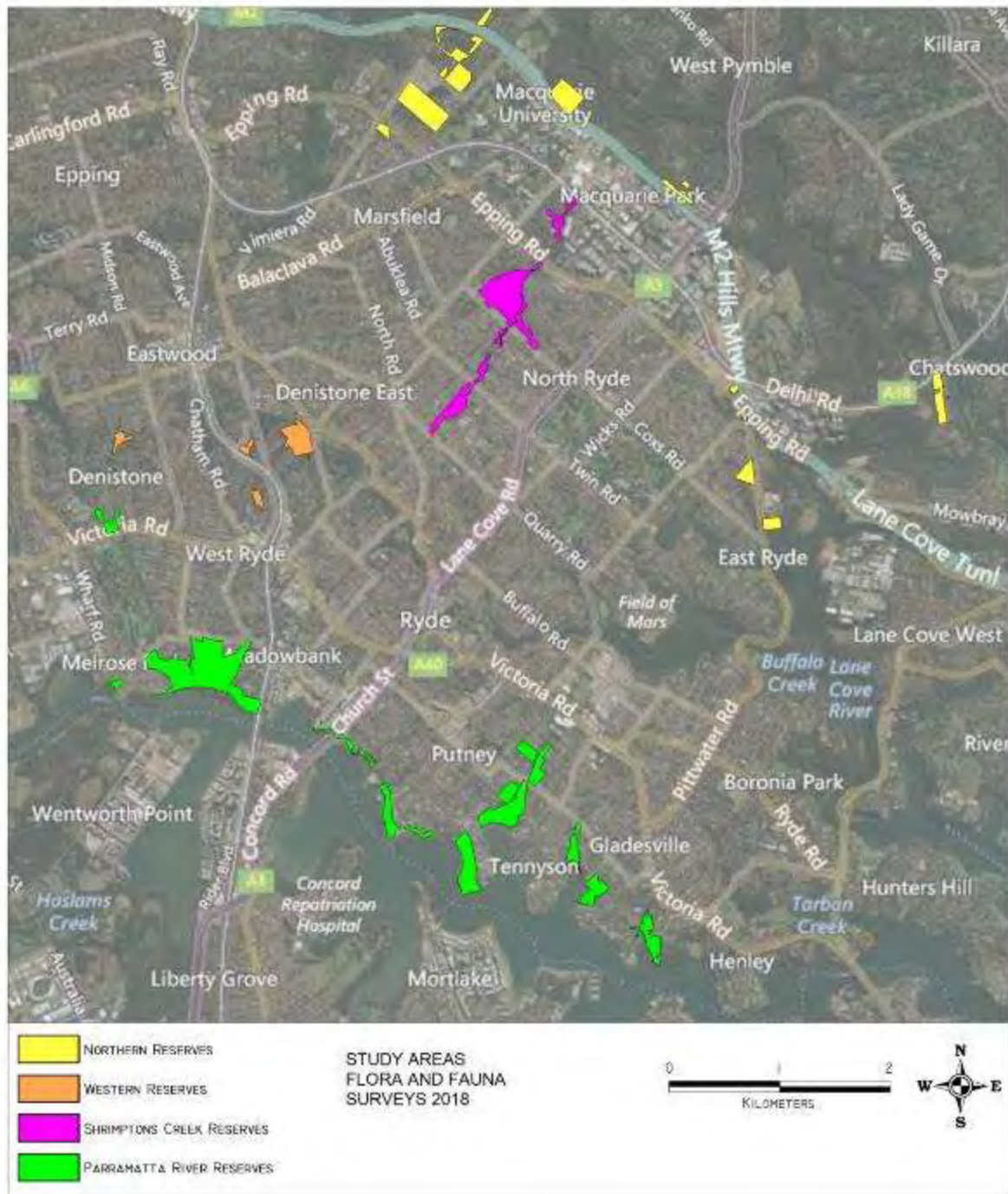


Figure 1 Study site locations –overview

3 FAUNA METHODOLOGY

The following techniques were used in conjunction with ad hoc observations collected while traversing the study site. See section 3.13 for key sampling dates.

3.1 Camera trapping

Remote cameras were deployed in each reserve that had a quadrat and several other reserves and parks that had the potential to have native terrestrial mammals present or were large enough to have areas where cameras could be deployed without being tampered with or potentially cause any privacy issues. Cameras were deployed throughout the sampling period (autumn and spring 2018). The number of nights of sampling reflects the size and habitat complexity within the reserve groupings and extra effort to detect particular species in certain locations.

Table 2 Camera trapping survey effort

RESERVE GROUPING	TARGET EFFORT PER SEASON	ACTUAL EFFORT AUTUMN	ACTUAL EFFORT SPRING
NORTHERN	40	145	200
WESTERN	40	40	52
SHRIMPTONS	40	49	49
PARRAMATTA RIVER	40	32 ¹	50

Cameras were not deployed on tracks due to the potential for tampering but were set off track in suitable locations such as along animal pads or, when targeting arboreal mammals, in preferred feed trees such as *Corymbia gummifera*. Baiting stations were set up at most camera sites to attract animals into the field of view of the camera. Universal bait (peanut butter, honey & rolled oats) in a pvc canister were used at all sites. Baits were deployed up trees, on the ground, and (where Black Rats *Rattus rattus* were an issue) hung by a wire from an appropriate height.



Figure 2 Bait canister deployed off the ground at Fielder Park Marsfield 2018

¹ Camera failure, tampering @ Glades bay Reserve



Figure 3 Solar powered cameras with battery backup were the deployed for up to 2-3 months in the “quadrat” reserves. Bait boxes/lures, where used, were rebaited after 10-14 days. Camera at Kobada Park, September 2018.

3.2 Call Playback

Call playback is commonly used as a technique for detecting nocturnal birds (Kavanagh et al. 1995, Wintle et al. 2005, DEC (2004) unpublished) who may respond to vocalisations of their own species within their territories by “calling back”. Call playback was undertaken after spotlighting on 6 occasions. Calls of each species were broadcast for 5 minutes



followed by a ten minute listening period. Calls were broadcast using a 25W megaphone that were effective (clearly audible to the human ear) for approximately 600m. The calls broadcast were of four owl species: the Barking Owl (*Ninox connivens*), the Eastern Barn Owl (*Tyto delicatula*), the Masked Owl (*Tyto novaehollandiae*) and the Sooty Owl (*Tyto tenebricosa tenebricosa*). We excluded the Powerful Owl (*Ninox strenua*) and Southern Boobook (*Ninox boobook*) from this process due to its known occurrence in the study area(s) and ongoing research by others – further calling is unlikely to reveal new information and risks disturbing resident individuals and pairs.

In addition, the “yipping” call of the Sugar glider was played during spotlighting sessions from a handheld speaker attached to a smartphone in Tasman Park, Kobada Park and Christie

3.3 Spotlighting Survey

Spotlighting was undertaken for all terrestrial and arboreal mammals, amphibians and nocturnal birds within the study area. Spotlighting was undertaken using 50- 100 watt hand held spotlights as appropriate which were used to sweep surrounding vegetation in search of eye-shine or animal movements. Time was spent listening for calls at 10 minute intervals for 1 minute. All fauna heard or observed during spotlighting meanders were recorded. Spotlighting was undertaken in all vegetation communities in the study area.

Table 3 Spotlighting survey effort

RESERVE GROUPING	TARGET EFFORT PER SEASON	ACTUAL EFFORT AUTUMN	ACTUAL EFFORT SPRING
NORTHERN	2	2	2
WESTERN	2	2	2
SHRIMPTONS	2	2	2
PARRAMATTA RIVER	2	2	4

3.4 Bat ultrasonic (Anabat) call recording

The method requires the recording and identification of high frequency, echolocation calls made by bats, which, except for one or two species, are ultrasonic, that is, inaudible to



humans.

The recording equipment consisted of an Anabat II® SD detector and digital flash card recorder that was used for mobile recording during spotlighting (this unit is not waterproof) and three Anabat Express® units positioned in a fixed location for multiple nights (waterproof units). Locations were selected during the day to target areas most likely to have higher levels of microbat activity within the reserve rather than placing units on “flyways” for example, directly pointing towards the Parramatta River. Units were deployed



in open forest and woodland where possible to target species foraging in the reserves rather than travelling along waterways. Surveys were conducted in two sessions between 15th of March 2018 to the 4th of May 2018 and 16th of September to 4th of November 2018. Microbat call identification is a specialised process. Anabat

recordings were transferred onto computer and sent to Margaret Turton (an expert in this field) for analysis. Identifications are designated as either: definite, probable or possible, following the methodology of Parnaby (1992). Recordings are assessed visually and compared to reference libraries of calls taken in the Sydney basin.

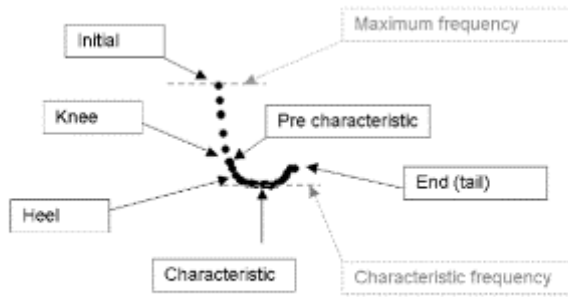


Figure 3. Features of a generic call pulse.

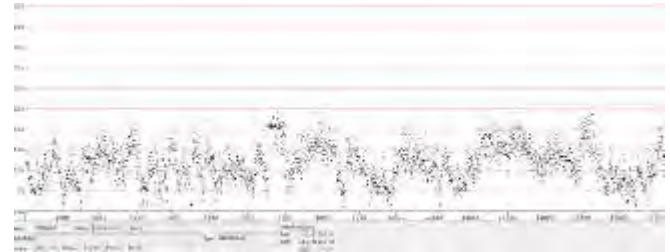


Figure 7 Insect noise as it appears in bat call analysis software

Figure 8 Characteristics of a call used to identify species (Pennay et al 2004).

Some sites were dominated by insect noise (see Figure 8). A unit deployed in an area with high insect activity can record thousands of calls in a night- few of which may be bat calls.

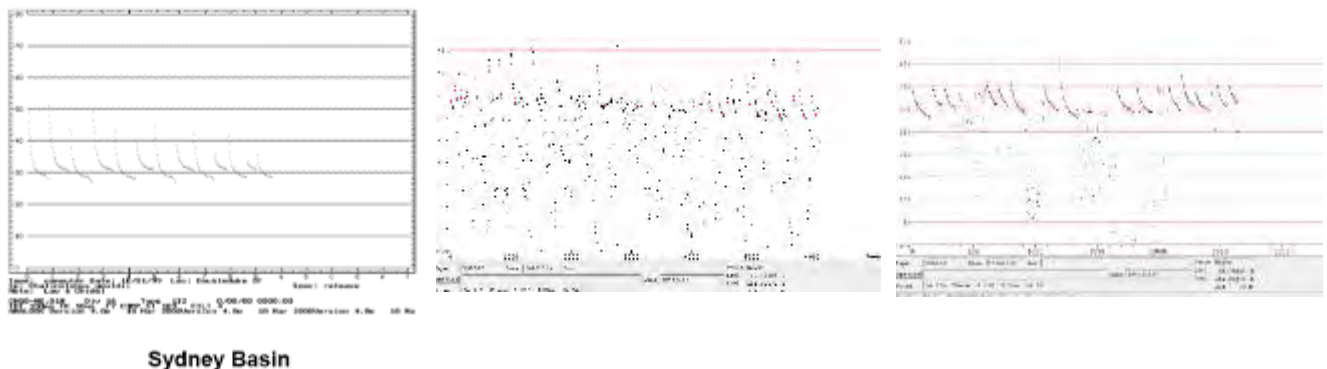


Figure 9 Reference call (left) for Gould's Wattled Bat and raw calls (centre and right) as downloaded from the anabat express units of the same species.

Some calls were not considered clear enough for positive identification – this included very short calls that consist of just a few pulses. Some species are difficult to differentiate based on call identification alone. For this reason, identified calls are generally categorised as “possible”, “probable” or “confident”. In this study, “possible” identifications were eliminated, and the few “probable” identifications were treated as “confident” since, in most cases, the same species was recorded elsewhere in the reserve or in another reserve nearby.

Given the high number of calls recorded at each site, and often on each night, analysis was limited to identification of species present. In reality, the number of calls does not represent the number of bats present as a single bat may make numerous passes in front of the detector. The number of calls may give an indication of the level of microbat activity in the area – more calls can indicate the location is used more frequently by microbats. Call identification to this level can become very expensive, and may not add significantly to the overall project.

Table 4 Anabat sampling effort

RESERVE GROUPING	TARGET EFFORT PER SEASON	ACTUAL EFFORT AUTUMN	ACTUAL EFFORT SPRING
NORTHERN	40	14	41
WESTERN	40	20	6
SHRIMPTONS	40	16	17
PARRAMATTA RIVER	40	7	23

3.5 Diurnal Bird Census

Bird surveys were both targeted and opportunistic. Systematic surveys designed to capture peak activity (dawn chorus, morning, and late afternoon) at marked quadrats were undertaken on a minimum of two days each season. These surveys were for a fixed period of 20 minutes. The majority of sites do not contain quadrats and slow random meanders were undertaken around reserves to record birds present. Individuals were counted exactly or estimated to the nearest “5” to a maximum of 20. For example, a social group of Superb Fairy-wrens can be hard to count exactly so an estimate of numbers to the nearest 5 was made. For abundant species in one location such as Noisy Miners and Sulphur-crested Cockatoos a maximum of “20” was recorded for any given survey despite the likelihood of higher local abundance. Only species flying within the canopy, roosting or foraging were recorded. For example Australian Pelicans or Australian Magpies flying at height over a reserve were not included in the records for that location, although some of the species recorded by Biosphere (2008), for example, Black Swans recorded at Denistone Park, were only spotted flying near or above a reserve. The exception to this rule was along the foreshore of the Parramatta River where Biosphere (2008) recorded birds on the mudflats and river and we also recorded birds on the river and mudflats adjacent to the reserves. Any species observed during other survey activities and during general traverses of the site were also recorded.

Table 5 Diurnal bird census survey effort

RESERVE GROUPING	20 MINUTE QUADRAT SESSIONS PER SEASON	ADDITIONAL BIRD SESSIONS
NORTHERN	6	25
WESTERN	2	8
SHRIMPTONS	2	8
PARRAMATTA RIVER	2	33

3.6 Reptile and Amphibian Searches

Reptiles and amphibians were surveyed within the study area by timed diurnal searches in suitable areas in addition to ad hoc surveys in areas with rocks, logs, rough-barked tree species, debris and other material, which provides suitable cover for Reptiles and Amphibians. Likely habitat was searched or observed and any species observed recorded. 20 minute timed searches were also undertaken in all quadrats, twice per season.

Table 6 Reptiles and Amphibians timed searched survey effort

	NORTHERN	WESTERN	SHRIMPTONS CREEK	PARRAMATTA RIVER

AUTUMN	6	2	2	2
SPRING	6	2	2	2

3.7 Nocturnal Frog Searches

During the evening calling frogs were identified on the basis of their characteristic calls. Spotlighting traverses included wet areas within the study sites with the objective to detect calling or active frogs. See spotlighting section for survey effort across the reserves.

3.8 Hair tubing

Hair-tubes are a remote sampling technique that can detect mammals by attracting them to an open cylinder containing a food bait held within a closed chamber. Fur from mammals that enter a hair-tube adheres to double-sided tape that is fixed to the inside of the device. Hair samples are then analysed in a laboratory to identify the species.



Figure 10 (left) The two types of hairtubes/funnels used during the survey



Figure 11 (right) a wafer is removed from a funnel-type hairtube and placed between non-stick paper with reserve and location noted and sent to the laboratory for processing. Cross section of hair samples showing different configuration of cells that are diagnostic for genus / species (Common Brushtail Possum and Bush Rat illustrated)

Hair tubes were deployed at a rate of 3-5 per targeted reserve. Not all reserves were surveyed using this method due to the risk of tampering or the nil likelihood of obtaining new mammal records. Reserves had at least one tree-mounted hairtube deployed to target Sugar gliders.

Table 7 Hairtube sampling - survey effort

RESERVE GROUPING	TARGET EFFORT PER SEASON	ACTUAL EFFORT AUTUMN	ACTUAL EFFORT SPRING
NORTHERN	100	126	498
WESTERN	50	75	156
SHRIMPONS	100	166	192
PARRAMATTA RIVER	150	168	250

3.9 Searches for Evidence

During survey activities bones, scats, owl pellets were collected for analysis if they could not be identified in the field. Other “evidence” was also noted such as glider chews on preferred feed trees, scratches on tree trunks, diggings, feathers, fur and signs of hollow use. Areas below powerful Owl roost trees were surveyed for pellets. Scats, bones and pellets were placed in brown paper bags and stored in an airtight container prior to delivery to “Scatsabout” a company specialising in the field of hair and scat analysis.



Figure 12 Examples of evidence – a fragment of a jaw bone (above) collected at Fielder Park and a Common Brushtail Possum tail at Bremner Park (right).

3.10 Searches for Invertebrates

Invertebrates were surveyed in the project quadrats as well as opportunistically. Invertebrate searches were combined with the reptile searches in each quadrat (i.e. two mornings of twenty minutes search effort per season).

Opportunistic searches were also carried out throughout the rest of the reserve comprising dip-netting in creeks, searching undergrowth for spiders, insects and other soft-bodied creatures and using small battery operated night lights for two evenings to collect night-flying and other insects.

Table 8 Invertebrate timed searched survey effort

	NORTHERN	WESTERN	SHRIMPTONS CREEK	PARRAMATTA RIVER
Autumn	6	2	2	2
Spring	6	2	2	2

3.11 Searches for Fish

Spotlighting, dip nets and/or small hand nets were used to survey waterways/water bodies within the sites listed in Table 9 below. These reserves and group of reserves along Shrimptons Creek were the only reserves with freshwater baseflows suitable for sampling. Outside of Shrimptons Creek flows were often very flashy. Twenty minutes was spent sampling each tributary/waterway with suitable water levels within each corridor to a maximum of 3 sites per corridor

Table 9 Fish & aquatics timed searched survey effort

	Glades Bay Park	Maze Park	Morrison Bay Park	Waterloo Park	Fielder Park	Shrimptons Creek
Autumn	3	2	2	2	2	3
Spring	2	2	2	2	2	3

3.12 Research Licensing

The survey and research of fauna during the 2018-2019 was undertaken under the following licences and approvals in accordance with the Animal Research Act (1991).

Principal: Anne Carey; Associates: Meredith Brainwood, Caroline Forest

Office of Environment and Heritage Scientific Licence SL101080

Department of Primary Industries Animal Research Authority Trim 12/4893 (2)

Department of Primary Industries Director-General's Animal Care and Ethics Committee DG ACEC Trim 12/4893

3.13 Key dates and equipment locations

Table 10 Key survey dates

	SPOTLIGHTING	DIURNAL BIRD CENSUS	HERPS/ INVERTS QUAD SEARCHES

	SPOTLIGHTING	DIURNAL BIRD CENSUS		HERPS/ INVERTS QUAD SEARCHES
PARRAMATTA RIVER group	18.3.18 24.3.18 11.4.18 18.9.18 2.10.18 18.10.18	1.3.18 18.3.18 24.3.18 11.4.18	18.9.18 13.10.18 18.10.18 8.11.18	2.4.18 4.5.18 16.9.18 13.10.18
WESTERN GROUP	15.3.18 11.4.18 18.9.18 28.10.18 8.11.18	15.3.18 24.3.18 11.4.18	16.9.18 18.9.18 28.10.18 8.11.18	2.4.18 4.5.18 16.9.18 28.10.18
SHRIMPTONS CREEK	10.4.18 13.5.18 16.9.18 27.10.18	15.3.18 2.4.18 11.4.18 13.5.18	16.9.18 22.9.18 27.10.18 3.11.18	2.4.18 4.5.18 22.9.18 28.10.18
NORTHERN GROUP	18.3.18 10.4.18 16.9.18 22.9.18	18.3.18 2.4.18 5.4.18 10.4.18 13.5.18	16.9.18 22.9.18 2.10.18 28.10.18 4.11.18 16.11.18	2.4.18 4.5.18 13.5.18 16.9.18 22.9.18 13.10.18 29.10.18

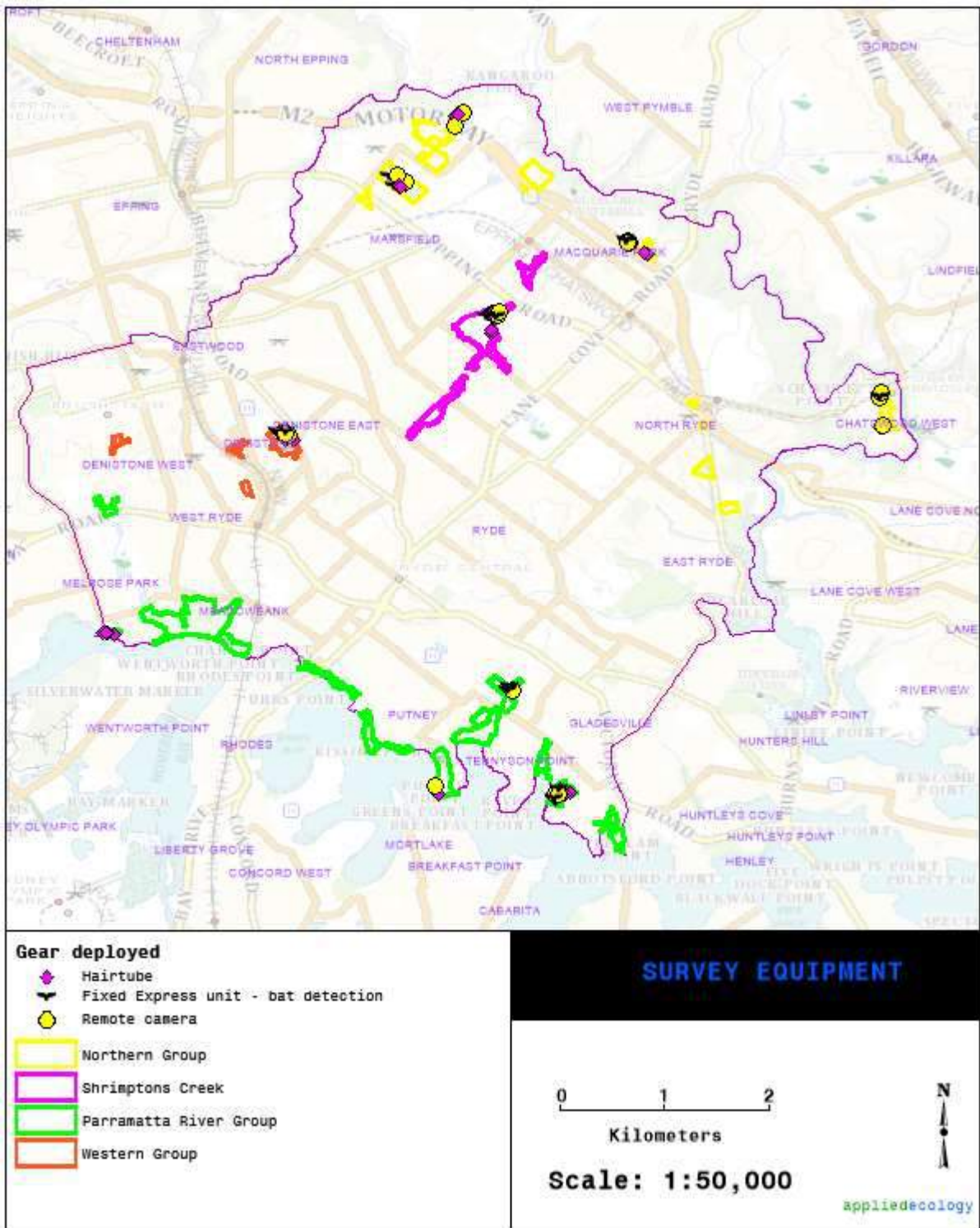


Figure 13 Remote sampling equipment locations

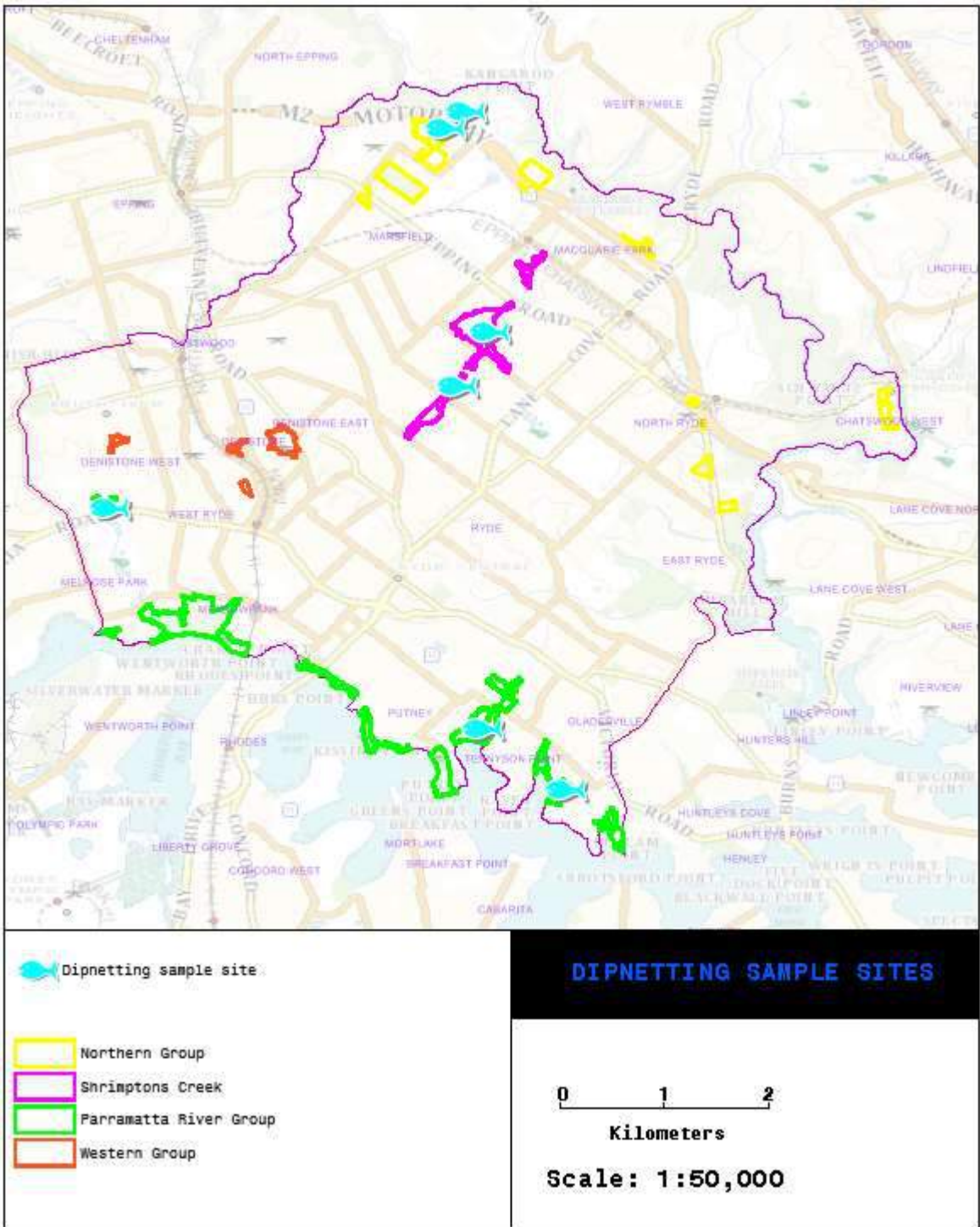


Figure 14 Fish sampling locations

4 FLORA METHODOLOGY

The main goal of the methodology was to replicate the one used in 2008 at the same sites by Biosphere (see Biosphere, 2006 and 2008). This comprised:

- 1) A general survey of the plant species in each reserve
- 2) Quadrat based surveys at previously specified locations in each reserve, using a 7 stage Braun-Blanquet technique
- 3) An additional component involved ground truth vegetation mapping for the reserves based on mapping developed by OEH (2016)

4.1 General survey

Biosphere (2008) described the process for general flora surveys as follows:

“In this survey thirty-five reserves were explored to compile lists of local native plants and non-local native/exotic plant species and to assess the vegetation communities, if possible. In many cases the reserves consisted of landscaped parkland and in those cases a “best guess” of the vegetation community was made judging by soil type and remnant tree canopy, if any, and the vegetation community of nearby native communities. A draft report Native Plants of the Ryde District: The Conservation Significance of Ryde’s Bushland Plants (Kubiak, 2005) was used as a baseline species list on which to base observation in this study. Species nomenclature follows The Flora of NSW (Harden, G (Ed.), 1990-1993). [...] “Vegetation communities were determined by assessing colour aerial photographs supplied by Council and then ground-truthed. Geology and soil types were also determined. It was stipulated by Council that the methods used for the vegetation survey were to be the same as used by the National Parks and Wildlife Service (NSW); using the model by Tozer (2003).”

We repeated this process using the random meander method described by Cropper (1993). The whole of the site was traversed at regular intervals, and plant species recorded. Particular attention was given to areas with any signs of differences in vegetation, or potential differences, for example, through proximity to water, change in soil characteristics, disturbance, rocky outcrops, steep slopes, etc. The aim was to record as many of the flora species present as possible. These were done for whole reserve corridors, although separate lists were retained for individual reserves within each corridor. Some inaccuracies in flora species lists for each reserve may have arisen from difficulties in identifying the boundary between one bushland reserve and the next in a continuous bushland corridor. These lists of flora species were compared with those recorded by Biosphere in 2007.

There were minor variations in the lists of reserves that were included in this study. These are summarised in the following table and included 9 additional reserves and one from the 2007 study.

Table 11 Summary of reserves surveyed in 2008 by Biosphere, and again in 2018 by Applied Ecology

RESERVE GROUP	RESERVES IN CURRENT STUDY	RESERVES IN 2008 STUDY	SUMMARY OF CHANGES
Parramatta River foreshores	17	12 (includes one in 2007 study)	5 new reserves, 1 from 2007 study
Western	4	4	nil
Northern	13	10	3 new reserves
Shrimptons Creek	8	7	1 new reserve

4.2 Quadrat surveys

The quadrat locations were selected and then established initially in 2007. This process was described as follows (Biosphere, 2007):

“Quadrats were to be 400 m² (0.04ha) in area and were placed in areas of high diversity of local native plants that may represent distinctive native vegetation communities. In order to assess abundance a Braun-Blanquet scale was used. While this method involves a subjective or qualitative description, it also provides for a quantitative or measurable documentation for comparison of plant community characteristics, especially species richness. Therefore, an inventory of plant species and approximate species numbers was completed for each quadrat then each species was assigned a Braun-Blanquet Cover Class.”

The following quadrats were established in 2008 and were resurveyed in 2018 (Table 12).

Table 12 Location and vegetation of the survey quadrats (adapted from Biosphere, 2007)

RESERVE		VEGETATION CLASSIFICATION		
NAME	CORRIDOR	OCULUS 1999	BIOSPHERE 2008	OEH 2016
Glades Bay Park	Parra foreshores	Sydney Sandstone Gully Forest	Western Sandstone Gully Forest	Coastal Sandstone Foreshores Forest
Denistone Park	Western	Blue Gum High Forest	Turpentine Ironbark Forest (Blue Gum dominant)	Blue Gum High Forest
ELS Hall Park	Shrimptons Creek	Blue Gum High Forest	Turpentine Ironbark Margin Forest	Coastal Enriched Sandstone Dry Forest
Kobada Park	Northern	Sydney Sandstone Ridgetop Woodland	Sandstone Ridgetop Woodland	Coastal Enriched Sandstone Dry Forest
Marsfield Park	Northern	Turpentine Ironbark Forest	Turpentine Ironbark Margin Forest	Sydney Turpentine Ironbark Forest
Tasman Park	Northern	Shale/Sandstone Transition Forest	Turpentine Ironbark Margin Forest	Coastal Shale-Sandstone Forest

The quadrat establishment process was described as follows (Biosphere, 2006):

“Each survey site consisted of a 20 m by 20 m square i.e. 400 square metres quadrat. Survey pegs and string lines were used to mark the boundaries of each quadrat and the location of each corner peg was plotted by GPS (in case they were interfered with or removed).”

Steel star posts measuring 450mm were used to mark each corner so that around 200-250mm was visible above ground, and capped with a yellow post cap for safety, and a waypoint provided for the centre to assist with relocating the quadrat. This waypoint gave an approximate location for the centre (most handheld GPS units are accurate to around 3m), and a search was commenced for a corner post. Once a corner peg had been located, this was used in conjunction with the centre waypoint to orient the rest of the corners. At least one corner peg was located for each quadrat, although often the remaining pegs were missing. There was no quadrat that had all four corner pegs in place.

Survey methodology aimed to replicate the work done previously by Biosphere in 2007 in the same quadrats, and also to be in line with work done as part of the repeat surveys for other reserves in the City of Ryde (ACA 2016, replicating Biosphere 2006).

Cover abundance scores (1 to 7) for the Braun-Blanquet Cover Classes were provided in Biosphere (2006, p. 16) and interpreted by ACA in the 2016 survey as follows (Table 13). This interpretation was used by Applied Ecology (2017) and again in 2018 to ensure some consistency in data collection and interpretation.

Table 13 Braun-Blanquet Cover Classes as provided by Biosphere (2006) and interpreted by ACA (2016)

Cover Class	Biosphere (2006)		Interpreted in 2016 as
1	Rare	few individuals (three or less) and cover <5%	≤ 3 individuals AND <5% cover
2	Uncommon	more than three but not consistently throughout the plot) and cover <5%	>3 individuals AND cover <5%
3	Common	consistent throughout the plot and cover <5%	cover <5% throughout the quadrat
4		Very abundant cover <5% OR cover >5% but <20%	6–19% cover in quadrat
5		Cover >20% but <50%	21% – 49% cover in quadrat
6		Cover >50% but <75%	51% – 74% cover in quadrat
7		Cover >75% but <100%	76% – 99% cover in quadrat

While the Braun-Blanquet scoring system provides a subjective estimate of abundance, it does assign the abundance for each species to a ranked grouping, and this can be used to determine whether observed changes in cover should be considered significant.

4.3 Ground truthing vegetation mapping

Native vegetation mapping has been compiled by Office of Environment & Heritage (OEH) through a project that was started by the Sydney Metro Catchment Management Authority, and since updated several times by OEH. Over time, ground truthing has contributed to our understanding of the floristic composition of various vegetation communities, and their extant distribution in the Sydney Basin. As a result, there have been changes to the names of communities, the composition of vegetation in communities, and the mapped extent of these communities in bushland reserves in Ryde. This project looked at the current understanding of the distribution of each vegetation community present in the reserve groups, and compared this with observed vegetation on ground for each mapped patch, except where the patch was very small in size.

Several methods for collecting ground truthing data were used, in line with the methodology described by OEH (2016) in *The Native Vegetation of the Sydney Metropolitan Area. Volume 1: Technical Report. Version 3.0*. These were based on the species recorded in a plot of 0.4ha, or within a 20m x 20m quadrat or the equivalent. Quadrat data recorded to assess changes in vegetation over time was included in this second dataset. Where the reserve was small and moderately degraded the flora list from the random meander searches was used. For these reserves the aim was partly to identify the most likely vegetation community that would exist on that site, so that this could be used to guide revegetation activities in the reserve.

4.4 General reserve-based flora surveys

A flora species inventory was compiled for each of the reserves in each of the catchment corridors. This was completed using a random meander methodology described by Cropper (1993), and widely used for determining species richness in a given area of bushland. The bushland patch/reserve/park is traversed using a meandering path, recording every species on the way. Particular effort is made to ensure that all species present are recorded by giving attention to each area with different, or potentially different, vegetation. Rock outcrops, overhangs, gullies, slopes with different aspects, creeks, under trees and shrubs, logs, etc, etc are all targeted during the random meander. The meander continues, remembering to look up and down as well as to each side, until the surveyor feels that they have recorded everything present. This inevitably will not happen as some plants are seasonally difficult to locate, such as orchids, very small and easily missed behind the proverbial blade of grass, or unable to have identification confirmed without the presence of flowers and/or fruit. However, the end result is usually a very good representation of the floristic diversity present on the site, for a comparatively small effort.



Figure 15 Identifying and recording data during a random meander search

4.5 Targeted searches for threatened species

Several threatened species have been recorded previously in several of the reserves, including *Wilsonia backhousei* in Looking Glass Bay Park at the lower end of Parramatta River, and *Acacia pubescens* in Kissing Point Park.

Locations of previous records for each of these species from 2008 surveys were submitted to BioNET, the Wildlife Atlas of NSW managed by OEH. These were accessed and used as a guide for targeted threatened species surveys. As well, each of the threatened species profiles was interrogated for information about key identifying characteristics, particularly flowering times when the plants will be most visible and most easily identified. This information is presented in Appendix A.

5 RESULTS – BY RESERVE GROUPING BY RESERVE

Summary data for all reserve groupings is provided below in Table 14 and Table 15. With detailed survey results for each reserve provided in the following sections. This section is arranged to replicate the organisation of the 2008 report where species list for each reserve formed the backbone of the report. Species profiles for each fauna species are available in Appendix B (pg 455), descriptions of vegetation communities and discussion of results are provided later in the report.

Table 14 Fauna Summary Species Richness (City of Ryde)

VERTEBRATE SPECIES RICHNESS		
	2008	2018
NATIVE BIRDS	65	71
INTRODUCED BIRDS	7	5
REPTILES	7	8
FROGS	2	4
NATIVE MAMMALS	5	8
BATS	2	12
INTRODUCED MAMMALS	5	5
FISH		2
TOTAL	93	112

Table 15 Fauna Summary Species Turnover (City of Ryde)

	TOTALS ACROSS RYDE		TURNOVER		
	2008	2018	2008 only	2018 only	Constant
NATIVE BIRDS	65	71	11	17	54
INTRODUCED BIRDS	7	5	2	0	5
REPTILES	7	8	3	4	4
FROGS	2	4	0	2	2
NATIVE MAMMALS	5	8	0	3	5
BATS	2	12	0	10	2
INTRODUCED MAMMALS	5	5	1	1	4
TOTAL	93	113	17	37	76

5.1 PARRAMATTA RIVER RESERVES

There are 17 named reserves in this reserve grouping on or near the Parramatta River Foreshore within the City of Ryde LGA. These are illustrated below in Figure 16.



Figure 16 Parramatta River Foreshore Park grouping

The reserves in this grouping are disjunct from larger areas of reserved bushland to the north and east of the foreshore and do not support more sedentary fauna species that require larger areas of contiguous bushland. These species include many small bush birds and terrestrial and arboreal mammals found elsewhere in the City of Ryde. The foreshore reserves, however, provide valuable stepping stone habitat for north/south migrants, habitat for estuarine specialists such as shorebirds, and provide a buffer between the river and the urban interface for species foraging in the Parramatta River Estuary.

The reserves fall into three categories:

- Mixed use with sporting grounds/large areas of grassed open space with fringing native vegetation:
 - Tygarah Park
 - Bremner Park
 - Bill Mitchell Park
 - Meadowbank Park
- Remnant bushland/bushland recreation in drainage gullies
 - Mallee reserve
 - Glades Bay Park
 - Looking Glass Bay
 - Maze Park
- Foreshore passive recreation parks often with estuarine vegetation communities and mature plantings

- Koonadan Reserve
- Melrose Park
- Memorial Park
- Settlers Park
- Bennelong Park
- Kissing Point Park
- Putney Park
- Banjo Patterson Park

Table 16 Fauna Summary Species Richness (Parramatta River Group)

PARRAMATTA RIVER RESERVE GROUPING		
	2008	2018
NATIVE BIRDS	49	47
INTRODUCED BIRDS	7	4
REPTILES	4	5
FROGS	1	3
NATIVE MAMMALS	3	3
BATS	1	10
INTRODUCED MAMMALS	5	5

Table 17 Fauna Summary Species Turnover (Parramatta River Group)

	TOTALS		TURNOVER		
	2008 counts	2018 counts	2008 only	2018 only	Constant
NATIVE BIRDS	49	47	13	11	36
INTRODUCED BIRDS	7	4	3	0	4
REPTILES	4	5	1	2	3
FROGS	1	3	0	2	1
NATIVE MAMMALS	3	3	0	0	3
BATS	1	10	0	9	4
INTRODUCED MAMMALS	5	5	1	1	4

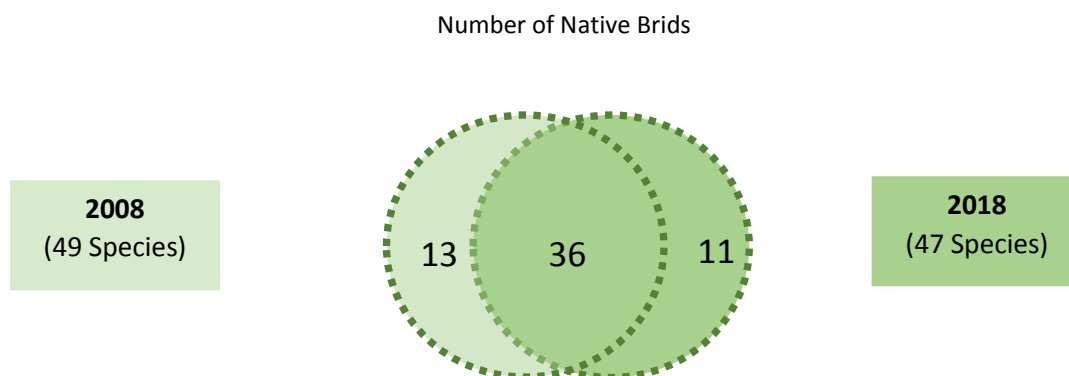


Figure 17 Comparison of native bird species richness from 2008 to 2018 for Parramatta Group

5.1.1 BANJO PATERSON RESERVE

Vegetation summary

Table 18 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
Banjo Paterson Reserve	14 Ashburn Place, Tennyson Point		2.07Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Urban_E/N: Urban Exotic/Native	N/A	2	0.468Ha
Weed_Ex: Weeds and Exotics	N/A	2	0.740Ha
THREATENED SPECIES PRESENT	Narrow-leaved <i>Wilsonia</i> (<i>Wilsonia backhousei</i>) on reserve boundary		

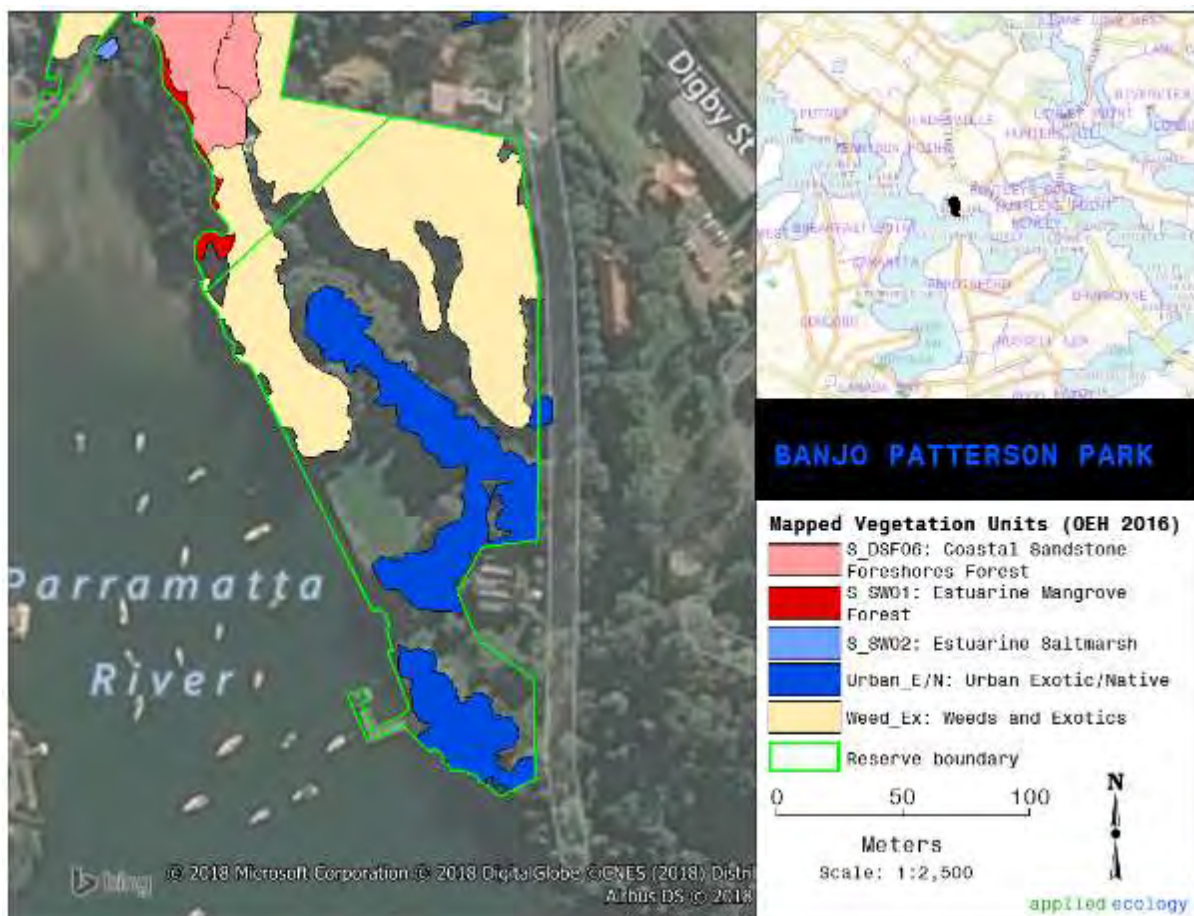


Figure 18 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 19 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	25	EXOTIC SPECIES COUNT 2008	39
NATIVE SPECIES COUNT 2018	40	EXOTIC SPECIES COUNT 2018	44
NATIVE SPECIES CONSTANT 2008-2018	23	EXOTIC SPECIES CONSTANT 2008-2018	30
NATIVE SPECIES LOST 2008-2018	2	EXOTIC SPECIES LOST 2008-2018	9
NATIVE SPECIES GAINED 2008-2018	17	EXOTIC SPECIES GAINED 2008-2018	14

Number of species

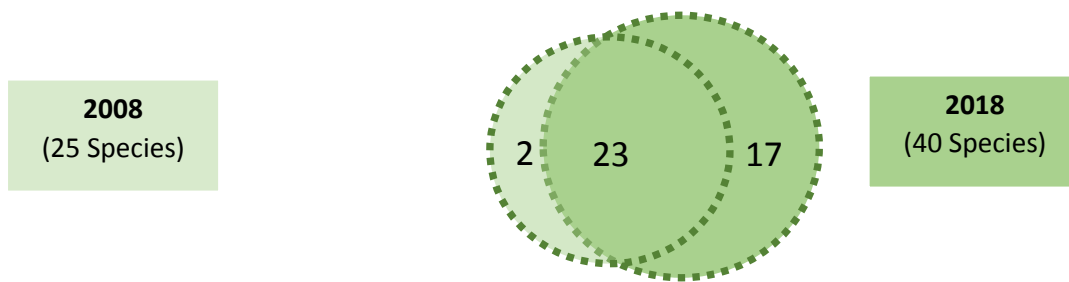


Figure 19 Comparison of native species richness from 2008 to 2018 for Banjo Patterson Reserve

Number of species

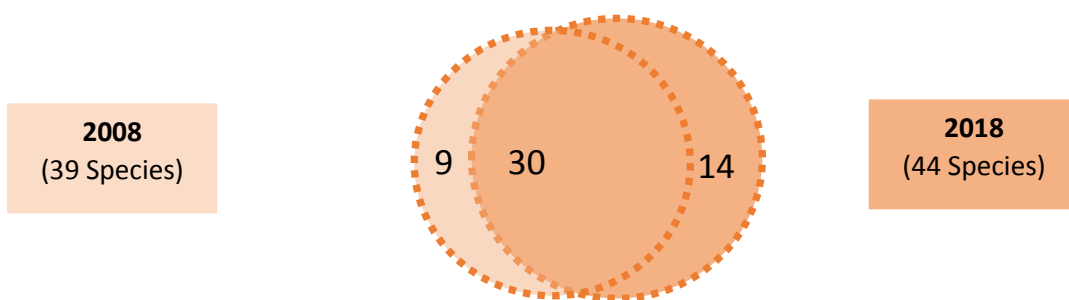


Figure 20 Comparison of exotic species richness from 2008 to 2018 for Banjo Patterson Reserve



Figure 21 Much of the foreshore area is managed lawn behind retaining walls, especially near the wharf



Figure 22 Banjo Patterson's house is a central point to this reserve



Figure 23 A small patch of *Wilsonia backhousei* is located on the boundary between this reserve and Looking Glass Bay Park

Comparison of flora inventories 2008-2018

Table 20 Native flora species recorded in Banjo Patterson Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Banksia ericifolia</i>	Heath-leaved Banksia		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily		y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus oblonga</i>	Narrow-leaved Stringybark		y
<i>Eucalyptus pilularis</i>	Blackbutt		y

<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hibbertia scandens</i>	Twining Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush		y
<i>Kunzea ambigua</i>	Tickbush	y	
<i>Leptospermum juniperinum</i>	Prickly-leaved Tea-Tree		y
<i>Livistona australis</i>	Cabbage Palm		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca decora</i>	White-feather Honey Myrtle	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Suaeda australis</i>	Seablite		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Wilsonia backhousei</i>	Narrow-leaved Wilsonia		y

Table 21 Introduced flora species recorded in Banjo Paterson Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia podalyriifolia</i>	Queensland Silver Wattle	y	
<i>Allium triquetrum</i>	Three-corner garlic	y	y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica</i> sp.	Turnip Weed		y
<i>Buddleia davidii</i>	Butterfly Bush	y	
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Dietes</i> sp.	Dietes	y	y

<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Ehrharta longiflora</i>	Annual Veldt Grass	y	
<i>Eragrostis curvula</i>	African Lovegrass	y	
<i>Eucalyptus citriodora</i>	Lemon Scented Gum	y	y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Ficus elastica</i>	Rubber Tree	y	
<i>Foeniculum vulgare</i>	Fennel		y
<i>Fumaria sp.</i>	Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed	y	
<i>Grevillea 'Robyn Gordon'</i>	Grevillea 'Robyn Gordon'	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Megathyrus maximus</i>	Guinea Grass		y
<i>Melia azadarach</i>	White Cedar	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Morus albus</i>	White Mulberry	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	y
<i>Pennisetum alopecuroides = Cenchrus purpurascens</i>	Swamp Foxtail	y	y
<i>Pennisetum clandestinum = Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry		y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [=albiflora]	Trad, Wandering Jew	y	y
<i>Trifolium repens</i>	White Clover	y	y

Fauna Summary

Table 22 Fauna summary data

FAUNA	2008	2018
Natives	18	14
Introduced	6	1

COMMON NAME	SPECIES NAME	2008	2018
Australian King-Parrot	<i>Alisterus scapularis</i>	●	
Australian Magpie	<i>Cracticus tibicen</i>	●	●
Australian Raven	<i>Corvus coronoides</i>	●	
Eastern Koel	<i>Eudynamys orientalis</i>	●	
Eastern Rosella	<i>Platycercus eximius</i>	●	
Grey Butcherbird	<i>Cracticus torquatus</i>	●	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		●
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	●	
Magpie-lark	<i>Grallina cyanoleuca</i>	●	
Noisy Miner	<i>Manorina melanocephala</i>	●	●
Pied Currawong	<i>Strepera graculina</i>	●	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	●	●
Sacred Kingfisher	<i>Todiramphus sanctus</i>	●	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>	●	●
Welcome Swallow	<i>Hirundo neoxena</i>	●	●
White-faced Heron	<i>Egretta novaehollandiae</i>		●
Willie Wagtail	<i>Rhipidura leucophrys</i>		●
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	●	
Common Starling	<i>Sturnus vulgaris</i>	●	●
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	●	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	●	
REPTILES			
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>		●
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	●	●
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	●	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	●	
BATS			
Eastern Bentwing Bat	<i>Miniopterus orianae oceanensis</i>		●
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	●	●

Large-footed Myotis	<i>Myotis macropus</i>		●
Chocolate Wattled Bat	<i>Chalinolobus morio</i>		●
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>	●	
Rabbit	<i>Oryctolagus cuniculus</i>	●	

There are more fauna resources available in the adjoining Looking Glass Bay Reserve immediately to the west. Mature trees with managed lawns provides habitat for Noisy Miners who aggressively exclude many species.



5.1.2 LOOKING GLASS BAY PARK

Vegetation summary

Table 23 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
LOOKING GLASS BAY PARK	38 Punt Road, Gladesville		2.11Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF06: Coastal Shale-Sandstone Forest	NO	2	1.036Ha
S_SW01: Estuarine Mangrove Forest	NO	1	0.027Ha
S_SW02: Estuarine Saltmarsh	BC Act: Endangered, EPBC Act Vulnerable	1	0.005Ha
Urban_E/N: Urban Exotic/Native	N/A	1	0.009Ha
Weed_Ex: Weeds and Exotics	N/A	4	0.877Ha
THREATENED SPECIES PRESENT	Narrow-leaved <i>Wilsonia</i> (<i>Wilsonia backhousei</i>) on reserve boundary		

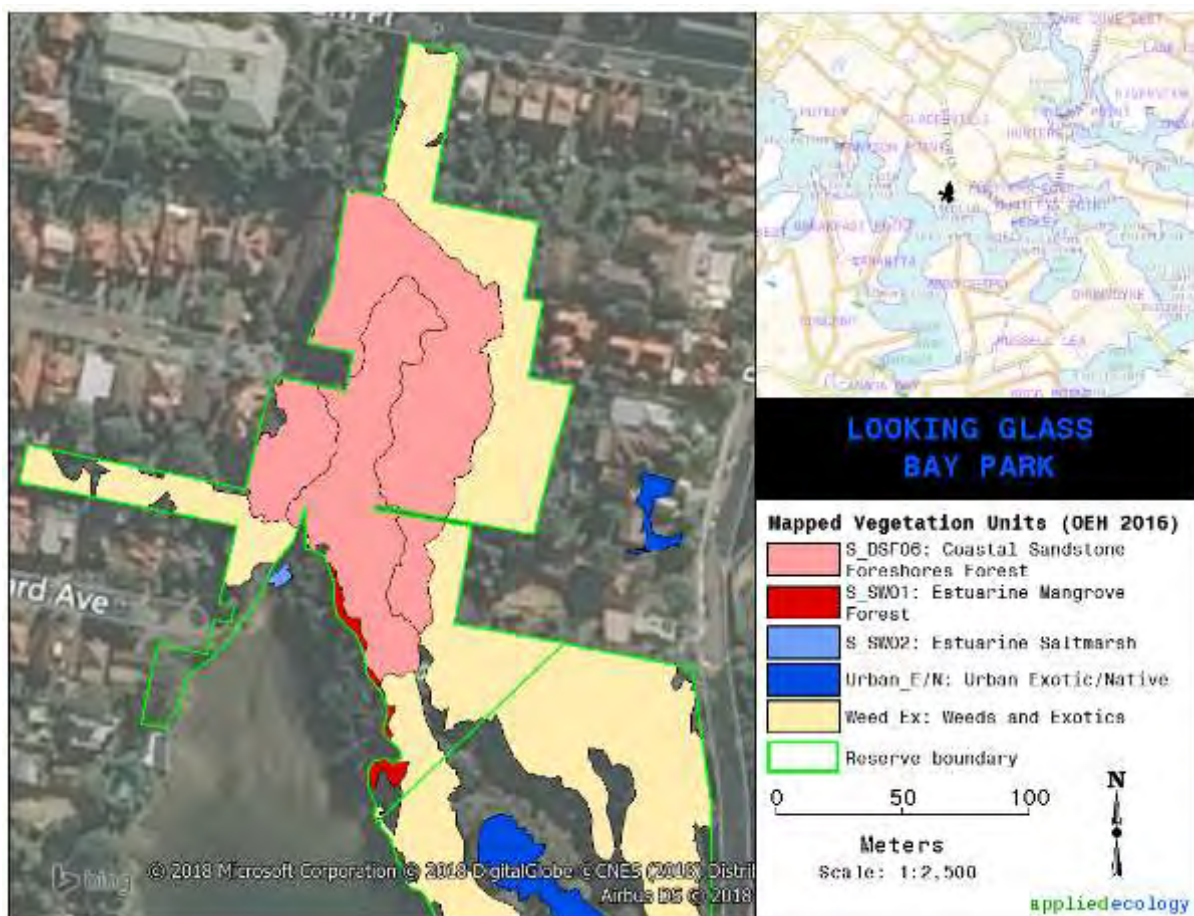


Figure 24 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 24 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	68	EXOTIC SPECIES COUNT 2008	52
NATIVE SPECIES COUNT 2018	77	EXOTIC SPECIES COUNT 2018	66
NATIVE SPECIES CONSTANT 2008-2018	56	EXOTIC SPECIES CONSTANT 2008-2018	40
NATIVE SPECIES LOST 2008-2018	12	EXOTIC SPECIES LOST 2008-2018	12
NATIVE SPECIES GAINED 2008-2018	21	EXOTIC SPECIES GAINED 2008-2018	26

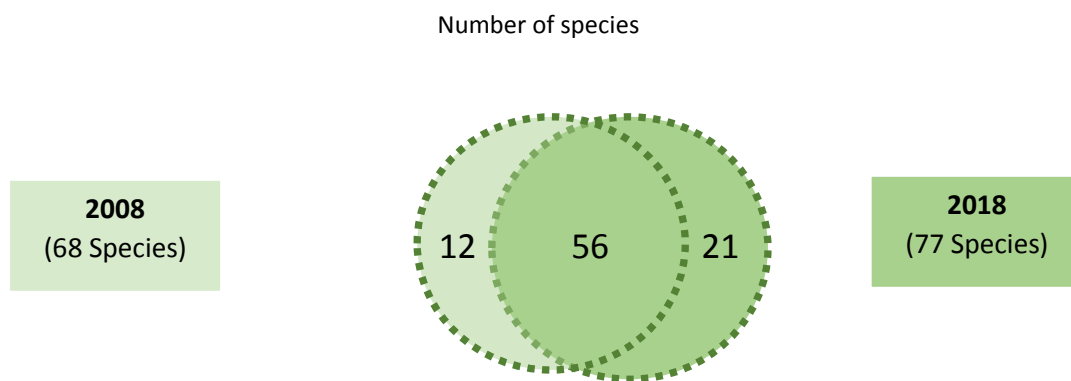


Figure 25 Comparison of native species richness from 2008 to 2018 for Looking Glass Bay Park

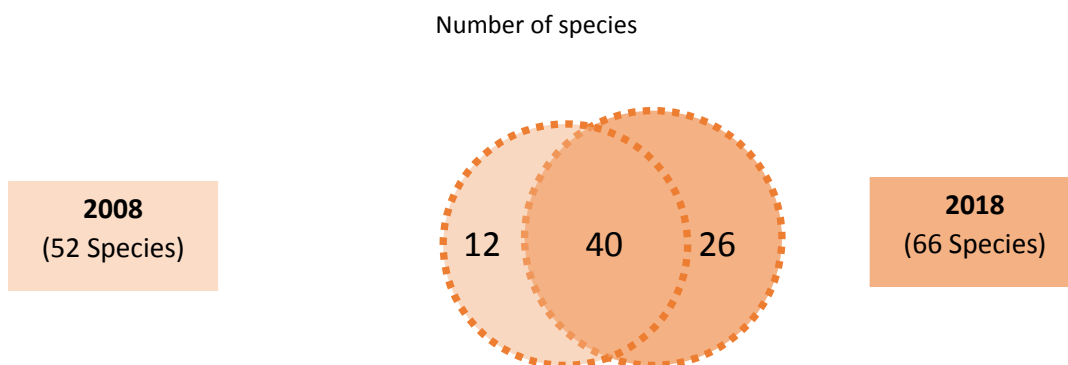


Figure 26 Comparison of exotic species richness from 2008 to 2018 for Looking Glass Bay Park



Figure 27 Extensive revegetation has been undertaken in the upper part of the reserve



Figure 28 A walking track has been added to facilitate movement through the reserve



Figure 29 Extant vegetation along the creek creates favourable conditions for native fauna



Figure 30 A rain garden has been installed to treat stormwater and protect sensitive foreshore vegetation



Figure 31 Ongoing revegetation is helping to improve resources in other parts of the reserve



*Figure 32 Mangroves and saltmarsh have colonised the foreshores, including *Wilsonia backhousei* on the boundary*

Comparison of flora inventories 2008-2018

Table 25 Native flora species recorded in Looking Glass Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Backhousia myrtifolia</i>	Grey Myrtle	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Baumea juncea</i>		y	y
<i>Breynia oblongifolia</i>	Coffee Bush	y	
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callicoma serratifolia</i>	Black Wattle	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callitris rhomboidea</i>	Port Jackson Cypress	y	
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Carex appressa</i>	Tall Carex		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	y
<i>Christella dentata</i>	Binung		y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cyathea australia</i>	Rough Tree Fern	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	
<i>Eucalyptus acmenioides</i>	White Mahogany		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus haemastoma</i>	Scribbly Gum		y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y

<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Gahnia melanocarpa</i>	Black-fruit Saw Sedge		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine clandestinus</i>	Love Creeper		y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Grevillea linearifolia</i>	White Spider Flower		y
<i>Grevillea sericea</i>	Pink Spider Flower	y	
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Isolepis cernua</i>	Nodding Club-rush	y	
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	y	y
<i>Juncus usitatus</i>	Common Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca nodosa</i>	Ball Honeymyrtle		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	
<i>Persoonia linearis</i>	Narrow-leaved Geebung	y	
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pomaderris</i> sp.	Pomaderris	y	
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Samolus repens</i>	Creeping Brookwed	y	y
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire	y	y
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Suaeda australis</i>	Seablite	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Syzygium australe</i>	Brush Cherry		y

<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Triglochin striata</i>	Streaked Arrow-grass	y	y
<i>Tristaniaopsis laurina</i>	Water Gum	y	y
<i>Veronica plebeia</i>	Trailing Speedwell		y
<i>Wahlenbergia gracilis</i>	Native Bluebell	y	
<i>Wilsonia backhousia</i>	Narrow-leaved Wilsonia	y	y
<i>Xylomelum pyriforme</i>	Woody Pear		y

Table 26 Introduced flora species recorded in Looking Glass Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Acacia podalyriifolia</i>	Queensland Silver Wattle		y
<i>Alstroemeria psittacina</i>	Parrot Lily	y	y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	
<i>Arundo donax</i>	Giant Reed	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus plumosus</i>	Climbing Asparagus	y	
<i>Aster subulatus</i>	Bushy Starwort	y	
<i>Atriplex prostrata</i>			y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	
<i>Celtis occidentalis</i>	Chinese Hackberry	y	y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Crassocephalum crepidioides</i>	Thickheads	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus rotundus</i>	Nutgrass		y
<i>Daucus carota</i>	Wild Carrot		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Ehrharta longiflora</i>	Annual Veldt Grass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Erodium moschatum</i>	Musky Storksbill		y
<i>Eucalyptus bicostata</i>	Southern Blue Gum, Eurabbie		y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Ficus elastica</i>	Rubber Tree	y	y
<i>Fumaria sp.</i>	Fumitory	y	y
<i>Galinsoga parviflora</i>	Potato Weed	y	

<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Gnaphalium sp.</i>	Cudweed	y	
<i>Grevillea 'Robyn Gordon'</i>	Grevillea 'Robyn Gordon'	y	
<i>Grevillea robusta</i>	Silky Oak	y	
<i>Hedera helix</i>	English Ivy		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea cairica</i>	Coast Morning Glory, Mile a Minute		y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lolium sp.</i>	Rye Grass	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Pennisetum alopecuroides</i> = <i>Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Ricinus communis</i>	Castor Oil Plant	y	y
<i>Ruellia squarrosa</i>	Blue Shade, Creeping Ruellia		y
<i>Schinus areira</i>	Pepper Tree		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	
<i>Setaria palmifolia</i>	Palm Grass	y	y
<i>Setaria viridis</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stachys arvensis</i>	Stagger		y
<i>Stellaria media</i>	Chickweed	y	y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y

<i>Thunbergia alata</i>	Black-eyed Susan		y
<i>Verbena officinalis</i>	Common Verbena, Vervain	y	y
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Wild Watsonia		y

Fauna Summary

Table 27 Fauna summary data

FAUNA	2008	2018
NATIVE	24	18
INTRODUCED	6	1

Table 28 Species lists 2008-2018

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	•
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Tawny Frogmouth	<i>Podargus strigoides</i>	•	•
White-faced Heron	<i>Egretta novaehollandiae</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•

INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
House Sparrow	<i>Passer domesticus</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Eastern Bentwing Bat	<i>Miniopterus orianae oceanensis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Large-footed Myotis	<i>Myotis macropus</i>		•
Chocolate Wattled Bat	<i>Chalinolobus morio</i>		•
INTRODUCED MAMMALS			
MOUSE	<i>Mus musculus</i>	•	
DOG		•	•
Rabbit		•	



Figure 33 Rock doves doing it in style - nesting on a moored boat

5.1.3 BENNELONG PARK and KISSING POINT PARK

Vegetation summary

Table 29 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
Bennelong Park	24 Waterview Street, Putney		0.27Ha
Kissing Point Park	22 Waterview Street, Putney		4.38Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_SW01: Estuarine Mangrove Forest	NO	7	0.119Ha
Weed_Ex: Weeds and Exotics	N/A	4	0.575Ha
THREATENED SPECIES PRESENT	Downy Wattle (<i>Acacia pubescens</i> , planted)		



Figure 34 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 30 Flora summary data Bennelong Park 2008-2018

NATIVE SPECIES COUNT 2008	17	EXOTIC SPECIES COUNT 2008	10
NATIVE SPECIES COUNT 2018	22	EXOTIC SPECIES COUNT 2018	29
NATIVE SPECIES CONSTANT 2008-2018	14	EXOTIC SPECIES CONSTANT 2008-2018	8
NATIVE SPECIES LOST 2008-2018	3	EXOTIC SPECIES LOST 2008-2018	2
NATIVE SPECIES GAINED 2008-2018	8	EXOTIC SPECIES GAINED 2008-2018	21

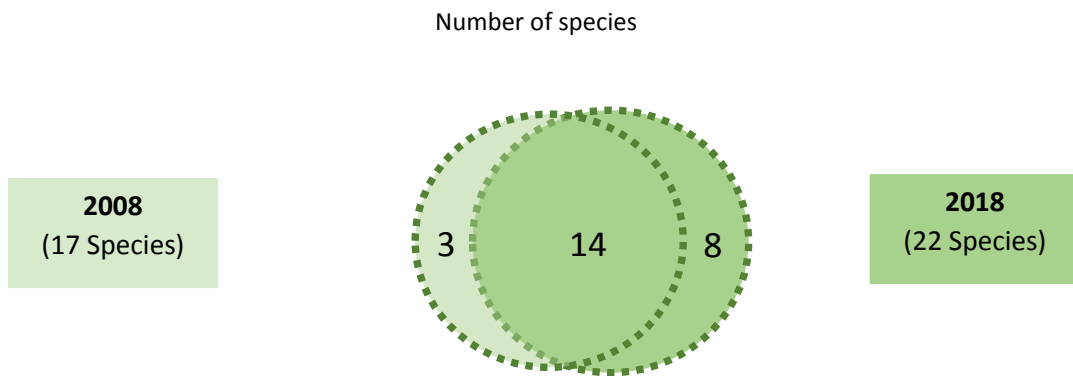


Figure 35 Comparison of native species richness from 2008 to 2018 for Bennelong Park

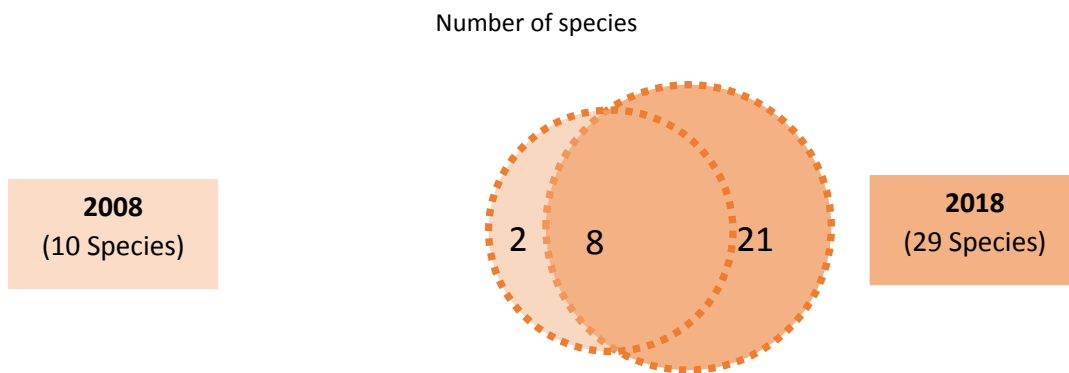


Figure 36 Comparison of exotic species richness from 2008 to 2018 for Bennelong Park

Table 31 Flora summary data Kissing Point Park 2008-2018

NATIVE SPECIES COUNT 2008	64	EXOTIC SPECIES COUNT 2008	46
NATIVE SPECIES COUNT 2018	51	EXOTIC SPECIES COUNT 2018	55
NATIVE SPECIES CONSTANT 2008-2018	45	EXOTIC SPECIES CONSTANT 2008-2018	34
NATIVE SPECIES LOST 2008-2018	19	EXOTIC SPECIES LOST 2008-2018	12
NATIVE SPECIES GAINED 2008-2018	6	EXOTIC SPECIES GAINED 2008-2018	21

Number of species

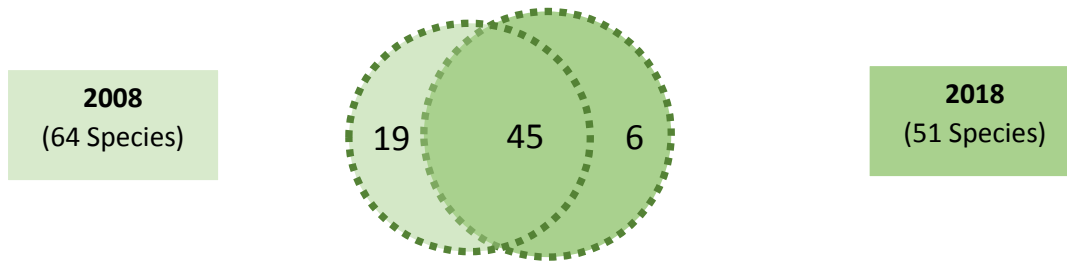


Figure 37 Comparison of native species richness from 2008 to 2018 for Kissing Point Park

Number of species

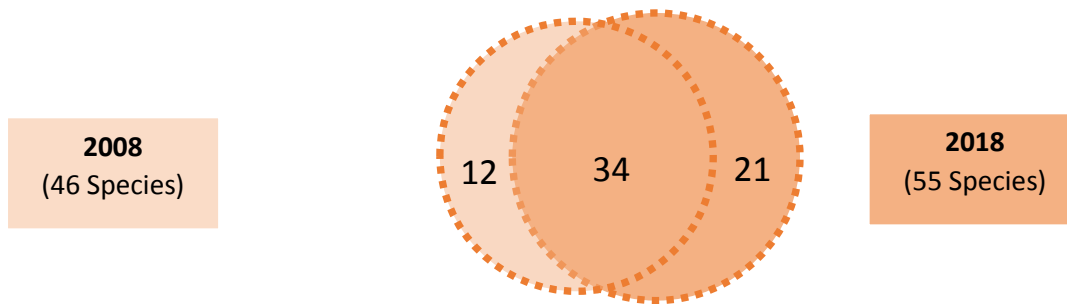


Figure 38 Comparison of exotic species richness from 2008 to 2018 for Kissing Point Park



Figure 39 Bennelong Park includes a boardwalk through areas of extensive revegetation



Figure 40 Information signs tell of the Aboriginal and European histories of the area



Figure 41 A patch of weedy mangroves with salt tolerant species is located at the western end of the foreshore



Figure 42 Locals enjoy the arts and culture but the fish look longingly towards the sea



Figure 43 The threatened Downy Wattle (Acacia pubescens) has been planted towards the eastern end of the foreshore

Comparison of flora inventories 2008-2018

Table 32 Native flora species recorded in Bennelong Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dichondra repens</i>	Kidney Weed	y	
<i>Doryanthes excelsior</i>	Gynea Lily		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus haemastoma</i>	Scribbly Gum	y	y
<i>Eucalyptus sideroxylon</i>	Red Ironbark	y	y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig	y	y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Kennedia rubicunda</i>	Dusky Coral Pea		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Viola hederacea</i>	Native Violet	y	

Table 33 Introduced flora species recorded in Bennelong Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Amaranthus viridus</i>	Green Amaranth		y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Chloris gayana</i>	Rhodes Grass		y
<i>Conyza</i> sp.	Fleabane		y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Digitaria didactyla</i>	Queensland Blue Couch	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y

<i>Erythrina x sykesii</i>	Coral Tree		y
<i>Fumaria capreolata</i> subsp. <i>capreolata</i>	Climbing Fumitory		y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hypochaeris radicata</i>	Flatweed, Catsear		y
<i>Lactuca serriola</i>	Prickly Lettuce		y
<i>Lantana camara</i>	Lantana		y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stellaria media</i>	Chickweed		y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officinale</i>	Dandelion	y	y
<i>Vicia hirsuta</i>	Hairy Vetch, Common Vetch		y

Table 34 Native flora species recorded in Kissing Point Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Backhousia myrtifolia</i>	Grey Myrtle	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Baumea juncea</i>		y	y
<i>Breynia oblongifolia</i>	Coffee Bush	y	
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callicoma serratifolia</i>	Black Wattle	y	y

<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callitris rhomboidea</i>	Port Jackson Cypress	y	
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Carex appressa</i>	Tall Carex		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	y
<i>Christella dentata</i>	Binung		y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cyathea australia</i>	Rough Tree Fern	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	
<i>Eucalyptus acmenioides</i>	White Mahogany		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus haemastoma</i>	Scribbly Gum		y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Gahnia melanocarpa</i>	Black-fruit Saw Sedge		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine clandestinus</i>	Love Creeper		y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Grevillea linearifolia</i>	White Spider Flower		y
<i>Grevillea sericea</i>	Pink Spider Flower	y	
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Isolepis cernua</i>	Nodding Club-rush	y	
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	y	y
<i>Juncus usitatus</i>	Common Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y

<i>Melaleuca nodosa</i>	Ball Honeymyrtle		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	
<i>Persoonia linearis</i>	Narrow-leaved Geebung	y	
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pomaderris</i> sp.	Pomaderris	y	
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Samolus repens</i>	Creeping Brookwed	y	y
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire	y	y
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Suaeda australis</i>	Seablite	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Syzygium australe</i>	Brush Cherry		y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Triglochin striata</i>	Streaked Arrow-grass	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Veronica plebeia</i>	Trailing Speedwell		y
<i>Wahlenbergia gracilis</i>	Native Bluebell	y	
<i>Wilsonia backhousia</i>	Narrow-leaved Wilsonia	y	y
<i>Xylomelum pyriforme</i>	Woody Pear		y

Table 35 Introduced flora species recorded in Kissing Point Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Acacia podalyriifolia</i>	Queensland Silver Wattle		y
<i>Alstroemeria psittacina</i>	Parrot Lily	y	y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	
<i>Arundo donax</i>	Giant Reed	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus plumosus</i>	Climbing Asparagus	y	
<i>Aster subulatus</i>	Bushy Starwort	y	
<i>Atriplex prostrata</i>			y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y

<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	
<i>Celtis occidentalis</i>	Chinese Hackberry	y	y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Crassocephalum crepidioides</i>	Thickheads	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus rotundus</i>	Nutgrass		y
<i>Daucus carota</i>	Wild Carrot		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Ehrharta longiflora</i>	Annual Veldt Grass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Erodium moschatum</i>	Musky Storksbill		y
<i>Eucalyptus bicostata</i>	Southern Blue Gum, Eurabbie		y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Ficus elastica</i>	Rubber Tree	y	y
<i>Fumaria sp.</i>	Fumitory	y	y
<i>Galinsoga parviflora</i>	Potato Weed	y	
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Gnaphalium sp.</i>	Cudweed	y	
<i>Grevillea 'Robyn Gordon'</i>	Grevillea 'Robyn Gordon'	y	
<i>Grevillea robusta</i>	Silky Oak	y	
<i>Hedera helix</i>	English Ivy		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea cairica</i>	Coast Morning Glory, Mile a Minute		y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lolium sp.</i>	Rye Grass	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Parietaria judaica</i>	Asthma Weed	y	y

<i>Pennisetum alopecuroides</i> = <i>Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Ricinus communis</i>	Castor Oil Plant	y	y
<i>Ruellia squarrosa</i>	Blue Shade, Creeping Ruellia		y
<i>Schinus areira</i>	Pepper Tree		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	
<i>Setaria palmifolia</i>	Palm Grass	y	y
<i>Setaria viridis</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stachys arvensis</i>	Stagger		y
<i>Stellaria media</i>	Chickweed	y	y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officinale</i>	Dandelion	y	y
<i>Thunbergia alata</i>	Black-eyed Susan		y
<i>Verbena officinalis</i>	Common Verbena, Vervain	y	y
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Wild Watsonia		y

Fauna Summary

Table 36 Fauna summary data (Bennelong Park)

FAUNA	2008	2018
NATIVE	21	5
INTRODUCED	2	1

Table 37 Fauna summary data (Kissing Point)

FAUNA	2008	2018
NATIVE	17	14
INTRODUCED	2	1

Table 38 Species lists 2008-2018 (Bennelong Park)

COMMON NAME	SPECIES NAME	2008	2018
Australasian Darter	<i>Anhinga novaehollandiae</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	

Eastern Koel	<i>Eudynamys orientalis</i>	•	
Fairy Martin	<i>Petrochelidon ariel</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	
Welcome Swallow	<i>Hirundo neoxena</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	•
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
FROGS			
NATIVE MAMMELS			
Common Brushtail Possum		•	

Some of the better habitat for small birds and reptiles in the local area is located in the disused industrial land to the west of Bennelong Park.

Table 39 Species lists 2008-2018 (Kissing Point)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Pelican	<i>Pelecanus conspicillatus</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Crested Tern	<i>Thalasseus bergii</i>		•
Galah	<i>Eolophus roseicapillus</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	•

Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	•
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>	•	



Figure 44 Exclusion fencing along the western boundary separates the well maintained public land from the messy and weedy, but more biodiverse, disused industrial lands next door.



Figure 45 Open space specialists such as the Masked Lapwing do well in Kissing Point Park

5.1.4 BILL MITCHELL PARK

Vegetation summary

Table 40 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
Bill Mitchell Park	82 Morrison Road, Tennyson Point		2.38Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Weed_Ex: Weeds and Exotics	N/A	4	0.365Ha
Urban_E/N: Urban Exotic/Native	N/A	3	0.261Ha

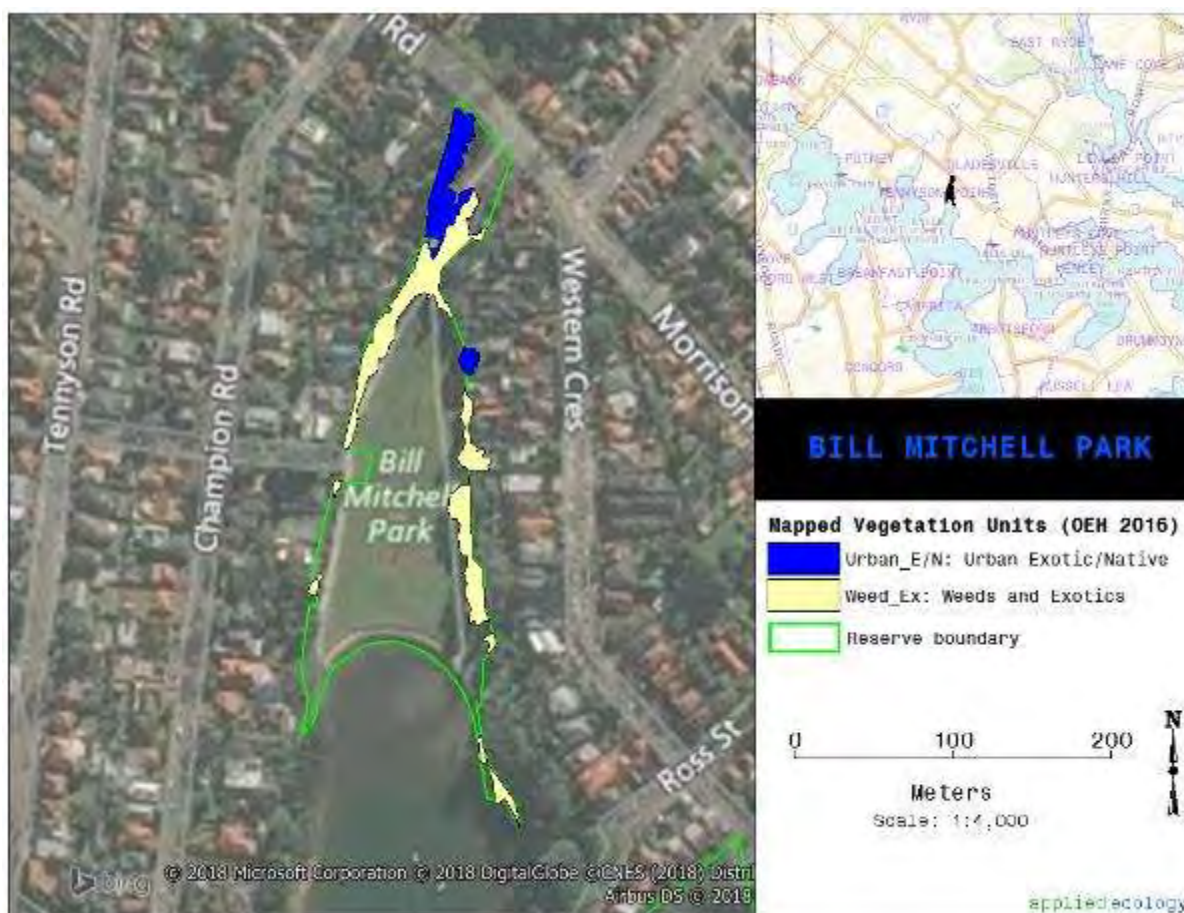


Figure 46 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 41 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	N/A	EXOTIC SPECIES COUNT 2008	N/A
NATIVE SPECIES COUNT 2018	31	EXOTIC SPECIES COUNT 2018	47
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	31	EXOTIC SPECIES GAINED 2008-2018	47

Number of species

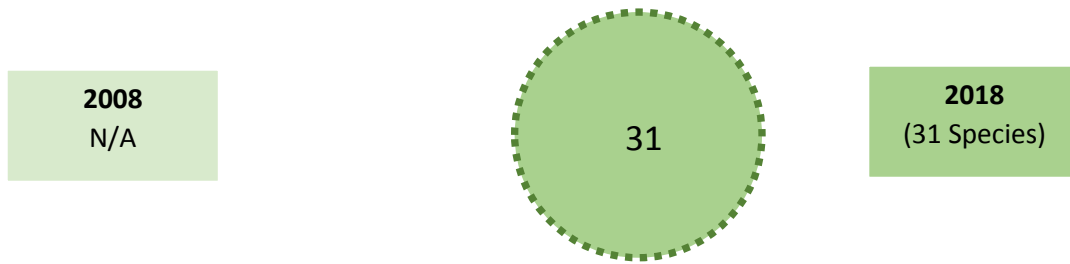


Figure 47 Comparison of native species richness from 2008 to 2018 for Bill Mitchell Park

Number of species

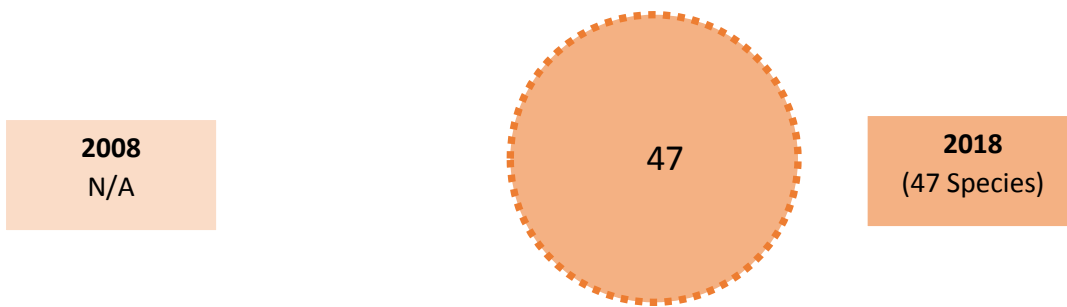


Figure 48 Comparison of exotic species richness from 2008 to 2018 for Bill Mitchell Park



Figure 49 Mature canopy trees are interspersed with weeds near the park entrance



Figure 50 Areas of revegetation are located around the park's perimeter



Figure 51 Remnant vegetation is mixed with weeds on the old quarry walls



Figure 52 Mangroves have colonised the small flats below the sandstone rock wall at the edge of the harbour



Figure 53 Numerous waders make use of the tidal mudflats adjoining Bill Mitchell Park

Comparison of flora inventories 2008-2018

Table 42 Native flora species recorded in Bill Mitchell Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Banksia ericifolia</i>	Heath-leaved Banksia		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia		y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callistemon salignus</i>	Willow Bottlebrush		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Carpobrotus glaucescens</i>	Pigface, Iceplant		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany		y
<i>Eucalyptus punctata</i>	Grey Gum		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig		y
<i>Gleichenia dicarpa</i>	Coral Fern		y
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Histopteris incisa</i>	Batswing Fern		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Poa labillardieri</i>	Poa Tussock		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Syzygium australe</i>	Brush Cherry		y
<i>Tristaniaopsis laurina</i>	Water Gum		y

Table 43 Native flora species recorded in Bill Mitchell Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine		y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Atriplex prostrata</i>			y

<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y
<i>Cardamine hirsuta</i>	Flickweed, Cardamine		y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Cinnamomum camphora</i>	Camphor Laurel		y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Conyza sp.</i>	Fleabane		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed		y
<i>Grevillea robusta</i>	Silky Oak		y
<i>Hedera helix</i>	English Ivy		y
<i>Ipomoea indica</i>	Blue Morning Glory		y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Lantana camara</i>	Lantana		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Lophostemon confertus</i>	Brush Box		y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Monstera deliciosa</i>	Fruit Salad Plant		y
<i>Morus albus</i>	White Mulberry		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Ophiopogon sp.</i>	Mondo Grass		y
<i>Dimorphotheca [=Osteospermum] ecklonis</i>	African Daisy, Sailor Boy Daisy		y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Senna pendula var. glabrata</i>	Easter Senna		y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stellaria media</i>	Chickweed		y
<i>Tillandsia spp.</i>	Bromeliads		y
<i>Tradescantia fluminensis [=albiflora]</i>	Trad, Wandering Jew		y
<i>Tradescantia pallida</i>	Purple Trad, Purple Queen		y
<i>Trifolium repens</i>	White Clover		y
<i>Vicia hirsuta</i>	Hairy Vetch, Common Vetch		y



Figure 54 A mixed flock foraging at Bill Mitchell Park - Australian Ibis, Little Corellas and Masked Lapwings.

