



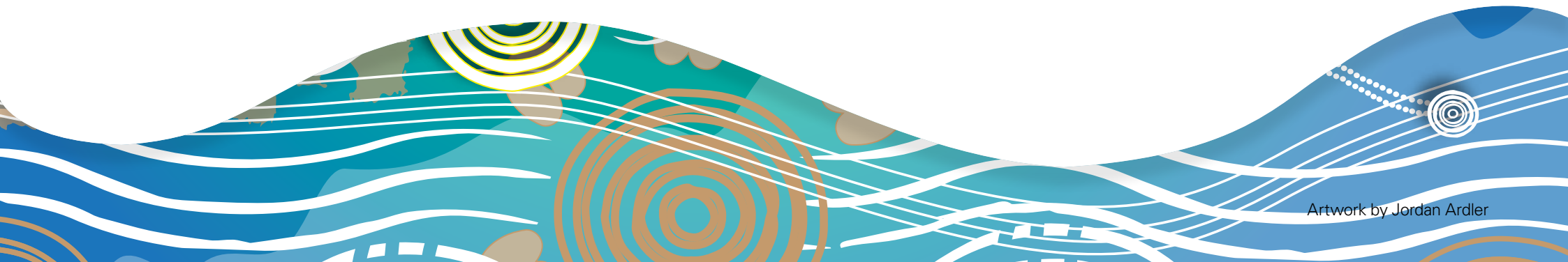
BIODIVERSITY CONSERVATION STRATEGY

2025–2035

August 2025

Acknowledgement of Country

Woollahra Council acknowledges the
Gadigal and Birrabirragal people who are the
Traditional Custodians of this land and we pay our
respects to Elders past, present and emerging.



Artwork by Jordan Ardler

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Cover: Cape White butterfly

Long-necked turtle

Message from the Mayor



As Mayor of Woollahra, I'm pleased to introduce Council's Biodiversity Conservation Strategy. This document demonstrates our ongoing commitment to protecting and enhancing our natural areas and the species that live in or visit our municipality.

Our local area is home to an important array of plants, animals, and ecosystems, all interconnected. From the sheltered gullies of Cooper Park to the coastal cliffs of Gap Park, we are fortunate to live in a place of such natural beauty, which provides a home for threatened species such as the spectacular Powerful Owl and a number of microbats.

However, our biodiversity is facing increasing pressures. Climate change, habitat loss, and invasive species are just some of the challenges that threaten biodiversity.

This Biodiversity Conservation Strategy outlines our vision for biodiversity in Woollahra. It sets clear objectives and actions, focusing on:

- Conserving, restoring and improving terrestrial biodiversity and enhancing habitat connectivity;
- Improving the health and resilience of freshwater ecosystems;
- Improving the water quality and habitat value of foreshore and marine ecosystems;
- Improving understanding of biodiversity; and
- Engaging with the community in enhancing biodiversity conservation.

Together, we can make a real difference in protecting biodiversity and ensuring healthy and vibrant natural areas.

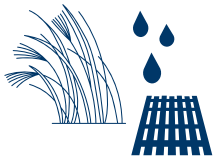
Councillor Sarah Dixon

Mayor of Woollahra

August 2025

Key outcomes

Since the development of Council's first Biodiversity Conservation Strategy in 2015:



Pollution traps and **raingardens** have been installed to reduce water pollution



80 bushcare volunteers are working to regenerate bushland across **10 sites**



75% of our bushland is **fully regenerated**



A Biodiversity and Environmental Monitoring Program has been developed, involving regular LGA-wide surveys



Over **200 beach cleanups** have been facilitated in the last 5 years through our Harbourcare program



Our focus on threatened species protection has **increased**

1. Introduction

The Woollahra municipality is located in Sydney's eastern suburbs covering an area of 12 square kilometres. The traditional owners of the Woollahra area are the Gadigal and Birrabirragal clans of the Dharawal Nation.

Woollahra is a highly urbanised area comprised of commercial precincts, medium to high density residential areas, a military reserve, a number of large schools, and open space including sport fields, parks and bushland reserves. Biodiversity in the area is supported by remnant bushland areas, parks and golf courses, rocky foreshore and beaches, street tree and verge plantings, and private gardens. These natural areas provide habitat for native flora and fauna, including threatened species.

The protection and conservation of biodiversity in Woollahra is a key priority for Council, residents, and the wider community. This Biodiversity Conservation Strategy outlines objectives and management actions for conserving and improving biodiversity across the Woollahra area.



This document was prepared by Woollahra Municipal Council with assistance from Applied Ecology, and uses information and resources from the previous Biodiversity Conservation Strategy 2015–2025, which was prepared by Eco Logical Australia.

Implementation of the Biodiversity Conservation Strategy will be managed by Council's Environment and Sustainability team. It will be reviewed and updated every 10 years.

Banksia ericifolia is native to the Sydney region. The large flowers attract nectar-eating birds and pollinators, and its dense spiky habit provides protection and shelter for small birds and mammals.

1.1 Vision and objectives

Our vision for biodiversity in Woollahra is:

‘To protect, restore and improve biodiversity, sustaining a healthy environment and conserving the integrity of ecosystem services for current and future generations.’

