



# ***DRAFT***

# **Bushland**



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## **PLAN OF MANAGEMENT**

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***NORTH SYDNEY COUNCIL***

*2021*

# DRAFT BUSHLAND PLAN OF MANAGEMENT

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## Introduction

Plans of Management provide clear guidelines for the effective short and long-term management of all land owned by Council or under Council's control. The Bushland Plan of Management examines the broad range of issues associated with bushland in North Sydney in a comprehensive and holistic manner and identifies clear objectives for management and maintenance. The Plan of Management clarifies management policy and direction, both for Council staff and the community.

Our bushland is precious. Increasing population and building densities mean that only 49 hectares of bushland remain in the North Sydney area. Much of this is on the harbour foreshore; where places of natural beauty combine with spectacular views. Despite the small, fragmented and highly impacted character of bushland in North Sydney, a surprising diversity of species and vegetation community types remain.

North Sydney's bushland reserves contain a range of significant natural and cultural heritage sites. Aboriginal heritage sites can be found in most bushland reserves, and heritage items include shell middens, rock art and engravings. Council is responsible for protecting remnant bushland areas, biodiversity, native wildlife and Aboriginal heritage. Public education through the Bushcare Program is an important part of this protection.

Land affected by this Plan of Management is a combination of Council-owned land and Crown land owned by the NSW State Government. As such, it is managed under the *Local Government Act 1993* and the *Crown Land Management Act 2016*.

Council's Foreshore Parks & Reserves Plan of Management should also be considered when reading this Plan, as much of North Sydney's bushland is located on the harbour foreshore. This document supersedes Council's Bushland Plan of Management 2014.

This Plan of Management draws on information contained in relevant Acts, planning documents and studies, including:

- *Local Government Act 1993 (LG Act)*
- *Crown Land Management Act 2016 (CLM Act)*
- *Native Title Act (Cwlth) 1993 (NT Act)*
- The North Sydney Community Strategic Plan 2018 – 2028
- North Sydney Local Environmental Plan 2013
- North Sydney Recreation Needs Study 2015
- North Sydney Natural Area Survey 2010
- North Sydney Bushland Rehabilitation Plans 2019-2029 (BRPs)
- North Sydney Urban Forest Strategy 2018

This Plan also considers the *NSW Biodiversity Conservation Act 2016*, the *Biosecurity Act 2015*, *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*, *State Environmental Planning Policy (Coastal Management) 2018*, *Rural Fires Regulation 2013* and *NSW Invasive Species Plan 2015*, *Greater Sydney Regional Strategic Weed Management Plan*, *Greater Sydney Regional Strategic Pest Management Strategy* and is consistent with the vision, purpose, objectives and management strategies set out in these documents.

A major review of the Bushland Plan of Management will take place every 5 – 10 years to allow policy and planning issues to be revisited and updated. Implementation of the actions listed in the Plan will be reviewed regularly.

## 1.0 **Management Framework**

### 1.1 **Structure of the Plan of Management**

The Bushland Plan of Management is divided into 5 parts.

- Part 1 examines what a Plan of Management is, outlines the scope of this Plan, the legislative framework that drives and guides it, its purpose and its core objectives. It explains the link between this Plan of Management and Council's land management goals and details the importance of community engagement. It also examines the issue of leases, licences, permits and other estates
- Part 2 provides a general description of North Sydney's bushland reserves, their physical makeup and existing values/site features.
- Part 3 identifies and examines the major planning issues essential to an understanding of the overall directions of the document and discusses current management practices.
- Part 4 sets out the core values and management objectives, as determined by Council and the community through previous studies such as the Bushland Rehabilitation Plans 2019 – 2029, the draft Sustainability Strategy 2020 and the Recreation Needs Study 2015. These objectives have been used as the basis for formulation of the implementation plan.
- Part 5 is the implementation and performance component of the Plan of Management. A matrix sets out the objectives, proposed actions and performance indicators and anticipated timing for each issue and action. An indicative works program further details the staging of all discrete works and actions.
- Part 5 is the Appendices, including maps of bushland in North Sydney.

### 1.2 **Purpose of the Plan of Management**

This Plan of Management provides an overall framework for management of bushland in North Sydney in coming years. Specifically, it has been prepared to:

- Meet Council's obligations regarding public land management under the requirements of Section 36 of the *LG Act* and the *CLM Act*
- Ensure the requirements of the *NT Act* for the management of Crown land are addressed
- Enable Council to renegotiate or enter into leases, licences and other use agreements

The production of this Plan of Management is closely linked with Council's overall land management objectives, as set out in the North Sydney Community Strategic Plan 2018 – 2028. The following information, relevant to bushland management, has been taken from the Community Strategic Plan.

Council's goal regarding bushland (encompassed in the Community Strategic Plan under Direction 1 – 'Our Living Environment') is:

1.1 'Protected and enhanced natural environment and biodiversity'

The following objectives are derived from this goal:

1.1.1 Rehabilitate bushland areas

- 1.1.2 Implement community education programs regarding protection and enhancement of the natural environment

### 1.3 Legislative Framework

The *LG Act* requires that Plans of Management must be prepared for Council-owned community land. Plans of Management for Crown land were previously adopted under the *Crown Lands Act 1989*; however, the *CLM Act* requires Council's to prepare Plans of Management for Crown reserves as per the requirements of the *LG Act*.

North Sydney's bushland reserves are located on a combination of Council-owned and Crown land and are zoned E2 Environmental Conservation under Council's Local Environmental Plan 2013. (Refer **Appendix 3** – Zoning of Bushland).

#### 1.3.1 NSW Local Government Act 1993 (LG Act)

The NSW *LG Act* provides the legislative framework for Council's day to day operations. The Act identifies a Council's responsibility to actively manage land and to involve the community in developing a strategy for management.

The NSW *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

The nature and use of community land may not change without an adopted Plan of Management.

#### 1.3.2 Crown Land Management Act 2016 (CLM Act)

The *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*. Dedicated or reserved Crown land may only be used for the following purposes:

- The purposes for which it 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 an 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:

- a) must manage the land as if it were community land under the *LG Act 1993*, and

- b) 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 licensing of community land).

### Objectives of the Crown Land Management Act

The Objectives of the *CLM Act* are to ensure that Crown land is managed for the benefit of the people of New South Wales, and in particular:

- To provide for the ownership, use and management of the Crown land of NSW, and
- To provide clarity concerning the law applicable to Crown land, and
- To require environmental, social, cultural heritage and economic considerations to be taken into account in decision-making about Crown land, and
- To provide for the consistent, efficient, fair and transparent management of Crown land for the benefit of the people of NSW, and
- To facilitate the use of Crown land by the Aboriginal people of NSW because of the spiritual, social, cultural and economic importance of land to Aboriginal people, and, where appropriate, to enable the co-management of dedicated or reserved Crown land, and
- To provide for the management of Crown land having regard to the principles of Crown land management.

### Principles of Crown land management

- Observe environmental protection principles in relation to the management and administration of Crown land
- To conserve the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) wherever possible
- Encourage public use and enjoyment of appropriate Crown land
- Encourage multiple use of Crown land, where appropriate
- Use and manage Crown land in such a way that both the land and its resources are sustained in perpetuity, where appropriate
- Occupy, use, sell, lease, licence or otherwise deal with Crown land in the best interests of the State, consistent with the above principles

The *CLM Act* provides a new regime for the management of Crown land, and Council is now responsible for compliance with native title legislation for the Crown land that it manages.

#### 1.3.3 Native Title Act (Commonwealth) 1993 (NT Act)

Native title is 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 since before the British asserted sovereignty over Australia. Native title rights and interests are formally recognised under the *NT Act*.

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.

All activities on Crown land included in this document (refer **Appendix 1** – Land included in this Plan of Management, and **Appendix 2** - Maps) must address the issue of native title. Whilst a successful claim for native title will lead to official recognition of native title rights, native title rights are considered to pre-date such recognition. Native title can therefore be relevant to activities carried out on the land even if no native title claim has been made or registered.

The native title process must be considered for each activity on the land and a native title assessment must be undertaken. Almost all activities and public works carried out on the land will affect native title and require validation under the future act procedures in Division 3 of the *NT Act* by Council's Native Title Manager.

The *NT Act* sets out procedures for notification and opportunity to comment which must be followed in certain circumstances (for example if the proposed activity/act is a 'public work' as defined in Section 253 of the Act).

#### 1.4 Land Categorisation and Core Objectives

Section 3.21 of the *CLM Act* states that dedicated or reserved Crown land may be classified and managed as if it were public (community or operational) land within the meaning of the *LG Act*. Section 3.23(2) of the *CLM Act* requires Crown land to be categorised consistent with the *LG Act*.

North Sydney's bushland reserves are located on a combination of Council-owned and Crown land. All are classified as community land, (i.e. land that must be kept for the use of the general community) and are categorised as a 'natural area - bushland'.

According to *LG Act 1993*, land should be categorised as 'natural area - bushland' if:

*The land contains primarily native vegetation and that vegetation:*

- (a) *is the natural vegetation or a remainder of the natural vegetation of the land, or*
- (b) *although not the natural vegetation of the land, is still representative of the structure or floristics or structure and floristics of the natural vegetation*

*Such land includes:*

- (c) *bushland that is mostly undisturbed with a good mix of tree ages, and natural regeneration, where the understorey is comprised of native grasses and herbs or native shrubs, and which contains a range of habitats for native fauna (such as logs, shrubs, tree hollows and leaf litter), or*
- (d) *moderately disturbed bushland with some regeneration of trees and shrubs, where there may be a regrowth area with trees or even age, where native shrubs and grasses are present in the understorey even though there may be some weed invasion, or*
- (e) *highly disturbed bushland where the native understorey has been removed, where there may be significant weed invasion and where dead and dying trees are present, where there is no natural*

*regeneration of trees or shrubs, but where the land is still capable of being rehabilitated.*

<b>Land Category</b>	<b>Core Objectives</b>
Bushland (LGA 1993 - Section 36G)	<p>(a) <i>to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, the flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and</i></p> <p>(b) <i>to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and</i></p> <p>(c) <i>to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and</i></p> <p>(d) <i>to restore degraded bushland, and</i></p> <p>(e) <i>to protect existing landforms such as natural drainage lines, watercourses and foreshores, and</i></p> <p>(f) <i>to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and</i></p> <p>(g) <i>to protect bushland as a natural stabiliser of the soil surface.</i></p>

Note: Many of the parks and reserves in North Sydney contain land zoned E2 Environmental Conservation as well as land zoned RE1 Public Recreation. This Plan of Management only applies to those areas within the parks and reserves that are zoned E2 Environmental Conservation under *LEP 2013*.

Public bushland included covered by this document is shown in the appendices. (Refer **Appendix 1** – Land included in this Plan of Management and **Appendix 2** – Maps).

### 1.5 Leases, Licences, Permits and Other Estates

A lease, license or permit is a contract between a land owner and another entity, granting that entity a right to occupy an area for a specific period. Leases, licenses and permits formalise the use of community land by groups such as sporting clubs, community groups and schools, or by commercial organisations and individuals providing facilities or services for public use.

A lease is typically required where exclusive use or control of all or part of a park or reserve is required. The terms and conditions of a lease should ensure that the lessee undertakes proper management of the facility such that it is maintained in a safe and visually pleasing condition, and that the interests of Council and the public are protected.

Licences allow multiple and non-exclusive use of an area. A licence may be required where intermittent or short-term use or control of all or part of a park or reserve is proposed. Several licences for different users can apply to the same area at the same time, provided there is no conflict of interest.

Under the *CLM Act*, Councils are authorised to manage Crown land as if it were community land within the meaning of the *LG Act 1993*. This enables Councils to issue licences, leases, permits and other estates for Crown land reserves in the same way they do for any Council-owned public land, with consideration of the reserve purpose. Essentially, the process for issuing tenures will depend on the classification and categorisation of the land, as well as its applicable planning controls associated with the land zoning.

This Plan of Management expressly authorises the issue of leases, licences, permits or other estates over the areas of bushland categorised as Natural Area – Bushland, provided that:

- The purpose is consistent with the reserve purpose of the land
- The purpose is consistent with the community land classification and the core objectives for the category of the land
- The purpose is consistent with the zoning of the land under North Sydney LEP 2013 (E2 – Environmental Conservation)
- The lease, licence, permit or other estate is for a permitted purpose listed in the *LG Act* or the Local Government Regulations 2005
- The issue of the lease, licence, permit or other estate and their respective provisions can be validated by the provisions of the *NT Act*
- The land is not subject to a claim under the *Aboriginal Land Rights Act 1983*
- The lease, licence, permit or other estate is granted and notified in accordance with the provisions of the *LG Act 1993* or the Local Government Regulations 2005
- The issue of the lease, licence, permit or other estate will not materially harm the use of the land for any of the purposes for which it was dedicated or reserved
- The purpose is consistent with the core values and management objectives listed in Section 4.1 of this Plan of Management
- Sub-leases are only allowable for the same purpose as the original lease in accordance with the requirements of Section 47C (1) (a) of the *LG Act*

For leases, licences or estates for terms up to five years, section 47A applies and councils are required to undertake a public consultation process as set out in section 47(1) through (4) of the *LG Act*.

Councils must consider all submissions received during the specified period for public consultation. However, there is no requirement to obtain the Minister for Local Government's approval to enter the lease, licence or estate.

Section 46A of the *LG Act*, which sets out the requirement to call for tenders, if a lease or licence for a term in excess of five years, is not being granted to a non-profit organisation.

Any proposal to grant a lease, licence or estate for a term of over five years on community land must be in accordance with section 47 of the *LG Act*. If, during the specified period for public consultation Council receives a submission in the form of

an objection, the consent of the Minister for Local Government is required for them to enter the lease, licence or estate.

Community land must not be leased or licenced for more than 21 years, or 30 years with the consent of the Minister for Local Government. Any lease or licence for more than 21 years must have prior public notice according to the requirements of Sections 47 and 47A of the *LG Act*, and if an objection is made to the tenure because of the notice, the Minister for Local Government's consent is required.

Licenses for short term casual use or occupation of land included in this Plan of Management for a range of uses may be granted in accordance with Section 46(1)(b)(ii) for the purposes specified in Section 116 of the Local Government (General) Regulation 2005. All short-term casual uses and occupations are subject to Council's standard conditions of hire, approval processes and booking fees, as well as to native title manager advice (for relevant Crown reserves).

## **1.6 Community Consultation**

Community consultation plays an important role in the production of Plans of Management, providing Council with a sound understanding of issues from people who are familiar with and use the relevant parks and reserves. To a large degree, the views expressed by the community guide Council's management of the land.

Public engagement also generates an understanding of Council's land management aims, combats misinformation and misunderstanding, and fosters support for Council's programs and policies. The consent and co-operation of the users of open space facilitates management and lends weight to the status of this Plan of Management.

Since the adoption of the previous Bushland Plan of Management in 2014, Council has developed a new Recreation Needs Study. Prepared with a high degree of community and stakeholder involvement, the North Sydney Recreation Needs Study 2015 provides information regarding recreation needs in bushland that has been considered in this document.

Prior to general public exhibition of a new Crown land draft Plan of Management, Council is required to submit the draft Plan of Management to the appropriate representative of the owner of the land under section 39 of the *LG Act* (Currently the NSW Department of Planning, Industry and Environment – Crown Lands). The Department reviews the draft Plan of Management and advises Council of any properly required provisions to including in the Plan of Management. Council then amends the draft Plan of Management (if required), and places it on public exhibition (under section 38 of the *LG Act*).

Exhibition of the draft Bushland Plan of Management for a 28-day period, followed by a 14-day period to receive submissions allows interested parties to comment on and have input into the final document. The following steps will generate widespread awareness of the draft Plan of Management:

- Posting the draft document on Council's website for information and comment, and providing details of how to make a submission
- Providing the opportunity to comment in accordance with sections 24JB(6) and 24KA(7) of the *NT Act*

- Notifying all Precincts, Bushcare Groups and other know stakeholders that a new draft Plan is on display, and inviting comments
- Providing hard copies of the draft document to stakeholders, upon request
- Making hard copies of the draft document available for viewing at Council's Customer Service Centre, upon request

### **Writing a Submission**

Submissions give stakeholders an opportunity to express their opinions, provide information and suggest alternatives to Council's proposed management strategies.

To ensure submissions are as effective as possible:

- (1) List all points according to the section and page number in the Plan of Management.
- (2) Briefly describe each subject or issue you wish to discuss.
- (3) State which strategies you agree or disagree with and give reasons.
- (4) Suggest alternatives to deal with any issue with which you disagree.

Written submissions should be sent to:

The General Manager  
North Sydney Council  
P O Box 12  
NORTH SYDNEY NSW 2059

Attention: Landscape Planner  
Email: [council@northsydney.nsw.gov.au](mailto:council@northsydney.nsw.gov.au)

Comments regarding this or any other adopted Plan of Management may be submitted at any time. All Plans of Management are reviewed regularly, and at the time of the review new issues and actions can be incorporated and existing actions amended. All adopted Plans are available on Council's website: [www.northsydney.nsw.gov.au](http://www.northsydney.nsw.gov.au)

Implementation of this Plan of Management will require ongoing engagement between Council and relevant stakeholders in ensure the recommended actions continue to reflect the community's changing needs.

### Note:

This Plan of Management requires that for any activity/action specified in it, a native title assessment and validation under the *NT Act* be carried out by Council's Native Title Manager prior to the commencement or approval of that activity. The need for notification of relevant organisations (including NTS Corp and the Metropolitan Local Aboriginal Land Council) will be assessed on a case-by-case basis. If required, it will be undertaken in accordance with the Native Title (Notices) Determination 2011 (No. 1).

## 2.0 **Bushland Characteristics and Resources**

Remnant bushland in North Sydney is generally restricted to the Sydney Harbour and Middle Harbour foreshores. Bushland areas are typically narrow linear slivers bordering urban development. The areas are mostly disjunct due to the incursion of roads, services and urban development. The high population density of North Sydney and the limited opportunities for gaining additional open space mean that the remnant bushland areas within North Sydney are under immense, ongoing pressure, and are consequently very precious.

Bushland in North Sydney continues to be managed and maintained responsibly and pro-actively. Council-funded regeneration work is supported by a large and enthusiastic volunteer work force. Previously degraded areas have been rehabilitated to native bushland and the overall quality of bushland in North Sydney continues to improve. More work is still required to overcome many years of neglect, and the ongoing impacts of urbanisation.

A brief description of the history, characteristics and resources of some of North Sydney's most significant bushland reserves follows. The set of maps included in '**Appendix 2 – Maps**' show the location of all bushland areas covered by this Plan of Management.

### **Balls Head Reserve**

The Aboriginal name for Balls Head is 'Yerroulbine'. Many Aboriginal sites including archaeological deposits, middens, art sites and rock engravings are still present today.

Named after Lieutenant Henry Lidgbird Ball, Commander of the ship 'Supply' in the First Fleet of 1788, Balls Head was the original foreshore land included in the large Wollstonecraft Estate. Strong public protests over proposals to develop the land for residential purposes saw it declared as public parkland in 1926.

The reserve contains several picnic areas, plaques, a car park and public amenities, a variety of walking tracks, foreshore caves and a historic flagpole, used in early settlement times to communicate with Government House.

Vegetation is predominately open forest, with Sydney Red Gums, and Red Bloodwoods and an understorey of Grevilleas, Wattles, Banksias, Geebung, as well as shrubs and grasses. Cheese Trees, Sweet Pittosporum, Blueberry Ash, NSW Christmas Bush, Lillypilly and Mock Olive flourish in sheltered gullies.

Balls Head reserve is a refuge for native fauna, with Geckoes, Blue-Tongue Lizards, Skinks, Common Eastern Froglets, Brushtail and Ringtail Possums, a colony of Eastern Bent-Wing Bats, and many species of birds living and visiting the area. Sea birds can be found on the rocks around the foreshore and Parrots, Lorikeets, Kookaburras, Butcher Birds, Wrens and Figbirds can be found in the trees. Overhead, the White-bellied Sea-eagle (a NSW-listed Threatened Species) can be seen scanning the bays for prey.

### **Badangi Reserve**

This bushland area and the associated freshwater creek that once ran through it

would have been frequented in the past by Aboriginal people. A small open section of this creek is still present through Bridge End; the remainder now lies underground.

Badangi Reserve also formed part of the Berry Estate in the early years of settlement. Interesting features include old sandstone walls, pebbled paths and relics from the sugar refinery and kerosene works once present in Oyster Cove.

The Reserve is predominately an open forest of Sydney Red Gums, Peppermints, and Red Bloodwoods with a small community of rare Forest Red Gums. Wattles, ferns and Zierias are common in the understorey. There are good examples of remnant Hawkesbury Sandstone vegetation, and Sweet Pittosporums are prolific at the Point. The gully area along the creek line is dotted with Coachwood, Lillypilly, mature vines and diverse fungi species that emerge after rain.

Fauna species include Tawny Frogmouths and Eastern Toadlets appear after rain. There are Noisy Miners, Lorikeets, Koels, Wrens, Robins, Scrub-wrens, Spotted Pardalotes and Satin Bower Birds. The Reserve is also home to rare and threatened species including the Rakali, Powerful Owl and Large-footed Myotis.

Badangi Reserve is an important link in the Waverton-to-Wollstonecraft wildlife corridor.

#### Berry Island Reserve

The Aboriginal history of Berry Island is evidenced by the numerous shell middens, axe grinding grooves and rock engravings found here.

In the early 19th century, the island was attached to the property of Edward Wollstonecraft on the mainland by a stone causeway over mud flats. In 1926, the island was dedicated as a nature reserve for public recreation, along with Balls Head Reserve. In the 1960s the mudflats were filled in to create a grassed area. This area now accommodates a playground, public amenities and BBQs, while visitors to the bushland section of the reserve can follow the interpretive Gadyan Track to learn about the Island's pre-European history.

Berry Island is one of North Sydney's most pristine bushland areas, consisting of relatively untouched remnant Hawkesbury Sandstone vegetation. There is open forest with Sydney Red Gums and Red Bloodwoods, understorey shrubs include White Spider Flower, pink flowering Crowea, Wattles, Banksias and Correa. Shallow soils in the island's interior support a lower shrubland of Tick Bush which is important habitat for Ringtail Possums. Locally rare plant species include *Acacia longissima*, *Banksia oblongifolia* and Grey Ironbark.

#### Cremorne Reserve

The Aboriginal name for Cremorne Point is 'Wulwarrajeung'. Numerous shell middens and rock engravings are evidence of the area's Aboriginal history.

In 1823, 86 acres of Cremorne Point were granted to a Scottish watchmaker, and later sold to James Milson. 3 years later, 22 acres were leased to create Cremorne Gardens, an amusement park mimicking a similar pleasure garden

in London.

Features of interest in this narrow, linear reserve include the lighthouse at Robertson's Point, harbourside Maccallum Pool, the Lex and Ruby Graham Gardens, started in 1957 from an Elephants Ear, and now protected by the National Trust, as well as a children's playground and fitness equipment.

The bushland areas of the reserve reflect their Hawkesbury Sandstone origins. Open forest areas feature Sydney Red Gums, with an understorey of Swamp She Oak, Coastal Banksia, Heath, pink flowered Crowea and Mat Rush. The Scribbly Gum and the Red Spider Flower are locally rare species.

Ringtail Possums are common in the area, and the reserve is visited by Greyheaded Flying-foxes, Tawny Frogmouths and the endangered Powerful Owl. Pied Currawongs and Magpies are common, and other birds include small Wrens, Whip birds, Channel-billed Cuckoos and Koels.

### Primrose Park

Primrose Park was originally occupied by the Cammeraygal Aboriginal people who would have been attracted by the choice of rock shelters and easy canoe access to 'Warringah' (Middle Harbour) and beyond. Shell middens can be found on the park's steep slopes.

The Park's sportsfields were once an estuarine bay, and from 1899 they housed North Sydney's first sewage treatment works. The sewerage works closed in the late 1920s and the area was dedicated as parkland in 1930. The Park was named after H L Primrose, a North Sydney Mayor from 1926 to 1932. The Willoughby Falls in the western gully was a favourite picnic spot in the early days of white settlement.

Bushland is found on the steep slopes surrounding the sports fields. Open forest species include Blackbutt, Sydney Red Gum and She-Oak, with an understorey of flowering shrubs and ferns. There are Tree Ferns, and Black Wattle canopy around Willoughby Falls. Bird diversity is high in the Park, and species include White-browed Scrub-wrens, Superb Fairy-wrens, Eastern Whip Birds, Rosellas, Lorikeets, Butcher Birds, King Parrots and sea birds around the foreshore. Other birds include Kingfishers, Boobook Owls and Powerful Owls, while Eastern Water Dragons sun themselves around Willoughby Falls during the day.

### Smoothey Park & Gore Cove Reserve

Shell middens found in the area indicate that Aboriginal people frequented this valley, using the creek as a fresh water supply. Both Smoothey Park and Gore Cove were part of the original Berry/Wollstonecraft estate. Smoothey Park was named after Mr S Smoothey, an Alderman of North Sydney Council from 1911 to 1920, while Gore Cove Reserve is named after Provost Marshall William Gore who was granted land in the area in 1806.

Gore Cove Reserve consists entirely of bushland, while Smoothey Park is a mix of European style parkland and natural bushland. Berry's Creek is the longest stretch of natural creek line remaining in North Sydney. The interpretive Gore Cove bush walking track partially follows the Creek, linking



Smoothey, Greendale and Holloway Parks to Berry Island Reserve via Gore Cove Reserve.

Items of European heritage significance include stone rubble walling, a rock-cut chamber and various rectangular cuts in the base of Berry's Creek. The stone embankments on the creek and cove may have been a jetty from Alexander Berry's time. They may also relate to the small coal mine that operated here.

Vegetation in Smoothey Park is diverse, due to the variations in topography and soil type. There is a marked change in vegetation types from the exposed hillside which is characterised by Sydney Red Gum (*Angophora costata*), woodland/open forest and dense undergrowth, to the heavy timber along the creek line, where the rainforest margin vegetation is dominated by species such as Lilly Pilly (*Acmena smithii*), and Callicoma (*Callicoma seratifolia*).

The Gore Cove Track passes through several vegetation communities. There are remnant Turpentine and flannel flowers at the northern end, closed rainforest (including Coachwoods, Tree Ferns and Sweet Pittosporum) along the creek line and Schlerophyll woodland with Sydney Red Gums, Peppermints and an understory of Grass Trees in the south. On the Gore Cove mud flats, grey mangroves provide breeding and shelter sites for estuarine life.

