



# **NORTH GARDENS SCULPTURE PARK LANDSCAPE MASTER PLAN, BALLARAT (2<sup>nd</sup> Edition)**



Deakin University  
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## NORTH GARDENS SCULPTURE PARK LANDSCAPE MASTER PLAN, BALLARAT (2<sup>nd</sup> Edition)

**Project Name:** North Gardens Sculpture Park Landscape Master Plan, Ballarat (2<sup>nd</sup> Edition)

**Participant Organisations:** City of Ballarat, Deakin University, and the Wadawurrung (Wathaurung Aboriginal Corporation)

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## EXECUTIVE SUMMARY



The North Gardens, and the constructed wetlands within it, is a significant living cultural and physical landscape to the *Wadawurrung* and the City of Ballarat.

It is a place to celebrate and respect the environment of the Ballarat plains, and the long-standing relationship the *Wadawurrung* have with their *Country*. It is a place of stories, continuing traditions, of healing, ecologies and a venue for gatherings to celebrate the spirit of the Lake Wendouree landscape.

Lake Wendouree was originally a swampland, and a resting place for the *Wadawurrung* and wildlife.

In this landscape design strategy, serpentine stone walling along the south flank of the gardens announces the new entry to North Gardens, adjacent Zoo Drive. Access to the gardens is from Wendouree Parade, past basalt standing stones from where ancestral views of Mount's Buninyong and Warrenheip can be seen. A little further along Wendouree Parade is the proposed Cultural Education Facility, with potential for classes in Indigenous culture, artistic endeavours, school programs, ecology education to name but a few.

This is an activity space and a cultural statement, before one enters the wetlands. First sight of the wetlands offers sight of Ibis (*Padjerook*) and Black Swan (*Kunuwarra*), a rippling stream, and the lower and upper pools. The lower pool hosts Ibis (*Padjerook*) and Black Swan (*Kunuwarra*), communities and the upper opens to a wide aquatic ecological system. The wetlands and stream tell of water cleansing, of an enclosed quiet ecological habitat and refuge to birds, insects, reptiles, mammals, fish and burgeoning vegetation communities. Walk around the upper wetland and witness the rippling stream, the different water pools, vegetation thickets, the sculptural pole garden and the expansive Yam Daisy (*Murnang*) grassland. Scattered amongst this walk are various sculptures authored by Aboriginal artists that narrate stories about this place and the environmental processes occurring. Witness the seasonal flowers, numerous birds roosting and in flight, landing on the pools, the dragonflies darting in the shallows and the dappled sunlight on the pathways and pool waters. This is a wetlands and grasslands in transition. A place hosting sculptures talking about this *Country* and its *Wadawurrung* and Aboriginal inhabitants, and about the need to care for this *Country*; to return its health and to renourish the existing environment.

North Gardens offers a venue to return and appreciate the cultural spirit and ecological significance of *Wadawurrung Country* around Ballarat. A place to celebrate past and continuing cultures respectfully and of an equally shared concern to enjoy and look after this *Country*. It is a place for all that incorporates universal access pathways and bridges throughout the Gardens and wetlands allowing circulation for ambulatory pedestrians as well as those in wheelchairs or on mobility scooters.

This report offers a master plan for the renovation and healing of the North Gardens precinct of the Lake Wendouree Parklands, together with contextual information and guidelines for relevant City of Ballarat committees and prospective artists whom might be engaged to provide works and activities in the North Gardens.

For information, words in this Report in italics are generally *Wadawurrung* words, used with *Wadawurrung* consent. See section 3 for more detail.

## 1. INTRODUCTION



Figure 1.0 North Gardens Wetlands

### 1.1 About Country

*Country in Aboriginal English is not only a common noun but also a proper noun.*

*People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country.*

*People say that country knows, hears, smells, takes notice, takes care, is sorry or happy.*

*Country is not a generalised or undifferentiated type of place, such as one might indicate with terms like 'spending a day in the country' or 'going up the country'.*

*Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life.*

*Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease [sic.] (Rose 1996: 7).*

Aboriginal people see *Country* in layers.

*Country* has very distinct layers, that link to infinite layers. There are six fundamental layers that include the *Below Country* - where we collect ochre for dance and ceremony. On *Country* - where we walk, travel, dance and conduct ceremony. Then there is *Water Country* - we use to sustain life, but also part of ceremonies of welcome. Next is *Wind Country* - smoke from welcome fires and language when spoken and sung, below in all directions and touch every layer of *Country*. Then comes *Sky Country* - where we see most of our Spiritual Protectors in their physical form before they transcend to their celestial home, *Star Country* where we can see them in the form of constellations. These then tell the story of the reflected layers of *Country* of which Aboriginal people's physical and spiritual bodies are connected to.

## 1.2 Scope of this Project and Report

This report set out the context, research and detail of the *North Gardens Indigenous Sculpture Landscape Master Plan* (2019) prepared for the City of Ballarat.

The *North Gardens Indigenous Sculpture Park Lake Wendouree, Ballarat Landscape Design Consultancy Services Brief* (2017a), contained in Appendix A, to prepare the *North Gardens Indigenous Sculpture Landscape Master Plan* (2018) sought the preparation a new Landscape Design Plan to guide the future development of a sculpture park featuring the work of Aboriginal artists at North Gardens, Lake Wendouree

The major objectives of developing this *North Gardens Indigenous Sculpture Landscape Master Plan* (2018) were to:

- 1) *Deliver a quality high profile 6 month engagement process that seeks to celebrate, recognise and adequately consult in the development of an Indigenous Sculpture Park at North Gardens, Lake Wendouree*
- 2) *Ensure a Landscape Design Plan for the site incorporates local Aboriginal stories and aspirations*
- 3) *Assess, review and prioritise key features of the Indigenous Sculpture Park project including sculpture commissions*
- 4) *Identify features and community values that have historical, cultural, environmental, and landscape significance, with particular regard to Aboriginal heritage*
- 5) *Establish principles for the siting, development and commissioning of artworks at North Gardens*
- 6) *Improve landscape development and management outcomes*
- 7) *Improve pedestrian connections and linkages.*

The above consultancy brief objectives were informed by the *Lake Wendouree Master Plan* (2017) that made several recommendations and identified priorities and actions for the City of Ballarat to consider and implement. Specifically for the North Gardens Wetlands, the Master Plan recommendations proposed:

### **Masterplan recommendations for the Resting Place (Indigenous Sculpture Park) Concept**

- *Sculptural elements be extended from the wetlands towards the Fairyland areas of the foreshore to help to visually connect and physically unify these areas.*
- *The number of sculptures be limited to ensure that they are not visually cluttered, are meaningful in their context, and are of a quality befitting the Botanical Gardens precinct.*
- *Ballarat's indigenous communities and stakeholders be consulted and intimately involved in all stages of the planning and development of the Trail.*

### **Masterplan recommendations improving biodiversity**

- *The open parkland landscape character, with established trees and lawn, is a historical and iconic part of the Lake and Gardens precinct and should therefore be given the highest priority in relation to the assessment of the impact of any current or future development proposals.*
- *Formalise a Tree Management Plan which:*
  - *Achieves a canopy coverage percentage of 40% in line with Council's policy.*
  - *Achieves recommended biodiversity levels of maximum 20% family representation, maximum 10% genus representation, and maximum 5% species representation.*
  - *Maintains a tree register to record all removed and newly planted trees.*
- *Continually implement the Tree Management Plan to maintain a largely European style of tree planting using informal plantings of predominantly exotic and some native trees in lawn on the Lake Foreshore and within the North and South Gardens.*
- *Concentrate areas of indigenous tree planting and underplanting in areas with the highest biodiversity values and potential such as the North Gardens wetlands and Fairyland.*
- *Limit the use of shrub planting to areas where it is required for habitat or for the screening of buildings, fences, etc (City of Ballarat 2017b: 4).*

## 1.3 Lake Wendouree Master Plan

The *Lake Wendouree Master Plan* (City of Ballarat 2017b: 4-5) concluded that

*Lake Wendouree is recognised by the Ballarat community as the cultural heart of Ballarat. Both its indigenous and European histories should be appropriately protected, enhanced, acknowledged and celebrated.*

Variables pertinent in this Masterplan and the North Gardens Wetlands, as stated in the *Lake Wendouree Master Plan* (City of Ballarat 2017b: 4-5) were:

### **Water security**

*As a man-made waterway, Lake Wendouree is naturally fed by stormwater from a relatively limited urban catchment. Devastatingly for the community, it was closed to most activities in 2004 before becoming completely dry in 2006 after a 10 year period of below average rainfall. It remained unusable until 2010 when it was again at capacity. Over recent years the City of Ballarat and partners have successfully implemented a storm water harvesting project which, in conjunction with natural rainfall, is providing a stable water supply. With ongoing management, these arrangements are considered sufficient to ensure the Lake remains full to 2040. The Lake has been stocked with 90,000 rainbow trout and visitors to the Lake in 2040 will find a premier recreational fishery. The North Gardens wetland has been designed as a water filtration area to utilise weeds to improve storm water before it enters Lake Wendouree.*

### **Management Development and Improving Biodiversity**

*Lake Wendouree has a much-loved character which includes wildlife, biodiversity, historic features, heritage buildings, trees and key views to Mt Warrenheip, Mt Buninyong and the forested ridge to the east. When the leaves are on the trees it can feel like you're not in a city at all. Ballarat's community have told us how much they love Lake Wendouree. It is also a key tourist destination, events precinct and cultural landscape in Ballarat. It is essential development does not diminish the much-loved character of this very special place. There are opportunities to improve biodiversity and native plantings, particularly in the 'Fairyland' parts of the Lake and in the North Gardens wetlands area.*

### **Community Use**

*Lake Wendouree and its foreshore in combination with the Ballarat Botanical Gardens Precinct (including the North and South Gardens) host and provide facilities for a diverse range of events each year. The Lake precinct is heavily utilised on a daily basis for recreation and sport. However, there are more opportunities for more public access clubs and facilities that have been envisioned in the 2017 Master Plan. The North Gardens currently provides a relatively flexible outdoor events space which could be compromised by inappropriate development proposals or works. North Gardens will continue to be used as a temporary, flexible events space while maintaining its open parkland character and ensuring that events and attractions, such as the sculpture park, do not adversely impact the environmental and biodiversity values of the area. Missing footpath sections across Wendouree Parade through the South and North Gardens will improve accessibility in the Lake and Gardens precinct. The wetlands are also a popular area for locals to walk and offer a more rustic and intimate environment than the Lake foreshore (City of Ballarat 2017b: 4-5).*

Within the *Lake Wendouree Master Plan* (2017), the North Gardens Wetlands and Fairyland were included within **5.6 Precinct 6: Fairyland** together (City of Ballarat 2017: 50-51). The scope of Precinct 6 is depicted in Figure 1.3.1:





Figure 1.3.1: North Gardens Wetlands Study Area. Source: City of Ballarat 2017a: 51.

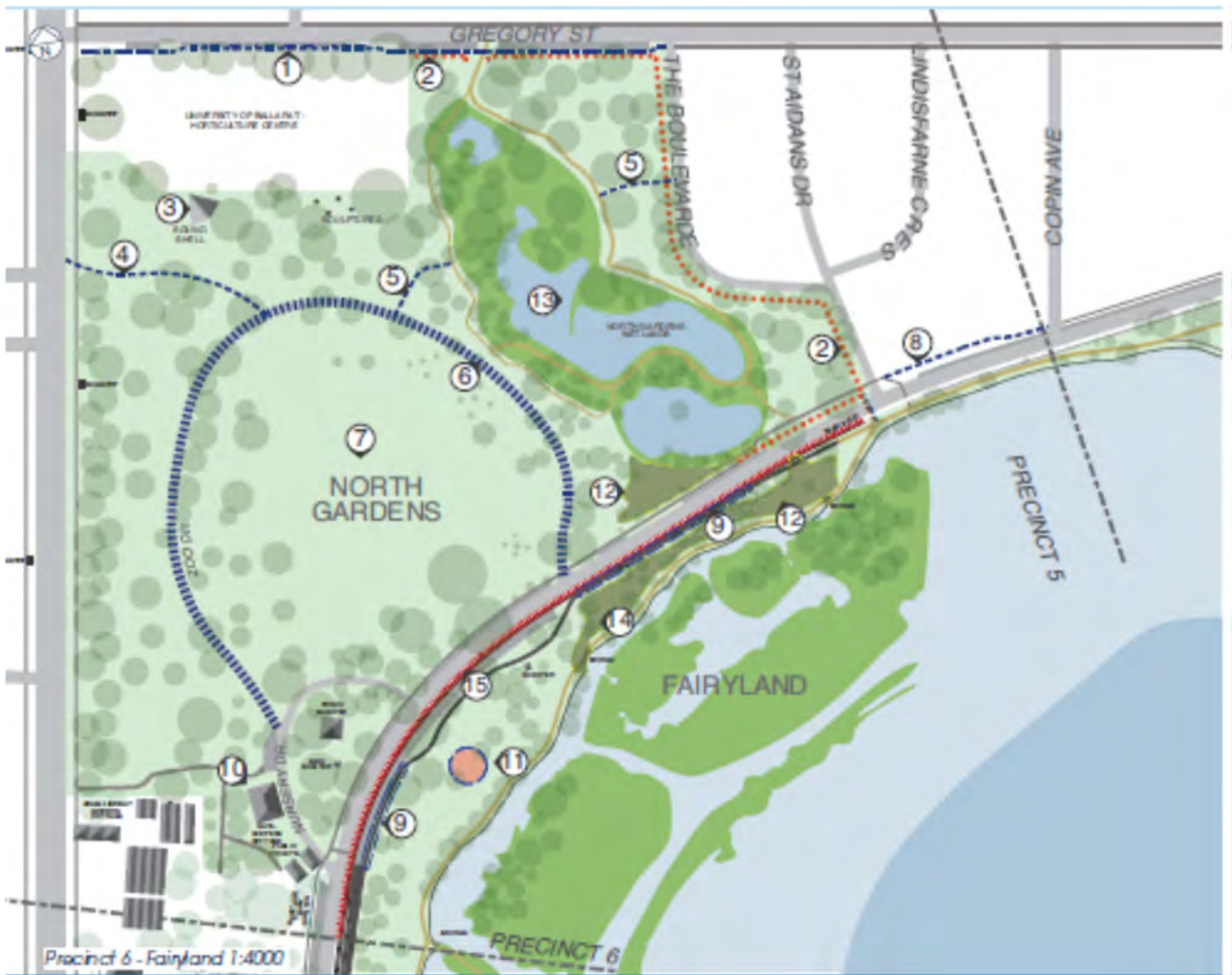


Figure 1.3/2: North Gardens Wetlands Study Area. Source: City of Ballarat 2017a: 51.

The *Lake Wendouree Master Plan* (2017) summarises the characteristics, opportunities and constraints of Precinct 6 as follows:

### **Precinct 6 Summary**

*Precinct 6 comprises 'Fairyland' along the Lakes north-west foreshore, and the North Gardens Reserve which forms part of the Ballarat Botanical Gardens.*

*'Fairyland' is a gardenesque style landscape with a sense of wonder and mystery. It derives its name from its wild flowers, abundance of weeping willows, concentration of islands and numerous footbridges. It also has extensive areas of wetlands and water bodies that provide significant habitat to support the Lakes ecology and biodiversity. Whilst there are opportunities to improve nature play and appreciation of the natural environment through indigenous plantings, care should be taken to retain and enhance this character.*

*The North Gardens area comprises a pavilion and BBQ shelter and facilities associated with the Botanical Gardens to the south, a large central open parkland area, and recently constructed wetlands with native plantings at the northern end. These areas generally function well however there are significant opportunities to improve the public's use and appreciation of the North Gardens by:*

- *Maintaining the original open parkland areas to provide flexibility for large events and temporary car parking.*
- *Implementation of the Resting Place Sculpture Trail concept around the wetlands to better recognize the indigenous history of the Lake.*
- *Undertaking further indigenous plantings around the wetlands to improve biodiversity and better integrate it to Fairyland and wetlands on the Lake foreshore.*
- *Installing new post and rail fencing around the Boulevard and Gregory Street to tie this area in with the rest of the North Gardens.*

- Reinstatement of the original Caretakers Cottage to support education within the Botanical Gardens.
- Demolition of the Sound Shell which does not comply with access requirements and is no longer used.
- Replacement of the asphalt in Zoo Drive for granitic gravel to enhance the park like setting.
- Providing new paths through the reserve to better connect to existing features and the Lake to the Wendouree Railway Station.
- Wendouree Parade acts as both a psychological and physical barrier between Lake Wendouree and North Gardens. The historical tram runs through this section of Wendouree Parade. A narrow bicycle lane in close proximity to the tram creates a hazard for cyclists and improved safety measures should be sought.

Arising from this summation, the *Lake Wendouree Master Plan* (2017) made the following recommendations:

#### **Precinct 6 Recommendations**

- 1) Connect footpath along south side of Gregory Street path.
- 2) Continue post and wire fence along boundary of North Gardens. Ensure room for off street parking and remove existing fence around wetland after.
- 3) Remove sound shelter and retain power and water access to support events.
- 4) Formalise 'goat trails' into granitic gravel connection paths for greater connectivity with Gillies Street and Wendouree Train Station.
- 5) Formalise path with granitic gravel.
- 6) Explore option to replace asphalt road along Zoo Drive with granitic gravel.
- 7) Retain historical open parkland character of North Gardens and flexibility of space to support events and overflow car parking precinct.
- 8) Install new footpath along north side of Wendouree Parade, where missing.
- 9) Make improvements to stretch of track with both asphalt and granitic gravel surface to better integrate the two surface types and read as one.
- 10) Relocated Gatekeeper's Cottage.
- 11) Opportunity for 'Fairyland' nature play space.
- 12) Improve biodiversity of wetlands precinct by expanding wetland and indigenous planting between North Gardens and Fairyland. Further design development required.
- 13) Potential location through existing and proposed wetlands for Resting Place Sculpture Trail.
- 14) Improve interpretive signage and awareness through precinct of indigenous history of the Lake.
- 15) Consider improvements to cyclist safety alongside tramline.

Accordingly, the scope of this project includes consideration of Recommendations 1-15 as part of considerations in formulating the Master Plan.

#### **1.4 Study Area**

The project Study Area as defined by the City of Ballarat is depicted in Figure 1.4.1.

For nomenclature clarification, the geographical scope of this Brief included both the North Gardens and Fairyland areas is included within the scope of 'North Gardens' discussed below and in this *North Gardens Indigenous Sculpture Landscape Master Plan* report (2019).



Figure 1.4.1: North Gardens Wetlands Study Area. Source: City of Ballarat 2017a: 6.

### 1.5 Study Process and Community Engagement

The study process involved several consultative stages with the City of Ballarat, the Wadawurrung (Wathaurung Aboriginal Corporation) and its representatives, and the Ballarat community. Central to this consultation was listening, quietly questioning and reflecting upon discussions, on site wanderings and respondent comments. This process is summarised in Table 1.5.1.

At the beginning of this project and as part of the *Wadawurrung* cultural consultation process, a Welcome to Country Smoking Ceremony was performed on-site by *Wadawurrung* woman Deanne Gilson.

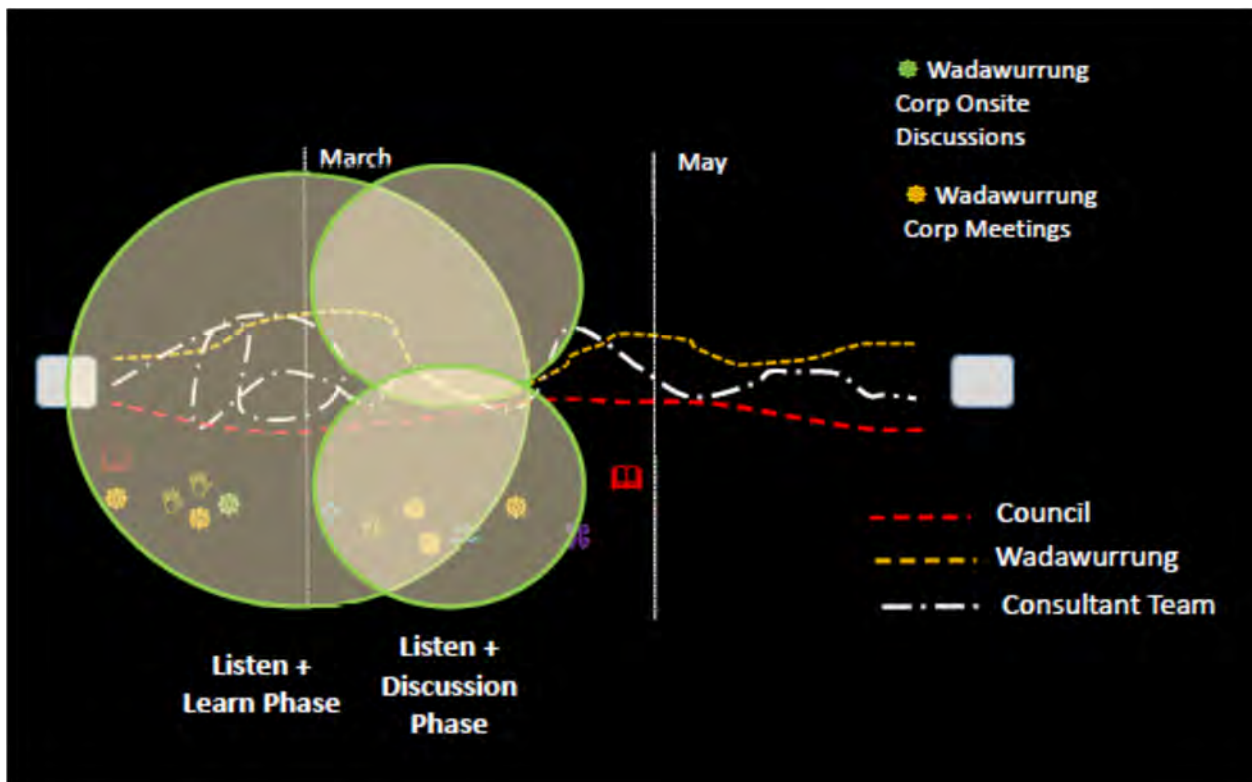


Figure 1.5.1 Study Consultation Process

The *North Gardens Indigenous Sculpture Landscape Master Plan* (2019) was preceded by the *Lake Wendouree Master Plan* (2017), The latter first proposed a 'Resting Place Sculptural Trail' for the North Gardens / Fairylands precincts.

A summary of community specific responses to the 'Resting Place Sculptural Trail' proposal is set out in Table 1.5.1 below. The majority of these comments applauded and supported the 'Resting Place Sculptural Trail' proposition.

These comments support the proposition, express concern about ensuring natural resource and biodiversity management, express concern to ensure a quality set of art installations and visitation experience, and not having too many art sculpture installations.

Resting Place Sculptural Trail		
Supportive Comments	Neutral Comments	Unsupportive Comments
Important to acknowledge our indigenous history and of Koori heritage relating to the Lake and Ballarat	Needs to be done in collaboration with the traditional custodians	Prefer no sculptures, just more native plants. Numbers seem excessive
Worthy and complimentary addition to the wetlands and native plantings experience of the wetlands	Support but 29 sculptures seems excessive for the area and may be dominating	Too expensive and more important projects to spend money on
Fantastic way of celebrating the traditional custodians of our land and to educate the community	Sculptures will need to be resistant to vandalism and properly maintained	May impact on birdlife and affect the natural qualities and tranquillity of the area
Great way to promote public art and sculpture and to attract visitors to this part of the Gardens	Should include additional native plantings and respect the bio-diversity of the area	Would be a target for vandals
Concept supports the north gardens as part of an education precinct	Sculptures should be high quality pieces of art and be of artistic merit.	Don't need to do more to acknowledge indigenous history

Table 1.5.1 Community Comments to the 'Resting Place Sculptural Trail' as part of the *Lake Wendouree Master Plan* (2017) planning and consultation process.

On-site community engagement was conducted on 20 April 2018 with the Project Team in attendance. An information flyer, in Appendix J, was letterboxed to local residents, and distributed by the City of Ballarat through their normal electronic email

distribution lists. The Team answered questions, discussed issues, and issued a survey instrument to obtain community values and opinions.

Table 1.5.2 synthesises community comments obtained as part of this community engagement activity. The comments largely echo the above community values, stressing the conservation of the existing wetland qualities including vegetation, habitat, water, pathway quality, personal safety, as well as strong encouragement and support for the use of the Gardens to host Aboriginal art sculptural installations.

Question:	Response:
What are the 3 best qualities of attributes of the North Gardens Wetlands?	Lots of birds Interesting twisting walking trail Isolated feel Natural vegetation The ambience of the place; the jewel in the crown Aboriginal playground was excellent Fairyland regeneration Bird life and pelicans Green space with shade Cycling friendly (and pedestrian friendly) Native vegetation The birds, swans, wildlife The natural layout of it The water The attempt at a wetland, for walk The water purification system Nice peaceful place to walk Love the bird life I see each time I like that the fallen trees etc. form habitat for small animals etc. Pathways /ambience Existing ambience
What are the 3 worst qualities or attributes of the North Gardens Wetlands?	None Access in and out of the Gardens Swampy/messy water in ponds Lots of cars in area. Including side streets Can't think of much This area could be better utilized Traffic – parking and night incursions Occasional rubbish dumping Some minor rubbish The area as a whole doesn't attract me It feels a bit unsafe as it's deserted and cut off from other garden areas There are few birds Access security of grasses Lack of crossings of Wendouree Parade Lack of disability access
If you had your chance, how would you change the North Gardens Wetlands?	Reduced traffic speed/calming on side roads Better access to tracks Integration into surrounding parts Leave it to the experts to develop it in ideas Path enhancement Subtle lighting around the Lake Good safe paths for walking Probably wouldn't change it Seating under shelter trees Low fence/barrier to traffic of road Think about aesthetic of old council nursery in NW corner – could this be incorporated Re-vegetate to attract birds Make paths clearer, with signage Make a track from Adam Lindsay Cottage area to this wetland (along road, for safety, and to not impinge on 'events' area/oval nearby Include an area that reflects the reason aboriginals make the Lake area home; food; wildlife; etc., and acknowledges them in sculpture [video stall of their history in area?] Keep the quiet qualities

	<p>I like the idea of utilising the surrounding areas for art etc.</p> <p>Keep the existing qualities</p> <p>Ok with sculpture aboriginal</p>
--	---

Table 1.5.2 Community Comments to the North Gardens Indigenous Sculpture Landscape Master Plan proposal.

### 1.6 Recent History of the North Gardens Wetlands

In 1999 the City of Ballarat prepared a landscape design for the North Gardens area to develop the site as a wetland, shown in Appendix B.

Key features of this design, many of which have been implemented, include:

- i. *Undertake works to create a network of water bodies and establishing reeds and grasses in the wetlands beds to improve water quality entering the lake*
- ii. *Planting additional indigenous trees, shrubs and grasses to increase wetlands biodiversity*
- iii. *Establishing a network of granitic sand paths and timber boardwalks to access wetlands area.*
- iv. *Installation of interpretive signs including integration of a local foods trail.*
- v. *Installation of a gross pollutant trap to capture litter entering the wetlands system*
- vi. *Improved linkages with Fairyland through raising of roadside asphalt.*
- vii. *Provide bird habitat through plantings and ensure selective openings for public viewing of bird life*
- viii. *Opportunities exist through this project to complete sections of paths and boardwalks not yet constructed (subject to funding). This landscape design plan should consider establishing some incomplete sections of the 1999 and how public art and sightlines to artworks can become an integral part of the landscape design plan.*

### 1.7 City of Ballarat Reconciliation Action Plan 2019-2021 (2019)

In May 2019, the City of Ballarat adopted a new *Reconciliation Action Plan* (City of Ballarat 2019).

Key items relevant to this project, as extracted into the Table in Appendix C, include provision of public art in the City of Ballarat public assets, provision of interpretation and exhibition elevation of this art as well as traditional land management practices and plant uses, and enabling employment opportunities for Aboriginal and Torres Strait Islander peoples.

There are considerable opportunities for human and intellectual resource partnerships in this Plan, as identified in the above extracted list. The opportunities unvalued are in enabling the North Gardens Wetlands to serve as an outdoor exhibition and performance venue allied to the actions presented for the Art Gallery of Ballarat and Her Majesty's Theatre in Ballarat

## 2. NORTH GARDENS LANDSCAPE



Figure 2.0 Lake Wendouree. Image Source: <https://www.thecourier.com.au/story/128727/lake-wendouree-photos-drought-to-now/>

### 2.1 Introduction

This section of the report provides a summation of the physical and human landscape history and characteristics of the Study Area.

### 2.2 Geology

Lake Wendouree and North Gardens sit on the edge of the Western District volcanic plains.

The plains date from the Pliocene Epoch, when the sea waters of the Tertiary Epoch retreated completely from this landscape. The Pliocene surface is composed of newer volcanics with evidence of scoria and minor tuff, with a scatter of riparian deposited alluvium. While this Epoch dates to 7-1.8 million years ago, nearby volcano eruption points including Mt Buninyong (to the south east), Mt Warrenheip (to the east) and Mt Rowan (to the north) – prominent lava cones – are dated as being more recent to 30,000-100,000 years ago.

The north-south Yarrowee River aligns to the junction between this 18-60m thick lava plain and an Ordovician uplift composed of tightly folded and thinly bedded siltstone, sandstone, slate, shale, etc., wherein lies much of the gold seams of the Ballarat gold fields. Lava maar tuff geologically created the western edges of Lake Burrumbeet. Tuff is rick formed by compaction after being expelled through vents during a volcanic eruption. Maar is a broad, low relief volcanic crater. Breaches in the crater rims of Mt Buninyong and Mt Warrenheip was caused by explosive shocks, over which lava subsequently flowed (LCC 1980: 31-61).

Map 2.2 therefore depicts much of the young volcanic plain landscape from the Holocene to Pliocene period pink-coloured Qvn-coded comprising Newer Volcanics of extrusive, Tholeiitic to alkaline basalts, with minor score and ash. This expanse is distinctively west-east edged on the Yarrowee River where the volcanics 'hit' the blue-coloured Oll-coded Ordovician sediments of marines, sandstones, siltstones, shales and cherts that harbour the gold-laden fault lines.



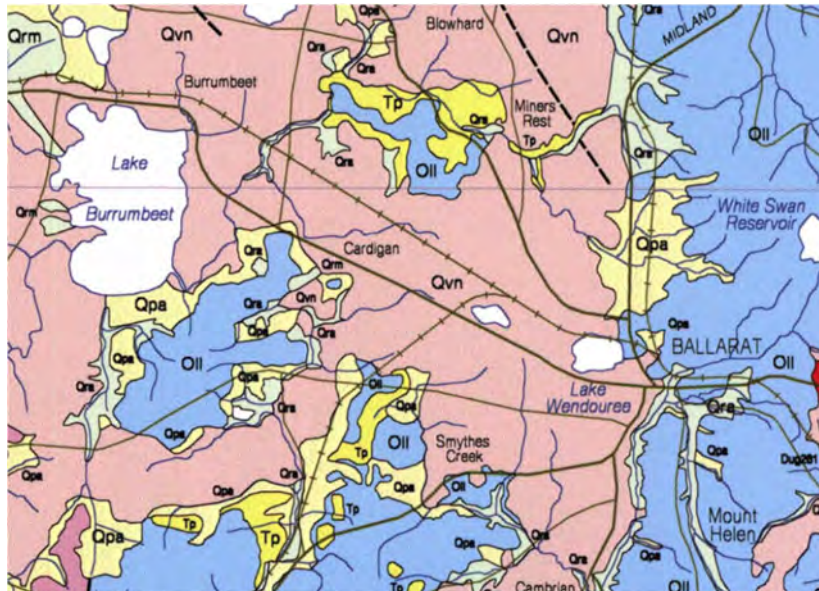


Figure 2.2 Extract of the Geology Map for Ballarat: Ballarat 1:250 000 geological map (1997).

Source: <http://earthresources.efirst.com.au/product.asp?pid=150&cid=32>

### 2.3 Landform

The landform around Lake Wendouree is characterised by a Basalt Plains land system lain on Pliocene era basalt or lava flows. This has resulted in a relatively flat landscape with rivulets weaving through the landscape, and depressions accommodating waterbodies including ephemeral and permanent wetlands depending upon yearly rainfalls (LCC 1980: 31-61).

### 2.4 Soils

Arising from weathering, and these initial lava deposits, soils in the Ballarat area around Lake Wendouree are typically termed Uniform Soils and Duplex Soils. Uniform soils are those developed on alluvial material derived from basalt erosion, and are located along and within drainage lines and drainage bodies/wetlands. Their character is distinguished by their often sticky when wet and deeply-cracking when dry. It is also subject to waterlogging and possess a minor salinity problem. Duplex soils are typically coarse structured yellow-brown calcareous soils laid on top of the relatively flat basalt plains. These soils are generally shallow to deep, subject to seasonal waterlogging, possess low permeability, and develop prominent cracks in dry times. The soils around Lake Wendouree are predominantly Uniform soils (LCC 1980: 83-88).

### 2.5 Climate

Ballarat has a moderate oceanic climate with four distinct 'Western' seasons. This variable seasonality offers more distinct climes, different vegetation growth and flowering, and a wider abundance of food-related plants and animal habitats in a more concentrated area. Such variability was more advantageous for *Wadawurrung* residency and food harvesting pre-colonisation (Clarke 2003).

It is also important to recognise that these are 'Western' seasons, and are not the *Wadawurrung* 'seasons' that would have and continue to exist for the Ballarat region (see Powell *et al.* 2019).

Ballarat's elevation, at 435m above sea level, causes its mean monthly temperatures to tend to be on average 3-4°C below those of Melbourne. The mean daily maximum temperature for January is 25.1°C, while the mean minimum is 10.9°C. In July, the mean maximum is 10.0°C; average July minimum is 3.2°C. The mean annual rainfall is 693mm, with August being the wettest month (75mm). There are an average of 198 rain-free days per year. Like much of Australia, Ballarat experiences cyclical drought and heavy rainfall. Prolonged drought (an average annual rainfall with falls averaging as low as 400mm per year since 2001) caused Lake Wendouree to dry up completely for the first time in its history between 2006 and 2007. More recently higher rainfall levels have been recorded including 95.0mm in the 24 hours on 14 January 2011, ending a four-day period of flooding rains across much of Victoria, and contributing to the wettest January on record, with a total of 206.0mm of rain for the month (LCC 1980: 62-67).



Figure 2.5 Aerial view, Lake Wendouree, 24 March 2006; Source: Jeremy Bannister, *The Courier*; <https://www.thecourier.com.au/story/128727/lake-wendouree-photos-drought-to-now/>

## 2.6 Water Systems

Lakes in the Ballarat locality are post-colonial settlement inventions to control and mediate water flows. Lake Wendouree, for example, is a constructed wetland pondage, arising from the formation of an embankment on the eastern exit flow from the Lake. While the Lake is now dammed, over the last 100 years its water levels have considerably varied accordingly to major dry seasons and major wet seasons. Increased suburbia in its catchment has increased water flows and water volumes due to increases in non-porous surfaces and typical engineering concrete treatments to remove water as efficiently as possible negating ponding and flooding. Thus, a catchment management strategy for Lake Wendouree implemented over the last 25 years has ensured the Lake's continued role as a stormwater basin, visual amenity and managed the incoming and outgoing flows without causing risk and damage to human life and property.

Geologically Lake Wendouree was originally a stream that flowed to the west but a lava flow resulted in it being dammed on three sides. Over generations of *Wadawurrung* it was known as a wetlands or swamp that always drained to the east into the now-named Yarrowee River. First known to European colonisers as 'Black Swamp', due to its dense dark reeds, it was later known as 'Yuille's Swamp' after William Cross Yuille who established a squatters' residence near its southern flank. When Ballarat was first surveyed in 1851 the swamp was recorded as 'Wendouree' and the misunderstood *Wadawurrung* word became the official name. Plans to dam the outlet stream that flowed from the swamp began as early as the first survey. The embankment was raised and pipes installed, enabling it to become the first permanent potable water supply for Ballarat's gold rush settlement. Before long this facility became redundant and the Lake Wendouree, with its embankment in-tact, became a permanent landscape feature for Ballarat.

Fairyland exists as a consequence of the construction of this 1851 retaining embankment along the eastern face of Lake Wendouree. It was progressively planted with White Poplars (*Populus alba*) in the 1920s-1930s at the same time as a concrete low-channel system was constructed. The system serves little water circulation or aeration purpose, and was originally intended as a water-based recreation feature.

North Gardens, as depicted in Figure 2.6.1, was designed and constructed in 1999 to service urban stormwater management requirements. Its construction was prompted by the burgeoning urbanisation of the Wendouree locality. Thus the green landscape evident today is a subservient component of this new water management system, enabling excess water flows from the Wendouree suburb to be mediated, treated, stored, limited released, and aerated before these waters enter Lake Wendouree. These hydraulic engineering treatments are evident within the design of the wetlands. Historically the top pond was excavated of sediment in 2010-2011, and a regular clean out of the gross pollutant traps occurs as well as and monthly water testing of the wetlands.



DSE (2009) has advised that Brolga (*Grus rubicunda*) is breeding in the north-western corner of the Winter Swamp conservation area (AECOM 2009).

Ecological Vegetation Class (EVC)	Description
EVC 647: Plains Sedgy Wetland	Occurs in seasonally wet depressions on volcanic and sedimentary plains, typically associated with fertile, silty, peaty or heavy clay paludal soils. Primarily sedgy-herbaceous vegetation, sometimes with scattered or fringing eucalypts or tea-tree/paperbark shrubs in higher rainfall areas. A range of aquatic herbs can be present, and species-richness is mostly relatively low to moderate, but higher towards drier margins.
EVC 653: Aquatic Herbland	Herbland of permanent to semi-permanent wetlands, dominated by sedges (especially on shallower verges) and/or aquatic herbs. Occurs on fertile paludal soils, typically heavy clays beneath organic accumulations.
EVC 55_61: Plains Grassy Woodland	An open, eucalypt woodland to 15 m tall. Occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. The understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer. This variant occupies areas receiving approximately 500 – 700 mm annual rainfall.

**Table 2.7.1 Descriptions of the Ecological Vegetation Classes (EVC) for the Lake Wendouree locality**

Source: <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>

Life Form Code	Wadawurrung Language Name (if known)	Common Name	Scientific Nomenclature	EVC 647 Plains Sedgy Wetlands – Volcanic Plains	EVC 653: Aquatic Herbland	EVC 55_61: Plains Grassy Woodland
MH		Amphibious Water-milfoil	<i>Myriophyllum simulans</i>	✓	✓	
MH		Australian Lilaepsis	<i>Lilaeopsis polyantha</i>	✓		
MTG		Australian Sweet-grass	<i>Glyceria australis</i>	✓	✓	
MTG		Bristly Wallaby-grass	<i>Austrodanthonia setacea</i>			✓
MTG		Brown-back Wallaby-grass	<i>Austrodanthonia duttoniana</i>		✓	
MTG		Common Blown-grass	<i>Lachnagrostis filiformis</i>	✓	✓	
MH		Common Nardoo	<i>Marsilea drummondii</i>		✓	
MH		Common Raspwort	<i>Gonocarpus tetragynus</i>			✓
SS		Common Rice-flower	<i>Pimelea humilis</i>			✓
MNG		Common Spike-sedge	<i>Eleocharis acuta</i>	✓	✓	
MTG		Common Wheat-grass	<i>Elymus scaber var. scaber</i>			✓
PS		Cranberry Heath	<i>Astroloma humifusum</i>			✓
PS		Creeping Bossiaea	<i>Bossiaea prostrata</i>			✓
SH		Duckweed	<i>Lemna disperma</i>		✓	
MH		Fennel Pondweed	<i>Potamogeton pectinatus</i>		✓	
MH		Floating Pondweed	<i>Potamogeton tricarlinatus</i> s.l.	✓	✓	
MS	Garra or Jerring-up	Golden Wattle	<i>Acacia pycnantha</i>			✓
MH		Grassland Wood-sorrel	<i>Oxalis perennans</i>			✓
MS		Hedge Wattle	<i>Acacia paradoxa</i>			✓
LTG		Hollow Sedge	<i>Carex tereticaulis</i>	✓		
MTG	Bar-rang or Woo-loitj	Kangaroo Grass	<i>Themeda triandra</i>			✓
SH		Kidney-weed	<i>Dichondra repens</i>			✓
LTG		Kneed Spear-grass	<i>Austrostipa bigeniculata</i>			✓
SH		Pacific Azolla	<i>Azolla filiculoides</i>		✓	
SH		Pale Swamp Everlasting	<i>Helichrysum aff. rutidolepis</i> (Lowland Swamps)	✓		
SH		Poison Lobelia	<i>Lobelia pratioides</i>	✓	✓	
SH		Prickfoot	<i>Eryngium vesiculosum</i>	✓		
CT	Biyal or Buul	River Red Gum	<i>Eucalyptus camaldulensis</i>			✓
LH		Running Marsh-flower	<i>Villarsia reniformis</i>		✓	
MH		Sheep's Burr	<i>Acaena echinata</i>			✓
MNG		Small Spike-sedge	<i>Eleocharis pusilla</i>		✓	
SH		Stinking Pennywort	<i>Hydrocotyle laxiflora</i>			✓
MTG		Stiped Wallaby-grass	<i>Austrodanthonia racemosa</i> var. <i>racemosa</i>			✓

LTG		Supple Spear-grass	<i>Austrostipa mollis</i>			✓
MH		Swamp Starwort	<i>Stellaria angustifolia</i>	✓		
LNG		Tall Spike-sedge	<i>Eleocharis sphacelata</i>		✓	
LH		Variable Willow-herb	<i>Epilobium billardierianum</i>	✓		
MTG	Polango or Warngare	Water Ribbons	<i>Triglochin procerum</i> s.l.		✓	
MNG		Wavy Swamp Wallaby-grass	<i>Amphibromus sinuatus</i>	✓		
MNG		Weeping Grass	<i>Microlaena stipoides</i> var. <i>stipoides</i>			✓
MTG		Wetland Blown-grass	<i>Lachnagrostis filiformis</i> (perennial variety)	✓		
SH		White Purslane	<i>Neopaxia australasica</i>	✓		

**Table 2.7.2 Mapping of the Ecological Vegetation Classes (EVC) for the Lake Wendouree locality with additional Wadawurrung information if available.**

Source: <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>

## 2.8 Basalt Peppercross (*Lepidium hyssopifolium*)

The Basalt Peppercross is found in an extensive, but patchy distribution from south-eastern NSW, through Victoria to eastern parts of Tasmania (Tumino 2010). The Basalt Peppercross is an erect, multi-branched perennial herb that grows up to 1m in height, with stems and stem leaves covered in fine short needle-shaped hairs (Leigh *et al.* 1984; Tumino 2010).

The Basalt Peppercross (*Lepidium hyssopifolium*), also Listed as 'Threatened' in Victoria under the *Flora and Fauna Guarantee Act 1988*, 'Endangered' on the *Advisory List of Rare or Threatened Plants in Victoria*, is subject to a National Recovery Plan (Tumino 2010) that includes strategies for re-planting the species in select locations that may aid its long-term conservation, recovery, and re-establishment.

During the period of this consultancy, the City of Ballarat, through the Botanical Gardens, undertook direct seeding of specimens of the listed 'Endangered' species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. These species included the Basalt Peppercross (or Pepper-cross, Rubble Peppercross, Pepperweed) (*Lepidium hyssopifolium*) to ascertain how the species would strike and survive in the North Gardens Wetlands (Australia 2018; Desvaux 1815). The actual sites of these planting are not disclosed in this Report, but due consideration of their locations have been made in drafting this Master Plan.

## 2.9 Ballarat Botanical Gardens

The aims of the Botanical Garden are to:

- 1: To maintain and preserve the Crown Reserve as a Botanical and Public Gardens as was the purpose the reserve was established by the Crown.
- 2: To ensure that the Botanical Gardens are maintained to the highest standard as possible and that the gardens staff can provide support, training and educational assistance to the Friends and the community generally, staff should be suitably qualified in Horticulture
- 3: To cultivate and display plant species of ornamental, economic, cultural and conservation value to the Ballarat region.
- 4: To provide quality recreation opportunities and educational programs and to assist educational and scientific institutions.
- 5: To provide a regionally significant facility that is accessible to all residents and visitors of Ballarat.
- 6: To display exotic and native plants suitable for use in the Ballarat region.
- 7: To label clearly and correctly identify those plants and provide interpretive services to educate the public on their uses, potential and distribution.
- 8: To keep appropriate records to ensure the scientific value of the collection.
- 9: To retain existing native vegetation where possible in the Botanical Reserve.
- 10: To provide an opportunity for the public to learn about the environment generally.
- 11: To create a high quality outdoor precinct for passive recreation for both local residents and visitors.
- 12: To promote the Botanical Gardens as a unique and major tourist attraction for the City and the district.
- 13: To utilise the Friends as a reference body in Botanical Gardens related matters.

In 1994 John Patrick Pty Ltd was commissioned to prepare a Masterplan and Management Strategy for the Ballarat Botanical Gardens, including the North Gardens and Fairyland areas. The project included a Conservation Analysis followed by a Landscape Masterplan.

The Analysis and Masterplan included a specific discussion about the North Gardens and Recommendations as to its future.



Figure 2.9.1: Original design for the North Gardens Wetlands contained in the *Ballarat Botanical Gardens Master Plan and Management Strategy (1997)*

### 2.10 Ballarat Planning Scheme (2019)

The North Gardens is zoned PPRZ or Public Park and Recreation Zone. Within this Scheme, North Gardens is only affected by the overlay of 15HO Heritage being item HO13. HO13 is listed as the 'Ballarat Botanical Gardens' with an address of 'Gillies Street and Wendouree Parade, Lake Wendouree' and is included on the Victorian Heritage Register as Ref No H2252 under the Victorian *Heritage Act 2007*. Thus, the City needs to verify that any changes to the land and or land use of the North Gardens Wetlands may be subject to consideration by Heritage Victoria under this Act.

North Gardens is not affected by the overlays of 15DDO Design and Development, 15DPO Development Plan, 15EAO Environmental Audit, 15HO Heritage, 15RXO Road Closure, and 15VPO Vegetation Protection.

### 2.11 Western Link Road Project

The *Ballarat Road Transport Strategy (2007)* reviewed traffic management options for Ballarat up to 2031. Its key recommendation was the Western Link Road and this was embodied in the Ballarat Planning Scheme Amendment C170. While the Road is some distance from North Gardens, the technical reports prepared as part of the Amendment consultation process offer relevant information on several topics.



Figure 3.0: Art Poles in the north-western corner of *Mirambeek Murrup*: North Gardens Wetlands.

### The Land Tenure Question

"King Billy [Mullawallah], one of the remaining Australian aborigines, was in Ballarat the other day, and a passer-by in Sturt street having refused to give Billy a donation, he delivered a short lecture on the land question from his point of view. He said that the ground he then stood on was rightfully his property, of which he had been robbed by the white man, and it was the duty of the invaders, therefore, to pay him rent as long as he and his fellow blackfellows lived, at any rate. Billy then went on to show that the white man always had an aversion to pay rent of any kind, and as he himself was not powerful enough to demand it, the next best thing was to beg for it. King Billy, by his argument, so enlisted the sympathy of several of his hearers as to induce them to part with several pieces of silver, and the aboriginal departed for new hunting-grounds, anything but satisfied with the present system of land tenure."