The following objectives have been developed to guide biodiversity conservation management actions:

- 1 To conserve, restore and improve terrestrial biodiversity and enhance habitat connectivity through our urban forest
- 2 To improve the health and resilience of freshwater ecosystems
- 3 To improve the water quality and habitat value of foreshore and marine ecosystems
- 4 To improve our understanding of biodiversity
- 5 To engage with the community in enhancing biodiversity conservation

Powerful Owl



2. Strategic Context

Local governments play an essential role in the conservation and management of biodiversity through the development and implementation of strategies and plans, land use planning mechanisms, development controls, and consultation with the local community. Council's approach to biodiversity conservation is guided by a complex legislative framework encompassing international, national, state, regional, and local regulations (Figure 1).

Council, within the wider planning framework and in consultation with the community, has developed a number of strategies and plans to identify the priorities and aspirations of the community and the delivery of a vision for the future.

The Biodiversity Conservation Strategy 2025–2035 will interact particularly closely with Council's Urban Forest Strategy and Environmental Sustainability Action Plan. The Urban Forest Strategy provides a framework to guide the increase in tree canopy cover in Woollahra. Addressing the environmental and biodiversity benefits of canopy coverage is a key aim of the Urban Forest Strategy.

These benefits include:

- Reduced urban heat
- Reduced air pollution
- Improved air quality
- Increased wildlife diversity.

The Environmental Sustainability Action Plan outlines targets and actions to address the following environmental priorities in Woollahra:

- Climate change mitigation and adaptation
- Water quality improvement
- Biodiversity conservation
- Waste reduction.

The Biodiversity Conservation Strategy 2025–2035 is consistent with these documents.



National Tree Day, Christison Park



Trumper Park pond provides habitat for ducks, turtles, and other water dependent fauna. Water quality in the pond is impacted by stormwater pollution and drought.

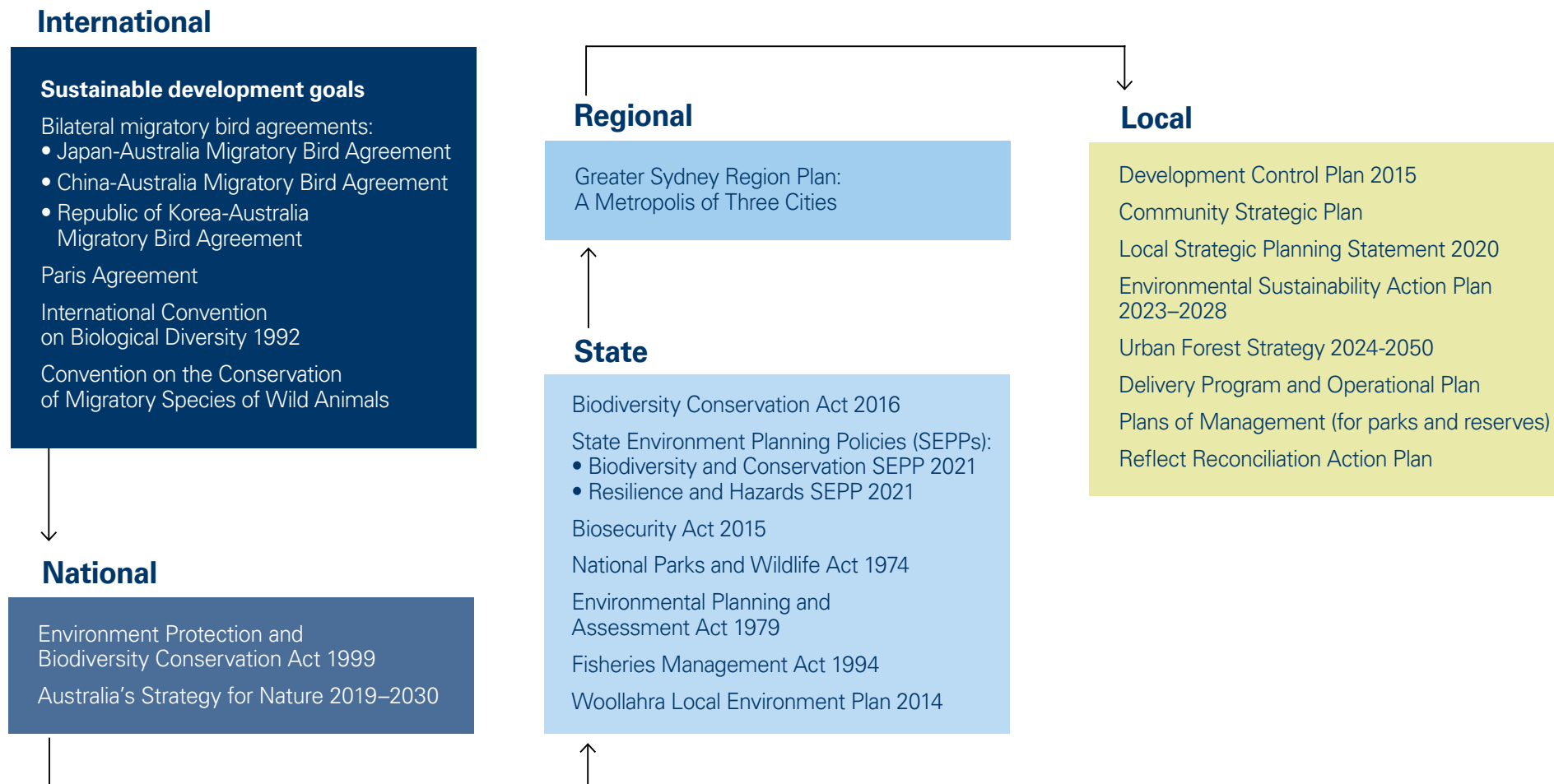


Figure 1: Strategic framework influencing biodiversity management in Woollahra

3. What is Biodiversity?

Biodiversity is defined as

The variety of all living things; “the different plants, animals and micro organisms, the genetic information they contain and the ecosystems they form.”¹

This concept emphasises the interrelatedness of the biological world, covering both terrestrial and marine environments.