### Tunks Park

Remnants of shell middens, rock art, caves and overhangs indicate that this area was originally home to the Cammeraygal people.

In the 1930's the estuarine mudflats and the upper reaches of Long Bay in Tunks Park were filled, levelled and converted into sportsfields, and the Park officially opened on 5 May 1956. The Tunks Park bushland, located on the steep valley walls, forms part of a larger corridor of contiguous bushland and wildlife corridor, linking Hallstrom Reserve and Munro Park in the Willoughby to Mortlock Reserve and the shores of Middle Harbour in the North Sydney Council area.

The Suspension Bridge is a picturesque landmark and a historically important feature of Tunks Park. Other Park features include a boat ramp, car and boat trailer parking, dinghy storage racks, a children's playground, fitness equipment and a BBQ area.

Tunks Park bushland consists of two remnant vegetation communities: Angophora Foreshore Forest and Blackbutt Gully Forest. The bushland areas provide important habitat for some rare plant and animal communities and form a valuable natural resource in a highly urbanised environment. The Tunks Park remnant bushland is recognised as a 'biodiversity hotspot', and the most important bushland for small birds and mammals in North Sydney.

## **2.1 The Physical Nature of Bushland**

### **2.1.1 Topography**

Remnant bushland in North Sydney is generally restricted to the steep headlands and foreshores of Sydney Harbour, as these areas were too steep to be of much value when

the area was originally developed. Other areas such as Balls Head and Berry Island Reserve were preserved from development due to community pressure and their recognised recreational and aesthetic value.

### 2.1.2 Geology and Soils

The geology of the North Sydney area is predominantly Hawkesbury Sandstone. This weathers to produce a sandy low-fertility soil particularly deficient in phosphorus and nitrogen. The ridgeline from Neutral Bay to Crows Nest and St Leonards is Wianamatta shale. The shale soils are more fertile and originally supported a tall open forest or wet sclerophyll forest compared to the woodlands and open forests growing on the sandstone soils. Lenses of shale can be found amongst the sandstone layers, for example in Smoothery Park, Primrose Park and Tunks Park.

Soil nutrients, particularly nitrogen and phosphorus, generally increase due to urban development. Soils derived from Hawkesbury Sandstone typically contain phosphorus concentrations of 50 parts per million. However, soils in degraded bushland areas have been found to contain phosphorus levels 5 times greater than this. Nutrient concentrations are greatest along urban boundaries and drainage lines where nutrient loadings in stormwater have been found to be 50-100 times greater than in waters of natural catchments. Nutrients also enter bushland from dumped garden refuse, imported soil, pet faeces, fertiliser, sewer overflows and leaks, and household runoff.

Soil nutrient concentrations greater than the previous natural level limits the diversity of indigenous plant species and can prevent the regeneration of endemic species adapted to low nutrient soils. Increased soil nutrients are toxic to some indigenous species while those that do survive are generally out-competed by weeds which are better able to utilise the extra nutrients.

### 2.1.3 Hydrology

Except for Berry's Creek, Quarry Creek and several ephemeral watercourses, the hydrology of North Sydney's bushland bears little resemblance to its natural state. Urbanisation has greatly increased the area of impervious surfaces such as roadways, parking areas, footpaths, driveways and roofs. This increases the proportion of precipitation that appears in runoff, by reducing storage time, infiltration and evaporation. As a result, urban runoff has a peak discharge which is higher and occurs sooner than for a similarly sized natural area.

Runoff from urban areas causes degradation of bushland in several ways, including:

- Increased discharge during rain events, due to the funnelling effect of runoff from hard surfaces being concentrated in the stormwater network before discharging into creek lines
- Deposition of silt and stream bank erosion caused by the increase in creek and river flows
- Transport of weed propagules into bushland
- Nutrient transport and deposition in bushland
- Loss of natural riparian vegetation assemblages
- Decreased water quality leading to depauperate aquatic habitats, and
- The alteration of natural drainage processes causing water logging of soils

Stormwater drains are one of the main contributors to bushland degradation. Past engineering practices have resulted in many stormwater drains currently emptying into bushland instead of being piped to permanent creeks or watercourses. The same situation regularly occurs from household runoff that is piped only to the property boundary and then discharged. The huge increase in moisture levels in the soil and the decrease in the temperature of the soil changes the entire ecology of the affected area.

Sewer infrastructure has also had, and continues to have, a deleterious impact on bushland condition. The legacy of damage caused during the original network installation is still visible today, with many major sewer pipes traversing North Sydney's bushland reserves. Overflows caused by blockages, development-driven volume increases and aging infrastructure (including private connections) result in contamination of bushland and waterways, which in turn fuels weed growth and harms native species including plants and aquatic life. Compounding this damage is the impact of infrastructure repair work that, in many cases, is considered 'emergency' works and therefore can be undertaken with minimal environmental safeguards.

#### 2.1.4 Vegetation

The comprehensive Natural Area Survey 2010 identified and mapped approximately 49ha of remnant bushland in North Sydney. The Survey identified 12 native vegetation communities and recorded a total of 347 native vascular plant species and subspecies:

##### Angophora Foreshore Forest

Open-forest, occasionally tall open-forest, in which the dominant tree species is *Angophora costata* (Sydney Red Gum). This vegetation community is found both along the harbour foreshores and up to 1km away.

##### Allocasuarina Scrub

Open-scrub dominated by *Allocasuarina littoralis* (Black She-oak). The distribution is restricted to Tunks Park, where it occurs on 2 steep slopes of Hawkesbury Sandstone.

##### Blackbutt Gully Forest

Open-forest or tall open-forest dominated by *Eucalyptus pilularis* (Blackbutt). It occurs in Wollstonecraft, Cremorne and Cammeray.

##### Disclimax Sandstone Scrub

Open to closed scrub, or a forest of mixed and variable composition. A 'disclimax' community is an altered community that has replaced the original vegetation community due to disturbance. Disclimax Sandstone Scrub develops in sites where the original eucalypt forest vegetation has been subject to clearing, dieback, an altered fire regime or severe weed infestation.

##### Estuarine Mangrove Forest

Low closed-forest of *Avicennia marina* (Grey Mangrove) growing on intertidal mudflats. In North Sydney, its distribution is restricted to Core Cove Reserve where it grows on the intertidal mudflats at the mouth of Berry Creek.

##### Estuarine Saltmarsh

Herbland of *Sarcocorinia quinqueflora* (Samphire) and *Suaeda australis* (Seablite), growing on intertidal mudflats. The introduced species, *Atriplex prostrata* (Orache), is

a co-dominant. The distribution of this vegetation community is mostly restricted to Gore Cove Reserve and it is listed as an endangered ecological community in NSW.

#### Sandstone Gallery Rainforest

Closed-forest dominated by *Acmena smithii* (Lilly Pilly), *Ceratopetalum apetalum* (Coachwood) and *Pittosporum undulatum* (Sweet Pittosporum), in various combinations. This vegetation community occurs on steep, sheltered slopes besides rock creek lines on Hawkesbury Sandstone in Wollstonecraft and Cremorne.

#### Kunzea Scrub

Open-scrub dominated by *Kunzea ambigua* (Tick Bush), growing on top of harbour headlands with extensive sandstone outcrops, occurring in Wollstonecraft and Waverton.

#### Mixed Sandstone Gully Forest

Open-forest of mixed tree composition. Distribution is restricted to Wonga Road Reserve and Tobruk Avenue Lookout, on a steep foreshore slope above Willoughby Bay.

#### Forest Red Gum Foreshore Forest

Open-forest in which the dominant tree species is *Eucalyptus tereticornis* (Forest Red Gum). This vegetation community is a rare and unusual form of Sydney Turpentine-Ironbark Forest (STIF) listed as endangered under NSW and Commonwealth legislation. In North Sydney it only occurs on one site in Badangi Reserve on the sides and across the top of a small peninsula in Balls Head Bay.

#### Estuarine Swamp Oak Forest

Open-forest dominated by *Casuarina glauca* (Swamp Oak), growing adjacent to the intertidal zone. This vegetation community is listed as an endangered ecological community in NSW and occurs in Wollstonecraft and Cammeray.

#### Sandstone Foreshore Scrub

Open-scrub or closed-scrub growing on steep sandstone slopes adjacent to the harbour, with extensive sandstone outcrops and cliffs. It is similar to Disclimax Sandstone Scrub but appears to be a natural community with intact floristics. This vegetation community occurs in Wollstonecraft, Waverton and at Cremorne Point.

The Natural Area Survey also identified several threatened plant and animal species and three endangered ecological communities. The Survey provided a benchmark of North Sydney's natural assets and a measure of their intrinsic value for rehabilitation and recovery. The Natural Area Survey can be viewed in full on Council's website.

### 2.1.5 Weeds

In Sydney's northern region many bushland reserves are under threat because of the invasion of plants escaping from backyards and gardens. Common garden species can be wind-blown, spread by birds eating the seed or people tossing garden clippings into the bush. Some exotic species are vigorous invaders, growing faster than native species and usually producing much more seed. Weed invasions are also typically found along creek, drainage and sewer lines. Seeds and spores may be transported into bushland via wind, water, attachment to fauna and digestion of weed berries by birds.

Weed infestation affects native ecosystems by altering the immediate environment. Weeds displace and out-compete native plant species by shading, changing soil

conditions, smothering, and outgrowing. The replacement of native flora by weeds indirectly affects native fauna species which are dependent on native plants. Weed infestations stop the replacement of canopy trees, destroys the understorey and can eventually alter fuel characteristics and reduce the ability to conduct ecological management burns in bushland. Weeds occupy new niches created by altered conditions but also niches previously occupied by native vegetation. Once weeds take over an area the character of the bushland changes, diminishing habitat for native wildlife and altering fire regimes.

Weeds in North Sydney are categorised according to their biosecurity risk, and ability to spread from their existing and/or intended location. Biosecurity Weeds (formerly known as Noxious Weeds) are categorised into 5 Risk Ratings, which in turn determine the control action required. More information about Biosecurity Weeds is available on Council's website.

At the community level, Bushcare groups work with Council to eradicate high risk weed infestations and regenerate bushland with indigenous species. Weeds do not recognise local government boundaries and North Sydney Council is a member of the Regional Weeds Committee (Sydney North), which coordinates a regional approach to weed management.

#### 2.1.6 Fauna

Prior to European Settlement, the rugged topography and dense bushland in North Sydney would have provided habitat for a variety of fauna. Mammal species likely to have been found in the area include wallabies, bandicoots, possums, quolls and echidnas. A variety of reptiles (snakes and lizards) and amphibians (frogs) would have also been present as well as a diversity of avifauna (birds and bats) and invertebrates.

Recent fauna studies and surveys carried out in North Sydney (including the Natural Area Survey 2010) document the species still found in the bushland and open space areas of North Sydney, and record the disappearance of others, particularly native mammals, from around Sydney Harbour and the North Sydney area. The information provided in these studies assists fauna management, as it allows for the protection of known fauna habitat and enables Council to make better-informed resource planning decisions.

Community volunteers participating in Council's Wildlife Watch program provide valuable additional information by regularly reporting fauna sightings to Council.

#### 2.1.7 Conservation of Biological Diversity

In 1992 the United Nations Conference on Environment and Development identified the conservation of biological diversity as one of the major issues of concern in maintaining the quality of the Earth's environment. Biological diversity, or biodiversity, is the variety of all species on earth. It is the different plants, animals and micro-organisms, their genes, and the terrestrial, marine and freshwater ecosystems of which they are a part.

The conference adopted chapter 15 of *Agenda 21* which identified biological diversity as a specific area and set out a basis for action. Management actions included promoting the rehabilitation and restoration of damaged ecosystems, the recovery of threatened and endangered species, and developing policies to encourage the conservation of biological diversity and the sustainable use of biological and

genetic resources on private lands.

It is important that Council recognises its role in biological diversity conservation and takes appropriate actions to fulfil the objectives of *Agenda 21*. North Sydney is a small, highly urbanised local government area. Only 5% of the original vegetation observed before European settlement remains; in small/narrow fragmented reserves that are vulnerable to urban pressures. This Plan of Management addresses the issues that face us in North Sydney and aims to build ecological resilience.

#### 2.1.8 Threatened Species

The *NSW Biodiversity Conservation Act 2016* aims to protect species, populations and ecological communities threatened with extinction in NSW.

The main objectives of the Act are to:

- Conserve biological diversity and promote sustainable development
- Prevent the extinction of native plants and animals
- Protect habitat that is critical to the survival of endangered species
- Eliminate or manage threats to biodiversity
- Properly assess the impact of development on threatened species
- Encourage cooperative management in the conservation of threatened species

18 species recorded in the Natural Area Survey 2010 are listed as threatened species under Commonwealth or NSW legislation. However, 3 of these are now locally extinct, 11 are only rare visitors to North Sydney, and one, the Red-crowned Toadlet, was recorded on only one occasion in an urban area well away from any bushland, suggesting that it had escaped or been released from captivity. The other 3 species, the Powerful Owl (*Nixon strenua*), the Grey-headed Flying-fox (*Pteropus poliocephalus*) and Eastern Bent-wing Bat (*Miniopterus schreibersii*), occur more regularly in North Sydney and are the species of greatest conservation concern in the area.

Following LGA-wide microbat surveys in 2013/14, a further 5 microbat species were found to occur in North Sydney's bushland reserves, including 3 species that are listed as threatened under the Biodiversity Conservation Act. These include the Little Bent-wing Bat, Yellow-bellied Sheath-tail Bat and the unique 'Fishing Bat', or Large-footed Myotis, which was recorded in Balls Head Bay, Wollstonecraft and at Tunks Park, Cammeray.

Other notable wildlife returns to North Sydney over the past decade include the Swamp Wallaby, Superb Lyre-bird and the Long-nosed Bandicoot.

#### 2.1.9 Fire

Fires in bushland are naturally occurring events that are essential to the health and long-term sustainability of remnant bushland areas. The life-cycles of native plants and wildlife that inhabit these bushland reserves are well adapted to cope with fire, providing it conforms to particular ecosystem requirements of intensity and length of time between burns.

Fire has had a profound influence on the evolution of plant species and distribution of plant communities in the Sydney region. The predominant vegetation in North

Sydney, sclerophyll flora growing on Hawkesbury Sandstone derived soils, has evolved with the periodic occurrence of fire and requires particular fire regimes for its survival.

Because of European settlement, fire regimes have altered from those occurring pre-settlement. In most instances, fire has been excluded from bushland reserves, a feature which distinguishes most of North Sydney's vegetation.

In the absence of fire, sclerophyll plant communities are prone to invasion by weeds and mesophyllic native species such as Pittosporum, Cheese Tree and Blueberry Ash. This can lead to potentially irreversible damage to biodiversity.

In the context of North Sydney's bushland reserve system, managed (or prescribed) burning is used to meet both ecological objectives of bush regeneration and hazard reduction to residential housing. While the risk of a wildfire damaging property or threatening life in North Sydney is relatively low, Council's Bushland Management Team actively undertakes hazard reduction activities including modifying vegetation structure, creating fire access management zones, manual fuel reduction, pile burning and broad area burning.

In cooperation with the Fire & Rescue NSW, and the Mosman-North Sydney-Willoughby Bushfire Management Committee, Council implements controlled hazard-reduction burns in several bushland reserves each year. The burns are approved under the region's Hazard Reduction Program and are carried out jointly by Fire & Rescue NSW and Council's Bushland Management Team.

North Sydney also has a Bushfire Danger Period Public Access Management Plan which provides direction for managing public access in Balls Head Reserve, Berry Island, Badangi and Gore Cove Reserves during periods where the Bushfire Danger Rating has been identified as Severe (or greater), and a Total Fire Ban has been declared.

## **2.2 Cultural Heritage**

### **2.2.1 Aboriginal Heritage**

North Sydney is rich in Aboriginal culture and history. The original occupants, the Cammeraygal, lived along the foreshores and in the bushland, cliffs and rock overhangs before the arrival of the Europeans.

Council helps to conserve and manage approximately 60 Aboriginal sites in the North Sydney area. The sites are predominantly located in bushland, as it is these areas that have remained relatively undeveloped. The sites, which are registered with the National Parks and Wildlife Service, include middens, occupation sites, rock engravings and rock art. At least one site has been dated at 7000 years old.

The sites are predominantly located along the foreshores of Sydney and Middle Harbours. The existence of shell middens, rock shelters, rock engravings, axe sharpening grooves and rock art confirms that these areas were used as hunting and camping grounds. The Cammeraygal people skilfully used fire to maintain open spaces, to hunt, and to nurture and promote certain bush tucker plants.

In 1999 Council's Aboriginal Heritage Manager prepared the first Aboriginal Sites Plan of Management. Covering all known sites of Aboriginal occupation in North Sydney, the Plan sets out management objectives and actions to protect and conserve the sites. The original Plan of Management has been updated several times, most recently in 2018.

In 1998, Council developed the Gadyan Track in association with the Metropolitan Local Aboriginal Land Council (MLALC). The loop track around the bushland section of Berry Island Reserve, places Aboriginal cultural heritage in both a traditional and a contemporary context. Interpretive signs tell the stories and legends of the Cammaraygal. Features of the walk include Aboriginal midden sites, watering hole and rock engravings. 'Gadyan' is the Aboriginal name for the Sydney Cockle, a shellfish common in the middens on the island. Local community groups and schools regularly use this and other tracks through bushland for educational walks and talks in association with the Aboriginal Heritage Office (AHO) and the MLALC.

In 2000 North Sydney Council established the AHO; the first organisation of its type in Australia at a local government level. The Office subsequently expanded to take a regional approach to promote and protect Aboriginal sites and cultural heritage across several local government areas (Lane Cove, Willoughby, North Sydney, Ku-ring-gai, and Northern Beaches).

Together, these Council's fund the position of an Aboriginal Heritage Manager (AHM). The AHM promotes greater understanding of Aboriginal culture by working with school and other groups and is in direct contact with the MLALC and its many resources. The AHM is available to Aboriginal and non-Aboriginal people to discuss issues or concerns.

### **2.2.2 European Heritage**

North Sydney's bushland reserves contain many sites of European heritage significance. The majority of these relate to early shipping and recreational activities and Depression-era employment schemes. Sites are most concentrated at Balls Head Reserve which contains ringbolts for ship mooring as well as remnants of paths, steps, railings and rock cabins constructed in the 1930's as part of Depression-era employment programs. Steps to a (now removed) pool provide evidence of past recreational use of the area.

Willoughby Falls (in Primrose Park) is significant as a popular nineteenth century recreation and picnic spot. The Falls were compromised by the creation of the Folly Point sewage Farm below them from 1891, and by the reclamation and enclosure in pipes of the creek above them in the early twentieth century.

Other sites of European heritage significance include a sandstone retaining wall adjacent to Berry's Creek and the remains of an early road in Badangi Reserve.

## **2.3 Recreation in Bushland**

North Sydney is home to approximately 49Ha of remnant bushland. Despite its urban situation, this bushland supports a wide diversity of native plant and animal species, it contains items and sites of Aboriginal and European heritage significance, and its (mostly) foreshore location provides a variety of scenic views and vistas. This



combination makes North Sydney's bushland an enjoyable and enriching experience for locals and visitors alike.

Due to bushland's environmental sensitivity, appropriate recreational activities tend to be passive and low impact. Whilst Council encourages the recreational use of bushland, the types and level of use must be carefully managed. Popular activities include walking and jogging on bush tracks, fishing, picnicking, viewing the harbour and city from lookouts, photography and nature appreciation.

There are kilometers of walking tracks through North Sydney's bushland, many of these tracks can be combined to form loops and longer expeditions. There are walking tracks in most of Council's bushland reserves, including Smoothey Park and Gore Cove Reserve, Balls Head Reserve, Berry Island Reserve, Badangi Reserve, Cremorne Reserve, Brightmore Reserve, Primrose Park and Tunks Park. The state of the tracks varies; many have been significantly upgraded over the past 20 years while others are scheduled for future upgrading. Regular maintenance keeps the tracks in good condition.

Available on Council's website, the North Sydney Harbour Foreshore Bushwalk Guide contains practical information about bush walking in North Sydney including length of walks, transport access, and information about the Aboriginal and European history of the area and the types of flora and fauna present. Stand-alone brochures for the Gadyan Track at Berry Island Reserve and the Cremorne Point Foreshore self-guided walking brochure are included in the Guide.

In addition to Council-managed tracks, most reserves contain a network of informal paths. Such paths are often associated with fishing spots, boat storage sites and secluded viewing areas. Without proper management the use of these paths can lead to erosion problems, weed invasion and vegetation damage. Regular inspections of both formal and informal paths are carried out to monitor the condition of all tracks, and to determine whether there is a need to close the informal paths, to upgrade them, or to alter current management practices or maintenance regimes.

Many of Council's bushland reserves contain ancillary facilities which make them popular with visitors. There are electric barbecues at Balls Head Reserve, Berry Island Reserve, Primrose Park and Tunks Park, and public amenities at Balls Head Reserve, Berry Island Reserve, the Coal Loader Centre for Sustainability, Cremorne Reserve, Forsyth Park, Primrose Park, Tunks Park and Waverton Park.

The spectacular location of North Sydney's bushland reserves has seen them grow in popularity as a venue for commercial filming. Applications to film in bushland reserves are generally approved, however appropriate conditions are imposed to minimise any potential negative impacts.

In recent years the use of North Sydney's public parks and reserves by fitness trainers has increased, reflecting a nationwide trend. Council supports people wishing to use Council's parks and reserves to maintain a healthy lifestyle, and outdoor fitness training is encouraged if it occurs in accordance with Council's Outdoor Fitness Training Code of Conduct. The Code, which is available on Council's website, sets out 'common sense' guidelines for fitness trainers to ensure use of parks and reserves is appropriate and conflicts with other users are minimised. The Code stipulates that bushland reserves are not available for use by commercial fitness trainers.

Bushland lends itself best to passive recreation. Active recreational pursuits such as rock-climbing, bouldering, orienteering, and mountain biking can cause significant environmental degradation and are prohibited by Council. Camping in Council parks and reserves is also prohibited.

The impacts that recreational activities have on bushland reserves and initiatives to manage these impacts are discussed in Section 3.6 'Managing Recreation'.

## **2.4 Interpretation**

Interpretation is a technique used to communicate information to visitors about a site. It provides an explanation of the nature, origin and purpose of the area they are visiting. Interpretive signage will often cover many stories but have an over-riding theme. The main areas for interpretation are cultural (Aboriginal and European) and natural heritage.

Council employs a combination of illustrative media and first-hand experience to educate visitors about North Sydney's bushland. Interpretation programs normally involve a combination of guided walks and activities, signage, pamphlets and displays. Interpretation can achieve several objectives, including:

- Enriching the visitor's experience
- Assisting the visitor to develop a keener awareness, appreciation for and understanding of the bushland areas
- Encouraging the thoughtful use of bushland areas by the visitor, thus reducing the visitor's impact on environmentally sensitive areas, and
- Promoting community understanding of Council's role in managing bushland areas

Many bushland reserves in North Sydney contain interpretive signage, and Council's Bushcare Workshops and Events program is another important form of bushland interpretation. Activities include spotlighting walks to observe wildlife, and guided walks and talks that inform participants about the natural, Aboriginal and European heritage of the North Sydney area. Other outdoor environmental activities allow children to experience our natural environment in ways that are both educational and enjoyable.

## **2.5 Current Management Programs**

North Sydney Council's Bushcare program commenced in 1993. It aims to increase community awareness of bushland issues in the local area by facilitating active community participation in bushland management. The program involves community volunteers working with Council to conserve and rehabilitate publicly owned natural bushland in the North Sydney area.

Council's Bushcare program provides a structured and supportive framework within which to integrate the community with the management of bushland. People wanting to make a positive contribution to their local bushland can play an active role in bushland rehabilitation in North Sydney, maintaining and increasing the health of bushland in public reserves. The volunteer program is integrated with the works of Council staff, contractors and other community groups who all contribute to the management of bushland.

Council has approximately 150 Bushcare volunteers working around reserves in North Sydney. The benefits of being a Bushcare volunteer include:

- An outdoor working environment
- Healthy, active and fun activities
- The opportunity to meet like-minded people and enjoy social events
- The opportunity to attend training, participate in guided bushwalks and join programs including Wildlife Watch, Adopt-a-Plot and Native Havens
- A sense of personal achievement through community involvement

Council recognises the importance of volunteers and is committed to the long-term support of the Bushcare program. Council provides tangible resources such as plants, mulch and stonework, as well as supplying fully qualified and experienced professional supervisors to support and guide volunteers, organising training sessions and supplying information designed to increase the skills of volunteers.

The following Bushcare groups are currently active in North Sydney:

- Smoothey Park, Wollstonecraft
- Badangi Reserve, Wollstonecraft
- Harry Howard Reserve, Wollstonecraft
- Balls Head Reserve, Waverton
- Forsyth Park, Neutral Bay
- Brightmore Reserve, Cremorne
- Mortlock Reserve, Cammeray
- Tunks Park West, Cammeray
- Tunks Park East, Cammeray
- Cremorne Reserve, Cremorne Point
- Primrose Park, Cammeray
- Bushcare Community Nursery, Coal Loader Centre for Sustainability, Waverton

Groups meet throughout the Bushcare year of February-November. Group Conveners meet with Council's Bushcare Officer twice a year to discuss issues relating to their Bushcare group and the program. Over 600 people are registered in Council's Bushcare database and receive the quarterly Bushcare Newsletter.

#### 2.5.1 Volunteer Aboriginal Site Monitoring

In 2008, the Aboriginal Heritage Office (AHO) commenced a project using local volunteers to monitor Aboriginal archaeological sites in bushland reserves. Local volunteers are trained in Aboriginal heritage sites awareness, and they periodically visit sites to check their condition. They alert authorities if there are any management issues. Rock art sites, engravings, burials, grinding grooves and extensive shell middens are just some of the sites being monitored by AHO trained and supervised community volunteers.

#### 2.5.2 Wildlife Watch

Participants in Council's Wildlife Watch program send records of fauna sightings to

Council. This provides Council with valuable information regarding wildlife in the North Sydney area, and is also a good starting point for a range of more detailed fauna studies. Council's Wildlife Watch reports are sent through to NSW National Parks and Wildlife Service on a regular basis. Similar programs operate in other Council areas.