Source: Kerang Times and Swan Hill Gazette 3 June 1884, page 4.

### 3.1 Introduction

This section of the report provides a summation of the *Wadawurrung* living history and characteristics of the Study Area.

A key component of this Landscape Master Plan is the theoretical and philosophical journey by the consultant team, in partnership with the *Wadawurrung*, towards realising a suitable design. The detailed logic of this inquiry, the rationale behind certain design decisions and the approach eventually adopted, is set out in greater detail in the Lorne Sculpture 2018 Biennial presentation paper (Nicholson *et al.* 2019), that is included as Appendix D.



Figure 3.1 Wadawurrung Country. Extract from <https://www.geelongaustralia.com.au/kaap/article/item/8d33614ddad2a9c.aspx>



### 3.2 Wadawurrung Residency

From time immemorial, the *Wadawurrung* have resided and managed their *Country* since the Dreaming in respect of their ancestors and their ancestral responsibilities. Across this *Country* landscape, clan groups looked after segments of this landscape.

This particular segment was curated by the *Keyeet Balug* clan of the *Wadawurrung* peoples. The *Keyeet Balug* clan resided on this landscape seasonally shifting according to their custodial obligations but also due to food resource availability, shifts in geological events, unusual climatic events such as droughts, etc.

Figure 3.2.1 depicts in the present extent of the Ballarat urbanisation (light orange shading) with geographical locational names provided in *Wadawurrung* (orange) and English (blue) for ease of orientation.

Figure 3.2.2 depicts the geographical *Country* of the *Keyeet Balug* clan (light green shading), the neighbouring clan *Country*'s, with geographical locational names provided in *Wadawurrung* (orange) and English (blue) for ease of orientation, so that the reader can understand their traditional residency catchments. These catchments were not fixed, in time or in 'fencing', but were pliable according to the time of year, seasonality and event, so are representational in scope.

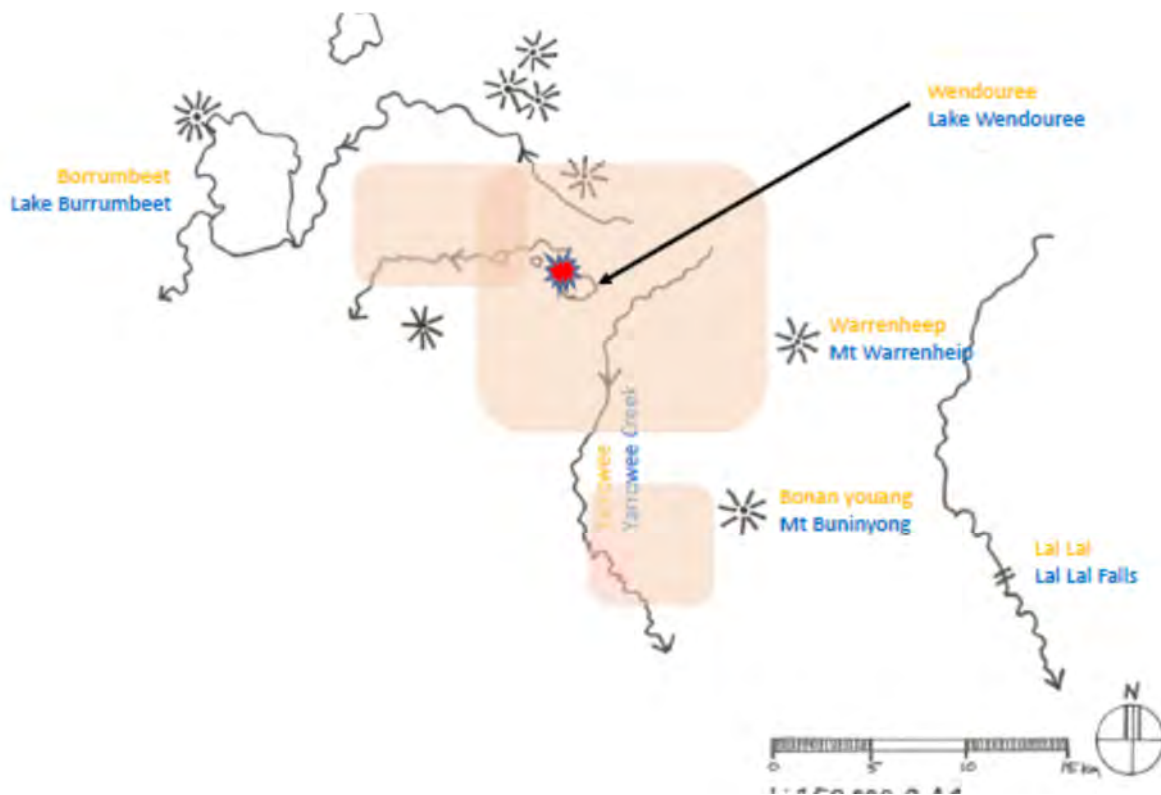


Figure 3.2.1: Existing Ballarat Urban Area.

Ballarat urbanisation (light orange shading) with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors

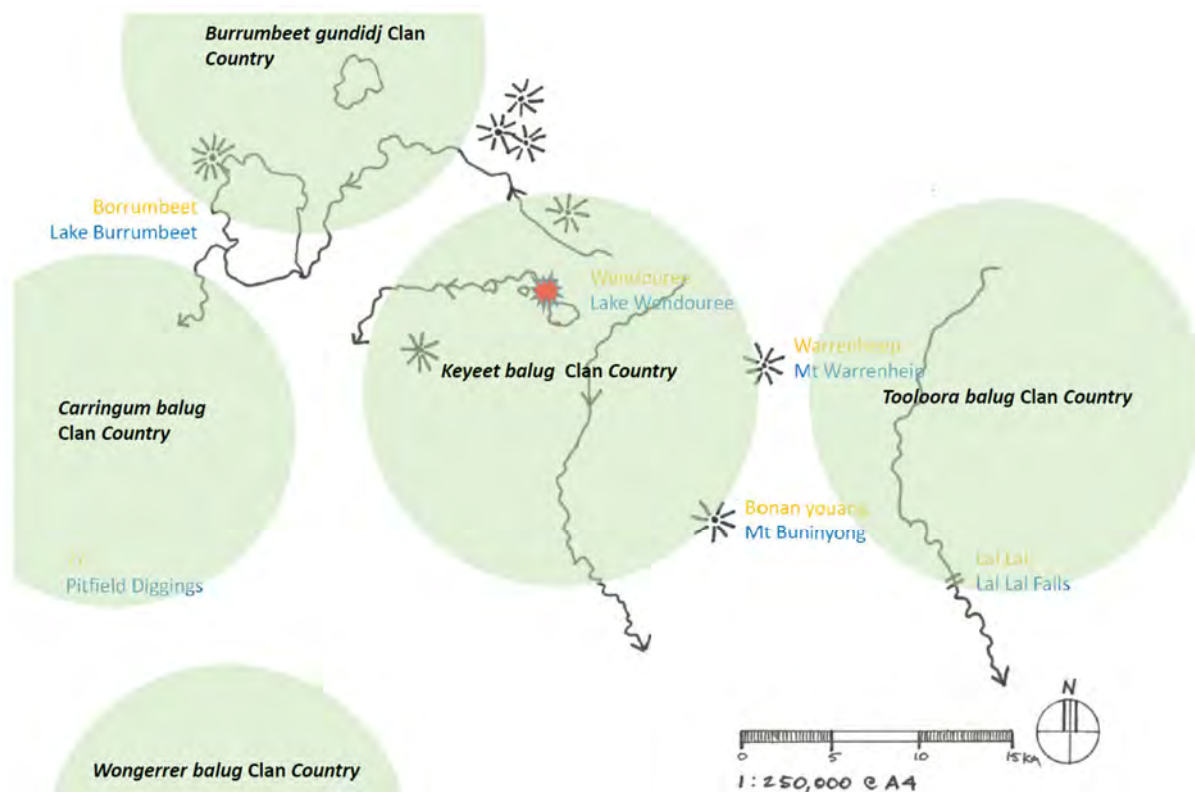


Figure 3.2.2: Country of the Keyeet Balug clan (light green shading), the neighbouring clan Country's, with geographical locational names provided in Wadawurrung (orange) and English (blue). Mirambeek Murrup: North Gardens is the red star. Source: authors.

### 3.3 Wadawurrung Nomenclature

The re-awakening of *Wadawurrung* language and nomenclature has been fast occurring over the last 10 years. In this report we have used the latest *Wadawurrung* geographical (hills, mounts, falls, lakes, rivers, watercourses, places, etc.) nomenclature, as depicted in the Figures and text in this report.

Additionally, in 2018, the Corangamite Catchment Management Authority published the *Wadawurrung Country of the Victorian Volcanic Plains* booklet that tabulated a collection of *Wadawurrung* names against animal, bird, and plant species. Table 3.3.1 is a revised version of this information that amends several names, adds several more species and their names. These names have been used throughout this report.

Wildlife Type	Wadawurrung Language Name	Common Name	Scientific Nomenclature
Birds	Porronggiti	Brolga	<i>Antigone rubicunda</i>
	Bundjil	Wedge-tailed Eagle	<i>Aquila audax</i>
	Padjerook	Australian White Ibis	<i>Threskiornis molucca</i>
	Waa	Crow / Raven	<i>Corvus coronoides</i>
	Kawirr	Emu	<i>Dromaius novaehollandiae</i>
	Toolim	Black Duck	<i>Anas superciliosa</i>
	Moodiwarr	Musk Duck	<i>Biziura lobata</i>
	Kunuwarra	Black Swan	<i>Cygnus atratus</i>
	Gherin, Gherang or Willam	Yellow-tailed Black Cockatoo	<i>Calyptorhynchus funereus</i>
	Parwan	Magpie	<i>Gymnorhina tibicen</i>
	Kuwarrk	Kookaburra	<i>Dacelo novaeguineae</i>
	Djirnap	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
	Mammals	Goim	Eastern Grey Kangaroo
Go-yin		Swamp Wallaby	<i>Wallabia bicolor</i>
Barnong		Ringtailed Possum	<i>Pseudocheirus peregrinus</i>
Walert		Brush-tailed Possum	<i>Trichosurus vulpecula</i>
Bu		Eastern Barred Bandicoot	<i>Perameles gunnii</i>
Mon.ngarrk		Echidna	<i>Tachyglossus aculeatus</i>
Yurn		Eastern Quoll	<i>Dasyurus viverrinus</i>

	Ngurr-ngurr	Common Wombat	<i>Vombatus ursinus</i>
	Ngaambulmum	Koala	<i>Phascolarctos cinereus</i>
	Wad-durring or Perridak	Platypus	<i>Ornithorhynchus anatinus</i>
<b>Fish</b>	Buniya	Short-finned Eel	<i>Anguilla australis</i>
	Ware-rap	River Blackfish	<i>Gadopsis marmoratus</i>
	Purrpurt	Trout small	
<b>Reptile</b>	Karn Kadak	Snake	
<b>Food Plants</b>	Murnang	Murnong, Plains Yam Daisy	<i>Microseris lanceolata</i>
	Polango Warn gare	Water Ribbons	<i>Triglochin procerata</i>
	Yepurt (Native Lilies) Yepiir (sweet bulb)	Pale Vanilla-lily	<i>Arthropodium milleflorum</i>
	Paiik	Yellow Bulbine-lily	<i>Bulbine bulbosa</i>
	Yep-eurt or Bom	Milkmaids	<i>Burchardia umbellata</i>
	Bom	Grass lilies	<i>Caesia species</i>
	Bom	Chocolate lilies	<i>Dichopogon strictus</i>
	Banganga	Fringe lilies	<i>Thysanotus</i>
	Name not known	Orchids	<i>Orchidaceae</i>
	Tarook or Dintini (Peppery Yam)	Small-leaved Clematis	<i>Clematis microphylla</i>
	Tharook or Min nam-berung	Pink Bindweed	<i>Convolvulus arvensis</i>
	Terraat	Native Geranium	<i>Geranium solanderi</i>
	Balout	Cherry Ballart	<i>Exocarpos cupressiformis</i>
	Tark	Common Reed	<i>Phragmites australis</i>
	Warour re rup or Toolain	Late Black Wattle	<i>Acacia mearnsii</i>
	Garra or Jerring-up	Golden Wattle	<i>Acacia pycnantha</i>
	Wurraak or Wooriki	Silver Banksia	<i>Banksia marginata</i>
	Burn-naa-look or Mooee-yung	Blackwood	<i>Acacia melanoxylon</i>
	Nurm-bal	Flax Lily	<i>Dianella species</i>
	Toolim	Pale Rush	<i>Juncus pallidus</i>
	Bal-yan	Bull Rush / Cumbungi	<i>Typha latifolia</i>
	Karawun	Spiny-head-Mat-rush	<i>Lomandra longifolia</i>
	Nareta	Ruby Saltbush	<i>Enchyaena tomentosa</i>
	Bowat	Austral Bugle	<i>Ajuga australis</i>
	Koon-yang or Gunyang	Large Kangaroo Apple	<i>Solanum laciniatum</i>
	Nareem	Native Raspberry	<i>Rubus parvifolia</i>
<b>Trees</b>	Ngarri	Drooping She-Oak	<i>Allocasuarina verticillata</i>
	Biyal or Buul	River Red-Gum	<i>Eucalyptus camaldulensis</i>
	Bi-et-mai	Yellow Gum	<i>Eucalyptus leucoxyton</i>
	Larrap	Manna Gum	<i>Eucalyptus viminalis</i>
	Kokibainang	Swamp Wallaby Grass	<i>Amphibromus reservatus</i>
	Bar-rang or Woo-loitj	Kangaroo Grass	<i>Themeda triandra</i>
	Wangarra	Messmate	<i>Eucalyptus obliqua</i>

Table 3.3.1 Wadawurrung Plant, Animal and Bird Nomenclature

Source: Reproduced with the permission of the Wadawurrung (Wathaurung Aboriginal Corporation). Source: Nomenclature listings in: Wadawurrung (Wathaurung Aboriginal Corporation) (2018), *Wadawurrung Country of the Victorian Volcanic Plains*, Wadawurrung (Wathaurung Aboriginal Corporation), Ballarat, pp. 5-20. Revised and amended by Melinda Kennedy and David Jones, August 2019.

### 3.4 Understanding Keyeet Balug Country

To understand *Keyeet Balug Country*, within *Wadawurrung Country*, one needs to respect understand Language + Country. Thus, the above nomenclature and spatial information is provided first, before this section explains the geographical characteristics and variable that explain this Country and the *Wadawurrung's* past, current and emerging relationship to this tract of landscape. This is the four-dimensional explanative setting of *Mirambeek Murrup*: North Gardens, or greater philosophical and phenomenological detail is provided in Appendix F in the article presented at the Lorne Art Biennial in 2018 and the accompanying article publication.

Unfortunately a translation and understanding of the traditional seasons of the *Keyeet Balug Country*, and the northern expanse of *Wadawurrung Country* is in its infancy of emergence. So its inclusion in this report would be inappropriate. That being said, given mature research in the Bellarine-Geelong expanse of *Wadawurrung Country* (Powell *et al* 2019), there would approximately 5 or 7 seasons in this region. Each season is not a discrete time band like in the Western Gregorian summer / winter / spring / autumn calendar, but time bands linked to climate, food resource availability and harvesting, animal and bird arrivals and departures, and

astronomical events. Knowing seasons gives a 'clock' and a culturally-informed temporal land management, as is now used in northern Australian national park land management plans, and also in the recent *Ngootyoong Gunditj Ngootyoong Mara South West Management Plan* (Parks Victoria 2017) that underpins the recent Budj Bim Cultural Landscape world heritage inscription.

Relationship to lands and waters are informed by the artefacts that ancestors created and left for the *Wadawurrung* to look after, manage sustainably, and heal. Thus, what 'we', as Western'ers, assume as site analysis layers are an integrated story, and what we consider 'land' is in fact a holistic Country. To re-quote from the beginning of this report:

*Country in Aboriginal English is not only a common noun but also a proper noun.  
People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country.  
People say that country knows, hears, smells, takes notice, takes care, is sorry or happy.  
Country is not a generalised or undifferentiated type of place, such as one might indicate with terms like 'spending a day in the country' or 'going up the country'.  
Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life.  
Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease [sic.] (Rose 1996: 7).*

*Aboriginal people see Country in layers.*

*Country has six layers, that link to infinite layers. These six layers include the Below Country - where we collect ochre for dance and ceremony). On Country - where we walk and travel, dance and conduct ceremony. Then there is Water Country – we use to sustain life, but also part of many ceremonies of welcome. Next is Wind Country – smoke from welcome fires and language blow in all directions and touch every layer of Country. Then comes Sky Country – where we see most of our Spiritual Protectors in their physical form before they transcend to the celestial home in the form of stars and constellations. These then tell the story of the reflected layers of Country of which Aboriginal people's physical and spiritual bodies are connected to.*

Figures 3.3.1 and 3.3.2 depict the abstract geological vegetational characteristics of this landscape. In the former one can interpret two types of geological land forms, that each provides different surface resources today, and the eastern junction of the volcanic plains expanse nudging up against the Ordovician uplifted sedimentary north-south aligned hills corridor. This juncture also aligns to the north-south flows of rivulets and the ponding of lakes and wetlands. The latter, the vegetation aligns closely to this geological template enabling easy food resource access for the *Wadawurrung* to three types of landscape 'supermarkets': saline and potable permanent and ephemeral wetlands; open grassland; scattered open woodland grassy plains and dry sclerophyll hills. Each type offers different resources, different seasonal arrangements, and different activities.

Figure 3.3.3 depicts the locations of these primary water source-related 'supermarkets'.

Thus, many encampments were determined by site location contexts that afforded easy access to all three 'supermarkets' / food source areas at any one time.

Figure 3.3.4 depicts the key animals present on this Country. Animals are both food resources and representational ancestors. Each *Wadawurrung* has by moiety obligations to one or several animals to respect, protect/conservate, and to ensure their health as well as to maintain custodial ties. The specifics of these moiety species is confidential to the *Wadawurrung* so not explained in detail in this report. Key cultural animals and birds, include *Bunjil* (Wedge-tailed Eagle) [*Aquila audax*], *Padjerook* (Australian White Ibis) [*Threskiornis molucca*], *Porronggiti* (Brolga) [*Antigone rubicunda*], *Wad-dirring* (Playtpus) [*Ornithorhynchus anatinus*] and *Rakili* [*Hydromys chrysogaster*]. These species are present within *Mirambeek Murrup*: North Gardens, appear as prominent figures within *Wadawurrung* narratives, holding great cultural relevance to their community.

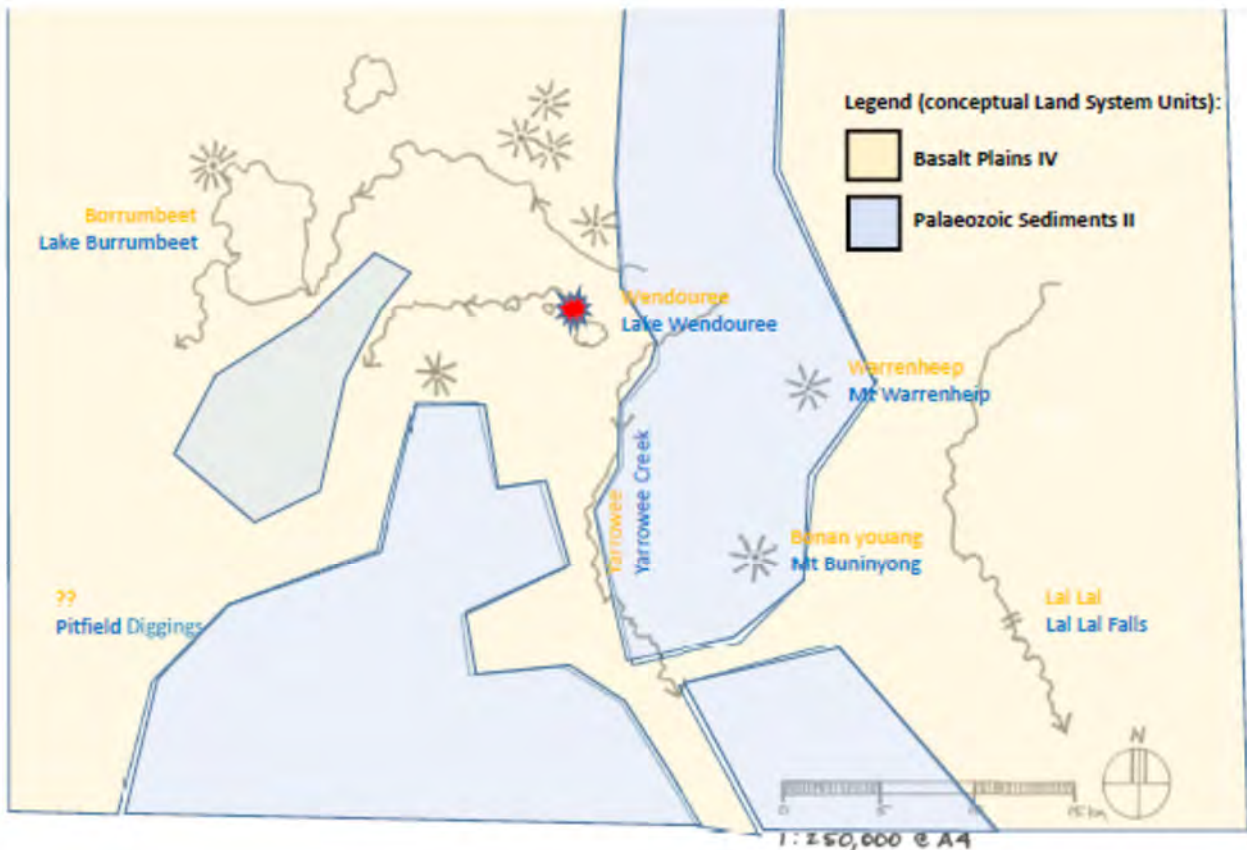


Figure 3.3.1: Underlying geology of the *Country of the Keyeet Balug* clan (light green shading), with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup: North Gardens* is the red star. Source: authors.

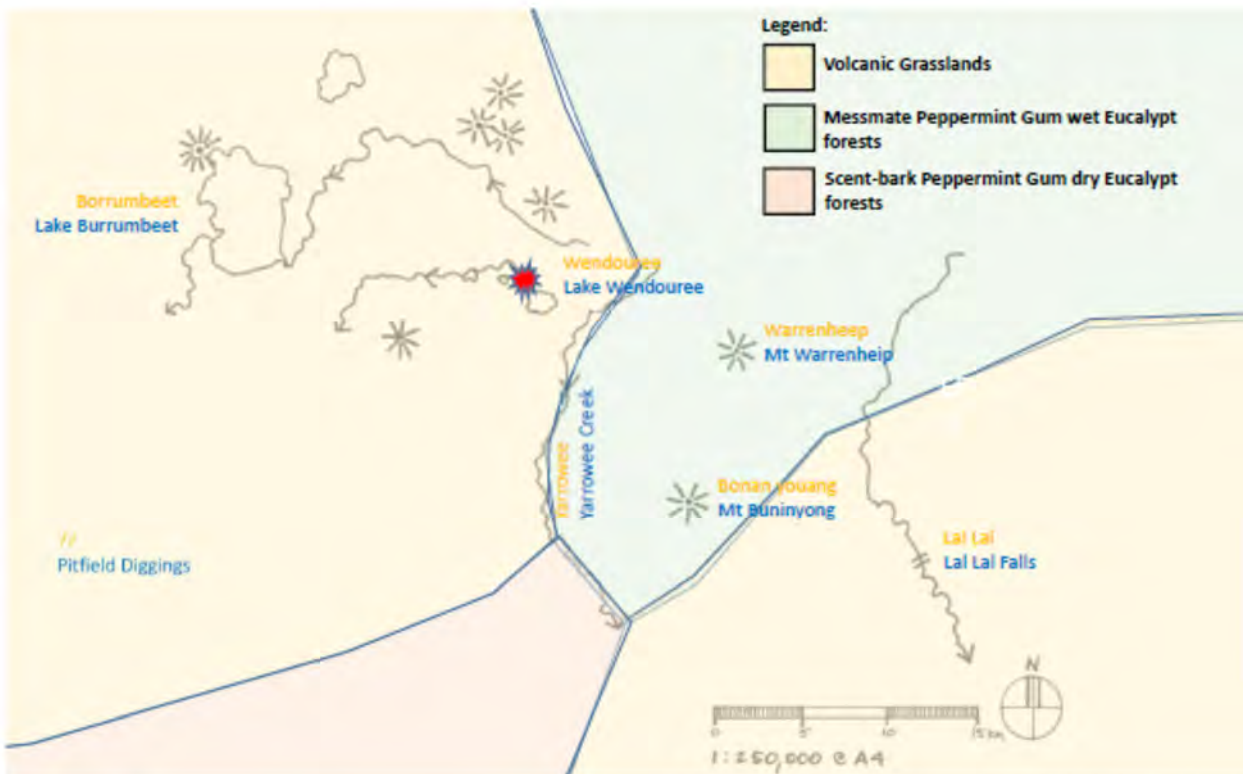


Figure 3.3.2: Underlying vegetation of the *Country of the Keyeet Balug* clan (light green shading), with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup: North Gardens* is the red star. Source: authors.

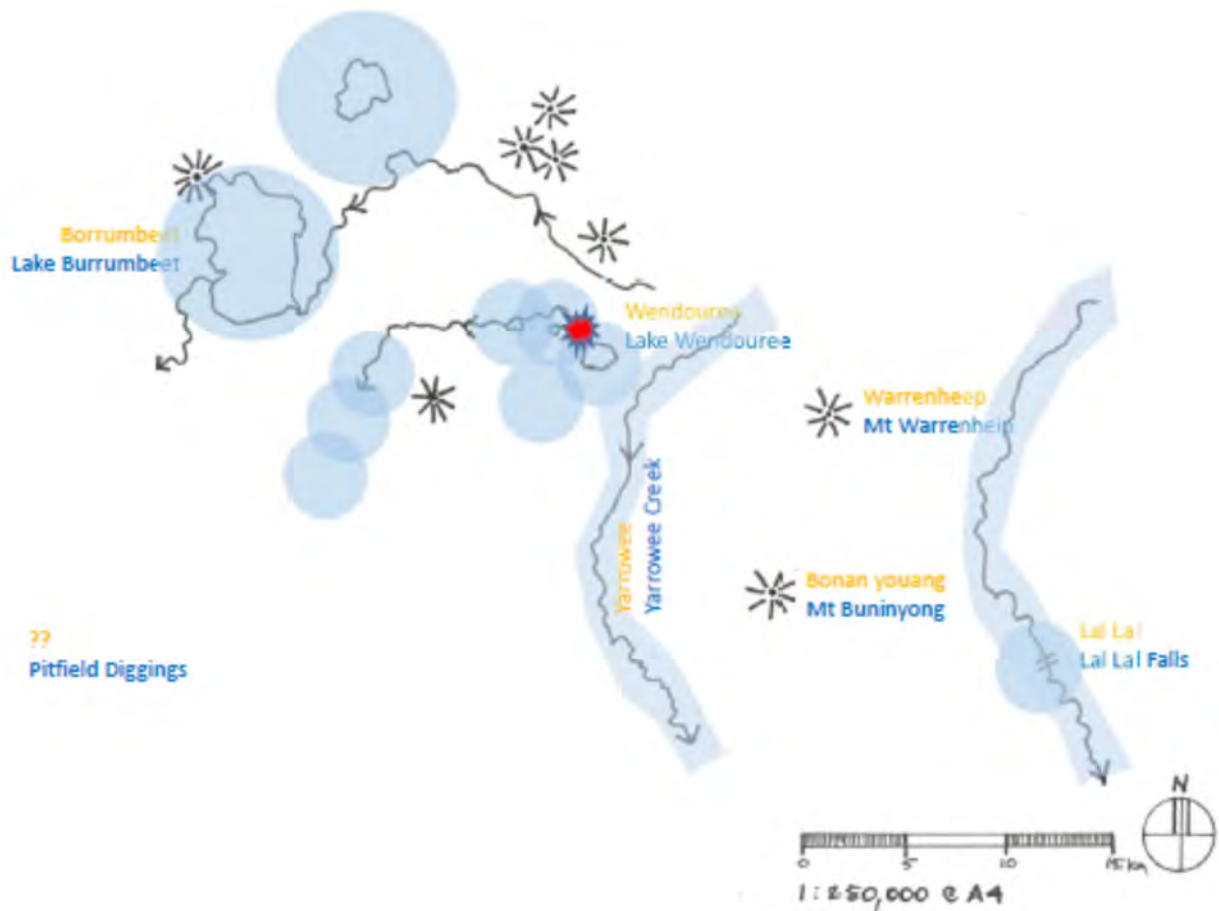


Figure 3.3.3: Underlying water systems of the *Country of the Keyeet Balug* clan (light green shading), with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup: North Gardens* is the red star. Source: authors.



Figure 3.3.4: Underlying animal characters of the *Country of the Keyeet Balug* clan, being *Bunjil* (Wedge-tailed Eagle) [*Aquila audax*], *Padjerook* (Australian White Ibis) [*Threskiornis molucca*], *Porronggiti* (Brolga) [*Antigone rubicunda*], *Wad-dirring* (Platypus) [*Ornithorhynchus anatinus*] and *Rakili* [*Hydromys chrysogaster*]. North Gardens is the red star. Source: authors.

Recognising these environmental variables, we can consider the next sets of mappings and information that start delineating human residency patterns and relationships.

Figure 3.3.5 depicts existing Aboriginal Victoria (AAV) archaeological site investigations mapped against what are considered to be by AAV the places where high concentrations of Aboriginal artefacts may be present today. In contrast, Figure 3.3.6 depicts the places the *Wadawurrung* presently consider regular *Keyeet Balug* clan encampment sites for this locality. Locations next to permanent potable water sources are evidence

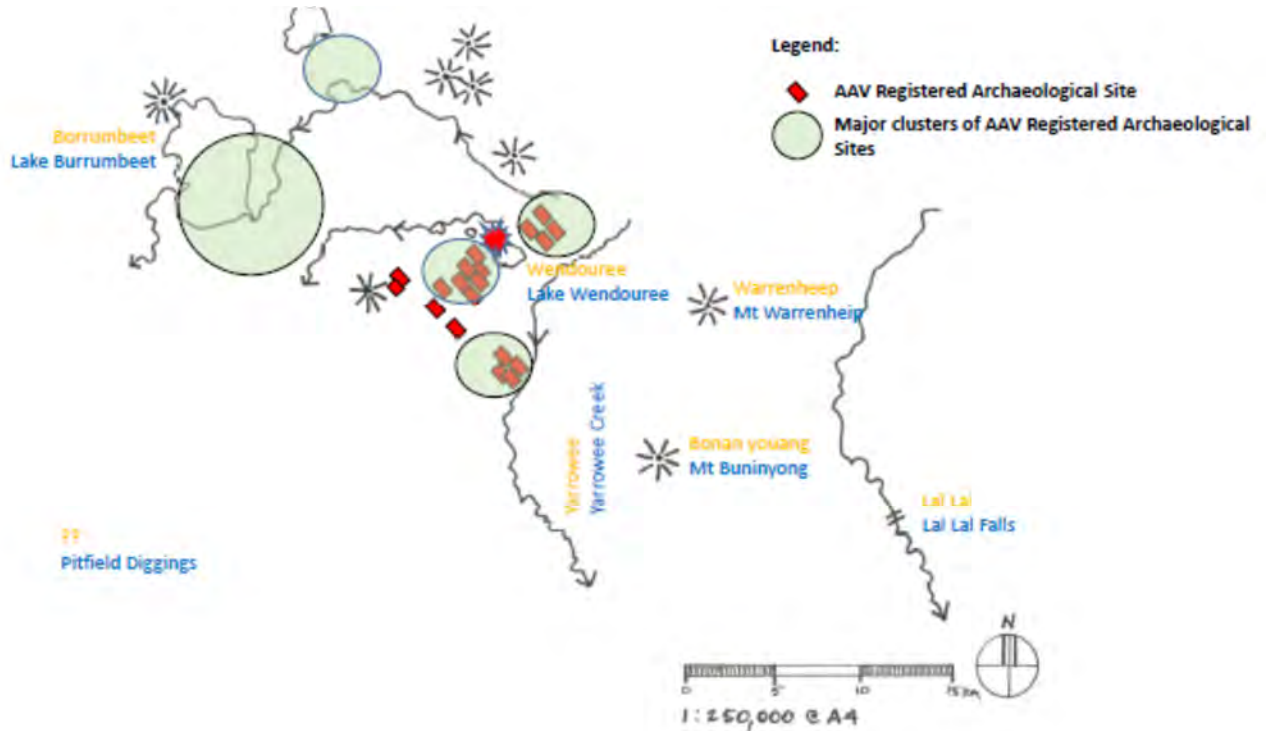


Figure 3.3.5: Underlying archaeological evidence of archaeological sites (red squares) and perceived concentrations of *Keyeet Balug* clan residency (light green shading), with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors.

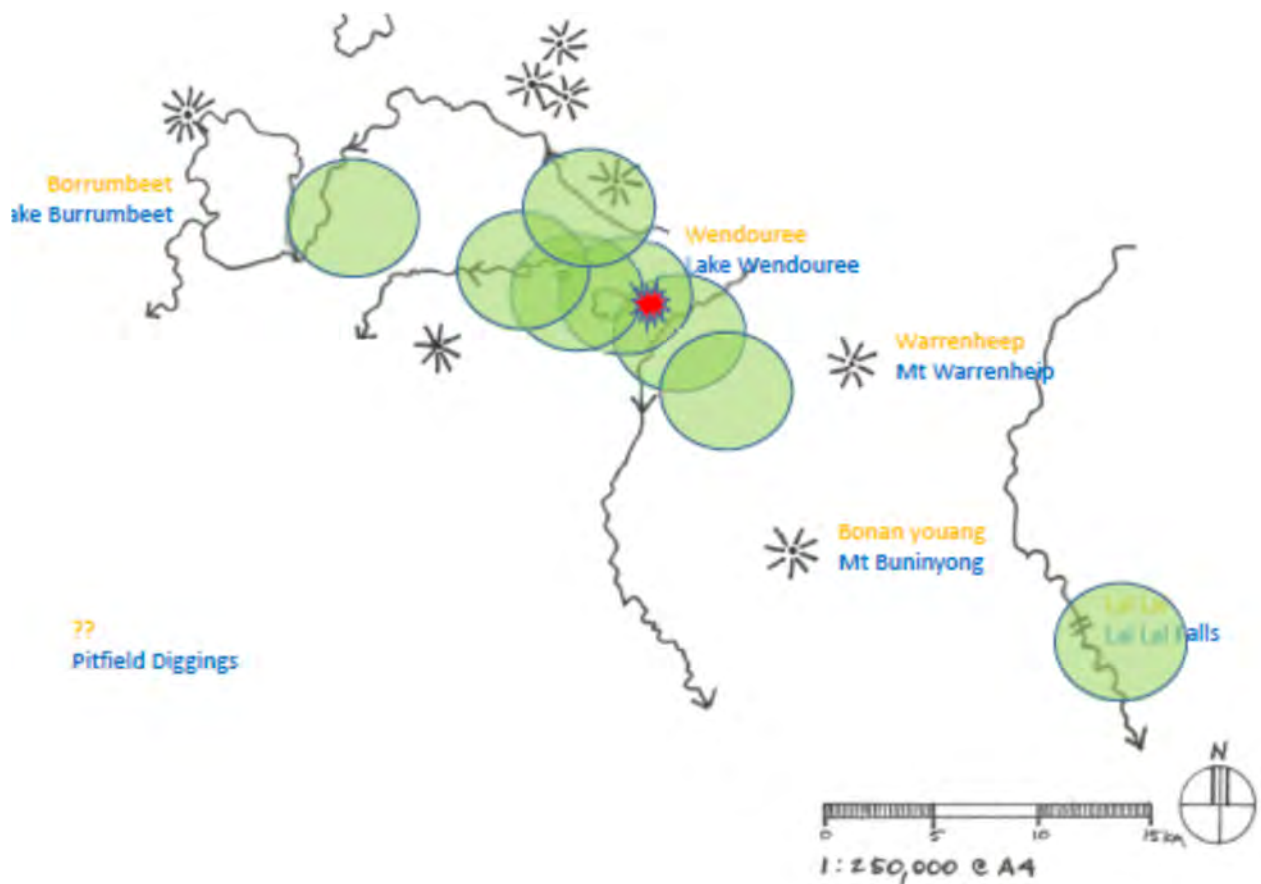


Figure 3.3.6: Wadawurrung recognised regular encampment venues for the Wadawurrung and *Keyeet Balug* clan residency (light green shading), pre-colonisation, with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup: North Gardens* is the red star. Source: authors.

The next two figures start to bring cultural and *Wadawurrung* perceptual information into the analysis and translation for the site.

Figure 3.3.7 considers the visual sightlines and landmarks that one can directly relate to and orient by when at *Mirambeek Murrup: North Gardens*. This information needs to be understood in both tangible (directly sightable) and intangible (mentally sightable) relationships. Thus, sightlines to *Warrenyeep*, *Bonan Youang* to the east, *Langi Gheran* and several volcanic cones to the west and north-west are evident. Additionally, the visual catchment created by the Yarrowee hillscape to the east and the Great Dividing Range to the north, provide a visual catchment and Country boundaries. To respect cultural sensitivities, the specific evidence of this information is not discussed here.

Figure 3.3.8 maps and introduces key *Wadawurrung* narratives and places relevant to *Keyeet Balug* clan and *Wadawurrung Country* in this locality, including several corridors and or Dreaming lines. These places feature in the preceding tangible and intangible visual mapping. To respect cultural sensitivities, the specific evidence of this information are not discussed here.

Thus, one can start seeing the proximity of Lake Wendouree, and *Mirambeek Murrup: North Gardens*, to several key *Wadawurrung*-rich cultural locations and corridors/dreaming lines.



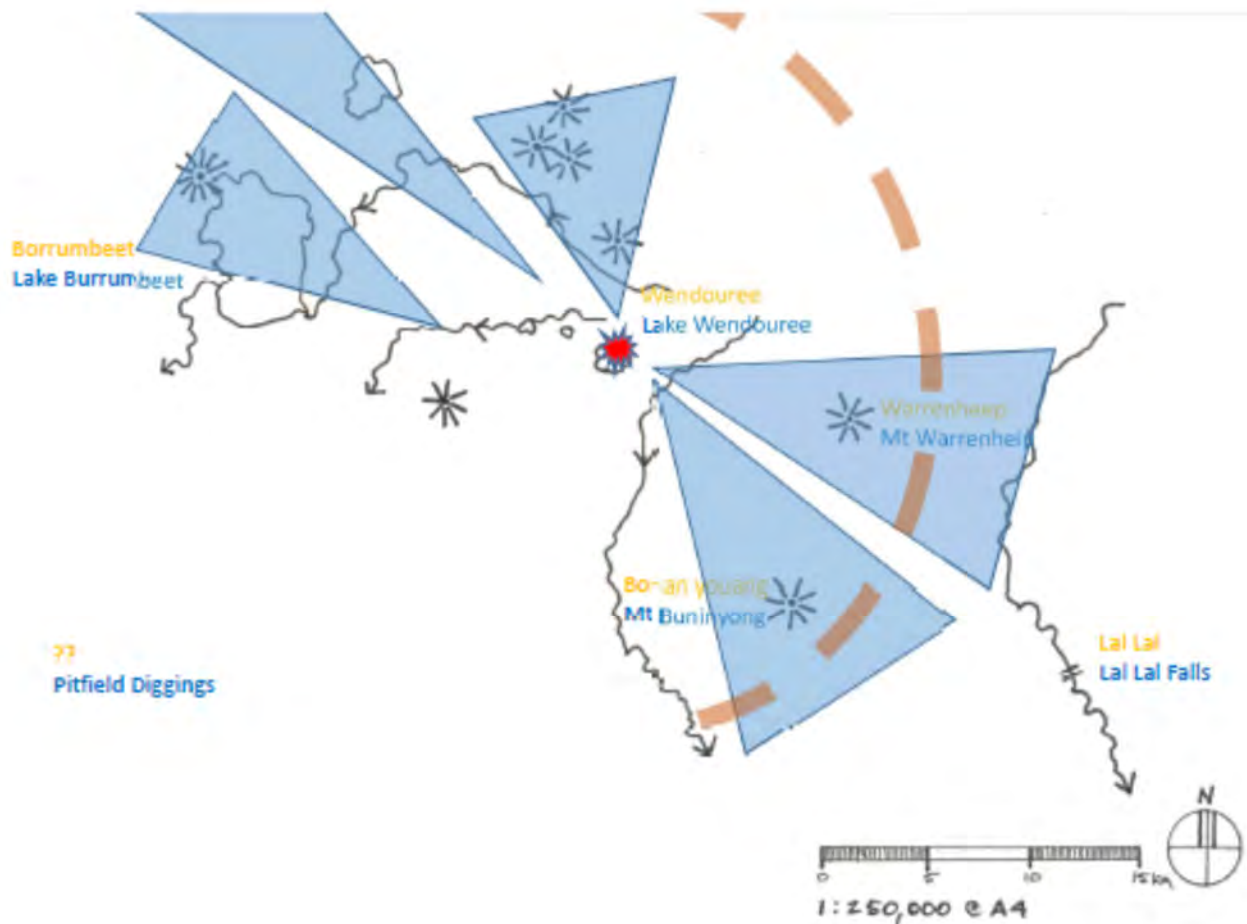


Figure 3.3.7: The visual qualities and characteristics of the *Keyeet Balug* clan and *Wadawurrung* Country, with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors.

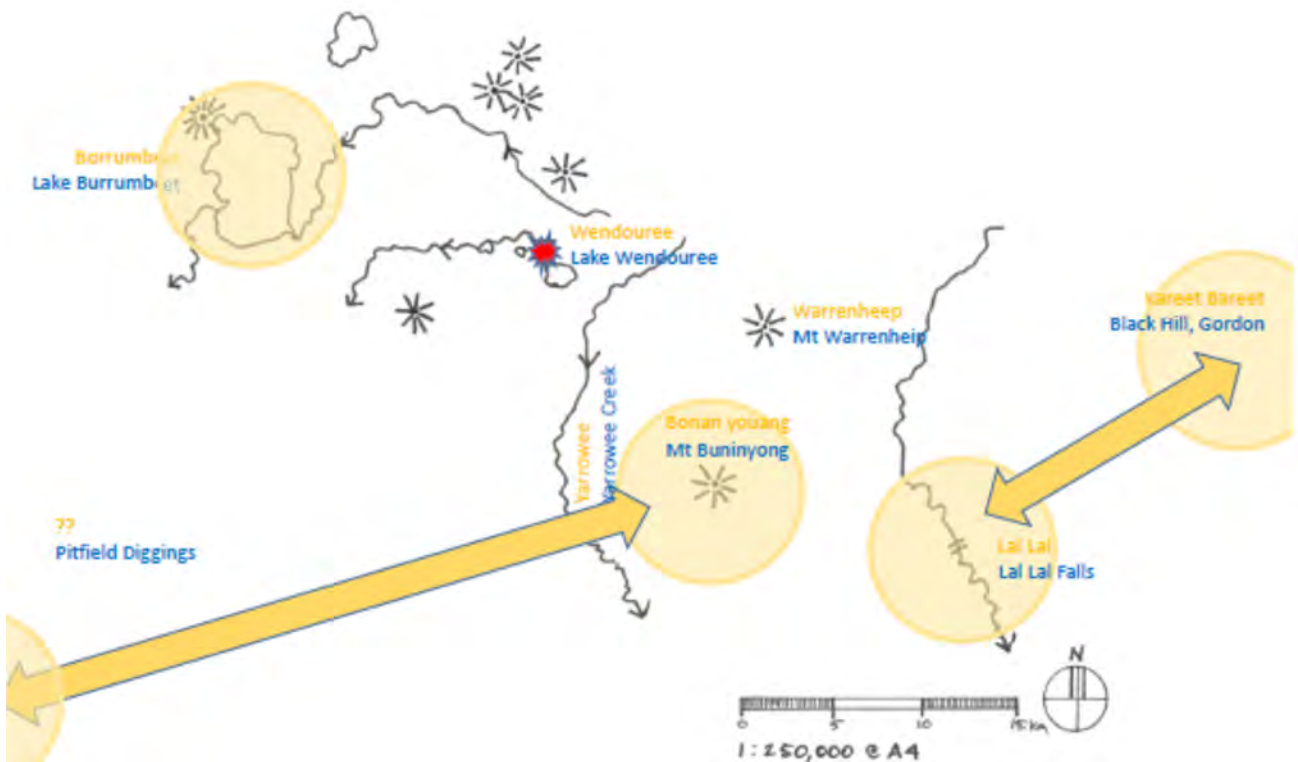


Figure 3.3.8: The highly significant cultural places and corridors relevant to the *Keyeet Balug* clan and *Wadawurrung* Country, with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors.

Going back to the discussion about seasons, and recognising the preceding Figures 3.3.7, 3.3.8 and 3.3.9 depict pre-colonisation *Wadawurrung* clan movement patterns across, through and within this landscape. A key conclusion is that the *Keyeet Balug* clan wetlands, was often a major food and potable water resource that was both used by the *Keyeet Balug* directly but also shared at different times of the year with different clans. These places correlate to *Burrumbeet*, *Mullawallah* Wetlands and Lake Wendouree. But there is also a recognition that lines of movement were internally for resource and ritual purposes, and that journey along such lines could be in-clan, cross-clan, cross-*Wadawurrung* Country, and externally from neighbouring non-*Wadawurrung* peoples given protocols about Dreaming lines or trails.

Figure 3.3.10 coalesces much of this information into a seasonal relationship map for the *Keyeet Balug*, and thus demonstrates the high importance that potable and saline wetland-related venues and resources played in the culture of the *Keyeet Balug* clan specifically, and the *Wadawurrung* peoples generally.

Thus, wetlands, like *Mirambeek Murrup*: North Gardens and the artificial Lake Wendouree are key venues for cultural events in pre-colonisation *Wadawurrung* culture.

Figures 3.3.11 and 3.3.12 maps, via aerial photos, show key water system resources and cultural relationship venues.