Galah feeding on *Ceratopetalum gummiiferum* (NSW Christmas Bush)

There are three levels to biodiversity

Genetic

Genetic diversity is the variety of genetic information contained in all of the individual plants, animals and microorganisms that inhabit the earth. Genetic diversity occurs within and between the populations of organisms that comprise individual species as well as among species.

Species

Species diversity is the variety of species on the Earth, and an important consideration for maintaining healthy ecosystems in Woollahra.



White-bellied Sea-Eagle, listed as Vulnerable in NSW

Ecosystem

Ecosystem diversity is the variety of habitats, biotic communities and ecological processes. In Woollahra these range from clifftop communities to shaded creek gullies and down through intertidal areas to the marine environment of beaches and Sydney Harbour.

Biodiversity conservation is a foundation of ecologically sustainable development. It underpins human health and wellbeing through the provision of ecological services that are essential for food, fresh water and air. Biodiversity mitigates against some of the impacts of anthropogenic climate change such as air pollution and extreme heat². Biodiversity also contributes positively to human psychological wellbeing, culture, recreation and education.

4. Biodiversity in Woollahra

4.1 Historical landscape

Prior to European settlement, Woollahra's landscape was comprised of a range of diverse ecosystems and habitat elements, including estuarine foreshore, swamp forests and exposed coastal sandstone cliffs. Extensive, species-rich heathlands grew on exposed ridges graduating into taller woodlands and forests on sheltered hillsides and gullies overlooking the harbour³.

On the alluvial flats at the heads of bays such as Rushcutters Bay and Double Bay, tall forests intermingled with smaller patches of Cabbage Tree Palms and other rainforest species.

Paperbark swamps occurred on the peaty low lying areas stretching inland from Rose Bay to the sand hills of Bondi⁴.

4.2 Biodiversity in Woollahra today

It is estimated that 4.3% of the original native vegetation communities remain in Woollahra's landscape today. Almost all of the swampy woodlands have been filled and replaced with parks and sports fields, creek-lines have been channelised and seawalls have been constructed along much of the foreshore. Woollahra's remaining natural areas and associated flora and fauna are of incalculable value to current and future generations.

Numerous diverse ecosystem elements persist in Woollahra, including:

- Bushland reserves
- Intertidal and estuarine ecosystems
- Rock platforms and sandy harbour beaches
- Seagrass meadows
- Exposed sandstone cliffs and headlands with coastal heath vegetation
- Sheltered and forested sandstone slopes and gullies
- Small freshwater creeks and ponds surrounded by bushland and parks.

The greatest diversity of native flora and fauna in Woollahra is found in larger bushland reserves including Nielsen Park, Cooper Park, and Parsley Bay. This is due to the reduced edge effect of larger reserves and habitat connectivity, promoting greater protection of bushland at the core.

Biodiversity is also supported by various other features of urban development, such as sport fields and golf courses, mature street trees, stormwater drains and ponds, and established gardens. Tree canopy covers 27.4% of the Woollahra area, split evenly across public and private land⁵. These ecosystem elements support a range of native species, including threatened flora and fauna.

4.2.1 Threatened Flora

According to BioNet, the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) database for flora and fauna records and other biodiversity survey data⁶, six threatened flora species have been recorded in Woollahra (Figure 2). Of these six species, four are actively managed as threatened species, with the remaining two, Macadamia Nut and Giant Spear Lily, being native to other Australian regions.



Sunshine Wattle in flower

Acacia terminalis subsp. Eastern Sydney (Sunshine Wattle) has a very limited distribution, found mainly in coastal areas from the northern shores of Sydney Harbour south to Botany Bay, with most records in the eastern suburbs of Sydney. This species is associated with the endangered ecological community Eastern Suburbs Banksia Scrub. It is planted within several reserves in Woollahra, including Cooper Park, Gap Park, and Parsley Bay.



Nielsen Park She-Oak in flower

MICHAEL VAN EWIJK

Allocasuarina portuensis (Nielsen Park She-oak) was originally only found in Nielsen Park. No remnant specimens remain however the species has been successfully propagated and planted at Nielsen Park, Gap Park and Cooper Park.



Magenta Lilly Pilly in flower

GREG STEENBEEKE

Populations of *Syzygium paniculatum* (Magenta Lilly Pilly) are well established in several reserves as a result of historic and recent plantings. It is unknown whether the species occurred naturally in the region prior to European settlement. The NSW Office of Environment and Heritage (now DCCEEW) has previously advised Council that the Magenta Lilly Pilly should be managed in accordance with its threatened species listing despite this uncertainty. This species is naturally found in riverside rainforests and remnant littoral rainforest communities. In Woollahra, planted specimens are found in Cooper Park, Trumper Park and Parsley Bay.



Netted Bottle Brush

JOHN & PATRICIA EDWARDS

While there are few records for *Callistemon linearifolius* (Netted Bottle Brush), this species is considered locally extinct in Woollahra. It is possible that the Netted Bottle Brush may regerminate naturally from the seed bank, which could be encouraged by weed control and scarification. Re-introduction of this species into bushland reserves in Woollahra has commenced, with individuals planted at Lighthouse Reserve. This is included in the Action Plan in Section 6.