### 2.5.3 Native Havens

Through its Native Haven program, Council assists residents who wish to help the environment by using local indigenous plants in their garden. Native plants provide food, shelter and nesting materials for native animals. Each garden that replaces exotic and hybrid plants with native plants increases the resources available to wildlife in North Sydney, effectively increasing the area of bushland. By eliminating weeds with seeds, fruits and propagules that are easily transported from gardens into bushland, fewer resources are required by Council to restore degraded bushland and the sustainability of bushland processes is strengthened.

Importantly, the Native Havens program supports Council's strategic objective of strengthening the connectivity of green corridors between remnant bushland areas. These links are vital to biodiversity conservation and the long-term health of our bushland plant communities.

Through the Native Haven program, Council supplies the local community with:

- Free local native plants
- An extensive list of local native plants
- Advice on suitable local native plants for individual gardens
- Ongoing advice and support

### 2.5.4 Adopt-a-Plot Program

In 2005 a grant-funded program known as the Adopt a Plot Envirofund project commenced in Cremorne Reserve, enabling residents to team up with Council bush regenerators to 'adopt' and care for a plot of bushland near their home. Residents choose to contribute time and/or money; to work with a qualified bush regenerator or to pay for a professional bush regenerator to work on their chosen plot. A commitment of only 3 hours a month is required. The success of the program in Cremorne Reserve led to its expansion into Tunks Park, Primrose Park, Harry Howard, Badangi and Gore Cove Reserves.

A qualified bush regenerator assists Adopt-a-Plot participants by:

- Identifying the range of weeds in the plot and formulating a rehabilitation plan
- Coordinating the implementation of this plan in partnership with the participant
- Teaching participants to control weeds and to recognise native species
- Teaching participants that their actions are part of a long-term process
- Ensuring the safety of participants and the protection of the environment

The Adopt a Plot program has significantly improved the quality of bushland in the areas where it operates. Although rehabilitating bushland through natural regeneration is a slow process, it is also the most effective process, as the original native plant species that naturally regenerate have a far better chance of out-competing weed invasion, resisting pests or disease, and surviving changing climatic conditions.

Planting locally-sourced native species at some plot sites has been necessary to overcome problems such as soil disturbance, rubbish dumping, and excess nutrients from sewerage or stormwater leaks, all of which reduce the likelihood of natural regeneration taking place.

The Adopt-a-Plot Program also provides volunteer opportunities to local companies whose staff are encouraged (and sponsored) to participate in environmental improvement programs as part of their corporation's social sustainability initiatives. Adopt-a-Plot Corporate Groups provide additional support to existing 'plots' however there is future scope for these groups to adopt sites of their own to rehabilitate with Council.

### 3.0 **Planning Issues**

#### 3.1 **Background**

Bushland is subject to a variety of pressures and impacts from both within and outside Council's bushland reserve system. The major impacts on bushland in North Sydney have included:

- Vegetation clearing
- Fragmentation of bushland areas
- Infilling of estuaries
- Piping and channelling of creeks
- Siltation of creeks
- Preclusion of natural fire regimes
- Introduction of exotic species/weeds
- Existing stormwater outlets and the introduction of new stormwater lines
- Fertilisers adding nutrients to the natural soil composition
- Dumping, including garden refuse and lawn clippings
- Pets and feral animals
- Native species imbalances (eg large, territorial birds)
- Leaking sewer infrastructure
- Tree vandalism
- Recreational pursuits and an intensification of bushland use linked to increasing population density
- Climate change

A significant commitment to the planning and management of these pressures and impacts is needed to prevent the bushland environment from suffering further degradation and biodiversity loss which would ultimately result in increased costs for rehabilitation and maintenance of bushland areas.

Most management issues and environmental factors are highly interrelated and are often the result of cumulative impacts rather than impacts from point sources. As such, an holistic approach to bushland management is required. To achieve this, planning issues addressed in this document have been divided into key ecosystem components - flora, fauna and fire. In addition to these are the management issues of recreation and interpretation, community involvement and volunteer management, heritage management, data gathering and monitoring and ongoing pressures of development and redevelopment.

#### 3.2 **Flora Management**

Flora management aims to conserve native vegetation communities, habitats and biodiversity. To achieve this the following issues must be addressed:

##### **3.2.1 Nutrient Control**

Excessive soil nutrients are the main cause of weed invasion in bushland. Minimising the entry of nutrients into bushland reserves is therefore critical to the long-term

conservation of indigenous flora.

Most nutrients enter bushland via stormwater, household runoff, dumped soil/green waste and sewerage leaks. Removing nutrients from stormwater requires the development of infrastructure such as gross pollutant traps, sedimentation basins and wetland filters. Diverting urban stormwater away from bushland areas is an effective method of minimising nutrient entry. To be successful, such measures must be complemented by the adoption of a total catchment management approach to management practices, community education, development controls and enforcement of pollution control regulations.

### 3.2.2 Weed Control

Weeds in urban areas, including residential gardens, often provide a source for weed infestation in bushland and can hamper the efforts of Council and the community in rehabilitating bushland. Weeds in bushland are managed and controlled in accordance with the *Biosecurity Act 2015* and best-practice natural area restoration principles expressed in the Bushland Rehabilitation Plans 2019-2029. Given the nature of weed spread, measures to control noxious weeds are implemented as part of a regional control strategy.

The identification and protection of dense weed thickets critical to the survival of small bush birds was a recommendation of Council's 2007 Continuing Bird Survey report. These areas were subsequently identified in several bushland reserves and were designated 'Dense Weedy Habitat Zones'.

These Dense Weedy Habitat Zones generally contain very little or no resilience and are dominated by exotic weed species forming a dense, structurally complex vegetation community. They should be retained and contained, and the physical spread of weeds from these areas into adjoining bushland rehabilitation areas should be prevented. Rehabilitation of these Zones is a long-term objective, however, foundation work in these areas has begun, such as with the strategic planting of native canopy trees in Primrose Park.

### 3.2.3 Stormwater

Stormwater drains are the major contributor to bushland degradation in North Sydney. Several major stormwater pipes drain still directly into bushland areas and form deep channels from the effects of erosion and high velocity storm-flows. They also result in considerable waste matter and litter being deposited in the bushland.

Since the preparation of the original Bushland Plan of Management in 1995, Council has undertaken numerous projects to counter the effects of stormwater entering bushland areas, adopting a Total Catchment Management approach using Water Sensitive Urban Design (WSUD) principles. Rehabilitation and mitigation works include rock armouring drainage outlets and planting urban stormwater-tolerant natives and constructing stormwater reduction devices to reduce erosion, constructing bio-retention basins, sediment basins or wetlands to reduce levels of stormwater contaminants and nutrients from flowing into bushland and waterways. Council also investigates the feasibility of installing gross pollutant traps around significant pipe outlets.

### 3.2.4 Bushland Rehabilitation

In bushland areas where weed species have outcompeted native flora, management works, in the form of bushland rehabilitation are required. The Australian Association

of Bush Regenerators defines bushland rehabilitation as:

*‘The practice of restoring bushland by focusing on reinstating and reinforcing the system’s ongoing natural regeneration processes.’*

Bush regeneration is not just weed removal; it is an integrated approach that encourages the bush to ‘bounce back’ through natural processes. It considers environmental factors such as fauna habitat, drainage, weed sources, nutrient levels, disturbance and the ability of native bushland to re-establish itself. Key to this process is ‘resilience’; the intrinsic ability of a bushland area to regenerate itself following a natural disturbance event such as fire. Fundamental to this ability is the soil seed bank – upper layers of the soil profile and accumulated leaf litter in which years of accumulated plant seeds and propagules are stored. Where the soil seed bank has been lost due to factors such as excavation, dumping of soil, erosion or eutrophication, resilience declines and rehabilitation options turn from regeneration to replanting.

Bush regeneration involves the progressive removal of weeds, spraying, pile burns, weed removal and brush matting. It is a long-term process involving many stages of development. Once regeneration of resilient bushland has commenced the process must be sustained. Ceasing a bush regeneration project too soon can sometimes cause more damage to an ecosystem and its future sustainability than not starting in the first place. Council is committed to the long-term conservation of North Sydney’s bushland assets. Bush regeneration is a labour and time intensive exercise that must be carefully planned and carried out and monitored, to make best use of limited resources.

### 3.2.5 Vegetation Management in E2 Environmental Conservation areas

General goals for land in North Sydney zoned E2 Environmental Conservation (under NSLEP 2013) are set out below. Detailed information on bushland management goals for specific bushland reserves is contained in Council’s Bushland Rehabilitations Plans 2019-2029.

- Maintain and enhance biodiversity and habitat for long term ecosystem resilience and function
- Conserve all threatened, and regionally significant flora and fauna species known or likely to occur in / naturally colonise the reserve
- Strategically restore bushland (prioritise areas of highest resilience)
- Enhance habitat connectivity
- Preserve genetic integrity of the vegetation community
- Manage the impacts of stormwater pollution and urban runoff on bushland and creek water quality
- Conserve the natural landscape and heritage values
- Provide for sustainable and bushland-sensitive recreation needs of the community
- Prevent inappropriate use of public bushland; regulate activities that risk bushland values, and
- Implement the strategic fire hazard reduction program and manage fuel to protect life, property and endemic biodiversity

### 3.2.6 Flora Protection

Most of North Sydney’s bushland is located on the harbour foreshores, and conflicts can arise between the conservation of canopy trees in bushland and the desire of some residents to enhance harbour views. The conflict can result in illegal destruction of



canopy trees that are important aesthetic and ecologic components of bushland. Community education is helping to reduce such incidents and the community is encouraged to report unauthorised activities such as poisoning or lopping of trees. Council's Tree Vandalism Policy strengthens the protection of flora in North Sydney. Other planning instruments providing protection to flora in the North Sydney area include the *EPA Act 1979*, SEPP 19, and NSLEP 2013.

Council's Urban Forest Strategy 2018 sets out the proven benefits that trees provide in an urban environment and states that all new planting should be sympathetic to the existing established landscape character. By striving to improve the quality of vegetation in all parks and reserves, Council is helping to increase biodiversity in the area. By carefully selecting species based on mature size, foliage density, growth habit and branching structure near popular vantage points, existing scenic views can be maintained.

In accordance with the Street Tree Strategy and the Urban Forest Strategy, Council is working to increase the level of canopy cover over the whole of the North Sydney Local Government Area. In bushland areas Council is aiming for 100% canopy cover, achieved gradually, in line with available tree maintenance resources. New tree plantings will be sited taking access, solar access and mature tree dimensions into account. Where remnant canopy species naturally regenerate, they will be protected in-situ unless, once mature, they would pose a potential hazard to life or property. Annual aerial photographs measure and document canopy cover levels.

### 3.2.7 Maintenance of Trees on Public Land

#### Essential Pruning

Council only prunes trees where the pruning is essential to maintain the health of the tree, or to ensure safety of persons or protect property. Council prunes in accordance with the Australian Standard for Pruning of Amenity Trees and will generally only prune for the following reasons:

- To provide clearance for traffic, and vision of essential traffic signage
- To allow pedestrian access
- To provide safety clearances around buildings and services
- To train young trees to an appropriate form
- To maintain a safe tree crown (eg remove dead or damaged branches)

While Council does not prune privately owned trees, if private trees encroach into target clearance spaces, Council may require the tree's legal owners to prune the tree.

#### Cosmetic Pruning

Cosmetic pruning encompasses pruning practices that are not essential to public safety or the health of the tree. These include thinning for views or light penetration, shaping for aesthetic reasons and removal of overhanging branches beyond Council's target clearances. Council does not allow cosmetic pruning of any vegetation located on land zoned E2 Environmental Conservation.

#### Removal of exotic trees from land zoned 'E2 Environmental Conservation'

Council only removes large/mature exotic trees from areas zoned 'E2 Environmental Conservation' for reasons of safety, or where their removal is identified in Bushland Rehabilitation Plans. Removal of exotic trees occurs gradually, over time, to ensure there is no significant loss of canopy cover. Replanting of appropriate native species takes place in association with the removal work.

In bushland areas of Cremorne Reserve, Coral Trees (*Erythrina sp.*) have been gradually removed and replaced with indigenous canopy species, such as Sydney Red Gums (*Angophora costata*). Coral Trees have a deleterious impact on bushland biodiversity; they out-compete native species and prevent the germination and establishment of native species underneath their canopy. For every Coral Tree removed, many native grasses, shrubs and canopy species either regenerate naturally or are planted to compensate.

### 3.3 Fauna Management

European settlement has significantly decreased the diversity of fauna that was present in the North Sydney area prior to settlement. The loss of fauna species is the result of a range of cumulative impacts including the isolation/fragmentation of bushland reserves and their small size, incompatible adjoining land uses, predation and competition by feral and domestic animals and, sometimes, a too-rapid rate of removing habitat-providing weeds such as lantana.

#### 3.3.1 Bushland Fragmentation

The negative effects of fragmentation, isolation and constrained habitat size on fauna can be lessened by developing wildlife corridors and habitat islands and by promoting habitat creation in areas adjoining bushland.

Over recent years Council has held tree planting days in bushland areas on North Sydney's borders that are contiguous with bushland in adjoining Council areas. By adopting a co-ordinated management approach, neighbouring land managers can provide vegetation corridors for the wider movement of fauna. Wildlife corridors can also be extended to other reserves within a Council area through planting along streets and on private property. Such initiatives require significant community support and involvement to succeed.

Property owners near bushland can also help to conserve fauna by providing appropriate habitat on their property and controlling domestic animals. Such community involvement is facilitated by Council through the Native Havens program.

#### 3.3.2 Habitat and Weed Management

Council's Bushland Rehabilitation Plans 2019 note that diversity of fauna species has declined in the North Sydney area over the last 200 years. This is largely due to land clearing and loss of hollow bearing trees, urbanisation, the introduction of pets, feral animals and weeds, degradation of bushland remnants, a decline or localised loss of native plant species, changes to vegetation structure and function and, most importantly, bushland fragmentation. Bushland fragmentation poses the greatest management challenge to bushland managers today.

Certain weeds can offer similar fauna habitat to native plants, and it is important to treat some degraded areas as fauna refuges and to ensure minimal disturbance to the habitat value when developing bush regeneration strategies. Rapid removal of lantana can be problematic, and some species of small birds may have been lost due to its removal over the last 30 years. Information gained through Council's Continuing Bird Surveys and observations made by Wildlife Watch participants assists Council to determine the habitat preferences of local fauna species.

Standing dead trees and fallen wood provide important habitat for native fauna as they contain nesting hollows and perform other ecological roles essential to bushland

function. The removal of dead trees and dead wood is listed as a key threatening process to bushland ecology under the *Biodiversity Conservation Act 2016*. Council only removes dead trees and dead wood from land zoned E2 Environmental Conservation where a risk to public safety is identified.

Council's Bushland Rehabilitation Plans provide fauna management strategies to improve biodiversity and resilience in North Sydney's bushland reserves. They suggest that with appropriate management, the remaining fauna species may be able to bounce back within the limits of the carrying capacity of bushland remnants and wildlife corridors which link bushland remnants across the landscape.

### 3.3.3 Pets and Feral Animals

European settlement and urbanisation have caused the fragmentation and isolation of urban bushland reserves. Many are now too small and too distant from larger natural areas to support a great diversity of indigenous fauna species. The introduction of non-native fauna that has subsequently turned feral, as well as high rates of companion animal ownership, have resulted in higher levels of predation and increased competition for resources. This has further impacted upon indigenous fauna and has led to a loss of species diversity. Some of the most well-known feral animals in Australia include the European Wild Rabbit, European Red Fox, cats, feral pigs, goats, deer, Cane Toads and Indian Mynas.

Council carries out fox baiting programs to protect native wildlife from predation as required. The programs are most effective when undertaken in conjunction with adjoining land managers. Extensive public notification is undertaken prior to each program commencing including information on Council's website, signage erected at all entrances to the affected bushland, and a letterbox drop to residents in the vicinity. Dogs and cats are prohibited from entering all baited reserves for the duration of the program, and a mandatory 4-week period of exclusion follows the program's cessation. The public notification process includes a date on which leashed dog walking may resume in the affected area.

### 3.3.4 Wildlife Protection Areas

Wildlife Protection Areas are declared under Section 30(1)(b) of the *NSW Companion Animals Act 1998* for the protection of native animals and their habitats. North Sydney Council has declared Wildlife Protection Areas under the Act, in the following bushland reserves, identified as supporting the highest diversity of native animals:

- Balls Head Reserve, Waverton
- Badangi Reserve, Wollstonecraft
- Smoothey Park & Gore Cove Reserve, Wollstonecraft
- Tunks Park, Cammeray
- Primrose Park, Cremorne

Native wildlife is particularly vulnerable to cat and dog predation. The number of native animals injured or killed can be considerably reduced when people keep their cats on their property and walk their dog on a leash on designated paths.

Wildlife Protection Areas were declared in North Sydney in 2010 to provide protection for species known to be at risk from cat predation including the Superb Fairy Wren, the White-browed Scrub Wren and the Spotted Pardalote. Since the introduction of Wildlife

Protection Areas (and in conjunction with Council's fox baiting program) animals including Long-nosed Bandicoots and Lyre Birds have been sighted in bushland.

To ensure the safety of both native animals and pets, the following restrictions apply when visiting a Wildlife Protection Area:

- Cats are prohibited from entering a Wildlife Protection Area (they can be seized, and the owner may incur a fine under Section 30 of the *Companion Animals Act 1998*);
- Dogs must be kept on a leash and stay on established tracks (Owners of dogs roaming off-leash within bushland of a Wildlife Protection Area may incur a fine under Section 14 of the *Companion Animals Act 1998*);
- Failure of an owner or handler to immediately remove their dog's faeces may incur a fine under Section 20 of the *Companion Animals Act 1998*.

Cat trapping may be carried out by Council in Wildlife Protection Areas in response to reports of domestic and feral cats harassing or killing native wildlife. Residents adjacent to the reserves will be notified and signs will be installed at the reserve entrances prior to the commencement of any trapping program.

Council undertakes community education programs to encourage pet owners to adopt the principles of responsible pet ownership including keeping pets indoors at night and disposing of pet faeces appropriately. Council's Bushland Rehabilitation Plans 2019-2029 seek to expand the declaration of Wildlife Protection Areas to all remnant bushland reserves in North Sydney.

### 3.3.5 Dogs in Bushland

With numerous parks and reserves where dogs can be exercised off-leash, North Sydney is a dog-friendly area. However, there are some restrictions. Under Section 14 of the *Companion Animals Act 1998*, dogs are prohibited in the following public places:

- In or within 10m of any children's play areas
- Food preparation and/or consumption areas (unless it is a public thoroughfare such as a road, footpath or pathway)
- Recreation areas where dogs are declared prohibited
- Public bathing areas where dogs are declared prohibited
- School grounds (unless with the permission of the person controlling the grounds)
- Child care centers (unless with the permission of the person controlling the center)
- Shopping areas where dogs are prohibited (unless secured in a vehicle, with the permission of the person controlling the place or going to or from a vet or pet shop)

North Sydney's Local Companion Animals Management Plan imposes some additional restrictions. All Council parks and public reserves are off-leash areas except for:

- St Leonards Park (ovals no. 1 & 2)
- All playing fields whilst organised sporting events are in progress
- All bushland areas
- Cremorne Reserve, Clark Park and Ancrum Street Park
- The Coal Loader Centre for Sustainability

All dogs in public places must be under the control of a competent person. As per the *Companion Animals Act*, the maximum number of dogs that a person is permitted to handle in a public place is 4. Council is required by the State Government to enforce the laws concerning dogs, and Council Rangers may issue on-the-spot fines for infringements.

### 3.4 Fire Management

Fire is a fundamental ecological management tool. When used correctly it can significantly assist the regeneration of resilient bushland areas, improving biodiversity and stimulating the germination of species which may have senesced over time and no longer occur above the ground.

Council uses managed burning to meet both ecological objectives of bush regeneration and hazard reduction to adjoining residential housing. The use of fire for either hazard reduction or ecological management must be carefully planned and should consider the implications of burning on local fauna, smoke emissions, soil erosion and weed management. The use of fire for ecological management generally will only occur in areas of low to moderate fire hazard.

Strict legislation controls bushfire management including burning of bushland for ecological purposes. Bushfire can only be conducted in compliance with the Rural Fires Act 1997 and the Mosman North Sydney Willoughby Bushfire Risk Management Plan (BFRMP).

The BFRMP identifies community assets at risk and sets out a 5-year program to remove, reduce or mitigate the risk. Actions include hazard reduction burning, community education, fire trail maintenance and establishing community fire units. Annual programs to implement these actions are carried out by the relevant land managers and fire-fighting authorities. The BFRMP also aims to manage fuel to reduce the rate of spread and intensity in the event of a bushfire, while also minimising environmental and ecological impacts.

Council implements controlled hazard reduction burns in relevant bushland reserves in North Sydney, in cooperation with the NSW Fire & Rescue and the Manly-Mosman-North Sydney-Willoughby Bushfire Management Committee, and in accordance with the BFRMP. Residents are notified when a controlled burn is scheduled to occur in their area. Council's Bushland Rehabilitation Plans contain further detailed information regarding current and future fire management activities in North Sydney.

### 3.5 Heritage Management

Because they are generally amongst the areas least disturbed by development, bushland areas play a vital role in conserving many known and unidentified sites and items of Aboriginal and European heritage significance.

The long-term conservation of heritage sites and items depends on careful management. Potential threats include vandalism, disturbance, removal of vegetation, erosion and compaction caused by people walking on sites, weathering and decay, damage and instability from invasive root systems, fire and smoke damage, insensitive development activities and construction of bushland infrastructure such as walking tracks.

Bushland management works such as walking track construction and bush regeneration

must consider the location of known and potential Aboriginal and European sites and items and adopt appropriate strategies to protect them. Interpretation of selected sites can increase community awareness and recognition of the value and need to conserve sites.

The Aboriginal Heritage Office (AHO), the Metropolitan Local Aboriginal Land Council (MLALC) and the NSW Department of Planning, Industry and Environment are key stakeholders in relation to Aboriginal sites. Council's Heritage Officer and the NSW Office of Environment and Heritage and interested groups such as the National Trust are key stakeholders for non-Aboriginal heritage.

As all Aboriginal and non-Aboriginal heritage is protected in North Sydney LGA, all heritage sites require investment in identifying values, specialist management and certain bush regeneration practices, monitoring and maintenance in consultation with relevant stakeholders. Council's BRPs 2019-2029 contain detailed strategies to identify, manage, protect and promote items and sites of heritage significance in North Sydney's bushland.

### 3.6 Climate Change

The Natural Area Survey 2010 contains information on climate change that is relevant to North Sydney. The Survey notes that while climate change has occurred throughout geological history, human-induced climate change is occurring at a faster rate than has previously occurred naturally, and human-induced climate change is occurring in a highly modified landscape which may limit the ability of organisms to survive climate change through dispersal. If the rate of climate change is faster than the rate of natural adaptation, substantial losses of biodiversity are likely.

Climate change is being caused by a build-up of carbon dioxide, methane and other greenhouse gases in the earth's atmosphere. There is evidence that concentrations of greenhouse gases will continue to rise for a substantial period even if emissions are stabilised or decreased. Modelling (by the Bureau of Meteorology and the CSIRO) shows that in coming decades in Eastern Australia average daily temperatures will rise, sea levels will rise, there will be increased storm and wave surges and the shoreline will retreat.

Projected sea level rises would impact on low-lying vegetation communities such as the Estuarine Mangrove Forest, Estuarine Salt Marsh and Estuarine Swamp Oak Forest at the mouth of Berry Creek; and the areas are likely to become permanently inundated. Other vegetation communities fringing Port Jackson and Middle Harbour in North Sydney's various waterside reserves are likely to be reduced. More frequent intense rainfall events would result in more frequent high flow events in creek lines such as Berry Creek, Quarry Creek and Willoughby Creek, with associated flooding, erosion, scouring of the stream bed, and movement of sediment. With most of North Sydney's remaining bushland occurring on moderate to steep slopes, the risk of increased erosion away from creek lines is also high.

Our understanding of how the natural environment will respond to climate change is limited. There are significant uncertainties regarding biological responses to climate change, but the impacts on biodiversity are likely to be varied. In North Sydney, the structure and composition of the vegetation communities and faunal assemblages are likely to change as the competitive abilities of component species change. Weed and pest species which adapt readily to change may become more problematic and the capacity of bushland to recover from burning is likely to decrease as the impact of extreme

temperatures and intense rainfall events becomes more frequent. These factors may result in a changed 'look and feel' to bushland areas in North Sydney.

While impacts of climate change may appear to be beyond the scope of local management, it is important to manage existing biodiversity to facilitate the long-term adaptation of species and communities to climate change as far as possible. Council should aim to build ecological resilience in bushland reserves by reducing existing impacts such as invasive weeds and altered fire regimens. Opportunities to rehabilitate or re-establish native vegetation on currently degraded land and to enhance habitat for already vulnerable species should be pursued. The capacity of local flora and fauna to adapt to climate change is likely to be constrained by small populations, and hence low genetic diversity, coupled with isolation. Linkages between bushland remnants are a critical factor in the long-term sustainability of our remnant natural areas and must be enhanced where possible.

### 3.7 Recreation Management

Bushland reserves in North Sydney are well-used due to the area's population density, due to their attractive and often spectacular harbour foreshore settings and due to the community's need for respite from the busy urban environment.

Council provides and maintains walking tracks and ancillary facilities such as toilet blocks, electric barbecues and interpretive signage in many of the bushland reserves to cater for people walking, picnicking, enjoying scenic views and appreciating nature. Bushland areas are also commonly used by dog walkers (on leash), by people walking to the foreshores to fish or to access the harbour, and by amateur and commercial photographers and videographers.

The high level of use bushland receives puts it under significant pressure. Council must address issues including vegetation damage, rubbish dumping and littering, vandalism and 'bush-bashing', track erosion and disturbance to habitat. Dogs off-leash can disturb and change native wildlife behaviour, and the scent dogs leave behind inhibits wildlife movements, foraging and breeding. Issues associated with requests to film in bushland areas can generally be addressed by Council officers working with the applicant to select an appropriate location and imposing a series of conditions.

Bushland areas adjoining playgrounds and grassed picnic areas are often used by children exploring and building cubby houses. Special events such as New Year's Eve can cause bushland in foreshore areas to be trampled by the large volume of visitors seeking to view the fireworks from a limited number of vantage points.

Unrestricted and inappropriately located storage of small water craft, (predominantly dinghies and kayaks) can result not only in a degraded foreshore environment, but in degraded access paths and the creation of informal tracks.