Fauna Summary

Table 44 Fauna summary data (Bill Mitchell Park)

FAUNA	2008	2018
NATIVE	0	14
INTRODUCED	0	0

Table 45 Species lists 2008-2018 (Bill Mitchell Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>		•
Australian Raven	<i>Corvus coronoides</i>		•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Little Corella	<i>Cacatua sanguinea</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>		•
Masked Lapwing	<i>Vanellus miles</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>		•
White-headed Stilt	<i>Himantopus leucocephalus</i>		
White-faced Heron	<i>Egretta novaehollandiae</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•

5.1.5 BREMNER PARK, MALLEE RESERVE and TYAGARAH PARK

Vegetation summary

Table 46 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)	TOTAL AREA	
BREMNER PARK MALLEE RESERVE TYAGARAH PARK	5 Tyagarah Street, Gladesville 8 Tyagarah Street, Gladesville 129 Morrison Road, Gladesville	BP: 2.16Ha MR: 0.536Ha TP: 1.83Ha	
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF06: Coastal Sandstone Foreshores Forest	NO	BP: 1 MR: 1 TP: 1	BP: 0.112Ha MR: 0.420Ha TP: 0.412HA
Urban_E/N: Urban Exotic/Native	N/A	BP: 2 TP: 5	BP: 0.341Ha TP: 0.066Ha
Weed_Ex: Weeds and Exotics	N/A	BP: 1 TP: 1	BP: 0.116Ha TP: 0.001Ha



Figure 55 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 47 Flora summary data Bremner Park, 2008-2018

NATIVE SPECIES COUNT 2008	28	EXOTIC SPECIES COUNT 2008	24
NATIVE SPECIES COUNT 2018	60	EXOTIC SPECIES COUNT 2018	46
NATIVE SPECIES CONSTANT 2008-2018	23	EXOTIC SPECIES CONSTANT 2008-2018	18
NATIVE SPECIES LOST 2008-2018	5	EXOTIC SPECIES LOST 2008-2018	6
NATIVE SPECIES GAINED 2008-2018	37	EXOTIC SPECIES GAINED 2008-2018	28

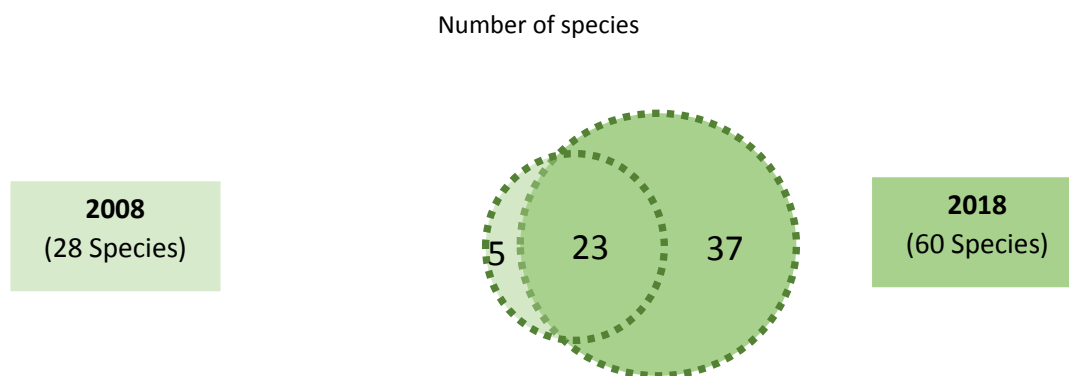


Figure 56 Comparison of native species richness from 2008 to 2018 for Bremner Park

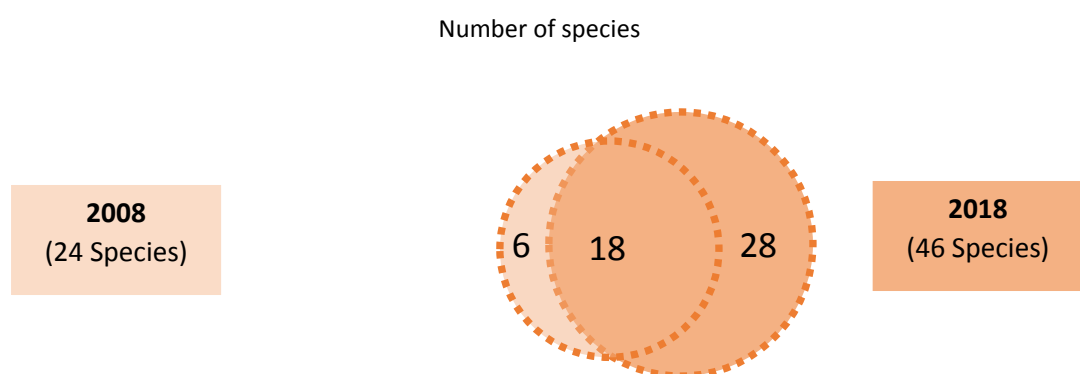


Figure 57 Comparison of exotic species richness from 2008 to 2018 for Bremner Park

Table 48 Flora summary data Mallee Reserve 2008-2018

NATIVE SPECIES COUNT 2008	27	EXOTIC SPECIES COUNT 2008	42
NATIVE SPECIES COUNT 2018	31	EXOTIC SPECIES COUNT 2018	44
NATIVE SPECIES CONSTANT 2008-2018	19	EXOTIC SPECIES CONSTANT 2008-2018	31
NATIVE SPECIES LOST 2008-2018	8	EXOTIC SPECIES LOST 2008-2018	11
NATIVE SPECIES GAINED 2008-2018	12	EXOTIC SPECIES GAINED 2008-2018	13

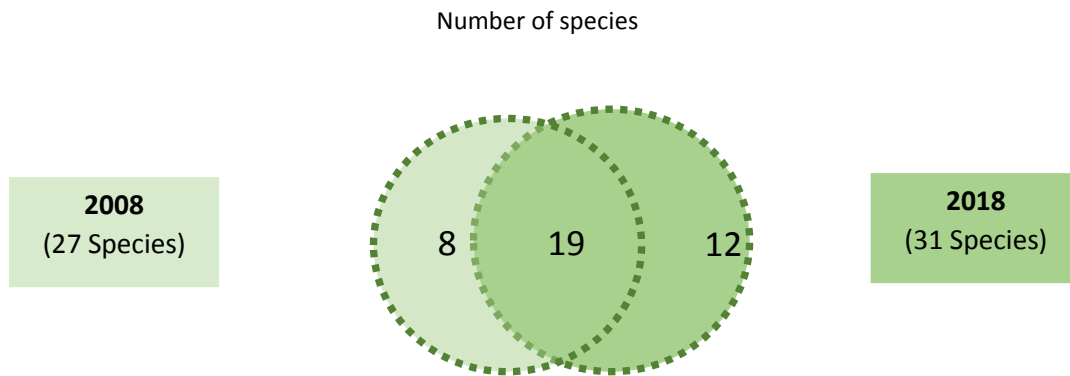


Figure 58 Comparison of native species richness from 2008 to 2018 for Mallee Reserve

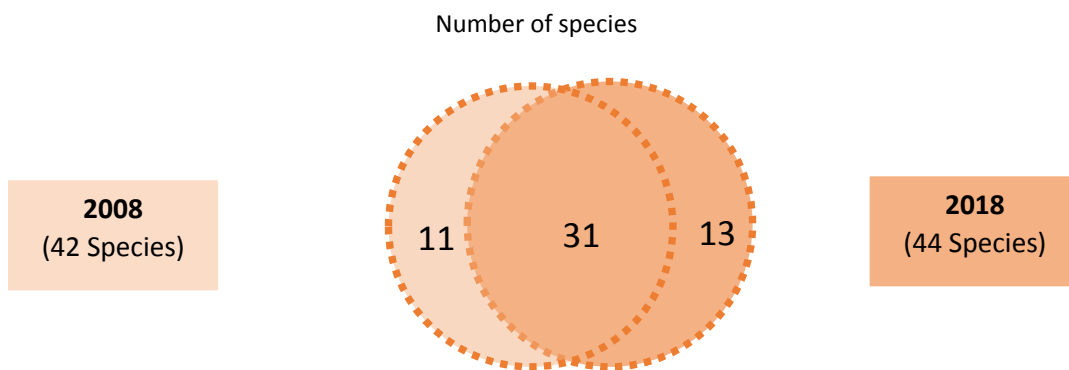


Figure 59 Comparison of exotic species richness from 2008 to 2018 for Mallee Reserve

Table 49 Flora summary data Tyagarah Park 2008-2018

NATIVE SPECIES COUNT 2008	15	EXOTIC SPECIES COUNT 2008	21
NATIVE SPECIES COUNT 2018	22	EXOTIC SPECIES COUNT 2018	27
NATIVE SPECIES CONSTANT 2008-2018	13	EXOTIC SPECIES CONSTANT 2008-2018	17
NATIVE SPECIES LOST 2008-2018	2	EXOTIC SPECIES LOST 2008-2018	4
NATIVE SPECIES GAINED 2008-2018	9	EXOTIC SPECIES GAINED 2008-2018	10

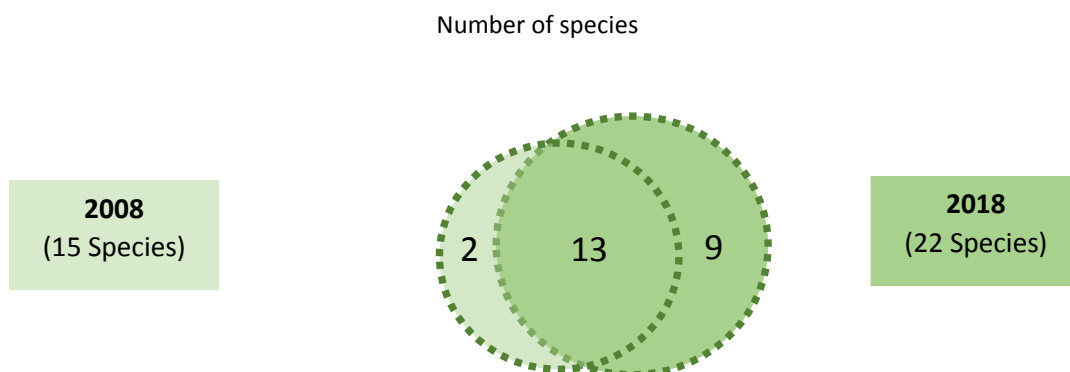


Figure 60 Comparison of native species richness from 2008 to 2018 for Tyagarah Park

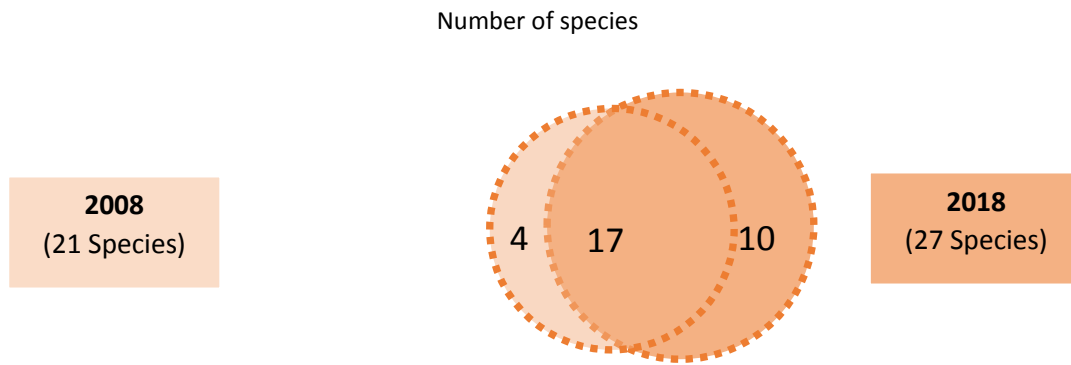


Figure 61 Comparison of exotic species richness from 2008 to 2018 for Tyagarah Park



Figure 62 Bremner Park has semi-mature canopy trees around a grassed oval



Figure 63 Weed control and revegetation is helping to restore ecosystem health in Mallee Reserve



Figure 64 Mature trees and remnant understorey retain biodiversity values in Mallee Reserve



Figure 65 Revegetation planting accompanies a footpath around grassed open space in Tyagarah Park



Figure 66 The main creekline is heavily weed infested, as seen from the footbridge between Bremner and Tyagarah Parks

Comparison of flora inventories 2008-2018

Table 50 Native flora species recorded in Bremner Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora bakeri</i>	Narrow-leaved Apple	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Breynia oblongifolia</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y
<i>Cassinia aculeata</i>	Common Dogwood		y
<i>Cassinia uncata</i>	Bent Cassinia		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Centella asiatica</i>	Indian Pennywort		y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Corymbia maculata</i>	Spotted Gum		y
<i>Cupaniopsis anacardioides</i>	Tuckeroo		y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Cymbopogon refractus</i>	Barbed Wire Grass		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Einadia hastata</i>	Seaberry Saltbush		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Eucalyptus crebra</i>	Broad-leaved Ironbark		y
<i>Eucalyptus sclerophylla</i>	Hard-leaved Scribbly Gum	y	y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry		y
<i>Ficus coronata</i>	Sandpaper Fig	y	y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig		y
<i>Geranium homeanum</i>	Native Geranium		y

<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Hakea dactyloides</i>	Finger Hakea		y
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hibbertia scandens</i>	Twining Guinea Flower		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Indigofera australis</i>	Austral Indigo	y	
<i>Kennedia rubicunda</i>	Dusky Coral Pea		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> <i>subsp. polygalifolium</i>	Lemon-scented Tea-tree	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca nodosa</i>	Ball Honeymyrtle	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Pittosporum</i> [= <i>Citriobatus</i>] <i>multiflorum</i>	Orange Thorn		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Tristaniaopsis laurina</i>	Water Gum	y	y

Table 51 Introduced flora species recorded in Bremner Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y
<i>Canna indica</i>	Canna Lily	y	
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel		y
<i>Cirsium vulgare</i>	Spear Thistle	y	
<i>Cynodon dactylon</i>	Common Couch		y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Delairea odorata</i>	Cape Ivy		y
<i>Dietes</i> sp.	Dietes		y

<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eleusine indica</i>	Crowsfoot Grass	y	y
<i>Erythrina x sykesii</i>	Coral Tree	y	y
<i>Eucalyptus cinerea</i>	Argyle Apple		y
<i>Eucalyptus citriodora</i>	Lemon Scented Gum		y
<i>Eucalyptus microcorys</i>	Tallow Wood		y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Fumaria sp.</i>	Fumitory		y
<i>Gomphocarpus fruticosus</i>	Narrow-leaved Cotton Bush	y	
<i>Grevillea robusta</i>	Silky Oak	y	
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory		y
<i>Lantana camara</i>	Lantana		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Pennisetum clandestinum = Cenchrus clandestinus</i>	Kikuyu		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Ricinus communis</i>	Castor Oil Plant	y	
<i>Rubus fruticosus aggregate species</i>	Blackberry		y
<i>Schinus areira</i>	Pepper Tree	y	
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Stachys arvensis</i>	Stagger		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis [=albiflora]</i>	Trad, Wandering Jew	y	y
<i>Ulmus parvifolius</i>	Chinese Elm		y

Table 52 Native flora species recorded in Mallee Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	y

<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle		y
<i>Acmena smithii</i>	Lilly-pilly	y	
<i>Allocasuarina littoralis</i>	Black She-oak	y	
<i>Angophora bakeri</i>	Narrow-leaved Apple	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Baumea juncea</i>			y
<i>Breynia oblongifolia</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Calystegia marginata</i>			y
<i>Cymbopogon refractus</i>	Barbed Wire Grass		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Eucalyptus crebra</i>	Broad-leaved Ironbark		y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hakea sericea</i>	Bushy Needlebush	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Kunzea ambigua</i>	Tickbush	y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y

Table 53 Introduced flora species recorded in Mallee Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acalypha australis</i>	Asian Copperleaf		y
<i>Acer negundo</i>	Box Elder	y	

<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Canna indica</i>	Canna Lily	y	y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Cyathea cooperi</i>	Straw Tree-fern	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass	y	
<i>Erythrina x sykesii</i>	Coral Tree	y	
<i>Fumaria sp.</i>	Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed	y	y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedychium gardnerianum</i>	Ginger Lily	y	
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Lantana camara</i>	Lantana	y	
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Pyracantha angustifolia</i>	Firethorn	y	y
<i>Ricinus communis</i>	Castor Oil Plant	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry		y
<i>Rumex pulcher</i>	Fiddle Dock		y

<i>Schinus areira</i>	Pepper Tree	y	
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Tropaeolum majus</i>	Nasturtium		y

Table 54 Native flora species recorded in Tyagarah Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle	y	
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Breynia oblongifolia</i>	Coffee Bush	y	y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Zieria smithii</i>	Sandfly Zieria		y

Table 55 Introduced flora species recorded in Tyagarah Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Crocasmia x crocosmiiflora</i>	Montbretia	y	
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Fumaria muralis subsp. muralis</i>	Wall Fumitory		y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Livistona chinensis</i>		y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Pyracantha angustifolia</i>	Firethorn	y	
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum mauritianum</i>	Wild Tobacco		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	
<i>Stachys arvensis</i>	Stagger		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y

Fauna Summary

Table 56 Fauna summary data (Bremner Park, Mallee Reserve and Tyagarah Park)

FAUNA	2008	2018
NATIVE	24	22
INTRODUCED	7	2

Table 57 Species lists 2008-2018 (Bremner Park, Mallee Reserve and Tyagarah Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian King-Parrot	<i>Alisterus scapularis</i>	•	•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Galah	<i>Eolophus roseicapillus</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>		•
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silvereye	<i>Zosterops lateralis</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>		•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	•
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Black-bellied Marsh Snake	<i>Hemiaspis signata</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•

Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Black Rat	<i>Rattus rattus</i>	•	
Mouse	<i>Mus musculus</i>	•	
Dog	<i>Canis lupus familiaris</i>	•	•

Nestling Grey Butcherbirds in the carpark at Bremner Park – Spring 2018 (photo Applied Ecology 2018)



5.1.6 GLADES BAY PARK

Vegetation summary

Table 58 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
GLADES BAY PARK	45 Glades Avenue, Gladesville		3.47Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_SW01: Estuarine Mangrove Forest	NO	1	0.148Ha
S_SW02: Estuarine Saltmarsh	BC Act: Endangered, EPBC Act: Vulnerable	1	0.008Ha
S_DSF06: Coastal Sandstone Foreshores Forest	NO	3	2.269Ha
Weed_Ex: Weeds and Exotics	N/A	5	0.211Ha

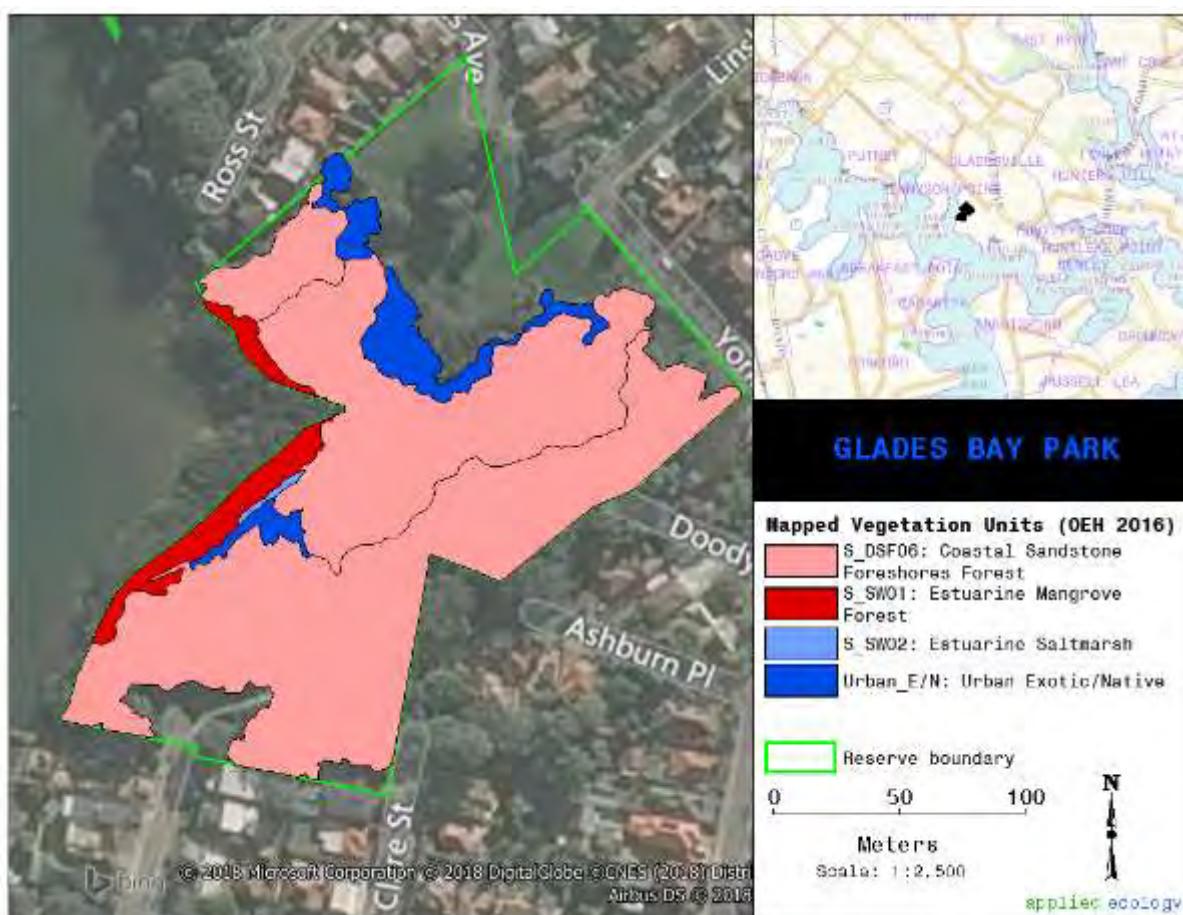


Figure 67 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 59 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	112	EXOTIC SPECIES COUNT 2008	71
NATIVE SPECIES COUNT 2018	106	EXOTIC SPECIES COUNT 2018	80
NATIVE SPECIES CONSTANT 2008-2018	95	EXOTIC SPECIES CONSTANT 2008-2018	56
NATIVE SPECIES LOST 2008-2018	17	EXOTIC SPECIES LOST 2008-2018	15
NATIVE SPECIES GAINED 2008-2018	11	EXOTIC SPECIES GAINED 2008-2018	24

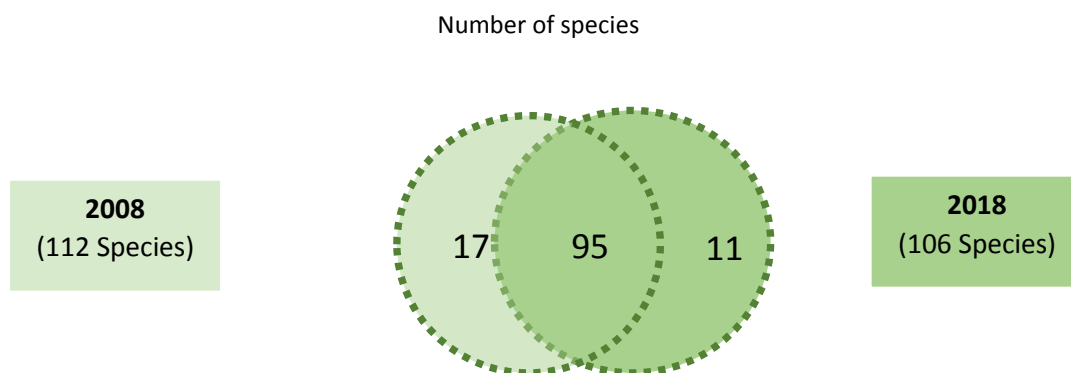


Figure 68 Comparison of native species richness from 2008 to 2018 for Glades Bay Park

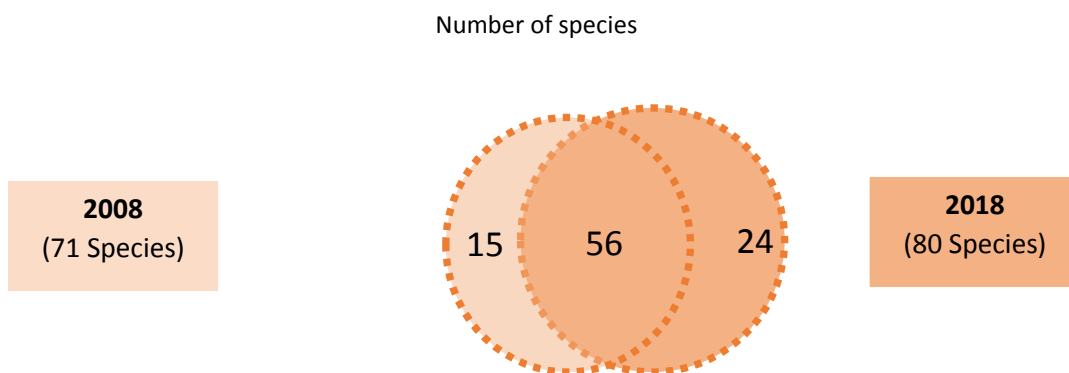


Figure 69 Comparison of exotic species richness from 2008 to 2018 for Glades Bay Park

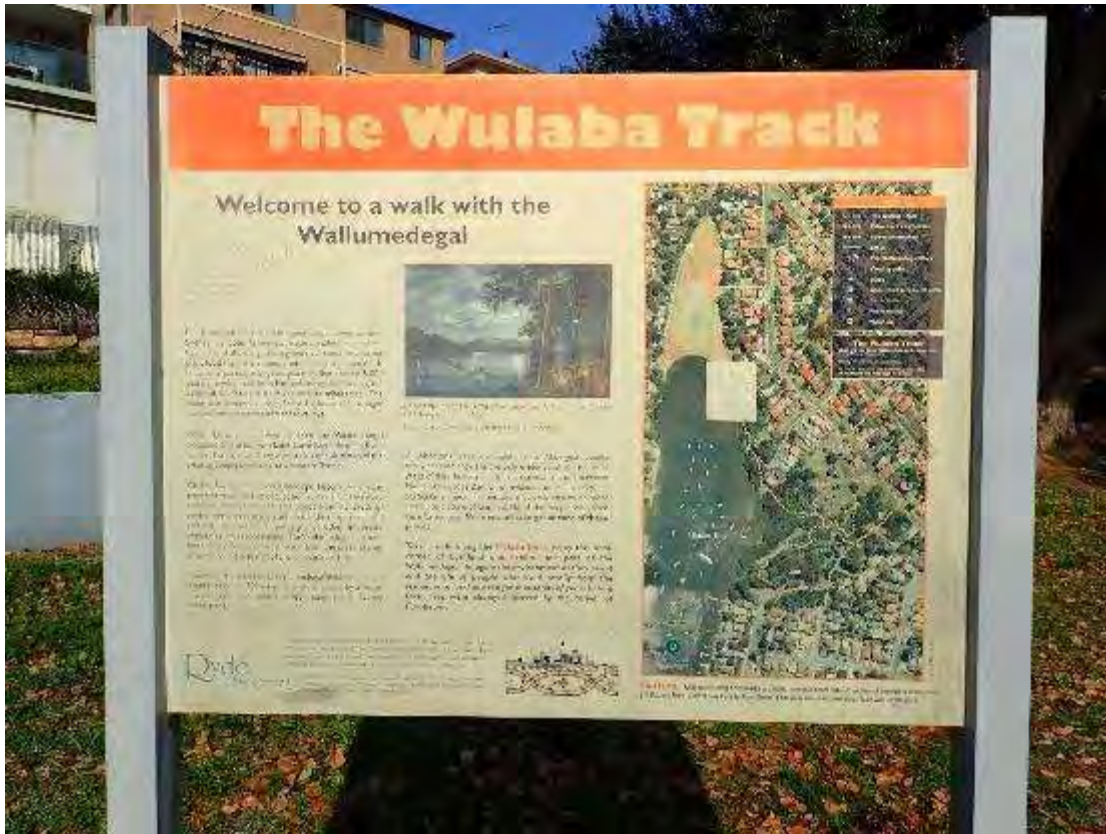


Figure 70 Signs offer a guided indigenous heritage walk around the foreshores of Glades Bay



Figure 71 Glades Bay Park has a pleasant mixture of built structures and good quality native vegetation



Figure 72 Parts of the foreshores include areas of saltmarsh and mangroves



Figure 73 Signs tell the story of wallaby (wulaba to the local Aborigines) in the Glades Bay area



Figure 74 Footpaths and boardwalks reduce the impacts on riparian vegetation in Glades Bay Park



Figure 75 Good quality Coastal Sandstone Foreshores Forest in Glades Bay Park



Figure 76 Bush regeneration weed control is being undertaken in some areas of the reserve



Figure 77 The eastern end of the reserve has areas of grassed open space with canopy trees and understorey patches

Comparison of flora inventories 2008-2018

Table 60 Native flora species recorded in Glades Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervata</i>	Two-veined Hickory	y	
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Alocasia brisbanensis</i>	Cunjevoi	y	y
<i>Alternanthera denticulata</i>	Lesser Joyweed	y	
<i>Angophora costata</i>	Sydney Red Gum		y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Asplenium australasicum</i>	Birds Nest Fern	y	y
<i>Austrostipa ramosissima</i>		y	y
<i>Austrostipa verticillata</i>	Bamboo Grass		y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia serrata</i>	Old Man Banksia	y	y
<i>Baumea juncea</i>		y	y
<i>Billardiera scandens</i>	Dwarf Appleberry		y
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern	y	y
<i>Bolboschoenus caldwellii</i>		y	
<i>Breynia oblongifolia</i>	Coffee Bush	y	y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y
<i>Callitris rhomboidea</i>	Port Jackson Cypress	y	
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Cheilanthes sieberi</i>	Poison Rock Fern, Mulga Fern		y
<i>Christella dentata</i>	Binung	y	y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily	y	y
<i>Corymbia maculata</i>	Spotted Gum	y	y

<i>Cymbopogon refractus</i>	Barbed Wire Grass	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichelachne crinita</i>	Longhair Plumegrass	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eragrostis brownii</i>	Brown's Lovegrass	y	
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus robusta</i>	Swamp Mahogany	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	y
<i>Ficus coronata</i>	Sandpaper Fig	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	
<i>Grevillea buxifolia</i>	Grey Spider Flower	y	y
<i>Grevillea linearifolia</i>	White Spider Flower	y	y
<i>Grevillea sericea</i>	Pink Spider Flower	y	y
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	
<i>Hibbertia scandens</i>	Twining Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Hydrocotyle sibthorpioides</i>	Pennywort	y	y
<i>Hypolepis muelleri</i>	Rough Ground Fern	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Isolepis cernua</i>	Nodding Club-rush	y	
<i>Juncus kraussii subsp. australiensis</i>	Sea Rush	y	y
<i>Juncus usitatus</i>	Common Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lachnagrostis filiformis</i>	Blown Grass	y	
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum polygalifolium subsp. polygalifolium</i>	Lemon-scented Tea-tree	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Livistona australis</i>	Cabbage Palm	y	y
<i>Lobelia alata</i>		y	y
<i>Lomandra confertifolia</i>	Mat Rush		y

<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Melaleuca nodosa</i>	Ball Honeymyrtle	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Melia azedarach</i>	White Cedar	y	
<i>Meliccytus [=Hymenanthera] dentatus</i>	Tree Violet		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Monotoca elliptica</i>	Tree Broom Heath	y	y
<i>Olearia microphylla</i>	Bridal Daisy Bush		y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Paspalidium distans</i>		y	
<i>Persicaria hydropiper</i>	White Pepper	y	
<i>Persicaria lapathifolia</i>	Pale Knotweed	y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platycterium bifurcatum</i>	Elkhorn Fern		y
<i>Plectranthus parviflorus</i>	Cockspur Flower	y	y
<i>Poa affinis</i>		y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pteris tremula</i>	Tender Brake	y	y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Samolus repens</i>	Creeping Brookwed	y	y
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire	y	y
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed		y
<i>Smilax glycyphylla</i>	Native Sarsparilla	y	
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine		
<i>Suaeda australis</i>	Seablite	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Triglochin striata</i>	Streaked Arrow-grass	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Typha orientalis</i>	Cumbungi		y
<i>Veronica plebeia</i>	Trailing Speedwell		y
<i>Zieria smithii</i>	Sandfly Zieria	y	y

Table 61 Introduced flora species recorded in Glades Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia elata</i>	Cedar Wattle		y
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Alternanthera philoxeroides</i>	Alligator Weed		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Arundo donax</i>	Giant Reed	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Aster subulatus</i>	Bushy Starwort	y	
<i>Atriplex prostrata</i>		y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	y
<i>Briza minor</i>	Shivery Grass	y	y
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Bryophyllum delagoense</i>	Mother of Millions	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Castanospermum australe</i>	Black Bean	y	
<i>Celtis occidentalis</i>	Chinese Hackberry	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Chloris gayana</i>	Rhodes Grass		y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Colocasia esculenta</i>	Purple Taro		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Crassocephalum crepidioides</i>	Thickheads	y	
<i>Cyathea cooperi</i>	Straw Tree-fern	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge	y	y
<i>Digitaria didactyla</i>	Queensland Blue Couch	y	y
<i>Digitaria sanguinalis</i>	Summer Grass	y	y
<i>Dimorphotheca</i> [= <i>Osteospermum</i>] <i>ecklonis</i>	African Daisy, Sailor Boy Daisy		y
<i>Echinochloa crus-galli</i>	Barnyard Grass	y	
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Eriobotrya japonica</i>	Loquat		y
<i>Erythrina x sykesii</i>	Coral Tree	y	
<i>Euphorbia peplus</i>	Petty Spurge	y	y
<i>Fumaria muralis subsp. muralis</i>	Wall Fumitory	y	y
<i>Galinsoga parviflora</i>	Potato Weed	y	y

<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Hedychium gardnerianum</i>	Ginger Lily		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory		y
<i>Isolepis prolifer</i>		y	
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Juncus cognatus</i>		y	
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Medicago polymorpha</i>	Burr Medic	y	y
<i>Megathyrus maximus</i>	Guinea Grass		y
<i>Monstera deliciosa</i>	Fruit Salad Plant		y
<i>Morus albus</i>	White Mulberry	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel	y	
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	y
<i>Passiflora edulis</i>	Edible Passionfruit	y	
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake	y	y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Persicaria capitata</i>	Japanese Knotweed		y
<i>Petrorhagia nanteuillii</i>	Proliferous Pinks		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllanthus tenellus</i>	Long-stemmed Phyllanthus	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Salvia verbenacea</i>	Salvia		y
<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna		y
<i>Setaria viridis</i>	Pigeon Grass	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y

<i>Stachys arvensis</i>	Stagger	y	y
<i>Stellaria media</i>	Chickweed	y	y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Thunbergia alata</i>	Black-eyed Susan	y	y
<i>Tillandsia spp.</i>	Bromeliads		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Tropaeolum majus</i>	Nasturtium		y
<i>Verbena bonariensis</i>	Purple Top	y	y
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Wild Watsonia	y	

Fauna Summary

Table 62 Fauna summary data (Glades Bay Park)

FAUNA	2008	2018
NATIVE	34	35
INTRODUCED	6	6

Table 63 Species lists 2008-2018 (Glades Bay Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathamii</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Thornbill	<i>Acanthiza pusilla</i>	•	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	•	•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Crested Tern	<i>Thalasseus bergii</i>		•
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Koel	<i>Eudynamis orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>		•
Little Corella	<i>Cacatua sanguinea</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	

Pied Currawong	<i>Strepera graculina</i>	•	•
Powerful Owl	<i>Ninox strenua</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	•
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>		•
White-browed Scrubwren	<i>Sericornis frontalis</i>		•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Common Starling	<i>Sturnus vulgaris</i>	•	
House Sparrow	<i>Passer domesticus</i>	•	
Rock Dove	<i>Columba livia</i>		•
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	•
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
Black-bellied Marsh Snake	<i>Hemisaspis signata</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	•
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
a Long-eared Bat	<i>Nyctophilus sp</i>		•
Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i>		•
Large Forest Bat	<i>Vespadelus darlingtoni</i>		•
INTRODUCED MAMMALS			
cat			•

Black Rat			•
MOUSE	<i>Mus musculus</i>	•	
DOG		•	
Rabbit			•
Red Fox			•
MISCELLANEOUS			
FISH			•



Figure 78 Hatchling Australian Brush-turkeys in Glades bay Reserve Spring 2018

5.1.7 MAZE PARK

Vegetation summary

Table 64 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)	TOTAL AREA	
MAZE PARK	100 - 108 Brush Road, West Ryde	1.93Ha	
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Urban_E/N: Urban Exotic/Native	N/A	2	1.055Ha

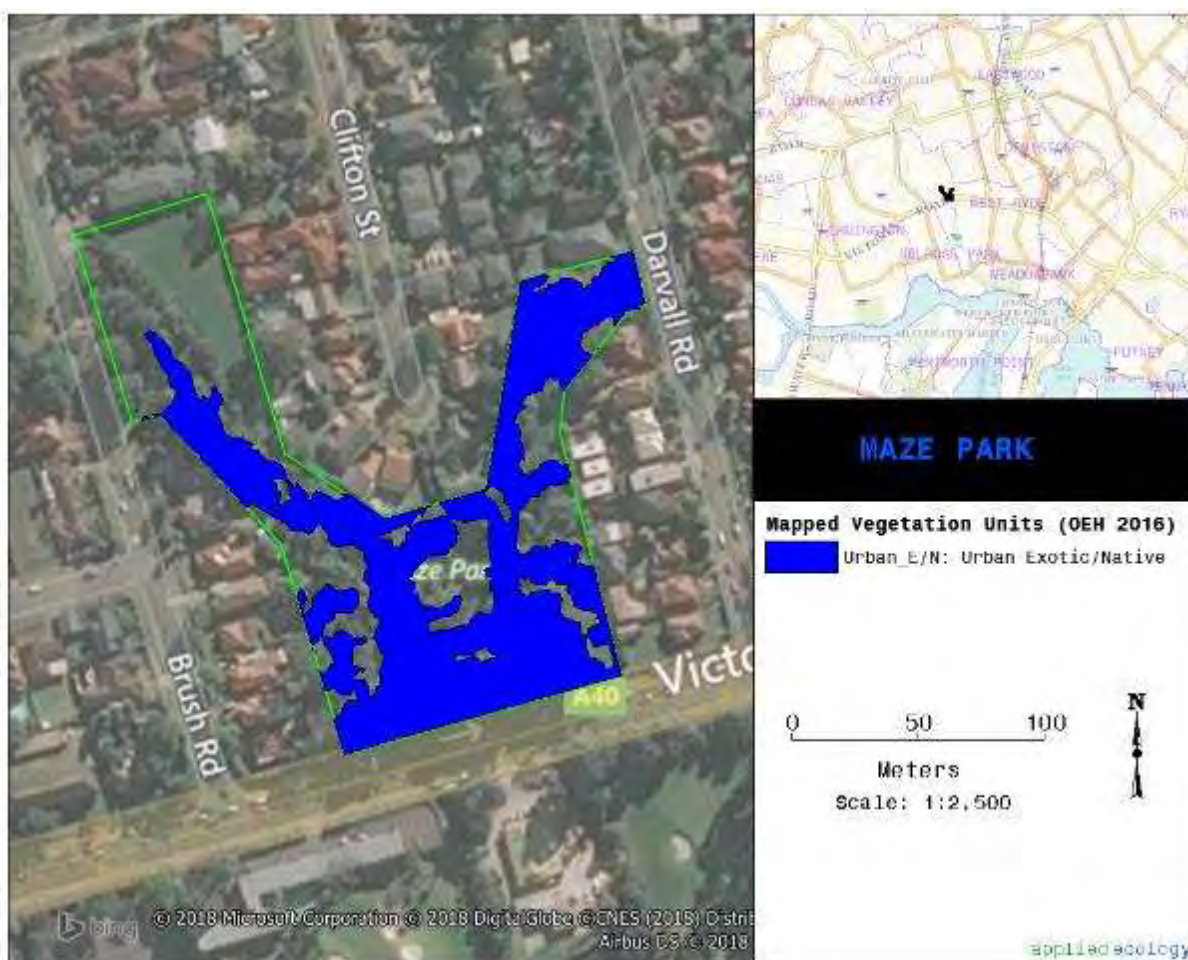


Figure 79 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 65 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	60	EXOTIC SPECIES COUNT 2018	44
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	60	EXOTIC SPECIES GAINED 2008-2018	44

Number of species

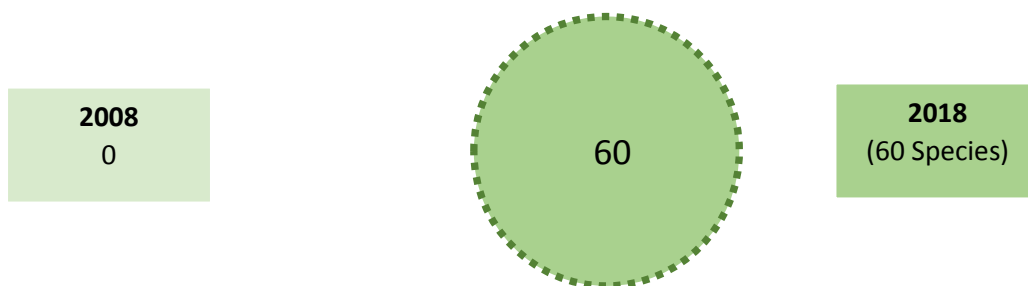


Figure 80 Comparison of native species richness from 2008 to 2018 for Maze Park

Number of species

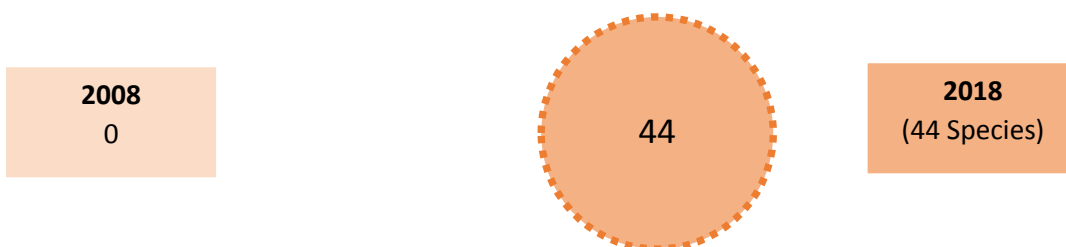


Figure 81 Comparison of exotic species richness from 2008 to 2018 for Maze Park



Figure 82 Extensive revegetation work is helping to recreate a bushland setting in Maze Park



Figure 83 In some sections, remnant native vegetation combines with a weedy understorey to create fauna habitat



Figure 84 Large Bangalays give an indication of what the vegetation was like in the past



Figure 85 Ongoing bush regeneration helps to improve the overall condition of the reserve

Comparison of flora inventories 2008-2018

Table 66 Native flora species recorded in Maze Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia floribunda</i>	White Sallow Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora costata</i>	Sydney Red Gum		y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Angophora subvelutina</i>	Broad-leaved Apple		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callicoma serratifolia</i>	Black Wattle		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Calystegia marginata</i>			y
<i>Carex appressa</i>	Tall Carex		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Christella dentata</i>	Binung		y

<i>Clematis glycinoides</i>	Old Man's Beard		y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Cymbopogon refractus</i>	Barbed Wire Grass		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dichondra repens</i>	Kidney Weed		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Eucalyptus acmenoides</i>	White Mahogany		y
<i>Eucalyptus amplifolia</i>	Cabbage Gum		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany		y
<i>Eucalyptus crebra</i>	Broad-leaved Ironbark		y
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	Grey Ironbark		y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum		y
<i>Ficus coronata</i>	Sandpaper Fig		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Geranium solanderi</i>	Native Geranium		y
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Homalanthus populifolius</i>	Bleeding Heart		y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Notolaea longifolia</i>	Mock Olive		y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Plectranthus parviflorus</i>	Cockspur Flower		y
<i>Poa labillardieri</i>	Poa Tussock		y
<i>Pomaderris prunina</i>	Plum-leaved Pomaderris		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Tristaniopsis laurina</i>	Water Gum		y

Table 67 Introduced flora species recorded in Maze Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acetosa sagittata</i>	Turkey Rhubarb		y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Avena fatua</i>	Wild Oat Grass		y
<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cardiospermum grandiflorum</i>	Balloon Vine		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Conyza sp.</i>	Fleabane		y
<i>Crassocephalum crepidioides</i>	Thickheads		y
<i>Cyathea cooperi</i>	Straw Tree-fern		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Ehrharta longiflora</i>	Annual Veldt Grass		y
<i>Eucalyptus cinerea</i>	Argyle Apple		y
<i>Fumaria capreolata</i> subsp. <i>capreolata</i>	Climbing Fumitory		y
<i>Fumaria muralis</i> subsp. <i>muralis</i>	Wall Fumitory		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Gnaphalium sp.</i>	Cudweed		y
<i>Malus sp</i>	Crabapple		y
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Dimorphotheca</i> [= <i>Osteospermum</i>] <i>ecklonis</i>	African Daisy, Sailor Boy Daisy		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Passiflora mollissima</i>	Banana Passionfruit		y
<i>Pennisetum alopecuroides</i> = <i>Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Rorippa nasturtium-aquaticum</i>	Watercress		y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna		y
<i>Setaria palmifolia</i>	Palm Grass		y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum mauritianum</i>	Wild Tobacco		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Stachys arvensis</i>	Stagger		y
<i>Stellaria media</i>	Chickweed		y

<i>Taraxacum officiale</i>	Dandelion		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Vicia hirsuta</i>	Hairy Vetch, Common Vetch		y

Fauna Summary

Table 68 Fauna summary data (Maze Park)

FAUNA	2008	2018
NATIVE	0	11
INTRODUCED	0	1

Table 69 Species lists 2008-2018 (Maze Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>		•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>		•
REPTILES			
Eastern Blue-tongue Lizard	<i>Tiliqua scincoides</i>		•
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>		•
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
FROGS			
Leaf-green Tree Frog	<i>Litoria phyllochroa</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>		•

5.1.8 MEADOWBANK PARK

Vegetation summary

Table 70 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
MEADOWBANK PAR	Constitution Road, Meadowbank		25.0Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_SW01: Estuarine Mangrove Forest	NO	3	0.519Ha
S_SW02: Estuarine Saltmarsh	BC Act: Endangered EPBC Act: Vulnerable	4	0.021Ha
Urban_E/N: Urban Exotic/Native	N/A	13	2.446Ha
Weed_Ex: Weeds and Exotics	N/A	4	0.453Ha
THREATENED SPECIES PRESENT	Narrow-leaved <i>Wilsonia</i> (<i>Wilsonia backhousia</i>)		



Figure 86 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 71 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	77	EXOTIC SPECIES COUNT 2018	53
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	77	EXOTIC SPECIES GAINED 2008-2018	53

Number of species

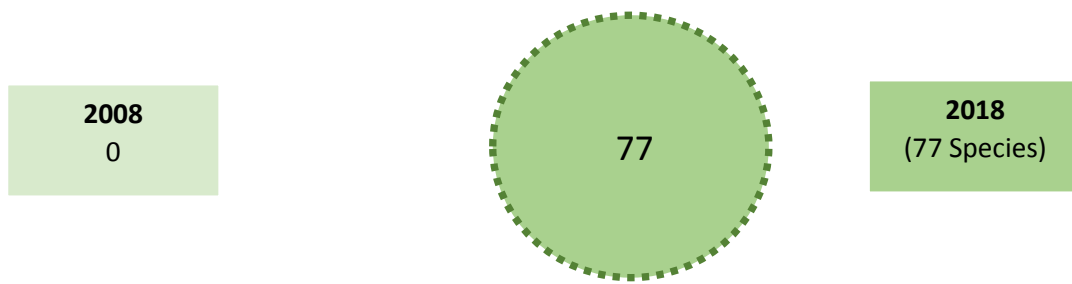


Figure 87 Comparison of native species richness from 2008 to 2018 for Meadowbank Park

Number of species

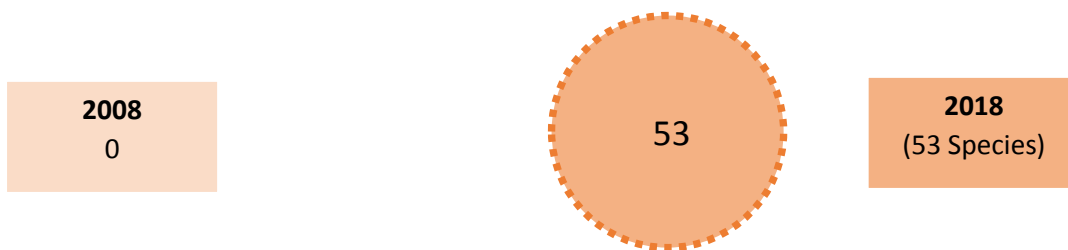


Figure 88 Comparison of exotic species richness from 2008 to 2018 for Meadowbank Park



Figure 89 Mangroves and saltmarsh are being invited into Meadowbank Park



Figure 90 Mangroves and saltmarsh reach to property boundaries of houses on Crowley Crescent



Figure 91 Several small patches of the threatened Wilsonia backhousia were found behind houses on Crowley Crescent



Figure 92 Areas of revegetation plantings were present, including the raingarden on Andrew St



Figure 93 Grassed open space is regularly used by locals for sports activities and an off leash dog park



Figure 94 Revegetation areas line the banks of channelled creeks where they pass through Meadowbank Park



Figure 95 Mangroves meet revegetation planting along the popular foreshore footpath/cycleway



Figure 96 In some places existing canopy trees have been retained in the mown grass landscape



Figure 97 Mature Turpentines form part of a small, but moderately intact remnant in one corner of the park



Figure 98 Revegetation planting is helping to improve the overall condition of the regenerating STIF patch

Comparison of flora inventories 2008-2018

Table 72 Native flora species recorded in Meadowbank Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Acacia stricta</i>	Straight Wattle		y
<i>Allocasuarina littoralis</i>	Black She-oak		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora costata</i>	Sydney Red Gum		y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove		y
<i>Banksia ericifolia</i>	Heath-leaved Banksia		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia		y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callicoma serratifolia</i>	Black Wattle		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush		y
<i>Cassinia aculeata</i>	Common Dogwood		y

<i>Cassinia denticulata</i>	Stiff Cassinia		y
<i>Cassinia uncata</i>	Bent Cassinia		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Corymbia maculata</i>	Spotted Gum		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dianella prunina</i>			y
<i>Dichondra repens</i>	Kidney Weed		y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Eucalyptus amplifolia</i>	Cabbage Gum		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany		y
<i>Eucalyptus oblonga</i>	Narrow-leaved Stringybark		y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum		y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig		y
<i>Ficus rubiginosa</i>	Port Jackson Fig		y
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Glycine clandestinus</i>	Love Creeper		y
<i>Grevillea buxifolia</i>	Grey Spider Flower		y
<i>Grevillea linearifolia</i>	White Spider Flower		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kennedia rubicunda</i>	Dusky Coral Pea		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Leucopogon juniperinus</i>	Prickly Heath		y
<i>Livistona australis</i>	Cabbage Palm		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Melaleuca ericifolia</i>	Swamp Paperbark		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Oxalis perennans</i>			y
<i>Persoonia pinifolia</i>	Pine-leaved Geebung		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y

<i>Polyscias sambuccifolia</i>	Elderberry Panax		y
<i>Pomaderris discolor</i>			y
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Pratia purpurascens</i>	White Root		y
<i>Samolus repens</i>	Creeping Brookwed		y
<i>Sarcocornia quinqueflora subsp. quinqueflora</i>	Samphire		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch		y
<i>Suaeda australis</i>	Seablite		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Telopea speciosissima</i>	Waratah		y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach		y
<i>Triglochin striata</i>	Streaked Arrow-grass		y
<i>Wilsonia backhousia</i>	Narrow-leaved Wilsonia		y
<i>Zieria smithii</i>	Sandfly Zieria		y

Table 73 Introduced flora species recorded in Meadowbank Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Araucaria heterophylla</i>	Norfolk Island Pine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine		y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Cardamine hirsuta</i>	Flickweed, Cardamine		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Conyza sp.</i>	Fleabane		y
<i>Cotoneaster glaucophylla</i>	Cotoneaster		y
<i>Cupressus sp</i>			y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Daucus carota</i>	Wild Carrot		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Epidendrum radicans x secundum hybrid complex</i>	Crucifix Orchid		y
<i>Eucalyptus citriodora</i>	Lemon Scented Gum		y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Gnaphalium sp.</i>	Cudweed		y
<i>Grevillea robusta</i>	Silky Oak		y
<i>Lactuca serriola</i>	Prickly Lettuce		y
<i>Lantana camara</i>	Lantana		y
<i>Lophostemon confertus</i>	Brush Box		y
<i>Malva nicaeensis</i>	Mallow of Nice		y

<i>Medicago polymorpha</i>	Burr Medic		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nerium oleander</i>	Oleander		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Pennisetum alopecuroides = Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum = Cenchrus clandestinus</i>	Kikuyu		y
<i>Persicaria capitata</i>	Japanese Knotweed		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phytolacca octandra</i>	Inkweed		y
<i>Pinus lambertiana</i>	Sugar Pine, Sugar Cone Pine		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Poa annua</i>	Winter Grass		y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Populus nigra</i>	Lombardy Poplar		y
<i>Rumex crispus</i>	Curled Dock		y
<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stachys arvensis</i>	Stagger		y
<i>Stellaria media</i>	Chickweed		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y
<i>Trifolium repens</i>	White Clover		y
<i>Vicia sativa</i>	Slender Vetch		y

Fauna Summary

Table 74 Fauna summary data (Meadowbank Park – includes Memorial Park)

FAUNA	2008	2018
NATIVE	39	24
INTRODUCED	7	4

Table 75 Species lists 2008-2018 (Meadowbank Park)

COMMON NAME	SPECIES NAME	2008	2018
Australasian Darter	<i>Anhinga novaehollandiae</i>	•	
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Pelican	<i>Pelecanus conspicillatus</i>	•	
Australian Raven	<i>Corvus coronoides</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>	•	•

Australian Wood Duck	<i>Chenonetta jubata</i>		•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	•
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	•	•
Chestnut Teal	<i>Anas castanea</i>	•	
Crested Pigeon	<i>Ocyphaps lophotes</i>	•	
Eastern Great Egret	<i>Ardea modesta</i>	•	•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	•	
Galah	<i>Eolophus roseicapillus</i>	•	•
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Corella	<i>Cacatua sanguinea</i>		•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	•	
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	•	
Long-billed Corella	<i>Cacatua tenuirostris</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	•
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Friarbird	<i>Philemon corniculatus</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>		•
Olive-backed Oriole	<i>Oriolus sagittatus</i>	•	
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Cormorant		•	
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Red-rumped Parrot	<i>Psephotus haematonotus</i>		•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	•
Welcome Swallow	<i>Hirundo neoxena</i>	•	•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	•
Common Starling	<i>Sturnus vulgaris</i>	•	•
Rock Dove	<i>Columba livia</i>	•	•
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
FROGS			

NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Black Rat	<i>Rattus rattus</i>	•	
DOG		•	•



Figure 99 An Intermediate Egret contemplates options for the next meal



Figure 100 A Pied Butcherbird is another fence sitter, taking advantage of the superior hunting position

5.1.9 MELROSE PARK AND KOONADAN RESERVE

Vegetation summary

Table 76 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
MELROSE PARK KOONADAN RESERVE	84-86 Lancaster Avenue, Melrose Park 163 Wharf Road, West Ryde		0.585Ha 0.139Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_SW01: Estuarine Mangrove Forest	NO	MP: 1 KR: 1	MP: 0.195Ha KR: 0.031Ha
S_SW02: Estuarine Saltmarsh	BC Act: Endangered EPBC Act: Vulnerable	MP: 1 KR: 1	MP: 0.032Ha KR: 0.001Ha
Urban_E/N: Urban Exotic/Native	N/A	MP: 1	0.002Ha
Weed_Ex: Weeds and Exotics	N/A	MP: 2	0.082Ha

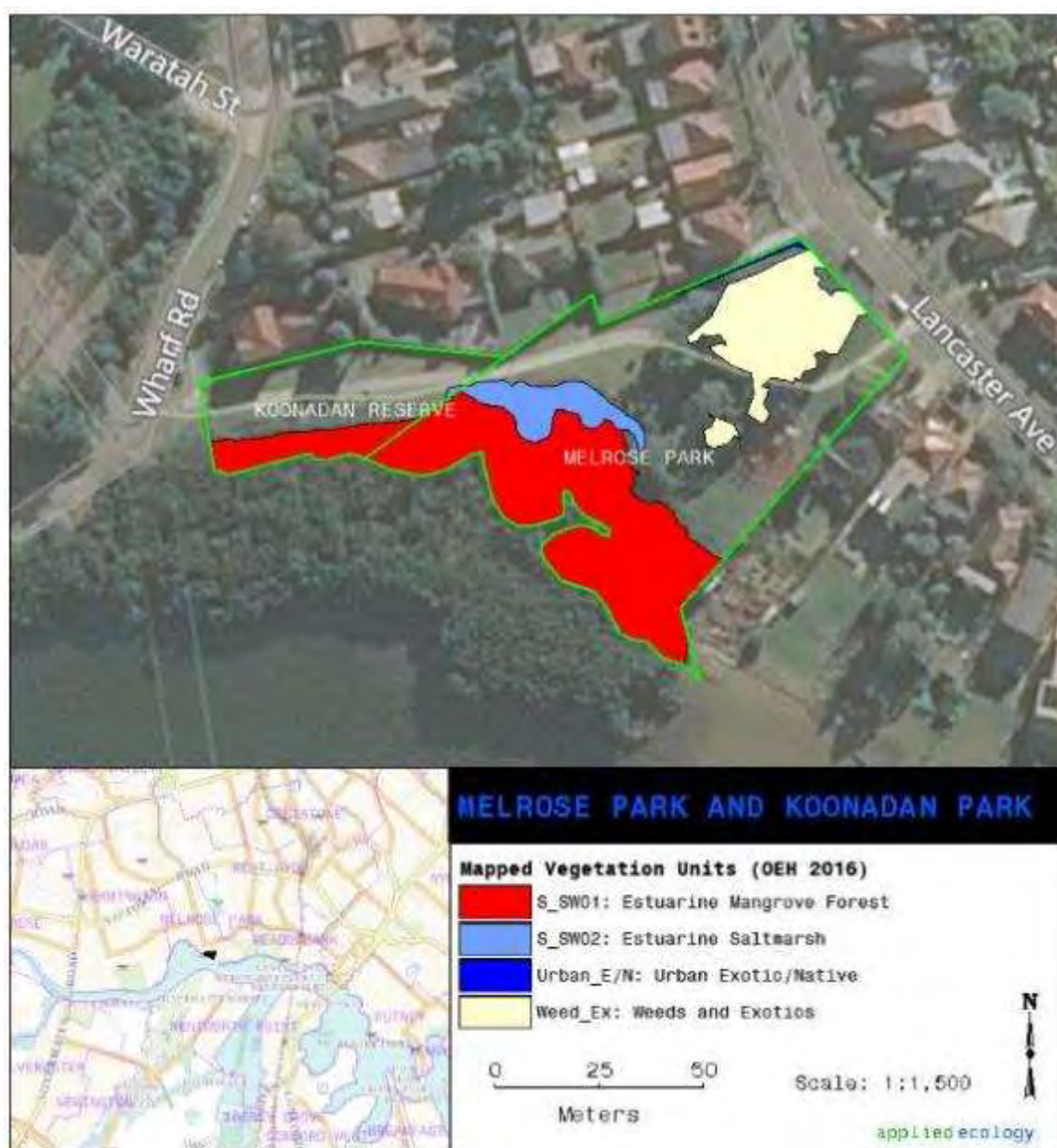


Figure 101 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 77 Flora summary data Melrose Park 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	5	EXOTIC SPECIES COUNT 2018	9
NATIVE SPECIES CONSTANT 2008-2018	00	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	5	EXOTIC SPECIES GAINED 2008-2018	9

Number of species

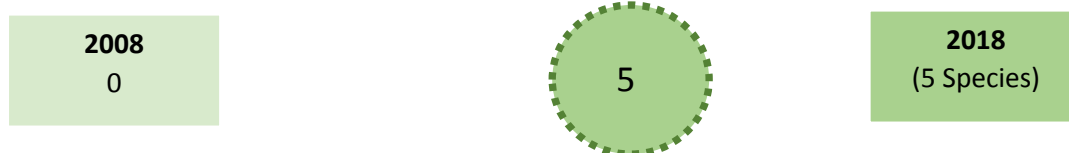


Figure 102 Comparison of native species richness from 2008 to 2018 for Melrose Park

Number of species

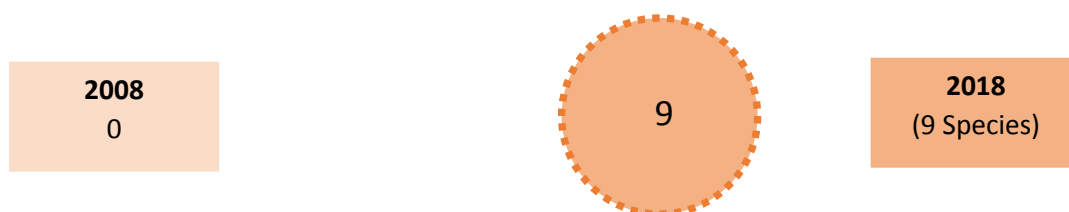


Figure 103 Comparison of exotic species richness from 2008 to 2018 for Melrose Park

Table 78 Flora summary data Koonadan Reserve 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	7	EXOTIC SPECIES COUNT 2018	4
NATIVE SPECIES CONSTANT 2008-2018	00	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	7	EXOTIC SPECIES GAINED 2008-2018	4

Number of species

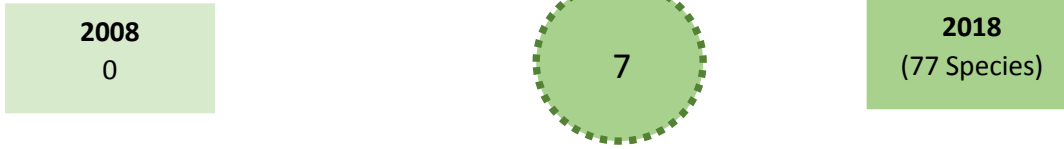


Figure 104 Comparison of native species richness from 2008 to 2018 for Koonadan Reserve

Number of species

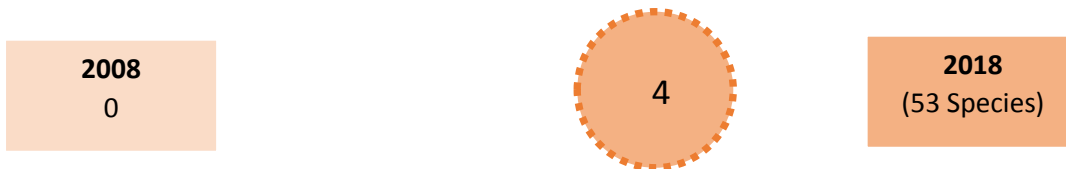


Figure 105 Comparison of exotic species richness from 2008 to 2018 for Koonadan Reserve



Figure 106 Mangrove and saltmarsh patches are protected by a “no mow” border in Koonadan Reserve



Figure 107 Mangroves and saltmarsh line the foreshore area in the adjoining Melrose Park



Figure 108 Melrose Park is on the Parramatta River Cycleway, and provides a pleasant place to break the journey



Figure 109 A children's playground is located between the cycleway and mangroves



Figure 110 Built structures include a number of ecologically inspired interactive play features

Comparison of flora inventories 2008-2018

Table 79 Native flora species recorded in Melrose Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Ficinia nodosa</i>	Knobby Club-rush		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Juncus usitatus</i>	Common Rush		y

Table 80 Introduced flora species recorded in Melrose Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Abelia x grandiflora</i>	Abelia		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Hibiscus sp</i>	Hibiscus		y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y

Table 81 Native flora species recorded in Koonadan Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak		y
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush		y
<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire		y
<i>Suaeda australis</i>	Seablite		y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach		y
<i>Triglochin striata</i>	Streaked Arrow-grass		y

Table 82 Introduced flora species recorded in Koonadan Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y

Fauna Summary

Table 83 Fauna summary data (Melrose Park)

FAUNA	2008	2018
NATIVE	0	23
INTRODUCED	0	3

Table 84 Fauna summary data (Koonadan Reserve)

FAUNA	2008	2018
NATIVE	0	16
INTRODUCED	0	2

Table 85 Species lists 2008-2018 (Melrose Park)

COMMON NAME	SPECIES NAME	2008	2018
Australasian Figbird	<i>Sphecothebes vieilloti</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>		•
Australian Raven	<i>Corvus coronoides</i>		•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Brown Goshawk	<i>Accipiter fasciatus</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Eastern Koel	<i>Eudynamys orientalis</i>		•
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Olive-backed Oriole	<i>Oriolus sagittatus</i>		•
Pied Cormorant			•
Pied Currawong	<i>Strepera graculina</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Sacred Kingfisher	<i>Todiramphus sanctus</i>		•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Tawny Frogmouth	<i>Podargus strigoides</i>		•
White-faced Heron	<i>Egretta novaehollandiae</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>		•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>		•
Common Starling	<i>Sturnus vulgaris</i>		•
REPTILES			
Eastern Water-skink	<i>Eulamprus quoyii</i>		•

FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>		•
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>		•
Common Brushtail Possum			•
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
INTRODUCED MAMMALS			
Rabbit			•

Table 86 Species lists 2008-2018 (Koonadan Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>		•
Australian Raven	<i>Corvus coronoides</i>		•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Brown Goshawk	<i>Accipiter fasciatus</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Pied Cormorant			•
Pied Currawong	<i>Strepera graculina</i>		•
Royal Spoonbill	<i>Platalea regia</i>		•
Sacred Kingfisher	<i>Todiramphus sanctus</i>		•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
White-faced Heron	<i>Egretta novaehollandiae</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>		•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>		•
Common Starling	<i>Sturnus vulgaris</i>		•
REPTILES			
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•

5.1.10 MEMORIAL PARK

Vegetation summary

Table 87 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
MEMORIAL PARK	Meadow Crescent, Meadowbank		3.70Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_SW01: Estuarine Mangrove Forest	NO	3	0.028Ha
S_WSF08: Sydney Foreshores Shale Forest	NO	1	1.248Ha
Urban_E/N: Urban Exotic/Native	N/A	6	0.233Ha
Weed_Ex: Weeds and Exotics	N/A	11	1.043Ha

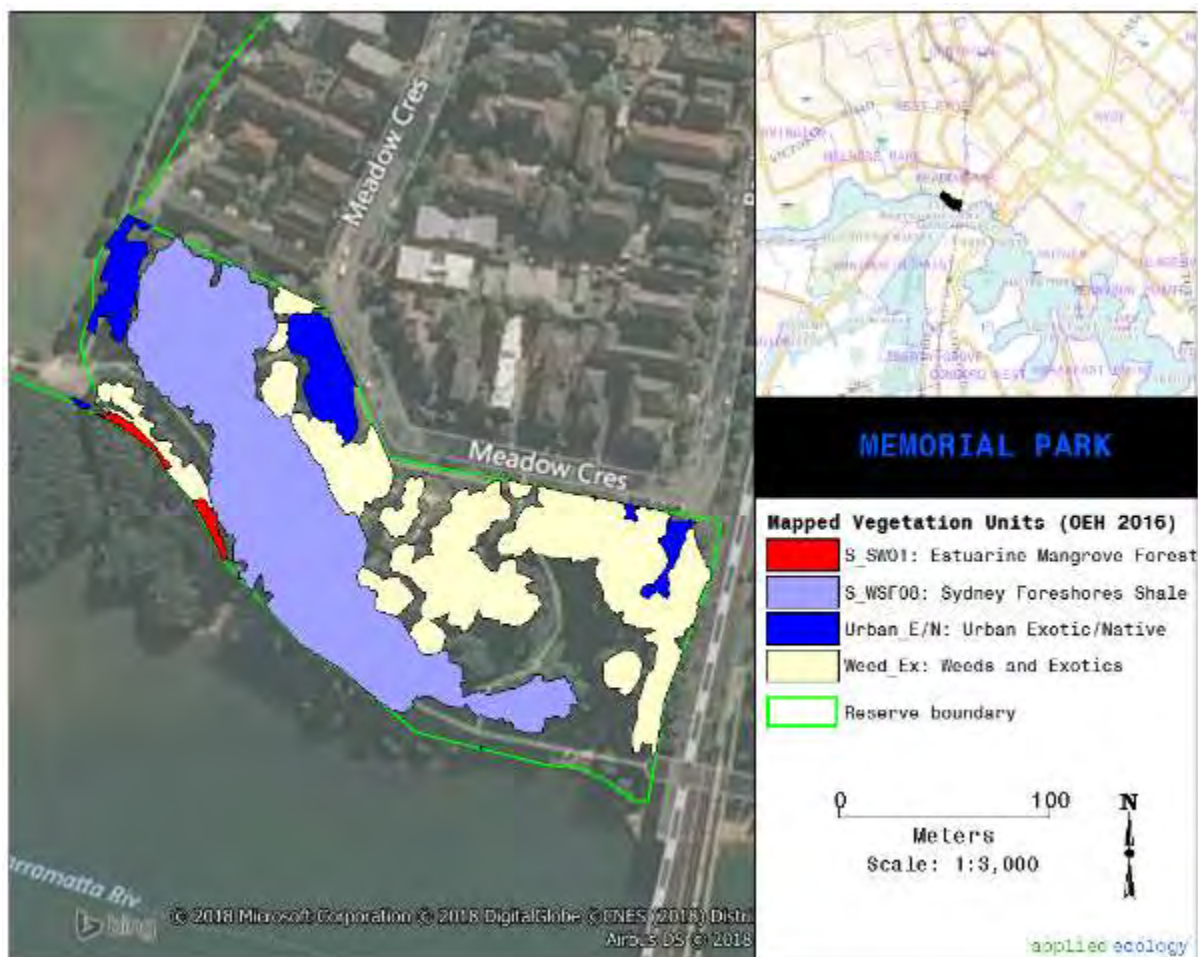


Figure 111 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 88 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	53	EXOTIC SPECIES COUNT 2008	56
NATIVE SPECIES COUNT 2018	57	EXOTIC SPECIES COUNT 2018	54
NATIVE SPECIES CONSTANT 2008-2018	39	EXOTIC SPECIES CONSTANT 2008-2018	33
NATIVE SPECIES LOST 2008-2018	14	EXOTIC SPECIES LOST 2008-2018	23
NATIVE SPECIES GAINED 2008-2018	18	EXOTIC SPECIES GAINED 2008-2018	21

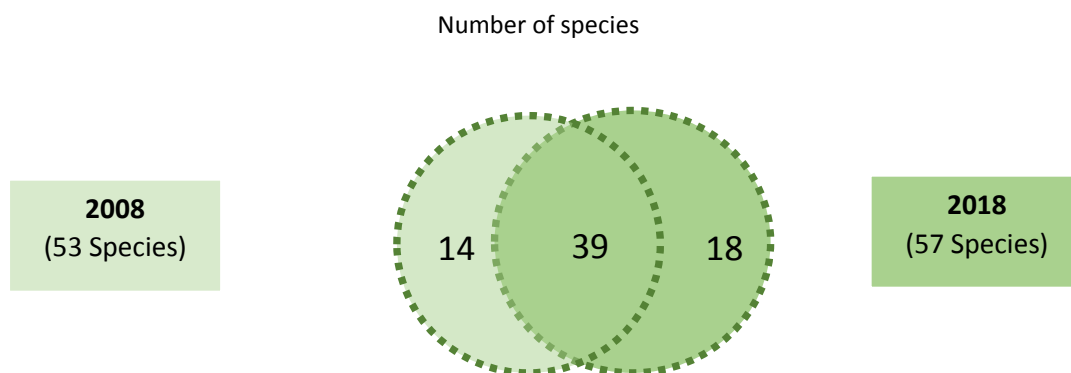


Figure 112 Comparison of native species richness from 2008 to 2018 for Memorial Park

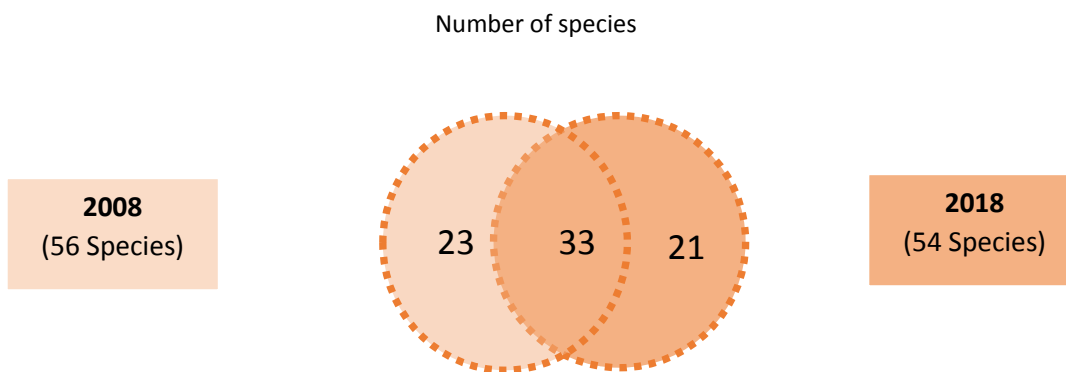


Figure 113 Comparison of exotic species richness from 2008 to 2018 for Memorial Park



Figure 114 Memorial Park has a mixture of grassed open space and remnant trees and vegetation



Table 89 The park is named for the memorial cenotaph located near the eastern end



Table 90 Areas of mangroves and saltmarsh line sections of foreshore along Memorial Park



Table 91 Waders can be seen foraging on mudflats on the foreshore of Memorial Park



Table 92 Built structures encourage residents to enjoy the natural bush setting of Memorial Park



Table 93 The park has areas of mature canopy trees with moderately intact understorey



Table 94 Other areas have extensive revegetation planting with an understorey ranging from weedy to very good

Comparison of flora inventories 2007-2018

Table 95 Native flora species recorded in Memorial Park 2008-2018

SPECIES NAME	COMMON NAME	2007	2018
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	
<i>Acmena smithii</i>	Lilly-pilly		y
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	
<i>Adiantum hispidulum</i>	Rough Maidenhair	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	
<i>Billardiera scandens</i>	Dwarf Appleberry		y
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	Kurrajong		y
<i>Breynia oblongifolia</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	
<i>Calystegia marginata</i>			y

<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Corymbia maculata</i>	Spotted Gum	y	y
<i>Cymbopogon refractus</i>	Barbed Wire Grass	y	y
<i>Cyperus polystachyos</i>		y	
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichelachne micrantha</i>		y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Einadia polygonoides</i>		y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Eucalyptus punctata</i>	Grey Gum		y
<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Exocarpus cupressiformis</i>	Cherry Ballart	y	
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine clandestinus</i>	Love Creeper		y
<i>Glycine tabacina</i>	Love Creeper	y	y
<i>Hakea bakeriana</i>			y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hardenbergia violacea</i>	False Sarsparilla	y	
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	
<i>Rubus parvifolius</i>	Native Raspberry	y	y

<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire		y
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed	y	y
<i>Sporobolus creber</i>	Slender Rats-tail Grass		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch		y
<i>Suaeda australis</i>	Seablite	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	y
<i>Wahlenbergia gracilis</i>	Native Bluebell	y	
<i>Westringia longifolia</i>	Long-leaved Westringia		y

Table 96 Native flora species recorded in Memorial Park 2008-2018

SPECIES NAME	COMMON NAME	2007	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	
<i>Ageratina adenophora</i>	Crofton Weed	y	
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Atriplex prostrata</i>			y
<i>Avena fatua</i>	Wild Oat Grass	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica fruticulosa</i>	Twiggy Turnip		y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Chloris virgata</i>	Feathertop Rhodes Grass	y	
<i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Bitou Bush	y	
<i>Cinnamomum camphora</i>	Camphor Laurel	y	
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Digitaria didactyla</i>	Queensland Blue Couch	y	
<i>Dimorphotheca</i> [= <i>Osteospermum</i>] <i>ecklonis</i>	African Daisy, Sailor Boy Daisy		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Ehrharta longiflora</i>	Annual Veldt Grass		y
<i>Eleusine tristachya</i>	Goose Grass	y	
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Eragrostis tenuifolia</i>	Elastic Grass	y	
<i>Erigeron karvinskianus</i>	Seaside Daisy	y	
<i>Erythrina x sykesii</i>	Coral Tree	y	
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge	y	y

<i>Freesia leichtlinii</i> hybrid	Freesia		y
<i>Fumaria</i> sp.	Fumitory	y	y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	
<i>Gnaphalium</i> sp.	Cudweed	y	
<i>Grevillea poorinda</i> sp		y	
<i>Grevillea robusta</i>	Silky Oak		y
<i>Hedera helix</i>	English Ivy		y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Megathyrus maximus</i>	Guinea Grass		y
<i>Nandeeana domestica</i>	Heavenly Bamboo		y
<i>Nothoscordum gracile</i>	Onion Weed	y	y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African Olive	y	
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Oxalis pes-caprae</i>	Soursob	y	y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel	y	y
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Paspalum urvillei</i>	Vasey Grass		y
<i>Pellaea viridis</i> var. <i>viridis</i>	Green Cliff Brake		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Rubus fruticosus</i> aggregate species	Blackberry	y	
<i>Salvia verbenacea</i>	Salvia		y
<i>Senecio madagascariensis</i>	Fireweed	y	
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	
<i>Setaria parviflora</i> [=geniculata]	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Soliva anthemifolia</i>	Dwarf Jo-jo, Button Burrweed		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sorghum halepense</i>	Johnson Grass	y	
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	y
<i>Stachys arvensis</i>	Stagger		y
<i>Stellaria media</i>	Chickweed	y	

<i>Stenotaphrum secundatum</i>	Buffalo Grass		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Trifolium repens</i>	White Clover	y	y
<i>Verbena sp.</i>	Purpletop	y	y
<i>Vicia sativa</i>	Slender Vetch	y	y
<i>Vulpia bromoides</i>	Squirrel Tail Fescue, Silver Grass	y	y

Fauna Summary – See Meadowbank Park

5.1.11 MORRISON BAY PARK

Vegetation summary

Table 97 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
MORRISON BAY PARK	Frances Road, Putney		9.54Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Urban_E/N: Urban Exotic/Native	N/A	8	0.825Ha
Weed_Ex: Weeds and Exotics	N/A	4	0.310Ha

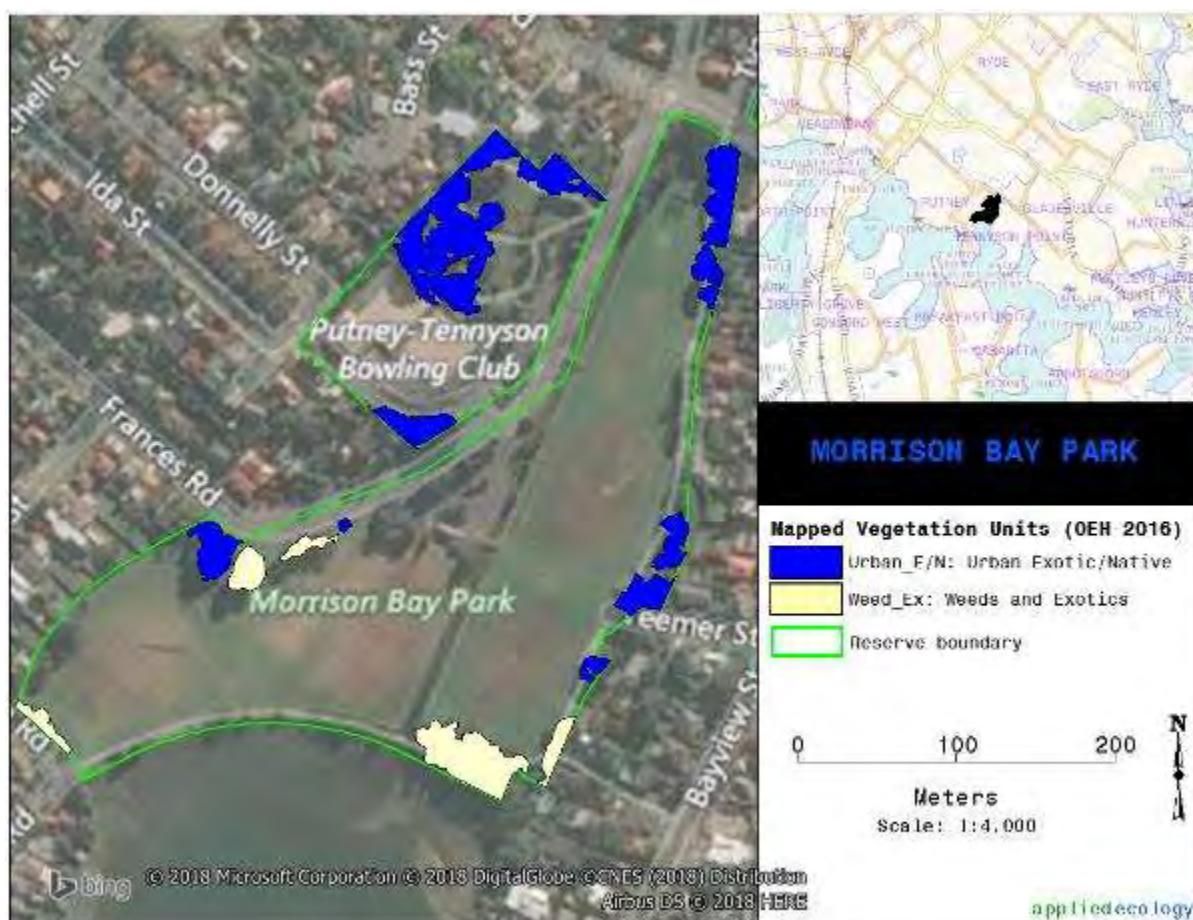


Figure 115 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 98 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	33	EXOTIC SPECIES COUNT 2008	28
NATIVE SPECIES COUNT 2018	35	EXOTIC SPECIES COUNT 2018	38
NATIVE SPECIES CONSTANT 2008-2018	23	EXOTIC SPECIES CONSTANT 2008-2018	23
NATIVE SPECIES LOST 2008-2018	10	EXOTIC SPECIES LOST 2008-2018	5
NATIVE SPECIES GAINED 2008-2018	12	EXOTIC SPECIES GAINED 2008-2018	15

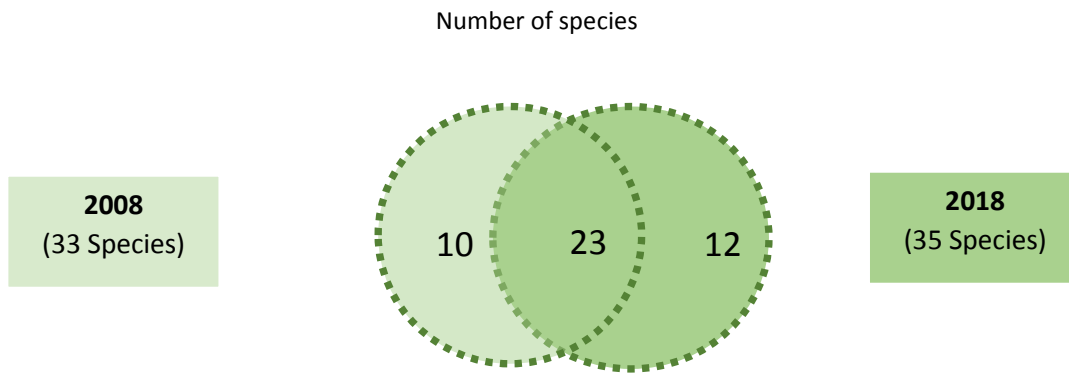


Figure 116 Comparison of native species richness from 2008 to 2018 for Morrison Bay Park

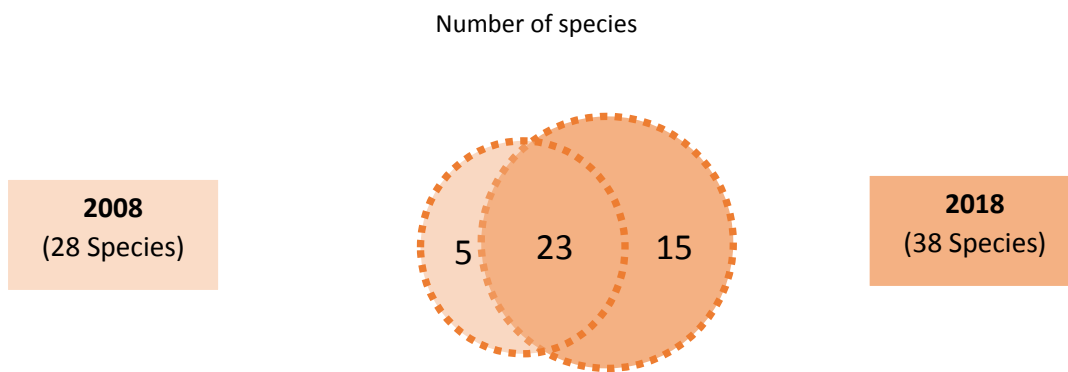


Figure 117 Comparison of exotic species richness from 2008 to 2018 for Morrison Bay Park



Figure 118 Extensive mudflats adjoining the foreshore at Morrison Bay Park provide habitat to numerous waders



Figure 119 Most of the reserve is grassed open space used for a range of recreational activities



Figure 120 Facilities at Morrison Bay Park are currently being upgraded, providing more for sporting participants

Comparison of flora inventories 2008-2018

Table 99 Native flora species recorded in Morrison Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acmena smithii</i>	Lilly-pilly		y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y
<i>Cassytha glabella</i>	Slender Devil's Twine	y	
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Cymbopogon refractus</i>	Barbed Wire Grass		y
<i>Cyperus laevigatus</i>		y	
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eragrostis brownii</i>	Brown's Lovegrass	y	y
<i>Eucalyptus moluccana</i>	Grey Box	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eucalyptus sideroxylon</i>	Red Ironbark	y	
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Hakea dactyloides</i>	Finger Hakea		y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y

<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire	y	
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Tristaniopsis laurina</i>	Water Gum	y	y

Table 100 Introduced flora species recorded in Morrison Bay Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	
<i>Agave americana</i>	Century Plant		y
<i>Ageratina adenophora</i>	Crofton Weed	y	
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass	y	y
<i>Bryophyllum delagoense</i>	Mother of Millions	y	
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge	y	y
<i>Cyperus sesquiflorus</i>			y
<i>Eleusine indica</i>	Crowsfoot Grass		y
<i>Erythrina x sykesii</i>	Coral Tree	y	
<i>Eucalyptus citriodora</i>	Lemon Scented Gum	y	y
<i>Fumaria</i> sp.	Fumitory		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Hedera helix</i>	English Ivy		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Koelreuteria elegans</i> subsp. <i>formosana</i>	Golden Rain Tree		y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	
<i>Lophostemon confertus</i>	Brush Box		y
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Bracelet Honey Myrtle	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African Olive	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Ricinus communis</i>	Castor Oil Plant	y	y

<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [=albiflora]	Trad, Wandering Jew		y
<i>Ulmus</i> sp.	Elm	y	y

Fauna Summary

Table 101 Fauna summary data (Morrison Bay Park)

FAUNA	2008	2018
NATIVE	24	28
INTRODUCED	8	2

Table 102 Species lists 2008-2018 (Morrison Bay Park)

COMMON NAME	SPECIES NAME	2008	2018
Australasian Darter	<i>Anhinga novaehollandiae</i>		•
Australasian Figbird	<i>Sphecotheres vieilloti</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Australian Wood Duck	<i>Chenonetta jubata</i>		•
Bar-tailed Godwit	<i>Limosa lapponica</i>	•	
Chestnut Teal	<i>Anas castanea</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>	•	•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eurasian Coot	<i>Fulica atra</i>	•	
Galah	<i>Eolophus roseicapillus</i>	•	•
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>		•
Little Corella	<i>Cacatua sanguinea</i>	•	•
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>		•
Long-billed Corella	<i>Cacatua tenuirostris</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	•
Noisy Miner	<i>Manorina melanocephala</i>	•	•

Pied Cormorant	<i>Phalacrocorax varius</i>		•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Welcome Swallow	<i>Hirundo neoxena</i>	•	•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	•
White-headed Stilt	<i>Himantopus leucocephalus</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Common Starling	<i>Sturnus vulgaris</i>		•
Domestic Duck	<i>Anas platyrhynchos domesticus</i>	•	
House Sparrow	<i>Passer domesticus</i>	•	
Rock Dove	<i>Columba livia</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
FROGS			
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Black Rat	<i>Rattus rattus</i>	•	
Dog	<i>Canis lupus familiaris</i>	•	•

5.1.12 PUTNEY PARK

Vegetation summary

Table 103 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
PUTNEY PARK	Pellisier Road, Putney		7.19Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF06: Coastal Sandstone Foreshores Forest	NO	2	0.337Ha
Urban_E/N: Urban Exotic/Native	N/A	4	0.596Ha
Weed_Ex: Weeds and Exotics	N/A	17	1.759Ha
Plant_n: Plantation (native and/or exotic)	N/A	3	0.528Ha

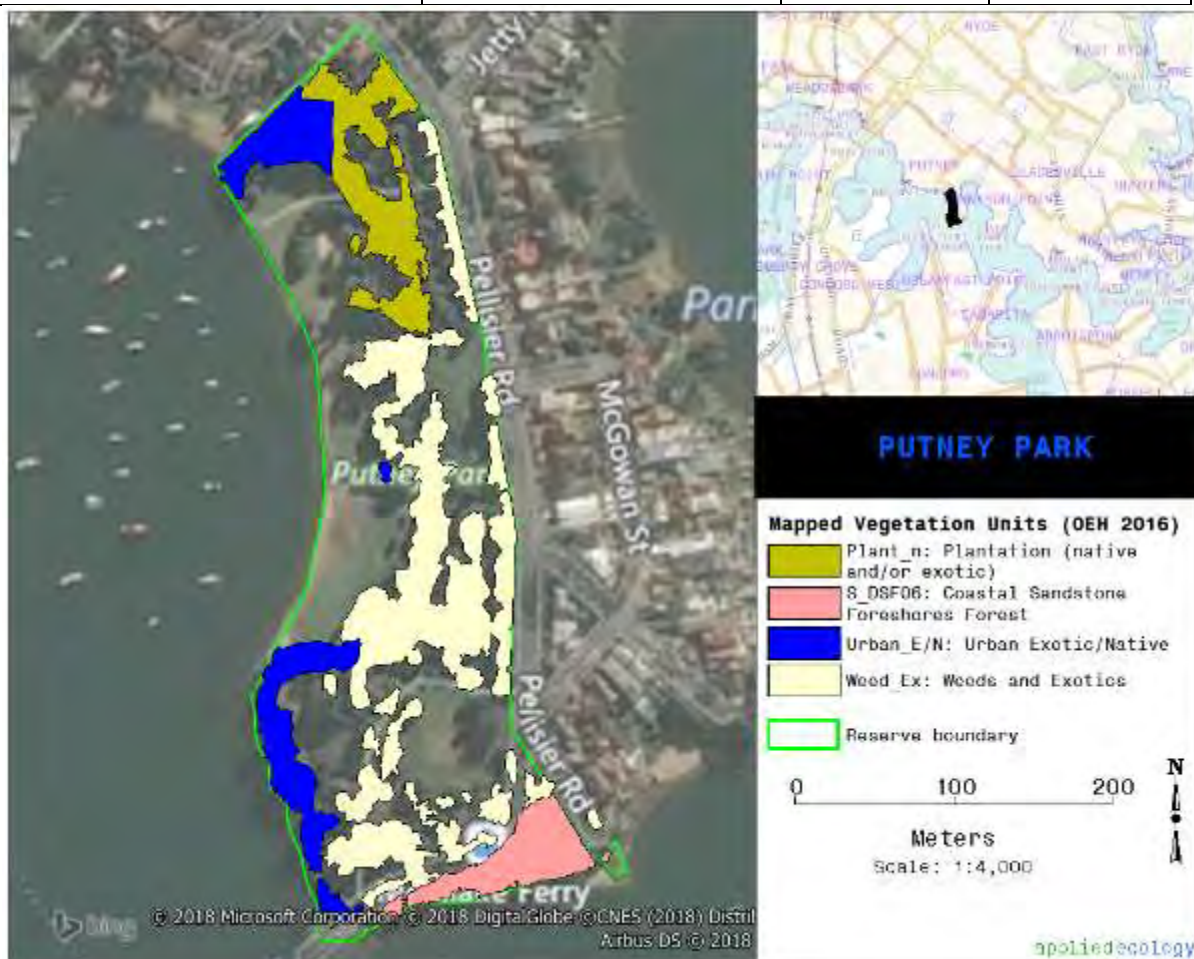


Figure 121 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 104 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	73	EXOTIC SPECIES COUNT 2008	56
NATIVE SPECIES COUNT 2018	94	EXOTIC SPECIES COUNT 2018	79
NATIVE SPECIES CONSTANT 2008-2018	56	EXOTIC SPECIES CONSTANT 2008-2018	47
NATIVE SPECIES LOST 2008-2018	17	EXOTIC SPECIES LOST 2008-2018	9
NATIVE SPECIES GAINED 2008-2018	38	EXOTIC SPECIES GAINED 2008-2018	32

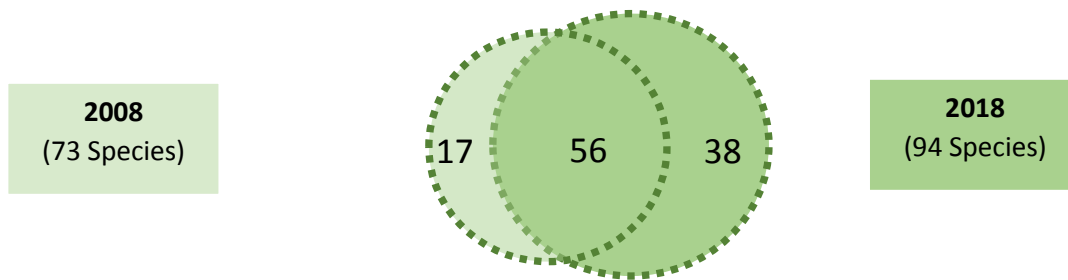


Figure 122 Comparison of native species richness from 2008 to 2018 for Putney Park

Number of species

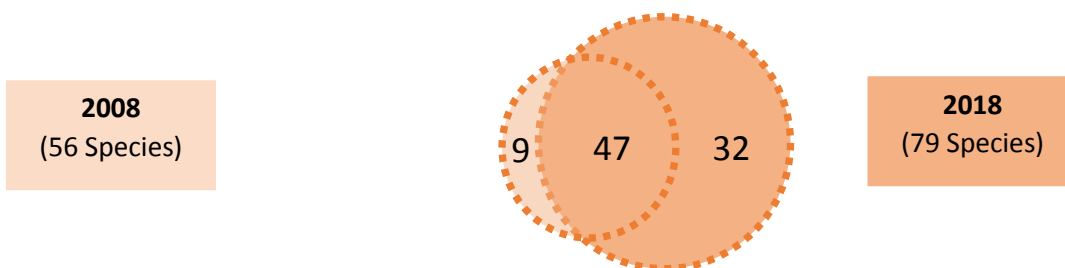


Figure 123 Comparison of exotic species richness from 2008 to 2018 for Putney Park



Figure 124 Upper sections of Putney Park have a combination of remnant bushland and revegetation planting



Figure 125 Reclaimed foreshore flats have grassed open space with a backdrop of bushland on slopes



Figure 126 Bushland is separated from grassed open space by “no mow” marks such as rocks and logs



Figure 127 Old sandstone walls are surrounded by mature remnant vegetation in degraded condition



Figure 128 Revegetation planting is helping to increase the extant of bushland in Putney Park



Figure 129 Remnant bushland persists on rocky areas of foreshore, especially towards the southern end of the park



Figure 130 Garden waste dumping and planting of inappropriate species are both problems in Putney Park

Comparison of flora inventories 2008-2018

Table 105 Native flora species recorded in Putney Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	y
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Acacia pubescens</i>	Downy Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Aristida ramosa</i> var. <i>ramosa</i>	Three-awn Speargrass	y	y
<i>Aristida vagans</i>	Three-awn Speargrass	y	
<i>Austrostipa verticillata</i>	Bamboo Grass		y
<i>Banksia ericifolia</i>	Heath-leaved Banksia		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia		y
<i>Billardiera scandens</i>	Dwarf Appleberry		y
<i>Breynia oblongifolia</i>	Coffee Bush	y	y
<i>Callicoma serratifolia</i>	Black Wattle	y	
<i>Calystegia marginata</i>		y	
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	
<i>Ceratopetalum apetalum</i>	Coachwood	y	
<i>Cheilanthes sieberi</i>	Poison Rock Fern, Mulga Fern	y	y
<i>Cissus antarctica</i>	Water Vine		y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Corymbia maculata</i>	Spotted Gum		y
<i>Crinum pedunculatum</i>	Swamp Lily	y	y
<i>Cyperus gracilis</i>	Slender Sedge		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily	y	y
<i>Dichelachne rara</i>	Plumegrass	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	
<i>Doryanthes excelsior</i>	Gymea Lily	y	y

<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Eragrostis brownii</i>	Brown's Lovegrass	y	y
<i>Eucalyptus amplifolia</i>	Cabbage Gum		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus punctata</i>	Grey Gum		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Ficinia nodosa</i>	Knobby Club-rush	y	
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Gahnia melanocarpa</i>	Black-fruit Saw Sedge	y	
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Grevillea buxifolia</i>	Grey Spider Flower	y	y
<i>Grevillea linearifolia</i>	White Spider Flower		y
<i>Grevillea mucronulata</i>			y
<i>Grevillea sericea</i>	Pink Spider Flower	y	y
<i>Hakea dactyloides</i>	Finger Hakea		y
<i>Hakea gibbosa</i>	Needlebush		y
<i>Hakea propinqua</i>			y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	
<i>Histopteris incisa</i>	Batswing Fern	y	
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lachnagrostis filiformis</i>	Blown Grass		y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Leptospermum trinervium</i>	Paperbark Tea-tree		y
<i>Lobelia alata</i>		y	
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>		y	
<i>Lomandra glauca</i>		y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca ericifolia</i>	Swamp Paperbark		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Melia azedarach</i>	White Cedar		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Opercularia aspera</i>	Thin Stink Weed	y	

<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Persicaria lapathifolia</i>	Pale Knotweed	y	
<i>Persoonia linearis</i>	Narrow-leaved Geebung		y
<i>Phyllanthus hirtellus</i>	Thyme Spurge		y
<i>Pimelea linifolia</i>	Rice Flower	y	y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Poa labillardieri</i>	Poa Tussock	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax		y
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Poranthera microphylla</i>		y	
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Sporobolus creber</i>	Slender Rats-tail Grass		y
<i>Sporobolus virginicus</i>	Salt Grass, Sand Couch	y	y
<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Synoum glandulosum</i> subsp. <i>glandulosum</i>	Scentless Rosewood		y
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Tristaniaopsis laurina</i>	Water Gum	y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	y
<i>Wahlenbergia gracilis</i>	Native Bluebell		y
<i>Westringia fruticosa</i>	Coast Rosemary		y
<i>Zieria smithii</i>	Sandfly Zieria	y	y

Table 106 Introduced flora species recorded in Putney Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia baileyana</i>	Cootamundra Wattle	y	y
<i>Acacia elata</i>	Cedar Wattle	y	y
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	y
<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Agave americana</i>	Century Plant	y	y
<i>Aloe vera</i>	Aloe Vera		y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Araucaria bidwilli</i>	Bunya Pine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine		y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Avena fatua</i>	Wild Oat Grass	y	y

<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	y
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass	y	
<i>Bryophyllum delagoense</i>	Mother of Millions	y	
<i>Canna indica</i>	Canna Lily		y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cardiospermum grandiflorum</i>	Balloon Vine		y
<i>Celtis occidentalis</i>	Chinese Hackberry	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Coreopsis lanceolata</i>	Coreopsis, Wet-the-beds	y	
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Cupressus sp</i>			y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Digitaria didactyla</i>	Queensland Blue Couch	y	
<i>Dolichandra [=Macfadyena] ungius-cati</i>	Cat's Claw Creeper		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Ehrharta longiflora</i>	Annual Veldt Grass	y	
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Eucalyptus cinerea</i>	Argyle Apple		y
<i>Eucalyptus citriodora</i>	Lemon Scented Gum	y	y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Ficus pumila</i>	Creeping Fig, Climbing Fig	y	y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy		y
<i>Hibiscus sp</i>	Hibiscus	y	
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminium didymum</i>	Jasmine		y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Lolium sp.</i>	Rye Grass	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Melinis repens</i>	Red Natal Grass		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y

<i>Monstera deliciosa</i>	Fruit Salad Plant	y	
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nerium oleander</i>	Oleander		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Pelargonium fragrans</i>	Geranium, Nutmeg Geranium		y
<i>Pennisetum alopecuroides</i> = <i>Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo		y
<i>Pinus sp</i>	Pine Tree	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Poa annua</i>	Winter Grass		y
<i>Rhaphiolepis indica</i>	Indian Hawthorn	y	y
<i>Schefflera actinophylla</i>	Umbrella Tree	y	y
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Setaria viridis</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Soliva sessilis</i>	Bindii		y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	y
<i>Stellaria media</i>	Chickweed		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tephrosia sp</i>		y	y
<i>Tillandsia spp.</i>	Bromeliads		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Tradescantia pallida</i>	Purple Trad, Purple Queen		y
<i>Trifolium repens</i>	White Clover	y	y
<i>Ulmus sp.</i>	Elm	y	

Fauna Summary

Table 107 Fauna summary data (Putney Park)

FAUNA	2008	2018
NATIVE	19	21
INTRODUCED	6	6

Table 108 Species lists 2008-2018 (Putney Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Galah	<i>Eolophus roseicapillus</i>		•
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	•	•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>		•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Welcome Swallow	<i>Hirundo neoxena</i>	•	•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>		•
INTRODUCED BIRDS			
Common Starling	<i>Sturnus vulgaris</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
FROGS			
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	•
BATS			
Gould's Wattled Bat			•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Black Rat	<i>Rattus rattus</i>	•	•

Dog	<i>Canis lupus familiaris</i>	•	•
Rabbit	<i>Oryctolagus cuniculus</i>	•	
Red fox	<i>Vulpes vulpes</i>		•



Remote camera pictures from Putney Park in Autumn 2018 – Black Rat, Common Brushtail Possum, Red Fox.