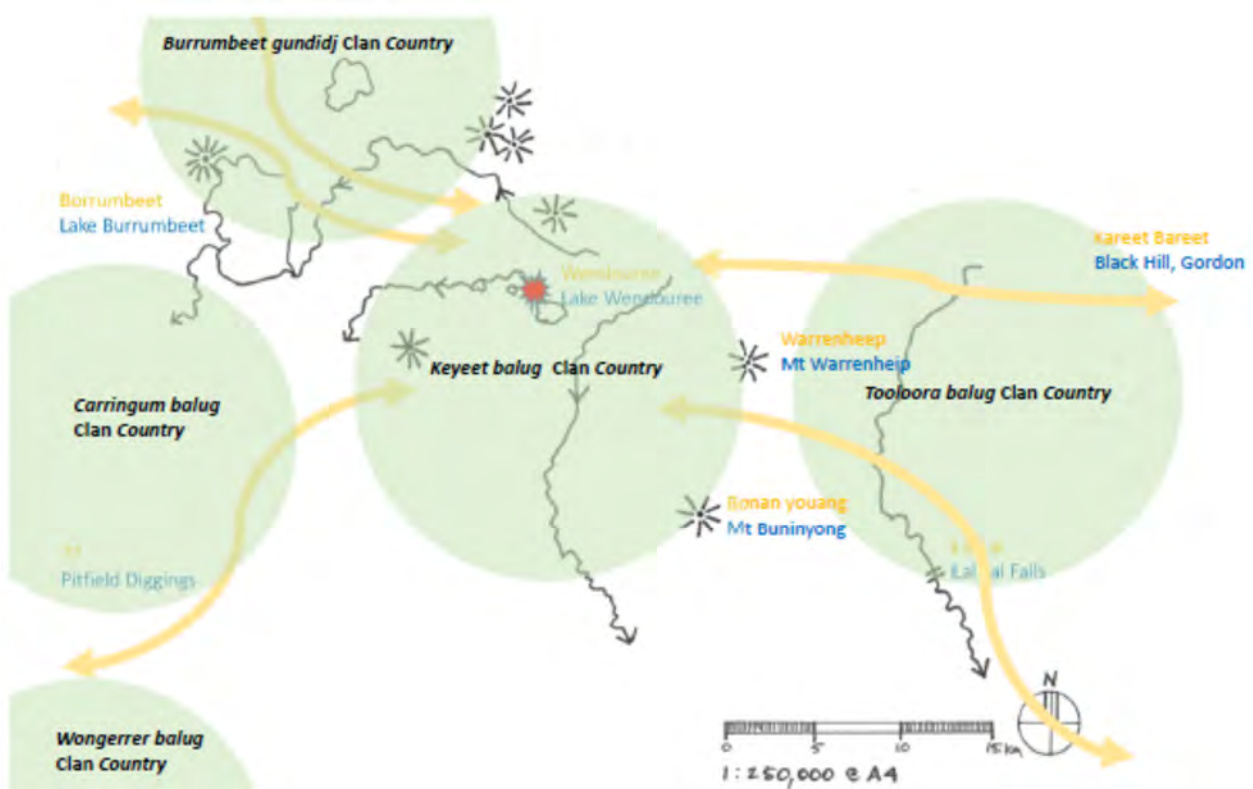


Figure 3.3.9: The highly significant cultural places and corridors relevant to the *Keyeet Balug* clan and *Wadawurrung* Country, with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors.

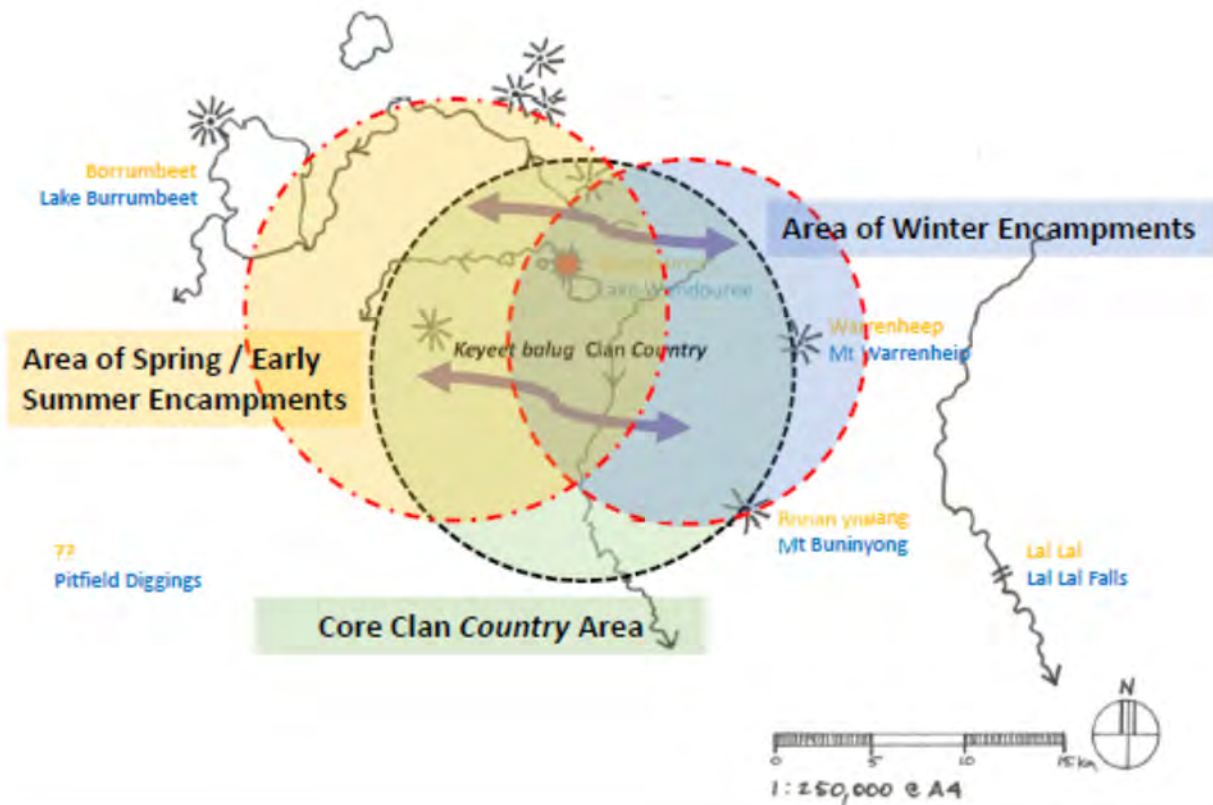


Figure 3.3.10: A graphic translation of the *Keyeet Balug* specifically, and *Wadawurrung* people generally, relationship to the larger Lake Wendouree and North Gardens localities, with geographical locational names provided in *Wadawurrung* (orange) and English (blue). *Mirambeek Murrup*: North Gardens is the red star. Source: authors.



Figure 3.3.11: Key water system and cultural relationship venues linked to the larger Lake Wendouree and *Mirambeek Murrup*: North Gardens localities. Source: authors.



Figure 3.3.12: Key water system and cultural relationship venues linked to the larger Lake Wendouree and *Mirambeek Murrup: North Gardens* localities. Source: authors.

Thus, food resource respect and management is a key *Wadawurrung* value for this locality, and in particular *Wadawurrung* perceptions for the future of the *Mirambeek Murrup: North Gardens*.

The finer detail and rationale of this analysis, *Wadawurrung* consultation process, and how this design philosophy was derived is detailed in the Lorne Biennial 2018 conference presentation paper and accompanying article (Nicholson *et al.*, 2019), as contained in Appendix F.

#### 3.4 *Murrup Laarr (Ancestral Stones (2019) Art Installation*

In February 2019, an art installation by *Wadawurrung* woman Deanne Gilson was completed and opened in *Mirambeek Murrup: North Gardens*, as a precursor to additional *Wadawurrung* / Aboriginal-related art installations being installed in *Mirambeek Murrup: North Gardens* as per this *Master Landscape Plan* (2019).

Involving a series of 10 basalt stones arranged in a circle, each with specific graphics carved thereon, encircling a contemporary representation of a *Wadawurrung* traditional pre-colonisation stone house, the installation offers a 'gateway' into *Mirambeek Murrup: North Gardens*, and a benchmark for future art installations on this site.

#### 3.5 *Koorie Poles Art Installation*

Comprising a set of 10 poles decorated and carved with 'Koorie' motifs and references. These poles were shifted from the Ballarat Botanical Gardens main area in the 1990s to their present site guarding the northern entrance to *Mirambeek Murrup: North Gardens*. They have been subject to little maintenance since their relocation and are displaying signs of deterioration.



Figures 3.4.1: Poles art installation. Photo: I. Paton.



Figures 3.4.2: Poles art installation. Photo: I. Paton.



Figure 3.4.3: Poles art installation. Photo: I. Paton.

### 3.6 North Gardens Nomenclature

While not in the brief for this project, through conversations with the *Wadawurrung*, it became evident that a key step towards reconciliation and his landscape design was to formulate a suitable *Wadawurrung* name for the place.

Our recommendation is that the City of Ballarat adopt the epithet *Mirambeek Murrup: North Gardens* for use at North Gardens. *Mirambeek Murrup* means in *Wadawurrung* tongue “our spirit, our belongingness”.

This naming proposal has arisen out of the consultation process that occurred with the *Wadawurrung* (*Wathaurung* Aboriginal Corporation) for the *North Gardens Indigenous Sculpture Landscape Master Plan* (2019) that the Consultant Team consider an exemplar of what the Corporation treasures.

The scope of the nomenclature considers the context of *Mirambeek Murrup: North Gardens* place; its heart role; its food resource role within the wetlands in the locality.

As explains by a *Wadawurrung* Elder, the name “embodies the spirit of all of what was good about life, and what can be good , bringing the old and new together; ... so it embodies everyone’s spirit, of past present future generations. It [*Mirambeek Murrup: North Gardens*] itself has no specific meaning to *Wadawurrung*, rather it ‘belongs’ to and of everyone, so it is not person specific.”

## 4. PUBLIC ART STRATEGY



Figure 4.1 Opening of *Murrup Laarr* by Yum, in March 2019. Photo: K. Gerritsen.

### 4.1 Introduction

Through the *Wadawurrung* and the broader *Kulin* Nation, community consultation, workshopping and *Walking Country*, was listened to and interpreted. Our brief was to link what is now *Mirambeek Murrup*: North Gardens, Lake Wendouree, its surrounding parks (including Fairyland), and the associated cycle and walking tracks back to the broader Ballarat community, through public art expressions that are respectful of *Wadawurrung* visual stories and their living culture. Expressed primarily in public art, these potentially large-scale, stand alone and functional site specific sculptural art works need to tell the story of 'Time, Place, Country and Culture'.

This includes stories about the geography and geology of Lake Wendouree, Ballarat and the larger Western Basalt Plains that is *Country* to the *Wadawurrung*, what it has been for many millennia, enabling the peeling back of its layers of time to understand and appreciate what it is today and what it will always be. These art installations should convey the tangible stories of meandering waterways, endangered fauna, open grasslands, expansive volcanic plains as well as the intangible oral stories and *Wadawurrung* or Aboriginal spiritualities.

The Consultant Team believes that aesthetically beautiful, educational artworks and interpretive signage will provide the broader community, both local and visitors alike, an awareness and understanding about how they all 'connect' to their natural surroundings. In addition, they can give a sense of pride and comfort in the place they live and enjoy and an intimate feeling of belonging and an appreciation of the shared history of place.

### 4.2 Public Art Response

In response to the Brief, our role was to try to answer a self-proposed question about how to "actively inspire and assist the *Wadawurrung* and broader communities in the development of insightful ideas for desirable and practical public art / sculpture project / park and its template concept for what is now called the North Garden, Fairyland and associated connecting paths."

Our question was to explore the origins of the site (geographically) its cultural heritage, and how it was used (from a traditional, historical and contemporary perspective), the environment, its different habitats, flora and fauna and how to turn it into a sculpture park or venue.

To tackle this question we have broken this task into two sections.



- Section 1. The natural environment.
- Section 2. Its tangible and intangible cultural heritage.

Of course these two sections overlap consistently due to the fact that the Wadawurrung have lived harmoniously for thousands of years in and with the natural and adapted environments in this region.

As *Mirambeek Murrup*: North Gardens exists today, its waterhole and lake beds, banks and once flood plains have been seen by some as a drain / bio filter for grey / storm water and a channel to carry flood and storm waters away. It has however not always been seen in this light.

Hopefully in attempting to answer our question this Master Plan may go some way (even if only minimally) in educating people in the Ancient values, ideals and uses of what is now *Mirambeek Murrup*: North Gardens. In so doing we can start once again to see *Mirambeek Murrup*: North Gardens as not just a Sculpture Park surrounding a storm water bio-filter but a major resource, a place of pride, and cultural significance

#### **4.3 Country Geography, Geology, Land Form and Timelines.**

North Gardens as we know it today has had many different historical scapes, both land and sea, habitats and histories over the millions of years of this landscapes' existence.

Back in the Palaeozoic period, approximately 400-450 million years ago, according to Silurian sedimentary rocks drilled in and around Ballarat, this area was once on the bottom of a great saline ocean. In these Ancient times, about the time of the first appearance of land plants, the appearance of amphibians also occurred at a time when China drifted from Gondwana.

Over the next 400 million years the sea and land scapes geologically twisted and distorted through heat pressure and ice ages. Thousands of different species traversed this landscape from crustaceans to mega-fauna all evolving, adapting and dying out as a result of changing habitats and major climate change shifts.

More recently this landscape experienced volcanic eruptions, many witnessed by the Wadawurrung, creating many of the prominent features evident in the Ballarat landscape today – several of these volcanoes erupted around 30,000 years ago. It is this time, from 30,000 – 5,000 years ago, that most of the surface features surrounding Ballarat were formed, which also have *Wadawurrung* Creation Narratives attached to them. The courses of the rivers, creeks the tapestry of vegetation and surrounding undulating countryside started to form through ongoing lava flows and erode by the agencies of water and wind, from the many volcanoes found in this part of Australia.

Volcanic activity stopped in this region approximately 7,500 years ago leaving behind a thick blanket of lava which now covers a large part of the Western District in which *Mirambeek Murrup*: North Gardens / Lake Wendouree is on the very cusp of some such flow.

This 'lava blanket', now known as 'The Western Basalt Plains', was host to the largest indigenous grasslands in Australia, and is also the third largest volcanic plain internationally. Now, however, only 0.01% of the existing pre-colonisation remnant vegetation exists.

During the 1860's to 1890's vast tracts of the wetlands and drainage lines, between what is now Lake Wendouree and the Yarrowee River, were slowly filled in. Thus, in the last 130 years much of the 'Lake', being historically an artificial creation from a wetland, and surrounding areas have been completely altered and or modified in sections and tracts. Sections of lakes and river tributaries have been straightened and channels covered in with concrete pipes and bitumen drains before natural rain stormwater can today find its way to Lake Wendouree. Of course this has had a major impact on all landscapes that were originally indigenous-plant rich wetlands. It is hard to know how devastating this change has been on the whole ecosystem of the region. But with only 0.01% of indigenous grasses left on the Western Basalt Plains, and with comparable impacts on the Yarrowee River and in Ballarat's wetland areas, it would be feasible to conclude that a complete annihilation of vegetation and its dependent wildlife systems would not be an over exaggeration.

#### **4.4 Results and Statistics on Flora and Fauna**

It is unclear how many different species of both flora and fauna have lived, survived and died out as a consequence of this human agency onslaught. In the absence of sound and comprehensive visual and or text documentation at the time of colonisation in this region, we will never know. However, it is extremely important to start to try and

understand, or even go some way in educating ourselves, about the indigenous species that have survived and about the exotic species that are quickly driving out the indigenous species. This includes sourcing evidence of known flora and fauna that have just recently become extinct or endangered through human occupation, and land and water management activities that have continued over the last 200 years.

In doing so the benefits are many. While Bruce Pascoe (2014) talks about harvesting native grasses as it leaves no footprint, no chemicals etc., Western convention is that we undertake revegetation programs, workshops and smart ways of incorporating interpretation into spaces and trails. The latter are pursued irrespective of whether through more formal ways (for example; signage) or through non-formal ways including sculpture parks, the formation of meeting places, the hosting of human celebratory gatherings or festivals in places, and workshop events. Not only are these latter activities good for the natural environment, but they are also good for individuals and communities that partake in these events that slowly over time contribute to local and state economies.



Figures 4.1.1, 4.1.2, and 4.1.3. Landscapes within *Mirambeek Murrup*: North Gardens. Photos: DS Jones.

#### 4.5 The *Wadawurrung* and *Kulin* Nation

From time immemorial, the *Wadawurrung* have lived around the area now named *Mirambeek Murrup*: North Gardens and Lake Wendouree.

The *Wadawurrung* belonged to the land that extends in the north to the Great Dividing Range just north of Creswick, east along the Werrabee River (joining *Wurundjeri Country*) as far west as Derrinallum (east of Colac) within its south eastern boundaries reaching to Aires Inlet and along the coast into Corio Bay and the Bellarine Peninsula.

The *Wadawurrung* name is the name of the people, and also their language. They are part of what is called the Central or Eastern *Kulin* Nation – a confederacy of five Language Groups. This confederacy have highly similar languages and beliefs, and strong bonds connected to trade, marriage exchange and politics. The languages of those who form this confederacy, share 80-90 % of language and share the same grammatical structure. There are known to be 38 Language Groups within what is now known as Victoria, with over 250 language groups across the Australian landscape with many more regional dialects under the umbrella languages.

The five known Language Groups found within the Central or Eastern *Kulin* Nation are:

- *Wadawurrung* / *Wathawurrung*, *Woi wurrung* / *Woiwurung*, *Bunurong* / *Boonwurrung* / *Bunurrong*, *Taungurung* / *Daungwurrung*, and *Djadjawurrung* / *Djaara*.

These Language Groups can be broken down into clans (extended family groups). The extended family groups or clans found within the *Wadawurrung* / *Wathawurrung* groups include the:

- *Kureet* (Ballarat area), *Curingum*, *Wongerra*, *Tolloora*, *Wudthaurung* *Tjuraaltja*, *Maa:Maart*, *Bengallat*, *Worin:yaloke* and *Marpeang*. These are some 10 of the possible 16 known clan / extended family groups that

resided on and cared for this *Country*, with descendants still taking care of *Country*. These clan groups are further broken into individual families.

The main family group or clan connected to the Ballarat Region are the *Kureet* (Men of the Uplands, moiety (half) linked to *Bunjil Bulluc*, the Wedgetail Eagle).

#### 4.6 The 'Waterways' a life source

The Yarrowee River and Lake Wendouree systems around the Ballarat district have been a life source for thousands of years to the *Wadawurrung*. Sites on the River and creeks demonstrate how creeks were used, and there were many uses. Unfortunately, the upper, middle and lower reaches of the Yarrowee River, that still evidence generations of intact artefact sites, middens, scar trees, hearths and silcrete outcrops, have been extensively destroyed. Taking with it, evidence of any ceremonial or gathering places. In these cases, the only evidence is through oral history. In some areas this loss makes it extremely difficult to find evidence at all of *Wadawurrung* occupancy, and what is there in some cases around Lake Wendouree has been scraped away or covered in tons of land fill in constructing and draining this artificial Lake.

Within the Western Basalt Plains, to the south and west, the Murnong (Yam Daisy) (*Microseris lanceolata*), a predominate food source for the *Kureet Balluc* clan, where the plant species was extensively cultivated and harvested. Fire stick farming (involving low cool burning) would have been used to burn these Plains enabling new shoots to come up giving kangaroos (*Macropus* sp.) and emus (*Dromaius novaehollandiae*) something fresh to eat and in turn making it easier for plant harvesting, and additionally a more reliable place to hunt because of the plant shoot attraction to animals. Fire stick farming is still practised throughout Victoria by many Language Groups and there are active attempts to bring this practise back on a larger scale through annual Fire Workshop gatherings around Victoria and Australia.

As Uncle Bryon Powell has said, "it would literally have been a supermarket at your back door".

On what is now the north-east side of Ballarat, the edge of the open dry woodland was ideal for hunting possums (*Barnong* or *Walert*) and other small marsupials. Possum skins were used for making possum skin cloaks for warmth during the colder months. The practise of making cloaks was rekindled on a large scale by three Victorian Aboriginal artists Treahna Hamm, Vicki Couzens and Lee Darroch. Bark from trees was used for many things including roofs for *Mia Mias / Willums*, and additionally enabling the construction of bowls, shields and canoes. Scars on many a tree bear witness to these activities and can still be seen along some parts of the Yarrowee River. Many mature River Red Gums (*Eucalyptus camaldulensis*), bearing scars on their upper trunks, can be found along the upper reaches of the Yarrowee River and its tributaries, and have been dated to be between 300 – 400 years old.

In the lower reaches, and at the confluences of the Yarrowee / Leigh and Barwon Rivers, landscapes would have been perfect for hunting water birds (ducks, geese), fish and eels. Therefore, in the space of 80 kms, many different types of environment and ecosystems offer quick access to their own unique qualities and resources. So food, shelter and water would have been plentiful in all seasons, all year round, in this region.

These waterways would have changed extensively over the last 200 years. Colonialist descriptions and stories indicate that the Yarrowee River, in some parts, was more like a chain of permanent water holes or billabongs during summers that was flushed in the wetter times of year becoming torrents and extensive pools. Water in these waterholes, was at most times of the year, clean potable fresh water. Each billabong would have had its own characteristics, and even habitats, that would have changed from one waterhole to the next.



Figure 4.7 Lower Pool in *Mirambeek Murrup*: North Gardens. Photo: DS Jones

#### 4.7 Post Contact

Initially the *Wadawurrung Kureet Bulluc* clan accepted the new colonial arrivals. Until the full impact of their arrival began to threaten *Kureet* very survival, then conflicts began.

Tangible and intangible 'colonisation' or invasion came very fast to this region. In 1836 a total of 40,000 sheep were unloaded at Port Phillip Bay from Tasmania. Within five years sheep (*Ovis aries*) numbers swelled to 100,000. Colonial graziers took up the nutrient-rich and luxuriant grassy plains (Western Basalt Plains) that were the fond hunting grounds for the *Wadawurrung* and pastures for herbaceous mammals and seed gathering birds.

With sheep eagerly grazing in indigenous flora, and other colonial animals predated native fauna, it was not long before the Murnong (Yam Daisy) (*Microseris lanceolata*) was all but gone, eaten down to the ground and trampled on, with the tubers also ripped out and eaten. With less food source for the indigenous animals, and with the added burden of being hunted for sport, it was not long before the larger marsupials and birds were on the decrease making it even harder for the *Wadawurrung* to continue their normal custodial practices and harvest foods traditionally.

With the felling and adzing of trees to clear more land, erosion commenced exponentially. Erosion processes were aided by heavy footed livestock trampling in watercourses, billabongs, along creek banks, and in wetlands slowly turned these places into muddy and boggy watercourses, their water transparency lost to particulates, as well as their newfound role as dumping venues for the newcomer's rubbish and waste. Gammage (2011) argues that the soil used to be like powder and soft under foot, with water soaking in to get to the roots of the plants. Until the sheep hardened the soil so much that water would simply run off causing this erosion.

With wool production booming, and gold being discovered, associated industries flourished, bringing pollution to the Barwon, Moorabool and Yarrowee Rivers local creeks wetlands and waterbodies including Lake Burrumbeet and Lake Learmonth. Wool was washed in flowing rivers and creeks with various types of soap and scourers, prior to shipping of their fleeces back to Yorkshire mills for processing. This pollution affected the ecology of the rivers and creeks, and made water undrinkable to humans and animals.

It has only been as recent as the 1980s where human attitudes have changed in regards to the polluting of all our waterways and now restoration has become an industry recognising that Ballarat's waterways and lakes offer a huge commodity and venue to recreation, tourism, real estate and ultimately the contemporary economy.

The above narrative just skims the surface as far as *Mirambeek Murrup*: North Gardens, Lake Wendouree and their vast histories go. Hopefully in bringing these histories to people's attention through beautiful public artworks, meeting places integrated with land formations, landscaping, educational spaces, interpretive well-designed signage and stories, it can be the stone that sets off the proverbial ripple.

#### **4.8 North Gardens today**

*Mirambeek Murrup*: North Gardens is predominately framed to the north by Lake Wendouree and to the east by the Ballarat Botanical Gardens, and is formally located within the Ballarat Botanical Gardens. Known today as 'North Gardens', it is today predominately used as a bio filter, and thus seen by many as a new colonial 'blank canvas'. However, this 'blank canvas' has many histories and stories of which some should be told through visual story.

With the understanding that artistic and interpretive spaces are to be created, and inspired by Country and Indigenous culture, a number of workshops, meetings and walking Country activities were required with members of the *Wadawurrung* and the broader Aboriginal community's resident in Ballarat, and with members of the mainstream Ballarat community. Suggestions of approaches, concepts, stories, histories, timelines, applied forms and possible future initiatives, were tabled, discussed and debated.

Common threads were put forward and it was made clear by the *Wadawurrung* that for this to be done properly, rejuvenation should be at the heart of this project. For this to be achieved strong cultural foundations will need to be laid, ideally starting with the lighting of ceremonial fire in conjunction with song to cleanse this parcel of space.

The offering of the planting and maintenance of a large indigenous plant palette over time could hopefully also create a small but extremely important green environmental corridor offering refuges to local indigenous fauna that is in decline due to urbanisation and attracting wildlife back to these parts. This revegetation strategy can coincide with the re-forming of land and the creation of new spaces to enable and host the narrating of stories. These stories can be both 2 dimensional and 3 dimensional in their narration and expression, and both vertical and horizontal giving new meaning to the yet to be re-named *Mirambeek Murrup*: North Gardens.

These cultural heritage / design themes, and associated interpretation strategies, should be used by Council staff collaborating with artists to reference and inspire the blossoming of these areas for the landscape / interpretation / public art aligned to the new North Gardens Master Plan philosophy.



Figure 4.9 View to Mount Buninyong from the Fairylands. Photo: DS Jones

#### 4.9 Public Art Approach

Through integrated landscape architecture, public art and interpretative signage, *Mirambeek Murrup*: North Gardens and the surrounding paths, tracks and possibly Fairyland (across the road from *Mirambeek Murrup*: North Gardens) can be recreated and healed.

Visual stories (public art), education and communication to achieve this outcome can be broken down into five categories:

1. Rejuvenation and replenish
2. Land formation and indigenous planting
3. Sites, places and spaces
4. Public art (Functional and Permanent, Temporary and Ephemeral)
5. Interpretive signage (Educational)

Rejuvenation and replenishing land is about trying to restore the health of *Mirambeek Murrup*: North Gardens to what it notionally was some 250 years ago in a stylised and landscape architectural format. To do this it has been suggested to undertake small but significant fire burn offs to eliminate the noxious weeds, reinvigorate the woody unpruned native plants, and to hopefully give an opportunity for dormant indigenous seeds to once again sprout and give rise to new growth.

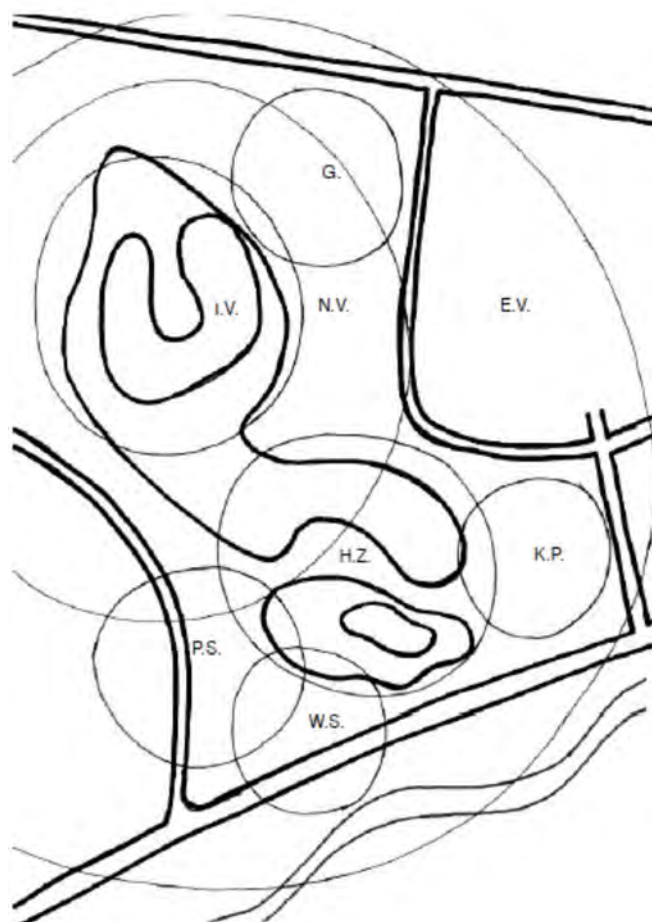
Once this has been done there is a need for cleansing, cleaning, land forming, rubbish removal and the replanting of indigenous plant species throughout *Mirambeek Murrup*: North Gardens as a priority. This strategy will lay the foundations for a new canvas to host historical, new and future visual stories and for interpretation of these to begin.

Land formation and indigenous planting will be a dramatic transformative feature within the space, and can assist in trying to interpret, in a contemporary visual format, what the Western Basalt Plains and grasslands was like throughout many millennia. This can be achieved through landscape architectural and geological forming of the land by bringing

back basalt rock, through the revegetation and use of indigenous grasses as well as River Red Gum (*Eucalyptus camaldulensis*), sheoaks (*Allocasuarina* sp.), and many of the other endangered grassland species.

Through land formation it will also be possible to create different sites, spaces and places. These can be anything from intimate spaces for human contemplation, larger meeting places for human gatherings as well as performance. Smoking ceremonial sites and workshop areas should be included for future school groups and education.

Public art is the most significant component in telling these visual stories. Public art can take on many forms, mediums and functions but the underlying emphasis is to tell the story of Country and Culture, the surrounding Western Basalt Plains through the eyes of the Wadawurrung and broader Aboriginal Community.



## Sculpture Park.

### Vegetation, Habitat and Functional Zones

- |                                    |        |
|------------------------------------|--------|
| -Indigenous Vegetation.            | - I.V. |
| -Indigenous and Native Vegetation. | - N.V. |
| -Native and Exotic Vegetation.     | - E.V. |
| -Grasslands.                       | - G.   |
| -Habitat Zone.                     | - H.Z. |
| -Performance Space.                | - P.S. |
| -Workshop Space.                   | - W.S. |
| -Kids / Play Space.                | - K.P. |

#### 4.10 Functional and Permanent, Temporary and Ephemeral Art Works.

Permanent art can also be functional within a space or place. This type of public art can serve as background themed pieces that can be used by the community for functional spaces and works. These artworks can take on many guises including:

- Play sculpture / spaces / grounds
- Seating
- Tables
- Paths
- Platforms/deck/observation lookouts
- Meeting places
- Contemplation spaces
- General signage
- Fences / bollards
- Landform/ landscape/ land excavations / land exposure
- Planting
- Creek / waterways/ waterlines
- Silt traps / bio filters

- Bins
- Bike racks
- Structures / pergola/ Mia Mia / shelters
- BBQ area
- Nesting areas, protection boxes, habitat houses
- Animal crossings
- Human crossings
- Entrances / exists / intersections
- Performance spaces
- Lights / lighting
- Toilets
- Energy / solar / wind / gas installations and infrastructure
- Carparks.

As long as the products / works, are done with imagination, functional art can be part of a larger story. It can create a themed strong approach and outcome. This strategy can and will lay foundations for permanent freestanding public sculptures that can be well positioned and sited throughout the new park



## Possible Locations for Artworks

Permanent Sculptures. - P.Sc

Meeting Places. - F

Functional Works. - F

Contemplation Spaces. - F

This should be seen as a guide only. Once land cleansing, forming and landscaping has occurred and created new site lines and boundaries.

Along with permanent Sculptures creating there own space and context it will be better understood where individual works are located.

### 4.11 Permanent Art

Permanent is one public art approach, and the one commonly accepted and used in the public domain. One approach to Permanent art can be seen as stand-alone installations / pieces that do not necessarily have to form a function but are there to communicate a concept, story or ideal.

Art can take on many forms and sizes. It can be placed within the land to create continuity or friction to the viewer. Permanent works can be 3 dimensional or 2 dimensional, created for scale that (for example) suits a 50m experience (visual / seen from the road) or can be tiny intimate objects only to be observed by very few and their creation and 'finding' is in itself a discovery experience. It is suggested that these artworks, although standalone, should very much sit within the landscape to convey an overarching story. These works can be spread far and wide across the site but with similar theming can be seen and interpreted as the same story.



Of course it will be up to individual artist(s) to what story(ies) they wish to communicate. There are numerous ways to tender out future projects / artworks based on merit including attention being given to concept, form, budget constraints, timelines and infrastructure feasibility (engineering). It should also be noted that it has not been expressed how these future works should or will be awarded by the City of Ballarat.

These permanent works, along with being stand-alone pieces, can also be connected to place, spaces as well as to sites to aid interpretation and to serve as educational points of reference.

Thought should be given to commissioning these works whether on a bi-annual, annual or otherwise timeline. Also, there is need of consideration to who such work is awarded to, and the appropriateness of how the artwork fits into the overriding theme.

All of these works need to be robust, or fulfil a criteria of longevity, which is crucial to the artworks and ultimately the space. Maintenance is always an ongoing concern and discussion needs to be entertained into how the whole site is to be continuously maintained now and into the future, and can be used and utilised for many years and generations to come.

Interpretation is the key to this whole site, and its surrounds. Reinvigorating this *Country* rotates around quality communication giving the broader public, both local and visitor alike, the opportunity to learn about the stories seen throughout *Mirambeek Murrup*: North Gardens including its local geology, geography, flora, fauna and about the cultures that have lived here for thousands of years

#### **4.12 Temporary & Ephemeral Public Art**

The other two approaches to public art, that have been recommended and could take part in this place are, Temporary Art and Ephemeral Art.

Both of these approaches - temporary and ephemeral -- should be considered and could be created at certain times of the year whether part of an event, a temporary exhibition or within workshops occurring on site (or immediately adjacent to the place) in designated curated or workshop areas. Both could be better aligned to *Wadawurrung* seasonal events (including Murnong grassland burning or Short-finned Eel harvesting, etc.).

Generally the difference between temporary and ephemeral approaches in creating this type of public art form is that temporary art is created offsite, installed in a particular location and once an understood time frame has elapsed it is dismantled and removed. This is considered an ideal approach when it comes to curated sculpture exhibitions / shows, and there are various approaches on how these sculpture shows can be created, curated, funded and or produced.

Ephemeral art can be seen a little differently. Although temporary in nature, they are usually created to have a short-lived life span in which the ephemeral piece can deteriorate, disintegrated and or dissolve leaving no trace of the experience or public art narrative. The process of deteriorating can be the ephemeral art itself also. Such art generally only occurs once, and is often created using organic or natural materials such as sand, leaves, rocks, and or water.

Both approaches, of creating public art (temporary and ephemeral), have been recommended for this place in relation to ongoing possible sculpture shows whether annual or bi-annual. It has also been recommended that these approaches could be a stepping stone towards the commissioning of a future permanent sculpture(s) for *Mirambeek Murrup*: North Gardens.

#### **4.13 Technical Requirements & Considerations in Creating Public Art.**

Once an artwork has been commissioned and created to fit into an already agreed and understood site / space, the work has to be physically installed.

Installation is this part of the public art process that can easily become difficult for the artist and Council if not thoroughly thought through. When creating a permanent work of a certain size and scale, to fit into an existing space, the installation variables are wide and varied, and can quite easily become overwhelming for an artist (and a Council) new to installing public art.

It should be made clear to the artist that the work may need to be engineered both in form, and with its footings, for safe and secure installation purposes, but also to comply with risk assurance insurance and Occupation Health & Safety laws and requirements.

Being in the public domain, it should be made clear that the artwork needs to be structurally safe for the public and its form and mediums/materials considered in regard to body entrapments, climb-ability, and extrusions that may pose a risk to humans and or wildlife.

It is recommended that the artist has Public & Product Liability Insurance. When creating / fabricating and installing their work, it has to be done in and on an Occupation Health & Safety compliant site / environment with all regulations and certificates approved prior to workbeginning.

Once the site has been approved, and the artworks footings have been qualified engineer approved, the ground should be investigated for below-ground existing infrastructure, or difficult and problematic ground conditions. This should be made clear whether it is part of the artist's brief and budget, or it is taken on and undertaken by the Council.

Access, both entry and exit for trucks, cranes, bobcats and excavators may be required. When installing it should be understood that a site in summer is not always as easy to access in winter with ground conditions becoming impossible to drive on without getting bogged.

It should be made clear whether the budget needs to include a contingency budget / plan, and what percentage of the overall budget that is. Within the written contract the agreement should state if there is a one-off fee, and what that fee covers including both known inclusions and exclusions. Or, if there is a budget contingency held by the Council for variations (possibly due to inclement weather) and other unknowns, and is to be only used in those situations. If the contingency budget is not required, it is kept by the Council. The contingency budget should not be part of the project budget.

When creating a large-scale permanent public artwork, there is an expectation of a large budget. It should be considered by the Council how that art budget gets broken down, and when percentage payments are handed out to the Principal Artist / Project Manager, etc. Payment could be made in relation to considered points of reference (timeline / job stages), for example, design, production, installation and finish so that the artist does not need to finance the whole work.

#### **4.14 Key Things to Consider When Creating a Public Art Work.**

Key criteria points to understand include:

- Does it have a strong story,
- Concept sound,
- Design sound,
- Project Management (Understanding and managing budget),
- Project Coordination ( on and offsite),
- Consideration of existing sight lines,
- Existing infrastructure,
- Knowing the overall site, the environment,
- Understanding existing and future artworks,
- Materials and form (Artwork) and installation requirements including footings, specifications, and their requirements ,
- Site management and safety Plans
- Job safety analysis (JSA) and a safe work method statement (SWMS) (on and offsite),
- Time lines and Time management,
- Subcontractors,
- Studio / Shed space requirements (on and offsite),
- Labour,
- Possible Structural engineering (if required),
- Consultation and Specialist Advise (if required).
- Administration,
- Freight, Transport, and Travel time,
- Communication (meetings with Client / Council and Community),
- Insurances,
- Site preparation,
- Site clean up,
- Maintenance Plan.

In the realm of Public Art it is important for the piece to be strong in story and concept; it should sit well in the surrounding landscape in scale; and, it should be considered in form and medium. The approach and process should also be well considered and a strong collaboration is required with the client / Council, community and artist, in consultation with the *Wadawurrung*, so by the end of the project it is a three way win for everybody and the experience is an enjoyable one by all.

#### 4.15 Conclusion

It is with great pride that the consultant team have been given the opportunity through the City of Ballarat to work with the *Wadawurrung* and broader Ballarat community, and to listen to what needs to be considered for the future landscape of *Mirambeek Murrup*: North Gardens, Fairyland and the surrounding bike and walking tracks.

This project has given us a very small insight into how this land was formed, and how it has been used, worked and lived on for many thousands of years. It has also enabled us a wider understanding of the *Wadawurrung's* connection with both their physical and spiritual landscapes as well as how they still maintain *Country* and culture. It also highlights the shared history of space and place and how *Mirambeek Murrup*: North Gardens and Lake Wendouree areas have come full circle and how the same vision of reclamation of space is being achieved together.

It is with this knowledge and wisdom that we can express in a contemporary format stories of the past and present that need to be told for all future generations, both Indigenous and non-Indigenous, so there is an understanding of how precious this place is, as Aboriginal culture have never ceased and will continue. Through imagination and education, these untold stories will give us all a sense of custodianship and belonging.



Figures 4.15.1 – 4.15.2 – 4.15.3 Sculptural works by Glenn Romanis. Source: G. Romanis

## 5. BIODIVERSITY STRATEGY

"... ecological areas need to be designed into their setting ... the correct balance between formal and informal ... structure planting, and design the interface with adjacent land uses ... areas rich in wildlife already exist in the locality ... obtain maximum benefit from these through appropriate site planning ... access points and main circulation routes ... within such a framework ... able to accommodate a wide range of existing and /or newly created wildlife habitats" (Gilbert 1989, p.316).

### 5.1 Introduction

"Viable habitats must simultaneously include spaces for breeding, sources of food, places to nest, and a quantifiable list of other species-specific essentials" (Weisser in Berg 2019, p.93).

"The ultimate goal of wildlife-habitat restoration is to provide for the survival and protection of individual organisms in sufficient numbers and locations to maximise the probability of long-term persistence" (Morrison 2009, p.17).

"No matter how clearly ecology is explained in words, the average person cannot visualize future ecological design outcomes on the landscape" (Johnson & Hill 2002, p.120).

In accordance with the project brief, 'to increase the biodiversity associated with the North Gardens site', based on currently available fauna and bird lists, an analysis of current and potential future habitat requirements has been undertaken.

Extensive scientific information has been synthesized into easily accessible language for use by practitioners, management, the City of Ballarat staff and the general community.

A key constraint to biodiversity increase at North Garden is the site's intended use as a Sculpture Park. This use will necessitate regularly traversing the area, creating visual, audible and movement disturbances for the more-timid, less dominant creatures.

Recognising the existing urban Ballarat context, being asked to increase the biodiversity of North Gardens would appear to be fraught with misconceptions and unrealistic expectations. It is not the intention of these guidelines that a significant recovery to an idealized, pre-colonisation state will be realized. However, with careful applied research and informed implementation, it is hoped that gradual changes will lead to positive habitat shifts, that enable North Gardens to host a wide and diverse range of species; not just the common and more adaptable dominant species.

The focus of this research has revealed that, in essence, most terrestrial species on this Earth, including the human species, require the same essential elements to survive and thrive:

- **nourishment, shelter, territory, companionship, reproduction, growth, sustainability and healing.**

These elements therefore underpin the design and planning concept for the whole of the North Gardens Wetlands and Fairyland Precincts. The ensuing guidelines, in Table 5.1, are a simple-to-follow management resource for implementation towards realising these essential elements.

By way of introduction then, the North Gardens Landscape Masterplan and biodiversity guidelines have been created combining, in equal measure, the concepts of *Indigenous Knowledge Systems* for Country, *Biophilia* and *Animal Aided Design*.

As a result, the overarching aim of this North Gardens biodiversity concept is to **make Country (ecology) visible**.

