

MASON PARK PLAN OF MANAGEMENT



1. royal spoonbill
 2. silver gull
 3. black-winged stilt
 4. black-bellied whistling
 5. sharp-tailed sandpiper
 6. curlew sandpiper
 7. great egret
 8. grey and chestnut teal
- STRATHFIELD
COUNCIL

DRAFT 2024


**STRATHFIELD
COUNCIL**

Table of Contents

1.	Introduction	5
1.1	Title	5
1.2	Land Description	6
1.3	Purpose of this Plan of Management.....	12
1.4	Background to this Plan of Management.....	12
1.5	Contents of this Plan of Management	12
1.6	Change and Review of Plan of Management	15
2.	About the Strathfield Local Government Area	17
2.1	Recognition of Traditional Custodians	17
2.2	Snapshot of Strathfield Local Government Area (LGA).....	17
2.3	Strathfield LGA community and recreational trends.....	18
2.4	Community Engagement.....	18
2.5	References	21
3.	Basis of Management	22
3.1	Management principles.....	22
3.2	Categories and Classifications of Community Land	22
3.3	Mason Park – Land Categorisations.....	24
3.4	Material Harm Considerations.....	26
3.5	Councils strategic objectives and priorities.....	26
3.6	Mason Park - prior use and history	28
3.7	Mason Park – Description and Condition of land and structures	31
3.8	Heritage.....	33
3.9	Native Title Review	34
3.10	Condition of Assets at Mason Park	35
3.11	Maintenance of Mason Park	37
3.12	Future Development	37
3.13	Minor development and development processes	38
3.14	Scale and intensity of land use	38
4.1	Permissible uses and developments.....	39
4.1.1	Sportsgrounds.....	39
4.1.2	Natural Area.....	42
4.2	Authorisation of leases, licences or other estates over community land.....	43

4.3 Short Term Uses	45
4.4 Current leases, licences and uses of Mason Park.....	46
5. Environmental	47
5.1 Soil landscapes	47
5.2 Detailed description of park flora and fauna	50
5.2.1 Powells Creek Inlet	50
5.2.2 Mason Park Wetlands.....	51
5.2.3 Forested surrounds (revegetation areas)	55
5.2.4 Carpark and footpath/cycleway (revegetation).....	57
5.3 Ecological values	60
5.3.1 Threatened Communities	60
5.3.2 Threatened Species	60
5.3.4 Managing Hydrology	77
6. Management of the land	79
6.1 Objectives and management of community land	79
Specific Actions for Wetland Management Zones.....	85
Strategies for Supplementary Planting.....	92
General Actions for Fauna.....	93
General Actions for Flora	94
Appendix A.....	95
1. Flora and Fauna Surveys 2020.....	95
1.1 Desktop Surveys.....	95
1.1.1 Flora field surveys methods.....	95
1.1.2 Results.....	96
1.1.3 Mapped Vegetation	101
1.2 Fauna Survey	102
1.2.1 Methods	102
1.2.2 Results.....	102
1.3 Fauna Habitats.....	109
1.4 Threatened species and protected matters	118
1.4.1 Bilateral migratory bird agreements	118
1.4.2 Threatened and migratory species searches.....	118
1.4.3 Protected Matters Searches.....	122

Appendix B – A review of vegetation and hydrology.....	130
1.2 Review of Vegetation for Mason Park Wetlands.....	141
Shorebird notes from previous PoMs.....	148
Habitat requirements for shorebirds (UBM, 1994).....	148
Appendix C – Coastal Wetlands and Key Fish Habitat.....	150
Appendix B – Community Consultation	153

© Strathfield Council 2023

1. Introduction

1.1 Title

This plan is titled Mason Park Plan of Management.

This plan of management (PoM) has been prepared by Strathfield Council and provides direction as to the use and management of council-owned community land and council-managed Crown reserves classified as 'community land' in the Strathfield Council area. The PoM is required in accordance with Section 3.23 of the *Crown Land Management Act 2016* and Section 36 of the *Local Government Act 1993*.

This PoM specifically addresses the management of Mason Park. The PoM outlines the way the land will be used and provides the framework for Council to follow in relation to the express authorisation of leases and licences on the land.

This land on which Mason Park is located is partly owned by Strathfield Council and partly owned by the Crown. The park is managed by Strathfield Council as Crown Land Manager under the *Crown Land Management Act 2016*.

Information and assessment of Mason Park's environmental features was prepared by Anne Carey and Meredith Brainwood of Applied Ecology Pty Ltd in April 2021. This includes Section 5 – Environmental Features and Appendix A – Flora and Fauna Surveys. Applied Ecology were also engaged to prepare an Operational Management Plan for the Mason Park Wetlands (December 2021). The Operational Management Plan supports the Plan of Management but provides more detailed actions for the specific management of the Wetland.

This PoM was placed on public exhibition from xx to xx, in accordance with the requirements of section 38 of the *Local Government Act 1993*. A total of xx submissions were received. Council considered these submissions before adopting the PoM on xx.

In accordance with section 39 of the *Local Government Act 1993*, prior to being placed on public exhibition, the draft PoM was referred to the Department of Planning & Environment – Crown Lands, as representative of the state of NSW, which is the owner of part of the Reserve. Council has included in the plan any provisions that have been required by the Department of Planning & Environment – Crown Lands.

Figure 1 – Mason Park location map



1.2 Land Description

This plan of management covers Mason Park. The reserve information is detailed in Table 1. The land is owned by the Crown and is managed by council as Crown land manager under the *Crown Land Management Act 2016*.

Mason Park is located on Underwood Road Homebush and is bounded by Saleyards Creek and Powells Creek. Bressington Park adjoins Mason Park at its northern boundary of Saleyards Creek. The eastern boundary of the park is Powells Creek, which is the boundary of the local government areas of Strathfield and City of Canada Bay Councils. The immediate surrounding areas are zoned industrial (west of the park). There are residential areas south of the park and within walking distance of the park,

Mason Park contains sportsfields, carpark, playground, parklands and wetlands.

Table 1 - Information about the Reserve covered by this plan of management.

Reserve Number	Bressington Park and Part of Mason Park (R500330)
Reserve Description	The Reserve Trust includes parts of Bressington Park and Mason Park in the Strathfield Local Government Area. The land extends east across Powells Creek into Powells Creek Reserve which is located in the City of Canada Bay Council. Therefore, the Reserve Trust (5000330) is dual managed. However, this Plan of Management applies only to the area known as Mason Park.
Reserve purpose	Public Recreation
Land classification	Community
Area (Ha)	12.55 hectares

Land parcel	Owner	Zoning (LEP 2012)	Assigned categories
Lot 50 DP1282691	Crown	REI – Public Recreation C2 – Environmental Conservation SP2 – Infrastructure (Stormwater)	Natural Area (Wetland) Sportsground
Lot 1 DP914879	Council	REI – Public Recreation C2 – Environmental Conservation SP2 – Infrastructure (Stormwater)	Natural Area (Wetland) Sportsground
Lot 1 DP129388	Council	REI – Public Recreation C2 – Environmental Conservation	Natural Area (Wetland) Sportsground
Lot 7496 DP 1187064	Council	REI – Public Recreation C2 – Environmental Conservation SP2 – Infrastructure (Stormwater)	Natural Area (Wetland) Sportsground
Lot 1 DP176625	Council	REI – Public Recreation C2 – Environmental Conservation SP2 – Infrastructure (Stormwater)	Natural Area (Wetland) Sportsground

**Lot 2 DP129388 is outside the boundary of Mason Park in the Strathfield LGA. This lot covers Powells Creek, owned by Sydney Water, and extends into the City of Canada Bay.*

Figure 2 – R500330 showing the full extent of Crown Reserve R50030, *with the area managed by Strathfield Council highlighted and the remainder managed by Canada Bay Council.*



Figure 3 Illustration of Mason Park indicating the portions of Crown Land and Council owned land



Figure 4 Land lots located in Mason Park and Bressington Park, Strathfield Local Government Area

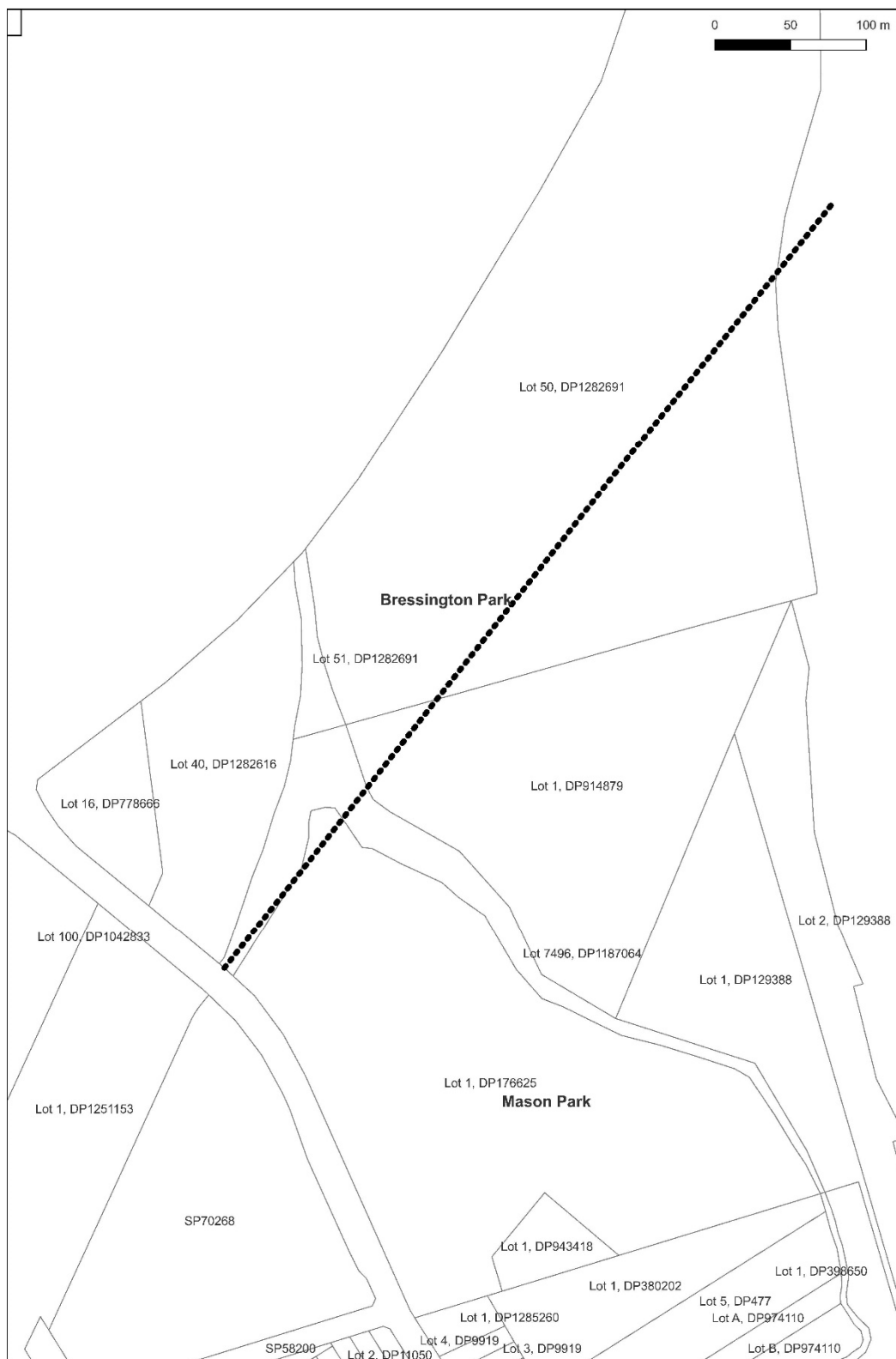
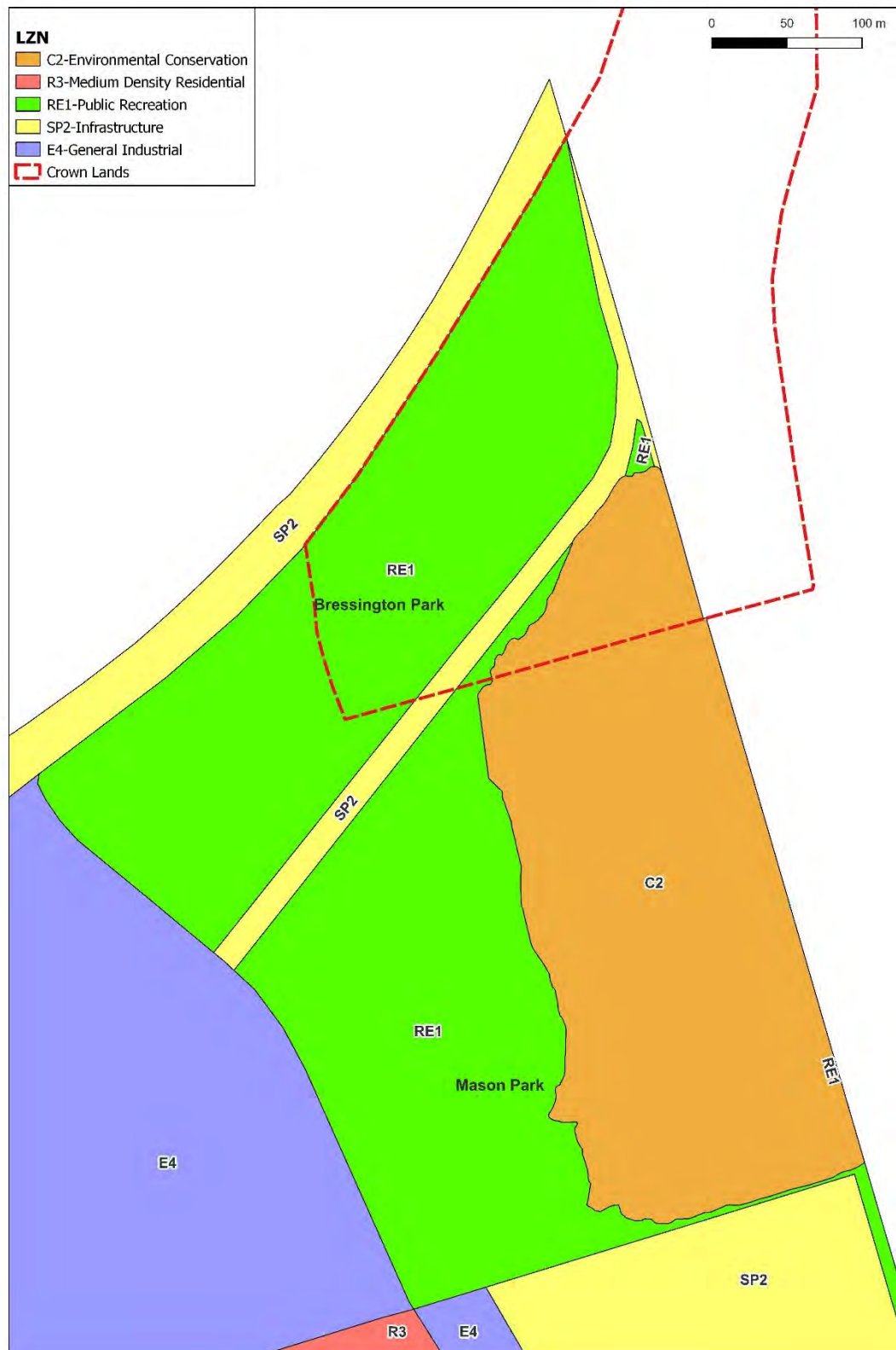


Figure 5– Strathfield Local Environmental Plan 2012 – Zoning



1.3 Purpose of this Plan of Management

The *Local Government Act 1993* and amendments to the *Crown Land Management Act 2016* require all public land including Crown Reserves, owned or managed by Council, to be classified as either 'community' land or 'operational' land. Land classified as 'Community' land is managed and used in accordance with an adopted Plan of Management.

The *Crown Land Management Act 2016* (the CLM Act) authorises local councils (council managers) appointed to manage dedicated or reserved Crown land to manage that land as if it were public land under the *Local Government Act 1993* (LG Act). Therefore, all Crown land reserves managed by council are also required to have a PoM under the LG Act.

The purpose of this PoM is to:

- contribute to the council's broader strategic goals and vision as set out in Strathfield Community Strategic Plan (CSP)
- ensure compliance with the *Local Government Act 1993* and the *Crown Land Management Act 2016*
- provide clarity in the future development, use and management of the community land
- ensure consistent management that supports a unified approach to meeting the varied needs of the community.

Plans of Management are developed by Council in consultation with the community. A Plan of Management describes the features of the community land and outlines how the land may be managed and used, consistent with land categorisations, core objectives and zoning, to provide a transparent and co-ordinated approach to public land management.

1.4 Background to this Plan of Management

There are four parks in the Strathfield LGA which are Crown Land Reserves. This includes Hudson Park, Strathfield Park, Bressington Park and Mason Park. These are also the largest parks in the LGA (more than five hectares) and are important to the local area by providing significant open space and recreation facilities.

With the adoption of the *Crown Land Management Act 2016*, all Crown Land Reserves are required to be managed similar to Council owned land under the *Local Government Act 1993*. This requires land to be classified as community or operational land and categorised based on its primary use, consistent with the purpose of the land.

Strathfield Council adopted a Plan of Management for Mason Park in 2008 which was prepared in 2008 by a team led by Parkland Environmental Planners. The new Plan of Management reviews, updates and replaces the previous Plan of Management.

1.5 Contents of this Plan of Management

This Plan of Management is divided into the following sections, as outlined in Table 2.

Table 2 – Structure of this Plan of Management

Section	What does it include?
1. Introduction	Title, land covered by plan, land description, purpose of the plan, background, legislative framework, review of plan
2. About the Strathfield LGA	Recognition of traditional custodians, Strathfield LGA snapshot, trends, community vision and strategic directions, community engagement, references
3. Basis of Management	Management principles, categories and classifications of community land, land categorisations (including map), Council's strategic objectives and priorities, land use/history, description and condition of land and structures, heritage, native title review, condition of assets, maintenance of park, future development, minor development, scale and intensity of land use
4. Development and Uses	Permissible uses and development, authorisation of leases and licences, short term uses, current leases, licences etc.
5. Environmental Features	Soil landscapes, detailed description of park flora and fauna, ecological values
6. Management of the land	Objectives, performance targets, means and manner for assessment of performance
Appendix A	Flora and Fauna Surveys
Appendix B	Community engagement documents

Local Government Act 1993 (NSW) (LG Act) provides the legislative framework for Council's management of community land. The LG Act requires all community lands to be covered by a Plan of Management that must identify:

- the category of the land
- objectives and outcomes for the land
- how Council proposes to achieve objectives and outcomes
- the way by which Council proposes to assess its performance
- expressly authorise any leases, licences or other estates

Crown Lands Management Act 2016 (NSW) (CLM Act) assigns certain functions to Council managers. As a crown land manager, Council is authorised to classify and manage its dedicated or reserved Crown land as if it were public land within the meaning of the LG Act. Dedicate or reserved Crown land may only be used for the following purposes:

- the purposes for which is dedicated or reserved, or
- any purpose incidental or ancillary to a purpose for which it is dedicated or reserved, or
- any purpose specified in a plan of management for the land, or
- any other purposes authorised by the Act

Council, as Crown Land Manager, may issue leases and licences over Crown land in line with the LG Act, as per the assigned category and with consideration of the reserve purpose.

Generally, when managing dedicated or reserved Crown land, and for the purposes of this Plan of Management, Council:

- must manage the land as if it were community land under the LG Act, and
- has for that purpose all the functions that a local council has under that Act in relation to community land (including in relation to the leasing and licencing of community land)

Native Title Act (Commonwealth) 1993 (NT Act) concerns the legal recognition of the individual or communal rights and interests which Aboriginal people have in land and water, where Aboriginal people have continued to exercise their rights and interests in accordance with traditional law and custom. On Crown land, native title rights and interests must be considered unless:

- Native title has been extinguished, or
- Native title has been surrendered, or
- Determined by a court to no longer exist.

Council must manage Crown land in accordance with Part 8 of the CLM Act in relation to native title and ensure the requirements of the NT Act for the management of Crown Land are addressed.

Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act) is the principal planning legislation for NSW, that provides a framework for the environmental planning and assessment of development proposals and preparation of environmental planning instruments (including the Local Environmental Plan or LEP).

Biodiversity Conservation Act 2016 (NSW) (BC Act) requires that Councils consider the impact on threatened species, populations and communities in fulfilling their statutory responsibilities under the EP&A Act for development approvals. It also covers management of threatened species and communities on Council owned lands.

Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act) provides a national scheme for environmental protection and biodiversity conservation, and incorporates referral mechanisms and environmental impact assessment processes for projects of national significance.

Companion Animal Act 1998 (NSW) requires the identification and registration of companion animals (e.g. cats and dogs) and sets out the duties and responsibilities in relation to management of animals and specific areas of land.

Local Land Services Act 2013 (NSW) provides a framework to ensure the proper management of natural resources in the social, economic and environmental interests of the State. Strathfield is part of the Greater Sydney Local Land Services (GSLLS), which provides guidance on matters such as community engagement, biosecurity and weeds.

Also relevant are:

- *Protection of the Environment Operations Act 1997* (NSW)
- *Water Management Act 2000* (NSW)
- *Disability Discrimination Act 1992* (NSW) and *Disability Inclusion Act 2014* (NSW)
- *Biosecurity Act 2015* (NSW)
- *Fisheries Management Act 1994* (NSW)
- *Rural Fires Act 1997* (NSW)
- *National Parks and Wildlife Act 1974* (NSW)

Related Strathfield Council policies and plans

- Strathfield Biodiversity Conservation Strategy and Action Plan 2020-2030
- Strathfield 2035 Community Strategic Plan (CSP)
- Strathfield Local Environmental Plan 2012 and Development Control Plans 2005
- Strathfield Local Strategic Planning Statement (LSPS) 2020
- Disability Inclusion Plan 2020-2024

1.6 Change and Review of Plan of Management

This Plan of Management will require regular review in order to align with community values and changing community needs, and to reflect changes in Council priorities. The performance of this Plan of Management will be reviewed on a regular basis to ensure the park and sportsground use of land and buildings are well maintained and provide a safe environment for public enjoyment.

Strategic reviews of this Plan of Management will be required where there is significant change to legislation or at five (5) year intervals.

Council may continue to acquire or divest land for the benefit of the community and as such, land may also come into Council's ownership by dedication of land for open space. As such, the Plan of Management may be updated from time to time, reflecting significant changes to the condition of the community land, or to reflect new acquisitions or dedications of land.

The community will have an opportunity to participate in reviews of this PoM.

DRAFT

2. About the Strathfield Local Government Area

2.1 Recognition of Traditional Custodians

Strathfield Council would like to show respect and acknowledge the Wangal people, the traditional Custodians of the lands on which the Strathfield area is located. We pay respect to Elders past, present and emerging.

2.2 Snapshot of Strathfield Local Government Area (LGA)

The Strathfield Local Government Area (LGA) is well known for transport connections, educational opportunities, attractive streetscapes, parks, heritage and buildings. The Strathfield LGA is centrally located in Sydney's Inner West, approximately 10.5 kilometres from the Sydney CBD and half way between Parramatta and the Sydney CBD. The LGA includes the suburbs of Strathfield (postcode 2135), Strathfield South (2136), Homebush (2140), Homebush West (2140), part of Belfield (2191) and part of Greenacre (2190). Sydney Markets (postcode 2129) is also located within Strathfield LGA.

Strathfield LGA is well known for its extensive green open spaces and high quality recreational facilities, which enhance the liveability, amenity and sustainability of the local area. The Strathfield LGA has a total area of approximately 13.9 square kilometres, with 104 hectares of the total area being public open space (2018 estimates). There is currently 9.06 hectares of remnant bushland in the LGA and about 6 hectares is under Council management.

The estimated residential LGA population is about 46,000 residents (2022 ABS ERP) and by 2041, the resident population is estimated to reach about 56,000 people (Department of Planning & Environment 2023). The growing population and accompanying building density will continue to increase demand for access to and usage of available open space and community facilities. Therefore, management of community land is of critical importance to current and future communities.

Open spaces range from regional and district sporting grounds to smaller local parks and reserves. Significant parks with major sporting facilities include Airey Park, Bressington Park, Bark Huts Reserve, Begnell Field, Cooke Park, Hudson Park, Mason Park and Strathfield Park. Many local biodiversity conservation and habitat connectivity priority areas, including flora and fauna assets, are located within Strathfield LGA's parks and reserves. A number of connected parks and open spaces form the Cooks River Foreshore open space network, an important local and regional habitat corridor and pedestrian and cycle transport connection.

Strathfield LGA also provides many community facilities, located on community land including meeting rooms, halls and community centres which are available for hire by groups and individuals for sporting, community, recreation, social and other purposes.

2.3 Strathfield LGA community and recreational trends

Some of the challenges facing the Strathfield LGA include increasing and competing demands for public open space and community facilities. Strathfield Council is strongly focused on identifying and meeting the current and future needs of the Strathfield community in a sustainable manner.

Recent community engagement and analysis of social and recreational trends indicate increasing participation in recreation, sporting and leisure activities such as organised team sports, walking, cycling, running, aerobic fitness and dog walking. There is increased demand for access to community and recreation facilities, outdoor and indoor.

Priorities for Council involve increasing the capacity of local community facilities, parks and sportsgrounds, developing new community and recreational facilities as required and ensuring equity of access to land and facilities, to meet changing and diverse needs.

2.4 Community Engagement

Prior to developing the Mason Park Plan of Management, Strathfield Council undertook community engagement and encouraged local residents and park users to be involved in the future planning for the park. An information sheet issued with a survey that asked for responses on the following questions as well as identifying personal data:

- Importance of Mason Park features
- Priorities of Mason Park
- Awareness of Mason Park Wetlands
- Suggested improvements to the park
- Allowable/Non-Allowable Activities
- Additional comments

The survey was open from 4 November 2020 to 11 December 2020 (refer to Appendix B for consultation documentation). A letter advising of the consultation was distributed to all households within 1km of the park by letterbox drop. Emails issued to clubs and park users regarding the consultative process. The survey was notified on Council's website and the Council e-News each week while the survey was open.

A total of 28 survey responses were received during the consultation period.

Community Engagement Outcomes

The feedback received showed a high and varied degree of community interest in Mason Park. 60% of respondents were residents of the Strathfield LGA. Of the persons surveyed, 21% identified they played sport and 15% identified as a member of an organisation that uses the park, which included sports or environmental activities such as Bushcare or bird watching. The highest respondent groups were aged

40-49 years (40%), 60 years or older (18%) and 30-39 years (14%). Other aged groups were around 7% of respondents.

Over 64% of those surveyed visited Mason Park at least once a week and 36% at least once a month.

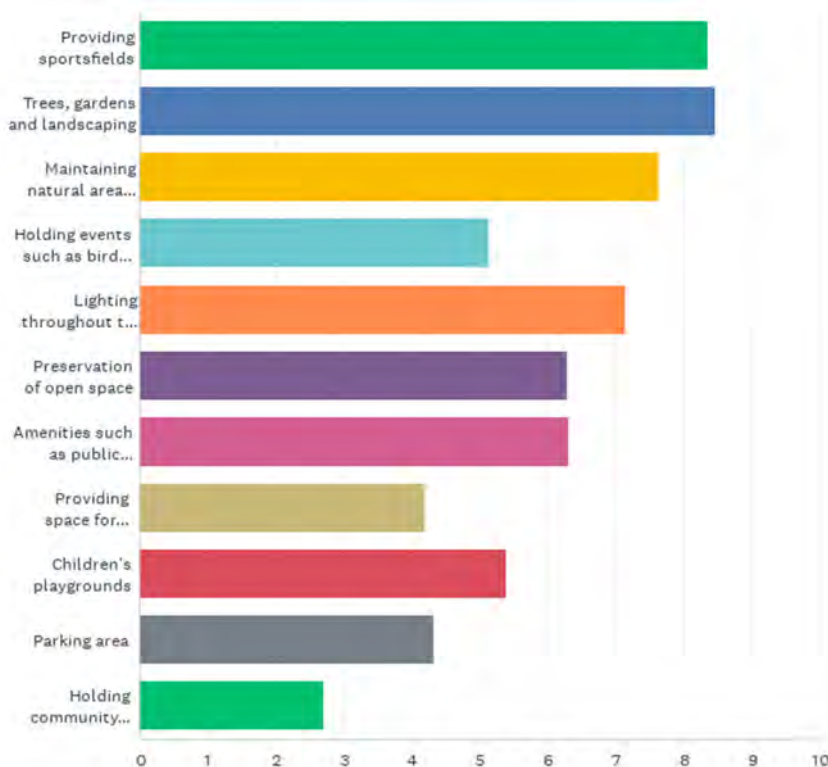
The survey requested respondents rate important features of the park. At least one response was required, but multiple responses were permitted. Mason Park features major sportsfields and the Mason Park Wetlands and natural area. These two areas are divided by substantial vegetation with the wetlands orientating to Powells Creek while the sportsfields located close to Underwood Road. The two areas connect by pathways. Respondents to the survey are clearly divided in their interests, particularly between sports and environment, which aligns with the major features of the park.

Like many other parks, the activity most participants engage in is walking, jogging or running, which attracted 68% of responses. Visiting the wetlands and natural areas was the second top response at 46%. 86% of all respondents stated they were aware of the wetlands at Mason Park. The provision of formal and informal recreation facilities and open space was important to respondents including children's playgrounds (32%), formal sport (32%), personal exercise (21%) and various informal activities such as relaxing, walking the dog and gatherings.

Feature/Activity	Responses
Walking, jogging or running	68%
Visiting wetlands and natural areas	46%
Visiting children's playgrounds	32%
Playing formal sport eg soccer, cricket etc	32%
Personal exercise/leisure eg yoga, tai chi	21%
Cycling via Bay to Bay Shared pathway	21%
Relaxing in open spaces	21%
Playing self-organised ball games	14%
Walking the dog	14%
Attending events	7%
Other activities	7%
Gatherings in open spaces for picnics, BBQs	4%

As previously stated, responses tended to focus on either the sporting facilities or environmental features of the park. Therefore, in ranking priorities for the park, the top three priorities were providing sportsfields; trees, gardens and landscaping; and maintaining the natural areas and Wetlands.

Figure 6 Mason Park respondent rating of importance of park features



Issues identified

Respondents were asked to suggest any issues or improvements to the park. Many commented that Mason Park was well managed and they were satisfied with the park. Respondents whose main focus was on the Wetland noted the need to protect and minimise disturbance of the Wetland, to manage rubbish dumping and to provide more educational signage including using QR codes.

Many raised issues with parking. There were complaints about the parking meters and difficulties using the meters especially for periods over three hours. Some suggested that the first 1-2 hours should be free and charged thereafter or that the parking charges be reduced to stop people parking in nearby streets instead of the parking area.

Users of sporting fields commented that lighting needed to be improved to the standard of Strathfield Park. Respondents who identified as being associated with a club using the park raised issues relating to hirers use of the park and facilities such as storage, amenities (toilets) etc.

Respondents were asked to comment on activities that should not be allowed in the park. There were a range of comments about anti-social behaviours including drinking and smoking (especially near playgrounds), littering (including failure to clean up dog droppings), dangerous practices eg archery, golf, drones, lighting fires, use of motorised sports and toys (eg scooters) or activities that cause harm to the natural environment or overuse of the sportsfields. However, respondents were generally satisfied with the management of the park.

The importance of Mason Park's Wetland, open and green spaces, trees and vegetation and was highlighted by the community consultation. Section 5 of this report provides a detailed assessment of the park's environmental features. These are addressed in the Action Plans included in Section 6.

2.5 References

Applied Ecology, (2021 December), *Operational Management Plan for the Mason Park Wetlands*

Eco Logical Australia and Strathfield Council, 2019, *Strathfield Biodiversity Strategy 2020-2030*, viewed at <https://www.strathfield.nsw.gov.au/live/biodiversity/>

Insight Ecology, 2017, *The Fauna of Strathfield (Local Government Area)*, viewed at <https://www.strathfield.nsw.gov.au/live/biodiversity/>

Jones, Cathy (2023) 'Mason Park' history, <https://strathfieldheritage.com/parks-and-reserves/mason-park-and-mason-park-wetlands/>

Near Maps – Strathfield LGA, 2023 at <https://www.nearmap.com/au/en>

Strathfield Council, *Strathfield Local Environmental Plan 2012*, viewed at <https://www.legislation.nsw.gov.au/#/view/EPI/2013/115>

Strathfield Council, 2022, *Community Strategic Plan – Strathfield 2035* viewed at <https://www.strathfield.nsw.gov.au/council/policies-plans-and-regulations/community-strategic-plan/>

Strathfield Council, 2023 Geographical Information System (GIS) Data

Strathfield LGA population projections, Department of Planning and Environment, viewed at <https://www.planningportal.nsw.gov.au/populations> in July 2023

3. Basis of Management

3.1 Management principles

Strathfield Council intends to manage its community land to meet:

- assigned categorisation of community land
- the Local Government (LG) Act guidelines and core objectives for community land
- the council's strategic objectives and priorities
- development and use of the land outlined in Section 6 of the LG Act.

All community land is required to be categorised as one or more of the following categories. Where the land is owned by the Crown, the category assigned should align with the purpose for which the land is dedicated or reserved.