5.1.13 SETTLERS PARK

Vegetation summary

Table 109 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
SETTLERS PARK	10 Waterview Street, Putney		1.68Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_FoW08: Estuarine Swamp Oak Forest	BC Act: Endangered EPBC Act: Endangered	1	0.050Ha
S_SW01: Estuarine Mangrove Forest	NO	2	0.264Ha
S_SW02: Estuarine Saltmarsh	BC Act: Endangered EPBC Act: Vulnerable	1	0.003Ha
Urban_E/N: Urban Exotic/Native	N/A	4	0.408Ha
Weed_Ex: Weeds and Exotics	N/A	2	0.016Ha



Figure 131 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 110 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	39	EXOTIC SPECIES COUNT 2008	58
NATIVE SPECIES COUNT 2018	31	EXOTIC SPECIES COUNT 2018	81
NATIVE SPECIES CONSTANT 2008-2018	23	EXOTIC SPECIES CONSTANT 2008-2018	49
NATIVE SPECIES LOST 2008-2018	16	EXOTIC SPECIES LOST 2008-2018	9
NATIVE SPECIES GAINED 2008-2018	8	EXOTIC SPECIES GAINED 2008-2018	32

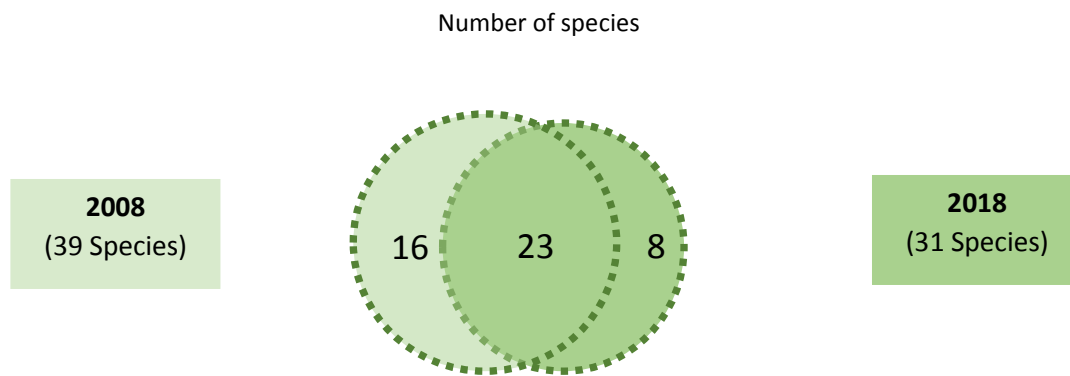


Figure 132 Comparison of native species richness from 2008 to 2018 for Settlers Park

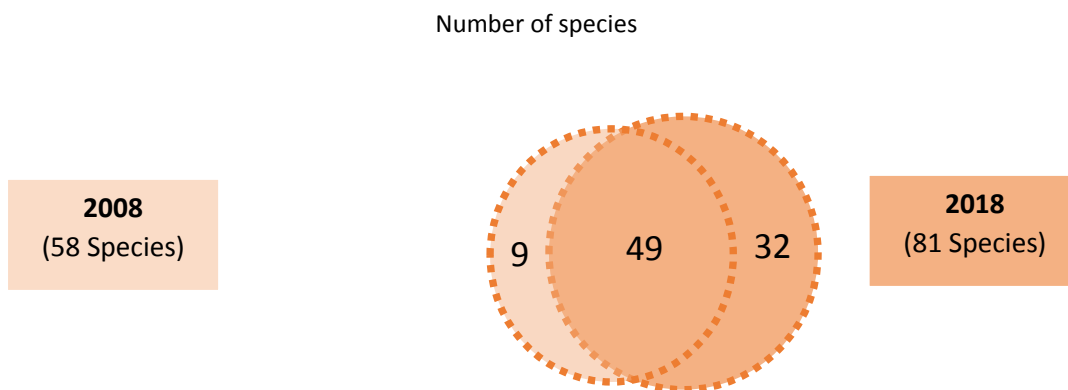


Figure 133 Comparison of exotic species richness from 2008 to 2018 for Settlers Park



Figure 134 Settlers Park includes sloping areas of weedy revegetation that drop steeply to the foreshore



Figure 135 Towards the western end a footpath links areas of road through the reserve



Figure 136 Towards the eastern end of the reserve as large areas of degraded saltmarsh and mangroves



Figure 137 Bush regeneration is helping to improve the overall health of native vegetation in Settlers Park



Figure 138 Weedy foreshore flats provided a place for storm debris to collect



Figure 139 The western end of the park is more formalised, with seats, paths and beautiful harbour views

Comparison of flora inventories 2008-2018

Table 111 Native flora species recorded in Settlers Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Avicennia marina</i> var. <i>australasica</i>	Grey Mangrove	y	y
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	
<i>Bolboschoenus caldwellii</i>			y
<i>Callistemon</i> sp.	Bottlebrush	y	
<i>Carex appressa</i>	Tall Carex		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cupaniopsis anacardioides</i>	Tuckeroo		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	
<i>Doryanthes excelsior</i>	Gynea Lily		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum	y	y
<i>Ficinia nodosa</i>	Knobby Club-rush	y	
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Isolepis cernua</i>	Nodding Club-rush	y	
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	y	y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leptospermum laevigatum</i>	Coast Tea-Tree	y	y
<i>Leptospermum lanigerum</i>	Woolly Teatree	y	y
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>			y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca ericifolia</i>	Swamp Paperbark		y
<i>Persicaria lapathifolia</i>	Pale Knotweed	y	
<i>Phragmites australis</i>	Common Reed	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Pteris tremula</i>	Tender Brake	y	
<i>Pteris vittata</i>	Chinese Brake, Ladder Brake	y	
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	
<i>Samolus repens</i>	Creeping Brookwed	y	

<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Samphire	y	
<i>Suaeda australis</i>	Seablite	y	
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	
<i>Triglochin striata</i>	Streaked Arrow-grass	y	y
<i>Westringia longifolia</i>	Long-leaved Westringia		y

Table 112 Introduced flora species recorded in Settlers Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	
<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Ageratina adenophora</i>	Crofton Weed	y	y
<i>Agrostis capillaris</i>	Browntop Bent		y
<i>Alternanthera philoxeroides</i>	Alligator Weed	y	y
<i>Amaranthus viridus</i>	Green Amaranth		y
<i>Ammi majus</i>	Bishops Weed		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Avena fatua</i>	Wild Oat Grass	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica fruticulosa</i>	Twiggy Turnip	y	y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Bryophyllum delagoense</i>	Mother of Millions	y	
<i>Canna indica</i>	Canna Lily		y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cardamine hirsuta</i>	Flickweed, Cardamine	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle	y	
<i>Conyza sp.</i>	Fleabane	y	y
<i>Coprosma repens</i>	Mirror Bush		y
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Crassocephalum crepidioides</i>	Thickheads		y
<i>Cyathea cooperi</i>	Straw Tree-fern	y	
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge	y	y
<i>Delairea odorata</i>	Cape Ivy	y	
<i>Digitaria didactyla</i>	Queensland Blue Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Epidendrum radicans</i> x <i>secundum</i> hybrid complex	Crucifix Orchid		y

<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Erythrina x sykesii</i>	Coral Tree	y	y
<i>Euphorbia peplus</i>	Petty Spurge	y	y
<i>Fumaria capreolata</i> subsp. <i>capreolata</i>	Climbing Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed		y
<i>Gnaphalium</i> sp.	Cudweed	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Howea</i> sp.			y
<i>Hydrocotyle bonariensis</i>	Kurnell's Curse	y	y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	
<i>Juncus acutus</i>	Sharp Rush	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Melinis repens</i>	Red Natal Grass		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African Olive	y	y
<i>Opuntia</i> sp.	Prickly Pear	y	y
<i>Parietaria judaica</i>	Asthma Weed	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Pennisetum alopecuroides</i> = <i>Cenchrus purpurascens</i>	Swamp Foxtail		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Pyracantha angustifolia</i>	Firethorn		y
<i>Ranunculus repens</i>	Creeping Buttercup	y	
<i>Ricinus communis</i>	Castor Oil Plant	y	y
<i>Rubus fruticosus</i> aggregate species	Blackberry	y	y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Setaria viridis</i>	Pigeon Grass		y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y

<i>Solanum lycopersicum</i>	Tomata Plant		y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Soliva sessilis</i>	Bindii		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	y
<i>Stellaria media</i>	Chickweed		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Triadica sebifera</i>	Chinese Tallow	y	y
<i>Tropaeolum majus</i>	Nasturtium	y	
<i>Verbena</i> sp.	Purpletop	y	y
<i>Vicia hirsuta</i>	Hairy Vetch, Common Vetch		y

Fauna Summary

Table 113 Fauna summary data (Settlers Park)

FAUNA	2008	2018
NATIVE	13	13
INTRODUCED	2	4

Table 114 Species lists 2008-2018 (Settlers Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>		•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	•	
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	•
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•
INTRODUCED BIRDS			

Common Myna	<i>Sturnus tristis</i>	•	•
Rock Dove	<i>Columba livia</i>		•
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>		•
REPTILES			
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>		
Black Rat	<i>Rattus rattus</i>	•	
Mouse	<i>Mus musculus</i>		
Dog	<i>Canis lupus familiaris</i>		•
Rabbit	<i>Oryctolagus cuniculus</i>		

5.2 SHRIMPTONS CREEK RESERVES

There are eight named reserves/ parks in this reserve group. In reality these reserves form a fairly contiguous riparian corridor along Shrimptons Creek and most species of fauna detected are likely to utilise multiple reserves within the system.

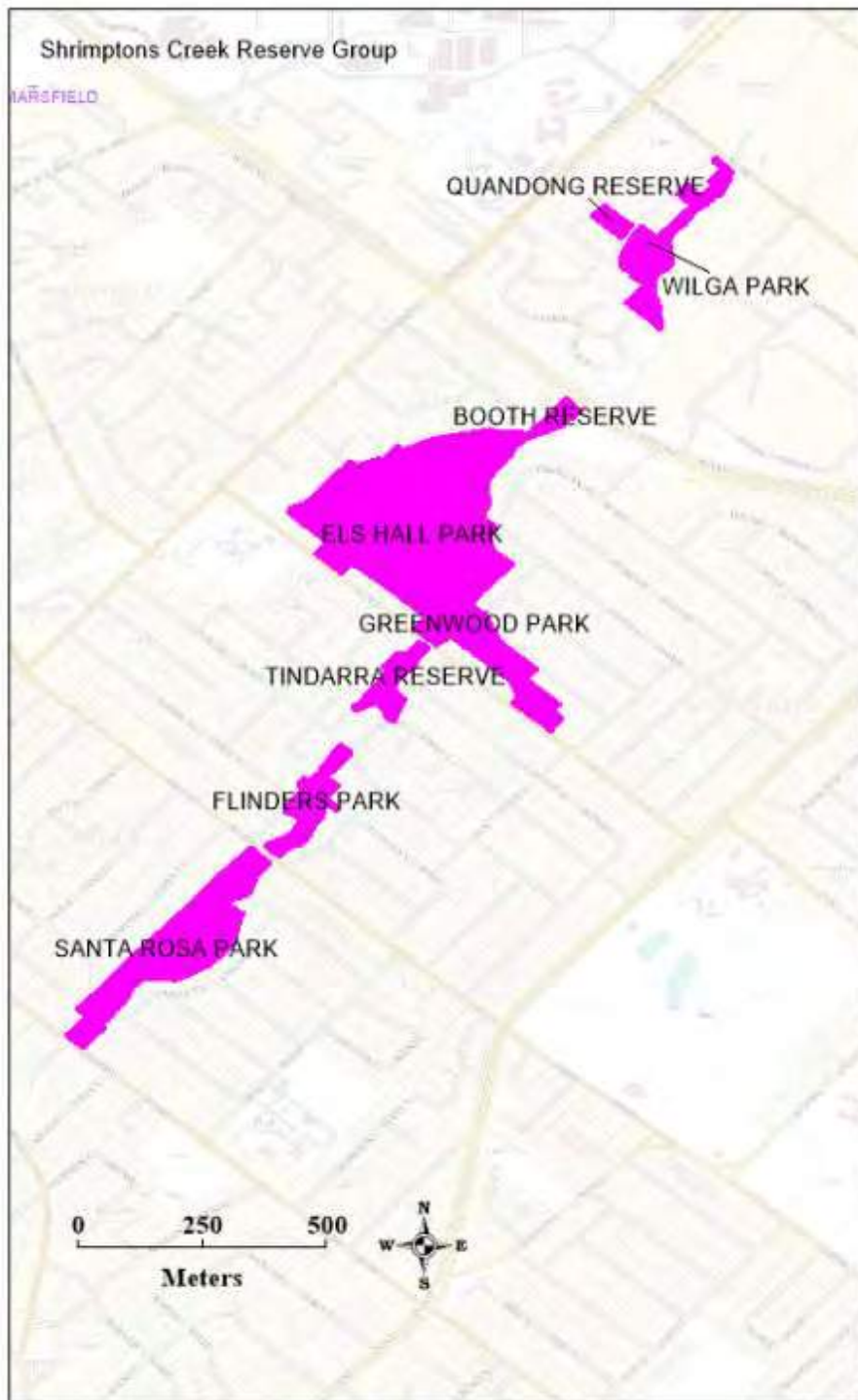


Figure 140 Shrimptons Creek Reserve Grouping

Table 115 Fauna Summary Species Richness (Shrimpton's Creek Group)

SHRIMPTONS CREEK RESERVE GROUP		
	2008	2018
NATIVE BIRDS	30	28
INTRODUCED BIRDS	4	2
REPTILES	5	6
FROGS	2	3
NATIVE MAMMALS	3	3
BATS	1	7
INTRODUCED MAMMALS	4	4

Table 116 Fauna Summary Species Turnover (Shrimptons Creek Group)

	TOTALS		TURNOVER		
	2008 count	2018 count	2008 only	2018 only	Constant
NATIVE BIRDS	30	28	14	12	15
INTRODUCED BIRDS	4	2	3	1	1
REPTILES	5	6	2	3	3
FROGS	2	3	0	1	2
NATIVE MAMMALS	3	3	0	0	3
BATS	1	7	0	6	1
INTRODUCED MAMMALS	4	4	2	2	2

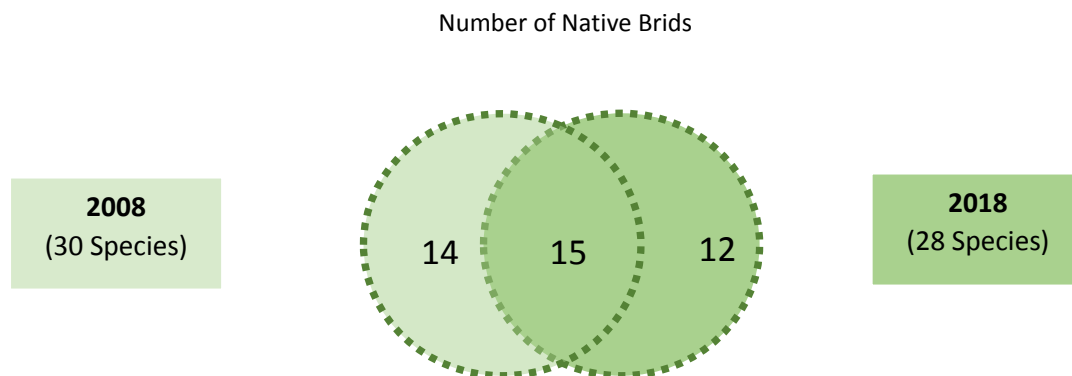


Figure 141 Comparison of native bird species richness from 2008 to 2018 for Shrimptons Creek Group

5.2.1 ELS HALL PARK and BOOTH RESERVE

Vegetation summary

Table 117 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
ELS HALL PARK BOOTH RESERVE	Kent Road, Marsfield 168 Epping Road, Marsfield		12.4Ha 0.324Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF09: Sydney Turpentine- Ironbark Forest	BC Act: Endangered EPBC Act: Vulnerable	EHP: 1 BR: 1	EHP: 0.544Ha BR: 0.263
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	EHP: 1	EHP: 0.887Ha
Urban_E/N: Urban Exotic/Native	N/A	EHP: 5	EHP: 1/716Ha
Weed_Ex: Weeds and Exotics	N/A	EHP: 2	EHP: 0.040Ha

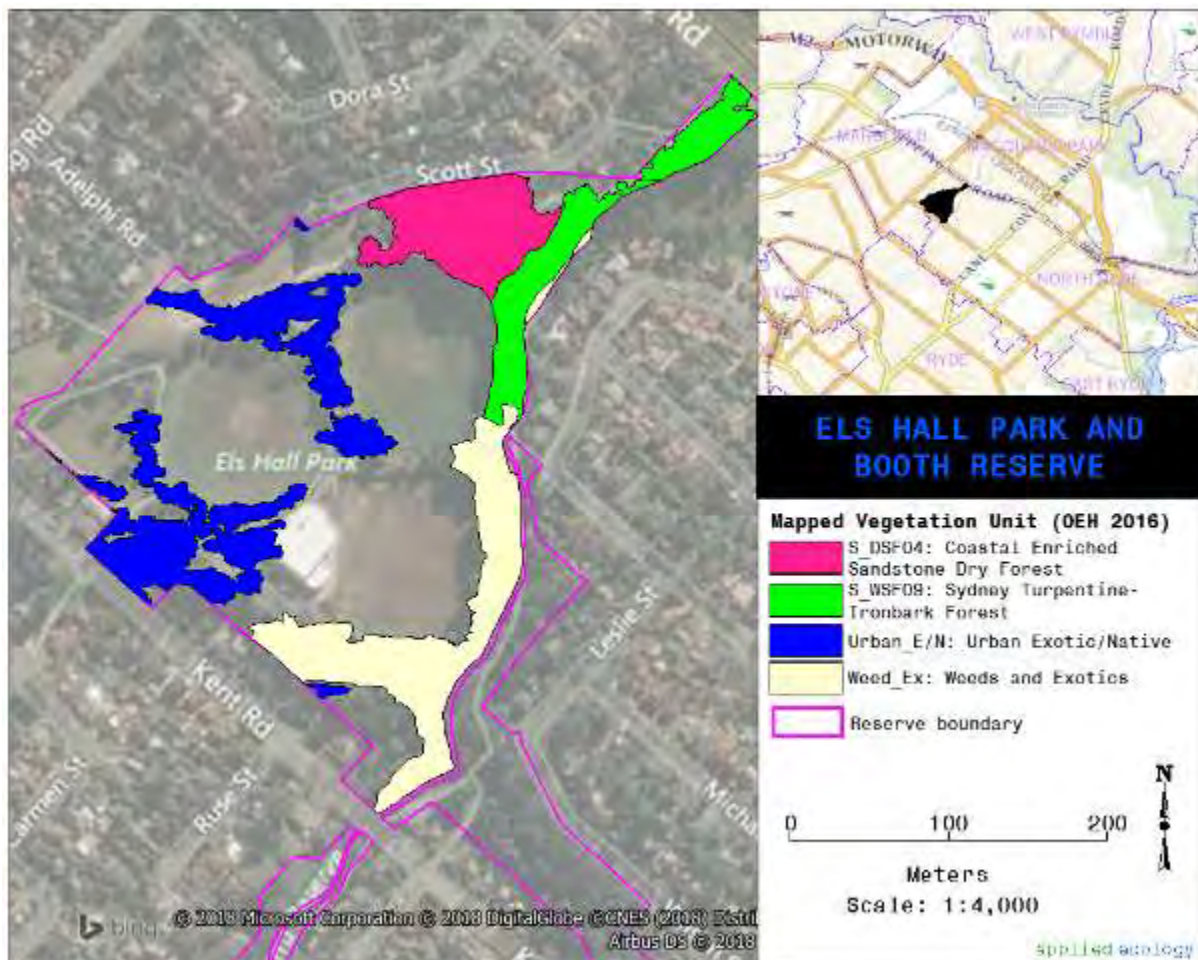


Figure 142 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 118 Flora summary data ELS Hall Park 2008-2018

NATIVE SPECIES COUNT 2008	99	EXOTIC SPECIES COUNT 2008	57
NATIVE SPECIES COUNT 2018	96	EXOTIC SPECIES COUNT 2018	81
NATIVE SPECIES CONSTANT 2008-2018	79	EXOTIC SPECIES CONSTANT 2008-2018	45
NATIVE SPECIES LOST 2008-2018	20	EXOTIC SPECIES LOST 2008-2018	12
NATIVE SPECIES GAINED 2008-2018	17	EXOTIC SPECIES GAINED 2008-2018	36

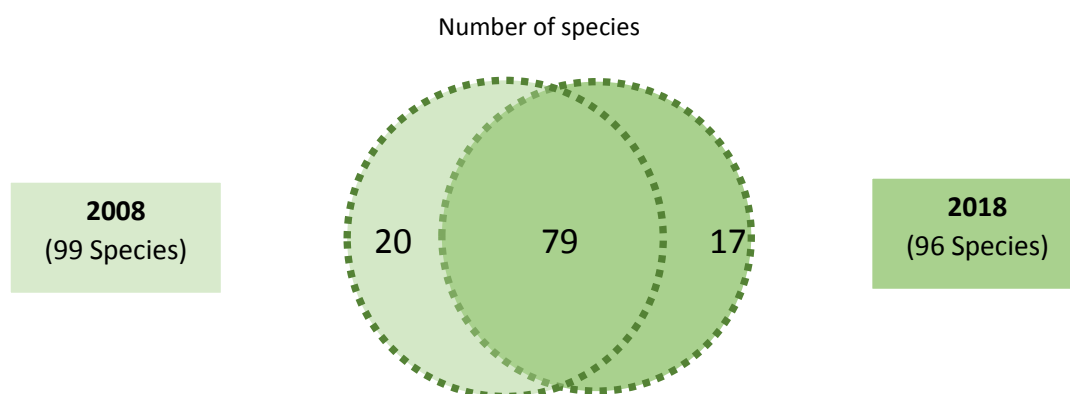


Figure 143 Comparison of native species richness from 2008 to 2018 for ELS Hall Park

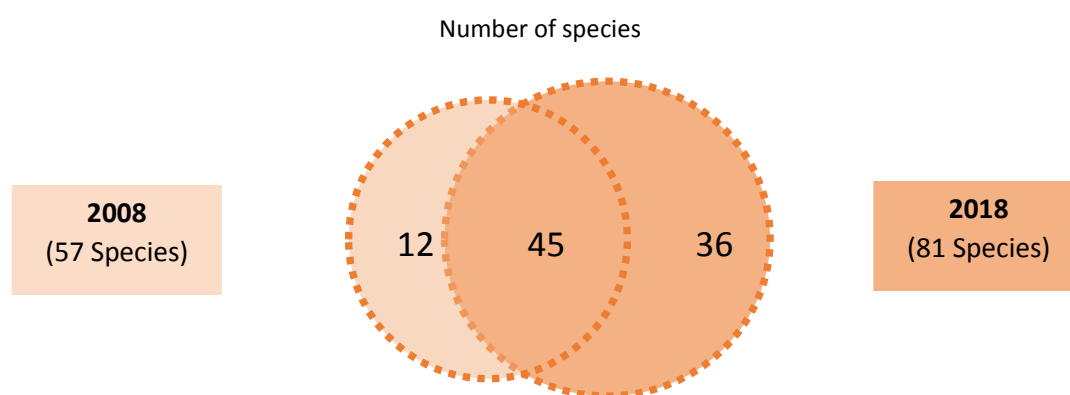


Figure 144 Comparison of exotic species richness from 2008 to 2018 for ELS Hall Park

Table 119 Flora summary data Booth Reserve 2008-2018

NATIVE SPECIES COUNT 2008	22	EXOTIC SPECIES COUNT 2008	40
NATIVE SPECIES COUNT 2018	31	EXOTIC SPECIES COUNT 2018	47
NATIVE SPECIES CONSTANT 2008-2018	19	EXOTIC SPECIES CONSTANT 2008-2018	25
NATIVE SPECIES LOST 2008-2018	3	EXOTIC SPECIES LOST 2008-2018	14
NATIVE SPECIES GAINED 2008-2018	12	EXOTIC SPECIES GAINED 2008-2018	22

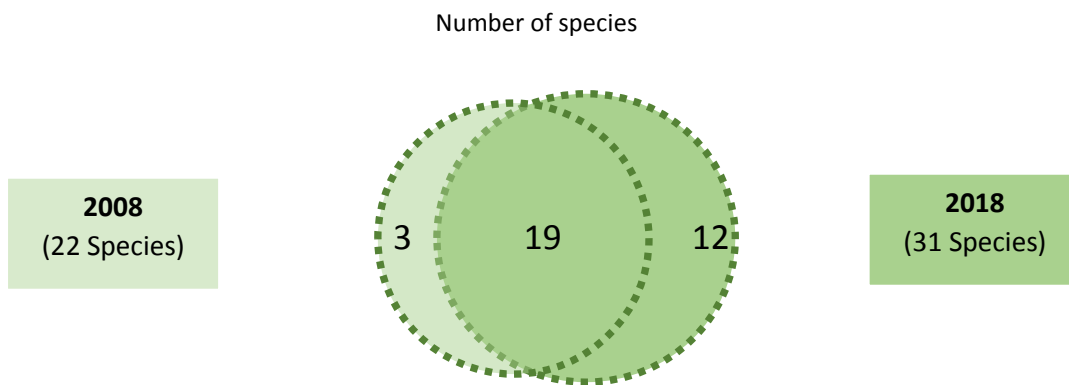


Figure 145 Comparison of native species richness from 2008 to 2018 for Booth Reserve

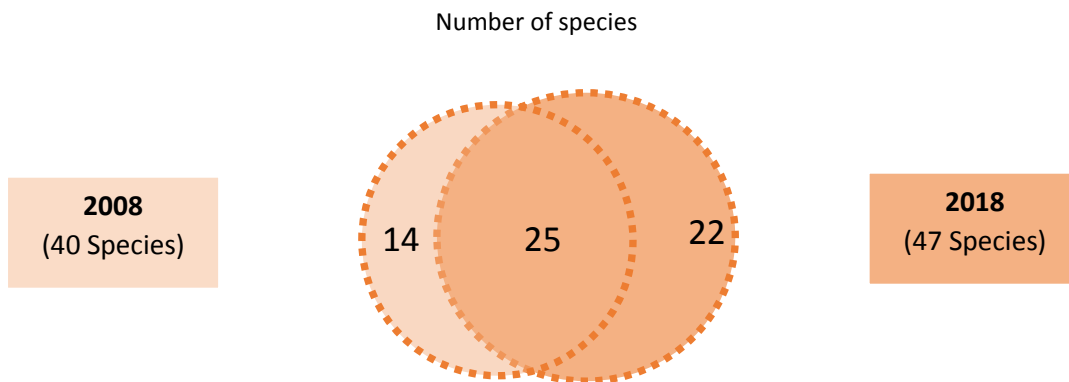


Figure 146 Comparison of exotic species richness from 2008 to 2018 for Booth Reserve



Figure 147 Booth Reserve is a narrow reserve behind houses near Epping Rd



Figure 148 The reserve has areas of degraded vegetation, especially along the creek line



Figure 149 Areas of bush regeneration are helping to improve the overall condition of bushland in Booth Reserve



Figure 150 ELS Hall Park has planted trees in open grassed space



Figure 151 Planted canopy trees behind the main sports oval have a degraded, mainly weedy understorey



Figure 152 Areas of good bush are located towards the northern end of the reserve



Figure 153 A footpath/cycleway provides good access through the reserve along Shrimptons Creek



Figure 154 Most of Shrimptons Creek is degraded through ELS Hall Park



Figure 155 Dry conditions have impacted native groundcovers in better areas of ELS Hall Park



Figure 156 Areas of revegetation are helping to increase the extent of bushland in parts of ELS Hall Park

Comparison of flora inventories 2008-2018

Table 120 Native flora species recorded in ELS Hall Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	y
<i>Acmena smithii</i>	Lilly-pilly	y	
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Adiantum hispidulum</i>	Rough Maidenhair		y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Anisopogon avenaceus</i>	Oat Speargrass		y
<i>Aristida ramosa</i> var. <i>ramosa</i>	Three-awn Speargrass	y	
<i>Austrostipa pubescens</i>		y	
<i>Baeckea linifolia</i>	Weeping Baeckea		y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	y
<i>Billardiera scandens</i>	Dwarf Appleberry	y	y
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callicoma serratifolia</i>	Black Wattle		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Calystegia marginata</i>		y	y
<i>Cassytha pubescens</i>	Common Devil's Twine	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	
<i>Christella dentata</i>	Binung		y
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cymbopogon refractus</i>	Barbed Wire Grass		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily	y	y
<i>Dichelachne rara</i>	Plumegrass		y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y

<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Einadia hastata</i>	Seaberry Saltbush	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Epacris pulchella</i>	Coral Heath	y	
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus resinifera subsp. resinifera</i>	Red Mahogany	y	
<i>Eucalyptus robusta</i>	Swamp Mahogany	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eucalyptus tereticornis</i>	Forest Red Gum		y
<i>Eustrephus latifolius</i>	Wombat Berry	y	
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine clandestinus</i>	Love Creeper	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Goodenia hederacea subsp. hederacea</i>	Violet-leaved Goodenia	y	y
<i>Grevillea linearifolia</i>	White Spider Flower	y	y
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Hibbertia scandens</i>	Twining Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus subsecundus</i>	Finger Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	
<i>Lepidosperma gunnii</i>		y	
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum polygalifolium subsp. polygalifolium</i>	Lemon-scented Tea-tree	y	
<i>Leptospermum trinervium</i>	Paperbark Tea-tree	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lomandra confertifolia</i>	Mat Rush	y	
<i>Lomandra cylindrica</i>		y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra obliqua</i>	Fish Bones	y	y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Micrantheum ericoides</i>		y	y
<i>Microlaena stipoides var. stipoides</i>	Weeping Meadow Grass	y	y
<i>Opercularia aspera</i>	Thin Stink Weed	y	y

<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Panicum simile</i>	Two Colour Panic	y	y
<i>Paspalidium distans</i>		y	y
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Persoonia levis</i>	Smooth Geebung	y	y
<i>Persoonia mollis</i>	Soft Geebung		y
<i>Pittosporum revolutum</i>	Rough-fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platylobium formosum subsp. formosum</i>	Handsome Flat-pea	y	y
<i>Platysace lanceolata</i>	Native Parsnip	y	
<i>Plectranthus parviflorus</i>	Cockspur Flower	y	
<i>Podocarpus elatus</i>	Plum Pine		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pomaderris discolor</i>		y	
<i>Pomax umbellata</i>	Pomax	y	y
<i>Poranthera microphylla</i>		y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pteris tremula</i>	Tender Brake		y
<i>Pultenaea daphnoides</i>	Large-leaf Bush-pea		y
<i>Rytidosperma tenuius [= Austrodanthonia tenuior]</i>		y	
<i>Sigesbeckia orientalis subsp. orientalis</i>	Indian Weed	y	y
<i>Smilax glycyphylla</i>	Native Sarsparilla	y	y
<i>Stylidium lineare</i>	Heath Trigger Plant	y	
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Trachymene incisa subsp. incisa</i>		y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	
<i>Tylophora barbata</i>			y
<i>Typha orientalis</i>	Cumbungi	y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	
<i>Woolisia pungens</i>	Snow Wreath	y	
<i>Zieria smithii</i>	Sandfly Zieria	y	y

Table 121 Native flora species recorded in ELS Hall Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acer negundo</i>	Box Elder		y
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Aloe vera</i>	Aloe Vera	y	y
<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araucaria heterophylla</i>	Norfolk Island Pine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus asparagoides</i>	Bridal Creeper		y
<i>Asparagus plumosus</i>	Climbing Asparagus	y	
<i>Axonopus affinis</i>	Narrow-leaved Carpet Grass	y	
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Bidens subalternans</i>	Beggars Ticks	y	y
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass	y	
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Bryophyllum delagoense</i>	Mother of Millions	y	y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Colocasia esculenta</i>	Purple Taro	y	y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Crassocephalum crepidioides</i>	Thickheads		y
<i>Crocasmia x crocosmiiflora</i>	Montbretia		y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Cyrtomium falcatum</i>	Holly Fern		y
<i>Delairea odorata</i>	Cape Ivy	y	y
<i>Digitaria didactyla</i>	Queensland Blue Couch	y	
<i>Digitaria sanguinalis</i>	Summer Grass	y	
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass		y
<i>Erythrina x sykesii</i>	Coral Tree	y	
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Fumaria sp.</i>	Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed	y	y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	
<i>Gnaphalium sp.</i>	Cudweed	y	y

<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Hedychium gardnerianum</i>	Ginger Lily		y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Lantana camara</i>	Lantana	y	y
<i>Leucanthemum x superbum [Chrysanthemum x superbum]</i>			y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Melia azadarach</i>	White Cedar	y	
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Passiflora subpeltata</i>	White Passionfruit	y	y
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Poa annua</i>	Winter Grass		y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Prunus sp.</i>	Cherry Blossom		y
<i>Ranunculus repens</i>	Creeping Buttercup		y
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Rorippa nasturtium-aquaticum</i>	Watercress		y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Rumex crispus</i>	Curled Dock		y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Senna pendula var. glabrata</i>	Easter Senna		y
<i>Setaria palmifolia</i>	Palm Grass		y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus [= indicus var. capensis]</i>	Parramatta Grass	y	y
<i>Stellaria media</i>	Chickweed		y

<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Trifolium repens</i>	White Clover	y	
<i>Tropaeolum majus</i>	Nasturtium	y	y
<i>Ulmus sp.</i>	Elm	y	y
<i>Verbena sp.</i>	Purpletop	y	y
<i>Veronica persica</i>	Creeping Speedwell		y
<i>Vicia sativa</i>	Slender Vetch	y	

Fauna Summary

Table 122 Fauna summary data (Ells Hall)

FAUNA	2008	2018
NATIVE	33	36
INTRODUCED	5	4

Table 123 Species lists 2008-2018 (Ells Hall)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australasian Pipit	<i>Anthus novaeseelandiae</i>	•	
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Australian Wood Duck	<i>Chenonetta jubata</i>		•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Thornbill	<i>Acanthiza pusilla</i>	•	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		•
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>		•
Eurasian Coot	<i>Fulica atra</i>	•	
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•

Red-browed Finch	<i>Neochmia temporalis</i>	•	
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Tawny Frogmouth	<i>Podargus strigoides</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>	•	•
White-browed Scrubwren	<i>Sericornis frontalis</i>		•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	•
House Sparrow		•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Blue-tongue Lizard	<i>Tiliqua scincoides</i>		•
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Lace Monitor	<i>Varanus varius</i>		
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Weasel Skink	<i>Saproscincus mustelinus</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	•
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Chocolate Wattled Bat	<i>Chalinolobus morio</i>		•
Eastern Bentwing-bat	<i>Miniopterus oriana oceanensis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
a Long-eared Bat	<i>Nyctophilus sp</i>		•
Large Forest Bat	<i>Vespadelus darlingtoni</i>		•
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>		•
Dog	<i>Canis lupus familiaris</i>		•

Mouse	<i>Mus musculus</i>	•	
Red fox	<i>Vulpes vulpes</i>		•

5.2.2 FLINDERS PARK

Vegetation summary

Table 124 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
FLINDERS PARK	2a Busaco Road, Marsfield		1.24Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Urban_E/N: Urban Exotic/Native	N/A	2	0.016Ha
Weed_Ex: Weeds and Exotics	N/A	1	0.674Ha

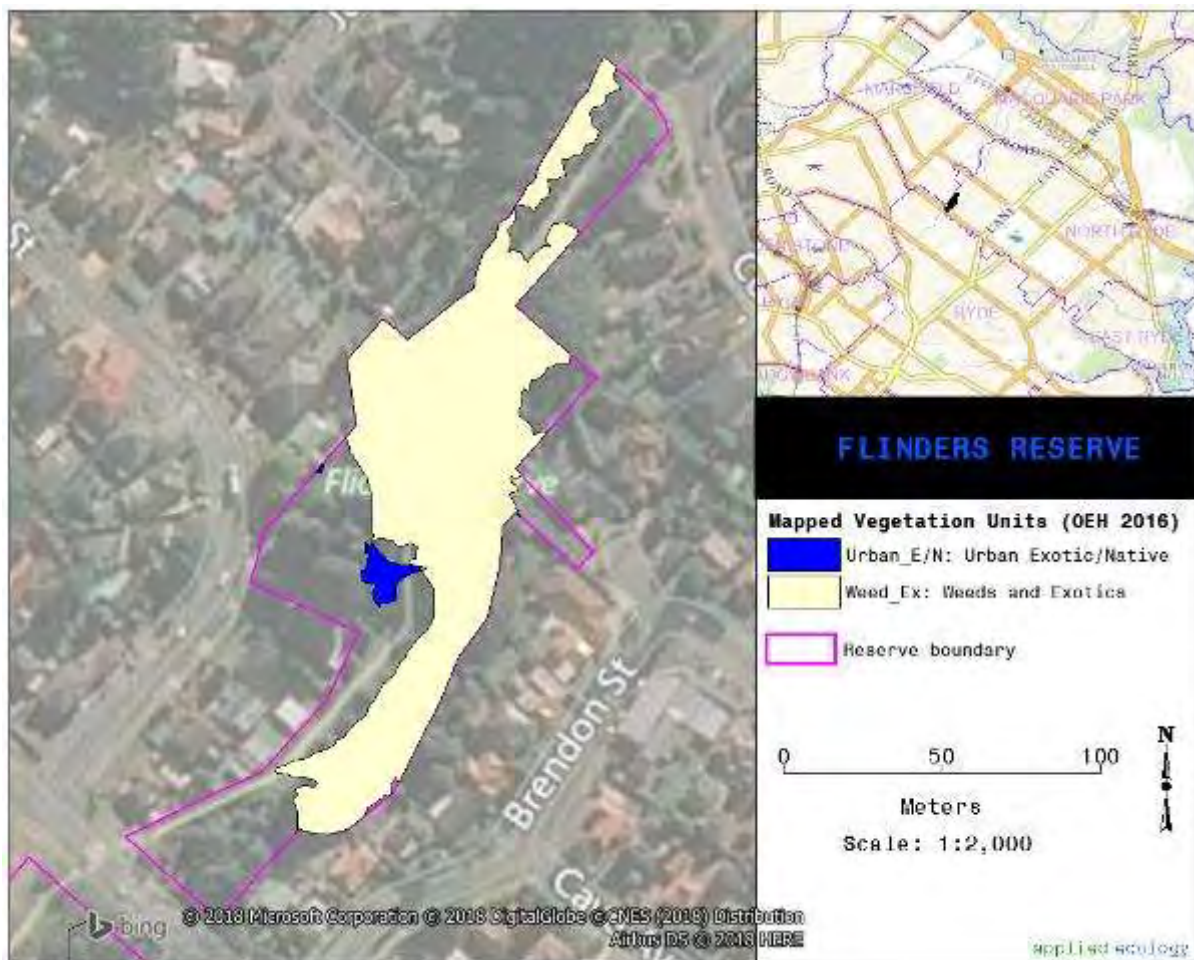


Figure 157 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 125 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	23	EXOTIC SPECIES COUNT 2008	26
NATIVE SPECIES COUNT 2018	28	EXOTIC SPECIES COUNT 2018	58
NATIVE SPECIES CONSTANT 2008-2018	19	EXOTIC SPECIES CONSTANT 2008-2018	24
NATIVE SPECIES LOST 2008-2018	4	EXOTIC SPECIES LOST 2008-2018	2
NATIVE SPECIES GAINED 2008-2018	9	EXOTIC SPECIES GAINED 2008-2018	34

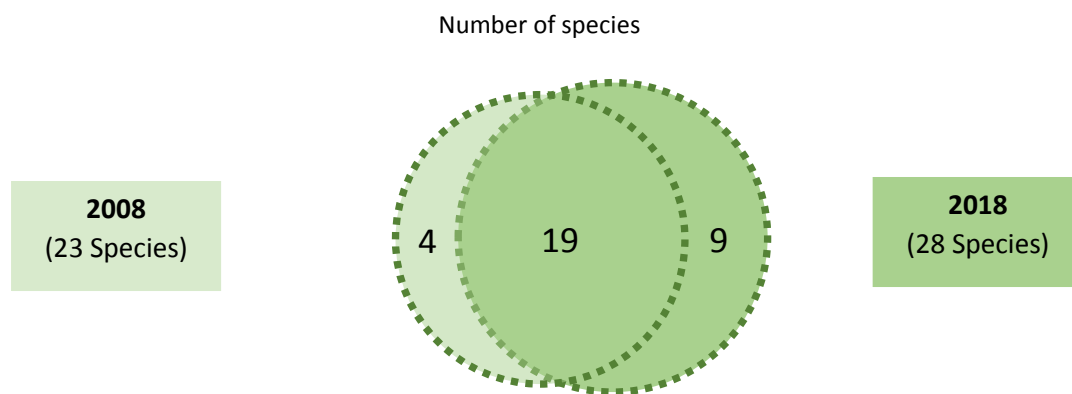


Figure 158 Comparison of native species richness from 2008 to 2018 for Flinders Park

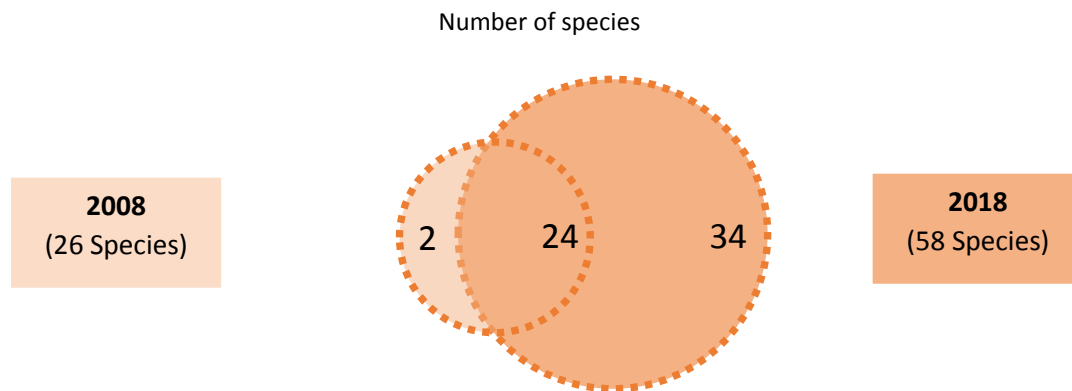


Figure 159 Comparison of exotic species richness from 2008 to 2018 for Flinders Park



Figure 160 Flinders Park has remnant trees surrounded by mown grass and native “garden” beds



Figure 161 In some places the reserve is a narrow corridor between houses and Shrimptons Creek



Figure 162 There are areas of dense weeds behind some of the houses



Figure 163 Shrimptons Creek is surrounded by dense weeds, including shrubs and groundcovers

Comparison of flora inventories 2008-2018

Table 126 Native flora species recorded in Flinders Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Alocasia brisbanensis</i>	Cunjevoi	y	y
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	y
<i>Callicoma serratifolia</i>	Black Wattle	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Imperata cylindrica</i>	Blady Grass	y	
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca hypericifolia</i>		y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Persicaria decipiens</i>	Spotted Knotweed	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Typha orientalis</i>	Cumbungi	y	y

Table 127 Introduced flora species recorded in Flinders Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Abelia x grandiflora</i>	Abelia		y
<i>Acer negundo</i>	Box Elder	y	y
<i>Acetosa sagittata</i>	Turkey Rhubarb		y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y

<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica sp.</i>	Turnip Weed		y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Chlorophytum comosum</i>	Ribbon Plant		y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Colocasia esculenta</i>	Purple Taro		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Cotoneaster glaucophylla</i>	Cotoneaster		y
<i>Crocasmia x crocosmiiflora</i>	Montbretia		y
<i>Cupressus sp</i>	Cypress		y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Dietes sp.</i>	Dietes		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Eriobotrya japonica</i>	Loquat	y	y
<i>Erythrina x sykesii</i>	Coral Tree	y	y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy		y
<i>Ipomoea indica</i>	Blue Morning Glory		y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminum polyanthum</i>	Chinese Jasmine		y
<i>Lantana camara</i>	Lantana	y	y
<i>Leucanthemum x superbum</i> [<i>Chrysanthemum x superbum</i>]			y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree	y	
<i>Myriophyllum aquaticum</i>	Brazilian Water Milfoil	y	y
<i>Nandina domestica</i>	Heavenly Bamboo		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Odontonema strictum</i>	Red Justicia		y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Ranunculus repens</i>	Creeping Buttercup		y
<i>Rorippa nasturtium-aquaticum</i>	Watercress		y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y

<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna		y
<i>Setaria palmifolia</i>	Palm Grass	y	
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Tecoma capensis</i>	Cape Honeysuckle		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Trifolium repens</i>	White Clover	y	y
<i>Tropaeolum majus</i>	Nasturtium		y
<i>Ulmus parvifolius</i>	Chinese Elm		y

Fauna Summary

Table 128 Fauna summary data (Flinders Park)

FAUNA	2008	2018
NATIVE	24	15
INTRODUCED	4	1

Table 129 Species lists 2008-2018 (Flinders Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		•
Chestnut Teal	<i>Anas castanea</i>		•
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>		•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Tawny Frogmouth	<i>Podargus strigoides</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	

Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Long-necked Turtle	<i>Chelodina longicollis</i>		•
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
Weasel Skink	<i>Saproscincus mustelinus</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	•	
INTRODUCED MAMMALS			
Dog	<i>Canis lupus familiaris</i>	•	•

5.2.3

5.2.4 GREENWOOD PARK

Vegetation summary

Table 130 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
GREENWOOD PARK	37 - 39 Kent Road, North Ryde		2.48Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF09: Sydney Turpentine-Ironbark Forest	BC Act: Endangered, EPBC Act: Critically Endangered	2	1.172Ha
Urban_E/N: Urban Exotic/Native		3	0.064Ha
Weed_Ex: Weeds and Exotics		1	0.556Ha

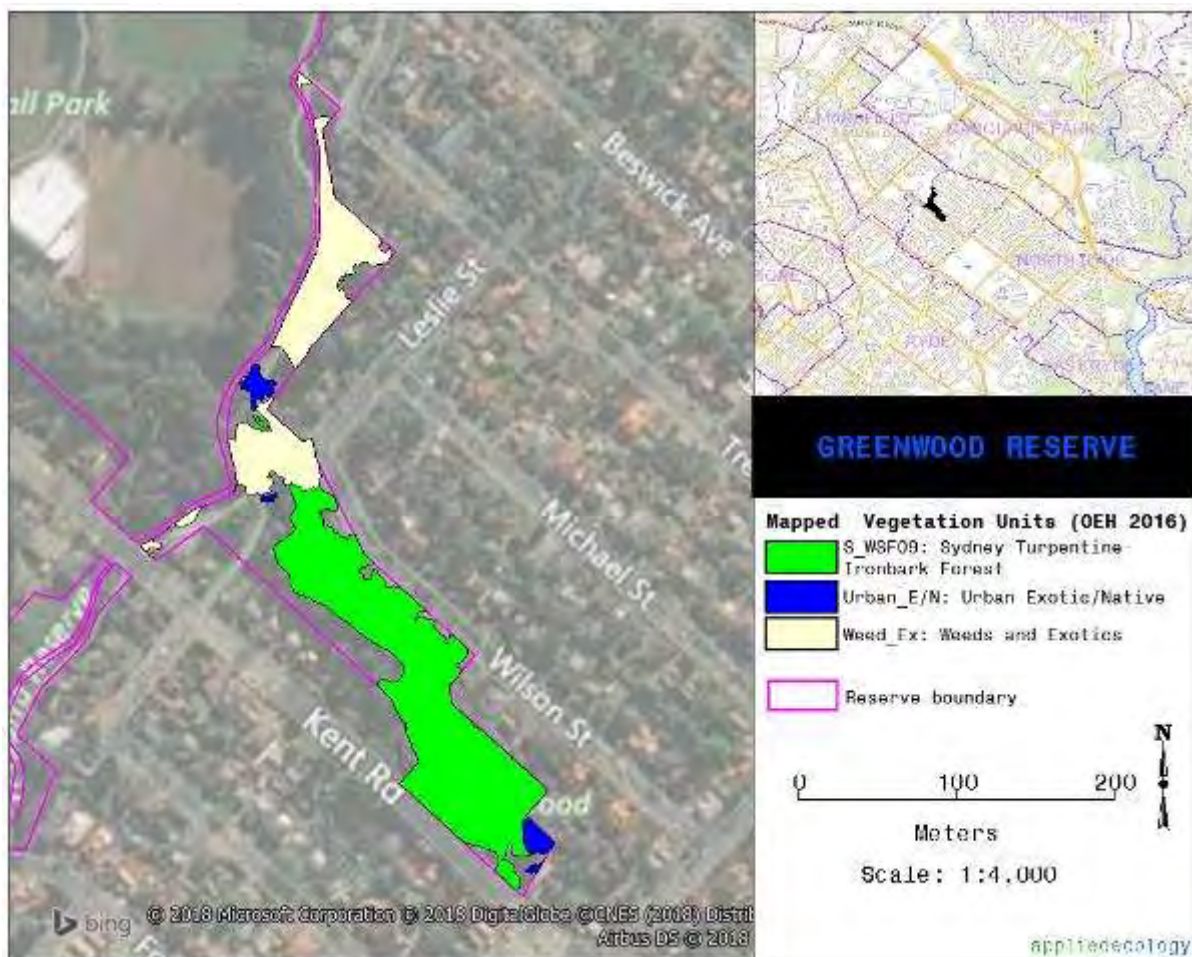


Figure 164 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 131 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	43	EXOTIC SPECIES COUNT 2008	62
NATIVE SPECIES COUNT 2018	60	EXOTIC SPECIES COUNT 2018	87
NATIVE SPECIES CONSTANT 2008-2018	36	EXOTIC SPECIES CONSTANT 2008-2018	54
NATIVE SPECIES LOST 2008-2018	7	EXOTIC SPECIES LOST 2008-2018	8
NATIVE SPECIES GAINED 2008-2018	24	EXOTIC SPECIES GAINED 2008-2018	33

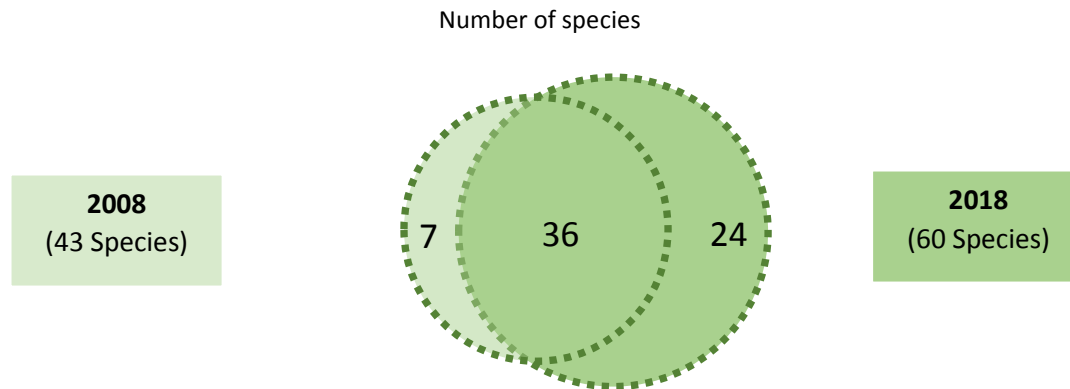


Figure 165 Comparison of native species richness from 2008 to 2018 for Greenwood Park

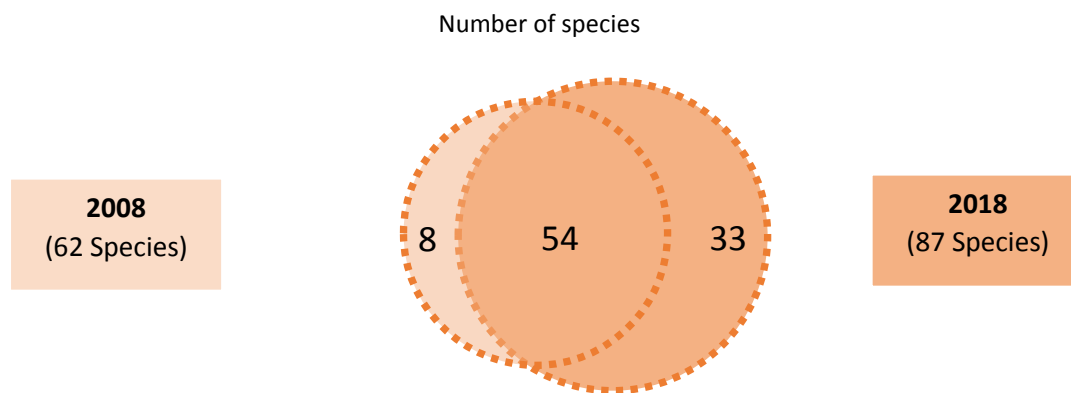


Figure 166 Comparison of exotic species richness from 2008 to 2018 for Greenwood Park



Figure 167 Mature trees and shrubs create ideal conditions for lorikeet and rosellas in Greenwood Park



Figure 168 The upper section of the creek is deeply incised with a mixed understorey of weeds and natives



Figure 169 Areas of native ferns were present in patches along the creek banks



Figure 170 Further downstream the understorey became highly degraded with dense weeds smothering natives



Figure 171 A combined footpath and cycleway runs beside Shrimptons Creek through the northern part of the reserve

Comparison of flora inventories 2008-2018

Table 132 Native flora species recorded in Greenwood Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Adiantum hispidulum</i>	Rough Maidenhair		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Asplenium australasicum</i>	Birds Nest Fern		y
<i>Backhousia myrtifolia</i>	Grey Myrtle		y
<i>Blechnum ambiguum</i>			y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Calystegia marginata</i>		y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Ceratopetalum apetalum</i>	Coachwood		y
<i>Christella dentata</i>	Binung		y
<i>Commelina cyanea</i>	Scurvy Weed		y

<i>Corymbia maculata</i>	Spotted Gum	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dichelachne micrantha</i>	Shorthair Plume Grass	y	
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Einadia hastata</i>	Seaberry Saltbush		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry		y
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge	y	
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Glycine microphylla</i>	Lesser Love Creeper		y
<i>Glycine tabacina</i>	Love Creeper		y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	y
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Hydrocotyle sibthorpioides</i>	Pennywort		y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree	y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Persicaria lapathifolia</i>	Pale Knotweed	y	y
<i>Pittosporum revolutum</i>	Rough-fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pultenaea daphnoides</i>	Large-leaf Bush-pea	y	

<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Tylophora barbata</i>			y
<i>Zieria smithii</i>	Sandfly Zieria	y	y

Table 133 Introduced flora species recorded in Greenwood Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Abutilon grandifolium</i>	Hairy Indian Mallow		y
<i>Acacia elata</i>	Cedar Wattle	y	y
<i>Acalypha australis</i>	Asian Copperleaf		y
<i>Acer negundo</i>	Box Elder	y	y
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed	y	y
<i>Alstroemeria psittacina</i>	Parrot Lily	y	y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Arctotheca calendula</i>	Cape Daisy		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus officinale</i>	Edible Asparagus		y
<i>Atriplex prostrata</i>			y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica fruticulosa</i>	Twiggy Turnip	y	
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Canna indica</i>	Canna Lily	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Crocsmia x crocosmiiflora</i>	Montbretia		y
<i>Cyathea cooperi</i>	Straw Tree-fern	y	y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Cyrtomium falcatum</i>	Holly Fern		y
<i>Delairea odorata</i>	Cape Ivy	y	y
<i>Dietes</i> sp.	Dietes	y	y

<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eriobotrya japonica</i>	Loquat		y
<i>Erythrina x sykesii</i>	Coral Tree		y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Euphorbia peplus</i>	Petty Spurge	y	y
<i>Fumaria sp.</i>	Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed	y	
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Hedychium gardnerianum</i>	Ginger Lily	y	y
<i>Hydrocotyle bonariensis</i>	Kurnell's Curse		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Juncus acutus</i>	Sharp Rush		y
<i>Justicia brandegeana</i>	Prawn Plant, Shrimp Plant		y
<i>Koelreuteria elegans subsp. formosana</i>	Golden Rain Tree		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Megathyrus maximus</i>	Guinea Grass		y
<i>Melia azadarach</i>	White Cedar	y	y
<i>Mirabilis jalapa</i>	Four O'clocks, Marvel of Peru		y
<i>Monstera deliciosa</i>	Fruit Salad Plant		y
<i>Morus albus</i>	White Mulberry	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum quadrifarium</i>	Tussock Paspalum	y	
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Passiflora edulis</i>	Edible Passionfruit	y	
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Ranunculus repens</i>	Creeping Buttercup	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Rumex crispus</i>	Curled Dock		y
<i>Senecio madagascariensis</i>	Fireweed		y

<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Setaria</i> sp.	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	y
<i>Stachys arvensis</i>	Staggers		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Triadica sebifera</i>	Chinese Tallow	y	
<i>Tropaeolum majus</i>	Nasturtium	y	y
<i>Verbena officinalis</i>	Common Verbena, Vervain	y	y
<i>Vicia sativa</i>	Slender Vetch	y	y
<i>Vinca major</i>	Blue Periwinkle		y
<i>Viola odorata</i>	Sweet Violet	y	y
<i>Xanthium</i> sp.	Cockle Burr	y	
<i>Yucca aloifolia</i>	Spanish Bayonet, Dagger Plant		y

Fauna Summary

Table 134 Fauna summary data (Greenwood Park)

FAUNA	2008	2018
NATIVE	15	17
INTRODUCED	2	1

Table 135 Species lists 2008-2018 (Greenwood Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Eastern Koel	<i>Eudynamys orientalis</i>	•	•
Eastern Rosella	<i>Platycercus eximius</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Magpie-lark	<i>Gallina cyanoleuca</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•

Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
Peron's Tree Frog	<i>Litoria peronii</i>		•
		1	2
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	•

5.2.5 SANTA ROSA PARK

Vegetation summary

Table 136 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
SANTA ROSA PARK	64 Bridge Road, Ryde		4.61Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Urban_E/N: Urban Exotic/Native	N/A	1	0.195Ha
Weed_Ex: Weeds and Exotics	N/A	1	1.524Ha

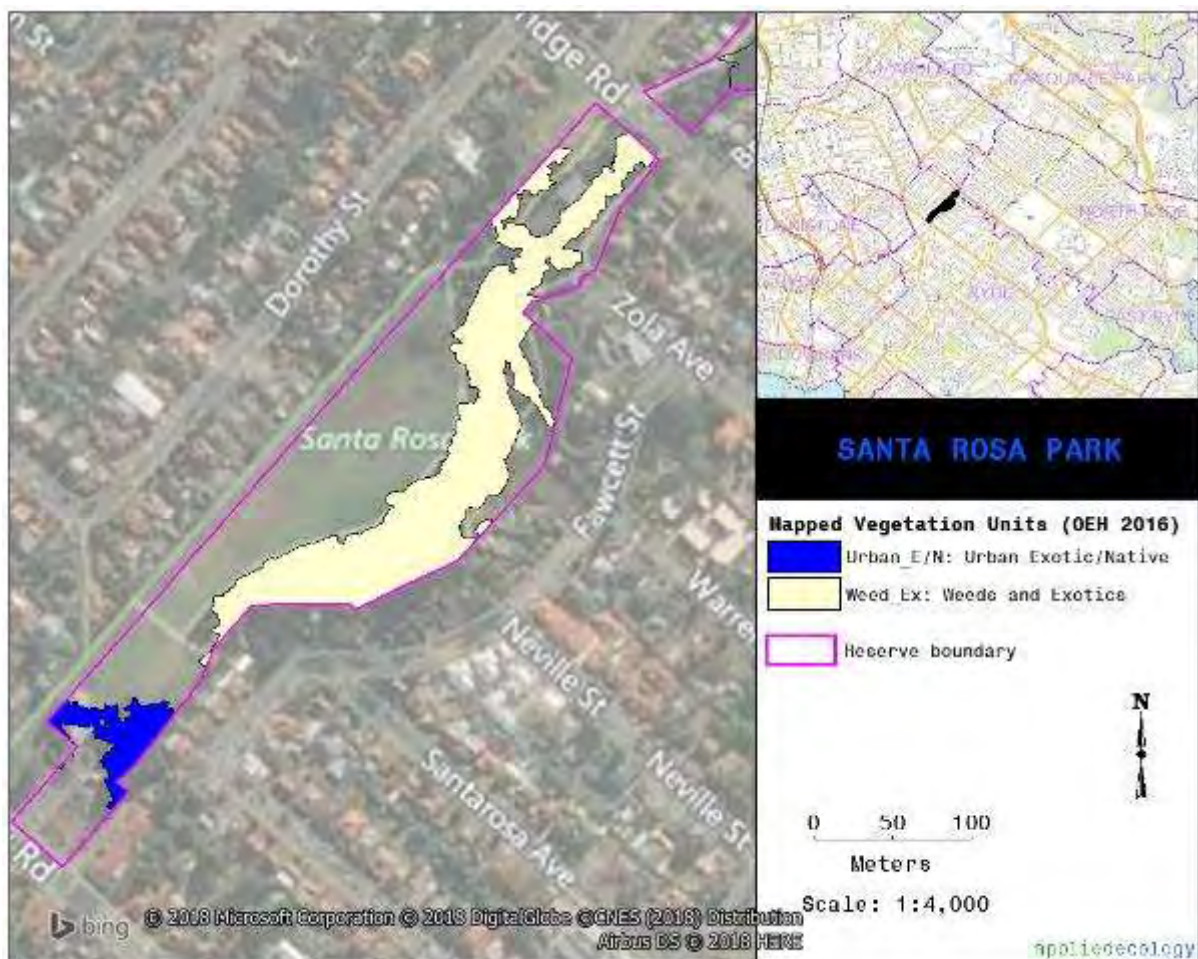


Figure 172 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 137 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	63	EXOTIC SPECIES COUNT 2018	65
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	63	EXOTIC SPECIES GAINED 2008-2018	65

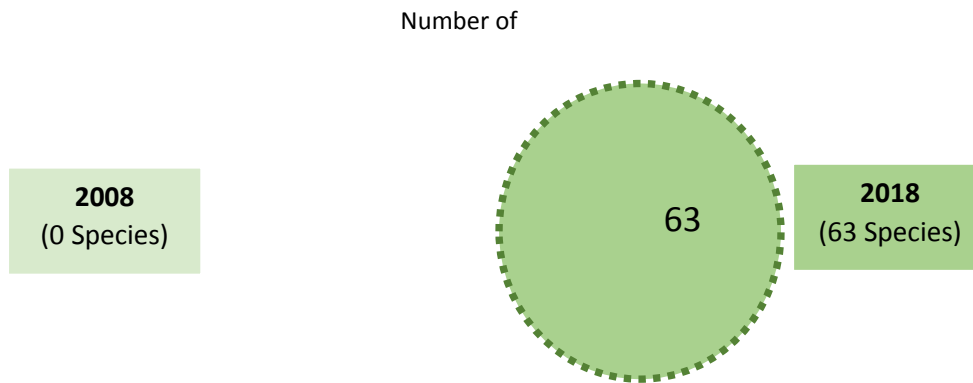


Figure 173 Comparison of native species richness from 2008 to 2018 for Santa Rosa Park

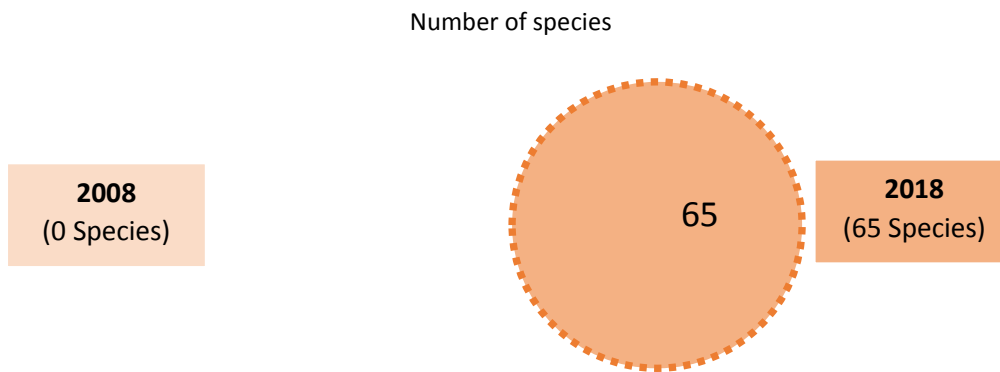


Figure 174 Comparison of exotic species richness from 2008 to 2018 for Santa Rosa Park



Figure 175 Considerable weed control has been undertaken along the lower section of Shrimptons Creek



Figure 176 Revegetation planting is helping to create additional habitat resources in Santa Rosa Park



Figure 177 Ongoing bush regeneration is an important part of management for Santa Rosa Park



Figure 178 A rain garden has been constructed at the upper end of Shrimptons Creek in Santa Rosa Park



Figure 179 Mature revegetation planting indicates the time that has gone into bushland restoration on this site



Figure 180 Mature canopy trees form the backbone of bushland in Santa Rosa Park



Figure 181 Dense weeds fill the channel where Shrimptons Creek daylights into Santa Rosa Park

Comparison of flora inventories 2008-2018

Table 138 Native flora species recorded in Santa Rosa Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia floribunda</i>	White Sallow Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Acacia suaveolens</i>	Sweet-scented Wattle		y
<i>Acacia ulicifolia</i>	Prickly Moses		y
<i>Acmena smithii</i>	Lilly-pilly		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia		y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Calystegia marginata</i>			y
<i>Carex appressa</i>	Tall Carex		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak		y

<i>Centella asiatica</i>	Indian Pennywort		y
<i>Clematis glycinoides</i>	Old Man's Beard		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Corymbia maculata</i>	Spotted Gum		y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Epilobium billardioreanum</i>			y
<i>Eucalyptus punctata</i>	Grey Gum		y
<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Gahnia melanocarpa</i>	Black-fruit Saw Sedge		y
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glycine tabacina</i>	Love Creeper		y
<i>Hakea dactyloides</i>	Finger Hakea		y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> <i>subsp. polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Livistona australis</i>	Cabbage Palm		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Melaleuca ericifolia</i>	Swamp Paperbark		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca nodosa</i>	Ball Honeymyrtle		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Ozothamnus diosmifolius</i>	Paper Daisy		y
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Pultenaea hispidula</i>			y
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Tristaniaopsis laurina</i>	Water Gum		y
<i>Typha orientalis</i>	Cumbungi		y

Table 139 Introduction flora species recorded in Santa Rosa Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia elata</i>	Cedar Wattle		y
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Acetosa sagittata</i>	Turkey Rhubarb		y
<i>Agapanthus praecox subsp. orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Bidens subalternans</i>	Beggars Ticks		y
<i>Brassica fruticulosa</i>	Twiggy Turnip		y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		y
<i>Cardamine hirsuta</i>	Flickweed, Cardamine		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Chlorophytum comosum</i>	Ribbon Plant		y
<i>Leucanthemum x superbum [Chrysanthemum x superbum]</i>			y
<i>Cinnamomum camphora</i>	Camphor Laurel		y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Conyza sp.</i>	Fleabane		y
<i>Cupressus sp</i>	Cypress		y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Cyperus rotundus</i>	Nutgrass		y
<i>Digitaria sanguinalis</i>	Summer Grass		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Eragrostis curvula</i>	African Lovegrass		y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Galinsoga parviflora</i>	Potato Weed		y
<i>Grevillea robusta</i>	Silky Oak		y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Jasminum didymum</i>	Jasmine		y
<i>Leptospermum rotundifolium</i>	Round-leaf Tea-tree		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Ligustrum sinense</i>	Small-leaved Privet		y
<i>Lophostemon confertus</i>	Brush Box		y
<i>Malva parviflora</i>	Smallflower Mallow		y
<i>Medicago polymorpha</i>	Burr Medic		y

<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Morus albus</i>	White Mulberry		y
<i>Oxalis pes-caprae</i>	Soursob		y
<i>Paspalum urvillei</i>	Vasey Grass		y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Poa annua</i>	Winter Grass		y
<i>Prunus sp.</i>	Cherry Blossom		y
<i>Rorippa nasturtium-aquaticum</i>	Watercress		y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna		y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Soliva sessilis</i>	Bindii		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stellaria media</i>	Chickweed		y
<i>Taraxacum officiale</i>	Dandelion		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Trifolium repens</i>	White Clover		y
<i>Ulmus parvifolius</i>	Chinese Elm		y
<i>Verbena bonariensis</i>	Purple Top		y
<i>Vicia sativa</i>	Slender Vetch		y
<i>Wisteria sinensis</i>	Wisteria		y

Fauna Summary

Table 140 Fauna summary data (Santa Rosa Park)

FAUNA	2008	2018
NATIVE	0	16
INTRODUCED	0	1

Table 141 Species lists 2008-2018 (Santa Rosa Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>		•
Australian Raven	<i>Corvus coronoides</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Pacific Black Duck	<i>Anas superciliosa</i>		•
Pied Currawong	<i>Strepera graculina</i>		•

Tawny Frogmouth	<i>Podargus strigoides</i>		•
White-faced Heron	<i>Egretta novaehollandiae</i>		•
INTRODUCED BIRDS			
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>		•
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>		•
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•



White-faced heron enjoying the wetland at Santa Rosa Park

5.2.6 TINDARRA RESERVE

Vegetation summary

Table 142 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
TINDARRA RESERVE	70 Kent Road, North Ryde		0.763Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
Weed_Ex: Weeds and Exotics	N/A	1	0.551Ha

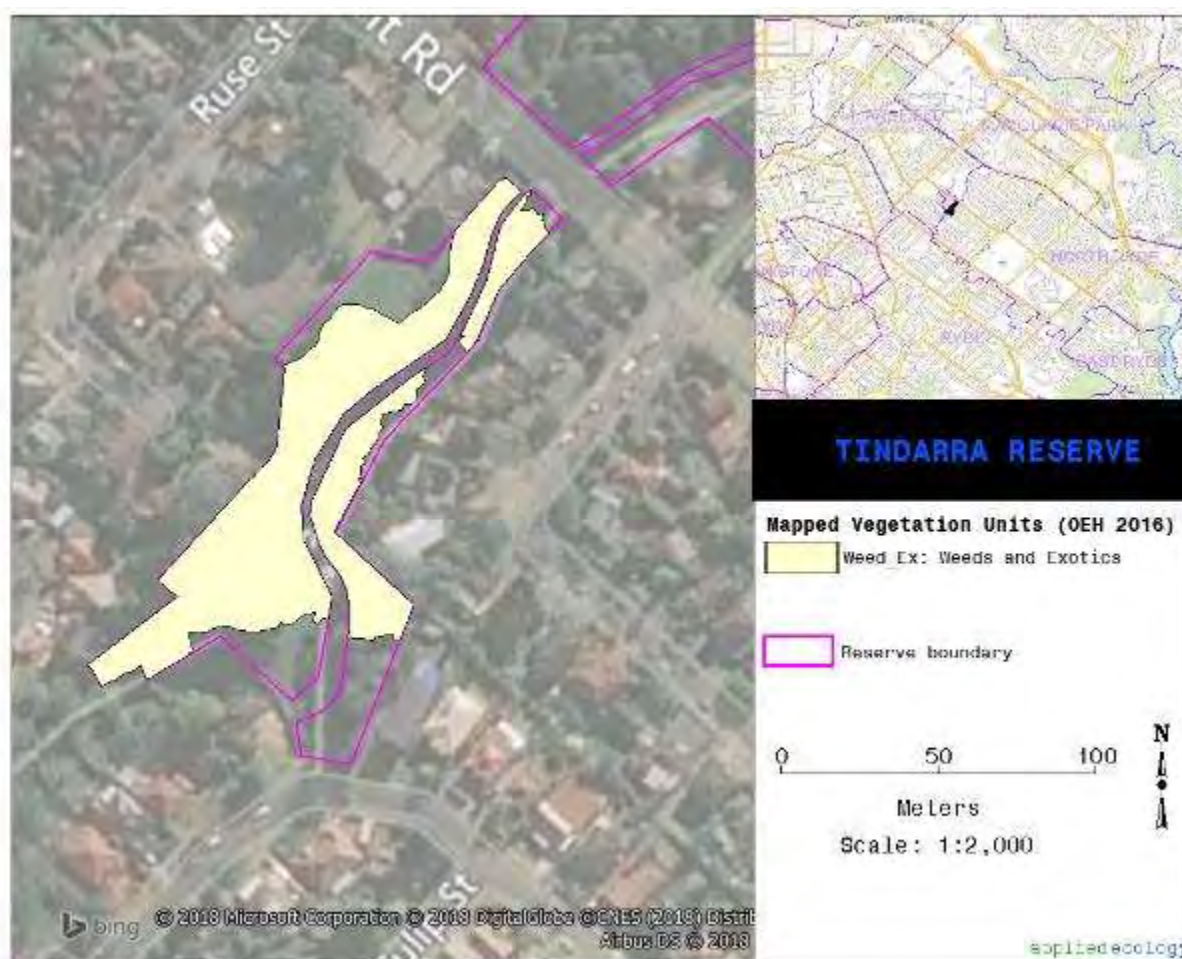


Figure 182 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 143 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	15	EXOTIC SPECIES COUNT 2008	28
NATIVE SPECIES COUNT 2018	33	EXOTIC SPECIES COUNT 2018	38
NATIVE SPECIES CONSTANT 2008-2018	13	EXOTIC SPECIES CONSTANT 2008-2018	25
NATIVE SPECIES LOST 2008-2018	2	EXOTIC SPECIES LOST 2008-2018	3
NATIVE SPECIES GAINED 2008-2018	19	EXOTIC SPECIES GAINED 2008-2018	13

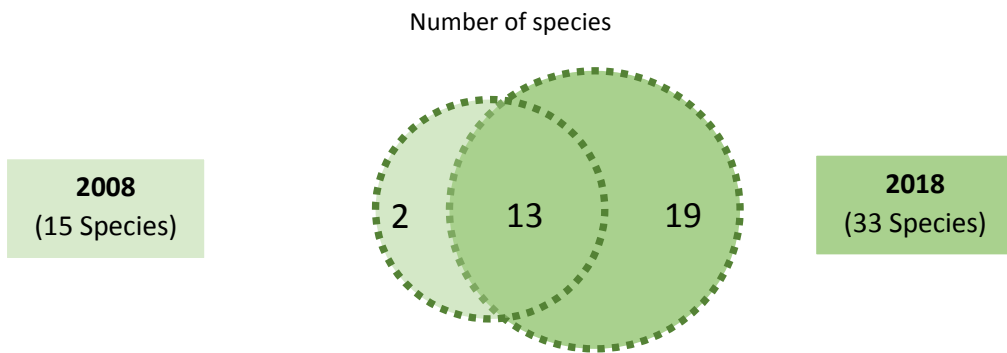


Figure 183 Comparison of native species richness from 2008 to 2018 for Tindarra Reserve

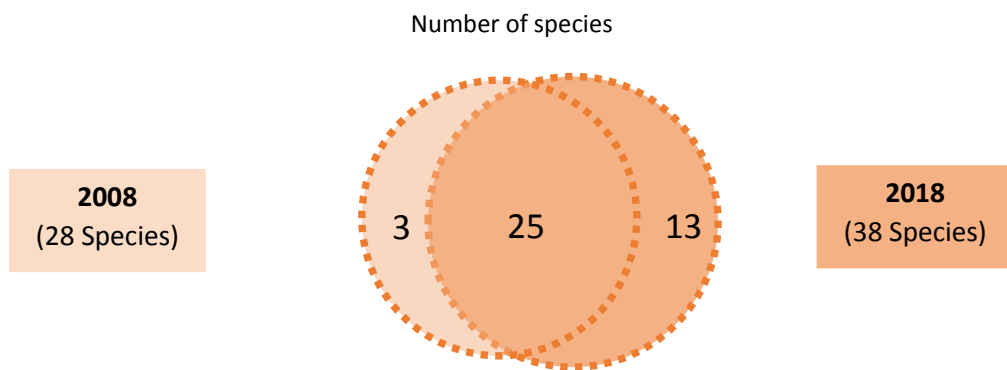


Figure 184 Comparison of exotic species richness from 2008 to 2018 for Tindarra Reserve



Figure 185 Tindarra Reserve forms a narrow bushland corridor between residential housing



Figure 186 In the lower part of the reserve the Shrimptons Creek corridor is narrow and weed infested



Figure 187 The reserve includes cycleway, grassed open space and native revegetation areas



Figure 188 Native Wood Ducks rest on the lawn in a quiet back area near the upstream end of the reserve

Comparison of flora inventories 2008-2018

Table 144 Native flora species recorded in Tindarra Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Calystegia marginata</i>			y
<i>Christella dentata</i>	Binung		y
<i>Clematis glycinoides</i>	Old Man's Beard	y	
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily		y
<i>Corymbia maculata</i>	Spotted Gum	y	y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Doryanthes excelsior</i>	Gynea Lily		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Eucalyptus acmenioides</i>	White Mahogany	y	y
<i>Eucalyptus pilularis</i>	Blackbutt		y

<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig	y	
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hibiscus heterophyllus</i>	Native Rosella, Native Hibiscus		y
<i>Homalanthus populifolius</i>	Bleeding Heart		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy		y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Typha orientalis</i>	Cumbungi		y