Table 5.1: Key Scientific Principles & Management Guidelines

Subject	Organism/Wildlife Type	Aims	Key Scientific Principles and Management Guidelines
SOILS	<ul style="list-style-type: none"> <li>• Microbes, bacteria, mycorrhizal-ungi, protozoa, insecticidal nematodes, invertebrates including earthworms and other living organisms.</li> </ul>	<ul style="list-style-type: none"> <li>• Improve soil condition and water-holding capacity;</li> <li>• Encourage fungi mycorrhizae to aid soil health and carbon sequestration;</li> <li>• Promote beneficial insects and invertebrates;</li> <li>• Reduce or eradicate use of chemical fertilizers, fungicides and pesticides; and</li> <li>• Establish long-term monitoring as part of education links, to assess success of aims and implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• "If you want soil that grows it must be full of life" (White 2016, p. 220).</li> <li>• "Aided by Glomalin ... more mycorrhizae in the soil ... results in higher soil carbon storage" (Tree 2018, p.287).</li> <li>• Remove the existing plastic weed mats from all areas as it creates anaerobic conditions.</li> <li>• The majority of weed mat types are detrimental to soil quality. If they <i>must</i> be used, preference is given to a product that is breathable, biodegradable and water permeable.</li> <li>• Discourage weed growth by planting thickly and mulching.</li> <li>• Aerate clay and compacted soils to promote drainage and air exchange.</li> <li>• Improve soil biota by increasing the amount of organic matter within soils.</li> <li>• Microbes, bacteria and fungi are key enablers in the process of nutrient and mineral exchange, aiding healthy plant growth, and in creating heat and moisture resilience in plants to enable them to better-cope with changing environmental conditions.</li> <li>• Apply mulch layers including the use of leaf litter, small sticks and tree detritus to encourage microbes, fungi and invertebrates.</li> <li>• Leave rotting logs <i>in-situ</i>.</li> <li>• Healthy soil and plant growth is essential in minimising or eradicating the use of chemical fertilizers, fungicides and pesticides that are known to suppress beneficial earthworms, bacteria, mycorrhizal fungi, protozoa, insecticidal nematodes and other living organisms in the soil.</li> <li>• Minimise the use of herbicides, pesticides and fungicides, and encourage natural predation by birds, reptiles and small mammals.</li> <li>• Use spot spraying in a targeted manner only where necessary.</li> <li>• High nitrogen fertilizers are known to eradicate earthworms, as does the excrement from recently wormed pets.</li> <li>• Encourage:             <ul style="list-style-type: none"> <li>○ <i>epigeic</i> earthworms - surface dwellers found in leaf litter and rotting logs;</li> <li>○ <i>endogeic</i> earthworms - soil dwellers that burrow horizontally and rarely come to the surface; and</li> <li>○ <i>anecic</i> earthworms - deep, vertical soil burrowers that leave their casts on the soil surface.</li> </ul> </li> <li>• For further reading, see: <a href="http://www.goodbugs.org.au">www.goodbugs.org.au</a> – Australasian Biological Control.</li> </ul>

<p><b>PLANT ZONES AND STRUCTURE</b></p>	<p>Upper-storey tree canopy, Middle-storey, lower-storey, thorny shrubs, vines, tufting and clumping plants, grasses and groundcovers.</p>	<ul style="list-style-type: none"> <li>• Create 3 planting zones in accordance with the Masterplan Concept;</li> <li>• Increase habitat complexity and biodiversity value;</li> <li>• Increase visual amenity;</li> <li>• Once established, employ a natural succession strategy;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>"Non-intervention is a positive option and will almost certainly be the appropriate one over a large part of any site"</i> (Gilbert 1989, p. 316).</li> <li>• Refer to plantings of Indigenous, Native and European Species linked to the 3 Masterplan Concept zones.</li> <li>• Restore vertical and horizontal plant hierarchy including upper storey tree canopies, middle stories, lower stories, thorny shrubs, vines, tufting and clumping plants, grasses and groundcovers.</li> <li>• Recognise that structure complexity and diversity is vital, providing habitat for foraging, moving, shelter, nesting and predator avoidance.</li> <li>• Create microclimates through patchiness in open space areas alternating with dense, shrubby areas.</li> <li>• Recognise that Stag trees and tall trees are geographical markers for some bird and animal species and provide prey observation posts.</li> <li>• Maintain existing Stag trees and trees with hollows, and regularly assess known specimens for safety and invasion by pest species.</li> <li>• Keep fallen trees where possible to provide shelter and havens for terrestrial and aquatic species.</li> <li>• Vary the horizontal depth of planting beds and create deep wide beds at various points to lessen fauna exposure, with a diversity of plant species and layering effect within the beds.</li> <li>• Consider the habitat value of the plant palette, including the use of mass plantings of different grasses to provide seasonal seed for birds.</li> <li>• Once wildlife zones are established, employ a natural succession strategy.</li> <li>• Implement accurate record keeping and planting records.</li> </ul>
<p><b>TERRESTRIAL VEGETATION</b></p>	<ul style="list-style-type: none"> <li>• Local provenance indigenous, native and exotic plants.</li> </ul>	<ul style="list-style-type: none"> <li>• Create 3 planting zones in accordance with the Concept Masterplan;</li> <li>• Maintain seasonal and sustainable food sources through the creation of habitat complexity and biodiversity value;</li> <li>• Introduce seasonal and sustainable food sources for cultural uses; and,</li> <li>• Establish long-term monitoring as part of education links, to assess</li> </ul>	<ul style="list-style-type: none"> <li>• <i>"... all plants serve some ecological function in their indigenous environment- and all groups should ideally be represented ..."</i> (Bishop 2018, p.71).</li> <li>• For specialist indigenous plant guidance, consult Indigenous plant professionals.</li> <li>• <b>'Heartland'</b> Plantings should be indigenous in species, with local provenance sourced from the Ballarat locality, including from the Lake Wendouree surrounds and the immediate Basalt Plains landscape.</li> <li>• <b>'Native'</b> species should be suitably native to and sourced from the Ballarat region, including the Western District Basalt Plains landscape, and from across the State of Victoria as necessary.</li> <li>• <b>'European'</b> planting species may include exotics and those plants associated with the cultural heritage of Ballarat and its surrounds.</li> <li>• Establish a diversity of species in each structural layer to increase plant community resilience.</li> <li>• Maintain vertical and horizontal tree canopies and closely spaced plantings to allow for movement of arboreal mammals.</li> </ul>

		<p>success of implementations.</p>	<ul style="list-style-type: none"> <li>• To be a sustainable food source for wildlife, it is important to provide plants that produce an abundance of food for a long period of time, to allow for seasonal availability to a range of species.</li> <li>• Employ a diversity of plant species catering to habitat needs and sustainable food sources, including: <ul style="list-style-type: none"> <li>○ Seed and berry eaters – granivorous birds, lizards, small mammals and arboreal mammals;</li> <li>○ Nectar feeders – nectivorous birds, small mammals and microbats;</li> <li>○ Foliage eaters – arthropods, small mammals and some parrots;</li> <li>○ Insect feeders – lizards, insectivorous birds, small mammals and microbats;</li> <li>○ Mosses – are eaten by some animals and used as nesting material;</li> <li>○ Groundcovers, grasses, strappy leaved plants – provide refuge for insects, lizards and small mammals;</li> <li>○ Plant long-flowering species – to ensure enough food source to sustain wildlife;</li> <li>○ Flowers are a food source for small mammals, birds, butterflies and invertebrates;</li> <li>○ Yellow flowers attract invertebrates which in turn, attract insectivorous birds;</li> <li>○ Thorny shrubs, dense shrubs, vines or hedges are good refuge and nesting sites;</li> <li>○ Construct garden beds around and underneath trees;</li> <li>○ Create patchiness alternating with open spaces to encourage a range of microclimates;</li> <li>○ To reduce the potential asthma hazard for visitors, use predominantly bird pollinated or insect pollinated plant varieties.</li> </ul> </li> <li>• Celebrate Cultural Events linked to the <i>Wadawurrung</i> seasonal calendar. For example, the Yam Daisy Festival celebrates the harvest of the Murnong (<i>Microseris scapigera</i>), or Native Yam, once a traditional food staple of the <i>Wadawurrung</i> peoples.</li> </ul>
<p><b>MURNONG GRASSLAND AND WOODLAND</b></p>	<ul style="list-style-type: none"> <li>• Murnong or Yam Daisy <i>Microseris scapigera</i></li> </ul>	<ul style="list-style-type: none"> <li>• Combine cultural values and biodiversity management to encourage revegetation of culturally significant plants;</li> <li>• Draw on traditional knowledge of the <i>Wadawurrung</i>;</li> <li>• Work in collaboration with various stakeholders and interest groups;</li> </ul>	<ul style="list-style-type: none"> <li>• <i>"We need to cherish Australian grasslands; they are beautiful and highly biodiverse, both in terms of plants and animals, and from a tangible connection with the past that fits comfortably with the scale and nature of urban development"</i> (Marshall 2013, p. x).</li> <li>• It is proposed that native and Murnong grasslands be established within the woodland / sculpture trail precinct adjacent to Gregory Street and The Boulevard.</li> <li>• The establishment of native and Murnong grasslands requires specialist guidance. Consultation with the <i>Wadawurrung</i> regarding traditional knowledge may be beneficial in the re-establishment process.</li> <li>• Consultation with DELP and other stakeholders is also recommended.</li> </ul> <p><b>Murnong:</b></p> <ul style="list-style-type: none"> <li>• <i>"grasslands provide important cultural connections... allow traditional owners to maintain their connection to, or to reconnect with, country"</i> (James Hitchmough in Marshall 2013, p. 9).</li> </ul>

	<ul style="list-style-type: none"> <li>• Kangaroo Grass- <i>Themeda triandra</i>.</li> <li>• Wallaby Grass- <i>Rytidosperma</i> spp. <i>Austrodanthonia</i> spp.</li> <li>• Spear Grass- <i>Austrostipa</i> spp.</li> <li>• Weeping Grass- <i>Microlaena stipoides</i> var. <i>stipoides</i></li> <li>• Common Tussock Grass- <i>Poa labillardierei</i></li> </ul>	<ul style="list-style-type: none"> <li>• Promote community participation in woodland and grassland rehabilitation;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations;</li> <li>• Protect culturally significant plants.</li> </ul>	<ul style="list-style-type: none"> <li>• Murnong (<i>Microseris scapigera</i>) is a perennial flowering plant producing seasonal, edible seeds and tuberous roots. Formerly widespread across grasslands and open woodlands of the basalt plains of western Victoria and south eastern Australia, the Yam Daisy was considered an important staple food source for Aboriginal People. Women and children harvested the tubers from shallow soils with a digging stick and the yams were cooked over coals in woven baskets</li> <li>• "Australian representatives of this [murnong] genus are now thought to comprise of three separate species, endemic to southern Australia. ... sp. 1 (basalt plains of western Victoria), sp. 2 (alpine and subalpine herbfields) and sp. 3 (widespread) and are mainly differentiated by the size of their fruit and their attached pappus hairs" (Agriculture Victoria.2019.) <a href="http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/sip_salt_native_yam">http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/sip_salt_native_yam</a>).</li> <li>• The Murnong flower head is yellow in colour with multiple petals resembling a Daisy. <i>Microseris scapigera</i> is a member of the Asteraceae family that includes the Dandelion and Chickory. Like the former, Murnong exudes a milky white sap when broken open. Murnong plants enjoy full sun or part shade and reach dimensions of 200mm H x 200mm W.</li> <li>• The Yam Daisy is used as the visual logo symbol of the Wadawurrung (Wathaurung Aboriginal Corporation).</li> </ul> <p><b>Native Grasslands</b></p> <ul style="list-style-type: none"> <li>• Consultation with the <i>Wadawurrung</i> regarding traditional knowledge may be beneficial in re-establishing grassland species of local significance.</li> <li>• The pre-European composition of native grasslands occurring near Ballarat is nearly impossible to identify due to lack of written records and the almost permanent destruction of this habitat by hard-hooved grazing animals post settlement.</li> <li>• "It is generally recognised that a "grassland community includes dominant, usually tussock forming, long-lived grasses in association with other species, especially of the daisy, pea, lily, rush and orchid families of plants, of which a number may be annuals" (Platt 2002, p.1).</li> <li>• Some native grasses survive high temperatures and drought due to the C<sub>4</sub> carbon fixation process that enables photosynthesis to occur under hot, dry, conditions and where nitrogen levels in the soil are low. This process requires more energy-use from the plant, but is compensated for, by a reduction in water release into the atmosphere (Source: Gullan 2019, p. 2).</li> <li>• The flowering of native grasses usually occurs from late winter through to early summer, with different species peaking in sequence.</li> <li>• In orchids and some other species, flowering may be triggered by ethylene gas produced by fire (Source: Gullan 2019, p. 2).</li> <li>• Native grass pollinators include native bees, beetles, butterflies, native wasps, flies and wind dispersal.</li> </ul>
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			<ul style="list-style-type: none"> <li>• Grasslands are vulnerable to weed invasion, high water nutrient activity and trampling.</li> <li>• As an aid to community acceptance, <i>“Allowing some access to grasslands is important despite the potential for human access to cause damage”</i> (Hitchmough in Marshall 2013, p. 20).</li> <li>• To keep visitors to the designated pathways, educational signage is recommended.</li> </ul>
<b>WETLAND AND RIPARIAN HABITAT</b>	<ul style="list-style-type: none"> <li>• Vegetated banks of waterways, stormwater channel on the west side of North Gardens and Fairylands.</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to existing Wetland Management Plan;</li> <li>• Implement erosion control measures on western waterway channel;</li> <li>• Create a management plan to gradually remove exotic Willow (<i>Salix babylonica</i>) spp. from Fairylands;</li> <li>• Improve visual amenity;</li> <li>• Maintain wetland and riparian habitat species to a sustainable level;</li> <li>• Maintain seasonal and sustainable food sources of herbivorous aquatic plants;</li> <li>• Maintain waterfowl access flight paths;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to the existing Wetland Management Plan.</li> <li>• Riparian habitats are recognised as valuable centres of bird diversity, density and activity and may contribute as stepping-stone corridors for bird movement.</li> <li>• Riparian vegetation plays a major role in the food chain, depositing organic matter such as leaves, bark and wood. This litter, and the organisms that feed on it, constitute a major food source for invertebrates, which in-turn form a major food source for other birds, animals, fish, and amphibians.</li> <li>• As stated by Romanowski, <i>“the reason so many urban wetlands are notorious for water quality problems is that there are far more birds present than is ecologically desirable... the number of visits by any one species or individual bird also has a regulatory effect on what the birds do to water quality, because everything they eat is also later excreted. Nitrogenous wastes are a normal part of aquatic cycles, but an overload of bird droppings will damage the health of all animals that breathe through their gills, whether these are insects, fishes or tadpoles”</i> (Romanowski 2010, p. 83). <ul style="list-style-type: none"> <li>○ water quality or contamination impact greatly on the health of bird life and other fauna;</li> <li>○ consequently, excess nutrients via an increase in nitrogen and phosphorous contained in waterbird excrement, can contribute to reduction in water quality, algal blooms and weed growth; and</li> <li>○ plant-damage may occur near water-bird colony sites due to excessive excreta suffocating foliage and of the weight of dense nests damaging trees.</li> </ul> </li> <li>• Vegetated banks of waterways contribute to the health of the ecosystem, improving water quality, bank stabilisation, slowing water movement, assisting soil uptake during rain events and providing habitat value for birds and animals.</li> <li>• Riparian vegetation, especially native trees, provide shading that helps maintain cooler water temperatures, and accordingly this is an important factor in controlling the life cycle of aquatic and terrestrial invertebrates.</li> <li>• Removal of vegetation on soil banks can destabilise banks, cause further erosion and increase sediment load in the water, recognising that: <ul style="list-style-type: none"> <li>○ removal of existing exotic or weedy vegetation should only occur gradually, after bank stabilisation is established and replacement of habitat vegetation is actively being used by wildlife;</li> <li>○ increase appropriate vegetation plantings to stabilise banks and provide habitat; and,</li> <li>○ employ a diversity of plant species catering to habitat needs and sustainable food sources.</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• The stormwater channel on the western side of North Gardens appears to be experiencing bed deepening. Erosion control measures are recommended, to prevent further deepening, the formation of an incised watercourse and eventual bank collapse.</li> <li>• Erosion control measures present an opportunity to create a naturalistic creek habitat, and such measures include: <ul style="list-style-type: none"> <li>○ creating a naturalistic creek habitat not only slows the water movement but adds aesthetic and biodiversity value;</li> <li>○ strategically place quarry rocks of various sizes, with a rip rap and pebble base to decrease water speed and add habitat value; and,</li> <li>○ when this creek is dry in the Summer months, it also has the potential to provide nature play opportunities.</li> </ul> </li> <li>• For specialist guidance on wetland habitat, consult an Aquatic Biologist.</li> <li>• As stated by Romanowski, "<i>Very few (constructed) wetlands have much value as habitat for anything but the most common and adaptable animals ... because they are designed and planted by people who have little or no background in aquatic biology ...</i>" (Romanowski 2010, p. 77), <ul style="list-style-type: none"> <li>○ most aquatic plant species grow in distinct zones following their preferred water depth contours;</li> <li>○ these depth zones are not static; many aquatic plants are spread by runners following receding water levels;</li> <li>○ the seeds of aquatic species are adapted to germinate in a similar depth range though others may float and lodge at the water's edge before they sprout new growth, with plants creeping into deeper water as they grow larger;</li> <li>○ some colonising species with wind borne seed will become dominant in areas of newly exposed mud; and,</li> <li>○ aquatic plant species, leaves, seeds and tubers are important food sources for waterfowl.</li> </ul> </li> <li>• River Red Gum (<i>Eucalyptus camaldulensis</i>) trees in seasonally flooded areas (in particular the Indigenous 'Heartland' Planting Zone) provide habitat for terrestrial animals, and snags and shelter for fish species.</li> <li>• Crowded stands of Paperbarks (<i>Melaleuca</i> sp.) in seasonally flooded areas are favoured nesting and roosting places for the Australia Ibis (<i>Threskiornis moluccus</i>), Egrets (<i>Ardea</i> sp.) and the Australian Pied Cormorant (<i>Phalacrocorax varius</i>).</li> <li>• Maintain existing Stag trees and trees with hollows and regularly assess each for safety and invasion by pest species.</li> <li>• Tussock forming sedges and rushes are important as shelter and nest sites for various water bird species, and accordingly: <ul style="list-style-type: none"> <li>○ space themselves fairly evenly once they reach maturity;</li> <li>○ provide shaded and protected tunnels between clumps for frogs and smaller animals;</li> </ul> </li> </ul>
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<b>VEGETATION MANAGEMENT</b>	<ul style="list-style-type: none"> <li>● Whole of site – North Gardens and Fairyland.</li> </ul>	<ul style="list-style-type: none"> <li>● Create a Management Plan based upon the Wadawurrung (or equivalent agreed) Indigenous Seasonal Calendar;</li> <li>● Understand the social implications of a low-level management strategy;</li> </ul>	<ul style="list-style-type: none"> <li>● "Aboriginal seasonal information and calendars provide a potential way to integrate traditional ecological knowledge and perspectives into natural resource management decisions. ... As well as their deeper cultural significance, the calendars summarise the changing seasonal conditions-plant, animal and water cycles and their interrelationships-and expected resource availability, based on generations of experience" (Olsen &amp; Russell 2019, p.188).</li> <li>● Devise and implement a vegetation management plan based upon the Wadawurrung seasonal calendar relevant for the Ballarat and Western Plains landscape.</li> <li>● Incorporate Fairylands within the North Gardens management plan.</li> <li>● Strategize the removal of invasive weed species including suckering Willow (<i>Salix babylonica</i>), Poplars (<i>Populus</i> sp.), Ivy (<i>Hedera</i> sp.), Blackberry (<i>Rubus</i> sp.), Flax (<i>Linum</i> sp.), Agapanthus (<i>Agapanthus</i> sp.), Broom (<i>Cytisus</i> sp.) and Pampas Grass (<i>Cortaderia selloana</i>).</li> <li>● Strategize the removal of over-mature, senescent and suckering plant species.</li> </ul>

		<ul style="list-style-type: none"> <li>• Implement targeted weed management where necessary;</li> <li>• Minimise human-impact practices on birds and animals; and,</li> <li>• Once established, employ a natural succession strategy.</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of exotic or weedy vegetation should only occur gradually, after establishment of replacement vegetation that is being actively used by wildlife.</li> <li>• <i>"Nature is often untidy ... many people ... find it difficult to accept the informal appearance of thriving wildlife habitat ... low-level management is mistaken for neglect ... rather than an amenity. A further often overlooked factor is that parks department staff have not been trained to manage sites for wildlife"</i> (Gilbert 1989, pp. 311-312): <ul style="list-style-type: none"> <li>○ minimise the use of herbicides, pesticides and fungicides within the North Gardens precinct, and encourage natural predation by birds, reptiles and small mammals;</li> <li>○ use spot spraying in a targeted manner only where necessary;</li> <li>○ maintain pathways clear of overhanging, understorey vegetation;</li> <li>○ apply a mulch layer including leaf litter, small sticks and tree detritus to encourage microbes, fungi and invertebrates;</li> <li>○ leave fallen and rotting logs <i>in situ</i> where possible;</li> <li>○ leave shedding bark from <i>Eucalyptus</i> sp., as it provides shelter for invertebrates and skinks;</li> <li>○ allow indigenous and native grasses to go-to-seed; and,</li> <li>○ where possible, allow green lawn areas to go to seed.</li> </ul> </li> <li>• As stated by Adams, <i>"Some plant species do not tolerate heavy pruning including Acacia spp. (Wattle) Allocasuarina spp. (Sheoak) ... Some species, including Leptospermum spp. (Tea-trees), and Melaleuca spp. (paperbarks) flower on old wood, so removal of it can result in the loss of next season's flowers"</i> (Adams 2015, p.13).</li> <li>• Tip prune or general prune plants at the end of flowering to promote good plant habit and flower proliferation, and recognise that: <ul style="list-style-type: none"> <li>○ pruning assists in maintaining shrub size and by creating a dense habitat, and provides shelter and predator protection for the smaller birds and animals; and,</li> <li>○ groups of 5-7 shrubs of the same species can be grown close together, to increase density and create thickets for smaller birds and animals.</li> </ul> </li> <li>• Prevent plant overcrowding at pond edges and maintain tree heights to facilitate waterfowl flight paths</li> <li>• As stated by Gilbert, <i>"Non-intervention is a positive option and will almost certainly be the appropriate one over a large part of any site"</i> (Gilbert 1989, p. 316), and thus: <ul style="list-style-type: none"> <li>○ once wildlife zones are established, employ a natural succession strategy.</li> </ul> </li> </ul>
CONNECTING WILDLIFE PATCHES	Linking North Gardens with local and regional habitats such as Lake Wendouree,	<ul style="list-style-type: none"> <li>• Create and maintain links to neighbouring areas for territorial and seasonal wildlife movement;</li> </ul>	<ul style="list-style-type: none"> <li>• <i>"... evolutionary processes require a dynamic mixture of isolation and connectivity"</i> (Steffen 2009, p.158).</li> <li>• <i>"Movement of organisms across landscapes is one of the most fundamental ecological processes. It affects the persistence of populations, distributions of species and genes, composition of</i></li> </ul>

	<p>Flaxman's Wetlands, Burrumbeet Creek Wetlands, Mullawallah/ Winter Swamp, Lake Burrumbeet and Lake Learmonth.</p>	<ul style="list-style-type: none"> <li>• Consider the need for wildlife crossings in trafficked and urban locations;</li> <li>• Include neighbourhoods and urban streetscapes in these links;</li> <li>• Connectivity benefits humans as well as wildlife;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<p><i>biological communities, spread of disturbances and other ecological phenomena</i>" (Hellmund &amp; Smith 2006, p. 72).</p> <ul style="list-style-type: none"> <li>• <i>"urbanisation removes, fragments and isolates natural vegetation, replacing it with roads and buildings and it introduces exotic plants, predators and competitors to native wildlife ..."</i> (Parsons. no year, p.6).</li> <li>• <i>"A restoration plan should include a categorization of species by the potential impacts that various paths, roads, structures, changes in vegetation structure, and other features of the plan might have on species of interest"</i> (Morrison 2009, p.127).</li> <li>• <i>"... managing the landscape as a whole, rather than each reserve as an independent unit ... the development of stepping stones that are close enough together to allow animals to move between patches without the establishment of direct linkages ... or even a simple passage under a highway, may be an effective management action"</i> (Morrison 2009, p.129)</li> <li>• <i>"As vegetation patches change in time so do responses by animals as they use patches for breeding, foraging, refuge from predators, resting and dispersal"</i> (Morrison 2009, p.295).</li> <li>• Retain or create buffers and stepping-stone corridors that help link with local and regional landscape patches, including streetscapes, gardens, parks and waterways.</li> <li>• In terms of corridor and patch widths: <ul style="list-style-type: none"> <li>○ They should be as wide as possible in the space available to minimise edge effects and provide interior habitat;</li> <li>○ a corridor 80 m wide would only provide 20 m interior habitat;</li> <li>○ patch-remnants should be carefully planned to connect with riparian strips or ridge lines (Source: Parsons no year, p.42).</li> </ul> </li> <li>• Well-planned neighbourhood and urban streetscapes can make a viable contribution to these links.</li> <li>• <i>"Designing, maintaining, and restoring a network of connectivity across a landscape can directly benefit humans, as well as biodiversity. If such zones of connectivity are open to public access, open spaces can be important places for recreational hiking, biking and relaxing"</i> (Hilty et al. 2006, p.112).</li> <li>• Network with Local and National stakeholders to create and maintain links with surrounding waterbodies and wildlife reserves including: <ul style="list-style-type: none"> <li>○ Lake Wendouree;</li> <li>○ Flaxman's Wetlands;</li> <li>○ Burrumbeet Creek Wetlands and Ponds;</li> <li>○ Mullawallah/ Winter Swamp;</li> <li>○ Lake Burrumbeet; and</li> <li>○ Lake Learmonth.</li> </ul> </li> </ul>
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<p><b>INSECTS AND INVERTEBRATES</b></p>	<ul style="list-style-type: none"> <li>• Ants, Arachnids, Insects, Invertebrates, Dragonfly, Butterflies, Native Bees, Phasmids, Ladybirds, Millipedes, Earthworms etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote beneficial insects and invertebrates for soil health and as biodiversity food sources;</li> <li>• Promote habitat for Native Bees;</li> <li>• Reduce or eradicate use of chemical fertilizers, fungicides and pesticides;</li> <li>• Consider the negative street lighting effects on a variety of species;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• "Arthropods, both in aquatic and terrestrial habitats, are the dominant animals in terms of numbers, biomass, and ecological impact as food animals ..." (Romanowski 2010, p. 97).</li> <li>• As decomposers, insects improve soil health (see Soil notes in this Table).</li> <li>• Insects are ectothermic and their activity is influenced by environmental temperatures. A variety of insects can detect shifts in atmospheric pressure, and most are more active in the warmer months of the year.</li> <li>• The majority of insects and arthropods shelter from contact with rain and strong wind and avoid open expanses of uncovered ground.</li> <li>• Australian Native Bees are important pollinators of Australian native flora, and there is a need to recognise that: <ul style="list-style-type: none"> <li>○ nationwide over 1600 species of Native bee exist;</li> <li>○ Australian Native Bees have a similar appearance to small flies;</li> <li>○ Females lay eggs in ground burrows approximately 8 cm deep accessed through small holes of 4-9 mm wide;</li> <li>○ most Australian Native Bees need habitats with a complex vegetative structure and layers of loose bark and leaf litter for shelter , at various stages of their life cycles.</li> </ul> </li> <li>• Minimise the use of herbicides, pesticides and fungicides to encourage natural predation of insects by birds, reptiles and small mammals.</li> <li>• Studies have confirmed that moth species, and other insects, are negatively attracted to nocturnal street -lights, which impact on their reproductive cycles.</li> <li>• "Researchers recommend turning off these lights at critical breeding stages to prevent potential extinction of susceptible species" (Bishop 2018, p.152).</li> </ul>
<p><b>DRAGONFLIES AND DAMSEL FLIES</b></p>	<ul style="list-style-type: none"> <li>• Dragonflies and Damselflies listed as found in Victoria in still waters, permanent ponds, lakes and lagoons:</li> </ul>	<ul style="list-style-type: none"> <li>• Provide and maintain pond edges and aquatic environment suitable for Dragonfly habitat;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dragonflies and their relatives are bio-indicators of a healthy wetland system.</li> <li>• Damselflies are smaller and slimmer than dragonflies, and hold their wings close to their bodies when they rest. Dragonflies hold their wings spread out when they rest (Theischinger &amp; Hawking 2006, p. 1).</li> <li>• Australia is home to 324 species of Dragonfly and Damselfly; 69 species occur in Victoria.</li> <li>• Dragonflies are primitive insects belonging to the order <i>Odonta</i> meaning 'large teeth-like jaws' (Theischinger &amp; Hawking 2006, p. 1).</li> <li>• Australian Dragonflies have evolved from the Ancient Greenling (<i>Hemiphlebia mirabilis</i>) which roamed Gondwana during the Permian Period (280-225 million years ago), and from the Petaltails (<i>Petalura</i>) during the Jurassic Period (195-135 million years ago) (Theischinger &amp; Hawking 2006, p. 1).</li> <li>• Dragonfly species are divided into two basic groups ; those that live in habitats with still water, including permanent ponds, dams, lakes and lagoons; and those that live in habitats with moving water including streams, creeks, and rivers.</li> </ul>

			<ul style="list-style-type: none"> <li>• Dragonflies are beneficial insects that hunt on the wing for mosquitoes, midges, moths and other small flying insects. They have multi -faceted eyes that have 360 ° vision.</li> <li>• The whole lifecycle of Dragonflies revolves around the availability of standing fresh water with a variety of plant groups providing different habitat for the 3 stages of the life cycle. The egg and larvae stages are aquatic and the adult stage is terrestrial. <ul style="list-style-type: none"> <li>○ egg laying occurs in either of two ways -endophytic -by inserting eggs directly into the plant tissue or soft mud; females of <i>endophytic</i> species lay 400-600 eggs;</li> <li>○ exophytic –eggs laid directly into the water; females of exophytic species lay 800-2000 eggs.</li> <li>○ ovipositing sites include tall emergent plants, semi-submerged and floating aquatic plants;</li> <li>○ submerged plants then provide oxygen and habitat for the larvae,</li> <li>○ the larvae are predacious being either, 'sit and wait' or attack predators. Food sources for the larvae stage consist of mosquito wrigglers, midge larvae and mayfly nymphs.</li> <li>○ the larvae stage can last up to 2 years and is influenced by water temperature. Depending on the species, ten to fifteen moults are required to reach the point where the wing pads are formed. The larvae then seeks an exposed rock, log or safe place to prepare for metamorphosis.</li> <li>○ after metamorphosis, the adult crawls out of the water onto emergent aquatic plants, rocks and branches, usually on cool mornings or in the evening. It prefers a gently sloping water-edge profile with shallow margins. Once its wings are dry, it moves up to 500 metres away from water until it reaches maturity.</li> <li>○ on reaching maturity up to 4 weeks later, adult dragonflies return to their site of emergence and create their territory. Adults require open water and flying space for hunting prey, with perching spots of branches and semi-submerged logs.</li> <li>○ adults generally live for 1-3 months only.</li> </ul> </li> <li>• Many Dragonfly and Damselfly species spend much of their time resting on banks, rocks or logs, and fly only when feeding, mating or when disturbed (Theischinger &amp; Hawking 2006, p. 7).</li> </ul>
<b>REPTILES AND AMPHIBIANS</b>	Marbled Gecko - <i>Christinus marmoratus</i>  Eastern Three-Lined Skink - <i>Acritoscincus duperreyi</i>	<ul style="list-style-type: none"> <li>• Increase habitat complexity and biodiversity value;</li> <li>• Create and maintain seasonal and sustainable food sources;</li> <li>• Establish long-term monitoring as part of</li> </ul>	<ul style="list-style-type: none"> <li>• Reptiles and amphibians are shy creatures, and apart from when basking, prefer to shelter out of sight or forage for food amongst low growing shrubs, dense vegetation, tussocky grasses, groundcovers, ground debris, under bark, leaf litter, rocks and logs.</li> <li>• Insect pollinated plants provide ready access to insects and invertebrates, eaten at the larval and adult stages.</li> <li>• Most reptiles and amphibians prefer to live near waterbodies with 70 % shade and 30% sun.</li> </ul> <p><b>Gecko, Lizards and Skinks.</b></p>

	<p>Coventry's Skink - <i>Carinascincus coventryi</i></p> <p>Southern Water Skink - <i>Eulamprus tympanum tympanum</i></p> <p>Garden Skink - <i>Lampropholis guichenoti</i></p> <p>Bougainville's Skink <i>Lerista bougainvillii</i></p> <p>Swamp Skink - <i>Lissolepis coventryi</i></p> <p>Blotched Blue-Tongued Lizard - <i>Tiliqua nigrolutea</i></p> <p>Southern Brown Tree Frog - <i>Litoria ewingi</i></p> <p>Growling Grass Frog - <i>Litoria raniformis</i></p> <p>Eastern Common Froglet - <i>Crinia signifera</i></p> <p>Eastern Banjo Frog, Pobblebonk - <i>Limnodynastes dumerili</i></p> <p>Striped Marsh Frog - <i>Limnodynastes peroni</i></p> <p>Spotted Marsh Frog - <i>Limnodynastes tasmaniensis</i></p>	<p>education links, to assess success of implementations.</p>	<ul style="list-style-type: none"> <li>• "Because many lizard species feed on invertebrates, or elements of the vegetation, or both, they fulfil an important role in the food web" (Robertson &amp; Coventry 2019, p.52).</li> <li>• Geckos, lizards and skinks: <ul style="list-style-type: none"> <li>○ are generally not active below 15°C;</li> <li>○ require sheltered basking places with sun exposure;</li> <li>○ source their food at ground level;</li> <li>○ are omnivorous, eating seeds, juvenile foliage of plant material, fruits and berries, invertebrates including snails, crickets, grasshoppers, cockroaches, spiders and moth larvae;</li> <li>○ are themselves a food source for small mammals and birds;</li> <li>○ Geckos are good climbers and are active nocturnally, often frequenting night-scented plants that attract moths;</li> <li>○ Major urban threats to small lizards are foxes (<i>Vulpes vulpes</i>), dogs (<i>Canis lupus familiaris</i>) and cats (<i>Felis catus</i>).</li> </ul> </li> </ul> <p><b>Tadpoles and Frogs</b></p> <ul style="list-style-type: none"> <li>• "Frogs occupy an important position in the food chain, forming a major part of the diet of many fish, snakes, birds and mammals" (Barker et al. 1995, p.37).</li> <li>• Frog's skins are not waterproof, "...frogs have a permeable skin and lose water at a considerable rate, they need persistent moisture and ground cover. They tend to prefer an environment where decomposing leaves and other debris maintain a high level of moisture at ground level" (Tyler &amp; Knight 2009, p.15). <ul style="list-style-type: none"> <li>○ frogs prefer shelter in rushes, sedges and plants adjacent water bodies;</li> <li>○ many Australian frog species bury themselves for a portion of the year in shallow soil burrows or under leaf litter;</li> <li>○ Tadpoles and frogs require waterway perches, submerged logs or rocks so they may exit the water periodically. Juvenile frogs are at risk of drowning if they cannot exit the water to rest.</li> </ul> </li> <li>• Feeding habits of amphibians vary with the part of the life cycle, and therefore: <ul style="list-style-type: none"> <li>○ Tadpoles are omnivorous, feeding on algae, rotting aquatic vegetation or animal matter, and</li> <li>○ adult frogs are active predators feeding on airborne and ground-level invertebrates, aquatic invertebrates, occasionally eating small lizards, snakes, birds and other frogs of smaller species or juveniles of their own species.</li> </ul> </li> </ul>
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	<p>Common Spadefoot Toad -<i>Neobatrachus sudelli</i></p> <p>Bibron's Toadlet -<i>Pseudophryne bibroni</i></p> <p>Lowland Copperhead -<i>Austrelaps superbus</i></p> <p>Red-Bellied Black Snake-<i>Pseudechis porphyriacus</i></p> <p>Eastern Brown Snake -<i>Pseudonaja textilis</i></p> <p>Tiger Snake -<i>Notechis scutatus</i></p> <p>White-Lipped Snake -<i>Drysdalia coronoides</i></p>		<ul style="list-style-type: none"> <li>• "Sight is the most important sense eliciting feeding behaviour and only moving prey are detected" (Tyler &amp; Knight 2009, p.22).</li> <li>• Major threats to amphibians are changes to habitat (waterways drained, piped or covered in concrete).</li> <li>• For further reading see the Amphibian Research Centre <a href="http://www.frogs.org.au">www.frogs.org.au</a></li> </ul> <p><b>Snakes</b></p> <ul style="list-style-type: none"> <li>• "Snakes are an important and extremely interesting component of ecosystems. Often they are among the top carnivores in a complex food web, and as such may exert a regulating influence upon the populations of a range of other species" (Robertson &amp; Coventry 2019, p.229).</li> <li>• Due to its colouring, the Lowland Copperhead (<i>Austrelaps superbus</i>) is sometimes mistaken for a Red Bellied-Black Snake (<i>Pseudechis porphyriacus</i>).</li> <li>• Food sources for snakes include lizards (especially skinks), other snakes, small mammals, small rodents, microbats, bird nestlings and frogs; <ul style="list-style-type: none"> <li>○ Snakes hunt their food by foraging and following scent trails, especially that left by rodents;</li> </ul> </li> <li>• After feeding, snakes need to maintain their body temperature to aid or speed up their digestion, and therefore: <ul style="list-style-type: none"> <li>○ may be active during the day or at night in hotter weather, and</li> <li>○ need to regulate their temperature by basking in the sun.</li> </ul> </li> <li>• Mating season for most snake species occurs in Spring. <ul style="list-style-type: none"> <li>○ Lowland Copperhead (<i>Austrelaps superbus</i>) and Tiger Snakes (<i>Notechis scutatus</i>) may mate in both Spring and Autumn,</li> <li>○ During this time, male snakes engage in ritual combat with other males,</li> <li>○ Female snakes lay their eggs in burrows under rocks or logs, and</li> <li>○ Young snakes hatch or are born in Summer or early Autumn.</li> </ul> </li> </ul>
<p><b>SNAKES AND PEOPLE MANAGEMENT</b></p>	<ul style="list-style-type: none"> <li>• The most frequently occurring snakes in the Ballarat region are:</li> </ul>	<ul style="list-style-type: none"> <li>• Promote a healthy respect for snakes through education;</li> <li>• Minimise human / snake interaction;</li> <li>• Be aware of snake seasonal behaviours;</li> </ul>	<ul style="list-style-type: none"> <li>• "Snakes play an important part in religion, superstition and folklore around the world. Many people have a deeply ingrained fear of snakes ... this fear has been reinforced by social conditioning ..." (Robertson &amp; Coventry 2019, p.229).</li> <li>• "In most encounters the threat from a snake is minimal and people need basic, common sense to manage the situation ... Snakes need to be left alone. Most snakebite occurs during confrontations, when people engage in risky behaviour ..." (Watharow 2011, p. 2-3).</li> <li>• Make cultural and scientific education available at the Information Centre.</li> <li>• Maintain pathway clearances free from overhanging, understorey vegetation.</li> </ul>

<p>Lowland Copperhead - <i>Austrelaps superbus</i></p> <p>Red-Bellied Black Snake <i>-Pseudechis porphyriacus</i></p> <p>Eastern Brown Snake - <i>Pseudonaja textilis</i></p> <p>Tiger Snake -<i>Notechis scutatus</i></p> <p>White-Lipped Snake - <i>Drysdalia coronoides</i></p>		<ul style="list-style-type: none"> <li>• Provide reporting procedures for sightings; and,</li> <li>• Provide accessible First Aid facilities and emergency contact details.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide signage indicating seasonal and nocturnal snake behaviours.</li> <li>• Provide identification signage of local species.</li> <li>• Provide snake-bite education and First Aid facilities at designated posts.</li> <li>• Have a procedure for reporting sightings to management or an appointed staff member.</li> <li>• Dogs must be on-lead when walking through and inside the North Gardens Wetlands.</li> <li>• Factors that may affect a snake’s behaviour, as follows: <ul style="list-style-type: none"> <li>○ snakes view humans as a predator,</li> <li>○ if a snake is surprised or cornered it may have a strong defensive behaviour by standing its ground or striking,</li> <li>○ if a snake is in the process of shedding its skin, its eyesight may be temporarily impaired and it may be easily startled,</li> <li>○ on hot days a snake may become overheated, agitated and easily provoked,</li> <li>○ in breeding season, males are more active and following female pheromone trails,</li> <li>○ if a snake has recently fed, it may be sluggish with slow movement and rely on threat displays,</li> <li>○ if a snake is carrying eggs or embryos internally, it may have restrictive movement and be slower to move away,</li> <li>○ during the warmer months, snakes may be active at night to prevent overheating,</li> <li>○ humid nights with low moons encourage most snake species to be active,</li> <li>○ snakes emerging in Spring, after Winter hibernation, will be actively basking and foraging for food,</li> <li>○ in Spring and Autumn, be alert to snakes basking in the early parts of the day,</li> <li>○ Eastern Tiger Snakes (<i>Notechis scutatus</i>) are particularly active on humid nights in January and February during storms, and</li> <li>○ walking paths are attractive basking places; nocturnal snakes use paths to maintain their temperature.</li> <li>○ If confronted, most snakes will seek an escape route and flee. Some species have known flight-response distances, and in particular: <ul style="list-style-type: none"> <li>- Eastern Brown Snake (<i>Pseudonaja textilis</i>) will move when approached at a distance of approximately 5 m,</li> <li>- Eastern Tiger Snake (<i>Notechis scutatus</i>) will move when approached at a distance of approximately 1.5 m,</li> <li>- Red Bellied Black Snake (<i>Pseudechis porphyriacus</i>) will move when approached and will try and escape towards water, and</li> <li>- Quite a few species will rely on camouflage as a first line of defence.</li> </ul> </li> </ul> </li> </ul>
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<p><b>BIRDS</b></p>	<p><i>"Each species of bird has its own food preferences ... a bird's bill is its most important implement for gathering food, and the size and shape of the bill is a good indication of the type of food eaten by a species"</i> (Adams 2018, p. 9).</p> <p><b><u>Insectivores:</u> Swifts, Swallows, Fairy Wrens, Silvereyes, Pardalotes, Fantails, Robins, Flycatchers, Woodswallows, Tree creepers, Magpies;</b></p> <ul style="list-style-type: none"> <li>• Eat earthworms, ants, spiders, moths, larvae, small insects, flying insects, scale, psyllids, lerp.</li> </ul> <p><b><u>Granivores:</u> Quail, Finches, Pigeons, Parrots, Cockatoos;</b></p> <ul style="list-style-type: none"> <li>• Eat seeds of <i>Eucalyptus</i> sp., <i>Acacia</i> sp., <i>Allocasuarina</i> sp., Cypress pine (<i>Callitris</i> sp.), native grasses, exotic weed seeds, and half-ripe grass seeds and insects when breeding or</li> </ul>	<ul style="list-style-type: none"> <li>• Create and maintain links to neighbouring patches for territorial and seasonal bird movement;</li> <li>• Create and maintain habitat to increase diversity of species;</li> <li>• Provide shelter from predation for smaller bird species;</li> <li>• Create and maintain seasonal and sustainable food sources;</li> <li>• Minimise human-impact practices on birds;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations;</li> <li>• Do not feed the birds;</li> <li>• Instigate effective litter control measures and covered bins.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>"The vertical structure of the plant community and the connectivity to other habitat types emerge as primary variables affecting bird community composition and abundance"</i> (Douglas et al. 2011, p.345).</li> <li>• Maintain stag trees and tall trees because these are geographical markers for some bird species and provide observation posts for prey spotting.</li> <li>• Restore vertical and horizontal plant hierarchy including upper storey tree canopies, middle storey trees and shrubs, lower stories, shrubs, vines, tufting and clumping plants, grasses, groundcovers, ground layers, logs, debris and leaf litter.</li> <li>• Restore habitat complexity, diversity and abundance to ensure year-round, seasonal, sustainable food sources.</li> <li>• As stated by Adams, <i>"A bird's beak ... the size and shape ... is a good indication of the type of food eaten ... By occupying different food niches competition between species is minimised"</i> (Adams 2015, pp.29-30).</li> <li>• Each hierarchy of vegetation also provides vital habitat resources for a variety of birds, enabling perching, observation, navigation, shelter, roosting, nesting, food resources, foraging, and seasonal food source accessibility.</li> <li>• Nest types vary with the bird species. Nest construction can include materials such as : directly on leaf litter; stick platforms; stick bowls; nests constructed of mud and grass; spherical, domed, pendulous or cupped grass nests; nests of plant fibres and cobwebs; nests lined with <i>Acacia</i> sp. or <i>Eucalyptus</i> sp. leaves; underground burrows with grass-lined nest chambers; nests made from reeds lined with rootlets and grasses; and, tree hollows (see: Adams 2018).</li> <li>• Removal of exotic or weedy vegetation should only occur gradually, after establishment of replacement vegetation that is seen to be used by birds and wildlife.</li> <li>• Reduce where possible, human-impact practices, including:</li> <li>• mowing that may decrease important insect sources and prevent grasses from setting seed for granivores. Nectivorous and granivorous birds often eat insects for part of the year or when nesting and feeding young. <ul style="list-style-type: none"> <li>○ trampling and compaction by vehicles and people, that leads to soil compaction which prevents plant establishment and regeneration, and</li> <li>○ disturbances during the breeding season that can cause birds to abandon their nests and young, including regular disturbances that can cause permanent abandonment of a site (e.g. dogwalkers).</li> </ul> </li> <li>• Consider shelter and nesting requirements for different bird species.</li> <li>• <i>"17% of Australian bird species use tree hollows which are naturally insulated whether it be in a tree trunk or branch"</i> (Bishop 2018, p. 210), and therefore: <ul style="list-style-type: none"> <li>○ many small birds use vegetation up to a height of 2 m for shelter, feeding and for nesting,</li> </ul> </li> </ul>
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	<p>feeding their young.</p> <p><b><u>Nectarivores:</u></b>  <b>Honeyeaters, Wattlebirds, Lorikeets</b></p> <ul style="list-style-type: none"> <li>• Are arboreal feeders of nectar, honeydew and pollen, other fruits, insects, lerp and scale;</li> <li>• Seek tubular honey-flora, <i>Epacris</i> sp., <i>Correa</i> sp., <i>Anigozanthos</i> sp., <i>Prostanthera</i> sp., <i>Banksia</i> sp., <i>Grevillea</i> sp., <i>Callistemon</i> sp., <i>Hakea</i> sp., <i>Eucalyptus</i> sp. blossoms.</li> </ul> <p><b><u>Frugivores:</u></b> Silvereyes, Pigeons, Parrots, Cockatoos, Currawongs;</p> <ul style="list-style-type: none"> <li>• Eat fruits, berries, seeds and insects.</li> <li>• Seek <i>Elaeocarpus</i> sp., <i>Syzygium</i> sp. trees.</li> </ul> <p><b><u>Herbivorous:</u></b> Swans, Moorhens, Ducks,</p> <ul style="list-style-type: none"> <li>• Eat aquatic vegetation, graze on grassland,</li> </ul>		<ul style="list-style-type: none"> <li>○ nesting material can include grasses, strappy-leaved plants, twigs and sticks, bark, mud, mosses and lichens,</li> <li>○ cobwebs and feathers are used as nest lining for several species, and</li> <li>○ the breeding season of many species coincides with fruiting, flowering or insect activity.</li> </ul> <ul style="list-style-type: none"> <li>• Create and maintain seasonal and sustainable food sources.</li> <li>• Aim to control or eradicate invasive or dominant pest species when they first appear. Habitat manipulation including creating unfavourable conditions for some pest species, may be an effective management practice.</li> </ul> <p><b><u>Insectivores</u></b></p> <ul style="list-style-type: none"> <li>• “<i>Most species of birds include some insects in their diet ...</i>” (Adams 2015, p.21), and therefore: <ul style="list-style-type: none"> <li>○ insectivores perch and pounce when hunting, preferring to perch on observation posts of tree stumps and logs to watch for insect movement,</li> <li>○ some insectivore species catch insects on the wing, and some forage through bark and leaf litter under shrubs,</li> <li>○ insectivores prefer open woodland habitat with a diversity of grasses, sedges, groundcovers, medium and small, dense shrubs,</li> <li>○ insectivores require dense undergrowth in which to shelter, and</li> <li>○ on very cold nights Silvereyes (<i>Zosterops lateralis</i>) can enter a state of torpor to conserve energy, rousing again at daybreak (Daniels 2011, p.55).</li> </ul> </li> </ul> <p><b><u>Granivores</u></b></p> <ul style="list-style-type: none"> <li>• Finches eat mature seeds from most native grass species and unripe green seeds when feeding young in the nest;</li> <li>• Generally, Finches do not do well in close proximity to humans due to disturbance behaviours and predation by cats (<i>Felis catus</i>) and foxes (<i>Vulpes vulpes</i>).</li> <li>• Finches, Parrots and Cockatoos will readily visit artificial bird feeders.</li> <li>• Parrots and cockatoos feed on a variety of wild seeds from grasses to <i>Acacia</i> sp., <i>Banksia</i> sp., <i>Melaleuca</i> sp., ornamental and fruit trees.</li> </ul> <p><b><u>Nectivores</u></b></p> <ul style="list-style-type: none"> <li>• Have an important symbiotic relationship with Australian plants as vital pollinators.</li> <li>• Some nectivores reside in one place; others are territorial and will drive off food competitors; others are seasonal visitors.</li> <li>• As stated by Bishop, “<i>It’s vital to provide plants that have a range of flower sizes and shapes to suit the various nectar feeding groups</i>” (Bishop 2018, p.217).</li> <li>• Such as tubular flowers such as <i>Correa</i> sp., Kangaroo Paws (<i>Anigozanthos</i> sp.), heaths, <i>Epacris</i> sp., <i>Banksia</i> sp., <i>Eremophila</i> sp., <i>Grevillea</i> sp. and <i>Hakea</i> sp..</li> </ul>
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	<p>reeds, shoots, worms, molluscs, small vertebrates.</p> <p><b>Carnivores:</b> Owls, Frogmouths, Nightjars, Kookaburra, Kingfishers, Butcherbirds, Falcons, Kites,</p> <ul style="list-style-type: none"> <li>• Eat moths, spiders, insects, frogs, reptiles, rodents, small mammals, small birds, eggs.</li> </ul> <p><b>Omnivorous scavengers:</b> Ibis, Currawongs, Ravens, Crows;</p> <ul style="list-style-type: none"> <li>• Eat fruit, berries, seeds, insects, snails, small reptiles, carrion including roadkill, small vertebrates, nestlings and scavenge human food from unsecured rubbish bins.</li> </ul>		<ul style="list-style-type: none"> <li>• Open flowers where nectar is in cups, such as <i>Eucalyptus</i> sp., <i>Melaleuca</i> sp., Lilly-pillies (<i>Syzygium</i> sp. and <i>Acmena</i> sp.), or dense thorny shrubs that flower on the inner stems and branches (see, Bishop 2018, p.217).</li> </ul> <p><b>Frugivores</b></p> <ul style="list-style-type: none"> <li>• Prefer plants with small sour fruits include Lilly-pillies (<i>Syzygium</i> sp. and <i>Acmena</i> sp.) and <i>Dianella</i> sp.</li> </ul> <p><b>Carnivores</b></p> <ul style="list-style-type: none"> <li>• Owls and other raptors hunt rodents by following a urine trail.</li> <li>• Kookaburras (<i>Dacelo novaeguineae</i>) and Currawongs (<i>Strepera</i> sp.) are effective at keeping snakes in check.</li> </ul> <p><b>Don't feed the birds</b></p> <ul style="list-style-type: none"> <li>• Access to a variety of native and exotic food sources reduces the reliance on artificial food and reduces potential wildlife aggression.</li> <li>• Supplementary feeding may promote the dominance of pest species and can contribute to the decline of small and less dominant bird species.</li> <li>• Supplementary feeding can contribute to spread of bird disease through high population densities at feeding places.</li> <li>• Supplementary feeding can contribute to sedentary bird behaviour and a reduction in bird health.</li> <li>• Provide explanatory signage to educate visitors and the community not to feed the birds.</li> </ul>
<p><b>WATERFOWL</b></p>	<p>Pacific Black Duck <i>Anas superciliosa</i></p> <p>Musk Duck <i>Biziura lobate</i></p>	<ul style="list-style-type: none"> <li>• Maintain seasonal and sustainable food sources of herbivorous aquatic plants;</li> <li>• Instigate effective litter control measures and covered bins;</li> </ul>	<ul style="list-style-type: none"> <li>• Waterbirds control insects like mosquito larvae and aid pollination and seed dispersal of wetland plants.</li> <li>• Black Swans (<i>Cygnus atratus</i>), ducks and geese are herbivores feeding on leaves and shoots of submerged aquatic plants in shallow waters or on adjacent grassy flats.</li> <li>• Australian Grebes (<i>Tachybaptus novaehollandiae</i>) are rarely seen on land. They swim underwater and dive, chasing their food of invertebrates and fish. During the breeding</li> </ul>