Storage of water craft in foreshore areas zoned E2 Environmental Conservation is usually inappropriate, and Council's Small Water Craft Storage Strategy 2018 (SWCSS) prohibits dinghy and kayak storage in most of North Sydney's bushland reserves, except for:

- Folly Point and Gore Cove Reserve (formal storage facilities are provided at specific locations)
- Primrose Park (a specific location has been identified for future formal storage)

- Sugarworks Reserve/King Street Road Reserve (identified for future informal storage)
- Coal Loader Centre for Sustainability (may be able to accommodate formal storage in the future)
- Cremorne Reserve (identified for future informal storage)

Note: future storage sites have been identified at Berry Island Reserve and Tunks Park, however they are in the parts of those reserves zoned RE1 Public Recreation.

The following factors will be considered by Bushland Management staff prior to permitting storage of small water craft in any areas zoned E2 Environmental Conservation:

- The location of sensitive foreshore native vegetation
- The presence of highly erodible soils
- Steep topography coupled with difficult and unstable access
- The potential presence of Coastal Saltmarsh habitat (an Endangered Ecological Community)
- Proximity to known and potential Aboriginal heritage sites and items
- Accessibility (safe and stable access points to water craft storage facilities)

The SWCSS recommends that strict conditions of use be imposed on storage sites in bushland, and that these must be signed-off on by potential hirers. Storage must be undertaken in as sustainable a manner as possible, and it must have minimal impact on the natural environment. For example, at Folly Point, duck boards provide access to dinghy racks. The number of Permits issued for foreshore bushland sites will also be carefully limited.

Activities in bushland reserves need to be managed to ensure that the reserves can be maintained in a healthy condition and their values protected. Council prohibits rock climbing, mountain biking, orienteering, geo-caching and camping in its parks and reserves, however, these activities continue to occur from time to time. In addition to creating informal tracks and causing erosion and vegetation damage, there are considerations of safety and risk management associated with these activities. Rangers patrol all parks and reserves and may be called out as needed.

Popular harbour viewing points in bushland (Cremorne Reserve and Balls Head Reserve) are managed and monitored each New Year's Eve to improve public safety, control crowd behaviour and minimise adverse impacts on the environment. Infrastructure including fencing, portable toilets and garbage bins is provided, and traffic plans and street closures are put in place. Relevant information is posted on Council's website in December each year and is distributed to affected households. (add something in to matrix about considering closing Balls Head on NYE as recommended by police and BFMC)

Trackhead and interpretive signage along bushland trails is a valuable tool that Council uses not only to assist visitors with wayfinding, but to educate visitors about the bushland. Signage can:

- Increase public awareness of the importance of bushland and of the threats it faces
- Describe special ecological features or functions



- Highlight a degraded area and explain the cause of degradation
- Describe rehabilitation work currently being implemented
- Explain the impacts of recreational activities which are prohibited in bushland
- Educate visitors about Council's programs and encourage them to get involved
- Provide direction on permitted and prohibited activities in bushland

More information regarding strategies to manage the impacts of recreational activities on bushland reserves are set out in Council's Bushland Rehabilitation Plans 2019-2029.

### 3.8 **Bushland Monitoring**

Monitoring is an important component in the management of ecological systems. The response of areas to similar treatments can differ widely and it is therefore important that responses are monitored, treatment strategies adjusted accordingly, and the efficiency of various techniques evaluated. Programs monitor the response of areas to ecological management burns, rate of regeneration following rehabilitation works and the response of different plant species in nutrient enriched areas.

Although bushland rehabilitation has been occurring in North Sydney since the early 1990's, it was the completion of a Natural Area Survey in 2010 that established a comprehensive ecological baseline from which future comparisons of species richness and ecosystem improvements could be made.

A comprehensive list of factors to be monitored, along with appropriate methods for monitoring each factor, is included in the BRPs 2019. On-going monitoring will be carried out throughout the life of the Plans to obtain qualitative and quantitative data and to determine whether objectives are being achieved. An adaptive management approach will be taken whereby the feedback from monitoring will be assessed and proposed actions revised to obtain optimal outcomes.

Monitoring will play a crucial role in identifying and measuring the impact of climate change over time. Factors that will need to be monitored will include temperature and rainfall, frequency and severity of bushfire, extreme weather events, raised sea levels, foreshore erosion and impacts to Aboriginal middens as well as species survival rates and changes to the structure and function of bushland.

### 3.9 **Bushland Planning and Management**

Bushland affected by this Plan of Management is located on a combination of Council-owned land and Crown land. The Plan seeks to establish a clear management direction and to achieve an holistic approach to the ongoing stewardship of bushland in North Sydney by providing guidelines for the future use, development, management and maintenance of all areas zoned E2 Environmental Conservation under Council's LEP 2013.

#### 3.9.1 Bushland Management Program

Council's Bushland Management Program has a wide array of functions and caters for a diverse range of stakeholders. For the program to be effective, considerable resources are required at a management level, as well as for on-ground works.

Aside from Council, various funding sources are available for natural resource management in North Sydney. These include a range of government grants available to

environmental and recreational projects, corporate sponsorship, and environmental levies. These alternate funding sources are monitored and actively pursued as appropriate.

Funds from North Sydney Council's Environmental Levy are used exclusively to finance environmental programs and initiatives that are documented in Council's existing environmental strategy documents. Work includes bushland rehabilitation, habitat augmentation, pest management, threatened species recovery, stormwater management, Bushcare volunteer support, biodiversity education and engagement, walking track upgrades, the Bushcare Community Nursery and the Adopt-a-Plot program.

Council's bushland management program also addresses issues such as skills of staff, contractors and volunteers, risk management issues and monitoring, co-ordination and implementation of the Bushland Plan of Management and the BRPs.

Bushland is protected from inappropriate development under the Council's LEP 2013. Bushland areas are zoned E2 Environmental Conservation in the LEP. 'Appendix 3 – Zoning of Bushland' provides a list of objectives for land zoned E2 Environmental Conservation, along with a list of activities and works that may be undertaken either without or with development consent, or that are prohibited.

### 3.9.2 Encroachments

This Plan of Management aims to ensure that any current or future encroachments onto bushland in public ownership are dealt with consistently, appropriately and in the best interests of the public.

Council's Encroachment Management Policy defines an encroachment as: *'the intrusion of a structure or other object onto land owned or controlled by Council'*. Encroachments typically include fences, steps, paths, paved areas, seating, small buildings such as sheds and vegetation planted to imply a boundary. Encroachments alienate public land and prevent the public from using public open space. Private encroachments onto bushland in public ownership are not permitted.

In accordance with the *LG Act*, Council-owned bushland is classified as 'community land'. It is further categorised as a 'natural area – bushland', as per Section 1.4 Land Categorisation and Core Objectives.

Community land cannot be sold and is subject to strict restrictions to ensure its long-term retention for public use. Encroachments onto community land are not permitted unless authorised by a lease or licence in accordance with the *LG Act*. The Act provides that Council may lease or licence community land where it is expressly authorised to do so under a Plan of Management, and where the purpose for which the lease or licence is issued is consistent with the core objectives for the area of community land in question. If the purpose of the lease or licence is not consistent with these core objectives, a Plan of Management authorising it is rendered invalid.

Encroachments onto Crown land are not permitted unless authorised by a lease or licence in accordance with the *CLM Act* and the *LG Act*. Refer Section 1.5 – Leases, Licences, Permits and Other Estates for further details.

### 3.9.3 Community Involvement

Community involvement in managing and maintaining Council's bushland through

programs such as Bushcare and other environmental programs is a vitally important component of Council's Bushland Management Program.

Volunteers can participate in local conservation works, have input into the management of local natural resources, receive training, gain new skills and enjoy outdoor recreation with other members of their local community. Volunteers are also often pro-active in monitoring and protecting the bushland from illegal activities and negative impacts. Their efforts allow Council to utilise limited in-house resources more effectively.

A continuing commitment from Council is required to maintain and enhance the current level of community involvement in bushland management. Council must ensure this community involvement is of a high standard, and that the rights and responsibilities of volunteers are recognised and protected.

Council's Bushcare, Adopt-a-Plot and Native Havens programs exemplify how local communities can participate in bushland management. Opportunities to continue expanding these programs will be pursued as a sense of community ownership can lead to reduced anti-social and environmentally damaging activities such as dumping and tree vandalism.

Council's BRPs 2019 provide strategies to foster community engagement and involvement in the various bushland reserves in North Sydney.

#### **3.9.4 Community Education**

Community awareness of Council's role in managing and conserving bushland areas is essential, as a better understanding of the effects of activities that negatively impact bushland such as dumping rubbish and letting pets roam freely can help reduce these behaviours.

To improve community awareness, Council holds Open Days at the Community Nursery, exhibits relevant information in the display room at the Coal Loader Centre for Sustainability and on community noticeboards and keeps information on Council's web site up-to-date. The Bushcare Workshops and Events Program is a partnership program between Willoughby, Lane Cove, Mosman and North Sydney Councils that offers workshops, lectures and field trips, to provide practical education relating to the natural environment for the community.

Council also provides bespoke activities to school groups and other organisations on request. Tree planting days, Bushcare, revegetation programs, weed control and presentations on local endangered animals have occurred under the auspices of the North Sydney Environmental Educators Network (NSEEN). Council's Bushcare program also accommodates students working towards their Duke of Edinburgh Award.

### **3.10 Improvement Works**

Since the previous Bushland Plan of Management was adopted in 2014, many of the identified projects and tasks have been implemented. Completing the projects listed below has directly and significantly contributed to improvements in the quality of the bushland in North Sydney:

- Ecological burns carried out by NSW Fire & Rescue in Smoothey Park, Balls Head Reserve, Badangi Reserve, Gore Cove Reserve and Primrose Park
- Ongoing biosecurity activities and environmental weed removal

- Improved management of Aboriginal sites in bushland through ongoing liaison with the Metropolitan Local Aboriginal Land Council and the Aboriginal Heritage Office
- Upgrading of walking tracks in various bushland locations including Balls Head Reserve, Berry Island Reserve, Tunks Park and Primrose Park
- Partnerships, initiatives and education, including:
  - Ongoing Bushcare, Wildlife Watch, Native Haven and Adopt-a-Plot programs, with an increasing number of participants
  - Ongoing quarterly distribution of Council's Bushcare Newsletter
  - Annual Bushcare Christmas Party to recognise and reward volunteers
  - Ongoing Bushcare Workshops and Events program (in conjunction with neighbouring Councils)
  - Sites recognition courses to educate and inform the community about Aboriginal sites in Council's bushland reserves
  - Stormwater management projects in Brightmore Reserve, Balls Head Reserve and Tunks Park
  - Sandstone capping projects in Waverton Park and Harry Howard Reserve
  - Continuing Birds Survey 2014
- Preparation of strategic documents including:
  - Bushland Rehabilitation Plans 2019 - 2029
  - Manly-Mosman-North Sydney-Willoughby Bushfire Risk Management Plan 2017-2022
  - Annual Bushcare site rehabilitation plans
- Microbat Survey and habitat assessment 2014/15
- Nest-boxes in bushland audit, and replacement of damaged boxes with boxes suitable for species of special conservation concern

Upcoming projects are detailed in section 5.1 – Matrix. Section 5.2 - Indicative Works Program contains specific scheduling details for the planned projects and other works.

#### 4.0 **Basis for Management**

The Bushland Plan of Management guides the future management of bushland in North Sydney. It aims to sustain and improve complex ecological relationships and to maintain the environmental quality now and for future generations, whilst simultaneously minimising the effects of urban development and managing the impacts of recreational use.

Council's bushland reserves are an important part of North Sydney's open space network; they provide diverse recreational and educational opportunities for the community and add to the visual appeal and green character of the North Sydney area.

#### 4.1 **Core Values and Management Objectives**

##### **4.1.1 Core Values**

The following core values describe the most important qualities of bushland. They must be considered when future management objectives, strategies and actions are developed, to ensure their protection.

##### **Scientific and Environmental Values**

- A reminder and example of the past vegetation communities in North Sydney
- Maintaining the biodiversity of the region
- Conserving habitat diversity of species, habitats and ecosystem functions
- Protecting and enhancing resilience at every opportunity
- An educational resource
- Reducing carbon dioxide in the atmosphere and producing oxygen
- Threatened species conservation
- Ameliorating the urban heat island

##### **Cultural Heritage**

- Conserving sites and items of Aboriginal heritage significance including middens, rock art and rock shelters
- Conserving sites and items of European heritage significance
- Ensuring future generations can experience and enjoy nature in their area

##### **Visual Quality**

- Aesthetic value – providing green space is important in maintaining the quality of urban living
- Bushland provides a contrast with surrounding densely built-up urban areas
- Many of the bushland areas are on the harbour foreshore and have high scenic value and are an iconic, internationally recognised aspect of Sydney's landscape
- Views of bushland from the harbour – bushland provides an attractive land-water interface
- Excellent views of the main harbour and Middle Harbour are available from many of the bushland reserves

##### **Social/Recreational**

- Providing opportunities for the community to be involved in the protection,

management and rehabilitation of bushland

- Providing opportunities for passive recreation activities not offered by other open space areas
- Providing a venue for organised community activities such as Bushcare and other environmentally sensitive programs
- Walking tracks facilitate appreciation of bushland areas and provide opportunities for exercise and education
- Bushland reserves in high-profile foreshore locations (such as Balls Head Reserve and Cremorne Reserve) are popular destinations for visitors viewing the main harbour, the bridge and the city
- Existing bushland in North Sydney is a vital resource both for the local and wider community in an area unlikely to gain significant additional bushland areas
- Proximity of bushland areas and other open green space increases property values and enhances the social wellbeing of locals and visitors

#### 4.1.2 Management Objectives

The following broad management objectives are based on:

- legislative requirements
- the values and assets of bushland
- identified community needs and expectations
- To manage bushland in North Sydney in accordance with the North Sydney Community Strategic Plan 2018-2028, the *LG Act*, the *CLM Act* and the *NT Act*;
- To manage to land as per the provisions of State Environmental Planning Policy No. 19 *‘To protect and preserve bushland within the urban area, so as to provide representation of the original vegetation in its natural state and enable the existing plant and animal communities to survive in the long term.’*
- To manage the bushland consistently with relevant Acts and planning instruments including (but not limited to) the *Environmental Planning and Assessment Act 1979*, the *Biodiversity Conservation Act 2016*, *Biosecurity Act 2015*, the *Protection of the Environment Operations Act 1997*, the *Work Health and Safety Act 2011*, the *Pesticides Act 1999* and the *Rural Fires Act 1997*.
- To ensure all uses of bushland are appropriate; that they comply with the purpose of the land reservation, and accord with its zoning under LEP 2013, and with its categorisation under the *LG Act*;
- To protect and enhance the scientific, natural, cultural, heritage and recreational values of bushland in North Sydney;
- To manage bushland areas in accordance with sound ecological principles and practices to a condition of local native bushland consistent with relevant legislation and identified community needs;
- To ensure the conservation and appropriate management of items and sites of cultural heritage significance (both Aboriginal and European);
- To maintain the ecological integrity of bushland areas;
- To ensure that the use and management of the bushland reserves is sustainable in environmental, social and economic terms, and takes account of environmentally sustainable principles;
- To preserve, maintain and enhance the diversity of native flora as an aid to protecting native faunal communities;

- To conserve and enhance habitat for resident and seasonal native wildlife species;
- To protect the bushland ecology by controlling and restricting the spread of pest plant and animal populations in bushland;
- To protect life and property from fire, while using fire as a management tool to maintain biodiversity;
- To reduce the effect of pollution on bushland reserves;
- To reduce the impacts of weeds in bushland reserves;
- To protect the bushland from excessive runoff and stormwater, and to mitigate the negative effects of excessive runoff and stormwater;
- To manage stormwater in accordance with the principles of Total Catchment Management;
- To ensure the conservation of the existing areas of remnant bushland, and to enhance and protect the ecological quality of bushland areas;
- To encourage community participation in the guardianship of the reserves;
- To involve the community in the management of bushland and, through promotion, foster awareness and support for Council's bushland management program;
- To facilitate an understanding and awareness of the heritage and environmental values of bushland reserves;
- To provide a range of appropriate recreational opportunities within bushland reserves commensurate with their capacity as public open spaces and natural areas;
- To minimise conflict between appropriate user groups;
- To provide appropriate facilities for users of bushland reserves;
- To provide for public safety;
- To provide appropriate access to and within bushland reserves;
- To cater for users with mobility and other impairments where practical within the physical constraints of the bushland areas;
- To provide access to the water, where appropriate;
- To maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transitional area;
- To take Council's Foreshore Parks and Reserves Plan of Management into consideration in the management of foreshore bushland areas;
- To ensure this Plan of Management is flexible and able to evolve with changing community needs and attitudes.

These objectives have been used in the subsequent management issues to guide policy development and formulation of the action plan.

## 5.0 **Policy, Implementation and Performance**

The policies established in this document provide a management framework that is consistent with the anticipated availability of resources and anticipated community trends. The priority ratings outlined on the following pages may be modified if special circumstances arise.

### Codes used to define priorities in the following matrix:

ST	(Short Term)	- Action completed within 3 years
MT	(Medium Term)	- Action completed within 3-5 years
LT	(Long Term)	- Action commenced after 5 years
O	(Ongoing)	- Action is carried out on a regular basis for the life of this Plan of Management
C	(Commenced)	- Action has commenced
CP	(Completed)	- Action has been carried out

### The following acronyms are used in the matrix:

BMPs	Bushland Rehabilitation Plans
TCM	Total Catchment Management
WSUD	Water Sensitive Urban Design
NAS	Natural Area Survey
NPWS	NSW National Parks & Wildlife Service
BFRMP	Mosman North Sydney Willoughby Bushfire Risk Management Plan
PoM	Plan of Management
AHO	Aboriginal Heritage Office



## 5.1 Matrix

### BUSHLAND REHABILITATION

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Bushland Rehabilitation	To rehabilitate degraded bushland areas to a condition of indigenous local native bushland	Continue to implement bushland rehabilitation strategies in accordance with Council's BRPs	Plans are implemented by a combination of staff, contractors and Bushcare volunteers	O	Improved condition of bushland	BRPs 2019-29 NSC
		Monitor and document rehabilitation work		O	Staff and contractors regularly report on all rehabilitation works	
	To maintain genetic integrity of bushland and to restore habitat	Employ measures to trigger natural regeneration in bushland reserves and supplement with revegetation where required	Revegetation uses provenance species consistent with NAS vegetation communities	O	Effective implementation of BRPs	BRPs 2019-29 NSC NAS 2010
	To manage the provenance of seeds and propagules to maintain healthy floral genetic viability	Produce niche, uncommon and commercially unavailable species for use in bushland rehabilitation programs at Council's Bushcare Community Nursery	Role of the Nursery in promoting biodiversity and genetic viability is set out in Council's BRPs	O	Uncommon species propagated	BRPs 2019-29 NSC
		Establish a provenance protocol to guide bushland revegetation and supplementary planting activities	Best-practice 'climate ready' research is used to inform appropriate provenance sources	MT	Provenance protocol developed and implemented	
		Investigate ways to increase Bushcare Community Nursery productivity	Seek additional resources to improve Nursery operations and increase plant production	ST	Nursery output increased, reduced reliance on commercial plant suppliers	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Threatened Species	To conserve all threatened flora and fauna species in the North Sydney area	Implement recovery plans for threatened species prepared by the NSW National Parks & Wildlife Service (NPWS)	Locally rare and uncommon species were identified as part of the NAS. Recovery plans to be produced by NPWS	O	Recovery plans implemented	<i>NSW Biodiversity Conservation Act 2016</i> Natural Area Survey 2010
		Ensure relevant Council staff, contractors and volunteers are aware of locations of threatened species	Council staff undertake site inspections to familiarise contractors and volunteers with relevant locations as required	O	Relevant groups and individuals aware of locations	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Biodiversity Conservation & Monitoring	To quantify and monitor all biodiversity assets in the North Sydney LGA	Update the Natural Area Survey every 10 years	Changes in legislation and new species records are incorporated, maintaining the NS Natural Area Survey as Council's baseline ecological inventory	O	NAS updates incorporate all new species records and reflect changes in relevant legislation	<i>NSW Biodiversity Conservation Act 2016</i> Natural Area Survey 2010
		Undertake bioindicator surveys (eg Microbat Surveys, Continuing Bird Surveys etc) at regular intervals (generally 5-7 years)	This ensures that up-to-date records are maintained	O	Bioindicator databases are maintained with all known species records	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Regionally Significant Species	To identify and conserve regionally significant species in the North Sydney area	Ensure the GIS layer for threatened or significant species with their locations and conservation status is current		O	Map prepared and maintained with new records	Natural Area Survey 2010
		Implement recovery measures for all identified species in accordance with Council's BRPs		O	Recovery measures implemented and reported	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Urban Runoff and Nutrient Pollution	To adopt a Total Catchment Management (TCM) approach using Water Sensitive Urban Design (WSUD) principles to manage stormwater	Continue to liaise with relevant Council Departments and other authorities (including adjoining Councils) and adopt a TCM approach to managing urban runoff	TCM considers each drainage basin or waterway as a planning/ management land unit. The activities upstream impact on bushland and the harbour downstream. Urban runoff impacts on bushland through erosion, nutrient pollution, altering hydrology and transporting weed propagules into bushland	O	Reduction in impact of urban runoff in bushland	
		Continue to carry out appropriate rehabilitation and mitigation works	Refer Issue 'Bushland Improvement Works' for list of projects	O	Ongoing program of rehabilitation and mitigation works	
	To identify and reduce the impacts of urban stormwater runoff on bushland	Assess the environmental impact of Council stormwater devices in bushland or any diversion of runoff into bushland prior to any construction	Liaise with Engineering Dept regarding placement of gross pollution traps and other WSUD devices. Council's Bushland Management Co-ordinator carries out the assessment	O	Ongoing liaison with Engineering Department	
		Ensure developments adjacent to bushland incorporate WSUD principles and meet relevant DCP requirements and DA conditions	For example: absorption trenches, energy dissipaters, and detention basins	O	Level of compliance with DA conditions	
		Continue to educate the community about the impacts of illegal and broken stormwater systems on bushland		O	Continued distribution of education leaflets as required	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Vegetation Management	To use best-practice ecological restoration techniques to manage vegetation in areas zoned E2 Environmental Conservation	Continue to implement Council's BRPs	Bushland rehabilitation is sustainable, ecologically sound and adheres to strategic objectives	O	Area of bushland under active rehabilitation	BRPs 2019-29 NSC Local Environmental Plan 2013 NSC
		Remove inappropriate species and replace with more suitable species	Inappropriate species include self-seeded trees and shrubs that pose a weed threat to bushland areas	O	Inappropriate species removed and replaced with suitable species	
		Gradually phase out non-native trees from bushland, in conjunction with natural regeneration or planting and establishment of replacement indigenous trees	Carry out work over several years to minimise the impacts of mature tree removal on bushland and wildlife	O	Number of replacement indigenous trees planted	Local Environmental Plan 2013 NSC Street Tree Strategy 2016
		Conserve desirable endemic species when they occur because of natural regeneration	Conserve these species in areas zoned E2 regardless of the impact on views	O	Increase in the amount of natural regeneration in bushland	Local Environmental Plan 2013 NSC
	To take a holistic approach to the creation and management of green corridors	Continue to expand green corridors, in conjunction with other Council greening programs	Other programs include Native Havens, Streets Alive and general OSE operations	O	Expansion of green corridors in North Sydney	
	To consider the impact of new plantings in bushland on existing views	Minimise planting of tall, dense spreading species along the harbour foreshore where this will have an impact on existing views	Consideration of existing views must be balanced with the need to provide riparian vegetation and replacement bushland canopy	O	All new planting work is appropriate and considers impacts on views	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
	To protect trees on public land zoned E2 from illegal activities	Deny requests to trim trees on public land zoned E2 for cosmetic purposes	Cosmetic pruning on land zoned E2 is prohibited under DCP Section 16 – Trees and Vegetation Management	O	All requests for cosmetic pruning of trees in bushland denied	North Sydney Development Control Plan 2013
		Respond to the loss of vegetation arising from deliberate vandalism on public land	Response will be in accordance with Council's Tree and Vegetation Vandalism Policy	O	Appropriate action taken by Council	Tree and Vegetation Vandalism Policy 2018 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Canopy Replenishment	To achieve canopy cover targets in areas zoned E2	Continue to plant new trees to ensure canopy cover targets are reached	The canopy cover target for land zoned E2 is 100%	O	Aerial photos indicate canopy cover percentage is increasing in bushland	Urban Forest Strategy 2019 NSC
		Locate all new trees to maximise environmental and community benefits, and to minimise negative impacts	Consider access, existing sight lines, solar access, spacings, mature tree dimensions etc	O	Decrease in number of complaints about negative impacts	Street Tree Strategy 2016 NSC
		Replace trees that are removed from bushland with appropriate new trees (where space permits)	Replace trees where natural regeneration will not/ does not occur	O	Replacement tree installed if required	Street Tree Strategy 2016 NSC
		Carry out appropriate community engagement regarding all significant tree work, including tree removals and tree planting	Effective engagement provides the community with relevant information and an understanding of the complexities of tree management	O	Decrease in the number of enquiries regarding tree work	Street Tree Strategy 2016 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Weed Control	To control biosecurity and environmental weeds on land zoned E2	Implement the Biosecurity Act consistently and effectively	The Act is implemented in association with bushland management practices	O	Biosecurity Act implemented by staff and contractors	<i>Biosecurity Act 2015</i>
		Carry out weed removal programs when and where necessary	Weed removal programs are a component of Council's BRPs. The Plans prioritise weed species and locations that require targeting	O	Reduction in the levels of weeds in bushland	BRPs 2019-29 NSC
		Undertake all weed removal in a target-specific and sensitive manner, so as not to compromise wildlife habitat	Delay weed control in Habitat Protection Zones until alternative habitat is established and being utilised by target wildlife species	O	Weed control does not result in loss of significant fauna species	
		Issue Notices to properties adjoining bushland where biosecurity weeds are present	Notices require property owners to remove or manage the noxious weeds within a set time to prevent their spread into adjoining bushland	O	Notices issued as required	<i>Biosecurity Act 2015</i>
		Co-ordinate biosecurity weed control with adjoining land managers and residents		O	Biosecurity weed control co-ordinated on a regional basis	Greater Sydney Regional Strategic Weed Management Plan 2017–22