4.2.2 Threatened Fauna

BioNet has recorded 19 threatened or migratory fauna species in Woollahra, listed under the *NSW Biodiversity Conservation Act 2016* (BC Act) and/or *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Figure 3). With the exception of the Grey-headed Flying-fox, most threatened fauna species have been recorded in larger bushland reserves, particularly South Head, Trumper Park, Cooper Park and Parsley Bay. Species richness is highest in key habitat areas (see Section 4.2.3), likely due to a combination of the suitable habitat available as well as increased survey effort in these areas.



Grey-headed Flying-Fox in Port Jackson Fig tree

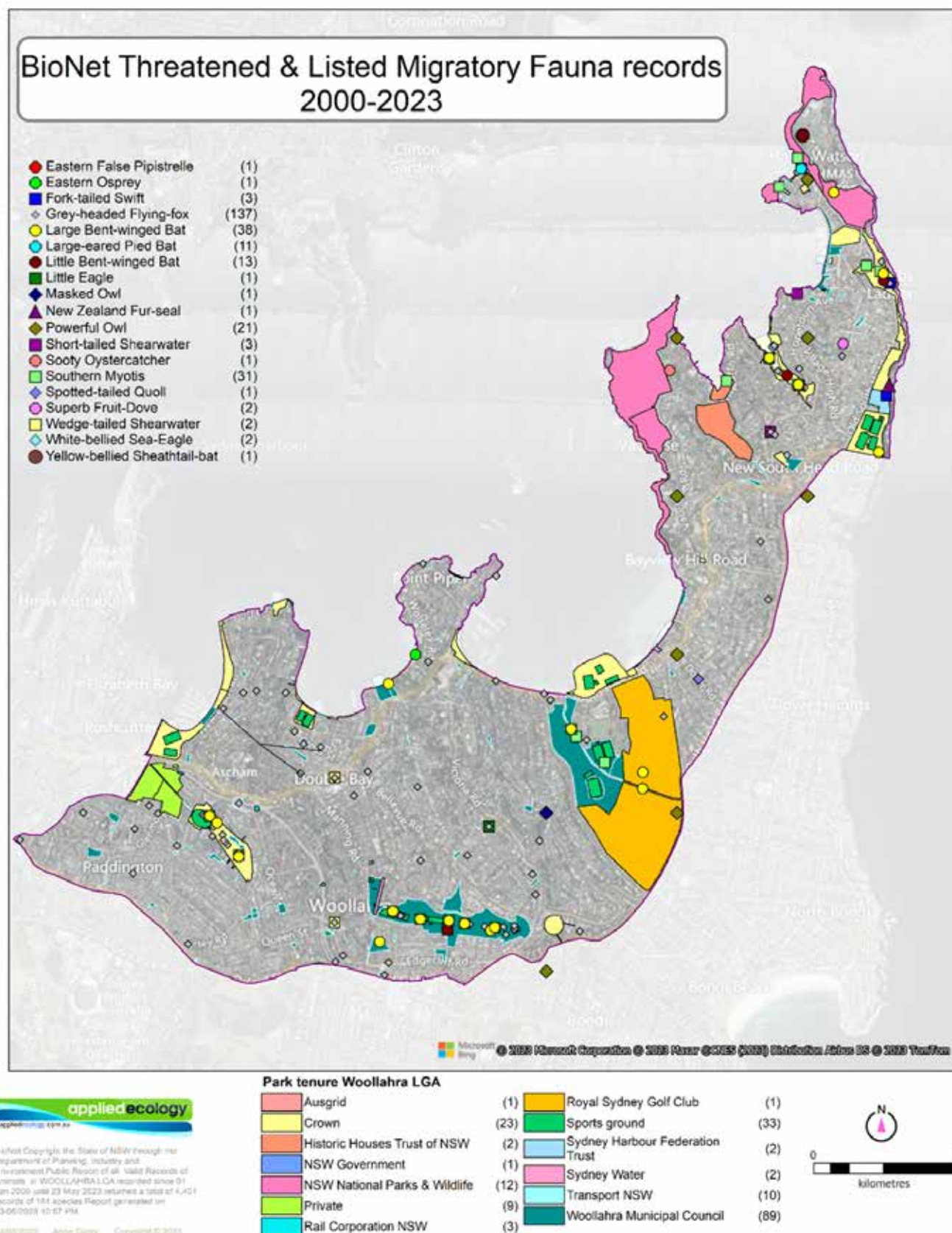


Figure 3: Distribution of threatened fauna species in Woollahra

Many of the recorded species are unlikely to occur regularly or are locally extinct in the region. Table 1 outlines the threatened fauna species known to persist in Woollahra. Some transient threatened species also occur occasionally but do not permanently reside here, including the Sooty Oystercatcher, Eastern Osprey, and White-bellied Sea-Eagle.

The conservation of these species is a key focus of biodiversity management in Woollahra (see Section 6).