	<p>Blue Billed Duck <i>Oxyura australis</i></p> <p>Australian Wood Duck <i>Chenonetta jubata</i></p> <p>Great Crested Grebe <i>Podiceps cristatus</i></p> <p>Hoary-Headed Grebe <i>Poliocephalus poliocephalus</i></p> <p>Great Cormorant <i>Phalacrocorax carbo</i></p> <p>Little Pied Cormorant <i>Microcarbo melanoleucos</i></p> <p>Hérons and Egrets <i>Ardeidae</i> family</p> <p>Purple Swamphen <i>Porphyrio porphyrio</i></p> <p>Dusky Moorhen <i>Gallinula tenebrosa</i></p> <p>Coot <i>Fulica atra</i></p> <p>Australian White Ibis <i>Threskiornis mollucca</i></p> <p>Royal Spoonbill <i>Platalea regia</i></p> <p>Yellow-billed Spoonbill <i>Platalea flavipes</i></p>	<ul style="list-style-type: none"> <li>• Maintain access flight paths;</li> <li>• Create and maintain vegetated corridors and links to neighbouring areas for seasonal wildlife movement; and</li> <li>• Consider the need for wildlife crossings in trafficked and urban locations.</li> </ul>	<p>season, they feed their young regurgitated feathers to prevent fish bones entering the young's intestinal tract (see: Adams 2018).</p> <ul style="list-style-type: none"> <li>• Australian Pied Cormorants (<i>Phalacrocorax varius</i>) dive underwater for their food, eating fish, tadpoles and crustaceans. To reduce buoyancy, their plumage is not fully-waterproof. Once their feathers become water-logged, they need to spend time drying on banks, logs or trees.</li> <li>• Herons and Egrets are waders stirring the water with one foot to disturb fish, crustaceans, insects and invertebrates.</li> <li>• Ibis and Spoonbills are slow, shallow waders who sweep their bills from side to side to disturb aquatic insects, molluscs, fish, shrimp and crustaceans. On land, they eat caterpillars and grasshoppers. Whilst probing for insects, Ibis assist in aerating soils.</li> <li>• Nesting sites vary with the species of waterbird and range from mounded nests of vegetation, nests built amongst dense reeds, raised mud islands, tree hollows, nesting in colonies on ground level or tree level.</li> <li>• Herons, Egrets, Australian White Ibis (<i>Threskiornis moluccus</i>) and Australian Pied Cormorants (<i>Phalacrocorax varius</i>) will share colony breeding sites</li> <li>• As stated by Romanowski, "One thing most larger waterbirds have in common is the need to be able to fly in and out of wetlands easily" (Romanowski 2010, p.142), and therefore: <ul style="list-style-type: none"> <li>○ many large water birds are not very manoeuvrable and are awkward when in the air,</li> <li>○ Black Swans (<i>Cygnus atratus</i>), ducks, <i>et al.</i>, require at least 40-50 m clearway access for landing and take-off into a predominant breeze,</li> <li>○ remove tall and congested trees planted too close to the flight paths and replace with widely spaced stands of smaller trees,</li> <li>○ overhead cables should be made visible by the addition of reflective, brightly coloured markers evenly spaced along the cable, and</li> <li>○ during site visits to North Gardens made by the design team, it was observed on numerous occasions that Black Swans (<i>Cygnus atratus</i>) and smaller waterfowl were effectively using the culvert underneath Lake Wendouree Parade as an access route between North Gardens Wetlands and Fairylands.</li> </ul> </li> <li>• Black Swan (<i>Cygnus atratus</i>) and Australian White Ibis (<i>Threskiornis moluccus</i>) populations may need to be monitored with an annual census. If necessary, Licenced population control measures may need implementing.</li> </ul>
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	Black Swan <i>Cygnus atratus</i>		
<b>AQUATIC MAMMALS</b>	<ul style="list-style-type: none"> <li>Rakali (Water Rat) <i>Hydromys chrysogaster</i></li> </ul>	<ul style="list-style-type: none"> <li>Maintain seasonal and sustainable food sources;</li> <li>Use education to improve recognition of this species and social considerations of living with wildlife;</li> <li>Educate fisher-folk about the dangers of crayfish traps;</li> <li>Increase predator control at high priority sites;</li> <li>Instigate effective litter control measures and covered bins; and,</li> <li>Establish long-term monitoring as part of education links or citizen science, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>Rakali (<i>Hydromys chrysogaster</i>) is a protected native aquatic mammal found in all states and territories of Australia. In the eastern states, it often co-exists with Platypus (<i>Ornithorhynchus anatinus</i>). Rakali can be quietly observed around North Gardens wetlands at dusk or early morning. The Rakali has soft waterproof fur, webbed hind feet and a long white tip on its tail.</li> <li>As stated in a World Wildlife Foundation Report, the "<i>Rakali is the Aboriginal name from the Murray Darling Basin in New South Wales and Victoria ... adopted as the species common name by the Australian Department of Environment and Heritage in the 1990's</i>" (WWF Report 2015, p.5).</li> <li><i>Wadawurrung</i> stories speak of the connection between the Rakali (<i>Hydromys chrysogaster</i>) and the Platypus (<i>Ornithorhynchus anatinus</i>).</li> <li>Rakali (<i>Hydromys chrysogaster</i>) are considered top predator mammals in freshwater systems, and are additionally considered bio-indicators of waterway health; assist in the dispersal of beneficial fungi spores.</li> <li>Rakali (<i>Hydromys chrysogaster</i>) were extensively hunted during the 1930s Depression for its soft fur to make coats and rugs. Mortality in the wild has been attributed to habitat destruction, especially reduction in water levels through damming waterways and the filling of swamps. Natural predators of Rakali are birds of prey, snakes and large fish.</li> <li>In urban environments mortality threats for Rakali (<i>Hydromys chrysogaster</i>) include vehicle strike, changes to dense vegetation cover, littered waterways, predation by foxes (<i>Vulpes vulpes</i>), dogs (<i>Canis lupus familiaris</i>) and cats (<i>Felis catus</i>) (especially dispersing juveniles at the end of the breeding season) and drowning when caught in opera-house style freshwater crayfish traps. The Australian Platypus Conservancy has developed crayfish traps with an escape hatch suitable for Rakali and Platypus. According to the Conservancy, both species are considered highly susceptible to climate change.</li> <li>As stated by Smith, "<i>Humans target them in the belief they are introduced rats</i>" (Smith 2017).</li> <li>Preferred Rakali (<i>Hydromys chrysogaster</i>) habitat includes: <ul style="list-style-type: none"> <li>slow flowing water (walking speed) and deep pools,</li> <li>overhanging vegetation, dense vegetation within 10-50 m of water and thick ground-cover vegetation,</li> <li>rocks and logs in the water for feeding and steep riverbank angles for making burrows,</li> <li>because Rakali are territorial and usually have a defined home-range associated with year-round food sources, a single male will keep a range that overlaps the territory of several females, and they will fight in overcrowded areas often resulting in damaged tails,</li> <li>Rakali is carnivorous and forages at dawn and dusk, but can be seen during the day,</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>○ Rakali have difficulty maintaining their body temperature in water below 25°C, as their fur is not insulated, it will spend considerable time warming on land after swimming. Juveniles are susceptible to hypothermia until after the post-weaning moult at 90-99 days (see: Gardner &amp; Serena 1995, p.74),</li> <li>○ Food sources include lizards, aquatic insects, crustaceans, mussels, amphibians, fish, small waterbirds and small mammals and sometimes, human food from rubbish bins. In Winter they will eat plants and spend less time foraging in the water,</li> <li>○ Rakali eats its prey out of the water, on islands or feeding platforms of rocks or logs, leaving behind little middens of food detritus,</li> <li>○ Rakali make nests in logs or at the end of tunnels dug into the waterway edges, in which it shelters during the day,</li> <li>○ Rakali will breed at any time of the year but mostly during spring and summer.</li> <li>● Management of the species includes effective litter control measures and covered bins at the North Gardens site</li> </ul>
<b>ARBOREAL MAMMALS</b>	<p>Common Ringtail Possum <i>Pseudocheirus peregrinus</i></p> <p>Common Brushtail Possum <i>Trichosurus vulpecula</i></p> <p><b>Microbats –</b> Gould’s Wattle Bat <i>Chalinolobus gouldii</i></p> <p>Chocolate Wattle Bat <i>Chalinolobus morio</i></p>	<ul style="list-style-type: none"> <li>● Create and maintain vegetated corridors and links to neighbouring areas for seasonal wildlife movement;</li> <li>● Maintain seasonal and sustainable food sources;</li> <li>● Use education to improve social considerations of living with wildlife;</li> <li>● Instigate effective litter control measures and covered bins.</li> </ul>	<p><b>Common Ringtail Possum (<i>Pseudocheirus peregrinus</i>)</b></p> <ul style="list-style-type: none"> <li>● ‘Ringtails’ are strictly vegetarian, preferring leaves from Eucalyptus trees when residing in natural habitats.</li> <li>● In suburbia, they will eat plant material from a wide range of native and exotic leaves, buds and flowers including roses.</li> <li>● They make spherical nests (dreys) out of plant material and twigs which are usually located within dense foliage in trees, tall shrubs or in clumps of mistletoe.</li> </ul> <p><b>Brush-tailed Possum (<i>Trichosurus vulpecula</i>)</b></p> <ul style="list-style-type: none"> <li>● Belong to the <i>Phalangerid</i> family that inhabited the supercontinent of Gondwana. <ul style="list-style-type: none"> <li>○ Brush-tailed possums are tree climbers with clawed feet and gripping tails, aided by a friction pad of naked skin on the underside of the tail,</li> <li>○ Spend a great deal of time foraging at ground level,</li> <li>○ Keep in contact with each other through vocalisations and scent trails, and</li> <li>○ are well-adapted to living in urban areas and often come in contact with people.</li> </ul> </li> <li>● Diet for these possums consist mainly of fruits and leaves with the occasional bird’s egg, nestling or small mammal taken. In urban areas, they will eat vegetables, fruit and flowers from gardens, and if given the opportunity, will rummage through unsecured rubbish bins and eat all sorts of foods including meat.</li> <li>● Breeding season occurs mostly in Autumn and sometimes also in Spring, with: <ul style="list-style-type: none"> <li>○ one or two juveniles stay in mother’s pouch for approximately 5 months and are then weaned at 7 months,</li> </ul> </li> </ul>



			<ul style="list-style-type: none"> <li>○ female juveniles may stay in their mother’s territory range but males disperse within 12 months of birth, and</li> <li>○ prefers dry eucalypt forests and woodlands but commonly nests in urban ceilings</li> <li>● Aboriginals used Brush-tailed Possum pelts for making warm cloaks</li> </ul> <p><b>Microbat’s</b></p> <ul style="list-style-type: none"> <li>● Bats are the only mammals that can truly fly.</li> <li>● Microbats are insectivorous bats found Australia wide including in cities and suburbs.</li> <li>● Insectivorous bats help to control insect populations; <i>“some need to consume one and a half times their bodyweight in insects each night to satisfy their energy requirements”</i> (Temby 2005, p. 38).</li> <li>● Most microbats are mouse-sized, weighing 3-15 grams. Their wings are used for flight and to wrap around themselves to keep warm or to fan themselves to keep cool. Roosting consists of <i>“... hanging upside down as their pelvis and hind legs are greatly reduced and cannot support their weight”</i> (Temby 2005, p.36).</li> <li>● Microbats emerge from their roosts at dusk and forage at night sometimes 10-12 km away, returning to roost at dawn, enabling them to: <ul style="list-style-type: none"> <li>○ Microbats eat insects such as small moths, small insects, and mosquitos, locating them via echolocation, which humans cannot hear. In urban areas, microbats can sometimes be seen hunting for moths and insects ,around street-lights, sporting-field lights, or the lights of buildings.</li> </ul> </li> <li>● Many microbats experience <i>torpor</i> in the winter months; a state similar to hibernation.</li> <li>● They commonly live in tree hollows, under loose bark, abandoned bird’s nests, bat boxes, in and around buildings – in the eaves, in rolled-up external blinds, behind drain-pipes and in other crevices. Artificial bat boxes fixed to trees should be placed in threes around the trunk, on all sides but north, as bats change their roosting preferences through the season (see: Lavelle 2007, p.129).</li> <li>● Microbats have a low reproductive rate and so live longer to compensate, sometimes up to 18 years of age. <ul style="list-style-type: none"> <li>○ newborn bats are carried by their mother until too heavy, then left in nursery roosts whilst they forage at night, and</li> <li>○ microbats are extremely vulnerable to human activities, and the use of pesticides negatively affects their food sources or nesting places .</li> </ul> </li> </ul>
<b>BIOPHILIA</b>	<ul style="list-style-type: none"> <li>● Humans.</li> <li>● Passive recreation.</li> <li>● Universal access.</li> </ul>	<ul style="list-style-type: none"> <li>● Use Biophilia theory as a platform to educate visitors about the role nature plays in their life.</li> </ul>	<ul style="list-style-type: none"> <li>● <i>“The need to relate to the landscape and to other forms of life - whether one considers this urge aesthetic, emotional, intellectual, cognitive or even spiritual - is in our genes. Sever that connection and we are floating in a world where our deepest sense of ourselves is lost”</i> (Tree 2018, p.297).</li> </ul>

			<ul style="list-style-type: none"> <li>• “For Harvard biologist E.O. Wilson the human connection with nature- something he calls ‘biophilia’, the ‘rich, natural pleasure that comes from being surrounded by living organisms’ – is rooted in our evolution” (Tree 2018, p.297).</li> <li>• Building on Wilson’s theory, Biophilia research instigated in the 1980s by Stephen and Rachel Kaplan and Robert Ulrich, and continued by Stephen Kellert, determined that deep connections with nature improve our long-term psychological wellbeing and recovery from brain overstimulation, associated with modern day stresses. Today, Biophilia is recognised worldwide as a major concept incorporated into healthcare design, to assist recovery from trauma, surgery and mental illness and to nurture a sense of well-being.</li> <li>• As stated by Wilding, “Studies show that children who spent time in green spaces between the ages of seven and twelve tend to think of nature as magical. As adults they are the people most likely to be indignant about lack of nature protection, while those who have had no such experience tend to regard nature as hostile or irrelevant and are indifferent to its loss” (Wilding 2018, p.294).</li> <li>• “Establishing an emotional connection with our urban wildlife is important for implementing long term management change at a whole spectrum of scales; the city, the suburb and the individual household level” (Parsons no year, p.2).</li> </ul>
<b>CULTURE AND EDUCATION</b>	<ul style="list-style-type: none"> <li>• <i>Wadawurrung</i>.</li> <li>• Primary and Secondary educational resource.</li> <li>• Tertiary research resource.</li> <li>• Visual Arts.</li> <li>• Community resource.</li> <li>• Tourism.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise and support the value of North Gardens as a living Indigenous education resource;</li> <li>• Aboriginal people see <i>Country</i> in layers;</li> <li>• Create a Management Plan based on a <i>Wadawurrung</i> Seasonal Calendar;</li> <li>• Embrace cultural events linked to the seasonal calendar;</li> <li>• Create a ‘Night Sky’ program;</li> <li>• Recognise that community involvement instils a sense of ownership;</li> </ul>	<ul style="list-style-type: none"> <li>• As stated by Olsen and Russell, “Aboriginal seasonal information and calendars provide a potential way to integrate traditional ecological knowledge and perspectives into natural resource management decisions. ... As well as their deeper cultural significance, the calendars summarise the changing seasonal conditions- plant, animal and water cycles and their interrelationships-and expected resource availability, based on generations of experience” (Olsen &amp; Russell 2019, p.188).</li> <li>• As stated by Nicholson, “Country has 6 layers that link to infinite layers ... Below country ... On Country ... Water Country ... Wind Country ... Sky Country” (Nicholson 2019, p.5).</li> <li>• Plant Indigenous and native vegetation communities for cultural uses and education.</li> <li>• Incorporate traditional Indigenous management approaches.</li> <li>• Involve Indigenous peoples in the day-to-day management of the Wetlands environment.</li> <li>• Celebrate cultural events linked to the <i>Wadawurrung</i> seasonal calendar, including allied uses or events such as a Tanderrum, Eel Festival and Yam Daisy Festival.</li> <li>• Maintain resource and education links with: <ul style="list-style-type: none"> <li>○ Indigenous communities,</li> <li>○ Ballarat Botanical Gardens - Scientific Plant trials,</li> <li>○ local and regional primary/secondary schools,</li> <li>○ tertiary institutions,</li> <li>○ local, national and international Visual Arts institutions and community, and</li> <li>○ local, national and international tourism.</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>• Introduce resource and education links with local, regional, national and international institutions; and</li> <li>• Keep up to date records as part of biodiversity research, and tertiary education resources.</li> </ul>	
<b>SPIRIT</b>	<ul style="list-style-type: none"> <li>• <i>Wadawurrung</i>.</li> <li>• Community.</li> </ul>	<ul style="list-style-type: none"> <li>• North Gardens offers a venue to return to and to appreciate the cultural spirit and ecological significance of <i>Wadawurrung Country</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• As stated by Rose, "... <i>country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life. Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease</i>" (Rose 1996, p.7).</li> <li>• As stated by Nicholson, "<i>Country has very distinct layers, that link to infinite layers. There are six fundamental layers [in Wurundjeri culture] that include the Below Country - where we collect ochre for dance and ceremony. On Country- where we walk, travel, dance and conduct ceremony. Then there is Water Country – we use to sustain life, but also part of ceremonies of welcome. Next is Wind Country – smoke from welcome fires and language when spoken and sung, below in all directions and touch every layer of Country. Then comes Sky Country – where we see most of our Spiritual Protectors in their physical form before they transcend to their celestial home, Star Country where we can see them in the form of constellations. These then tell the story of the reflected layers of Country of which Aboriginal people's physical and spiritual bodies are connected to</i>" (Nicholson 2019, p.5).</li> </ul>
<b>WILDLIFE / HUMAN INTERACTIONS</b>	<ul style="list-style-type: none"> <li>• Humans, birds, animals.</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage positive interactions between wildlife and people to foster sympathetic environmental values;</li> <li>• Do not supplement the food of birds or animals;</li> <li>• Instigate effective litter control measures and covered bins;</li> <li>• Use education to improve the social considerations of living with wildlife;</li> </ul>	<ul style="list-style-type: none"> <li>• "<i>Gardens located close to bush remnants normally have a higher probability of being visited by a diverse range of birds ...</i>" (Parsons no year, p.81).</li> <li>• "<i>Nature is often untidy and many people brought up to expect a well-kept city landscape find it difficult to accept the informal appearance of thriving wildlife habitats in a town ... low-level management is mistaken for neglect ... rather than an amenity</i>" (Gilbert 1989, pp.311-312).</li> <li>• "<i>interactions between wildlife and humans are increasing. Urban animals are often less wary of humans than their non-urban counterparts, which could be explained by habituation, adaption or local site selection</i>" (van Dongen et al. 2015, p. 1).</li> <li>• "<i>Humans and their pets are the greatest threats to native mammals</i>" (Grant 2003, p.54).</li> <li>• Education is vital; be mindful of species seasonal cycles &amp; disturbance effects.</li> <li>• Don't supplementary feed the birds or animals.</li> <li>• Educate visitors and the community not to feed the animals or birds, and recognise that:</li> </ul>

		<ul style="list-style-type: none"> <li>• Education is the best conflict-management tool;</li> <li>• Include and educate animal control officers in biodiversity management;</li> <li>• Consider negative street lighting effects on a variety of species;</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations; and,</li> <li>• Connect with Citizen Science programs.</li> </ul>	<ul style="list-style-type: none"> <li>○ this reduces the reliance on artificial food sources and reduces potential wildlife aggression,</li> <li>○ it may also lessen the attractiveness to pest species,</li> <li>○ feeding bread to ducks is an age-old pastime. Regardless of signage, some visitors and residents may continue to do so,</li> <li>○ litter management and the covering of public garbage bins also reduces the accessibility of additional food stuffs to foraging wildlife, and</li> <li>○ the proximity of groups of animals and large water-bird colonies to recreational, picnic and residential areas, has the potential to facilitate the spread of pathogens to humans.</li> <li>• Windows, glass doors or any large glass areas can contribute to glass strike, which can injure or kill a bird. If birds can see daylight through the glass, they will often try to fly through to the other side. Slowing a bird's flying speed may assist in reducing injury.</li> <li>• Artificial lighting contributes to 'moonlight' confusion and can change normal nocturnal animal behaviour patterns. Consider alternate lighting effects.</li> <li>• Educate and encourage motorists to drive more slowly at peak activity periods, especially at dawn, at dusk and at night.</li> <li>• Protect wildlife from dogs (<i>Canis lupus familiaris</i>), cats (<i>Felis catus</i>), traffic and human behaviours.</li> <li>• "Animals in urban habitats are also frequently exposed to human-related disturbances, ranging from human presence and approach to various forms of noise ..." (Payne et al. 2012, p.1).</li> <li>• "... many species of wildlife are sensitive to the presence of humans and may not use an area heavily used by humans" (Hilty et al. 2006, p.113).</li> <li>• Disturbance behaviours can include: <ul style="list-style-type: none"> <li>○ physical avoidance of an area leading to temporary or permanent reductions in population size,</li> <li>○ behavioural changes including increased vigilance at the expense of foraging or parental care,</li> <li>○ increased movement to avoid detection, and</li> <li>○ physiological effects including increased stress response with consequent increases in body temperature and heart rate along with the release of stress hormones .</li> </ul> </li> <li>• Establish public education to discourage dog walking through the North Gardens area during breeding seasons.</li> <li>• Pet waste contributes to the spread of domestic diseases to wildlife.</li> <li>• Enforce nocturnal cat (<i>Felis catus</i>) curfew and encourage thoughtful and responsible cat ownership.</li> </ul> <p><b>Microbats</b></p>
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			<ul style="list-style-type: none"> <li>• If you find a sick, injured or orphaned microbat, contact your local licenced wildlife carer, Vet or RSPCA. Observe the bat if possible, without making contact, to maintain its safety until care arrives.</li> <li>• Three species of microbats are known to carry Australian Bat Lyssavirus (ABL), a rabies-like virus that is fatal to bats and humans.</li> <li>• Members of the public should not handle bats.</li> <li>• If bitten or scratched by a bat of any species, seek medical advice immediately.</li> <li>• Human symptoms include paralysis, delirium and convulsions.</li> </ul> <p><b>Black Swans (<i>Cygnus atratus</i>)</b></p> <ul style="list-style-type: none"> <li>• Black Swans (<i>Cygnus atratus</i>) aggregate in considerable numbers around permanent water; <ul style="list-style-type: none"> <li>○ from September to February, swans experience moult of their flight feathers and are therefore grounded,</li> <li>○ Swans can be aggressive towards other native waterfowl and out-compete them for food sources,</li> <li>○ Swans are popular with people, but can become aggressive when nesting or food begging,</li> <li>○ Swans can contribute to the trampling and fouling of amenity grasslands and contribute to water quality pollution,</li> <li>○ Swans and other wildlife habituated to human presence in urban situations, have a lower flight initiation distance (FID) than those living in natural environments. This evolutionary response is transferred genetically to the next generation,</li> <li>○ Black Swan and Ibis populations may need to be monitored with an annual census, and</li> <li>○ If necessary, Licenced population control-measures may need to be implemented.</li> </ul> </li> </ul> <p><b>Australian White Ibis (<i>Threskiornis moluccus</i>)</b></p> <ul style="list-style-type: none"> <li>• The Australian White Ibis (<i>Threskiornis moluccus</i>) is the largest of the three native Australian Ibis species, and: <ul style="list-style-type: none"> <li>○ Ibis are migratory birds. Juvenile Ibis have recorded flight distances up to 3,200 km,</li> <li>○ more research is needed regarding the Ibis breeding/dispersal/ migration cycle,</li> <li>○ although considered a pest species in urban areas, Ibis numbers are declining on the inland river systems, and</li> <li>○ decline in traditional Ibis habitat has caused colonies to form in urban areas where food and water is more available.</li> </ul> </li> <li>• As stated by the Dept. Environment &amp; Climate Change NSW, "<i>Caution is required in managing large breeding colonies in urban areas as there is potential to cause considerable impact on the national status of the species</i>" (Dept. Environment &amp; Climate Change NSW).</li> <li>• Urban Ibis have become scavengers, augmenting their diets from landfill sites and rubbish bins.</li> </ul>
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			<ul style="list-style-type: none"> <li>• Management of the species includes effective litter control measures and covered bins at the North Gardens site, in conjunction with local landfill sites and waste transfer station.</li> </ul>
<p><b>WILDLIFE CROSSINGS AND UNDERPASSES</b></p>		<ul style="list-style-type: none"> <li>• Create and maintain vegetated corridors and links to neighbouring areas for seasonal wildlife movement;</li> <li>• Consider the need for wildlife crossings in trafficked and urban locations;</li> <li>• A waterfowl underpass is proposed at the North Gardens and Fairyland crossing place, on Lake Wendouree Parade; and</li> <li>• Establish long-term monitoring as part of education links, to assess success of implementations.</li> </ul>	<ul style="list-style-type: none"> <li>• The home range for various wildlife species can be quite considerable.</li> <li>• Connecting habitat corridors and greenways reduces the need for wildlife to cross at roads and railways.</li> <li>• Arboreal mammals are having to climb down to ground level due to tree canopies diminishing , and greater distance between trees. They are then killed crossing roads or from attacks by dogs, cats or foxes.</li> <li>• Wildlife crossings are mostly purpose-built to suit the variety of different species. In Australia, these include fauna tunnels, aerial rope ladders, retrofitted drains and culverts, poles, nets, and rope bridges. Research confirms that fauna seek-out these crossings once they are familiar with their use.</li> <li>• Studies worldwide have shown a diversity of species successfully using water culverts to cross roadways from underneath.</li> <li>• Studies indicate animals prefer to keep their paws dry. Installing internal ledges above the water-line to traverse culverts, has been very successful.</li> <li>• Consult Council statistics for Black Swan (<i>Cygnus atratus</i>) and waterfowl incidents at the busy Gregory Street and Lake Wendouree Parade crossing areas to address the traffic death rate.</li> <li>• During the North Garden site visits, the design team observed, on numerous occasions, that Black Swans (<i>Cygnus atratus</i>) and smaller waterfowl were effectively using the culvert underneath the road between North Gardens Wetlands and Fairylands as an access route between the two, rather than crossing the roadway itself. A purpose-built Waterfowl Underpass is therefore proposed, for the Lake Wendouree Parade - North Gardens and Fairyland crossing place.</li> </ul>

## 6. INTERPRETATION STRATEGY

### 6.1 Vision and Directions

The overarching vision of *Mirambeek Murrup*: North Gardens is to highlight *Wadawurrung* culture of the Ballarat region in a contemporary way, but honouring the ancient ways of knowing.

This approach aligns with the City of Ballarat's *Reconciliation Action Plan 2019-2012* (City of Ballarat, 2019) of creating "greater awareness; increased opportunities; improved relationship; improved engagement; and enhanced financial support" for the local Aboriginal community. The *Reconciliation Action Plan* (2019: 31) also embraces the local Aboriginal and Torres Strait Islander (ATSI) community to "tell their own story and highlight their connection to Ballarat and its cultural heritage. (Source: point 15 under 'respect' page 31 RAP)

This would include the ancient bloodline connections of the *Wadawurrung* as well as the modern historical connections of other ATSI peoples; this could be through familial links or through more modern connections to place.

The narrative of the Lake Wendouree region began millennia ago. The vision of *Mirambeek Murrup*: North Gardens is to showcase this narrative to all visitors be they local, national and international guests. To envision this place is to highlight the importance of this place, the timeline of this place, and the shared history of this place. 'Ballarat', meaning 'resting place', has had a varied history through time and the aim of this Master Plan is to showcase that *Wadawurrung* and Aboriginal culture as a whole is not a relic from the past, but something that is living, just like the *Mirambeek Murrup*: North Gardens ecosystems, and will continue into the future.

To realise this vision, through the shared history of place, is to recognise and make *Wadawurrung* culture relevant and to be in the present for everyone to enjoy throughout the entire 'timeline'.

Even though *Mirambeek Murrup*: North Gardens is a human-made water filtration system, it is linked to the ancient wetland systems of what Ballarat residents now known as 'Lake Wendouree', that in the *Wadawurrung* language means 'go away'. *Mirambeek Murrup*: North Gardens means "our spirit, our belongingness". The Gardens is connected to Lake Wendouree by waters flowing through Fairylands, a small manicured area full of grasslands and European trees and plantings, but it is also connected in human mind and memory whether *Wadawurrung* or Ballarat resident.

*Mirambeek Murrup*: North Gardens has much potential in creating spaces that can be shared by not only the local *Wadawurrung* traditional custodians, but also by other ATSI communities and non-Indigenous locals and visitors nationally and internationally.

By incorporating a design plan that encompasses the reintroduction of native wetland plants in the central core – *dharra* (heart) – of the North Gardens Wetlands – *Mirambeek Murrup*, then 'encircling' it with trees, shrubs and grasses, and then encircling it with an outer 'circle' eventually into the existing European tree line, will present a series of cocoons that protects the heart, the *dharra*, the bloodlines, and the essence of the place.

The inner circle reclaims the 'beating heart' of *Country* that ripples out to all other living things. This also represents the shared journey of Ballarat, Victoria and Australia as a whole. *Mirambeek Murrup*: North Gardens can be utilised and enjoyed by all, with the underpinnings of culture, language and original ecosystems being recreated in a contemporary human-constructed setting. With water being the main connection between both *Mirambeek Murrup*: North Gardens and the Fairylands, this could be a main focal point for any future interpretations into the shared histories of place.

The way that *Mirambeek Murrup*: North Gardens is and should be reimagined is as a platform for reclaiming a space. Reclaiming a space for cultural expression involves not only things like dance, song, story, ceremony and cultural activities for all to share, but it also allows and involves for practices that have been reclaimed throughout Victoria - cultural burning, rights of passage. Practice – 'the customary, habitual, or expected procedure or way of doing of something' – is essential to *Wadawurrung* being, but it is equally relevant to non-*Wadawurrung* peoples in their ritualistic lifestyles and journeys through life and through this place whether daily, weekly, yearly or intermittently. For example, the planting of select and culturally-relevant Indigenous grasses and shrubs, enables small demonstrations of how this cultural practice has 'manicured' the Australian landscape since time-immemorial, and is today an accepted practice of community land care ('Caring for Country') and revegetation initiatives. The *Wadawurrung* have trained cultural burners who could facilitate these burns to engage the wider community as well as enabling cultural immersion, and a cross-cultural expression. While *Mirambeek Murrup*: North Gardens is too small to have large scale burns, it would be apt for smaller 'demonstrations' that could be invaluable to the narrative of the Ballarat area, of cultural reclamation, and how such can still be practised in urban settings. Highlighting that Aboriginal, and specifically *Wadawurrung* culture, is still alive and they still care for *Country*.

*Mirambeek Murrup*: North Gardens should be envisioned as a great opportunity for the Ballarat Botanical Gardens to host diverse reclaimed collections of local Indigenous and Australian plants in Victoria, or Australia, within an ecosystem. The environment allows for grasslands that could include lily species, such as Bulbine (*Bulbine bulbosa*) and Chocolate Lily (*Arthropodium strictum*). The Murnong (*Microseris lanceolata*) could also be harvested annually, like how the Friends of Merri Creek do every November along the Merri Creek in Coburg. North Gardens Wetlands – *Mirambeek Murrup* also has environments suitable for water species to flourish.

*Mirambeek Murrup*: North Gardens could be maintained with the correct cultural maintenance practices connected with the modern ways of maintenance. It could be a hub for botanists, etc., to demonstrate how working together in reclamation can support a wide variety of wildlife and plant life, recreating ecosystems in a human-made setting by working together.

According to the City of Ballarat's *Reconciliation Action Plan 2019-2021*, by collaborating with *Wadawurrung* people would enable a platform for training in many areas including cultural tourism and cultural heritage management in partnership with Wathaurung Aboriginal Corporation. This interpretative strategy aligns with the opportunities flagged in the *Reconciliation Action Plan 2019-2021*, of exploring "opportunities to promote and strengthen traditional land practises on City of Ballarat owned land" (City of Ballarat, 2019: 35).

## 6.2 Learning Approaches and Educative Strategies

The general public, whom have lived in Ballarat and Lake Wendouree areas for many years, and those whom have recently moved into these areas would benefit from the narrative being told in its entirety. The Creational beginnings of the physical and spiritual landscapes of the *Wadawurrung*, and how they connect regionally, would be essential. The timeline then could move onto the more modern history of the area, such as the gold rush, but also incorporate how Aboriginal people assisted in this rush as this is an often-forgotten aspect of the era. This way, the timeline or journey of place is articulated in a way that would open the eyes of many whom have not recognised that *Wadawurrung* and Aboriginal people have been a constant landscape participant throughout all time, and therefore not separated from it. This is highlighted in the 'dharra' spatial structure of the proposed plantings. By reintroducing the native plants in the 'dharra' spatial circle, then leading into the periphery with more of the grassland species that once flourished all around Ballarat, then the European connections, evident through the English Elms (*Quercus robur*) and Weeping Willows (*Salix babylonica*) that line *Mirambeek Murrup*: North Gardens and the Fairylands, the re-vegetation interpretive and experiential structure can be achieved.

There are many opportunities to incorporate education experiences and learning outcomes into *Mirambeek Murrup*: North Gardens through cultural activities for the wider community. This could include cultural tours by *Wadawurrung* people with groups and school excursions, but also self-guided interactive tours.

These types of tours can prompt questions that can also be posed on signage that children could search for. For example, "What kind of plant can you see around you and what is it used for?" This could relate to weaving grasses that are strategically planted around the sign. This could also focus on the importance of the local animals such as the *Rakali* (water rat; *Hydromys chrysogaster*), *Kunuwarra* (Black Swan; *Cygnus atratus*) and *Buniya* (Short-finned Eel; *Anguilla australis*). This could connect back to Deanne Gilson's *Murrup Laarr* sculpture, with the sculpture work being the template for any type of signage/interactive signage.

For tertiary study they can also focus on Deanne Gilson's *Murrup Laarr* seasonal/elemental sculpture work and relate it to the *Wadawurrung* seasons for the Ballarat plains, the formation of the surrounding volcanic landscape and how these narratives are all connected through the chains of wetlands and extinct volcanoes. Furthermore, they could research how these are also connected to language regionally, and to the important cultural underpinnings found therein. Then eventually, research could consider how these all relate to the stars of which have their own *Wadawurrung* creation narratives. This would assist in creating a greater picture of *Wadawurrung* culture directly from *Wadawurrung* people for everyone to embrace.

*Mirambeek Murrup*: North Gardens something that the *Wadawurrung* should primarily narrate and author as it is their story that no one else can tell; it is their morale rights and intellectual property. These narrations could highlight key aspects of their Creation Narratives for the region. It could also include key phrases and names that have been used throughout *Mirambeek Murrup*: North Gardens and Fairylands that the *Wadawurrung* have consented to for their use in the public domain. Too often you will read on webpages the generic terms and references to Aboriginal culture in a past tense; this is an opportunity to change this grammatical error into one of culture being dynamic and not a stagnant culture from the past. It could also highlight how the City of Ballarat will be guided and assisted in landscape management practices by and with the *Wadawurrung*.

It is very evident that small patchwork burns could possibly occur in *Mirambeek Murrup*: North Gardens grasslands under the guidance of the *Wadawurrung* fire keepers (people who have cultural burn knowledge sets). This continued practice could be paralleled with secondary and tertiary school research projects that monitor patch burns, regeneration and regrowth, and species reclamation.



Tertiary students could research the plant life and cycles of *Mirambeek Murrup*: North Gardens and Fairylands. They could compare them with the regional waterbodies that are connected to the *Wadawurrung* narrative of places such as *Mullawallah* (Winter's Swamp), *Burrumbeet* (Lake Burrumbeet), Lake Learmonth, *Lal Lal* (Lal Lal Falls) and *Warrenyeep* (Mt Warrenheip), *Bonang Youang* (Mt Buninyong), etc., to consider and narrate how a redeveloped 'human-made' landscape compares to the naturally formed ones. Another focus could be 'cultural flows' that can be recreated from the bore water that the City of Ballarat currently accesses in drought times.

### 6.3 Interpretation Technologies and Strategies

Other ways that demonstrate cultural values and belief systems to visitors to *Mirambeek Murrup*: North Gardens is through the use of interpretive signage. This however should be designed and 'authored' by the *Wadawurrung* themselves, as with the signage to Deanne Gilson's *Murrup Laar* (Ancestor Stones) sculpture piece. The signage around *Mirambeek Murrup*: North Gardens and the Fairylands could be directly linked to the themes within Deanne Gilson's artwork that revolves around elemental approaches to seasons, ceremony and gathering. Also, the roles of men and women, the stars, moon, sun, the Southern Cross, Murnong (*Microseris lanceolata*), shields and Black Swans (*Cygnus atratus*). An important theme of water should be considered as the cultural connector and thread in works that connect everything together. Language could form an essential part of any hardcopy / electronic signage because language needs to be utilised so it does not retreat into only *Wadawurrung* memories. All language should be gained and utilised with permission directly from the *Wadawurrung* people.

Further signage throughout *Mirambeek Murrup*: North Gardens could be placed at vantage points to connect back to the Creation Narratives. One sign, in particular, should be positioned at one of the path junctions (marked as 'Observation Point' on North Gardens Landscape Masterplan) that has a sightline directly towards Mt Warrenheip; this location affords a perfect opportunity to express this narrative to visitors.

An opportunity could be to incorporate a more interactive way of interpretation by using digital technology. An example could be a soundscape connected to each sign. This involves the introduction of each 'point' through a physical sign that is designed in a cultural way to blend into the environment around it, and then having a QR code that people can scan on their smart phones for a more in-depth, immersive viewing/telling of the narrative. This idea was recently successfully executed at the Abbotsford Convent in Melbourne. The technology incorporates *Wurundjeri* songs, voices, narratives and lived cultural expressions and experiences. This technological approach would enable the *Wadawurrung* to have more input into the overall 'cultural planning' of *Mirambeek Murrup*: North Gardens. There could also be an opportunity for a series of signs to 'travel' the shared history timeline and incorporate more recent histories of Ballarat. This digital voice information can all link back to respective authorised websites with additional educational resources. It could have links to the *Wadawurrung* Language App -- <https://vaclang.org.au/projects/wathawurrung-ipad-app.html> -- that was produced through the Victorian Aboriginal Corporation for Languages (VACL) for the *Wadawurrung* (Wathaurung Aboriginal Corporation). This *Wadawurrung* Language App has many animal and plant names that could be directly connected to those found in *Mirambeek Murrup*: North Gardens and the Fairylands.

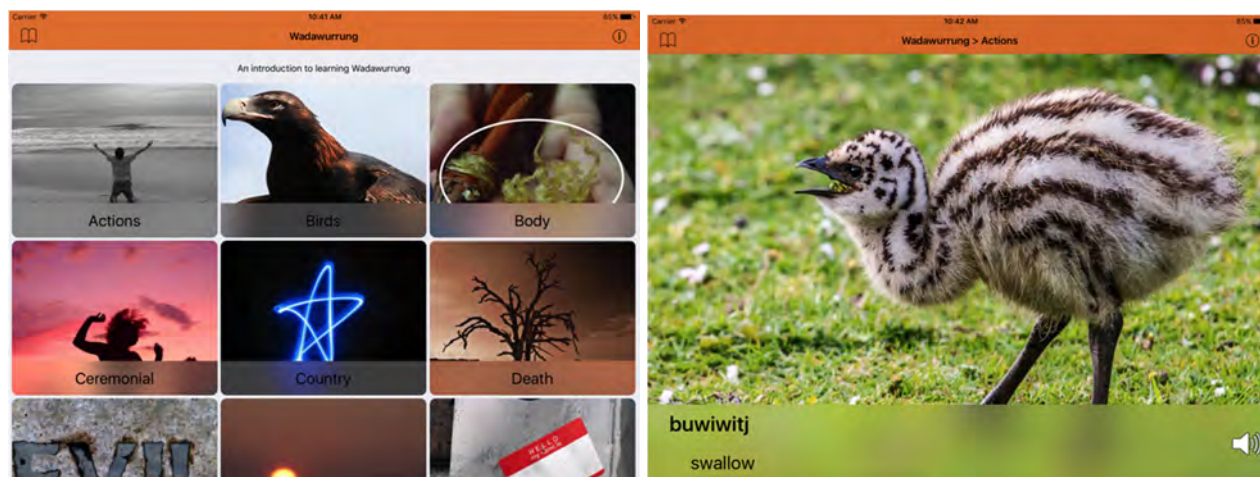


Figure 6.3.1 Screenshots from the Wadawurrung Language App. Source: <https://apps.apple.com/us/app/wadawurrung-language-introduction/id1162480939/?platform=ipad>

### 6.4 Fairylands

While the Fairylands is physically separated from North Gardens Wetlands – *Mirambeek Murrup* by Wendouree Parade, it is still connected via the water that flows underneath Wendouree Parade, eventually into the Lake, as well by the animals and birds that commute between both tracts of land. The importance of water to *Wadawurrung* Peoples is significant. It can be likened to the importance of cultural burning, and being able to have vantage points to look over *Country* and manage it in a more overarching way.

One important aspect in the Fairylands is maintaining vantage points in a more modern context by having a few select trees in the Fairland precinct trimmed so to enable and reinforce the cultural re-imagination these vantage points and rekindle the Creation Narratives the *Wadawurrung* have for the volcanic mountains *Warrenyeep* (Mt Warrenheip), *Bonang Youang* (Mt Buninyong), *Kareet Bareet* (Black Hill) of the Ballarat region. One of the most prominent being *Warrenyeep* (Mt Warrenheip) to the southeast of Ballarat that connects to the regional wetlands, and volcanic plains. The Creation Narrative is discussed further in the Master Plan

### **6.5 Copyright and Intellectual Property**

All *Wadawurrung* cultural knowledge, practices, language, narratives, songs and dances are owned by the *Wadawurrung* people. They have chosen to share certain aspects of their knowledge to the wider public, but this still remains the intellectual property of the *Wadawurrung* and should not be manipulated or appropriated anywhere else unless under their consent. This scope and obligation is outlined in the Indigenous Cultural & Intellectual Property (ICIP) rights of Aboriginal people. Publicly available knowledge that is found online, is different to personal individual knowledge that has been provided in this Masterplan, and should also be treated in accordance with ICIP requirements.

Intellectual Property rights and copyright, recognise that under the *Copyright Act 1968* (Cth) (ss 35, 77, and 194-195), "that all parties need to recognise and respect the moral rights and copyright of public art and Indigenous authors (including Indigenous Cultural and Intellectual Property ICIP). These obligations are also contained in clauses under the *Designs Act 2003* (Cth).

## 7. MASTER PLAN



Figure 5.0 *Mirambeek Murrup*: North Gardens upper pool. Photo: DS Jones



Figure 5.1 Location of *Mirambeek Murrup*: North Gardens in relation to Lake Wendouree, Flaxman's Wetlands and Mullawallah (Winters Swamp)

### 7.1 Towards a Master Plan Philosophy

The threads of these consultations and listenings with the *Wadawurrung* revealed and cast aside different conventional landscape design thematic responses to the place, and identified a design strategy with the theme of 'Caring for Country' or healing, notionally characterised by a 'series of food-ponds' narrative.

It is therefore helpful, to the lay person, to explain how this specific narrative was realised, and where it sits within *Wadawurrung* culture (Powell 2018; Powell *et al* 2018; Powell & Jones 2018).

While stories about *Borombeet* (Lake Burrumbeet) are common, they are not locationally relevant to *Mirambeek Murrup*: North Gardens site (Massola 1968a; Powell 2015e).

Similarly, it was clear that narratives about the role of *Bonan Youang* (Buninyong) in creating several of Ballarat's physical landscape features, and his present apparition in Mount Buninyong, were evident (Stanbridge 1861: 300; Massola 1962: 110; Alberts in Massola 1962: 110; Massola 1968b: 28; Wright 2014: 59-61; Powell 2015b).

However, the emergence of *Bunjil* at *Kareet Bareet* (Black Hill) near Gordon (Massola 1968d; Powell 2015a, 2015f), his rest at Lal Lal Falls (Massola 1968c; Powell 2015a, 2015f), and the journey passage of *Lo'an* from *Wotjobaluk* Country across *Wadawurrung* Country to *Gunaikurnai* Country (Massola 1968e) were not pertinent.

It was also clear that existing place names or their incarnations were equally not of paramount significance but were of human orientation relevance to the place and therefore needed to be considered. This included the place names of *Warrenyeep* (Mount Warrenheip) (being a 'place of feathers' referring to the Bracken Fern (*Pteridium esculentum*) on the mount (Powell 2015g; Withers 1887: 13-14)), *Lal Lal* (Lal Lal Falls) (being the "dashing of waters" (Powell 2015a)), *Bonan Youang* (Buninyong and Mount Buninyong) (being linked to two Creation Beings (Stanbridge 1861: 300; Massola 1962: 110; Alberts in Massola 1962: 110; Massola 1968b: 28; Wright 2014: 59-61; Powell 2015b)), *Ballaraat* (Ballarat) that means 'resting place' or 'bended elbow' (Powell 2015c), *Wendouree* that means 'go away' (Powell pers.comm. 2018)], and *Wadawurrung* graphic icons (diamonds, waves, of cross-hatches) (Gilson 2018) or *Mullawallah* (Anon 1884; Newton 2014).

*Mullawallah*, or 'King Billy', is a colonial-period *Wadawurrung* Elder now recognised in the epithet of 'Mullawallah Wetlands' replacing the colonial epithet of 'Winter's Swamp' (Anon 1884; Newton 2014). Thus, the mounts of *Bonan Youang* (Buninyong) and *Warrenyeep* (Warrenheip), being visually in the sightline of *Mirambeek Murrup*: North Gardens, through the Fairylands, across Lake

Wendouree, are important to bring into the *Mirambeek Murrup*: North Gardens landscape master plan, as they all form the regions creative narrative.

It was also evident that tension existed within the *Wadawurrung* community about a recent Aboriginal-inspired Playspace installation on the side of Lake Wendouree as not 'sitting' harmoniously within their aspirations (Spencer 2016).