Table 145 Introduced flora species recorded in Tindarra Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Acacia podalyriifolia</i>	Queensland Silver Wattle	y	y
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed	y	y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brassica fruticulosa</i>	Twiggy Turnip		y
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Canna indica</i>	Canna Lily	y	y
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu		y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Colocasia esculenta</i>	Purple Taro	y	y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cyathea cooperi</i>	Straw Tree-fern	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Erythrina x sykesii</i>	Coral Tree	y	y
<i>Grevillea 'Robyn Gordon'</i>	<i>Grevillea 'Robyn Gordon'</i>		y
<i>Hedychium gardnerianum</i>	Ginger Lily		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y

<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	
<i>Modiola caroliniana</i>	Red-flowered Mallow	y	y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree	y	y
<i>Oxalis pes-caprae</i>	Soursob		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Salix babylonica</i>	Weeping Willow	y	
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco		y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stellaria media</i>	Chickweed		y
<i>Tropaeolum majus</i>	Nasturtium	y	y

Fauna Summary

Table 146 Fauna summary data (Tindarra Reserve)

FAUNA	2008	2018
NATIVE	17	16
INTRODUCED	3	3

Table 147 Species lists 2008-2018 (Tindarra Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	
Australian Raven	<i>Corvus coronoides</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>		•
Australian Wood Duck	<i>Chenonetta jubata</i>		•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>		•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
White-faced Heron	<i>Egretta novaehollandiae</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	

INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Rock Dove	<i>Columba livia</i>		•
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Blue-tongue Lizard	<i>Tiliqua scincoides</i>		•
Eastern Long-necked Turtle	<i>Chelodina longicollis</i>		•
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	•
Dog	<i>Canis lupus familiaris</i>		•

5.2.7 WILGA RESERVE and QUANDONG RESERVE

Vegetation summary

Table 148 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
WILGA PARK	2a Cottonwood Crescent, Macquarie Park		1.88Ha
QUANDONG RESERVE	6 Lachlan Ave, Macquarie Park		0.261Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	WP: 1	WP: 0.555Ha
Urban_E/N: Urban Exotic/Native	N/A	WP: 6	WP: 0.285Ha
		QR: 1	QR: 0.223Ha

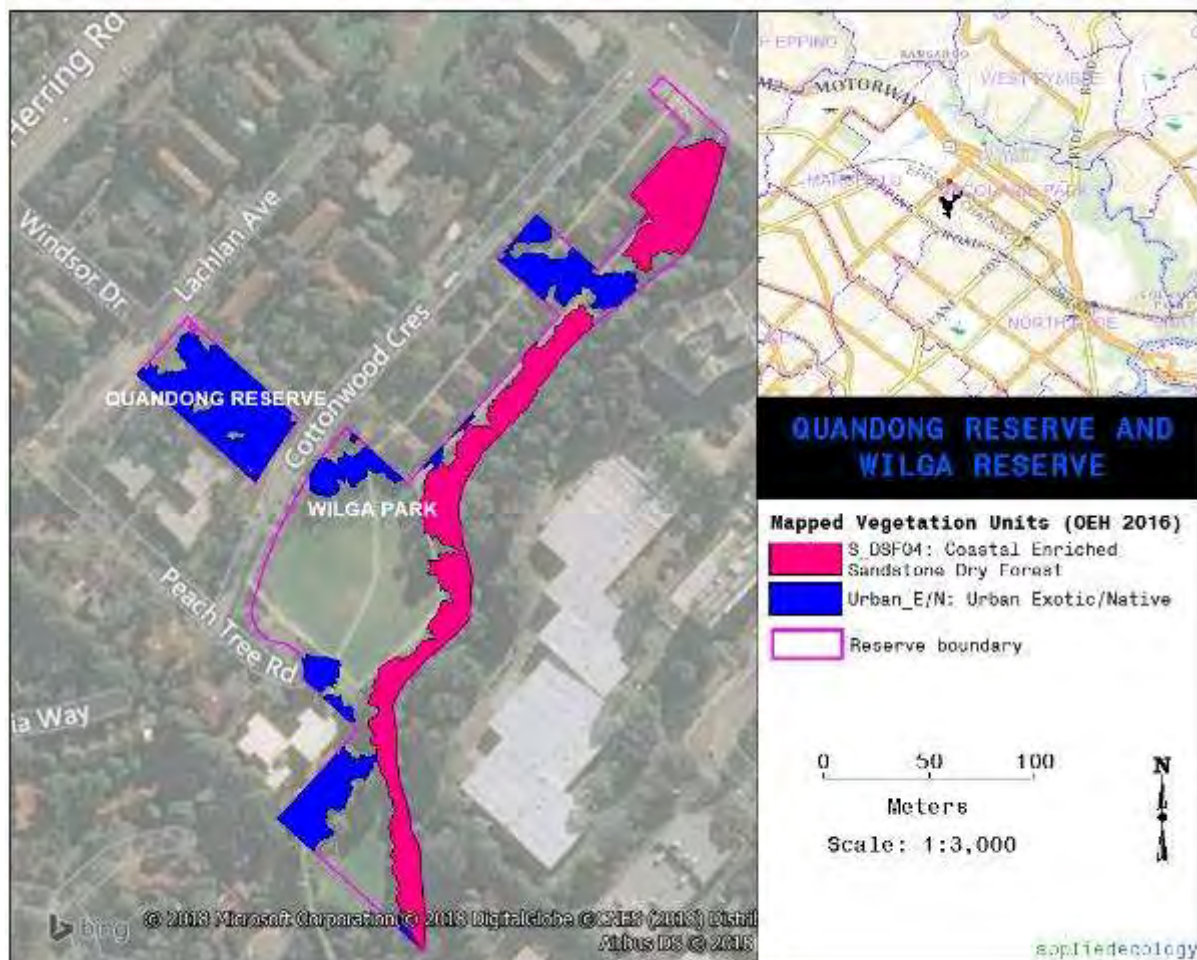


Figure 189 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 149 Flora summary data Wilga Park 2008-2018

NATIVE SPECIES COUNT 2008	30	EXOTIC SPECIES COUNT 2008	43
NATIVE SPECIES COUNT 2018	89	EXOTIC SPECIES COUNT 2018	61
NATIVE SPECIES CONSTANT 2008-2018	29	EXOTIC SPECIES CONSTANT 2008-2018	34
NATIVE SPECIES LOST 2008-2018	1	EXOTIC SPECIES LOST 2008-2018	9
NATIVE SPECIES GAINED 2008-2018	60	EXOTIC SPECIES GAINED 2008-2018	27

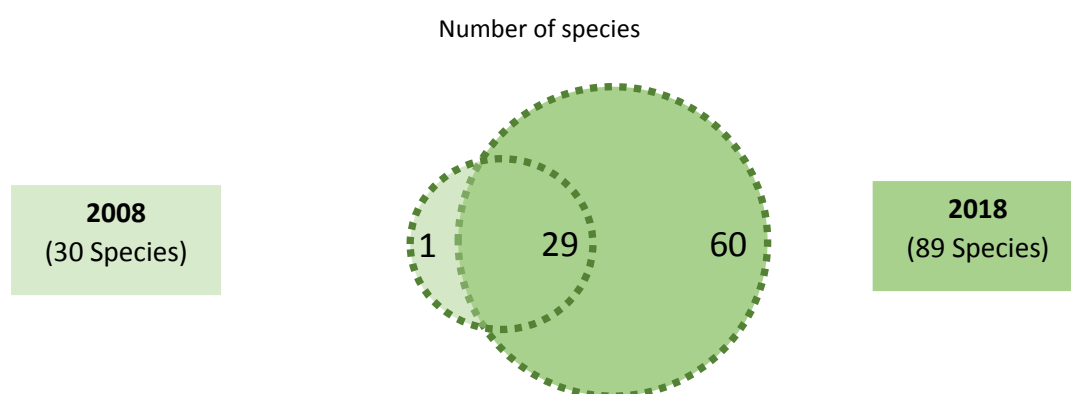


Figure 190 Comparison of native species richness from 2008 to 2018 for Wilga Reserve

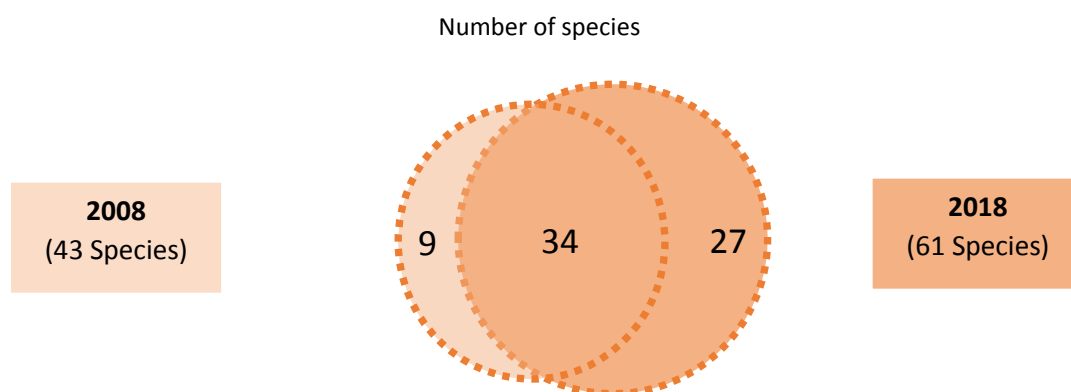


Figure 191 Comparison of exotic species richness from 2008 to 2018 for Wilga Reserve

Table 150 Flora summary data Quandong Reserve 2008-2018

NATIVE SPECIES COUNT 2008	8	EXOTIC SPECIES COUNT 2008	3
NATIVE SPECIES COUNT 2018	11	EXOTIC SPECIES COUNT 2018	4
NATIVE SPECIES CONSTANT 2008-2018	7	EXOTIC SPECIES CONSTANT 2008-2018	3
NATIVE SPECIES LOST 2008-2018	1	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	4	EXOTIC SPECIES GAINED 2008-2018	1

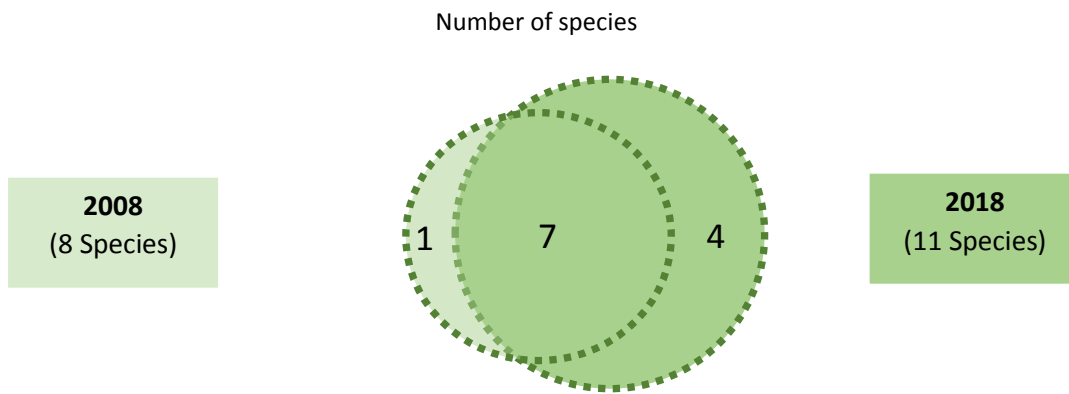


Figure 192 Comparison of native species richness from 2008 to 2018 for Quandong Reserve

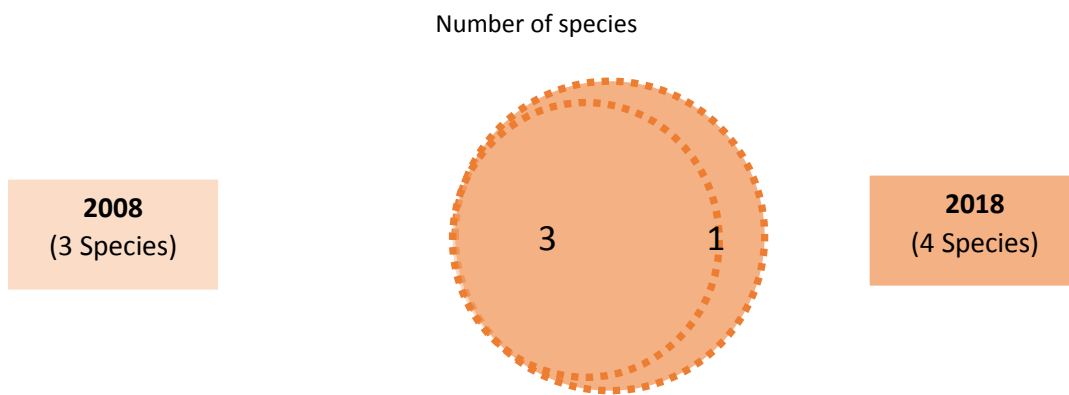


Figure 193 Comparison of exotic species richness from 2008 to 2018 for Quandong Reserve



Figure 194 Wilga Park includes an area of grassed open space between medium to high density housing blocks



Figure 195 A footpath/cycleway winds through mature revegetation planting areas



Figure 196 Vegetation along Shrimptons Creek is predominantly weedy



Figure 197 In wider riparian areas dense vines form thickets that smother native vegetation



Figure 198 A revegetation project has been undertaken along Shrimptons Creek in the midsection of the reserve



Figure 199 Extensive planting has been undertaken, creating a dense stand of native trees, shrubs and groundcovers



Figure 200 Areas of revegetation supplement existing habitat resources in Wilga Park – native and introduced



Figure 201 The riparian zone is in good condition towards the lower end of Wilga Park

Comparison of flora inventories 2008-2018

Table 151 Native flora species recorded in Wilga Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses		y
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Adiantum hispidulum</i>	Rough Maidenhair		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Banksia marginata</i>	Silver Banksia		y
<i>Bauera rubioides</i>	River Rose, Dog Rose		y
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y

<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Calystegia marginata</i>		y	y
<i>Carex appressa</i>	Tall Carex		y
<i>Cassinia aculeata</i>	Common Dogwood		y
<i>Cassinia uncata</i>	Bent Cassinia		y
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak		y
<i>Centella asiatica</i>	Indian Pennywort		y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush		y
<i>Christella dentata</i>	Binung		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Coronidium scorpioides</i>	Button Everlasting		y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Cupaniopsis anacardioides</i>	Tuckeroo		y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dichelachne crinita</i>	Longhair Plumegrass		y
<i>Dichondra repens</i>	Kidney Weed		y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Doryanthes excelsior</i>	Gynea Lily		y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass		y
<i>Einadia hastata</i>	Seaberry Saltbush		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Grevillea buxifolia</i>	Grey Spider Flower		y
<i>Grevillea linearifolia</i>	White Spider Flower		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Grevillea speciosa</i>	Red Spider Flower		y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Homalanthus populifolius</i>	Bleeding Heart		y
<i>Hydrocotyle sibthorpioides</i>	Pennywort		y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lachnagrostis filiformis</i>	Blown Grass		y
<i>Lambertia formosa</i>	Mountain Devil		y
<i>Lasiopetalum ferrugineum</i> var. <i>ferrugineum</i>	Rusty Petals		y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum parvifolium</i>	Small-flowered Tea-tree	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree	y	y

<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca hypericifolia</i>		y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Melaleuca nodosa</i>	Ball Honeymyrtle	y	y
<i>Melia azedarach</i>	White Cedar		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Olearia microphylla</i>	Bridal Daisy Bush		y
<i>Olearia viscidula</i>	Wallaby Weed		y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Ozothamnus diosmifolius</i>	Paper Daisy		y
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Poa labillardieri</i>	Poa Tussock		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Pomaderris prunina</i>	Plum-leaved Pomaderris		y
<i>Pratia purpurascens</i>	White Root		y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pultenaea daphnoides</i>	Large-leaf Bush-pea		y
<i>Pultenaea hispidula</i>			y
<i>Solanum aviculare</i>	Kangaroo Apple		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Viola betonicifolia</i>	Showy Violet		y
<i>Wahlenbergia gracilis</i>	Native Bluebell		y
<i>Westringia fruticosa</i>	Coast Rosemary	y	

Table 152 Introduced flora species recorded in Wilga Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acer negundo</i>	Box Elder	y	y
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Arundo donax</i>	Giant Reed	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Cardamine hirsuta</i>	Flickweed, Cardamine		y
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-Oak	y	y

<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Colocasia esculenta</i>	Purple Taro		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Delairea odorata</i>	Cape Ivy	y	
<i>Dietes sp.</i>	Dietes		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Erythrina x sykesii</i>	Coral Tree		y
<i>Euphorbia peplus</i>	Petty Spurge	y	y
<i>Fraxinis sp.</i>	Golden Ash, Claret Ash	y	
<i>Galinsoga parviflora</i>	Potato Weed	y	
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Grevillea 'Robyn Gordon'</i>	<i>Grevillea 'Robyn Gordon'</i>		y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy		y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Medicago polymorpha</i>	Burr Medic		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nandina domestica</i>	Heavenly Bamboo		y
<i>Nerium oleander</i>	Oleander		y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Plumbago auriculata</i>	Blue Jasmine		y
<i>Poa annua</i>	Winter Grass		y
<i>Populus nigra</i>	Lombardy Poplar	y	
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Salix babylonica</i>	Weeping Willow	y	
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria palmifolia</i>	Palm Grass	y	

<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	
<i>Stachys arvensis</i>	Staggers		y
<i>Stellaria media</i>	Chickweed		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Triadica sebifera</i>	Chinese Tallow		y
<i>Tropaeolum majus</i>	Nasturtium		y
<i>Verbena sp.</i>	Purpletop	y	y
<i>Vicia sativa</i>	Slender Vetch		y

Table 153 Native flora species recorded in Quandong Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon sp.</i>	Bottlebrush	y	y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y

Table 154 Introduced flora species recorded in Quandong Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	y
<i>Nandina domestica</i>	Heavenly Bamboo	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Populus nigra</i>	Lombardy Poplar	y	y

Fauna Summary

Table 155 Fauna summary data (Wilga Reserve and Quandong Reserve)

FAUNA	2008	2018
NATIVE	17	16
INTRODUCED	5	1

Table 156 Species lists 2008-2018 (Wilga Reserve and Quandong Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Australian Wood Duck	<i>Chenonetta jubata</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	•
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	•
Common Starling	<i>Sturnus vulgaris</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>		•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•

Eastern Bentwing Bat	<i>Miniopterus orianae oceanensis</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Rabbit	<i>Oryctolagus cuniculus</i>	•	•

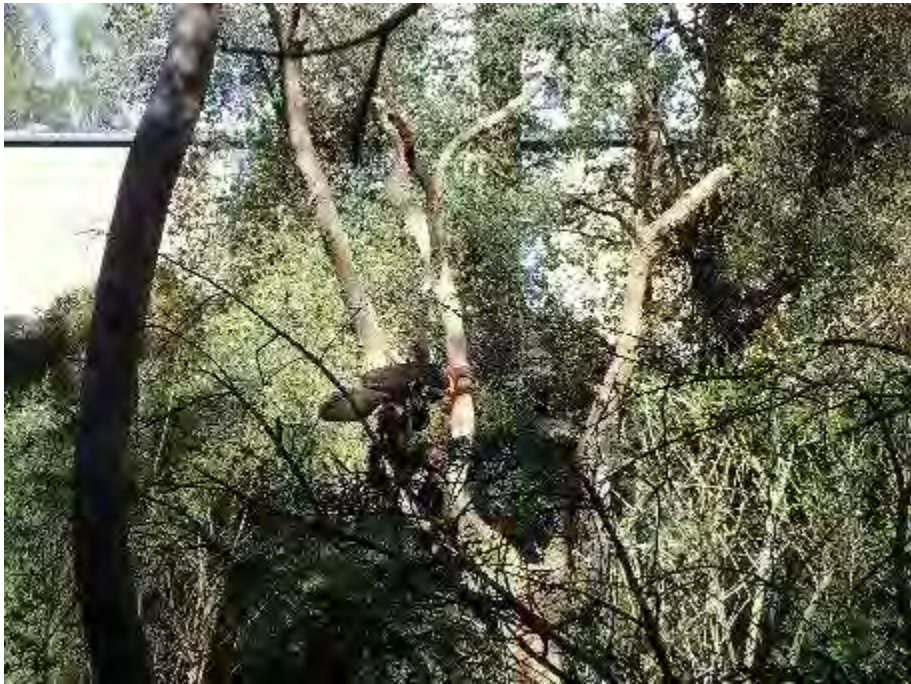


Figure 202 Brush Turkeys will take to the trees when startled or threatened



Figure 203 Local residents take an interest in the wildlife, stopping for photos of Sulphur-crested Cockatoos

5.3 NORTHERN RESERVES

There are 13 reserves in this group that range from very good bush adjoining the Lane Cove National Park to very small isolated pockets of remnant bushland such as Bundara Reserve to mixed use reserves such as Boobajool Reserve that is dominated by a cricket field and practice nets.

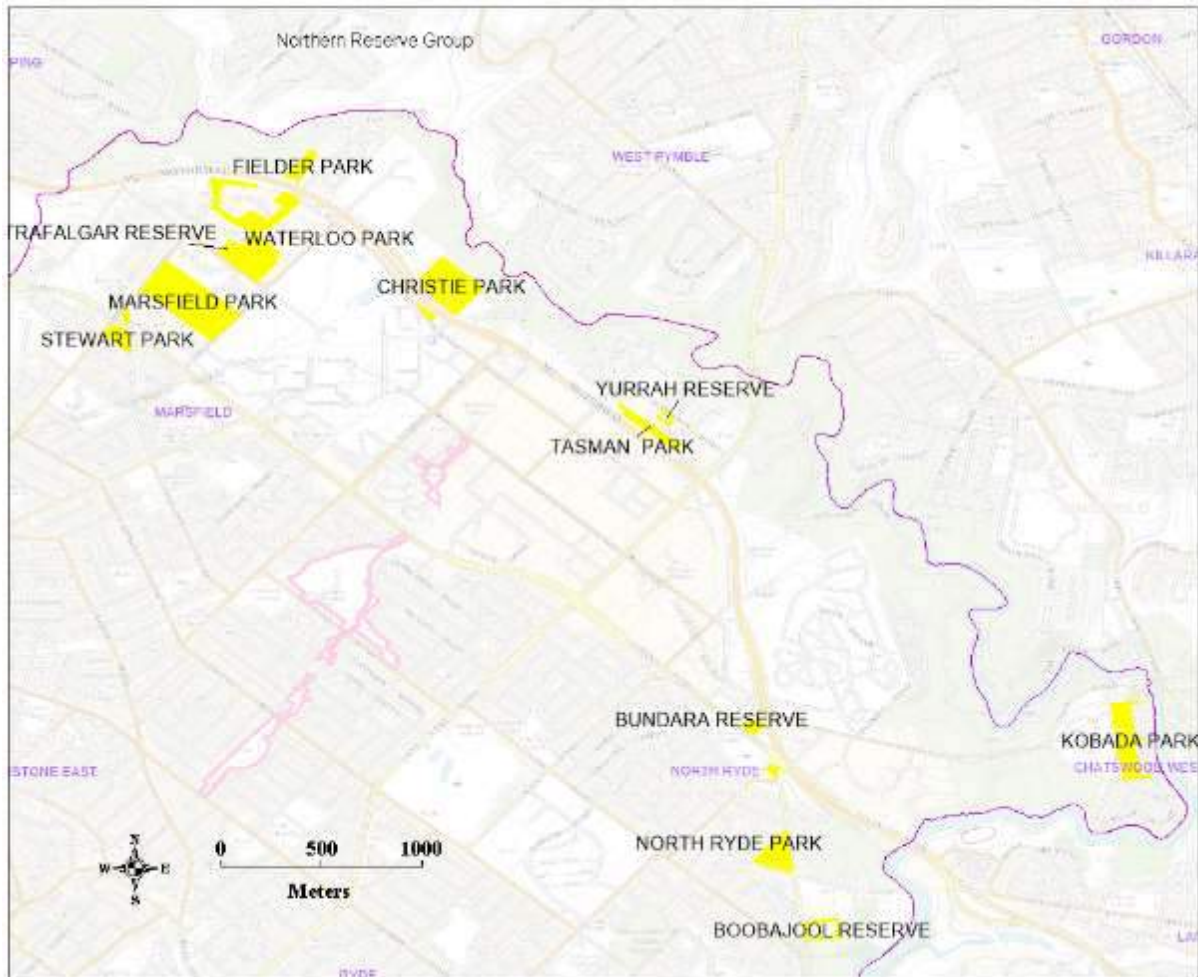


Figure 204 Northern Reserve Group

Table 157 Fauna Summary Species Richness (Northern Group)

NORTHERN RESERVES GROUP		
	2008	2018
NATIVE BIRDS	35	47
INTRODUCED BIRDS	2	3
REPTILES	6	6
FROGS	1	4
NATIVE MAMMALS	5	7
BATS	2	11
INTRODUCED MAMMALS	4	4

Table 158 Fauna Summary Species Turnover (Northern Group)

	TOTALS		TURNOVER		
	2008c	2018c	2008 only	2018 only	Constant
NATIVE BIRDS	35	47	6	18	29
INTRODUCED BIRDS	2	3	1	2	1
REPTILES	6	6	3	3	3
FROGS	1	4	0	3	1
NATIVE MAMMALS	5	7	0	2	5
BATS	2	11	1	10	1
INTRODUCED MAMMALS	4	4	2	2	2

Number of Native Birds

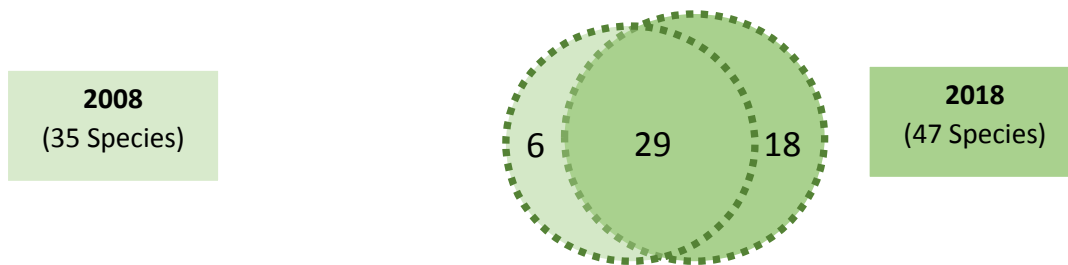


Figure 205 Comparison of native bird species richness from 2008 to 2018 for Northern Group

5.3.1 BOOBAJOO RESERVE

Vegetation summary

Table 159 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
BOOBAJOO RESERVE	Pittwater Road, East Ryde		1.62Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	1	0.440Ha
S_WSF06: Coastal Shale-Sandstone Forest	NO	2	0.401Ha

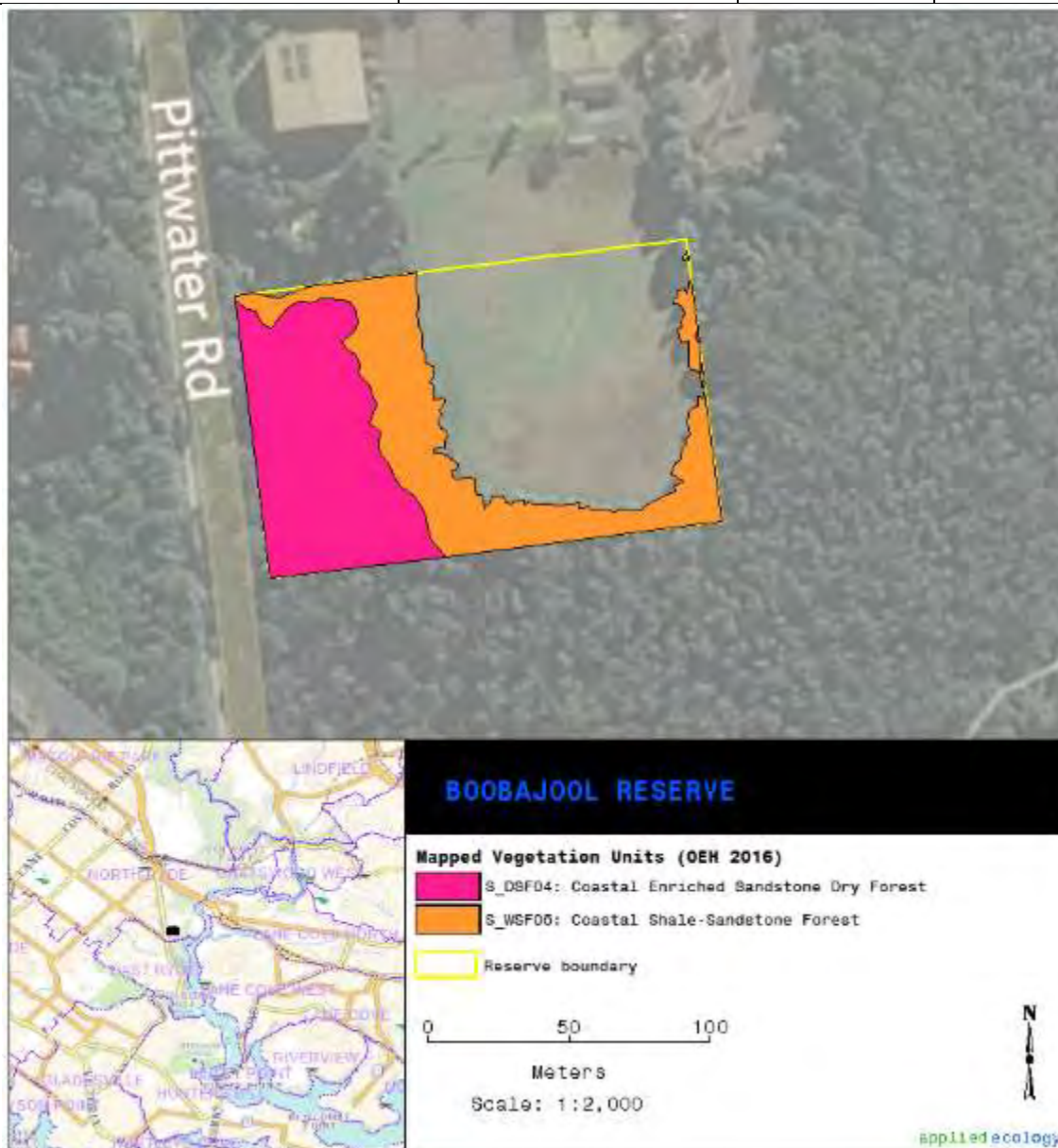


Figure 206 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 160 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	44	EXOTIC SPECIES COUNT 2008	35
NATIVE SPECIES COUNT 2018	55	EXOTIC SPECIES COUNT 2018	62
NATIVE SPECIES CONSTANT 2008-2018	35	EXOTIC SPECIES CONSTANT 2008-2018	27
NATIVE SPECIES LOST 2008-2018	9	EXOTIC SPECIES LOST 2008-2018	16
NATIVE SPECIES GAINED 2008-2018	20	EXOTIC SPECIES GAINED 2008-2018	35

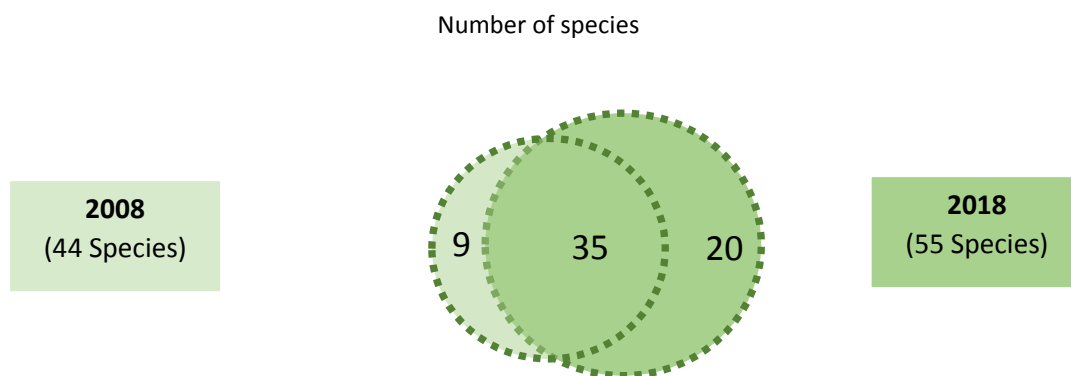


Figure 207 Comparison of native species richness from 2008 to 2018 for Boobajool Reserve

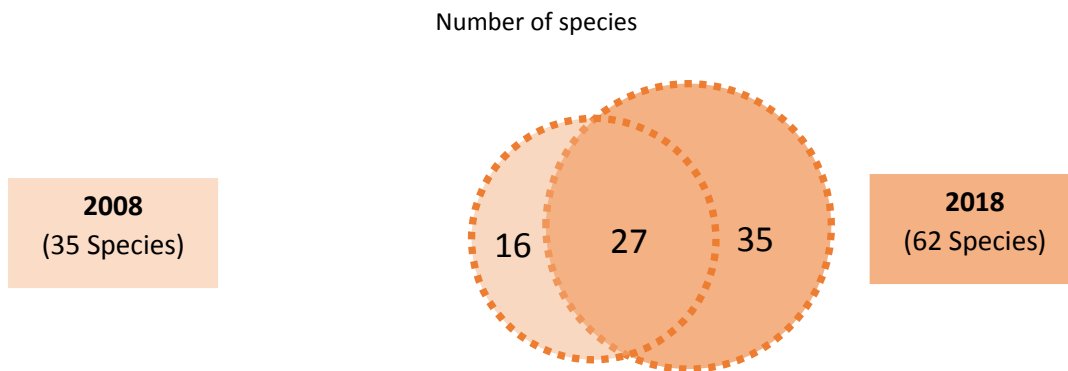


Figure 208 Comparison of exotic species richness from 2008 to 2018 for Boobajool Reserve



Figure 209 Boobajool Reserve is an odd park that includes part of a grassed oval



Figure 210 Immediately below the fence around the oval is an area of degraded bushland with weedy shrubs



Figure 211 Seen from the road, the bushland part of Boobajool Reserve appears in good condition



Figure 212 Parts of Boobajool Reserve include good quality Coastal Enriched Sandstone Dry Forest

Comparison of flora inventories

Table 161 Native flora species recorded in Melrose Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle		y
<i>Acacia ulicifolia</i>	Prickly Moses		y
<i>Actinotus helianthi</i>	Flannel Flower		y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Angophora bakeri</i>	Narrow-leaved Apple	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	
<i>Banksia serrata</i>	Old Man Banksia	y	y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	
<i>Bauera rubioides</i>	River Rose, Dog Rose	y	
<i>Billardiera scandens</i>	Dwarf Appleberry		y
<i>Blechnum cartilagineum</i>	Gristle Fern	y	y
<i>Bossiaea scolopendria</i>		y	y
<i>Callicoma serratifolia</i>	Black Wattle	y	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush	y	y
<i>Cassytha pubescens</i>	Common Devil's Twine	y	y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Einadia nutans</i>	Climbing Saltbush		y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	
<i>Eucalyptus piperita</i>	Sydney Peppermint		y
<i>Eucalyptus robusta</i>	Swamp Mahogany		y
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Gonocarpus teuroides</i>	Raspwort		y
<i>Grevillea buxifolia</i>	Grey Spider Flower	y	y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea		y
<i>Hakea sericea</i>	Bushy Needlebush	y	
<i>Hibbertia serpillophylla</i>			y
<i>Homalanthus populifolius</i>	Bleeding Heart		y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush	y	y

<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	
<i>Leptospermum trinervium</i>	Paperbark Tea-tree	y	y
<i>Lomandra confertifolia</i>	Mat Rush		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	Many-flowered Mat-rush	y	y
<i>Lomandra obliqua</i>	Fish Bones	y	y
<i>Lomatia myricoides</i>	River Lomatia	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Melichrus urceolatus</i>	Urn Heath		y
<i>Micrantheum ericoides</i>		y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive		y
<i>Oplismenus aemulus</i>	Basket Grass	y	
<i>Pimelea linifolia</i>	Rice Flower		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pteris tremula</i>	Tender Brake	y	y
<i>Schoenus apogon</i>			y
<i>Schoenus melanostachys</i>	Black Bog-rush	y	y
<i>Smilax glycyphylla</i>	Native Sarsparilla	y	
<i>Woolsia pungens</i>	Snow Wreath	y	y
<i>Xanthorrhoea arborea</i>	Tall Grass Tree	y	y
<i>Xanthosia pilosa</i>	Woolly Xanthosia	y	y

Table 162 Native flora species recorded in Melrose Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Arundo donax</i>	Giant Reed	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Aster subulatus</i>	Bushy Starwort	y	
<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cestrum parqui</i>	Green Cestrum		y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Conyza</i> sp.	Fleabane		y
<i>Cortaderia selloana</i>	Pampas Grass	y	
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cynodon dactylon</i>	Common Couch		y

<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Dipogon lignosus</i>	Dolichos Pea	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy		y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Freesia laxa</i>	Freesia		y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminum didymum</i>	Jasmine	y	
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Liquidamber styraciflua</i>	American Sweetgum	y	y
<i>Lonicera japonica</i>	Honeysuckle		y
<i>Lophostemon confertus</i>	Brush Box		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Morus albus</i>	White Mulberry		y
<i>Nandina domestica</i>	Heavenly Bamboo	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Parietaria judaica</i>	Asthma Weed	y	
<i>Pavonia hastata</i>	Pink Pavonia	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Plantago major</i>	Large Plantain		y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Pyracantha angustifolia</i>	Firethorn	y	
<i>Rhaphiolepis indica</i>	Indian Hawthorn	y	
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade		y

<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass		y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Thunbergia alata</i>	Black-eyed Susan	y	y
<i>Trifolium repens</i>	White Clover		y
<i>Verbena bonariensis</i>	Purple Top		y
<i>Verbena officinalis</i>	Common Verbena, Vervain		y
<i>Vicia sativa</i>	Slender Vetch		y
<i>Vinca major</i>	Blue Periwinkle		y
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Wild Watsonia	y	

Fauna Summary

Table 163 Fauna summary data (Boobajool Reserve)

FAUNA	2008	2018
NATIVE	8	14
INTRODUCED	1	2

Table 164 Species lists 2008-2018 (Boobajool Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian King-Parrot	<i>Alisterus scapularis</i>	•	•
Australian Raven	<i>Corvus coronoides</i>		•
Brown Thornbill	<i>Acanthiza pusilla</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Yellow Robin	<i>Eopsaltria australis</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Olive-backed Oriole	<i>Oriolus sagittatus</i>		•
Pied Currawong	<i>Strepera graculina</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>		•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>		•
Common Starling	<i>Sturnus vulgaris</i>		•
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>		•

FROGS			
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	•	
INTRODUCED MAMMALS			
Mouse	<i>Mus musculus</i>	•	



A Willie-wagtail enjoying the cricket at Boobajool Reseve

5.3.2 BUNDARA RESERVE and MYALL RESERVE

Vegetation summary

Table 165 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
BUNDARA RESERVE	238 Epping Road, North Ryde		0.393Ha
MYALL RESERVE	372 Pittwater Road, Ryde		0.157Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF06: Coastal Shale-Sandstone Forest	NO	MR: 1	0.154Ha
S_WSF09: Sydney Turpentine-Ironbark Forest	BC Act: Endangered, EPBC Act: Critically Endangered	BR: 1	0.383Ha
Weed_Ex: Weeds and Exotics	N/A	BR: 1	0.002Ha

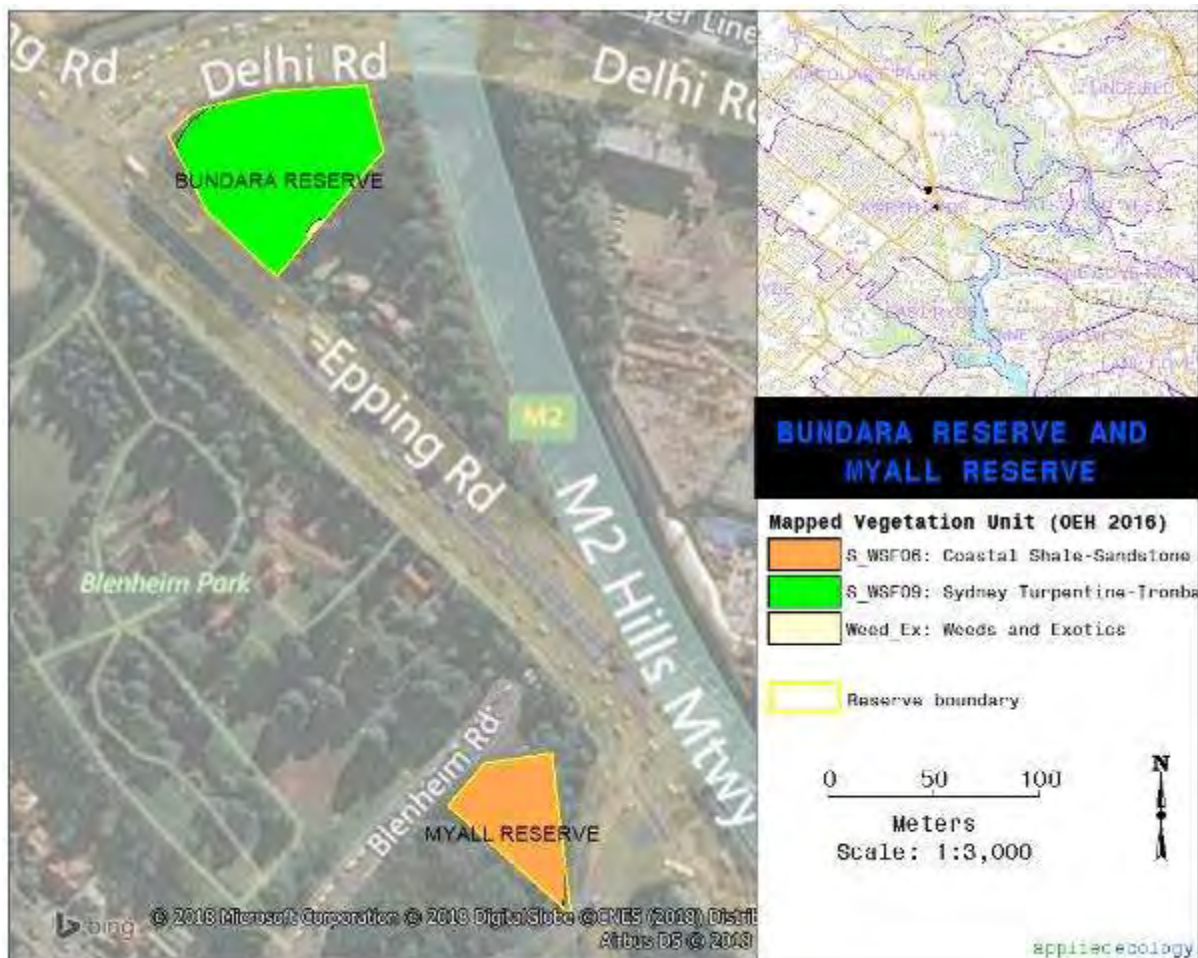


Figure 213 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 166 Flora summary data Bundara Reserve 2008-2018

NATIVE SPECIES COUNT 2008	77	EXOTIC SPECIES COUNT 2008	17
NATIVE SPECIES COUNT 2018	54	EXOTIC SPECIES COUNT 2018	15
NATIVE SPECIES CONSTANT 2008-2018	48	EXOTIC SPECIES CONSTANT 2008-2018	6
NATIVE SPECIES LOST 2008-2018	29	EXOTIC SPECIES LOST 2008-2018	11
NATIVE SPECIES GAINED 2008-2018	6	EXOTIC SPECIES GAINED 2008-2018	9

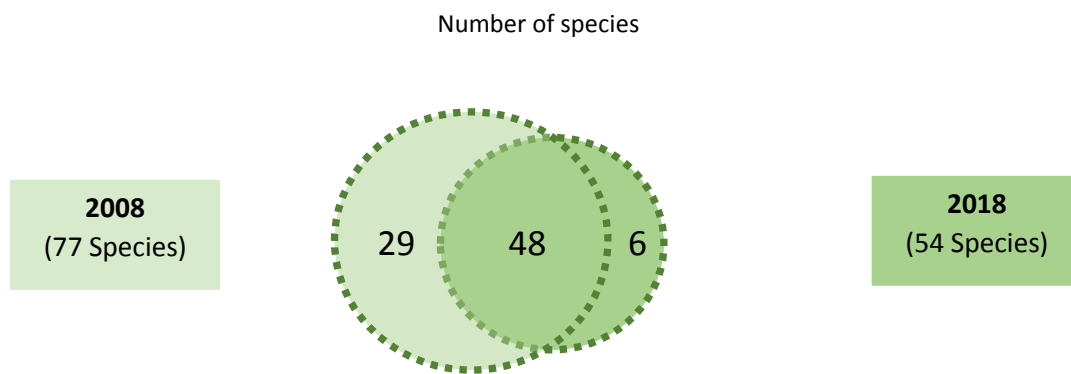


Figure 214 Comparison of native species richness from 2008 to 2018 for Bundara Reserve

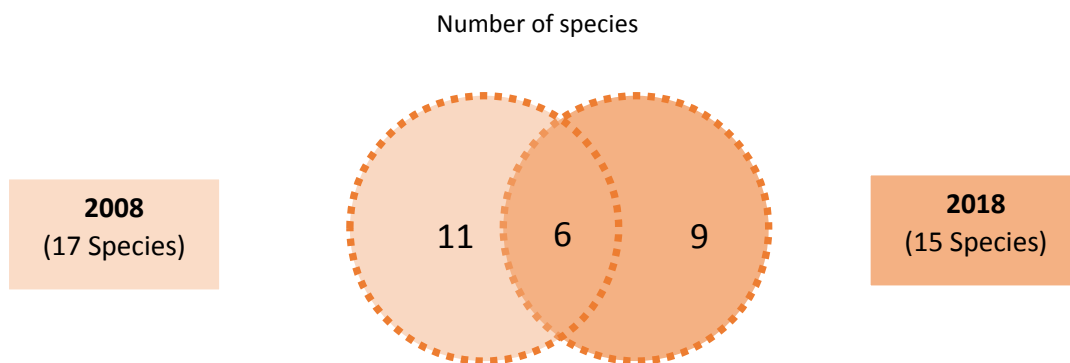


Figure 215 Comparison of exotic species richness from 2008 to 2018 for Bundara Reserve

Table 167 Flora summary data Myall Reserve 2008-2018

NATIVE SPECIES COUNT 2008	65	EXOTIC SPECIES COUNT 2008	35
NATIVE SPECIES COUNT 2018	45	EXOTIC SPECIES COUNT 2018	30
NATIVE SPECIES CONSTANT 2008-2018	31	EXOTIC SPECIES CONSTANT 2008-2018	21
NATIVE SPECIES LOST 2008-2018	34	EXOTIC SPECIES LOST 2008-2018	14
NATIVE SPECIES GAINED 2008-2018	14	EXOTIC SPECIES GAINED 2008-2018	9

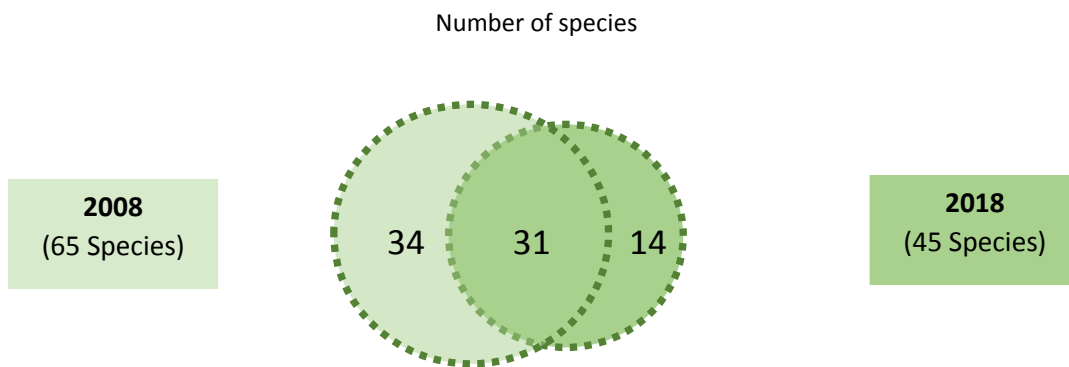


Figure 216 Comparison of native species richness from 2008 to 2018 for Myall Reserve

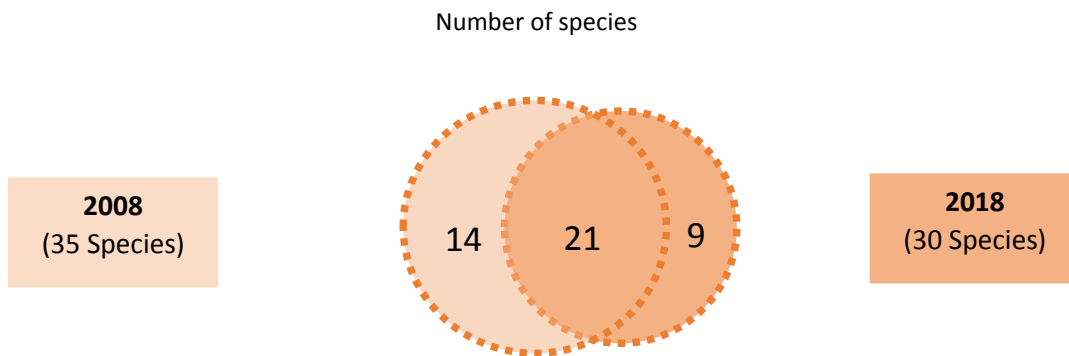


Figure 217 Comparison of exotic species richness from 2008 to 2018 for Myall Reserve



Figure 218 Despite its small size, there is a nice patch of good condition Sydney Turpentine Ironbark Forest on site



Figure 219 Bundara Reserve is exposed to constant impacts from development in surrounding areas



Figure 220 Myall Reserve has dense weedy shrubs in the understorey around the park perimeter



Figure 221 Weedy shrubs dominate in many areas of Myall Reserve, especially along the drainage line



Figure 222 Some areas are benefiting from bush regeneration weed control and retain some of their ecological values

Comparison of flora inventories 2008-2018

Table 168 Native flora species recorded in Bundara Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	y
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Asplenium australasicum</i>	Birds Nest Fern		y
<i>Austrostipa ramossissima</i>		y	y
<i>Blechnum cartilagineum</i>	Gristle Fern	y	
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Christella dentata</i>	Binung	y	
<i>Cissus antarctica</i>	Water Vine	y	y
<i>Clematis aristata</i>	Travellers Joy	y	

<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily	y	
<i>Cyathea australia</i>	Rough Tree Fern	y	
<i>Cymbopogon refractus</i>	Barbed Wire Grass	y	
<i>Desmodium varians</i>	Slender Tick Trefoil	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dipodium punctatum</i>	Hyacinth Orchid	y	
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	Grey Ironbark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	y
<i>Exocarpus cupressiformis</i>	Cherry Ballart	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Geranium homeanum</i>	Native Geranium	y	
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hardenbergia violacea</i>	False Sarsparilla	y	
<i>Hibbertia obtusifolia</i>	Grey Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Hypolepis muelleri</i>	Rough Ground Fern	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Juncus usitatus</i>	Common Rush	y	
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lindsaea linearis</i>	Screw Fern	y	y
<i>Lomandra confertifolia</i>	Mat Rush	y	
<i>Lomandra cylindrica</i>		y	
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	Slender Mat-rush	y	
<i>Lomandra glauca</i>		y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y

<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Persoonia laurina subsp. laurina</i>	Golden Geebung	y	
<i>Persoonia levis</i>	Smooth Geebung	y	
<i>Pimelea linifolia</i>	Rice Flower	y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Plantago debilis</i>	Slender Plantain	y	
<i>Poa affinis</i>		y	y
<i>Podocarpus elatus</i>	Plum Pine		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Rytidosperma racemosum [= Austrodanthonia racemosa]</i>		y	y
<i>Smilax glycyphylla</i>	Native Sarsparilla	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	
<i>Zieria smithii</i>	Sandfly Zieria	y	

Table 169 Introduced flora species recorded in Bundara Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia elata</i>	Cedar Wattle	y	
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Agapanthus praecox subsp. orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Cyathea cooperi</i>	Straw Tree-fern	y	
<i>Doryanthes excelsa</i>	Gynea Lily	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Grevillea robusta</i>	Silky Oak	y	
<i>Hedera helix</i>	English Ivy	y	
<i>Lagunaria patersonii</i>	Norfolk Island Hibiscus	y	
<i>Macrozamia sp.</i>		y	y
<i>Nandina domestica</i>	Heavenly Bamboo	y	
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Opuntia sp.</i>	Prickly Pear		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	

<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry		y
<i>Stenocarpus sinuatus</i>	Firewheel Tree	y	
<i>Syzygium sp.</i>		y	
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Viola odorata</i>	Sweet Violet	y	y

Table 170 Native flora species recorded in Myall Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia falcata</i>	Hickory Wattle	y	
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Aristida vagans</i>	Three-awn Speargrass	y	
<i>Asplenium australasicum</i>	Birds Nest Fern		y
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	y	
<i>Billardiera scandens</i>	Dwarf Appleberry	y	y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Cassytha pubescens</i>	Common Devil's Twine	y	
<i>Christella dentata</i>	Binung	y	y
<i>Clematis aristata</i>	Travellers Joy	y	
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig		y

<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	
<i>Grevillea buxifolia</i>	Grey Spider Flower	y	
<i>Grevillea sericea</i>	Pink Spider Flower	y	
<i>Hakea sericea</i>	Bushy Needlebush	y	
<i>Hardenbergia violacea</i>	False Sarsparilla	y	
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kunzea ambigua</i>	Tickbush	y	
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lindsaea linearis</i>	Screw Fern	y	
<i>Lomandra confertifolia</i>	Mat Rush	y	
<i>Lomandra cylindrica</i>		y	
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	Slender Mat-rush	y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	
<i>Micrantheum ericoides</i>		y	
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Oxalis perennans</i>			y
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Panicum simile</i>	Two Colour Panic	y	y
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	Native Passionfruit		y
<i>Persoonia levis</i>	Smooth Geebung	y	
<i>Persoonia linearis</i>	Narrow-leaved Geebung	y	
<i>Persoonia pinifolia</i>	Pine-leaved Geebung	y	
<i>Phyllanthus hirtellus</i>	Thyme Spurge	y	
<i>Pimelea linifolia</i>	Rice Flower	y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platylobium formosum</i> subsp. <i>formosum</i>	Handsome Flat-pea	y	y
<i>Poa affinis</i>		y	
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Schoenus melanostachys</i>	Black Bog-rush	y	
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Tristaniopsis laurina</i>	Water Gum		y

<i>Veronica plebeia</i>	Trailing Speedwell		y
<i>Xanthorrhoea sp.</i>	Grass Tree	y	
<i>Zieria pilosa</i>	Hairy Zieria		y

Table 171 Introduced flora species recorded in Myall Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acer negundo</i>	Box Elder		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Celtis occidentalis</i>	Chinese Hackberry	y	
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	
<i>Cestrum parqui</i>	Green Cestrum	y	y
<i>Chloris virgata</i>	Feathertop Rhodes Grass	y	
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	
<i>Cynodon dactylon</i>	Common Couch	y	y
<i>Dietes sp.</i>	Dietes	y	
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass		y
<i>Freesia leichtlinii hybrid</i>	Freesia	y	
<i>Hedychium gardnerianum</i>	Ginger Lily	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Jasminum polyanthum</i>	Chinese Jasmine	y	
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	
<i>Morus albus</i>	White Mulberry	y	
<i>Nandina domestica</i>	Heavenly Bamboo		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	
<i>Passiflora edulis</i>	Edible Passionfruit	y	
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y

<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y	y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Trifolium repens</i>	White Clover		y
<i>Yucca aloifolia</i>	Spanish Bayonet, Dagger Plant		y

Fauna Summary

Table 172 Fauna summary data (Bundarra Reserve)

FAUNA	2008	2018
NATIVE	18	6
INTRODUCED	2	0

Table 173 Fauna summary data (Myall Reserve)

FAUNA	2008	2018
NATIVE	13	12
INTRODUCED	2	0

Table 174 Species lists 2008-2018 (Bundarra Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian King-Parrot	<i>Alisterus scapularis</i>	•	
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	•

INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
Dog	<i>Canis lupus familiaris</i>	•	

Table 175 Species lists 2008-2018 (Myall Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathamii</i>		•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>		•
Crested Pigeon	<i>Ocyphaps lophotes</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>	•	
White-browed Scrubwren	<i>Sericornis frontalis</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	

5.3.3 CHRISTIE PARK

Vegetation summary

Table 176 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
CHRISTIE PARK	16 - 26 Christie Road, Macquarie Park		5.35Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	NO	2	0.619Ha
Urban_E/N: Urban Exotic/Native	N/A	1	0.081Ha
Weed_Ex: Weeds and Exotics	N/A	1	0.151Ha



Figure 223 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 177 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	50	EXOTIC SPECIES COUNT 2018	40
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	50	EXOTIC SPECIES GAINED 2008-2018	40

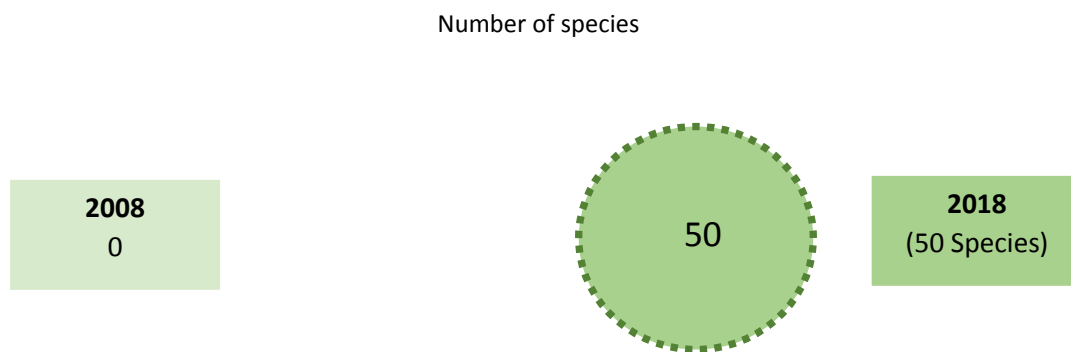


Figure 224 Comparison of native species richness from 2008 to 2018 for Christie Park

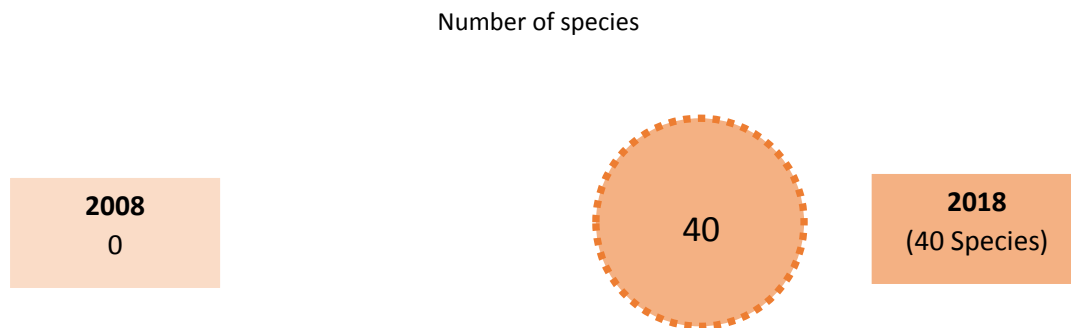


Figure 225 Comparison of exotic species richness from 2008 to 2018 for Christie Park



Figure 226 Christie Park provides access to walking tracks into Lane Cove National Park



Figure 227 The eastern edges of the reserve predominantly have weedy shrubs



Figure 228 Towards the northern corner the vegetation is much better; a silt fence provides a boundary with the mown areas



Figure 229 The good quality vegetation reflects the shared boundary with Lane Cove National Park



Figure 230 In reality, most of Christie Park has mown grass around the sports fields

Comparison of flora inventories 2008-2018

Table 178 Native flora species recorded in Christie Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall		y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Angophora hispida</i>	Dwarf Apple		y
<i>Banksia oblongifolia</i>			y
<i>Billardiera scandens</i>	Dwarf Appleberry		y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush		y
<i>Cissus hypoglauca</i>	Five-leaved Water Vine		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Entolasia stricta</i>	Wiry Panic		y
<i>Eucalyptus haemastoma</i>	Scribbly Gum		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum		y
<i>Gahnia clarkei</i>	Tall Saw Sedge		y
<i>Galium binifolium</i>	Bedstraw		y

<i>Glycine tabacina</i>	Love Creeper		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hakea sericea</i>	Bushy Needlebush		y
<i>Hibbertia nitida</i>			y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Lepidosperma gunnii</i>			y
<i>Lepidosperma laterale</i>	Flat Saw-sedge		y
<i>Leptospermum trinervium</i>	Paperbark Tea-tree		y
<i>Leucopogon juniperinus</i>	Prickly Heath		y
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	Slender Mat-rush		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Lomandra obliqua</i>	Fish Bones		y
<i>Lomatia silaifolia</i>	Crinkle Bush		y
<i>Micrantheum ericoides</i>			y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Oplismenus imbecillis</i>	Slender Basket Grass		y
<i>Oxalis perennans</i>			y
<i>Ozothamnus diosmifolius</i>	Paper Daisy		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax		y
<i>Pratia purpurascens</i>	White Root		y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed		y
<i>Senecio vagus</i>	Saw Groundsel		y
<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Veronica plebeia</i>	Trailing Speedwell		y
<i>Xanthorrhoea minor</i>	Grass Tree		y

Table 179 Introduced flora species recorded in Christie Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine		y
<i>Asparagus asparagoides</i>	Bridal Creeper		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Asparagus officinale</i>	Edible Asparagus		y
<i>Briza subaristata</i>			y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Chlorophytum comosum</i>	Ribbon Plant		y
<i>Cirsium vulgare</i>	Spears Thistle		y

<i>Conyza sp.</i>	Fleabane		y
<i>Cyclopermum leptophyllum</i>	Slender Celery		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Eragrostis curvula</i>	African Lovegrass		y
<i>Freesia laxa</i>	Freesia		y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Jasminum didymum</i>	Jasmine		y
<i>Lantana camara</i>	Lantana		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Ligustrum sinense</i>	Small-leaved Privet		y
<i>Lolium sp.</i>	Rye Grass		y
<i>Lonicera japonica</i>	Honeysuckle		y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel		y
<i>Paspalum dilatatum</i>	Paspalum		y
<i>Cenchrus clandestinus [= Pennisetum clandestinum]</i>	Kikuyu		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Senna pendula var. glabrata</i>	Easter Senna		y
<i>Sida rhombifolia</i>	Paddy's Lucerne		y
<i>Solanum mauritianum</i>	Wild Tobacco		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Sporobolus africanus [= indicus var. capensis]</i>	Parramatta Grass		y
<i>Verbena bonariensis</i>	Purple Top		y
<i>Vicia sativa</i>	Slender Vetch		y
<i>Viola odorata</i>	Sweet Violet		y
<i>Vulpia bromoides</i>	Squirrel Tail Fescue, Silver Grass		y

Fauna Summary

Table 180 Fauna summary data (Christie Park)

FAUNA	2008	2018
NATIVE	0	23
INTRODUCED	0	2

Table 181 Species lists 2008-2018 (Christie Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>		•
Brown Gerygone	<i>Gerygone mouki</i>		•
Brown Thornbill	<i>Acanthiza pusilla</i>		•
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>		•
Eastern Whipbird	<i>Psophodes olivaceus</i>		•
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Grey Fantail	<i>Rhipidura albiscapa</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Little Wattlebird	<i>Anthochaera chrysoptera</i>		•
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>		•
Pied Currawong	<i>Strepera graculina</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Red Wattlebird	<i>Anthochaera carunculata</i>		•
Red-browed Finch			•
Silveryeye	<i>Zosterops lateralis</i>		•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Variigated Fairy-wren	<i>Malurus lamberti</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>		•
Willy Wagtail	<i>Rhipidura leucophrys</i>		•
INTRODUCED BIRDS			
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>		•
REPTILES			
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Swamp Wallaby	<i>Wallabia bicolor</i>		•
BATS			
Eastern Bentwing Bat	<i>Miniopterus orianae oceanensis</i>		•

5.3.4 FIELDER PARK

Vegetation summary

Table 182 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
FIELDER PARK	2a Busaco Road, Marsfield		0.862Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF09: Coastal Sandstone Gully Forest	NO	1	0.107Ha
S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	NO	2	0.296Ha
S_RF02: Coastal Sandstone Gallery Rainforest	NO	1	0.077Ha
Weed_Ex: Weeds and Exotics	N/A	1	0.361Ha

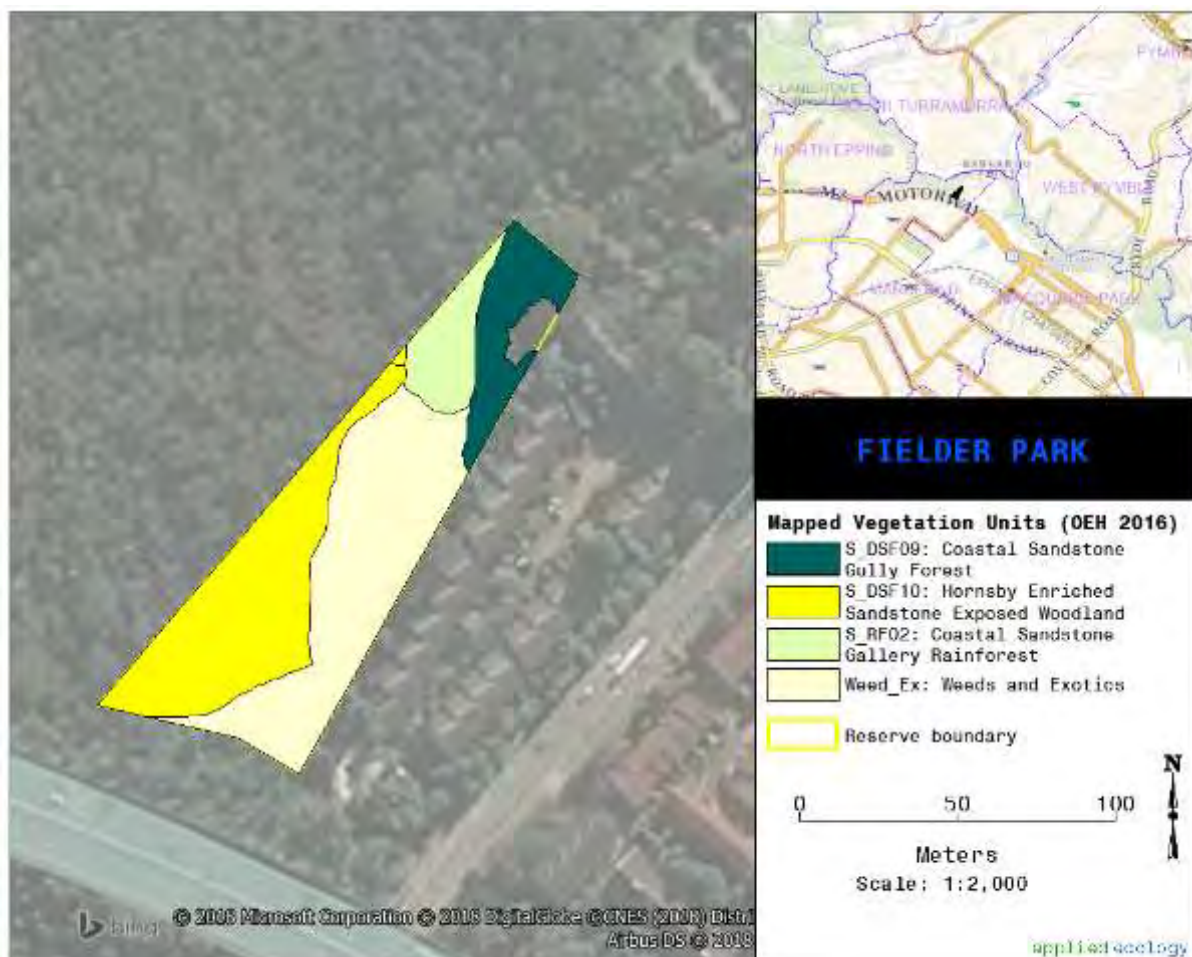


Figure 231 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 183 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	54	EXOTIC SPECIES COUNT 2018	37
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	54	EXOTIC SPECIES GAINED 2008-2018	37

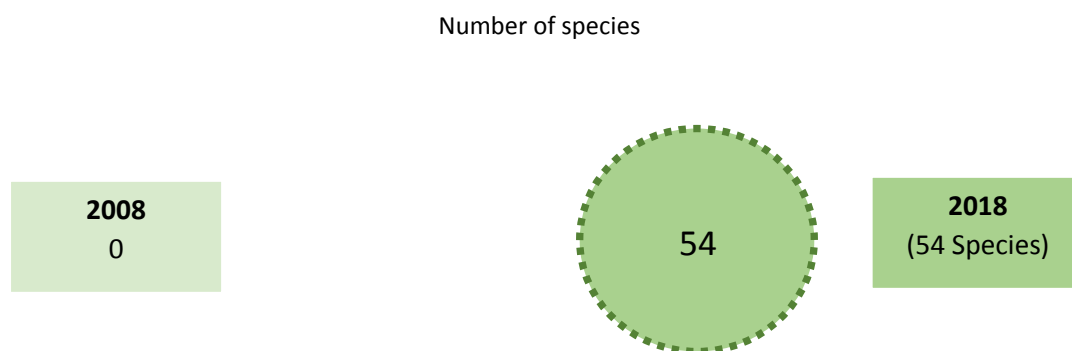


Figure 232 Comparison of native species richness from 2008 to 2018 for Fielder Park

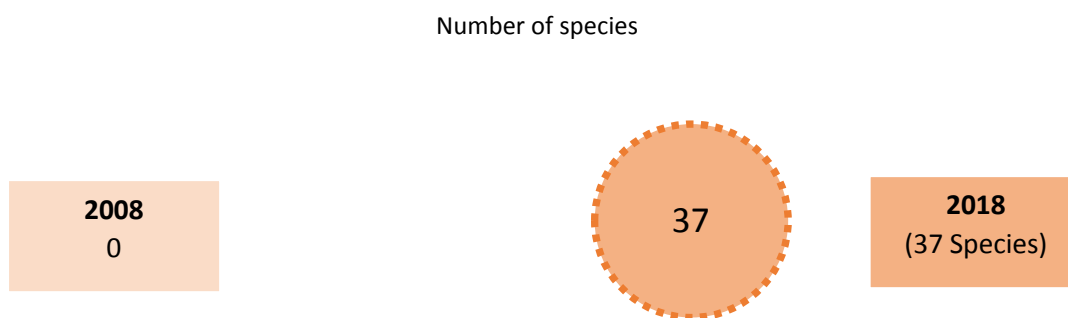


Figure 233 Comparison of exotic species richness from 2008 to 2018 for Fielder Park



Figure 234 Fielder Park has a creek that passes under the M2 motorway and exists via concrete flow dissipators



Figure 235 The creek has a mixture of native and weed vegetation, with weeds most dense immediately by the creek



Figure 236 Away from the creek the vegetation is in good condition, and shares a boundary with Lane Cove National Park



Figure 237 The adjoining apartment complex has fenced a section of the park for their own recreational use



Figure 238 Dense beds of ferns are present at the lower end of Fielder Park



Figure 239 Because of the variety of vegetation present, wildlife resources are plentiful in Fielder Park

Comparison of flora inventories 2008-2018

Table 184 Native flora species recorded in Fielder Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Asplenium flabellifolium</i>	Necklace Fern		y
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia		y
<i>Banksia serrata</i>	Old Man Banksia		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Calystegia marginata</i>			y
<i>Cassinia aculeata</i>	Common Dogwood		y
<i>Christella dentata</i>	Binung		y
<i>Commelina cyanea</i>	Scurvy Weed		y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Desmodium varians</i>	Slender Tick Trefoil		y
<i>Dianella caerulea</i>	Blue Flax Lily		y
<i>Dichondra repens</i>	Kidney Weed		y
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern		y
<i>Entolasia marginata</i>	Bordered Panic		y
<i>Entolasia stricta</i>	Wiry Panic		y
<i>Eucalyptus haemastoma</i>	Scribbly Gum		y
<i>Eucalyptus oblonga</i>	Narrow-leaved Stringybark		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glycine microphylla</i>	Lesser Love Creeper		y
<i>Glycine tabacina</i>	Love Creeper		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea		y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Hypolepis muelleri</i>	Rough Ground Fern		y
<i>Imperata cylindrica</i>	Blady Grass		y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus usitatus</i>	Common Rush		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Leucopogon juniperinus</i>	Prickly Heath		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Lomatia silaifolia</i>	Crinkle Bush		y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y

<i>Oplismenus aemulus</i>	Basket Grass		y
<i>Oplismenus imbecillis</i>	Slender Basket Grass		y
<i>Oxalis perennans</i>			y
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax		y
<i>Pratia purpurascens</i>	White Root		y
<i>Pteridium esculentum</i>	Harsh Bracken		y
<i>Pteris tremula</i>	Tender Brake		y
<i>Pterostylis sp.</i>	Greenhood		y
<i>Sigesbeckia orientalis subsp. orientalis</i>	Indian Weed		y
<i>Stephania japonica var. discolor</i>	Snake Vine		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Trema tomentosa</i>	Native Peach, Poison Peach		y
<i>Wahlenbergia gracilis</i>	Native Bluebell		y

Table 185 Introduced flora species recorded in Fielder Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acer negundo</i>	Box Elder		y
<i>Acetosa sagittata</i>	Turkey Rhubarb		y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Ageratina riparia</i>	Mist Flower		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs		y
<i>Centaureum sp.</i>	Centauray		y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Conyza sp.</i>	Fleabane		y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cyperus eragrostis</i>	Umbrella Sedge		y
<i>Cyperus rotundus</i>	Nutgrass		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Gnaphalium sp.</i>	Cudweed		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Ligustrum sinense</i>	Small-leaved Privet		y
<i>Lonicera japonica</i>	Honeysuckle		y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Passiflora edulis</i>	Edible Passionfruit		y
<i>Platanus x acerifolia</i>	London Plane Tree		y

<i>Rorippa nasturtium-aquaticum</i>	Watercress		y
<i>Rumex obtusifolius</i>	Broad-leaved Dock		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna		y
<i>Solanum linnaeanum</i>	Apple of Sodom		y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Soliva sessilis</i>	Bindii		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle		y
<i>Stellaria media</i>	Chickweed		y
<i>Taraxacum officiale</i>	Dandelion		y
<i>Tradescantia fluminensis</i> [=albiflora]	Trad, Wandering Jew		y
<i>Verbena bonariensis</i>	Purple Top		y
<i>Verbena</i> sp.	Purpletop		y

Fauna Summary

Table 186 Fauna summary data (Fielder Park)

FAUNA	2008	2018
NATIVE	0	24
INTRODUCED	0	2

Table 187 Species lists 2008-2018 (Fielder Park)

COMMON NAME	SPECIES NAME	2008	2018
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>		•
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		•
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>		•
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Grey Fantail	<i>Rhipidura albiscapa</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Lewins Honeyeater	<i>Meliphaga lewinii</i>		•
Little Wattlebird	<i>Anthochaera chrysoptera</i>		•
Noisy Miner	<i>Manorina melanocephala</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Red Wattlebird	<i>Anthochaera carunculata</i>		•
Spotted Pardalote	<i>Pardalotus punctatus</i>		•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
White-browed Scrubwren	<i>Sericornis frontalis</i>		•
White-cheeked Honeyeater	<i>Phylidonyris niger</i>		•
Yellow Thornbill	<i>Acanthiza nana</i>		•
Yellow-faced Honeyeater	<i>Lichenostomus chrysops chrysops</i>		•
INTRODUCED BIRDS			

REPTILES			
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Long-nosed Bandicoot	<i>Perameles nasuta</i>		•
Swamp Wallaby	<i>Wallabia bicolour</i>		•
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>		•
Red Fox	<i>Vulpes vulpes</i>		•



Figure 240 Water Dragons are a common site in Fielder Park

5.3.5 KOBADA PARK

Vegetation summary

Table 188 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
KOBADA PARK	River Avenue, Chatswood West		3.33Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF09: Coastal Sandstone Gully Forest	NO	2	0.970Ha
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	1	1.850Ha
Urban_E/N: Urban Exotic/Native	N/A	3	0.060Ha

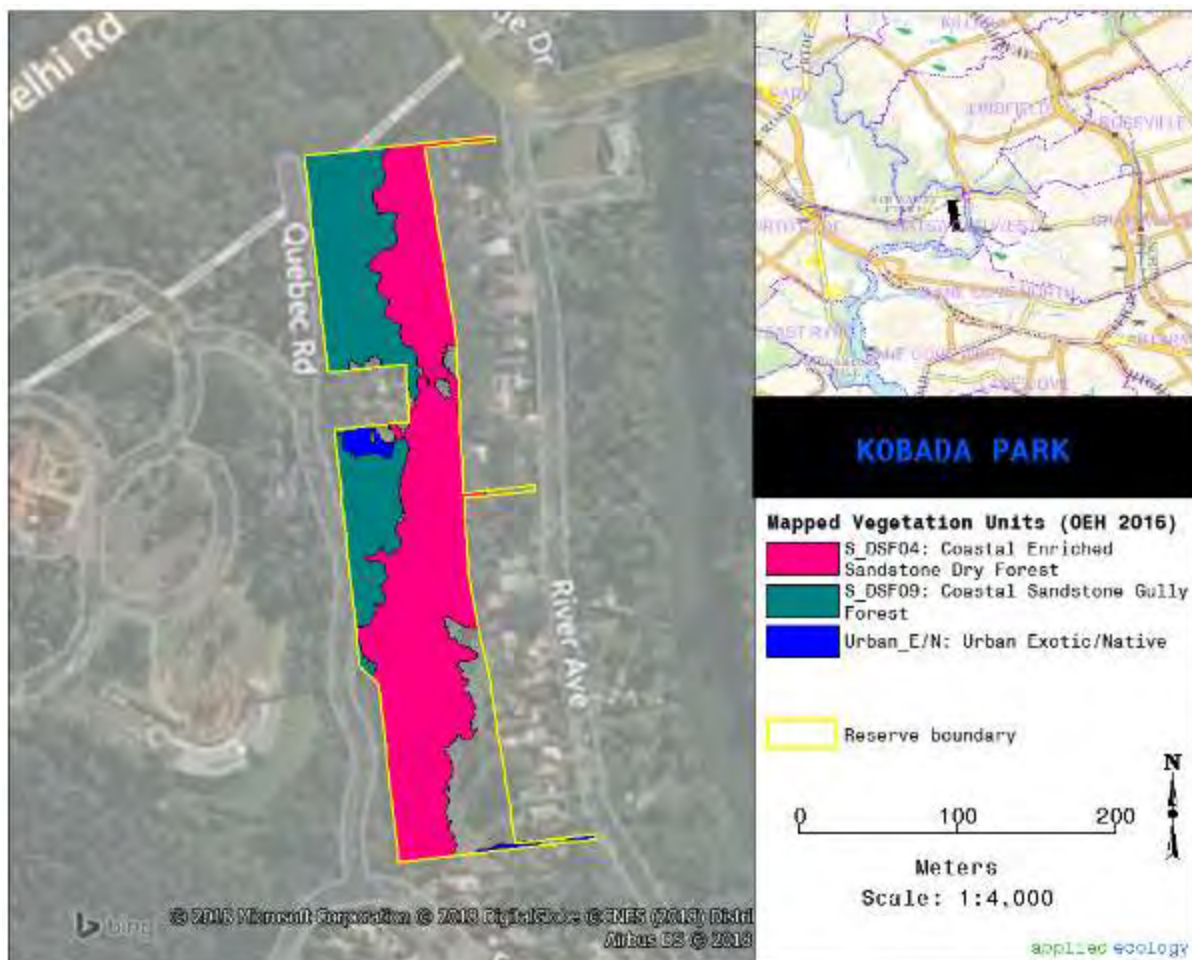


Figure 241 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 189 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	129	EXOTIC SPECIES COUNT 2008	42
NATIVE SPECIES COUNT 2018	138	EXOTIC SPECIES COUNT 2018	60
NATIVE SPECIES CONSTANT 2008-2018	102	EXOTIC SPECIES CONSTANT 2008-2018	34
NATIVE SPECIES LOST 2008-2018	27	EXOTIC SPECIES LOST 2008-2018	8
NATIVE SPECIES GAINED 2008-2018	36	EXOTIC SPECIES GAINED 2008-2018	26

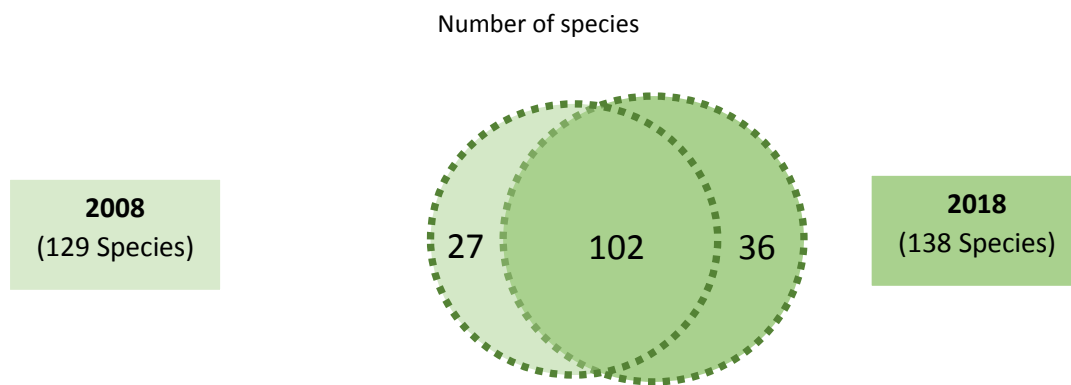


Figure 242 Comparison of native species richness from 2008 to 2018 for Kobada Park

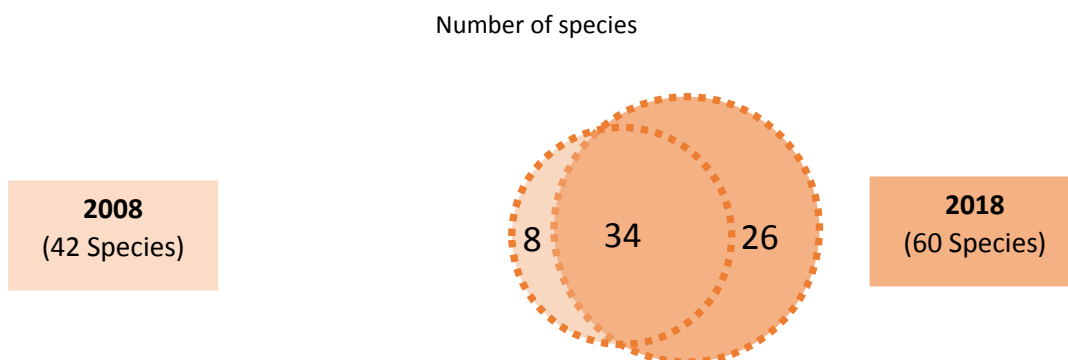


Figure 243 Comparison of exotic species richness from 2008 to 2018 for Kobada Park



Figure 244 The narrow Quebec Road separates Kobada Park from the Northern Suburbs Crematorium immediately upslope



Figure 245 The reserve drops steeply down the side of the hill with a series of low sandstone cliffs



Figure 246 Vegetation is typically dry sandstone forests in mostly very good condition



Figure 247 Wet soaks create microclimatic variation on the ground and are colonised by ferns and weeds



Figure 248 Residents in houses below Kobada Park have extended their garden planting into the reserve



Figure 249 Steep east facing sandstone cliffs provide shade and shelter for a range of plants and animals



Figure 250 A narrow foot track connects Quebec Road with Delhi Rd and Lane Cove National Park

Comparison of flora inventories 2008-2018

Table 190 Native flora species recorded in Kobada Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	y
<i>Acacia terminalis</i>	Sunshine Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	y
<i>Acianthus fornicatus</i>	Pixie Orchid	y	
<i>Actinotus helianthi</i>	Flannel Flower	y	y
<i>Actinotus minor</i>	Lesser Flannel Flower	y	y
<i>Adiantum aethiopicum</i>	Maidenhair Fern		y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Amperea xiphoclada</i> var. <i>papillata</i>	Broom Spurge	y	
<i>Angophora bakeri</i>	Narrow-leaved Apple	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Anisopogon avenaceus</i>	Oat Speargrass	y	y
<i>Aristida vagans</i>	Three-awn Speargrass	y	y
<i>Asplenium flabellifolium</i>	Necklace Fern	y	y

<i>Astroloma pinifolium</i>		y	
<i>Astrotricha longifolia</i>		y	
<i>Baeckea diosmifolia</i>		y	
<i>Baeckea imbricata</i>		y	
<i>Banksia ericifolia</i>	Heath-leaved Banksia	y	y
<i>Banksia marginata</i>	Silver Banksia	y	y
<i>Banksia oblongifolia</i>		y	y
<i>Banksia serrata</i>	Old Man Banksia	y	y
<i>Banksia spinulosa var. spinulosa</i>	Hair-pin Banksia	y	y
<i>Bauera rubioides</i>	River Rose, Dog Rose	y	
<i>Billardiera scandens</i>	Dwarf Appleberry	y	y
<i>Blechnum cartilagineum</i>	Gristle Fern		y
<i>Boronia ledifolia</i>	Sydney Boronia	y	y
<i>Boronia polygalifolium</i>	Dwarf Boronia		y
<i>Bossiaea heterophylla</i>	Variable Bossiaea	y	y
<i>Bossiaea obcordata</i>	Spiny Bossiaea		y
<i>Breynia oblonga</i>	Coffee Bush	y	y
<i>Burchardia umbellata</i>	Milkmaids	y	y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callicoma serratifolia</i>	Black Wattle		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Calochilis paludosus</i>	Red Beardie	y	
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Calytrix tetragona</i>		y	
<i>Cassytha glabella</i>	Slender Devil's Twine		y
<i>Caustis flexuosa</i>	Curly Wig	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush		y
<i>Cheilanthes sieberi</i>	Poison Rock Fern, Mulga Fern	y	y
<i>Chordifex fastigiatus [= Saropsis fastigata]</i>	Tassel Rush	y	
<i>Christella dentata</i>	Binung	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Cryptostylis erecta</i>	Tartan Tongue Orchid	y	y
<i>Cryptostylis subulata</i>	Large Tongue Orchid	y	y
<i>Cyathea australia</i>	Rough Tree Fern		y
<i>Dampiera stricta</i>		y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dichelachne rara</i>	Plumegrass	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dillwynia retorta</i>		y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y

<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Epacris microphylla</i>	Coral Heath	y	y
<i>Epacris pulchella</i>	Coral Heath		y
<i>Eragrostis brownii</i>	Brown's Lovegrass	y	
<i>Eucalyptus haemastoma</i>	Scribbly Gum	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus piperita</i>	Sydney Peppermint	y	y
<i>Euchiton involucratus</i>	Star Cudweed	y	y
<i>Ficus macrophylla</i> subsp. <i>macrophylla</i>	Moreton Bay Fig		y
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge	y	y
<i>Geitonoplesium cymosum</i>	Scrambling Lily		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine tabacina</i>	Love Creeper		y
<i>Gonocarpus teuroides</i>	Raspwort	y	y
<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	Violet-leaved Goodenia	y	
<i>Grevillea buxifolia</i>	Grey Spider Flower	y	y
<i>Grevillea sericea</i>	Pink Spider Flower	y	y
<i>Hakea dactyloides</i>	Finger Hakea	y	y
<i>Hakea gibbosa</i>	Needlebush	y	y
<i>Hakea teretifolia</i>	Dagger Hakea	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Hibbertia aspera</i>	Rough Guinea Flower		y
<i>Hibbertia linearis</i>	Showy Guinea Flower	y	
<i>Hibbertia nitida</i>			y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Hypolaena fastigiata</i>	Tassel Rope-rush	y	
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Indigofera australis</i>	Austral Indigo		y
<i>Juncus usitatus</i>	Common Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lambertia formosa</i>	Mountain Devil	y	y
<i>Laxmannia gracillis</i>	Slender Wire-lily	y	
<i>Lepidosperma filiforme</i>			y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree		y
<i>Leptospermum squarrosum</i>			y
<i>Leptospermum trinervium</i>	Paperbark Tea-tree	y	y
<i>Lepyrodia scariosa</i>		y	y
<i>Leucopogon ericoides</i>	Bearded Heath	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Leucopogon lanceolatus</i>	Lance Beard Heath	y	y