The LG Act defines five categories of community land:

- Park – for areas primarily used for passive recreation.
- Sportsground – for areas where the primary use is for active recreation involving organised sports or the playing of outdoor games.
- General Community Use – for all areas where the primary purpose relates to public recreation and the physical, cultural, social, and intellectual welfare or development of members of the public. This includes venues such as community halls, scout and guide halls, and libraries.
- Cultural Significance – for areas with Aboriginal, aesthetic, archaeological, historical, technical, research or social significance.
- Natural Area – for all areas that play an important role in the area's ecology. This category is further categorised into bushland, escarpment, foreshore, watercourse and wetland categories.

Mason Park has multiple categorisations which are identified and mapped in Section 3.3.

3.2 Categories and Classifications of Community Land

The management of community land is governed by the categorisation of the land, its purpose, and the core objectives of the relevant category of community land.

Council may then apply more specific management objectives to community land, though these must be compatible with the core objectives for the land.

The guidelines for categorisation of community land are set out in the LG (General) Reg. The core objectives for each category are set out in the LG Act. The guidelines and core objectives for the Park, Sportsground and Natural Area categories are set out in the relevant category sections of this plan of management.

Community land is valued for its important role in the social, intellectual, spiritual and physical enrichment of residents, workers, and visitors to the Strathfield Council area.

The intrinsic value of community land is also recognised, as is the important role this land plays in biodiversity conservation and ecosystem function.

Strathfield Council encourages a wide range of uses of community land and intends to facilitate uses which increase the activation of its land, where appropriate. Within buildings, swimming pools, and recreational and sporting facilities in particular, Strathfield Council intends to permit and encourage a broad range of appropriate activities.

The management of community land is governed by the categorisation of the land, and the core objectives of the relevant category of community land. The core objectives for each category are set out in the *Local Government Act 1993*. The guidelines and core objectives for relevant categories are set out in Table 4.

Table 3 – Guidelines for and core objectives of community land

Category	Guidelines ¹	Core objectives ²
Sportsground	<i>Regulation cl.103</i> Land should be categorised as 'sportsground' if the land is used primarily for active recreation involving organised sports or the playing of outdoor games.	<i>Category Sportsground - (Section 36F)</i> - to encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games, and - to ensure that such activities are managed having regard to any adverse impact on nearby residences.
Natural Area – wetland	<i>Regulation cl.108</i> Marshes, mangroves, backwaters, billabongs, swamps, sedgelands, wet meadows or wet heathlands that form a waterbody.	<i>Natural Area – Wetland (Section 36K)</i> - to protect the biodiversity and ecological values of wetlands, with particular reference to their hydrological environment (including water quality and water flow), and to the flora, fauna and habitat values of the wetlands, and - to restore and regenerate degraded wetlands, and - to facilitate community education in relation to wetlands, and the community use of wetlands, without compromising the ecological values of wetlands.

¹ *Local Government General Regulation 2021*

² *Local Government Act 1993*

Council must manage community land in according to these core objectives. Any activities or uses of the land should be consistent with the core objectives for that category of land. Additional objectives which support the above core objectives are included in Section 6 Management of the land.

The land classified as community land under the *Local Government Act 1993* is categorised as Sportsground and Natural Area (Wetland). The categorised areas are marked in Figure 7.

3.3 Mason Park – Land Categorisations

Bressington Park and Part of Mason Park Reserve (R500330) includes both Bressington Park and Mason Park and extends across Powells Creek including land managed by City of Canada Bay Council. This plan of management only relates to land located in Mason Park. Mason Park was gazetted on 16 December 1927 for Public Recreation. The Department of Planning and Environment notified that approval was granted for the initial classification of Mason Park as 'community land' and the categorisations of sportsground and natural area (wetland) in February 2020.

The residue land in the park is owned by Strathfield Council. The following land categorisations are:

- Sportsgrounds. The majority of the park is dedicated to formal sports with ancillary facilities such as amenities and carparking. This land is owned by Strathfield Council.
- Natural Area (Wetland). The Mason Park Wetlands area near Powells Creek is categorised as Natural Area (wetland). This area is partly owned by Crown Land and Strathfield Council.

Figure 7 – Map of Mason Park land categorisations



3.4 Material Harm Considerations

The land at Mason Park was dedicated in 1927 for the reserve purpose of Public Recreation. The park is 12.55 hectares (ha) in size. Two land categories are assigned in Mason Park for Sportsground and Natural Area - Wetland. All land categorisations support the reserve purpose of Public Recreation. Material harm considerations are set out under each land categorisation and address the considerations set out in Section 2.14(3) of the *Crown Land Management Act 2016*.

Sportsground

The Sportsground categorisation contains three multi-purpose sportsfields (one being synthetic), a small touch football field, one children's playground, an amenities pavilion, lighting, shelter and seating. This area measures about 4.8ha which is about 38% of the total land area. The sportsfields are used for summer and winter sports. All sportsfields have lighting which supports night use of the facility. The sportsfields are open to the public, except when hired for formal sports. The land is maintained by Council to a high standard.

Natural Area - Wetland

Areas within Mason Park primarily located near Powells Creek are categorised as Natural Area (wetland). This land measures about 7.7ha or about 62% of the total land area. This categorisation provides protection for two Endangered Ecological communities: Estuarine Swamp Oak Forest and Estuarine Saltmarsh; the Estuarine Mangrove Forest and Threatened and Listed Migratory Species including Narrow-leafed Wilsonsia *Wilsonia backhousei*, the Grey-heading Flying-fox *Pteropus poliocephalus* and microbat species; the Eastern Bent-winged Bat *Miniopterus orianae oceanensis* and Yellow-bellied Sheath-tail Bat *Saccolaimus flaviventris*. There is a relationship with the small wetland area of Bressington Park, which is adjacent to this land. The land is maintained by Council to a high standard.

3.5 Councils strategic objectives and priorities

Strathfield Council, in consultation with the community, has developed the following strategies and plans to identify the priorities and aspirations of the community and the delivery of a vision for the future. They have a direct influence on the objectives, uses and management approach covered by PoMs.

The community vision describes the community's aspirations for the future of the Strathfield Local Government Area by 2035:

"Located in the heart of Greater Sydney, Strathfield is highly connected to transport, education and employment. It's culturally diverse and socially cohesive community is proud of its heritage and residential character, safe neighbourhoods, leafy environments and parklands. Strathfield is a place that embraces learning, culture, productivity and opportunity."

Strathfield 2035 is the community strategic plan (CSP) for the Strathfield Local Government Area until 2035. The plan was developed following extensive community engagement and is divided into the key

themes of Connectivity, Community Wellbeing, Celebrating Culture and Place, Liveable Neighbourhoods and Responsible Leadership.

CSP Theme	Goal	Strategies
Connectivity	1.1 Sustainable growth supported by well-planned and accessible infrastructure and services	1.1.1 Collaborate with NSW Government and agencies to plan and deliver high quality and accessible infrastructure to support population growth and increasing density
		1.1.2 Plan and deliver high quality and strategically located local infrastructure to support current and future population needs
Community Wellbeing	2.2 Healthy & Active Communities	2.2.1 Manage open space, recreation and community facilities and programs to provide fair access and meet community, leisure and recreational needs
		2.2.2 Promote healthy and active living programs
Liveable Neighbourhoods	4.3 Healthy, thriving, sustainable and resilient environments	4.3.1 Conserve, restore and enhance Strathfield's biodiversity, ecological health, tree canopies and resilience
		4.3.2 Implement sustainable practices and efficiencies in resource use to support a healthy built environment
Responsible Leadership	5.1 Council's leadership and decision making reflects community priorities and values	5.1.1 Strathfield community is well informed, engaged and represented in Council policy making and advocacy
	5.2 Council is effectively and responsibly managed and responds to community needs	5.2.1 Prepare and implement plans and strategies to deliver and resource efficient and accountable services, programs and infrastructure

This plan is aligned with the Strathfield Local Strategic Planning Statement (LSPS) which defines the long term vision for land use and infrastructure provisions within the Strathfield LGA and supports place within the Greater Sydney and District planning frameworks. This plan of management aligns with the priorities and actions set out in the LSPS

- Priority P13 'Biodiversity and ecological health and resiliency is conserved, restored and enhanced' and
- Priority P15 'Quality Open Spaces and thriving green corridors offset the impacts of growth across the LGA'
- Action A93 'review and prepare new plans of management'.

3.6 Mason Park - prior use and history³

Mason Park has undergone numerous changes during its lengthy history. The area around Powells Creek Homebush, which is now occupied by Mason Park, was fringed by mangroves, mudflats and large areas of saltmarsh. Originally the waterways were natural, and Powells Creek followed a meandering course to Homebush Bay. The area was low lying and subject to tidal inundation as waters were discharged into the area by Powells Creek. Tidal fluctuations provided a challenge for the ongoing development of the area. This area was locally known as 'The Mangroves' and 'The Swamp'.

The boundaries of Powells Creek continually changed depending on the level of rainfall. Councils of the day and the community called for the NSW Government to canal the river system to deal with flooding and support reclamation of the 'Swamp', through landfill and waste tipping, into usable land, usually for park purposes.

As parts of the 'Swamp' were filled, a park was created which was then named Mason Park, after Albert Mason, a former Mayor of Homebush. The landfill process continued for many decades. Therefore, therefore the land which we today recognise as Mason Park continually expanded due to landfill activities.

By 1929, sufficient land had been claimed to create a park at this site and from the early 1930s, the land was primarily used as the home ground of the Homebush Rugby League Football Club. However, while part of the land which had completed reclamation was being used for recreation, the Council continued to fill the 'swamp' with more fill. Mangroves were removed under Depression employment schemes during the 1930s. Homebush Council also accepted waste fill from local employer Arnotts Biscuits and the Department of Main Roads. The Council also operated waste tips in the park as another method of landfill. The location of the tip would change once sites were filled. The last garbage tip closed in 1977 in Bressington Park (which was originally part of Mason Park), when the site was capped and levelled off.

The Park as a venue for sport and recreation became more popular over time and provided facilities for football and cricket as well as picnics and a children's playground. Homebush Council supported the increased use of the park by installing amenities including toilets and showers in the 1930s. Mason Park's facilities have continued to be upgraded and now include large multi-use sportsgrounds, a children's playground, amenities and carparking.

In 1934, a drainage channel was constructed from around Parramatta Road to Powells Creek. It was called Saleyards Creek as it flowed from the Homebush Cattle Saleyards then located near Parramatta Road. Powells Creek also was straightened, realigned and developed into a concrete channel in 1934. Powells Creek was the boundary between Concord and Strathfield Councils (now City of Canada Bay and Strathfield Councils). In 1934, a footbridge was installed at the end of Mena Street to facilitate pedestrian access from Homebush to Concord West across Powells Creek.

³ Jones, C (2023) 'Mason Park' history, <https://strathfieldheritage.com/parks-and-reserves/mason-park-and-mason-park-wetlands/>

In 1956 the decision was made to divide Mason Park into two portions bounded by Saleyards Creek. The northern portion was renamed Bressington Park. A portion of Bressington Park was further divided with the construction of Homebush Bay Drive and land to the north became part of the new Bicentennial Park (Sydney Olympic Park and City of Parramatta Council). Therefore, over its history, the boundaries of Mason Park changed considerably.

The Mason Park Wetlands are effectively what remained following decades of landfill which changed the landform and concreting of waterways which completely changed the hydrology of the area. Interest in protecting and preserving the Wetlands became a political issue in the 1970s, especially as the Wetlands were a key location for migratory birds, and actions to continue to fill the remaining Wetland ceased. This part of Mason Park was retained as an estuarine wetland, providing habitat resources for several key protected natural assets, including migratory shorebirds (Australia has three bilateral migratory bird agreements with Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), estuarine saltmarsh (a threatened ecological community protected under the NSW BC Act 2016) and *Wilsonia backhousei* (a threatened flora species protected under the NSW BC Act 2016). Areas of regenerating bushland around the wetlands include patches of Estuarine Swamp Oak Forest, another threatened ecological community (protected under the NSW BC Act 2016).

Over recent decades, a shared pathway was installed alongside Powells Creek, connecting to the Bay to Bay pathway which runs from Botany Bay to Homebush Bay, attracting large amounts of pedestrian and cycle movement. In 2018, Sydney Water transformed a section of Powells Creek into a natural waterway, through removal of the old concrete banks and replacement with sloping banks made from sandstone and native plants. A pedestrian bridge across Powells Creek was installed near Lorraine Street in 2022 to enable pedestrian and cycle access to and from Mason Park.

Figure 8 - Historical photographs of Mason Park

These historic photographs indicate the development of the park since the 1940s.



Aerial photograph of Mason Park (1947)



Aerial photograph (1951)



Mason Park aerial 2009 © Near Maps



Mason Park aerial 2023 © Near Maps

3.7 Mason Park – Description and Condition of land and structures

Mason Park is one of Strathfield LGA's largest parks at 12.55 hectares. Mason Park is major local and regional destination for sporting facilities as well as the location of Mason Park Wetlands.

Mason Park is located near the northern point of the LGA near Sydney Olympic Park (City of Parramatta Council) and bordered by Powells Creek (east). Powells Creek is the boundary between Strathfield and City of Canada Bay Councils. City of Canada Bay Council is located on the eastern side of Powells Creek. Saleyards Creek is the northern border between Mason Park and Bressington Park. Mason Park is adjacent to Powells Creek and the shared Bay to Bay pathway. A pedestrian bridge was recently installed at Lorraine Street, which links Strathfield LGA to City of Canada Bay Council.

The Bay to Bay walk/cycleway, which runs from Botany Bay to Homebush Bay, is located near Powells Creek and provides regional cycle and pedestrian access to the park. Mason Park is road accessible from Underwood Road Homebush. Pathways run through the park linking Underwood Road with Powells Creek and the Bay to Bay Shared Pathway. There is pedestrian entry to the park from Underwood Road and from the Bay to Bay Shared Pathway. The park is accessible by vehicle and public transport, mainly buses, on Underwood Road. The surrounding areas have a variety of land zonings and land uses including low-rise residential and medium density units (east and north of the park) and industrial lands (west of the park).

The park is effectively separated into two areas containing the sportsgrounds and the Wetlands. The park faces Underwood Road, while the Wetland faces Powells Creek.

The park features multi-purpose sportsfields, which are used for playing sports such as cricket, rugby league and soccer. There is one children's playground on the south of the park. An amenities pavilion provides toilets and change rooms. Within the park are open space and recreation areas with shelters and BBQs. A large car park is located near Underwood Road.

MASON PARK- MASTER PLAN



Description of the wetland

Mason Park wetlands is an intertidal mudflat ecological community. The tidal nature of the wetlands along with the artificial control of water levels has created a unique environment allowing the growth of specialised flora, primarily saltmarsh and mangroves. The existing inlet/outlet structure has promoted growth of Grey Mangroves *Avicennia marina* in the northern and western portions of the wetland where they are encroaching into saltmarsh areas due extended inundation and poor tidal flushing. The wetlands support a number of saltmarsh species including Beaded Samphire *Sarcocornia quinqueflora* and Seablite *Sueda australis*, and the threatened Narrow-leaved Wiltonia *Wiltonia backhousei*. The wetlands form the ecological core of Mason Park. Some of the vegetation is remnant from the original vegetation, some has been reintroduced on tidal flows, and some from assisted regeneration. Unlike some vegetation communities, most estuarine vegetation will establish – or reestablish – if the conditions are right.

Mangroves establish so readily that they can become a problem, disrupting drainage and colonizing areas previously occupied by saltmarsh or tidal mudflats. Saltmarsh occupies a narrow strip within the tidal inundation regime. Unlike mangroves which are best suited to areas with regular inundation, saltmarsh is found in areas with irregular inundation, such as occurs where normal high tides may not flood but king tides will. These areas may also be inundated during storm events. Within the Mason Park wetlands there are large patches of saltmarsh between the Swamp Oaks and the expanding swathe of mangroves at the northern end of the wetland. The saltmarsh is becoming crowded from both sides and will eventually be squeezed out by both the Swamp Oaks and mangroves if the aggressive colonization is allowed to continue. The centre of the wetlands has a larger area of saltmarsh which is

interspersed with open areas. These open areas typically result from hypersalinity following evapo-concentration of marine salts; however, in Mason Park they may also result from toxic materials in the soils.

For the open mudflats to remain viable as shorebird habitat they must be regularly inundated. This keeps the microbenthic fauna alive, which provides the valuable food resources also needed by the migratory shorebirds. Without food, the wetlands lose a lot of their value for these species – many of which are subject to migratory species agreements with other countries. The southern end of the wetlands is the most degraded, with an area of revegetation planting in the southeastern corner that is almost entirely weeds. The southwestern corner is in similar condition, and the area in between is a patchy mix of saltmarsh and mudflats that has ongoing impacts from vehicle access, despite the construction of a pedestrian boardwalk. Ironically, this highly impacted area includes the location of the majority of *Wilsonia backhousei*, a threatened flora species, on the subject site.

Fringing vegetation has been planted extensively around Mason Park Wetlands over the last few decades. This starts right on the margins of the saltmarsh/wetlands area and consists of a canopy of mixed *Melaleuca* species and *Eucalyptus* species. These form a dense canopy, particularly towards the northern end. This overstorey tops a dense layer of shrubs and grasses, with dense shrubs concentrated along the edge of the grassed open space. This forms a solid vegetative barrier that generally discourages people from entering the forested section. In reality, other than towards the northern end, the vegetated buffer is quite narrow between the playing fields and the wetlands, generally only the width of several densely planted Swamp Oaks. The trees have reached roughly maximum height in this area. The understorey tends to be more weedy towards the southern end of the park, so that near the substation fence there is almost entirely weeds with a few canopy trees of a single species.

3.8 Heritage

Mason Park Wetlands is a statutory heritage item on the Strathfield Local Environmental Plan 2012. The statement of significance states that “The wetlands of Mason Park are one of eight significant remnant wetlands which were once part of an extensive wetland system bordering the Parramatta River. The wetlands include mangroves that, as part of the Parramatta River mangrove system represent a significant proportion of remaining mangroves in the Sydney region. Saltmarsh vegetation communities of the place are significant, including one of the largest remaining populations of *Wilsonia Backhousei* and *Lampranthus tegens*⁴ (small pig face). The wetlands provide habitat for a diverse bird community including two endangered species of migratory waders”.

⁴ This species was described from Aust. though almost certainly originally from South Africa. Attempts to equate it with a known African species have not been successful (Plantnet 2023- <https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Lampranthus~tegens>)

3.9 Native Title Review

Crown land has significant spiritual, social, cultural and economic importance to the Aboriginal peoples of NSW. The CLM Act recognises and supports Aboriginal rights, interests and involvement in Crown land.

On Crown land, Native Title rights and interests must be considered unless Native Title has been extinguished, surrendered, or determined by a court to no longer exist.

Dealings in land or water that affect (impair or extinguish) Native Title are referred to as 'Future Acts' and these acts must be done in compliance with the Native Title Act 1993 (Cth) ("NT ACT"). The NT Act specifies procedures that must be followed before future acts can be done legally.

Some examples of acts which may affect Native Title on Crown land managed by Council include:

- The construction of new buildings and other facilities such as toilet blocks, walking tracks, basketball courts, grandstands and barbecues
- The construction of extensions to existing buildings
- The construction of new roads
- Installation of infrastructure such as sewerage pipes, etc.
- The creation of an easement
- The issue of a lease or licence
- The undertaking of major earthworks.

On Crown land, a future act undertaken by Council which is not covered by one of the Future Act subdivisions of the NT Act will be invalid.

Section 8.7 of the *Crown Land Management Act 2016* requires that written Native Title Manager advice is required before a council Crown land manager does any of the following:

- a. Grants leases, licences, permits, forestry rights, easements or rights of way over the land
- b. Mortgages the land or allows it to be mortgaged
- c. Imposes, requires or agrees to covenants, conditions or other restrictions on use (or removes or releases, or agrees to remove or release, covenants, conditions, or other restrictions on use) in connection with dealings involving the land
- d. Approves (or submits for approval) a plan of management for the land that authorises or permits any of the kinds of dealings referred to in paragraph (a), (b) or (c). Accordingly, Native Title Manager advice must be obtained prior to the approval (or submittal for approval) of a PoM that allows a dealing in (a)–(c) and the execution of any lease, licence, permit, etc. that may be authorised under that plan.

Council's Native Title Manager has been and will continue to be consulted in all relevant aspects of Native Title pertaining to the land that is covered by this Plan of Management.

3.10 Condition of Assets at Mason Park

The criteria for assessing the condition of land and structures upon adoption of this plan of management are shown in Table 5 and the interpretation of the condition of infrastructure in Table 6. The condition ratings were assessed in April 2021.

Table 4 - Condition rating assessment criteria

Rating	Descriptor	Guide	Residual Life as a % of Total Life	Mean % age residual life
1 - Excellent	Sound physical condition. Asset likely to perform adequately without major work.	Normal maintenance required	>86	95
2 – Good	Acceptable physical condition, minimal short term risk of failure.	Normal maintenance plus minor repairs required (to 5% or less of the asset)	65 to 85	80
3 – Satisfactory	Deterioration evident, failure in the short term unlikely. Minor components need replacement or repair now but asset still functions safely.	Significant maintenance and/or repairs required (to 10-20% of the asset)	41 to 64	55
4 – Worn	Deterioration of the asset is evident and failure is possible in the short term. No immediate risk to health and safety.	Significant renewal required (to 20 - 40% of the asset)	10 to 40	35
5 – Poor	Failed or failure is imminent or there is significant deterioration of the asset. Health and safety hazards exist which present a possible risk to public safety.	Over 50% of the asset requires renewal	<10	5

Figure 9 Photos and Condition of assets at Mason Park



Mason Park Wetlands



Pathway over wetlands the condition is assessed as good condition.



Bridge/walking pathway is assessed as excellent condition.



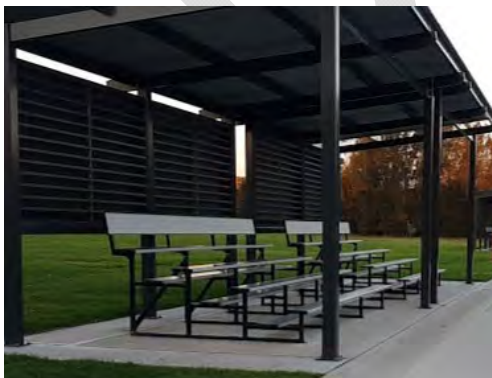
Pathway are assessed as good condition.



Amenities building is assessed as satisfactory condition.



Grass Sportsfield is assessed as satisfactory condition.



Grandstands is assessed as excellent condition.



Playground is assessed as excellent condition.



Sportsfield lighting is assessed as satisfactory condition.



Carpark is assessed as good condition.

3.11 Maintenance of Mason Park

Council's management of community and Crown land integrates with strategies set out in the Community Strategic Plan, actions in the Delivery Program, Operational Plan and resourcing plans, especially asset management plans to meet community needs and priorities. Major parks such as Mason Park provide significant recreational and community facilities and are highly valued by the community. To ensure the park is well and safely maintained, there are weekly visual inspections of the grounds and equipment. The park operates on a two weekly maintenance cycle. The park is undergoing transformation and installation of new facilities. As these are completed, new maintenance arrangements will be developed to ensure the parks and its facilities are fully maintained to high levels of safety and amenity.

3.12 Future Development

There are proposed works for improve the condition and accessibility of the Wetland (see Table 10 for details). These works are identified as actions in the management plan. The implementation of the proposed works is conditional on availability of funding. These include:

- Installation of a bird hide near southern boardwalk and perched wetland to provide opportunities for birdwatching without impacting migratory waders and other waterbirds. Both provide opportunities for community education.
- Install markers to delineate approximate extent of estuarine communities/species to ensure wetlands do not become over colonised by mangroves and that saltmarsh and *Wilsonia backhousei* are maintained at agreed patch size minimum
- Selective thinning of Swamp Oaks and removal of swarming seedlings to improve sight lines for waterbirds and migratory waders and reduce incursion into saltmarsh at northern end of wetlands
- There are several options to improve hydrology. The preferred option is construction of a second tidal flushing inlet (single tidal regime) to improve tidal flushing for upper sections (southern end) and reduce incidence of hypersalinity/drying out and its impacts on saltmarsh and macrobenthic assemblages. Other options include upgrading the existing inlet/outlet structure at the northeastern side of wetlands to increase the volume of water entering the wetland on incoming tides or creating second inlet and regulate water levels with two tidal regimes (ie two ponds

managed separately for saltmarsh and mangrove respectively). All options include provisions to improve hydraulic links within the wetland.

3.13 Minor development and development processes

Minor changes to community land are regularly made on a routine basis, such as garden beds are replanted, and damaged play equipment is replaced.

In the event of potential future development other than that listed, proposed changes of use of community land will:

1. Meet legislative requirements - zoning tables in the Strathfield Council Local Environmental Plan specifies the range of uses and activities that may be permitted on the land. A number of uses are also set out in the Regulations to the *Local Government Act 1993*.

2. Be consistent with the guidelines and core objectives of the community land category - under the *Local Government Act 1993* uses and development of community land must be consistent with the guidelines for categorisation and the core objectives of each category, and any other additional objectives the Council proposes to place on the community land categories.

3. Be consistent with relevant Council policies - substantial upgrades and proposed new development will take into account a range of factors, including:

- this Plan of Management and the core objectives for the land
- the planning controls for the land
- Council's adopted policies
- the characteristics of the land affected, including existing and future use patterns
- any landscape masterplan for the land.

3.14 Scale and intensity of land use

The scale and intensity of use and development associated with community land in Strathfield is generally dependent on:

- the nature of the approved uses and developments
- approved Development Applications and any conditions
- an approved masterplan
- the physical constraints of the land
- the carrying capacity of the land
- relevant government legislation
- permissible times of use
- proximity of neighbours

The scale and intensity of use of parks and sportsgrounds should be monitored by:

- regular inspection of the physical impacts on the park or sportsground
- reports to Council regarding any conflicts between park and sportsground users
- reports to Council from adjoining neighbours.

4. Development and Use

Community land is valued for its important role in the social, intellectual, spiritual and physical enrichment of residents, workers, and visitors to the Strathfield Council area.

The intrinsic value of community land is also recognised, as is the important role this land plays in biodiversity conservation and ecosystem function.

Strathfield Council encourages a wide range of uses of community land and intends to facilitate uses which increase the activation of its land, where appropriate. Within buildings, swimming pools, and recreational and sporting facilities in particular, Strathfield Council intends to permit and encourage a broad range of appropriate activities.

The use of community land is often supported by appropriate ancillary development such as playground equipment, amenity blocks or food kiosks.

The general types of uses which may occur on community land categorised as Sportsground and Natural Area (Wetland), and the forms of development generally associated with those uses, are set out in the tables below in relevant categories of this plan of management.

4.1 Permissible uses and developments

The tables below set out the purpose/use of the land consistent with its land categorisation and the types of development generally associated with those uses. Facilities on community land may change over time, reflecting the needs of the community. The anticipated uses, and associated development, identified in the categories below are intended to provide an overview or general guide.

4.1.1 Sportsgrounds

Sportsgrounds are defined in clause 103 of the LG (General) Reg as land used primarily for active recreation involving organised sports or playing outdoor games.

The core objectives for sportsgrounds, as outlined in Section 36F of the LG Act, are to:

- encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games
- ensure that such activities are managed having regard to any adverse impact on nearby residences.

Most of Mason Park contains areas which are categorised as Sportsgrounds. These contain sportsfields that are primarily used for the playing of formal and informal sports such as Touch football and Cricket, cricket practice wickets, amenities and carpark. There is also a small playground located in this area.

DRAFT

Table 5 - Permissible uses of land categories – Sportsgrounds

Purpose/Use	Development to facilitate uses
• Active and passive recreational and sporting activities consistent with the nature of the particular land and any relevant facilities • Organised and unstructured recreation activities • Community events or gatherings, and public meetings • Commercial uses associated with sports facilities • Easement, utilities and estate	• Development for the purpose of conducting and facilitating organised sport (both amateur and professional) • Sportsfields (turf and synthetic) including cricket, football, soccer, track and field athletics, baseball, softball etc • Courts (basketball, netball, badminton, tennis, hockey, badminton etc) • Skate facilities • Facilities for sport training eg batting cages, tennis rebound walls • Recreational or community facility • Amenities eg change room, lockers, shower/toilet facilities, first aid rooms, seating • Café or kiosk facilities, mobile coffee cart or food vending subject to site assessment and Council approval • Car parking and loading areas • Ancillary areas eg staff rooms, meeting rooms, equipment storage areas • Shade structures • Seating and scoreboards • Sports or fitness training, and practice facilities • Equipment sales/hire areas • Heritage and cultural interpretation eg signs, public art • Advertising structures and signage (such as A-frames and banners) that relate to approved uses/activities, discreet and temporary and approved by Council. • Water/Energy savings initiatives • Lighting and water (eg taps, bubblers) • Locational, directional and regularly signage

4.1.2 Natural Area

Natural areas are defined in clause 102 of the LG (General) Reg as land possessing a significant feature that would be sufficient to further categorise the land as bushland, wetland, escarpment, watercourse or foreshore.

The core objectives for natural areas, as outlined in Section 36E of the LG Act, are to:

- conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area
- maintain the land, or that feature or habitat, in its natural state and setting
- provide for the restoration and regeneration of the land
- provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion
- assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in the *Biodiversity Conservation Act 2016* or the *Fisheries Management Act 1994*.

Wetlands are defined in clause 108 of the LG (General) Reg as marshes, mangroves, backwaters, billabongs, swamps, sedge lands, wet meadows or wet heathlands that form a waterbody.

The core objectives for wetlands, as outlined in Section 36K of the LG Act, are to:

- protect the biodiversity and ecological values of wetlands, particularly their hydrological environment (including water quality and water flow), flora, fauna and habitat value
- restore and regenerate degraded wetlands
- facilitate community education in relation to wetlands, and community use of wetlands, without compromising the ecological values of wetlands.

Section 5 of this plan contains descriptions and analysis of Mason Park's environment with survey data results outlined in Attachment A and Coastal Wetlands outlined in Attachment B.

Table 6 sets out permissible uses of land category for Natural Area (Wetland). It is noted that part of the wetland is located on the Crown Land Reserve. This reserve is also located in the City of Canada Bay. The Crown Land reserve permits public school purposes and community purposes.

Table 6 – Permissible uses of land categories – Natural Area (Wetland)

Purpose/Use	Development to facilitate uses
• Walking and cycling • Guided bushwalks and bird watching • Environmental programs and scientific study • Preservation of biodiversity and habitat • Wetlands and bush regeneration and revegetation works • Relaxation and passive informal recreation	• Interpretative and directional signage • Seating • Lighting • Low impact carparks • Low impact walking trails • Water saving initiatives eg swales, sediment traps, rainwater gardens

4.2 Authorisation of leases, licences or other estates over community land

Under section 46(1)(b) of the LG Act, leases, licences and other estates formalise the use of community land. A lease, licence or other estate may be granted to organisations and persons, community groups, sports clubs and associations, non-government organisations, charities, community welfare services, non-profit organisations and government authorities.

The lease or licence must be for uses consistent with the reserve purpose(s), the assigned categorisation and zoning of the land, be in the best interests of the community as a whole, and enable, wherever possible, shared use of community land.

Any lease or licence proposal will be individually assessed and considered, including the community benefit, compatibility with this PoM and the capacity of the community land itself and the local area to support the activity.

A lease is normally issued where exclusive control of all or part of an area by a user is proposed. In all other instances a licence or short-term licence or hire agreement will be issued.

When planning to grant a lease or licence on Crown reserves, Council must comply with the requirements of the *Commonwealth Native Title Act 1993* (NT Act) and have regard for any existing claims made on the land under the *Aboriginal Land Rights Act 1983 (NSW)*. Council's Native Title Manager will provide written advice in certain circumstances to advise if the proposed activities and dealings are valid under the NT Act.

This plan of management **expressly authorises** the issue of leases, licences and other estates over the land covered by the plan of management, provided that:

- the purpose is consistent with the purpose for which it was dedicated or reserved
- the purpose is consistent with the core objectives for the category of the land
- the lease, licence or other estate is for a permitted purpose listed in the *Local Government Act 1993* or the LG (General) Reg
- the issue of the lease, licence or other estate and the provisions of the lease, licence or other estate can be validated by the provisions of the *Native Title Act 1993* (Cth)
- where the land is subject to a claim under the *Aboriginal Land Rights Act 1983* the issue of any lease, licence or other estate will not prevent the land from being transferred in the event the claim is granted
- the lease, licence or other estate is granted and notified in accordance with the provisions of the *Local Government Act 1993* or the LG (General) Reg
- the issue of the lease, licence or other estate will not materially harm the use of the land for any of the purposes for which it was dedicated or reserved.

Under Section 46 of the LG Act, a lease or licence may only be granted for a maximum term of 21 years including options, or for 30 years with consent of the Minister. A lease or licence for a term exceeding five (5) years may be granted only by tender unless it is granted to a non-profit organisation. All leases and licences must be publicly notified for a minimum period of 28 days.

Agreements for a short-term, casual purpose may be issued in accordance with Section 46 of the LG Act where that purpose is prescribed by the Regulations.

The tables set out below in the relevant categorisations of this plan of management further identifies the purposes for which leases and licences may be issued over the reserves identified in this plan of management.