Consequently, the design inspirations of place name, myth, story, animal, etc., that are normally identified as priorities by the Western design professions (as embodied in several prominent Australian Institute of Architects (AIA) and Australian Institute of Landscape Architects (AILA) profession-awarded projects), were identified as secondary attributes arising from the larger vision. This conclusion runs counter to the conventional propensity of contemporary built environment Australian design to historically, over the last 30 years, seek inspiration in the tangible, in the iconography, in the public domain stories of place and *Country*, like 'cathedrals' of how to celebrate heritage. Instead, the core philosophical role and purpose of Aboriginal custodianship, epitomised in the now mis-used 'Caring for Country' metaphor, is little understood and encapsulated into a design response. This results in the living heritage of the place, or the vernacular of a cultural landscape (which is increasingly being termed in anthropological literature a 'Living Station'), being overlooked. Supporting this is the contemporary practice of the phrasing of Aboriginal culture in past tense.

While it is evident that 'bush tukka' philosophically informed the original 1999-2001 landscape design and plantings around *Mirambeek Murrup*: North Gardens, it is equally evident that the species selection was general to the Ballarat landscape region. The latter was dependent upon native plant species tubestock availability in the Council's nursery resulting in a native plant profile in contrast to establishing an Indigenous plant profile or an Indigenous 'bush tukka garden'.

With these characteristics in mind, the design inspirations of *Wadawurrung* seasons with the bringing forward of food plant harvesting and artefact fabrication and construction as high priorities were not identified as important (typical of several prominent AILA landscape architecture profession-awarded projects), and were also identified as secondary attributes arising from the larger vision.

Additionally, during these listenings and wanderings, terrestrial and aquatic animals and bird species, including the:

- *Padjerook*: Sacred Ibis (*Threskiornis molucca*),
- *Porronggiti*: Brolga / Native Companion (*Antigone rubicunda*),
- *Kunawarra*: Black Swan (*Cygnus atratus*),
- *Rakali* (*Hydromys chrysogaster*),
- *Barnong*: Common Ring-tailed Possum (*Pseudocheirus peregrinus*),
- domestic Cat (*Felis silvestris catus*), Red Fox (*Vulpes vulpes*),
- *Bunjil*: Wedge-tailed Eagle (*Aquila audax*),
- *Waa*: Australian Crow (*Corvus coronoides*),
- Mudlark (*Grallina cyanoleuca*),
- Dragonfly,
- Fingerling and
- *Buniya*: Short-finned Eel (*Angullia australis*),

were mentioned.

There were also terrestrial animals but with no references to their *Wadawurrung* totemic or astronomical presence or their continuing roles, less the oversight role of *Bunjil* (as embodied in the Wedge tailed Eagle; *Aquila audax*), including *Waa* (Australian Crow; *Corvus coronoides*) (Massola 1968e; Gilson 2018; Powell 2015f, 2018; Powell *et al* 2018; Powell & Jones 2018; Powell pers.comm., 2018). Animals including *Wa-durring* (Platypus; *Ornithorhynchus anatinus*), *Go-yin* (Swamp Wallabies; *Wallabia bicolor*), *Goim* (Eastern Grey Kangaroos; *Macropus giganteus*) or *Buniya* (Short-finned Eel; *Angullia australis*), that would also have been present in this pre-European colonised landscape, were not mentioned.

Of these, the antics of the playful Mudlark, the *Mirambeek Murrup*: North Gardens–Fairlyland commuting of *Kunawarra* (Black Swan) and their infrequent Lake Wendouree Parade road deaths, and the overzealous territoriality of *Padjerook* (Sacred Ibis), were also narrated by the *Wadawurrung* in the context of their physical presence, in addition to the need to manage their habitats and populations.

In terms of habitat management, there was a desire expressed to enrich the habitat diversity; to reconsider the plant profile; to enhance biodiversity opportunities; to provide havens for the *Rakali*; to mediate the *Kunawarra* (Black Swan) death rate and population; to mediate *Padjerook's* (Sacred Ibis') population and habitat over-grazing damage; and to undertake strategic plant species renewal of *Mirambeek Murrup*: North Gardens towards a more relevant Indigenous profile so as to enhance the biodiversity of the place.

There was also no reference to the place holding a specific cultural ceremonial role (Anon 1857, 1861), although recognition was made to the hosting of corroborees around the western edge of Lake Wendouree that involved both *Wadawurrung* and non-*Wadawurrung* representatives (presumably of the *Kulin Nation*) in the 1800s. Additionally, there was the desire expressed to recommence these events near to *Mirambeek Murrup*: North Gardens in the Lake Wendouree Park Lands, similar to the re-establishment of *Tanderrum* at Federation Square in Melbourne (Anon 2017; Lindsay 2017; Melbourne Festival 2015), perhaps as an annual *Kulin Nation* gathering.

'Fairylands', a post-European creation by virtue of an embankment at the Lake's watercourse natural exit, now subsumed by Willows (*Salix babylonica*), and echoing an enchanted European child's play venue, was little mentioned. When it was, it was in the negative context of the European-colonised vegetation, and its poor transition between *Mirambeek Murrup*: North Gardens and the former 'Wendouree wetlands' (of the Lake itself).

Through this process, the traditional design themes of story, myth, animals, season name, visual connectivity, etc., that architects, planners, and / or landscape architects 'latch onto'; as their design inspiration(s), were all progressively directly or indirectly canvassed in the listenings and wanderings, and deleted from the landscape design strategy.

It was a theme about the contextual position of the place of *Mirambeek Murrup*: North Gardens, and its relationships to Lake Learmonth, Lake Burrumbeet, Mullawallah (Wetlands), Flaxman's Swamp, Reedy Creek Waterholes, Lake Wendouree (in its pre-embankment days) and Yarrowee River as a 'series of food-ponds' that instead resonated.

This theme was a narrative of interconnected places to being the quality potable permanent water that hosted a rich habitat and food supermarket to both humans and animals alike.

Instead, it was the 'heart' or *djarra* of this 'series of food-chains', as expressed in Figure 5.2, both as a place interconnected as well as a place in its own right, of the *Keelup baluk* clan Country, and their living relationship to this place, that continuously threaded the quiet tone of the listenings, wanderings and discussions.



Figure 5.2. *Djarra* of Place. Source: Authors.

## 7.2 Textual, Tangible and Public Art Narrative and Directions

The 'heart' or *djarra* of this 'series of food-chains', are expressed in Figures 5.3 and 5.4, that conceptualise the design strategy for the North Gardens radiating from its *djarra* at A outwards to a post-colonisation landscape at C.

Figure 5.3 expresses the *djarra* to post-colonisation A to C in terms of time, volcanic plain formation, vegetation and habitat re-establishment and re-planting, water quality treatment and language.

This Landscape Master Plan therefore acknowledges the Wadawurrung desire to heal the *djarra* of this place. To action this is to renew the larger *djarra* blood circuitry environmental system as part of renourishing a core part of the *Keyeet balug* clan *Country* specifically, and the *Wadawurrung Country* generally, to the betterment of the Ballarat landscape and its community. *Mirambeek Murrup: North Gardens* offers one pond in the larger story for healing this landscape.

Figure 5.5 therefore embodies that philosophical strategy, whilst integrating the conventional City of Ballarat parks, gardens and landscape planning, planting and maintenance requirements, as well as the thoughts from the community.

In articulating this philosophical strategy, as a Consultant Team we are conscious, also, that at *Mirambeek Murrup: North Gardens*, we are the co-authors of a new canvas in consultation, and not the sole authors. *Mirambeek Murrup: North Gardens* is a canvas that needs to sympathetically accommodate past, present and future, respecting *Wadawurrung* culture specifically (and Aboriginal culture generically) and their aspirations, whilst also responding to the aims of the City of Ballarat's brief as the funding client (City of Ballarat 2017).



Figure 5.3: Proposed *Mirambeek Murrup: North Gardens* theoretical landscape design and sculpture relationship strategy. Source: authors.

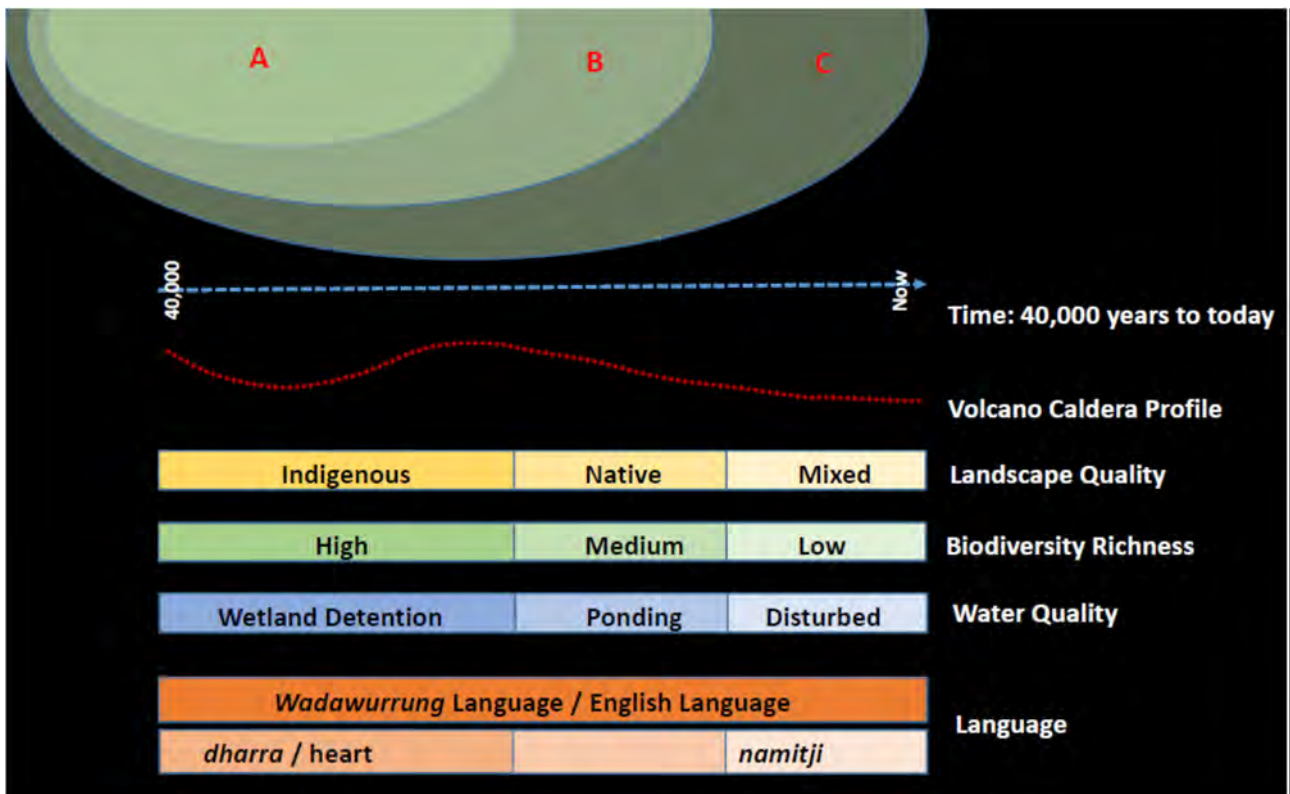


Figure 5.4: Detailed translation of the proposed *Mirambeek Murrup: North Gardens* theoretical landscape design and sculpture relationship strategy. Source: authors.

Arising from the preceding analysis, consultations, and research of information, the following:

- ✚ Plan Design Principles are offered as the influencers and rationale in informing the actual spatial Plan for the Gardens and Fairylands;
- ✚ Master Plan Recommendations are tabled as conclusionary points that may guide the future implementation of the Landscape Master Plan and its hosting of activities and public art.

### 7.3 Design Principles of the Masterplan

- ✚ Propose a *Wadawurrung* culturally respectful landscape master plan that fulfils the City of Ballarat's aspirations and enables an innovative platform for Indigenous public art display and celebration in conjunction with ecological habitat and water systems enrichment of *Mirambeek Murrup: North Gardens* and Fairylands.

With this in mind, the Landscape Master Plan seeks to:

- Create an interactive and flexible venue for the display and performance of Indigenous-informed public art, including enabling flexibility of mode, type, siting, site evolution in a non-cluttered and environmentally-rich setting;
- Encourage ecological biodiversity richness of habitat opportunities including nurturing Indigenous and endangered species regeneration, enabling quality succession and greater species habitat security, towards crafting a rich biological and healthy environment as a key component of the overall Ballarat Botanical Gardens landscape;
- Enabling the continued water cleansing role of the site, but updating existing technologies and flows, mediating seasonal water variations, and enhancing water aeration and qualities before flows exit into Lake Wendouree;
- Create a distinct *Mirambeek Murrup: North Gardens* Entrance space that welcomes visitors to the cultural and ecological qualities and aspirations of *Mirambeek Murrup: North Gardens*, and enables opportunities for future interpretative and activities without compromising the design and interpretative integrity of the Entrance;
- Empower *Wadawurrung* Indigenous Knowledge Systems and *Country* philosophy as the over-arching management vision for *Mirambeek Murrup: North Gardens*, including enabling regular *Wadawurrung* and Aboriginal use of *Mirambeek Murrup: North Gardens*, and continue an European landscape aesthetic for Fairylands that merges into the overall Ballarat Botanical Gardens and Lake Wendouree landscapes;



- Providing an innovative venue to enable culturally-rich interpretative opportunities and learning settings across a range of technologies and learning places;
- Enable a strategic and *Wadawurrung* Indigenous Knowledge Systems informed grassland burning regime in select areas of *Mirambeek Murrup*: North Gardens led by the *Wadawurrung* in collaboration with the City of Ballarat;
- Create and strengthen pedestrian entry gates in the Gardens, and enable more creative and safer animal entry routes into *Mirambeek Murrup*: North Gardens and Fairyland;
- Strengthen the safety of humans and wildlife interconnecting, passing through, and passing by the Gardens and Fairyland;
- Enable opportunities for visual sightlines into and out of *Mirambeek Murrup*: North Gardens and Fairylands generally, and distinct visual connections between the new *Mirambeek Murrup*: North Gardens Entrance area and *Warrenyeep* (Mt Warrenheip) specifically;
- Establish human, wildlife, visual and biological connections between *Mirambeek Murrup*: North Gardens and Fairylands, whilst respecting their distinct characteristics; and
- Provide opportunities for select community and *Wadawurrung* gathering and learning activity venues inside the Gardens that enable dance, language, experimentation, public art, culture, story, lecture and song to be entertained.

#### 7.4 Master Plan Recommendations

- ✚ Implement a *Wadawurrung* culturally respectful landscape master plan that fulfils the City of Ballarat's aspirations and enables an innovative platform for Indigenous public art display and celebration in conjunction with ecological habitat and water systems enrichment of *Mirambeek Murrup*: North Gardens and Fairylands.

Having to the above, and the Report, that the City of Ballarat:

- ✚ adopt the *North Gardens Indigenous Sculpture Landscape Master Plan* as its overarching guide for the future management for *Mirambeek Murrup*: North Gardens and Fairylands precincts;
- ✚ should re-affirm its policy commitment to *Mirambeek Murrup*: North Gardens serving as a prospective nationally significant Indigenous sculpture / public art venue, including its role in supporting the City of Ballarat's *Reconciliation Action Plan 2019-2021* (2019), as well as the use of *Wadawurrung* language in place nomenclature and all interpretative information about the place and its qualities;
- ✚ should manage, enable and oversight public art provision in *Mirambeek Murrup*: North Gardens by a relevant City of Ballarat committee, that includes a *Wadawurrung* (*Wathaurung* Aboriginal Corporation) representative, and pro-actively seeks to source additional funding external to the City of Ballarat to fulfil the Master Plan, aligned to the Public Art concerns and requisites contained in this Report;
- ✚ should pro-actively fund public art commissions and or expression of interest art installation calls, recognising the concepts and requisites contained in this Report, on an incremental and regular basis over a long-term implementation strategy
- ✚ should consider partnerships with the Art Gallery of Ballarat and Her Majesty's Theatre for the staging of art exhibitions hosting of joint Aboriginal and Torres Strait Islander-themed programs and performances, aligned to the City of Ballarat's *Reconciliation Action Plan 2019-2021* (2019) for indoor venue uses;
- ✚ should encourage and enable regular *Wadawurrung* and Aboriginal cultural use of *Mirambeek Murrup*: North Gardens as an activity and gathering venue and education platform allied to its role in hosting public art, aligned to the *Wadawurrung* discussions in this Report;
- ✚ review the health, quality, biodiversity richness, successional patterns and potential, and plant species profile of the existing *Mirambeek Murrup*: North Gardens towards species renewal and renourishment, to better enhance the health and capacity of the vegetation profile in attracting, ensuring security, enabling burning, and sustaining both Indigenous plant and wildlife species relevant to this place, as well as raising awareness of *Wadawurrung* plant traditional uses and applications, aligned to the Biodiversity discussions in this Report and the City of Ballarat's *Reconciliation Action Plan 2019-2021* (2019)
- ✚ review the health, security, longevity, and cultural applicability of vegetation in the Fairylands as to successional management, incorporation of culturally-relevant sightlines from *Mirambeek Murrup*: North Gardens, and its capacity to host quality wildlife habitats, aligned to the Biodiversity discussions in this Report;
- ✚ undertake a water systems review of *Mirambeek Murrup*: North Gardens as to whether current cleansing, vegetation filtration, water aeration, water storage/retention, water release interpretation is aligned to and is achieving its original designed purposes and expectations, and whether renovations are now required to address changing hydraulic technologies, water science, and cultural requirements to the betterment of the water management system;

- ✚ prepare a Landscape Standards manual for *Mirambeek Murrup*: North Gardens and Fairylands that, aligned to the existing Ballarat Botanical Gardens Standards/templates, that addresses the design/construction/siting of pathways, fencing, interpretation and directional signage, lighting, human and wildlife security, electricity access internal to the site, grassland burning and management, drainage and any other relevant infrastructure.
- ✚ review current internal and external staffing for *Mirambeek Murrup*: North Gardens and Fairylands precincts, including employment internship opportunities and outsourced maintenance and rehabilitation works, to ensure adequacy of staffing commiserate to the overall Ballarat Botanical Gardens, but also pro-actively enables Aboriginal employment opportunities aligned to the City of Ballarat *Reconciliation Action Plan 2019-2021* (2019).
- ✚ enable the re-naming of North Gardens Wetlands to *Mirambeek Murrup*: North Gardens in line with Wadawurrung (Wathaurung Aboriginal Corporation) consultations during this project, and aligned to the City of Ballarat *Reconciliation Action Plan 2019-2021* (2019).
- ✚ ensure that all relevant planning, heritage and environmental statutory policy and requirements be addressed by the City of Ballarat to enable the implementation of the Plan;
- ✚ all parties recognise and respect the moral rights and copyright of public art and Indigenous authors (including Indigenous Cultural and Intellectual Property ICIP) as set out under the *Copyright Act 1968* (Cth) ss 35, 77, and 194-195, as well as clauses under the *Designs Act 2003* (Cth).
- ✚ *Mirambeek Murrup*: North Gardens should be viewed as key component in the City of Ballarat's *Reconciliation Action Plan 2019-2021* (2019), and that *Mirambeek Murrup*: North Gardens should used as a platform to action and enable the Plan's stated Relationships, Respect and Opportunities Actions.



Figure 5.5: North Gardens Landscape Design Master Plan. Source: authors.



- Adams, G. (2015) *Birdscaping Australian Gardens: using native plants to attract birds to your garden*. Penguin Random House Australia.
- Adams, G. (2018) *The Complete Guide to Australian Birds*. Penguin Random House Australia Pty Ltd
- Adams, G. (Reprint 1998) *Birdscaping Your Garden*. Lansdowne Publishing Pty Ltd. Sydney NSW
- Ahern, J. Leduc, E. and York, M L. (2006) *Biodiversity Planning and Design: sustainable practices*. Landscape Architecture Foundation. Island Press. Washing DC USA
- Allaby, M. Ed. (2003) *Oxford Dictionary of Zoology*. 2<sup>nd</sup> Edition. Oxford University Press. Oxford. England.
- Allaby, M. Ed. (2005) *Oxford Dictionary of Ecology*. 3<sup>rd</sup> Edition. Oxford University Press. Oxford. England.
- Anon (2017), *Tanderrum: Performed by the clans of the Kulin Nation*, facilitated by Ilbjerri Theatre Company. Available at: <<https://2017.festival.melbourne/events/tanderrum/#.WusOQKLIY5o>> (accessed 1 March 2018).
- Anon. (1857), A Corroboree, *Bendigo Advertiser*, Friday 27 March 1857, p 3.
- Anon. (1861), Ballarat, *Geelong Advertiser*, Thursday 14 March 1861, p. 3.
- Anon. (1884), The Land Tenure Question, *Kerang Times and Swan Hill Gazette* 3 June 1884, p. 4.
- Atkinson CA, Lund MA and Morris KD (2008), BiblioRakali: The Australian water rat, *Hydromys chrysogaster* Geoffroy, 1804 (Muridae: Hydromyinae), a subject-specific bibliography, *Conservation Science Western Australia* 7 (1): 65-71.
- Australian Government. Department of the Environment, Water, Heritage and the Arts. (2008) *Natural Temperate Grassland of the Victorian Volcanic Plain. Policy statement 3.8*. Department of the Environment, Water, Heritage and the Arts. p.1,6 & 7.
- Bankstown City Council. (2012) *Management Plan for Australian White Ibis in the Bankstown Local Government Area*. Sustainable Development Unit. Bankstown City Council. NSW
- Barker, J., Grigg, G C. and Tyler, M. (1995) *A Field Guide to Australian Frogs*. Surrey Beatty and Sons. Chipping Norton NSW.
- Barthes, R (1977), An Introduction to the Structural Analysis of Narrative, in R Barthes, *Image-Music-Text*, trans. Stephen Heath, pp. 79-124. New York: Hill and Wang
- Bate, W (1978), *Lucky City: The first generation at Ballarat: 1851-1901*. Melbourne: Melbourne University Press.
- Bate, W (1993), *Life after gold: Twentieth-century Ballarat*. Melbourne: Melbourne University Press at the Miegunyah Press.

- Berg, N. (2019) Creature Comforts in *Landscape Architecture Magazine*. June 2019. Vol. 109. No. 6. The Magazine of the American Society of Landscape Architects. p.93
- Bishop, AB. (2018) *Habitat: a practical guide to creating a wildlife-friendly Australian garden*. Murdoch Books Australia.
- Buchanan, R A. (2009) *Restoring Natural Areas in Australia*. State of NSW through Department of Industry and Investment.
- Bulbeck, C. (2005) *Facing the Wild: Ecotourism, conservation and Animal Encounters*. Earthscan UK.
- Burch J and MacManus T (2011), *Ballarat West Growth Area, Precinct 4, Alfredton and Delacombe, Victoria: Aboriginal and Historical Heritage Assessment*. Brunswick, Vic: Ecology Partners Pty Ltd.
- Cann, J. *A Wild Australia Guide: Freshwater Turtles*. (2008) Steve Parish Publishing. Archerfield Qld. Australia.
- Chatman, S (1978), *Story and Discourse: Narrative Structure in Fiction and Film*. Ithaca, N.Y.: Cornell University Press.
- City of Ballarat (1999), *Landscape guidelines for development in the City of Ballarat*. Ballarat: City of Ballarat.
- City of Ballarat (2012), *Environment Sustainability Strategy 2012-2014*. Ballarat: City of Ballarat.
- City of Ballarat (2014), *Reconciliation Action Plan 2014-2020*. Ballarat: City of Ballarat.
- City of Ballarat (2017), *North Gardens Indigenous Sculpture Park, Lake Wendouree, Ballarat: Landscape Design Consultancy Services Brief*. Ballarat: City of Ballarat.
- City of Ballarat (2019), *Innovate Reconciliation Action Plan May 2019-May 2021*. Ballarat: City of Ballarat.
- City of Ballarat with Urban Initiatives (2017), *Lake Wendouree Master Plan: Final Draft*. Ballarat: City of Ballarat Council.
- City of Burnside (2008) *Nature Conservation in an Urbanised Landscape. A biodiversity Strategy for the City of Burnside*. City of Burnside South Australia.
- City of Greater Geelong (2016), *The lands of the Wadawurrung*. Available at: <https://www.geelongaustralia.com.au/kaap/article/item/8d33614ddad2a9c.aspx> (accessed 1 March 2018).
- Clarke, PA (2003), *Where the ancestors walked: Australia as an Aboriginal Landscape*. Sydney: Allen & Unwin.
- Cook T (2009), *Ballarat West Future Arterial Road Flora and Fauna Assessment Report*. Melbourne: AECOM Australia.
- Costermans, L. (2009) *Native Trees and Shrubs of South-Eastern Australia. (Reprint with Addendum)* New Holland Publishers (Australia) Pty Ltd
- Cronin, L. (2001) *Key Guide. Australian Reptiles and Amphibians*. Envirobook. Annadale. NSW.
- Daniels, C B. (2011) *A Guide To Urban Wildlife: 250 creatures you meet on your street*. Harper Collins Publishers Australia Pty Ltd.
- Davenport, J. (reprint 2011) *The Garden Guardians: Identifying and attracting good bugs to your garden*. Imaginability Pty Ltd. Byron Bay NSW Australia.
- Debney, T, Slavin B, Fiddian J and Houghton K (2009), *Ballarat West Future Arterial Road, Ballarat, Victoria: Archaeological Assessment*. Port Melbourne: Biosis Research.
- Dengate, J. (Reprint 2013) *Attracting Birds to your Garden in Australia*. New Holland Publishers (Australia) Pty Ltd.
- Douglas, I. & James, P. (2015) *Urban Ecology: an introduction*. Routledge. London.
- Douglas, I. Goode, D, Houck, MC and Rusong, W. (Eds) (2011) *The Routledge Handbook of Urban Ecology*. Routledge. London.
- Elliot, R. (1994) *Attracting Wildlife to your Garden*. Thomas C Lothian Pty Ltd. Melbourne.
- Farina, A. (2006) *Principles and Methods in Landscape Ecology. Towards a science of Landscape*. Springer. Dordrecht, the Netherlands.
- Flegg, J. (2002) *Birds Of Australia: photographic field Guide*. 2<sup>nd</sup> Edition. Reed New Holland. Sydney, Australia.
- Francis, M & Hester, R.T. Jnr. Eds. (1990. 1993 3<sup>rd</sup> printing) *The Meaning of Gardens: Idea, Place and Action*. The MIT Press. London.
- Friends of the Ballarat Botanical Gardens Inc (no date) *Lake Wendouree Fauna and Flora Walks*. Friends of the Ballarat Botanical Gardens Inc
- Friends of the Ballarat Botanical Gardens Inc (2012), *An eden of loveliness: Ballarat Botanical Gardens by Lake Wendouree – A pictorial history*. Ballarat West: Friends of the Ballarat Botanical Gardens Inc.
- Gammage, B. (2011), *The biggest estate on earth: How Aborigines made Australia*, Allen & Unwin, Crows Nest, NSW.
- Gardner JL and Serena M (1995), *Observations on activity patterns, population and den characteristics of the water rat *Hydromys chrysogaster* along Badger Creek, Victoria, *Australian Mammalogy* 18: pp71–75.*
- Geelong Field Naturalists Club Inc. Ed Craig Morley. (2018) *Geelong Bird Report 2013-2016*. Geelong Field Naturalists Club Inc.
- Geelong, City of Greater (2019), *The Lands of the Wadawurrung*; available at <https://www.geelongaustralia.com.au/kaap/article/item/8d33614ddad2a9c.aspx>
- Gilson, D (2018), *White Haze, Black Gaze: Lifting the Veil on Women's Business*, unpublished PhD Confirmation of Candidate report, Institute of Koorie Education, Deakin University, Waurin Ponds, Vic.
- Gleeson, J; Gleeson, D. (2012) *Reducing The Impacts of Development on Wildlife*. CSIRO Publishing.
- Gott, B (1983), *Murnong – *Microseris scapigera*: a study of a staple food of Victorian Aborigines, *Australian Aboriginal Studies* 2: 2-18.*
- Gould, L. & Morris, J. (2005) *Riverways: shortcuts to river management information in Australia*. Greening Australia Ltd.
- Grant, P. (2003) *Habitat Garden: attracting wildlife to your garden*. Australian Broadcasting Corporation.
- Great Britain Non-Native Species Secretariat. *Black Swan Rapid Risk Assessment Summary Sheet*. April 2017. [www.nonnativespecies.org](http://www.nonnativespecies.org)
- Gullan, P., *Victorian Ecosystems – Grassland*. Viridans Biological Databases. [www.viridans.com/ECOVEG/grassland.htm](http://www.viridans.com/ECOVEG/grassland.htm) accessed 23/9/2019. P.2.

- Hill, D. & Edquist, N. (1991) *Wildlife and Farm Dams*. Department of Conservation and Environment.
- Hilty, J.A. (2006) *Corridor Ecology: the science and practice of linking landscapes for biodiversity conservation*. Island Press. Washington DC. USA.
- Hone, J. (2007) *Wildlife Damage Control*. CSIRO Publishing. Collingwood. Victoria.
- John Patrick Pty Ltd (1995), *Ballarat Botanical Garden Masterplan and Management Strategy*. Kew, Vic: John Patrick Pty Ltd.
- John Patrick Pty Ltd in association with Allom Lovell & Associates Pty Ltd (1993) *Ballarat Botanic Gardens – Conservation Analysis and Policy*, City of Ballarat & John Patrick & Associates, Ballarat.
- Johnson, B R & Hill, K. (2002) *Ecology and Design: frameworks for learning*. Island Press. Washington DC.p.120
- Kelly, L. (2016) *The Memory Code. The traditional aboriginal memory technique that unlocks the secrets of Stonehenge, Easter island and ancient monuments the world over*. Allen and Unwin. NSW.
- Kingsford, R. (Reprint 1994) *Australian Waterbirds: a field guide*. Kangaroo Press Pty Ltd. Kenthurst NSW.
- Land Conservation Council (1980), *Ballarat Area*. Melbourne: Land Conservation Council.
- Lavelle, C & Lavelle, M. (2007) *The Illustrated Practical Guide to Wildlife Gardening*. Hermes House. London.
- Legoe, C. & Ross, G., (Eds) (2007) *Wild About Ibis. Living with urban wildlife*. Department of Environment and Climate Change. NSW.
- Lindenmayer, D.B. & Fischer, J. (2006) *Habitat Fragmentation and Landscape Change. An Ecological and Conservation Synthesis*. CSIRO Publishing. Collingwood. Victoria.
- Lindenmayer, D.B. & Hobbs, R. J. Eds. (2007) *Managing and Designing Landscapes for Conservation.: moving from Perspectives to principles*. Blackwell Publishing. Victoria. Australia.
- Lindsay, K (2017), *Tanderrum revives an ancient ceremony that celebrates the people of the Kulin Nation*, <https://www.sbs.com.au/yourlanguage/aboriginal/en/audiotrack/tanderrum-revives-ancient-ceremony-celebrates-people-kulin-nations>, accessed 1 March 2018.
- Local Government Infrastructure Design Association (2018), *Infrastructure Design Manual*. Tongala, Vic: Local Government Infrastructure Design Association.
- Loos T (2000), Water rats *Hydromys chrysogaster* seen in Fitzroy Gardens at Easter-time, *Victorian Naturalist* 117: 188–189.
- Marshall B, Toscano M and Webb, C (214), *Ballarat Western Link Road, Cultural Heritage Desktop Assessment*. Northcote, TerraCulture Heritage Consultants.
- Marshall, A. (2011) *Start with the Grasslands: Design guidelines to support native grasslands in urban areas*. Victorian National parks Association.
- Massola, A (1962), Two Aboriginal legends of the Ballarat District, *Victorian Naturalist* 79: 110-112.
- Massola, A (1968a), Bunjil, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 40. Melbourne: Lansdowne Press.
- Massola, A (1968b), The fight between Mount Buninyong and Mount Elephant, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 28. Melbourne: Lansdowne Press.
- Massola, A (1968c), The Lal-Lal Falls on the Moorabool River, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 59. Melbourne: Lansdowne Press.
- Massola, A (1968d), Bunjil, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 40. Melbourne: Lansdowne Press.
- Massola, A (1968e), *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*. Melbourne: Lansdowne Press.
- Massola, A (1968f), The fight between Mount Buninyong and Mount Elephant, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 28. Melbourne: Lansdowne Press.
- Massola, A (1968g), The Lal-Lal Falls on the Moorabool River, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 59. Melbourne: Lansdowne Press.
- Massola, A (1968h), The witch of Lake Burrumbeet, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, pp. 31-32. Melbourne: Lansdowne Press.
- Massola, A (1970), Mortuary and other monuments to Aborigines, *Victorian Naturalist* 87: 299-305.
- McComb, B.C. (2008) *Wildlife Habitat Management: concepts and applications in forestry*. CRC Press. Florida USA.
- McNally J (1960), The biology of the water rat *Hydromys chrysogaster* Geoffroy (Muridae: Hydromyinae) in Victoria, *Australian Journal of Zoology* 8: 170–180.
- Melbourne Festival (2015), *Tanderrum*. Available at <<https://www.youtube.com/watch?v=AzOvrcgG8dk>> (accessed 1 March 2018).
- Menkhorst, P.W. (2004) *A Field Guide To The Mammals of Australia. 2<sup>nd</sup> Edition*. Oxford University Press. Victoria.
- Morrison, M L. (2009) Ed. *Restoring Wildlife: ecological concepts and practical applications. 2<sup>nd</sup> Edition*. Island Press. Washington DC USA.
- Myers, R. ed. (1995) 2<sup>nd</sup> Edition. *Watercourse Management. A Field Guide*. Upper River Torrens Landcare Group. #####
- Nakamura, S. (2006) *Pattern Sourcebook: Japanese Style 2*. Rockport Publishers Inc. Massachusetts USA.
- Newman, P. & Jennings, I. (2008) *Cities as Sustainable Ecosystems: principles and practices*. Island Press. Washington DC.
- Newton, J (2014), *Mullawallah: The last King Billy of Ballarat*. Ballarat: Ballarat Heritage Services
- Ngiam, R. (2011) *Dragonflies of Our Parks and Gardens*. National Parks Board. National Biodiversity Centre. Singapore.

- Nicholson, M, G Romanis, I Paton, DS Jones (2019a in press), *North Gardens Wetlands Landscape Master Plan*. Geelong: School of Architecture & Built Environment, Deakin University.
- Nicholson, M, G Romanis, I Paton, DS Jones, K Gerritsen & G Powell (2019b in press), 'Unnamed as yet': Putting *Wadawurrung* meaning into the North Gardens Landscape of Ballarat, *UNESCO Observatory E-Journal Multi-disciplinary Research in the Arts*, [http://education.unimelb.edu.au/about\\_us/specialist-areas/arts\\_education/melbourne\\_unesco\\_observatory\\_of\\_arts\\_education/the\\_e-journal](http://education.unimelb.edu.au/about_us/specialist-areas/arts_education/melbourne_unesco_observatory_of_arts_education/the_e-journal), ISSN 1835-2776
- Olsen, P & Russell, L. (2019) *Australia's First Naturalists: Indigenous People's Contribution to Early Zoology*. NLA Publishing. National Library of Australia.
- Parks Victoria (PV) (2015), *Ngootyoong Gunditj Ngootyoong Mara South West Management Plan*. Available at: [https://parkweb.vic.gov.au/\\_data/assets/pdf\\_file/0003/662763/NGNM-South-West-Management-Plan.pdf](https://parkweb.vic.gov.au/_data/assets/pdf_file/0003/662763/NGNM-South-West-Management-Plan.pdf). Accessed February 1, 2019.
- Parsons. H. (No year recorded) *Best practice Guidelines for Enhancing Urban Bird Habitat: Scientific Report*. Birds in Backyards Program.
- Pascoe, B (2014), *Dark Emu: Black seeds: Agriculture or accident?* Magabala Books, Broome, WA.
- Payne, C.J., Jessop, T.S., Guay, P.J., Johnstone, M., Feore, M., Mulder, R.A., (2012) Population, Behavioural and Physiological Responses of an Urban Population of Black Swans to an Intense Annual Noise Event. in *PLOS ONE*. September 2012. Vol.7. Issue 9. e45014
- Perlman, D. & Milder, J. (2005) *Practical Ecology for Planners, Developers, and Citizens*. Island Press. Washington DC.
- Peterson J (1965), Eastern water rat, *Victorian Naturalist* 82: 206.
- Pieris, A, N Tootell, F Johnson, J McGaw & R Berg (2014), *Indigenous Place: Contemporary Buildings, Landmarks and Places of Significance in South East Australia and beyond*. Melbourne, Vic: Melbourne School of Design, University of Melbourne.
- Pizzey, G & Knight, F. (2003) *The Field Guide To the Birds of Australia*. 7<sup>th</sup> Ed. Harper Collins Publishers. Australia.
- Platt, S.J. (2002) Native grasslands of the basalt plain. In *Land for Wildlife Notes*. Department of Natural Resources and Environment, Melbourne. Victoria.
- Platt, S.J. (2002) *How to Plan Wildlife Landscapes: a guide for community organisations*. Department of Natural Resources and Environment, Melbourne. Victoria.
- Positive Space (1994), *Lake Wendouree Heritage Conservation Analysis*. Ballarat: City of Ballarat & Mark McWha Landscape Architect.
- Potteiger, M & J Purinton (1998), *Landscape Narratives: Design practices for telling stories*. New York: John Wiley & Sons.
- Powell, B (2015a), Wadawurrung language: Kareet Bareet, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86715>> (accessed 1 January 2018).
- Powell, B (2015b), Wadawurrung language: Bonan Youang, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86782>> (accessed 1 January 2018).
- Powell, B (2015c), Wadawurrung language: Ballaarat, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86716>> (accessed 1 January 2018).
- Powell, B (2015d), Wadawurrung language: Kuarka-dora, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86721>> (accessed 1 January 2018).
- Powell, B (2015e), Wadawurrung language: Borombeet, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86709>> (accessed 1 January 2018.)
- Powell, B (2015f), The Bunjil Creation Story, in M Satchell, Maude's Bunjil Lookout, *Meredith and District News*, April, p.16.
- Powell, B (2015g), Wadawurrung language: Warrenyeep, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86723>> (accessed 1 January 2018).
- Powell, B (2019 in press), *Coolenth Jumbunna: Blackfella Talking*, in DS Jones & D Low Choy (eds.), *Yurlendj-nganjjin: Everyone's knowledge / Our intelligence*, Cambridge Scholars Publishing, London.
- Powell, B, D Tournier, DS Jones, & PB Roös (2019), Welcome to Wadawurrung Country, in DS Jones & PB Roös (eds), *Geelong's Changing Landscape: Ecology, Development and Conservation*, pp. 44-84. CSIRO Publishing, Melbourne. 978-0-643-10360-3
- Powell, G & DS Jones (2019), 'Kim-barne Wadawurrung Tabayl': You are in Wadawurrung Country, *KERB: Journal of Landscape Architecture*.
- Randolph, J. (2004) *Environmental Land Use Planning and Management*. Island Press. Washington DC.
- Readers Digest. (1989) *The Australian Wildlife Year. A month-by-month guide to nature*. Readers Digest Sydney.
- Readers Digest. (2005) *Encyclopedia of Australian Wildlife*. Revised Edition. Readers Digest (Australia) Pty Ltd. Sydney. Australia.
- Richardson, M (2014), *Visionary Plan for the Ballarat Botanical Gardens*, Mark Richardson & Associates, Bridgewater SA.
- Robertson, E. (1999) *Restoration of Grassy Woodland. Watiparinga Reserve Management Plan*. The National Trust of South Australia.
- Robertson, P & Coventry, A.J. (2019) *Reptiles of Victoria: A guide to identification and ecology*. CSIRO Publishing. Collingwood. Victoria.
- Romanowski, N. (1998) *Aquatic and Wetland Plants: a field guide for non-tropical Australia*. University of NSW Press.
- Romanowski, N. (2000) *Water Garden Plants and Animals: the complete guide for all Australia*. University of NSW Press Ltd.

- Romanowski, N. (2010) *Wetland Habitats: a practical guide to restoration and management*. CSIRO Publishing. Collingwood, Victoria.
- Romanowski, N. (2011) *Wetland Weeds: Causes, cures and compromises*. CSIRO Publishing. Collingwood, Victoria.
- Romanowski, N. (reprint 2005) *Planting Wetlands and Dams. A practical guide to wetland design, construction and propagation*. University of NSW Press Ltd.
- Rose, DB (1996), *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness*. Canberra, ACT: Australian Heritage Commission. Available at: <[www.environment.gov.au/resource/nourishing-terrains](http://www.environment.gov.au/resource/nourishing-terrains)> (accessed 1 March 2018).
- Ross, J. (1999) *Guide to Best Practice Conservation of Temperate Native Grasslands*. World Wide Fund for Nature (Australia). pp.
- Seebeck J (2000), Wandering with water rats or, rambling with Rakali, *Victorian Naturalist* 117: 229–231.
- Smith M (2017), Have you seen these cute critters in Lake Wendouree?, *The Ballarat Courier*, 15 June. Available at: <<http://www.thecourier.com.au/story/4731677/water-rats-at-home-in-lake/>> (accessed 1 January 2018).
- Soulsbury C. D. and White, P.C.L. Eds. (2015) Interactions Between Humans and Wildlife in Urban Areas in *Wildlife Research*. Vol.42, Issue 7.
- Spencer M (2016), *Lake Wendouree Ballarat Indigenous Playspace*. Unpublished SRL733 report, School of Architecture & Built Environment, Deakin University, Geelong.
- Stanbridge, WE (1861), Some Particulars of the General Characteristics, Astronomy, and Mythology of the Tribes in the Central Part of Victoria, Southern Australia, *Transactions of the Ethnological Society of London*, 1, pp. 286-304.
- Steffen, W. (2009) *Australia's biodiversity and Climate Change*. CSIRO Publishing. Collingwood Victoria.
- Strahan, R. Ed. (2<sup>nd</sup> Edition 1995, Reprint 2004) *The Mammals of Australia*. Australian Museum. Reed New Holland Australia Pty Ltd.
- Temby, I. (2005) *Wild Neighbours: the humane approach to living with wildlife*. Citrus Press. Broadway NSW.
- Tree, I. (2018) *Wilding: The return of nature to a British farm*. Picadore. London.
- Treize T (1984), *From Swamp to Lake: The story of Lake Wendouree, Ballarat*. Ballarat, Vic: T Treize.
- Trocini S, Barrett G, Howard K and Ramalho C (2015) *Rakali Community Survey 2014-2015. Report prepared by WWF-Australia and the Western Australian Department of Parks and Wildlife*. Perth, WA: WWF-Australia.
- Tumino, M (2010), *National Recovery Plan for the Basalt Peppergrass (Lepidium hyssopifolium)*, Victorian Government Department of Sustainability and Environment (DSE) Melbourne, July 2010.
- Turner, M. S. (2001) *Conserving Adelaide's Biodiversity: Resources*. Urban Forest Biodiversity Program, Adelaide.
- Tyler, M. & Knight, F. (2009) *Field Guide to the Frogs of Australia*. CSIRO Publishing. Collingwood Victoria.
- Van Dongen, W.F.D, Robinson, R.W., Weston, M.A., Raoul, A., Guay, P.J, Variation at the DRD4 locus is associated with wariness and local site selection in urban black swans. In *BMC evolutionary biology*, vol.15, Article Number: 253, pp.1-11
- Van Dyke, S., Gynther, I & Baker, A. Eds. (2013) *Field Companion to the Mammals of Australia*. New Holland publishers. Chatswood NSW.
- Victoria (2017), *Guidelines for the removal, destruction or lopping of native vegetation*. Melbourne: Department of Environment Land Water & Planning.
- Walraven, E. 2004 revised. *Care of Australian /wildlife.: for gardeners, landholders, motorists and wildlife carers*. New Holland Publishers (Australia) Ltd.
- Walsh, N (2016), A name for Murnong (*Microseris*: Asteraceae: Cichoriodeae), *Muelleria* 43: 63-67.
- Watharow, S. (2011) *Living With Snakes and Other Reptiles*. CSIRO Publishing. Collingwood Victoria.
- White, X. *The Good Dirt*. Penguin Random House. New Zealand.
- Williams, GA & M Serena (2017), *Distribution and Status of the Australian Water-Rat or Rakali (Hydromys chryso-gaster) in Victoria: A Report by the Australian Platypus Conservancy to the Norman Wettenhall Foundation*. Melbourne: Australian Platypus Conservancy and the Norman Wettenhall Foundation.
- Wilson, S & Swan, G. (2008) *A Complete Guide to Reptiles of Australia*. 2<sup>nd</sup> Edition. New Holland Publishers Australia Ltd.
- Withers, WB (1887), Place names in Ballarat, in *The History of Ballarat from the first pastoral settlement to the present time*, pp. 13-14. Ballarat: FW Niven & C; 2<sup>nd</sup> edition.
- Wright, J (2014), Derrinallum ba Buninyong: The fight between Mount Buninyong and Mount Elephant, in *Nyernila: Listen Continuously: Aboriginal creation stories of Victoria*, p. 60-61. Melbourne: Arts Victoria.



## APPENDICES

### APPENDIX A

*North Gardens Indigenous Sculpture Park Lake Wendouree, Ballarat Landscape Design Consultancy Services Brief (2017a)*

### APPENDIX B

*North Gardens Wetlands Landscape Master Plan (1999).*

### APPENDIX C

*Relevant Themes and Actions from the City of Ballarat's Reconciliation Action Plan 2019-2021 (2019)*

### APPENDIX D

*Indigenous Plant Species Cross-Comparison and Nomenclatures*

### APPENDIX E

Unpublished paper presented to the *Creating Utopia: Imagining and Making Futures – Art, Architecture and Sustainability* as part of the *Lorne Sculpture Biennial 17 March-2 April 2018*, at QDOS Lorne 23 March 2018.

### APPENDIX F

*Lake Wendouree Heritage Conservation Analysis (1994)*

### APPENDIX G

*Ballarat Botanical Gardens Master Plan and Management Strategy (1994)*

### APPENDIX H

*Visionary Plan for the Ballarat Botanical Gardens (2013)*

### APPENDIX I

*Draft North Gardens Sculpture Park Landscape Master Plan Community Engagement Information (2018)*

### APPENDIX J

*North Gardens Sculpture Park Landscape Master Plan (2019)*

**APPENDIX A**

*North Gardens Indigenous Sculpture Park Lake Wendouree, Ballarat Landscape Design Consultancy Services Brief (2017a)*

No document included here

**APPENDIX B**

*North Gardens Wetlands Landscape Master Plan (1999).*



## APPENDIX C

### Relevant Themes and Actions from the City of Ballarat's *Reconciliation Action Plan 2019-2021* (2019)

The following are the most relevant themes and actions extract from the recently adopted City of Ballarat *Reconciliation Action Plan 2019-2021* (City of Ballarat 2019) that are directly applicable to the North Gardens Indigenous Sculpture Landscape Master Plan.