<i>Leucopogon microphyllus</i>			y
<i>Lindsaea linearis</i>	Screw Fern	y	
<i>Lindsaea microphylla</i>	Lacy Wedge Fern	y	y
<i>Lobelia dentata</i>		y	
<i>Lomandra cylindrica</i>		y	y
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	Slender Mat-rush	y	
<i>Lomandra glauca</i>		y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	Many-flowered Mat-rush	y	y
<i>Lomandra obliqua</i>	Fish Bones	y	y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Micrantheum ericoides</i>		y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Microtis unifolia</i>	Common Onion Orchid	y	
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Panicum simile</i>	Two Colour Panic	y	y
<i>Paspalidium distans</i>		y	y
<i>Pellaea falcata</i> var. <i>falcata</i>	Sickle Fern	y	
<i>Persicaria lapathifolia</i>	Pale Knotweed		y
<i>Persoonia levis</i>	Smooth Geebung	y	y
<i>Persoonia linearis</i>	Narrow-leaved Geebung		y
<i>Petrophile pulchella</i>	Cone Sticks	y	y
<i>Phragmites australis</i>	Common Reed		y
<i>Phyllanthus hirtellus</i>	Thyme Spurge		y
<i>Phyllota phyllicoides</i>	Heath Phyllota	y	y
<i>Pimelea linifolia</i>	Rice Flower		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platysace lanceolata</i>	Native Parsnip		y
<i>Platysace linearifolia</i>	Carrot Tops	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pomaderris discolor</i>		y	y
<i>Pomaderris prunina</i>	Plum-leaved Pomaderris		y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pterostylis acuminata</i>	Pointed Greenhood	y	
<i>Pultenaea elliptica</i>		y	y
<i>Pultenaea stipularis</i>		y	
<i>Rytidosperma tenuius</i> [= <i>Austrodanthonia tenuior</i>]		y	y
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed	y	y

<i>Smilax glycyphylla</i>	Native Sarsparilla	y	y
<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine		y
<i>Sticherus flabellatus</i>	Umbrella Fern	y	
<i>Styphelia longifolia</i>	Five Corners	y	
<i>Swainsona galegifolia</i>	Smooth Darling Pea		y
<i>Thelymitra pauciflora</i>	Slender Sun Orchid	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Tricoryne simplex</i>	Yellow Rush-lily	y	
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Typha orientalis</i>	Cumbungi		y
<i>Viminaria juncea</i>	Golden Spray	y	
<i>Wahlenbergia gracilis</i>	Native Bluebell		y
<i>Woolsia pungens</i>	Snow Wreath	y	y
<i>Xanthorrhoea</i> sp.	Grass Tree	y	y
<i>Xanthosia pilosa</i>	Woolly Xanthosia	y	y
<i>Xanthosia tridentata</i>	Rock Xanthosia	y	y
<i>Zieria pilosa</i>	Hairy Zieria		y

Table 191 Introduced flora species recorded in Kobada Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia baileyana</i>	Cootamundra Wattle	y	
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Acetosella vulgaris</i>	Sheep Sorrel		y
<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Ageratina adenophora</i>	Crofton Weed	y	y
<i>Andropogon virginicus</i>	Whisky Grass	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bambusa</i> sp.	Bamboo	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass	y	y
<i>Briza minor</i>	Shivery Grass		y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Centaureum</i> sp.	Centaury		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cirsium vulgare</i>	Spear Thistle		y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Coreopsis lanceolata</i>	Coreopsis, Wet-the-beds		y
<i>Cortaderia selloana</i>	Pampas Grass	y	
<i>Cotoneaster glaucophylla</i>	Cotoneaster	y	y
<i>Crassocephalum crepidioides</i>	Thickheads	y	
<i>Cyclosporum leptophyllum</i>	Slender Celery		y

<i>Cynodon dactylon</i>	Common Couch		y
<i>Cyperus eragrostis</i>	Umbrella Sedge	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Erigeron karvinskianus</i>	Seaside Daisy	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Freesia leichtlinii hybrid</i>	Freesia		y
<i>Fumaria capreolata subsp. capreolata</i>	Climbing Fumitory		y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Holcus lanatus</i>	Yorkshire Fog		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Lactuca serriola</i>	Prickly Lettuce		y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lolium sp.</i>	Rye Grass		y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum quadrifarium</i>	Tussock Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Plantago lanceolata</i>	Plantain		y
<i>Plantago major</i>	Large Plantain	y	
<i>Potentilla [= Duchesnea] indica</i>	Wild Strawberry, Indian Strawberry	y	
<i>Prunella vulgaris</i>	Self Heal		y
<i>Rhaphiolepis indica</i>	Indian Hawthorn	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Silene gallica</i>	French Catchfly		y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus [= indicus var. capensis]</i>	Parramatta Grass	y	y
<i>Stellaria media</i>	Chickweed	y	y
<i>Taraxacum officiale</i>	Dandelion		y
<i>Tillandsia spp.</i>	Bromeliads		y

<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Vicia sativa</i>	Slender Vetch	y	y
<i>Wisteria sinensis</i>	Wisteria		y

Fauna Summary

Table 192 Fauna summary data (Kobada Park)

FAUNA	2008	2018
NATIVE	34	45
INTRODUCED	1	4

Table 193 Species lists 2008-2018 (Kobada Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathamii</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Thornbill	<i>Acanthiza pusilla</i>	•	•
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	•	
Crimson Rosella	<i>Platycercus elegans</i>	•	•
Eastern Koel	<i>Eudynamis orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	•
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Eastern Whipbird	<i>Psophodes olivaceus</i>		•
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Grey Fantail	<i>Rhipidura albiscapa</i>		•
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Corella	<i>Cacatua sanguinea</i>		•
Little Wattlebird	<i>Anthochaera chrysoptera</i>		•
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Rufous Whistler	<i>Pachycephala rufiventris</i>	•	
Silveryeye	<i>Zosterops lateralis</i>		•
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	
White-browed Scrubwren	<i>Sericornis frontalis</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	

Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>	•	•
INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Broad-tailed gecko	<i>Phyllurus platurus</i>		•
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Black-bellied Marsh Snake	<i>Hemiaspis signata</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		•
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>		•
Sugar Glider	<i>Petaurus breviceps</i>		•
Swamp Wallaby	<i>Wallabia bicolor</i>		•
	<i>Antechinus sp.</i>		•
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Chocolate Wattled Bat	<i>Chalinolobus morio</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
Large-footed Myotis	<i>Myotis macropus</i>		•
a Long-eared Bat	<i>Nyctophilus sp</i>		•
Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i>		•
Eastern Broad-nosed Bat	<i>Scotorepens orion</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>		•
Black Rat	<i>Rattus rattus</i>		•
Rabbit	<i>Oryctolagus cuniculus</i>		•
Red Fox	<i>Vulpes vulpes</i>		•

5.3.6 MARSFIELD PARK

Vegetation summary

Table 194 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)	TOTAL AREA	
MARSFIELD PARK	202 Vimiera Road, Marsfield	9.43Ha	
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF09: Sydney Turpentine-Ironbark Forest	BC Act: Endangered, EPBC Act: Critically Endangered	3	3.450Ha
Urban_E/N: Urban Exotic/Native	N/A	4	0.494Ha

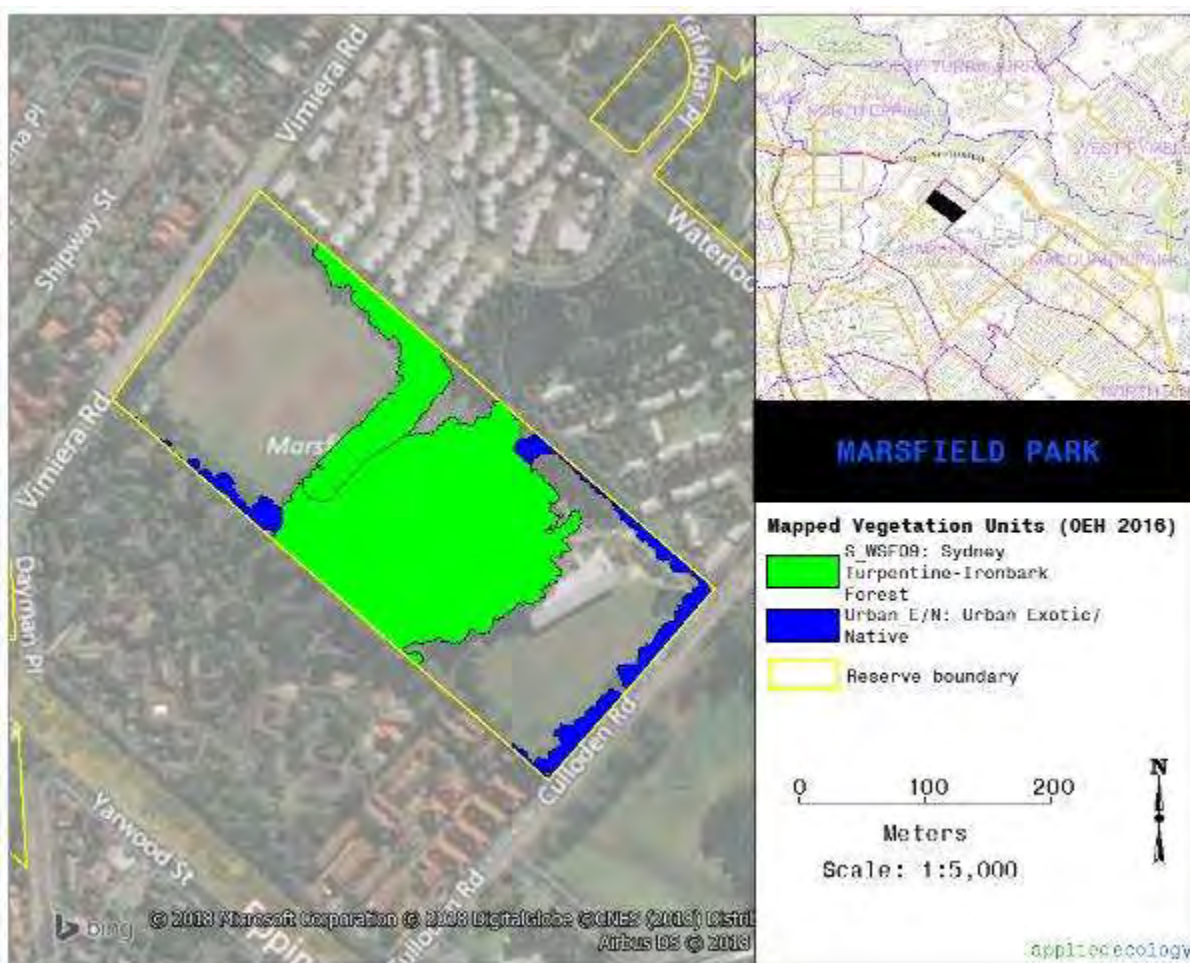


Figure 251 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 195 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	83	EXOTIC SPECIES COUNT 2008	50
NATIVE SPECIES COUNT 2018	76	EXOTIC SPECIES COUNT 2018	59
NATIVE SPECIES CONSTANT 2008-2018	67	EXOTIC SPECIES CONSTANT 2008-2018	43
NATIVE SPECIES LOST 2008-2018	16	EXOTIC SPECIES LOST 2008-2018	8
NATIVE SPECIES GAINED 2008-2018	9	EXOTIC SPECIES GAINED 2008-2018	17

Number of species

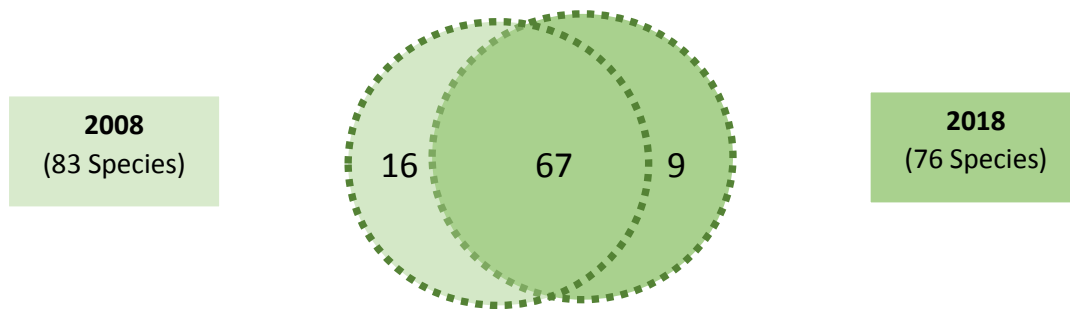


Figure 252 Comparison of native species richness from 2008 to 2018 for Marsfield Park

Number of species

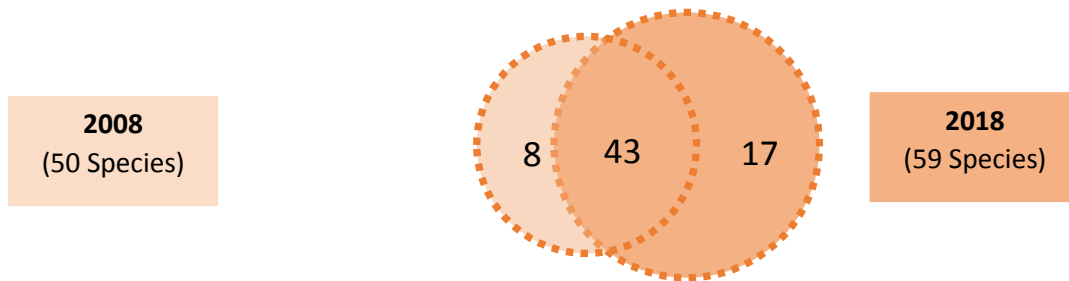


Figure 253 Comparison of exotic species richness from 2008 to 2018 for Marsfield Park



Figure 254 A weedy drainage line flows through the centre of Marsfield Park



Figure 255 A row of fence posts create an edge to bushland in Marsfield Park



Figure 256 In some places, bushland is in very good condition in Marsfield Park



Figure 257 Bush regeneration weed control is helping to improve the condition of bushland in Marsfield Park



Figure 258 Areas of native understorey species are being protected through weed control



Figure 259 Parts of the reserve have a diverse native shrub layer and groundcover layer

Comparison of flora inventories 2008-2018

Table 196 Native flora species recorded in Marsfield Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Adiantum aethiopicum</i>	Maidenhair Fern	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Angophora bakeri</i>	Narrow-leaved Apple	y	
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Aristida vagans</i>	Three-awn Speargrass	y	y
<i>Austrostipa pubescens</i>		y	y
<i>Billardiera scandens</i>	Dwarf Appleberry	y	y
<i>Bothriochloa macra</i>	Redleg Grass	y	
<i>Breynia oblonga</i>	Coffee Bush	y	y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Cassinia aculeata</i>	Common Dogwood	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily	y	y
<i>Cymbopogon refractus</i>	Barbed Wire Grass	y	y
<i>Desmodium rhytidophyllum</i>	Tick Trefoil	y	y
<i>Desmodium varians</i>	Slender Tick Trefoil	y	y
<i>Deyeuxia quadriseta</i>	Bent Grass	y	
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella prunina</i>		y	y
<i>Dichelachne micrantha</i>	Shorthair Plume Grass	y	
<i>Dichelachne rara</i>	Plumegrass	y	
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Einadia hastata</i>	Seaberry Saltbush		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus paniculata subsp. paniculata</i>	Grey Ironbark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y

<i>Glycine clandestinus</i>	Love Creeper	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Glycine tabacina</i>	Love Creeper	y	y
<i>Gonocarpus teuroides</i>	Raspwort	y	
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	y
<i>Hakea sericea</i>	Bushy Needlebush	y	
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	y
<i>Hydrocotyle sibthorpioides</i>	Pennywort	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	
<i>Lachnagrostis filiformis</i>	Blown Grass	y	y
<i>Lepidosperma filiforme</i>		y	y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lissanthe strigosa</i>	Peach Heath	y	y
<i>Lomandra confertifolia</i>	Mat Rush	y	
<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	Slender Mat-rush	y	y
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	Slender Mat-rush	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	Many-flowered Mat-rush	y	y
<i>Melia azedarach</i>	White Cedar		y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Opercularia aspera</i>	Thin Stink Weed	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Paspalidium distans</i>		y	y
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	Native Passionfruit		y
<i>Persoonia pinifolia</i>	Pine-leaved Geebung	y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platylobium formosum</i> subsp. <i>formosum</i>	Handsome Flat-pea	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Poranthera microphylla</i>		y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pultenaea daphnoides</i>	Large-leaf Bush-pea		y
<i>Pultenaea flexilis</i>	Graceful Bush-pea	y	y
<i>Pultenaea hispidula</i>			y

<i>Pultenaea scabra</i> var. <i>biloba</i>	Rough Bush-pea	y	
<i>Pultenaea villosa</i>			y
<i>Rytidosperma tenuius</i> [= <i>Austrodanthonia tenuior</i>]		y	
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed	y	
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed	y	y
<i>Solanum prinophyllum</i>	Forest Nightshade		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	y
<i>Wahlenbergia gracilis</i>	Native Bluebell		y

Table 197 Introduced flora species recorded in Marsfield Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed	y	
<i>Amaranthus viridus</i>	Green Amaranth		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus asparagoides</i>	Bridal Creeper	y	y
<i>Axonopus affinis</i>	Narrow-leaved Carpet Grass	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Briza subaristata</i>		y	y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Canna indica</i>	Canna Lily	y	
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle	y	y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cyclosporum leptophyllum</i>	Slender Celery		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Delairea odorata</i>	Cape Ivy	y	
<i>Dietes</i> sp.	Dietes		y
<i>Dipogon lignosus</i>	Dolichos Pea		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass	y	y
<i>Fumaria capreolata</i> subsp. <i>capreolata</i>	Climbing Fumitory		y
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	y
<i>Gnaphalium</i> sp.	Cudweed	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y

<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Lagunaria patersonii</i>	Norfolk Island Hibiscus		y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lolium sp.</i>	Rye Grass	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Melia azadarach</i>	White Cedar	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Morus albus</i>	White Mulberry	y	y
<i>Musa sp</i>	Banana Tree	y	y
<i>Nandina domestica</i>	Heavenly Bamboo	y	
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel		y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Phytolacca octandra</i>	Inkweed	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Ricinus communis</i>	Castor Oil Plant	y	
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus [= indicus var. capensis]</i>	Parramatta Grass	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis [=albiflora]</i>	Trad, Wandering Jew		y
<i>Triadica sebifera</i>	Chinese Tallow	y	
<i>Verbena sp.</i>	Purpletop	y	y

Fauna Summary

Table 198 Fauna summary data (Marsfield Park)

FAUNA	2008	2018
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NATIVE	17	16
INTRODUCED	5	1

Table 199 Species lists 2008-2018 (Marsfield Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	
Australian Raven	<i>Corvus coronoides</i>		•
Brown Gerygone	<i>Gerygone mouki</i>		•
Brown Goshawk	<i>Accipiter fasciatus</i>		•
Crimson Rosella	<i>Platycercus elegans</i>	•	•
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	•
Grey Butcherbird	<i>Cracticus torquatus</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>		•
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Powerful Owl	<i>Ninox strenua</i>		•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>		•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>		•
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>		•
Long-nosed Bandicoot	<i>Perameles nasuta</i>		•
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•

a Long-eared Bat	<i>Nyctophilus sp</i>		•
Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i>		•
Large Forest Bat	<i>Vespadelus darlingtoni</i>		•
Little Bentwing Bat			•
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>		•
Mouse	<i>Mus musculus</i>	•	
Dog	<i>Canis lupus familiaris</i>	•	
Rabbit	<i>Oryctolagus cuniculus</i>		•
Red Fox	<i>Vulpes vulpes</i>		•

5.3.7 NORTH RYDE PARK

Vegetation summary

Table 200 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
NORTH RYDE PARK	26 Cressy Road, North Ryde		2.15Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	2	0.673Ha
Urban_E/N: Urban Exotic/Native	N/A	1	0.155Ha



Figure 260 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 201 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	0	EXOTIC SPECIES COUNT 2008	0
NATIVE SPECIES COUNT 2018	46	EXOTIC SPECIES COUNT 2018	30
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	46	EXOTIC SPECIES GAINED 2008-2018	30

Number of species

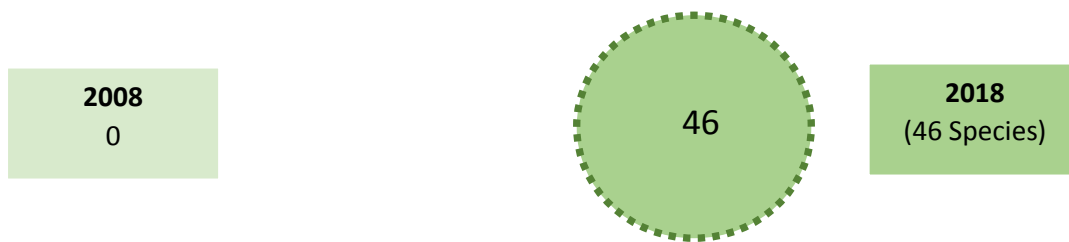


Figure 261 Comparison of native species richness from 2008 to 2018 for North Ryde Park

Number of species

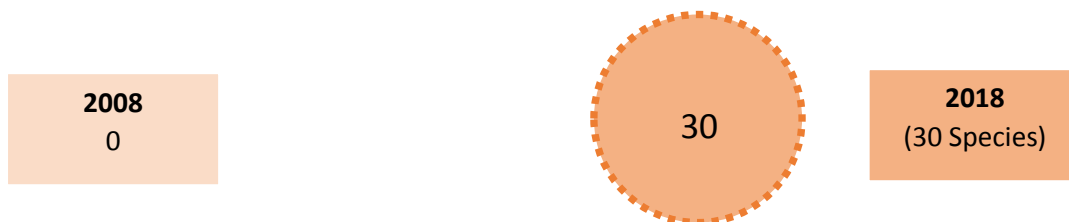


Figure 262 Comparison of exotic species richness from 2008 to 2018 for North Ryde Park



Figure 263 North Ryde Park has planted canopy trees around grassed open space (sports oval)



Figure 264 Logs are used to delineate and edge between the mown area and remnant native bushland



Figure 265 The understorey includes a diverse mixture of native grasses and forbs

Comparison of flora inventories 2008-2018

Table 202 Native flora species recorded in North Ryde Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle		y
<i>Acacia suaveolens</i>	Sweet-scented Wattle		y
<i>Acacia ulicifolia</i>	Prickly Moses		y
<i>Allocasuarina torulosa</i>	Forest She-oak		y
<i>Angophora bakeri</i>	Narrow-leaved Apple		y
<i>Angophora costata</i>	Sydney Red Gum		y
<i>Angophora floribunda</i>	Rough-barked Apple		y
<i>Aristida vagans</i>	Three-awn Speargrass		y
<i>Rytidosperma pallidum</i>	Silvertop Wallaby Grass		y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Callistemon citrinus</i>	Crimson Bottlebrush		y
<i>Centella asiatica</i>	Indian Pennywort		y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush		y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Entolasia marginata</i>	Bordered Panic		y

<i>Entolasia stricta</i>	Wiry Panic		y
<i>Eucalyptus acmenioides</i>	White Mahogany		y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany		y
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	Grey Ironbark		y
<i>Eucalyptus punctata</i>	Grey Gum		y
<i>Eucalyptus racemosa</i>	Narrow-leaved Scribbly Gum		y
<i>Eucalyptus tereticornis</i>	Forest Red Gum		y
<i>Ficus watkinsiana</i>	Strangling Fig		y
<i>Glycine microphylla</i>	Lesser Love Creeper		y
<i>Glycine tabacina</i>	Love Creeper		y
<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	Violet-leaved Goodenia		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Hibbertia aspera</i>	Rough Guinea Flower		y
<i>Kunzea ambigua</i>	Tickbush		y
<i>Lepidosperma gunnii</i>			y
<i>Lepidosperma laterale</i>	Flat Saw-sedge		y
<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	Slender Mat-rush		y
<i>Lomandra longifolia</i>	Spiny Mat Rush		y
<i>Lomandra obliqua</i>	Fish Bones		y
<i>Micrantheum ericoides</i>			y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass		y
<i>Pimelea linifolia</i>	Rice Flower		y
<i>Schoenus melanostachys</i>	Black Bog-rush		y
<i>Syncarpia glomulifera</i>	Turpentine		y
<i>Themeda australis</i>	Kangaroo Grass		y
<i>Westringia fruticosa</i>	Coast Rosemary		y

Table 203 Introduced flora species recorded in North Ryde Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle		y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y
<i>Cinnamomum camphora</i>	Camphor Laurel		y
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Eucalyptus citriodora</i>	Lemon Scented Gum		y
<i>Freesia laxa</i>	Freesia		y
<i>Hedera helix</i>	English Ivy		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear		y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y

<i>Ligustrum sinense</i>	Small-leaved Privet		y
<i>Lophostemon confertus</i>	Brush Box		y
<i>Nandina domestica</i>	Heavenly Bamboo		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Pinus lambertiana</i>	Sugar Pine, Sugar Cone Pine		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Prunus persica</i>	Peach Tree		y
<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senecio madagascariensis</i>	Fireweed		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y
<i>Taraxacum officiale</i>	Dandelion		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y
<i>Trifolium repens</i>	White Clover		y
<i>Ulmus sp.</i>	Elm		y

Fauna Summary

Table 204 Fauna summary data (North Ryde Park)

FAUNA	2008	2018
NATIVE	0	10
INTRODUCED	0	1

Table 205 Species lists 2008-2018 (North Ryde Park)

COMMON NAME	SPECIES NAME	2018
Australian Magpie	<i>Cracticus tibicen</i>	•
Eastern Koel	<i>Eudynamys orientalis</i>	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•
Welcome Swallow	<i>Hirundo neoxena</i>	•
Long-billed Corella	<i>Cacatua tenuirostris</i>	•
Noisy Miner	<i>Manorina melanocephala</i>	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•
INTRODUCED BIRDS		
REPTILES		
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•
NATIVE MAMMALS		

Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•
BATS		
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	•
INTRODUCED MAMMALS		
DOG	<i>Canis lupus familiaris</i>	•



Figure 266 Mixed flock including Long-billed Corellas and Sulphur-crested Cockatoos at North Ryde park.

5.3.8 STEWART PARK

Vegetation summary

Table 206 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
STEWART PARK	186 Vimeria Road, Marsfield		1.03Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF09: Sydney Turpentine-Ironbark Forest	BC Act: Endangered; EPBC Act: Critically Endangered	2	0.962



Figure 267 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 207 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	72	EXOTIC SPECIES COUNT 2008	23
NATIVE SPECIES COUNT 2018	60	EXOTIC SPECIES COUNT 2018	35
NATIVE SPECIES CONSTANT 2008-2018	56	EXOTIC SPECIES CONSTANT 2008-2018	22
NATIVE SPECIES LOST 2008-2018	16	EXOTIC SPECIES LOST 2008-2018	1
NATIVE SPECIES GAINED 2008-2018	4	EXOTIC SPECIES GAINED 2008-2018	13

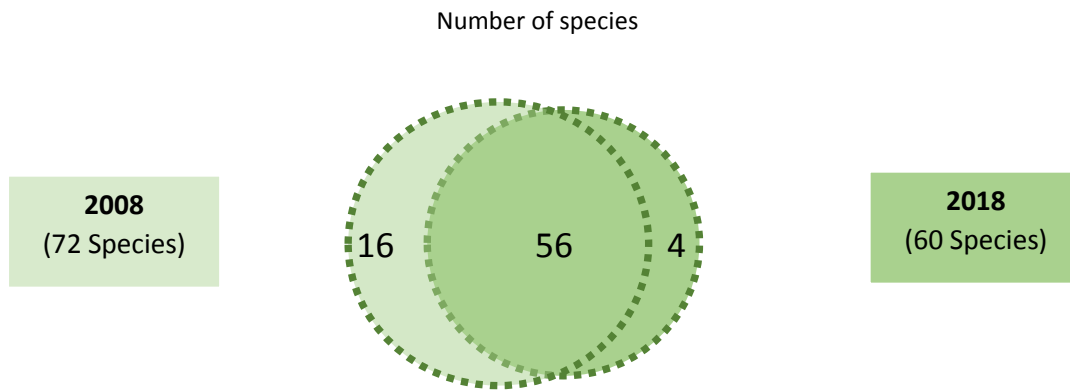


Figure 268 Comparison of native species richness from 2008 to 2018 for Stewart Park

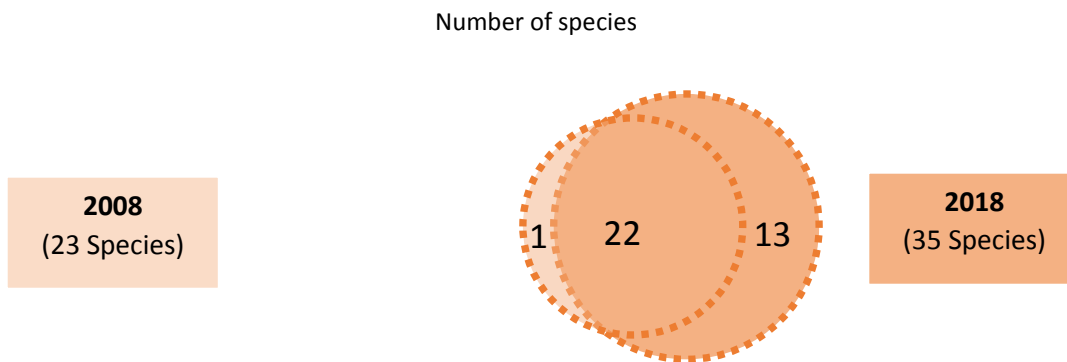


Figure 269 Comparison of exotic species richness from 2008 to 2018 for Stewart Park



Figure 270 The northern part of Stewart Park has a very small but reasonably intact patch of bushland



Figure 271 Areas of diverse native understorey plants are present



Figure 272 South of Epping Road, information signs do not act as a deterrent for dumping of household waste



Figure 273 A small children's playground is surrounded by good quality Sydney Turpentine Ironbark Forest EEC



Figure 274 Local residents use the park entrances as an opportunity for dumping of garden wastes



Figure 275 Logs are used to create an edge around bushland and delineate walking tracks through the reserve

Comparison of flora inventories

Table 208 Native flora species recorded in Stewart Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Aristida ramosa</i> var. <i>ramosa</i>	Three-awn Speargrass	y	
<i>Aristida vagans</i>	Three-awn Speargrass	y	y
<i>Arthropodium milleflorum</i>	Pale Vanilla Lily	y	
<i>Austrostipa pubescens</i>		y	y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia		y
<i>Bursaria spinosa</i>	Blackthorn	y	y
<i>Cassinia aculeata</i>	Common Dogwood	y	
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Clematis aristata</i>	Travellers Joy	y	
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y

<i>Desmodium rhytidophyllum</i>	Tick Trefoil	y	y
<i>Desmodium varians</i>	Slender Tick Trefoil	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily	y	y
<i>Dichelachne rara</i>	Plumegrass	y	
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Einadia hastata</i>	Seaberry Saltbush	y	
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus acmenioides</i>	White Mahogany	y	y
<i>Eucalyptus paniculata subsp. paniculata</i>	Grey Ironbark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus punctata</i>	Grey Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	
<i>Exocarpus cupressiformis</i>	Cherry Ballart	y	y
<i>Geranium homeanum</i>	Native Geranium	y	
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Glycine tabacina</i>	Love Creeper	y	y
<i>Gonocarpus teuroides</i>	Raspwort	y	y
<i>Goodenia hederacea subsp. hederacea</i>	Violet-leaved Goodenia		y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Hydrocotyle sibthorpioides</i>	Pennywort	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Lambertia formosa</i>	Mountain Devil	y	
<i>Lasiopetalum ferrugineum var. ferrugineum</i>	Rusty Petals	y	
<i>Leptospermum juniperinum</i>	Prickly-leaved Tea-Tree	y	y
<i>Leptospermum polygalifolium subsp. polygalifolium</i>	Lemon-scented Tea-tree	y	
<i>Lomandra confertifolia</i>	Mat Rush	y	
<i>Lomandra filiformis subsp. filiformis</i>	Slender Mat-rush	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora subsp. multiflora</i>	Many-flowered Mat-rush	y	y
<i>Microlaena stipoides var. stipoides</i>	Weeping Meadow Grass	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y

<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Panicum simile</i>	Two Colour Panic	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platylobium formosum subsp. formosum</i>	Handsome Flat-pea	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pultenaea villosa</i>		y	y
<i>Rytidosperma pallidum</i>	Silvertop Wallaby Grass		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Tylophora barbata</i>		y	y
<i>Velleia lyrata</i>			y
<i>Veronica plebeia</i>	Trailing Speedwell	y	
<i>Zieria smithii</i>	Sandfly Zieria	y	y

Table 209 Introduced flora species recorded in Stewart Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Avena fatua</i>	Wild Oat Grass		y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Bidens subalternans</i>	Beggars Ticks	y	y
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass		y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Cenchrus clandestinus [= Pennisetum clandestinum]</i>	Kikuyu	y	y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel		y
<i>Cotoneaster glaucophylla</i>	Cotoneaster		y
<i>Dietes sp.</i>	Dietes		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eragrostis curvula</i>	African Lovegrass		y
<i>Freesia leichtlinii hybrid</i>	Freesia	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminum didymum</i>	Jasmine		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lophostemon confertus</i>	Brush Box	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nandina domestica</i>	Heavenly Bamboo		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y

<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Passiflora edulis</i>	Edible Passionfruit	y	y
<i>Passiflora suberosa</i>	Corky Passionfruit	y	y
<i>Passiflora subpeltata</i>	White Passionfruit	y	y
<i>Plantago lanceolata</i>	Plantain		y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry	y	
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew		y

Fauna Summary

Table 210 Fauna summary data (Stewart Park)

FAUNA	2008	2018
NATIVE	20	11
INTRODUCED	1	0

Table 211 Species lists 2008-2018 (Stewart Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>		•
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Welcome Swallow	<i>Hirundo neoxena</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
REPTILES			
Dark-flecked Garden	<i>Lampropholis delicata</i>	•	•

Sunskink			
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Weasel Skink	<i>Saproscincus mustelinus</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	

5.3.9 TASMAN PARK and YURRAH RESERVE

Vegetation summary

Table 212 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
TASMAN PARK	27a Fontenoy Road, Macquarie Park		1.09Ha
YURRAH RESERVE	11 Tasman Place, Macquarie Park		0.280Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF04: Coastal Enriched Sandstone Dry Forest	NO	TP: 2 YR: 1	TP: 0.509Ha YR: 0.251Ha
S_WSF06: Coastal Shale-Sandstone Forest	NO	TP: 1	TP: 0.254Ha
Urban_E/N: Urban Exotic/Native	N/A	TP: 1	TP: 0.012Ha
Weed_Ex: Weeds and Exotics	N/A	TP: 1	TP: 0.295Ha

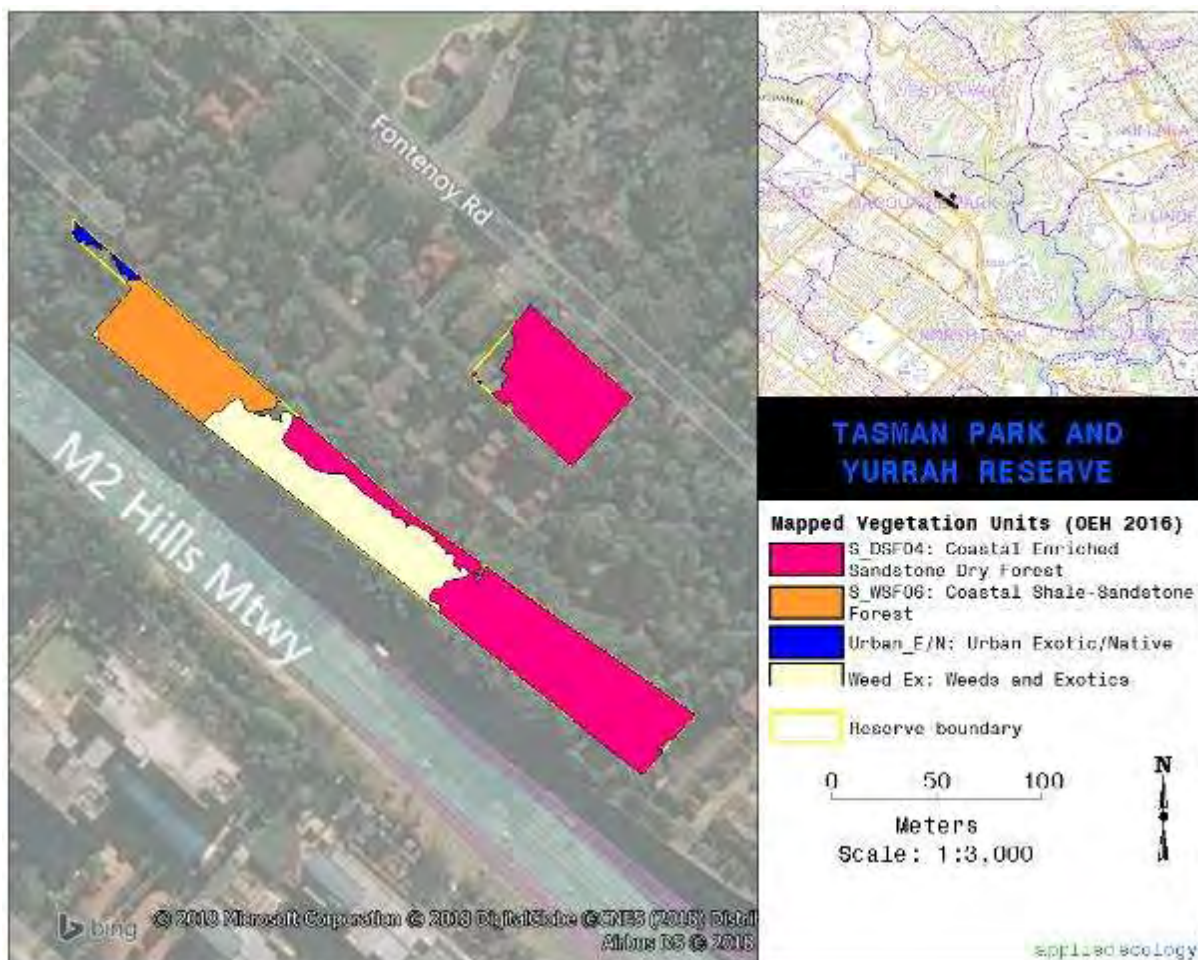


Figure 276 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 213 Flora summary data Tasman Park 2008-2018

NATIVE SPECIES COUNT 2008	118	EXOTIC SPECIES COUNT 2008	39
NATIVE SPECIES COUNT 2018	105	EXOTIC SPECIES COUNT 2018	53
NATIVE SPECIES CONSTANT 2008-2018	89	EXOTIC SPECIES CONSTANT 2008-2018	33
NATIVE SPECIES LOST 2008-2018	29	EXOTIC SPECIES LOST 2008-2018	14
NATIVE SPECIES GAINED 2008-2018	16	EXOTIC SPECIES GAINED 2008-2018	20

Number of species

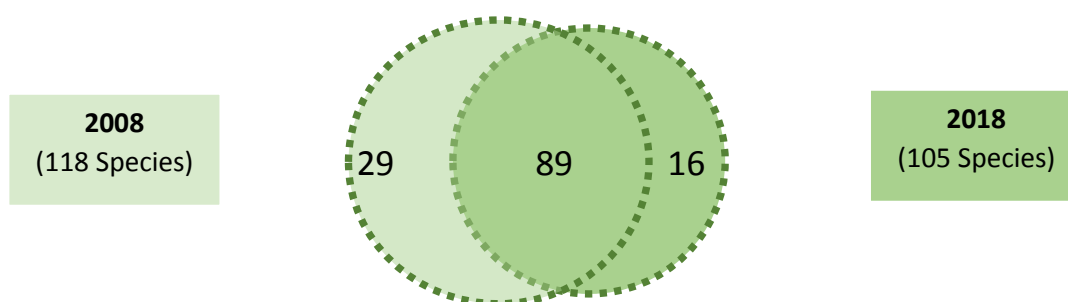


Figure 277 Comparison of native species richness from 2008 to 2018 for Tasman Park

Number of species

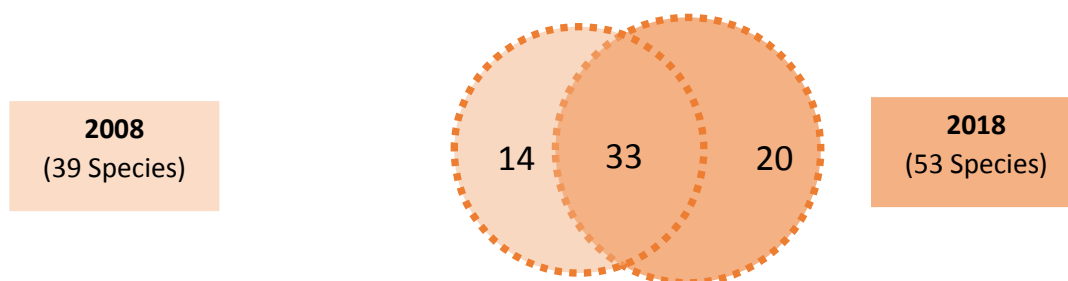


Figure 278 Comparison of exotic species richness from 2008 to 2018 for Tasman Park

Table 214 Flora summary data Yurrah Reserve 2008-2018

NATIVE SPECIES COUNT 2008	38	EXOTIC SPECIES COUNT 2008	11
NATIVE SPECIES COUNT 2018	48	EXOTIC SPECIES COUNT 2018	14
NATIVE SPECIES CONSTANT 2008-2018	33	EXOTIC SPECIES CONSTANT 2008-2018	2
NATIVE SPECIES LOST 2008-2018	5	EXOTIC SPECIES LOST 2008-2018	9
NATIVE SPECIES GAINED 2008-2018	15	EXOTIC SPECIES GAINED 2008-2018	12

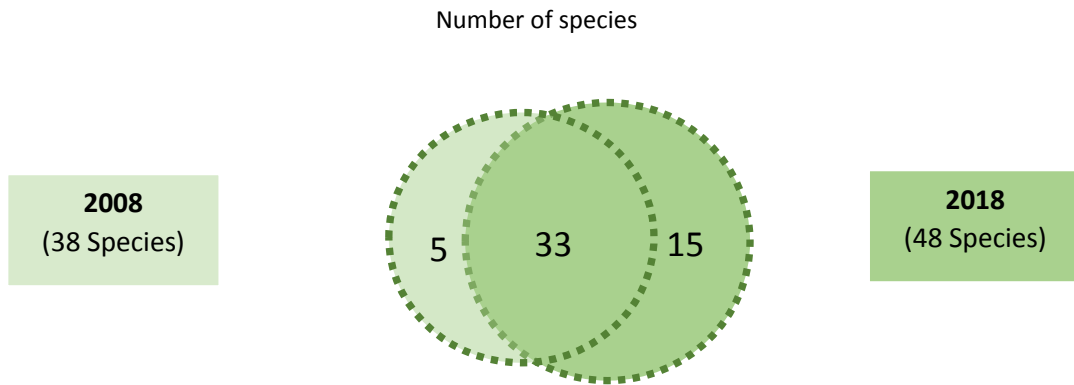


Figure 279 Comparison of native species richness from 2008 to 2018 for Yurrah Reserve

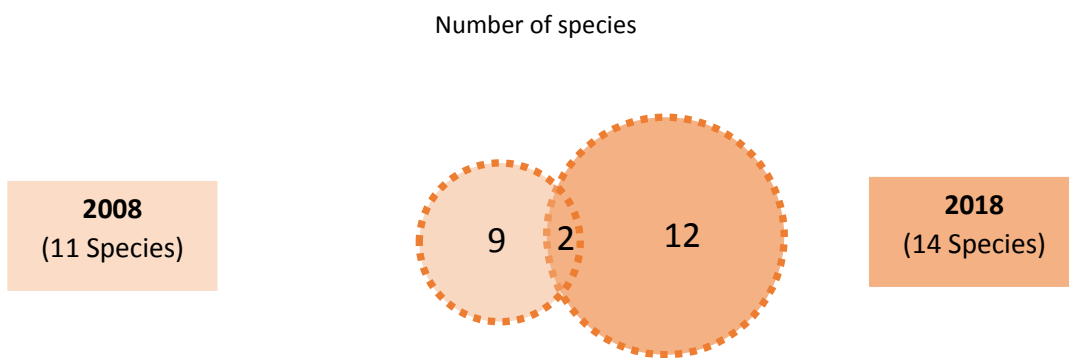


Figure 280 Comparison of exotic species richness from 2008 to 2018 for Yurrah Reserve



Figure 281 Tasman Park has areas of dense weedy shrubs and groundcovers



Figure 282 Parts of Tasman Park have native bushland in good condition



Figure 283 Groundcovers include a diverse array of native flora and fauna species



Figure 284 The centre of the reserve has native canopy species over regenerating native groundcovers



Figure 285 Where Tasman Park adjoins the M2 motorway the vegetation is almost completely weeds



Figure 286 Bush regeneration weed control is being conducted in better parts of Tasman Park



Figure 287 Diverse native groundcover flora is conserved in areas in the southeast of Tasman Park



Figure 288 Yurrah Reserve is a small park with mature canopy trees present



Figure 289 Despite its small size, Yurrah Reserve bushland is in good condition



Figure 290 Logs are used to create a clear edge around bushland, separating it from apartment buildings nearby



Figure 291 Yurrah Reserve has areas with a diverse range of native groundcover species present

Comparison of flora inventories 2008-2018

Table 215 Native flora species recorded in Tasman Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia myrtifolia</i>	Myrtle Wattle	y	
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Alocasia brisbanensis</i>	Cunjevoi		y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Anisopogon avenaceus</i>	Oat Speargrass	y	
<i>Aristida vagans</i>	Three-awn Speargrass	y	y
<i>Austrostipa pubescens</i>		y	
<i>Backhousia myrtifolia</i>	Grey Myrtle		y
<i>Banksia serrata</i>	Old Man Banksia	y	y
<i>Banksia spinulosa var. spinulosa</i>	Hair-pin Banksia		y
<i>Billardiera scandens</i>	Dwarf Appleberry	y	y
<i>Bossiaea obcordata</i>	Spiny Bossiaea	y	y
<i>Breynia oblonga</i>	Coffee Bush	y	y
<i>Brunoniella pumilio</i>	Dwarf Trumpet	y	y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Caesia parviflora var. parviflora</i>	Pale Grass Lily	y	y
<i>Caesia parviflora var. vittata</i>	Blue Grass Lily	y	
<i>Callicoma serratifolia</i>	Black Wattle		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Cassytha pubescens</i>	Common Devil's Twine	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	
<i>Cheilanthes sieberi</i>	Poison Rock Fern, Mulga Fern	y	y
<i>Cissus antarctica</i>	Water Vine	y	y
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily		y
<i>Correa reflexa var. reflexa</i>		y	
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Cryptostylis erecta</i>	Tartan Tongue Orchid	y	
<i>Cryptostylis subulata</i>	Large Tongue Orchid	y	y
<i>Cupaniopsis anacardioides</i>	Tuckeroo		y

<i>Daviesia ulicifolia</i>	Gorse Bitter Pea	y	
<i>Deyeuxia decipiens</i>	Reed Bent Grass	y	
<i>Deyeuxia quadriseta</i>	Bent Grass	y	
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily	y	y
<i>Dichelachne micrantha</i>	Shorthair Plume Grass	y	
<i>Dichelachne subaequiglumis</i>	Plumegrass	y	
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	Grey Ironbark	y	y
<i>Eucalyptus racemosa</i>	Narrow-leaved Scribbly Gum	y	y
<i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	Red Mahogany	y	y
<i>Exocarpus cupressiformis</i>	Cherry Ballart	y	y
<i>Gahnia aspera</i>	Rough Saw Sedge		y
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	y	y
<i>Glycine clandestinus</i>	Love Creeper	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Gonocarpus teuroides</i>	Raspwort	y	y
<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	Violet-leaved Goodenia	y	
<i>Grevillea sericea</i>	Pink Spider Flower	y	
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla	y	y
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	y
<i>Hovea linearis</i>		y	
<i>Hydrocotyle sibthorpioides</i>	Pennywort	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	
<i>Kunzea ambigua</i>	Tickbush		y
<i>Lambertia formosa</i>	Mountain Devil	y	y
<i>Lasiopetalum ferrugineum</i> var. <i>ferrugineum</i>	Rusty Petals	y	y
<i>Leionema dentatum</i>		y	
<i>Lepidosperma gunnii</i>		y	y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum juniperinum</i>	Prickly-leaved Tea-Tree	y	y
<i>Leptospermum polygalifolium</i>	Lemon-scented Tea-tree	y	y

<i>subsp. polygalifolium</i>			
<i>Leptospermum trinervium</i>	Paperbark Tea-tree	y	y
<i>Lindsaea linearis</i>	Screw Fern	y	y
<i>Lomandra cylindrica</i>		y	y
<i>Lomandra filiformis subsp. coriacea</i>	Slender Mat-rush	y	y
<i>Lomandra filiformis subsp. filiformis</i>	Slender Mat-rush	y	y
<i>Lomandra gracilis</i>	Slender Mat-rush	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora subsp. multiflora</i>	Many-flowered Mat-rush	y	y
<i>Lomandra obliqua</i>	Fish Bones	y	y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	y
<i>Micrantheum ericoides</i>		y	y
<i>Microlaena stipoides var. stipoides</i>	Weeping Meadow Grass	y	y
<i>Morinda jasminoides</i>	Jasmine Morinda	y	y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Olearia microphylla</i>	Bridal Daisy Bush	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Panicum simile</i>	Two Colour Panic	y	
<i>Paspalidium distans</i>		y	
<i>Passiflora herbertiana subsp. herbertiana</i>	Native Passionfruit		y
<i>Persoonia laurina subsp. laurina</i>	Golden Geebung	y	
<i>Persoonia levis</i>	Smooth Geebung	y	y
<i>Persoonia pinifolia</i>	Pine-leaved Geebung	y	y
<i>Phyllanthus hirtellus</i>	Thyme Spurge	y	y
<i>Pimelea linifolia</i>	Rice Flower	y	
<i>Pittosporum revolutum</i>	Rough-fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Platylobium formosum subsp. formosum</i>	Handsome Flat-pea	y	y
<i>Poa affinis</i>		y	
<i>Podocarpus spinulosus</i>	Spiny Plum Pine		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Poranthera microphylla</i>		y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Pultenaea elliptica</i>		y	
<i>Pultenaea flexilis</i>	Graceful Bush-pea	y	y

<i>Pultenaea linophylla</i>		y	
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed	y	
<i>Smilax glycyphylla</i>	Native Sarsparilla	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tetrarrhena turfosa</i>	Ricegrass	y	
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Thysanotus tuberosus</i> subsp. <i>tuberosus</i>	Fringe Lily	y	
<i>Tristaniopsis laurina</i>	Water Gum		y
<i>Veronica plebeia</i>	Trailing Speedwell	y	y
<i>Viola hederacea</i>	Native Violet	y	
<i>Xanthorrhoea</i> sp.	Grass Tree	y	y

Table 216 Introduced flora species recorded in Tasman Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acer negundo</i>	Box Elder		y
<i>Acetosa sagittata</i>	Turkey Rhubarb		y
<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Asparagus asparagoides</i>	Bridal Creeper	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Bromus catharticus</i>	Prairie Grass		y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Centaurium</i> sp.	Centaury		y
<i>Chloris virgata</i>	Feathertop Rhodes Grass	y	
<i>Chlorophytum comosum</i>	Ribbon Plant	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	
<i>Cirsium vulgare</i>	Spear Thistle	y	y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Conyza</i> sp.	Fleabane	y	y
<i>Cuscuta campestris</i>	Golden Dodder	y	?
<i>Cynodon dactylon</i>	Common Couch		y
<i>Dietes</i> sp.	Dietes	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Euphorbia peplus</i>	Petty Spurge		y
<i>Fumaria muralis</i> subsp. <i>muralis</i>	Wall Fumitory	y	
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	y	y
<i>Gnaphalium</i> sp.	Cudweed	y	y
<i>Grevillea robusta</i>	Silky Oak		y
<i>Hedera helix</i>	English Ivy	y	y
<i>Hirschfeldia incana</i>	Buchan Weed		y
<i>Hypochaeris albiflora</i>	White Flatweed		y

<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Lysimachia [=Anagalis] arvensis</i>	Scarlet Pimpernel		y
<i>Macadamia sp.</i>	Macadamia	y	
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nandina domestica</i>	Heavenly Bamboo	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern		y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel	y	
<i>Paspalum dilatatum</i>	Paspalum	y	
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Passiflora caerulea</i>	Blue Passionflower	y	
<i>Passiflora edulis</i>	Edible Passionfruit	y	
<i>Passiflora suberosa</i>	Corky Passionfruit	y	y
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Phytolacca octandra</i>	Inkweed	y	
<i>Pinus sp</i>	Pine Tree	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Salvia verbenacea</i>	Salvia		y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria sp.</i>	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus [= indicus var. capensis]</i>	Parramatta Grass	y	y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree	y	y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis [=albiflora]</i>	Trad, Wandering Jew	y	y
<i>Triadica sebifera</i>	Chinese Tallow		y
<i>Ulmus sp.</i>	Elm		y

Table 217 Native flora species recorded in Yurrah Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
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<i>Acacia binervia</i>	Coast Myall		y
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia myrtifolia</i>	Myrtle Wattle	y	
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia ulicifolia</i>	Prickly Moses	y	
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Banksia oblongifolia</i>			y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Cheilanthes sieberi</i>	Poison Rock Fern, Mulga Fern	y	
<i>Cissus antarctica</i>	Water Vine		y
<i>Clematis aristata</i>	Travellers Joy	y	y
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Cupaniopsis anacardioides</i>	Tuckeroo		y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily		y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus racemosa</i>	Narrow-leaved Scribbly Gum	y	y
<i>Glochidion ferdinandi</i>	Cheese Tree		y
<i>Glycine clandestinus</i>	Love Creeper		y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea		y
<i>Hakea sericea</i>	Bushy Needlebush	y	
<i>Hibbertia aspera</i>	Rough Guinea Flower	y	y
<i>Hibbertia</i> sp.	Guinea Flower	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea		y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lepidosperma gunnii</i>		y	y
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	Many-flowered Mat-rush		y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	y
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y

<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass		y
<i>Oxalis perennans</i>			y
<i>Persoonia pinifolia</i>	Pine-leaved Geebung	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Westringia fruticosa</i>	Coast Rosemary	y	y

Table 218 Introduced flora species recorded in Yurrah Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Briza subaristata</i>			y
<i>Celtis occidentalis</i>	Chinese Hackberry		y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	
<i>Conyza sp.</i>	Fleabane	y	
<i>Cynodon dactylon</i>	Common Couch		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Gnaphalium sp.</i>	Cudweed	y	
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	
<i>Ligustrum sinense</i>	Small-leaved Privet		y
<i>Nandina domestica</i>	Heavenly Bamboo	y	
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Oxalis pes-caprae</i>	Soursob		y
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Plantago lanceolata</i>	Plantain		y
<i>Senecio madagascariensis</i>	Fireweed	y	
<i>Senna pendula var. glabrata</i>	Easter Senna		y
<i>Setaria sp.</i>	Pigeon Grass		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officiale</i>	Dandelion	y	

Fauna Summary

Table 219 Fauna summary data (Tasman Park)

FAUNA	2008	2018
NATIVE	36	26
INTRODUCED	2	2

Table 220 Fauna summary data (Yurrah Reserve)

FAUNA	2008	2018
NATIVE	16	7
INTRODUCED	2	0

Table 221 Species lists 2008-2018 (Tasman Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathamii</i>	•	•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Thornbill	<i>Acanthiza pusilla</i>		•
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	•
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>		•
Eastern Whipbird	<i>Psophodes olivaceus</i>		•
Eastern Yellow Robin	<i>Eopsaltria australis</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>	•	
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Wattlebird	<i>Anthochaera chrysoptera</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Southern Boobook	<i>Ninox novaeseelandiae</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Superb Fairy-wren	<i>Malurus cyaneus</i>		•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	
Welcome Swallow	<i>Hirundo neoxena</i>	•	
White-cheeked Honeyeater	<i>Phylidonyris niger</i>	•	
White-faced Heron	<i>Egretta novaehollandiae</i>	•	

Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Blue-tongue Lizard	<i>Tiliqua scincoides</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Golden Crown Snake	<i>Cacophis squamulosus</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Weasel Skink	<i>Saproscincus mustelinus</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	•
Long-nosed Bandicoot	<i>Perameles nasuta</i>	•	
Sugar Glider	<i>Petaurus breviceps</i>	•	
BATS			
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	•	•
Little Bentwing Bat	<i>Miniopterus australis</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
Little Forest Bat	<i>Vespadelus vulturnus</i>	•	
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>		•
Cat	<i>Felis catus</i>	•	
Red Fox	<i>Vulpes vulpes</i>		•

Table 222 Species lists 2008-2018 (Yurrah Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•

Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
		3	1
FROGS			
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
		1	1
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Black Rat	<i>Rattus rattus</i>	•	



Figure 292 Brush Turkey populations have exploded across many areas of Sydney and are now seen in many of the smaller reserves, such as Yurrah Reserve, where they utilise a broad range of foodstuffs, including bread

5.3.10 TRAFALGAR PARK AND WATERLOO PARK

Vegetation summary

Table 223 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
TRAFALGAR PARK	6 Trafalgar Place, Marsfield		0.397Ha
WATERLOO PARK	191a Waterloo Road, Marsfield		6.60Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	NO	WP: 1	WP: 0.025Ha
S_WSF06: Coastal Shale-Sandstone Forest	NO	WP: 2	WP: 0.712Ha
Urban_E/N: Urban Exotic/Native	N/A	TP: 1	TP: 0.170Ha
		WP:	WP: 2.016Ha

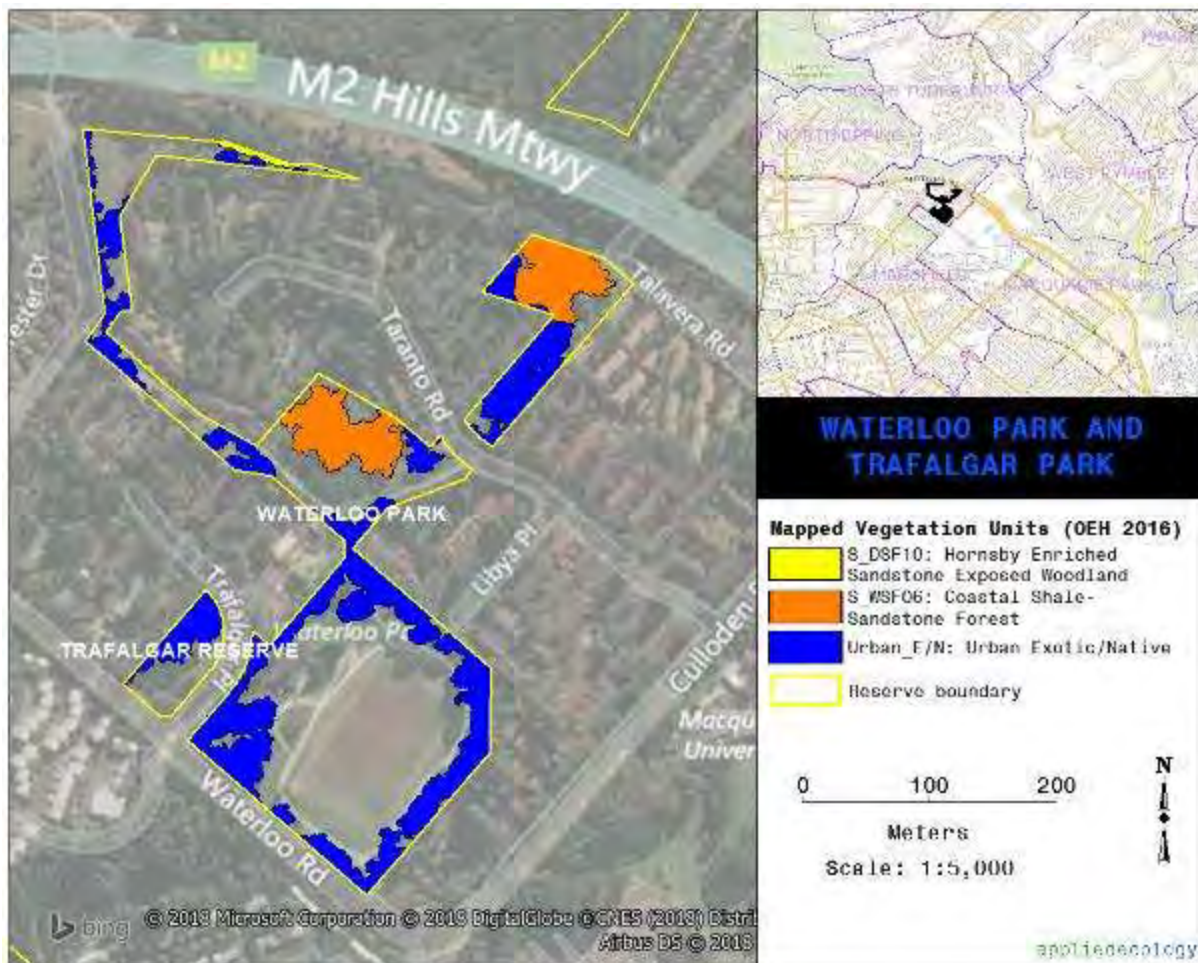


Figure 293 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 224 Flora summary data Trafalgar Park 2008-2018

NATIVE SPECIES COUNT 2008	6	EXOTIC SPECIES COUNT 2008	1
NATIVE SPECIES COUNT 2018	6	EXOTIC SPECIES COUNT 2018	1
NATIVE SPECIES CONSTANT 2008-2018	0	EXOTIC SPECIES CONSTANT 2008-2018	0
NATIVE SPECIES LOST 2008-2018	0	EXOTIC SPECIES LOST 2008-2018	0
NATIVE SPECIES GAINED 2008-2018	6	EXOTIC SPECIES GAINED 2008-2018	1

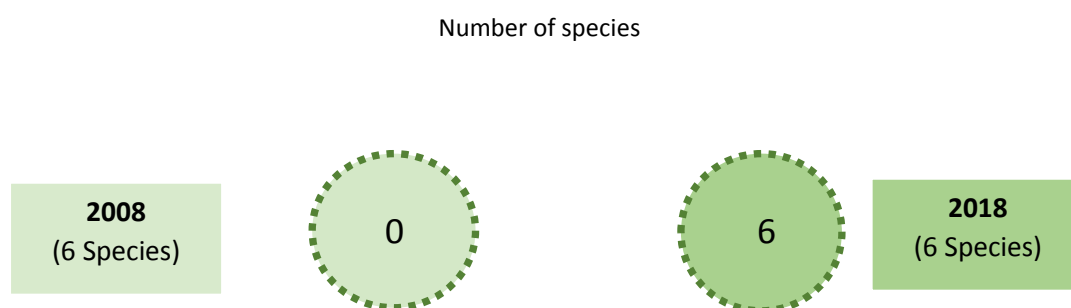


Figure 294 Comparison of native species richness from 2008 to 2018 for Trafalgar Park

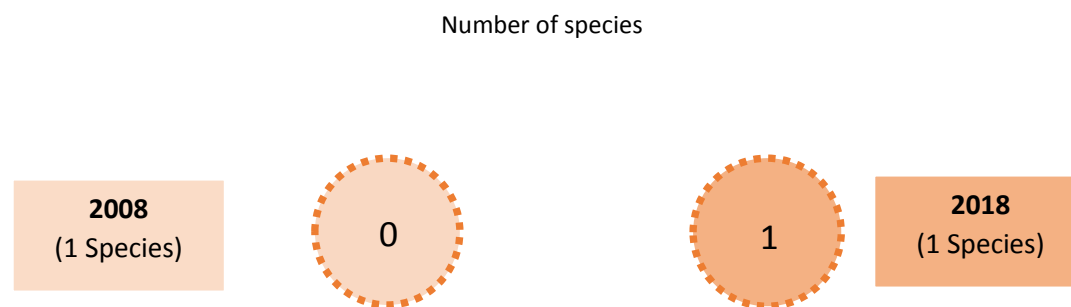


Figure 295 Comparison of exotic species richness from 2008 to 2018 for Trafalgar Park

Table 225 Flora summary data Waterloo Park 2008-2018

NATIVE SPECIES COUNT 2008	71	EXOTIC SPECIES COUNT 2008	67
NATIVE SPECIES COUNT 2018	85	EXOTIC SPECIES COUNT 2018	91
NATIVE SPECIES CONSTANT 2008-2018	60	EXOTIC SPECIES CONSTANT 2008-2018	55
NATIVE SPECIES LOST 2008-2018	11	EXOTIC SPECIES LOST 2008-2018	12

NATIVE SPECIES GAINED 2008-2018	25	EXOTIC SPECIES GAINED 2008-2018	36
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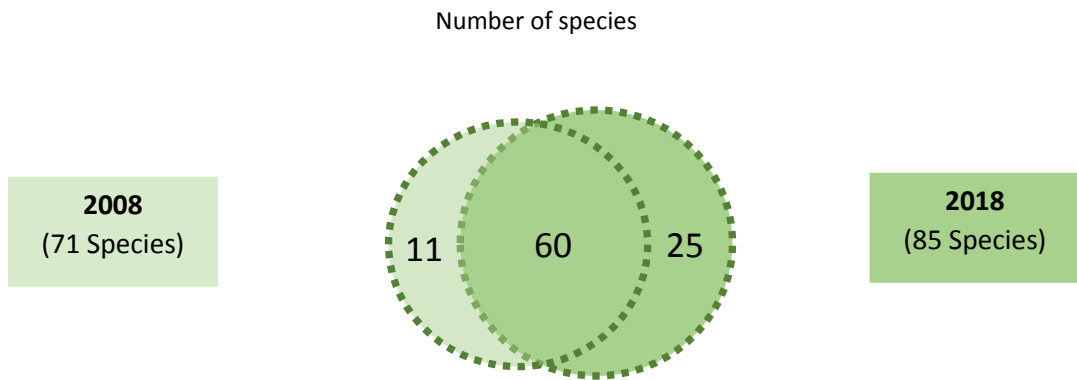


Figure 296 Comparison of native species richness from 2008 to 2018 for Waterloo Park

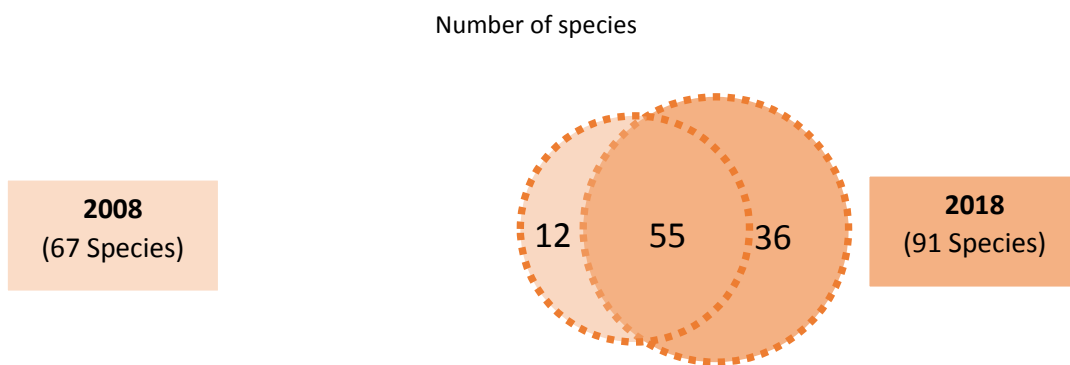


Figure 297 Comparison of exotic species richness from 2008 to 2018 for Waterloo Park



Figure 298 Trafalgar Park is a small area of grassed open space with several canopy trees and children's play equipment



Figure 299 Waterloo Park has several sections, the northern section forming a narrow strip between townhouses



Figure 300 A weed infested creek line passes through the lower part of Waterloo Park



Figure 301 Mature canopy trees provide good habitat resources for a range of native wildlife



Figure 302 Bush regeneration weed control is helping to improve the condition of bushland in lower Waterloo Park



Figure 303 The upper section of Waterloo Park is predominantly grassed open space, with footpaths



Figure 304 Small native gardens have been planted around outdoor fitness equipment



Figure 305 Footpath/cycleways connect the various sections of Waterloo Park



Figure 306 Small areas of degraded native vegetation are present in the upper section of Waterloo Park

Comparison of flora inventories 2008-2018

Table 226 Native flora species recorded in Trafalgar Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Corymbia maculata</i>	Spotted Gum	y	y
<i>Eucalyptus botryoides</i>	Bangalay, Southern Mahogany	y	y
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	y	y
<i>Eucalyptus fibrosa</i>	Broad-leaved Ironbark	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y

Table 227 Introduced flora species recorded in Trafalgar Park 2008-2018 *

SPECIES NAME	COMMON NAME	2008	2018
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y

* Note: this does not include common lawn species or weeds

Table 228 Native flora species recorded in Waterloo Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia falcata</i>	Hickory Wattle	y	y
<i>Acacia floribunda</i>	White Sallow Wattle	y	y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	y
<i>Acacia longifolia</i>	Sydney Golden Wattle	y	y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia suaveolens</i>	Sweet-scented Wattle	y	y
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Allocasuarina littoralis</i>	Black She-oak	y	y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Angophora costata</i>	Sydney Red Gum	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Angophora hispida</i>	Dwarf Apple	y	y
<i>Anisopogon avenaceus</i>	Oat Speargrass	y	
<i>Aristida vagans</i>	Three-awn Speargrass	y	y
<i>Austrostipa pubescens</i>		y	
<i>Banksia ericifolia</i>	Heath-leaved Banksia		y
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	Hair-pin Banksia	y	y
<i>Breynia oblonga</i>	Coffee Bush		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Callicoma serratifolia</i>	Black Wattle	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon linearis</i>	Narrow-leaved Bottlebrush		y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken		y
<i>Cassinia aculeata</i>	Common Dogwood		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	y	y
<i>Christella dentata</i>	Binung		y

<i>Cissus antarctica</i>	Water Vine	y	y
<i>Commelina cyanea</i>	Scurvy Weed	y	y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily		y
<i>Corymbia gummifera</i>	Red Bloodwood	y	y
<i>Corymbia maculata</i>	Spotted Gum	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic	y	y
<i>Eucalyptus globoidea</i>	White Stringybark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus piperita</i>	Sydney Peppermint	y	y
<i>Eucalyptus racemosa</i>	Narrow-leaved Scribbly Gum	y	y
<i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	Red Mahogany	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	y
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glycine clandestinus</i>	Love Creeper	y	y
<i>Grevillea buxifolia</i>	Grey Spider Flower		y
<i>Grevillea sericea</i>	Pink Spider Flower		y
<i>Hakea salicifolia</i> subsp. <i>salicifolia</i>	Willow-leaved Hakea	y	
<i>Hakea sericea</i>	Bushy Needlebush	y	y
<i>Hakea teretifolia</i>	Dagger Hakea	y	y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Hypolepis muelleri</i>	Rough Ground Fern	y	y
<i>Imperata cylindrica</i>	Blady Grass	y	y
<i>Indigofera australis</i>	Austral Indigo	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	y
<i>Kunzea ambigua</i>	Tickbush	y	y
<i>Lambertia formosa</i>	Mountain Devil		y
<i>Laxmannia gracillis</i>	Slender Wire-lily	y	
<i>Lepidosperma laterale</i>	Flat Saw-sedge	y	y
<i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i>	Lemon-scented Tea-tree	y	y
<i>Leucopogon juniperinus</i>	Prickly Heath	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomandra obliqua</i>	Fish Bones		y
<i>Lomatia silaifolia</i>	Crinkle Bush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Melia azedarach</i>	White Cedar		y

<i>Micrantheum ericoides</i>		y	
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Meadow Grass	y	y
<i>Olearia viscidula</i>	Wallaby Weed		y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Oxalis perennans</i>			y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Panicum simile</i>	Two Colour Panic	y	
<i>Paspalidium distans</i>		y	
<i>Persoonia linearis</i>	Narrow-leaved Geebung		y
<i>Phyllanthus hirtellus</i>	Thyme Spurge		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Plectranthus parviflorus</i>	Cockspur Flower		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	
<i>Pomaderris ferruginea</i>	Rusty Pomaderris		y
<i>Pomaderris prunina</i>	Plum-leaved Pomaderris		y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Schoenus melanostachys</i>	Black Bog-rush		y
<i>Solanum aviculare</i>	Kangaroo Apple		y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Themeda australis</i>	Kangaroo Grass	y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	
<i>Tristaniopsis laurina</i>	Water Gum	y	y
<i>Wahlenbergia gracilis</i>	Native Bluebell		y

Table 229 Introduced flora species recorded in Waterloo Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia baileyana</i>	Cootamundra Wattle	y	
<i>Acacia elata</i>	Cedar Wattle	y	
<i>Acacia fimbriata</i>	Fringe-leaf Wattle	y	
<i>Acacia podalyriifolia</i>	Queensland Silver Wattle	y	
<i>Acer negundo</i>	Box Elder		y
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Ageratina riparia</i>	Mist Flower	y	y
<i>Aloe vera</i>	Aloe Vera		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Aster subulatus</i>	Bushy Starwort	y	
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y

<i>Brachychiton acerifolius</i>	Illawarra Flame Tree		y
<i>Briza maxima</i>	Quaking Grass, Blowfly Grass	y	y
<i>Briza minor</i>	Shivery Grass		y
<i>Bromus catharticus</i>	Prairie Grass	y	y
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Cenchrus clandestinus</i> [= <i>Pennisetum clandestinum</i>]	Kikuyu	y	y
<i>Centaurium sp.</i>	Centaury		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	y	y
<i>Chlorophytum comosum</i>	Ribbon Plant	y	
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Citrus x sinensis</i>	Sweet Orange, Orange Tree		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Cotoneaster glaucophylla</i>	Cotoneaster		y
<i>Crassocephalum crepidioides</i>	Thickheads	y	y
<i>Cuscuta campestris</i>	Golden Dodder	y	
<i>Cyathea cooperi</i>	Straw Tree-fern	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Eucalyptus viminalis</i>	Ribbon Gum	y	
<i>Fortunella sp.</i>	Cumquat, Kumquat		y
<i>Fumaria capreolata</i> subsp. <i>capreolata</i>	Climbing Fumitory		y
<i>Galium aparine</i>	Cleavers, Sticky Weed		y
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Grevillea 'Robyn Gordon'</i>	<i>Grevillea 'Robyn Gordon'</i>	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Helleborus sp.</i>	Hellebore, Winter Rose		y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Hypoestes phyllostachya</i>	Freckle Plant, Polka Dot Plant		y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminum didymum</i>	Jasmine		y
<i>Koelreuteria elegans</i> subsp. <i>formosana</i>	Golden Rain Tree		y
<i>Lantana camara</i>	Lantana	y	y
<i>Leptospermum petersonii</i>	Lemon-scented Tea-tree	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lilium formosum</i>	Formosan Lily	y	
<i>Lonicera japonica</i>	Honeysuckle	y	
<i>Lysimachia</i> [= <i>Anagalis</i>] <i>arvensis</i>	Scarlet Pimpernel		y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Bracelet Honey Myrtle	y	y

<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry		y
<i>Nandina domestica</i>	Heavenly Bamboo	y	y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel	y	y
<i>Parietaria judaica</i>	Asthma Weed		y
<i>Paspalum dilatatum</i>	Paspalum	y	y
<i>Paspalum urvillei</i>	Vasey Grass	y	
<i>Passiflora edulis</i>	Edible Passionfruit		y
<i>Pellaea viridis</i> var. <i>viridis</i>	Green Cliff Brake		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo		y
<i>Phytolacca octandra</i>	Inkweed	y	
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Platanus x acerifolia</i>	London Plane Tree		y
<i>Potentilla</i> [= <i>Duchesnea</i>] <i>indica</i>	Wild Strawberry, Indian Strawberry	y	y
<i>Ranunculus repens</i>	Creeping Buttercup		y
<i>Rhaphiolepis indica</i>	Indian Hawthorn		y
<i>Richardia stellaris</i>			y
<i>Rubus fruticosus</i> aggregate species	Blackberry	y	y
<i>Schefflera actinophylla</i>	Umbrella Tree		y
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Setaria</i> sp.	Pigeon Grass	y	y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum linnaeanum</i>	Apple of Sodom		y
<i>Solanum mauritianum</i>	Wild Tobacco	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Solenostemon</i> sp.	Coleus		y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Sporobolus africanus</i> [= <i>indicus</i> var. <i>capensis</i>]	Parramatta Grass	y	y
<i>Stellaria media</i>	Chickweed		y
<i>Syzygium paniculatum</i>	Brush Cherry	y	y
<i>Taraxacum officinale</i>	Dandelion	y	y
<i>Thunbergia alata</i>	Black-eyed Susan	y	y
<i>Tillandsia</i> spp.	Bromeliads		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y
<i>Tradescantia pallida</i>	Purple Trad, Purple Queen		y

<i>Triadica sebifera</i>	Chinese Tallow		y
<i>Trifolium repens</i>	White Clover		y
<i>Tropaeolum majus</i>	Nasturtium		y
<i>Verbena sp.</i>	Purpletop	y	y
<i>Vicia sativa</i>	Slender Vetch	y	y

Fauna Summary

Table 230 Fauna summary data (Trafalga Park)

FAUNA	2008	2018
NATIVE	11	8
INTRODUCED	0	0

Table 231 Fauna summary data (Waterloo Park)

FAUNA	2008	2018
NATIVE	16	13
INTRODUCED	1	2

Table 232 Species lists 2008-2018 (Trafalga Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
REPTILES			
Bar-sided forest-skink	<i>Concinnia tenuis</i>		

Broad-tailed gecko	<i>Phyllurus platurus</i>		
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	

Table 233 Species lists 2008-2018 (Waterloo Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>		•
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Gerygone	<i>Gerygone mouki</i>		•
Grey Fantail	<i>Rhipidura albiscapa</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing		•	
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>		•
Welcome Swallow	<i>Hirundo neoxena</i>	•	
White-faced Heron	<i>Egretta novaehollandiae</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
		0	0
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>		•
		0	1
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	
Eastern Water Dragon	<i>Intellagama lesueurii</i>		•
Eastern Water-skink	<i>Eulamprus quoyii</i>		•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
		2	2
FROGS			
Leaf-green Tree Frog	<i>Litoria phyllochroa</i>		•
		0	1
NATIVE MAMMALS			

Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Dog	<i>Canis lupus familiaris</i>		•



Figure 307 Brush Turkeys are becoming tolerant of domestic animals, seen in Waterloo Park

5.4 WESTERN RESERVES

The western reserve group consists of four reserves that are all vegetated with Blue Gum High Forest. There is no connectivity between the reserves and all are mixed use.