Table 7 - Leases, Licences and other estates

Type of Arrangement Authorised	Land and Facilities covered	Purposes for which long term leasing/licensing will be granted
Lease	Sportsground	A lease proposal will be individually assessed and considered, including the community benefit, compatibility with this Plan of Management and Council's goals and objectives in its Community Strategic Plan and Delivery Program and the capacity of the land area to support the activity. Sympathetic, compatible uses include: • Kiosk/café and refreshment purposes including seating and tables • Management of court or similar facilities • Hire or sale of recreational equipment
Licence	Sportsground	A licence proposal will be individually assessed and considered, including the community benefit, compatibility with this Plan of Management and Council's goals and objectives in its Community Strategic Plan and Delivery Program and the capacity of the land area to support the activity. Sympathetic, compatible uses include: • Sporting and recreational purposes, including team sports, fitness activities and games • Outdoor kiosk/café and refreshment purposes including seating and tables • management of court, driving range or similar facilities • Hire or sale of recreational equipment
Licence	Natural Area (Wetland)	Any lease or licence proposal will be individually assessed and considered, including the community benefit, compatibility with this Plan of Management and Council's goals and objectives in its Community Strategic Plan and Delivery Program and the capacity of the land area to

Type of Arrangement Authorised	Land and Facilities covered	Purposes for which long term leasing/licensing will be granted
		support the activity. Sympathetic, compatible uses include: • educational or environmental programs, scientific studies and surveys or similar • walkways, pathways, bridges or causeways • signs, observation platforms • information kiosk • small kiosk (not restaurant) selling light refreshments • work sheds or storage sheds required in connection with the maintenance of the land • temporary erection or use of structures to enable a filming project or works to be carried out
Other Estates	Sportsground Natural Area (Wetland)	This Plan of Management allows Council to grant ‘an estate’ over community land for the provision of public utilities and works associated with or ancillary to public utilities in accordance with the <i>Local Government Act 1993</i>. Estates may also be granted across community land that is not affected by endangered communities for the provision of pipes, conduits, or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the Council or other public utility provider that is situated on community land.

The grant of a lease or licence is an important step in using community land, but there may be other requirements relevant to any proposed use. For example, the refurbishment of a kiosk may also require development consent under the *Environmental Planning and Assessment Act 1979*. Any interested person should check carefully to make sure they are aware of all relevant requirements.

4.3 Short Term Uses

Short-term licences and bookings may be used to allow the council to program different uses of community land at different times, allowing the best overall use. Short-term licences are authorised for the purpose of:

Table 8 - Seasonal, regular and casual use agreements

Community land category	Purposes for which short term uses may be granted subject to council approval	Requirements
Sportsgrounds	- community events and festivals - sporting fixtures and events - sports and fitness training and classes - filming or photography of sporting fixtures or events - uses reasonably associated with the promotion or enhancement of sporting groups, fixtures and events - displays, exhibitions, fairs, fashion parades and shows - events (including weddings, corporate functions, and community gatherings) - concerts and other performances, including both live performances and film (cinema and TV) - broadcasts associated with any event, concert, or public speech - engaging in an appropriate trade or business delivering a public address, community events; auctions, markets and similar activities	- the proposed use must comply with terms and conditions approved e.g. SafeWork NSW regulations, insurance, waste management etc. - the use should not result in physical damage to the park, sportsground or natural area - the use should not result in a significant adverse impact on adjoining residents or disturbance to nearby residents - organisers of the site should be responsible for cleaning up the site and notify authorities and Council of any damage or incidents that may occur
Natural Area (Wetland)	- educational or environmental programs, scientific studies and surveys or similar - temporary erection or use of structures to enable a filming project to be carried out	

In assessing community land categorised as Natural Area (Wetland) or Sportsground as a venue for any proposed utilisation, the Council applies the following minimum criteria:

Council reserves the right to refuse bookings based on previous unsatisfactory payment or performance history or where proposed use would damage the facility or cause significant disruption to other regular users.

Fees for short-term casual bookings will be charged in accordance with Council's adopted Fees and Charges at the time.

4.4 Current leases, licences and uses of Mason Park

There are no current leases or licences on Mason Park.

5. Environmental

5.1 Soil landscapes

The site is underlain by the Birrong soil landscape, with a small patch underlain by the Blacktown soil landscape at the southwestern end of the park (Figure 10). Soil landscapes inform the types of vegetation that were very likely present pre European occupation and can assist in making sound ecological decisions when choosing plants for landscaping and revegetation works.

The Birrong soil landscape is associated with floodplains of watercourses draining Wianamatta Group shales, on the Cumberland Lowlands and is dominated by silt and clay sized alluvial materials derived from this group. The landscape is extensively cleared with remnants of ironbark *Eucalyptus paniculata*, turpentine *Syncarpia glomulifera*, and Sydney blue gum *E. saligna* forest and woodland.

The landscape was historically filled to reduce its limitations that include flood hazards, seasonal waterlogging and water erosion hazards (Bannerman and Hazelton 1990).



Figure 10 Soil landscapes underlying Mason Park

The Blacktown soil landscape occurs extensively on the Cumberland Lowlands between the Georges and Parramatta Rivers in the south-west and is part of the Wianamatta Group -Ashfield Shale consisting of laminite and dark grey siltstone and Bringelly Shale which consists of shale, with occasional calcareous claystone, laminite and coal. This landscape has been almost completely cleared with only very small

remnants of the original wet sclerophyll forest containing Sydney blue gum *E. saligna* and blackbutt *E. pilularis*. The original woodland and open-forest in drier areas to the west were dominated by forest red gum *E. tereticornis*, narrow leaved ironbark *E. crebra* and grey box *E. moluccana* (Bannerman SM and Hazelton PA 1990).

Vegetation was mapped in 2016 by OEH for the Sydney metropolitan area (Figure 11). A narrow band of Estuarine Swamp Oak Forest provides a vegetative buffer to the estuarine wetlands. The wetlands include a mosaic of Estuarine Saltmarsh patches interspersed with open water and tidal mudflats (depending on management of the tidal regime). Large, and still expanding, areas of Estuarine Mangrove Forest occur on site as well, although these have not been mapped present.



Figure 11 Mapped vegetation communities, Office of Environment and Heritage (OEH) 2016

Saleyards Creek has a band of vegetation mapped as Urban Exotic/Native, and includes young and mature native and introduced species organized in a manner that provides shade to large sections of the carpark along the channel edge. Several smaller sections of Urban Exotic/Native vegetation are

mapped for the southern end of the park, and these are not in as good condition as the ones along Saleyards Creek.

The park has a long history of land modification. In 1943 the area was entirely cleared and/or modified for uses other than native vegetation retention (Figure 12). Powells Creek and Saleyards Creek had been recently channelised through the area, although the original courses for these waterways were still evident in the aerial imagery for the site.

Urban residential development was well underway in the vicinity, but by no means complete. Formalising the waterways meant that the risk of flooding was considerably reduced in the area. Pedestrian footbridges cross both channels – the Powells Creek crossing is still in place but the Saleyards Creek footbridge has been relocated closer to the confluence.



Figure 12 1943 Aerial imagery for Mason Park and surrounds with present road names marked (SIX Maps (nsw.gov.au))

5.2 Detailed description of park flora and fauna

Mason Park has a number of areas with different vegetation, generally associated with either the previous land use or the current or intended park uses. These are described in the following sections.

5.2.1 *Powells Creek Inlet*

Mason Park is separated from Bressington Park by Saleyards Creek which joins Powells Creek at the northern corner of Mason Park (Figure 14 left). Powells Creek runs along the eastern boundary of Mason Park. Below the confluence, Powells Creek is a naturalized channel as far as Homebush Bay Drive, beyond which it crosses through SOPA grounds. Upstream of the confluence, Powells Creek has a formalized trapezoidal channel constructed of sandstone blocks. This area is tidal, although there is generally baseflow from Powells Creek throughout the year (Figure 14 right).



Figure 13 (left) at high tides the incoming seawater enters the wetlands inlet; (right) a floodgate weir regulates flows into the wetlands

Just upstream of the footbridge is an inlet point where seawater can enter the wetlands during high tides (left). From the grated inlet the incoming tide floods the inlet chamber (right) until the tide reaches 1.5m (UBM 1994), at which point it begins to enter the wetlands.

There is additional capacity to manage inflows and outflows through the opening or closing of floodgates in the inlet chamber. Unfortunately, these floodgates and their housing have rusted over time and now leak, while some parts have become damaged and do not function properly (right). This tidal connection is vitally important for maintaining the health of the wetlands.



Figure 14 (left) confluence of Powells Creek with Saleyards Creek; (right) Powells Creek is tidal with freshwater baseflows

A key challenge with this reserve is understanding the original design intent for the wetlands hydrology, and discerning changes over time in both configuration and management actions currently in place.



Figure 15 (left) upstream the channel banks have been naturalised by Sydney Water; (right) Sydney Water harvest litter using a tidal floating trash trap

5.2.2. Mason Park Wetlands

The wetlands form the ecological core of Mason Park. This is an estuarine wetland that includes a mosaic of mangroves, saltmarsh, open water and tidal mudflats (Figure 16). Some of this is remnant from the original vegetation, some has been reintroduced through tidal invasion, and some from assisted regeneration. Unlike some vegetation communities, most estuarine vegetation will establish – or re-establish – if the conditions are right. Mangroves establish so readily that they can become a problem, disrupting drainage and colonizing areas previously occupied by saltmarsh or tidal mudflats. Saltmarsh occupies a narrow strip within the tidal inundation regime. Unlike mangroves which are best suited to areas with regular inundation, saltmarsh is found in areas with irregular inundation, such as occurs where normal high tides may not flood but king tides will. These areas may also be inundated during storm events.



Figure 16 The estuarine wetland includes a mosaic of mangroves, saltmarsh, open water and tidal mudflats

Within the Mason Park wetlands there are large patches of saltmarsh between the Swamp Oaks and the expanding swathe of mangroves at the northern end (left).

The saltmarsh is becoming crowded from both sides, and will eventually be squeezed out by both the Swamp Oaks and mangroves, if the aggressive colonisation is allowed to continue.

The centre of the wetlands has a larger area of saltmarsh which is interspersed with open areas (right). These open areas typically result from hyper salinity following evapoconcentration of marine salts; however, in Mason Park they may also result from toxic materials in the soils.

For the open mudflats to remain viable as shorebird habitat they must be regularly inundated. This keeps the microbenthic fauna alive, which provides the valuable food resources also needed by the migratory shorebirds. Without food, the wetlands lose a lot of their value for these species – many of which are subject to migratory species agreements with other countries. When the tidal flats are allowed to dry out completely (Figure 17) the result is a combination of hypersalinity, mobilisation followed by crystallization of toxic compounds in the soils, changes in pH, cracking of the surface, all of which contribute to the loss of infauna, with flow on impacts for saltmarsh species and the migratory shorebirds. Compaction following drying makes the process of reestablishment of macrobenthos almost impossible.



Figure 17 Large expanses of tidal flats are adversely impacted by poor management of the tidal regime

Recent work by Sydney Water was aimed at naturalising the concrete channelised creek banks in Powells Creek. The concrete banks were broken out, the area regraded to allow for the addition of sandstone boulders, and saltmarsh and salt tolerant species planted into the gaps. As part of the design, a boardwalk was added along the western bank of Powells Creek, and the top of the creek bank was supposed to allow for inundation at king tides, effectively resulting in a second inlet that provides recirculating flows through the wetlands. This does not appear to be happening, and the mudflats are dry for extended periods of time.

A review of the history of hydrology management, including previous Plans of Management (1994) and of the site is available in Appendix C and should be read in conjunction with the PoM.



Figure 18 Bank 'naturalisation' on the adjoining Powells Creek should have improved the tidal regime to prevent drying



Figure 19 *Despite the poor health of the mudflats and wetlands, some waders and waterbirds persist in the area*

Despite the poor condition of the wetlands, and the chronic over drying of the mudflats, there were waders (left) and waterbirds (right) present on the site at the time of surveys. However, migratory shorebirds were absent and have not been seen on site for some time.

Management of the site for shorebirds has been largely undertaken by volunteers. As a result it tends to proceed in an ad hoc manner, depending on who is driving the activities. Volunteers from Birdlife are currently removing mangrove seedlings from areas with excessive colonization (left), and removing swamp oaks from the eastern edge of the wetlands where they interfere with sight and flight lines for migratory shorebird species (right). Both these factors contribute to making the site less desirable for shorebirds, and can be managed through simple actions.

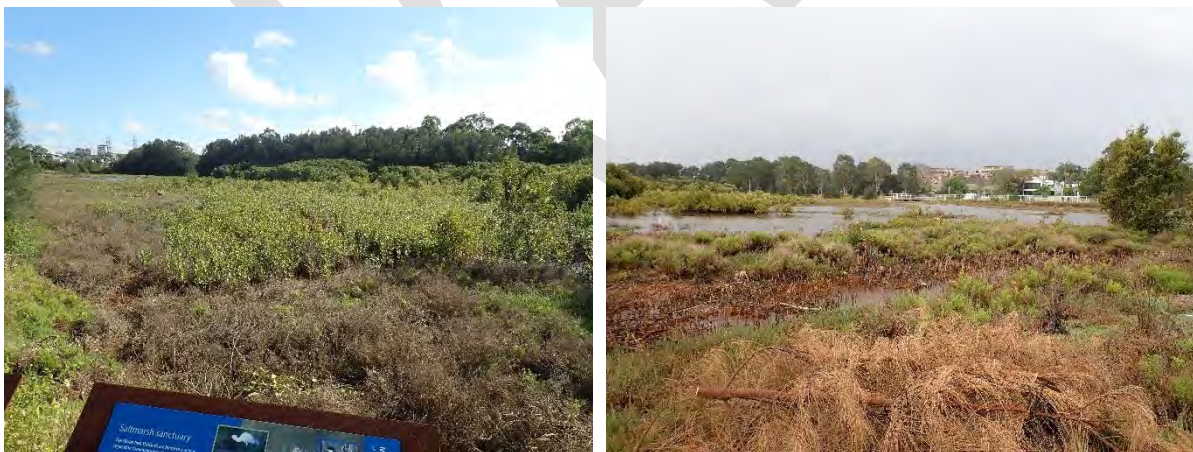


Figure 20 *Community engagement includes volunteers who manage the mangroves and swamp oaks to reduce their impacts on the saltmarsh and migratory shorebirds*

The southern end of the wetlands is the most degraded, with an area of revegetation planting in the southeastern corner that is almost entirely weeds (left). The southwestern corner is in similar condition, and the area in between is a patchy mix of saltmarsh and mudflats that has ongoing impacts from vehicle access, despite the construction of a pedestrian boardwalk (right). Ironically, this highly impacted area includes the location of the majority of *Wilsonia backhousei*, a threatened flora species, on the subject site. Vehicle impacts have been described as a major threat for this species.



Figure 21 The southern end of the wetlands is the most degraded, with weeds dominating terrestrial areas (left) and ongoing vehicle impacts despite the construction of a pedestrian boardwalk

Of particular note is the second species of interest from the 2008 POM: *Lampranthus tegens*. At that time it was under study, whereas now it is acknowledged as a species that has been introduced. Interestingly, though, its origins are still unclear, and it is described in PlantNET as “almost certainly originally from South Africa. Attempts to equate it with a known African species have not been successful.” *Lampranthus* occupies a very similar habitat niche to that of *Wilsonia* and may begin to exclude this native species. Monitoring is recommended to assist with the management of this.

5.2.3 Forested surrounds (revegetation areas)

Fringing vegetation has been planted extensively around Mason Park Wetlands over the last few decades. This starts right on the margins of the saltmarsh/wetlands area (Figure 23) and consists of a canopy of mixed *Melaleuca* species and *Eucalyptus* species.



Figure 23 The forested areas are entirely revegetation planting and include *Melaleucas* and *Eucalyptus* species

These form a dense canopy, particularly towards the northern end. This overstorey tops a dense layer of shrubs and grasses, with dense shrubs concentrated along the edge of the grassed open space.



Figure 24 The canopy plantings grow above a dense layer of shrubs, especially along the edges of the mown grass areas

This forms a solid vegetative barrier that generally discourages people from entering the forested section. In reality, other than towards the northern end, the vegetated buffer is quite narrow between the playing fields and the wetlands, generally only the width of several densely planted Swamp Oaks. The trees have reached roughly maximum height in this area. The understory tends to be more weedy towards the southern end of the park, so that near the substation fence there is almost entirely weeds with a few canopy trees of a single species. The trees form a solid vegetation buffer between the wetlands and the playing fields, although it is not clear the role that night sports have in creating disturbances, including noise and light spill.



Figure 22 Surrounding forest vegetation starts right on the margins of the saltmarsh



Figure 23 *The forested areas are entirely revegetation planting and include Melaleucas and Eucalyptus species*



Figure 24 *The canopy plantings grow above a dense layer of shrubs, especially along the edges of the mown grass areas*



Figure 25 *In reality, the vegetation buffer between the wetlands and the playing fields is very narrow – seen here from both sides*

5.2.4 Carpark and footpath/cycleway (revegetation)

A carpark at the northern end of Mason Park provides off street metered parking. The carpark is adjacent to the Saleyards Creek channel, and is separated from it by a narrow stand of planted native Eucalypts and Swamp Oaks. In some areas there are remnants of previous plantings, including the Hills Weeping Figs that provide dense shade and fantastic perching resources.



Figure 26 Native flora species have been planted along the edges of Saleyards Creek and Mason Park carpark

Towards the western end the canopy plantings are also located on the open space side of the carpark, providing good shade for the carpark and for seating in the grassed open space (left). Towards the eastern end of the carpark there is a grassed swale with additional native plantings, designed to treat stormwater runoff from the playing fields (right). The carpark is connected to the Powells Creek footpath/cycleway and then to a wider cycleway network throughout the inner west of Sydney. The short connecting path is also surrounded by extensive revegetation planting including numerous trees, shrubs and ground layer species planted in the last decade.

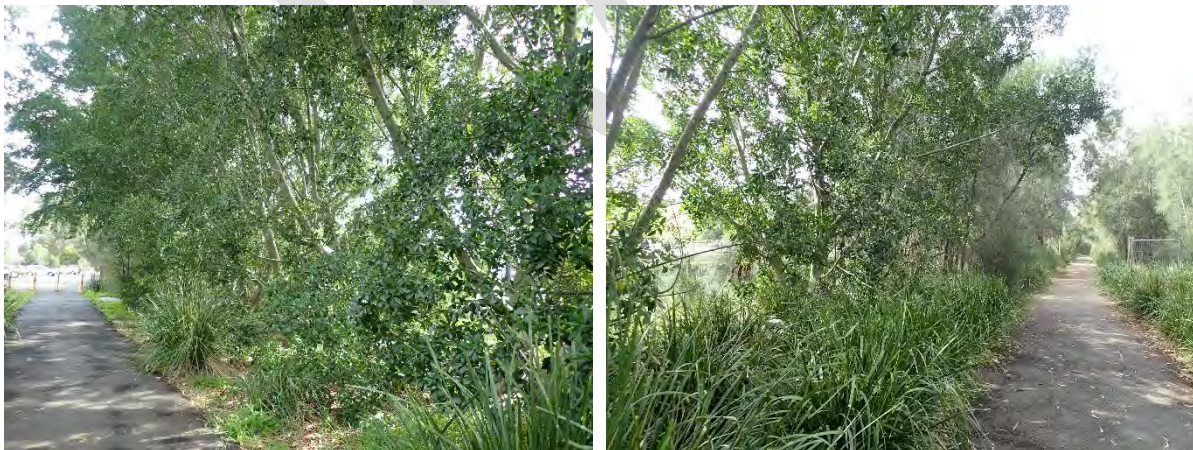


Figure 27 The carpark is connected to Powells Creek footpath/cycleway by another footpath, and this has also been revegetated in recent years

As a result of this extensive revegetation planting, there is a solid band of young Swamp Oaks along the northern side of the path towards Saleyards Creek, and then an area of mown grassed open space between the path and the edge of the wetlands. This stand of canopy trees has been steadily increasing in height until it now constitutes a barrier to sight and flight lines for migratory shorebirds, and has made Mason Park wetlands less attractive to this group of fauna.



Figure 28 View from the Powells Creek footbridge crossing – most of these Swamp Oaks are less than 10 years old

5.3 Ecological values

5.3.1 Threatened Communities

Two endangered ecological communities have been mapped for the vicinity of Mason Park (Figure 11):

- **Estuarine Swamp Oak Forest** (S_FoW08), a component of Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions, an Endangered Ecological Community
- **Estuarine Saltmarsh** (S_SW02), which conforms to Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions, an Endangered Ecological Community

One threatened flora species has been reported from the site (*Wilsonia backhousei* - described in section 3.2.1).

The extant vegetation on site occurs in several patch types, including:

- Estuarine wetland communities
 - Estuarine Mangrove Forest, which is spreading into other areas of the wetland
 - Estuarine Saltmarsh, which is affected by the management of the tidal regime
- Forested wetland communities
 - Estuarine Swamp Oak Forest, which is the result of ongoing colonization by Swamp Oaks
 - An unmapped riverflat paperbark/eucalypt forest resulting from ongoing revegetation planting. Riverflat Eucalypt Forest EEC is likely to have been historically present on this site
- Previously planted mixed urban exotics and native species, such as occur along the edges of Saleyards Creek and Mason Park carpark

Thus, parts of the park retain vegetation in a more natural condition (eg. as a result of tidal movements) than others (eg. areas with revegetation planting that does not accurately represent the pre-existing vegetation community). Estuarine Saltmarsh, in particular, is becoming lost from the Sydney basin, and needs to have value for the vegetation community created for local residents to ensure ongoing support for the park. Signage can be useful to provide information about origins of species and ecosystems, the need for active management of one floral group to protect another, uses of individual plants by Aboriginal people and uses by early settlers, and any information that helps identify each species.

5.3.2 Threatened Species

Wilsonia Backhousei

One threatened flora species is present on site - *Wilsonia backhousei*. *Wilsonia* is listed as Vulnerable under the NSW Biodiversity Conservation Act 2016. It is a slow growing prostrate species growing to a height of several centimetres, capable of forming a rich green lawn under ideal conditions (Figure 29).



Figure 29 *Wilsonia backhousei* is a slow growing prostrate species growing to a height of one or two centimetres



Figure 30 *Wilsonia backhousei* are damaged by trampling and vehicle use, and recovery from damage is slow

Mats of *Wilsonia backhousei* are damaged by trampling and vehicle use, and recovery from damage is slow (Figure 30). A boardwalk was recommended in 2008 and constructed 2017, and the apparent reduction in extent of *Wilsonia* may be attributable to the construction process. However, there are ongoing impacts from vehicle access, and the boardwalk only provides for pedestrians and cycles.



Figure 31 *Wilsonia* can occur in pure stands, such as near the substation fence (left) or as a component in a mixed saltmarsh (right)



Figure 32 Higher in the saltmarsh it grows with sedges and grasses (left), while lower in the saltmarsh it grows with *Suaeda australis* and *Sarcocornia quinqueflora* (right)

At Mason Park the distribution of *Wilsonia* is somewhat varied (Figure 32). Higher in the saltmarsh it grows surrounded by grasses and sedges, whereas lower in the saltmarsh it grows among *Suaeda australis* and *Sarcocornia quinque flora* plants. Areas where it grows as a pure stand are very similar to other locations nearby, where *Wilsonia* tends to grow in upper marsh areas in fine grained soils forming a shallow layer upon sandstone bedrock.

The following is reproduced from the Mason Park Wetlands PoM (UBM 1994):

“Wilsonia backhousei is a slow growing prostrate species growing to a height of one centimetre, capable of forming a rich green lawn under ideal conditions. Wilsonia is intolerant to flooding and prefers permanently moist conditions, but can persist where the soil becomes dry for much of the year. It can tolerate irrigation by seawater but probably prefers brackish water.”

*“A sizeable turf of *Wilsonia* grows against the fence at the southern edge of the marsh and this may be utilised as a source of tufts of material to be introduced to other parts of the wetland.”*

While this doesn't answer any questions about the origin of *Wilsonia* in this area (given the highly modified status of the vegetation), it does suggest that the patch of *Wilsonia* may have pre-dated the extensive damage to the wetland in 1987 caused by Sydney Water channel works. Phil Straw⁵ said that *Wilsonia* was not planted during his time with Mason Park Wetlands (pers. comm.), supporting the likelihood of it being a natural occurrence.

The NSW Scientific Committee made the following observations about *Wilsonia backhousei* (2000):

- *It often occurs as pure, or nearly pure, stands. At most sites, stands are limited in extent (in the order of a few 10s of m²). The most extensive stands occur around Jervis Bay.*
- *Wilsonia backhousei is salt tolerant and is found in intertidal saltmarshes and, more rarely, on seacliffs.*
- *In New South Wales Wilsonia backhousei is scattered along the coast, reaching a northern limit at Wamberal Lagoon.*
- *In the Sydney region there has been a considerable decline in the abundance of the species this century, largely as a result of loss of habitat.*
- *Mats of Wilsonia backhousei are damaged by trampling and vehicle use, and recovery from damage is slow.*
- *Saltmarsh sites are subject to a number of other threats, including changed salinity regimes resulting from modified drainage or discharge of stormwater and invasion of weeds such as *Juncus acutus*.*

⁵ Phil Straw is the director of Avifauna Research & Services, and past Chairman of BirdLife Australia Southern NSW. Phil sat on the committee of the Southern NSW and ACT Group of the RAOU (precursor to BLSNSW) from 1992 -1998.

The extent of *Wilsonia* on site was mapped in 2008/9 in the SEE prepared by Sainty and Associates and again in 2020 during current surveys (Figure 35). It appears that one part of the patch of *Wilsonia* has continued to expand, possibly as a result of some reduction in the level of trampling following construction of the boardwalk (Figure 33).

Despite this, there is ongoing impacts from vehicle access across the southern end of the wetlands and this has and will continue to impact *Wilsonia*, along with other saltmarsh species in the area (Figure 34). The larger patch near the substation fence appears to have reduced in size, possibly due to localised changes in hydrology, including removing or relocating the drainage pipe to Powells Creek from the substation property.



*Figure 33 (right) The boardwalk has allowed new areas of *Wilsonia* to establish and flourish*



*Figure 34 Damage from vehicle access across the southern end of the wetlands continues to impact *Wilsonia* and other saltmarsh species*

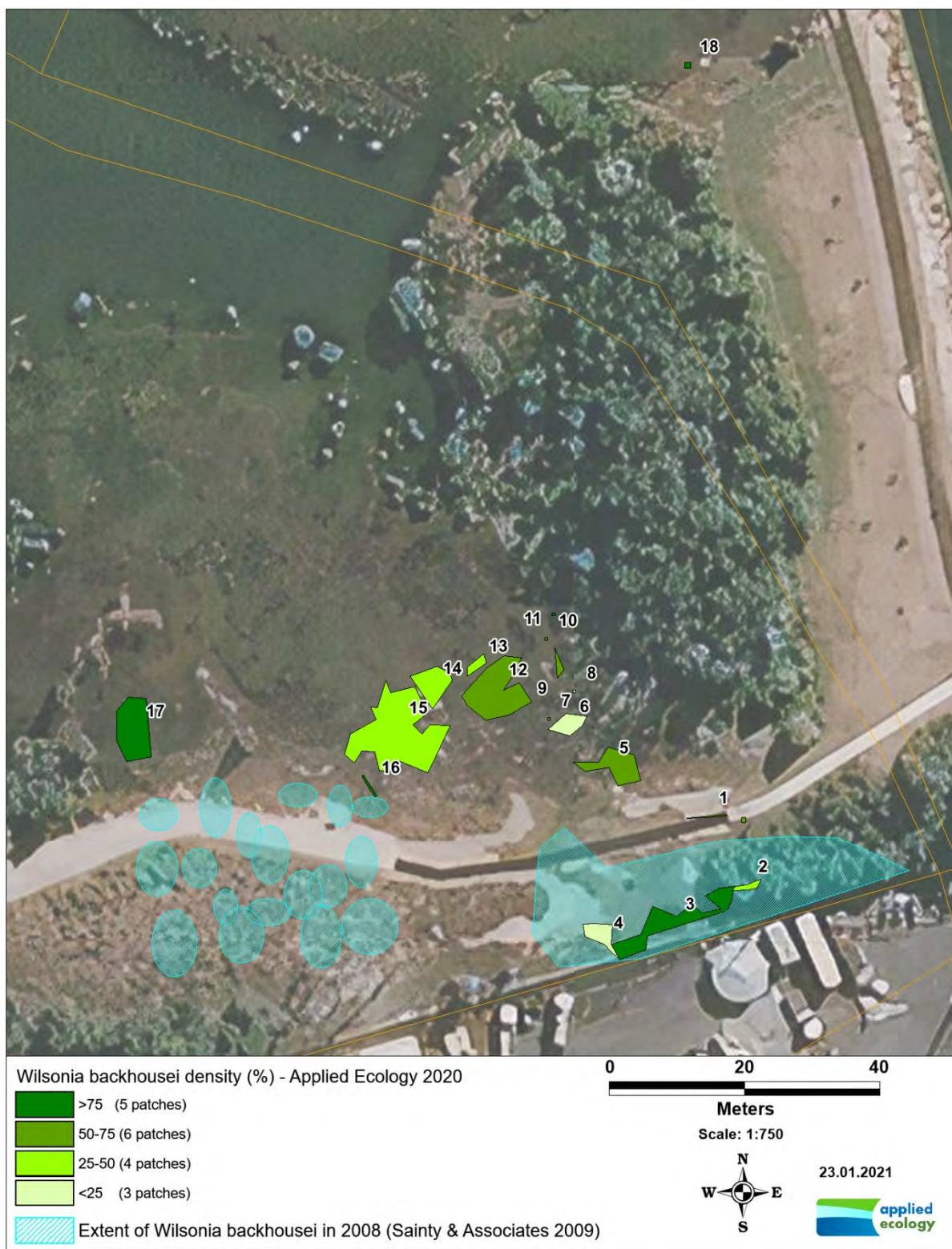


Figure 35 Extent of *Wilsenia backhousei* in 2008 (redrawn from Sainty & Associates 2009) vs 2020 (current study)

Threatened Fauna

The current survey detected 63 species of vertebrate animals at Mason Park including 4 threatened species (BC Act 2016) and 3 listed marine species (EPBC Act 1999). The threatened species below are species detected during the current survey and are a subset of threatened species likely to utilize the wetland as foraging and roosting habitat on occasion.

Eastern Bent-winged Bat (*Miniopterus orianae oceanensis*)

This species is cave dwelling, but also use abandoned mines and culverts. Populations are centred on a maternity cave that is used annually. Each population disperses to other caves during the rest of the year. In the south, bats overwinter in hibernation caves, while in the north they remain active and forage nightly. They are a high flying species that forages from just above the canopy to many times canopy height. Also forages in open areas where they forage just above the ground. They are fast flying and may forage long distances from the roost site (up to 65km in one night). This species was detected most nights at Mason Park foraging across the wetland as well along the edge habitats.

Yellow-bellied Sheathtail Bat (*Saccolaimus flaviventris*)

Widespread in wet to dry sclerophyll forests, woodlands, grasslands, mangroves, agricultural and urban areas. Migrates to southern Australia in January to April. It roosts in large tree hollows in mixed sex groups, usually around six but up to 30 and usually forages above the canopy but lower in open spaces. This species was detected on several nights foraging at Mason Park.

Grey-headed Flying Fox (*Pteropus poliocephalus*)

Feeds on nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines. Also gardens and crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. This species was heard and observed foraging in eucalypts in Mason Park. Mason Park Wetland is not an important habitat for this species.

White-bellied Sea-eagle (*Haliaeetus leucogaster*)

This species feeds mainly on aquatic animals, such as fish, turtles and sea snakes, but it takes birds and mammals as well. It is a skilled hunter, and will attack prey up to the size of a swan. It was observed cruising over the site, and was chased aggressively by Noisy Miners and Pied Currawongs. A pair nest and breed at Homebush annually and this was likely one of the adults. Mason Park provides foraging habitat for this species.

Listed marine species observed during the current survey include Great Egret *Ardea alba*, Little Egret *Egretta garzetta* and White-headed Stilt *Himantopus leucocephalus*.

5.3.3 Shorebirds in Mason Park Wetlands

Important Shorebird Species in Mason Park Wetlands



Figure 36 Great Egret *Ardea alba* (left), Little Egret *Egretta garzetta* (centre) and White-headed Stilt *Himantopus leucocephalus* (right).

Mason Park attracts migratory shorebirds from the Northern Hemisphere, including from China, Japan, Siberia and Alaska. To illustrate where migratory birds visiting Mason Park originate, Figure 37 shows the Asia-Pacific migratory flyways.



Figure 37 Asia-Pacific migratory flyways (Figure 2.5 in PoM 2008)

Important migratory species associated with Mason Park since the 1960s are:

Curlew Sandpiper

- Federal - Critically Endangered
- NSW - Endangered

Curlew Sandpipers are omnivorous, feeding on worms, molluscs, crustaceans, insects and some seeds. It is one of the most threatened migratory species in southeast Australia with widespread declines, not just at Mason Park or the Parramatta River estuary (Figure 38). With declines to almost nil in Botany Bay, Mason Park was an important site for this species in the Sydney region 2000–2010. The PoM 2008 noted that numbers at Mason Park varied with counts between 50 and 100 birds when the area was poorly managed and up to 240 when the tidal flushing was effectively managed by council. Unfortunately there has been a rapid decline in numbers at Mason Park and at wetlands in neighbouring SOPA since the time of writing of the 2008 PoM. Statewide counts of the species does not reflect the same rapid declines as observed in the Parramatta River estuary.