Theme	Action	Deliverable	Timeline	Responsibility
<b>Relationships</b>	2. Celebrate and participate in National Reconciliation Week (NRW) by providing opportunities to build and maintain relationships between Aboriginal and Torres Strait Islander peoples and other Australians.	<ul style="list-style-type: none"> <li>Support an external NRW event.</li> </ul>	Annually May 2019, May 2020, May 2021	Intercultural Partnerships Officer
<b>Respect</b>	10. Provide opportunities to promote and raise awareness of local and regional Aboriginal and Torres Strait Islander artists to the wider community.	<ul style="list-style-type: none"> <li>Actively stage Aboriginal and Torres Strait Islander-themed programs or performances at Her Majesty's Theatre for each year of the RAP.</li> </ul>	October 2019, September 2020	Manager, Her Majesty's Theatre
		<ul style="list-style-type: none"> <li>Promote and raise awareness of local and regional Aboriginal and Torres Strait Islander art through exhibitions and programs at the Art Gallery of Ballarat.</li> </ul>	September 2019, October 2020	Director, Art Gallery of Ballarat
		<ul style="list-style-type: none"> <li>Assist in sourcing appropriate venues for artwork presentations.</li> </ul>	July 2019, October 2020, May 2021	Intercultural Partnerships Officer, KEAG Coordinator, Creative City
		<ul style="list-style-type: none"> <li>Link the artists to the City of Ballarat's Arts and Cultural team.</li> </ul>	October 2020, May 2021	Intercultural Partnerships Officer and KEAG
	11. Increase the performances, participation and presence of Aboriginal and Torres Strait Islander artists and musicians into the City of Ballarat's Arts and Culture activities.	<ul style="list-style-type: none"> <li>Commission the installation of significant and public Aboriginal and Torres Strait Islander artworks.</li> </ul>	September 2019, September 2020, May 2021	Coordinator, Public Arts Coordinator, Intercultural Services
		<ul style="list-style-type: none"> <li>Incorporate Aboriginal and Torres Strait Islander artists and events into the City of Ballarat Cultural Plan, Creative Arts and Community Events implementation plans.</li> </ul>	June 2019, January 2020, January 2021	Coordinator, Creative City Manager, Events
		<ul style="list-style-type: none"> <li>Nominate a representative from the Aboriginal and Torres Strait Islander community to the Public Art Advisory Committee.</li> </ul>	July 2019, July 2020	Coordinator, Public Arts
		<ul style="list-style-type: none"> <li>Assist in developing Aboriginal and Torres Strait Islander-themed live music events, and the integration of Aboriginal and Torres Strait Islander musicians into City of Ballarat's overall live music programming.</li> </ul>	December 2019, December 2020	Manager, Events Manager, Her Majesty's Theatre
		<ul style="list-style-type: none"> <li>Support the integrated engagement of Aboriginal and Torres Strait Islander artists across all of City of Ballarat's Creative Arts and Community Events public programs and activities through membership on relevant City of Ballarat committees.</li> </ul>	October 2019, October 2020	Coordinator, Creative City Coordinator, Public Arts
		<ul style="list-style-type: none"> <li>Explore opportunities to encourage development of contemporary art</li> </ul>	October 2019, October 2020	Coordinator, Creative City

		practices, including media, sculpture, sound installations, virtual reality and literature.		
	12. Continue to inform and educate the wider community about Aboriginal and Torres Strait Islander cultures, histories and achievements.	<ul style="list-style-type: none"> <li>Consult with Traditional Owners on the naming of streets, localities, and landscapes features including waterways.</li> </ul>	July 2019, December 2020	Director, Infrastructure and Environment Heritage and Cultural Landscapes
		<ul style="list-style-type: none"> <li>Promote and provide information to the public regarding native plant species in local parks and gardens and to raise awareness of their traditional uses and applications.</li> </ul>	May 2019, December 2020, May 2021	Director, Infrastructure and Environment Heritage and Cultural Landscapes
	13. Promote involvement and inclusion of Aboriginal and Torres Strait Islander communities into City of Ballarat's cultural activities and in the involvement of its strategies.	<ul style="list-style-type: none"> <li>Identify opportunities in consultation with Aboriginal and Torres Strait Islander peoples to include cultural information in City of Ballarat-owned public spaces to raise public awareness of Aboriginal heritage (e.g. Victoria Park).</li> </ul>	October 2019, October 2020	Executive Manager, Events and Arts Manager, Economic Development
		<ul style="list-style-type: none"> <li>Explore opportunities to develop and update the Koorie Heritage Art Trail, working in partnership with Traditional Custodians and local Aboriginal organisations and continue to commit development of Heritage North Garden and Sculpture Park.</li> </ul>	November 2019, November 2020	Community Events Officer
	15. Provide opportunities for local Aboriginal and Torres Strait Islander peoples to tell their own story and highlight their connection to Ballarat and its cultural heritage	<ul style="list-style-type: none"> <li>Develop an Interpretation Framework and Toolkit to empower Aboriginal and Torres Strait Islander communities to tell their stories and link into cultural tourism and creative and cultural industry opportunities within the municipality.</li> </ul>	December 2019	Manager, Economic Development Community Events Officer
<b>Opportunities</b>	18. Investigate opportunities to improve and increase Aboriginal and Torres Strait Islander employment outcomes within our workplace.	<ul style="list-style-type: none"> <li>Develop and implement an Aboriginal and Torres Strait Islander Employment and Retention strategy, and complete a mapping exercise aiming at improving and increasing Aboriginal and Torres Strait Islander employment across the City of Ballarat, including exploring options to create targeted positions.</li> </ul>	December 2019, December 2020	Manager, People and Performance
	19. Scholarship to support studies / research on Aboriginal Cultural Heritage and / or Aboriginal Interpretation information.	<ul style="list-style-type: none"> <li>Explore and facilitate application for at least one undergraduate / postgraduate scholarship in the identified area in consultation with KEAG.</li> </ul>	October 2019, October 2020, May 2021	Coordinator, Heritage and Cultural Landscapes
	22. Explore opportunities to promote and strengthen traditional land practices on City of Ballarat owned land.	<ul style="list-style-type: none"> <li>Work with Aboriginal and Torres Strait Islander peoples to identify and explore opportunities for inclusion of traditional land management practices on City of Ballarat-owned land, including supporting Aboriginal people to conduct burning activities on traditional lands.</li> </ul>	August 2019, August 2020	Emergency Management Coordinator, Parks and Gardens

Source: City of Ballarat (2019), *Innovate Reconciliation Action Plan May 2019-May 2021*. Ballarat: City of Ballarat.

## APPENDIX D

### Indigenous Plant Species Cross-Comparison and Nomenclatures

Wadawurrung Language Name	Common Names	Scientific Names	Indigenous Plants of the Ballarat Area in the Australian Bed in the Ballarat Botanical Gardens	Threatened Indigenous Plants of Ballarat in the Ballarat Botanical Gardens Collection	Indigenous Plants of Victoria Park
	Gold-dust Wattle	<i>Acacia acinacea</i>	✓		
	Snake Wattle	<i>Acacia aculeatissima</i>	✓		
<i>Burn-naa-look or Mooee-yung</i>	Silver Wattle	<i>Acacia dealbata</i>			✓
<i>Warour re rup or Toolain</i>	Black Wattle	<i>Acacia mearnsii</i>			✓
	Blackwood	<i>Acacia melanoxylon</i>			✓
	Hedge Wattle	<i>Acacia paradoxa</i>			✓
<i>Garra or Jerring-up</i>	Golden Wattle	<i>Acacia pycnantha</i>	✓		
	Sheep's Burr	<i>Acaena echinata</i>			✓
	Bidgee Widgee	<i>Acaena novae-zelandiae</i>			✓
	Sheep's Burr	<i>Acaena x ovina</i>			✓
	Black Sheoak	<i>Allocasuarina littoralis</i>	✓		
	Common Wheat-grass	<i>Anthosachne scabra</i>			✓
<i>Yepurt (Native Lilies) Yepiir (sweet bulb)</i>	Pale Vanilla Lily	<i>Arthropodium milleflorum</i>	✓		
<i>Bom</i>	Chocolate Lily	<i>Arthropodium strictum</i>	✓		✓
	Common Woodruff	<i>Asperula conferta</i>			✓
		<i>Austrostipa mollis</i>			✓
	Spear Grass	<i>Austrostipa semibarbata</i>			✓
	Silver Banksia	<i>Banksia marginata</i>	✓		✓
	Creeping Bossiaea	<i>Bossiaea prostrata</i>			✓
	Wombat Bossiaea	<i>Bossiaea vomkata</i>	✓		
	Tall Daisy	<i>Brachyscome diversifolia</i>	✓		
<i>Paiik</i>	Bulbine Lily	<i>Bulbine bulbosa</i>	✓		✓
<i>Yep-eurt or Bom</i>	Milkmaids	<i>Burchardia umbellata</i>			✓
	Blue Grass-lily	<i>Caesia calliantha</i>	✓		✓
	Lemon Beauty-heads	<i>Calocephalus citreus</i>	✓		
	Milky Beauty-heads	<i>Calocephalus lacteus</i>	✓		✓
	Cut-leaf Burr-daisy	<i>Calotis anthemoides</i>	✓		
	Short-stem Sedge	<i>Carex breviculmus</i>			✓
	Drooping Cassinia	<i>Cassinia arcuata</i>			✓
		<i>Centaurium sp</i>			✓
	Hairy Centrolepis	<i>Centrolepis strigosa</i> subsp. <i>strigosa</i>			✓
	Common Everlasting	<i>Chrysocephalum apiculatum</i>	✓		✓
	Clustered Everlasting	<i>Chrysocephalum semipapposum</i>	✓		
	Pale Swamp Daisy	<i>Coronidium gunnianum</i>		✓	
	Common Billy-buttons	<i>Craspedia variabilis</i>	✓		
	Sieber Crassula	<i>Crassula sieberiana</i>			✓
		<i>Crassula sp.</i>			✓
	Austral Bear's-ear	<i>Cymbonotus preissianus</i>			✓

	Sweet Hounds-tongue	<i>Cynoglossum suaveolens</i>			✓
Nurm-bal	Matted Flax-lily	<i>Dianella amoena</i>	✓		✓
Nurm-bal	Black-anther Flax-lily	<i>Dianella revoluta</i> sp. aff. <i>revoluta</i>	✓		✓
	Long-hair Plume-grass	<i>Dichelachne crinita</i>			✓
	Kidney-weed	<i>Dichondra repens</i>	✓		✓
	Sticky Hop-bush	<i>Dodonaea viscosa</i>	✓		
	Golden Moths	<i>Diuris chryseopsis</i>			✓
	Leopard Orchid	<i>Diuris pardina</i>			✓
	Scented Sundew	<i>Drosera aberrans</i>	✓		✓
	Scarlet Sundew	<i>Drosera glanduligera</i>			✓
	Pale Sundew	<i>Drosera hookeri</i>			✓
	Tall Sundew	<i>Drosera peltata</i> subsp. <i>auriculata</i>			✓
	Nodding Saltbush	<i>Einadia nutans</i>	✓		
	Common Spike-rush	<i>Eleocharis acuta</i>			✓
	Tall Spike-rush	<i>Eleocharis sphacelata</i>			✓
	Hairy Willow-herb	<i>Epilobium hirtigerum</i>			✓
	Blue Devil	<i>Eryngium ovinum</i>	✓		
	Prickfoot	<i>Eryngium vesiculosum</i>			✓
Biyal or Buul	River Red-gum	<i>Eucalyptus camaldulensis</i>			✓
	Creeping Cudweed	<i>Euchiton japonicus</i>	✓		✓
	Nobby Club-sedge	<i>Ficinia nodosa</i>	✓		
Terraat	Variable Crane's-bill	<i>Geranium</i> sp. 2	✓		
	Grassland Crane's-bill	<i>Geranium retrosum</i>			✓
	Common Raspwort	<i>Gonocarpus tetragynus</i>			✓
	Trailing Goodenia	<i>Goodenia lanata</i>	✓		
	Hop Goodenia	<i>Goodenia ovata</i>	✓		
	Enfield Grevillea	<i>Grevillea bedgoodiana</i>	✓		
	Native Sarsparilla, Purple Coral-pea	<i>Hardenbergia violacea</i>	✓		
	Small St John's Wort	<i>Hypericum gramineum</i>			✓
	Austral Indigo	<i>Indigofera australis</i>	✓		
	Toad Rush	<i>Juncus bufonius</i>			✓
	Joint-leaf Rush	<i>Juncus holoschoenus</i>			✓
Toolim	Pale Rush	<i>Juncus pallidus</i>			✓
	Running Postman	<i>Kennedia prostrata</i>	✓		
	Basalt Peppergrass	<i>Lepidium hyssopifolium</i>	✓	✓	
		<i>Lepidium pseudohyssopifolium</i>			✓
	Scaly Buttons	<i>Leptorhynchus squamatus</i>			✓
		<i>Lomandra filiformis</i>	✓		✓
	Wattle Mat-rush	<i>Lomandra filiformis</i> ssp. <i>coriacea</i>			✓
Karawun	Spiny-headed Mat-rush	<i>Lomandra longifolia</i>	✓		
		<i>Lomandra nana</i>			✓
	Field Woodrush	<i>Luzula meridionalis</i> var. <i>meridionalis</i>	✓		✓
	Lesser Loosestrife	<i>Lythrum hyssopifolia</i>			✓
	Native Hollyhock	<i>Malva preissiana</i>	✓		
	Tree Violet	<i>Melicytus dentatus</i>	✓		
	Slender Mint	<i>Mentha laixiflora</i>	✓		
	Forest Mint	<i>Mentha satureioides</i>	✓		
	Weeping grass	<i>Microlaena stipoides</i> var. <i>stipoides</i>			✓
Murnang	Yam Daisy, Murnong	<i>Microseris lanceolata</i>	✓		
	Slender Onion-orchid	<i>Microtis parviflora</i>			✓
	Common Onion-orchid	<i>Microtis unifolia</i>			✓



	White Purslane	<i>Montia australasica</i>			✓
	Broad-leaf Stinkweed	<i>Opercularia ovata</i>			✓
	Grassland Wood-sorrel	<i>Oxalis perennans</i>			✓
	Grey Everlasting	<i>Ozothamnus obcordatus</i>	✓		
	Yellow Star	<i>Pauridia glabella</i> var. <i>glabella</i>			✓
	Austral Stork's-bill	<i>Pelargonium australe</i>	✓		
	Magenta Stork's-bill	<i>Pelargonium rodneyanum</i>	✓		
	Curved Rice-flower	<i>Pimelea curviflora</i> var. <i>sericea</i>			✓
	Common Rice-flower	<i>Pimelea humilis</i>			✓
	Tall Rice-flower	<i>Pimelia linifolia</i> subsp. <i>linifolia</i>			✓
	Variable Plantain	<i>Plantago varia</i>			✓
	Common Tussock Grass	<i>Poa labillardierei</i>	✓		
	Soft Tussock-grass	<i>Poa morrisii</i>			✓
	Fine Leaf Tussock Grass	<i>Poa sieberiana</i>	✓		
	Tussock-grass	<i>Poa sieberiana</i> var. <i>hirtella</i>			✓
	Fine-leaved Poa	<i>Poa sieberiana</i> var. <i>sieberiana</i>			✓
	Buttercup	<i>Ranunculus</i> sp.			✓
	Kneed Wallaby-grass	<i>Rytidosperma geniculatum</i>			✓
	Wallaby Grass	<i>Rytidosperma laeve</i>			✓
		<i>Rytidosperma racemosum</i>			✓
	Bristly Wallaby-grass	<i>Rytidosperma setaceum</i>	✓		
	Common Bog-rush	<i>Schoenus apogon</i>			✓
	Stiff Groundsell	<i>Senecio behrianus</i>	✓	✓	
		<i>Senecio glomeratus</i>			✓
	Cottony Fireweed	<i>Senecio quadridentatus</i>			✓
	Groundsel	<i>Senecio</i> sp. aff. <i>squarrosus</i>			✓
<i>Koon-yang or Gunyang</i>	Large Kangaroo-apple	<i>Solanum lacinatedum</i>	✓		
	Smooth Solenogyne	<i>Solenogyne dominii</i>			✓
	Bottle-daisy	<i>Solenogyne gunnii</i>			✓
	Grass Triggerplant	<i>Stylidium graminifolium</i>			✓
	Slender Sun Orchid	<i>Thelymitra pauciflora</i>			✓
<i>Bar-rang or Woo-loitj</i>	Kangaroo Grass	<i>Themeda triandra</i>			✓
<i>Banganga</i>	Twining Fringe Lily	<i>Thysanotus patersonii</i>			✓
	Yellow Rush Lily	<i>Tricoryne elatior</i>			✓
	Slender Speedwell	<i>Veronica gracilis</i>	✓		✓
	Ivy-leaved Violet	<i>Viola hederacea</i>	✓		
	Woolly New Holland Daisy	<i>Vittadinia gracilis</i>	✓		
	Bronze Bluebell	<i>Wahlenbergia luteola</i>	✓		
	Branching Bluebell	<i>Wahlenbergia multicaulis</i>	✓		✓
	Tall Bluebell	<i>Wahlenbergia stricta</i>			✓
	Early Nancy	<i>Wurmbea dioica</i>			✓
	Austral Grass-tree	<i>Xanthorrhoea australis</i>	✓		
	Small Grass-tree	<i>Xanthorrhoea minor</i>	✓		
	Sticky Everlasting	<i>Xerochrysum viscosum</i>	✓		

Sources: Donna Thomas + Ballarat Botanical Gardens records, August 2019.

Source: Nomenclature listings in: Wadawurrung (Wathaurung Aboriginal Corporation) (2018), *Wadawurrung Country of the Victorian Volcanic Plains*, Wadawurrung (Wathaurung Aboriginal Corporation), Ballarat, pp. 5-20.

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## APPENDIX E

Unpublished paper presented to the *Creating Utopia: Imagining and Making Futures – Art, Architecture and Sustainability* as part of the *Lorne Sculpture Biennial 17 March-2 April 2018*, at QDOS Lorne 23 March 2018.



### **‘Unnamed as yet’: Putting *Wadawurrung* meaning into the North Gardens Landscape of Ballarat**

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#### **ABSTRACT:**

As part of their strategic commitment to the recently approved Lake Wendouree Master Plan, the City of Ballarat has commissioned the formulation of a new Landscape Master Plan for the North Gardens precinct of the Lake. The City of Ballarat brief seeks to formulate a *Wadawurrung* cultural narrative and spatial arrangement for the Gardens that reflects and directly engages with one or more of their cultural stories, songlines and moiety animals, and lends a respectful visual and cultural relationship to the surrounding ancestral features of Mount Buninyong, Mount Warrenheip, *Mullawallah* Wetland, Lake Wendouree and Lake Burrumbeet. Importantly the brief is to formulate the canvas upon which future Indigenous-conceived sculptures will be ideated and situated, thus creating the first Indigenous-inspired sculpture landscape in Australia. This paper, prepared by the Indigenous-rich consultant team in conjunction with the *Wadawurrung* (Wathaurung Aboriginal Corporation) and City of Ballarat, reviews the aspirations of the project together with these narratives and relationships in etching a design and master plan on the canvas. The paper considers the operational frame of the City of Ballarat and its aims, the position of nature through a *Wadawurrung* cultural lens in the ideation process and the cultural desires of the *Wadawurrung* community to the future of the North Gardens. It profiles the narratives being considered, as well as taking the audience through the community engagement process being explored with the *Wadawurrung* to realise a culturally respectful master plan. The paper title is deliberate because it reflects a yet to be named *Wadawurrung* place that will be discussed as part of this paper.

#### **KEYWORDS:**

*Wadawurrung, Indigeneity, higher education, support, academic success, university, cultural capital*

#### **ACKNOWLEDGEMENT TO COUNTRY:**

We wish to acknowledge and pay respect to the Elders, families and forebears of the *Wadawurrung* peoples, the Traditional Custodians of the lands and waters that is the venue for this research and discussion, as well as Aboriginal and Torres Strait Islander peoples of the Australian continent, islands and adjacent seas, who remain the spiritual and cultural custodians of their lands and waters and who continue to practise their values, languages, beliefs and customs.

#### **INTRODUCTION:**

North Gardens represents a small ‘jig-saw’ piece of the larger *Wadawurrung Country* jig-saw puzzle. It is a ‘puzzle’ to recent colonists but to the *Wadawurrung* the landscape around Ballarat is their *Country*, their place that holds a mosaic of stories, narratives, songs, meanings, environmental and cultural knowledge (Powell 2018; Powell *et al* 2018; Powell & Jones 2018). Importantly, it is their *Country*, ‘ownership’ of which lies in their Creation Beings and not our Western sensibilities. Thus, *Mullawallah*’s (Newton 2014) statement in 1884:

*King Billy [Mullawallah] ... was in Ballarat the other day, and ... delivered a short lecture on the land question from his point of view. He said that the ground he then stood on was rightfully his property, of which he had been robbed by the white man, and it was the duty of the invaders, therefore, to pay him rent as long as he and his fellow blackfellows lived, at any rate (Mullawallah in Anon 1884: 4).*

Mullawallah (c.1820-1896) is a recognised past Elder of the *Wadawurrung Keyeet balug* clan whose lands comprise the larger Ballarat region today (Newton 2014). It is apt that he was quoted in this context, expressing in English tongue whilst dressed in English costume with tie, his cultural association with these lands and waters that comprise Ballarat, Lake Wendouree and the project site.

This project involves the *Wadawurrung* people ('the red soil people'), *Wadawurrung Country*, *Wadawurrung* Indigenous knowledge systems and environmental knowledge, and accordingly, their consultation (Powell 2015a). This article is written through a *Wadawurrung* lens and should not be interpreted as being generic for all Aboriginal communities and *Country*'s.

*Wadawurrung Country* consists of the lands and waters stretching from the settlements Beaufort to *Ballaarat* ('resting place' or 'bended elbow' at Ballarat) to *Djilang* (Geelong) to *Werribee* ('spine' on the *Iramoo* plains) to *Kuaka-dorla* (Anglesea) and includes the Bellarine Peninsula (Powell 2015c; Powell 2015d; Powell *et al* 2018; Withers 1887: 13-14), as depicted in Figure 1. The City of Ballarat municipality is accordingly within this *Country* (and part of the neighbouring *Dja Dja Wurrung Country*).



**Figure 1:** Wadawurrung Country.

Source: City of Greater Geelong (2016), *The lands of the Wadawurrung*, adapted from Clark (1990), accessed 1 March 2018.

The project has been initiated in response to the 2017 City of Ballarat tender submissions for the *North Gardens Indigenous Sculpture Park* (City of Ballarat 2017b). The aim of the tender was to formulate a Landscape Design Master Plan for the North Gardens precinct of Lake Wendouree “to guide the future development of a sculpture park featuring the work of Aboriginal artists” in a manner respectful to *Wadawurrung* culture and their *Country* (City of Ballarat 2017b: 3).

This paper surveys the engagement process and design thinking that occurred with this project. The latter is very much *Wadawurrung* inspired but has regard to operational issues like public art formulation and installation, urban habitat management strategies, the regeneration of the existing landscape, human interpretation and engagement strategies and opportunities, and avenues for which the new Gardens may serve as an important statement, gathering and renewal place, in the spirit of mutual cultural co-operation with the Ballarat and *Wadawurrung* communities.

The *North Gardens Indigenous Sculpture Park* (City of Ballarat 2017) proposal arose from the recommendations of the broader *Lake Wendouree Master Plan* (City of Ballarat with Urban Initiatives 2017), that was adopted by the City of Ballarat in late 2017. The

*Master Plan* concluded that “Lake Wendouree is recognised by the Ballarat community as the cultural heart of Ballarat. Both its indigenous and European histories should be appropriately protected, enhanced, acknowledged and celebrated” (City of Ballarat with Urban Initiatives 2017: 37). It recommended the implementation of a ‘Resting Place Sculpture Trail’ concept in the North Gardens wetlands area as a strategy of celebrating the significance of the Lake to the *Wadawurrung* peoples and local Indigenous (enveloping all non-*Wadawurrung*) residents in the region and as visitors, as well as the significance to the broader community of the region and visitors. This concept was widely supported by community participants, local residents and the expert panel involved in the *Master Plan* consultation process (City of Ballarat with Urban Initiatives 2017: 10-13, 15, 38, 49-51, 66, 72). Such a strategy also aligns to the municipality’s *Reconciliation Action Plan* (City of Ballarat 2014).

Integral in the *Sculpture Park* was a conscious requirement “to celebrate, recognise and adequately consult in the development of an Indigenous Sculpture Park ... [to] ensure ... [that the] Plan ... incorporates local Aboriginal stories and aspirations” and to “Identify features and community values that have historical, cultural, environmental, and landscape significance, with particular regard to Aboriginal heritage” (City of Ballarat with Urban Initiatives 2017: 3). These objectives were equal to, if not more important than, traditional municipal concerns requiring attention to community engagement, staging, maintenance, urban habitat management issues, and the plan integral within the overall *Master Plan* (City of Ballarat with Urban Initiatives 2017).

At the same time, the Ballarat Botanic Gardens has also been reviewing its living collections and examining master plan options for their future development and growth (John Patrick Pty Ltd in association with Allom Lovell & Associates Pty Ltd 1993; Positive Space 1995; Richardson 2014; Mark Richardson pers.comm. 2018; Donna Thomas pers.comm. 2018), of which some draft recommendations broach into North Gardens. Such recommendations include revegetation, interpretation and education, *Wadawurrung* nomenclature, and strategic species re-establishment including the Basalt Peppergrass (*Lepidium hyssopifolium* (Tumino 2010). Additionally, the entire Lake edge is host to the rare Rakali (*Hydromys chrysogaster*) (Atkinson *et al* 2008; Loos 2000; McNally 1960; Petersen 1965; Seebeck 2000; Smith 2017; Trocini *et al* 2015; Williams & Serena 2017).



**Figure 2: The existing North Gardens Wetlands. Source: authors.**

In 1999, the City of Ballarat took action to transform this long-forgotten segment of the Lake Wendouree Park Lands that was susceptible to infrequent ponding and had witnessed mixed Gardenesque beautification measures, into a wetland liked to a biofilter and stormwater management system. The Wetlands (depicted in Figure 2) were constructed in 1999-2000 by the Catchment Management Authority with the City of Ballarat, to service and treat stormwater originating from the increasing Wendouree suburbia to the north of the project site, before such waters were artificially released by drains into Lake Wendouree. This enabled a regulated flushing of the waters, biofiltration of the water, and an opportunity to ensure water security levels for the Lake, given past contemporary drying-out

periods. The works included: the creation of a network of water bodies with suitable aquatic reeds and grasses to improve water quality entering the lake; planting of indigenous trees, shrubs and grasses to increase the wetland's biodiversity; establishment of a network of granitic sand paths and timber boardwalks to access the wetlands area; installation of interpretive signs including integration of a local foods trail; construction of a gross pollutant trap to capture litter entering the wetlands system; improvement in movement linkages with the adjacent Fairyland through raising of roadside asphalt; and the provision of a bird habitat through plantings, including ensuring selective openings to avail public viewing of bird life.

The majority of these 1999-proposed works were implemented, resulting in improvements in water quality and pollutant mediation. However, the landscape is now witnessing senescent, a lack of succession of indigenous vegetation plantings; an unclear 'local foods trail'; concentrated bird damage of select areas and vegetation species; Black Swan (*Cygnus atratus*) commuting routes between the Wetlands and Fairylands directly across the heavily-trafficked Wendouree Parade, with resultant bird deaths or injuries; as well as hosting a set of poles authored by Aboriginal man Tom Clark relocated to the site from a past Ballarat Begonia Festival activity.

### SINGING NARRATIVES

To sing a narrative in *Wadawurrung* culture is to respectfully engage with *Wadawurrung Country*, their *Country*, and their *Wadawurrung* identity.

Anthropologist Deborah Bird Rose has written that "*Country*, to use the philosopher's term, is a 'nourishing terrain'. *Country* is a place that gives and receives life. Not just imagined or represented, it is lived in and lived with."

*Country in Aboriginal English is not only a common noun but also a proper noun. People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country. People say that country knows, hears, smells, takes notice, takes care, is sorry or happy. Country is not a generalised or undifferentiated type of place, such as one might indicate with terms like 'spending a day in the country' or 'going up the country'. Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life. Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease (Rose 1996: 7).*

Thus *Country* is a place + identity + Indigenous knowledge + responsibility/obligation

Indigenous Knowledge is located in the being that is *Country*. But one needs to understand that the concept of *Country* cannot be comprehensively translated as an 'environment'. Therefore, while *Country* may be an area of land that is overseen and managed by an Aboriginal group, like the *Wadawurrung* people, with *Country*-specific Creation Being divested culture and language, the relationship between *Wadawurrung* people and their *Country* extends beyond our Western sense of time. In this lens, time is sung, is the singing, is the stories embodied in, and specific to, *Country* that is the spiritual source of knowledge essential to *Wadawurrung* past, present, future generations. In this sense, *Country* is alive and intelligent, and provides everything that *Wadawurrung* people need. So while *Country* exists physically 'outside' as a living place that the *Wadawurrung* (and animals and Creation Beings) inhabit, it is also a venue and place through which one learns culture and respects being human in a proper and respectful way. *Country* provides everything the *Wadawurrung* need for their life, to curate their lands and waters, to feed humans and animals alike, offers language and nomenclature, and provides the 'operational' structure to their society today and into the future in anticipation of the return of their Creation Beings. It is all a 'design', as a 'masterplan' (Powell & Jones 2018).

'Design' is not simply the 'products', conventional Western brief deliverables, but equally about each individual person(s) / animal(s) who 'designs', as well as about the locus of that 'design'. Thus, *Wadawurrung* culture exists in patterns of relationship with their *Country*, and any *North Gardens Wetlands Landscape Master Plan* (Nicholson *et al* 2018) resides upon an existing 'design' whose future needs to be informed, mediated and guided into the future by this 'design' "to ensure that any works undertaken at the North Gardens connect deeply with local Aboriginal cultural heritage" respectfully (City of Ballarat 2017: 4).

### DESIGNING NARRATIVES

Narratives are landscapes. For the *Wadawurrung*, they possess sites, accretions of history, possess patterns and sequences, and engage with and respond to attributes / qualities and the processes of landscape formation and change (Powell 2018; Powell *et al* 2018; Powell & Jones 2018). In this sense, stories, narratives, explanations, text, song, story, voice and meaning 'narrate', whether in an oral or non-oral mode(s) or via voice or non-voice, that is computed to Western language and text.

Landscape narratives (Potteiger & Purinton 1998) embody a responsive relationship and engagement between place + human + animal + time. Landscape designs, or master plans, textual histories, etc., are all dependent upon a 'reading' of place and its resources, its contextualisation. In this way, as humans, whether Western or *Wadawurrung*, we 'write' narratives (whether fiction or non-fiction), stories, songs and myths, and we use these to locate ourselves in time, place, community and meaning.

To explain, Table 1 summarises Western Story and Narrative Distinctions and Relationships, and Table 2 summarises Western and Aboriginal Tangible and Intangible Story and Narrative Distinctions and Relationships.

Strategy	Form	Shape	Types
Narrative	Story	Content	Events, characters, settings
	Telling	Expression	Verbal, dance, landscape, film, manifestation

**Table 1:** Western Story and Narrative Distinctions and Relationships. Source: Potteiger & Purinton 1998: 11, who adapted it from Chatman 1978, 26).

Strategy	Structure	Form	Shape	Types
	Human Tangible	Story	Content	Events, characters, settings
		Telling	Expression	Voice, dance, landscape, film, manifestation
Narrative	Non-Human Tangible	Story	Content	Events, characters, settings
		Telling	Expression	Voice, dance, landscape, manifestation
	Intangible	Story	Content	Poetics, sounds, events, characters, settings
		Telling	Expression	Voices, patterns, landscape, manifestations,

**Table 2:** Western and Aboriginal Tangible and Intangible Story and Narrative Distinctions and Relationships. Source: Authors, adapted from Potteiger & Purinton 1998: 11, who adapted it from Chatman 1978, 26).

Potteiger and Purinton (1998) established a set of landscape narrative typologies determining that “The narratives of the world are numberless”. They can be “carried by articulated language, spoken or written, fixed or moving images, gestures, and the ordered mixture of all these substances; narrative is present in myth, legend, fable, tale, novella, epic, history, tragedy, drama, comedy, mime, painting, stained glass windows, cinema, comics, news item, conversation. cultural back- grounds. Caring nothing for the division between good and bad literature, narrative is international, transhistorical, transcultural: it is simply there, like life itself” (Barthes 1997: 79).

Table 3 summarises Potteiger and Purinton’s (1998: 11) translation of Western Landscape Narrative Typology.

Landscape Narrative Type	Typology Explanation
<b>Narrative Experiences</b>	Routines, rituals, or events that represent or follow narrative structures, e.g., festivals, processions, reenactments, pilgrimage, daily journeys, crossing the threshold.
<b>Associations and Experiences</b>	Elements in the landscape that become connected with experience, event, history, religious allegory, or other forms of narrative.
<b>Memory Landscapes</b>	Places that serve as the tangible locus of memory, both public and personal. This may develop through implicit association or by intentional acts of remembering (and forgetting); e.g., monuments, museums, preserved buildings, districts and regions.
<b>Narrative Setting and Topos</b>	A setting is the spatial and temporal circumstances of a narrative. It can recede to the background or figure prominently. A narrative topos is a highly conventionalized setting linked with particular events, which is evoked repeatedly in a culture's narratives. In Western culture epiphanies occur on mountaintops, and chance meetings take place on the road.
<b>Genres of Landscape Narratives</b>	Places shaped by culturally defined narrative forms or ‘genres’, e.g., legend, epic, biography, myth.
<b>Processes</b>	Actions or events that are caused by some agency (wind, water, economics) and occur in succession or proceed in stages toward some end (progress; entropy). Erosion, growth, succession, restoration, demolition and weathering are visible records of change that inscribe time into landscape form.
<b>Interpretive Landscapes</b>	Elements and programs that tell what happened in a place. The intent is to make existing or ongoing narratives intelligible.
<b>Narrative as Form Generation</b>	Using stories as a means of giving order (selecting, sequencing, etc.) or developing images in the design process. It is not necessary that the story be explicitly legible in the final design form.

## Storytelling Landscapes

Places designed to tell specific stories with explicit references to plot, scenes, events, character, etc. The stories may be either existing literary or cultural narratives or produced by the designer.

**Table 3:** Western Landscape Narrative Typology. Source: Potteiger & Purinton 1998: 11.

If we position such a typology in Aboriginal thought, then contemporary Australian architecture, landscape design and landscape architecture practice is witnessing Aboriginal culture, or *Country*-specific culture, being 'designed' or 're-designed' through one of more of the following themes:

- Stories (Histories / Events / Incidents)
- Creation Being Myths (Stories / Characters)
- Animals (Tangible / Intangible)
- Symbols (Art / Iconography)
- Geographical Features
- Place (Ceremonial)
- Place (Non-Ceremonial)
- Night landscape / Stars
- Names / Nomenclature
- Seasons
- Life Culture
- Land Custodianship / Healing

of which Stories, Creation Being Myths, Animals, Symbols, Geographical Features, and Place are the primary design narrative inspirations; Night landscape / Stars, Names / Nomenclature, and Seasons are the secondary design narration inspirations; and Life Culture and Land Custodianship / Healing are the tertiary or use applied/explored design narration inspirations. Evidence of this can be sighted in Pieris *et al* (2014).

Historically, approaches to design by Australian architecture, landscape design and landscape architecture practitioners for Aboriginal clients have predominantly focused upon unravelling and expressing a primary Aboriginal design narrative. Such a narrative has drawn inspiration(s) from a client culture and what that client orally (tells) [and graphically] articulates (story) to the consultant(s), or what inspiration emerges from the preliminary (and successive) listening and discussion processes. Such a design inspiration strategy has had a tendency to draw reference or inspiration from a single 'actor', from one or several story-telling voices, and / or from a graphic reference or image. The 'actor' can be location specific, can be variable in location or dynamic in journey mode, but can also be plural in 'actors', recalling the intersections of 'actors' and locations.

The secondary design inspiration strategy has tended to be derived from a process of living in a culture. It tells of the process of living, or a segment or segments of that process, or the art of living that process.

Rare is the tertiary design inspiration strategy that considers the culture as a system, within its own 'scientific' lens.

The elements of these primary inspiration(s) strategies are designs that draw reference from:

- A story, or a segment of that story
- A myth, or a segment of that myth, that can also be a songline or a segment of that songline
- An animal, being a moiety character or an actor in a story or myth
- A star, or a set of stars that envelop a story or a myth;
- A place, being a point of reference in a story or a myth, that does not necessarily have to be a geographical feature nor have a defined scale; and / or
- A geographical feature, being a point in the location that hosts a feature like a hill, rock, cave, billabong, stream watercourse, water fall or coastal cliff.

The secondary are

- A seasonal calendar
- A thematic approach linked to food harvesting and / or the artefact construction/ fabrication to enable food harvesting; and / or
- A celebratory place, being both the place as well as the event, as well as the act of 'singing' the land and the event.

A subtle characteristic, little discussed, is the temporality of the design inspiration strategy. The assumption taken in many Aboriginal-responsive designs, and the way they are presented to the visitor audience, is that the primary and secondary strategies are specific in time, content, and environment (vegetation, micro-climate, etc.) and thus static as distinct from dynamic. This is ironic because



Aboriginal culture is dynamic, positioned in past present future, and has no defined end point. Thus, contemporary architecture, landscape design and landscape architecture ‘designs’ need to embrace primary or secondary themes to be dynamic, they are not just now, as in 2018, or post-European invasion or pre-European invasion. Instead, they should be dynamic, adaptive, resilient, as well as being pliable. They should be respectful of a long historical time (now back to 40,000 or 60,000 years), short in historical time (the last 200 years), and or sketch an historical time into the future.

An additional facet little comprehended by Australian architecture, landscape design and landscape architecture practitioners is the listening and discussing process needed in both the design theme(s) encapturisation process, and in the design exposition phase; and how the design narrative is translated and conveyed to an audience, in that this one design is more often a segment within a theme, a page in a story. Accordingly, what is ideated and expressed may be a page in time, space, story or culture – singular rather than plural – and one that is simple Western abstraction of an Aboriginal *Country* and / or specific Aboriginal client / community.

The complexity of the foregoing critique lies in the notion of *Country*. *Country* is a Western term appropriated by Aboriginal communities to express their interpretation of place.

A ‘healthy’ or ‘good’ *Country* is one where all the tangible and intangible elements do their activities respectfully and in harmony. Harmony equals the ‘nourishment’. Rose (1996: 10) observes that

*... because there is no site, no position, from which the interest of one can be disengaged from the interests of others in the long term. Self-interest and the interest of all of the other living components of country (the self-interest of kangaroos, barramundi, eels and so on), cannot exist independently of each other in the long term. The interdependence of all life within country constitutes a hard but essential lesson.*

Change one variable in the interdependence, such as removing a natural predator, or constructing a roadway, or planting an incorrect plant species, then one changes the interdependence and ‘nourishment’ process and its continuum.

~

‘Destroy’ one component of *Country* and you ultimately destroy yourself and *Country*.

### LISTENING TO COUNTRY

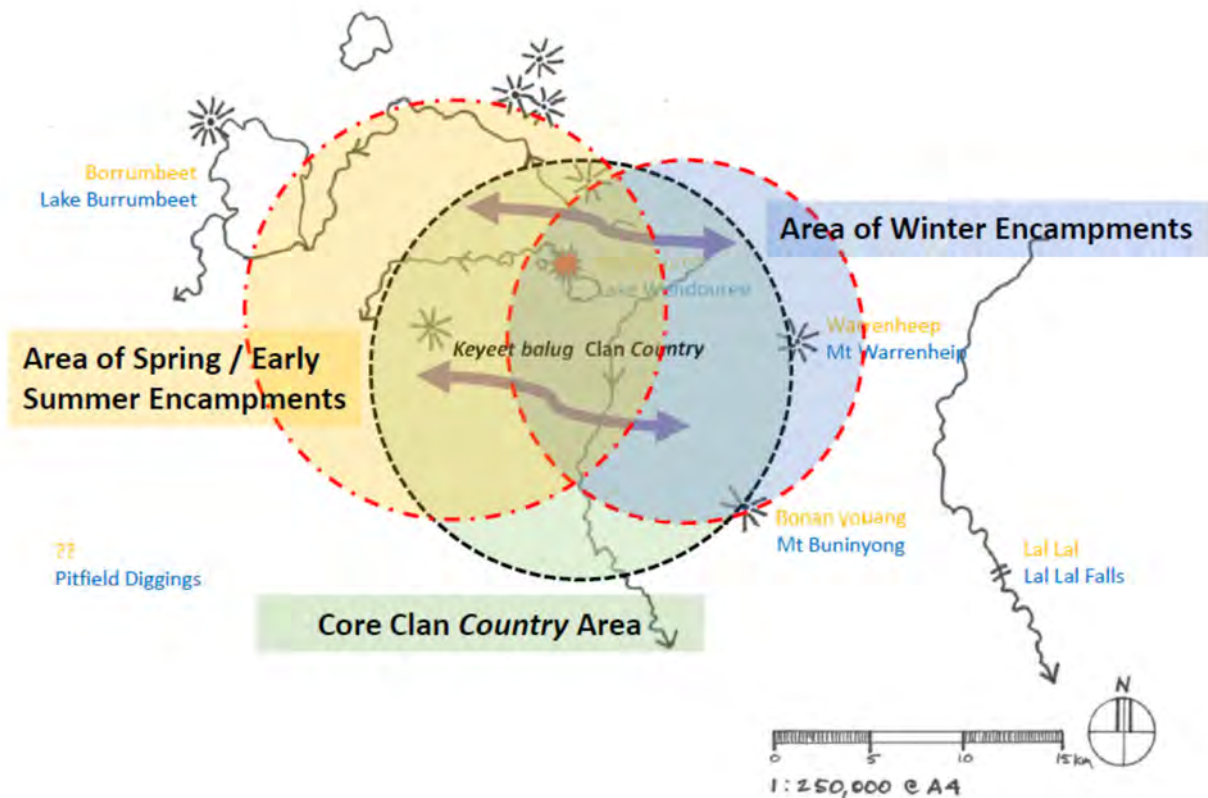


**Figure 3:** *Warrenyeep* (Mount Warrenheip) [left] and *Bonan Youang* (Buninyong) [right] from the Fairlands of Lake Wendouree, a vista that can be sighted from the North Gardens Wetlands. Source: the authors.

For the North Gardens Wetlands, the consultant team has sought to listen. Listen to both the *Wadawurrung* community and to the place, the *Country*. The former has involved listening to the art of storytelling, the nature of stories and the nature of narrating, listening about the moral protocols quietly embedded in these stories and narratives, and watching for the non-expressed and expressed stress points and subtle points embedded in the stories and narratives. The latter has involved a set of interpretative and experiential on-site wanderings to quietly navigate through the place to appreciate its intangible narratives, modes, visual connections, and opportunities.

A clear thread in the listening process has been to not latch onto, and be philosophically structured by, conventional or identifiable *Wadawurrung* / Aboriginal design themes (stories, myths, characters, animals, etc.). In addition, it should be structured and elevate ‘formal’ *Wadawurrung* cultural practices, like the activity of women’s food harvesting.

Instead, a clear theme that cascaded from the listening process with the *Wadawurrung* was to comprehend the geo-biological context of North Gardens as a sequence of a ‘series of food-ponds’ in a ‘Living Station’; to articulate their traditional seasonal movement systems and their spatial sequences; and particularly to heal the place to bring it back to the ‘living supermarket’ it once was. This is encapsulated in Figure 4 that explains the seasonal movements of the *Wadawurrung* in their *Ballaraat* region being linked to potable water + available plant and animal food resource harvesting capabilities.



**Figure 4:** Keelup baluk clan Country seasonal movement patterns. Source: authors.

This experiential listening of the place identified the need to heal (biologically and human well-being), and to enable quality successional Indigenous plant growth to enhance and diversify the biodiversity of the place. The philosophical context of this conclusion is that many of the native plants (as distinct from Indigenous plants), planted in the 1999-2001 period at the Gardens lack a consistent Indigenous volcanic plains species ecological community profile, and have as yet not been managed or fired to enable quality vegetation regeneration and succession. Therefore, a landscape with limited biodiversity accommodation possibilities has been ‘created’ or ‘designed’. This is affecting the limited fish profile, the over-populations of Sacred Ibis (*Threskiornis molucca*) and Black Swan (*Cygnus atratus*), the absence of Indigenous grasses and bulbous herbs like the Murnong (*Microseris walteri* syn. *lanceolata* or *Microseris scapigera*) (Gott 1983; Walsh 2016) or Vanilla Lily (*Arthropodium milleflorum*), the restricted opportunities for species like the Rakali (*Hydromys chrysogaster*) (Atkinson *et al* 2008; McNally 1960; Petersen 1965; Seebeck 2000; Trocini *et al* 2015; Williams & Serena 2017) or the Basalt Peppergrass (*Lepidium hyssopifolium*) (Tumino 2010) to gain / re-gain a population foothold.

Therefore, the unfolding North Gardens Wetlands design narrative is primarily one of a cultural responsibility of healing. Accordingly, urban habitat renewal is essential, but the renewal and design strategy needs to link to the ‘series of food-ponds’. Secondary is the modifications of the place to accommodate Wadawurrung and Aboriginal events and cultural activities; to host sculpture (permanent, temporary, and ephemeral); to scaffold species, plant use and gathering, visual connectivities; potable water access; and an opportunity to partake in traditional agricultural and ceremonial practices and activities. Tertiary is any formal ‘celebration’ of Wadawurrung culture and environmental knowledge and practice through tangible, tactile, physical means including signage.

The consultation process, from December 2017 to April 2018, for this project has involved a series of discussions on-site and in-office with representatives of the Wadawurrung community. The former included on-site wanderings and listenings, and discussions with multiple representatives including Elders, as well as a Smoking Ceremony to cleanse the site of any negative spirits or incidents. The latter has involved in-office listenings and discussions with representatives of the Wadawurrung in the Wadawurrung (Wathaurong Aboriginal Corporation) offices. Some on-site wanderings and listenings also involved several Aboriginal representatives from the wider Ballarat community.

The threads in those listenings revealed and cast aside different thematic responses to the place, and identified a design strategy with the theme of ‘Caring for Country’ or healing, notionally characterised by a ‘series of food-ponds’ narrative.

It is helpful to explain how this specific narrative was realised, and where it sits within Wadawurrung culture (Powell 2018; Powell *et al* 2018; Powell & Jones 2018).

While stories about *Borombeet* (Lake Burrumbeet) are common, they are not locationally relevant to the North Gardens site (Massola 1968a; Powell 2015e). Similarly, it was clear that myths about the role of *Bonan Youang* (Buninyong) in creating several of Ballarat's physical landscape features, and his present apparition in Mount Buninyong, were evident (Stanbridge 1861: 300; Massola 1962: 110; Alberts in Massola 1962: 110; Massola 1968b: 28; Wright 2014: 59-61; Powell 2015b). However, the emergence of *Bunjil* at *Kareet Bareet* (Black Hill) near Gordon (Massola 1968d; Powell 2015a, 2015f), his rest at Lal Lal Falls (Massola 1968c; Powell 2015a, 2015f), and the journey passage of *Lo'an* from *Wotjobaluk* Country across *Wadawurrung* Country to *GunaiKurnai* Country (Massola 1968e) were not pertinent. It was also clear that existing place names or their incarnations [like the place names of *Warrenyeep* (Mount Warrenheip) being a 'place of feathers' referring to the Bracken Fern (*Pteridium esculentum*) on the mount (Powell 2015g; Withers 1887: 13-14); Lal Lal Falls being the "dashing of waters" (Powell 2015a); *Bonan Youang* (Buninyong and Mount Buninyong) being linked to two Creation Beings (Stanbridge 1861: 300; Massola 1962: 110; Alberts in Massola 1962: 110; Massola 1968b: 28; Wright 2014: 59-61; Powell 2015b); *Ballaraat* (Ballarat) that means 'resting place' or 'bended elbow' (Powell 2015c), Wendouree that means 'go away' (Powell pers. comm. 2018)], to *Wadawurrung* graphic icons (diamonds, waves, of cross-hatches) (Gilson 2018), or *Mullawallah* (Anon 1884; Newton 2014). *Mullawallah*, or 'King Billy', is a colonial-period *Wadawurrung* Elder now recognised in the epithet of 'Mullawallah Wetlands' replacing the colonial epithet of 'Winter's Swamp' (Anon 1884; Newton 2014). It was also evident that tension existed within the *Wadawurrung* community about a recent Aboriginal-inspired Playspace installation on the side of Lake Wendouree as not 'sitting' harmoniously within their aspirations (Spencer 2016).