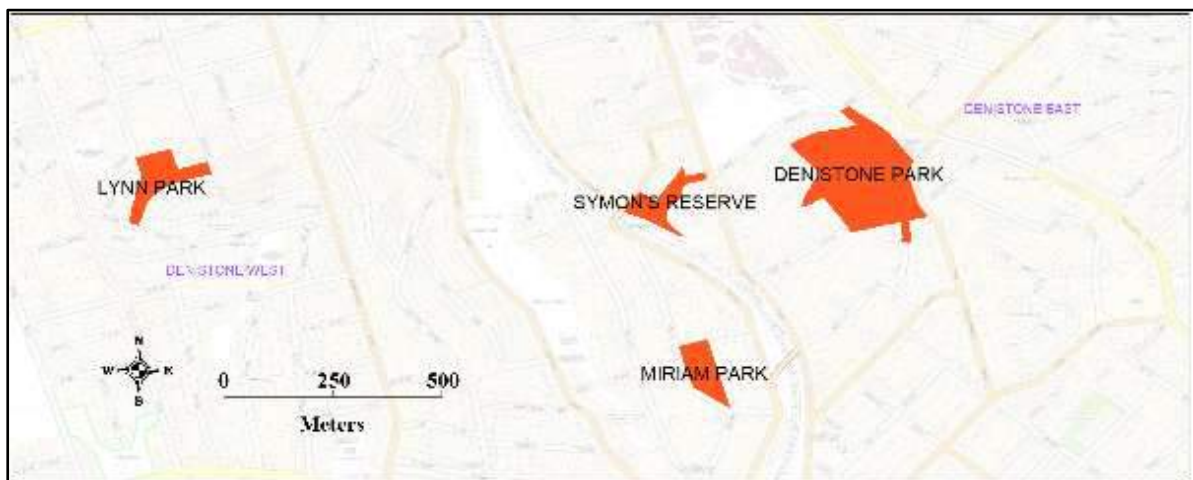


Figure 308 Western Reserve Group

Table 234 Fauna Summary Species Richness (Western Group)

WESTERN RESERVE GROUP		
	2008	2018
NATIVE BIRDS	37	32
INTRODUCED BIRDS	4	0
REPTILES	4	4
FROGS	2	1
NATIVE MAMMALS	3	2
BATS	1	7
INTRODUCED MAMMALS	3	4

Table 235 Fauna Summary Species Turnover (Western Group)

	TOTALS		TURNOVER		
	2008 count	2018 count	2008 only	2018 only	Constant
NATIVE BIRDS	37	32	15	10	22
INTRODUCED BIRDS	4	0	4	0	0
REPTILES	4	4	1	1	3
FROGS	2	1	2	1	0
NATIVE MAMMALS	3	2	1	0	2
BATS	1	7	0	6	1
INTRODUCED MAMMALS	3	4	2	3	1

Number of Native Birds

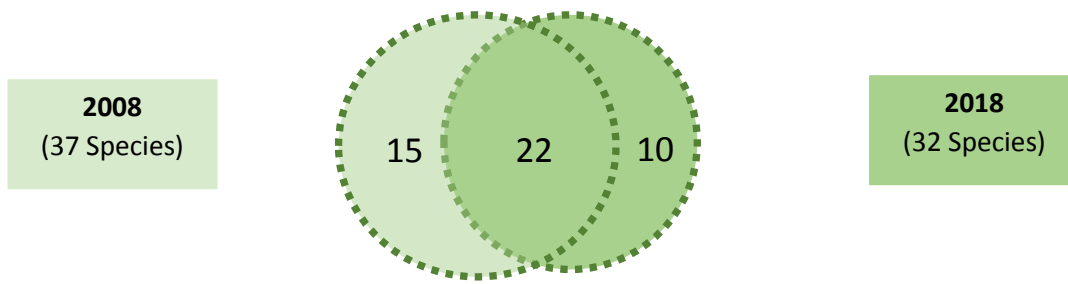


Figure 309 Comparison of native bird species richness from 2008 to 2018 for Western Group



Figure 310 Mixed flocks of corellas and cockatoos were a major component of the fauna observed in Western reserves

5.4.1 DENISTONE PARK

Vegetation summary

Table 236 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
DENISTONE PARK	62 Terry Road, Denistone East		5.95Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF01: Blue Gum High Forest	BC Act: Critically endangered EPBC Act: Critically endangered	2	3.99Ha
Urban_E/N: Urban Exotic/Native	N/A	2	0.530Ha

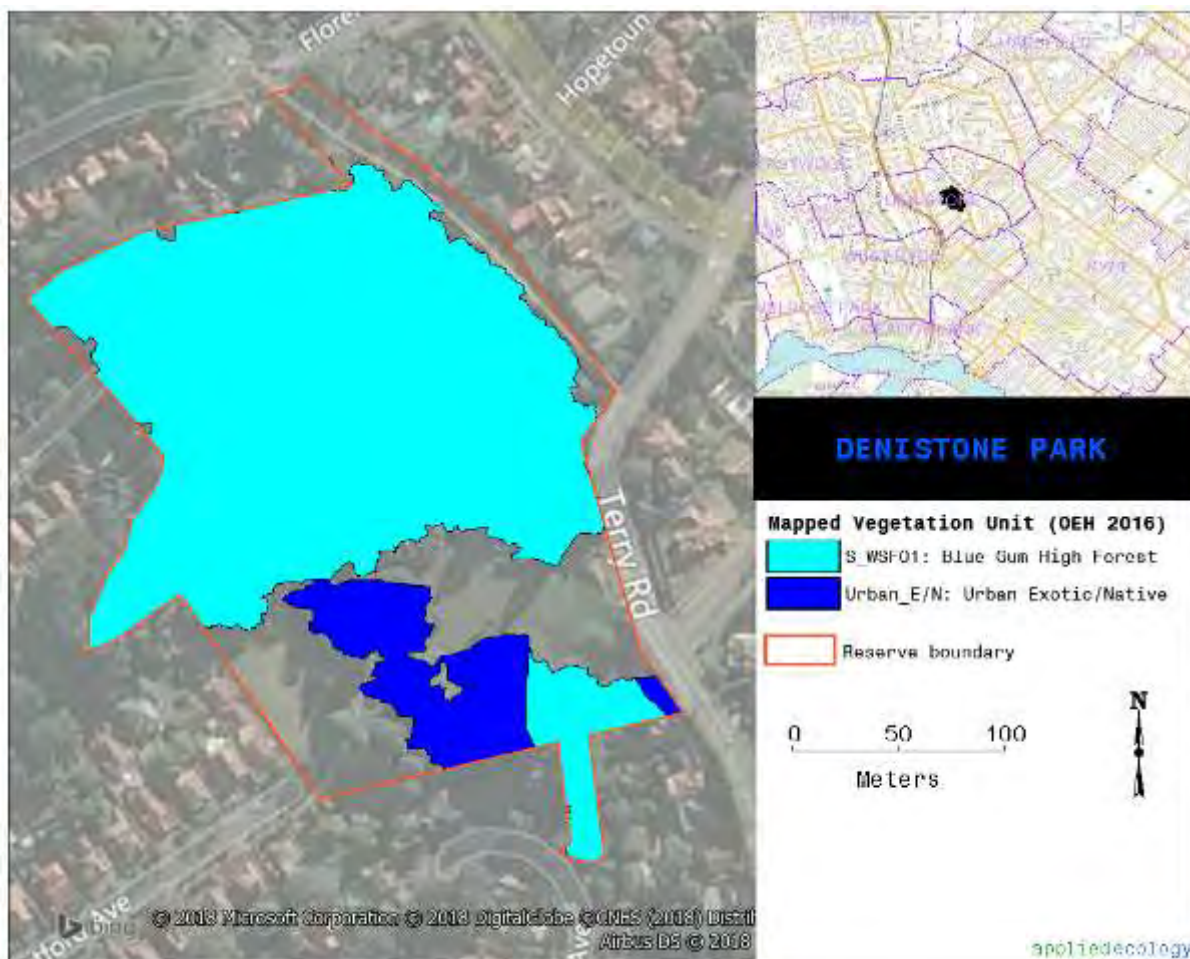


Figure 311 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 237 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	82	EXOTIC SPECIES COUNT 2008	52
NATIVE SPECIES COUNT 2018	69	EXOTIC SPECIES COUNT 2018	61
NATIVE SPECIES CONSTANT 2008-2018	60	EXOTIC SPECIES CONSTANT 2008-2018	46
NATIVE SPECIES LOST 2008-2018	22	EXOTIC SPECIES LOST 2008-2018	6
NATIVE SPECIES GAINED 2008-2018	9	EXOTIC SPECIES GAINED 2008-2018	15

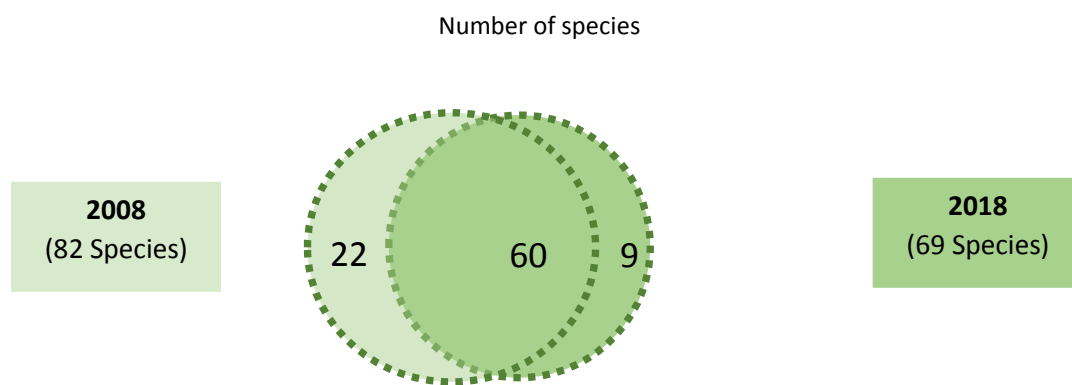


Figure 312 Comparison of native species richness from 2008 to 2018 for Denistone Park

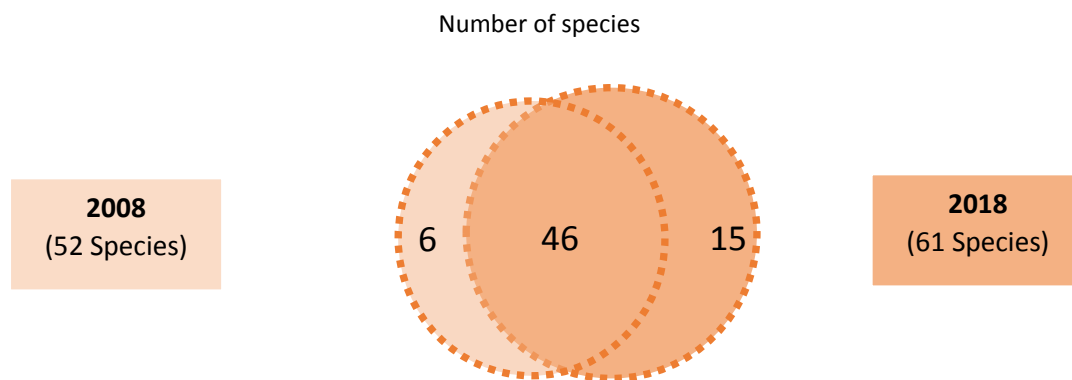


Figure 313 Comparison of exotic species richness from 2008 to 2018 for Denistone Park



Figure 314 Much of Denistone Park is grassed open space with introduced canopy trees



Figure 315 Dense bushland is being restored along the gully down the western side of the reserve



Figure 316 Revegetation planting is helping to improve the condition of bushland



Figure 317 Bushland is Blue Gum High Forest with a weedy understorey in many places



Figure 318 Council warnings attempt to limit the damage from informal track creation



Figure 319 Numerous mountain bike tracks crisscross Denistone Park, destroying native vegetation and encouraging weeds



Figure 320 Areas of good quality Blue Gum High Forest persist in the upper part of Denistone Park

Comparison of flora inventories 2008-2018

Table 238 Native flora species recorded in Denistone Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia binervia</i>	Coast Myall	y	
<i>Acacia decurrens</i>	Sydney Green Wattle	y	y
<i>Acacia falcata</i>	Hickory Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle	y	
<i>Acacia longifolia</i>	Sydney Golden Wattle		y
<i>Acacia parramattensis</i>	Parramatta Green Wattle	y	y
<i>Acacia stricta</i>	Straight Wattle	y	
<i>Adiantum hispidulum</i>	Rough Maidenhair		y
<i>Allocasuarina torulosa</i>	Forest She-oak	y	y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Austrostipa ramossissima</i>		y	y
<i>Backhousia myrtifolia</i>	Grey Myrtle	y	y
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern	y	y
<i>Callistemon citrinus</i>	Crimson Bottlebrush	y	y
<i>Callistemon salignus</i>	Willow Bottlebrush	y	y
<i>Calochlaena dubia</i>	Soft Bracken, False Bracken	y	y
<i>Calystegia marginata</i>		y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	y
<i>Centella asiatica</i>	Indian Pennywort	y	y

<i>Cissus antarctica</i>	Water Vine	y	y
<i>Clematis aristata</i>	Travellers Joy	y	
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily	y	y
<i>Cyperus gracilis</i>	Slender Sedge	y	
<i>Denhamia [=Maytenus] silvestris</i>	Orange Bush, Orange Bark	y	y
<i>Dianella caerulea</i>	Blue Flax Lily	y	y
<i>Dianella revoluta</i>	Mauve Flax Lily	y	
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Digitaria parviflora</i>	Finger Grass	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	
<i>Einadia trigonos subsp. trigonos</i>	Fishbones	y	
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Entolasia marginata</i>	Bordered Panic	y	y
<i>Entolasia stricta</i>	Wiry Panic		y
<i>Eucalyptus acmenioides</i>	White Mahogany	y	y
<i>Eucalyptus paniculata subsp. paniculata</i>	Grey Ironbark	y	y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus punctata</i>	Grey Gum	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry	y	
<i>Ficus macrophylla subsp. macrophylla</i>	Moreton Bay Fig	y	
<i>Ficus rubiginosa</i>	Port Jackson Fig	y	
<i>Gahnia melanocarpa</i>	Black-fruit Saw Sedge	y	
<i>Geranium homeanum</i>	Native Geranium	y	y
<i>Glycine microphylla</i>	Lesser Love Creeper	y	y
<i>Glycine tabacina</i>	Love Creeper	y	y
<i>Hardenbergia violacea</i>	False Sarsparilla		y
<i>Hibbertia dentata</i>	Trailing Guinea Flower	y	
<i>Hibbertia sp.</i>	Guinea Flower	y	
<i>Homalanthus populifolius</i>	Bleeding Heart	y	y
<i>Juncus subsecundus</i>	Finger Rush	y	y
<i>Juncus usitatus</i>	Common Rush	y	y
<i>Kennedia rubicunda</i>	Dusky Coral Pea	y	
<i>Kunzea ambigua</i>	Tickbush	y	
<i>Leucopogon juniperinus</i>	Prickly Heath	y	
<i>Livistona australis</i>	Cabbage Palm	y	y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Microlaena stipoides var. stipoides</i>	Weeping Meadow Grass	y	y
<i>Morinda jasminoides</i>	Jasmine Morinda	y	y
<i>Muehlenbeckia gracillima</i>	Slender Lignum	y	y

<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Oplismenus aemulus</i>	Basket Grass	y	y
<i>Oplismenus imbecillis</i>	Slender Basket Grass	y	y
<i>Oxalis perennans</i>		y	y
<i>Ozothamnus diosmifolius</i>	Paper Daisy	y	
<i>Pandorea pandorana</i>	Wonga Wonga Vine	y	y
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	Native Passionfruit	y	y
<i>Pellaea falcata</i> var. <i>falcata</i>	Sickle Fern	y	y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum	y	y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Plectranthus parviflorus</i>	Cockspur Flower	y	
<i>Poa affinis</i>		y	y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Pratia purpurascens</i>	White Root	y	y
<i>Pseuderanthemum variabile</i>	Pastel Flower	y	y
<i>Pteridium esculentum</i>	Harsh Bracken	y	y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood		y
<i>Rubus parvifolius</i>	Native Raspberry	y	y
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	Rough Groundsel, Hill Fireweed	y	
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	Indian Weed	y	y
<i>Solanum aviculare</i>	Kangaroo Apple	y	y
<i>Stephania japonica</i> var. <i>discolor</i>	Snake Vine	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Tylophora barbata</i>		y	y
<i>Veronica plebeia</i>	Trailing Speedwell	y	
<i>Westringia longifolia</i>	Long-leaved Westringia		y
<i>Zieria smithii</i>	Sandfly Zieria	y	

Table 239 Introduced flora species recorded in Denistone Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acetosa sagittata</i>	Turkey Rhubarb	y	y
<i>Ageratina adenophora</i>	Crofton Weed		y
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araucaria heterophylla</i>	Norfolk Island Pine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Asparagus officinale</i>	Edible Asparagus		y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	y
<i>Bryophyllum delagoense</i>	Mother of Millions	y	
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Celtis occidentalis</i>	Chinese Hackberry	y	y
<i>Cestrum parqui</i>	Green Cestrum		y

<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Cirsium vulgare</i>	Spear Thistle	y	
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Crassocephalum crepidioides</i>	Thickheads	y	y
<i>Dolichandra [=Macfadyena] unguis-cati</i>	Cat's Claw Creeper	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass		y
<i>Erythrina x sykesii</i>	Coral Tree	y	y
<i>Fumaria muralis subsp. muralis</i>	Wall Fumitory	y	y
<i>Gnaphalium sp.</i>	Cudweed	y	y
<i>Grevillea robusta</i>	Silky Oak	y	y
<i>Hedera helix</i>	English Ivy	y	y
<i>Hypochaeris radicata</i>	Flatweed, Catsear	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Jasminum didymum</i>	Jasmine		y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Lonicera japonica</i>	Honeysuckle	y	y
<i>Malva parviflora</i>	Smallflower Mallow	y	y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Morus albus</i>	White Mulberry	y	
<i>Nandeeana domestica</i>	Heavenly Bamboo		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Nothoscordum borbonicum</i>	Onion Weed		y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Odontonema strictum</i>	Red Justicia	y	y
<i>Olea europaea subsp. cuspidata</i>	African Olive	y	y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Paspalum urvillei</i>	Vasey Grass		y
<i>Passiflora edulis</i>	Edible Passionfruit	y	
<i>Passiflora suberosa</i>	Corky Passionfruit	y	y
<i>Pellaea viridis var. viridis</i>	Green Cliff Brake		y
<i>Phoenix canariensis</i>	Canary Island Date Palm	y	y
<i>Phytolacca octandra</i>	Inkweed	y	
<i>Pistachia vera</i>	Pistachio	y	y
<i>Plantago lanceolata</i>	Plantain	y	y
<i>Potentilla indica</i>	Wild Strawberry, Indian Strawberry	y	y
<i>Rubus fruticosus aggregate species</i>	Blackberry	y	y
<i>Senecio madagascariensis</i>	Fireweed	y	y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	y
<i>Setaria palmifolia</i>	Palm Grass		y
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	y

<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Solanum pseudocapsicum</i>	Pseudocapsicum, Madeira Winter Cherry	y	y
<i>Sonchus oleraceus</i>	Sowthistle, Milk Thistle	y	y
<i>Stellaria media</i>	Chickweed	y	y
<i>Talinum paniculatum</i>	Jewels of Opar		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Toxicodendron succedaneum</i>	Rhus Tree	y	
<i>Tradescantia fluminensis [=albiflora]</i>	Trad, Wandering Jew		y
<i>Verbena bonariensis</i>	Purple Top	y	y
<i>Viola odorata</i>	Sweet Violet	y	y

Fauna Summary

Table 240 Fauna summary data (Denistone Park)

FAUNA	2008	2018
NATIVE	42	37
INTRODUCED	6	3

Table 241 Fauna summary data (Denistone Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathami</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Black Swan	<i>Cyngus atrus</i>	•	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Brown Thornbill	<i>Acanthiza pusilla</i>	•	•
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	•	
Crested Pigeon	<i>Ocyphaps lophotes</i>		
Crimson Rosella	<i>Platycercus elegans</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eastern Rosella	<i>Platycercus eximius</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	•
Eastern Whipbird	<i>Psophodes olivaceus</i>	•	•
Eastern Yellow Robin	<i>Eopsaltria australis</i>		•
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	•	
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Grey Butcherbird	<i>Cracticus torquatus</i>	•	•
Grey Fantail	<i>Rhipidura albiscapa</i>	•	•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>		•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	

New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	•
Powerful Owl	<i>Ninox strenua</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Rufous Fantail	<i>Rhipidura rufifrons</i>		•
Rufous Whistler	<i>Pachycephala rufiventris</i>	•	
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>		•
Spotted Pardalote	<i>Pardalotus punctatus</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Superb Fairy-wren	<i>Malurus cyaneus</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	•
Welcome Swallow	<i>Hirundo neoxena</i>		•
White-browed Scrubwren	<i>Sericornis frontalis</i>	•	•
White-faced Heron	<i>Egretta novaehollandiae</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Common Starling	<i>Sturnus vulgaris</i>	•	
House Sparrow	<i>Passer domesticus</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Bar-sided forest-skink	<i>Concinnia tenuis</i>		•
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	•
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	•
Weasel Skink	<i>Saproscincus mustelinus</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>		
Common Eastern Froglet	<i>Crinia signifera</i>	•	
Leaf-green Tree Frog	<i>Litoria phyllochroa</i>		
Peron's Tree Frog	<i>Litoria peronii</i>		•
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	•	
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
a Long-eared Bat	<i>Nyctophilus sp</i>		•
Eastern Bentwing-bat	<i>Miniopterus orianae oceanensis</i>		•
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	•	•
Little Bentwing Bat	<i>Miniopterus australis</i>		•
Little Forest Bat	<i>Vespadelus vulturnus</i>		•

Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
White-striped Free-tailed Bat	<i>Austronomus australis</i>		•
INTRODUCED MAMMALS			
Black Rat	<i>Rattus rattus</i>		•
Dog	<i>Canis lupus familiaris</i>	•	
Mouse	<i>Mus musculus</i>	•	•
Red Fox	<i>Vulpes vulpes</i>		•



Bar-sided Forest Skinks are not common anywhere in the LGA. A small population exists in Denistone Park.



5.4.2 LYNN PARK

Vegetation summary

Table 242 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
LYNN PARK	92 Tarrants Avenue, Denistone West		1.28Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF01: Blue Gum High Forest	BC Act: Critically endangered EPBC Act: Critically endangered	1	0.780Ha
Urban_E/N: Urban Exotic/Native	N/A	4	0.370Ha

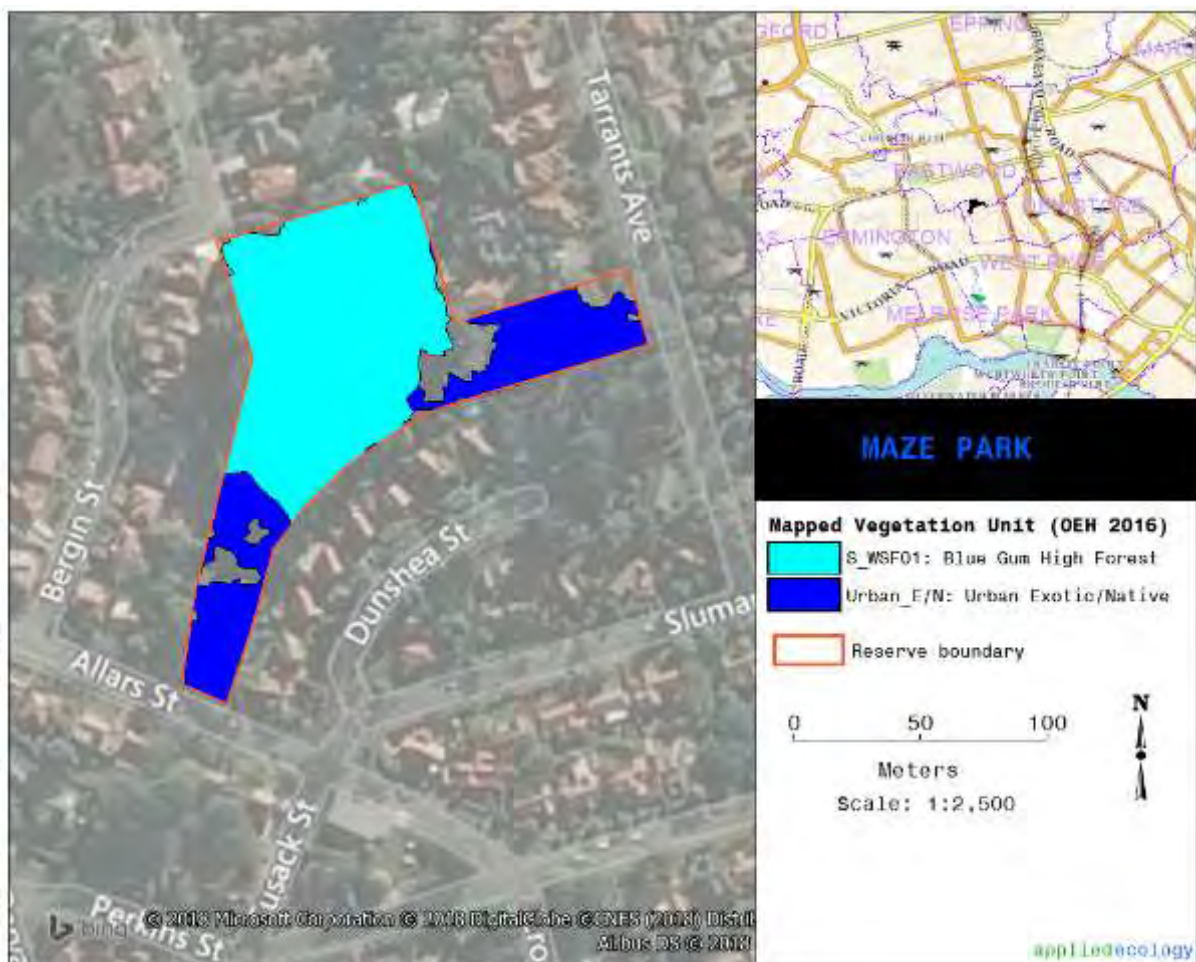


Figure 321 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 243 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	15	EXOTIC SPECIES COUNT 2008	23
NATIVE SPECIES COUNT 2018	19	EXOTIC SPECIES COUNT 2018	29
NATIVE SPECIES CONSTANT 2008-2018	11	EXOTIC SPECIES CONSTANT 2008-2018	21
NATIVE SPECIES LOST 2008-2018	4	EXOTIC SPECIES LOST 2008-2018	2
NATIVE SPECIES GAINED 2008-2018	8	EXOTIC SPECIES GAINED 2008-2018	8

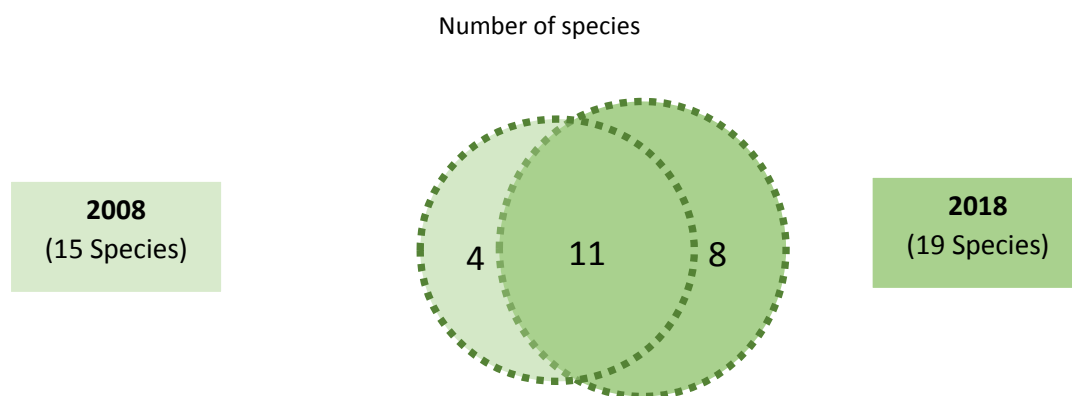


Figure 322 Comparison of native species richness from 2008 to 2018 for Lynn Park

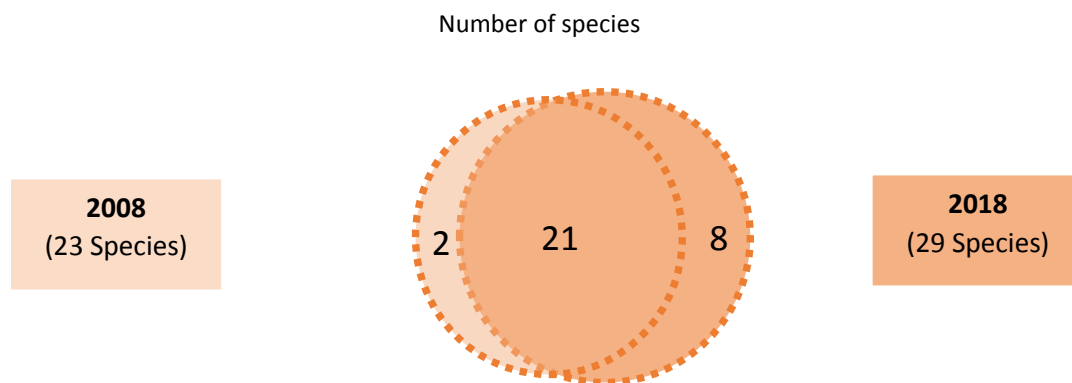


Figure 323 Comparison of exotic species richness from 2008 to 2018 for Lynn Park



Figure 324 The top part of Lynn Park is steeply sloping grassed open space



Figure 325 The lower part of Lynn Park is also grassed open space



Figure 326 The main vegetated area has degraded Blue Gum High Forest



Figure 327 Weed removal is improving the overall condition of Blue Gum High Forest in this steep reserve

Comparison of flora inventories 2008-2018

Table 244 Native flora species recorded in Lynn Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle	y	
<i>Acmena smithii</i>	Lilly-pilly	y	y
<i>Austrostipa pubescens</i>		y	
<i>Blechnum neohollandicum</i> = <i>Doodia aspera</i>	Rasp Fern		y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Corymbia gummifera</i>	Red Bloodwood		y
<i>Corymbia maculata</i>	Spotted Gum		y
<i>Dichondra repens</i>	Kidney Weed	y	y
<i>Echinopogon caespitosus</i>	Tufted Hedgehog Grass	y	y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	y	y
<i>Eucalyptus acmenioides</i>	White Mahogany		y
<i>Eucalyptus pilularis</i>	Blackbutt	y	y
<i>Eucalyptus punctata</i>	Grey Gum	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark	y	y
<i>Notolaea longifolia</i>	Mock Olive		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Plectranthus parviflorus</i>	Cockspur Flower	y	
<i>Syncarpia glomulifera</i>	Turpentine	y	y

Table 245 Native flora species recorded in Lynn Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Ageratina adenophora</i>	Crofton Weed	y	y
<i>Alstroemeria psittacina</i>	Parrot Lily		y
<i>Anredera cordifolia</i>	Madeira Vine		y
<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	y	y
<i>Bromus catharticus</i>	Prairie Grass	y	
<i>Cardiospermum grandiflorum</i>	Balloon Vine	y	y
<i>Cinnamomum camphora</i>	Camphor Laurel	y	y
<i>Clivia miniata</i>	Kaffir Lily		y
<i>Conyza sp.</i>	Fleabane	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Jasminium didymum</i>	Jasmine		y

<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Nandeeana domestica</i>	Heavenly Bamboo		y
<i>Nephrolepis cordifolia</i>	Fishbone Fern	y	y
<i>Ochna serrulata</i>	Mickey Mouse Plant	y	y
<i>Oxalis purpurea</i>	Large-flowered Wood Sorrel	y	y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Plectranthus ciliatus</i>		y	y
<i>Ranunculus repens</i>	Creeping Buttercup	y	y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	y
<i>Solanum mauritianum</i>	Wild Tobacco	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade		y
<i>Strelitzia nicolai</i>	Bird of Paradise Tree		y
<i>Taraxacum officiale</i>	Dandelion	y	y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y

Fauna Summary

Table 246 Fauna summary data (Lynn Park)

FAUNA	2008	2018
NATIVE	27	8
INTRODUCED	3	1

Table 247 Fauna summary data (Lynn Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	•	
Dusky Moorhen	<i>Gallinula tenebrosa</i>	•	
Eastern Koel	<i>Eudynamis orientalis</i>	•	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	•	
Eurasian Coot	<i>Fulica atra</i>	•	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>	•	•
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	•
Purple Swamphen	<i>Porphyrio porphyrio</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•

Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Tawny Frogmouth	<i>Podargus strigoides</i>	•	
White-faced Heron	<i>Egretta novaehollandiae</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>	•	
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>		•
Mouse	<i>Mus musculus</i>	•	
Dog	<i>Canis lupus familiaris</i>	•	

5.4.3 MIRIAM PARK

Vegetation summary

Table 248 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)	TOTAL AREA	
MIRIAM PARK	1A Miriam Road, West Ryde	0.973Ha	
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF01: Blue Gum High Forest	BC Act: Critically endangered EPBC Act: Critically endangered	2	0.965Ha



Figure 328 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 249 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	14	EXOTIC SPECIES COUNT 2008	16
NATIVE SPECIES COUNT 2018	29	EXOTIC SPECIES COUNT 2018	26
NATIVE SPECIES CONSTANT 2008-2018	11	EXOTIC SPECIES CONSTANT 2008-2018	14
NATIVE SPECIES LOST 2008-2018	3	EXOTIC SPECIES LOST 2008-2018	2
NATIVE SPECIES GAINED 2008-2018	18	EXOTIC SPECIES GAINED 2008-2018	12

Number of species

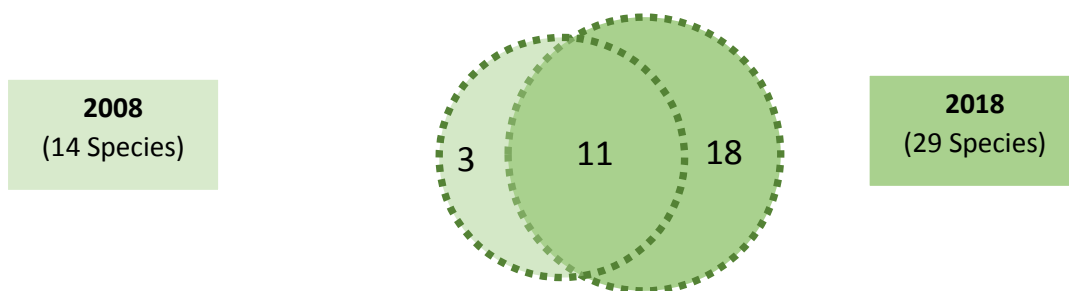


Figure 329 Comparison of native species richness from 2008 to 2018 for Miriam Park

Number of species

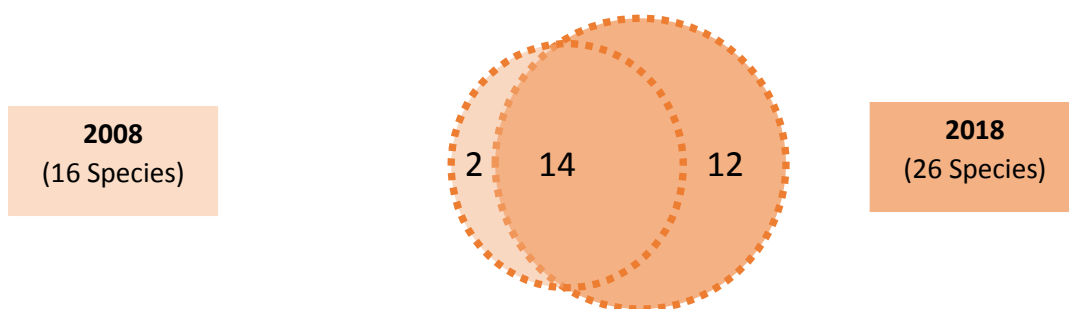


Figure 330 Comparison of exotic species richness from 2008 to 2018 for Miriam Park



Figure 331 Blue Gum High Forest is evident along the fenceline of Miriam Park



Figure 332 Trees of various ages are present in the park, along with a strip of native vegetation along on fence



Figure 333 Patches of native vegetation grow in garden style beds under semi-mature native canopy

Comparison of flora inventories 2008-2018

Table 250 Native flora species recorded in Miriam Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia decurrens</i>	Sydney Green Wattle		y
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Backhousia myrtifolia</i>	Grey Myrtle		y
<i>Bursaria spinosa</i>	Blackthorn		y
<i>Calystegia marginata</i>		y	
<i>Casuarina glauca</i>	Swamp She-Oak, Swamp Oak	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape		y
<i>Clematis glycinoides</i>	Old Man's Beard	y	y
<i>Clerodendrum tomentosum</i>	Hairy Clerodendrum		y
<i>Dichondra repens</i>	Kidney Weed		y
<i>Eucalyptus acmenioides</i>	White Mahogany	y	y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Eustrephus latifolius</i>	Wombat Berry		y
<i>Geranium homeanum</i>	Native Geranium		y
<i>Homalanthus populifolius</i>	Bleeding Heart	y	
<i>Lomandra longifolia</i>	Spiny Mat Rush	y	y
<i>Lomatia myricoides</i>	River Lomatia		y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark		
<i>Melaleuca stypheloides</i>	Prickly-leaved Paperbark		y
<i>Notolaea longifolia</i>	Mock Olive	y	y
<i>Olearia viscidula</i>	Wallaby Weed		y
<i>Ozothamnus diosmifolius</i>	Paper Daisy		y
<i>Pandorea pandorana</i>	Wonga Wonga Vine		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Podocarpus spinulosus</i>	Spiny Plum Pine		y
<i>Polyscias sambuccifolia</i>	Elderberry Panax	y	y
<i>Sigesbeckia orientalis subsp. orientalis</i>	Indian Weed	y	
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Trema tomentosa</i>	Native Peach, Poison Peach	y	y
<i>Tristaniaopsis laurina</i>	Water Gum		y
<i>Zieria smithii</i>	Sandfly Zieria		y

Table 251 Introduced flora species recorded in Miriam Park 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Agapanthus praecox subsp. orientalis</i>	Agapanthus, African Lily, Lily of the Nile		y
<i>Alstroemeria psittacina</i>	Parrot Lily	y	y
<i>Anredera cordifolia</i>	Madeira Vine	y	y

<i>Araujia sericiflora</i>	Moth Plant, Moth Vine	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern	y	y
<i>Bidens pilosa</i>	Cobbler's Pegs	y	y
<i>Celtis occidentalis</i>	Chinese Hackberry	y	
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Eucalyptus microcorys</i>	Tallow Wood	y	y
<i>Freesia leichtlinii hybrid</i>	Freesia		y
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda		y
<i>Koelreuteria elegans subsp. formosana</i>	Golden Rain Tree		y
<i>Ligustrum lucidum</i>	Broad-leaved Privet		y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Nandeeana domestica</i>	Heavenly Bamboo	y	y
<i>Narcissus pseudonarcissus</i>	Daffodil		y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Oxalis corniculata</i>	Yellow Wood Sorrel	y	y
<i>Passiflora edulis</i>	Edible Passionfruit		y
<i>Pennisetum clandestinum = Cenchrus clandestinus</i>	Kikuyu	y	y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Senna pendula var. glabrata</i>	Easter Senna	y	
<i>Sida rhombifolia</i>	Paddy's Lucerne	y	y
<i>Solanum nigrum</i>	Blackberry Nightshade	y	y
<i>Stachys arvensis</i>	Stagger		y
<i>Stenotaphrum secundatum</i>	Buffalo Grass		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y

Fauna Summary

Table 252 Fauna summary data (Miriam Park)

FAUNA	2008	2018
NATIVE	21	11
INTRODUCED	3	1

Table 253 Fauna summary data (Miriam Park)

COMMON NAME	SPECIES NAME	2008	2018
Australian Magpie	<i>Cracticus tibicen</i>	•	•
Australian Raven	<i>Corvus coronoides</i>	•	•
Australian White Ibis	<i>Threskiornis molucca</i>	•	•
Dusky Moorhen	<i>Gallinula tenebrosa</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eurasian Coot	<i>Fulica atra</i>	•	

Galah	<i>Eolophus roseicapillus</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Magpie-lark	<i>Grallina cyanoleuca</i>	•	
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>		•
Pacific Black Duck	<i>Anas superciliosa</i>	•	
Pied Currawong	<i>Strepera graculina</i>	•	•
Purple Swamphen	<i>Porphyrio porphyrio</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	•
Red Wattlebird	<i>Anthochaera carunculata</i>	•	•
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	•
INTRODUCED BIRDS			
Common Myna	<i>Sturnus tristis</i>	•	
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	•	•
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
INTRODUCED MAMMALS			
DOG		•	•

5.4.4 SYMON'S RESERVE

Vegetation summary

Table 254 Vegetation summary information

RESERVE NAME(S)	RESERVE ADDRESS(ES)		TOTAL AREA
SYMON'S RESERVE	26a Gordon Crescent, Eastwood		0.898Ha
MAPPED VEGETATION UNIT	NSW BC Act/EPBC Act	# POLYGONS	TOTAL AREAS
S_WSF01: Blue Gum High Forest	BC Act: Critically endangered EPBC Act: Critically endangered	1	0.651Ha



Figure 334 Location overview and mapped vegetation units (OEH 2016)

Flora summary

Table 255 Flora summary data 2008-2018

NATIVE SPECIES COUNT 2008	6	EXOTIC SPECIES COUNT 2008	17
NATIVE SPECIES COUNT 2018	14	EXOTIC SPECIES COUNT 2018	25
NATIVE SPECIES CONSTANT 2008-2018	5	EXOTIC SPECIES CONSTANT 2008-2018	12
NATIVE SPECIES LOST 2008-2018	1	EXOTIC SPECIES LOST 2008-2018	5
NATIVE SPECIES GAINED 2008-2018	9	EXOTIC SPECIES GAINED 2008-2018	13

Number of species

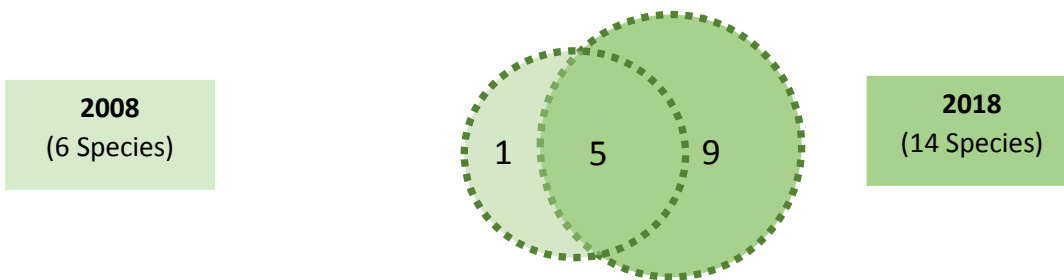


Figure 335 Comparison of native species richness from 2008 to 2018 for Symon's Park

Number of species

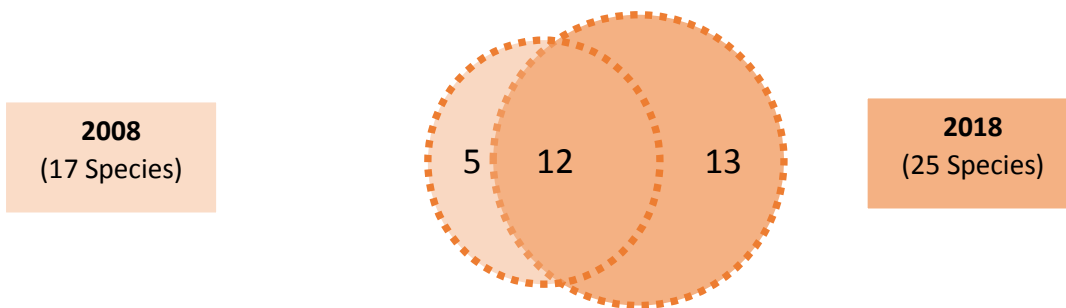


Figure 336 Comparison of exotic species richness from 2008 to 2018 for Symon's Park



Figure 337 The upper section of Symon's Reserve is very narrow



Figure 338 The main part of the reserve has grassed open space adjoining a weedy creekline



Figure 339 The gully is filled with dense and impenetrable weeds



Figure 340 Neighbouring landholders dumping their garden waste into the gully contribute to the ongoing problem

Comparison of flora inventories 2008-2018

Table 256 Native flora species recorded in Symon's Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Acacia linifolia</i>	Flax-leaved Wattle		y
<i>Angophora floribunda</i>	Rough-barked Apple	y	y
<i>Cayratia clematidea</i>	Native Grape, Slender Grape	y	
<i>Ceratopetalum gummiferum</i>	NSW Christmas Bush		y
<i>Cissus antarctica</i>	Water Vine		y
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		y
<i>Eucalyptus acmenioides</i>	White Mahogany		y
<i>Eucalyptus pilularis</i>	Blackbutt		y
<i>Eucalyptus saligna</i>	Sydney Blue Gum	y	y
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	Native Passionfruit		y
<i>Pittosporum revolutum</i>	Rough – fruit Pittosporum		y
<i>Pittosporum undulatum</i>	Sweet Pittosporum	y	y
<i>Rapanea variabilis</i> = <i>Myrsine variabilis</i>	Mutton Wood	y	y
<i>Syncarpia glomulifera</i>	Turpentine	y	y
<i>Tristaniopsis laurina</i>	Water Gum		y

Table 257 Introduced flora species recorded in Symon's Reserve 2008-2018

SPECIES NAME	COMMON NAME	2008	2018
<i>Anredera cordifolia</i>	Madeira Vine	y	y
<i>Araucaria heterophylla</i>	Norfolk Island Pine	y	y
<i>Arundo donax</i>	Giant Reed	y	y
<i>Asparagus aethiopicus</i>	Asparagus Fern		y
<i>Colocasia esculenta</i>	Purple Taro	y	
<i>Cyathea cooperi</i>	Straw Tree-fern	y	
<i>Dietes sp.</i>	Dietes		y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldtgrass	y	y
<i>Erythrina x sykesii</i>	Coral Tree		y
<i>Ficus elastica</i>	Rubber Tree	y	
<i>Hedychium gardnerianum</i>	Ginger Lily		y
<i>Impatiens sp</i>	Impatiens	y	
<i>Ipomoea indica</i>	Blue Morning Glory	y	y
<i>Jacaranda mimosoides</i>	Jacaranda	y	y
<i>Lantana camara</i>	Lantana	y	y
<i>Ligustrum lucidum</i>	Broad-leaved Privet	y	y
<i>Ligustrum sinense</i>	Small-leaved Privet	y	y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y
<i>Monstera deliciosa</i>	Fruit Salad Plant	y	y
<i>Ochna serrulata</i>	Mickey Mouse Plant		y
<i>Olea europaea subsp. cuspidata</i>	African Olive		y
<i>Pennisetum clandestinum</i> = <i>Cenchrus clandestinus</i>	Kikuyu		y
<i>Phoenix canariensis</i>	Canary Island Date Palm		y
<i>Phyllostachys aureus</i>	Golden Bamboo, Fishpole Bamboo	y	y
<i>Plantago lanceolata</i>	Plantain		y
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed		y
<i>Ricinus communis</i>	Castor Oil Plant		y
<i>Senna pendula</i> var. <i>glabrata</i>	Easter Senna	y	
<i>Taraxacum officiale</i>	Dandelion		y
<i>Tradescantia fluminensis</i> [= <i>albiflora</i>]	Trad, Wandering Jew	y	y

Fauna Summary

Table 258 Fauna summary data (Symon's Reserve)

FAUNA	2008	2018
NATIVE	21	14
INTRODUCED	2	1

Table 259 Fauna summary data (Symon's Reserve)

COMMON NAME	SPECIES NAME	2008	2018
Australian Brush-turkey	<i>Alectura lathamii</i>		•
Australian King-Parrot	<i>Alisterus scapularis</i>		•
Australian Raven	<i>Corvus coronoides</i>	•	
Australian White Ibis	<i>Threskiornis molucca</i>	•	
Eastern Koel	<i>Eudynamys orientalis</i>	•	
Eurasian Coot	<i>Fulica atra</i>	•	•
Golden Whistler	<i>Pachycephala pectoralis</i>		•
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	•	•
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>		•
Long-billed Corella	<i>Cacatua tenuirostris</i>		•
Maggie-lark	<i>Grallina cyanoleuca</i>	•	•
Masked Lapwing	<i>Vanellus miles</i>	•	
Noisy Miner	<i>Manorina melanocephala</i>		•
Pacific Black Duck	<i>Anas superciliosa</i>	•	•
Pied Currawong	<i>Strepera graculina</i>	•	•
Purple Swamphen	<i>Porphyrio porphyrio</i>	•	
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	•	
Red Wattlebird	<i>Anthochaera carunculata</i>	•	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	•	•
Welcome Swallow	<i>Hirundo neoxena</i>	•	
Willie Wagtail	<i>Rhipidura leucophrys</i>	•	
INTRODUCED BIRDS			
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	•	
REPTILES			
Dark-flecked Garden Sunskink	<i>Lampropholis delicata</i>	•	•
Eastern Water-skink	<i>Eulamprus quoyii</i>	•	
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>	•	
FROGS			
Brown-striped Frog	<i>Limnodynastes peronii</i>	•	
Common Eastern Froglet	<i>Crinia signifera</i>	•	
NATIVE MAMMALS			
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	•	
BATS			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>		•
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		•
INTRODUCED MAMMALS			
Cat	<i>Felis catus</i>	•	
Rabbit	<i>Oryctolagus cuniculus</i>		•

5.5 SUMMARY OF FLORA AND VEGETATION SURVEYS IN RESERVES

5.5.1 Summary of results: vegetation

Flora and vegetation was surveyed and ground truthed in 42 smaller bushland reserves in City of Ryde LGA. Based on current mapping available through OEH (2016), 12 vegetation communities were reported and verified in reserves during the survey, and included 4 threatened ecological communities (in bold):

Dry Sclerophyll communities

- S_DSF04: Coastal Enriched Sandstone Dry Forest
- S_DSF06: Coastal Sandstone Foreshores Forest
- S_DSF09: Coastal Sandstone Gully Forest
- S_DSF10: Hornsby Enriched Sandstone Exposed Woodland

Wet Sclerophyll communities

- **S_WSF01: Blue Gum High Forest (CEEC BC Act/EPBC Act)**
- S_WSF06: Coastal Shale-Sandstone Forest
- S_WSF08: Sydney Foreshores Shale Forest
- **S_WSF09: Sydney Turpentine-Ironbark Forest (EEC BC Act/CEEC EPBC Act)**

Estuarine communities

- S_SW01: Estuarine Mangrove Forest
- **S_SW02: Estuarine Saltmarsh (EEC BC Act/Vulnerable EPBC Act)**

Other native vegetation

- **S_FoW08: Estuarine Swamp Oak Forest (EEC BC Act/EPBC Act)**
- S_RF02: Coastal Sandstone Gallery Rainforest

And 3 categories of non-native vegetation

- Plant_n: Plantation (native and/or exotic)
- Urban_E/N: Urban Exotic/Native
- Weed_Ex: Weeds and Exotics

5.5.2 Summary of results: flora species

A total of 403 native flora species were recorded across the 42 reserves surveyed. This included 2 threatened species:

- Narrow-leaved *Wilsonia* (*Wilsonia backhousei*) recorded in two locations
- Downy Wattle (*Acacia pubescens*) recorded in one location

An additional 301 species of introduced flora were also recorded, and included 16 priority control (formerly noxious) weeds in the Greater Sydney Region. The most commonly encountered priority weeds were Blackberry, Asparagus Fern, and Lantana, all recorded in 10 or more reserves (Table 260). Other commonly encountered priority weeds in reserves in the current study were Madiera Vine and Fireweed.

Table 260 Priority weeds and the extent of their presence in bushland reserves in the current study

PRIORITY WEEDS		PRESENT IN # RESERVES	
SPECIES NAME	COMMON NAME	2018	2008
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African Olive	5	6
<i>Alternanthera philoxeroides</i>	Alligator Weed	0	0
<i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Bitou Bush	0	0
<i>Rubus fruticosus</i> aggregate species	Blackberry	11	11
<i>Asparagus asparagoides</i>	Bridal Creeper	4	2
<i>Asparagus aethiopicus</i>	Asparagus Fern, Ground Asparagus	18	11
<i>Asparagus plumosus</i> *	Climbing Asparagus	0	1
<i>Asparagus officinalis</i>	Edible Asparagus, Asparagus	2	0
<i>Genista monspessulana</i>	Cape Broom, Montpellier Broom	4	5
<i>Dolichandra [=Macfadyena] ungius-cati</i>	Cat's Claw Creeper	0	0
<i>Senecio madagascariensis</i>	Fireweed	9	4
<i>Arundo donax</i>	Giant Reed	1	2
<i>Cestrum parqui</i>	Green Cestrum	7	5
<i>Lantana camara</i>	Lantana	10	9
<i>Anredera cordifolia</i>	Madeira Vine	9	9
<i>Cortaderia selloana</i>	Pampas Grass	0	2
<i>Opuntia</i> sp.	Prickly Pear	1	0
TOTAL		80	69

* Note: *A. officinalis* was probably incorrectly identified as Climbing Asparagus (*A. plumosus*) in 2008 survey

5.6 VEGETATION IN QUADRATS

5.6.1 DENISTONE PARK QUADRAT

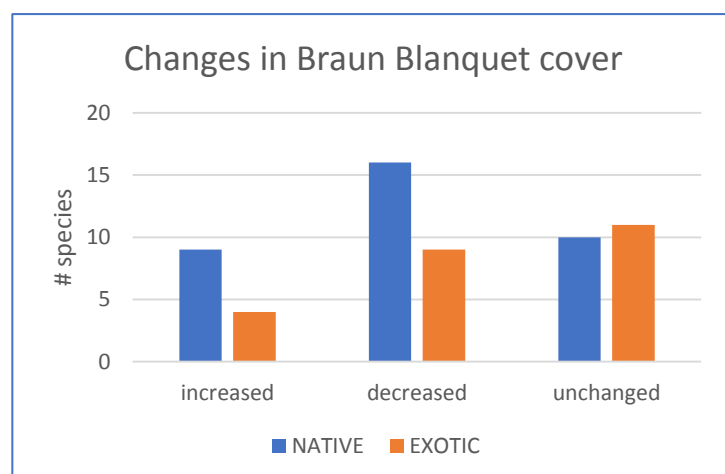
The Denistone Park quadrat was located just off Florence Avenue, Denistone. The quadrat is located on a south facing, steeply sloping part of the reserve, not far from residential properties on the western boundary of the reserve. Despite considerable effort, the corner markers were not able to be relocated in 2018, and the final location for the quadrat was informed, in part, by the suite of species present in the original survey.

SUMMARY DATA NATIVE FLORA	
# native species 2008	32
# native species 2018	25 (+3, -10)
total native species recorded	35
SUMMARY DATA WEED SPECIES	
# weed species 2008	23
# weed species 2018	19 (+1, -5)
total weed species recorded	24

Vegetation in the quadrat area has been mapped as S_WSF01: Blue Gum High Forest, and it complies with the diagnostic requirements for this community. Native diversity and weed diversity in the quadrat showed a small net decrease compared to the 2008 study.

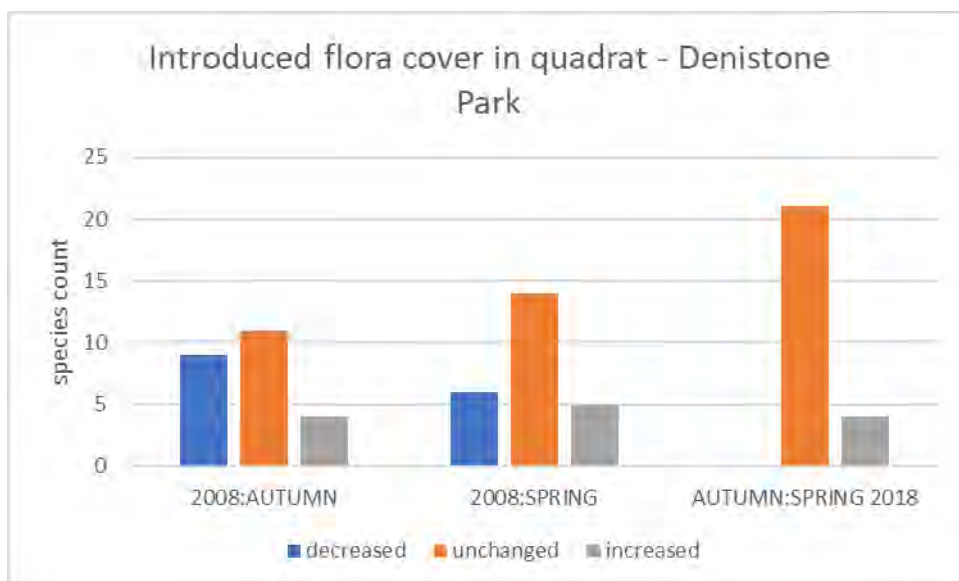
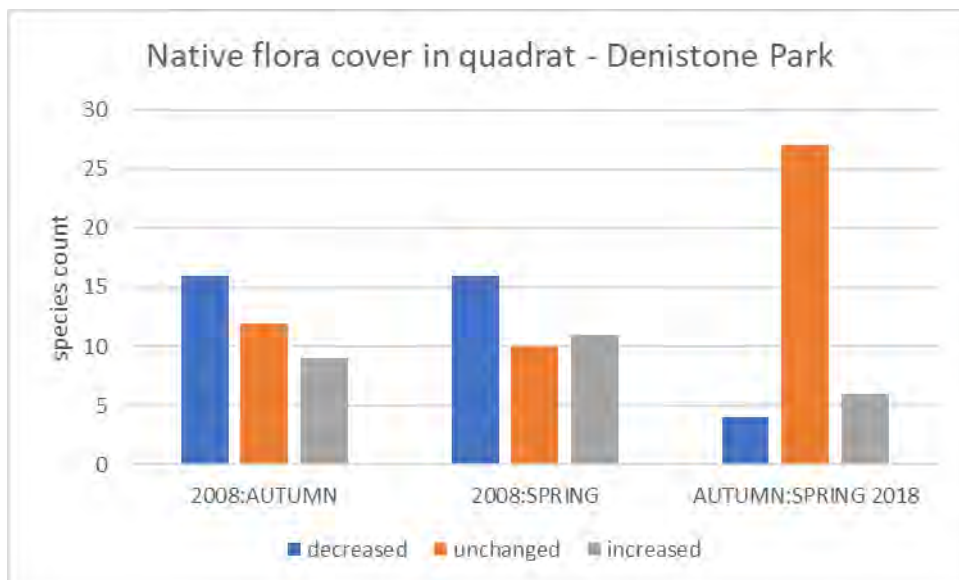
Nearly half the native species present showed a decrease in cover extent in autumn 2018 compared to 2008. This may be because of the extended drought that continued in the Sydney basin from 2017, or because of the large Brush Turkey's mound in one corner of the reserve.

Exotics/weeds were predominantly unchanged or decreased in cover extent over the same period. Introduced species were also likely to be affected by drought, and locally by the presence of the Brush Turkey's mound.



Quadrat surveys were repeated late in spring 2018 after good rain in November. In general, there was little change in species richness or cover extent between autumn and spring, except that several additional species were recorded, and several species were relocated after the rain.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES RECORDED IN 2008	32	23
NEW SPECIES IN AUTUMN 2018	3	1
NEW SPECIES IN SPRING 2018	2	1
TOTAL NEW SPECIES IN 2018	5	2
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	1	2
SPECIES IN 2008 NOT RECORDED IN 2018	8	3
SPECIES IN AUTUMN 2018	25	19
SPECIES IN SPRING 2018	28	22
TOTAL SPECIES RECORDED IN QUADRAT	37	25





Rubus parviflorus was a new species recorded in spring 2018 in the quadrat.



Echinopogon ovatus was recorded for the first time in spring 2018 in the quadrat; both these species are considered diagnostic for Blue Gum High Forest.

5.6.2 ELS HALL PARK QUADRAT

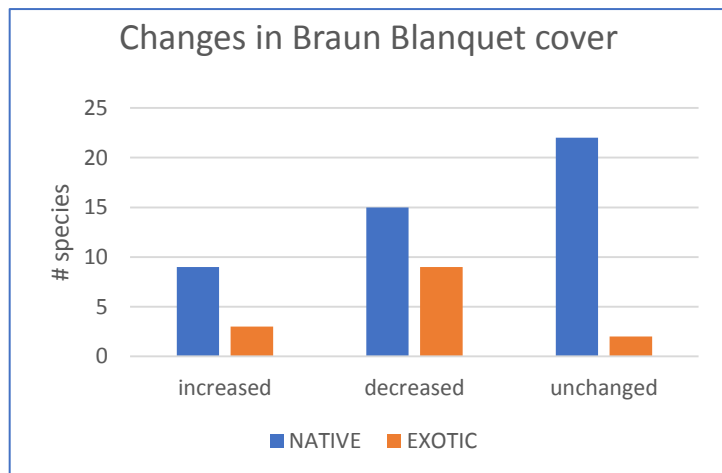
The ELS Hall Park quadrat is located in a small area of good bushland just off Scott St, Macquarie Park. The quadrat is located on an east facing, moderately sloping part of the reserve, away from the main areas used for sporting activities. One corner marker was relocated and the quadrat re-established from this point.

SUMMARY DATA NATIVE FLORA	
# native species 2008	43
# native species 2018	38 (+3, -8)
total native species recorded	46
SUMMARY DATA WEED SPECIES	
# weed species 2008	11
# weed species 2018	6 (+3, -8)
total weed species recorded	14

Vegetation in the quadrat has been mapped as S_DSFO4: Coastal Enriched Sandstone Dry Forest, and it complies with the diagnostic requirements for this community. Native diversity and weed diversity in the quadrat showed a small net decrease compared to the 2008 study.

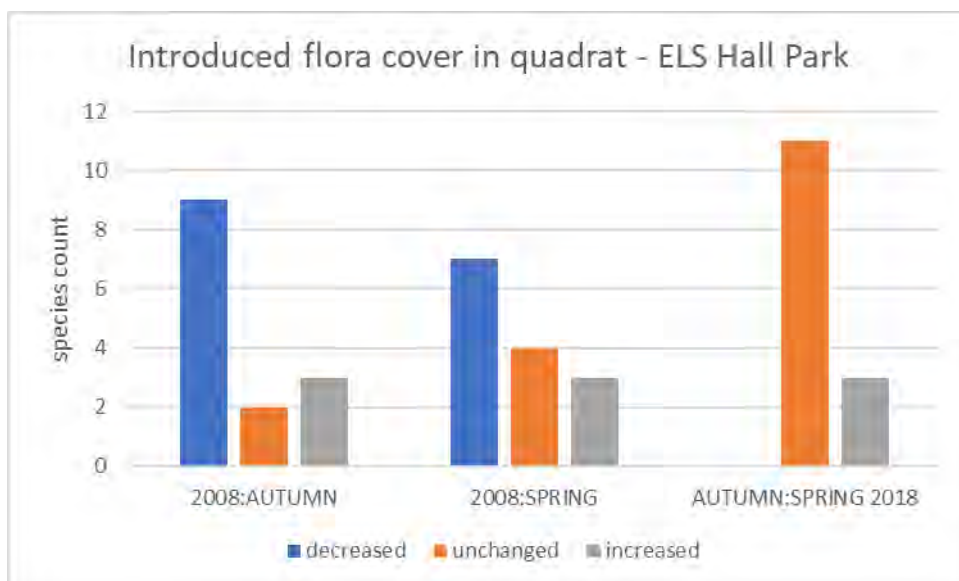
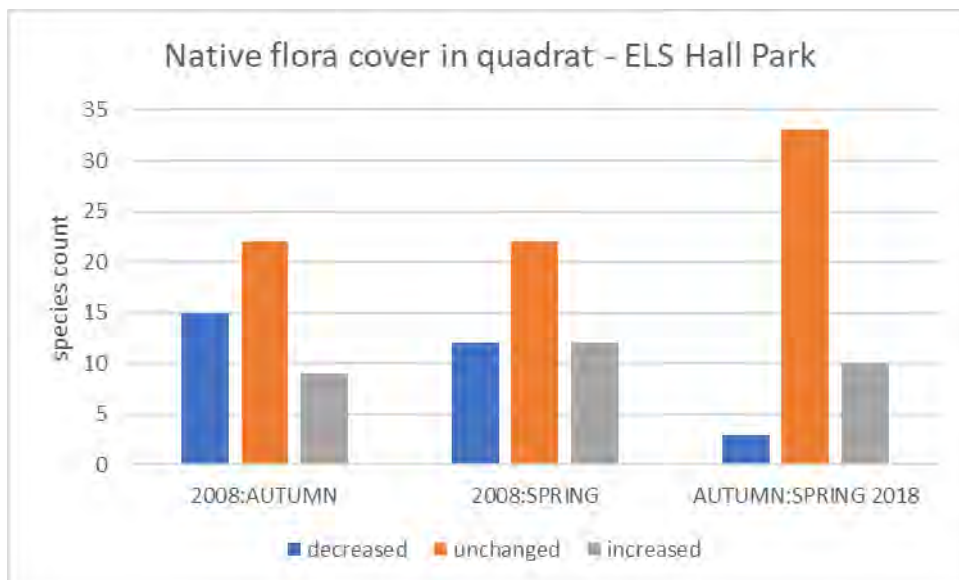
Nearly half the native species present showed no change in extent of cover within the quadrat compared to 2008. More of the remaining species showed a decrease in cover, and this is most likely attributable to the extended dry conditions.

There was a decrease in cover extent for most of the exotic/weed species recorded in the quadrat over the same period. This may have been due to a combination of bush regeneration weed control and the dry conditions which have resulted in a high level of leaf and bark litter accumulating on the site.



Quadrat surveys were repeated late in spring 2018 after good rain in November. There was little change in species richness or cover extent between autumn and spring, except that 3 native and 3 introduced species were recorded in the quadrat in spring that were absent in autumn 2018.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES IN 2008	43	11
NEW SPECIES IN AUTUMN 2018	3	3
NEW SPECIES IN SPRING 2018	0	0
TOTAL NEW SPECIES IN 2018	3	3
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	3	3
SPECIES IN 2008 NOT RECORDED IN 2018	2	5
SPECIES IN AUTUMN 2018	39	6
SPECIES IN SPRING 2018	44	9
TOTAL SPECIES RECORDED IN QUADRAT	46	14





Pomax umbellata was recorded in 2008, absent in autumn, and recorded again in spring 2018.



Goodenia hederacea subsp. *hederacea* was recorded in 2008, then not recorded in the quadrat again until spring 2018; both these species are diagnostic for Coastal Enriched Sandstone Dry Forest.

5.6.3 GLADES BAY PARK QUADRAT

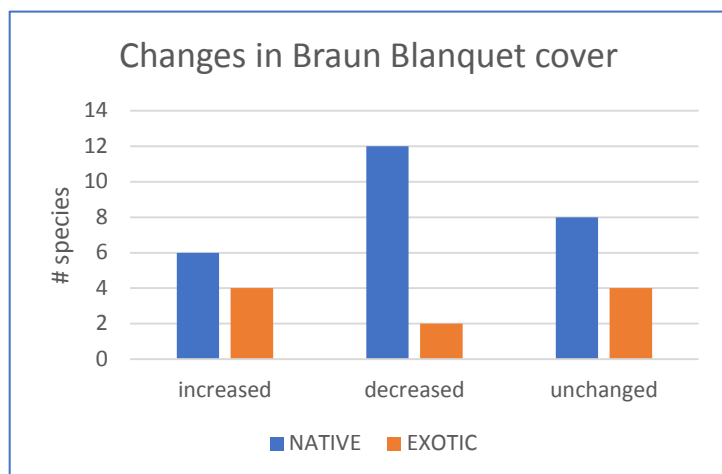
The Glades Bay Park quadrat was located near the end of Delmar Parade, Gladesville. The quadrat is located on west facing, moderately steep slope overlooking the Parramatta River, not far from residential properties on the southern reserve of the boundary. One corner marker was relocated, and the quadrat re-established from that point.

SUMMARY DATA NATIVE FLORA	
# native species 2008	24
# native species 2018	24 (+2, -2)
total native species recorded	26
SUMMARY DATA WEED SPECIES	
# weed species 2008	7
# weed species 2018	9 (+3, -1)
total weed species recorded	10

Vegetation in the quadrat has been mapped as S_DSF06: Coastal Sandstone Foreshores Forest, and it complies with the diagnostic requirements for this community. Native diversity and weed diversity showed a small net increase when compared with the 2008 survey.

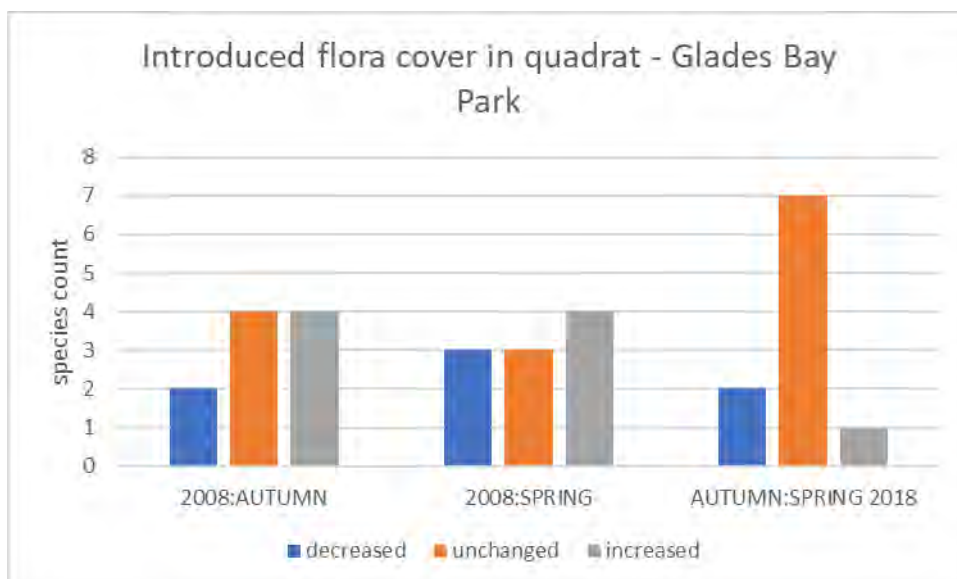
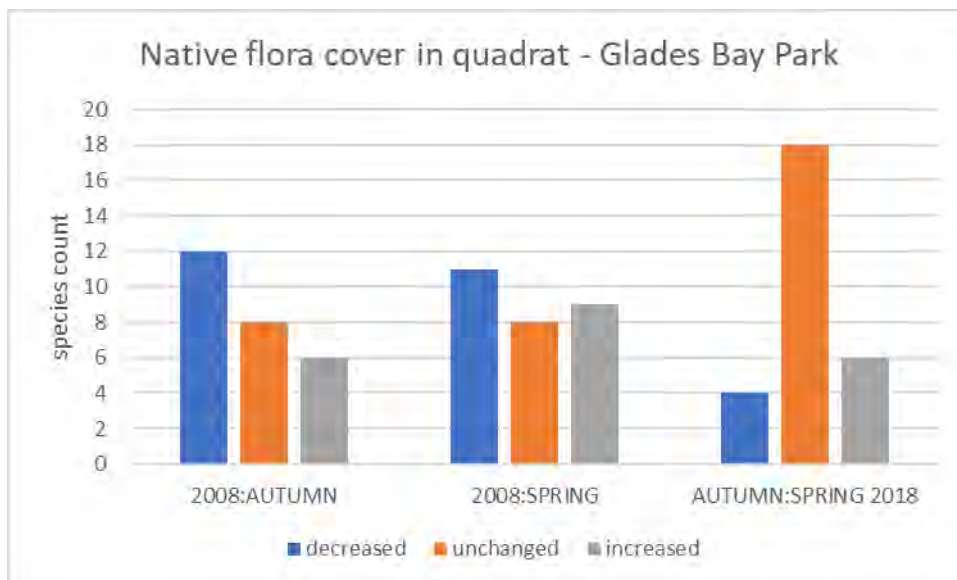
Nearly half the native species present showed a decrease in cover extent compared to 2008. This may be because of the extended dry period, with possible impacts from rabbit grazing and/or Brush Turkey foraging activity.

Exotics/weeds had increased or unchanged cover extent over the same period. The quadrat is located in a better part of this reserve, evidenced by the low number of weed species present, and bush regeneration has been focused on other parts of the reserve. This may have contributed to the perceived increase in weed cover.



Quadrat surveys were repeated late in spring 2018 after good rain in November. In general, there was little change or an increase in native cover and decrease in exotic species cover extent between autumn and spring, while several 'new' native flora species were recorded in spring 2018.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES IN 2008	24	7
NEW SPECIES IN AUTUMN 2018	2	3
NEW SPECIES IN SPRING 2018	2	0
TOTAL NEW SPECIES IN 2018	4	3
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	0	0
SPECIES IN 2008 NOT RECORDED IN 2018	2	1
SPECIES IN AUTUMN 2018	24	9
SPECIES IN SPRING 2018	26	8
TOTAL SPECIES RECORDED IN QUADRAT	28	10





There was an increase in cover extent for native flora species, and a decrease in cover for introduced species in the quadrat following good rain in late spring.



Commelina cyanea was recorded in the quadrat for the first time in spring 2018 and is a diagnostic species for Coastal Sandstone Foreshores Forest.

5.6.4 KOBADA PARK QUADRAT

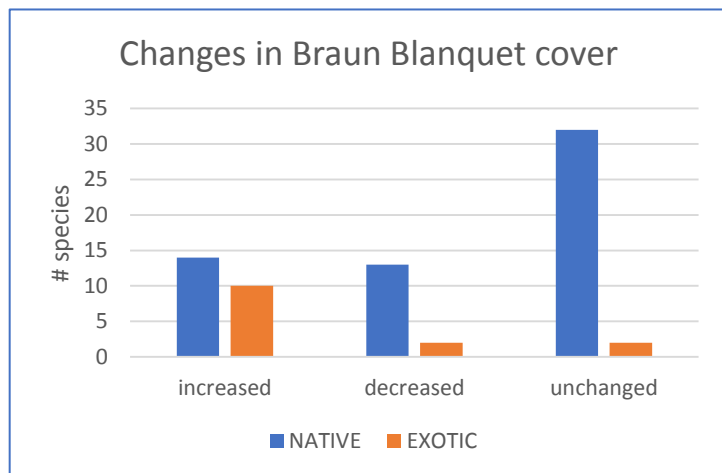
The Kobada Park is located just off Quebec Road, Chatswood West. It is located on a fairly flat section of the park, immediately below the Northern Suburbs Crematorium. Two corner markers were located, and one of the others would be located under a relatively new retaining wall built along the back boundary of the crematorium. Thus there has been some disturbance to the quadrat and the included vegetation.

SUMMARY DATA NATIVE FLORA	
# native species 2008	51
# native species 2018	50 (+8, -9)
total native species recorded	59
SUMMARY DATA WEED SPECIES	
# weed species 2008	5
# weed species 2018	13 (+9, -1)
total weed species recorded	14

Vegetation in the quadrat has been mapped as S_DSFO4: Coastal Enriched Sandstone Dry Forest, and it complies with the diagnostic requirements for this community. Native diversity was effectively the same from 2008 to 2018, although there was a species turnover of around 15-20% within the quadrat. In contrast, there was an increase in weed diversity compared to the previous survey.

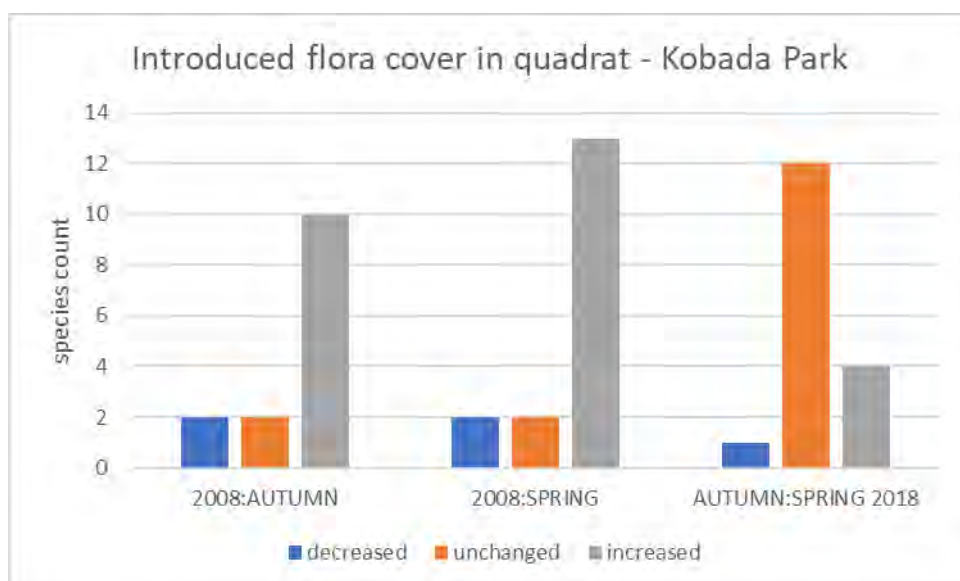
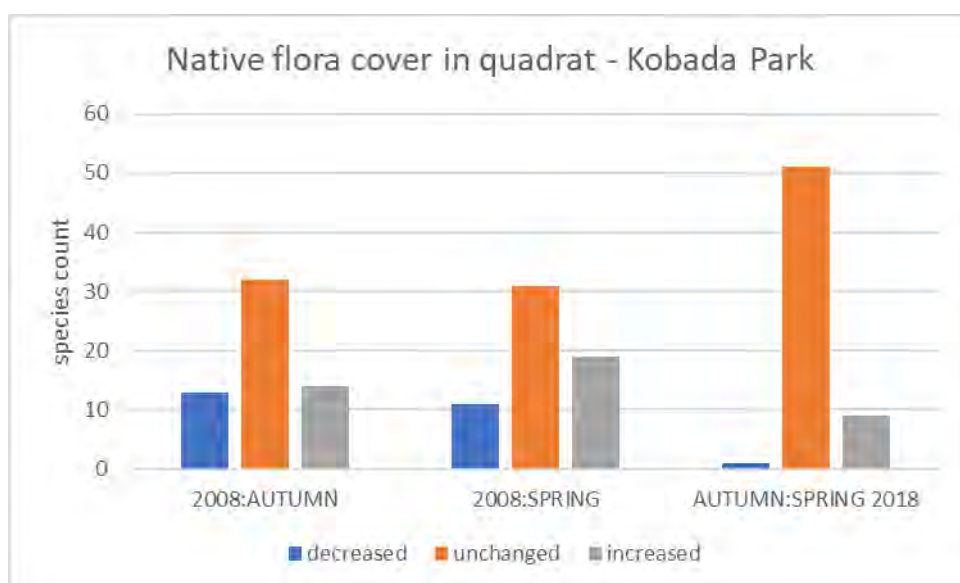
Nearly half the native species present had their cover extent unchanged when compared to the 2008 survey, despite the impacts on vegetation in the quadrat.

Exotics/weeds had their cover extent increased for most species recorded. This is largely attributable to the 9 new species recorded, and could be linked with soil chemistry and water changes following construction of the retaining wall.



Quadrat surveys were repeated late in spring 2018 after good rain in November. In general, there was little change in species richness or cover extent between autumn and spring, although several additional species were recorded, and several native species were relocated after the rain.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES IN 2008	51	5
NEW SPECIES IN AUTUMN 2018	6	8
NEW SPECIES IN SPRING 2018	2	3
TOTAL NEW SPECIES IN 2018	8	11
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	3	0
SPECIES IN 2008 NOT RECORDED IN 2018	6	1
SPECIES IN AUTUMN 2018	50	13
SPECIES IN SPRING 2018	55	16
TOTAL SPECIES RECORDED IN QUADRAT	61	17





Several patches of *Cryptostylis* orchid leaves were noted in late spring, 'returned' since 2008.



Lindsaea linearis was located in 2008 but not recorded again until spring 2018, and *Velleia lyrata* was recorded in spring 2018 but not previously reported in the quadrat.

5.6.5 MARSFIELD PARK QUADRAT

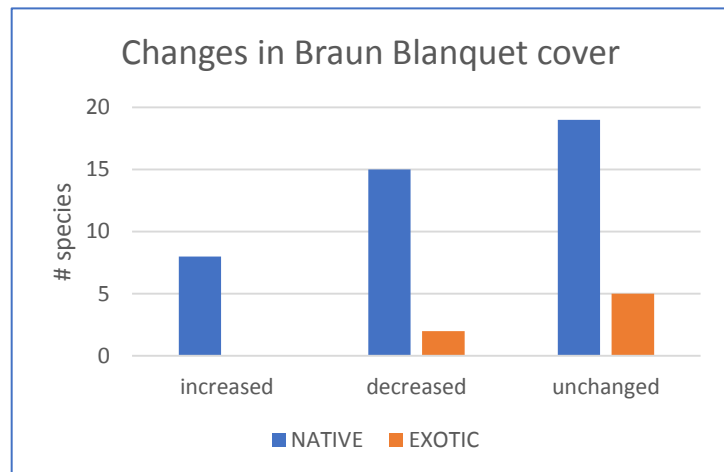
The Marsfield Park quadrat is located almost at the centre of the reserve. It is located on a northwest facing, gently sloping site, draining almost immediately to an unnamed drainage line that connects to Lane Cove River. Several corner markers were relocated and the quadrat was readily recreated from these fixed points.

SUMMARY DATA NATIVE FLORA	
# native species 2008	42
# native species 2018	34 (+0, -8)
total native species recorded	42
SUMMARY DATA WEED SPECIES	
# weed species 2008	7
# weed species 2018	5 (+0, -2)
total weed species recorded	7

Vegetation in the quadrat area has been mapped as S_WSF09: Sydney Turpentine-Ironbark Forest, and it complies with the diagnostic requirements for this community. Native diversity within the quadrat was notably reduced from 2008 to 2018. In contrast, there was a minor reduction in weed species richness over the same period.

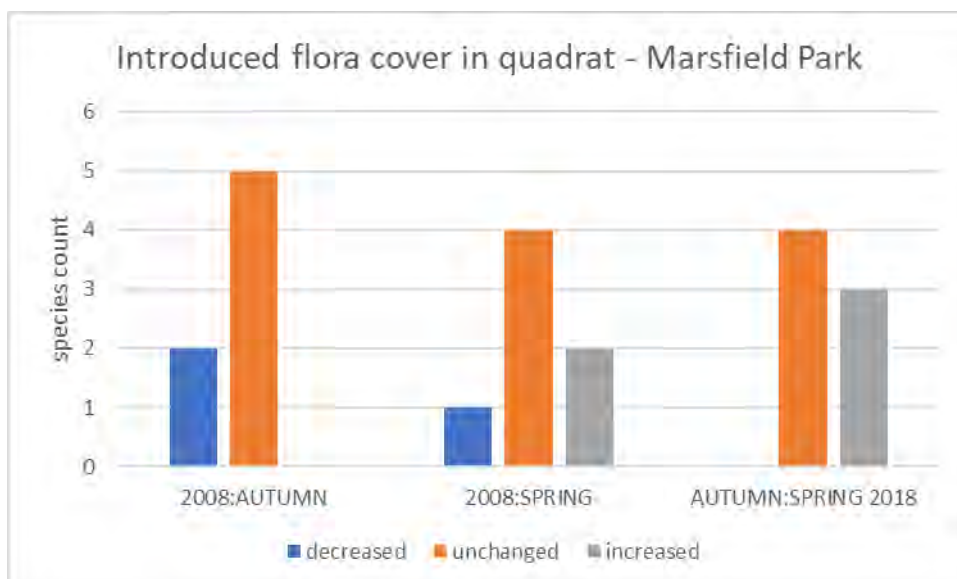
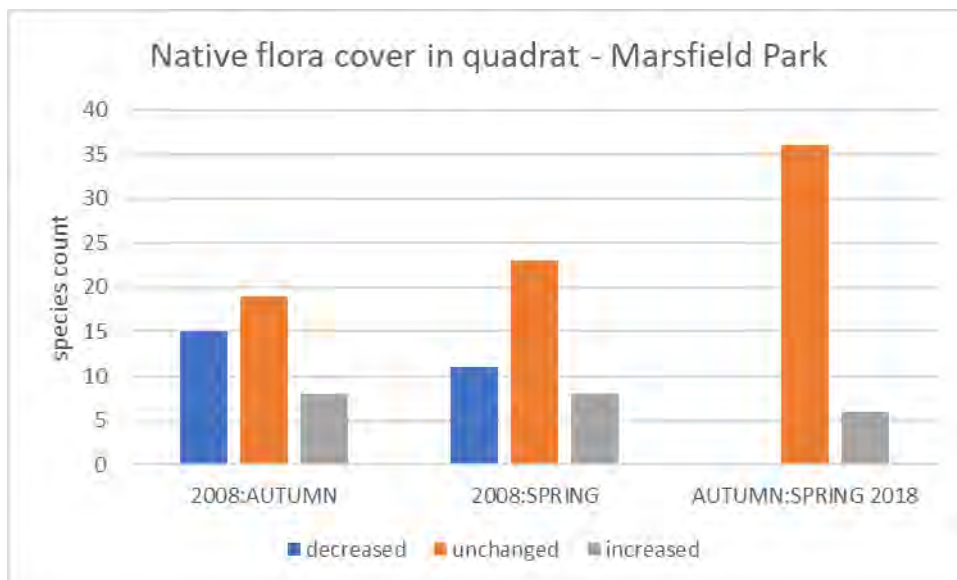
More native species had no real change in their cover extent from 2008 to 2018, and many of the others showed a decreased cover extent. Like many of the other reserves, this park has also been affected by the extended dry conditions, although possibly to a lesser degree.

Exotics/weeds also had unchanged or decreased cover extent over the same period. There has been recent bush regeneration nearby in the reserve, and this could have contributed to observed change in weed cover in the quadrat.



Quadrat surveys were repeated late in spring 2018 after good rain in November. In general, there were fewer species present in 2018, although several native and introduced species were relocated after the rain. There was little change in cover extent for native flora but an increase for weed cover.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES IN 2008	42	7
NEW SPECIES IN AUTUMN 2018	0	0
NEW SPECIES IN SPRING 2018	0	0
TOTAL NEW SPECIES IN 2018	0	0
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	3	1
SPECIES IN 2008 NOT RECORDED IN 2018	5	1
SPECIES IN AUTUMN 2018	34	5
SPECIES IN SPRING 2018	37	6
TOTAL SPECIES RECORDED IN QUADRAT	42	7





There were fewer native and introduced species recorded in either of the 2018 quadrat surveys, and there were no additional species recorded in either survey.



Cover was unchanged for native flora but increased for introduced species from autumn to spring.

5.6.6 TASMAN PARK QUADRAT

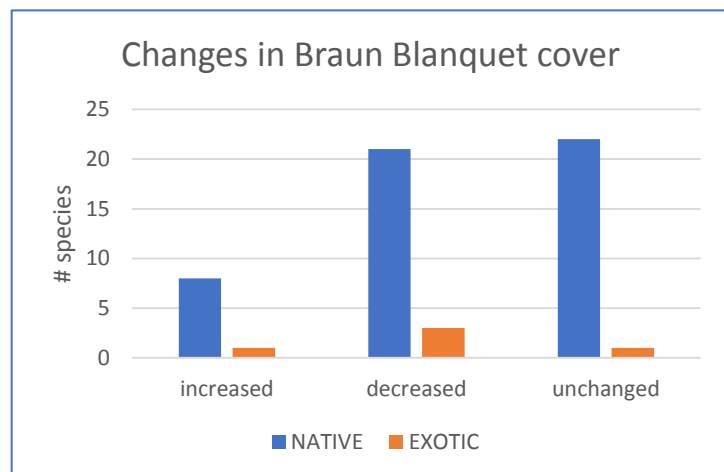
The Tasman Park quadrat is located near the end of Tasman Place, Macquarie Park. The quadrat is on a flat area between apartment buildings and the M2 Motorway towards the western end of the reserve. Several corner markers were located and the rest of the quadrat was readily re-established from these points.

SUMMARY DATA NATIVE FLORA	
# native species 2008	51
# native species 2018	39 (+0, -12)
total native species recorded	51
SUMMARY DATA WEED SPECIES	
# weed species 2008	4
# weed species 2018	2 (+1, -3)
total weed species recorded	5

Vegetation in the quadrat area has been mapped as S_WSF06: Coastal Shale-Sandstone Forest, and it complies with the diagnostic requirements for this community. There was a notable reduction of 20-25% in native species richness in this quadrat between 2008 and 2018. In contrast there was little net change in weed species diversity in the quadrat.

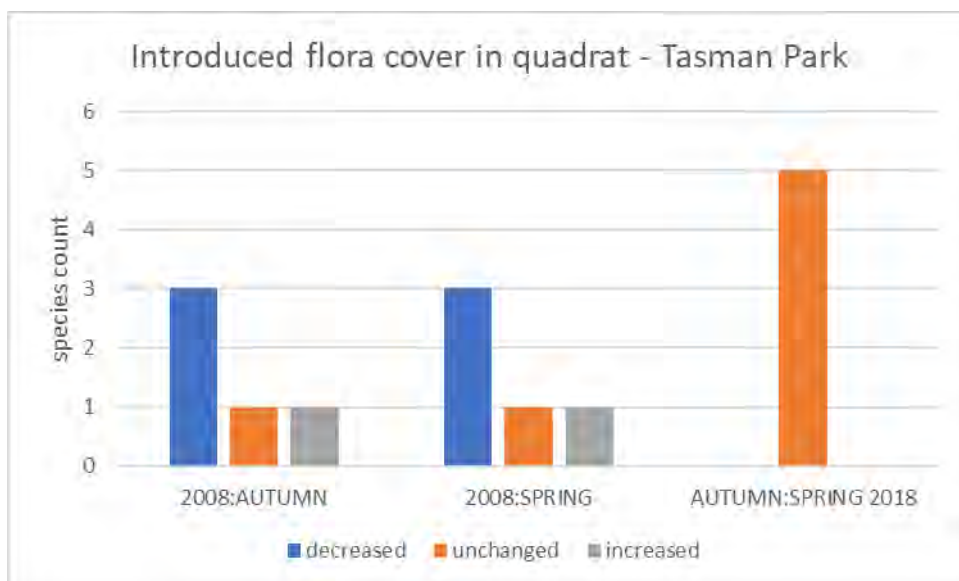
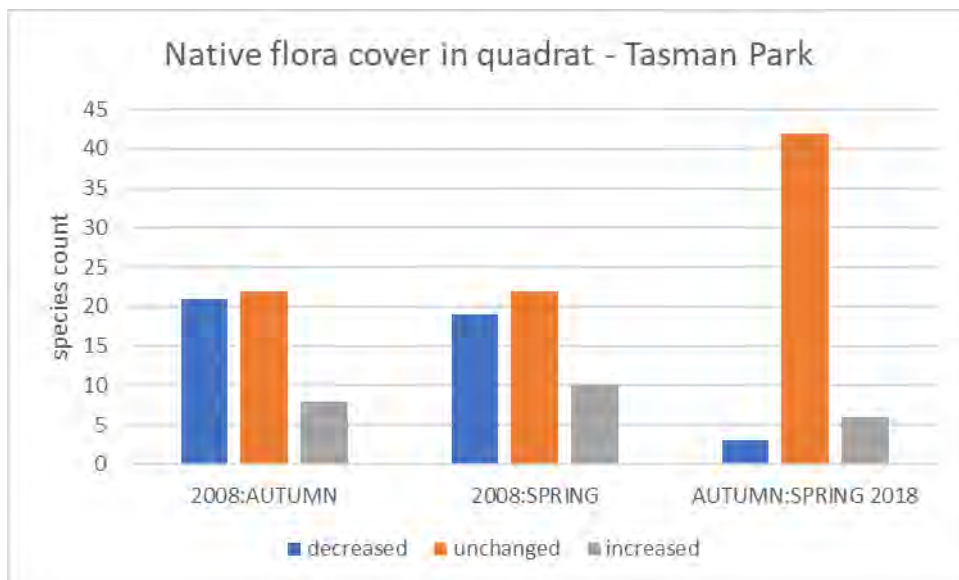
Most of the native species present had decreased or unchanged cover extent from 2008 to 2018. A large part of this can be attributed to the loss of 12 native species from the quadrat. Other influences could be the recent extended dry period, or possibly a localised extinction debt from the construction of the M2 motorway which turned Tasman Park into a narrow, overshadowed strip of bushland.

Exotics/weeds had decreased cover extent for more species, which could be due to drought or bush regeneration weed control.



Quadrat surveys were repeated late in spring 2018 after good rain in November. In general, there was little change in species richness or cover extent between autumn and spring, although several native species were relocated after the rain.

SUMMARY DATA: SPECIES RICHNESS	NATIVE FLORA	INTRODUCED FLORA
SPECIES IN 2008	51	4
NEW SPECIES IN AUTUMN 2018	0	1
NEW SPECIES IN SPRING 2018	0	0
TOTAL NEW SPECIES IN 2018	0	1
SPECIES ABSENT AUTUMN, RETURNED IN SPRING	5	0
SPECIES IN 2008 NOT RECORDED IN 2018	7	3
SPECIES IN AUTUMN 2018	39	2
SPECIES IN SPRING 2018	44	2
TOTAL SPECIES RECORDED IN QUADRAT	51	5





Brunoniella pumilio was recorded in 2008, but not seen again until spring 2018.



Goodenia hederacea subsp. *hederacea* and *Lomandra obliqua* were reported from 2008 but not recorded again in the quadrat until spring 2018, both diagnostic for Coastal Shale-Sandstone Forest.



Several individuals of *Cryptostylis erecta* were seen flowering in the quadrat in Tasman Park – seen on 4th December for the first time in the entire survey period!

6 DISCUSSION OF FLORA AND VEGETATION RESULTS

6.1 MECHANISMS FOR SPECIES TURNOVER

Like all the biological systems, plant communities are temporally and spatially dynamic; they change at all possible scales. Dynamism in vegetation is defined primarily as changes in species composition and/or vegetation structure. Temporally, a large number of processes or events can cause change, but for sake of simplicity they can be categorized roughly as either abrupt or gradual. Abrupt changes are generally major disturbances, and are often catastrophic and usually arise from an external origin. These can range from floods and fire to extreme wind and weather conditions, landslides and so on, and are natural processes that generally occur independently of the natural processes of the community, such as germination, growth, death, etc. Such events can change vegetation structure and composition very quickly and for long time periods, and they can do so over large areas.

Very few ecosystems are without some type of disturbance as a regular and recurring part of the long term system dynamic. In smaller bushland patches such as those in the current study, however, fire is typically excluded, flooding is infrequent and often unlikely, and the effects of extreme weather events often unremarkable. The most likely factors influencing the observed patterns of species turnover for reserves in this study are described in the following sections.

6.1.1 Changes in native flora species diversity

Changes in recorded native flora species richness can be attributed to a number of factors:

- Increased survey effort – a more diligent survey may find additional species
- Changes in survey extent – surveying a larger area may result in more species being recorded
- Seasonal variation – some species are more readily observed or identified during some seasons, usually spring and/or summer, while others are only present above ground for part of their life histories, such as many native orchids.
- Revegetation planting – will increase species richness if new species are among those planted in a reserve
- Immigration from nearby bushland – these species are the most likely to belong in the extant vegetation community, and most likely to grow and thrive; however, with the increasing pressures from urbanisation on smaller and more isolated reserves this is becoming less likely to occur

Not all changes will be increased diversity, although this was common for the current study. For example, if revegetation species are not suited for the local vegetation community they may not establish and survive well. If there are not sufficient numbers of a given species, for example, only planted in low numbers in the revegetation, there is not the right plant density for successful fertilisation, or the right pollinator may not be present, or the right conditions for germination and/or young seedling survival may not be present. This highlights the difference between supplementing species that are already present – or could be present – on site, and planting of species that are found in the LGA but do not belong in the particular location. Seedlings may survive with ongoing maintenance after planting, but this does not guarantee the ongoing persistence of the species on a long-term basis. Many shrubs and groundcovers are relatively short-lived, and may have died out in the particular reserve, hence they are counted as a loss.

6.1.2 Changes in weed species diversity

Changes in recorded native flora species richness can be attributed to a number of factors:

- Change in survey extent or effort – a more diligent survey may find additional species, while surveying a larger area may result in more species being recorded
- Bush regeneration weed control – this will reduce the density of weed species but may not completely remove a species from a given site; however, removing weeds creates conditions that favour the establishment and growth of native flora, which in turn competes with and excludes weeds from establishing on a site. Followup weed control is vitally important if the process is to be effective.
- Invasion from elsewhere – new weeds are entering the district and being moved around on an ongoing basis. Movement of machinery is the single most significant factor in the increasingly mobile weed problem – weed propagules become attached to machinery, often in clods of dirt and ready for “planting” at their point of dislodgement. Maintaining good machinery hygiene is the best way to minimise the potential for weed transfer. Other common methods of spread are wind and water, depending on the species.
- Seasonal variation – like native flora, some weed species are more evident at different times of year and at different stages in their life history

For most of the reserves in this survey there was an increase in weed diversity. An understanding of each species is required before management will be even partly successful. Mechanisms of spread can be used to identify potential locations for new infestations before they become overwhelming. Knowledge of the fecundity and seed viability will help inform the nature and extent of ongoing weed control required for a given species. Understanding competition between weed species will help prevent one species being replaced with several more.

Perhaps the most commonly overlooked factor in weed management is that external factors will continue to promote weeds over native flora. Changes in soil chemistry, stormwater quality and quantity, and surrounding land use will all tend to favour weeds over natives. Management of these needs to occur at a larger scale and outside the reserve. In reality, the changes may be of such an extent that re-establishing the original vegetation community may not realistically be achievable.

6.2 SUMMARY OF VEGETATION CHANGES OVER TIME

The following sections describe the vegetation changes observed between the 2008 survey and the autumn and spring 2018 surveys. Results from autumn and spring surveys in 2018 were consolidated into a single set of species lists for each reserve to enable comparison with the species inventory from 2008. Where possible, the most likely mechanisms were identified for the observed changes in species present in each reserve grouping.

6.2.1 Parramatta River Foreshore Reserves

In general, more native species were recorded in most reserves surveyed along Parramatta River foreshore (Figure 341). Exceptions to this were Glades Bay Park, Kissing Point Park, and Settlers Park. Much of this observed increase in species richness could be attributed to revegetation planting, while some is probably a result of existing species germinating as conditions become favourable.