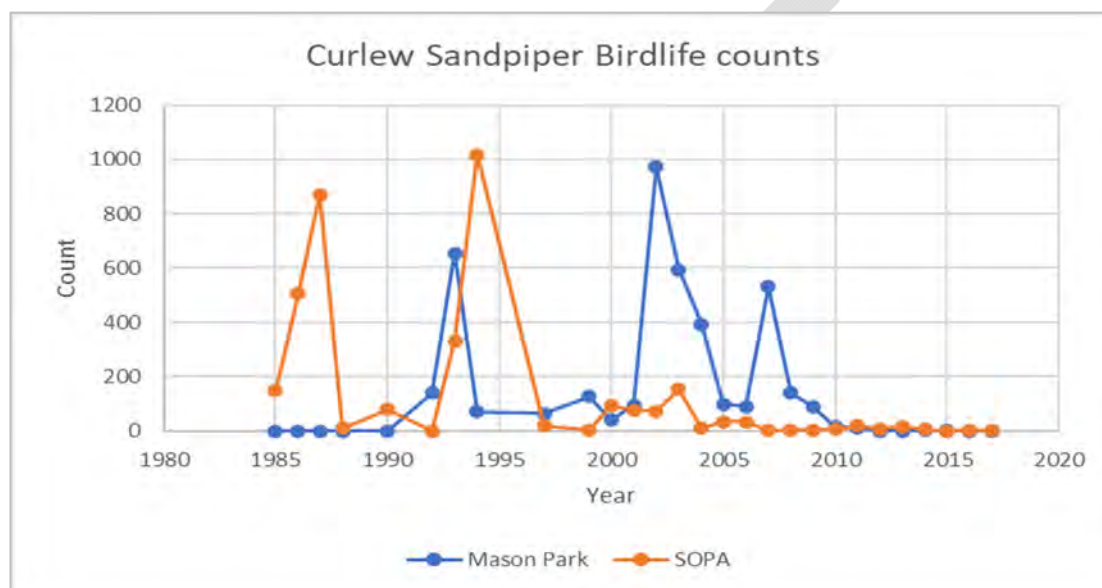


Figure 38 Curlew Sandpiper counts at Sydney Olympic Park and Mason Park show a steep decline over a decade ago (adapted from Birdlife Australia Shorebird count data).

Pacific Golden Plover

- Federal - Migratory (Bonn, CAMBA, JAMBA, ROKAMBA)

Primarily feeds on terrestrial invertebrates; also takes freshwater and marine invertebrates and plant matter including berries and seeds⁶.

This species has also declined at Mason Park and the Parramatta River estuary. Mason Park was long been the most important roost site for this species in the estuary (PoM 2008). The population in 1985 was estimated to have been 200 birds in Botany Bay and about 100 for the Parramatta River. Statewide counts of the species do not reflect the same rapid declines as observed in the Parramatta River estuary.

⁶ Johnson, O. W., P. G. Connors, and P. Pyle (2020). Pacific Golden-Plover (*Pluvialis fulva*), version 1.0. In *Birds of the World* (P. G. Rodewald and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.pagplo.01>

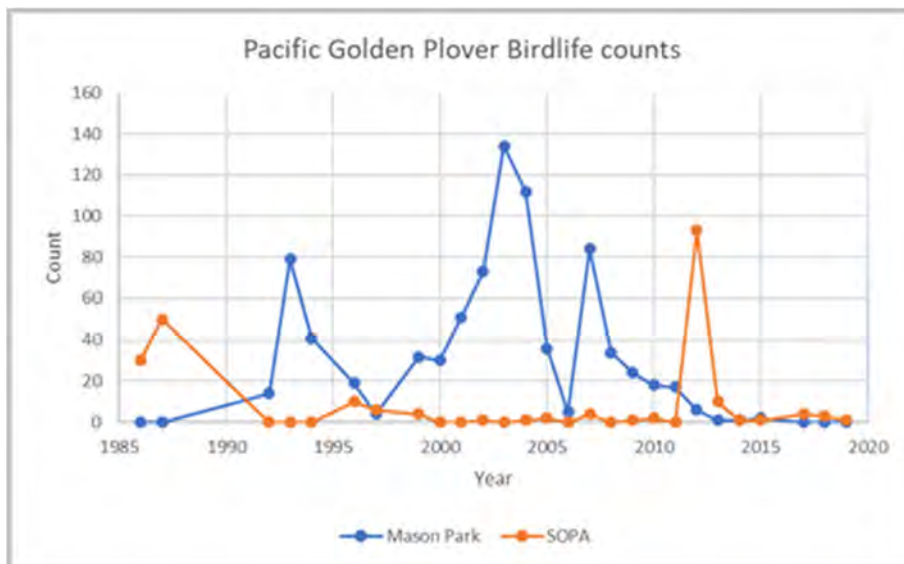


Figure 39 Pacific Golden Plover counts at Mason Park show a steep decline since 2007 (adapted from Birdlife Australia Shorebird count data).

Sharp-tailed Sandpiper

Federal - Migratory (Bonn, CAMBA, JAMBA, ROKAMBA)

Diet highly variable, including insects and their larvae, bivalves, snails, crustaceans, polychaete worms and seeds. Feeds at water's edge; uses combined pecking and jabbing with rapid, shallow probing⁷. The 2008 PoM noted numbers of this species were increasing at Mason Park, potentially in response to drought conditions in inland Australia, but that it had responded well to the current management actions at Mason Park. However since 2008 there has been a sharp decline in numbers with no Sharp-tailed Sandpipers present at Mason Park in recent years- a trend not observed at SOPA (Figure 40) or in statewide counts.

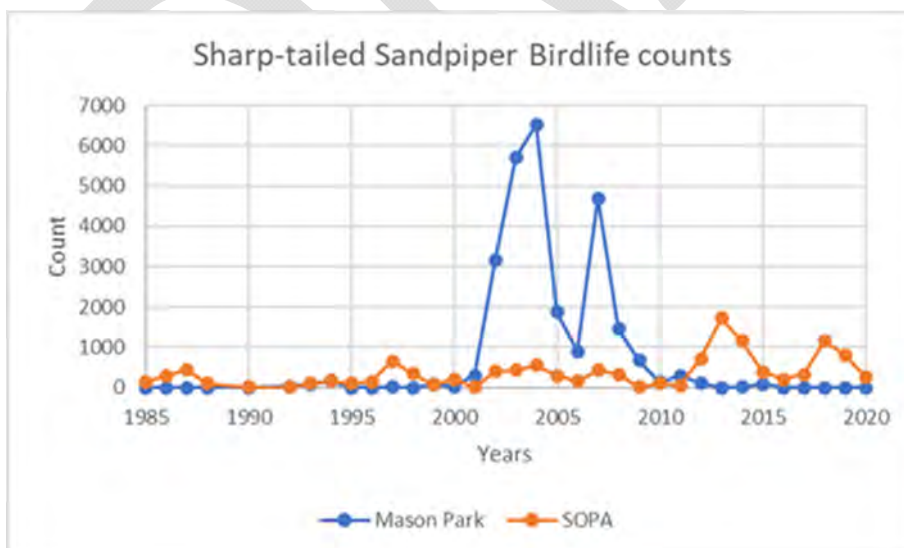


Figure 40 Sharp-tailed Sandpipers counts at Mason Park show a steep decline since 2008 (adapted from Birdlife Australia Shorebird count data).

⁷ Van Gils, J., P. Wiersma, and G. M. Kirwan (2020). Sharp-tailed Sandpiper (*Calidris acuminata*), version 1.0. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.shtsan.01>

Latham's Snipe

- Federal - Migratory (Bonn, CAMBA, JAMBA, ROKAMBA)

Diet varies with locality and month; in winter, in New South Wales, most commonly identified animal items in faeces are Coleoptera (beetle) adults and larvae and Diptera (Flies and mosquitos) larvae, but aquatic macroinvertebrates such as dragonflies and water ticks were also present, and seeds and grit were more abundant than any animal food. It feeds by probing bill into soft soil, usually on open mud, less often in shallow water⁸.

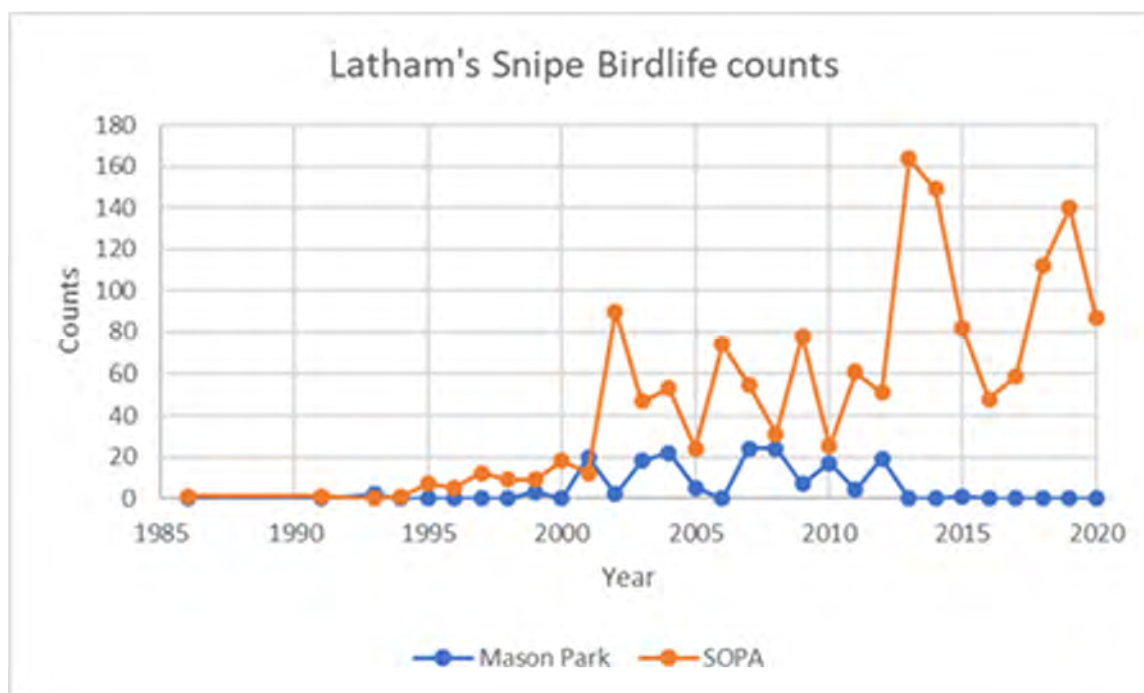


Figure 41 *Latham's Snipe* observations at Mason Park have been very low since 2012 with a corresponding increase in sightings at SOPA (adapted from Birdlife Australia Shorebird count data).

UBM (2008) noted that the species occurred in small numbers roosting in rank vegetation around the periphery of the wetland at Mason Park, and ventured out at dusk and dawn to feed on mudflats and in shallow water. This species fluctuates in numbers at coastal wetlands depending on the availability of habitat at ephemeral wetlands. Coastal wetlands provide important drought refuge. In 2012 there were 19 observations of the species in Mason Park with only one observation in 2015. Since then until a current study in 2020 (Insight Ecology) observed a single Latham's Snipe in the northern area of the wetland in December 2020.

Other migratory species – the 2008 PoM notes that five other species occur in small numbers (one or two birds) from time to time including Red-necked Stint, Common Greenshank, Pectoral Sandpiper, Marsh Sandpiper, and rarely the Wood Sandpiper.

Non-migratory species include the White-faced Heron, Black-fronted and Red-kneed Dotterels, and Masked Lapwing (Figure 42).

⁸ Van Gils, J., P. Wiersma, and G. M. Kirwan (2020). *Latham's Snipe (Gallinago hardwickii)*, version 1.0. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.latsni1.01>



Figure 42 Black-fronted Dotterel (left), Masked Lapwing (centre), and White-faced Heron (right) at Mason Park November 2020.

White-headed Stilts regularly breed at Mason Park Wetland and successful breeding was observed in Spring 2020. However, prolonged periods of drying exposed eggs and nesting birds to predation by foxes and disturbance by other pest species resulting in multiple observed failures of nesting birds.



Figure 43 White-headed stilt and young



Figure 44 White-headed Stilt eggs found away from nest (left) and human and fox/dog prints in drying mud flats (right); inset – Red Fox on one of the vegetated bunds (near nesting stilts) in the south west section of the wetland.

Macrobenthic Surveys

Birdlife volunteers have been working with Dr Swapan Paul from Sydney Olympic Park Authority to determine the availability of food resources in Mason Park wetlands. They have undertaken several surveys of macrobenthic fauna at 3 locations around the wetlands. At the time of writing, the results of the initial surveys were available (see Section 5.3.4 in Appendix A). The species richness for the site was comparatively low, while there were abundant populations of each of the three species recorded. This provides some marginal food resources for some birds but is not adequate for migratory species that feed on polychaetes and bivalves, (S. Paul, pers. comm.).

Birdlife's volunteers plan to continue to monitor the macrobenthos to detect changes over time. Key factors that are likely to hinder increases in macrobenthos diversity are a combination of inadequate tidal flushing and elevation, compaction - particularly of clayey substrates and extended periods of drying for the tidal mudflats (Figure 45). These need to be managed more effectively by better use of the existing floodgates, or replacement with larger automated floodgates.



Figure 45 Extended periods of little or no inundation has resulted in prolonged drying of the mud flats within Mason Park rendering them unsuitable foraging habitat (image taken October 24, 2020).

SOPA installed a similar automated floodgate that currently manages tidal inundation levels within their Waterbird Refuge. Following installation, they found an improvement in water quality, expansion in saltmarsh extent, reduction in filamentous algae and corresponding unpleasant odours, increased food resources (macrobenthos), and increase in the number and diversity of waterbirds using the wetland refuge (Wetlands Australia, 2014).

Initial setup costs have reduced over the interim, and a similar system for Mason Park is strongly recommended. Additional activities undertaken at SOPA's Waterbird Refuge include:

- Control of mangroves through gradual removal of adult trees, annual removal of seedlings
- Removal of Swamp Oaks at strategic locations around the Waterbird Refuge to improve sight lines

Mason Park would benefit from similar activities to improve the overall habitat value of the reserve for migratory and local shorebirds.

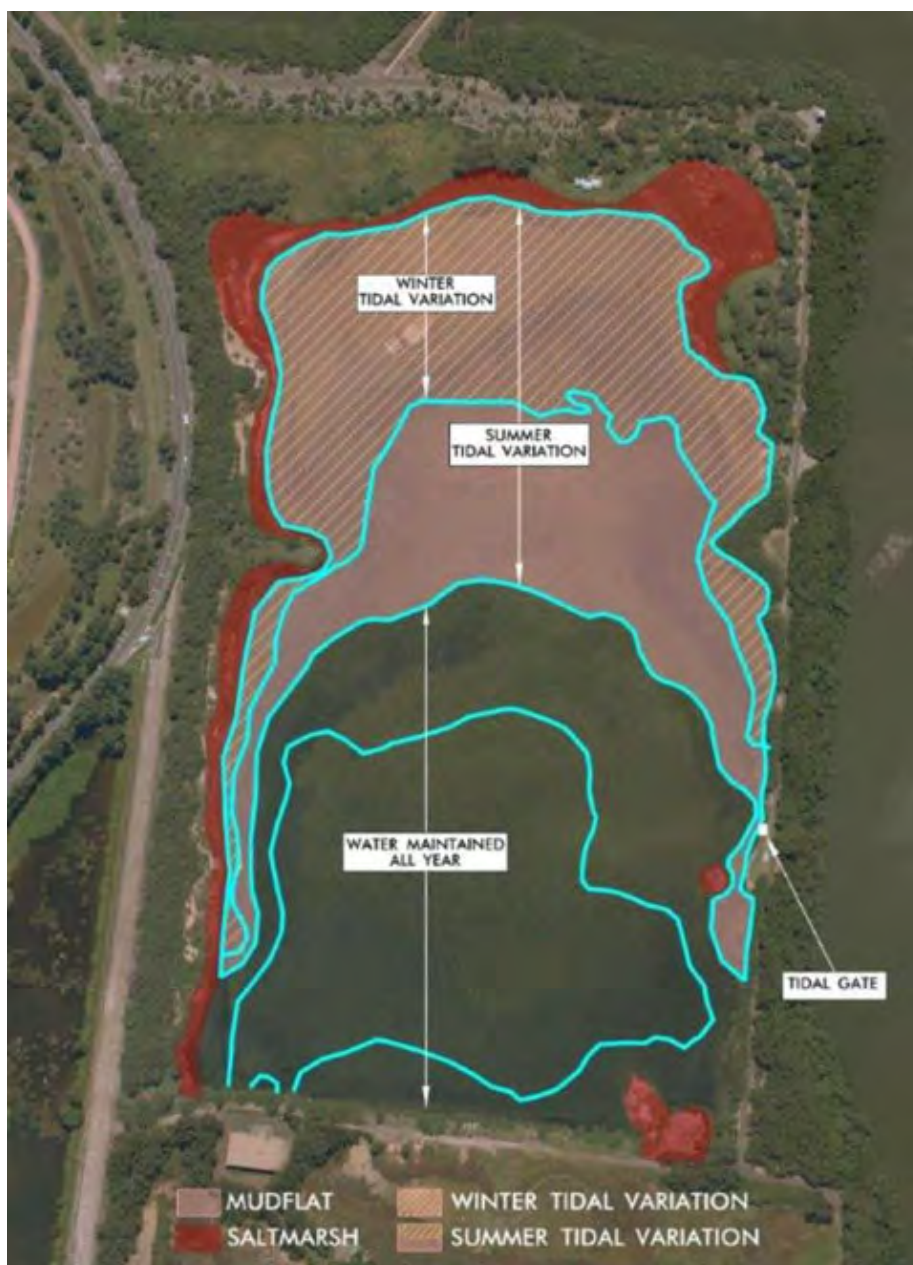


Figure 46 (right) Management of tidal regimes at the SOPA Waterbird Refuge and the resulting zonation of the wetland

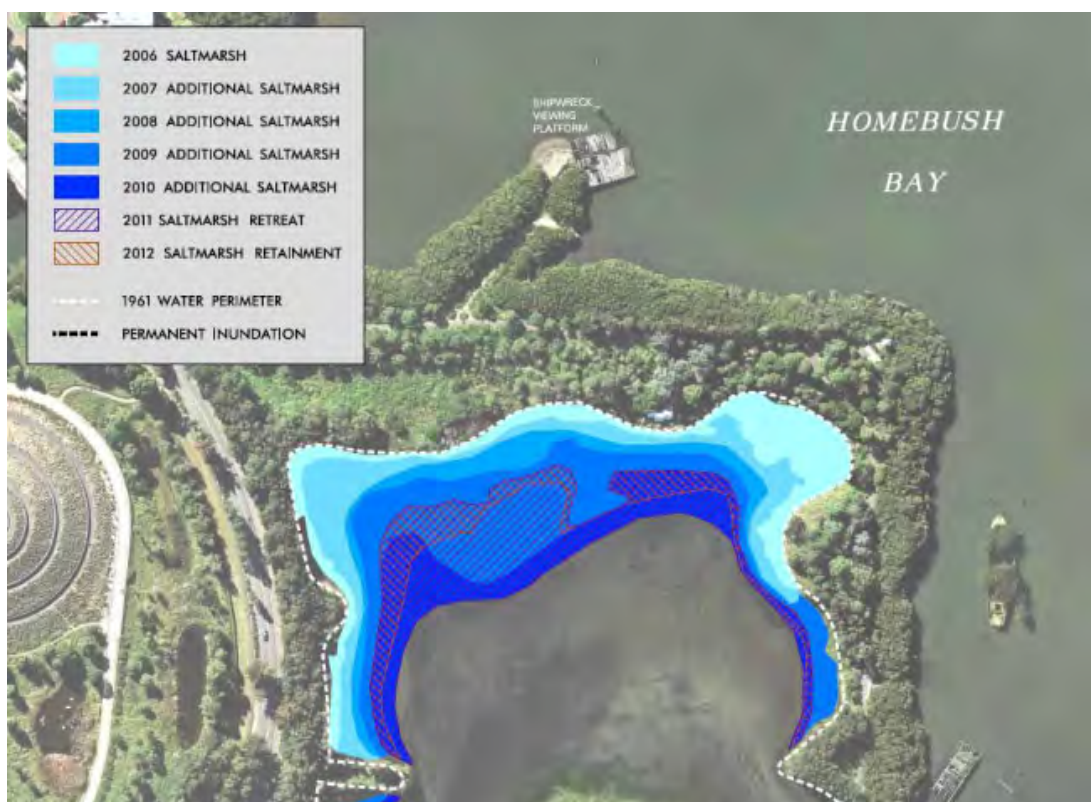


Figure 47 increase in the extent of saltmarsh in the Waterbird Refuge following manipulation of tidal levels and frequency (Swapan Paul, SOPA, 2020)

Specific Habitat Requirements for Shorebirds

The following information is provided from Birdlife Australia for the four main migratory shorebird species historically recorded in Mason Park wetlands.

Curlew Sandpiper

The Curlew Sandpiper is a small to medium-sized wader (migratory shorebird). It is a common summer migrant from north-eastern Siberia and Alaska, found in many Australian coastal sites and may also be seen inland in suitable habitats. It is most common in the far south-east and north-west of Australia. The Curlew Sandpiper is **found on intertidal mudflats of estuaries, lagoons, mangroves**, as well as beaches, rocky shores and around lakes, dams and floodwaters. Its breeding habitat is the lowland tundra of Siberia. The Curlew Sandpiper feeds on insects and their larvae when breeding. Otherwise, it **feeds on small marine invertebrates, especially polychaete worms**.

Based on this, the right habitat is present in Mason Park wetlands, along with the right sort of food resources.

Pacific Golden Plover

The Pacific Golden Plover is a slender upright shorebird (wader), also known as the Eastern, Lesser or Least Golden Plover. The Pacific Golden Plover breeds on the Arctic tundra in western Alaska. It winters in South America and islands of the Pacific Ocean to India, Indonesia and Australia. In Australia it is widespread along the coastline. The Pacific Golden Plover is found on **muddy, rocky and sandy wetlands, shores, paddocks, saltmarsh, coastal golf courses, estuaries and lagoons**. The Pacific Golden Plover **eats molluscs, insects, worms, crustaceans, lizards and is known to eat birds' eggs and small fish**.

Based on this, the right habitat is present in Mason Park wetlands, along with the right sort of food resources.

Sharp-tailed Sandpiper

The Sharp-tailed Sandpiper is a medium sized wader with a straight black bill. The Sharp-tailed Sandpiper is a summer migrant from Arctic Siberia, being found on wetlands throughout Australia. The Sharp-tailed Sandpiper **prefers the grassy edges of shallow inland freshwater wetlands. It is also found around sewage farms, flooded fields, mudflats, mangroves, rocky shores and beaches**. The Sharp-tailed Sandpiper **feeds on aquatic insects and their larvae, as well as worms, molluscs, crustaceans and sometimes, seeds**. It is often found in large flocks, often with other waders, foraging in shallow waters.

Based on this, the right habitat is present in Mason Park wetlands, along with the right sort of food resources.

Latham's Snipe

Latham's Snipe is the largest snipe in Australia, with cryptic, mainly brown, plumage. Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. Latham's Snipe breed in Japan and on the east Asian mainland. Latham's Snipe are seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are **found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges** on migration. They also use crops and pasture. Latham's Snipe feed by thrusting their long bill into mud with an up and down 'sewing machine' action in soft mudflats or shallow water. They roost in the day and feed at night, early morning or evening. They are omnivorous, **eating seeds and plant material, worms, spiders and insects, some molluscs, isopods and centipedes**.

Based on this, the right habitat is present in Mason Park wetlands, along with some of the right food resources.

Consultation with Birdlife Australia (NSW)

Birdlife was contacted to ascertain their recommendations for management of the wetlands as shorebird habitat. The following recommendations were provided (E. Dark, pers comm.):

- improve water circulation throughout the wetland, include a possible second access point from Powells Ck towards the south end
- manage tidal flows to better mimic a natural regime, encouraging increase in abundance and diversity of macroinvertebrates
- prevent colonisation of mangroves from seed entering the wetland
- greatly reduce (or totally remove) mature mangroves and remove all juvenile mangroves
- maximise habitat for migratory and resident wading birds
- retain/enhance habitat value for small terrestrial birds
- institute regular monitoring of the condition of the wetland including saltmarsh health, and water quality
- clearly identify which area in Council is responsible for management
- provide adequate funding for ongoing maintenance
- ensure Council staff responsible for the wetland receive adequate training to perform that role

5.3.4 Managing Hydrology

Effectively managing the wetland for migratory birds and threatened flora species and communities is reliant on managing hydrology. Water quality testing during Spring 2020 showed that the wetland is strongly saline in the northern portion of the wetland and becomes increasingly less saline along a north-south gradient. The deep pond in the south west, referred to as the south saline pond in previous PoMs, retains water and was approximately half as saline as the water at the inlet. This supports other visual assessments that the wetland is not adequately flushed.

The current management regime does not achieve desired outcomes and has resulted in the following effects:

- Tidal flushing is not maintaining mudflats or shallow pools throughout the wetlands.
- Large areas of substrate are bare and showing evidence of salt scalding and/or acid sulphate buildup.
- There does not appear to be a functional second inlet, either based on the original design criteria or from the creek bank naturalisation works undertaken by Sydney Water in 2018 (see 1.1.6 pg.139).
- The drain from adjoining land that provided the opportunity for back flooding during extreme king high tides has been removed or relocated
- The floodgate weir lacks some of the more important aspects of functionality from the original proposal – for example, there is no capacity for automated operations.
- There appears to have been no operations manual or guidelines to assist council staff with manually operating the floodgate.
- The floodgates have become damaged and do not appear to be functioning properly.

(Also see Section 0 **Review of Hydrology for Mason Park Wetlands** , pg 130)

Current Status (2020)

Key issues identified in the current study build upon the problems in the previous iterations of site management plans and are:

- Mangroves have invaded large areas of saltmarsh and continue to colonise areas that were formerly saltmarsh or mudflats. They accumulate sediments and raise the bed levels, reducing the extent of mudflats and shallow pools.
- Hypersalinity and acid sulphate soils have rendered parts of the wetland unsuitable for all but the most tolerant of saltmarsh species (or for macroinvertebrates).
- Ongoing research has revealed that *Lampranthus* is probably native to South Africa (<https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Lampranthus-tegens>) although “attempts to equate it with a known African species have not been successful.”
- In Mason Park there has been loss of habitat for the threatened species, *Wilsonia backhousei*, through infilling and contamination of soils (including ASS/PASS, leaching of heavy metals, and hypersalinity), trampling and vehicle use, modified drainage and invasion of weeds, including *Juncus acutus*. These were noted in 1994, again in 2008, and continue in 2020, despite the construction of a raised boardwalk across the area where *Wilsonia* is established. Motor vehicles and bicycles continue to drive/ride across the area beside the boardwalk.
- Planted trees around the edges of the wetlands have grown and now present a restriction to sight lines and flight lines for migratory waders. This was noted in the 2008 PoM, along with management recommendations for staged removal.
- Swamp Oaks are self colonising areas along the eastern boundary, beside the footpath/cycleway/boardwalk and are further limiting sight and flight lines. This was noted in 2008 and either was not addressed, or not maintained since then.
- *Juncus acutus* appears to be largely controlled in the wetland, although some individuals remain, and it needs to be continually monitored and eradicated in the future.
- Weeds management remains an ongoing issue. Five species of state or federally listed priority control weeds were recorded on site. Another six regional priority control weeds were recorded. There are specific control requirements for these species. A total of 69 species of introduced plants were recorded in the Mason Park precinct, with 37 introduced species recorded within the wetlands area.
- Access for the electricity stanchion will continue to be required. However, this should not impact the *Wilsonia* patches in the area or other saltmarsh species. Vehicle access for the stanchion needs to be established and maintained in such a manner that these protected assets are adequately protected. For example, dedicated access maintained from Underwood Rd, and bollards used to prevent vehicle access across the saltmarsh (other than bicycles across the boardwalk). If vehicles do need to cross from the Powells Creek footpath/cycleway then the boardwalk needs to be reconstructed to provide this kind of access.

6. Management of the land

6.1 Objectives and management of community land

The land is managed in accordance with the objectives and methods set out below:

Table 9 - Objectives, means and performance measures for parks, sportsgrounds and general community use

Management Issues	Objectives	Actions	Performance Indicators
Licence, leases, permits and other estates	1. To facilitate the use of Mason Park for a range of recreation, sporting and community activities	1. Review and grant licence, leases, permits, other estates and short term use agreements for use of facilities in Mason Park in accordance with legislative and policy requirements.	1. Leases and licences prepared and adopted in accordance with provisions of LG Act and CLM Act. Native Title Manager advice is received for all proposed leases and licences 2. Monitor agreements in accordance with terms and conditions of agreement.
Manage facilities, safety and risk in Mason Park	1. Provide safe access and usage of public land and facilities.	1. Design and maintain layouts, landscaping and facilities in accordance with CPTED principles (Crime Prevention through Environmental Design) principles including passive surveillance, good sight lines, territorial reinforcement and space management and lighting. 2. Review provision of sportsfield and pathway lighting especially for twilight and night time use of park.	1. Works to be in accordance with relevant Australian Standards and CPTED principles. 2. Monitor and action incident and accident reports and audits. 3. Monitor agreements 4. Review and update asset management plans periodically

Management Issues	Objectives	Actions	Performance Indicators
		3. Work with local police to identify and act on safety issues. 4. Utilise CCTV to support park safety, where required 5. Maintain sportsfields, facilities and playgrounds to a safe and usable condition and in accordance with relevant Australian standards 6. Schedule regular inspections and condition assessments. 7. Inclusion of maintenance standards in licence, lease or hire agreements. 8. Respond to reports on condition of facilities, vandalism or graffiti as soon as practicable.	
Manage traffic and park around Mason Park	1. Manage traffic and parking to and in Mason Park 2. Implement strategies to reduce traffic congestion and conflicts	1. Prohibit vehicle access to the park (beyond public carpark) except for Council authorised service and emergency vehicles 2. Install signage and barriers to prevent vehicles from entering unauthorised areas. 3. Where vehicles are permitted, provide clearly marked areas for vehicle movement 4. Provide access to parking in and near Mason Park for park users and monitor use of car park	1. Monitor parking and access to the park 2. Improved public safety. 3. Monitor traffic access to park by authorised vehicles

Management Issues	Objectives	Actions	Performance Indicators
		5. Promote public transport and community transport to visit Mason Park. 6. Install bicycle racks in Mason Park	
Management of dogs and off-leash area in Mason Park	1. Provide facilities at Mason Park for dog walking and training. 2. Maintain a fenced dog off-leash area in Mason Park to allow for safe off leash play. 3. Ensure dogs in Mason Park (outside of the off-leash area) are exercised on-leash and the park is kept free of faecal matter.	1. Ensure owners of dogs are held responsible for clean up faecal matter in the park 2. Enforce that dogs are kept on-leash within the park 3. Ensure receptacles for dog waste disposal are available in the park 4. Rangers regularly patrol the park and take action on infringements	1. Monitor behaviour of dogs in parks 2. Actions to address infringements
POM review	1. Review Plan of Management regularly	1. Review Plan of Management at least every five years to conserve, maintain and enhance the values and character of the park	1. Implement Plan of Management actions
Promote varied recreational uses	1. Ensure a range of facilities in Mason Park meets a wide range of ages and interests 2. Maintain condition, useability and sustainable capacity of park and facilities	1. Promote a range of organised and informal/unstructured activities at Mason Park 2. Monitor use of park and manage potential overcrowding within the park 3. Provide amenities that support use and enjoyment of park and sportsfields eg toilets, change rooms and kiosk/café facilities.	1. Monitor local use of parks and sportsgrounds by bookings, surveys, complaints and observation.