Table 1: Threatened fauna in Woollahra, including conservation status and location

Species	Conservation Status	Location
Powerful Owl <i>Ninox strenua</i>	BC Act – vulnerable	Woollahra Golf Club (nesting) Vaucluse House (nesting) Cooper Park (roosting) Parsley Bay (roosting) Trumper Park (foraging)
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	BC Act – vulnerable EPBC Act – vulnerable	LGA-wide (foraging only)
Yellow-bellied Sheath-tail-bat <i>Saccolaimus flaviventris</i>	BC Act – vulnerable	South Head
Large-eared Pied Bat <i>Chalinolobus dwyeri</i>	BC Act – endangered EPBC Act – endangered	Trumper Park Woollahra Golf Club Parsley Bay South Head and Gap Park
Eastern False Pipistrelle <i>Falsistrellus tasmaniensis</i>	BC Act – vulnerable	South Head
Southern Myotis <i>Myotis macropus</i>	BC Act – vulnerable	South Head Parsley Bay Cooper Park
Little Bent-winged Bat <i>Miniopterus australis</i>	BC Act – vulnerable	South Head and Gap Park Cooper Park Woollahra Golf Club Parsley Bay
Large Bent-winged Bat <i>Miniopterus orianae oceanensis</i>	BC Act – vulnerable	Gap Park and Christison Park Camp Cove Reserve Parsley Bay Trumper Park Woollahra Golf Club Cooper Park Rose Bay foreshore
White's Seahorse <i>Hippocampus whitei</i>	FM Act – endangered EPBC Act – endangered	Parsley Bay and Watsons Bay swimming nets Camp Cove seagrass meadows

4.2.3 Key Habitat Areas

Key habitat areas are defined as areas that provide foraging, sheltering, or breeding habitat for native fauna. Ten key habitat areas have been identified in Woollahra (Figure 4), representing the majority of our biodiversity. The biodiversity value and management constraints associated with these are described in Table 2.



Figure 4: Key habitat areas in Woollahra

Table 2: Key Habitat Areas in Woollahra

Key Habitat Area	Biodiversity Value	Management Constraints
Cooper Park Land manager: Council Size: 17.9ha	• Largest area of Council-managed remnant bushland • Diverse habitat including sandstone escarpment, rainforest, woodland, and riparian corridor • Scattered old-growth hollow-bearing trees • Creek and pond habitats with riparian vegetation • Restoration site for threatened flora, including Sunshine Wattle and Magenta Lilly Pilly • Habitat for threatened fauna: - Habitat for the Powerful Owl - Foraging habitat for the Grey-headed Flying-fox - Foraging and roosting habitat for threatened microbats (Southern Myotis, Large Bent-winged Bat, Little Bent-winged Bat) • Important stepping-stone connectivity between other areas of habitat, such as the golf courses at Rose Bay, Sydney Harbour National Park at South Head, and Centennial Park • Bush regeneration regularly undertaken by Council staff, contractors and volunteers.	• Heritage listing, historic plantings of exotic species • Maintenance and repair of heritage-listed stormwater infrastructure • Incidences of pollution and aquatic weed incursion through stormwater • Pressure from surrounding residential development • Sedimentation of creek and ponds • High weed incursion in some areas, particularly sloped areas • Non-compliance with dog controls • Very popular recreation area with high visitation rates • High level of community interest in park management • Presence of Aboriginal cultural heritage sites.

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Trumper Park Land manager: Council Size: 6.5ha	• Revegetated bushland reserve, reconstructed after the cessation of quarrying in the 1960s • Ephemeral stormwater overflow pond provides habitat for ducks and turtles and is a water source for other fauna • Habitat for threatened fauna; - Foraging habitat for the Powerful Owl and Grey-headed Flying-fox - Foraging and roosting habitat for threatened microbats (Large Bent-winged Bat, Large-eared Pied Bat, Southern Myotis) • Restoration site for the Magenta Lilly Pilly • Important stepping-stone connectivity between other areas of habitat, such as Cooper Park and Centennial Park • Dense planting near Trumper Park pond provides habitat for the Buff-banded Rail, a primarily ground-dwelling bird species that is rare locally • Bush regeneration regularly undertaken by Council staff, contractors and volunteers.	• Highly urbanised location • Commuter pathway linking Paddington to Edgecliff Station • Ephemeral stormwater pond, becomes stagnant with low water level during dry periods • High weed incursion in some areas, particularly sloped areas • Non-compliance with dog controls • High level of community interest in park management • Complex stormwater network • Presence of Aboriginal cultural heritage sites.

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Woollahra Golf Club Land manager: Council Size: 15.8ha	• Significant established plantings including native trees and hollow-bearing trees providing habitat for a range of native birds • Habitat for threatened fauna: - Powerful Owls - Foraging and potential roosting habitat for threatened microbats (Large-eared Pied Bat, Southern Myotis, Little Bent-winged Bat, Large-eared Pied Bat) • Rose Bay Creek, which is partially channelised and traverses the golf course and flushes into Rose Bay. This provides a water source for native fauna and the potential to establish saltmarsh at the drain outflow adjacent to Sydney Harbour • The upstream section of Rose Bay Creek is vegetated with riparian species providing habitat for aquatic invertebrates and other water-dependent species such as the Southern Myotis and the Pacific Black Duck • Revegetation efforts are regularly implemented in out of bounds areas • Stepping stone habitat in harbour-side foreshore corridor and between other bushland areas, such as South Head, Parsley Bay, the Royal Sydney Golf Club, Rose Bay Park and Cooper Park.	• Active golf course • Managed under lease agreement • Rose Bay Creek owned and managed by Sydney Water • Non-compliance with dog controls and roaming domestic cats • Feeding of wildlife by local residents • High population of aggressive native birds, such as Sulphur-crested Cockatoos and Noisy Miners.