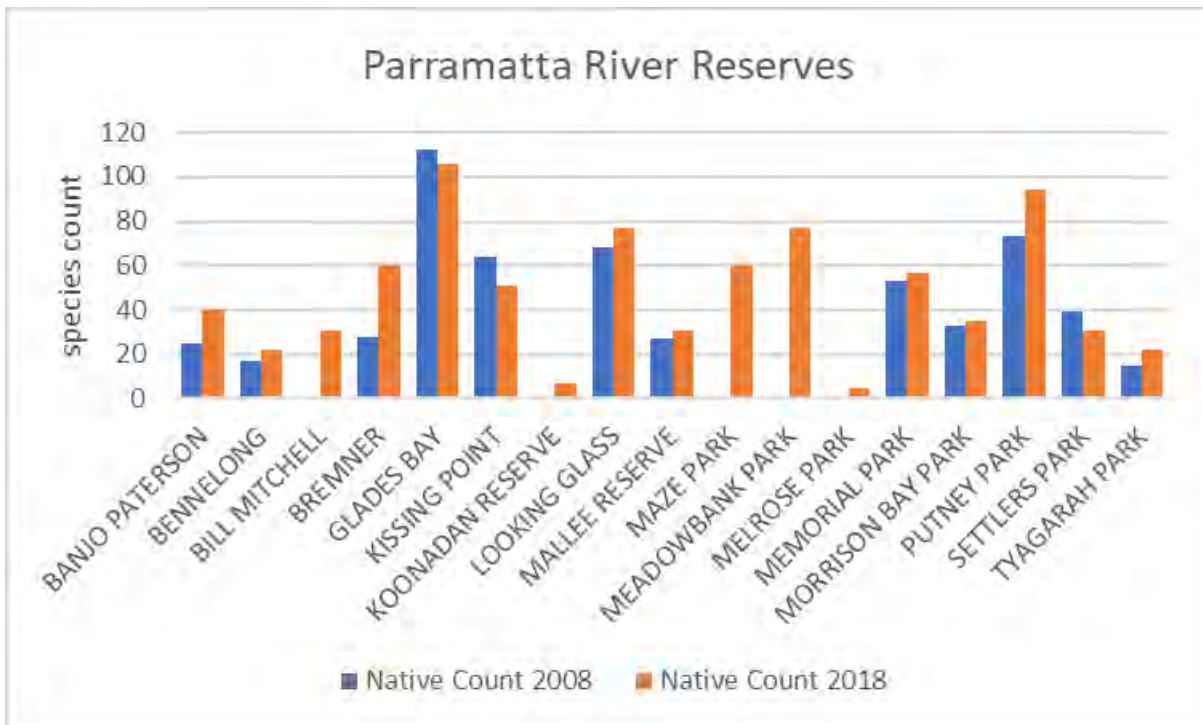


Figure 341 Summary of native flora species richness for reserves along Parramatta River

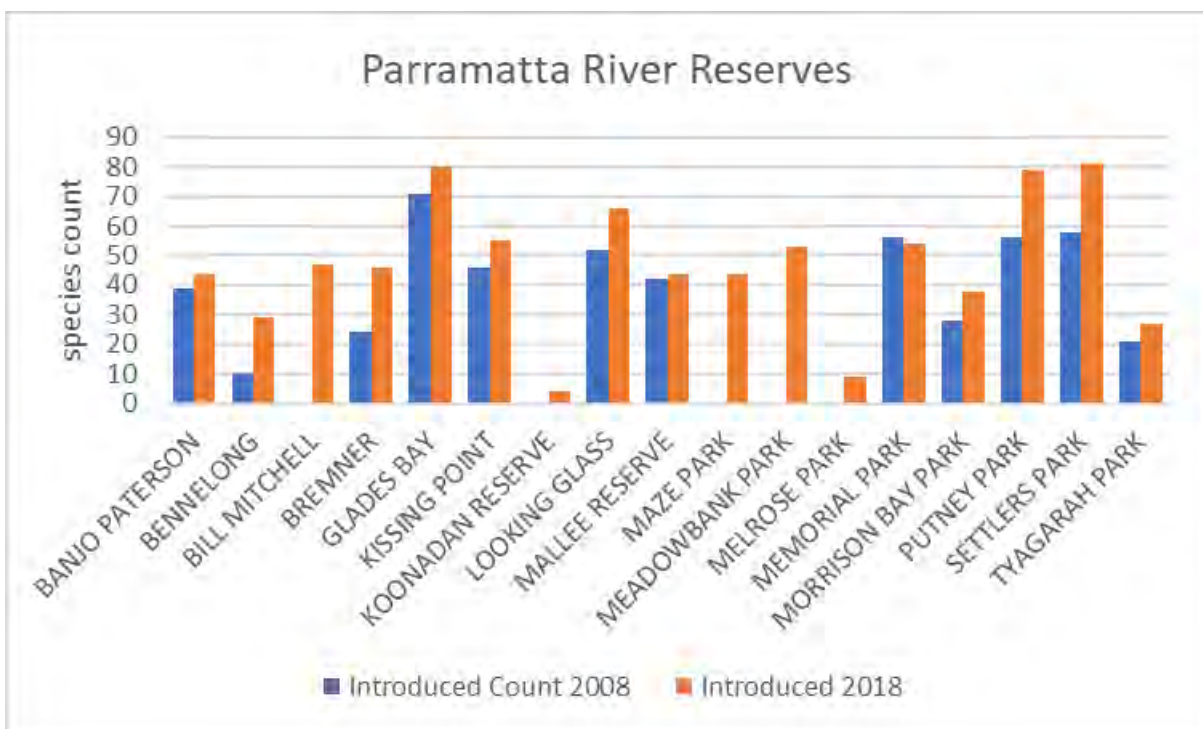


Figure 342 Summary of introduced flora species richness for reserves along Parramatta River

A similar pattern of increased species diversity was observed for introduced species in reserves along Parramatta River (Figure 342), with the sole exception of Memorial Park. Over the last 10 years there has been increasing pressure on bushland and other reserves from surrounding development, leading to conditions that can favour introduced/weed species over native species. At the same time, an increase in the general mobility of people, vehicles and machinery has undoubtedly led to

an increase in mechanisms for transfer of propagules, and this is the most likely explanation for the increase in weed species in these reserves.

There was a level of species turnover in each reserve that had been surveyed previously (Figure 343). Losses in species were greatest in Glades Bay Park, Kissing Point Park, Putney Park, and Settlers Park. For several of these reserves, gains were greater than losses, including Looking Glass Bay Park, Bremner Park and Putney Park. Much of this can be attributed to revegetation planting – both the observed gains and the losses due to unsuitable species selection for revegetation planting.

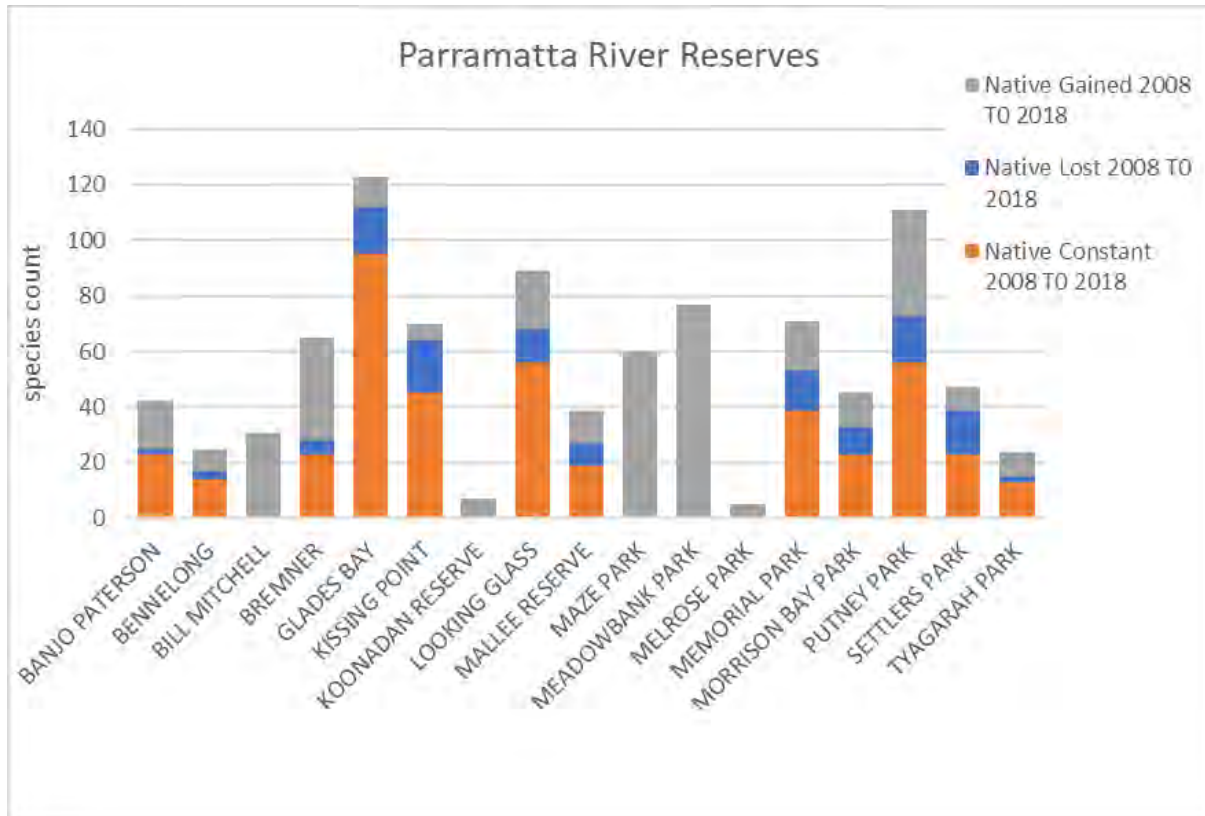


Figure 343 Summary of native species turnover (gains and losses vs constants) in Parramatta River reserves 2008-2018

6.2.2 Western Reserves

This was the smallest group of reserves surveyed, and generally had lower species richness in reserves, with the exception of Denistone Park. There was an increase in native flora diversity in every reserve except Denistone Park, although supplementary planting was undertaken throughout.



Figure 344 Summary of (left) native, and (right) introduced flora species richness for reserves in the Western group



Figure 345 Supplementary planting was common in Western reserves, including at the lower end of the gully in Denistone Park

A similar increase in weed diversity was reported for all reserves in this group. Many of the reserves are small and therefore more vulnerable to weed invasion, while Denistone Park has ongoing degrading impacts from mountain bikers, and potentially bringing weeds in mud on their tyres.

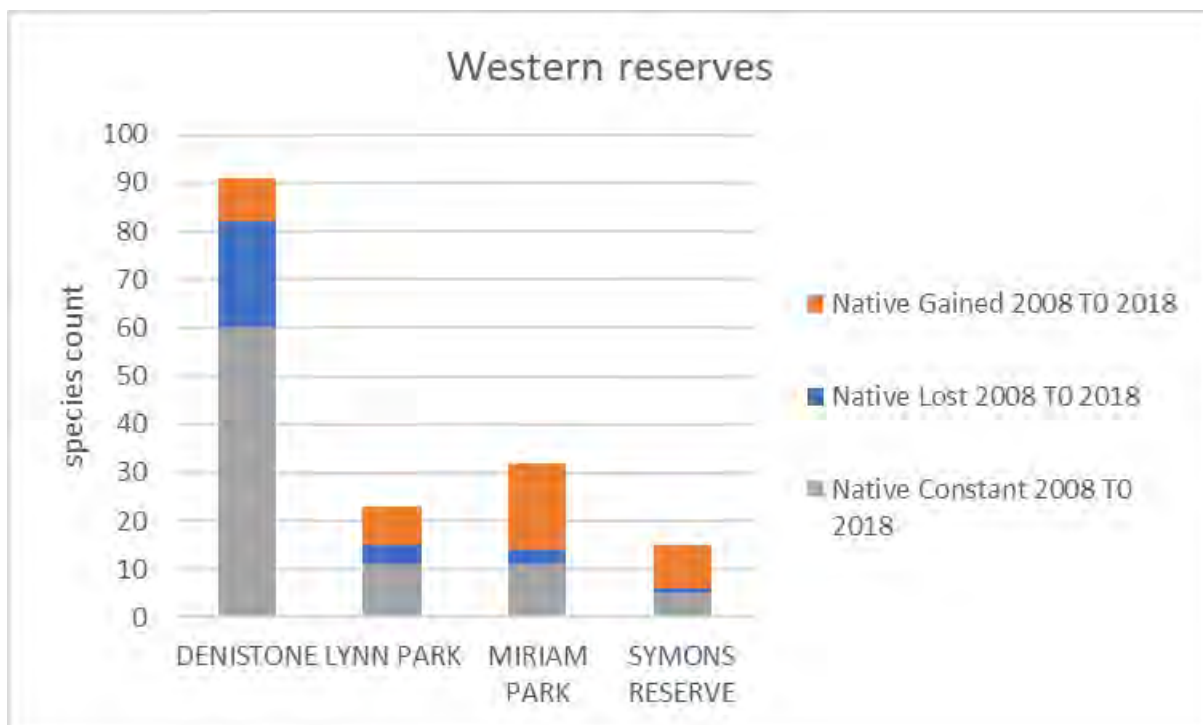


Figure 346 Summary of native species turnover (gains and losses vs constants) in Western reserves 2008-2018

More native flora species were lost than gained from Denistone Park, possibly as a result of the extended dry weather, in which case they will regenerate when conditions improve – unless, of course, they are smothered by weeds or a downhill mountain bike track. The other reserves all recorded larger gains than losses, most likely due to supplementary planting.

6.2.3 Northern Reserves

Increased native flora diversity was reported from several reserves in this group, including Boobajool Reserve and Kobada Park (increased extent?), and Waterloo Park and Yurrah Reserve (revegetation planting?). Decreases in native flora diversity could be a result of extended dry weather and competition from weeds.

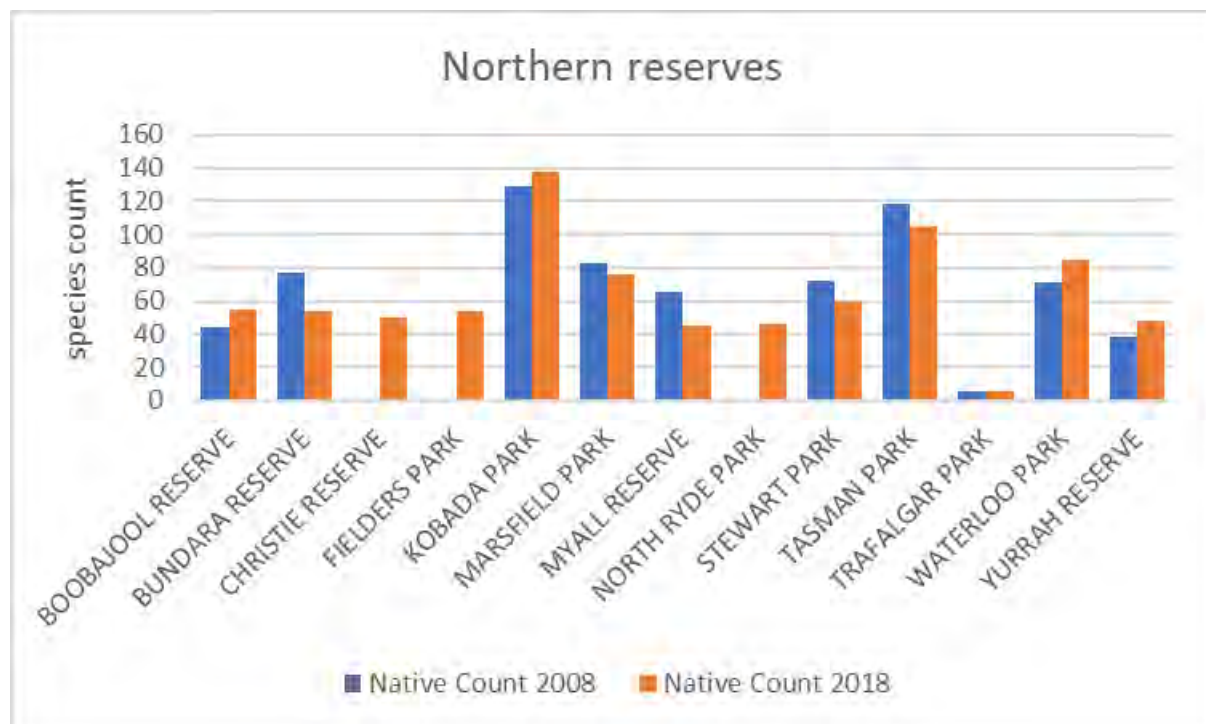


Figure 347 Summary of native flora species richness for reserves in the Northern group

Increases in weed diversity were reported from every reserve in this group, except for Myall Reserve, where extensive bush regeneration is underway. In other parts of Myall Reserve there is dense stands of weeds dominated by privets and Lantana, and these may be suppressing other weed species. Notable among the other reserves was Boobajool Reserve, which had a nearly threefold increase in weed species recorded between 2008 and 2018. This could be simply due to an increase in the extent of the survey area. This was a difficult reserve to locate the boundaries, and these may have been differently interpreted in 2008 compared to the current survey. From all appearances, the reserve includes around half of the oval attached to the back of North Ryde RSL Club, and many of the additional weed species were located in this area.

Losses of native flora were greater than gains for Bundara Reserve, Marsfield Park, Myall Reserve and Tasman Park. This could be the result of the extended dry weather combined with an absence of supplementary planting, although in many cases it appears that there has been development of large areas of weed infestations over the 10 year inter-survey period. For the other reserves, where gains were greater than losses this could be attributed to increased survey extent and/or supplementary planting.

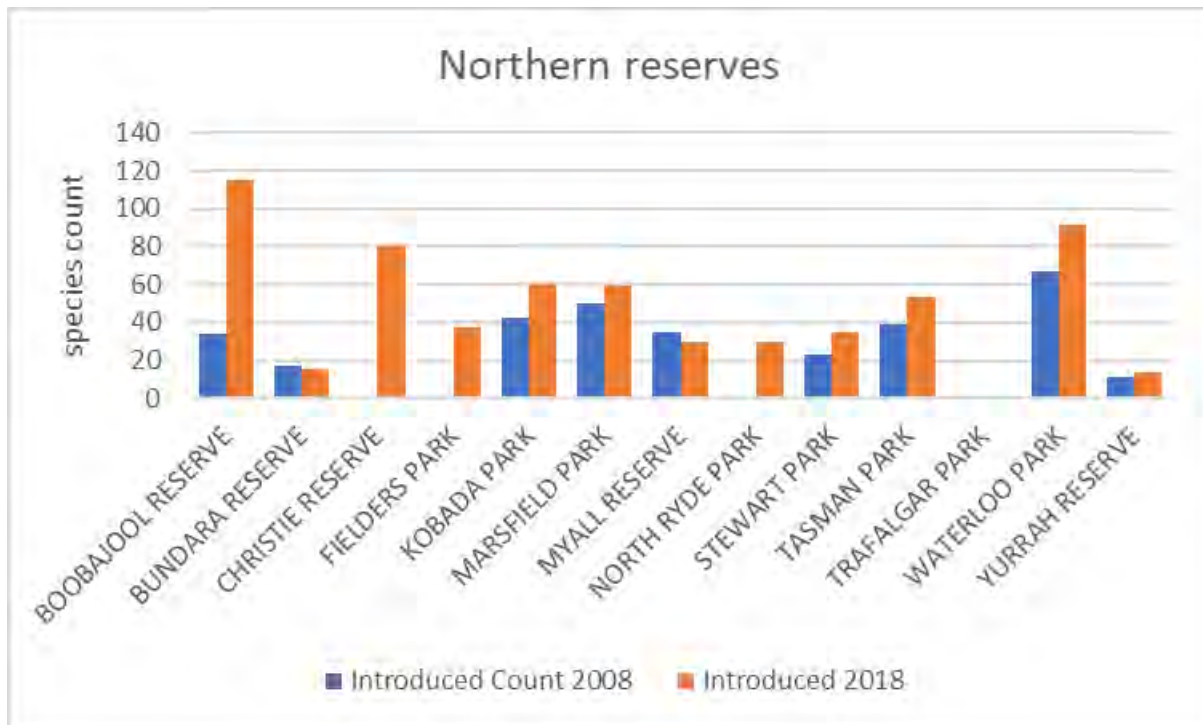


Figure 348 Summary of introduced flora species richness for reserves in the Northern group

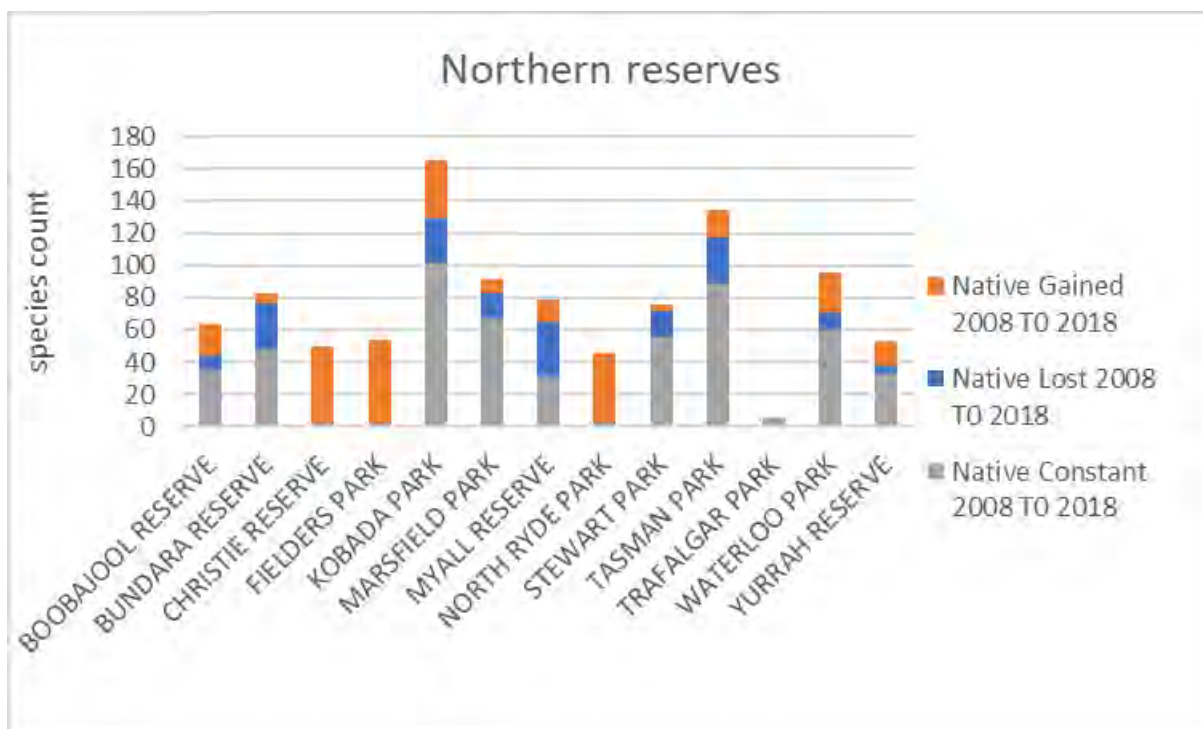


Figure 349 Summary of native species turnover (gains and losses vs constants) in Northern reserves 2008-2018

6.2.4 Shrimptons Creek Reserves

Shrimptons Creek reserves are largely within a narrow linear corridor along the creek. In most cases there was an increase in native flora diversity, with the exception of ELS Hall Park. ELS Hall Park is the largest park with the most intact bushland, even though it is spread around several sports ovals and other facilities. Ongoing bushland management activities include weed control, and supplementary planting is largely limited to species that belong in the community, thereby adding

little to the species inventory. The extended dry period saw a number of small herbs not recorded in the 2018 surveys, leading to the small reduction in diversity reported for this reserve. For all the other reserves, extensive weed control and supplementary planting have added to the species richness observed.

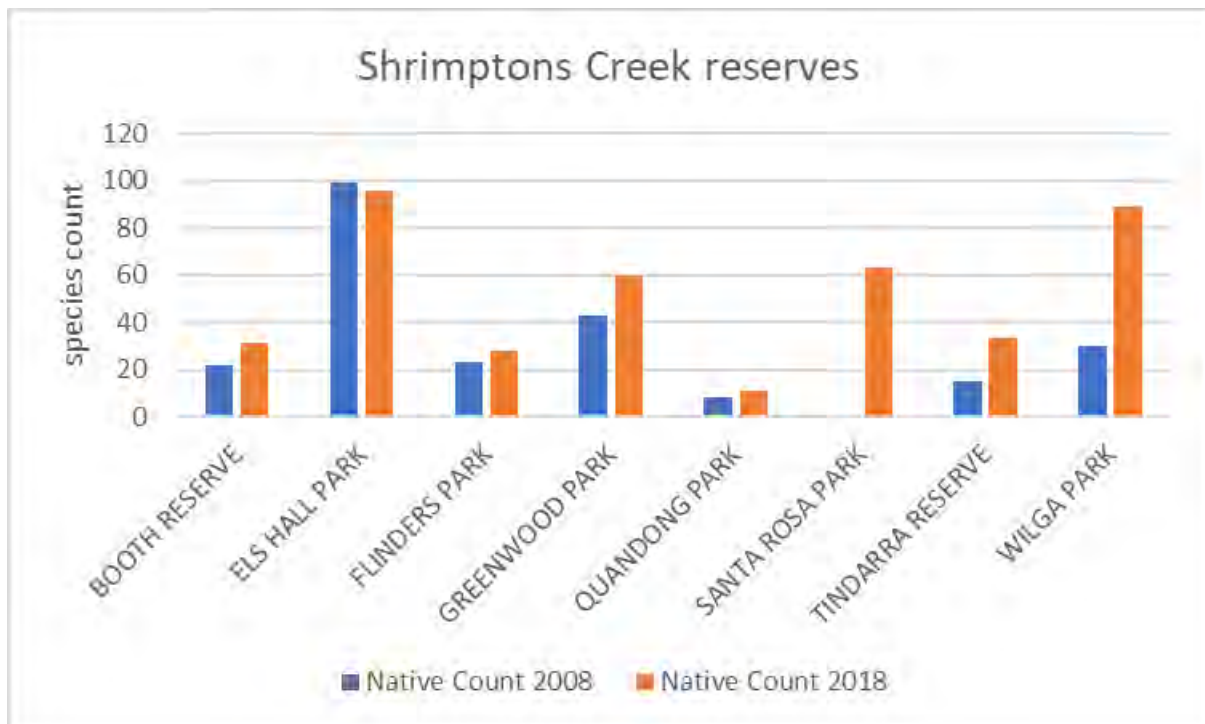


Figure 350 Summary of native flora species richness for reserves along Shrimptons Creek

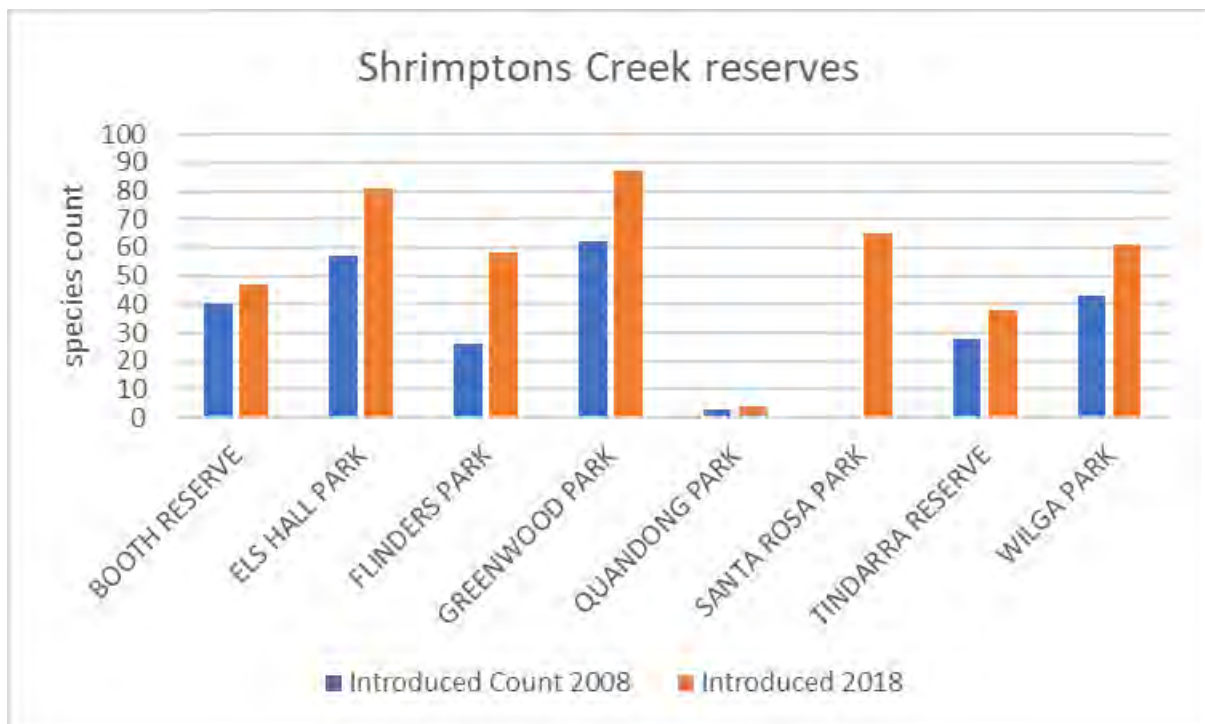


Figure 351 Summary of introduced flora species richness for reserves along Shrimptons Creek

More introduced species were recorded in every reserve surveyed in 2018 compared to 2008. Many weed species have propagules that are spread by water, facilitating their movement along the creek

corridor, so that a new species in an upstream reserve is able to quickly spread and colonise other reserves downstream.

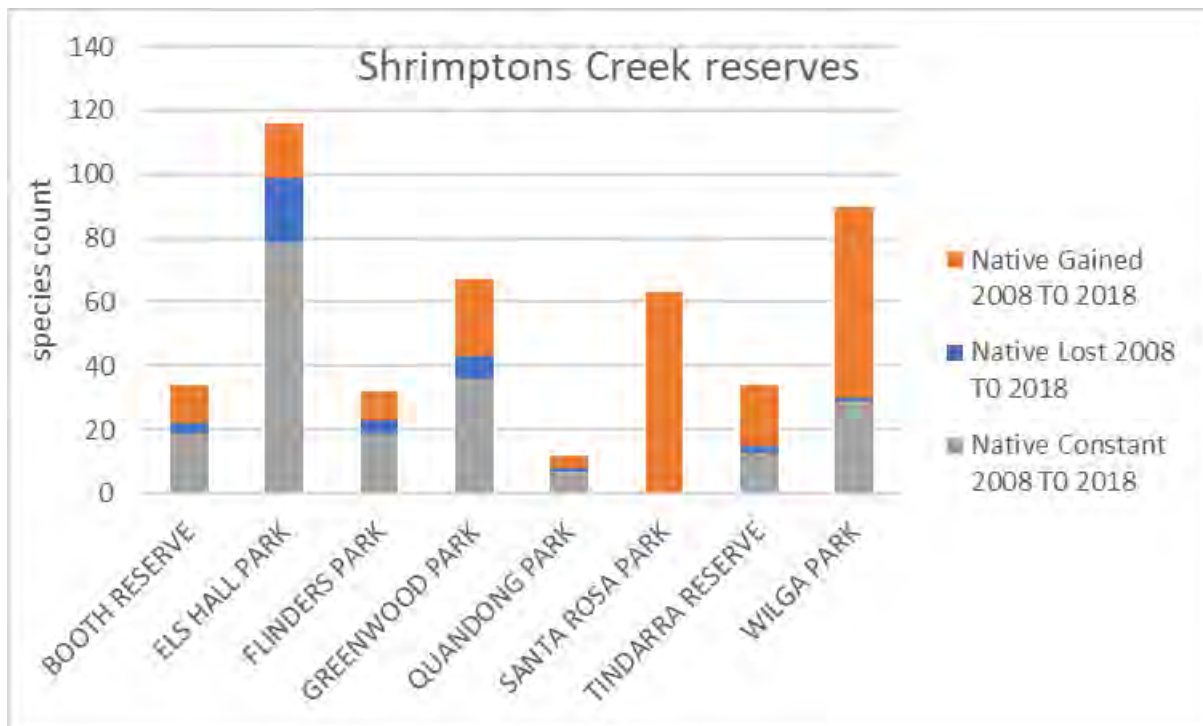


Figure 352 Summary of native species turnover (gains and losses vs constants) in Shrimptons Creek reserves 2008-2018

For all reserves surveyed in the group, there was a general trend of greater gains than losses of native flora species, with the exception of ELS Hall Park. For the rest of the reserves, gains can be attributed largely to supplementary planting in these clearly defined reserves.

6.3 SPECIES TURNOVER IN QUADRATS

6.3.1 Native flora species

The locations of quadrats were chosen in better areas of vegetation in larger reserves with better bushland resources. These were surveyed in 2008, and again in autumn and spring 2018. Quadrats where higher species richness was recorded in 2008 also had higher species richness in 2018, and those with lower species richness showed the same pattern of consistency. In general, quadrat data from spring more closely matched that reported from 2008. There were complicating factors for the autumn survey, including an extended period of dry weather. Developmental stages for annuals and cryptic species mean they are typically absent from the soil surface in autumn, and therefore making them difficult to locate as plants.

Gains and losses (species turnover) were not consistent in quadrats when compared between 2008 and 2018. Species losses were quite high in Marsfield Park (6 species) and Tasman Park (7 species), with no concurrent gains, resulting in reduced native flora species richness. Denistone Park also had notable species losses (8 species) but these were offset to some extent by new species recorded in the quadrat (5 species). For the other three quadrats the gains in species numbers was greater than the losses, resulting in a net increase in species richness for these quadrats. When these gains and losses were considered as a proportion of the species richness in the quadrat, gains ranged from 0 to 17%, losses from 4 to 25%, and net turnover from -14% to 8%.

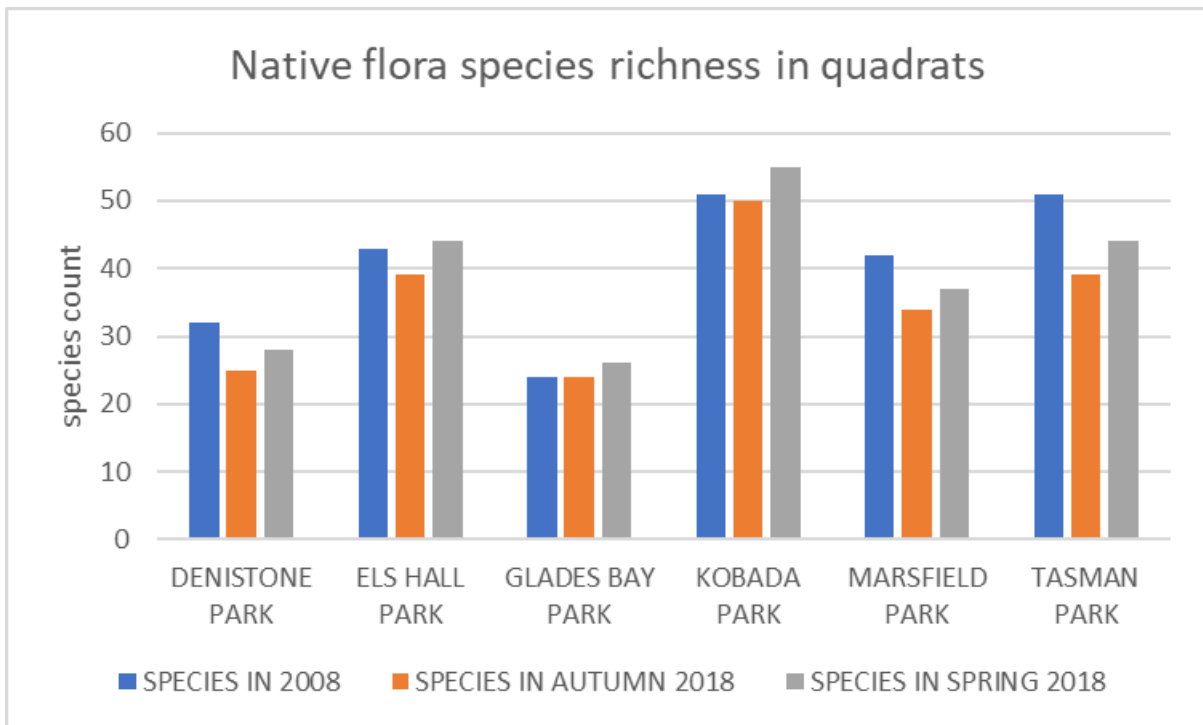


Figure 353 Summary of native flora species richness in quadrats, 2008-2018

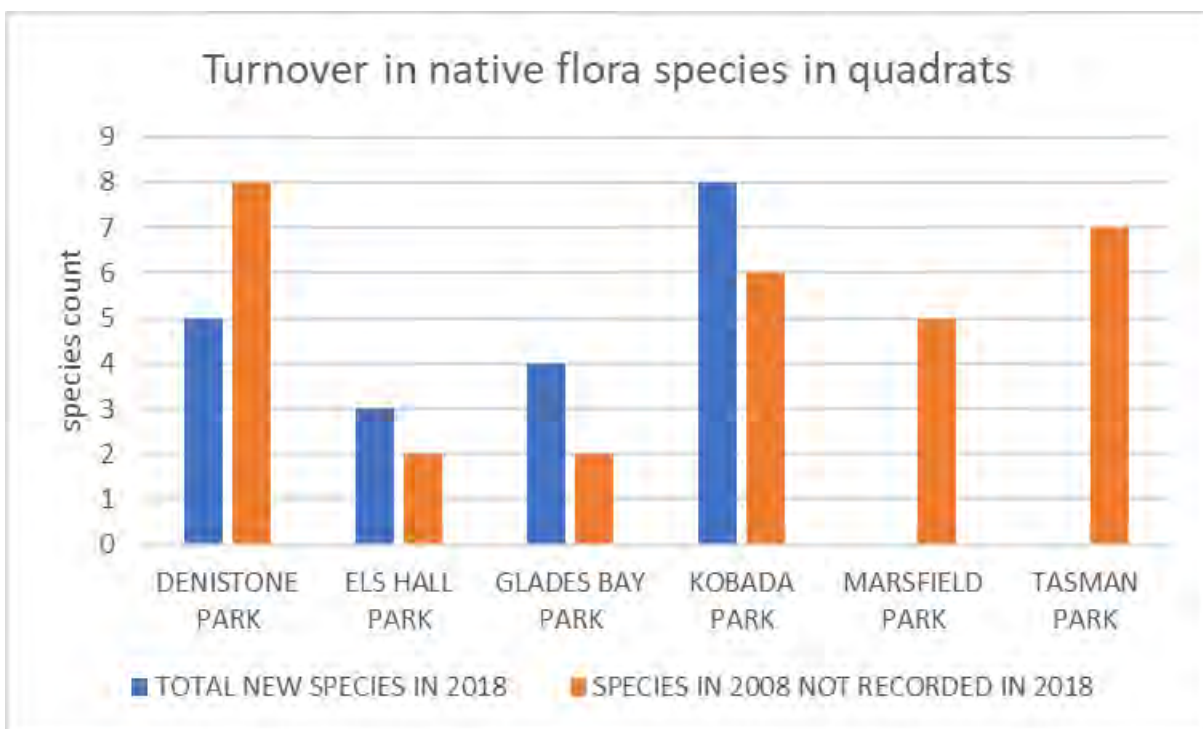


Figure 354 Summary of native species turnover (gains and losses) in quadrats 2008-2018

While quantifying “gains” and “losses” of species from quadrats is comparatively easy, it is difficult to understand whether these are “reasonable” or “unreasonable”. Decadal surveys in reserves in the Sydney basin are few (but see Benson & Picone, 2009), and there has been no effort to interpret changes in species richness in the context of the extant vegetation community. Despite this, a net gain or loss >10% should definitely raise a red flag. For smaller reserves such as those surveyed in

the current study, a net gain in species richness should be celebrated, provided the new species are appropriate for the extant vegetation community.

6.3.2 Introduced flora species

Weed diversity was consistently much higher in Denistone Park quadrat than any of the others surveyed. For Glades Bay Park and Kobada Park there was a net increase in weed species richness in the survey quadrat, while there was a small reduction in weed diversity in the other four quadrats. Reasons for this include extended dry weather, which will adversely affect some of the smaller herbaceous weeds, or bush regeneration weed control, or both.

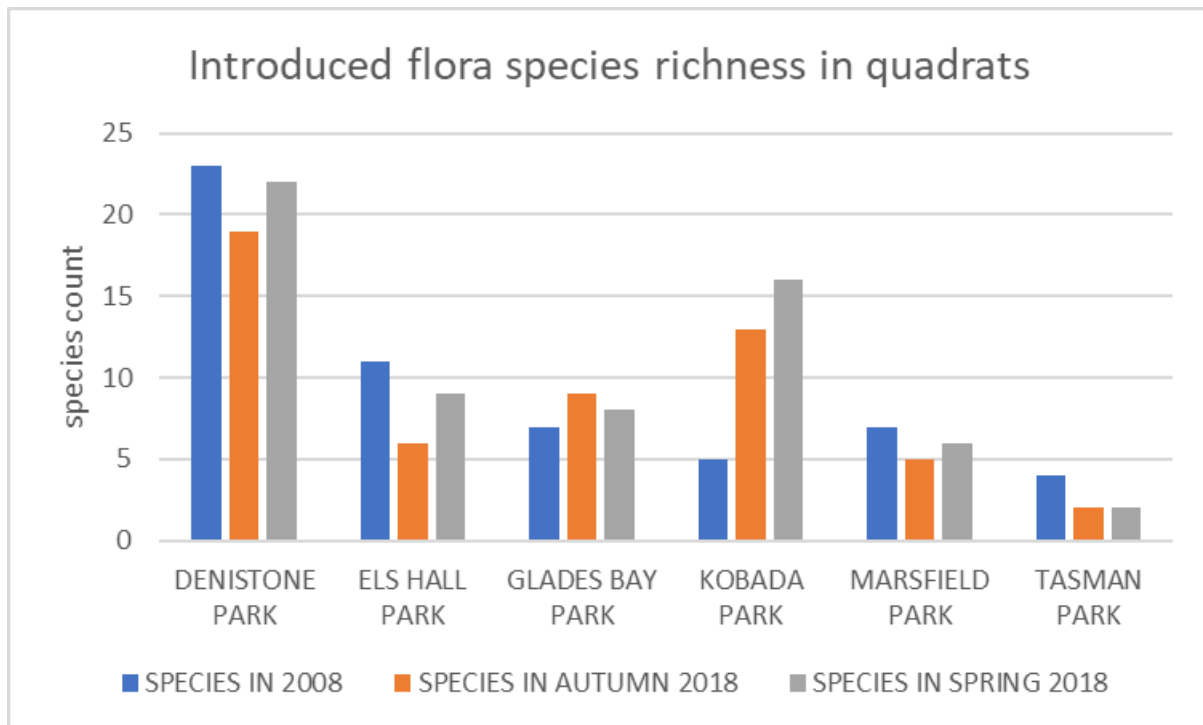


Figure 355 Summary of introduced flora species richness in quadrats, 2008-2018

More weed species were “lost” from quadrats for most reserves, with the exception of Glades Bay Park and Kobada Park. The recorded increase in weed diversity in the Kobada Park quadrat was much higher (11 species) than the other quadrats. This quadrat was located in an area immediately adjacent to the park’s shared boundary with Northern Suburbs Crematorium. Construction work since 2008 saw the construction of a retaining wall that impinged into the quadrat, reducing its extent by a small amount and creating a ready source of weed propagules to the quadrat. As well, typical management activities for lawns such as above the retaining wall create conditions in surrounding areas that do not favour native flora species. Fertilisers will adversely affect many species of native flora, which are typically adapted to lower nutrient soils, especially in sandy soil areas such as Kobada Park.

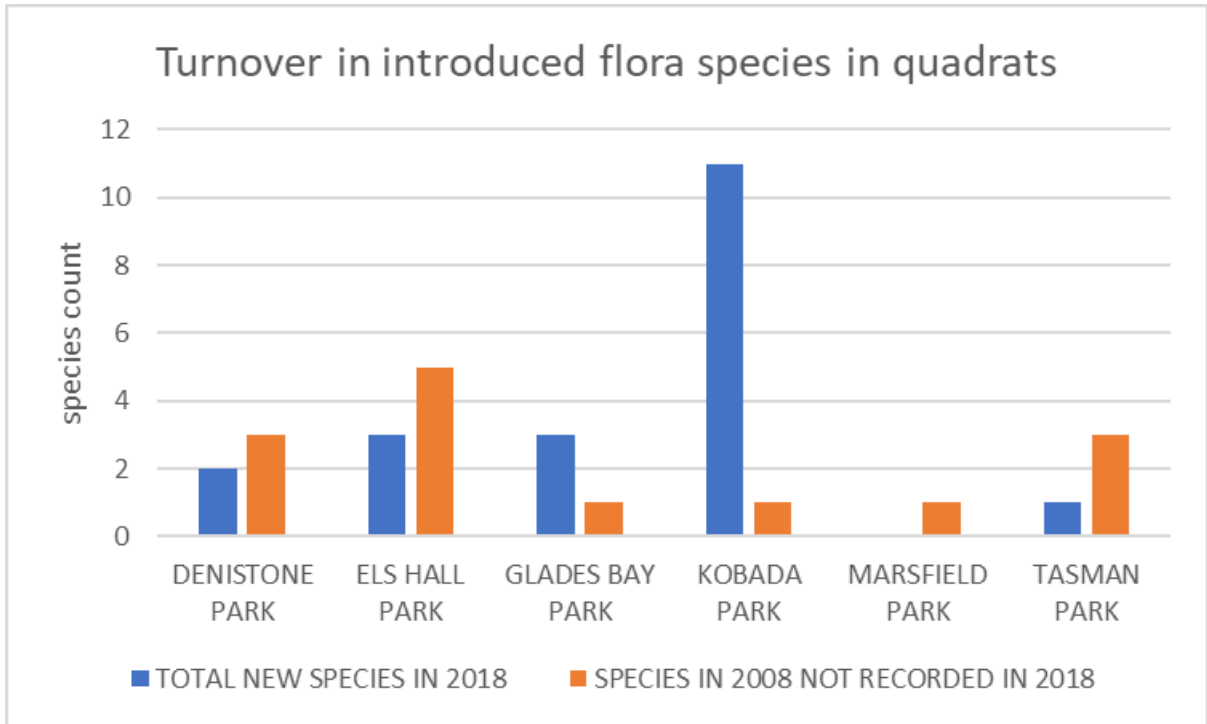


Figure 356 Summary of introduced species turnover (gains and losses) in quadrats 2008-2018

7 GROUND TRUTHING VEGETATION IN RESERVES

An extended random meander was used to develop the native flora species inventories for ground truthing vegetation in each of the 42 reserves in the current study. While this is not entirely in line with the 0.04 hectare survey area specified by OEH (2016), it aims to compensate for the small patch size and ongoing exposure to degrading factors. In many cases, ongoing sources of weed propagules are provided within the reserve, evidenced by the number of reserves with patches mapped as Weeds and Exotics, or Urban Exotic/Native vegetation.

Table 261 Summary of mapped vegetation for smaller reserves in City of Ryde (current study only)

PARK NAME	MAPPED VEGETATION UNIT	MAPPED AREA (Ha)
NORTHERN RESERVES		
BOOBAJOO RESERVE	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.440
BOOBAJOO RESERVE	S_WSF06: Coastal Shale-Sandstone Forest	0.401
BUNDARA RESERVE	S_WSF09: Sydney Turpentine-Ironbark Forest	0.383
BUNDARA RESERVE	Weed_Ex: Weeds and Exotics	0.002
CHRISTIE PARK	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	0.619
CHRISTIE PARK	Urban_E/N: Urban Exotic/Native	0.081
CHRISTIE PARK	Weed_Ex: Weeds and Exotics	0.151
FIELDER PARK	S_DSF09: Coastal Sandstone Gully Forest	0.107
FIELDER PARK	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	0.296
FIELDER PARK	S_RF02: Coastal Sandstone Gallery Rainforest	0.077
FIELDER PARK	Weed_Ex: Weeds and Exotics	0.361
KOBADA PARK	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.970
KOBADA PARK	S_DSF09: Coastal Sandstone Gully Forest	1.850
KOBADA PARK	Urban_E/N: Urban Exotic/Native	0.060
MARFIELD PARK	S_WSF09: Sydney Turpentine-Ironbark Forest	3.450
MARFIELD PARK	Urban_E/N: Urban Exotic/Native	0.494
MYALL RESERVE	S_WSF06: Coastal Shale-Sandstone Forest	0.154
NORTH RYDE PARK	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.673
NORTH RYDE PARK	Urban_E/N: Urban Exotic/Native	0.155
STEWART PARK	S_WSF09: Sydney Turpentine-Ironbark Forest	0.962
TASMAN PARK	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.509
TASMAN PARK	S_WSF06: Coastal Shale-Sandstone Forest	0.254
TASMAN PARK	Urban_E/N: Urban Exotic/Native	0.012
TASMAN PARK	Weed_Ex: Weeds and Exotics	0.295
TRAFALGAR RESERVE	Urban_E/N: Urban Exotic/Native	0.170
WATERLOO PARK	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland	0.025
WATERLOO PARK	S_WSF06: Coastal Shale-Sandstone Forest	0.712
WATERLOO PARK	Urban_E/N: Urban Exotic/Native	2.016
YURRAH RESERVE	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.251
PARRAMATTA FORESHORE RESERVES		
BANJO PATERSON PARK	Urban_E/N: Urban Exotic/Native	0.468
BANJO PATERSON PARK	Weed_Ex: Weeds and Exotics	0.740
BENNELONG PARK	Weed_Ex: Weeds and Exotics	0.064

BILL MITCHELL PARK	Urban_E/N: Urban Exotic/Native	0.261
BILL MITCHELL PARK	Weed_Ex: Weeds and Exotics	0.365
BREMNER PARK	S_DSF06: Coastal Sandstone Foreshores Forest	0.112
BREMNER PARK	Urban_E/N: Urban Exotic/Native	0.341
BREMNER PARK	Weed_Ex: Weeds and Exotics	0.116
GLADES BAY PARK	S_DSF06: Coastal Sandstone Foreshores Forest	2.269
GLADES BAY PARK	S_SW01: Estuarine Mangrove Forest	0.148
GLADES BAY PARK	S_SW02: Estuarine Saltmarsh	0.008
GLADES BAY PARK	Weed_Ex: Weeds and Exotics	0.211
KISSING POINT PARK	S_SW01: Estuarine Mangrove Forest	0.119
KISSING POINT PARK	Weed_Ex: Weeds and Exotics	0.575
KOONADAN RESERVE	S_SW01: Estuarine Mangrove Forest	0.031
KOONADAN RESERVE	S_SW02: Estuarine Saltmarsh	0.001
LOOKING GLASS BAY PARK	S_DSF06: Coastal Sandstone Foreshores Forest	1.036
LOOKING GLASS BAY PARK	S_SW01: Estuarine Mangrove Forest	0.027
LOOKING GLASS BAY PARK	S_SW02: Estuarine Saltmarsh	0.005
LOOKING GLASS BAY PARK	Urban_E/N: Urban Exotic/Native	0.009
LOOKING GLASS BAY PARK	Weed_Ex: Weeds and Exotics	0.877
MALLEE RESERVE	S_DSF06: Coastal Sandstone Foreshores Forest	0.420
MALLEE RESERVE	Weed_Ex: Weeds and Exotics	0.001
MAZE PARK	Urban_E/N: Urban Exotic/Native	1.055
MEADOWBANK PARK	S_SW01: Estuarine Mangrove Forest	0.519
MEADOWBANK PARK	S_SW02: Estuarine Saltmarsh	0.021
MEADOWBANK PARK	Urban_E/N: Urban Exotic/Native	2.446
MEADOWBANK PARK	Weed_Ex: Weeds and Exotics	0.453
MELROSE PARK	S_SW01: Estuarine Mangrove Forest	0.195
MELROSE PARK	S_SW02: Estuarine Saltmarsh	0.032
MELROSE PARK	Urban_E/N: Urban Exotic/Native	0.002
MELROSE PARK	Weed_Ex: Weeds and Exotics	0.082
MEMORIAL PARK	S_SW01: Estuarine Mangrove Forest	0.028
MEMORIAL PARK	S_WSF08: Sydney Foreshores Shale Forest	1.248
MEMORIAL PARK	Urban_E/N: Urban Exotic/Native	0.233
MEMORIAL PARK	Weed_Ex: Weeds and Exotics	1.043
MORRISON BAY PARK	Urban_E/N: Urban Exotic/Native	0.825
MORRISON BAY PARK	Weed_Ex: Weeds and Exotics	0.310
PUTNEY PARK	Plant_n: Plantation (native and/or exotic)	0.528
PUTNEY PARK	S_DSF06: Coastal Sandstone Foreshores Forest	0.337
PUTNEY PARK	Urban_E/N: Urban Exotic/Native	0.596
PUTNEY PARK	Weed_Ex: Weeds and Exotics	1.759
SETTLERS PARK	S_FoW08: Estuarine Swamp Oak Forest	0.050
SETTLERS PARK	S_SW01: Estuarine Mangrove Forest	0.264
SETTLERS PARK	S_SW02: Estuarine Saltmarsh	0.003
SETTLERS PARK	Urban_E/N: Urban Exotic/Native	0.408
SETTLERS PARK	Weed_Ex: Weeds and Exotics	0.016

TYAGARAH PARK	S_DSF06: Coastal Sandstone Foreshores Forest	0.412
TYAGARAH PARK	Urban_E/N: Urban Exotic/Native	0.066
TYAGARAH PARK	Weed_Ex: Weeds and Exotics	0.001
SHRIMPTONS CREEK RESERVES		
BOOTH RESERVE	S_WSF09: Sydney Turpentine-Ironbark Forest	0.263
BOOTH RESERVE	Weed_Ex: Weeds and Exotics	0.001
ELS HALL PARK	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.887
ELS HALL PARK	S_WSF09: Sydney Turpentine-Ironbark Forest	0.544
ELS HALL PARK	Urban_E/N: Urban Exotic/Native	1.716
ELS HALL PARK	Weed_Ex: Weeds and Exotics	0.040
FLINDERS PARK	Urban_E/N: Urban Exotic/Native	0.016
FLINDERS PARK	Weed_Ex: Weeds and Exotics	0.674
GREENWOOD PARK	S_WSF09: Sydney Turpentine-Ironbark Forest	1.172
GREENWOOD PARK	Urban_E/N: Urban Exotic/Native	0.064
GREENWOOD PARK	Weed_Ex: Weeds and Exotics	0.556
QUANDONG RESERVE	Urban_E/N: Urban Exotic/Native	0.223
SANTA ROSA PARK	Urban_E/N: Urban Exotic/Native	0.195
SANTA ROSA PARK	Weed_Ex: Weeds and Exotics	1.542
TINDARRA RESERVE	Weed_Ex: Weeds and Exotics	0.551
WILGA PARK	S_DSF04: Coastal Enriched Sandstone Dry Forest	0.55
WILGA PARK	Urban_E/N: Urban Exotic/Native	0.285
WESTERN RESERVES		
DENISTONE PARK	S_WSF01: Blue Gum High Forest	3.99
DENISTONE PARK	Urban_E/N: Urban Exotic/Native	0.530
LYNN PARK	S_WSF01: Blue Gum High Forest	0.780
LYNN PARK	Urban_E/N: Urban Exotic/Native	0.370
MIRIAM PARK	S_WSF01: Blue Gum High Forest	0.965
SYMON'S RESERVE	S_WSF01: Blue Gum High Forest	0.651

The purpose of ground truthing in this study was as much to confirm the vegetation community's presence for the purpose of allocating maintenance resources and to provide guidance for revegetation activities. The following tables show the results of testing recorded species inventories against the diagnostic criteria for the respective vegetation communities (see OEH, 2016 volume 2).

Table 262 Results of ground truthing vegetation in Parramatta River foreshore reserves

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED *	# DIAGNOSTIC SPECIES REQUIRED *	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
BANJO PATERSON	N			40		None present
BENNELONG	N			22		None present
BILL MITCHELL	N			31		None present
BREMNER	S_DSF06	28	14	60	17	Confirmed
GLADES BAY	S_SW02	3	1	106	7	Confirmed
GLADES BAY	S_SW01	Not Calculated	Not Calculated	106	1	Confirmed
GLADES BAY	S_DSF06	28	14	106	30	Confirmed
KISSING POINT	S_SW01	Not Calculated	Not Calculated	51	1	Confirmed
KOONADAN RESERVE	S_SW01	Not Calculated	Not Calculated	7	1	Confirmed
KOONADAN RESERVE	S_SW02	3	1	7	6	Confirmed
LOOKING GLASS	S_SW01	Not Calculated	Not Calculated	77	1	Confirmed
LOOKING GLASS	S_DSF06	28	14	77	21	Confirmed
MALLEE RESERVE	S_DSF06	28	14	31	14	Confirmed
MAZE PARK	N			60		None present
MEADOWBANK PARK	S_SW02	3	1	77	7	Confirmed
MEADOWBANK PARK	S_SW01	Not Calculated	Not Calculated	77	1	Confirmed
MELROSE PARK	S_SW02	3	1	5	0	Not Confirmed
MELROSE PARK	S_SW01	Not Calculated	Not Calculated	5	0	Confirmed
MEMORIAL PARK	S_SW01	Not Calculated	Not Calculated	57	1	Confirmed
MEMORIAL PARK	S_WSF08	Not Calculated	Not Calculated	57	15	Not Calculated
MORRISON BAY PARK	N			35		None present
PUTNEY PARK	S_DSF06	28	14	94	24	Confirmed
SETTLERS PARK	S_SW02	3	1	31	7	Confirmed
SETTLERS PARK	S_SW01	Not Calculated	Not Calculated	31	1	Confirmed

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED *	# DIAGNOSTIC SPECIES REQUIRED *	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
SETTLERS PARK	S_FoW08	5	1	31	8	Confirmed
TYAGARAH PARK	S_DSF06	28	14	22	9	Not Confirmed

- Note: for **S_SW01 Estuarine Mangrove Forest** there are no minimum number of native species or diagnostic species required other than the presence of Mangroves on site (OEH, 2016). For **S_WSF08 Sydney Foreshores Shale Forest** there are no minimum number of native species or diagnostic species provided due to the limited number of sites with this vegetation community present (OEH, 2016)

Table 263 Results of ground truthing vegetation in Western reserves

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED	# DIAGNOSTIC SPECIES REQUIRED	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
DENISTONE	S_WSF01	34	22	69	41	Confirmed
LYNN PARK	S_WSF01	34	22	19	14	Not Confirmed
MIRIAM PARK	S_WSF01	34	22	29	19	Not quite
SYMONS RESERVE	S_WSF01	34	22	14	5	Not Confirmed

Table 264 Results of ground truthing vegetation in Northern reserves

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED	# DIAGNOSTIC SPECIES REQUIRED	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
BOOBAJOO RESERVE	S_DSF04	38	21	55	27	Confirmed
BOOBAJOO RESERVE	S_WSF06	39	20	55	20	Confirmed
BUNDARA RESERVE	S_WSF09	35	20	54	36	Confirmed
CHRISTIE RESERVE	S_DSF10	38	21	50	14	Not Confirmed
FIELDERS PARK	S_RF02	16	3	54	5	Confirmed
FIELDERS PARK	S_DSF10	38	21	54	7	Not Confirmed
FIELDERS PARK	S_DSF09	45	32	54	8	Not Confirmed
KOBADA PARK	S_DSF09	45	32	138	59	Confirmed

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED	# DIAGNOSTIC SPECIES REQUIRED	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
KOBADA PARK	S_DSF04	38	21	138	41	Confirmed
MARSHFIELD PARK	S_WSF09	35	20	76	41	Confirmed
MYALL RESERVE	S_WSF06	39	20	45	41	Confirmed
NORTH RYDE PARK	S_DSF04	38	21	46	17	Not quite
QUANDONG PARK	N			11	0	None Present
STEWART PARK	S_WSF09	35	20	60	36	Confirmed
TASMAN PARK	S_DSF04	38	21	105	46	Confirmed
TASMAN PARK	S_WSF06	39	20	105	45	Confirmed
TRAFALGAR PARK	N			6	0	None Present
WATERLOO PARK	S_WSF06	28	13	85	32	Confirmed
WATERLOO PARK	S_DSF10	38	21	85	18	Confirmed
WILGA PARK	S_DSF04	38	21	89	22	Confirmed
YURRAH RESERVE	S_DSF04	38	21	48	23	Confirmed

Table 265 Results of ground truthing vegetation in Shrimptons Creek reserves

RESERVE NAME	VEGETATION COMMUNITY CODE/NAME	MIN # NATIVE SPECIES REQUIRED	# DIAGNOSTIC SPECIES REQUIRED	# NATIVE SPECIES PRESENT	# DIAGNOSTIC SPECIES PRESENT	COMMUNITY PRESENT?
BOOTH RESERVE	S_WSF09	35	20	31	12	Not Confirmed
ELS HALL PARK	S_WSF09	35	20	96	40	Confirmed
ELS HALL PARK	S_DSF04	38	21	96	43	Confirmed
FLINDERS PARK	N			28	0	None Present
GREENWOOD PARK	S_WSF09	35	20	60	31	Confirmed
SANTA ROSA PARK	N			63	0	None Present
TINDARRA RESERVE	N			33	0	None Present

Most of the mapped vegetation patches were able to be confirmed on the ground, either because they met the minimum numbers of native species and diagnostic species required to test and confirm presence. In two cases, the diagnostic criteria were “not quite” met on ground, either because there were not quite enough diagnostic species present, but at least 80% were present. For another 8 vegetation patches, the existing vegetation did not meet the diagnostic criteria, nor did they come close, with less than 80% of diagnostic species present.

Table 266 Summary of results of ground truthing vegetation communities in 42 reserves

	PARRA FORESHORES	WESTERN	NORTHERN	SHRIMPTONS
NO VEG COMMUNITY PRESENT	5 reserves		2 reserves	3 reserves
VEG PATCH CONFIRMED	18 patches	1 patch	15 patches	3 patches
VEG PATCH WITHIN 80% DIAGNOSTIC	1 patch (19/22)		1 patch (17/21)	
VEG PATCH NOT CONFIRMED	2 patches	2 patches	3 patches	1 patch
NOT CALCULATED (NO DIAGNOSTIC CRITERIA)	1 patch			

7.1 SELECTING SPECIES FOR REVEGETATION

In most cases, the mapped vegetation was confirmed present, or almost confirmed. This provides good information for directing selection of species for revegetation in these reserves. When revegetation reserves with no mapped vegetation present should species should be selected from the vegetation communities that are most likely to have been present there in the past. This will optimise chances for establishment success.

Table 267

RESERVE GROUP	# RESERVES	MAPPED VEGETATION UNIT
WESTERN	4 reserves	S_WSF01: Blue Gum High Forest
SHRIMPTONS CREEK	3 reserves	S_WSF09: Sydney Turpentine-Ironbark Forest
	2 reserves	S_DSF04: Coastal Enriched Sandstone Dry Forest
	8 reserves	S_SW01: Estuarine Mangrove Forest
PARRAMATTA FORESHORE	6 reserves	S_DSF06: Coastal Sandstone Foreshores Forest
	6 reserves	S_SW02: Estuarine Saltmarsh
	1 reserve	S_FoW08: Estuarine Swamp Oak Forest
	1 reserve	S_WSF08: Sydney Foreshores Shale Forest
NORTHERN	5 reserves	S_DSF04: Coastal Enriched Sandstone Dry Forest
	4 reserves	S_WSF06: Coastal Shale-Sandstone Forest
	3 reserves	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland
	3 reserves	S_WSF09: Sydney Turpentine-Ironbark Forest
	2 reserves	S_DSF09: Coastal Sandstone Gully Forest
	1 reserve	S_RF02: Coastal Sandstone Gallery Rainforest

8 ADDITIONAL FAUNA SURVEY RESULTS

8.1 HAIR, SCAT, PELLET AND OTHER SAMPLE ANALYSES

Forty Hairy tubes/funnel tapes and wafers were collected and sent to the laboratory for analysis to determine genus/species. Results are illustrated in Figure 357.

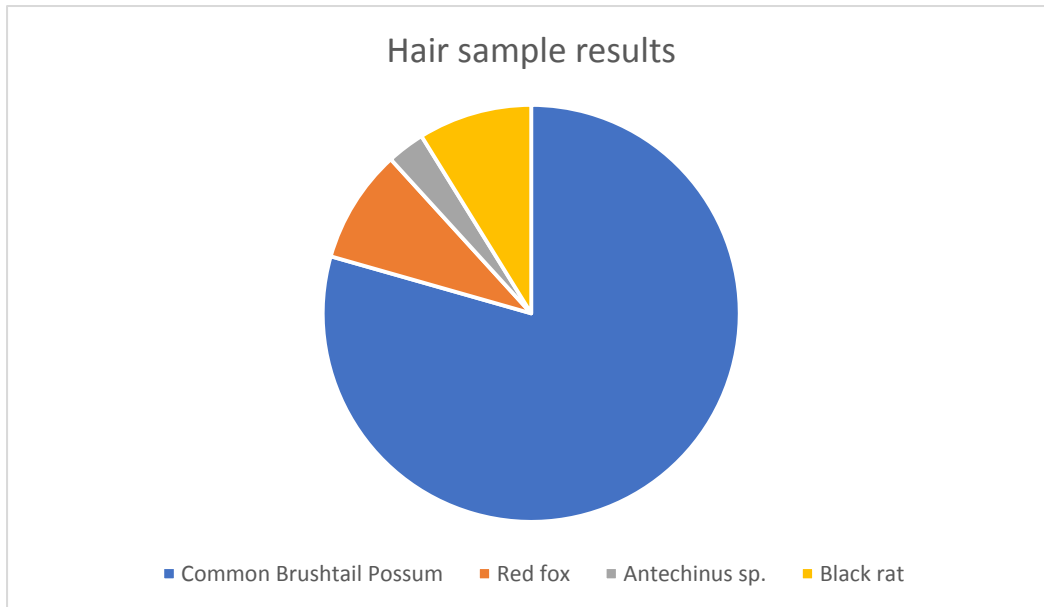


Figure 357 Hairy tube hair analysis results

Nine Powerful Owl pellets were collected near the Ross Street reserve during spring. A selection of pellets is illustrated below.



Figure 358 Powerful Owl pellets collected at Gladesville 2018

Common Brushtail Possum was the most common prey species. This result is in line with the previous years survey.

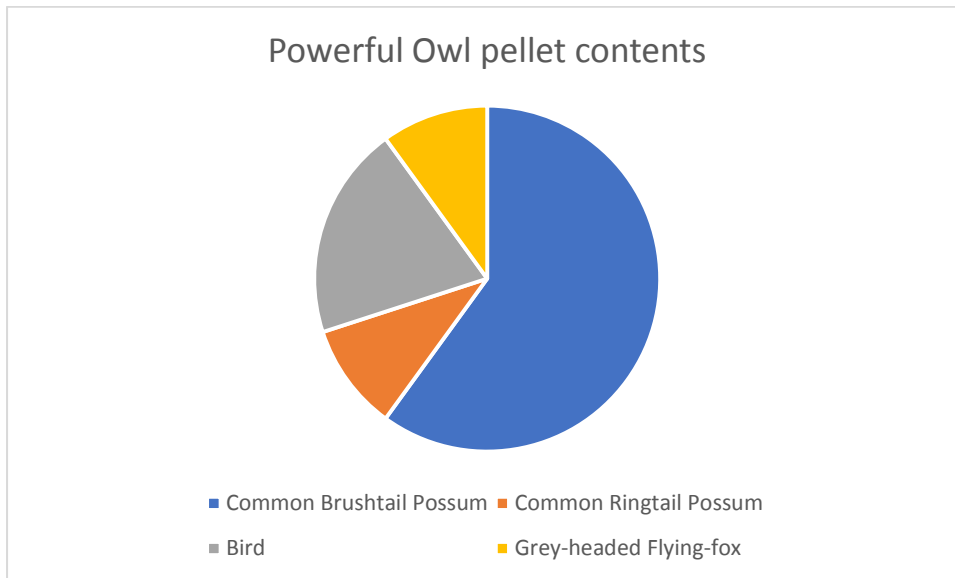


Figure 359 Powerful Owl pellet analysis results

Only one fox scat was collected (at Marsfield Park) and this contained Common Brushtail Possum.

The remains of several species were also collected. These included Grey-headed Flying-fox at Marsfield Park, Red Fox at Tasman Park and Common Brushtail Possum at Bremner Park and Fielder Park. Parts of a macropod intestine (species unknown) were collected from Denistone Park.



Figure 360 Bones at Fielder Park (left), Common Brushtail Possum at Bremner Park (centre), and Grey-headed Flying-fox at Marsfield Park (right)

1.1.1 FISH

Native fish were largely absent in the waterways of the subject sites. In reality, Shrimptons Creek is the only permanent creek in the study areas this year and the only fish species observed there was the introduced Eastern Gambusia or Mosquito fish *Gambusia holbrooki*. This species was present in large numbers in Shrimptons Creek and in the unnamed creek that flows under the M2 motorway at Fielder Park in Marsfield. The presence of this species combined with very low rainfall over the previous two hot summers, which caused many creeks to dry completely, would reduce the ability of native species to persist in the current study areas. An unidentified species of fish was observed in a pool in Glades Bay Reserve. This pool is immediately above the board walk that descends into the estuarine vegetation. These fish were “gudgeon-sized” but efforts to make a positive identification were hampered by the amount of debris in the pool and the almost instant high turbidity when dipnetting was attempted.



Figure 361 Saltwater species were not included in this survey although they were commonly observed along the foreshore. Smooth Toadfish, *Tetractenos glaber* at Putney Park

1.1.2 INVERTEBRATES

Invertebrate fauna surveys included timed searches in quadrats, with additional surveys conducted more generally throughout the reserves. These were supplemented with opportunistic sightings of invertebrates during other surveys. Quadrat searches involved 20 minutes of targeted searching through the quadrat for any invertebrates. This was specifically spent looking under rocks and logs, digging through the litter layer and surface of the soil, and looking through vegetation – under bark, on branches and in foliage. Effort was made to ensure enough time was spent in each area of invertebrate habitat. In an effort to avoid the further drying in late October and November that had occurred the previous two years surveys were conducted in September and October. In hindsight the good rain in spring may have resulted in a higher abundance if the second surveys were conducted in late November.

Invertebrates in quadrats

There was fewer taxa of invertebrates collected overall in the quadrats surveyed in spring compared to those surveyed in autumn (Figure 362). This can be attributed to the very dry weather conditions leading up to, and during the early spring survey period.

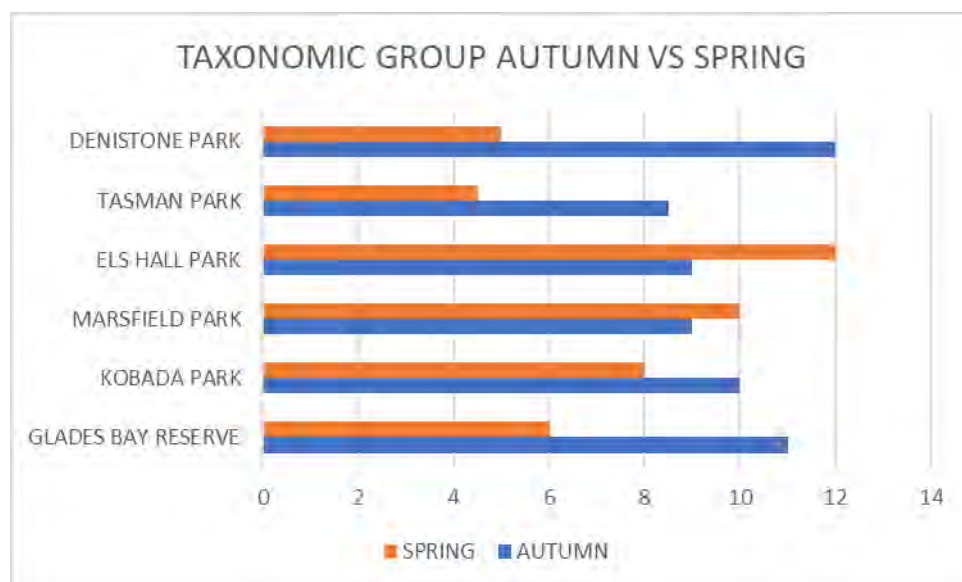


Figure 362 Invertebrate species richness in quadrats in during autumn and spring 2018

Soil moisture, and ambient moisture in general has been linked with greater invertebrate diversity in similar studies (Ives et al, 2007). Riparian zones are significantly taxonomically richer than ‘upland’ non-riparian areas and invertebrate assemblage structures are significantly different between these two habitat patch types, with all quadrats in this survey period located away from drainage lines, depressions or riparian zones. The quadrats that retained the majority of their taxa between autumn and spring also had fairly complex understoreys, and large amounts of woody debris and leaf litter (Marsfield Park and Kobada Park). The two quadrats with the least amount of complexity had the highest number of taxa in both autumn and spring – Els Hall and Denistone Park. This may simply be that invertebrates are more readily observed in less complex environments. Sum of morpho species in each season by taxonomic group for each quadrat are provided in the following tables.

Table 268 Numbers of morpho species by taxonomic group detected in Glades Bay Reserve, 2018

Glades Bay Reserve		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Dipterae	true flies, mosquitos	0	1
Areneae	Spiders	8	2
Chilopoda	centipede	1	0
Isopoda	woodlice	1	0
Acari	ticks, mites	2	0
Blatodea	cockroaches	1	2
Diplopoda	millipedes	1	2
Hymenoptera	ants	8	2
Lepidoptera	butterflies, moths	5	2

Table 269 Numbers of morpho species by taxonomic group detected in Marsfield Park, 2018

Marsfield Park		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Odonata	Damselfly	0	1
Coleoptera	beetles	0	3
Ephemeroptera	Mayfly	1	0
Isopoda	woodlice	1	0
Areneae	spiders	5	3
Isoptera	termites	1	1
Hemiptera	true bugs	1	2
Acari	ticks, mites	2	0
Diplopoda	millipedes	2	1
Dipterae	true flies, mosquitos	2	7
Hymenoptera	ants	2	8
Lepidoptera	butterflies, moths	2	9

Table 270 Numbers of morpho species by taxonomic group detected in ELS Hall Park, 2018

ELS HallPark		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Areneae	Trapdoor/burrow/ground	3	7
Blatodea	cockroaches	0	1
Chilopoda	centipede	1	0
Coleoptera	beetles	0	1
Diplopoda	millipedes	1	1
Dipterae	true flies, mosquitos	1	5
Hemiptera	true bugs	1	3
Hymenoptera	ants	4	5
Isopoda	woodlice	2	2
Lepidoptera	butterflies, moths	7	2
Odonata	Damselfly	0	1

Table 271 Numbers of morpho species by taxonomic group detected in Kobada Park, 2018

Kobada Park		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Hemiptera	true bugs	0	1
Diplopoda	millipedes	0	1
Areneae	spiders	4	2
Isoptera	termites	1	1
Lepidoptera	butterflies, moths	1	4
Dipterae	true flies, mosquitos	2	0
Hymenoptera	ants	4	1
Blatodea	cockroaches	5	2

Table 272 Numbers of morpho species by taxonomic group detected in Tasman Park, 2018

Tasman Park		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Blatodea	cockroaches	2	0
Areneae	spider	5	4
Isopoda	woodlice	2	1
Diplopoda	millipedes	2	1
Hemiptera	true bugs	3	0
Dipterae	true flies, mosquitos	3	1
Lepidoptera	butterflies, moths	4	2
Hymenoptera	ants and wasps	8	4

Table 273 Numbers of morpho species by taxonomic group detected in Denistone Park, 2018

Denistone park		MORPHO SPECIES	
TAXONOMIC GROUP	COMMON NAMES	AUTUMN	SPRING
Areneae	spiders	8	4
Blatodea	cockroaches	1	0
Chilopoda	centipede	2	0
Coleoptera	beetles	1	0
Collembolae	springtails	1	0
Diplopoda	millipedes	2	0
Dipterae	true flies, mosquitos	6	1
Hymenoptera	ants	2	3
Isopoda	woodlice	2	0
Lepidoptera	butterflies, moths	3	2

Habitat use by invertebrates

To better understand the reduced invertebrate taxa, they were allocated to broad habitat preferences, based on where found and literature support (Figure 363). Soil biota formed the largest component followed by aerial species. This latter group, for example, at Marsfield Park in Spring was dominated by butterflies and moths that were present in good diversity and abundance for a short

period. Biosphere (2008) provided no invertebrate data so, unfortunately, no comparisons between surveys is possible.

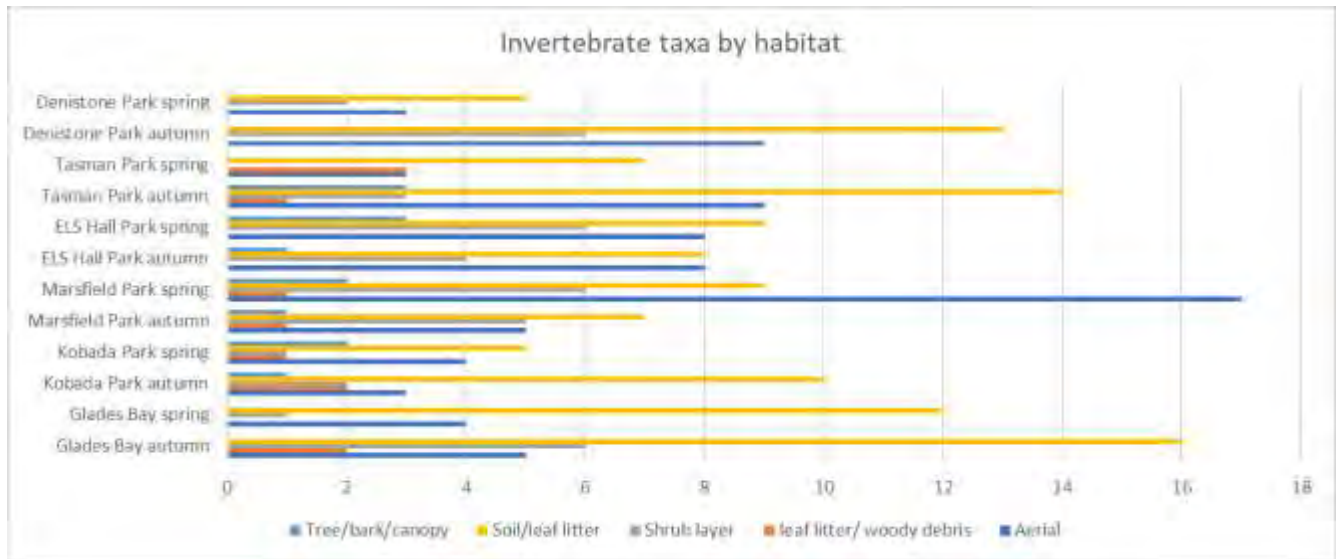


Figure 363 Habitat preferences for invertebrates recorded in surveys in 2018

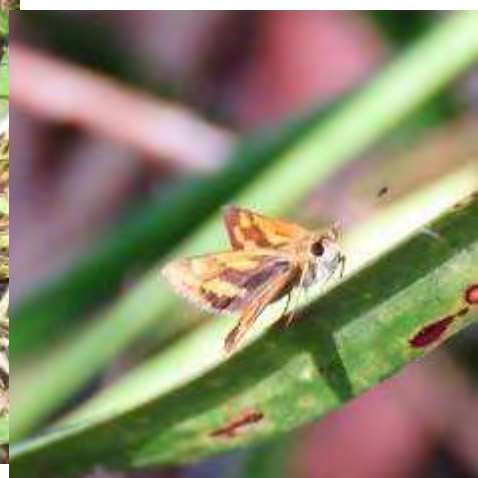


Figure 364 The most common butterflies observed during the survey were Meadow Argus at Marsfield park (top left), Dusky Blue at Marsfield Park (top right), Common Crow at Memorial Park (bottom left) and Grass-dart at Glades Bay (bottom right).



Figure 365 *Caenoplana coerulea*, known as the Blue Planarian or Blue Garden Flatworm is a species of land planarian (Denistone Park Quad)



Figure 366 (left) Trombididae - Red Velvet Mite, live in the litter layer of woodlands and forests. They live from one to several years, depending on the species. As larvae, they attach themselves to a variety of arthropods and feed parasitically (Marsfield Park Quad); (right) Yabby in Shrimptons Creek (ELS Hall Park)



Figure 367 Giant Water Spider *Megadolomedes australianus* (left) and Granny Cloak Moth *Speiredonia spectans* (right) were common in culverts under the M2 at Fielder Park



Figure 368 Gum hopper nymph at Marsfield Park (left) and a beetle larvae at Tasman Park (right).

8.2 SUMMARY OF FAUNA RESULTS

A total of 110 terrestrial vertebrate species were recorded in 2018. This is an increase of 17 species since 2008.

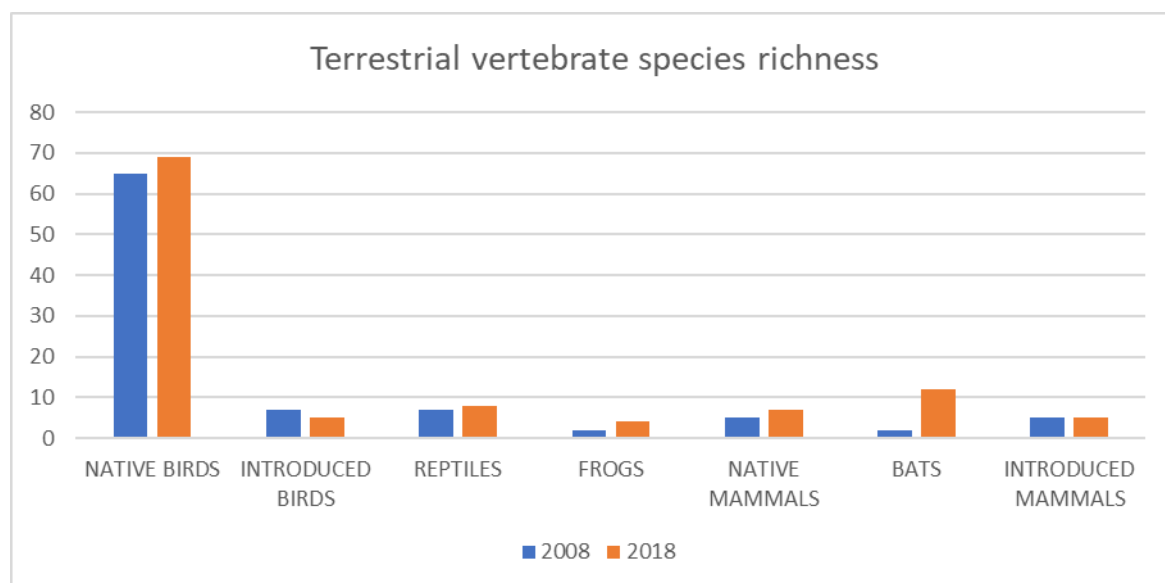


Figure 369 Total vertebrate richness by class 2008 vs 2018

By simply looking at total numbers it would appear that not a lot has changed between the two survey periods except for a large increase in the number of mammals detected - mainly due to better technology and survey effort. However, a closer look at the species present in each class in each survey year shows that there has been considerable turnover of species (Table 274 and Figure 370).

Table 274 Total species richness and turnover

	TOTALS		TURNOVER		
	2008	2018	2008 unique	2018 unique	Shared species
NATIVE BIRDS	65	69	13	17	52
INTRODUCED BIRDS	7	5	2	0	5
REPTILES	7	8	3	4	4
FROGS	2	4	0	2	2
NATIVE MAMMALS EXCLUDING MICROBATS	5	7	0	2	5
MICROBATS	2	12	0	10	2
INTRODUCED MAMMALS	5	5	1	1	4
TOTAL	93	110	19	36	74

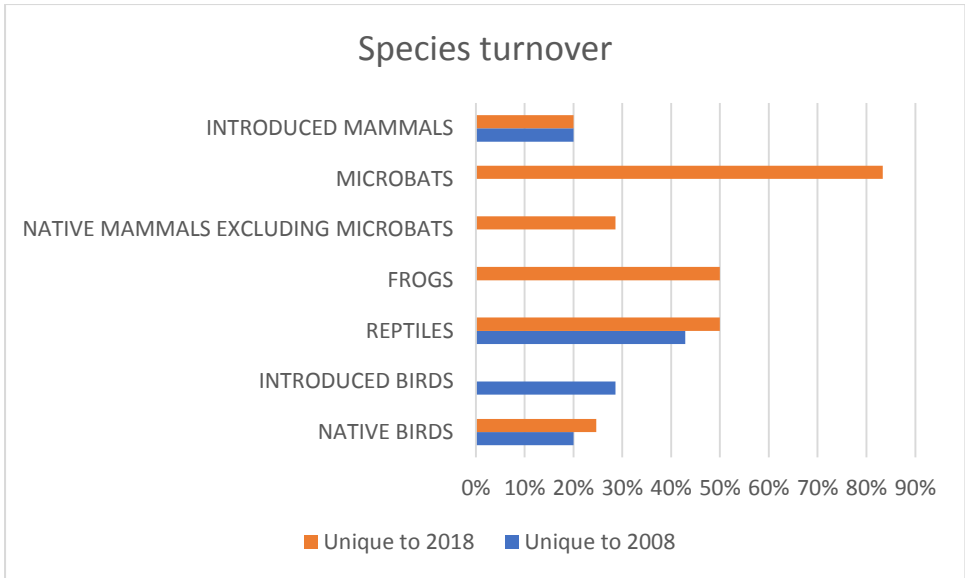


Figure 370 Species uniqueness to each survey year by class

The following sections take a closer look at the individual classes and builds upon the data present in Section 5 .

8.2.1 Bird species richness and changes over time

For the current study in 2018, bird species richness was greatest in the largest groups of reserves- the Northern group and the Parramatta River Group (Figure 371). The northern group of reserves contains reserves that adjoin the Lane Cove National Park and these reserves contribute species not found elsewhere in the study including several species of honeyeaters and small bush birds.

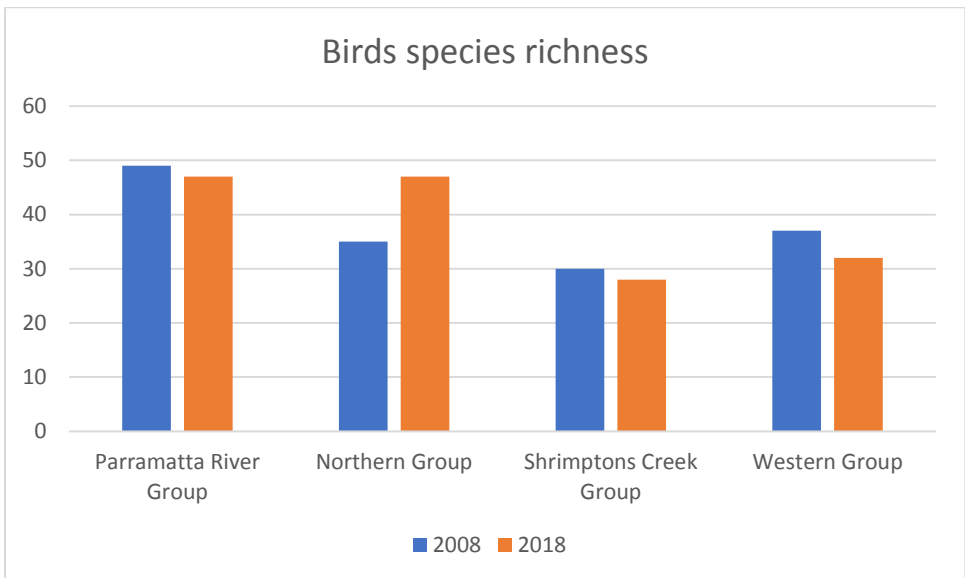


Figure 371 Bird species richness in reserve groupings 2018

Greater turnover as a percentage of total number of species was more pronounced in the smaller reserve groups (Figure 372).

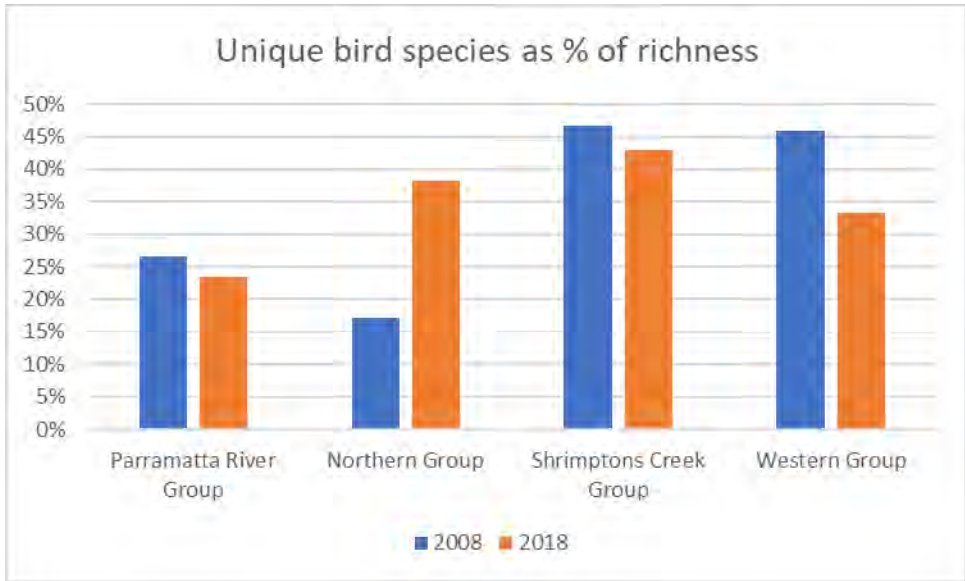


Figure 372 Native bird species unique to each reserve grouping as a percentage of the total species richness for that year.