Management Issues	Objectives	Actions	Performance Indicators
		4. Consider addition of informal recreation facilities such as outdoor fitness/gym equipment, rebound wall 5. Provide additional shading and seating in the park.	
Protect and promote aesthetic character, historic and Aboriginal history and heritage	1. That aesthetic character and visual quality of public open spaces is enhanced 2. Identify, commemorate and educate on the historical, heritage and environmental significance of Mason Park.	1. Design buildings, structures and features that complement and enhance the park setting and character including consistency of selection and design of park and sportsground furniture, paving, fencing etc 2. Implement and maintain co-ordinated signage and public art strategy including providing information on key park features, natural environment (eg trees, plant species etc), Aboriginal heritage etc 3. Incorporate historical and educational information on signage to enhance understanding and appreciation of the park and its features	1. Community consultation and satisfaction surveys. 2. Installation of signage and historical/educative information throughout the park
Provide a safe environment and facilities for children's play.	1. Provide children's facilities and ensure safe maintenance of play equipment	1. Maintain and regularly inspect children's play areas in Mason Park 2. Ensure seating and shading is provided for adults supervising children's play areas.	1. Ensure all play equipment meets all relevant standards 2. Ensure play items are kept free of rubbish and hazardous items, such as needles or broken glass

Management Issues	Objectives	Actions	Performance Indicators
Provide safe access, pathways and facilities for all community members including seniors and persons with disabilities	Provide safe access to and within the park and facilities, especially for older people and those with disabilities.	1. Upgrades, refurbishments and/or improvement works on community land to incorporate public access requirements for mobility and connections. 2. New or modifications to facilities including parking, ramps, stairs and pathways to comply with relevant Council and BCA requirements consistent with Australian Standards. 3. Provide clear directional signage in the park to key facilities 4. Ensure seating is provided within the park near primary pathways, playgrounds and sportsfields which are accessible for seniors and persons with disabilities 5. Unless designated for cycles or shared use, all pathways in Mason Park should be for pedestrian access only.	1. Audits of community land and facilities to comply with standards 2. Comply with actions and measures in the Council Disability Inclusion Plan
Sustainability	1. Implement best environmental management practises and principles having regard to environmental sustainable design, resource use and maintenance.	1. Ensure community facilities meet sustainable building requirements and/or are progressively upgraded to incorporate best practice energy and water efficiencies to minimise water and energy use in parks, sportsgrounds and ancillary facilities. 2. Promote waste reduction strategies in Mason park	1. Monitor usage and trends via quarterly and annual consumption and billing. 2. Periodically monitor tree canopy and heat island effect in Mason Park

Management Issues	Objectives	Actions	Performance Indicators
		3. Increase tree canopies and vegetation to improve shade, natural heating and cooling (island effect)	
Trees, vegetation and landscaping	1. Manage trees, gardens and natural areas to maintain and improve the quality of the environment in accordance with Council's tree management, biodiversity strategies and actions detailed in this plan.	1. Increase plantings within the park and improve wildlife/habitat corridors especially links to Mason Park 2. Maintain weed management program to minimise spread of weeds 3. Implement individual specific actions for flora, fauna, coastal wetland and zone management of the park as specified in Table 11 of this plan.	1. Measure and monitor tree canopies, vegetation, weeds and habitat. 2. Undertake periodic flora and fauna reviews
Waste and rubbish management	1. Provide effective and efficient waste management of park and facilities	1. Provide and monitor waste and recycling bins in park and ensure regular collection of bins to minimise litter overflow 2. Inclusion of litter management standards in licence, lease or hire agreements.	1. Regular scheduling of waste removal from park 2. Monitor and respond to complaints and audits.

Specific Actions for Wetland Management Zones

Mason Park wetland was divided into management zones based on existing vegetation/land use and future potential for ecological gains and improvements (*Figure 48*). It is important to ensure that adjoining uses do not compromise the existing and/or potential ecological values and recreational uses.

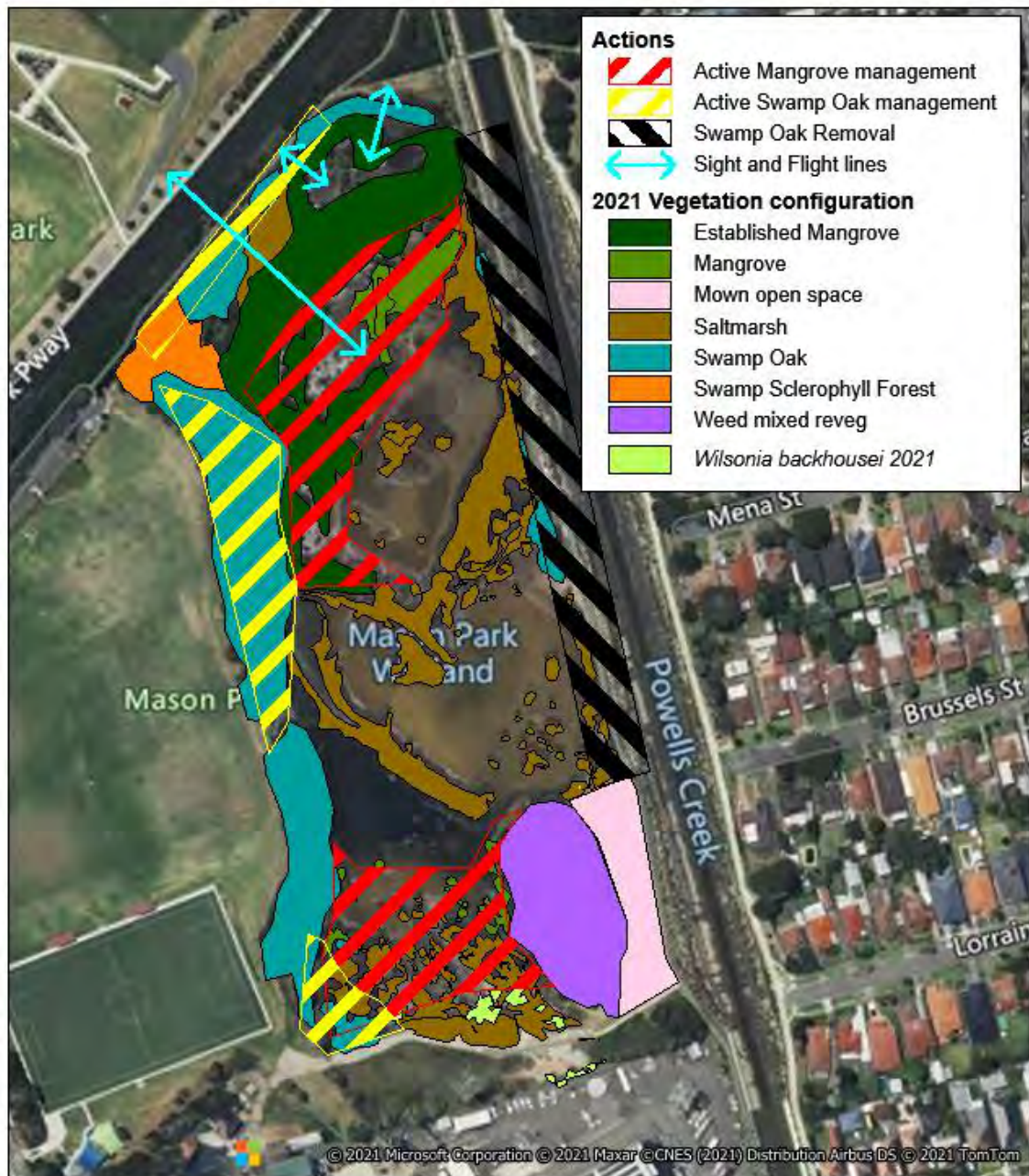


Figure 48 Vegetation zones recommended for management actions in Mason Park

Table 10 Management actions recommended for Mason Park Wetland (from Management Plan 2021)

Item	Values	Action	Ecological Benefit	Priority	Implementation Note
1	Flora protection	Fence southern end of wetlands or <i>Wilsonia backhousei</i> patches	Prevent vehicle (bicycles, dogs, foot traffic etc) damage to saltmarsh and the threatened <i>Wilsonia backhousei</i>	Low (see options)	Temporary fencing could be installed pending actioning items 2 and 11
2	Flora protection	Finalise agreement with other stakeholders regarding access requirements to stanchions	Prevent vehicle damage to saltmarsh and the threatened <i>Wilsonia backhousei</i>	High	
3	Flora management	Install markers to delineate approximate extent of wetland ecosystem patches	Ensure wetlands do not become over colonised by mangroves and that saltmarsh and <i>Wilsonia</i> are maintained at agreed patch size minimums	High	See monitoring forms in this plan to be completed by Council staff - includes maintenance of markers
4	Flora management	Implement regular monitoring regime to include water levels, patch sizes and weeds	Support ongoing commitment to the site by council, provide evidence to grant providers of ecological values etc	High	See monitoring forms in management plan to be completed by Council staff. There is potential for involvement of citizen scientists in monitoring programmes via community development program.
5	Flora management	Mangrove removal	Reduce invasion of other sections of wetland	High / ongoing	Extent at markers
			Create additional space for saltmarsh or mudflats for migratory waders		
6	Flora management	Weed control in surrounding forested wetland vegetation	Improved condition of EEC vegetation	Medium	

Item	Values	Action	Ecological Benefit	Priority	Implementation Note
7	Flora management	Install screens to prevent mangrove propagules washing in with tidal flushing	Manage the spread of mangrove propagules within the wetlands, reduced ongoing costs for management of establishing mangroves, reduced need for human activity and disturbance within the wetlands	High	High priority pending final design. May not be required with installation of two inlets.
8	Flora management	Thinning of Swamp Oaks, removal of swarming seedlings	Improved sight lines for waterbirds and migratory waders	High / ongoing	Consider staged replacement planting with low shrubs/ small trees such as Melaleucas for screening from the path (northern end only) to max height 4-5 metres
			Reduce incursion into saltmarsh at northern end of wetlands		
9	Fauna and citizen science	Inoculate mudflats with larger macroinvertebrates	Improve food resources within the wetlands, improve overall health and resilience of mudflats and saltmarsh ecosystems	Medium	Liaison with SOPA wetland management staff for advice
10	Fauna	Monitor incursions into core habitat areas by reserve users or dogs off leash. If this becomes an issue consider simple fencing (eg single cable) to delineate no go zones along the wetland side of existing formal paths.	Less disturbance to wetland flora and fauna	Ongoing/ moderate	See monitoring forms in this plan to be completed by Council staff. There is potential for involvement of citizen scientists in monitoring programmes via community development program.
11	Visitor experience and Flora protection	Formalise path across southern end of wetlands/ replace existing boardwalk with wider boardwalk to accommodate two way foot traffic with prams and dogs, children etc	Reduce impacts on saltmarsh and <i>Wilsonia backhousei</i>	Medium	Maintain access to stanchions (see item 2)

Item	Values	Action	Ecological Benefit	Priority	Implementation Note
12	Flora and fauna and visitor experience enhancement	Earthworks to reshape southern grassy knoll/weedy area	Reinstate wetland area for saltmarsh or mudflats	Low	Implement as alternative to option below (the preferred option)
			Potential for brackish/fresh habitat with Typha and Phragmites (as per 2004 aerial photos)		
			Create additional foraging habitat for waterbirds		
13	Flora and fauna and visitor experience enhancement	Create freshwater wetland (perched), brackish swale	Create additional foraging habitat for waterbirds	Medium	See the Wetland MP Appendix A, Figure 39
			Recreate frog habitat evident in 2008 PoM surveys		
			Utilise stormwater harvesting tank storage water		
14	Visitor experiences	Install bird hide near southern boardwalk or perched wetland	Provide opportunities for birdwatching without impacting migratory waders and other waterbirds. Community education opportunities.	Medium	See Wetland Operational Plan 2021, Section 5.1.1 and Appendix A. Both locations are suitable for 2 direction viewing
15	Hydrology	Create second tidal flushing inlet (single tidal regime)	- Improved tidal flushing for upper sections (southern end), reduced incidence of hypersalinity/drying out and its impacts on saltmarsh and <i>Wilsonia backhousei</i> - Council would have remote operation of two gates, and monitoring of water level in both northern and southern mudflats. Gate could be adjusted for adaptive management of sea level rise. - With two connections turnover of water can be achieved, improving tidal flushing of wetland.	High	See Wetland Operational Plan 2021 Section 3.1 and Appendix A, Figure 40 for details

Item	Values	Action		Ecological Benefit		Priority	Implementation Note
16	Hydrology	Upgrade existing inlet/ Outlet structure at Northeastern side of wetlands	a) flap gates with automated motorised gate system	Floodgates can respond to changing tides at any time, improved regulation of tidal regimes within the wetlands, improved conditions within wetlands for migratory shorebirds.	Council would have remote operation of gate, and monitoring of water level in northern mudflats. Gate could be adjusted for adaptive management of sea level rise. Allows some control of water levels during breeding seasons reducing predation risk	High	
			b) replace existing box culvert with larger box culvert	• Larger volume of water able to enter on incoming tides • Reduced frequency of wetlands drying out			Works to existing box culvert may be more straightforward for approvals
17	Hydrology	Create second inlet and regulate water levels with two tidal regimes (ie two ponds)		Creation of sustainable inundation regimes to promote healthy mangroves in one pond and healthy saltmarsh in the other, with mudflats		Low	low priority – not preferred option
18	Hydrology	Create berm mid marsh to reduce potential for mangrove propagule movement and establishment		Manage the spread of mangrove propagules within the wetlands, reduced ongoing costs for management of establishing mangroves, reduced need for human activity and disturbance within the wetlands		Low	
19	Hydrology	Remove mangroves from around inlet channel		Reduced inhibition of tidal flows, improved tidal flushing of wetlands		High/ ongoing	Yes

Item	Values	Action	Ecological Benefit	Priority	Implementation Note
	Hydrology	Improve hydraulic links within wetland	- Water able to circulate between mudflat basins, - Improves wetland flushing - improved health of saltmarsh - Reduced frequency of wetlands drying out - Internal screening of mangrove propagules could be included	Medium	see monitoring and adaptive management approach
20	Community engagement	Establish official Bushcare/wetland care group of volunteers to ensure ongoing weed control and other site maintenance.	Maintain ongoing community involvement, Increase community awareness of wetland values	Low-Medium	
		And/or continue memorandum of understanding with Birdlife Australia		In place	
21	General wetland management	Manage crumb rubber particulates to prevent their entry into the wetland	Maintain ecological health and prevent environmental degradation		At end of life of current field (generally require replacement after 8-10 years) replace with generation 4 woven turf (or better) that does not require crumb rubber infill.
22	General wetland management	Formalise boundary with boundary lot adjustment		Low	
23	General wetland management	Rename wetland	Generate interest in wetland increase	Low	Example "Mason Park Shorebird Sanctuary"

Table 11 Management actions recommended for forested areas in Mason Park

Forested Areas	Actions	Priority	Performance Measures
Weed control and supplementary planting	Undertake weed control on a regular basis Develop a species list for planting that includes shrubs to 2m high and comprehensive groundcover species Supplementary planting to: • Increase ground layer complexity • Increase species diversity • Add to Estuarine Swamp Oak Forest EEC	High	Weed free Plants installed and maintained Increased diversity and/or abundance of fauna
Weed control and supplementary habitat features	Undertake weed control on a regular basis Addition of habitat elements: • Hollow logs and piles of woody debris • Rock piles for basking and refuge • Artificial hollows and nest boxes	Medium	Weed free Habitat elements installed Increased diversity and/or abundance of fauna
Expand vegetated areas around the northwestern edges of the park	Add species that provide feeding resources for Grey-headed Flying-foxes and for microbats Addition of cultural elements: • Information signage • Animal sculptures using a range of textured materials that can be felt and explored • Consider adding nest boxes, especially for arboreal mammals (possums, microbats), and ensure these are monitored and maintained	Medium	Weed free Plants installed and maintained Cultural elements added Increased diversity of fauna
Freshwater pond(s)	Add a freshwater habitat feature in an area where birds and animals can safely drink; ensure refuge habitat is located nearby (see design example)		

Table 12 Management actions recommended for grassed open space in Mason Park

Grassed Open Space	Actions	Priority	Performance Measures
Passive recreation open space	Maintain areas of grassed open space to ensure there is always space for people to engage in informal or individual recreation activities Open space is psychologically important as well as physically important and allows for non structured thinking and activities	High	Continued use by local residents
Manage impacts from sporting facilities	Minimise impacts on surrounding areas of Mason Park, eg light spill during night usage – use full cut off lighting, consider using motion sensing dimmers and ensure adequate dark hours are maintained throughout the year	High	Full cut off lighting installed Impacts minimised
New sporting facilities	Ensure new sporting facilities must be sympathetic with the existing and potential/historic natural assets of the site	High	No increase in site impacts

Strategies for Supplementary Planting

Some general considerations for selecting plant species for different parts of the reserve include:

- Maintaining sight lines near roads and access points, especially to larger sporting facilities
- Maintaining good vegetation cover within fauna habitat areas
- Ensure that short lived species are regularly replaced if they do not establish local self-sustaining populations
- Control of weeds, including priority control species, environmental weeds and garden escape species

Plantings should be organized to create areas with structural diversity as well as species diversity. Include habitat elements except in areas where there are high levels of pedestrian or vehicular traffic, or high levels of light spill from playing fields. Be sure to include as many of the following elements as possible:

- Rocks and hollow logs for refuges for ground dwelling animals
- Grasses for food and cover as animals approach the water

Management actions for most of Mason Park are quite targeted, and apply specifically to the wetlands areas. It is important that other areas of the park are not neglected, and the following general actions apply to these areas.

General Actions for Fauna

There are some actions that can be undertaken that can improve habitat for local fauna species within the habitat areas adjoining the wetland and edges of the park (*Table 13*).

Table 13 Management actions recommended for fauna outside the wetland

Background	Actions	Priority	Performance Measures
Improve ground level refugia for reptiles and macroinvertebrates. Vertebrate species that would benefit include Eastern Blue-tongue Lizards and garden and grass skinks and the species that prey upon these species	• Import larger woody debris into the Casuarina stands along Saleyard Creek and eastern edge of sports fields. • Create complex piles of woody debris and rocks for basking and refuge.	Medium	• Increase in the number of (harmless) reptiles in the park. Increased complexity in park and wetland perimeter. • Increased terrestrial invertebrates
Increase areas of complex grassy understorey. Some migratory birds, eg Pacific Golden Plover consume seeds and other plant matter, while native seed eaters such as Red-browed Finches have been observed foraging seeds around the wetland.	• Increase diversity of grasses and ground covers where there is available sunlight amongst, and along the edges, of Casuarina stands. • Replace weeds with native grasses and ground covers in areas identified in Figure 48 • Thin out Casuarinas and increase plant diversity	Medium	• Increased understory complexity • Increased terrestrial invertebrates • Increased number of birds feeding in understorey

Background	Actions	Priority	Performance Measures
Ambrose (2008) observed five species of frog in Mason Park. It is unclear where the observations were made but there has been a marked reduction in frog diversity.	• Revitalize drainage swale along carpark with bunds to hold water and plant out edges with macrophytes	Medium	• Frogs calling from drainage swale
Foxes prey on nesting birds Black Rats prey on nesting birds	• Monitor drainage and road easements or other sites where foxes may breed for dens • Work with landholders to fumigate breeding dens • Ensure any pest control measures are integrated ie if fox numbers are suppressed pest rat species numbers are likely to increase.	Low	• Red fox numbers suppressed • No increase in Black rat population

General Actions for Flora

Control of state and regional priority control weeds is strongly recommended. Expanding areas of vegetation does not need to be limited to simply planting more plants, but could include use of artificial habitat elements, harvested natural habitat elements such as hollow logs and tree mounted hollows that provide habitat. Adding these elements to areas where there has been extensive tree planting will assist with creating a more sustainable ecosystem rather than an area of urban forestry plantings. Targeting the creation of areas of feed trees, shrubs and groundcovers is also an option. Selection of flora species for planting that add to the food resources on site should be managed based on the results of the recent fauna surveys.

Appendix A

1. Flora and Fauna Surveys 2020

1.1 Desktop Surveys

Searches of several databases were made to identify threatened species and Endangered Ecological Communities (EECs) that may potentially be found on the subject site. Databases were accessed on 10th September 2020. These included:

- NSW Wildlife Atlas (www.bionet.nsw.gov.au/),
- EPBC Act database (www.environment.gov.au/erin/ert/epbc/index.html).

1.1.1 *Flora field surveys methods*

Mason Park and Wetlands were traversed using the Random Meander method for flora surveys (Cropper, 1993). Typically this involves inspecting each area of different vegetation, including around waterways, rocky areas, dense vegetation and sparse patches to compile a flora inventory for the site. For Mason Park Wetlands this method was adapted to include investigating all of the vegetation patches in each section of the park and recording flora species. Species identification and nomenclature were generally in line with PlantNet (<https://plantnet.rbgsyd.nsw.gov.au/search/simple.htm>).

Data on this site are derived from the printed Flora of New South Wales series, published by the UNSW Press, augmented with data from electronic sources maintained by the National Herbarium of New South Wales. The website owners note that data have not been fully checked for consistency, and are not fully up-to-date. State and federal weed control requirements were obtained from NSW WeedWise (<https://weeds.dpi.nsw.gov.au/WeedBiosecurities?Areald=3>), maintained by DPIE. Regional weed control requirements are additional, and have been developed for each region by Local Land Services in consultation with relevant stakeholders.

Due to the differences in vegetation communities and land uses the site was divided into several sections.

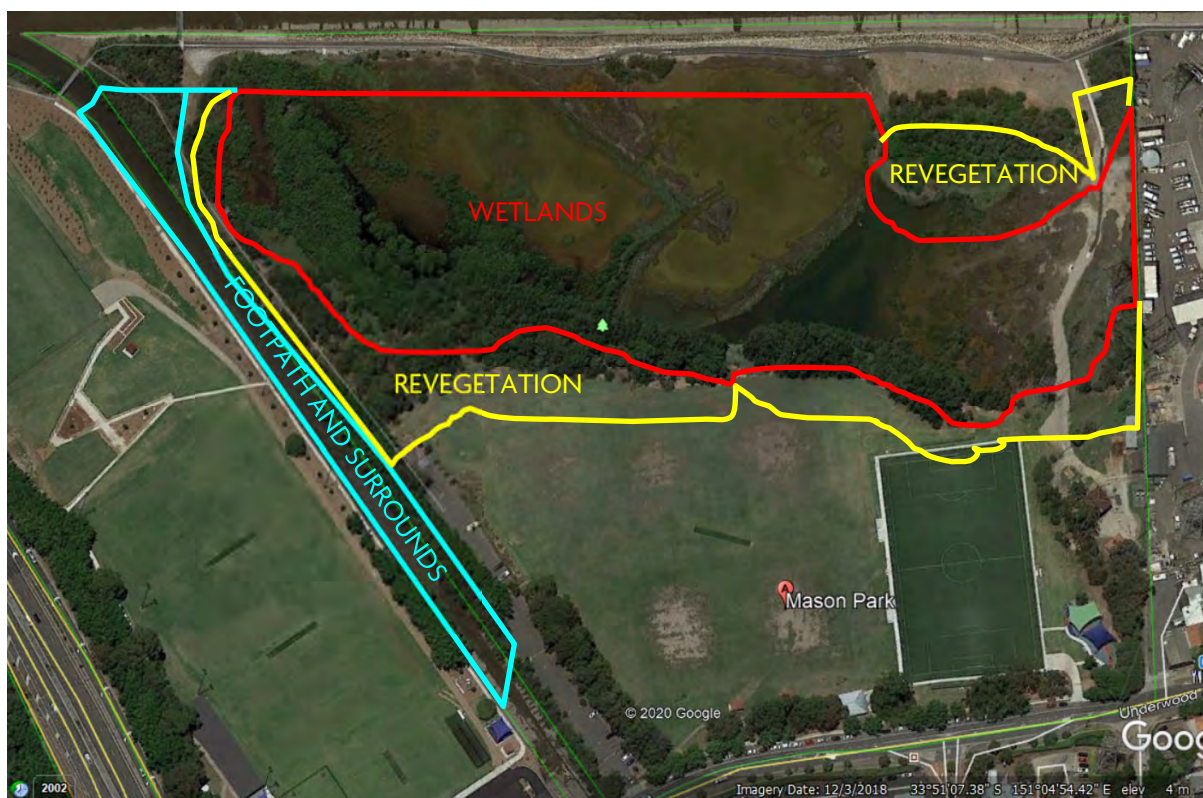


Figure 49 Assessment zones for vegetation in Mason Park and Mason Park Wetlands, spring 2020

1.1.2 Results

Field surveys were conducted within the subject site on 16th and 19th September, and 18th October 2020. Weather was generally warm and sunny during surveys following recent heavy rain. A total of 67 species of native flora were recorded on the subject site (Table 15). One threatened species was recorded in the southeastern section of the park. No threatened populations were recorded during the current study.

Table 14 Native flora species recorded in Mason Park Wetlands in Sept and Oct 2020 (* denotes threatened species)

Species Name	Common Name	Plant form	Footpath area	Forested area	Wetland area
<i>Acacia binervia</i>	Coast Myall	shrub		y	
<i>Acacia decurrens</i>	Sydney Green Wattle	shrub		y	
<i>Acacia fimbriata</i>	Fringed Wattle	shrub	y	y	
<i>Acacia longifolia</i>	Sydney Golden Wattle	shrub		y	
<i>Angophora floribunda</i>	Rough-barked Apple	tree	y		
<i>Atriplex sp</i>	Saltbush	groundcover			y
<i>Austrostipa ramosissima</i>	Stout Bamboo Grass	grass	y	y	
<i>Avicennia marina subsp. Australasica</i>	Grey Mangrove	tree		y	y
<i>Banksia marginata</i>	Silver Banksia	tree	y		
<i>Banksia spinulosa</i>	Hairpin Banksia	shrub	y		
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	tree	y		
<i>Bursaria spinosa</i>	Blackthorn	shrub	y		y
<i>Callistemon salignus</i>	Willow Bottlebrush	shrub	y	y	
<i>Callistemon sieberi</i>	River Bottlebrush	shrub	y		

Species Name	Common Name	Plant form	Footpath area	Forested area	Wetland area
<i>Carex appressa</i>	Tall Carex	sedge	y		
<i>Cassinia aculeata</i>	Dolly Bush, Dogwood	shrub		y	
<i>Casuarina glauca</i>	Swamp Oak	tree	y	y	y
<i>Cenchrus purpurascens</i>	Swamp Foxtail	grass			y
<i>Commelina cyanea</i>	Scurvy Weed	groundcover	y	y	
<i>Cordyline petiolaris</i>	Broad-leaved Palm Lily	shrub	y		
<i>Corymbia maculata</i>	Spotted Gum	tree	y		
<i>Cotula australis</i>	Carrot Weed	groundcover	y		
<i>Cupaniopsis anacardioides</i>	Tuckeroo	shrub	y		
<i>Dianella caerulea</i> var. <i>producta</i>	Blue Flax Lily	groundcover	y	y	
<i>Dianella longifolia</i>	Flax Lily	groundcover	y	y	
<i>Dichondra repens</i>	Kidney Weed	groundcover	y		
<i>Dodonaea triquetra</i>	Large-leaf Hop-bush	shrub		y	
<i>Einadia hastata</i>	Berry Saltbush	groundcover	y	y	y
<i>Einadia nutans</i>	Climbing Saltbush	groundcover		y	
<i>Einadia polygonoides</i>		groundcover	y	y	
<i>Eucalyptus eugenioides</i>	Thin-leaved Stringybark	tree	y		
<i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	Red Mahogany	tree	y	y	
<i>Eucalyptus saligna</i>	Sydney Blue Gum	tree	y		
<i>Euchiton japonicus</i>	Creeping Cudweed	groundcover	y		
<i>Ficinia nodosa</i>	Knobby Club-rush	sedge		y	y
<i>Glochidion ferdinandi</i>	Cheese Tree	tree	y	y	
<i>Goodenia ovata</i>	Hop Goodenia	shrub		y	
<i>Hakea dactyloides</i>	Finger Hakea	shrub		y	
<i>Hardenbergia violacea</i>	False Sarsparilla	vine	y	y	y
<i>Juncus kraussii</i>	Sea Rush	sedge		y	y
<i>Juncus usitatus</i>	Common Rush	sedge	y		
<i>Kunzea ambigua</i>	Tick Bush	shrub		y	y
<i>Lomandra longifolia</i>	Spiny Mat-rush	groundcover	y	y	y
<i>Melaleuca decora</i>		tree	y		
<i>Melaleuca linariifolia</i>	Flax-leaved Paperbark	tree	y		y
<i>Melaleuca nodosa</i>	Prickly -leaved Paperbark	tree	y	y	y
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	tree	y	y	
<i>Melaleuca sieberi</i>		tree	y		
<i>Melaleuca styphelioides</i>	Prickly Paperbark	tree	y		y
<i>Microlaena stipoides</i>	Weeping Meadow Grass	grass	y		
<i>Myoporum acuminatum</i>	Coast Boobialla	shrub		y	
<i>Oxalis perennans</i>		groundcover	y		
<i>Pittosporum revolutum</i>	Rough-fruit Pittosporum	shrub		y	
<i>Pittosporum undulatum</i>	Sweet Pittosporum	shrub	y		y

Species Name	Common Name	Plant form	Footpath area	Forested area	Wetland area
<i>Poa billardierei</i>	Coast Fescue, Beach Fescue	grass			y
<i>Poa labillardieri</i>	Poa Tussock Grass	grass		y	
<i>Podocarpus elatus</i>	Plum Pine	shrub	y		
<i>Sarcocornia quinqueflora</i>	Samphire Glasswort	groundcover		y	y
<i>Senecio quadridentatus</i>	Cotton Fireweed	groundcover	y		y
<i>Spergularia marina</i>	Lesser Sea-spurrey	groundcover			y
<i>Sporobolus virginicus var virginicus</i>	Sand Couch	grass			y
<i>Suaeda australis</i>	Seablite	groundcover		y	y
<i>Tetragonia tetragonioides</i>	Warragul Greens	groundcover	y	y	y
<i>Themeda australis</i>	Kangaroo Grass	grass	y		
<i>Triglochin striata</i>	Streaked Arrow Grass	groundcover		y	
<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	groundcover	y		
<i>Wilsonia backhousei</i> *	Narrow-leaved Wilsonia	groundcover			y

A total of 69 species of introduced flora were recorded on the subject site in September 2020 (**Table 15**). The Biosecurity Act 2015 lists priority control weeds for the Greater Sydney LLS region. All weeds listed under this Act have a General Biosecurity Duty as follows:

All plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Table 15 Introduced flora species recorded in Mason Park Wetlands in September and October 2020

Species Name	Common Name	Footpath Area	Forested Area	Wetland Area
<i>Anredera cordifolia</i>	Madeira Vine		y	
<i>Araujia sericifera</i>	Moth Vine		y	y
<i>Arctotheca calendula</i>	Cape Daisy	y		
<i>Avena fatua</i>	Oat Grass			y
<i>Axonopus fissifolius</i>	Narrow-leaved Carpet Grass		y	
<i>Bidens pilosa</i>	Cobblers Pegs	y		y
<i>Brassica fruticulosa</i>	Twiggy Turnip	y	y	y
<i>Bromus catharticus</i>	Prairie Grass	y		y
<i>Bromus hordeaceus</i>	Soft Brome			y
<i>Cardamine hirsuta</i>	Common Bittercress	y		
<i>Celtis occidentalis</i>	Hackberry	y		y
<i>Cenchrus clandestinus</i>	Kikuyu	y		y
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed		y	
<i>Cestrum parqui</i>	Green Cestrum			y
<i>Chrysanthemoides monilifera subsp. monilifera</i>	Boneseed	y		

Species Name	Common Name	Footpath Area	Forested Area	Wetland Area
<i>Cirsium vulgare</i>	Spear Thistle	y		y
<i>Conyza sp</i>	Fleabane	y	y	y
<i>Cotula coronopifolia</i>	Water Buttons		y	y
<i>Crassocephalum crepidioides</i>	Thickhead	y		
<i>Cyclospermum leptophyllum</i>	Slender Celery	y	y	y
<i>Cynodon dactylon</i>	Common Couch	y	y	y
<i>Ehrharta erecta</i>	Ehrharta, Panic Veldt Grass	y	y	y
<i>Ehrharta longiflora</i>	Annual Veldtgrass		y	
<i>Euphorbia peplus</i>	Petty Spurge	y		
<i>Ficus microcarpa hillii</i>	Hills Weeping Fig (SQld)	y		
<i>Foeniculum vulgare</i>	Fennel			y
<i>Fumaria capreolata</i>	Climbing Fumitory		y	
<i>Galium aparine</i>	Cleavers			y
<i>Genista linifolia</i>	Flaxleaf Broom			y
<i>Gomphocarpus fruticosus</i>	Narrow-leaved Cotton Bush			y
<i>Hypochaeris radicata</i>	Flatweed		y	
<i>Juncus acutus</i>	Sharp Rush	y		y
<i>Lactuca saligna</i>	Willow Herb		y	
<i>Lactuca serriola</i>	Prickly Lettuce	y		y
<i>Lampranthus tegens</i>				y
<i>Ligustrum lucidum</i>	Large-leaved Privet			y
<i>Lolium sp</i>	Rye Grass	y		y
<i>Lophostemon confertus</i>	Brush Box	y		
<i>Lupinus luteus</i>	Yellow Lupins		y	y
<i>Lysimachia arvensis</i>	Scarlet Pimpernel		y	
<i>Malva parviflora</i>	Small-flowered Mallow		y	
<i>Medicago polymorpha</i>	Burr Medic	y	y	
<i>Melilotus albus</i>	Bokhara			y
<i>Melilotus officinalis</i>	Yellow Clover, Common Melilot			y
<i>Modiola caroliniana</i>	Red-flowered Mallow		y	y
<i>Nothoscordum borbonicum</i>	Onion Weed			y
<i>Oxalis pes-caprae</i>	Soursob		y	
<i>Parietaria judaica</i>	Asthma Weed, Pellitory			y
<i>Phoenix canariensis</i>	Canary Island Date Palm			y
<i>Plantago lanceolata</i>	Plantain			y
<i>Poa annua</i>	Winter Grass	y		
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed	y		
<i>Polygonum aviculare</i>	Wireweed		y	
<i>Ricinus communis</i>	Castor Oil Plant			y
<i>Rumex obtusifolius</i>	Broad-leaved Dock			y
<i>Senecio madagascariensis</i>	Fireweed		y	
<i>Sida rhombifolia</i>	Paddys Lucerne		y	
<i>Solanum nigrum</i>	Blackberry Nightshade	y		y
<i>Soliva sessilis</i>	Bindii	y		

Species Name	Common Name	Footpath Area	Forested Area	Wetland Area
<i>Sonchus oleraceus</i>	Milk Thistle, Sowthistle	y	y	y
<i>Stachys arvensis</i>	Staggers		y	
<i>Stenotaphrum secundatum</i>	Buffalo Grass	y		
<i>Taraxacum officinale</i>	Dandelion	y		
<i>Tradescantia fluminensis</i>	Trad, Wandering Jew		y	
<i>Trifolium dubium</i>	Yellow Suckling Clover		y	
<i>Trifolium repens</i>	White Clover		y	
<i>Verbena bonariensis</i>	Purple Top		y	
<i>Vicia hirsuta</i>	Hairy Vetch		y	
<i>Watsonia meriana</i>	Bugle Lily			y

There were 5 national or state level priority control weeds recorded on the subject site. Their control requirements are as follows.