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Nielsen Park and Hermitage Foreshore Sydney Harbour National Park Land manager: National Parks & Wildlife Service Size: 23.9ha	• Most extensive patch of remnant vegetation in Woollahra and largest area of foreshore bushland south of Sydney Harbour • Sandstone woodland and heathland vegetation habitat on slopes, gullies and coastal headlands • Extensive intertidal habitat including sandy beaches and rock pools • Habitat for threatened flora including the Sunshine Wattle and Nielsen Park She-oak • Foraging habitat for threatened fauna such as the Powerful Owl and Sooty Oystercatcher • Foraging habitat for the Little Penguin, the nesting site in Manly for which is listed as an Area of Outstanding Biodiversity • Provides connectivity for some migratory bird and smaller bird species from other bushland areas including Middle Head and North Head • Hosts the largest small bird population in Woollahra • Dogs prohibited	• Limited authority of Council • Very popular recreation area with high visitation rates • Limited knowledge of species presence • Non-compliance with dog controls • Presence of Aboriginal cultural heritage sites

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Vaucluse House and Vaucluse Bay Land manager: Museums of History Size: 8.9ha	• Includes remnant sandstone woodland habitat with escarpments and creek • Mature, hollow-bearing trees providing habitat for native species • Habitat for threatened fauna: - Powerful Owls - Foraging and roosting habitat for microbats, including the Southern Myotis • Relatively large patch of established garden plantings extend from the upper slopes to a sheltered marine cove with sandy beach and intertidal rock platforms • A stand of Swamp Oaks along the sandy foreshore provides the opportunity to regenerate Swamp Oak Floodplain Forest, an endangered ecological community (EEC)	• Extensive history and heritage listing • Heritage-listed exotic plantings • Limited authority of Council • Tree vandalism and view protection • Non-compliance with dog controls and lack of enforcement • Coastal erosion threatening foreshore vegetation • Presence of Aboriginal cultural heritage sites

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Parsley Bay Land manager: Council Size: 3.7ha	• Intact remnant sandstone woodland and moist forest in good condition • Variety of habitat elements such as natural creek and waterfall, rock over-hangs and caves • Remnant vegetation extends to sheltered marine cove with sandy beach and intertidal rock platforms • Habitat for threatened flora including Sunshine Wattle and Magenta Lilly Pilly • Habitat for threatened fauna: - Powerful Owl - Foraging and roosting habitat for microbats including Large-eared Pied Bat, Southern Myotis, Little Bent-winged Bat and Large Bent-winged Bat - Swimming net and seahorse hotels provide habitat for a colony of White's Seahorses • Bush regeneration undertaken by Council staff, contractors and volunteers • Remnant population of Eastern Water Dragons present • Dogs prohibited	• Sydney Water wastewater infrastructure upgrade – Refresh Vaucluse Diamond Bay Project • Encroachment from surrounding urban development • Incidences of pollution and aquatic weed incursion through stormwater • Very popular recreation area with high visitation rates • High level of community interest in park management

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Christison Park, Lighthouse Reserve and Signal Hill Reserve Land manager: Council Size: 6.2ha	• Native revegetation, remnant and weedy vegetation providing habitat for small birds • Important habitat link with South Head • Provides habitat for threatened microbats including Large Bent-winged Bat, Little Bent-winged Bat, Large-eared Pied Bat and Southern Myotis • Rocky platforms at the base of the cliffs provide basking habitat for fur seals and foraging habitat for Little Penguins • Restoration site for the Sunshine Wattle and Eastern Suburbs Banksia Scrub EEC • Planting site for National Tree Day 2021–2025 and bush regeneration regularly undertaken by Council staff, contractors and volunteers	• Use as sports field • Woollahra LGA boundary – no authority over adjacent land • View protection • Non-compliance with dog controls • Presence of Aboriginal cultural heritage sites
Gap Park Land manager: Council Size: 4.6ha	• Remnant coastal heathland • Important habitat link from South Head • Restoration site for the Sunshine Wattle and Eastern Suburbs Banksia Scrub EEC • Recorded presence of threatened microbats including Large-eared Pied Bat, Southern Myotis and Large Bent-winged Bat • Habitat for small birds • Bush regeneration undertaken by Council staff, contractors and volunteers	• Non-compliance with dog controls • Protection of views • Bushfire management • Limited accessibility to some weedy areas (such as on cliff edge) • Areas including pathways, viewing platforms and CCTV cameras require vegetation clearing to ensure adequate passive surveillance • Presence of Aboriginal cultural heritage sites

Table 2: Key Habitat Areas in Woollahra *continued*

Key Habitat Area	Biodiversity Value	Management Constraints
Green Point and South Head Land manager: National Parks & Wildlife Service Size: 15.5ha	• Remnant coastal headland Banksia heath • Dogs prohibited • Potential foraging habitat for the Sooty Oystercatcher • Habitat for the Sunshine Wattle • Remnant vegetation supplemented by native revegetation program • Presence of threatened microbats including Southern Myotis, Large Bent-winged Bat, Little Bent-winged Bat and Large-eared Pied Bat • Provides connectivity for some migratory and smaller bird species from other bushland areas including Middle Head and North Head	• Managed by National Parks with limited collaboration • Presence of Aboriginal cultural heritage sites • History of disturbance has led to a high level of weed incursion • Council has limited authority • Very popular recreation area with high visitation rates • Bushfire management
Estuarine foreshore and seagrass areas Land manager: RMS Size: 90.5ha	• Foraging habitat for Little Penguins from Manly • Seagrass ecosystems including patches of the endangered Posidonia seagrass populations recorded at Queens Beach, Milk Beach, Bottle and Glass Point, Vaucluse Bay, Gibsons Beach, Watsons Bay Baths, and Camp Cove⁷ • Habitat for a rich diversity of marine fish species including the White's Seahorse • Stepping stone connectivity for native fauna, including small birds • Key sites for marine biodiversity restoration through Project Restore include Camp Cove, Watsons Bay, Parsley Bay, Vaucluse Bay, and Rose Bay.	• Coastal development and reclamation of foreshore • Impacts of stormwater run-off, pollution and litter • Dogs off-leash • Tree vandalism and view protection • Community desire for improved foreshore access • Impacts of factors out of Council control, such as boating, fishing, Transport for NSW activities • Very popular recreation areas with high visitation rates • Presence of Aboriginal cultural heritage sites