Consequently, the design inspirations of place name, myth, story, animal, etc., that are normally identified as priorities by the Western design professions (as embodied in several prominent AIA and AILA architecture and / or landscape architecture profession-awarded projects), were identified as secondary attributes arising from the larger vision.

While it is evident that 'bush tukka' philosophically informed the original 1999-2001 landscape design and plantings around the North Gardens Wetlands, it is equally evident that the species selection was general to the Ballarat landscape region, dependent upon native plant species tubestock availability in the Council's nursery that resulted in a native plant profile as distinct from an Indigenous plant profile. With these characteristics in mind, the design inspirations of *Wadawurrung* seasons with the bringing forward of food plant harvesting and artefact fabrication and construction as high priorities were not identified as priorities (typical of several prominent AILA landscape architecture profession-awarded projects), and were also identified as secondary attributes arising from the larger vision.

This is the conclusion despite the mounts of *Bonan Youang* (Buninyong) and *Warrenyeep* (Warrenheip) being visually in the sightline of North Gardens, through the Fairylands, across Lake Wendouree, as depicted in Figure 3.

During the course of the listenings and wanderings, terrestrial and aquatic animals and bird species, including the Sacred Ibis (*Threskiornis molucca*), Brolga / Native Companion (*Antigone rubicunda*), Black Swan (*Cygnus atratus*), Rakali (*Hydromys chrysogaster*), Common Ring-tailed Possum (*Pseudocheirus peregrinus*), domestic Cat (*Felis silvestris catus*), Red Fox (*Vulpes vulpes*), Wedge-tailed Eagle (*Aquila audax*), Australian Crow (*Corvus coronoides*), Mudlark (*Grallina cyanoleuca*), Dragonfly, Fingerling and Short-finned Eel (*Angullia australis*). There are also terrestrial animals with no references to their *Wadawurrung* totemic or astronomical presence or their continuing roles, less the oversight role of *Bunjil* (as embodied in the Wedge tailed Eagle; *Aquila audax*), including *Waa* (Australian Crow; *Corvus coronoides*) (Massola 1968e; Gilson 2018; Powell 2015f, 2018; Powell *et al* 2018; Powell & Jones 2018; Powell pers.comm., 2018). Animals including the Platypus (*Ornithorhynchus anatinus*), Swamp Wallabies (*Wallabia bicolor*), Eastern Grey Kangaroos (*Macropus giganteus*) or Short-finned Eel (*Angullia australis*), which would also have been present in this pre-European colonised landscape, were not mentioned.

Of these, the antics of the playful Mudlark, the North Gardens-Fairyland commuting of the Black Swan and their infrequent Lake Wendouree Parade road deaths, and the overzealous territoriality of the Sacred Ibis, were also narrated by the *Wadawurrung* in the context of their physical presence, in addition to the need to manage their habitats and populations. In terms of habitat management, there was a desire expressed to enrich the habitat diversity; to reconsider the plant profile; to enhance biodiversity opportunities; to provide havens for the Rakali; to mediate the Black Swan death rate and population; to mediate the Sacred Ibis' population and habitat over-grazing damage; and to undertake strategic plant species renewal of the North Gardens Wetlands towards a more relevant Indigenous profile so as to enhance the biodiversity of the place.

The naming of Lake Wendouree, for example, was expressed as a point of *Wadawurrung* communication to 'whitefellas' rather than a name holding meaning and value (Powell pers.comm., 2018).

There was also no reference to the place holding a specific cultural ceremonial role (Anon 1857, 1861), although recognition was made to the hosting of corroborees around the western edge of Lake Wendouree that involved both *Wadawurrung* and non-*Wadawurrung* representatives (presumably of the *Kulin Nation*) in the 1800s. Additionally, there was the desire expressed to re-commence these events near to North Gardens in the Lake Wendouree Park Lands, similar to the re-establishment of *Tanderrum* at Federation Square in Melbourne (Anon 2017; Lindsay 2017; Melbourne Festival 2015), perhaps as an annual *Kulin Nation* gathering.

'Fairylands', a post-European creation by virtue of an embankment at the Lake's watercourse natural exit, now subsumed by Willows (*Salix babylonica*), and echoing an enchanted European child's play venue, was little mentioned. When it was, it was in the negative

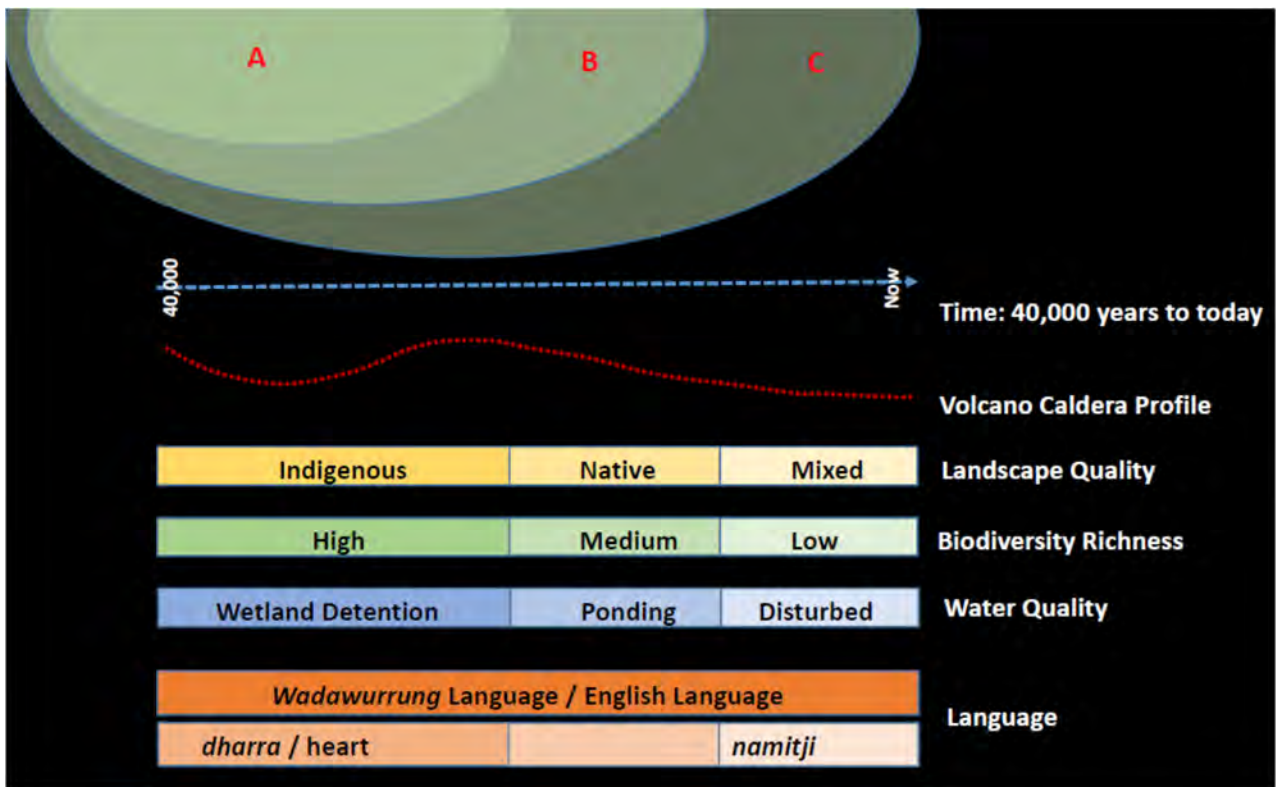
context of the European-colonised vegetation, and its poor transition between the North Gardens Wetlands and the former ‘Wendouree wetlands’ (of the Lake itself).

Through this process, the traditional design themes of story, myth, animals, season name, visual connectivity, etc., that architects, planners, and / or landscape architects ‘latch onto’; as their design inspiration(s), were all progressively directly or indirectly canvassed in the listenings and wanderings. It was a theme about the contextual position of the place of the North Gardens Wetlands, and its relationships to Lake Learmonth, Lake Burrumbeet, Mullawallah Wetlands, Flaxman’s Swamp, Reedy Creek Waterholes, Lake Wendouree (in its pre-embankment days) and Yarrowee River as a ‘series of food-ponds’ that instead resonated. This was a narrative of interconnected places to being the quality potable permanent water that hosted a rich habitat and food supermarket to both humans and animals alike. Instead, it was the ‘heart’ or *djarra* of this ‘series of food-chains’, both as a place interconnected as well as a place in its own right, of the *Keelup baluk* clan *Country*, and their living relationship to this place, that continuously threaded the quiet tone of the listenings, wanderings and discussions.

These ideas are expressed in Figures 5 and 6, that conceptualise the design strategy for the North Gardens radiating from its *djarra* at A outwards to a post-colonisation landscape at C. Figure 6 expresses the *djarra* to post-colonisation A to C in terms of time, volcanic plain formation, vegetation and habitat re-establishment and re-planting, water quality treatment and language.



**Figure 5:** Proposed North Gardens theoretical landscape design and sculpture relationship strategy. Source: authors.



**Figure 6:** Detailed translation of the proposed North Gardens theoretical landscape design and sculpture relationship strategy. Source: authors.

### DRAFTING A NARRATIVE

This article demonstrates a need to listen, to listen, to listen, and to listen, to people and lands and waters when ‘working’ with Aboriginal, and in this instance *Wadawurrung*, ‘clients’. To not suppose and presume, to knowingly cast aside Indigenous design nuances and norms is to not consider both the tangible and the intangible, and to not appreciate and appraise both the story(ies) and act of telling as well as their narrated and non-narrated substances.

A key conclusion is that there has been a propensity of contemporary built environment Australian design to historically, over the last 30 years, to seek inspiration in the tangible, in the iconography, in the public domain stories of place and *Country*, like ‘cathedrals’ of how to celebrate heritage. Instead, the core philosophical role and purpose of Aboriginal custodianship, epitomised in the now misused ‘Caring for Country’ metaphor, is little understood and encapsulated into a design response. This results in the living heritage of the place, or the vernacular of a cultural landscape (which is increasingly being termed in anthropological literature a ‘Living Station’), being overlooked.

We are conscious, also, that at North Gardens, we are the co-authors of a new canvas in consultation, and not the sole authors. North Gardens is a canvas that needs to sympathetically accommodate past, present and future, respecting *Wadawurrung* culture specifically (and Aboriginal culture generically) and their aspirations, whilst also responding to the aims of the City of Ballarat’s brief as the funding client (City of Ballarat 2017).

To date, the inquiry and listening is a ‘work in progress’, still in need of cultural endorsement and client approval, and still ‘Unnamed as Yet’. We are all increasingly acknowledging a desire to heal the *djarra* of this place, and to renew the larger *djarra* blood circuitry environmental system as part of renourishing a core part of the *Keyeet balug* clan *Country* specifically, and the *Wadawurrung Country* generally, to the betterment of the *Ballaarat* landscape and its community.

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### Protocols

This research has been subject to an approved human research ethics application through the Deakin University Human Research Ethics Committee coded 2018-013 dated 6 March 2018.

## Bibliography

- Anon (2017), *Tanderrum: Performed by the clans of the Kulin Nation*, facilitated by Ilbijerri Theatre Company. Available at: <<https://2017.festival.melbourne/events/tanderrum/#.WusOQKLIYso>> (accessed 1 March 2018).
- Anon. (1857), A Corroboree, *Bendigo Advertiser*, Friday 27 March 1857, p 3.
- Anon. (1861), Ballarat, *Geelong Advertiser*, Thursday 14 March 1861, p. 3.
- Anon. (1884), The Land Tenure Question, *Kerang Times and Swan Hill Gazette* 3 June 1884, p. 4.
- Atkinson CA, Lund MA and Morris KD (2008), BiblioRakali: The Australian water rat, *Hydromys chrysogaster* Geoffroy, 1804 (Muridae: Hydromyinae), a subject-specific bibliography, *Conservation Science Western Australia* 7 (1): 65-71.
- Barthes, R (1977), An Introduction to the Structural Analysis of Narrative, in R Barthes, *Image-Music-Text*, trans. Stephen Heath, pp. 79-124. New York: Hill and Wang
- Chatman, S (1978), *Story and Discourse: Narrative Structure in Fiction and Film*. Ithaca, N.Y.: Cornell University Press.
- City of Ballarat (2014), *Reconciliation Action Plan 2014-2020*. Ballarat: City of Ballarat.
- City of Ballarat (2017), *North Gardens Indigenous Sculpture Park, Lake Wendouree, Ballarat: Landscape Design Consultancy Services Brief*. Ballarat: City of Ballarat.
- City of Ballarat with Urban Initiatives (2017), *Lake Wendouree Master Plan: Final Draft*. Ballarat: City of Ballarat Council.
- City of Greater Geelong (2016), *The lands of the Wadawurrung*. Available at: <<https://www.geelongaustralia.com.au/kaap/article/item/8d33614ddad2a9c.aspx>> (accessed 1 March 2018).
- Gilson, D (2018), White Haze, Black Gaze: Lifting the Veil on Women's Business, unpublished PhD Confirmation of Candidate report, Institute of Koorie Education, Deakin University, Waurin Ponds, Vic.
- Gott, B (1983), Murnong – *Microseris scapigera*: a study of a staple food of Victorian Aborigines, *Australian Aboriginal Studies* 2: 2-18.
- John Patrick Pty Ltd in association with Allom Lovell & Associates Pty Ltd (1993) *Ballarat Botanic Gardens – Conservation Analysis and Policy*, City of Ballarat & John Patrick & Associates, Ballarat.
- Lindsay, K (2017), *Tanderrum revives an ancient ceremony that celebrates the people of the Kulin Nation*, <<https://www.sbs.com.au/yourlanguage/aboriginal/en/audiotrack/tanderrum-revives-ancient-ceremony-celebrates-people-kulin-nations>> , accessed 1 March 2018.
- Loos T (2000), Water rats *Hydromys chrysogaster* seen in Fitzroy Gardens at Easter-time, *Victorian Naturalist* 117: 188–189.
- Massola, A (1962), Two Aboriginal legends of the Ballarat District, *Victorian Naturalist* 79: 110-112.
- Massola, A (1968a), The witch of Lake Burrumbeet, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, pp. 31-32. Melbourne: Lansdowne Press.
- Massola, A (1968b), The fight between Mount Buninyong and Mount Elephant, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 28. Melbourne: Lansdowne Press.
- Massola, A (1968c), The Lal-Lal Falls on the Moorabool River, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 59. Melbourne: Lansdowne Press.
- Massola, A (1968d), Bunjil, in *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*, p. 40. Melbourne: Lansdowne Press.
- Massola, A (1968e), *Bunjil's Cave: Myths, legends and superstitions of the Aborigines of south-east Australia*. Melbourne: Lansdowne Press.
- McNally J (1960), The biology of the water rat *Hydromys chrysogaster* Geoffroy (Muridae: Hydromyinae) in Victoria, *Australian Journal of Zoology* 8: 170–180.
- Melbourne Festival (2015), *Tanderrum*. Available at <<https://www.youtube.com/watch?v=AzOvrcgG8dk>> (accessed 1 March 2018).
- Newton, J (2014), *Mullawallah: The last King Billy of Ballarat*. Ballarat: Ballarat Heritage Services
- Nicholson, M, G Romanis, I Paton, DS Jones (2018 in press), *North Gardens Wetlands Landscape Master Plan*. Geelong: School of Architecture & Built Environment, Deakin University.
- Peterson J (1965), Eastern water rat, *Victorian Naturalist* 82: 206.
- Pieris, A, N Tootell, F Johnson, J McGaw & R Berg (2014), *Indigenous Place: Contemporary Buildings, Landmarks and Places of Significance in South East Australia and beyond*. Melbourne, Vic: Melbourne School of Design, University of Melbourne.
- Positive Space (1994), *Lake Wendouree Heritage Conservation Analysis*. Ballarat: City of Ballarat & Mark McWha Landscape Architect.
- Potteiger, M & J Purinton (1998), *Landscape Narratives: Design practices for telling stories*. New York: John Wiley & Sons.
- Powell, B (2015a), Wadawurrung language: Kareet Bareet, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86715>> (accessed 1 January 2018).
- Powell, B (2015b), Wadawurrung language: Bonan Youang, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86782>> (accessed 1 January 2018).
- Powell, B (2015c), Wadawurrung language: Ballarat, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86716>> (accessed 1 January 2018).
- Powell, B (2015d), Wadawurrung language: Kuarka-dora, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86721>> (accessed 1 January 2018).
- Powell, B (2015e), Wadawurrung language: Borombeet, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86709>> (accessed 1 January 2018.)
- Powell, B (2015f), The Bunjil Creation Story, in M Satchell, Maude's Bunjil Lookout, *Meredith and District News*, April, p.16.

- Powell, B (2015g), Wadawurrung language: Warrenyeep, *Open ABC*. Available at: <<https://open.abc.net.au/explore/86723>> (accessed 1 January 2018).
- Powell, B (2018 in press), *Coolenth Jumbunna*: Blackfella Talking, in DS Jones & D Low Choy (eds.), *Yurlendj-nganjjin: Everyone's knowledge / Our intelligence*, Cambridge Scholars Publishing, London.
- Powell, B, D Tournier, DS Jones, & PB Roös (2018 pending), Welcome to Wadawurrung Country, in DS Jones & PB Roös (eds), *The Nature of the Geelong Landscape*, CSIRO Publishing, Melbourne.
- Powell, G & DS Jones (2018 in press), 'Kim-barne Wadawurrung Tabayl': You are in Wadawurrung Country, *KERB: Journal of Landscape Architecture*
- Richardson, M (2014), *Visionary Plan for the Ballarat Botanical Gardens*, Mark Richardson & Associates, Bridgewater SA.
- Rose, DB (1996), *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness*. Canberra, ACT: Australian Heritage Commission. Available at: <[www.environment.gov.au/resource/nourishing-terrains](http://www.environment.gov.au/resource/nourishing-terrains)> (accessed 1 March 2018).
- Seebeck J (2000), Wandering with water rats or, rambling with Rakali, *Victorian Naturalist* 117: 229–231.
- Smith M (2017), Have you seen these cute critters in Lake Wendouree?, *The Ballarat Courier*, 15 June. Available at: <<http://www.thecourier.com.au/story/4731677/water-rats-at-home-in-lake/>> (accessed 1 January 2018).
- Spencer M (2016), *Lake Wendouree Ballarat Indigenous Playspace*. Unpublished SRL733 report, School of Architecture & Built Environment, Deakin University, Geelong.
- Stanbridge, WE (1861), Some Particulars of the General Characteristics, Astronomy, and Mythology of the Tribes in the Central Part of Victoria, Southern Australia, *Transactions of the Ethnological Society of London*, 1, pp. 286-304.
- Trocini S, Barrett G, Howard K and Ramalho C (2015) *Rakali Community Survey 2014-2015. Report prepared by WWF-Australia and the Western Australian Department of Parks and Wildlife*. Perth, WA: WWF-Australia.
- Tumino, M (2010), *National Recovery Plan for the Basalt Peppercreep (Lepidium hyssopifolium)*, Victorian Government Department of Sustainability and Environment (DSE) Melbourne, July 2010.
- Walsh, N (2016), A name for Murnong (*Microseris*: Asteraceae: Cichoriodeae), *Muelleria* 43: 63-67.
- Williams, GA & M Serena (2017), *Distribution and Status of the Australian Water-Rat or Rakali (Hydromys chrysogaster) in Victoria: A Report by the Australian Platypus Conservancy to the Norman Wettenhall Foundation*. Melbourne: Australian Platypus Conservancy and the Norman Wettenhall Foundation.
- Withers, WB (1887), Place names in Ballarat, in *The History of Ballarat from the first pastoral settlement to the present time*, pp. 13-14. Ballarat: FW Niven & C; 2<sup>nd</sup> edition.
- Wright, J (2014), Derrinallum ba Buninyong: The fight between Mount Buninyong and Mount Elephant, in *Nyernila: Listen Continuously: Aboriginal creation stories of Victoria*, p. 60-61. Melbourne: Arts Victoria.

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## APPENDIX F

### Lake Wendouree Heritage Conservation Analysis (1994)

The *Lake Wendouree Heritage Conservation Analysis* (2014) was commissioned to 'guide the future conservation and development of Lake Wendouree in order to maintain and enhance the heritage values and significant for the lake' (Positive Space 2014: 2). The scope of this report, that includes North Gardens, addresses non-Wadawurrung heritage only.

The *Lake Wendouree Heritage Conservation Analysis* (1994) relevant extract stated:

#### 3.6 FAIRYLAND

*Section of foreshore characterised by a concentration of islands, Weeping Willows, rustic style pedestrian bridges and intimate pathways from which it derives the name Fairyland'. The islands and adjoining reed beds form an important wildlife habitat and refuge for a large number of birds and animals.*

#### **Contributory Elements:**

- *Bluestone gate piers (2) either side of Wendouree Pde., east end of precinct. Erected in 1897 to support large iron gates defining the north entry to the Botanic Gardens reserve. Although the original alignment is unknown, a timber picket fence once ran between the southern pier and lake edge, punctuated by a pedestrian gate with simple ornamental posts straddling the lakeside path. This fence also extended from the northern pier where it joined with other fencing enclosing the Botanic Gardens reserve. The piers are in good condition and provide an effective entry enclosing the Botanic Gardens area, but appear isolated without their associated gates or fence. Consider reconstruction of gates and fencing using existing photographic evidence.*
- *Bluestone pitcher path along foreshore edge, between bluestone gate piers and former white swan pond, constructed 1967. Generally in good condition, the path makes a significant contribution to the rustic intimate character of the Fairyland. A small concrete section of the pathway opposite Zoo Dve. should be replaced with bluestone pitchers.*
- *Fairyland islands and internal waterbodies. Suffering from years of neglect, the islands have become overgrown with suckering Willows and Poplars and woods such as Ivy, Blackberry, Flax, Agapanthus, Broom and Pampas Grass. The islands should be selectively thinned and replanted with species typical of the original period such as Oaks, Cedars, Redwoods, Cordylines and ornamental shrubs including Yuccas, Aloes and Holly. Consideration should also be given to revegetating a small area of the east islands with indigenous species originally known to exist in the area (including River Red Gum, Swamp Gum and Blackwood), establishing a link with the indigenous parkland and dry creek bed north of Wendouree Pde. Public access to one of the Islands via a sympathetically designed boardwalk structure should also be explored. The internal Fairyland water bodies have become stagnant and overgrown with reeds, water lilies and suckering plants. Ongoing maintenance is required to remove the weeds, increase water circulation and deepen the channels.*
- *Reed beds adjoining Fairyland islands. Provide an Important water refuge and feeding/nesting habitat for native birds and animals including several uncommon species. Consider the provision of well designed facilities such as bird hides, nesting boxes or boardwalks to improve the viewing potential of this aquatic habitat.*
- *Isolated landmark Pines (2) and Cypress (1). Mature to overmature and in a state of decline, these trees should be assessed by a suitably qualified person and replaced with the same or similar species required.*
- *Mature Willow in good condition over hanging water's edge, east of Zoo Dve.*
- *Row of mature Tortured Willows in good condition along lake margin, opposite Nursery Oval.*
- *Formal avenue of mature English Elms in good condition opposite Nursery Dve.*
- *Former white swan pond, originally enclosed by a palisade fence, constructed c.1876. The pond has become stagnant and overgrown with reeds and suckering plants. Removal of weeds and general cleaning out is required. The narrow gravel path surrounding the pond offers panoramic views of reed beds and distant lake shores, but is in poor condition and needs to be repaired. Consider ornamental planting theme on pond Islands to provide a visual link with Lake Lodge and the Botanic Gardens.*
- *Scenic views from lake margin to distant lake shore framed by Fairyland islands. Additional planting along foreshore and selective thinning and replanting on Islands should maintain and enhance these views.*
- *Tram tracks along south side of Wendouree Pde. (last laid 1936 when the tracks were shifted about two feet closer to the lakeside, but in existence since late 1880's) and associated overhead decorative tram wire supports c. 1905*



#### Comments:

- *Treated pine foot bridges (5) along the Fairyland walk are visually intrusive and detract from the landscape character of this precinct. Replace with a more historically suitable 'rustic' style of foot bridge designed, in character with original structures as shown in c.1895-1905 photograph and postcard.*
- *Consider reintroduction of ferry route amongst the Fairyland islands as shown in several c.1895-1905 photographs and postcards.*
- *Exposed concrete barrel drain from Wendouree Pde. to lake edge is unsightly and needs to be concealed.*
- *A strict management plan for the maintenance of Fairyland islands and internal water bodies including weed control and selective removal of overmature and suckering species should be developed.*
- *Timber and concrete seats and picnic tables at various locations through precinct are without significance and make little positive contribution to the landscape character of the foreshore. They are not intrusive, but should be replaced with a more appropriate style of furniture. Consider the use of 'rustic' style timber seats within the Fairyland area as opposed to the iron strap seats proposed for the rest of the lake foreshore. Reproductions of the original Umber seats known to surround the lake based on photographic evidence and the City of Ballarat Engineers Office drawing (1880) are the preferred option.*
- *Treated pine vehicular barriers (adjacent Lake Lodge) and bright coloured playground equipment (opposite Nursery Ove.) are intrusive elements which detract from the landscape character of the foreshore and should be removed.*
- *Timber and concrete picnic tables are without significance and make little positive contribution to the landscape character of the foreshore. They are not intrusive, but should be replaced with a more appropriate style of furniture.*
- *Large green plastic rubbish bins. Although a functional necessity, the bins are visually intrusive and detract from the landscape character of the foreshore. Consider replacement with a more sympathetic style of bin, or alternatively, suitable treatment to reduce their visual impact (the dressed timber bin enclosures in the Botanic Gardens are a good example).*
- *Timber tram shelter with corrugated iron roof near Nursery Ove. relocated and restored by the Ballarat Tramways Preservation Society in early 1994. Similar in design to the shelters near View Point, this shelter is in good condition and should be retained.*
- *Narrow strip of foreshore east of Zoo Ove. is exposed to traffic along Wendouree Pde. Consolidate tree planting along road edge to maintain and enhance intimate character of Fairyland.*
- *Wetland interpretation signs (7) are non-intrusive and sympathetic with the landscape character of the foreshore. Consider development of a heritage/nature walk around the entire lake foreshore with similar Interpretation signs at various locations (eg: Lake Lodge: Rustic fountain, View Point, institutional boatsheds, rowing start and finish, etc.). The opportunity to extend this 'interpretation walk' to include the Botanic Gardens and adjacent parklands should not be overlooked.*



Upgrading the facilities for visitors is a high priority for the North Gardens. Proposals include a new entry to the north end of the Botanical Gardens proper, upgrading the children's playground, an additional picnic shelter and barbeque facility, plus reinstatement of a maze in its original location. The children's playground should be redeveloped with a heritage theme. Additional angle parking is proposed to Nursery Drive to service toilets, playground and picnic areas.

Actions are proposed to control off-road access by unauthorised vehicles including construction of kerbs to Gillies Street, Wendouree Parade and Nursery Drive. A post and cable fence is proposed for Gregory Street and The Boulevard which will allow pedestrian access at various locations but will prevent vehicle access.

The Sound Shell provides an outdoor facility for theatre, music and other forms of entertainment although it is isolated at the north of this zone.

The north-east corner of the zone is poorly drained and underutilised but represents an opportunity for the creation of a wetlands. The establishment of a wetlands linking the area to Fairyland would serve several purposes:

- retention basins for flood control
- settling ponds for removal of sediment and rubbish entering Lake Wendouree via the stormwater drain from the north-west
- creation of habitat for different bird species in addition to those attracted to Lake Wendouree
- planting of indigenous vegetation which is poorly represented in the reserve
- the construction of walks, bird hides and an interpretation centre would provide an educational resource.

Refer also to Sections 4.2 Design Principles, 4.3 Access and Circulation, 4.4 Vegetation, 4.8 Visitor Facilities, 4.9 Possible tenancies and Future Uses, 4.10 Site Elements, Structures and Furniture Design Guidelines for general policies which are relevant to this zone.

Reinforce screen plantings to Gillies Street to maintain enclosure to the North Gardens. Maintain the existing tree species of Cypress (*Cupressus macrocarpa*) and English Oak (*Quercus robur*) and fill any gaps. Extend planting to the north along Gillies Street to the south end of the proposed Horticultural Centre.

Reinforce Cedar (*Cedrus deodara*) planting around Nursery Drive to provide shade and continue the planting of English Oak (*Quercus robur*) to the west side of Wendouree Parade opposite the picnic shelter. Continue the scheme of Pines alternating with Elms and Poplars around Zoo Drive and reinforce this planting. Zoo Drive planting should take precedence over the extension of the Sequoiadendron Avenue. Young Sequoiadendron trees at the north end of the avenue could be transplanted to the south end to be used as infills.

Remove senescent trees from the zone including over-mature *Pinus radiata* adjacent to the children's playground. Remove inappropriate trees from the south end of the Sequoiadendron Avenue.

Plant tree groups to reinforce the central open grass space in the North Garden, repeating the historic precedent of single species tree circles or groups. Tree species should be large scale and include coniferous and broad-leaved trees, e.g.

<i>Acer rubrum</i>	Red Maple
<i>Liriodendron tulipifera</i>	Tulip Tree
<i>Pinus canariensis</i>	Canary Island Pine
<i>Pinus halepensis</i>	Aleppo Pine
<i>Pinus sylvestris</i>	Scots Pine
<i>Quercus palustris</i>	Pin Oak

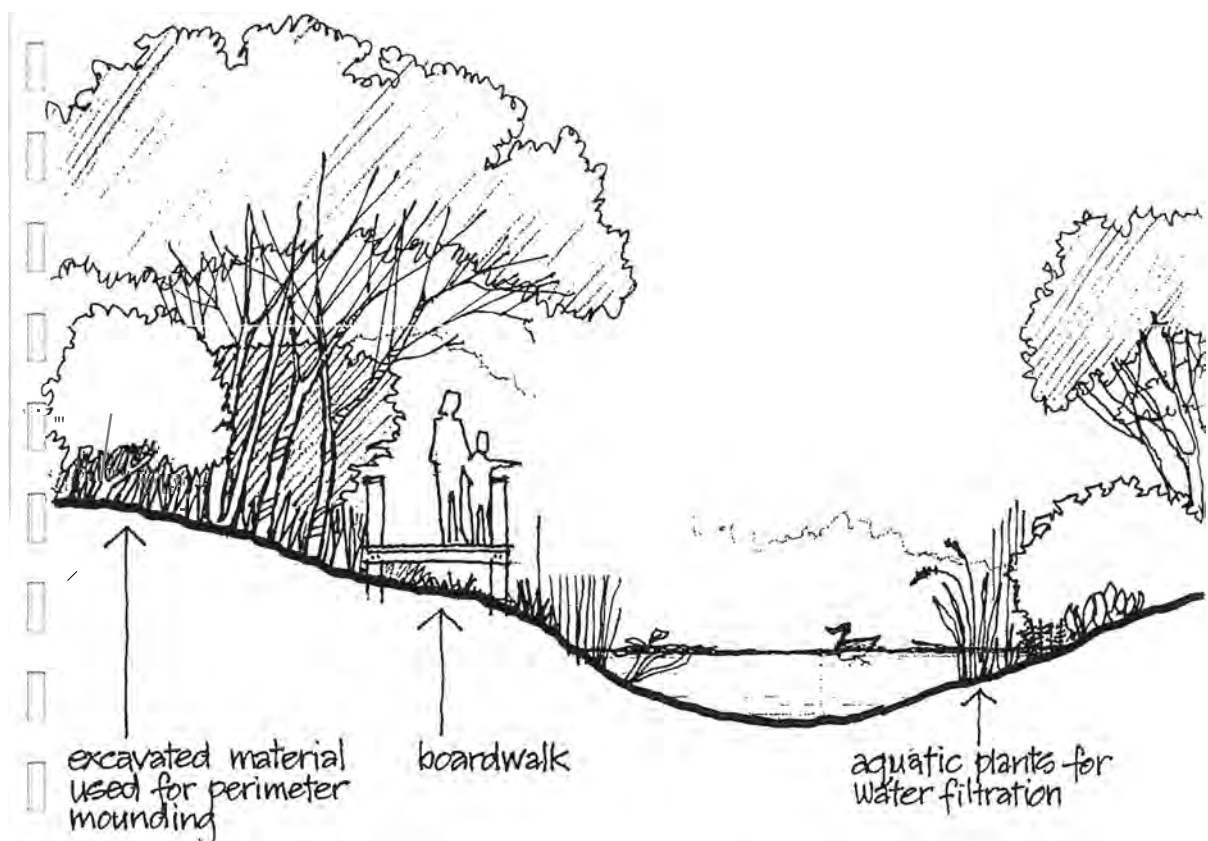
Establish evergreen shrub massing adjacent to the nursery to create an effective screen between the North Gardens and nursery, and to create a visual screen to the existing car park. Similarly provide screen planting to the existing Council depot fence at the north end of this zone.

The Botanical Gardens contain few Australian native plants and no indigenous plants yet there is a growing public interest in these plants. The opportunity exists for the existing vegetation to be enhanced and for an educational

area of indigenous planting and wetlands to be established. The use of riparian and aquatic plant species could provide invaluable bird cover, and the latter would also assist in trapping sediment and filtering stormwater. Remove weed species and non-native trees and shrubs from the site of the wetlands area and establish a planting based on indigenous woody plants, for example:

<i>Acacia implexa</i>	Lightwood
<i>Acacia melanoxylon</i>	Blackwood
<i>Allocasuarina littoralis</i>	Black She Oak
<i>Allocasuarina verticillata</i>	Drooping She Oak
<i>Bursaria spinosa</i>	Sweet Bursaria
<i>Eucalyptus camaldulensis</i>	River Red Gum
<i>Eucalyptus ovata</i>	Swamp Gum
<i>Eucalyptus yarraensis</i>	Yarra Gum
<i>Leptospermum continentale</i>	Prickly Tea Tree
<i>Leptospermum lanigerum</i>	Woolly Tea Tree

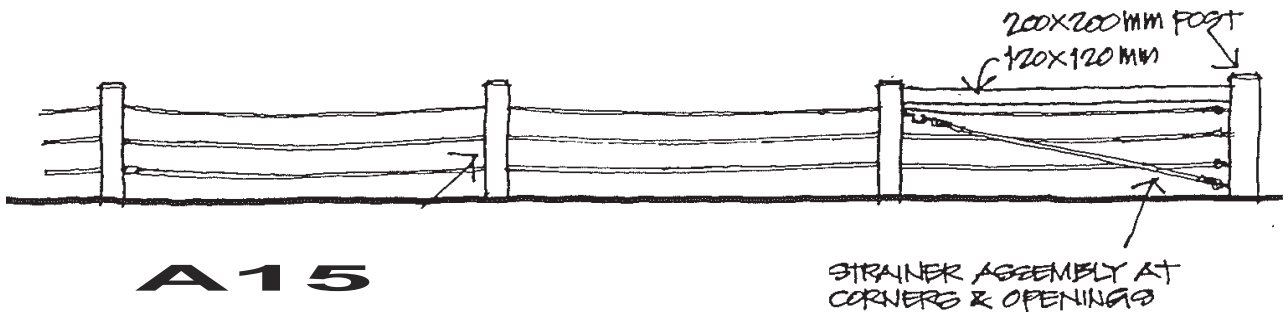
Following the establishment of a woody cover provide under-planting of suitable indigenous aquatic and riparian species.



### 5.3.3 Actions

- Maintain the double row screen planting to Gillies Street with alternating Oaks and Cypresses. Fill any gaps and carry out tree surgery as required. Extend the avenue to the south end of the proposed Horticultural Centre.
- Construct a new path through the centre of the Oak/ Cypress Avenue to Gillies Street to link the Horticultural Centre with the Nursery.

- Construct a diagonal path with a gravel surface from the Gillies Street path to Zoo Drive to ensure all-weather access.
- Remove the fence between the west side of the Sound Shell and Gillies Street to allow the extension of the North Gardens up to the proposed Horticultural Centre. Thin out the adjacent Cypress grove to open up views to and from the Horticultural Centre.
- Re-establish a maze based on the original layout within the Oak-framed space to the north side of the Nursery. Construction should provide a vandal-proof treatment of a wire-mesh fence covered by climbing plants, e.g. with *Muehlenbeckia complexa*.
- Reinforce the avenue planting around Zoo Drive by continuing the existing scheme of Pines alternating with Elms and Poplars. Fill gaps and replace senescent trees.
- Relocate young *Sequoiadendron* trees from the north end of the avenue to fill gaps at the south end.
- Provide small car parking areas along Zoo Drive to service informal barbeque and picnic areas.
- Construct a solid fence to the north of the Nursery to provide screening to the Nursery carpark. Establish evergreen shrub planting to screen the north fence of the Nursery.
- Strengthen the northern approach to the Botanical Gardens proper by the construction of a formal entry with a lych gate structure and a section of fencing to each side. Extend the fence to east to Wendouree Parade and west to the Nursery fence. Provide interpretative signage and a location map. Construct a new path on the north side of the fence leading to the toilet facilities.
- Construct a new path in the centre of the *Sequoiadendron* Avenue leading north from the Botanical Gardens entry. Terminate the path at a circular bed with display planting opposite the centre of the maze site and the existing picnic pavilion. Extend a path east to Zoo Drive from the circular termination.
- Redevelop the children's playground in the south-east corner of the northern garden with a heritage theme. Remove the existing equipment and replace with equipment and surfaces which meet current standards, to suit the age group 3 - 9 years. Remove the existing iron fence and construct a new safety fence along the parking area of Nursery Drive. Provide deciduous shade planting along Nursery Drive.
- Provide a picnic shelter, barbeque, tables and seating adjacent to the children's playground.
- Strengthen Cedar planting around Nursery Drive.
- Construct a kerb to Nursery Drive in association with formal angle parking.
- 'Terra-lift' compacted soil around picnic pavilion and re-sow lawn.
- Continue planting of Oaks along Wendouree Parade to the east of the picnic pavilion.
- Remove the posts and fences in front of the Sound Shell.
- Reinforce the groups of trees planted around the oval. Replace senescent trees.
- Undertake any necessary conservation to zoo structures and provide interpretative signage.
- Establish evergreen shrub planting to screen the Council depot fence.
- Excavate ponds to the north-east corner of the North Gardens to fulfil the role of flood control and settlement ponds. Extend the ponds through a series of wetlands with suitable plantings to provide a broad range of habitats. Indigenous plants should be utilised whenever possible. Excavated material may be suitable for use as perimeter mounding and creation of one or more island sanctuaries. Construct boardwalks, paths and observation decks adjacent to the wetlands to permit the use of this facility as a natural history study centre for interest groups and for schools. An interpretation centre and a series of hides should be established to allow appreciation of the facility. (Figure 13)
- Provide an informal car park and bus bays to service the wetland area.
- Improve drainage to the intersection of Zoo Drive and Wendouree Parade.
- Retain exotic trees along St Aidans Drive and The Boulevard until after the wetland planting is well-developed. Progressively remove other exotic planting from this area over a five year period. Senescent pines should be removed from Gregory Street when the indigenous vegetation is established.
- Construct a post-and-cable fence to Gregory Street, St Aidans Drive and The Boulevard to prevent vehicle access to the wetland area. Provide pedestrian openings. (Figure 14)
- Reconstruct short sections of fencing to each side of the existing bluestone gate pillars and provide signage to highlight the entry. Reinstall the original gates, if available, and fix in a permanently open position. Provide suitable floodlighting. Reconstruct the intersection of St Aidan's Drive with Wendouree Parade as a tee-junction.



## APPENDIX H

### *Visionary Plan for the Ballarat Botanical Gardens (2013)*

In 2013 the City of Ballarat commissioned Mark Richardson Botanic Consultancy to prepare a *Visionary Plan for the Ballarat Botanical Gardens* (Richardson 2014).

The purpose of this *Visionary Plan for the Ballarat Botanical Gardens* (Richardson 2014) is to provide recommendations that will assist the Ballarat Botanical Gardens (BBG) achieve the following goals:

- *To position itself as one of Australia's top rural botanic gardens*
- *To meet its role as a botanic garden in the 21st century*

In doing so, this plan primarily looks at how the BBG could achieve this with what it already has been achieved, and in particular:

- *Current botanic garden features*
- *Themes of the current living collections*
- *Condition of the current living collections*
- *Possible future living collections*
- *The curation of the living collections, including plant records*
- *Current interpretation, including plant labelling*
- *Use of the current and future collections for education*
- *Use of the current and future collections for conservation*
- *Use of the current and future collections by the Federation University for studies and research*
- *The role of the Friends of the Ballarat Botanical Gardens*
- *Other assistance that could be gained from a closer link with the Royal Botanic Gardens in Melbourne and other institutions.*

Recommendations pertinent to the North Gardens Wetlands in this Plan's draft Recommendations include:

**Recommendation 1:** *To better link the resources the BBG already has, combine the North Garden, South Garden and Lake Precincts 6, 7 and 8 to form a single Arboretum that encompasses the current Ballarat Botanical Garden. Consideration could be given to 'renaming' it all to become the Ballarat Botanical Garden and Arboretum. The value of creating the Arboretum is that it will highlight the previous and significant tree plantings in the areas around the botanical gardens and would greatly help to guide tree plantings in the future. By including the three lake precincts in the proposed Arboretum, the BBG will not only include part of the lake shore but would also include a range of other features that are very relevant to a modern day botanic garden, including: a picnic area (Precinct 8); playgrounds (Precinct 8); Pipers on the Parade Restaurant & Kiosk (Precinct 7); the ferry mooring (Precinct 7); beauty of distant views across the lake (Precinct 7); an opportunity to tell the story of the water recycling (Precinct 6); reedbeds (Precinct 6); [and], native aquatic plants (Precinct 6). The picnic area and playground provide an excellent chance to use interpretation to tell the botanic gardens story to people who otherwise may not have really thought about visiting it. This recommendation also takes into account the comments about the importance of the tree plantings made in the 1995 Master Plan and Maintenance Strategy - 4.4.3 Arboreta (Patrick, 1995).*

**Recommendation 2:** *Make the wetlands a part of the botanical garden (as opposed to arboretum) and use them to talk about water treatment and native vegetation. The area around the wetlands could be developed as a reflection of the natural vegetation that used to exist around the lake when it was a swamp. As a part of this, consideration should be given to the removing the Willows from the watercourses near the lake and replacing them with native trees that can be used as a way of extending the wetland down to the edge of the lake. (CoB Points 9&10).*

**Recommendation 17:** *Develop a collection of what used to grow naturally around Ballarat.*

**Recommendation 27:** *Interpret the story of the wetlands and water use at the botanic gardens to promote both the environmental sustainability of both the botanic gardens and the City of Ballarat.*

**Recommendation 34:** *Introduce the use of the Wathaurong language and stories to the BBG's interpretation.*

**Recommendation 35:** *Rethink the way the Aboriginal poles have been used (e.g. does it make sense having them in the Asia garden). And look at what repair is needed.*

The Consultancy Team's thoughts as to these draft Recommendations are:

**Recommendation 1:** This Recommendation needs to address the nomenclature and master planning recommendations embodied in this report.

**Recommendation 17:** This Recommendation is supported as it will serve as a valuable a 'taste sensation' for any North Gardens Indigenous plant planting and or revegetation initiative.

**Recommendation 27:** This Recommendation is supported.

**Recommendation 30:** This Recommendation is not supported because any plant species labelling would be contrary to the City of Ballarat's *Reconciliation Action Plan* recommend that seek a respectful the Wadawurrung-enhancement cultural agenda in North Garden.

**Recommendation 34:** Despite extensive desk-top review of this information to date, noting that many of the 'Wathaurong' plant names were sourced from various Wadawurrung representatives and more particularly one very well respected Geelong-based non-Wadawurrung Elder (now deceased), we recommend prudence in nomenclature without direct consultation with and endorsement by the Wadawurrung.



## APPENDIX I

### Draft North Gardens Sculpture Park Landscape Master Plan Community Engagement Information (2018)



Wadawurrung

CITY OF  
BALLARAT 

# Proposed North Gardens Indigenous Sculpture Park Landscape Master Plan



The Wadawurrung community is invited to contribute their thoughts on the design and creation of the North Garden Indigenous Sculpture Park Landscape Design Plan, a key recommendation outlined in the recently adopted Lake Wendouree Master Plan (2017).

**'Lake Wendouree is recognised by the Ballarat community as the cultural heart of Ballarat. Both its indigenous and European histories should be appropriately protected, enhanced, acknowledged and celebrated'** – Lake Wendouree Masterplan 2017

This project has the support and approval of the Wadawurrung (Wathaurong Aboriginal Corporation).

The City of Ballarat is now seeking your thoughts on the landscape design for the North Gardens Indigenous Sculpture Park.



## Project objectives:

- Deliver a quality high-profile engagement process over a six-month period that seeks to adequately consult in the development of an Indigenous Sculpture Park at the North Gardens
- Ensure the landscape design plan for the site incorporates local Aboriginal stories and aspirations
- Assess, review and prioritise key features of the North Gardens Indigenous Sculpture Park project, including sculpture commissions
- Identify features and community values that have historical, cultural, environmental, and landscape significance, with regard to Aboriginal heritage
- Establish principles for the siting, development and commissioning of artworks at North Gardens
- Improve landscape development and management outcomes
- Improve pedestrian connections and linkages.

## We want to hear from you about:

- What your ideas are for this precinct?
- What type of place you would like the North Gardens wetlands area to be?
- How would you like to see the Wadawurrung culture celebrated, recognised and incorporated in this design and master plan?
- How would you like to see Aboriginal culture celebrated, recognised and incorporated in this design and master plan?

## How can you participate?

Join the conversation at the 'Day in the Park' community drop-in session at [insert location?]	10am-4pm, Friday 20 April 2018
Drop in to the Wadawurrung Corporation offices at 99 Mair Street East, Ballarat	Date and time [details needed?]
Follow us on Facebook at [insert address]	address
Email us at [insert address]	address

## Contact us for more information:

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## APPENDIX J

### *North Gardens Sculpture Park Landscape Master Plan (2019)*

The following image is the final North Gardens Sculpture Park Landscape Master Plan arising from City of Ballarat community consultation and comments in 2018.