## FAUNA MANAGEMENT

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Fauna Conservation	To maintain and enhance the range of fauna habitats, conserve the remaining species and provide suitable conditions for species colonisation from adjoining habitats	Implement strategies and actions listed in the BRPs for bushland areas in North Sydney	The works aim to improve biodiversity and resilience in the North Sydney area and include establishing and embellishing wildlife corridors, installing nesting boxes, creating hollows and expanding the number of Wildlife Protection Areas (WPAs)	O	All work carried out in accordance with the relevant BRPs	BRPs 2019-29 NSC
		Ensure the safety of both native animals and pets by enforcing restrictions in WPAs	Balls Head, Badangi and Gore Cove Reserves, along with Smoothey, Primrose and Tunks Parks are all WPAs  Restrictions re domestic pets and feral animals are included in: 'Pest and Feral Animal Management'	O	Regular inspections carried out	<i>Companion Animals Act 1998</i> <i>Biosecurity Act 2015</i>
		Maintain faunal habitat including identified Dense Weedy Habitat zones during bush revegetation work	Adopt contemporary best practice bushland rehabilitation principals and techniques	O	Results of regular fauna surveys	
		Preserve, maintain and enhance existing habitat for native fauna	Both native and exotic species can provide fauna habitat	O	Results of regular fauna surveys	
		Carry out continuing bird surveys	Continuing bird surveys are undertaken at 5-year intervals	O	Surveys carried out every 5 years	
		Select and plant appropriate new trees, shrubs and ground covers to provide habitat for key/vulnerable native wildlife species in appropriate locations	Priority is given to significant and or vulnerable/ habitat sensitive species	O	Appropriate species selected and planted	



Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Encourage residents to report fauna sightings through Council's Wildlife Watch program	Information about the program is available on Council's website	O	Wildlife Watch program operates effectively	
		Create an online reporting tool for the Wildlife Watch program	Utilise existing online systems such as the Atlas of Living Australia	ST	Online reporting tool created	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Pest and Feral Animal Management	To reduce the impact of feral and domestic animals on native wildlife in North Sydney's bushland	Continue to monitor, assess and address the impacts of feral animal species on Council's bushland	The current main problem animals are foxes, dogs and cats	O	Results of regular fauna surveys monitored	
		Enforce restrictions in (Wildlife Protection Areas) WPAs to ensure the safety of both native animals and pets	Relevant restrictions are listed in the following Actions	O	Restrictions enforced	
		Prohibit cats from WPAs	Cats found in WPAs can be seized and the owner may incur a fine	O	Reduction in number of reports of cats killing native wildlife in WPAs	<i>Companion Animals Act 1998</i>
		Respond to reports of feral or domestic cats harassing or killing native wildlife in WPAs	Cat trapping may be carried out once neighbouring residents have been notified WPA notification signs are installed at reserve entrances	O	Trapping programs implemented if required	<i>Companion Animals Act 1998</i>

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Control and restrict dogs in bushland and WPAs as per relevant Council policies and legislation	Appropriate information to be provided at track entrances. Dogs are restricted to formal tracks and must be on-leash. Dogs must also be on a leash at the Coal Loader Centre for Sustainability	O	Reduction in the annual number of complaints	NSC Local Companion Animal Management Plan 2004 <i>Companion Animals Act 1998</i>
		Patrol bushland to ensure compliance with the above actions	Patrols are carried out by Council Rangers	O	Regular Ranger patrols carried out	
		Provide dog tidy bags in selected bushland areas	Dog tidy bags are available at Berry Island, Brightmore and Cremorne Reserves, and Forsyth, Primrose, Tunks and Waverton Parks	O	Dog tidy bags available at selected reserves	
		Review the effectiveness of Council's Dog Control Policy as it applies to bushland regularly		O	Carry out review every 2 years	<i>Companion Animals Act 1998</i>
		Continue to build public awareness regarding responsibilities of domestic animal ownership and the potential impact of domestic animals on the environment	Methods include signage, information kits and brochures, open days etc A 'Responsible Pet Ownership' booklet is available from Council	O	Reduction in number of infringements	'Owning Cats and Dogs in North Sydney' brochure NSC
		Implement fox control programs twice yearly (generally March and September) or as required	Extensive public notification is given. Dogs and cats are banned from baited reserves for the duration of the program, plus 4-weeks	O	Fox baiting programs occur in Council's bushland areas as required	

## FIRE MANAGEMENT

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Fire Protection and Ecological Management	To use fire as a management tool to maintain the biodiversity of the bushland in North Sydney and to reduce hazard	Carry out all bushfire management in compliance with the Rural Fires Act and the Mosman North Sydney Willoughby Bushfire Risk Management Plan (BFRMP)	The BFRMP aims to manage fuel to reduce the rate of spread and intensity of bush fires while minimising environmental and ecological impacts	O	Bushfire management in accordance with BFRMP	<i>Rural Fires Act 1997</i> Mosman North Sydney Willoughby Bushfire Risk Management Plan
		Carry out future hazard reduction and ecological burns in accordance with Council's BRPs	The BRPs contain maps that indicate land management zones, reserve fire history and proposed future burns	O	All burns are in accordance with BRPs	BRPs 2019-29 NSC
		Burns are currently scheduled for the following bushland reserves in North Sydney: Brightmore Reserve, Waverton Park, Badangi Reserve, Gore Cove Reserve and Tunks Park	Hazard reduction/ ecological burns are carried out NSW Fire and Rescue in accordance with the Mosman-North Sydney-Willoughby Bushfire Management Committee	O	Burns are conducted in accordance with the annual Hazard Reduction Program	
		Notify nearby residents when a controlled burn is scheduled to occur	Notification is carried out by Council or by NSW Fire & Rescue directly	O	Fewer phone calls received when controlled burns occur	

## CULTURAL HERITAGE

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Conservation and Recognition of Heritage Items and Sites	To protect and conserve all identified items and sites of Aboriginal and European heritage in bushland reserves	Manage all Aboriginal heritage sites as per Council's Aboriginal Sites Management Report	Aboriginal sites include shell middens, rock art and rock shelters	O	Management of Aboriginal sites complies with Management Report	North Sydney Aboriginal Sites Management Report 2011 AHO
		Consult relevant organisations regarding Aboriginal sites management and fulfil the requirements of the <i>NP&amp;W Act 1974</i>	Relevant organisations are the Department of Planning, Industry & Environment, the MLALC and the AHO	O	Co-ordinated and effective management of Aboriginal sites	<i>National Parks and Wildlife Act 1974</i>
		Keep the location of Aboriginal sites confidential where necessary to prevent damage	The degradation of some sites has significantly reduced their heritage value	O	Condition of confidential sites	
		Train relevant Council staff and volunteers to identify and protect Aboriginal heritage sites	The AHO provides regular free training to Council staff, contractors and volunteers	O	No further degradation of sites by Council staff or volunteers	North Sydney Aboriginal Sites Management Report 2011 AHO
		Carry out work necessary to maintain all heritage items and sites in good condition		O	Heritage items and sites well maintained	
		Take appropriate measures to protect heritage items and sites that are vulnerable to damage	For example, walking tracks can be redirected away from heritage items or sites	O	No damage to heritage items and sites	Local Environmental Plan 2013 NSC
		Manage sites of European heritage significance as per the Heritage Provisions in Council's LEP		O	Management of all European sites is appropriate	Local Environmental Plan 2013 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Consult relevant organisations re management of European heritage sites and items and fulfil the requirements of the NSW Heritage Act	Relevant organisations are the Department of Planning, Industry & Environment and the National Trust	O	Co-ordinated and effective management of heritage sites and items	<i>NSW Heritage Act 1977</i>

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Interpretation	To recognise and interpret the cultural and natural heritage of North Sydney's bushland	Continue to provide interpretive signage in bushland areas	Interpreting the natural and cultural history of an area/site enriches the visitor experience. Refer Issue 'Bushland Improvement Works' for upcoming projects	O	Provision of effective interpretive signage based on feedback	
		Maintain existing interpretive signs in bushland in good condition	Signs should be legible and free from graffiti	O	Signage maintained in good condition	
	To provide opportunities for the community to learn about bushland ecology and Council's operations	Continue to implement interpretive programs that include guided walks, talks, pamphlets and interactive children's activities		O	Continuation of Council's annual program of interpretive events and activities	

## ACCESS & CIRCULATION

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Access	To encourage the community to walk, cycle or use public transport to get to bushland areas	Increase public awareness of alternative ways to get to bushland areas (other than by car)	Maps and brochures for pedestrians and cyclists are on Council's website  This also helps overcome the issue of limited car parking	O	Relevant maps and brochures readily available to the public	'Walk North Sydney' maps and brochures  Northern Sydney Cycling Map
	To control vehicular access into Council's bushland reserves	Prohibit and prevent inappropriate vehicular access into Council's bushland reserves	Council's Bushland Management Co-ordinator may grant permission for a private vehicle requiring access on a one-off basis. A bond and or/ Council supervision may be required to minimise disturbance and ensure safety	O	General vehicular access to the reserves prevented	
		Allow service and emergency vehicles to enter Council's bushland reserves	Removable bollards and gates allow access for maintenance and other permissible activities	O	Ease of entry for service and emergency vehicles	
		Minimise the impacts of vehicles parking on bushland edges in North Sydney	Install bollards, sandstone boulders or fencing where required to protect bushland edges	O	Bushland protected from vehicle damage	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Connections	To improve connections within and between bushland reserves	Provide a connected system of walking tracks that offer a range of experiences while minimising environmental impacts	Refer Issue: 'Bushland Improvement Works' for proposed walking track upgrading projects	O	Bushland tracks meet relevant Australian Standards where possible	BRPs 2019-29 NSC Recreation Needs Study 2015 NSC
		Strengthen the vegetation/wildlife corridor linking Berry Island with Gore Cove and Badangi Reserves	This will assist fauna movement and improve the experience for walkers	O	Existing link strengthened	BRPs 2019-29 NSC
		Strengthen the vegetation/wildlife corridor linking Mortlock Reserve to Tunks Park		MT	Existing link strengthened	Tunks Park PoM/ Master Plan 2019
		Investigate the feasibility of constructing a path to link Wonga Road with the Brightmore Reserve bushland track		LT	Investigations carried out and recommendations received	BRPs 2019-29 NSC
		Work with other Council departments to further develop green linkages between bushland as part of their projects		O	Continued expansion of green linkages	
		Investigate feasibility of aerial fauna bridges across Young Street to link Primrose Park, Brightmore and Wonga Reserves		ST	Investigations carried out and recommendations received	BRPs 2019-29 NSC
		Encourage property owners adjacent to bushland to provide appropriate habitat	Community involvement is facilitated by Council through the Native Havens program	O	Continued growth in Native Havens program	
	To publicise connections between North Sydney's bushland areas	Provide relevant information to enable the community and visitors to enjoy walking in bushland in North Sydney	Relevant information on Council's website includes the 'North Sydney Harbour Foreshore Bushwalk Guide'	O	Relevant brochures easily accessible to the public	

## MANAGING ACTIVITIES IN BUSHLAND

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Recreation	To accommodate a range of low-impact recreational activities to meet the needs of the community, within the carrying capacity of the bushland	Ensure all activities occurring in bushland are appropriate and are consistent with Council's management goals and objectives as set out in this Plan of Management	Activities should be consistent with the E2 Environmental Conservation zoning, and with the classification and categorisation of the land as 'community' and 'natural area – bushland'	O	Reduction in number of complaints.	<b>Appendix 3 – Zoning of Bushland</b> Local Environmental Plan 2013 NSC <i>CLM Act 2016</i> <i>LG Act 1993</i>
		Manage activities that may have negative environmental impacts carefully to minimise impacts	Most popular bushland activities are low impact, however some permissible activities including walking dogs, trail-running, fitness training and fishing can have a higher environmental impact	O	General condition of bushland	
		Prevent inappropriate activities from occurring in bushland	High impact activities including rock climbing, bouldering, orienteering and mountain biking can cause erosion, track damage and destruction of vegetation	O	Decrease in annual number of reports of inappropriate activities	
		Inspect popular fishing locations regularly and discourage inappropriate behaviour	Littering, vegetation damage, erosion and fire-lighting can occur	O	Regular inspections carried out	
		Impose conditions to minimise the impact of commercial filming activities in bushland	Council officers work with applicants to choose appropriate locations and impose relevant conditions	O	Conditions imposed on applications to film as required	



Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Impose restrictions and declare alcohol-free zones in certain locations to manage crowd behaviour on New Year's Eve	Restrictions currently apply at Cremorne and Balls Head Reserves	O	Condition of reserves following New Year's Eve	
		Consider closing Balls Head Reserve on New Year's Eve	This has been requested by the Police (through the Bush Fire Management Committee)	ST	Decision made and appropriate action taken	
		Enforce Council's Fitness Code of Conduct as required	The Code provides common sense guidelines to ensure that fitness trainers' activities have minimal impact on the environment and neighbours	O	Rangers carry out patrols and respond to complaints	Outdoor Fitness Code of Conduct NSC
		Liaise directly with individuals or groups if complaints are received	All users should respect the environment and be considerate to other reserve users	O	Reduction in the annual number of complaints	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Small Water Craft Storage	To control small water craft storage in bushland to minimise environmental degradation	Prohibit storage of small water craft in most areas zoned E2	Council's SWCSS contains maps which identify 'No Storage Zones'	O	Reduction in number of small water craft stored in prohibited locations	SWCSS 2018 NSC
		Allow storage of small water craft at selected locations (see Actions below) zoned E2	All small water craft stored on North Sydney's foreshores must be registered and fees are payable for hire of storage space	O	All small water craft stored on the foreshore are registered	SWCSS 2018 NSC
		Allow storage of small water craft in the dinghy storage racks at Folly Point	Formal storage racks are provided for dinghies	O	All small water craft stored at Folly Point are registered	SWCSS 2018 NSC
		Allow storage of small water craft at the tie-up points in Gore Cove		O	All small water craft stored in Gore Cove are registered	SWCSS 2018 NSC
		Investigate feasibility of constructing formal storage facilities for small water craft at Primrose Park and construct new facilities if feasible	Small water craft are currently stored near the bridge. Amount of storage will be determined in consultation with Bushland team	ST/MT	Small water craft stored in designated area only at Primrose Park	SWCSS 2018 NSC
		Provide a designated area for informal storage at Primrose Park (if above action is not feasible)		ST/MT	Small water craft stored in designated area only at Primrose Park	SWCSS 2018 NSC
		Investigate feasibility of constructing formal storage facilities at Sugarworks Reserve/King St Road Reserve and construct new facilities if feasible	Small water craft are currently stored informally here. Amount of storage will be determined in consultation with Bushland Management staff	ST/MT	Small water craft stored in designated area only at Sugarworks/King St Rd Reserve	SWCSS 2018 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Provide a designated area for informal storage at Sugarworks/ King St Rd Reserve if above action is not feasible		ST/MT	Small water craft stored in designated area only at Sugarworks/King St Rd Reserve	SWCSS 2018 NSC
		Investigate the desirability and feasibility of providing formal storage facilities at the Coal Loader Centre for Sustainability	Refer SWCSS for exact location	MT-O	Investigations complete, recommendations made	SWCSS 2018 NSC
		Provide safe access to identified small water craft storage sites	Maintain access tracks to storage sites identified above and carry out track repairs when and where required	O	Repairs carried out as required. Safe access maintained	SWCSS 2018 NSC
		Impose strict conditions of use on storage sites in bushland	Conditions must be 'signed-off on' by potential hirers	O	Appropriate conditions imposed	SWCSS 2018 NSC
		Limit the number of Permits issued for each foreshore bushland site based on the constraints of each site	Limits will be determined in consultation with Council's Bushland Management Co-ordinator	O	Appropriate limits adhered to	SWCSS 2018 NSC
		Carry out a regular audit and remove abandoned and unregistered water craft through the notification and impounding process.	Impounding abandoned, and unregistered water craft reduces visual clutter and environmental damage	O	Reduced number of abandoned and unregistered small water craft on the foreshore	SWCSS 2018 NSC
	To minimise conflict between small boat storage and other users of foreshore bushland areas	Implements recommendations of the SWCSS relevant to storage sites in bushland	Small water craft must have a permit and must be stored in neatly in authorised locations, otherwise they may be impounded	O	Solutions negotiated, and problems resolved in a timely manner	SWCSS 2018 NSC

## IMPROVEMENT WORKS

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Bushland Improvement Works	To improve the quality of the bushland in North Sydney	Continue to carry out bush regeneration in all Council-owned and managed bushland reserves	Work is undertaken by a combination of Council staff, Bushcare volunteers and contractors accredited by the Australian Association of Bush Regenerators (AABR)	O	Improvement in the overall quality of bushland as gauged from regular monitoring	BRPs 2019-29 NSC
		Undertake the capital works and investigations set out below		O	New works and actions implemented	BRPs 2019-29 NSC
		Undertake stormwater improvement works in Brightmore Reserve below Brightmore and Little Young Streets		ST	Works completed with minimal impact on bushland	BRPs 2019-29 NSC
		Investigate managing surface flow along Vernon Street so that it no longer flows uncontrolled into Mortlock Reserve		MT	Works completed with minimal impact on bushland	BRPs 2019-29 NSC
		Implement stormwater/creek line rehabilitation projects in Primrose Park	Identified locations include below Grafton Street, Lambert Street and Churchill Crescent	MT	Works completed with minimal impact on bushland	BRPs 2019-29 NSC
		Investigate stormwater management measures in Tunks Park to address gross pollutants and erosion near the Suspension Bridge	Carry out investigation in consultation with the NSW Roads and Maritime Services	ST	Works completed with minimal impact on bushland	BRPs 2019-29 NSC
		Undertake additional stormwater drainage line upgrades in Tunks Park	For example, off The Boulevarde, Rowlison Parade and Cambridge Street	MT	Works completed with minimal impact on bushland	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Investigate stormwater management measures to address gross pollutants and erosion at Wonga Reserve & Tobruk Ave Lookout		LT	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Investigate the feasibility of creek line projects in Brightmore Reserve, and prioritise rehabilitation according to level of need		LT	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Investigate improving the ecological value of the open stormwater culvert on the eastern boundary of Mortlock Reserve		MT	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Investigate reinstating the Tunks Park fish-way bypass	Investigations determined that this is not required, however occasional work to remove the sediment plug that blocks the bypass channel may be needed	CP	Investigations complete and recommendations made	BRPs 2019-29 NSC Tunks Park PoM / Master Plan 2019
		Continue to investigate other opportunities for WSUD systems in or adjoining bushland	Work with Council's Stormwater Engineers to implement WSUD projects that benefit bushland	O	Investigations complete and recommendations made	
		Maintain the Fire Management Access Zones (FMAZ's) in Badangi Reserve and Tunks Park	Use bark blower technology and consider replacing inappropriate canopy species with endemic species over time	O	Work completed on time and to budget	BRPs 2019-29 NSC
		Commence stabilising and revegetation work in Cremorne Reserve along the Milson Road (western) foreshore	Work will take place in areas zoned E2, where access permits	O	Work completed on time and to budget	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Work with Council's Engineers to implement fauna-sensitive sea wall upgrades in Primrose Park		O	Work completed on time and to budget	BRPs 2019-29 NSC
		Liaise with Rail Corp to better manage weeds on railway land south of the Men's Shed in Smoothey Park		O	Ongoing liaison as required	BRPs 2019-29 NSC
		Assess slope stabilisation needs in Brightmore Reserve and undertake works where feasible		MT	Assessment complete and recommendations made	BRPs 2019-29 NSC
		Install edging in Forsyth Park to delineate boundaries between bushland and mown turf	This will minimise the spread of exotic grass/herbaceous weeds into bushland	ST	Work completed on time and to budget	BRPs 2019-29 NSC
		Investigate installing a vehicle guard rail on Matora Lane to address safety and minimise illegal dumping	Matora Lane runs into the Primrose Park from Young Street.	ST	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Investigate installing a gate in Primrose Park at the footbridge to prevent off-leash dogs entering the bushland section of the Park		ST	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Assess the need to install traffic calming devices along Balls Head Drive on the southern section of the road from the parking area and into the north-bound corner		LT	Investigations complete and recommendations made	BRPs 2019-29 NSC
		Install boom-gates on the inbound and outbound lanes of Balls Head Drive (where the lanes split) to manage public access during severe fire danger	This action comes from a Council resolution	ST	Work completed on time and to budget	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Redesign Balls Head Drive (where the lanes split) to enable vehicle U-turns when boom-gates are in use		ST	Work completed on time and to budget	BRPs 2019-29 NSC
		Assess the desirability and feasibility of closing Balls Head Reserve from sunset to sunrise	This could reduce the instances of night-time illegal/anti-social activity	ST	Investigations complete and recommendations made	
	To enhance visitors' awareness of natural and cultural items and issues in bushland reserves	Provide interpretive signage in selected bushland areas		O	Interpretive signage provides the community with interesting and useful information	BRPs 2019-29 NSC
		Install interpretive signage in Tunks Park	The Masterplan identified a need to interpret Park features including the habitat and environmental values of the creek system Note: there is already interpretive signage at the viewing platform overlooking the weir	MT/LT	Relevant interpretive material installed in Tunks Park	Tunks Park PoM/ Master Plan 2019 NSC
		Update interpretive and directional signage at Brightmore Reserve		MT	Existing signage updated	BRPs 2019-29 NSC
		Assess the need for upgrades to directional and / or interpretative signage at Forsyth Park and implement if needed		ST	Needs assessment complete and recommendations made	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Provide signage at selected fishing spots in Balls Head Reserve	Signage could discuss impacts of discarded hooks on aquatic wildlife and identify protected aquatic species and fishing rules	ST	Appropriate new signage installed on time and to budget	BRPs 2019-29 NSC
		Upgrade and augment fauna awareness and appreciation signage along the Balls Head Reserve roadway and at picnic and parking areas	Provide information about not feeding birds and the impacts of cats and dogs on wildlife	ST	Appropriate new signage installed on time and to budget	BRPs 2019-29 NSC
	To upgrade walking tracks in bushland reserves	Upgrade the Gadyan Track in Berry Island Reserve	Work will include installing boardwalks, edging, stairs / ramps and seating to improve accessibility and safety, as well as managing erosion and protecting Aboriginal sites	ST	Work carried out on time and to budget	BRPs 2019-29 NSC
		Upgrade walking tracks in Badangi Reserve	Work will reduce informal tracks, improve surface condition, minimise erosion and address safety concerns (e.g. foot bridge)	ST	Work carried out on time and to budget	BRPs 2019-29 NSC
		Upgrade walking tracks in Primrose Park		MT	Work carried out on time and to budget	BRPs 2019-29 NSC
		Upgrade the Gore Cove track and provide new directional and interpretative signage	Work will improve safety and accessibility	MT	Work carried out on time and to budget	BRPs 2019-29 NSC
		Upgrade walking tracks in Brightmore Reserve	The old access track behind Benelong Street has been identified as of high priority	LT	Work carried out on time and to budget	BRPs 2019-29 NSC
		Upgrade walking tracks in Forsyth Park		MT	Work carried out on time and to budget	BRPs 2019-29 NSC



Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Upgrade path through Judith Ambler Reserve (connecting Tunks Park to Currawang Street)		MT	Work carried out on time and to budget	BRPs 2019-29 NSC Tunks Park PoM/Master Plan 2019 NSC
		Construct the Balls Head Road to Quarantine Station Link Track and Boardwalk		LT	Work carried out on time and to budget	Recreation Needs Study 2015 NSC
		Assess feasibility of installing a footbridge across Berry Creek to connect the North Sydney and Lane Cove Council areas	Gore Cove/Smoothey Park	LT	Feasibility assessed and recommendations made	BRPs 2019-29 NSC
	To facilitate pedestrian access to the water's edge in appropriate bushland locations	Provide and maintain paths, steps and other means of accessing the water's edge in appropriate locations	Small paths typically provide access to small water craft storage sites, fishing spots and lookouts	O	Pedestrian access to foreshore provided in appropriate locations	
	To ensure bush tracks do not cause undue environmental degradation	Continue to rationalise and formalise tracks in bushland to minimise environmental impacts while still providing good access	Inappropriate informal tracks may be closed. Encourage users to follow formal walking tracks only	O	Reduction in the number of informal tracks in bushland	
		Prevent the establishment of new informal tracks in bushland	Preventative measures include brush matting, fencing and educational signage	O	Reduction in number of new informal tracks	
		Consider installing handrails in strategic locations in bushland at Forsyth Park	This could reduce formation of informal walking tracks	MT	Assessment complete and recommendations made	BRPs 2019-29 NSC
		Continue to protect bushland at Robertsons Point (in Cremorne Reserve) during New Year's Eve celebrations	Problems include illegal track creation and vegetation damage	O	Investigations complete and recommendations made	BRPs 2019-29 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
		Monitor the condition of all informal tracks and paths that lead to the water's edge	Track proliferation is particularly evident at Balls Head Reserve and Berry Island Reserve	O	Informal tracks inspected regularly	
		Assess the condition of existing safety fencing in bushland areas in Cremorne Reserve and replace as required		O	Assessment complete and required work carried out	BRPs 2019-29 NSC
		Identify areas affected by hard-surface run-off at Balls Head Reserve and implement actions to mitigate impacts		ST	Assessment complete and required work carried out	BRPs 2019-29 NSC