4.2.4 Freshwater ecosystems

There are a number of freshwater ecosystems in Woollahra, including creeks and ponds. Most of these waterways have been heavily modified however continue to provide habitat for freshwater species and act as an important water source for other native fauna.

Double Bay Creek

Double Bay Creek is the most significant riparian corridor in Woollahra, rising high in Cooper Park. The upper catchment includes an interconnected series of ponds. The largest pond has stands of macrophytes that provide habitat for frogs, insects and small birds. The ponds are impacted by sedimentation, resulting in elevated nutrient levels and algae downstream. The condition of the ponds is highly variable, and can be influenced by storm flows, drought, access by animals (predominantly dogs), surrounding development, and management practices. Downstream the channel alternates between a rock-lined swale and a formal channel and eventually a channelised stream until it discharges to Double Bay.



Double Bay Creek flows through Cooper Park as a series of ponds and interconnecting channels

Rose Bay Creek

Rose Bay Creek daylights at a point in the Woollahra Golf Club where the stormwater network concentrates local flows. The upper section is a rock-lined channel with a large trash rack located midway down the stream. Downstream the creek is channelised and eventually discharges to Rose Bay.



Rose Bay Creek at the Woollahra Golf Club is partially channelised, and has a large trash rack midway along the stream

Trumper Park pond

Trumper Park is a regenerating bushland park within a disused quarry. A stormwater pond was created in the early 2000s and has become a wildlife refuge, particularly for Pacific Black Ducks and turtles. The ephemeral nature of the pond means that it is heavily reliant on rain to maintain its water quality and quantity. Periods of dry weather can result in low, stagnant water with elevated nutrient levels. Occasionally maintenance of the pond is required to improve water quality by removing sediment and planting native vegetation in adjacent areas.

Parsley Creek

Parsley Creek runs through Parsley Bay Reserve at the base of the gully. Most of this small stream has been formalised with a rock lined channel, surrounded by bushland. Stormwater flows untreated into Parsley Creek from neighbouring properties and the surrounding catchment. Parsley Creek discharges to Parsley Bay, a sensitive marine environment that supports a population of White's Seahorses on Council's swimming net.



Pacific Black Duck at Trumper Park pond

JOHN TURNBULL



An endangered White's Seahorse on the swimming net at Parsley Bay, which is sensitive to stormwater pollution



Cooper Park, Bellevue Hill

Other freshwater waterways within Woollahra

- A tributary of Double Bay Creek flowing through Harbourview Park;
- Vaucluse Creek, which flows from Vaucluse Park out to Vaucluse Bay; and
- Rushcutters Creek, a channelised creek which flows from Trumper Park to Rushcutters Bay.

Monitoring of water quality and macroinvertebrate populations within freshwater ecosystems is undertaken biennially through Council's environmental and biodiversity monitoring program.

The most recent survey in 2024 found elevated levels of Total Nitrogen, Total Phosphorus, Total Suspended Solids and Chlorophyll-a levels⁸. Some heavy metals exceeded trigger values at some sites as well.

This 2024 survey also found only highly tolerant macroinvertebrate fauna present in Double Bay Creek, Trumper Park pond and Rose Bay Creek, which is likely a result of the poor water quality associated with the elevated nutrient and heavy metal levels.



Hermitage Foreshore, Sydney Harbour National Park

4.2.5 Marine and Intertidal Ecosystems

Marine and intertidal environments in and around Woollahra are diverse, including sandy beaches, rocky sandstone foreshores with intertidal rock pools, and tidal ecosystems such as seagrass beds and saltmarsh. While these ecosystems are not managed by Council, they are affected by factors within Council's control, including the quality of stormwater discharges, sedimentation, and coastal development.

Seagrass

There are three species of seagrass present along the Woollahra foreshore, including *Posidonia australis*. *Posidonia* is extremely sensitive to disturbance, resulting in its dramatic decline. It is listed as endangered under the *NSW Fisheries Management Act 1994* and the EPBC Act. Seagrass meadows provide habitat for fish, including the White's Seahorse, and improve water quality in the harbour. Seagrass along Woollahra's foreshore has declined over the last 20 years⁹, particularly in areas impacted by boating activities and sedimentation.

Intertidal habitat

Intertidal habitat along Woollahra's harbour foreshore consists of beaches and rock pools. Foreshore development has reduced the availability of these habitats, however has provided some artificial habitats, such as wharves, jetties and sea walls.

Woollahra's eastern boundary consists of sheer sandstone cliffs overlooking the Pacific Ocean, providing popular visitor opportunities in Gap Park, Lighthouse and Signal Hill Reserves and Christison



Rocky intertidal pools at Bottle and Glass Point, Sydney Harbour National Park

Park, as well as ecologically important rocky platforms below. These platforms provide habitat for fur seals and other marine species, such as Little Penguins.