Control Order, Prohibition on dealings:

- Boneseed (*Chrysanthemoides monilifera subsp. monilifera*)
Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant. Also Prohibition on dealings - Must not be imported into the State or sold.

Prohibition on dealings - Must not be imported into the State or sold:

- Madeira Vine (*Anredera cordifolia*)
- Flaxleaf Broom (*Genista linifolia*)
- Fireweed (*Senecio madagascariensis*)

Regional Recommended Measures – see the following specific requirements:

- Green Cestrum (*Cestrum parqui*) - Land managers should mitigate the risk of new weeds being introduced to land used for grazing livestock. Land managers should mitigate spread from their land. Plant should not be bought, sold, grown, carried or released into the environment.

The Biosecurity Act 2015 provides powers to Local Control Authorities to take action in relation to regional priority control weeds in particular circumstances, for example where a weed threatens a high value asset and prevention, elimination or reduction of the risk is feasible and reasonable. Regional priority control weeds on this site are known to affect environmental assets and human health, and would be expected to be controlled within the subject site during any works that affect vegetation. The following 7 species of weeds are listed in the Greater Sydney region as regional priority control weeds:

- Moth Vine (*Araujia sericifera*)
- Kikuyu (*Cenchrus clandestinus*)
- Canary Island Date Palm (*Phoenix canariensis*)
- Trad, Wandering Jew (*Tradescantia albiflora*)
- Chinese Hackberry (*Celtis sinensis*)
- Large-leaved Privet (*Ligustrum lucidum*)
- Rye Grass (*Lolium* sp.)

1.1.3 Mapped Vegetation

Vegetation in Mason Park has been mapped by OEH in 2016 as part of the Native Vegetation of the Sydney Metropolitan Area (v3.1). This mapped vegetation on site as (Figure 11):

- **Estuarine Swamp Oak Forest** (S_FoW08), a component of Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions, an Endangered Ecological Community
- **Estuarine Saltmarsh** (S_SW02), which conforms to Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions, an Endangered Ecological Community
- **Urban Exotic/Natives** These vegetation communities were confirmed during site surveys as being present on site. As well, large areas of Estuarine Mangrove Forest (S_SW01) were also recorded on site.

1.2 Fauna Survey

1.2.1 *Methods*

The site was visited twelve times in the Spring and summer of 2020 with the Park traversed and fauna species present noted. Spotlighting was undertaken on four nights. Microbat ultrasonic call recording was undertaken for 40 nights in two different locations within the wetland. Calls were analysed by Marg Turton, an expert in this field. A song meter was deployed to record frog calls in the northern woodland section adjoining the Swamp Oak forest for 40 nights. Remote motion-triggered cameras were deployed in two locations with a total of 180 nights camera trapping.

1.2.2 *Results*

The following table provides data from the 2020 survey, BioNet and other surveys commissioned by Council. BioNet records were obtained for the 1995-2020 period. Ambrose Ecological Services Pty Ltd conducted a vertebrate fauna study in 2008-9 for Council and these results were not in BioNet so are tabled separately below along with surveys by Insight. The current survey detected 63 species at Mason Park including 4 threatened species (BC Act 2016) and 3 listed marine species (EPBC Act 1999). Birdlife and ebird records total 152 species and are present separately in Table 17.

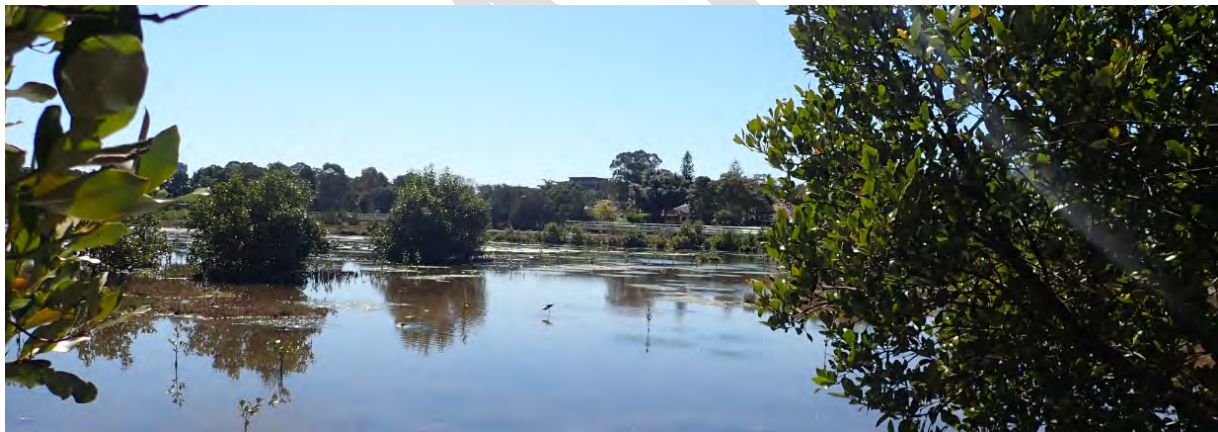


Table 16 Fauna records- various sources

- *  Introduced species
 Threatened species (Biodiversity Conservation Act 2016)
 Listed under s248 of the EPBC Act/JAMBA/CAMBA/ROKAMBA

Note that some species are both threatened species and listed migratory species.

Name	Scientific Name	Applied Ecology 2020	Ambrose 2008	Insight 2008	Insight 2020	BioNet 1995-2020
Birds						
Australasian Darter	<i>Anhinga novaehollandiae</i>				x	
Australasian Figbird	<i>Sphecotheres vieilloti</i>	x	x	x	x	
Australasian Swampphen	<i>Porphyrio melanotus</i>		x			
Australian Magpie	<i>Cracticus tibicen</i>	x	x		x	
Australian Pelican	<i>Pelecanus conspicillatus</i>		x			
Australian Raven	<i>Corvus coronoides</i>	x	x	x		x
Australian Spotted Crake	<i>Porzana fluminea</i>		x			
Australian White Ibis	<i>Threskiornis molucca</i>	x	x	x	x	x
Baillon's Crake	<i>Porzana pusilla</i>		x			
Black Swan	<i>Cygnus atratus</i>		x			
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	x	x			x
Black-fronted Dotteral	<i>Elseya melanops</i>	x	x	x		x
Black-shouldered Kite	<i>Elanus axillaris</i>		x			x
Brown Goshawk	<i>Accipiter fasciatus</i>	x			x	
Brown Honeyeater	<i>Lichmera indistincta</i>	x			x	
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>				x	
Chestnut Teal	<i>Anas castanea</i>	x	x	x	x	x
Common Myna*	<i>Sturnus tristis</i>	x	x	x	x	x
Common Starling*	<i>Sturnus vulgaris</i>	x	x	x	x	x
Crested Pigeon	<i>Ocyphaps lophotes</i>	x			x	x
Curlew Sandpiper	<i>Calidris ferruginea</i>		x			x
Dusky Moorhen	<i>Gallinula tenebrosa</i>	x			x	x
Eastern Great Egret	<i>Ardea modesta</i>	x	x		x	
Eastern Koel	<i>Eudynamys orientalis</i>	x			x	x
Fairy Martin	<i>Petrochelidon ariel</i>			x		
Galah	<i>Eolophus roseicapillus</i>	x			x	
Golden Whistler	<i>Pachycephala pectoralis</i>					x
Great Cormorant	<i>Phalacrocorax carbo</i>	x			x	
Greater Sand-plover	<i>Charadrius leschenaultii</i>		x			
Grey Butcherbird	<i>Cracticus torquatus</i>		x	x	x	
Grey Fantail	<i>Rhipidura albiscapa</i>					x

Name	Scientific Name	Applied Ecology 2020	Ambrose 2008	Insight 2008	Insight 2020	BioNet 1995-2020
Grey Plover	<i>Pluvialis squatarola</i>		x			
Grey Teal	<i>Anas gracilis</i>	x	x	x	x	x
Intermediate Egret	<i>Ardea intermedia</i>				x	
Latham's Snipe	<i>Gallinago hardwickii</i>		x		x	x
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	x				
Leaden Flycatcher	<i>Myiagra rubecula</i>					x
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	x			x	x
Little Corella	<i>Cacatua sanguinea</i>	x			x	
Little Egret	<i>Egretta garzetta</i>	x			x	
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>		x	x		x
Magpie-lark	<i>Grallina cyanoleuca</i>	x	x	x	x	x
Marsh Sandpiper	<i>Tringa stagnatilis</i>			x		
Masked Lapwing	<i>Vanellus miles</i>	x	x	x	x	x
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>		x	x	x	x
Noisy Miner	<i>Manorina melanocephala</i>	x	x	x	x	x
Nutmeg Mannikin*	<i>Lonchura punctulata</i>					x
Olive-backed Oriole	<i>Oriolus sagittatus</i>	x				
Pacific Black Duck	<i>Anas superciliosa</i>	x	x	x	x	x
Pacific Golden Plover	<i>Pluvialis fulva</i>		x			x
Pectoral Sandpiper	<i>Calidris melanotos</i>		x			
Peregrine Falcon	<i>Falco peregrinus</i>	x				
Pied [White-headed] Stilt	<i>Himantopus leucocephalus</i>	x	x	x	x	x
Pied Cormorant	<i>Phalacrocorax varius</i>				x	
Pied Currawong	<i>Strepera graculina</i>	x	x		x	x
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	x	x	x	x	x
Red Wattlebird	<i>Anthochaera carunculata</i>	x	x	x	x	x
Red-browed Finch	<i>Neochmia temporalis</i>	x			x	x
Red-kneed Dotteral	<i>Erythronyx cinctus</i>		x	x		
Red-necked Avocet	<i>Recurvirostra novaehollandiae</i>		x			
Red-rumped Parrot	<i>Psephotus haematonotus</i>				x	
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	x	x	x		
Rock Dove*	<i>Columba livia</i>	x	x	x	x	
Royal Spoonbill	<i>Platalea regia</i>	x	x	x		x
Ruddy Turnstone	<i>Arenaria interpres</i>		x			
Ruff	<i>Calidris pugnax</i>		x			
Scarlet Honeyeater	<i>Myzomela sanguinolenta</i>				x	
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>		x	x		x
Silver Gull	<i>Chroicocephalus novaehollandiae</i>	x	x	x	x	x

Name	Scientific Name	Applied Ecology 2020	Ambrose 2008	Insight 2008	Insight 2020	BioNet 1995-2020
Silvereye	<i>Zosterops lateralis</i>		x	x	x	
Spotted Pardalote	<i>Pardalotus punctatus</i>		x	x		
Spotted Turtle-Dove*	<i>Streptopelia chinensis</i>	x	x	x	x	x
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	x			x	x
Superb Fairy-wren	<i>Malurus cyaneus</i>	x	x	x	x	x
Tawny Frogmouth	<i>Podargus strigoides</i>	x				
Torresian Crow	<i>Corvus orru</i>				x	
Welcome Swallow	<i>Hirundo neoxena</i>	x	x	x	x	x
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>	x				
White-browed Scrubwren	<i>Sericornis frontalis</i>	x	x	x	x	
White-faced Heron	<i>Egretta novaehollandiae</i>	x	x		x	x
Willie Wagtail	<i>Rhipidura leucophrys</i>	x	x	x		x
Wood Sandpiper	<i>Tringa glareola</i>		x			
Yellow Thornbill	<i>Acanthiza nana</i>	x	x	x	x	x
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>				x	
Mammals						
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	x	x			
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	x	x			
Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>	x	x			
White-striped Free-tailed Bat	<i>Auromotus australis</i>	x	x			
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	x	x			
Eastern Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	x				
Long-eared Bat	<i>Nyctophilus sp.</i>	x				
Ride's Free-tailed Bat	<i>Ozimops ridei</i>	x				
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	x				
Forest Bat	<i>Vespadelus sp. (poss. Regulus)</i>	x				
Forest Bat	<i>Vespadelus sp. (prob. darlingtoni)</i>	x				
Black Rat *	<i>Rattus rattus</i>	x	x			
Cat *	<i>Felis catus</i>		x			
Dog *	<i>Canis lupus familiaris</i>	x	x			
European Hare*	<i>Lepus europaeus</i>	x				
House Mouse *	<i>Mus musculus</i>		x			
Red Fox *	<i>Vulpes vulpes</i>	x	x			
Amphibians						
Common Eastern Froglet	<i>Crinia signifera</i>		x			
Dwarf Tree Frog	<i>Litoria fallax</i>		x			
Perons Treefrog	<i>Litoria peronii</i>	x	x			

Name	Scientific Name	Applied Ecology 2020	Ambrose 2008	Insight 2008	Insight 2020	BioNet 1995-2020
Spotted Grass Frog	<i>Limnodynastes tasmaniensis</i>		x			
Striped Marsh Frog	<i>Limnodynastes peronii</i>		x			
Total Species (106)		63	68	34	48	41

Table 17 Birdlife Australia and ebird records for Mason Park

Common name	Birdlife Australia	ebird (Cornell)	Common name	Birdlife Australia	ebird (Cornell)
Australasian Darter	x	x	Double-barred Finch		x
Australasian Figbird	x	x	Eastern Great Egret	x	x
Australasian Grebe	x	x	Dusky Moorhen	x	x
Australasian Pipit	x	x	Eastern Rosella		x
Australasian Shoveler	x	x	Eastern Koel	x	x
Purple Swamphen	x	x	Eastern Rosella	x	
Australian Pelican	x	x	Eastern Spinebill	x	x
Australian Reed Warbler		x	Eurasian Coot	x	x
Australian Raven	x	x	European Goldfinch*	x	x
Australian Magpie	x	x	Fairy Martin	x	x
Australian White Ibis	x	x	Fan-tailed Cuckoo	x	x
Australian Wood Duck	x	x	Galah	x	x
Banded Lapwing	x	x	Glossy Ibis	x	x
Bar-tailed Godwit	x		Golden Whistler	x	x
Black Duck-Mallard hybrid	x		Golden-headed Cisticola	x	x
Black Swan	x	x	Great Cormorant	x	x
Black-faced Cuckoo-shrike	x	x	Grey Butcherbird	x	x
Black-faced Monarch	x	x	Grey Fantail	x	x
Black-fronted Dotterel	x	x	Grey Plover	x	
Black-shouldered Kite	x	x	Grey Teal	x	x
Black-winged Stilt	x	x	Hardhead	x	x
Brown Gerygone	x	x	Horsfield's Bronze-Cuckoo	x	x
Brown Goshawk	x	x	House Sparrow	x	x
Brown Honeyeater	x	x	Intermediate Egret	x	x
Brown Quail	x	x	Latham's Snipe	x	x
Brown Thornbill		x	Laughing Kookaburra	x	x
Brush Bronzewing	x	x	Leaden Flycatcher	x	x
Brush Cuckoo	x	x	Little Black Cormorant	x	x
Buff-banded Rail	x	x	Little Corella	x	x

Caspian Tern	x		Little Egret	x	x
Cattle Egret	x	x	Little Grassbird	x	x
Channel-billed Cuckoo	x	x	Little Pied Cormorant	x	x
Chestnut Teal	x	x	Little Wattlebird		x
Chestnut-breasted Mannikin	x		Mallard *	x	x
Cockatiel	x		Long-billed Corella	x	x
Collared Sparrowhawk	x		Magpie-lark	x	x
Common Blackbird*	x		Mangrove Gerygone	x	x
Common Greenshank	x		Marsh Sandpiper	x	x
Common Myna*	x	x	Masked Lapwing	x	x
Common Starling*	x	x	Muscovy Duck	x	x
Crested Pigeon	x	x	Musk Lorikeet	x	x
Curlew Sandpiper	x	x	Nankeen Kestrel	x	x
Domestic goose*		x	New Holland Honeyeater	x	x
Double-banded Plover	x	x	Noisy Miner	x	x

Common name	Birdlife Australia	ebird (Cornell)	Common name	Birdlife Australia	ebird (Cornell)
Pallid Cuckoo		x	Silvereye	x	x
Nutmeg Mannikin*	x	x	Southern Boobook	x	x
Olive-backed Oriole	x	x	Spangled Drongo		x
Pacific Black Duck	x	x	Spotted Dove*	x	x
Pacific Golden Plover	x	x	Spotted Pardalote	x	x
Pectoral Sandpiper	x	x	Straw-necked Ibis	x	x
Peregrine Falcon	x	x	Striated Heron	x	x
Pied Cormorant	x	x	Sulphur-crested Cockatoo	x	x
Pied Currawong	x	x	Superb Fairy-wren	x	x
Pink-eared Duck	x	x	Swamp Harrier		x
Rainbow Lorikeet	x	x	Terek Sandpiper	x	x
Red Knot	x	x	Topknot Pigeon	x	x
Red Wattlebird	x	x	Tree Martin		x
Red-browed Finch	x	x	Welcome Swallow	x	x
Red-capped Plover	x	x	Western Wattlebird	x	
Red-kneed Dotterel	x	x	Whistling Kite		x
Red-necked Avocet	x	x	White-bellied Sea-Eagle		x
Red-necked Stint	x	x	White-breasted Woodswallow		x
Red-rumped Parrot	x	x	White-browed Scrubwren	x	x
Red-whiskered Bulbul	x	x	White-faced Heron	x	x

Restless Flycatcher	x		White-naped Honeyeater	x	
Rock Dove	x	x	White-plumed Honeyeater	x	x
Rose Robin	x	x	White-throated Gerygone	x	x
Royal Spoonbill	x	x	White-throated Needle-tail	x	x
Ruff		x	White-winged Triller	x	x
Rufous Fantail	x		Willie Wagtail	x	x
Rufous Songlark	x	x	Wood Sandpiper	x	
Rufous Whistler	x	x	Yellow Thornbill	x	x
Sacred Kingfisher	x	x	Yellow-faced Honeyeater	x	x
Satin Flycatcher	x		Yellow-tailed Black-Cockatoo	x	x
Scarlet Myzomela		x	Yellow-tufted Honeyeater		x
Sharp-tailed Sandpiper	x	x			
Silver Gull	x	x			

1.3 Fauna Habitats

Mason Park wetland is the primary habitat for fauna in Mason Park, however, adjoining advanced revegetation works along Saleyards Creek and around the periphery of the park (Figure 52) also provide habitat for a different suite of species. Powells Creek provides complementary habitat to the wetland, with many species using both the wetlands and the creek to forage (Figure 55) while some species, such as the Great Cormorant, are restricted to the deeper waters of Powells Creek (Figure 54).



Figure 50 Good numbers of Grey Teals, Chestnut Teals, and White-headed Stilts were commonly observed on the wetland in Spring 2020.



Figure 51 Looking east along Saleyard Creek. Advanced revegetation plantings provide habitat for a variety of “non-wetland” birds.



Figure 52 Mixed eucalypt plantings around the edge of the open grassed areas provide foraging opportunities for Grey-headed Flying-foxes and Common Brushtail Possums at night but are occupied by Noisy Miners during the day.



Figure 53 Powells Creek provides complementary habitat to the wetland and is utilised, on occasion, by many of the same species observed in the wetland. Note the Little Egret in the chanel above.



Figure 54 Great Cormorant cruising up Powells Creek



Figure 55 Grey Teals (above) resting in the saltmarsh and (left) on Powells Creek with other domestic and native species.

Superb Fairy-wrens frequent the wetland edges but are more commonly sighted in adjoining vegetation rather than the wetland itself (Figure 56). A variety of species utilize the stands of Casuarina and woodland revegetation for foraging and breeding including Olive-backed Orioles (Figure 57), Yellow Thornbills (Figure 58), Magpie-larks, Willie Wagtails and Black-faced Cuckoo shrikes (Figure 60). Raptors were observed cruising or actively hawking across the wetland and in the advanced revegetation including a Peregrine Falcon and Brown Goshawks (Figure 59). The latter was particularly aggressive in hunting fledgling Olive-backed Orioles. Raptors were mobbed by many of the resident species including Noisy Miners, Pied Currawongs and Willie Wagtails.



Figure 56 Superb Fairywren (male) on the path near the carpark



Figure 57 Olive-backed Orioles were observed breeding in the Casuarinas adjoining the carpark (inset: fledgling)



Figure 58 Yellow Thornbills were regularly observed foraging in the Casuarinas on the north perimeter of the wetland



Figure 59 *Raptors were observed hawking over the wetland and surrounding vegetation on multiple occasions. Brown Goshawks were the most common and were observed actively hunting Olive-backed Oriole fledglings amongst the Casuarinas. Images above are a pair photographed from the oval as they made circuits of the wetland and revegetation works.*

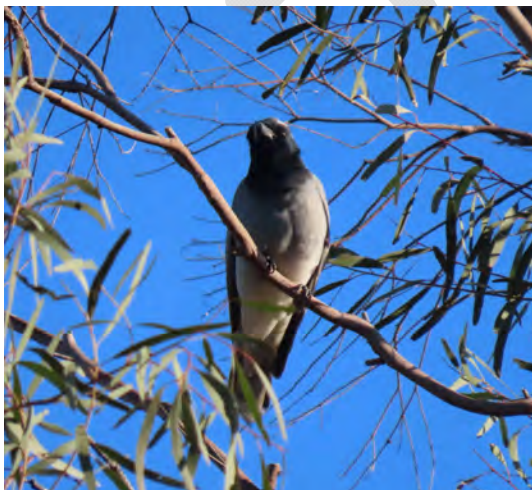


Figure 60 *Black-faced Cuckoo shrikes were observed regularly in the woodland and Casuarina stands that fringe the northern portion of the wetland (left). Willie Wagtails utilized a variety of habitats across Mason Park.*

Some species were observed utilizing a variety of habitats available at Mason Park, such as Welcome Swallows that hawked over the grassed open space and frequented the wetland . Similarly, Masked Lapwings were observed in the wetland and foraging on the grassed oval on numerous occasions (**Error! Reference source not found.**). Many species not typically associated with wetlands were observed opportunistically foraging in the saltmarsh, including Australian Ravens (*Figure 64*) and

Crested Pigeons (*Figure 62*), along with introduced species such as the Rock Dove, Common Myna and Common Starling (*Figure 64*).



Figure 61 Welcome Swallows are often observed hawking across the wetland. Observed here collecting nesting material (?) for their mud nests that are likely constructed on adjoining commercial properties.



Figure 62 Crested pigeons foraging on the wetland (right).



Figure 63 Masked lapwings on the grassed oval



Figure 64 Australian Raven (left) and Common Myna (centre) and Common Starling (right) foraging in the saltmarsh

1.1.1 Macroinvertebrate Surveys, Mason Park

Table 18 Results of initial macroinvertebrate surveys at Mason Park wetlands – summer 2020/21 (Swapan Paul, on behalf of Birdlife)

		Count						Per m2					
		Loc 1		Loc 2		Loc 3		Loc 1		Loc 2		Loc 3	
Group		27/8/20 20	24/09/2020	27/8/20 20	24/09/2020	27/8/2020	24/09/2020	27/8/20 20	24/09/2020	27/8/20 20	24/09/2020	27/8/20 20	24/09/2020
Amphipod	Shrimp type							0		0		0	
Bivalve - 1	Shell type							0		0		0	
Bivalve - 2	Shell type							0		0		0	
Chironomid L	Midge larve	9	8	8	7	12	6	4583	4074	4074	3565	6111	3055
Gastropod - 1	Mollusc type							0	0	0	0	0	0
Gastropod - 2	Mollusc type							0	0	0	0	0	0
Isopod	Shrimp type							0	0	0	0	0	0
Oligochate - 1	Earthworm type (long)							0	0	0	0	0	0
Oligochate - 2	Earthworm type	8	9	18	13	8	14	4074	4583	9167	6620	4074	7130
Polychaete - 1	Beachworm type (long)	4	3	2	3	4	2	2037	1527	1018	1527	2037	1018
Polychaete - 2	Beachworm type							0		0		0	
Polychaete - 3	Small worm type							0		0		0	
True Fly larva - 1								0		0		0	
True Fly larva - 2								0		0		0	

1.4 Threatened species and protected matters

1.4.1 *Bilateral migratory bird agreements*

Australia has bilateral migratory bird agreements with Japan in 1974, China in 1986 and most recently the Republic of Korea in 2007 aimed at conservation of migratory birds in the East Asian - Australasian Flyway (the Flyway). Each of these agreements provides for the protection and conservation of migratory birds and their important habitats, protection from take or trade except under limited circumstances, the exchange of information, and building cooperative relationships.

Birds listed on the annexes to these three agreements, together with those on Appendices I or II of the Bonn Convention, must also be placed on the migratory species list under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Australia has further international commitments to protect migratory birds under the Ramsar Convention and the Bonn Convention.

1.4.2 *Threatened and migratory species searches*

A search of Bionet- NSW Wildlife Atlas was undertaken for records within 2km of the subject site. A total of 25 listed migratory species (EPBC Act 1999) of which 6 are also threatened species (BC Act 2016) and 38 threatened species (Table 19) have been recorded since 1995. Protected migratory species are listed in

Table 20 along with species listed under BONN, ROKAMBA, CAMBA or JAMBA and illustrated in Figure 65.

Table 19 Threatened species recorded within 2km of Mason Park

Class Name	Common Name	Scientific Name	NSW Status	Comm Status	Count
Amphibia	Green and Golden Bell Frog	<i>Litoria aurea</i>	EI,P	V	8590
Aves	Australasian Bittern	<i>Botaurus poiciloptilus</i>	EI,P	E	3
Aves	Australian Painted Snipe	<i>Rostratula australis</i>	EI,P	E	3
Aves	Black Bittern	<i>Ixobrychus flavicollis</i>	V,P		1
Aves	Black-tailed Godwit	<i>Limosa limosa</i>	V,P	C,J,K	6
Aves	Broad-billed Sandpiper	<i>Limicola falcinellus</i>	V,P	C,J,K	1
Aves	Curlew Sandpiper	<i>Calidris ferruginea</i>	EI,P	CE,C,J,K	273
Aves	Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	V,P		1
Aves	Eastern Curlew	<i>Numenius madagascariensis</i>	P	CE,C,J,K	7
Aves	Eastern Grass Owl	<i>Tyto longimembris</i>	V,P,3		1
Aves	Great Knot	<i>Calidris tenuirostris</i>	V,P	CE,C,J,K	1
Aves	Little Eagle	<i>Hieraaetus morphnoides</i>	V,P		2
Aves	Little Lorikeet	<i>Glossopsitta pusilla</i>	V,P		3
Aves	Little Tern	<i>Sternula albifrons</i>	EI,P	C,J,K	5
Aves	Powerful Owl	<i>Ninox strenua</i>	V,P,3		1
Aves	Red Knot	<i>Calidris canutus</i>	P	E,C,J,K	13
Aves	Regent Honeyeater	<i>Anthochaera phrygia</i>	E4A,P	CE	1
Aves	Scarlet Robin	<i>Petroica boodang</i>	V,P		2
Aves	Spotted Harrier	<i>Circus assimilis</i>	V,P		4
Aves	Swift Parrot	<i>Lathamus discolor</i>	EI,P,3	CE	1
Aves	Terek Sandpiper	<i>Xenus cinereus</i>	V,P	C,J,K	1
Aves	White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V,P		103
Aves	White-fronted Chat	<i>Epthianura albifrons</i>	V,P		10
Aves	White-throated Needle-tail	<i>Hirundapus caudacutus</i>	P	V,C,J,K	6
Flora	Downy Wattle	<i>Acacia pubescens</i>	V	V	4
Flora	Magenta Lilly Pilly	<i>Syzygium paniculatum</i>	EI	V	1
Flora	Narrow-leafed Wilsonia	<i>Wilsonia backhousei</i>	V		21
Flora	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	<i>Pomaderris prunifolia</i>	E2		1
Flora	Tadgell's Bluebell in the local government areas of Auburn, Bankstown,	<i>Wahlenbergia multicaulis</i>	E2		1

Class Name	Common Name	Scientific Name	NSW Status	Comm Status	Count
	Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield				
Flora		<i>Zannichellia palustris</i>	EI		5
Flora		<i>Dillwynia tenuifolia</i>	V		1
Flora		<i>Epacris purpurascens</i> var. <i>purpurascens</i>	V		1
Mammalia	Eastern Coastal Free-tailed Bat	<i>Micronomus norfolkensis</i>	V,P		1
Mammalia	Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i>	V,P		1
Mammalia	Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V,P	V	92
Mammalia	Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	V,P		18
Mammalia	Southern Myotis	<i>Myotis macropus</i>	V,P		9
Mammalia	Yellow-bellied Sheathtail-bat	<i>Saccolaimus flaviventris</i>	V,P		1

Table 20 Listed migratory species recorded within 2km of Mason Park

Class Name	Common Name	Scientific Name	NSW Status	Comm Status	Count
Aves	Bar-tailed Godwit	<i>Limosa lapponica</i>	P	C,J,K	799
Aves	Black-tailed Godwit	<i>Limosa limosa</i>	V,P	C,J,K	6
Aves	Broad-billed Sandpiper	<i>Limicola falcinellus</i>	V,P	C,J,K	1
Aves	Caspian Tern	<i>Hydroprogne caspia</i>	P	J	29
Aves	Common Greenshank	<i>Tringa nebularia</i>	P	C,J,K	28
Aves	Common Sandpiper	<i>Actitis hypoleucos</i>	P	C,J,K	25
Aves	Common Tern	<i>Sterna hirundo</i>	P	C,J,K	21
Aves	Crested Tern	<i>Thalasseus bergii</i>	P	J	19
Aves	Curlew Sandpiper	<i>Calidris ferruginea</i>	EI,P	CE,C,J,K	273
Aves	Eastern Curlew	<i>Numenius madagascariensis</i>	P	CE,C,J,K	7
Aves	Fork-tailed Swift	<i>Apus pacificus</i>	P	C,J,K	1
Aves	Great Knot	<i>Calidris tenuirostris</i>	V,P	CE,C,J,K	1
Aves	Grey-tailed Tattler	<i>Tringa brevipes</i>	P	C,J,K	1
Aves	Gull-billed Tern	<i>Gelochelidon nilotica</i>	P	C	15
Aves	Latham's Snipe	<i>Gallinago hardwickii</i>	P	J,K	162
Aves	Little Tern	<i>Sternula albifrons</i>	EI,P	C,J,K	5
Aves	Marsh Sandpiper	<i>Tringa stagnatilis</i>	P	C,J,K	21
Aves	Pacific Golden Plover	<i>Pluvialis fulva</i>	P	C,J,K	290
Aves	Pectoral Sandpiper	<i>Calidris melanotos</i>	P	J,K	33
Aves	Red Knot	<i>Calidris canutus</i>	P	E,C,J,K	13
Aves	Red-necked Stint	<i>Calidris ruficollis</i>	P	C,J,K	15
Aves	Ruddy Turnstone	<i>Arenaria interpres</i>	P	C,J,K	2
Aves	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	P	C,J,K	527
Aves	Terek Sandpiper	<i>Xenus cinereus</i>	V,P	C,J,K	1
Aves	White-throated Needletail	<i>Hirundapus caudacutus</i>	P	V,C,J,K	6

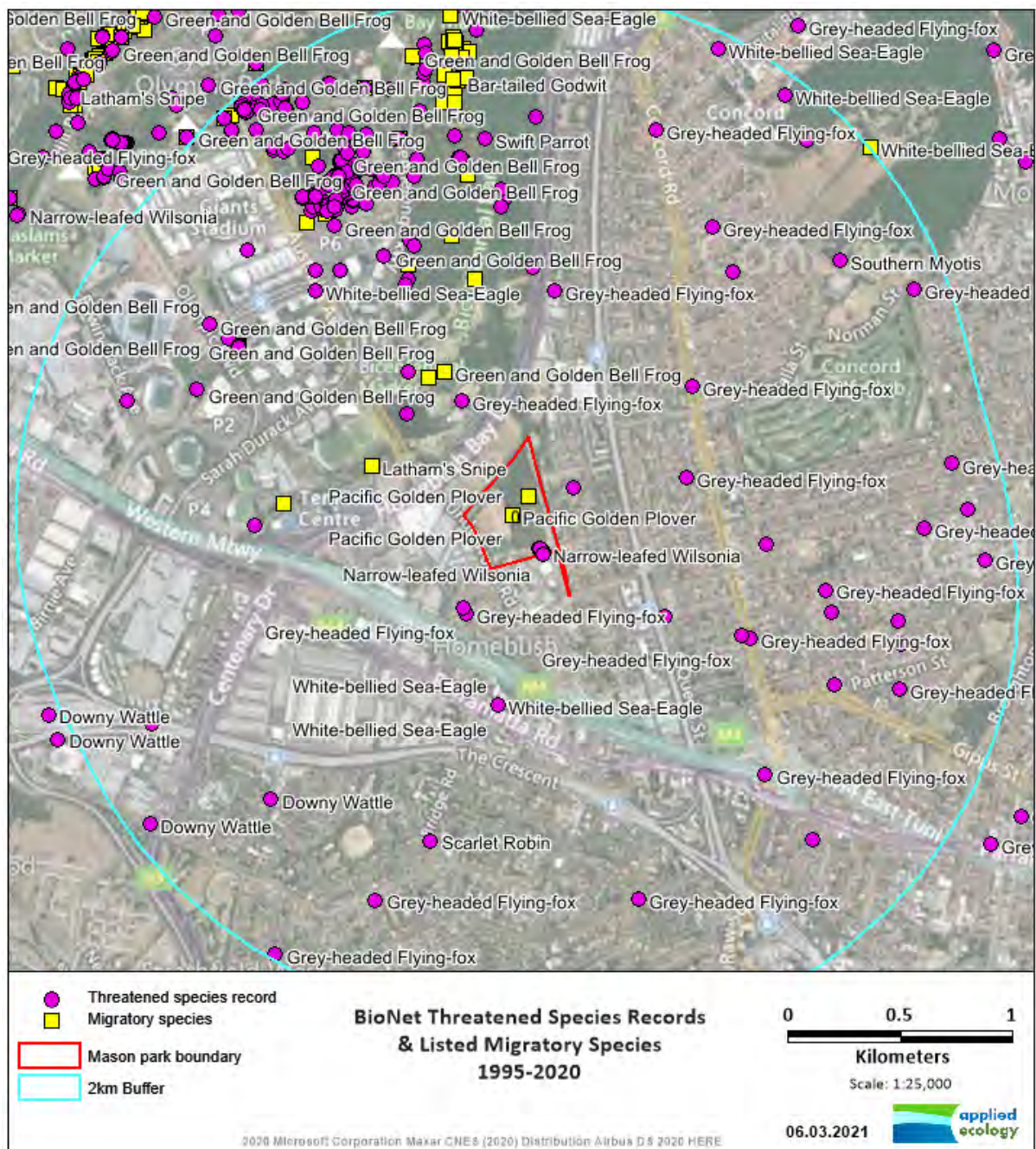


Figure 65 Threatened species sightings recorded within the vicinity of Mason Park on any date (BioNet)

1.4.3 Protected Matters Searches

The EPBC Act lists environmental assets that are protected at a federal level. The Protected Matters databases summarise the matters of national environmental significance that may occur in, or may relate to, the area nominated.