## LANDUSE PLANNING AND MANAGEMENT

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Community Involvement	To provide opportunities for community involvement this Plan of Management (PoM)	Actively seek stakeholder input by widely publicising the draft PoM	Major stakeholders including Bushcare groups are notified when the draft PoM is on public exhibition and are invited to comment	O	Public exhibition of draft PoM widely publicised	
		Carry out consultation as required by the <i>NT Act</i>	Notification and providing the opportunity to comment will occur when the draft Plan of Management is prepared	O	Obligations under the <i>NT Act</i> fulfilled	<i>NT Act (Cwlth) 1993</i>
		Encourage all stakeholders to provide written submissions to Council regarding the draft PoM	All submissions are considered by Council and appropriate information and comments are incorporated into the final Plan of Management	O	Review of Plan of Management considers all submissions received	
		Ensure that both the draft and the final Bushland PoM are easily accessible to the community and stakeholders	All adopted PoMs are permanently available on Council's website	O	PoM available on Council's website	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
	To raise community awareness of and participation in Council's bushland programs and projects	Encourage community participation in Council's various community programs operating in bushland areas by publicising them widely	Bushcare, Adopt-a-Plot, Wildlife Watch, Native Havens, Bushcare Community Nursery and Building Bridges to Boorowa are publicised via Council's various newsletters and social media, and via word-of-mouth  The Coal Loader Centre for Sustainability is a hub for information dissemination and for workshops and events	O	Level of community participation stable or increasing (where this can be possible given existing resources)  Information readily available from a variety of sources	
		Review and update information and presentation of the natural environment section of Council's website	Ensure information remains current and external weblinks are functional	MT-O	Website information reviewed and updated	
		Provide information and native plants to people living close to bushland	Native Havens kits help residents who want to assist with bushland conservation	O	Information and plants provided on request	
		Consider adopting a resident incentive program that rewards the creation of native landscapes and habitat features on private property within green corridor zones (eg green walls/ rooftops)	Private landholders can help bridge the gaps that separate Council's bushland reserves and aid in the dispersal of fauna and flora	O	Options considered and reported	
		Work with the AHO to raise awareness about Aboriginal heritage issues		O	Ongoing liaison as required	
		Liaise with surrounding Councils and Government agencies to conduct joint public awareness campaigns as appropriate		O	Implementation of joint community awareness campaigns	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
	To raise community awareness about activities detrimental to bushland conservation	Utilise Council's mobile display boards that focus on activities that detrimentally impact upon bushland	Mobile display to be used at shopping centres, open days, fairs, market days etc	O	Mobile display regularly used	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Bushcare Volunteer Program	To involve the community in Council's Bushcare program	Continue to provide a Bushcare Program for local schools	Schools programs involve tree planting, plant propagation, bush regeneration, education, presentations, participation in National Tree Day and numerous other activities	O	Program continues to operate	
	To ensure Bushcare volunteers are skilled in bush regeneration procedures	Provide volunteers with a comprehensive introductory and ongoing training program and relevant specialist workshops	To be effective, bush regenerators require a high level of skills  The Aboriginal Heritage Office provides regular training to Council volunteers	O	Bushcare volunteers receive appropriate training	
		Provide volunteers with leadership and technical assistance as required	Bushcare trainers meet with groups regularly to provide relevant assistance	O	Bushcare Trainer regularly attends group meetings	
	To ensure the rights and responsibilities of volunteers are clear	Implement Council's Volunteer Policy & Bushcare Program Guidelines	Policy identifies Council's legislative responsibilities and approach to the management of the Bushcare Program	O	Community satisfaction with the Bushcare Program	Volunteer Policy & Bushcare Program Guidelines NSC
		Review and update the Bushcare Program Guidelines		ST	Guidelines reviewed and updated on time	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Leases, Licences, Permits and Other Estates	To facilitate the use of public land zoned E2 for a range of appropriate cultural and recreational activities	Grant leases, licences and other estates to cultural and recreational organisations to formalised use of parts of the bushland reserves for appropriate activities	<p>A Native title assessment and validation under the <i>NT Act</i> must be undertaken by Council's Native Title Manager prior to the preparation, exhibition and adoption of any leases, licences, permits or other estates in the bushland areas that are Crown land.</p> <p>Applicable legislative and other planning controls governing leases, licences, permits and other estates are described in Section 1.5 of this PoM.</p> <p>All lessees/licensees should provide facilities or services for public use and should ensure the leased area is safe and attractive and that the interests of Council and the public are protected</p>	O	Any leases or licences are prepared, exhibited and adopted in accordance with the provisions of the <i>LG Act</i> and the <i>CLM Act</i>	<i>LG Act 1993</i> <i>CLM Act 2016</i> Local Environmental Plan 2013 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Development Adjacent to Bushland	To minimise the impacts of development adjacent to bushland	Refer DAs to Council's Bushland Management Co-ordinator for comment and to ensure appropriate conditions are imposed		O	Relevant DA's referred to Bushland Management Co-ordinator	NSC DCP 2013 Section 15-Bushland SEPP 19 1986
		Continue to liaise with relevant Council Departments to encourage the use of rainwater tanks in new developments	Absorption trenches can retain stormwater on-site, however if they are poorly sited, they can still negatively impact on adjacent bushland	O	Reduced impact of stormwater from adjacent developments on bushland	
		Liaise with Strategic Planning to ensure that Planning Proposals upstream of bushland incorporate adequate measures to reduce impacts to bushland and incorporate WSUD principles	Catchment Management is a shared responsibility across Council Divisions; City Strategy is responsible for implementing this Action	O	All new developments to reduce impacts and/or improve bushland	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Private Encroachments onto Bushland	To manage private encroachments onto public land zoned E2 consistently	Assess any private encroachments onto public bushland areas when they are identified	Encroachments can include structures such as fences, steps, paths or buildings, or planting that implies a boundary	O	Impact assessments carried out when possible private encroachments are identified	<i>LG Act 1993</i> <i>CLM Act 2016</i>
	To manage private encroachments onto Council-owned 'Community' land in accordance with the <i>LG Act</i>	If the encroachment is assessed as being for a purpose consistent with the core objectives for 'natural area – bushland', Council may lease or licence the land to the encroaching owner	The core objectives for management of 'natural area – bushland' are set out in Section 1.4 A PoM must authorise the lease or licence	O	Lease or licence entered into if appropriate and desirable	<i>LG Act 1993</i>
		If the encroachment is assessed as not being for a purpose consistent with the core objectives for 'natural area – bushland', Council may direct the encroaching owner to remove the encroachment	In this situation a lease or licence cannot be entered into, and any Plan of Management so authorising a lease or licence would be invalid A written notice would be served by Council	O	Encroachment removed	<i>LG Act 1993</i> Encroachment Management Policy 2019 NSC
	To manage private encroachments onto Crown land in accordance with the <i>CLM Act</i>	If the encroachment is assessed as being consistent with the purpose for which the land was dedicated (generally 'public recreation'), and is in the public interest, Council may lease or licence the land to the encroaching owner	This applies to Crown land for which Council is the Crown land manager	O	Lease or licence entered into if appropriate and desirable	<i>CLM Act 2016</i> Encroachment Management Policy 2019 NSC
		If the encroachment is assessed as not consistent with the purpose for which the land was dedicated and not in the public interest, Council will direct the encroaching owner to remove the encroachment	A written notice will be served by Council	O	Encroachment removed	<i>CLM Act 2016</i> Encroachment Management Policy 2019 NSC



Issue	Objective	Action	Comments	Priority	Performance Indicators	References
	To prevent future private encroachments onto bushland in public ownership	Ensure staff and contractors working in bushland are aware of property boundaries and that new encroachments can be easily identified		O	Council staff and contractors working in bushland areas remain vigilant	
		Refuse DAs that propose encroachments onto public land zoned E2	Council's LEP 2013 outlines work for which Development Consent is required New private encroachments onto public open space are prohibited	O	No new private encroachments onto bushland	Local Environmental Plan 2013 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Monitoring Ecological Processes and Environmental Factors	To assess effectiveness of current bushland management programs and sustainability of the bushland resource	Continue monitoring programs for key environmental factors as per Council's BRPs		O	Improved management of natural resources	BRPs 2019-29 NSC
	To employ sustainable management practices and achieve ongoing ecological improvement	Co-ordinate monitoring programs with other relevant agencies.	Provide wildlife monitoring results to the NSW Wildlife Atlas and the Atlas of Living Australia etc	O	Effective co-ordination with other agencies	
		Engage with educational institutions on biodiversity research projects and pursue opportunities for mutual learning when they arise		O	Opportunities pursued as they arise	
		Monitor developments in climate change research and best practice management approaches to biodiversity conservation		O	Ongoing monitoring continues	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Maintenance	To maintain bushland to an ecologically sustainable standard ensuring conservation recovery	Carry out regular maintenance to appropriate standards	Council's bushland management team, contractors, and volunteers working under the auspices of programs such as Bushcare undertake maintenance	O	Condition of bushland reserves	
		Undertake emergency repairs or other additional maintenance work as required	Council staff are pro-active, identifying problem areas and responding to requests from the public	O	Required work undertaken in a timely manner	
		Respond to public suggestions, attend to public enquiries promptly and provide accurate and useful information to the community as required		O	Level of community satisfaction gauged from feedback	
	To maintain Balls Head public amenities as per Council's ACRMP	Carry out maintenance and minor repairs to the amenities block as per Council's 10-year Amenities Condition Report & Maintenance Plan		O	Condition of amenities block	Amenities Condition Report & Maintenance Plan 2018 NSC

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Safety and Risk Management	To minimise Council's exposure to complaints, compensation claims and litigation	Continue to carry out an inspection program to identify and eliminate potential hazards in a timely manner	The regular maintenance inspections also function as risk assessment inspections	O	Inspection program regularly carried out	
	To minimise the incidence of vandalism in bushland	Patrol bushland areas regularly	Council Rangers carry out patrols	O	Decrease in annual number of incidents reported	
		Investigate the establishment of a dedicated Open Space Compliance Program, with appropriate staff resources	This could result in more consistent and effective compliance with Open Space regulations and better community education	MT	Investigations carried out and recommendations reported	
		Remove all graffiti as soon as practicable	Removing graffiti quickly sends the message that Council facilities are well cared for	O	Speed of graffiti removal	Graffiti Management Policy 2018 NSC
		Repair vandalised items and sites as soon as practicable	Visitors are encouraged to alert Council if they observe any vandalism	O	Speed of repair work or removal	
		Restrict access to ecologically sensitive sites as required	Temporarily fencing off burnt bushland areas protects regenerating native plants	O	Measures implemented as required	

Issue	Objective	Action	Comments	Priority	Performance Indicators	References
Monitoring of Management Systems	To review and update the Bushland PoM regularly	Review the PoM regularly, and comprehensively update the Plan after 5-10 years to conserve, maintain and enhance the values and character of bushland areas		O	PoM objectives and actions implemented. Relevance of PoM	

## 5.2 Implementing the Indicative Works Program

Council's Plans of Management identify clear objectives and directions for planning, resource management and maintenance of public open space. They inform the community about upcoming projects and works; clarifying what will be happening, explaining why, and assigning priorities.

However, Plans of Management also need to be flexible enough to respond to new opportunities and to changed circumstances and community needs. While significant shifts in policy or planning issues during the life of a Plan of Management are unlikely, it is conceivable works and projects or the order in which works are undertaken may vary.

### *New Opportunities*

Whenever possible, Council makes application for grant funding from relevant state and federal organisations. If an application is successful, Council may need to bring forward and fast-track a project. There may also be instances where particular projects need to be delayed.

### *Changed Circumstances and Community Needs*

The process of reviewing and revising Council's Plans of Management is cyclical, and, in some instances, other significant studies completed 'between Plans' may identify actions and works that can appropriately jump ahead of existing Plan of Management actions. This is particularly so when the study in question (for example a Recreation Needs Study) has been prepared with a very high level of community engagement and involvement. If the fast-tracked action is consistent with the core values and stated management objectives expressed in the relevant Plan of Management, this is justified.

### 5.3 INDICATIVE WORKS PROGRAM

WORKS/ACTION	ST 2021 - 2023	MT 2023 - 2025	LT 2026 onwards
Establish a provenance protocol to guide bushland revegetation and supplementary planting activities			
Investigate ways to increase Bushcare Community Nursery productivity			
Create an online reporting tool for the Wildlife Watch program			
Strengthen the vegetation/ wildlife corridor linking Mortlock Reserve to Tunks Park			
Investigate the feasibility of constructing a path to link Wonga Road with the Brightmore Reserve bushland track			
Investigate feasibility of aerial fauna bridges across Young Street to link Primrose Park, Brightmore and Wonga Reserves			
Consider closing Balls Head Reserve on New Year's Eve			
Investigate feasibility of constructing formal storage facilities for small water craft at Primrose Park and construct new facilities if feasible			
Provide a designated area for informal storage at Primrose Park (if above action is not feasible)			
Investigate feasibility of constructing formal storage facilities at Sugarworks Reserve/King St Road Reserve and construct new facilities if feasible			
Provide a designated area for informal storage at Sugarworks/ King St Rd Reserve if above action is not feasible			
Investigate the desirability and feasibility of providing formal storage facilities at the Coal Loader Centre for Sustainability			
Undertake stormwater improvement works in Brightmore Reserve below Brightmore and Little Young Streets			
Investigate managing surface flow along Vernon Street so that it no longer flows uncontrolled into Mortlock Reserve			
Implement stormwater/creek line rehabilitation projects in Primrose Park			
Investigate stormwater management measures in Tunks Park to address gross pollutants and erosion near the Suspension Bridge			
Undertake additional stormwater drainage line upgrades in Tunks Park			
Investigate stormwater management measures to address gross pollutants and erosion at Wonga Reserve & Tobruk Ave Lookout			
Investigate the feasibility of creek line projects in Brightmore Reserve, and prioritise rehabilitation according to level of need			

WORKS/ACTION	ST 2021 - 2023	MT 2023 - 2025	LT 2026 onwards
Investigate improving the ecological value of the open stormwater culvert on the eastern boundary of Mortlock Reserve			
Assess slope stabilisation needs in Brightmore Reserve and undertake works where feasible			
Install edging in Forsyth Park to delineate boundaries between bushland and mown turf			
Investigate installing a vehicle guard rail on Matora Lane to address safety and minimise illegal dumping			
Investigate installing a gate in Primrose Park at the footbridge to prevent off-leash dogs entering the bushland section of the Park			
Assess the need to install traffic calming devices along Balls Head Drive on the southern section of the road from the parking area and into the north-bound corner			
Install boom-gates on the inbound and outbound lanes of Balls Head Drive (where the lanes split) to manage public access during severe fire danger			
Redesign Balls Head Drive (where the lanes split) to enable vehicle U-turns when boom-gates are in use			
Assess the desirability and feasibility of closing Balls Head Reserve from sunset to sunrise			
Install interpretive signage in Tunks Park			
Update interpretive and directional signage at Brightmore Reserve			
Assess the need for upgrades to directional and / or interpretative signage at Forsyth Park and implement if needed			
Provide signage at selected fishing spots in Balls Head Reserve			
Upgrade and augment fauna awareness and appreciation signage along the Balls Head Reserve roadway and at picnic and parking areas			
Upgrade the Gadyan Track in Berry Island Reserve			
Upgrade walking tracks in Badangi Reserve			
Upgrade walking tracks in Primrose Park			
Upgrade the Gore Cove track and provide new directional and interpretative signage			
Upgrade walking tracks in Brightmore Reserve			
Upgrade walking tracks in Forsyth Park			
Upgrade path through Judith Ambler Reserve (connecting Tunks Park to Currawang Street)			
Construct the Balls Head Road to Quarantine Station Link Track and Boardwalk			

<b>WORKS/ACTION</b>	<b>ST 2021 - 2023</b>	<b>MT 2023 - 2025</b>	<b>LT 2026 onwards</b>
Assess feasibility of installing a footbridge across Berry Creek to connect the North Sydney and Lane Cove Council areas			
Consider installing handrails in strategic locations in bushland at Forsyth Park			
Identify areas affected by hard-surface run-off at Balls Head Reserve and implement actions to mitigate impacts			
Review and update information and presentation of the natural environment section of Council's website			
Investigate the establishment of a dedicated Open Space Compliance Program, with appropriate staff resources			
Carry out a major review and updating of this Plan of Management			



## 6.0 Appendices and Supporting Material

### 6.1 **Appendix 1** - Land included in the Bushland Plan of Management

#### Notes

Only the parts of the parks and reserves in the following Table (**Table 1**) that are zoned E2 – Environmental Conservation are included in this Bushland Plan of Management.

All parts of the parks and reserves in **Table 1** that are zoned E2 – Environmental Conservation are categorised as Natural Area – Bushland.

Those parts of the parks and reserves in Table 2 that are not zoned E2, (and are not categorised as Natural Area – Bushland) are not included in this Plan of Management but are addressed in the relevant North Sydney Council generic Plan of Management (Sportsgrounds, Neighbourhood Parks, Foreshore Parks & Reserves) or the relevant significant area Plan of Management.

**Table 1** – Land included in the Bushland Plan of Management

	Description	Street Address	Ownership	Land Category (LG Act 1993)	Zoning (NSC LEP 2013)	Map Reference- (Refer Appendix 2)
1	Balls Head Reserve	Balls Head Drive, Waverton	Crown (R88999 - Balls Head Reserve)	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map E
2	Berry Island Reserve	Shirley Road, Wollstonecraft	Crown (R58957- Berry Island Recreation Reserve) NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map B
3	Badangi Reserve	Tryon Road, Wollstonecraft	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map C
4	Brightmore Reserve	Young Street, Cremorne	NSC Crown Minister for Lands	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation E2 – Environmental Conservation	Refer Map M
5	Carradah Park	Larkin Street, Waverton	Crown (R1004268 - Waverton Peninsula Reserve) Crown (R1004268 – Waverton Peninsula Reserve)	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map E

	<b>Description</b>	<b>Street Address</b>	<b>Ownership</b>	<b>Land Category</b> (LG Act 1993)	<b>Zoning</b> (NSC LEP 2013)	<b>Map Reference- (Refer Appendix 2)</b>
6	Coal Loader Centre for Sustainability	Balls Head Drive, Waverton	Crown (R1004268 - Waverton Peninsula Reserve) Crown (R1004268 – Waverton Peninsula Reserve)	Natural Area – Bushland Park* Community Purposes*	E2 - Environmental Conservation RE1 – Public Recreation RE1 – Public Recreation	Refer Map E
7	Cremorne Reserve	Milson Road, Cremorne Point	Crown (R39677 - Cremorne Reserve) Crown (R39677 - Cremorne Reserve)	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map G
8	Folly Point	Folly Point, Cammeray	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map L
9	Forsyth Park	Montpelier St, Neutral Bay	NSC NSC NSC	Natural Area – Bushland Park* Sportsground*	E2 - Environmental Conservation RE1 – Public Recreation RE1 – Public Recreation	Refer Map H
10	Fred Hutley Reserve	Hamilton Ave, Cammeray	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map I
11	Gore Cove Reserve	Milray Ave, Wollstonecraft	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map B
12	Hamilton Reserve	Hamilton Lane, Cammeray	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map I
13	Harry Howard Reserve	Newlands Lane, Wollstonecraft	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map D
14	Judith Ambler Reserve	Pine Street East, Cammeray	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map K
15	Mortlock Reserve	Vernon Street, Cammeray	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map K
16	Primrose Park	Young Street, Cremorne	NSC NSC Crown (R500456 - Primrose Park)	Natural Area – Bushland Sportsground* Natural Area - Bushland	E2 - Environmental Conservation RE1 – Public Recreation E2 – Environmental Conservation	Refer Map L

	<b>Description</b>	<b>Street Address</b>	<b>Ownership</b>	<b>Land Category</b> (LG Act 1993)	<b>Zoning</b> (NSC LEP 2013)	<b>Map Reference- (Refer Appendix 2)</b>
17	Smoothey Park	Russell Street, Wollstonecraft	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map A
18	Sugarworks Reserve	Horace Street, Waverton	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map C
19	Suspension Bridge Reserve	The Boulevarde, Camberay	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map J
20	Tobruk Avenue Lookout	Tobruk Avenue, Cremorne	NSC NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map N
21	Tunks Park	Brothers Avenue, Camberay	NSC Crown (R74114 – Tunks Park) Crown (R74114 – Tunks Park)	Natural Area – Bushland Sportsground* Park*	E2 - Environmental Conservation RE1 – Public Recreation RE1 – Public Recreation	Refer Map J
22	Walumetta Park	Walumetta Drive, Wollstonecraft	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map D
23	Waverton Park	Woolcott Street, Waverton	Crown (R500178 – Waverton Park (part of) Crown (R500178 – Waverton Park (part of) Crown (R87002 – Waverton Park (part of) Crown (R500285 – Waverton Park (part of)	Natural Area – Bushland Park* Sportsground* Park*	E2 - Environmental Conservation RE1 – Public Recreation RE1 – Public Recreation RE1 – Public Recreation	Refer Map F
24	Will Ashton Lookout	Larkin Street, Waverton	NSC	Natural Area – Bushland Park*	E2 - Environmental Conservation RE1 – Public Recreation	Refer Map F
25	Wonga Road Reserve	Wonga Road, Cremorne	NSC	Natural Area - Bushland	E2 - Environmental Conservation	Refer Map N

\*This section of the park or reserve is not included in this Plan of Management. Only the sections of the park or reserve zoned E2 Environmental Conservation and categorised 'Natural Area – Bushland' are included in this Plan of Management.

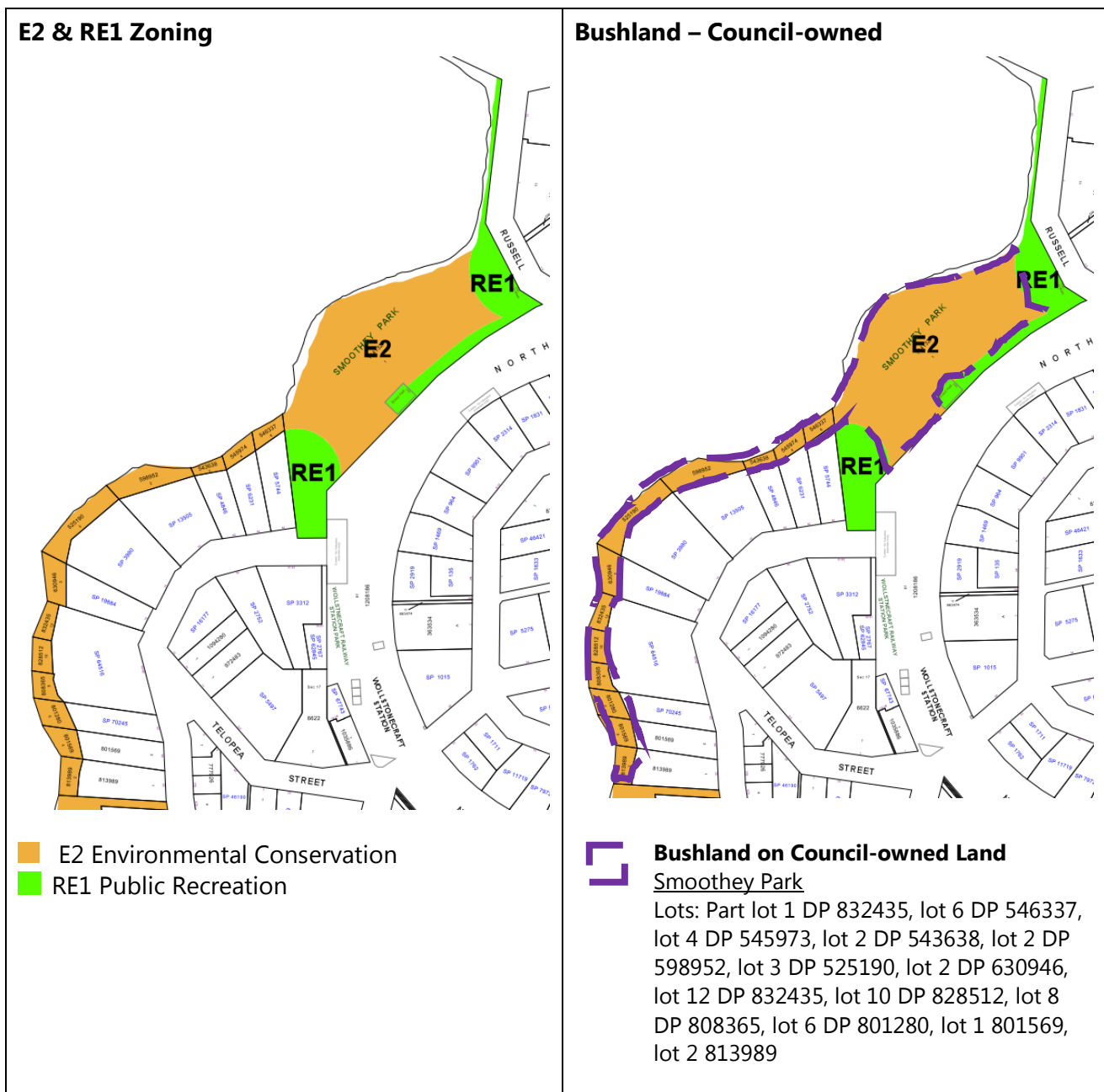
## 6.2 Appendix 2 – Maps

**Note:** all parts of the parks and reserves that are shown as zoned E2 – Environmental Conservation in the following maps are categorised as Natural Area - Bushland

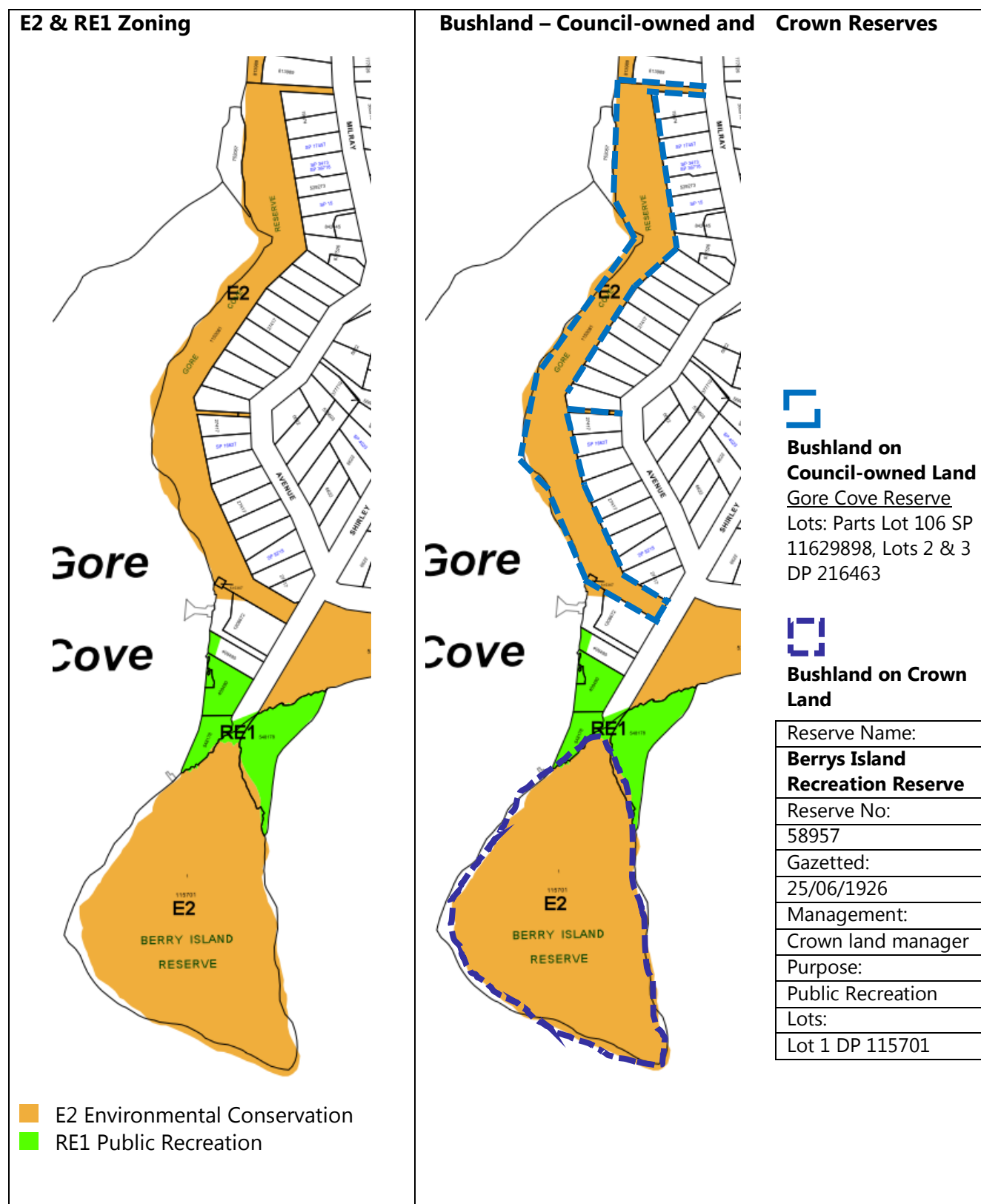


1	Balls Head Reserve	9	Forsyth Park	17	Smoothey Park
2	Berry Island Reserve	10	Fred Hutley Reserve	18	Sugar Works Reserve
3	Badangi Reserve	11	Gore Cove Reserve	19	Suspension Bridge Reserve
4	Brightmore Reserve	12	Hamilton Reserve	20	Tobruk Avenue Lookout
5	Carradah Park	13	Harry Howard Reserve	21	Tunks Park
6	Coal Loader Centre for Sustainability	14	Judith Ambler Reserve	22	Walumetta Park
7	Cremorne Reserve	15	Mortlock Reserve	23	Waverton Park
8	Folly Point	16	Primrose Park	24	Will Ashton Lookout
				25	Wonga Road Reserve