With lower overall species richness, turnover is more pronounced in Shrimptons Creek and Western reserve groupings. Unusual records, for example Eurasian Coot, Purple Swamphen, Dusky Moorhen and Black Swan recorded in multiple Blue Gum High Forest locations dominated reserves of the Western Group in 2008 but are very unlikely to be replicated given the absence of permanent water bodies. These sightings contribute to approximately one quarter of turnover, and the original sightings were probably recorded for birds flying over the reserves.

The reasons for turnover in other cases is not so clear cut. Conditions outside the LGA can have a major impact on what birds are present where. Flowering events elsewhere (such as inland or in other coastal areas) can impact the presence of migratory and nomadic species. This can bring more species to the Sydney basin or result in less species being present. Autumn 2018 was characterised by an extended dry period with little good rainfall. Spring 2018 was little better and followed a comparatively dry winter period. Good rain did not really fall until later in spring, at the end of November, and as such fell largely after the bulk of the survey work was completed, and certainly after many of the seasonal migrants would normally have completed their breeding season.

The majority of species recorded in 2018 can broadly be called sedentary species. This was consistent across the reserve groupings as a percentage of total species present (Figure 373). Poor local conditions can result in local movements in all species including sedentary species resulting in contractions and expansions in distribution in response to resource availability. Resources include available clean surface waters for drinking and bathing, food availability and enough space to establish breeding and foraging territories.

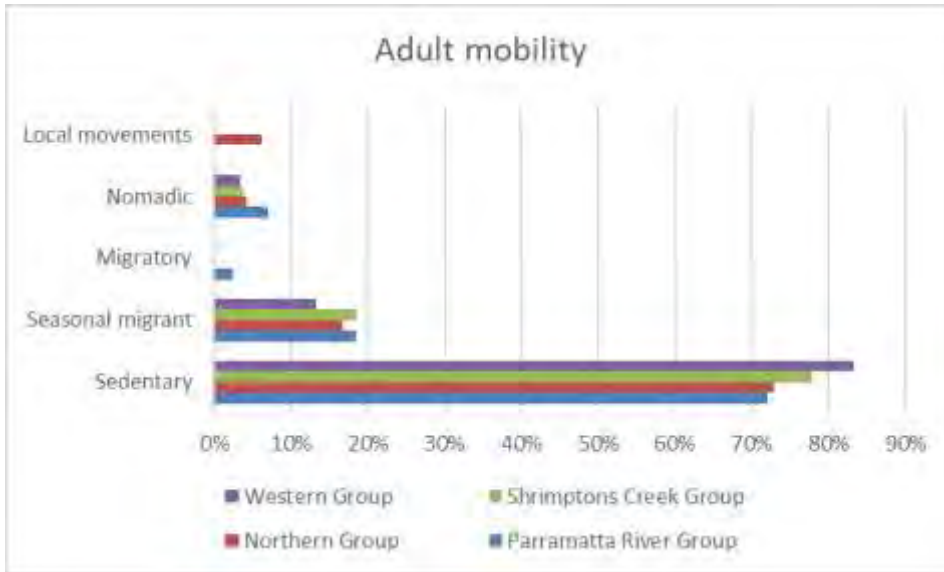


Figure 373 Broad mobility categories for species recorded in 2018.



Figure 374 Examples of **sedentary species** include Laughing Kookaburra- Boobajool Reserve (left), Grey Butcherbird at ELS Hal (centre), Brown Thornbill at Looking Glass Bay (bottom right) and Australian King-parrot at Denistone Park.



Figure 375 Commonly observed **seasonal migrants** in the City of Ryde include Channel-billed Cuckoos (left), Australasian Figbirds – (centre at Morrison Bay) and Sacred Kingfishers (Right at Koonadan Reserve).

The majority of species observed were insectivores (Figure 376).

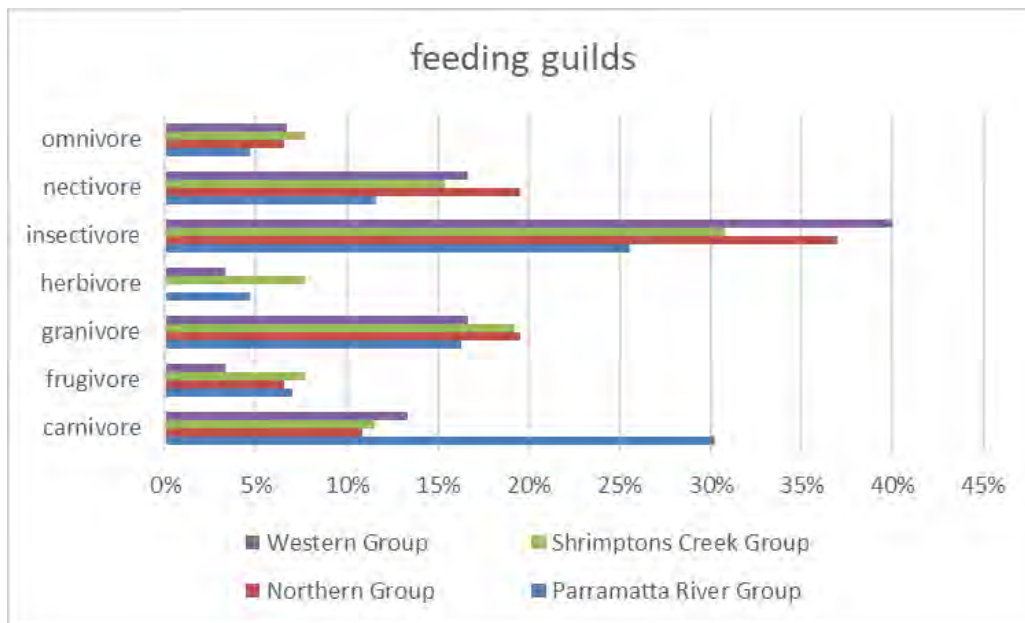


Figure 376 Feeding guilds of species as a percentage of total species richness for each reserve grouping

Insectivores include a diverse group of species from White-faced Herons to Black-faced Cuckoo-shrikes to Superb Fairywrens. Frugivores include species such as Satin Bowerbirds, Australasian Figbirds and Eastern Koels. Species that are true omnivores, such as Pied Currawongs are less common. Nectivores include both common and rarer species such as Rainbow Lorikeets and Little Wattlebirds. True carnivores include predatory species including many of the “fishing” species found along the River foreshore including Australasian Darter, Crested Tern, Eastern Great Egret, Grey Butcherbird, Little Black Cormorant, Little Pied Cormorant, Powerful Owl and Sacred Kingfisher. The prevalence of the “carnivore” guild on the Parramatta River is explained by this mix of species which is not present elsewhere.



Figure 377 Australasian Darter with a Yellowfin Bream at Morrison Bay (Applied Ecology 2018)

The predominance of the carnivore guild along the river also results in the birds in this area having a typically larger body size than other reserve groupings (Figure 378). Despite this, medium-sized birds dominated in all reserve groupings. Many of the most common species such as Sulphur-crested Cockatoos, Noisy Miners and Rainbow Lorikeets fall into the medium-sized category.

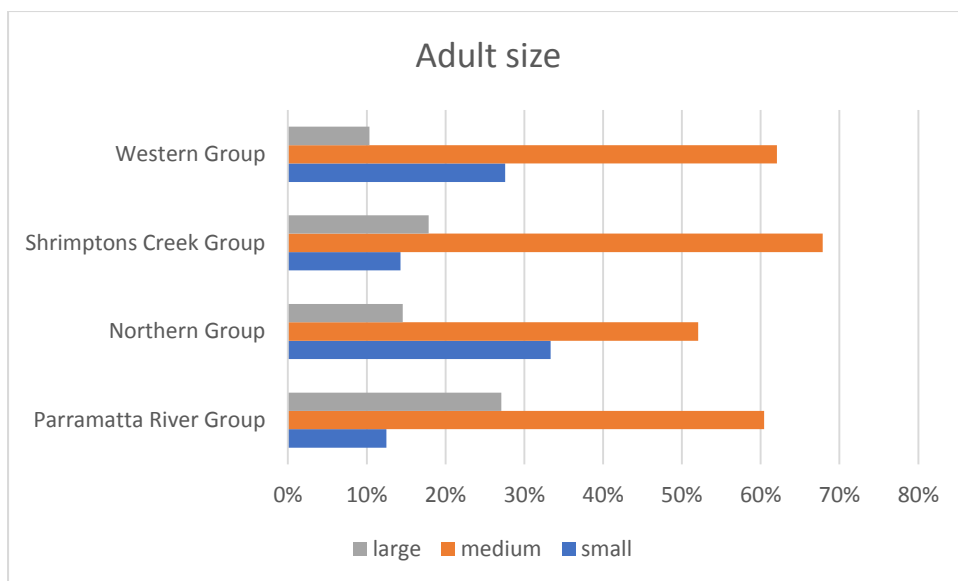


Figure 378 Broad grouping of bird sizes as a percentage of total species richness for each reserve grouping

There is no discernable pattern to species present in 2008 that were not present in 2018. A particular guild or group of migratory species does not dominate the list (Table 275). Some of the species listed would realistically be considered uncommon or irregular visitors to the study sites, such as the Australasian Pipit, Grey Shrike-thrush and Rufous Whistler, but certainly not extirpated from the LGA.

Table 275 Bird species present in 2008 that were not detected in 2018

Common Name	Scientific Name
Australasian Pipit	<i>Anthus novaeseelandiae</i>
Bar-tailed Godwit	<i>Limosa lapponica</i>
Black Swan	<i>Cygnus atrus</i>
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>
Dusky Moorhen	<i>Gallinula tenebrosa</i>
Eurasian Coot	<i>Fulica atra</i>
Fairy Martin	<i>Petrochelidon ariel</i>
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>
Grey Shrike-thrush	<i>Colluricincla harmonica</i>
Noisy Friarbird	<i>Philemon corniculatus</i>
Purple Swamphen	<i>Porphyrio porphyrio</i>
Rufous Whistler	<i>Pachycephala rufiventris</i>
Southern Boobook	<i>Ninox novaeseelandiae</i>

Species gained in 2018 (Table 276) can partly be explained by the addition of two reserves on the edge of the Lane Cove National Park (Christie Park and Fielder Park) that contributed some smaller species that prefer good bush, combined with improving conditions through long term bush regeneration. There are several migratory species present that may not have been present in 2008 due to conditions outside the LGA. Overall, and taking the LGA as a whole, the turnover of bird species does not raise any red flags. The freshwater wetland/open water species recorded in the western reserves in 2008, while unlikely to be found there now, have the potential to be found along

Shrimptons Creek, particularly as the condition of the corridor continues to improve with restoration works at Santa Rosa Park, for example, maturing into good wetland and riparian habitat.

Table 276 Bird species present in 2018 that were not detected in 2008

Common Name	Scientific Name
Australasian Figbird	<i>Sphecotheres vieilloti</i>
Australian Wood Duck	<i>Chenonetta jubata</i>
Brown Gerygone	<i>Gerygone mouki</i>
Brown Goshawk	<i>Accipiter fasciatus</i>
Crested Tern	<i>Thalasseus bergii</i>
Golden Whistler	<i>Pachycephala pectoralis</i>
Lewins Honeyeater	<i>Meliphaga lewinii</i>
Little Wattlebird	<i>Anthochaera chrysoptera</i>
Red-rumped Parrot	<i>Psephotus haematonotus</i>
Royal Spoonbill	<i>Platalea regia</i>
Rufous Fantail	<i>Rhipidura rufifrons</i>
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>
Variegated Fairy-wren	<i>Malurus lamberti</i>
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>
Yellow Thornbill	<i>Acanthiza nana</i>
Yellow-faced Honeyeater	<i>Lichenostomus chrysops chrysops</i>

8.2.2 Reptiles and Amphibians and mammal species richness

Reptiles and Frogs

Unlike many bird species, reptiles and frogs are far less mobile, and benefit from proximity to good bush and open water. Thus, not surprisingly, the greatest diversity of reptiles and frogs was recorded in the Northern Group of reserves in 2018. However, this is also the group of reserves that had the most turnover of species, with the two species of snakes recorded in 2008 not recorded in 2018. These snake species, the Golden Crown Snake and Black-bellied Marsh Snake, are small cryptic species and not generally considered urban tolerant, and despite targeted searches were not detected. They may still be present in small numbers or it is equally likely that they have not been able to persist in the smaller reserves due to increasing pressures of the urban environment. The Eastern Water Dragon is urban tolerant under the right conditions and while it was not recorded in 2008 it was widely encountered and was particularly abundant along Shrimptons Creek in 2018. During the 2018 surveys it was noted that the Weasal Skink, Dark-flecked Garden Sunskink and Pale-flecked Garden Sunskink were not observed in the numbers expected and the Weasal Skink was not observed at all. These three small skinks, usually common to abundant, may have been adversely impacted by a drop in invertebrate numbers (their prey) during the previous two very hot and dry summers. In addition their eggs, which they deposit in moist soil, may have been desiccated, resulting in reduced reproductive success due to record low soil moisture in 2016-2017.

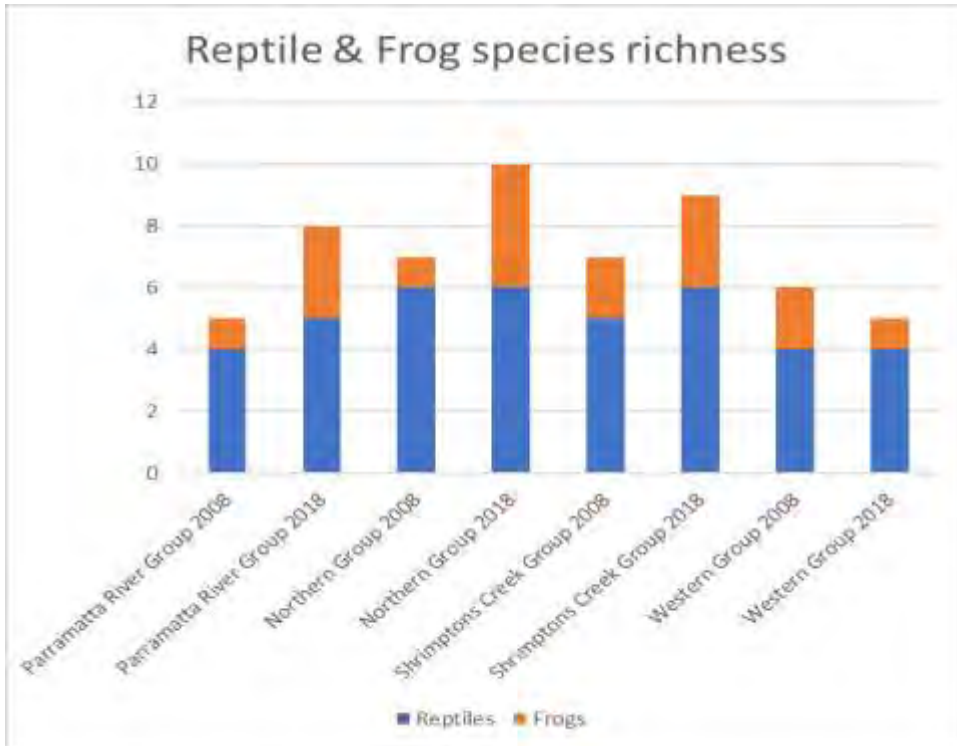


Figure 379 Reptiles and Amphibians species richness for reserve corridors from 2007 and 2017

The four species of frog detected were patchily distributed in reserves with suitable habitat. Peron’s Tree Frog was not detected in 2008, became the most widely distributed species and could be heard calling from many reserves and nearby suburban blocks, particularly in older, well established backyards. The Green Stream Frog, also not detected in 2008, is fairly common in other larger bushland reserves in the LGA with suitable habitat particularly near flowing water on sandstone. Thus it was not surprising that it was detected in the tributary of the Lane Cove River that rises in Waterloo Park and flows under the M2 to Fielder Park. Less connected to good habitat is Maze Park and the species was also present there. Shrimptons Creek provided some of the best frog habitat during the current survey and frogs were abundant in several locations, particularly in Santa Rosa Park. Volunteers at “The Habitat” observed a Red-bellied Blacksnake in the corridor in spring 2018 and sightings of this species are likely to increase along this corridor with improving habitat providing suitable refugia and abundant preferred prey (reptiles and frogs).



Figure 380 The biodetention basin in Santa Rosa Park is maturing into excellent frog habitat.

Mammalian fauna

Three additional species of terrestrial mammals were detected in 2018. These species were the Swamp Wallaby, an Antechinus species (likely Brown Antechinus) and the Short-beaked Echidna. Remote cameras and/or hairtubes detected these species in Kobada Park with Swamp Wallabies also present in Fielder Park and Christie Park. All these reserves adjoin the Lane Cove National Park.

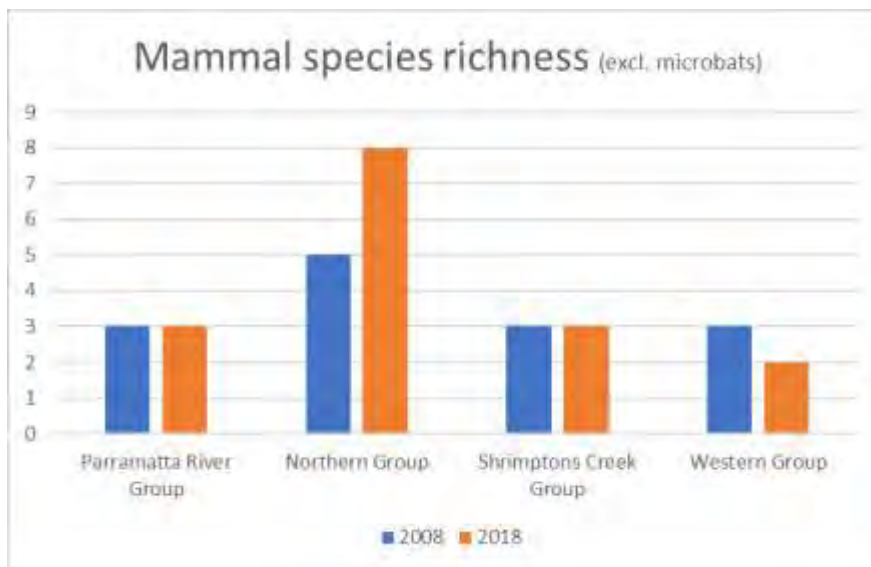


Figure 381 Mammalian fauna species richness for reserve corridors from 2007 and 2017

Sugar Gliders were also detected in Kobada Park, but they appear to have disappeared from Tasman Park where they were observed in 2008. Tell-tale chew marks on Red Bloodwoods still remain in Tasman Park but these all appeared to be quite old. Multiple remote cameras and hairtubes failed to detect this species or the Long-nosed Bandicoot in Tasman Park and it is very likely that decreased connectivity to better bush to the north has resulted in these small, fairly isolated populations

succumbing to the pressures of persisting in the urban environment since 2008. Long-nosed Bandicoots were detected in Marsfield Park where there is opportunity for dispersal from the north via culverts under the M2.

8.2.3 Microbats Surveys

Overview of species present

A total of 12 species of microbats were identified during the current study (Table 277). Of these, 4 species are listed as Vulnerable under the NSW Threatened Species Conservation Act 1995. One genus of microbats (*Nyctophilus* species) cannot be identified to species using echolocation calls and has been assumed to be a single species. Bat detectors were used in 20 of the 42 reserves in the current study. This included the 6 larger reserves where quadrats were present, and another 14 reserves with good potential microbat habitat – either feeding and/or roosting. No microbats were recorded in one reserve (Fielders Park) but this may have been due to the comparatively short survey period (opportunistic time on one evening). Of the 12 species recorded, Gould’s Wattleed Bat (16 reserves) and the Eastern Bentwing Bat (11 reserves) were the most commonly recorded. Of these, Eastern Bentwing Bat is listed as Vulnerable under the NSW Biodiversity Conservation Act 2016.

Table 277 Microbat species recorded, conservation status, and number of reserves where species were present

COMMON NAME	SPECIES NAME	BioCon Act	# RESERVES
White-striped Free-tailed Bat	<i>Austronomus australis</i>		9
Gould's Wattleed Bat	<i>Chalinolobus gouldii</i>		16
Chocolate Wattleed Bat	<i>Chalinolobus morio</i>		2
Little Bentwing Bat	<i>Miniopterus australis</i>	V	5
Eastern Bentwing Bat	<i>Miniopterus orianae oceanensis</i>	V	11
Ride's Free-tailed Bat	<i>Mormopterus ridei</i>		8
Large-footed Myotis	<i>Myotis macropus</i>	V	2
Long-eared Bat	<i>Nyctophilus</i> sp.		5
Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i>	V	3
Eastern Broad-nosed Bat	<i>Scotorepens orion</i>		1
Large Forest Bat	<i>Vespadelus darlingtoni</i>		3
Little Forest Bat	<i>Vespadelus vulturnus</i>		2

The current study’s results contrasted strongly with the results from the 2008 surveys, which recorded microbats in 5 reserves, with a maximum of 2 species (Table 278). The most likely explanation for the differences in results is the improvement in bat detection using Anabat detectors. The newer detectors are waterproof, and can be left out in the reserve overnight, or for an extended period, unlike the earlier versions of the detector.

Table 278 Distribution of microbats reported from 2008 surveys

RESERVE SURVEYED	Gould's Wattleed Bat	Little Forest Bat
Boobajool Reserve	y	
Banjo Paterson Park	y	
Denistone Park	y	
Flinders Park	y	
Tasman Park	y	y

Distribution of species

Bat detectors were left in each of the quadrat reserves for an extended period of time, aiming to maximise species richness detected in the reserve (Table 279). Total survey nights ranged from 10 in ELS Hall Park, which has a smaller area of comprehensive bushland compared to the other reserves, to 36 nights in Kobada Park. Number of survey nights needed to meet the minimum, and then detectors were left until they were needed elsewhere.

Table 279 Summary of survey effort for microbats in quadrat reserves

RESERVE	AUTUMN NIGHTS	SPRING NIGHTS	TOTAL NIGHTS/ RESERVE
EL HALLS	3	7	10
KOBADA PARK	15	21	36
TASMAN PARK	8	14	22
MARSHFIELD PARK	8	6	14
GLADES BAY	8	9	17
DENISTONE PARK	16	6	22

Of the 12 species recorded in the current study, 11 were recorded in quadrat reserves (Table 280). Overall diversity ranged from 3 species in Tasman Park to 8 species in Kobada Park, suggesting that beyond a certain point, species richness did not increase with additional survey nights.

Table 280 Distribution of microbat species in quadrat reserves (threatened species highlighted in green)

	Deniston e Park	ELS Hall Park	Glades Bay Park	Kobad a Park	Marsfiel d Park	Tasma n Park	Total quadrat s
Gould's Wattled Bat	y	y	y	y	y	y	6
Eastern Bentwing Bat	y	y	y	y	y		5
White-striped Free-tailed Bat	y	y	y	y	y	y	6
Little Bentwing Bat	y		y		y	y	4
Chocolate Wattled Bat		y		y			2
Long-eared Bat	y	y	y	y	y		5
Ride's Free-tailed Bat	y	y	y	y	y	y	6
Large Forest Bat		y	y		y		3
Little Forest Bat	y				y		
Yellow-bellied Sheath-tailed Bat			y	y	y		3
Large-footed Myotis				y			1
Eastern Broad-nosed Bat				y			1
Total species	4	4	7	8	6	3	

When the overall species richness for microbats in the current study was compared with those reported from 2008 (Figure 382), it was apparent that there may have been inconsistencies in survey methodologies used. Many of the quadrat reserves had no records of microbat fauna from 2008. Ironically, the reserve with the greatest microbat diversity in 2008 was the reserve with the lowest diversity recorded in 2018.

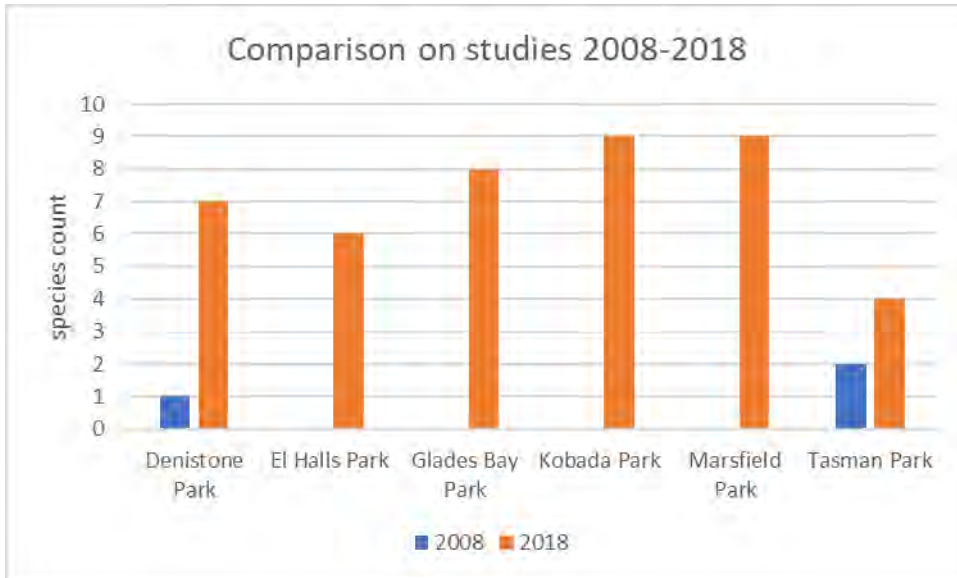


Figure 382 Comparison of total species richness from microbat surveys – 2008 to 2018

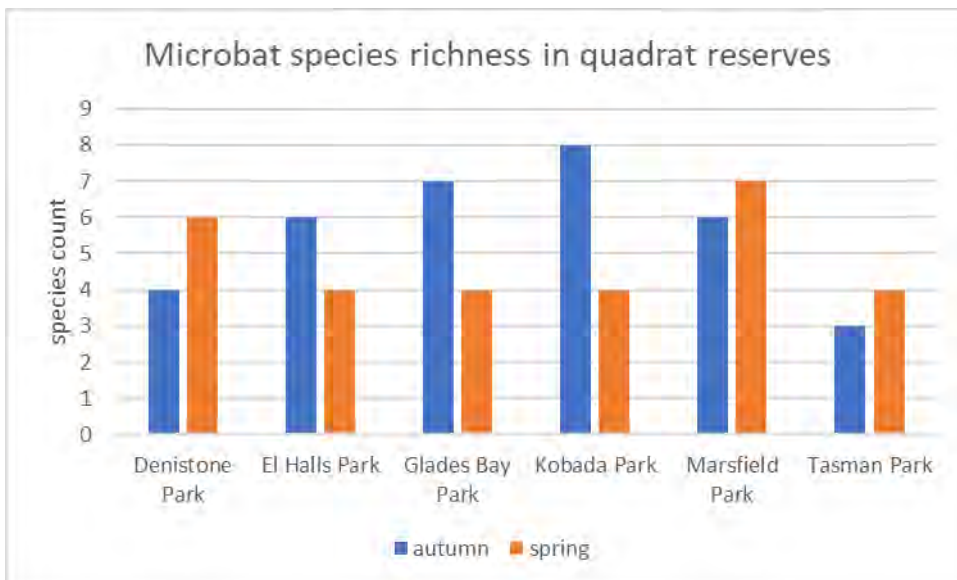


Figure 383 Comparison of species richness from microbat surveys – autumn and spring 2018

Results of microbat surveys in autumn were compared with those from spring 2018 (Figure 383). Species richness was greater in autumn for half the quadrats, and greater in spring for the other half. This was not consistent across reserve groups, and there was no obvious explanation for this.

When the actual species recorded in each season was compared between season, there was a subset of species that were constant for the two seasons (Figure 384). For all but one quadrat/reserve there were 3 species that were constant across the two surveys, and for Marsfield Park there were 4 constant species.

Actual total species diversity was similar in most of the quadrats/reserves, ranging from totals of 7 to 9 species of microbats for the two seasons. Diversity was lowest in Tasman Park, and 3 of the 4 species recorded were constant across the two seasons surveyed.

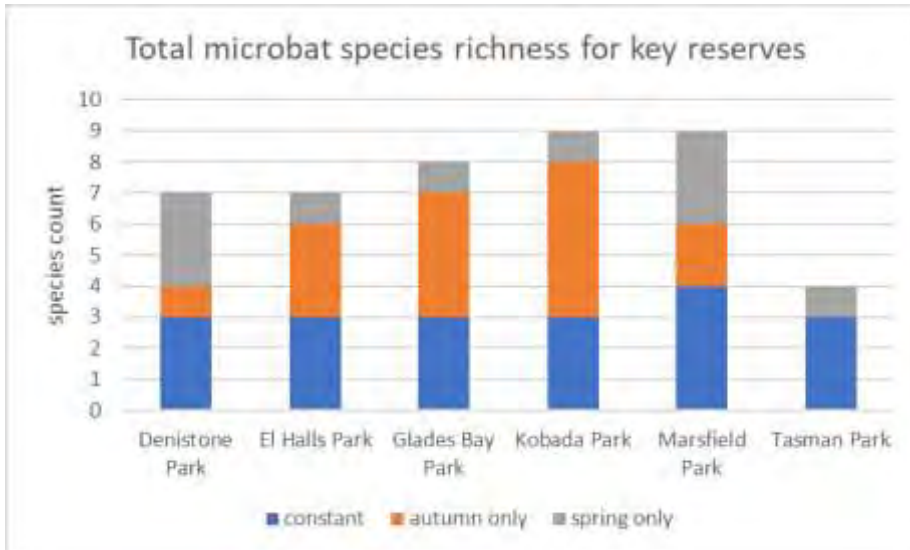


Figure 384 Microbat species accumulation across seasons for quadrat surveys in 2018

Species that were regularly recorded in both seasons in a given reserve are likely to form the core component of microbat fauna in these reserves, based on the current study (Table 281). Gould’s Wattleed Bat is widespread and recognised as a highly urban tolerant species, and it is not unexpected that it is commonly recorded as a constant species. Two species of threatened Bentwing Bats, however, were also constant in 3 or 4 of the reserves surveyed. This raised questions about the tolerance of the recorded species to urbanisation. This is considered in the following section.

Table 281 Microbat species recorded in both seasons surveyed in 2018 in quadrat reserves

MICROBAT SPECIES (STATUS)	CONSTANT IN # RESERVES
Gould's Wattleed Bat	6
Eastern Bentwing Bat (V)	4
White-striped Free-tailed Bat	4
Little Bentwing Bat (V)	3
Ride's Free-tailed Bat	1
Large Forest Bat	1

Habitat partitioning in smaller bushland reserves in Ryde LGA

Microbat echolocation calls fall within a spectrum of frequencies. Lower frequency calls travel further but are not always able to locate very small insects and other items. Higher frequency calls do not travel as far, but are very good for locating small insects close by. Combining this with flight speed and manoeuvrability means that some microbats are better suited to foraging in open sky while others are well adapted to foraging in or around the canopy and shrub layers. Some of the observed foraging niche selection is also influenced by potential exposure to predation by species such as the Powerful Owl (and other owls), kookaburras, butcherbirds, pied currawongs and ravens.

Distribution of species in the current study is provided in Table 282. **Error! Reference source not found.** Key life history characteristics for microbats in City of Ryde LGA are summarised in Table 283.

Table 282 Distribution of microbat species recorded in smaller bushland reserves in City of Ryde, 2018

MICROBAT SPECIES	Eastern Bentwing Bat	Gould's Wattled Bat	White-striped Free-tailed Bat	Chocolate Wattled Bat	Large-footed Myotis	Ride's Free-tailed Bat	Little Bentwing Bat	Long-eared Bat	Little Forest Bat	Large Forest Bat	Yellow-bellied Sheath-tailed Bat	Eastern Broad-nosed Bat
RESERVE SURVEYED												
Christie Park	y											
North Ryde Park		y										
Bill Mitchell Park			y									
Looking Glass Bay Park	y	y		y	y							
Mallee/Tyagarah Reserve	y	y	y			y	y					
Melrose Park			y									
Morrison Bay		y										
Putney Park	y	y										
Santa Rosa Park		y										
Tindarra Reserve	y	y										
Wilga Park	y	y										
Symons Reserve		y				y						
Stewart Park		y										
Denistone Park	y	y	y			y	y	y	y			
ELS Hall Park	y	y	y	y		y		y		y		
Glades Bay Park	y	y	y			y	y	y		y	y	
Kobada Park	y	y	y	y	y	y		y			y	y
Marsfield Park	y	y	y			y	y	y	y	y	y	
Tasman Park		y	y			y	y					
	11	16	9	3	2	8	5	5	2	3	3	1

Table 283 Key life history characteristics for microbats recorded in City of Ryde LGA in 2018 (see below for data sources)

SPECIES NAME	COMMON NAME	ECHOLOCATION FREQUENCY	FLIGHT PATTERNS	FORAGING NICHE**	SENSITIVE TO URBANISATION*
<i>Austronomus australis</i>	White-striped Free-tailed Bat	low	fast, low manoeuvrability	Open	tolerant
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	low	fast, high manoeuvrability	Edge	tolerant
<i>Chalinolobus morio</i>	Chocolate Wattled Bat	high	fast, moderate manoeuvrability	Edge	moderately sensitive
<i>Miniopterus orianae oceanensis</i>	Eastern Bentwing Bat	medium	fast, moderate manoeuvrability	Edge	tolerant
<i>Miniopterus australis</i>	Little Bentwing Bat	high	fast, high manoeuvrability	Clutter	likely to be moderately sensitive
<i>Mormopterus ridei</i>	Ride's Free-tailed Bat	low	medium, moderate manoeuvrability	Open	tolerant
<i>Myotis macropus</i>	Large-footed Myotis	linear	medium, moderate manoeuvrability	Clutter	very sensitive
<i>Nyctophilus sp</i>	a Long-eared Bat	linear	slow, high manoeuvrability	Clutter	moderately sensitive
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tailed Bat	low	fast, low manoeuvrability	Open	unknown
<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	low/medium	medium, high manoeuvrability	Edge/clutter	moderately sensitive
<i>Vespadelus darlingtoni</i>	Large Forest Bat	medium	fast, moderate manoeuvrability	Clutter	likely to be sensitive
<i>Vespadelus vulturnus</i>	Little Forest Bat	high	fast, high manoeuvrability	Clutter	moderately sensitive

Foraging spaces were defined following Milne et al (2004) and Adams et al (2009) as: 1) open-space; 2) edge-space; and 3) clutter (known gleaning species). Overall sensitivity to urbanisation is described in Threlfall et al (2012). Echolocation ranges are based on Reinhold et al (2001) and Pennay et al (2004) with characteristic call frequency ranges: low <38 kHz; medium 38-48 kHz; high >48 kHz; or linear (vertically linear calls).

Sensitivity to urbanisation for species recorded in the current study was compared with the number of times these species were recorded. In general, microbats with greater sensitivity to urbanisation were recorded at fewer reserves in the current study, moderately sensitive species were recorded at the same number or slightly more reserves, and tolerant species were recorded at a much greater number of reserves (Figure 385).

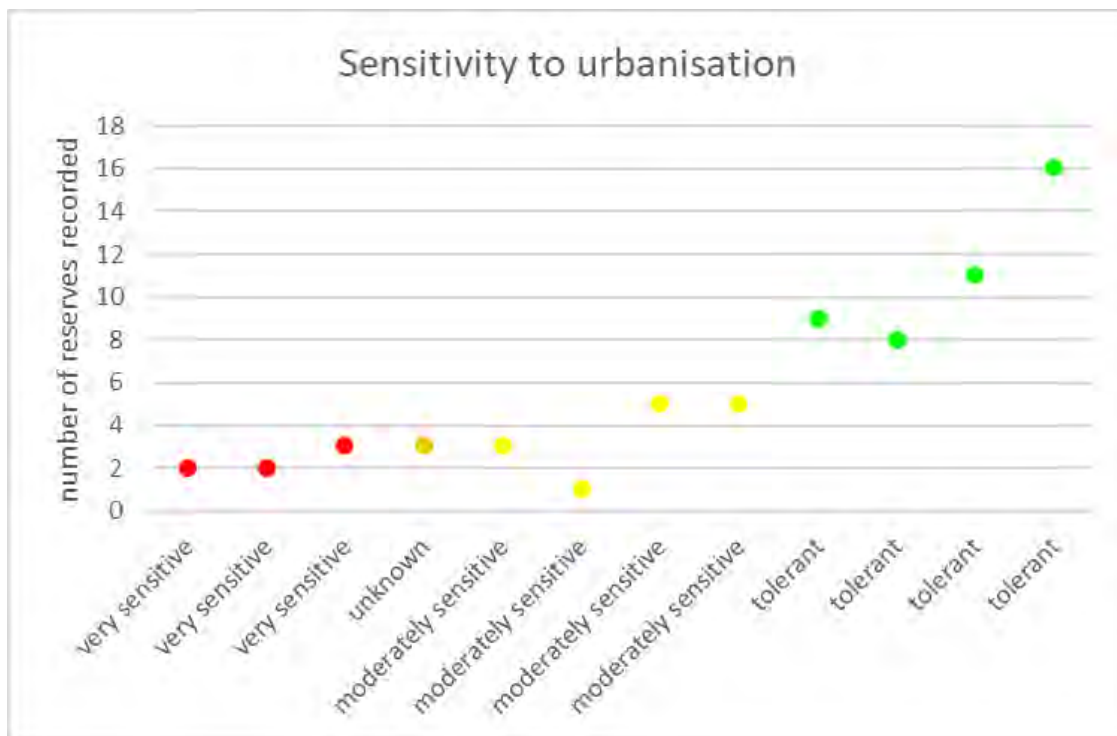


Figure 385 Sensitivity of microbat species and number of reserves they were recorded at during 2018

Microbats in an urban environment

Microbats comprise a major component of remnant mammalian fauna in urban areas. The major impact for this faunal group is the loss of habitat associated with clearing, including loss of foraging habitat and roosting habitat. Urbanisation can also negatively affect bat communities through noise, artificial lighting, collisions with cars and predation from domestic animals (Gehrt and Chelvig 2004). Overseas studies on the effects of urbanisation on bats identified the high ecological value of habitat remnants, and this is true for Australia as well (Basham et al. 2011; Threlfall et al. 2011).

There is a clear trend for greater microbat species richness as well as abundance in areas with remnants of native vegetation in urban areas in Australian cities and larger towns, although a reduced richness and greater dominance by a few species has been noted in highly urbanised areas (Jung and Kalko 2011). In other cases, there is greater species richness in urban parks and residential areas (Hourigan et al. 2010; Threlfall et al. 2012). Old growth trees in remnant native vegetation provide the essential roost sites and forage availability that ensure the persistence of microbat species in urban environments. The availability of these resources can be affected by past and present land-use practices, such as clearing and urban development, and particularly by the current

trend of medium density housing following complete clearing of the subdivision area. Other considerations for microbats include interspecific competition for roost sites, especially tree hollows (Threlfall et al. 2013), and competition with birds such as corellas, cockatoos, parrots, rosellas, lorikeets, and introduced species including the common starling and common (Indian) myna.

Most microbats are highly mobile species and can forage up to 5km from their roost sites. As well, they may alternate between several roost sites in different parts of their range. They have been described as the most persistent group of native fauna following the ongoing impacts of urbanisation – their mobility, combined with their capacity to roost almost opportunistically as long as there are suitable locations, have contributed to the persistence of these species.

Among the microbats there are notable differences in feeding behaviours, speed and manoeuvrability in flight, all of which contribute to the development of preferred habitat niches for each species (see Table 282). Like other animals, microbats need water for drinking, and will access this in rivers, creeks, ponds, dams, pools and wetlands – anywhere with suitable open water. Concentrations of insects, especially flying insects, tends to be higher on or around water, thus bats are able to access most of their required intakes in these areas. All the reserve corridors in the current study are centred on or near a named watercourse.

Presence of hollow bearing trees is a major determinant in microbat diversity and abundance. Nearly 60% of all microbat species in Australia are dependent on tree hollows for roosting habitat and/or maternity habitat. Research indicates that hollow-bearing trees are in decline across all forest types within Australia, and particularly in urban areas. In urban landscapes, the persistence of hollow-dependent bats arguably depends upon the protection of roosting habitat, the hollow bearing trees. Key differences in microbat diversity have been linked to the presence of hollow bearing trees, on which some microbat species are almost completely dependent (Treby & Castley, 2016). For the microbat species recorded in the current study in Ryde, obligate hollow dwelling microbats include the *Vespadelus* species, and these were notably absent from most of the reserves.

Trees are important for bats because they provide focal points for navigation and foraging (Law, Chidel & Turner 2000; Lumsden & Bennett 2005). Tree density has also been related to microbat activity, with species richness and activity peaking at intermediate tree densities (Hanspach et al, 2012). Areas with low tree cover tend to be dominated by larger, fast flying species, while areas with high tree cover tend to be dominated by smaller, highly manoeuvrable species, a pattern that has been consistently reported from studies around the world. The size of the reserve has also been noted to have a significant effect on the distribution of microbat species (Beninde et al, 2015), with more sensitive species typically only found in the largest reserves.

Microbat species recorded in this survey

Gould's Wattled Bat (*Chalinobolus gouldii*) is reported to be very tolerant to the effects of urbanisation with a widespread distribution throughout larger and smaller urban areas (Threlfall et al 2012a). This species was recorded in 16 reserves in the current study from a total of 20 reserves surveyed and is almost certainly the most commonly recorded species in the Sydney basin. Somewhat surprisingly it was not recorded in Christie Park, Melrose Park or Bill Mitchell Park, but these reserves were all sampled opportunistically, and this species is highly likely to be recorded there.

White-striped Freetailed Bat (*Austronomus australis*) has been found to make extensive use of the urban matrix where it has been recorded most frequently foraging above cleared and grassy flood-plains (Threlfall et al 2012a). Grassed open space reserves such as sporting fields along the

Parramatta River therefore provide ideal habitat for this species, and it was recorded in Bill Mitchell Park and Melrose Park on the river foreshores and in Bremner/Mallee/Tyagarah Parks which form an extension to Morrison Bay Park on the river foreshore. This species was recorded in surveys around each of the six quadrats.

The Eastern Bentwing Bat (*Miniopterus orianae oceanensis*) is believed to be relatively tolerant to urbanised landscapes, mainly because it will utilise man-made structures for roosting sites, including stormwater drains, tunnels and culverts, and buildings (Treby & Castley, 2016). This species is listed as Vulnerable in the NSW Biodiversity Conservation Act 2016, in part because of its complex life history which includes extensive annual migrations between overwintering caves in the Central Tablelands, several key maternity caves (Wee Jasper Caves near Yass, and Bungonia Caves near Marulan), and their summer habitat along the eastern coast. Given their adaptability around roost selection, it is not surprising that this species was the second most commonly recorded in the current study, although it was notably absent from Tasman Park.

The Little Bentwing Bat (*Miniopterus australis*) shares many characteristics with the Eastern Bentwing Bat, including a complex seasonal migration. The species is more common along the Queensland east coast, spreading south through NSW to Wollongong. Five nursery sites are known in Australia, including several in NSW that they share with the Eastern Bentwing Bat, where they benefit from additional maternity roost warming from the larger species.

Like Gould's Wattled Bat and the White-striped Free-tailed Bat, Ride's Free-tailed Bat (*Mormopterus ridei*) is an open space feeder with low frequency calls. Microbat species that are open space feeders with low frequency calls are less dependent on the presence of bushland in the urban matrix, and thus are more tolerant of a range of urban conditions (Threlfall et al, 2011). This species was also commonly reported, with records in 8 reserves in the current study.

The Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*) is also an open space forager with low frequency calls. This is the largest microbat in the Sydney region, and is listed as Vulnerable in the Biodiversity Conservation Act. Little is known about this species but it is believed to have an extensive migration across southeastern Australia. The species is dependent on hollow bearing trees for roost habitat where it is generally found as individuals or in very small groups. The main threats to conservation of the Yellow-bellied Sheath-tailed Bat are habitat loss, particularly of old-growth trees, disturbance to roosting and summer breeding sites, and prey depletion or secondary poisoning as a result of pesticides and herbicides (OEH, 2017).

Nyctophilus gouldi, one of the more common Long-eared bats in the Sydney basin, has been reported to have a preference for trees with a greater amount of understory and canopy cover, and only roosted where the extent of forest cover in the local landscape was greatest (Threlfall et al, 2013). The Long-eared Bats tend to have flexibility in the amplitude of their echolocation calls and can forage as aerial hawkers or whispering gleaners. They can also use visual cues and will turn off their echolocation when they get close to their prey, enabling them to catch insects that are sonar sensitive, such as moths. This flexibility in echolocation calls makes the genus difficult to differentiate based on recorded calls alone.

Clutter tolerant species, such as the Large Forest Bat (*Vespadelus darlingtoni*), and clutter dependent species, such as the Little Forest Bat (*V. vulturnus*), belong to a group of microbats that are most vulnerable to the effects of habitat fragmentation and urbanisation (Threlfall et al. 2012a). These species tend to be largely absent from more urban areas, but can be quite common in well vegetated landscapes, provided there is a corresponding low density of houses. The Chocolate

Wattled Bat (*Chalinolobus morio*) has similar characteristics to these species, including fast and manoeuvrable flight, high frequency calls that can locate smaller prey at closer distances, and a preference for foraging around the edges of bushland vegetation. This species also appears to have minimum bushland patch size requirements, and shows a preference for vegetation communities on shale or shale influenced soils (Threlfall et al, 2012b).

Summary of potential impacts for microbats

Main potential impacts identified for microbats from literature and the current study include:

- Reduced clutter through simplification of vegetation, eg following too frequent fire
- Increasing density of urbanisation
- Loss of hollow bearing trees and other roost sites
- Disruption to flyways, especially for regionally migratory species
- Artificial lighting
- Exposure to predation
- Lack of understanding, eg vilification as ‘disease-ridden vermin’

These all have the potential to alter or reduce microbat population characteristics over time.

9 DISCUSSION OF FAUNA SURVEY RESULTS

The previous sections have presented summary data for fauna recorded in surveys during autumn and spring in 2018 and provided comparisons between 2008 and 2018 species inventories. While diversity remains high, there has been multiple “losses and gains” in species recorded. This needs to be taken with caution, however, and a good understanding of some of the contextual factors that may have contributed to the perceived changes. These factors include:

- Survey effort;
- Survey equipment (more, better in 2018);
- Stochastic events outside the LGA such as localized flowering events;
- Stochastic events inside the LGA such as localized flowering events;
- Local weather conditions – extremely dry hot summer in 2016 and 2017; and
- Regional & national weather conditions impacting the arrival and departure times of migrant species.

Understanding that there are multiple factors that can impact the species richness detected during a given survey period, especially for mobile species, needs to be considered with a realistic understanding of the habitat available, types of species that are likely to use that habitat, how urban tolerant a species is and the likelihood that they will inhabit smaller urban reserves. Whilst it is exciting to see a rare or unusual species it is equally satisfying to see that common species are remaining common. It is not good to see species in locations where they are unlikely to survive let alone flourish.

When small isolated populations are detected they can be assisted with targeted management. Two species of note are the Bar-sided Forest Skink population in Denistone Park and Long-nosed Bandicoots in Marsfield Park. The former is directly under threat from creation of new bike tracks (which Council is attempting to stop) and both from fox predation. Ongoing suppression of the LGA’s fox population and retention of refugia is necessary for both these species to persist.

More generally expansion of habitat resources is possible in most of the reserves and parks surveyed but there needs to be a clear understanding of where habitat creation fits in mixed use parks

(passive recreation, sporting facilities, wildlife habitat). Specific corridor-based management plans to balance competing needs and provide clear direction for any future development may be useful for park users and land managers (see recommendations below). It is also worth noting that creating fauna habitat or supplementing existing habitat to benefit fauna can often be quite different to attempting to recreate the vegetation community that existed on a given site pre-disturbance.

10 GENERAL RECOMMENDATIONS

Surveys

Continue to monitor reserves and repeat surveys on a decadal or half decadal basis. Retain new reserves from the current study, but do not continue surveys in Trafalgar Park or Quandong Park as these each have several trees present over a mown grass understorey and lack any real ecological value.

Flora surveys should be timed to optimise the likelihood of locating species – spring, and a single dataset used for comparison with previous survey(s). Repeating surveys in autumn and spring is not likely to provide additional information about species richness. Alternatively run surveys over summer- beginning in September and finishing in April. This would allow zoologists and botanists to choose optimal conditions to target certain species and flowering events.

Mapping

Update mapping of natural areas to reflect current extents of natural areas in each park. This is especially important for all endangered ecological communities. Better define natural area boundaries to reduce impacts and edge effects. Improved management along the interface between natural areas and parkland or sportsfields will lead to better environmental outcomes. This can be achieved through plantings, incorporating Water Sensitive Urban Design principles, and enhanced training opportunities for operations staff.

General recommendations

- Maintain connectivity between reserves and corridors to ensure genetic diversity is maintained, and that animals have adequate access to refuge areas during fire and other perturbations
- Consider introducing Wildlife Protection Areas for the most significant bushland reserves
- Manage fire to ensure the ongoing persistence of sensitive species
- Use signage to educate and restrict reserve use to established tracks and inform of key reserve wildlife assets
- Encourage landholders in neighbouring areas to plant local native species as food for wildlife, and to minimise their use of fertilisers and chemicals to reduce impacts on water quality and invertebrate fauna.
- Undertake to transition to more suitable (for fauna) lighting around public reserves
- Only use appropriate species for the extant vegetation community when planning for revegetation. Implement Council's Planting Guide to ensure that correct species are used as planting of inappropriate species can degrade ecological values.
- Urban parks and sporting facilities can provide supplementary habitat resources and significant opportunities for corridor connections and improved canopy cover.

- Continue to protect riparian corridors and look for opportunities for expansion to meet Office of Water Guidelines.
- Protect the habitat of shorebirds and waders along the Parramatta River

Land Management

Specify management criteria for each land use zone in the generic plans of management currently being developed. Where appropriate, develop separate and site-specific vegetation management plans for bushland areas – these are much cheaper and will help to work towards more targeted outcomes. For larger reserves, consider developing separate plans of management. For reserves with significant fauna assets, ensure the requirements for these species are incorporated into plans of management or vegetation management plans.

During the planning stages for any infrastructure projects or park upgrades, potential impacts on the natural environment must be considered. Infrastructure such as pathways, cycle paths, bridges, hardstand courts, synthetic sportsfield surfaces and lighting in and around natural areas can have detrimental impacts on natural assets and ecological values. Whilst considering the needs of the community in terms of access, consider rationalisation of pathways that dissect bushland areas and further fragment them.

Fire Management:

- Whole of reserve burns are to be avoided at all cost
- Mosaic burns should burn less than half of any reserve, and there should be a patchy arrangement of burnt and unburnt areas, ideally with a range of fire intensities for the burnt areas
- Native fauna species need to be able to move through the landscape to emigrate, access refuge areas, or remain in in-situ refuges, if they are to survive a fire
- Some species are not able to avoid fire, such as the Dural Land Snail, and some areas should be dedicated as ‘fire excluded’ for this species
- A more holistic approach to fire management be adopted by council and any relevant fire authorities, such as NPWS, RFS, NSW Fire & Rescue

Managing for specific fauna species/groups

Bird fauna

Large ground dwelling birds (includes Brush Turkeys and Lyre Birds)

- Encourage residents to keep cats inside at night and wear bells during the day
- Educate residents on the importance of responsible pet ownership

Hollow dependent birds (and other species)

- Retain standing stags and dead limbs on trees. If necessary, fence around the tree to prevent limb drop in areas where there is risk of injury
- Retain old growth trees on development sites adjoining reserves
- If hollow bearing trees are being removed, harvest hollow bearing branches before felling the tree; relocated hollows in younger trees in areas of forest regeneration

- If stags are being removed, consider relocating to a reserve as a standing stag
- Consider hollow augmentation in younger mature trees in areas where there are little or no natural hollows. Monitor and share the results, and monitor successes of other hollow augmentation projects, eg. Swift Parrot in Tasmania, Superb Parrot in Central Tablelands of NSW

Small woodland birds

- Use staged removal of weedy shrubs
- Combine with revegetation planting to re-establish a comprehensive shrub layer for small birds; ensure that supplementary planting includes a range of food resource species that are appropriate to that vegetation community
- Exclude fire or limit to strictly monitored patchy burns, with less than half of the area burnt at any given time, and that there is a suitable inter-fire interval and time since fire

Birds of prey (includes Powerful Owls)

- Where possible do not use feral animal control methods that might leave toxic carcasses, eg 1080, pindone
- Educate residents of the impact of secondary poisoning on wildlife by domestic use of rat and mouse poisons
- Ensure that large shrubby weed control along creeklines is conducted in a staged manner to prevent over disturbance to existing roost sites for Powerful Owls
- Exclude fire from known roosting sites
- Locations of powerful owl roosting sites are not disseminated widely by Council or Bushcare volunteers that work within the reserves

Nocturnal birds (includes nightjars, boobooks and other owls, and tawny frogmouths)

- Exclude fire from areas with ground nesting bird species, at least during their breeding seasons
- Consider establishing noise constraint areas around reserves with known breeding sites for nocturnal birds, eg construction noise restrictions

Other animals

Amphibians

- Monitor and manage water quality in creeks to reduce impacts on frogs
- Retain a range of vegetation around waterways to ensure a more diverse range of frog habitats
- Exclude fire from areas around drainage lines to prevent inbreeding depression and loss of genetic diversity

Reptiles

- Limit fire to patch burns, ensuring that no more than 50% of the area is burnt at any one time, and that there is a suitable inter-fire interval and time since fire

Possums and gliders

- Maintain hollow bearing trees, supplement with nest boxes and translocated hollows
- Limit fire to cool autumn burns with flame height less than 2m
- Exclude fire from smaller reserves, especially in areas with newer urban development where there is limited opportunity for animals to escape using temporary emigration

Flying foxes

- Maintain food resources for this species in the LGA
- Include food plants in revegetation planting species selections
- Promote a positive attitude in the community to flying foxes

Swamp Wallabies and Long-nosed Bandicoots

- Where possible do not use feral animal control methods that might affect swamp wallabies, such as pindone and 1080
- Ensure that shrubby weed control is conducted in a staged manner to prevent over disturbance to existing refuge sites
- Limit fire to patch burns, ensuring that no more than 50% of the area is burnt at any one time, and that there is a suitable inter-fire interval and time since fire

Microbats

- Maintain street trees, especially larger and older trees, to provide navigation, foraging opportunities and refuge from predation
- Prevent removal of hollow bearing trees, supplement available hollows with harvested limbs
- Ensure that old structures such as buildings, culverts, bridges, etc are adequately surveyed for microbats before removal
- Ensure that all new outdoor lighting is shielded with full cutoff covers; where possible use timers to turn lights off when they are not required, or use motion sensors
- Encourage staged replacement of existing lighting with full cutoff covers and timers or motion sensors as part of maintenance activities
- Maintain or improve vegetated corridors from bushland reserves to Lane Cove River
- Promote a positive attitude in the community to microbats

Dural Land Snail

- Monitor for this species in likely habitat in suitable season and weather conditions
- Encourage bush regeneration contractors and bushcare volunteers to learn to identify the species; if found, structure works so that they can avoid trampling it or disturbing habitat for the Dural Land Snail

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12 APPENDICES

The following information is included in appendices to this report:

Appendix A Threatened species profiles
 Vegetation community profiles

Appendix B: Fauna species profiles

Appendix C: Master list of fauna sightings

Appendix D: Fauna sightings by others

13 APPENDIX A THREATENED FLORA SPECIES PROFILES

13.1 Downy Wattle - profile

Scientific name: *Acacia pubescens*

Conservation status in NSW: **Vulnerable**

Commonwealth status: **Vulnerable** 

Gazetted date: 17 Sep 1999

Profile last updated: 01 Dec 2017

13.1.1 Description

Downy Wattle is a spreading shrub, 1 - 5 m high with brilliant yellow flowers, bipinnate leaves (divided twice pinnately) and conspicuously hairy branchlets.

13.1.2 Distribution

Downy Wattle is concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. In City of Ryde, it was found as a planted specimen in Kissing Point Park.



Figure 386 Downy Wattle (*Acacia pubescens*) was seen in Kissing Point Park, planted in a native garden bed

13.1.3 Habitat and ecology

- Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravelly soils, often with ironstone. Occurs in open woodland and forest, in a variety of plant communities.
- Flowers from August to October. Pollination of *Acacia* flowers is usually by insects and birds. The pods mature in October to December.
- Recruitment is more commonly from vegetative reproduction than from seedlings. The percentage of pod production and seed fall for this species appears to be low.



Figure 387 Acacia pubescens: (left) characteristic fine hairs on young stems; (right) flowers and foliage and form (Photos: M. Brainwood)

13.2 Narrow-leaved *Wilsonia* – profile

Scientific name: *Wilsonia backhousei*

Conservation status in NSW: **Vulnerable**

Commonwealth status: **Not listed** 

Gazetted date: 15 Sep 2000

Profile last updated: 17 Aug 2018

13.2.1 Description

Narrow-leaved *Wilsonia* is a perennial, sprawling, matted shrub less than 15 cm tall. The narrow, pointed, dark green, stalkless leaves are succulent and less than 20 mm long. The single white flowers are also stalkless. They have a 10 mm long slender tube with curled-back tips, from which purple-tipped stamens and style protrude.

13.2.2 Distribution

In NSW Narrow-leaf *Wilsonia* is found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney (Nelson's Lake, Potato Point, Sussex Inlet, Wowly Gully, Parramatta River at Ermington, Clovelly, Voyager Point, Wollongong and Royal National Park). Recorded in the current survey in Meadowbank Park and Banjo Paterson Park/Looking Glass Bay Park.

13.2.3 Habitat and ecology

- This is a species of the margins of salt marshes and lakes.
- Flowering occurs in spring and summer.
- Typically grows in thin layer of sediments on sandstone substrates.



Figure 388 *Wilsonia backhousei* growing among other saltmarsh plants in Meadowbank Park (Photo: M. Brainwood)



Figure 389 Wilsonia backhousei in flower, growing on the boundary between Banjo Paterson Park and Looking Glass Bay Park

14 VEGETATION COMMUNITY PROFILES

14.1 Coastal Enriched Sandstone Sheltered (Dry) Forest (S_DSF04)

Coastal Enriched Sandstone Dry Forest is commonly encountered on the upper slopes and dry gullies of Sydney urban areas. It is a tall open eucalypt forest with an understorey of dry sclerophyll shrubs with ferns and forbs amongst the ground cover. The commonly recorded eucalypts are smooth-barked apple (*Angophora costata*), red bloodwood (*Corymbia gummifera*) and Sydney peppermint (*Eucalyptus piperita*). Blackbutt (*Eucalyptus pilularis*) is common on gully slopes of the north shore. A sparse layer of small trees such as *Allocasuarina littoralis* and old-man banksia (*Banksia serrata*) is common above a variety of wattles, tea-trees, gee bungs and grass trees.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	20 m 0-30	25% 5-85	<i>Angophora costata</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus piperita</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus lamra</i> , <i>Syncarpia glomulifera</i>
Small Trees	6 m 2-15	20% 3-55	<i>Allocasuarina littoralis</i> , <i>Banksia serrata</i> , <i>Elaeocarpus reticulatus</i> , <i>Phloecopon undulatum</i> , <i>Ceralepifalum gummiferum</i>
Shrubs	3.4 m 0.5-10.0	19% 2-80	<i>Acacia ulicifolia</i> , <i>Leptoppermum trinerium</i> , <i>Persoonia levis</i> , <i>Acacia suaveolens</i> , <i>Acacia terminalis</i> , <i>Lomaria striatula</i> , <i>Dodonaea triquetra</i> , <i>Banksia spinulosa</i>
Ground Covers	1.3 m 0.5-3.0	27% 3-90	<i>Dianella caerulea</i> , <i>Eriochloa stricta</i> , <i>Lomaria longifolia</i> , <i>Pteridium esculentum</i> , <i>Xanthosia pilosa</i>
Vines & Climbers	N/A	N/A	<i>Smilax glycyphylla</i> , <i>Blandfordia scandens</i> , <i>Cassytha pubescens</i>



Figure 390 Coastal Enriched Sandstone Dry Forest, seen in Boobajool Reserve (Northern reserves)

14.2 Coastal Sandstone Foreshores Forest (S_DSFO6)

Coastal Sandstone Foreshores Forest is found on sheltered sandstone slopes along the foreshores of Sydney's major waterways and coastal escarpments. It is an open forest with a moist shrub layer and a ground cover of ferns, rushes and grasses. The flora of this community has a maritime influence given its exposure to prevailing sea breezes. The canopy can be dominated by pure stands of smooth-barked apple (*Angophora costata*), though more regularly this is found in combination with other tree species. Localised patches of bangalay (*Eucalyptus botryoides*) and coast banksia (*Banksia integrifolia*) occur closest to the coast, whereas Sydney peppermint (*Eucalyptus piperita*) and blackbutt (*Eucalyptus pilularis*) prefer more protected locations.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	18 m ± 6-28	30% ± 14 8-55	<i>Angophora costata</i> , <i>Banksia integrifolia</i> , <i>Eucalyptus piperita</i> , <i>Eucalyptus botryoides</i> , <i>Eucalyptus pilularis</i>
Small Trees	6 m ± 1-15	24% ± 11 1-55	<i>Glochidion ferdinandi</i> , <i>Pittosporum undulatum</i> , <i>Allocasuarina littoralis</i> , <i>Breytia oblongifolia</i> , <i>Notelaea longifolia</i> , <i>Dodonaea triquetra</i> , <i>Elaeocarpus reticulatus</i> , <i>Polyscias sambucifolia</i> , <i>Acacia longifolia</i> , <i>Myrsine variabilis</i>
Ground Covers	1.1 m ± 0.2-2.0	27% ± 14 5-80	<i>Dianella caerulea</i> , <i>Pteridium esculentum</i> , <i>Lomandra longifolia</i> , <i>Eriolasia stricta</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Poa affinis</i> , <i>Themeda australis</i> , <i>Xanthorrhoea arborea</i> , <i>Lepidosperma laterale</i> , <i>Pratia purpurascens</i>
Vines & Climbers	N/A	N/A	<i>Smilax glycyphylla</i> , <i>Billardiera scandens</i> , <i>Pandorea pandorana</i> , <i>Glycine clandestina</i>



Figure 391 Coastal Sandstone Foreshores Forest, seen in Mallee Reserve (Parramatta foreshores reserves)

14.3 Coastal Sandstone Gully Forest (S_DSF09)

Coastal Sandstone Gully Forest is widely distributed along the eastern extent of the Sydney sandstone plateaus. It occupies sheltered aspects on infertile Hawkesbury sandstone in areas that receive more than 1000 millimetres of mean annual rainfall. Sydney peppermint (*Eucalyptus piperita*) and smooth-barked apple (*Angophora costata*) form a moderately tall open forest. These are rocky environments and the understorey is a diverse mix of heath and shrub species such as banksias, tea-trees and wattles. The taller NSW Christmas bush (*Ceratopetalum gummiferum*) is also commonly encountered.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	16 m 6-25	30% 5-65	<i>Angophora costata</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus piperita</i> , <i>Eucalyptus sieberi</i>
Small Trees	8 m 2-20	29% 5-85	<i>Banksia serrata</i> , <i>Ceratopetalum gummiferum</i>
Shrubs	3.6 m 1.0-8.0	30% 5-70	<i>Leptospermum trinervium</i> , <i>Persoonia levis</i> , <i>Banksia ericifolia</i> subsp. <i>ericifolia</i> , <i>Persoonia pinifolia</i> , <i>Dillwynia retorta</i> , <i>Platysace linearifolia</i> , <i>Acacia terminalis</i> , <i>Acacia suaveolens</i> , <i>Pimelea linifolia</i> , <i>Epacris longiflora</i> , <i>Lambertia formosa</i> , <i>Petrophile pulchella</i> , <i>Pultenaea stipularis</i> , <i>Woolisia pungens</i> , <i>Bossiaea heterophylla</i>
Ground Covers	1.3 m 0.4-3.0	22% 3-65	<i>Entolasia stricta</i> , <i>Lomandra longifolia</i> , <i>Caustis flexuosa</i> , <i>Gonocarpus teucrioides</i> , <i>Lomatia silaifolia</i> , <i>Pteridium esculentum</i> , <i>Xanthosia tridentata</i> , <i>Lepyrodia scariosa</i> , <i>Lomandra obliqua</i> , <i>Dianella caerulea</i> , <i>Lepidosperma laterale</i> , <i>Xanthosia pilosa</i> , <i>Doryanthes excelsa</i>
Vines & Climbers	N/A	N/A	<i>Smilax glyciphylla</i>



Figure 392 Coastal Sandstone Gully Forest, seen in Kobada Park (Northern reserves)

14.4 Hornsby Enriched Sandstone Exposed Woodland (S_DSf10)

Hornsby Enriched Sandstone Exposed Woodland is a low open eucalypt woodland with an open to dense shrub layer. It is one of a suite of heathy sandstone woodlands found in Sydney coastal environments. The most extensive areas of habitat that remain occur around northern Lane Cove NP and Pennant Hills Park. Broad-leaved scribbly gum (*Eucalyptus haemastoma*) is the most common eucalypt on ridgetop situations while Sydney peppermint (*Eucalyptus piperita*) is more prominent on exposed slopes. At times the canopy layer may only have a sparse eucalypt cover with black she-oak (*Allocasuarina littoralis*) forming dense scrubs sometimes with *Kunzea ambigua*.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	14 m ± 8-20	32% ± 10-40	<i>Angophora hispida</i> , <i>Eucalyptus haemastoma</i> , <i>Corymbia gummiifera</i> , <i>Eucalyptus piperita</i>
Shrubs	6 m ± 2-10	20% ± 5-40	<i>Micranthemum ericoides</i> , <i>Leptospermum trinervium</i> , <i>Allocasuarina littoralis</i> , <i>Acacia suaveolens</i> , <i>Banksia ericifolia</i> subsp. <i>ericifolia</i> , <i>Lambertia formosa</i> , <i>Grevillea buxifolia</i> , <i>Banksia serrata</i> , <i>Woolisia pungens</i> , <i>Xanthorrhoea media</i> , <i>Pultenaea tuberculata</i> , <i>Banksia oblongifolia</i> , <i>Phyllota phyllicoides</i> , <i>Dillwynia retorta</i> , <i>Persoonia levis</i> , <i>Leucopogon microphyllus</i> , <i>Acacia longifolia</i> , <i>Kunzea ambigua</i>
Ground Covers	1.2 m ± 0.3-2.0	15% ± 3-45	<i>Entolasia stricta</i> , <i>Actinotus minor</i> , <i>Cyathochaeta diandra</i> , <i>Dianella caerulea</i> , <i>Dampiera stricta</i> , <i>Boronia ledifolia</i> , <i>Austrostipa pubescens</i> , <i>Lomandra glauca</i>
Vines & Climbers	N/A	N/A	<i>Cassytha pubescens</i> , <i>Billardiera scandens</i>



Figure 393 Hornsby Enriched Sandstone Exposed Woodland, seen in Christie Park (Northern reserves)

14.5 Estuarine Swamp Oak Forest (S_FoW08)

In the zonation from mangroves to terrestrial sclerophyll and mesophyll forests and woodlands, Estuarine Swamp Oak Forest occurs immediately above tidal influence. It fringes the margins of saline waterbodies that include rivers, lagoons and tidal lakes. Swamp oak (*Casuarina glauca*) forms dense monospecific stands above a thick ground cover of salt tolerant herbs, rushes and sedges. The shrub layer is low-growing and sparse, comprising a mix of terrestrial species while others typical of wetlands. It is a community of relatively low species diversity. Estuarine Swamp Oak Forest is widespread along the coast of the Sydney basin where it is rarely found at more than two meters above sea level.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	15 m ± 10-22	36% ±14 5-55	<i>Casuarina glauca</i>
Small Trees	6 m ±1 2-12	23% ±11 5-60	<i>Casuarina glauca</i> , <i>Avicennia marina</i> , <i>Goodenia ovata</i> , <i>Suaeda australis</i>
Ground Covers	0.9 m ±0.2 0.3-2.0	40% ±20 5-70	<i>Juncus kraussii</i> , <i>Baumea juncea</i> , <i>Samolus repens</i> , <i>Phragmites australis</i> , <i>Sporobolus virginicus</i> , <i>Atriplex australasica</i>
Vines & Climbers	N/A	N/A	<i>Tetragonia tetragonioides</i>



Figure 394 Estuarine Swamp Oak Forest, seen in Glades Bay Park (Parramatta foreshores reserves)

14.6 Coastal Sandstone Gallery Rainforest (S_RF02)

This depauperate warm-temperate rainforest is found on sandy alluvium or rocky streams in deep protected sandstone gully systems across the greater Sydney region. Coachwood (*Ceratopetalum apetalum*) usually dominates the tallest stratum with black wattle (*Callicoma serratifolia*), lilly pilly (*Acmena smithii*), water gum (*Tristaniaopsis laurina*) and tree ferns (*Cyathea* spp.) forming a scattered cover of small trees in the sub-canopy layer. These are rainforests of low species diversity compared to more complex rainforests associated with richer soils. The array of lianes and climbers that are common in other rainforest assemblages are absent here. Instead, the ground cover is an open cover of ferns amongst sandstone boulders and fallen logs.

In the Sydney area these narrow ribbons of rainforest form small disjunct patches restricted to very incised Hawkesbury sandstone gullies and sandstone alluvium.

Floristic Summary^a

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Emergent	24 m 5-40	10% 5-40	<i>Syncopala plumifera</i> , <i>Eucalyptus piperita</i>
Trees	15 m 10-20	55% 25-85	<i>Ceratopetalum apetalum</i> , <i>Callicoma serratifolia</i> , <i>Tristaniaopsis laurina</i> , <i>Acmena smithii</i> , <i>Ptilosporum undulatum</i> , <i>Melaleuca linariifolia</i>
Shrubs	4.0 m 2.0-8.0	45.0% 5-90	<i>Acacia pennantiiensis</i> , <i>Acacia longifolia</i> , <i>Austrorhynchus fenulifolia</i> , <i>Leptospermum polygalifolium</i> subsp. <i>polygalifolium</i> , <i>Acmena smithii</i>
Ground Covers	0.5 m 0.5-0.5	30% 2-100	<i>Cephaelis dubia</i> , <i>Doodia caespitosa</i> , <i>Lomandra longifolia</i> , <i>Juncus ustulatus</i> , <i>Diplazium</i> spp., <i>Viole hederacea</i>
Vines & Climbers	N/A	N/A	<i>Morinda javanoides</i> , <i>Cassytha pubescens</i>



Figure 395 Coastal Sandstone Gallery Rainforest in Fielder Park (Northern reserves)

14.7 Estuarine Mangrove Forest (S_SW01)

Stands of mangroves form a low closed to open forest on mudflats in Sydney's harbour, river coves and estuaries. There are two mangrove species found in Sydney. Grey mangrove (*Avicennia marina*) is the taller and more common, often seen in pure stands. Stands of grey mangrove comprise very few species other than the canopy, with the understorey mostly an open mudflat sometimes with scattered saltmarsh herbs. The second mangrove species is river mangrove (*Aegiceras corniculatum*). It is more often a small tree or shrub found scattered amongst swathes of grey mangrove or along upper reaches of coastal riverbanks. It occurs where freshwater influences from runoff or rivers cause lower salinity levels.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Small Trees	7 m ± 3-9	57% ± 40-70	<i>Avicennia marina</i> var. <i>australasica</i> , <i>Aegiceras corniculatum</i>
Ground Covers	1.0 m ± 1.0-1.0	6% ± 2-10	<i>Sarcocornia quinqueflora</i>



Figure 396 Estuarine Mangrove Forest, seen in Meadowbank Park (Parramatta foreshores reserves)

14.8 Estuarine Saltmarsh (S_SW02)

Saltmarshes consist of low succulent herbs and rushes on tidally inundated land. These marshes form plains that adjoin open water and mangroves. Throughout the marsh salinity varies greatly according to tidal influence, evaporation and fresh water accumulation. Some of the areas are flooded regularly, while at slightly higher elevations flooding is rare. After rain fresh water accumulates and adds extra water to the marsh, leaving pools of standing water when the tide recedes. Chenopod species dominate areas more frequently inundated by the tides, while sea rush (*Juncus kraussii*) occupies the more elevated terrestrial margin. Local scalds may occur in small depressions where intensely saline deposits accumulate from the evaporation of tidal waters.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Shrubs	0.5 m	4%	<i>Aegiceras corniculatum</i> , <i>Avicennia marina</i> , <i>Casuarina glauca</i> , <i>Rhagodia candolleana</i>
Ground Covers	0.6 m	58%	<i>Samolus repens</i> , <i>Sarcocornia quinqueflora</i> , <i>Sporobolus virginicus</i> , <i>Juncus kraussii</i>



Figure 397 Estuarine saltmarsh, seen in Meadowbank Park (Parramatta foreshores reserves)

14.9 Blue Gum High Forest (S_WSF01)

Blue Gum High Forest (Benson and Howell 1990) is a tall wet sclerophyll forest found on fertile shale soils in the high rainfall districts of Sydney's north shore. It is dominated by Sydney blue gum (*Eucalyptus saligna*), blackbutt (*Eucalyptus pilularis*) and turpentine (*Syncarpia glomulifera*) with a number of other eucalypts occurring patchily. A sparse to open cover of small trees is found at most sites and includes a variety of sclerophyllous and mesophyllous species. The ground layer is variable in both composition and cover. It may be ferny, grassy or herbaceous depending on topographic situation and disturbance history. At some sites vines and climbers are prolific. Blue Gum High Forest is found on a range of shale or shale-influenced substrates in areas receiving higher annual rainfall, with small areas occurring in Ryde.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	32 m 20-55	33% 5-50	<i>Eucalyptus saligna</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus paniculata</i> , <i>Syncarpia glomulifera</i> , <i>Angophora costata</i>
Small Trees	13 m 2-30	24% 2-80	<i>Ptilosporum undulatum</i> , <i>Syncarpia glomulifera</i> , <i>Elaeocarpus reticulatus</i> , <i>Acacia implexa</i>
Shrubs	4.3 m 1.5-15.0	17% 2-80	<i>Polystichum sarcochloide</i> , <i>Ptilosporum undulatum</i> , <i>Ptilosporum revolutum</i> , <i>Breyeria oblongifolia</i> , <i>Leucopogon juniperinus</i> , <i>Crotophaga plumbeifolia</i> , <i>Nolea longifolia</i> , <i>Clerodendrum tomentosum</i> , <i>Maytenus siveolii</i> , <i>Trema litorale</i>
Ground Covers	1.1 m 0.3-5.0	52% 2-85	<i>Eniolasia marginata</i> , <i>Pseuderanthemum variabile</i> , <i>Opismenus aemulus</i> , <i>Lomandra longifolia</i> , <i>Microlaena stipoides</i> , <i>Dianella caerulea</i> , <i>Dichoncha repens</i> , <i>Poa affinis</i> , <i>Opismenus imbecilis</i> , <i>Sigesbeckia orientalis</i> , <i>Adiantum aethiopicum</i> , <i>Pratia purpurascens</i>
Vines & Climbers	N/A	N/A	<i>Europhorus latifolius</i> , <i>Pandorea jasutinaria</i> , <i>Clematis glycinoides</i> , <i>Tylophora barbata</i> , <i>Cayratia clematidea</i> , <i>Gynerium microphylla</i>



Figure 398 Blue Gum High Forest, seen in Denistone Park (Western reserves)

14.10 Coastal Shale Sandstone Forest (S_WSF06)

Coastal Shale-Sandstone Forest is often a tall open eucalypt forest with a sparse layer of dry sclerophyllous shrubs and a grassy ground cover. It occurs on clay-influenced soils associated with residual shale or lateritic capping, shale bands in the sandstone bedrock or downslope shale wash on exposed sandstone slopes. The eucalypts that occur consistently are tall red bloodwood (*Corymbia gummifera*) and smooth-barked apple (*Angophora costata*), but it is the local abundance of blackbutt (*Eucalyptus pilularis*), turpentine (*Syncarpia glomulifera*) and mahogany (*Eucalyptus resinifera*, *E. umbra*) that make the forest distinctive from the surrounding sandstone woodlands. A tall sparse layer of casuarinas (*Allocasuarina littoralis*) is found above an open layer of dry shrubs including banksias, wattles, hakeas and geebung. A diverse combination of grasses, rushes and herbs provide a continuous ground cover. A thin layer of clay soil is sufficient to retain the grassy ground covers that help to distinguish the community.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	24 m 15-35	37% 5-70	<i>Angophora costata</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus pilularis</i> , <i>Syncarpia glomulifera</i> , <i>Eucalyptus resinifera</i>
Small Trees	6 m 1-20	20% 3-70	<i>Ptilosporum unistulatum</i> , <i>Allocasuarina littoralis</i>
Shrubs	3.8 m 1.5-15.0	25% 5-60	<i>Lomaria nitida</i> , <i>Acacia linifolia</i> , <i>Banksia spinulosa</i> , <i>Hakea serotina</i> , <i>Persea levis</i> , <i>Polyscias wandooifolia</i> , <i>Bostera obtusata</i> , <i>Dodonaea triquetra</i> , <i>Lepidospermum trinervium</i> , <i>Gonolobus pedunculatus</i> , <i>Lomandra multiflora</i>
Ground Covers	0.8 m 0.4-2.0	34% 4-60	<i>Eriolasia stricta</i> , <i>Dianella caerulea</i> , <i>Phyllanthus tenuifolius</i> , <i>Lomandra obliqua</i> , <i>Lepidosperma laterale</i> , <i>Pteridium esculentum</i> , <i>Lomandra longifolia</i> , <i>Austrostipa pubescens</i> , <i>Ampeliza cylindrica</i> var. <i>major</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Themeda australis</i> , <i>Brunsdalea panicula</i>
Vines & Climbers	N/A	N/A	<i>Blandfordia scandens</i> , <i>Casrytha pubescens</i> , <i>Smilax glaberrima</i>



Figure 399 Coastal Shale Sandstone Forest in Field of Mars Reserve

14.11 S_WSF08: Sydney Foreshores Shale Forest

Sydney Foreshores Shale Forest is found on localised patches of shale-enriched sandstone which occur on crests and slopes of minor sandstone scarps adjoining the coastal waterways of Sydney. It is a tall open eucalypt forest with a sparse shrub layer and a dense cover of graminoids (grasses, rushes and sedges). The canopy generally includes grey gum (*Eucalyptus punctata*) and smooth-barked apple (*Angophora costata*) while forest red gum (*Eucalyptus tereticornis*) may dominate locally. Often the shrub and small tree layer is only a sparse cover of wattles or casuarinas. In contrast the ground cover is characterised by dense clumps of spiny-headed mat-rush (*Lomandra longifolia*) above a low cover of other grasses and herbs.

Floristic Summary*

	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	26 m ± 1 25-30	31% ± 11 20-45	<i>Angophora costata</i> , <i>Eucalyptus punctata</i> , <i>Eucalyptus tereticornis</i>
Small Trees	5 m ± 1 4-7	18% ± 10 10-40	<i>Allocasuarina littoralis</i> , <i>Acacia mearnsii</i> , <i>Kunzea ambigua</i> , <i>Notelaea longifolia</i> , <i>Breynia oblongifolia</i> , <i>Duboisia myoporoides</i> , <i>Myrsine variabilis</i>
Ground Covers	1.0 m ± 0.1 0.3-1.5	47% ± 14 20-70	<i>Aristida vagans</i> , <i>Dichondra repens</i> , <i>Entolasia stricta</i> , <i>Leucopogon juniperinus</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Pratia purpurascens</i> , <i>Gahnia aspera</i> , <i>Lepidosperma laterale</i> , <i>Lomandra longifolia</i> , <i>Oplismenus imbecillis</i> , <i>Poranthera microphylla</i> , <i>Veronica plebeia</i> , <i>Digitaria parviflora</i> , <i>Eragrostis brownii</i> , <i>Hydrocotyle laxiflora</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Oplismenus aemulus</i> , <i>Oxalis perennans</i> , <i>Echinopogon ovatus</i> , <i>Entolasia marginata</i> , <i>Lomandra filiformis</i> , <i>Setaria distans</i> , <i>Viola hederacea</i>
Vines & Climbers	N/A	N/A	<i>Glycine microphylla</i> , <i>Geitonoplesium cymosum</i> , <i>Billardiera scandens</i> , <i>Hibbertia scandens</i>



Figure 400 Sydney Foreshores

14.12 Sydney Turpentine Ironbark Forest (S_WSF09)

Sydney Turpentine-Ironbark Forest (Benson and Howell 1990) is a tall open forest found on shale and shale-enriched sandstone soils on the coast and hinterland of Sydney. It has been extensively cleared but was once widely distributed. The forest is characterised by open midstrata of mesic and sclerophyllous shrubs and small trees with a grassy ground cover. Typically, it is recognised by a canopy dominated by turpentine (*Syncarpia glomulifera*), red mahogany (*Eucalyptus resinifera*) and various ironbarks of which *Eucalyptus paniculata* is most often recorded. On the north shore these forests are found on shale-enriched sheltered sandstone slopes where ironbarks are less common and blackbutt (*Eucalyptus pilularis*) is prevalent, such as found in occurrences in City of Ryde.

Floristic Summary*			
	Average Height & Height Range (m)	Average Cover & Cover Range (%)	Typical Species
Trees	20 m 15-30	35% 5-85	<i>Syncarpia glomulifera</i> , <i>Angustura costata</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus paniculata</i> subsp. <i>paniculata</i> , <i>Eucalyptus fibrosa</i> , <i>Eucalyptus crebra</i>
Small Trees	9 m 1-25	23% 5-80	<i>Pittosporum undulatum</i> , <i>Syncarpia glomulifera</i>
Shrubs	2.9 m 1.0-10.0	16% 1-80	<i>Pittosporum undulatum</i> , <i>Leucopogon juniperinus</i> , <i>Polyscias sambucifolia</i> , <i>Breynia oblongifolia</i> , <i>Cenchrus diosmifolius</i> , <i>Notelaea longifolia</i> , <i>Hibbertia aspera</i> subsp. <i>aspera</i> , <i>Drosera iniquifera</i> , <i>Pittosporum revolutum</i> , <i>Bursaria spinosa</i>
Ground Covers	0.8 m 0.3-2.0	50% 5-90	<i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Dianella caerulea</i> , <i>Pratia purpurascens</i> , <i>Entolasia marginata</i> , <i>Entolasia stricta</i> , <i>Lepidosperma laterale</i> , <i>Lomandra longifolia</i> , <i>Echinopogon caespitosus</i> var. <i>caespitosus</i> , <i>Dichondra repens</i> , <i>Lomandra multiflora</i> , <i>Themeda australis</i> , <i>Aristida vagans</i> , <i>Pseuderanthemum variable</i>
Vines & Climbers	N/A	N/A	<i>Pandorea pandorana</i> , <i>Blandfordia scandens</i> , <i>Glycine microphylla</i> , <i>Eustrephus latifolius</i> , <i>Glycine clandestina</i>



Figure 401 Sydney Turpentine Ironbark Forest seen in ELS Hall Park (Shrimptons Creek reserves)

15 APPENDIX B FAUNA SPECIES PROFILES

17 Appendix D Fauna sightings- other sources

Three databases were searched for records that fell within or near the study sites for the calendar year 2018. These databases were the BioNet formerly the NSW Wildlife Atlas, ebird Hotspot mapping and Birdlife Australia Birdata. Two records were also provided by bushcare volunteers of uncommon species for Shrimptons Creek.

Table 284 Records from other sources for 2018

2018 RECORDS - OTHER DATABASES		EBIRD				BIRDLIFE		OTHER	BIONET
COMMON NAME	SPECIES NAME	GLADES BAY AREA	MORRISON BAY	KISSING POINT PARK	MEADOWBANK PARK	MORRISON BAY	SANTA ROSA PARK	SHRIMPTONS CREEK	NIL FAUNA RECORDS
NATIVE BIRDS									
Australasian Figbird	<i>Sphecotheres vieilloti</i>	X	X			X			
Australian Brush-turkey	<i>Alectura lathamii</i>	X							
Australian King-Parrot	<i>Alisterus scapularis</i>						X		
Australian Magpie	<i>Cracticus tibicen</i>	X	X	X	X	X	X		
Australian Pelican	<i>Pelecanus conspicillatus</i>		X			X			
Australian Raven	<i>Corvus coronoides</i>	X		X	X	X			
Australian White Ibis	<i>Threskiornis molucca</i>		X		X	X	X		
Australian Wood Duck	<i>Chenonetta jubata</i>					X			
Bar-tailed Godwit	<i>Limosa lapponica</i>		X			X			
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>					X			
Buff-banded Rail	<i>Gallirallus philippensis</i>							X	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>	X					X		

2018 RECORDS - OTHER DATABASES		EBIRD				BIRDLIFE		OTHER	BIONET
COMMON NAME	SPECIES NAME	GLADES BAY AREA	MORRISON BAY	KISSING POINT PARK	MEADOWBANK PARK	MORRISON BAY	SANTA ROSA PARK	SHRIMPTONS CREEK	NIL FAUNA RECORDS
Chestnut Teal	<i>Anas castanea</i>		X						
Crested Pigeon	<i>Ocyphaps lophotes</i>			X	X	X	X		
Crested Tern	<i>Thalasseus bergii</i>					X			
Crimson Rosella	<i>Platycercus elegans</i>								
Dollar Bird	<i>Eurystomus orientalis</i>								
Dusky Moorhen	<i>Gallinula tenebrosa</i>						X		
Eastern Great Egret	<i>Ardea modesta</i>				X	X			
Eastern Rosella	<i>Platycercus eximius</i>					X			
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	X							
Fairy Martin	<i>Petrochelidon ariel</i>					X			
Galah	<i>Eolophus roseicapillus</i>				X	X	X		
Grey Butcherbird	<i>Cracticus torquatus</i>		X			X	X		
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		X			X	X		
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>					X			
Little Corella	<i>Cacatua sanguinea</i>			X		X	X		
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>		X		X	X			
Little Wattlebird	<i>Anthochaera chrysoptera</i>	X							
Long-billed Corella	<i>Cacatua tenuirostris</i>	X							
Magpie-lark	<i>Grallina cyanoleuca</i>	X	X	X	X	X	X		
Masked Lapwing	<i>Vanellus miles</i>		X		X	X			

2018 RECORDS - OTHER DATABASES		EBIRD				BIRDLIFE		OTHER	BIONET
COMMON NAME	SPECIES NAME	GLADES BAY AREA	MORRISON BAY	KISSING POINT PARK	MEADOWBANK PARK	MORRISON BAY	SANTA ROSA PARK	SHRIMPTONS CREEK	NIL FAUNA RECORDS
Musk Lorikeet	<i>Glossopsitta concinna</i>	X			X				
Noisy Friarbird	<i>Philemon corniculatus</i>	X							
Noisy Miner	<i>Manorina melanocephala</i>		X	X	X	X	X		
Pacific Black Duck	<i>Anas superciliosa</i>		X				X		
Pied Cormorant	<i>Phalacrocorax varius</i>					X			
Pied Currawong	<i>Strepera graculina</i>			X	X	X	X		
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	X	X	X	X	X	X		
Red Wattlebird	<i>Anthochaera carunculata</i>	X			X				
Red-rumped Parrot	<i>Psephotus haematonotus</i>					X			
Royal Spoonbill	<i>Platalea regia</i>		X			X			
Sacred Kingfisher	<i>Todiramphus sanctus</i>		X			X			
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>								
Silver Gull	<i>Chroicocephalus novaehollandiae</i>		X	X	X	X			
Silvereye	<i>Zosterops lateralis</i>		X						
Spotted Pardalote	<i>Pardalotus punctatus</i>	X							
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>						X		
Tree Martin	<i>Petrochelidon nigricans</i>			X					
Welcome Swallow	<i>Hirundo neoxena</i>	X	X	X	X	X			
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>	X							

2018 RECORDS - OTHER DATABASES		EBIRD				BIRDLIFE		OTHER	BIONET
COMMON NAME	SPECIES NAME	GLADES BAY AREA	MORRISON BAY	KISSING POINT PARK	MEADOWBANK PARK	MORRISON BAY	SANTA ROSA PARK	SHRIMPTONS CREEK	NIL FAUNA RECORDS
White-faced Heron	<i>Egretta novaehollandiae</i>		X	X		X			
White-headed Stilt	<i>Himantopus leucocephalus</i>		X			X			
White-naped Honeyeater	<i>Melithreptus lunatus</i>	X							
White-throated Needletail	<i>Hirundapus caudacutus</i>	X							
Willie Wagtail	<i>Rhipidura leucophrys</i>	X	X	X	X	X			
Yellow-faced Honeyeater	<i>Lichenostomus chrysops chrysops</i>	X							
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>			X					
INTRODUCED BIRDS									
Common Starling	<i>Sturnus vulgaris</i>		X		X	X			
Domestic Duck	<i>Anas platyrhynchos domesticus</i>		X		X	X			
Muscovy Ducks(geese)						X			
Rock Dove	<i>Columba livia</i>	X	X		X	X			
REPTILES									
Red-bellied Black Snake	<i>Pseudechis porphyriacus</i>							X	