Summary of Protected Matters databases

The following Matters of National Environmental Significance (MNES) were reported for a 2km buffer of the study area (Table 21).

Table 21 Summary of Protected Matters searches

Protected matters	Present at or near the study site
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Significance (RAMSAR Sites)	None
Great Barrier Reef Marine Park	None
Commonwealth Marine Areas	None
Threatened Ecological Communities	9
Threatened Species	69
Migratory Species	58

Threatened Ecological Communities

The following Threatened Ecological Communities (table 22) were reported for a 2km buffer of the study area.

Table 22 Threatened Ecological Communities listed in the protected matters search within a 2km buffer of the study site

Threatened Ecological Communities	Status	Type of Presence	Present on site?
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area	No
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	Yes
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community may occur within area	No
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area	No
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area	No
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	No
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	Yes
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area	No
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within area	No

Threatened fauna species

The following threatened fauna species (Table 23) were reported for a 2km buffer of the study area and tested against records in BioNet. Pelagic species are excluded.

Table 23 Threatened fauna species listed in the protected matters search within a 2km buffer of the study site

Scientific Name	Common Name	Federal Status	Type of Presence	Bionet records
Birds				
<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	1
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	Species or species habitat known to occur within area	3
<i>Calidris canutus</i>	Red Knot	Endangered	Species or species habitat may occur within area	13
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Species or species habitat may occur within area	273
<i>Calidris tenuirostris</i>	Great Knot	Critically Endangered	Foraging, feeding or related behaviour known to occur within area	1
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	Vulnerable	Foraging, feeding or related behaviour known to occur within area	0
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	Endangered	Foraging, feeding or related behaviour known to occur within area	0
<i>Falco hypoleucos</i>	Grey Falcon	Vulnerable	Species or species habitat likely to occur within area	0
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable	Species or species habitat known to occur within area	6
<i>Lathamus discolor</i>	Swift Parrot	Critically Endangered	Species or species habitat likely to occur within area	1
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit	Vulnerable	Species or species habitat known to occur within area	799
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered	Species or species habitat may occur within area	7
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered	Species or species habitat known to occur within area	3
<i>Sternula nereis nereis</i>	Australian Fairy Tern	Vulnerable	Species or species habitat may occur within area	0

Scientific Name	Common Name	Federal Status	Type of Presence	Bionet records
<i>Thinornis cucullatus cucullatus</i>	Hooded Plover (eastern), Eastern Hooded Plover	Vulnerable	Species or species habitat may occur within area	0
Fish				
<i>Macquaria australasica</i>	Macquarie Perch	Endangered	Species or species habitat may occur within area	0
Frogs				
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Vulnerable	Species or species habitat may occur within area	0
<i>Litoria aurea</i>	Green and Golden Bell Frog	Vulnerable	Species or species habitat known to occur within area	8590
Mammals				
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	Species or species habitat likely to occur within area	0
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll	Endangered	Species or species habitat likely to occur within area	0
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot	Endangered	Species or species habitat may occur within area	0
<i>Petauroides Volans</i>	Greater Glider	Vulnerable	Species or species habitat likely to occur within area	0
<i>Phascolarctos cinereus</i> (Qld, NSW and ACT)	Koala (combined populations)	Vulnerable	Species or species habitat may occur within area	0
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	92

Threatened flora species

The following threatened flora species were reported for a 2km buffer of the study area (Table 24).

Table 24 Threatened flora species listed in the protected matters search within a 2km buffer of the study site

Scientific Name	Common Name	Federal Status	Type of Presence	Bionet Records
<i>Acacia bynoeana</i>	Bynoe's Wattle, Tiny Wattle	Vulnerable	Species or species habitat may occur within area	0
<i>Acacia pubescens</i>	Downy Wattle, Hairy Stemmed Wattle	Vulnerable	Species or species habitat known to occur within area	4
<i>Allocasuarina glareicola</i>		Endangered	Species or species habitat may occur within area	0

Scientific Name	Common Name	Federal Status	Type of Presence	Bionet Records
<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid, Daddy Long-legs	Vulnerable	Species or species habitat likely to occur within area	0
<i>Cryptostylis hunteriana</i>	Leafless Tongue-orchid	Vulnerable	Species or species habitat likely to occur within area	0
<i>Darwinia biflora</i>		Vulnerable	Species or species habitat may occur within area	0
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Vulnerable	Species or species habitat may occur within area	0
<i>Genoplesium baueri</i>	Yellow Gnat-orchid	Endangered	Species or species habitat likely to occur within area	0
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Vulnerable	Species or species habitat may occur within area	0
<i>Melaleuca deanei</i>	Deane's Paperbark	Vulnerable	Species or species habitat may occur within area	0
<i>Persicaria elatior</i>	Tall Knotweed	Vulnerable	Species or species habitat may occur within area	0
<i>Persoonia hirsuta</i>	Hairy geebung	Vulnerable	Species or species habitat may occur within area	0
<i>Pimelea curviflora</i> var. <i>curviflora</i>		Vulnerable	Species or species habitat may occur within area	0
<i>Pimelea spicata</i>	Spiked Rice-flower	Endangered	Species or species habitat may occur within area	0
<i>Pterostylis Saxicola</i>	Sydney Plains Greenhood	Endangered	Species or species habitat may occur within area	0
<i>Rhodamnia rubescens</i>	Scrub Turpentine, Brown Malletwood	Critically Endangered	Species or species habitat likely to occur within area	0
<i>Rhodomyrtus psidioides</i>	Native Guava	Critically Endangered	Species or species habitat may occur within area	0
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Vulnerable	Species or species habitat likely to occur within area	1
<i>Thesium australe</i>	Austral Toadflax	Vulnerable	Species or species habitat may occur within area	0

Migratory terrestrial bird species

A number of faunal groups, including migratory terrestrial birds, are identified as having potential presence within a 2km radius of the study site. These were assessed for likely presence (Table 25).

Table 25 Terrestrial migratory species protected under EP&BC Act within 2km of Mason Park

Species Name	Common Name	Type of Presence	Bionet Records
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfields Cuckoo	Species or species habitat may occur within area	0
<i>Hirundapus caudacutus</i>	White-throated Needletail	Species or species habitat known to occur within area	8
<i>Monarcha melanopsis</i>	Black-faced Monarch	Species or species habitat known to occur within area	0
<i>Monarcha trivirgatus</i>	Spectacled Monarch	Species or species habitat may occur within area	0
<i>Motacilla flava</i>	Yellow Wagtail	Species or species habitat likely to occur within area	0
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Species or species habitat known to occur within area	0
<i>Rhipidura rufifrons</i>	Rufous Fantail	Species or species habitat likely to occur within area	0

Migratory wetland bird species

Migratory wetland birds are also identified as having potential presence within a 2km radius of the study site. These were assessed for likely presence (Table 26).

Table 26 Wetland migratory species protected under EP&BC Act within 2km of Mason Park

Species Name	Common Name	Type of Presence	Bionet Records
<i>Actitis hypoleucos</i>	Common Sandpiper	Species or species habitat known to occur within area	25
<i>Arenaria interpres</i>	Ruddy Turnstone	Foraging, feeding or related behaviour known to occur within area	2
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Foraging, feeding or related behaviour known to occur within area	527
<i>Calidris canutus</i>	Red Knot, Knot	Species or species habitat known to occur within area	13
<i>Calidris ferruginea</i>	Curlew Sandpiper	Species or species habitat known to occur within area	273
<i>Calidris melanotos</i>	Pectoral Sandpiper	Species or species habitat known to occur within area	33

Species Name	Common Name	Type of Presence	Bionet Records
<i>Calidris ruficollis</i>	Red-necked Stint	Foraging, feeding or related behaviour known to occur within area	15
<i>Calidris tenuirostris</i>	Great Knot	Foraging, feeding or related behaviour known to occur within area	1
<i>Charadrius bicinctus</i>	Double-banded Plover	Foraging, feeding or related behaviour known to occur within area	0
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	Foraging, feeding or related behaviour known to occur within area	0
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	Foraging, feeding or related behaviour known to occur within area	0
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	Species or species habitat known to occur within area	162
<i>Gallinago megala</i>	Swinhoe's Snipe	Foraging, feeding or related behaviour likely to occur within area	0
<i>Gallinago stenura</i>	Pin-tailed Snipe	Foraging, feeding or related behaviour likely to occur within area	0
<i>Limosa lapponica</i>	Bar-tailed Godwit	Species or species habitat known to occur within area	799
<i>Limosa limosa</i>	Black-tailed Godwit	Foraging, feeding or related behaviour known to occur within area	6
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	Species or species habitat known to occur within area	7
<i>Numenius minutus</i>	Little Curlew, Little Whimbrel	Foraging, feeding or related behaviour likely to occur within area	0
<i>Numenius phaeopus</i>	Whimbrel	Foraging, feeding or related behaviour known to occur within area	0
<i>Pandion haliaetus</i>	Osprey	Species or species habitat known to occur within area	0
<i>Philomachus pugnax</i>	Ruff (Reeve)	Foraging, feeding or related behaviour known to occur within area	0

Species Name	Common Name	Type of Presence	Bionet Records
<i>Pluvialis fulva</i>	Pacific Golden Plover	Foraging, feeding or related behaviour known to occur within area	290
<i>Tringa brevipes</i>	Grey-tailed Tattler	Foraging, feeding or related behaviour known to occur within area	1
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	Species or species habitat known to occur within area	28
<i>Tringa stagnatilis</i>	Marsh Sandpiper, Little Greenshank	Foraging, feeding or related behaviour known to occur within area	21

Appendix B – A review of vegetation and hydrology

Review of Hydrology for Mason Park Wetlands

Historical Context

Like much of the intertidal zones along the southern side of Parramatta River, large parts of the foreshores around Homebush were subjected to ongoing infilling and development for industrial purposes (UBM 1994), including the area around Powells Creek. Prior to that the entrance to Powells Creek was fringed by mangroves and mudflats. The area around Mason Park was previously known locally as “The Mangroves” and subject to tidal inundation. Freshwater was discharged into this area from Powells Creek, which also formed the boundary between Strathfield and Canada Bay Councils. The boundaries of Powells Creek changed continually depending on the level of rainfall (Jones, undated), which must have been complicated for management of council boundaries.

“To assist in disposal of water from the Homebush Cattle Sales Yards (located on Parramatta Road, now the site of Sydney Markets), a concrete channel known as Saleyards Stormwater Channel was constructed in 1934 from Parramatta Road to Powells Creek. The channel cut through the swamp lands at a point roughly in the middle of the swamp.

“In 1934 Saleyards and Powells Creeks were canalised by the Water Board (then MSDWB) and as part of those operations, Powells Creek was realigned and moved to its present location east of its old channel. Three sewer lines were laid in Mason Park; one in 1915, an overflow line from the pumping station in 1926 and a rising main in 1965.” (UBM 1994).

“The large concrete channel reduced but did not eliminate tidal flooding of the land. The concreting of the new channel caused some alteration to the boundaries, which made identifying land lots difficult. However, most land along the creek is Crown Land.

“Both Homebush Council and later Strathfield Council supported land reclamation of areas they referred to as ‘swamp’ land. Both Mason Park and Bressington Park have been used as tip sites. Mason Park was described by the Strathfield Council Town Clerk James Mathews in 1963 as ‘approximately half of this Park has been filled with garbage and the level raised to that as we now know it. The remainder is the original mud flat covered with swamp grass.’” (Jones 2018, revised 2023).

The concrete channels for Saleyards Creek and Powells Creek completely changed the hydrology of the area, while the ongoing landfill changed the landform for the surrounding areas.

During the 1970s Australia became a signatory on the International Wetlands Convention (1971) and the Migratory Bird Treaty (1974; now JAMBA) with Japan. A combination of local and international pressure led to the cessation of rubbish dumping in the Mason Park area and it became preserved as a feeding and resting place for birds.

Recent History (1994)

The formalised creek channels were further amplified in 1987. Unfortunately, major habitat destruction was caused during maintenance work on Saleyard Creek stormwater channel. UBM (1994) described the

current flood regime at Mason Park as the result of works carried out by the Sydney Water Board as an attempt to remediate the damage. “The Water Board installed two concrete pipes connecting a small stand of mangroves and the saltmarsh to Powell's Creek at high tide. This action partially rectified damage to vegetation and the salt content destroyed by freshwater flooding during maintenance work.”

Prior to that time, Mason Park had been described as "one of the best places in Sydney for migratory shorebirds (Roberts 1993, cited in UBM 1994), with interest in the waterbirds of this areas stretching back to the 1960's. The international migratory bird agreements signed by Australia with Japan, China, and later Republic of Korea came about as a direct result of this interest in migratory waders.

The first Plan of Management (PoM) for Mason Park Wetlands was prepared in 1994 by UBM, only a few years after the remedial works by the Sydney Water Board. It is unclear how much planning went into the remedial works, other than the installation of the two pipes to provide some sort of hydraulic connection for the mangroves and wetlands. The configuration of areas within the saltmarsh were described in the 1994 PoM as follows.

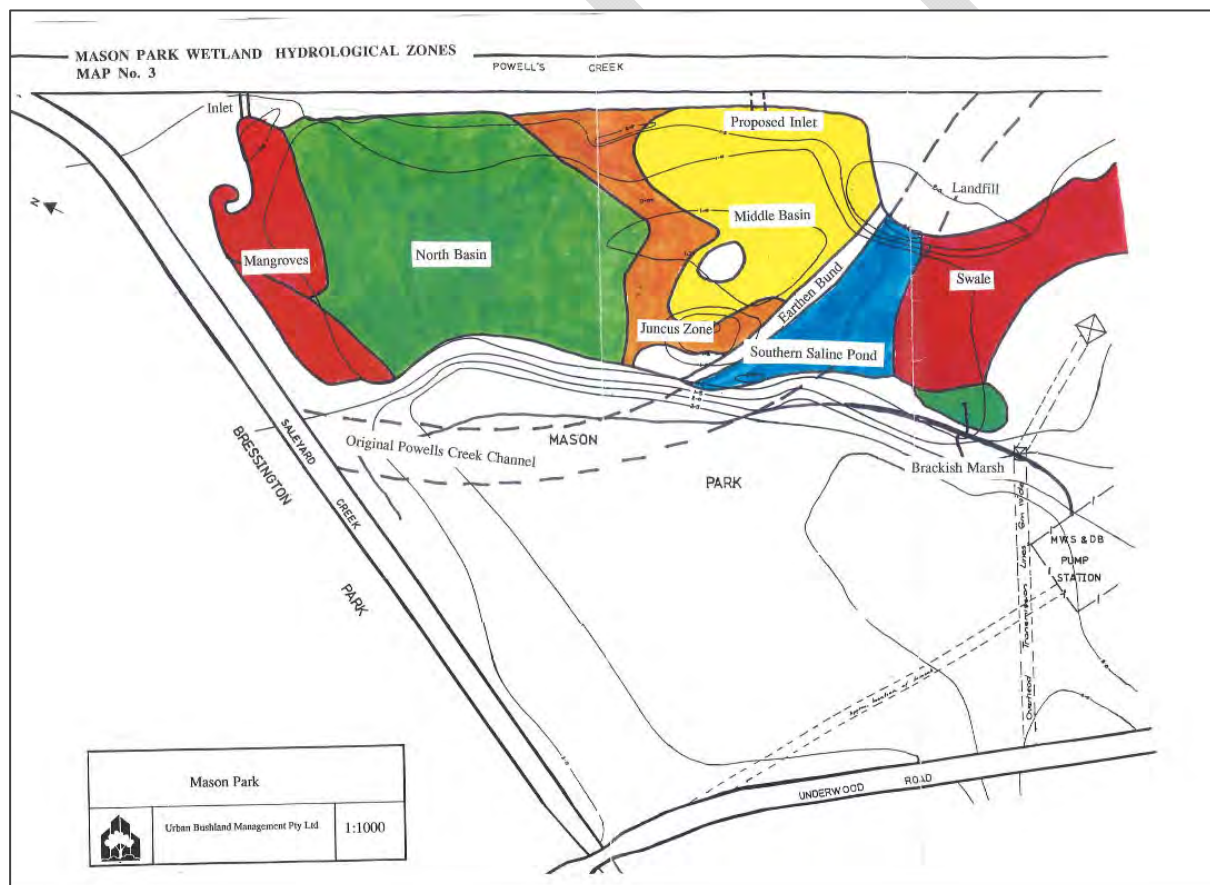


Figure 66 Mason Park Wetland hydrological zones map (UBM 1994, Map No. 3)

“Currently the Mason Park wetland is composed of five hydrologically distinct but interconnected areas (Figure 66). These are 1) a shallow saline basin in northern half of the site. 2) a second basin in the mid-portion. 3) a shallow saline pond towards the south. 4) east of this a brackish marshy area. 5) a damp saline swale to the south.

“Seawater enters the northern basin during tidal events of approximately 1.5m or higher. Much of the influx is unable to drain away as sedimentation within the mangrove stand to the north of the marsh has raised the substrate elevation above that of the basin pan. Through evaporation, dissolved salts are concentrated, and the basin soils and surface waters have consequently become hypersaline. The pH of soils and surface waters is also very low, possibly as a consequence of the oxidation of iron sulphide during periods of desiccation.

“The southern saline pond is a remnant of the original Powells Creek channel, now isolated by land-fill operations. During very high spring tide events (1.9m or greater) seawater enters the marsh via a drain passing from Powells Creek via the adjacent Electricity Trust property. This inflow passes through a swale entering the saline pond, where evaporation has created hypersaline conditions.” While the swale is still present, the drain to Powells Creek has been removed or relocated.

“The middle basin is also highly saline. This area appears to be hydrologically isolated from the rest of the marsh for much of the year. However it is possible that during spring tides and storm events, water levels in the northern basin and in the saline pond will become high enough for overflow to this area to occur. During prolonged wet weather, rainfall alone may be enough to partially flood the basin.” It appears from this that the middle basin was expected to hold water throughout the year.

“The presence of freshwater and semi salt-tolerant species to the south west of the southern saline pond indicates that this zone is influenced by freshwater inputs from an unidentified source (possibly runoff from the neighbouring Electricity Trust property during storm events).” (UBM 1994)

While some clear differentiation was apparent in the structuring of the wetlands, it was not identified whether the observed layout was a legacy of various pipe laying projects and other activities, or whether there was any real planning to try to create a functioning estuarine wetland. Given that extensive searches for the rationale for the organisation of the wetlands have proved unsuccessful, the most obvious answer is that there was none. As a result, the configuration observed and described in 1994 is most likely to be the pre-existing layout of ‘basins’ in low lying or subsided areas separated by ‘swales’ that were spoil mounds from pipe laying, and connected by ‘channels’ that happened to be there. The description of soils for the wetlands supports the ad hoc approach. The following is reproduced from the Mason Park Wetlands PoM (UBM 1994):

“Soils in the wetlands are generally described as freshwater or hypersaline bare solonchaks, which are defined as a soil rich in soluble salt, often having a salt crust and mineral deposits to a depth of one foot, formed in areas of high evaporation, especially where the water table is close to the surface. Elsewhere the soils are capped or uncapped fill, with the capping consisting of a shallow layer of crushed sandstone fill. In deeper ponds the water smells of sulphides and shows characteristic iron oxide scums and fresh unconsolidated deposits at the bottom of the water body.” (Figure 67).

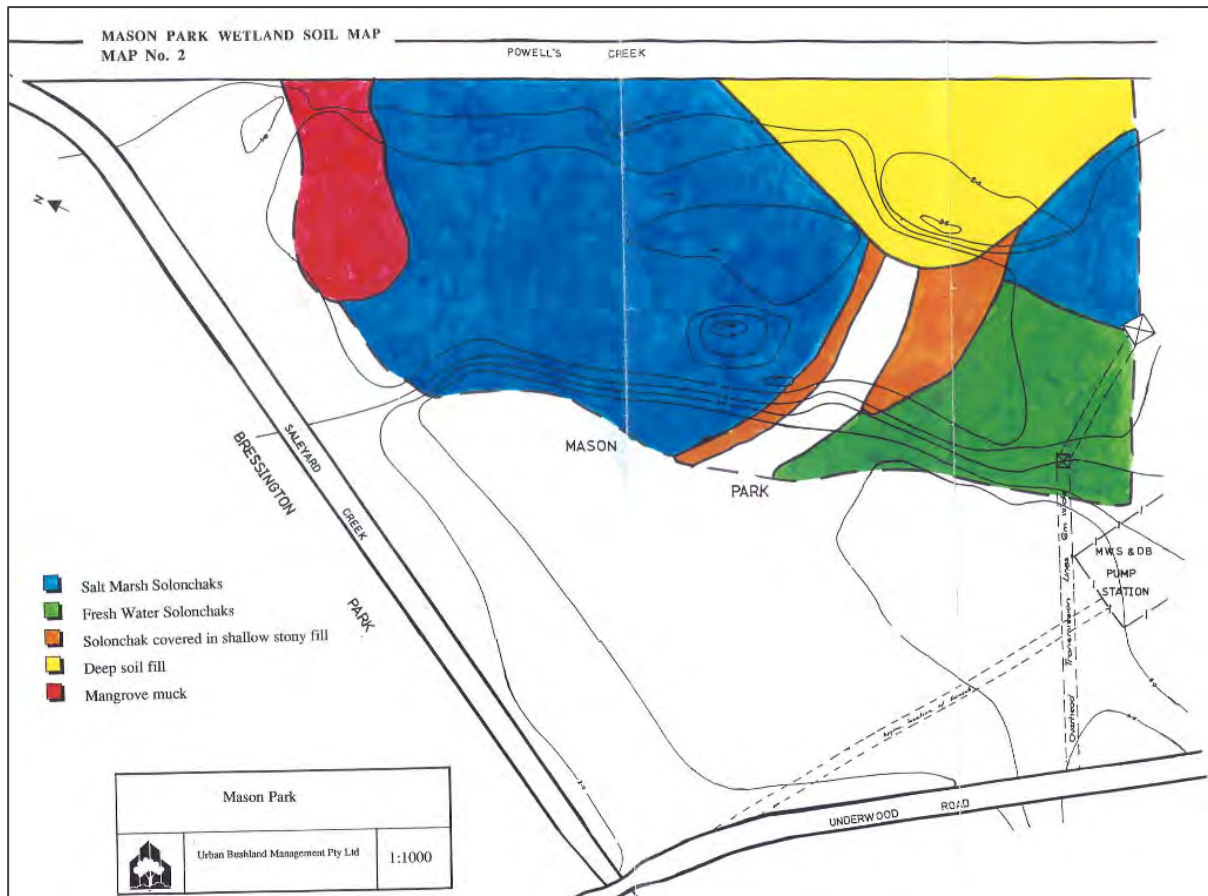


Figure 67 Mason Park Wetland soil map (UBM 1994, Map No. 2)

Trying to understand the design intent that underpinned the organisation of basins within the wetlands was one of the key issues for the current study. In reality, there was no coherent design intent, other than to 'make good' the damage done by the Sydney Water Board in 1987. Seven years later, design intent was assumed, and the site was managed in accordance with the existing configuration. Unfortunately, there was considerable evidence that the existing configuration was not functioning 'properly', and recommendations were made to address this.

1.1.2 PoM recommendations (UBM 1994)

The PoM stated that the "main objectives of the proposed management plan re a to maximise the saltmarsh component of the wetlands, increase species diversity and improve wildlife habitat" which involve:

- Reinstall adequate tidal ventilation by improving the functioning of the drop-log weir and install another such weir at a higher level towards the southern boundary
- Further improve tidal ventilation through the wetland by removing selected mangroves in order to create a channel into the northern basin
- Remove the low soil berm (bund wall) separating the "freshwater" end from the saltflats and remove the surface layer of crushed sandstone fill overlying the natural gleyed clays
- Reduce the depth of the existing freshwater pond, using clean fill from the berm and excluding any vegetative material
- Use lime to neutralise the acid sulphate conditions of the surface of some of the saltflat areas

- Containment of the metal-contaminated soil fill bench should be undertaken to minimise exposure of the public and the environment to any possible harmful effects.

1.1.3 Recent History (2008)

By 2008 the situation has changed very little, other than how it is described. From the PoM 2008 (prepared by Parkland Environmental partners, POD Landscape architecture, Sainty and Associates and Avifauna Research and Services) the hydrology for the wetlands is described as follows:

“In 1998 Strathfield Council installed a single-vent dropboard weir inlet at the north-east corner of the wetland to reinstate tidal flow and flushing of the wetland from Powells Creek. Water entering the wetland is kept there for extended periods by placing boards in the weir. Benefits of the weir include a better water bird habitat, and reduction in the production of acid sulphate soils, and more neutral soil acidity. However retaining water in a saltmarsh prevents the free movement of nekton (free-swimming animals) into the estuary.

“The two northern basins are shallowly flooded at tides above about 1.7 metres. The southern half of the saltmarsh (brackish marsh and saline pond) is protected by a low earth bund and receives no flooding from the highest king tides (2.1 metres). As a result, the southern basin does not receive enough water and frequently dries out, resulting in actual and potential acid sulphate soils. The area near the electricity stanchion is above the current king tides, but would have been flooded during the recorded highest tide of 2.4 metres in 1974. The swale adjacent to the southern Energy Australia boundary receives some tidal flooding during ‘king tides’ (1.9 metres or greater). The saline water backfloods the area from a drain into Powells Creek. In addition to tidal flushing, small amounts of stormwater enter the southern and western sections.

“Tidal inundation of the lower quarter of the saltmarsh has increased invasion of mangroves due to incoming water transporting mangrove seeds from the mangrove across the saltmarsh. Mangroves have not been controlled, and continue to grow to maturity and spread seedlings even further across the wetland”.

“In summary, the wetland does not flush efficiently. The existing inlet structure adequately floods the lower part of the saltmarsh, but is not able to flood the upper part of the saltmarsh. Infrequent tidal inundation of some areas in the wetland has resulted in:

- hypersalinity where evaporation results in soils with high concentrations of salt in which some saltmarsh plants, notably *Lampranthus*, do not thrive.
- dead zones in swards of *Juncus kraussii*.
- drying out of the wetland.”

The dropboard regulator is operated manually by council staff. The PoM states that it has not been operated as specified in the Plan of Management. It has become obvious that the regulator is not large enough to allow unrestricted tidal inflow to Mason Park. The PoM also notes that there are approximately 40 tides greater than 1.9m (king tides) per year, with half of these at night when staff are not available. The area at the southernmost end of the wetlands is only very irregularly flooded at the highest of king tides (over 2.1m). Some flooding of the swale occurs during tides of this height, while the

area around the electricity stanchion has only been flooded during record tides of 2.4m (recorded in 1974).

The 2008 PoM then recommends a new weir floodgate that opens to allow water in at higher tides – in response to water pressure, and remains closed to keep water in as the tides runs out – again in response to water pressure. They also recommended that it be used in conjunction with a new inlet upstream on Powells Creek that would allow tidal flows to come in the southern end of the wetlands and flow out the northern end. They made a series of design recommendations to achieve a more desired tidal flushing regime, with the new inlet designed to:

- operate automatically in response to tides and water levels by a remote controlled automated inlet gate. This allows flooding or draining of the wetland to maintain specific water levels, or it can be overridden for various management needs. An automated system means the site can be effectively managed 24 hours a day without the need for site visits by staff at inconvenient times. The structure can be programmed for varying stages of the tide, from small neap tides to large spring tides. If required, the inlet can be opened or closed at short notice, such as preventing contamination of the wetland in the event of pollution in either Powells or Saleyards Creek or a sewage overflow.
- operate in the southern section of the saltmarsh at a point where the distance from saltmarsh to the concrete estuary channel widens.
- be of adequate size and width to ensure the tidal flood at the top of the tide would not be constrained and only limited by elevation and not by the inlet flow capacity.
- be capable of delivering enough water to flood the whole wetland on one tide cycle (spring tides) or progressively during smaller tides, and total drainage to allow for maintenance work in dry conditions.
- maintain a desirable water level and adequate tidal flow.

The PoM recommended the preparation of a Statement of Environmental Effects (SEE) before installing the new inlet structure.

1.1.4 Objectives for the wetland (POM 2008)

The 2008 PoM gives specific objectives for restoration and management of the Mason Park Wetland:

- encourage a functioning saltmarsh ecosystem.
- restore and retain saltmarsh communities and tidal lagoons that provide habitat for migratory and threatened species of shorebirds as well as fish nursery habitat.
- increase the numbers of migratory shorebirds at the site through appropriate management, and to maintain the wetlands as the most important site for species in serious decline, such as the Curlew Sandpiper.
- provide educational facilities on site and through various media to demonstrate the importance of wetlands and the plight of migratory birds in Australia and throughout the Asia Pacific Migratory Flyways in association with SOPA and other member bodies of Wetlands Link International (WLI).
- provide adequate tidal flows to:
 - provide ideal conditions for saltmarsh and tidal lagoons.
 - provide shorebird feeding and roosting habitat
 - improve water quality
 - minimise acid sulfate soils

- manage mangroves.
- fulfil international treaty obligations regarding migratory birds.
- provide an outdoor classroom for educational purposes.
- control mosquitoes for human health.
- improve understanding of the function and significance wetland by the community.

The PoM provided specific strategies and actions to achieve these outcomes within the context of managing Mason Park in its entirety. Managing for a healthy *Wilsonia* population was not specifically mentioned here, but each of these objectives are contingent upon establishing and maintaining an appropriate tidal flushing regime. This does not appear to have happened.

1.1.5 Statement of Environmental Effects (Sainty & Associates, 2009)

The SEE summarised the obvious issues with the (then) current condition of the wetlands. They noted that “there are 7 hydrologically distinct basins in the wetland, some of which are connected during flooding. Tidal and stormwater influxes to the wetland have reduced. Movement of water into the wetland has been progressively restricted by mangroves that trap sediment around their trunks and pneumatophores.” The 7 hydrologically distinct basins were mapped and are reproduced here in Figure 68.

Installation of the new floodgate weir and a second inlet was expected to provide the following benefits:

- productivity of the estuarine wetland.
- increasing water movement through the system.
- promoting soil conditions that saltmarsh species require to thrive.
- providing a pathway for marine life between the estuary and Mason Park resulting in re-establishment of invertebrates and fish.
- [reduce] hypersalinity where evaporation results in soils with high concentrations of salt in which some saltmarsh plants notably *Lampranthus tegens* does not thrive.
- [reduce] dead zones in swards of *Juncus kraussii*.
- [reduce] drying out of the wetland.
- Increased and regular tidal flushing, pushing water to higher areas at the back of the wetland.
- Provide conditions for the mix of micro saltmarsh biota to develop
- Enable the free movement of nekton in and out of the estuary.
- Discourage human access to the mudflat.
- Reduce the potential for isolated water pooling and opportunities for mosquito larvae to mature.
- Ameliorate acid and hypersaline conditions to improve productivity and plant growth.
- Expand the extent of *Wilsonia backhousei*.
- Limit the expansion of mangroves.