## Map A – Smoothey Park, Wollstonecraft



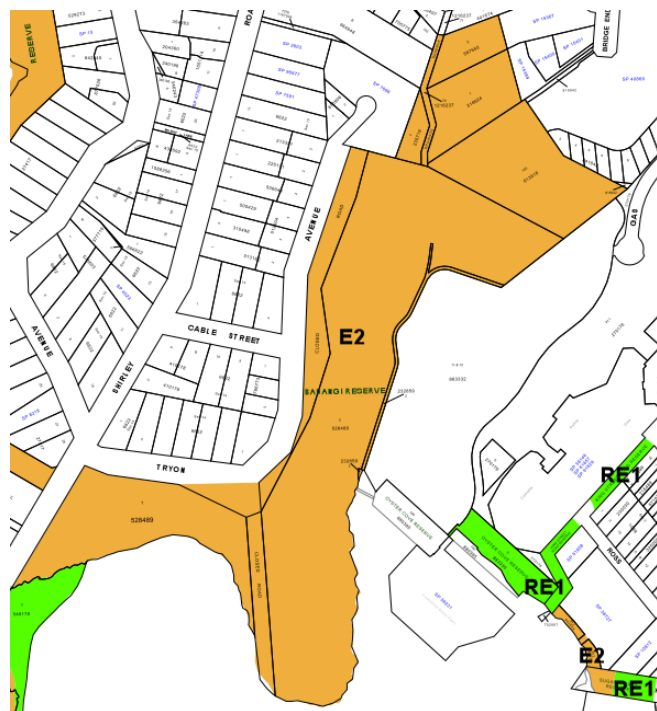
### Map B – Gore Cove & Berry Island, Wollstonecraft





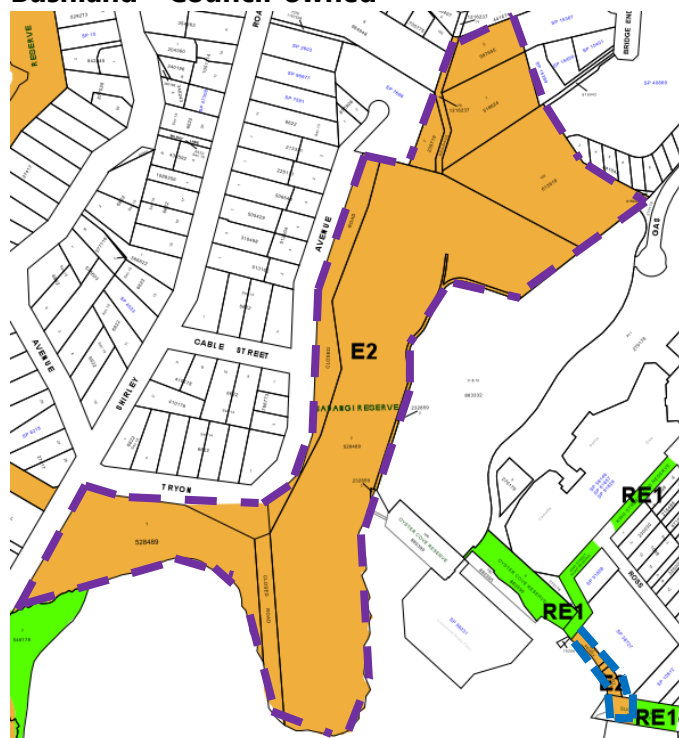
## Map C – Badangi & Sugarworks Reserves, Wollstonecraft

### E2 & RE1 Zoning



- E2 Environmental Conservation
- RE1 Public Recreation

### Bushland – Council-owned



#### Bushland on Council-owned Land



##### Badangi Reserve

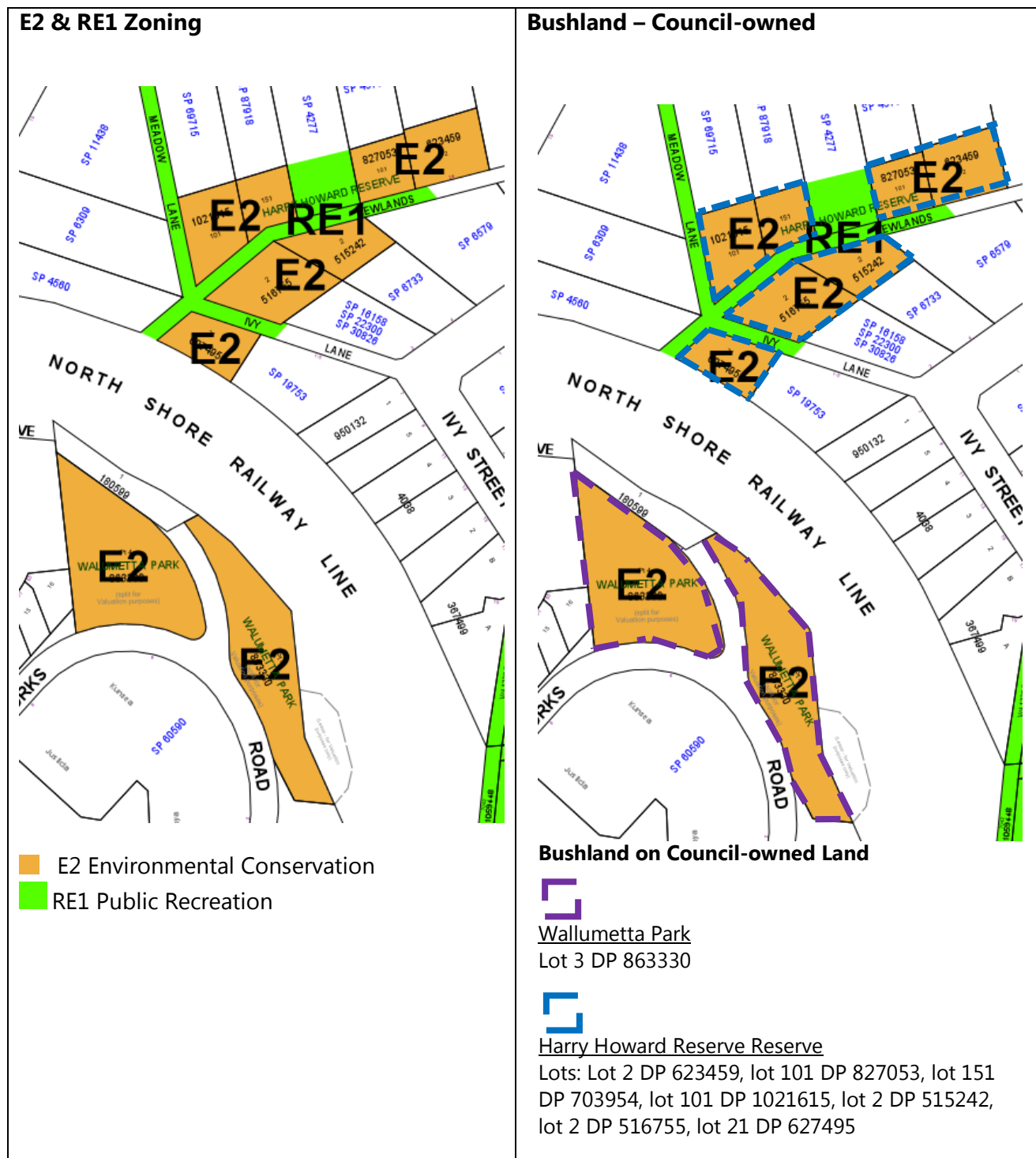
Lots: Lot 5 DP 587535, lot 1 DP 518624, lot 7 DP 235719, lot 70 DP 1216237, lot 103 DP 613918, lot 2 DP 528489, lot 3 DP 232859, lot 1 DP 528489



##### Sugarworks Reserve

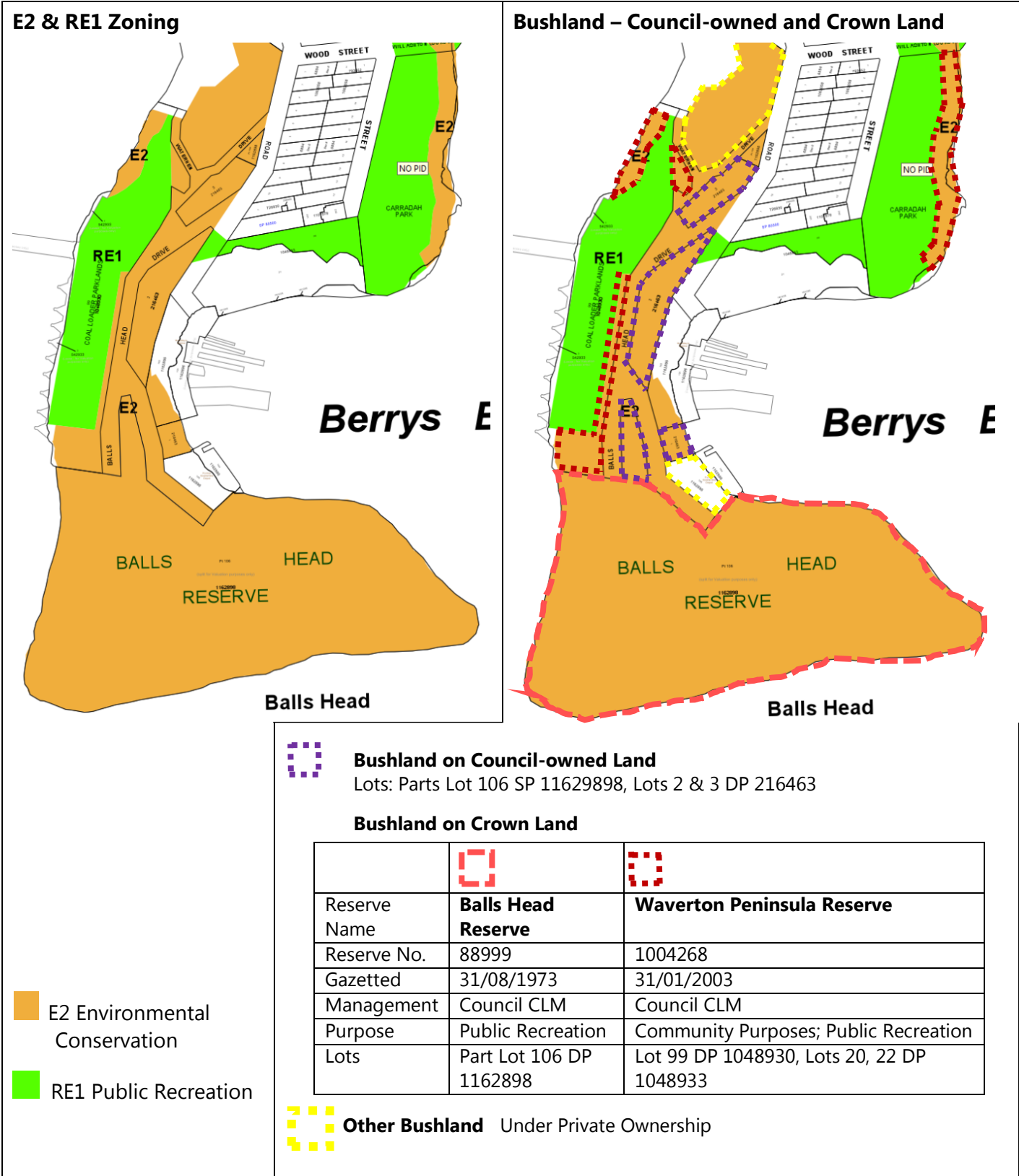
Lot 2 DP 803524

## Map D - Wallumetta Park and Harry Howard Reserve, Wollstonecraft

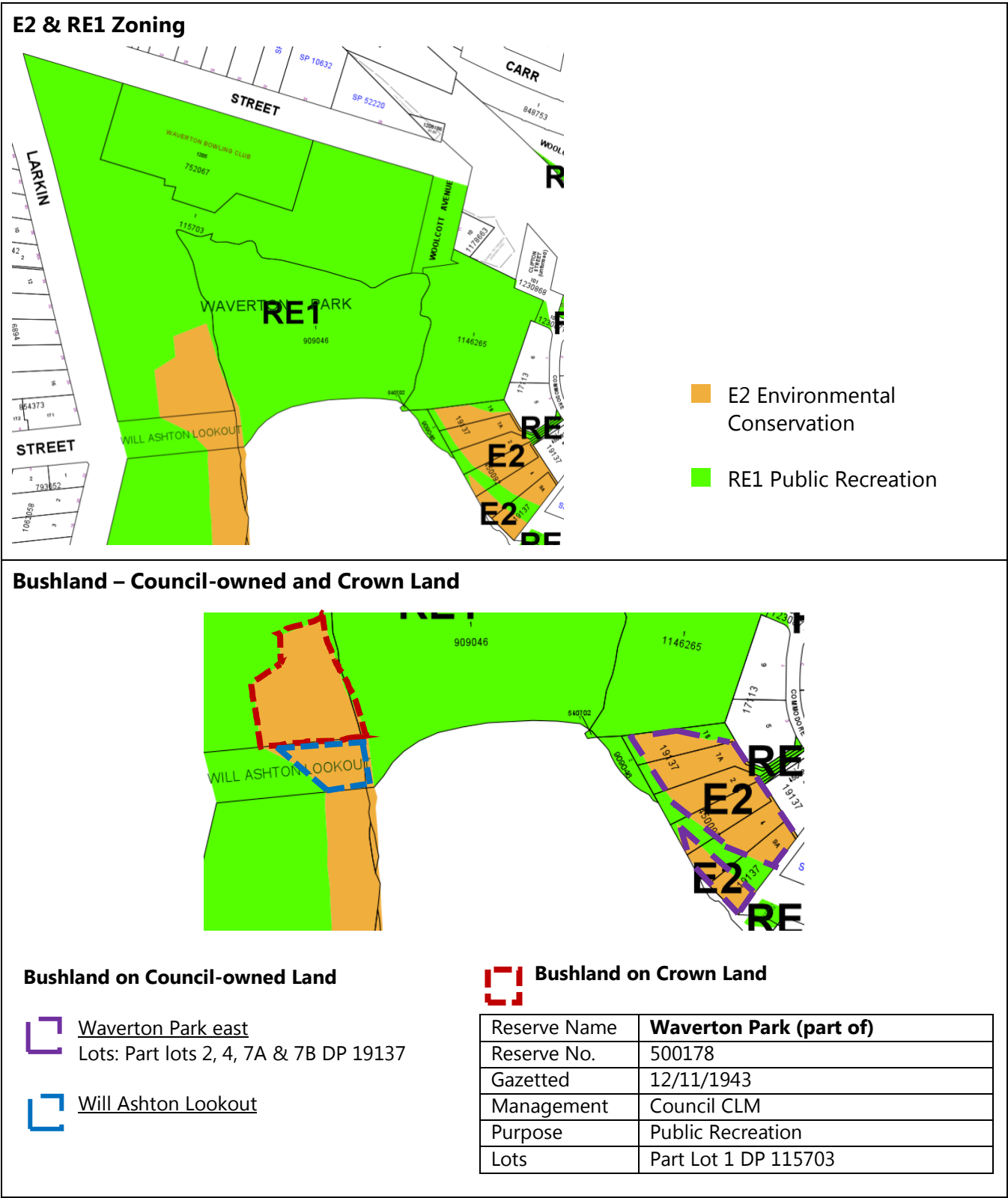




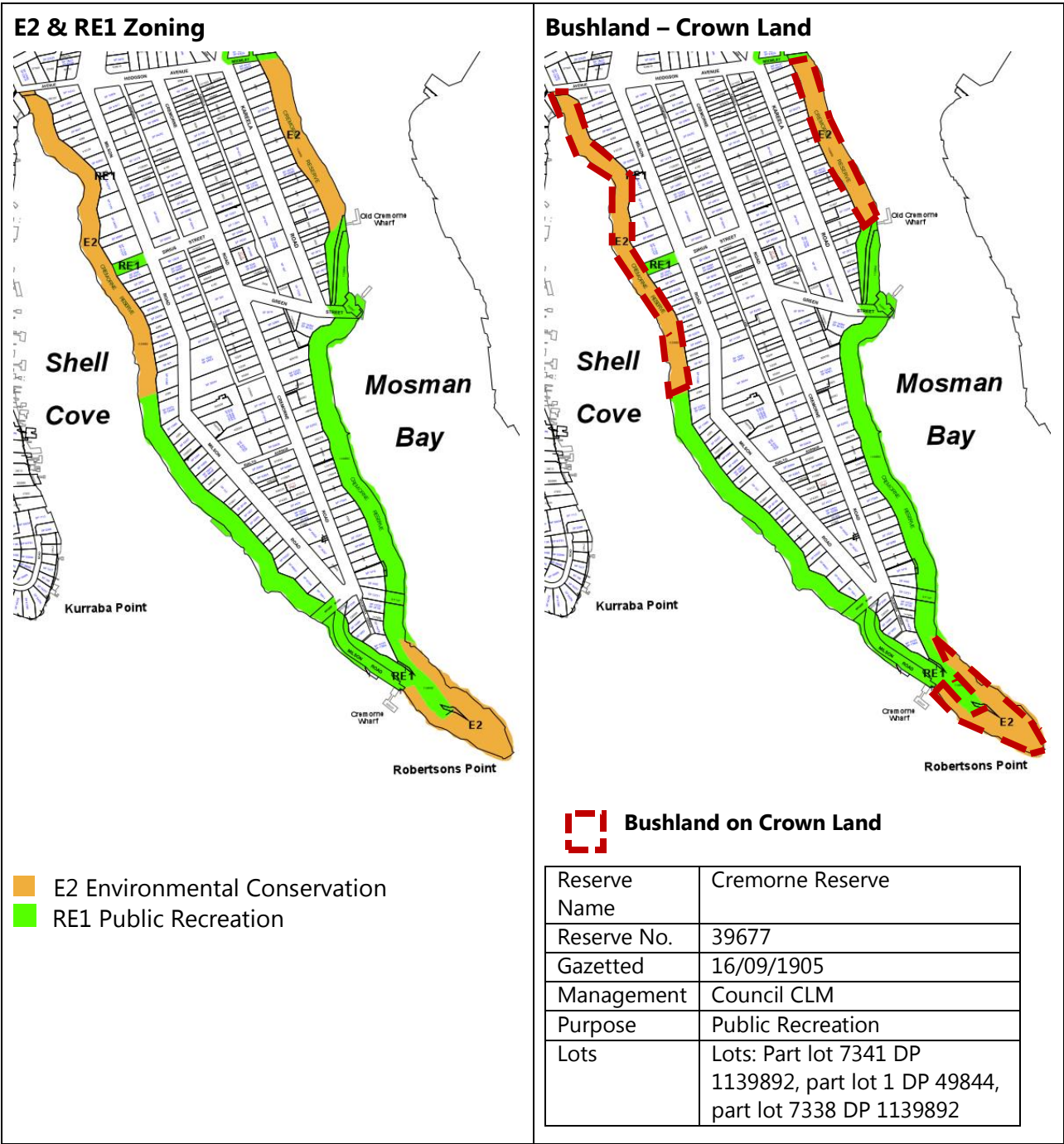
Map E - Balls Head, Carradah Park & Coal Loader Center for Sustainability, Waverton



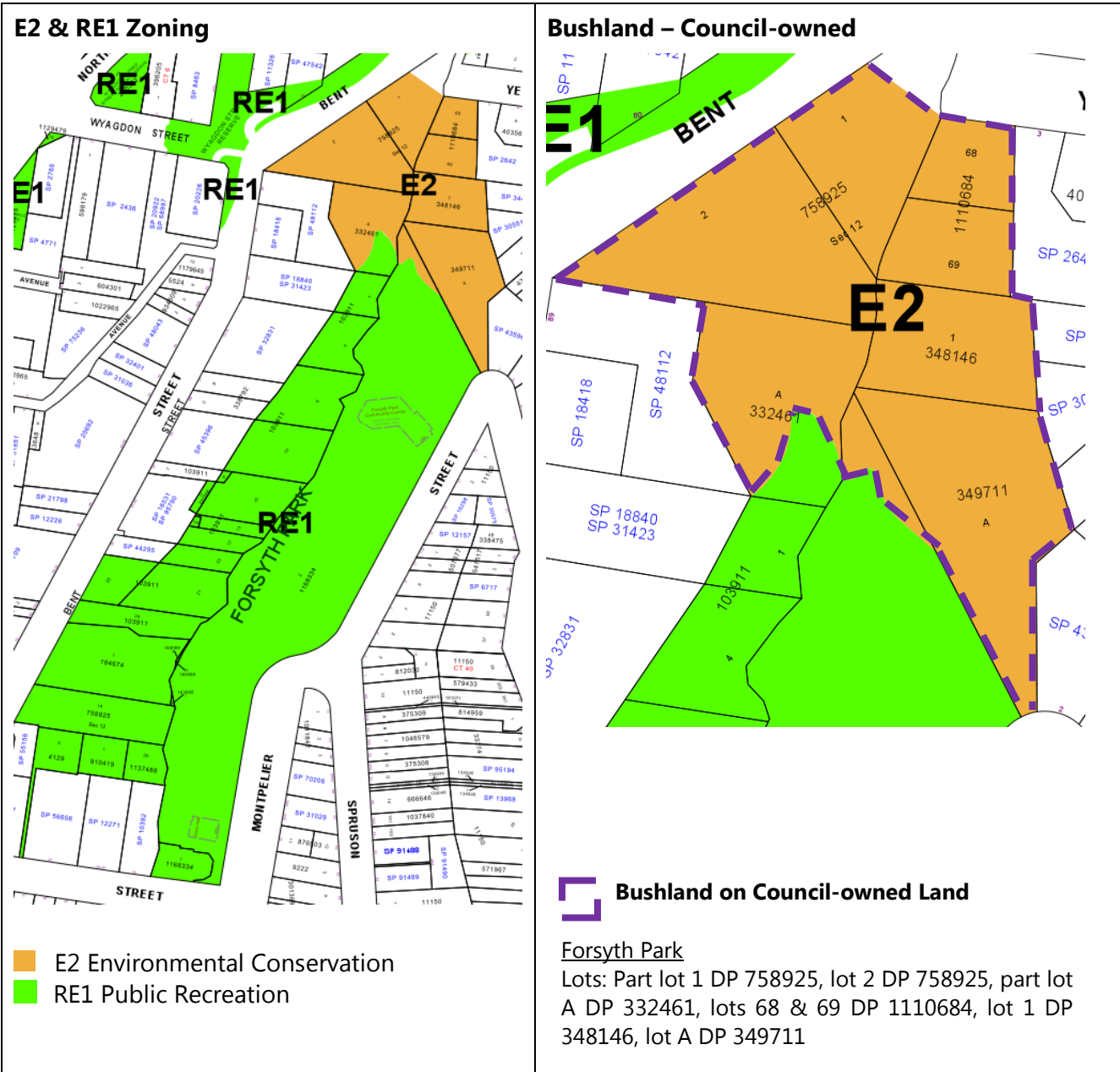
Map F – Waverton Park & Will Ashton Lookout, Waverton



Map G – Cremorne Reserve, Cremorne Point

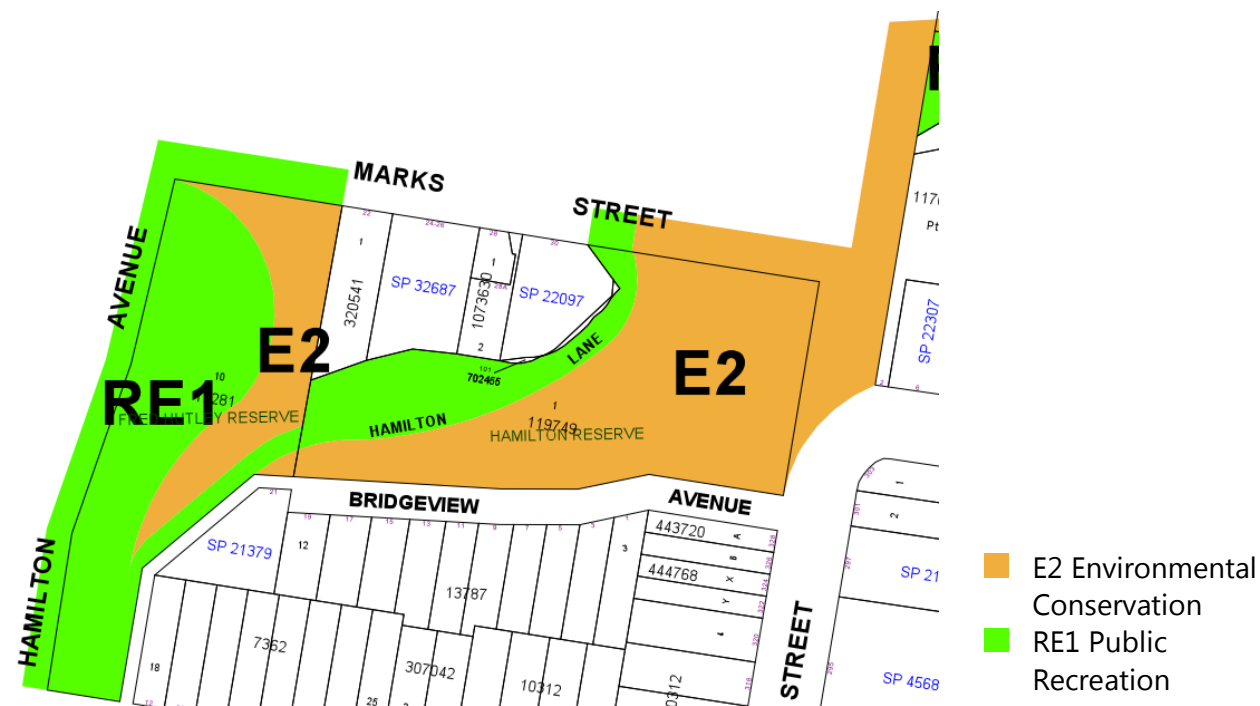


Map H – Forsyth Park, Neutral Bay

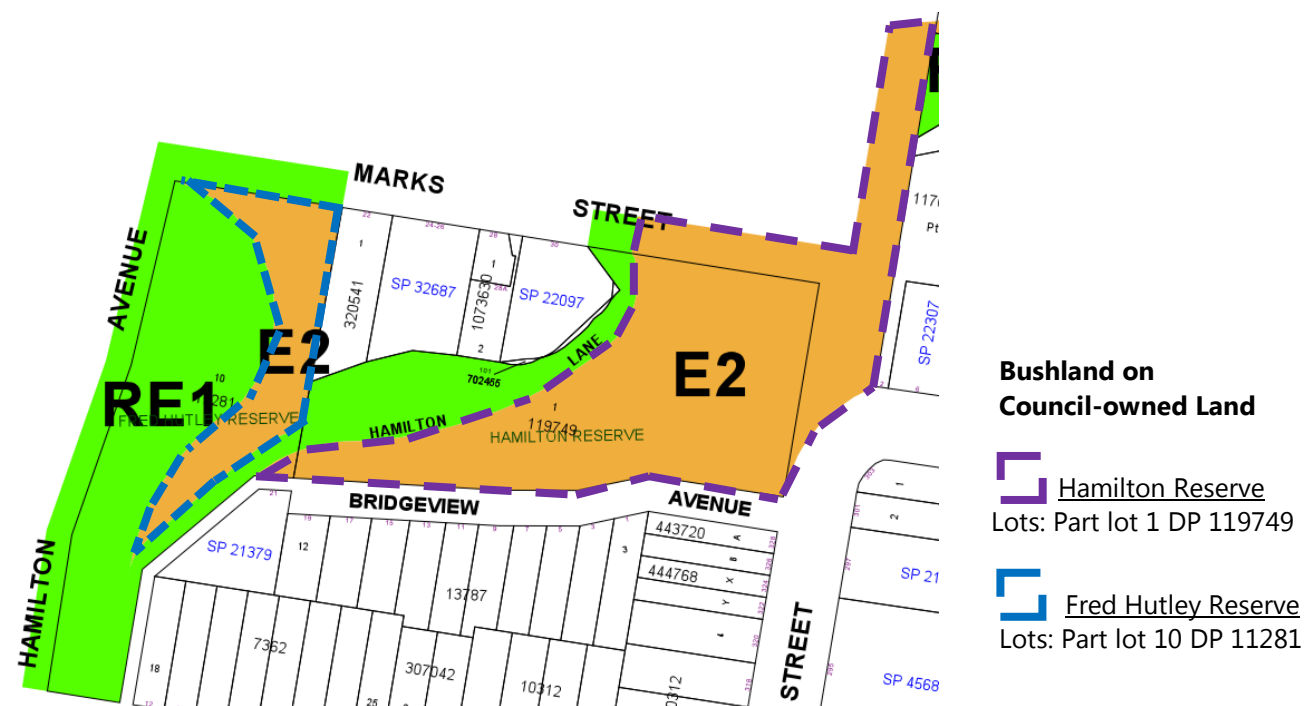


# Map I – Fred Hutley Reserve & Hamilton Reserve, Cammeray

## E2 & RE1 Zoning



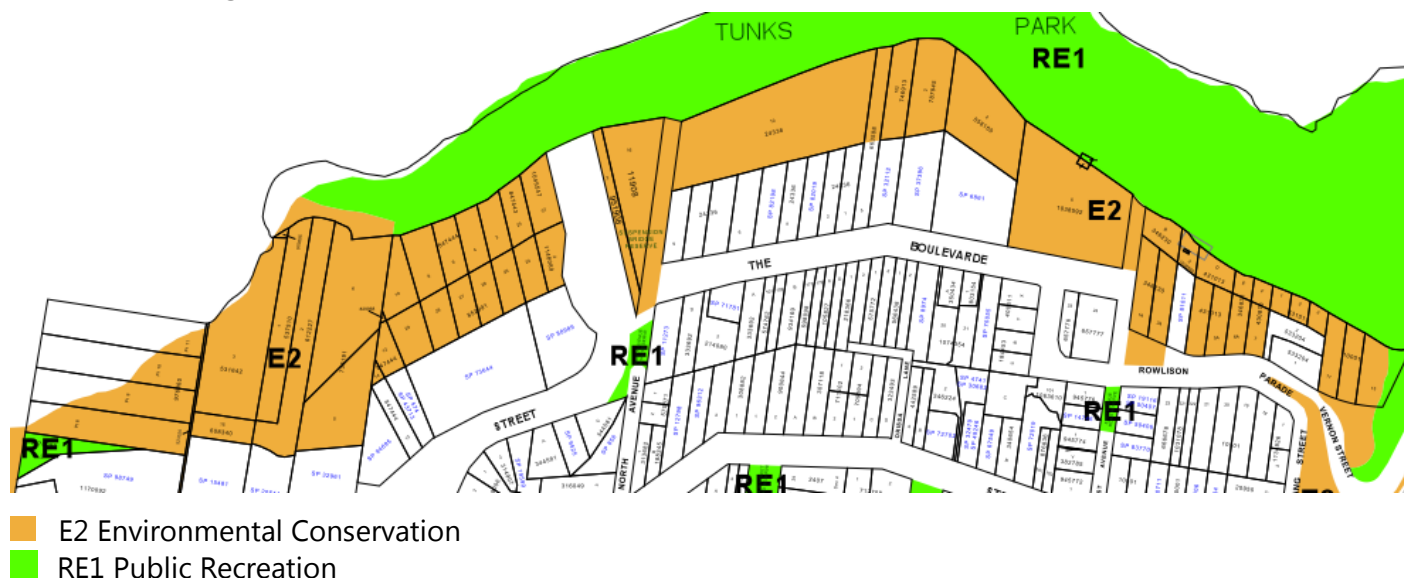
## Bushland – Council-owned



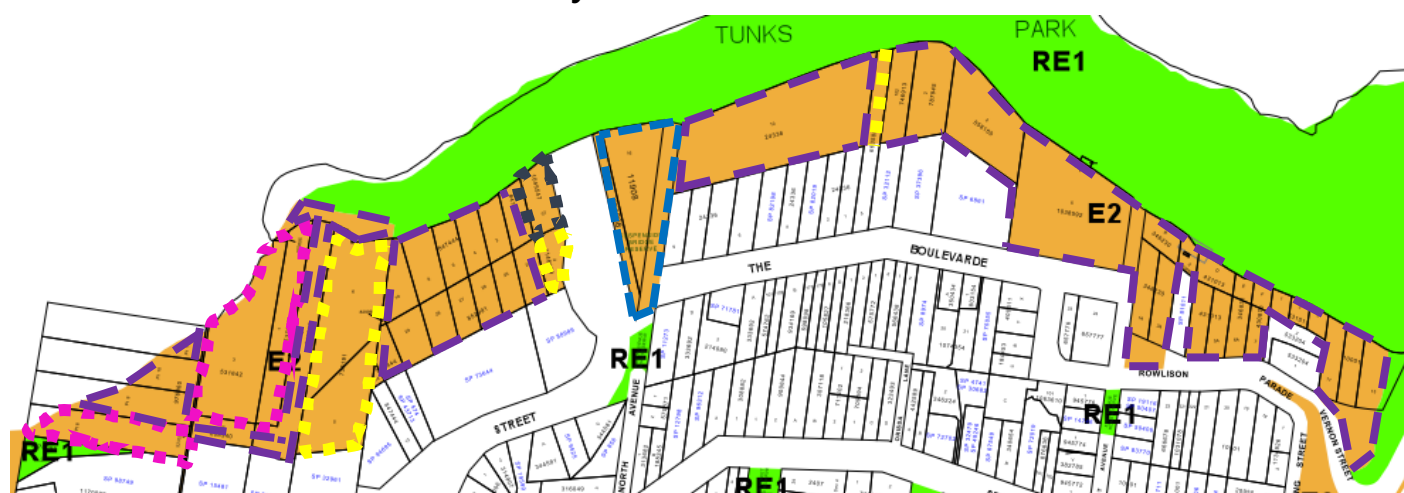


## Map J - Tunks Park & Suspension Bridge Reserve, Cammeray

### E2 & RE1 Zoning



### Bushland – Council-owned, and owned by others



#### Bushland on Council-owned Land



Suspension Bridge Reserve

Lots: lot 2 DP 951908, lot 16 DP 11908



Tunks Park

Lots: 10, 12 DP 976960, lot 15 DP 608340, lot 2 DP 612227, lot 5 DP 735191, lots 2,4,6,8,10,12 DP 847444, lots 24,25,26,27,28,29 DP 852991, lot 23 DP 847443, lot 10 DP 24336, lot 102 DP 746913, lot 2 DP 558150, lot 5 DP 1038592, lots 1A, 2A, B DP 346230, lots 1&2 DP 1038592, lot D,54 DP 431013, lot 6A DP 346831, lot 6 DP 430876, lots 1,2,3 DP 431511, lots 11,13,18 DP 10001, lots 20,24 DP 876370

#### Other Bushland



Under Private Ownership

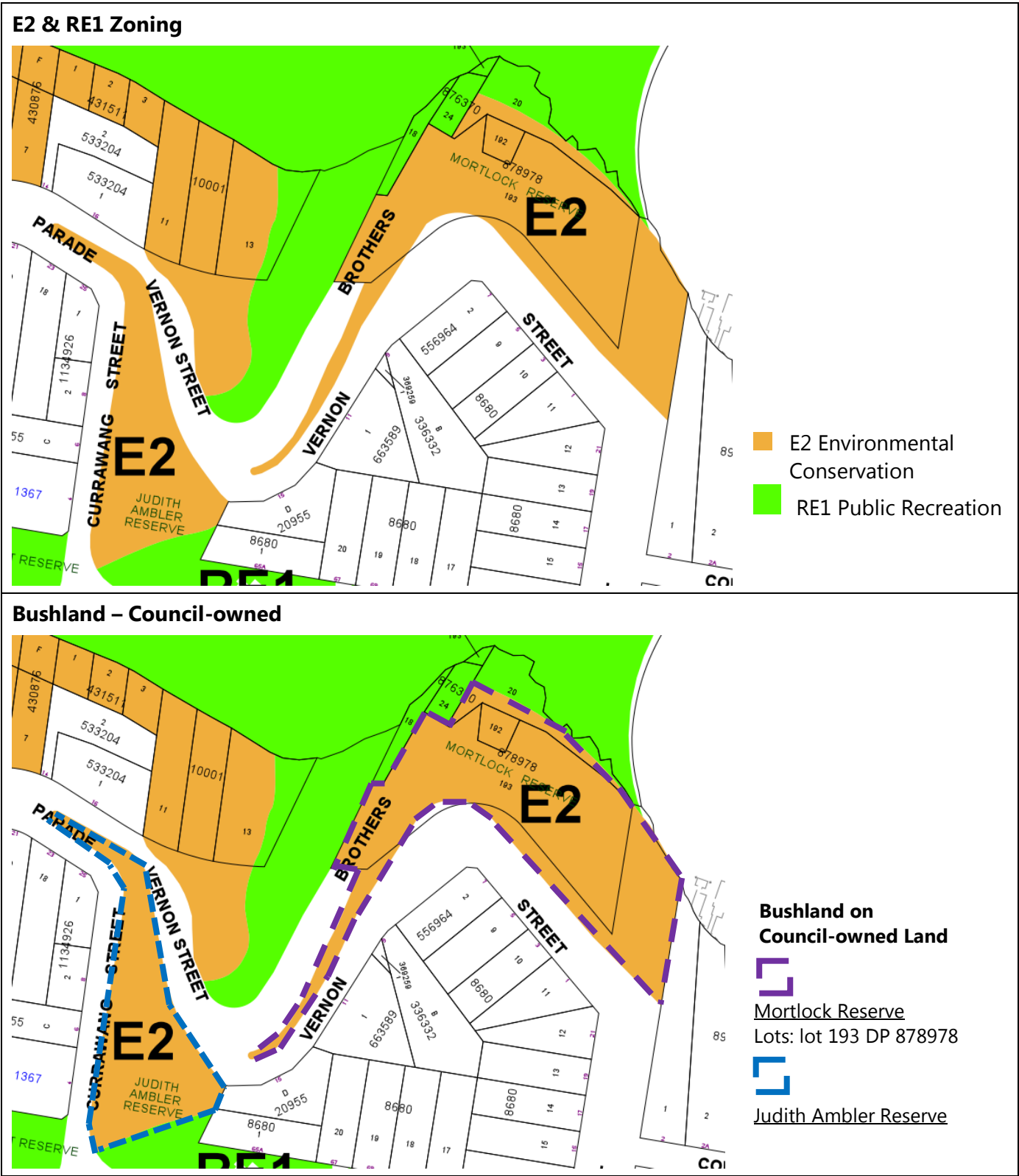


State Planning Authority

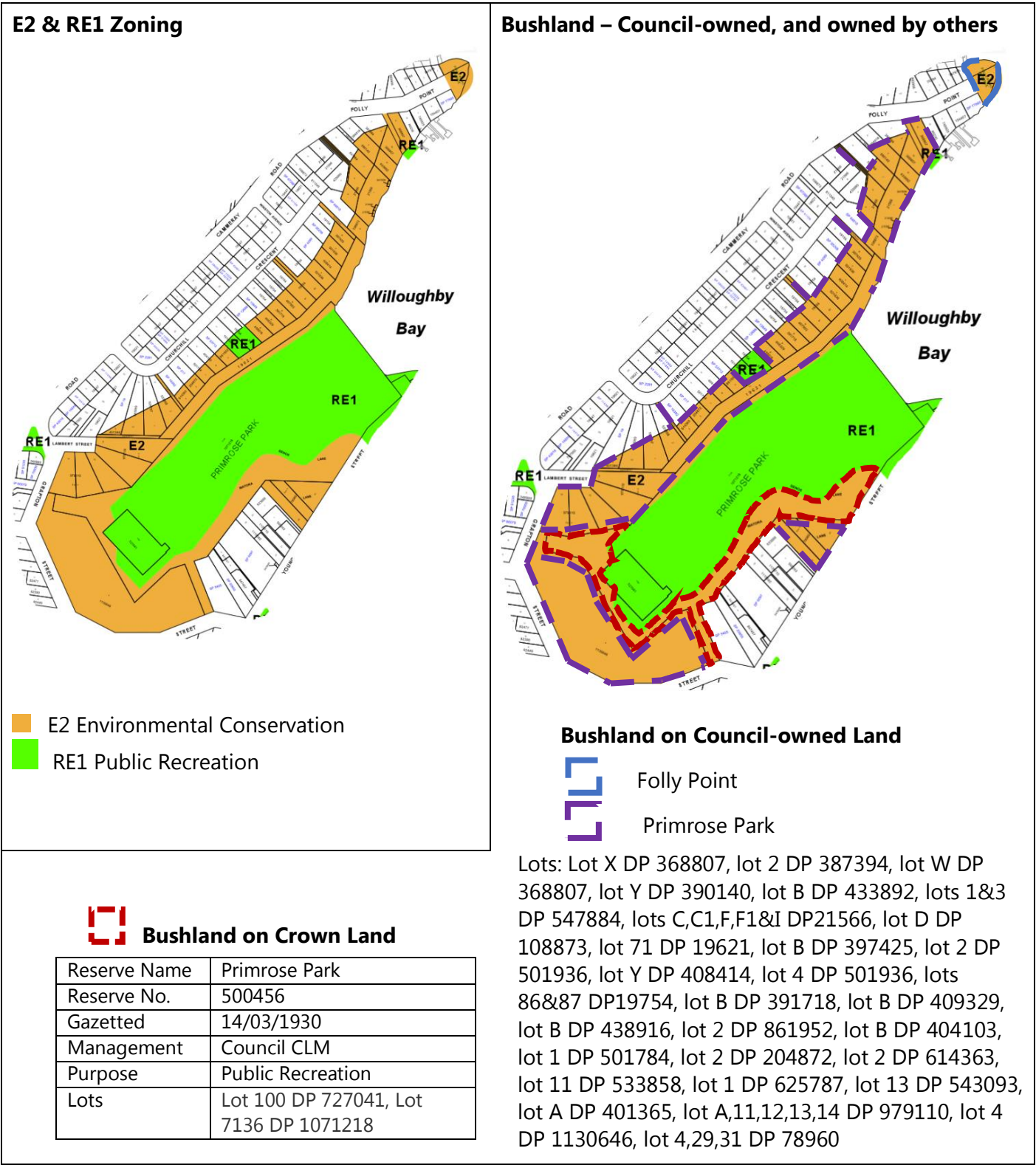


Roads & Maritime Services

Map K – Mortlock Reserve & Judith Ambler Reserve, Cammeray

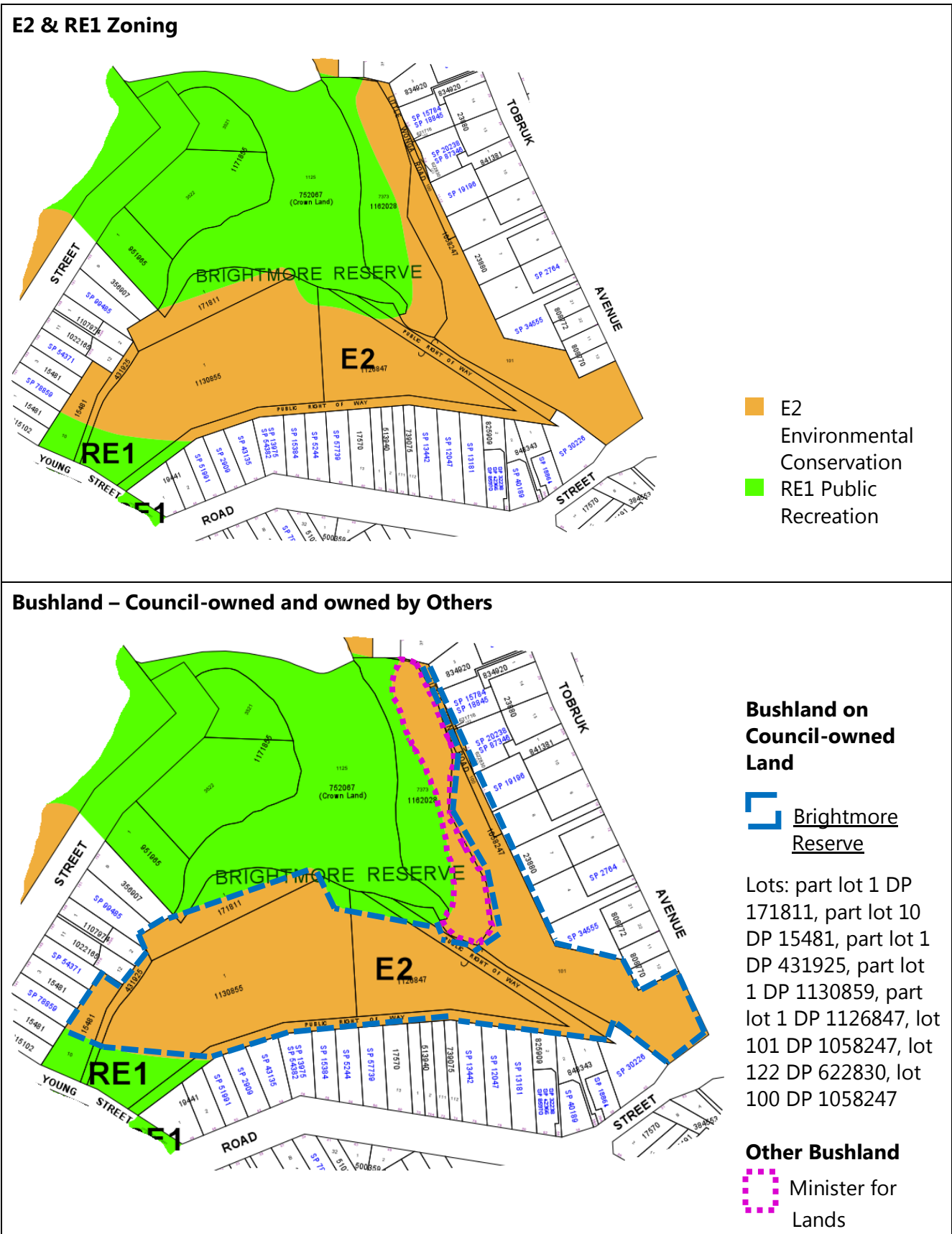


Map L – Primrose Park & Folly Point, Cremorne

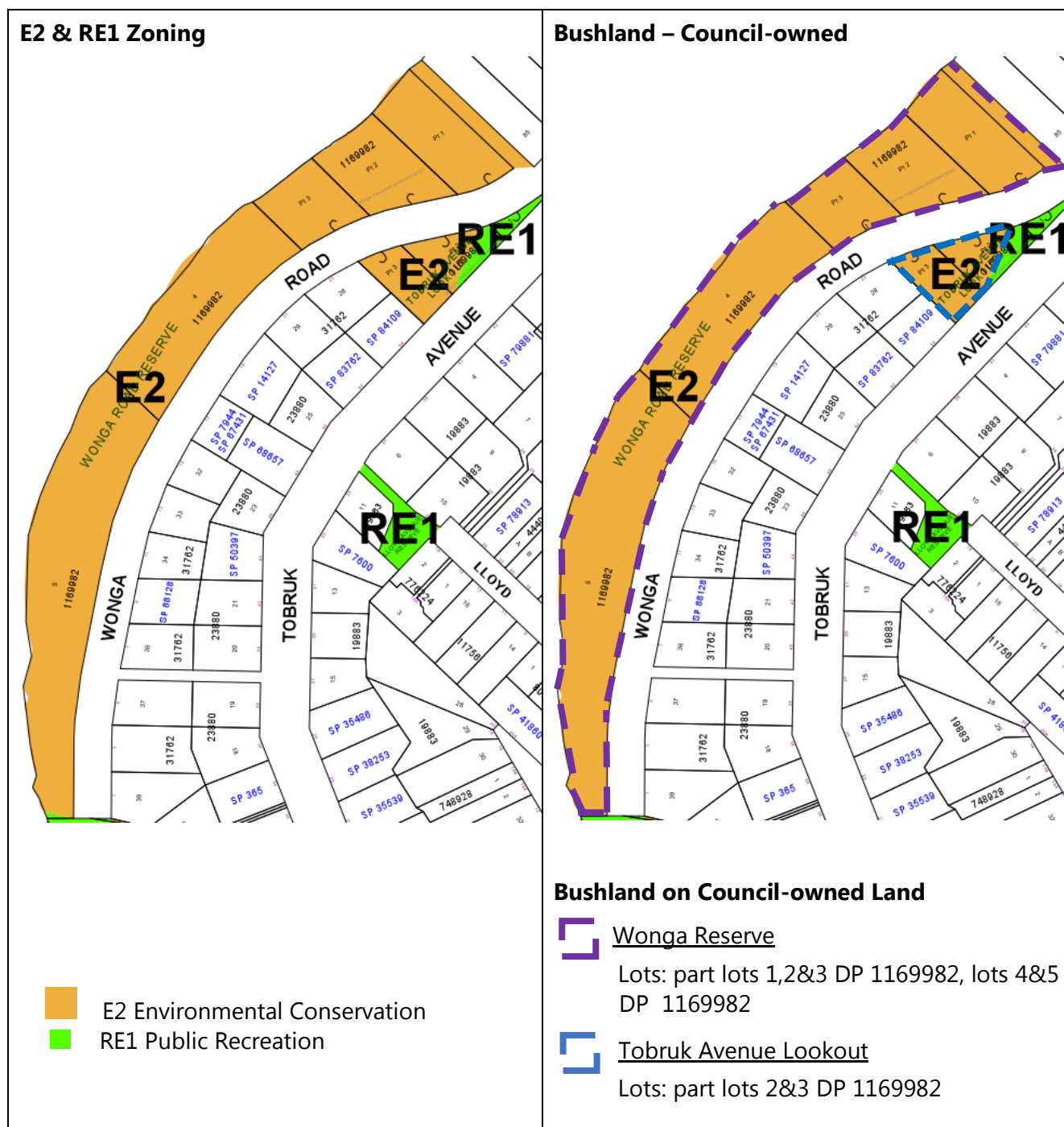




Map M – Brightmore Reserve, Cremorne



## Map N – Wonga Road Reserve & Tobruk Ave Lookout



## **Zone E2 Environmental Conservation**

### **1 Objectives of zone**

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- To protect and preserve bushland to provide representation of the natural state and to enable existing animal and plant communities to survive in the long term.
- To allow, where appropriate, for low-impact recreational opportunities, which will protect the value of bushland.

### **2 Permitted without consent**

Environmental Conservation works

### **3 Permitted with consent**

Environmental facilities; Roads

### **4 Prohibited**

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Source: *North Sydney Local Environmental Plan 2013*