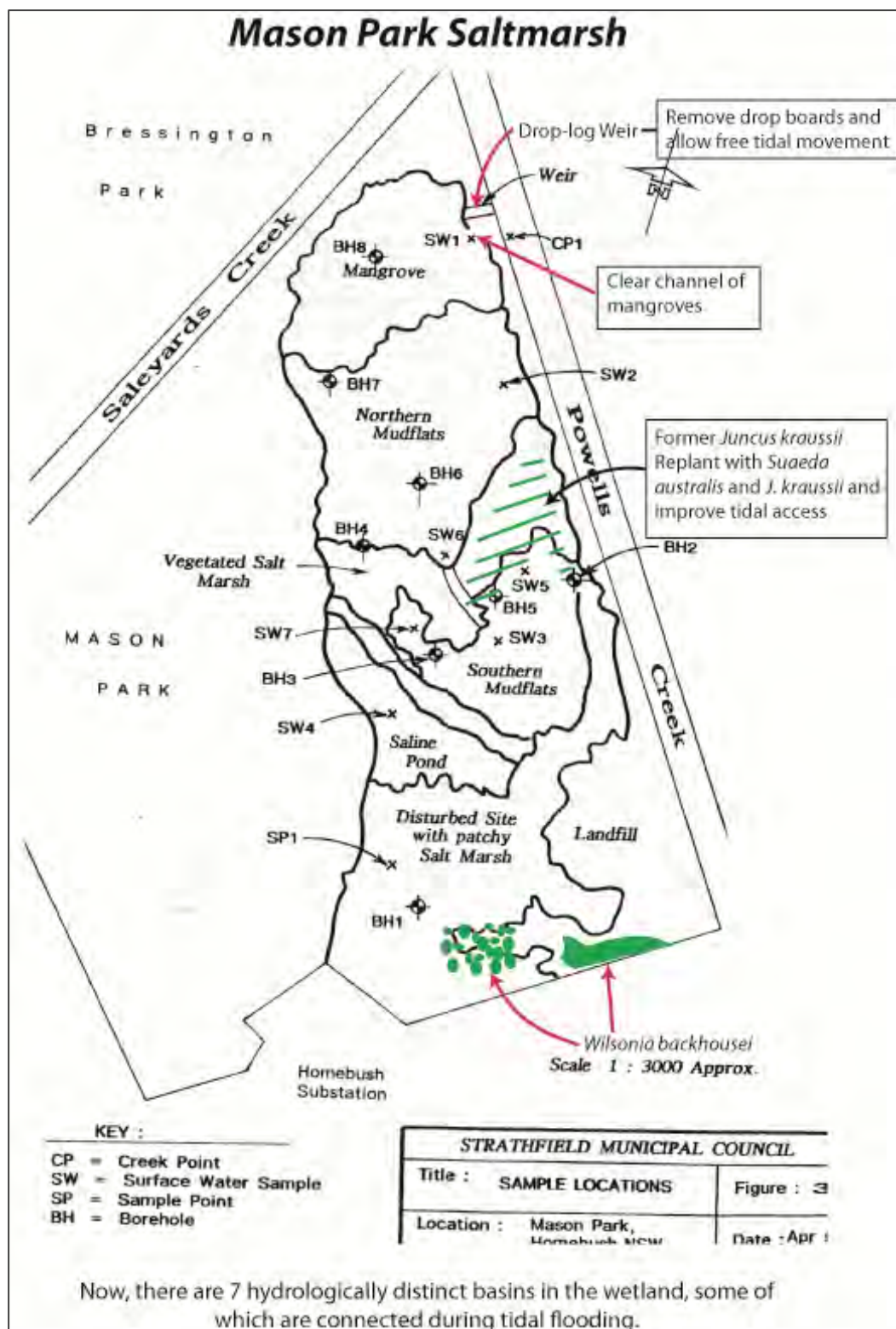


Figure 68 Updated mapping of wetland basins in Statement of Environmental Effects (Sainty & Associates, 2009)

The design intent from these observations and recommendations appears to be different for different parts of the wetlands:

- (i) Irregular inundation of saltmarsh areas at higher tides, which is appropriate for this vegetation community
- (ii) Retention of water in open water ponding areas and mudflats to prevent drying – which harms or kills the vitally important macroinvertebrates that are the food for migratory waders
- (iii) Reduced opportunity for introduction of mangrove propagules, and reduced chance of establishment

The original design had an infrared sensor to regulate automated opening and closing of the floodgates. The constructed design has addressed part of the proposed changes – no second inlet was constructed, and the existing inlet has floodgates that are designed to open and close in response to flow pressures. A step up weir regulates the level of tides that can flow into the wetland, even after the inlet has been flooded there is no flow into the wetland until the tides reach around 1.7m (based on interpretation of the SEE).

Now, 10 years later the floodgates are rusted and have fallen into disrepair (Figure 69). There is no record of an operations manual for the floodgate, and it is currently manually manipulated by council staff on a very ad hoc basis, using cable ties to hold the gate(s) open to allow water out when they want to drain the ponds. Inflows are still limited to the two floodgates at the entrance. Outflows can be regulated by closing the floodgates but rusting has resulted in ongoing discharge of water even with the gates closed.



Figure 69 (left) the incoming seawater enters the wetlands inlet; (right) a floodgate regulates flows into the wetlands



Figure 70 (left) outflows can be regulated with the floodgates; (right) the floodgates are rusty and have fallen into disrepair

1.1.6 Powells Creek Bank Naturalisation (2018)

A 750 metre section of concrete channel on the boundary of Masons Park was naturalised by Sydney Water in 2017-2018. This would have been an ideal opportunity to improve tidal flushing to the middle basin and a spillway (see Figure 71) was proposed under the boardwalk in the location circled below.



Figure 71 Powells Creek naturalisation concept design (<https://www.sydneywatertalk.com.au/powells/>)



Figure 72 Powells Creek during construction (<https://www.sydneywatertalk.com.au/powells/photos/47614>)



6 Fauna passage between Powells Creek and Mason Park Wetland

Figure 73 Example of proposed linkage between the wetland and Powells Creek
(<https://www.sydneywatertalk.com.au/powells>)

A constructed spillway is not evident in the naturalized sections of bank. It is unlikely that Sydney Water's design intent was for a leaky wall allowing movement of water in this location as small areas between the rockwork are quickly filled by organic and inorganic matter. Minor flows were observed during king tides but it would appear that there is no mechanism for improved tidal flushing was incorporated into the final design.

1.2 Review of Vegetation for Mason Park Wetlands

1.2.1 Original vegetation (UBM 1994)

The following description is reproduced from the Mason Park Wetlands PoM (UBM 1994):

“The original soils were Wianamatta Shales which were typically habitat for Turpentine Ironbark Forests. These were cleared early in the process of settlement for grazing on the rich clay soils. Numerous eucalypts were common in the area and provided a backdrop to the estuarine habitat. Early maps and aerial photos show extensive mangrove forests and extensive areas of estuarine and freshwater wetlands.

“Estuarine wetlands in the area still retain stands of Grey Mangrove (*Avicennia marina* var. *australasia*) with associated saltmarsh plants such as Samphire (*Sarcocornia quinqueflora*), Seabite (*Suaeda australis*), Lampranthus (*Lampranthus tegens*) and Waterbuttons (*Cotula coronopifolia*). [Note - Lampranthus and Waterbuttons are now believed to be native to South Africa, although for Lampranthus the “Attempts to equate it with a known African species have not been successful.” (PlantNET).]

“Herbs such as New Zealand Spinach (*Tetragonia tetragonioides*), Native Bluebell (*Wahlenbergia gracilis*) and Wilsonia (*Wilsonia backhousei*) - classified as regionally rare in 1994 and now listed under the Biodiversity Conservation Act 2016 as Vulnerable- and reeds such as Streaked Arrow-grass (*Triglochin striata*), Cumbungi (*Typha orientalis*), Noddy Rush (*Isolepis nodosus*), River Clubrush (*Schoenoplectus validus*) and *Juncus kraussii* are indigenous to the margins of the saltmarsh. Native grasses such as Sand Couch (*Sporobolus virginicus*), Blown Grass (*Agrostis aemula*) and Coast Barb Grass (*Parapholis incurva*) [an introduced species] grow in the zone between the saltmarsh and the woodland.

“In the Homebush Bay area, extensive landfill and reclamation programs began in the 1920s and continued for almost fifty years, in the process destroying most of the saltmarsh areas and many of the associated mangroves (Benson & Howell 1990). In the 1930s there was about 305 hectares of saltmarsh and rushmarsh in the Homebush Bay area: by 1985 this had dwindled to 38 hectares. About 5 hectares, or 12% of the remaining total, is found in Mason Park (Allaway 1987).”

1.2.2 Recent History (1994)

The following description is reproduced from the Mason Park Wetlands PoM (UBM 1994):

“Topography and the nature of soils at the site have been drastically altered over the past five decades. Extensive alterations have been made to the courses and capacities of the creeks, culminating in their conversion to concrete channels. Consequently, both tidal and stormwater influxes to the site have been strongly reduced. Concurrently, the vegetation has undergone considerable modification. This is partially attributable to direct disturbance during earth-work operations; however alterations to soil and water physico-chemical factors in the marsh pans (such that these areas are now characterised by hyper-salinity, transient desiccation and low pH) appear to have been responsible for eliminating much of the original vegetation and for preventing re-establishment.

“Very little of the original vegetation of the site remains intact. The zone of *Juncus kraussii* separating the northern and southern basins is probably the sole remaining remnant (). The swards appear to have

been adversely affected by dry conditions during 1993-1994 and the zone may consequently undergo further reductions in extent. To the north of the marsh, a mangrove stand surrounds the inlet weir. This is of recent origin and its existence is contingent on the influence of regular tidal flushing via the weir. All areas of landfill at the site which are beyond the influence of saline conditions are now vegetated by weedy exotics.

“Saltmarsh species are most prevalent to the north and west of the northern basin, in the southern saline swale and as narrow fringes around the basins and ponds. These are areas under saline influence but not subject to the extremes of the basin floors.

“In order to halt the ongoing decline of vegetation in the Mason Park wetland and to enable revegetation (both natural and facilitated) to occur, it is necessary that physico-chemical conditions in the soils and waters of the site be returned to some semblance of their original state. The most practical method of achieving this is to restore, as far as is practicable, the original water regime. As it is not possible to reintroduce flooding from the old creek channel, tidal inundation from the existing waterways must be encouraged.” (UBM 1994)

The PoM (UBM 1994) proposed that two inlets be installed to allow tidal access:

“1) The capacity of the existing inlet from Powells Creek to the northern basin is inadequate and drainage following tidal events is restricted. Therefore, the flow capacity should be increased and a channel should be dug through the mangrove stand to facilitate drainage.

2) An inlet should be installed to allow tides to enter the middle basin. It is imperative that the capacity of both inlets be adjustable. However a standard drop-board weir must not be installed since to minimise mangrove incursion to the marshes, drainage following tidal events should be as complete as possible. A horizontal drop-board weir will encourage siltation, thus reducing water flow, as has already occurred at the existing inlet.”

Despite this, the horizontal dropboard weir was used for another 10 years, the capacity was not increased during this period, and mangroves continued to colonise the wetlands.

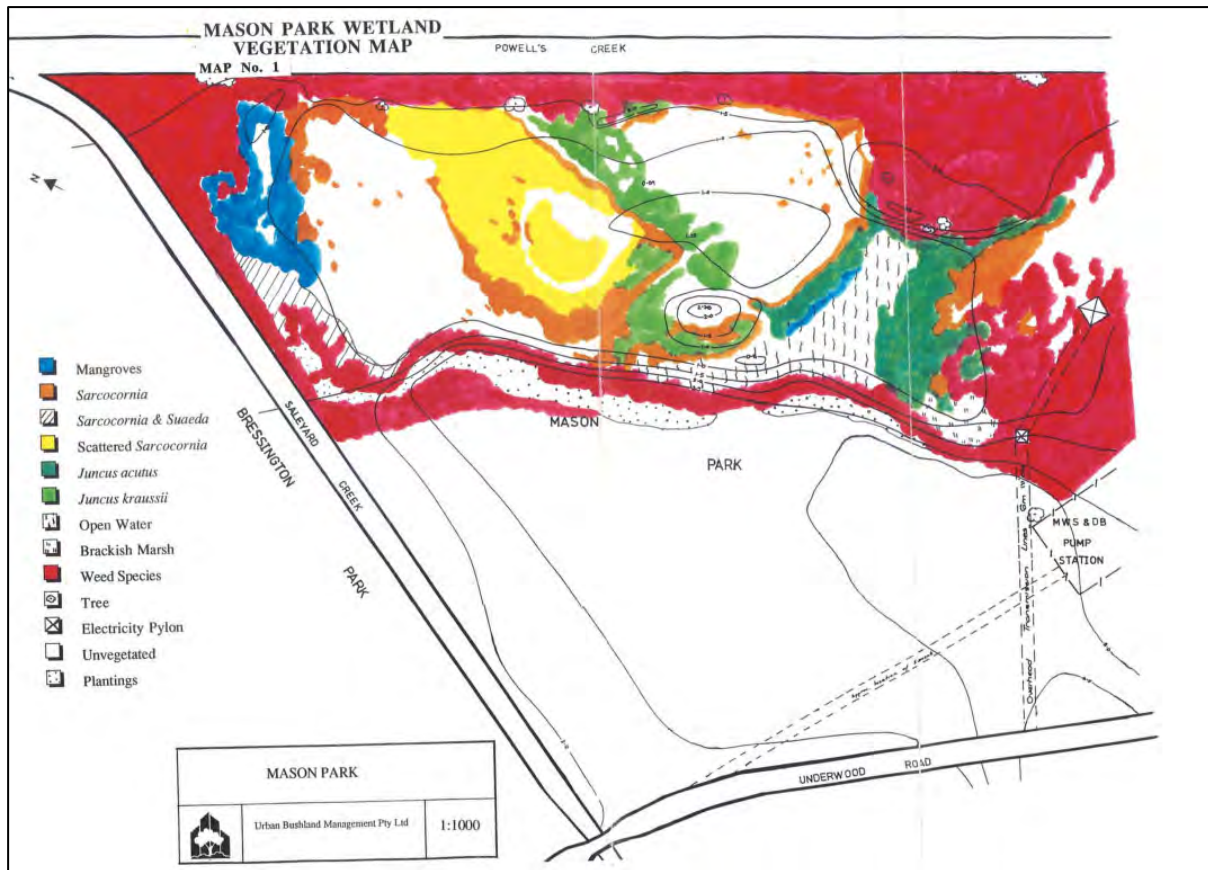


Figure 74 Mason Park Wetland vegetation map (UBM 1994, Map No. 1)

1.2.3 POM recommendations (UBM 1994)

Most of the actions to improve the hydrological processes within the wetlands will directly benefit the wetland vegetation:

- Improve tidal inundations from the existing waterways by increasing the capacity of the existing inlet from Powells Creek to the northern basin and by digging a channel through the mangroves to facilitate drainage.
- Install a second inlet to allow tides to enter the middle basin.
- Ensure that the capacity of both inlets are adjustable to ensure complete drainage from the basins between tidal events.
- Consideration should be given to installing a vertical drop-board weir rather than simply replacing the existing drop-log weir, which encourages siltation and reduces waterflow.
- Encourage the free exchange of water between the northern and southern basins by breaching the earthen bund wall.
- Increase the base elevation of the southern saline pond, using material from the bund to partially fill the existing pond.
- Monitor the expansion of mangroves under the new tidal regime and regularly cull seedlings which may colonise the saltmarsh and adjacent basins.

1.2.4 Recent History (2008)

In a review of saltmarsh management issues, Sainty & Associates (2008) stated that:

“The importance of tidal flushing to estuarine wetland productivity is recognised. Structures that reduce tidal flushing impact adversely on vegetation, fish invertebrates and plankton in estuarine wetlands. Many studies have shown that removal or modification of inlet structures leads to at least partial recovery of biological communities (Streever et al 1996) alter the tidal hydrology and changes will take place in saltmarsh processes and biota.”

Saltmarsh are considered nurseries for many nekton species. The production of animals reaching adult populations is dependent on a combination of processes. Minello et al (2003) found that nekton survival in saltmarsh was higher than in open water, lower than in oyster reef cobble, and higher but not significantly different from seagrass.

Sainty & Associates (2008) reviewed the potential impacts of sea level rise. They postulated that:

“Sea level rise of around 0.5 m by 2100 is predicted by IPCC. However, these predictions are being adjusted upward and scientists in Australia point out that the predictions are conservative. Whatever the case construction or rehabilitation of saltmarsh needs to take into account sea level rise. At present Mason Park is not fully commanded by tide and a 10 cm rise would be an improvement over current tidal flooding. A new wide inlet will leave southern higher parts of the saltmarsh not adequately commanded by tide except during rare tidal surges. A 20 cm rise would make the northern lower elevated part of the saltmarsh more suited to mangroves. The northern higher elevation area would be commanded by 1.8 m tides. However, if an automated inlet gate is installed the higher tides could be excluded from entering the marsh, but this has negative outcome in that free movement of nekton is reduced. Once sea level rise exceeds 20 cm the saltmarsh would be under threat and probably not sustainable without continued exclusion of tides above 1.8 metres.”

“Mangroves will continue to be an ongoing threat to Mason Park. The *Avicennia marina* mangroves at the northern end of the marsh will benefit by improved tidal flushing if water is allowed to rise and fall. With sea level rise they will naturally expand. Management of mangroves and exclusion of fruits will require regular reassessment.”

Sainty & Associates (2008) also noted that:

- The southern part of the marsh is undulating and requires some earthwork to rectify. As most of the site is contaminated (SESL 1997) any regrading of the site could only be done after appropriate investigation.
- Previous studies have shown invertebrate diversity and abundance to be low. Improved saltmarsh coverage and diversity, improved soil structure and algal presence coupled with regular flooding and draining have been shown to improve abundance and diversity of invertebrates. However the concrete estuary and loss of habitat for invertebrates makes re-colonisation of these animals slow and probably unrealistic.
- *Wilsonia* is confined to small part of the southern section of Mason Park. As it is a listed endangered species and changes to the marsh would require a six part test (now 5 part test) and possibly a Species Impact Statement. *Lampranthus* is an introduced species and not protected. It is killed by tidal inundation. If it is to be conserved some will need to be replanted to a higher elevation.
- Spread of mosquito borne diseases is likely to increase (under the current hydraulic regime)

Sainty & Associates (2008) described the wetland zone of Mason Park as follows:

“The current condition of the wetland is hostile or limiting to all plants except for Spiny Rush (*Juncus acutus*) and mangroves. Hyper-salinity, acid conditions, periods of poor tidal inundation, drought, human activity and weeds such as *Juncus acutus* have resulted in a loss of saltmarsh species, particularly *Juncus kraussii*, and low saltmarsh plant diversity.

Vegetation communities in the wetland include:

- **mangrove:** Grey Mangrove (*Avicennia marina*) is clustered around the weir. Mangroves are regenerating from production of seed in the mangrove forest. Seedling mangroves have been sporadically removed but in recent years have spread.
- **saltmarsh:** Coastal Saltmarsh in the Sydney Basin is an endangered ecological community (Schedule 1 of the Threatened Species Conservation Act 1995). The indigenous saltmarsh community in Mason Park is diverse, and includes *Sarcocornia quinqueflora*, *Suaeda australis*, *Wilsonia backhousei* and *Lampranthus tegens* which are uncommon in the Sydney Region. *Wilsonia* is a vulnerable species (Schedule 2 of the Threatened Species Conservation Act 1995). The areas of saltmarsh are generally in healthy condition because *Sarcocornia quinqueflora*, the dominant saltmarsh species at Mason Park is adapted to high salinity. The stand of *Wilsonia* in a small part of the southern section of the wetland is relatively large and healthy. Studies of *Wilsonia* and/or *Lampranthus* are being carried out by UNSW, Sydney University and UTS.
- **rushland** on the higher level ground is less frequently inundated by tides. The rushland includes an important stand of the native rush (*Juncus kraussii*), which is one of only two extensive stands in the Homebush Bay area. The rushland has not thrived and much of the original has died, probably as the result of high salinity coupled with poor or no tidal flushing and contaminated soils. Weed invasion by *Juncus acutus* is also a factor.
- a **brackish pond** containing a small area of *Sporobolus virginicus*, scattered *Spergularia marina* and at times extensive blooms of filamentous algae (primarily *Enteromorpha intestinalis*).

Potential species for revegetation planting in the wetlands were provided (PoM 2008):

Tolerance to salt	Suitable species	Common Name	Significance in saltmarsh
Moderately salt tolerant (suitable for outer edge of saltmarsh)	<i>Bolboschoenus caldwellii</i>	Sea Clubrush	X
Salt tolerant	<i>Apium prostratum</i>		X
	<i>Cotula coronopifolia</i>	Water Buttons	XX
	<i>Cyperus laevigatus</i>		XXX
	<i>Isolepis nodosa</i>	Knob Rush	XXX
	<i>Juncus kraussii</i>	Sea Rush	XXXX
	<i>Lampranthus tegens</i>	Described as native but thought to be naturalised	X
	<i>Leptinella longipes</i>		X
	<i>Mimulus repens</i>	Creeping Monkey Flower	X
	<i>Paspalum vaginatum</i>	Salt Couch	XX
	<i>Samolus repens</i>	Creeping Brookweed	XX
	<i>Sarcocornia quinqueflora</i>	Samphire	XXXX
	<i>Selliera radicans</i>		XX
	<i>Sporobolus virginicus</i>	Sand Couch	XXXX
	<i>Suaeda australis</i>	Austral Seablite	XX
	<i>Triglochin striatum</i>	Streaked Arrow-grass	XXX
	<i>Wilsonia backhousei</i>	ROTAP species	XX

Notes:

X = minor species, may or may not persist — could be introduced — optional

XX = useful/attractive but plant in small amounts

XXX = saltmarsh species that should be represented in moderate quantity
XXXX = major saltmarsh species for site.



Figure 75 Classification of vegetation in Mason Park (PoM, 2008)

Shorebird notes from previous PoMsHabitat requirements for shorebirds (UBM, 1994)

The following is reproduced from the Mason Park Wetlands PoM (UBM 1994):

Periodically inundated sand and mudflats providing a soft substrate creating a major habitat for invertebrates which are an essential food source of waders. If mudflats are allowed to dry out they eventually become unsuitable for waders to feed on. Mason Park offers mudflats which are viable, as a wader feeding habitat at all times of the year and during the full daily and monthly tidal cycles. This is due partly to the fact that the area is occasionally flooded by spring high tides and that pools of water remain between tides providing the right conditions for invertebrates, a vital food source for waders. The tidal flow over a saltmarsh without pooling of water would dry out depriving waders of feeding habitat during that period.

Feeding sites for waders are essentially open areas of intertidal mud or sand-flats, rock platforms, non-tidal mudflats and shallow water, either coastal or inland. Feeding areas for waders should be free from frequent disturbance. Waders select areas that are free from obvious terrestrial predators and which are in an open situation, enabling a clear view of approaching terrestrial or avian predators.

Black-winged Stilts nest on Mason Park Wetland on a regular basis. The site provides suitable habitat in the form of small islands, which are remnants of clumps of *Juncus* species which have died off due to pollution in the past. The success of breeding depends on the amount of water around these islands; drying out allows predators such as foxes and feral cats to reach the nests. The roost site must be sufficiently elevated to ensure a viable roosting area on the highest of spring tides. Waders, and to some extent ducks and gulls, roost on islands of bare mud or low vegetation. Nearly all waders using the wetland have been observed roosting on a large area of Samphire and clumps of dead *Juncus* sp in the northern lagoon. This area is raised a few centimetres above the highest water level.

POM recommendations (UBM 1994)

Again, the recommendations are very similar for managing shorebirds and their habitat:

- Enhancement of the saltmarsh component of the wetland to provide improved feeding habitat and to decrease disturbance to waders using the site for roosting.
- Reinstate tidal flooding of the saltmarsh, whilst at the same time restricting the spread of mangroves.
- Any future revegetation program should avoid planting out existing open spaces in the wetland as this would reduce wader habitat and provide shelter for predators.
- The rate of tidal interchange to the brackish southern section of the wetland should be improved by the installation of a second weir and the existing inlet point modified to provide greater flushing, without altering the water depth greatly.
- Proposed rehabilitation work should aim to include very shallow, muddy areas which provides diverse benthic invertebrate, macrophyte and algal food resources.

A fence should be constructed around the wetland to exclude predators and (human) vandals or alternately, a "mote" could be located within the wetland itself to prevent feral animals (cats, foxes, dogs) from reaching roosting birds.

Recent History (2008)

The following is reproduced from the PoM (2008):

“The Mason Park wetland currently provides a mosaic of tidal pools and remnant saltmarsh vegetation once common along the Homebush Bay foreshore. Shorebirds that use Mason Park move between similar wetlands at the waterbird Refuge and Newington Wetlands in Sydney Olympic Park, and the intertidal areas of the Parramatta River estuary such as Hen and Chicken Bay.

“When flooded at high tide the wetland provides foraging and roosting habitat for migratory shorebirds and nesting habitat for several non-migratory species.

“The numbers of shorebirds using the wetland since records have been kept have fluctuated with the conditions of the site over time. In the past this wetland has been one of the most important shorebird feeding and roosting sites in the Sydney area, and until recently has had more shorebirds per hectare than any other site in the region.”

“Previous studies have shown low invertebrate diversity and abundance in the Mason Park wetland. Despite this, the wetland has large numbers of Chironomids (bloodworms) and midge larvae which makes it attractive as a feeding ground for many waders.”

“Mosquitoes occur naturally in the wetland area, and they are in neighbouring wetlands in Sydney Olympic Park. The key pest mosquito in the Mason Park Wetland is *Ochlerotatus vigilax*, a nuisance biting species which is a known carrier of arboviruses. The current tidal strategy favours the production of the species because the saltmarsh substratum is flat, resulting in the potential for water to be temporarily isolated.”

Appendix C – Coastal Wetlands and Key Fish Habitat

The Coastal Management Act 2016 includes mapping of the four coastal management areas to which the provisions of the Act apply. One of these management areas is applicable to Mason Park. This is the coastal wetlands and littoral rainforests area.

Coastal wetlands and littoral rainforests area are areas which display the characteristics of coastal wetlands or littoral rainforests that were previously protected by SEPP 14 and SEPP 26. There 100-metre proximity area, applying to all land zones, around coastal wetlands and littoral rainforests (Figure 76).



Figure 76 Coastal Management Act 2016- coastal management areas

In the coastal wetlands most works will require development consent including the following (Division 1 cl10):

- clearing of native vegetation
- harm to marine vegetation (includes mangroves)
- environmental protection work

However, environmental works may be carried out by or on behalf of a public authority without development consent if the development is identified in:

- the relevant certified coastal management program, or
- a plan of management prepared and adopted under Division 2 of Part 2 of Chapter 6 of the LG Act or
- a plan of management under Division 3.6 of the CLM Act

For works in the proximity area Council must be satisfied that development would not impact:

- (a) the biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or
- (b) the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest

Under the *Fisheries Management Act 1994*, Powells Creek is mapped as key fish habitat (Figure 77). This is because key fish habitat includes all oceanic, bay, inlet and estuarine habitats up to the level defined by High High Water Solstice Spring tides (so called 'King tides' or Highest Astronomical Tide). A Part 7 Fisheries Management Act permit is generally required for works in areas mapped as key fish habitat, hence a permit is likely required for inlet works or the construction of a second inlet at Mason Park.

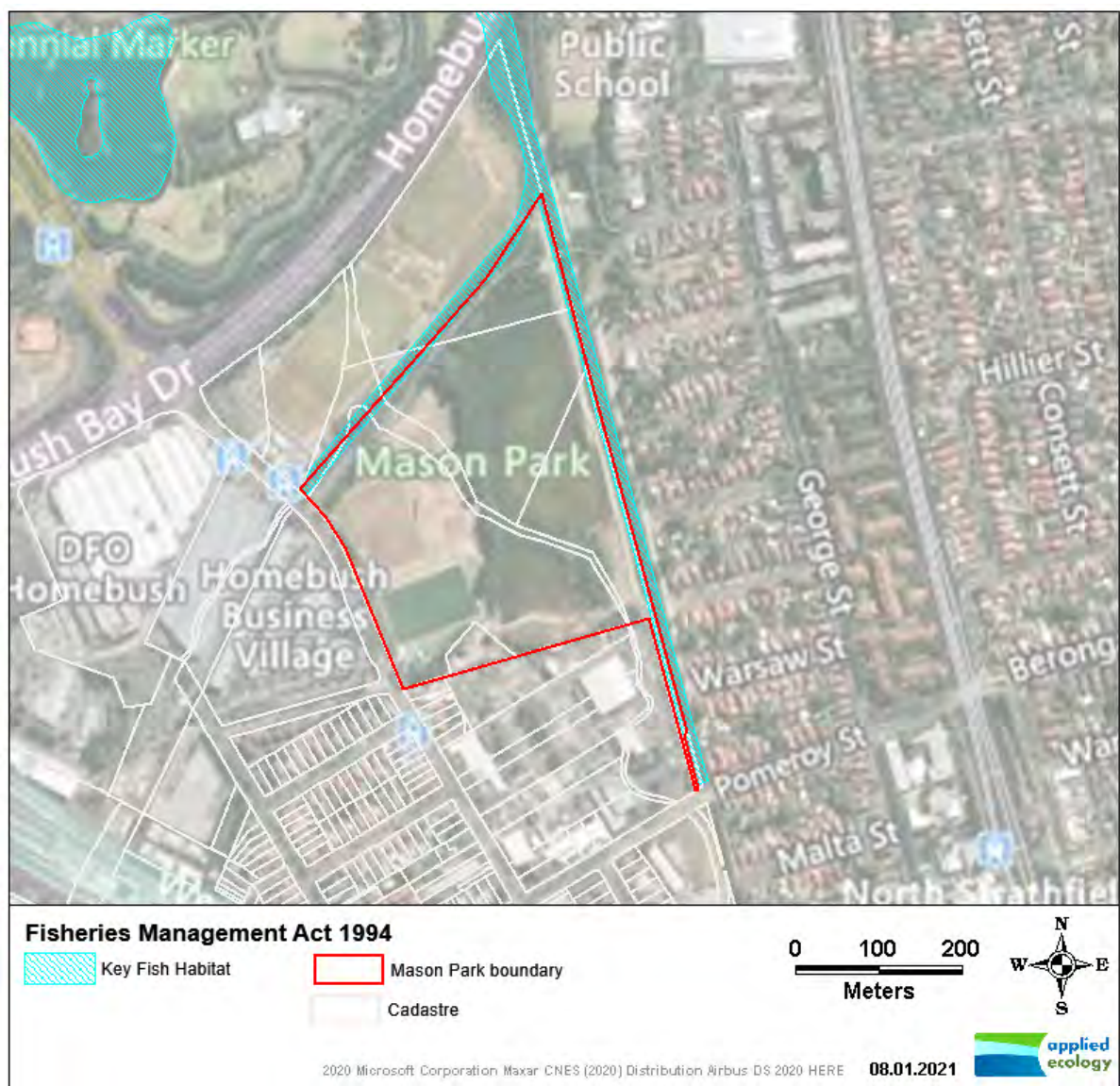


Figure 77 Fisheries Management Act 1994 – key fish habitat

Appendix B – Community Consultation

Mason Park draft Plan of Management Community Consultation (April 2021)

Strathfield Council is preparing new plans for managing Mason Park and is interested in your views and ideas. This consultation will take less than 5 minutes to complete. All personal data collected will be kept confidential. Reporting on results from this consultation will not identify individuals.

1. How often do you visit Mason Park?

- ☐ At least once a week
- ☐ At least once a month
- ☐ Couple of times each year
- ☐ Once a year
- ☐ Every couple of years
- ☐ Never

2. What is your connection to Mason Park? Please choose all that apply

- ☐ I am a local resident living in the Strathfield Council area
- ☐ I am a local business owner
- ☐ I am a visitor from outside the local area
- ☐ I am a student at a school in the Strathfield Council area
- ☐ I play sport at the park
- ☐ I am a member of an organisation that uses the park
- ☐ I work in the Strathfield Council area
- ☐ Other (please specify)

3. What features of Mason Park are important to you?

- ☐ Walking, jogging or running
- ☐ Personal exercise/leisure eg yoga, tai chi
- ☐ MasonOval for playing of formal sports
- ☐ Trees, vegetation and landscaping
- ☐ Playing self-organised ball games

- ☐ Multi-purpose courts
- ☐ Gatherings in open spaces for picnics, BBQs
- ☐ Playgrounds
- ☐ Relaxing in open spaces or near Lake
- ☐ Walking the dog
- ☐ Golf driving range

4. Can you suggest any changes or improvements that should be made to the park?

5. Do you have any comments about Mason Park future proposals (refer to the Information Sheet)?

6. Any other comments about Mason Park?

7. To assist us understanding your needs, could you please provide some information about yourself? What is your age group?

- ☐ Under 18
- ☐ 18-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60 or older
- ☐ Don't want to say

8. Please provide your contact details

Name

Email address

Phone number

Home address

9. Do you wish to enter the draw to win one of three \$50 shopping vouchers?

☐ Yes

☐ No

Please return completed surveys to:

Mason Park Consultation, Strathfield Council, PO Box 120, Strathfield NSW 2135. Should you have questions regarding this project, please contact Cathy Jones, Executive Manager, Corporate Strategy and Performance, email: cathy.jones@strathfield.nsw.gov.au or 9748 9937

DRAFT