On the eastern boundary of Woollahra is Gap Park, with sheer sandstone cliffs dropping directly to the Pacific Ocean

4.2.6 Habitat corridors

Key habitat areas in Woollahra (Section 4.2.3) are linked by urban parks, street trees, and private gardens, which provide 'corridors' for wildlife. The highly developed nature of Woollahra has resulted in limited connectivity between bushland reserves, which has significant biodiversity impacts (see Section 5.1.1 for more information).

A Connected Corridors for Biodiversity map has been developed for the Greater Sydney region. This habitat corridor map was produced in 2016 for the Southern Sydney Regional Organisation of Councils (SSROC) and Sydney Coastal Councils Group (SCCG). The map highlights existing habitat corridors across the region and identifies opportunities for greater connectivity (Figure 5). Key areas for connectivity with Woollahra include Centennial Park, Moore Park and along the foreshore.



It is important to maintain good streetscape plantings and supplement these with bushy urban gardens to provide stepping stone and buffer habitat for urban bushland reserves



Figure 5: Connected Corridors for Biodiversity map (SSROC and SCCG)



5. Threats to Biodiversity

Biodiversity in Australia is in a state of decline, and has been since European colonisation. Habitat loss and fragmentation remain the most significant threats, however other key threats include the introduction of invasive species and the impacts of climate change¹⁰.

Key threats affecting biodiversity in Woollahra are explained in the following sections.



Common Brushtail Possum in a tree hollow

5.1 Land use change and urban development

5.1.1 Habitat loss and fragmentation

Woollahra has experienced extensive habitat loss, with over 95% of the landscape being cleared since European colonisation. This trend has continued in recent times as the population has grown, with the need for higher density housing, services and infrastructure resulting in increased hard surfaces and reduced 'green' areas suitable for habitat. Over the last 10 years, canopy cover in Woollahra has declined by 2.5%¹¹, with the majority of loss taking place on private land. The clearing of native vegetation and loss of hollow-bearing trees are listed as key threatening processes affecting biodiversity under the *Biodiversity Conservation Act 2016*.

The loss of hollow-bearing trees resulting from the widespread clearing of native vegetation, replacement of native trees with non-hollow-forming exotic trees, and the removal of mature trees to reduce public safety risks, is a particular concern for biodiversity in Woollahra. Many native species rely on tree hollows for nesting and roosting habitat, including forest owls, microbats, woodland birds including parrots and kookaburras, possums, gliders, antechinus, and some reptile species.

Encroachment

Encroachment occurs on the urban interface of bushland and foreshore areas and generally involves incremental vegetation clearance and degradation. This may be due to the extension of residential backyards, weed and rubbish dumping, car parking, trailers, boat storage, view enhancement, or management of bushfire risk. Bushland encroachment is a particular issue on the boundaries of public land at Trumper Park, Cooper Park and Parsley Bay Reserve.

Loss of riparian and foreshore habitat

The removal of riparian vegetation along estuary tributaries and foreshores and subsequent replacement with reclaimed parkland, infrastructure, housing and other artificial structures such as jetties and seawalls have significantly modified estuarine foreshores. Loss of riparian vegetation can lead to bank destabilisation, loss of intertidal habitat, and can impact water quality by introducing nutrients and sediments into the waterway.

Landscape maintenance and construction

Landscape maintenance works can result in habitat loss, such as the inappropriate use of herbicide, lawnmowers and brush-cutters in habitat areas, misidentification of native plants as weeds, and removal of important habitat features such as fallen timber, rocks and hollow bearing trees. Construction works associated with new development or redevelopment can remove habitat elements which are important for urban wildlife such as long grass, dense shrubby areas (including weeds) and rock piles.



Decreased habitat for small birds

A healthy understorey of native shrubs and/or grasses is one of the most important factors in maintaining bird diversity. Dense native flowering shrubs provide nesting habitat and shelter for small birds, and a range of food such as nectar, seed and fruit. Urban parks and private gardens generally lack this habitat, and populations of small birds are largely absent from urban areas as a result. The abundance of Noisy Miners, which is associated with less complex vegetation structure typically found in urban parks and gardens, has also contributed to the decline of small birds in Woollahra (see Section 5.2.3 for more information).



Altered fire regimes

Fire regimes play a critical role in the health and diversity of ecological communities by stimulating seed germination, facilitating the establishment of seedlings and reducing competition of existing vegetation. Altered fire regimes are generally implemented in less complex patterns of frequency, intensity and seasonality, resulting in a reduction in biodiversity values.

The urbanised nature of Woollahra and relatively small, isolated areas of bushland has resulted in the alteration of natural bushfire regimes to protect people, housing and other assets. The reduced capacity of native flora to germinate naturally leads to a decrease in under- and mid-storey vegetation. This less complex vegetation structure reduces habitat for small birds and favours more aggressive bird species such as the Noisy Miner, as mentioned above.

Far left: Superb Fairy Wrens are threatened by loss of habitat and an abundance of Noisy Miners. Male (left) and female (right)

Left: Dense, spiky shrubs like Grevilleas provide excellent shelter and foraging habitat for small birds. *Grevillea sericea*, Trumper Park.

5.1.2 Stormwater infrastructure and management

As the landscape of Woollahra has been developed, natural waterways have been channelised or constructed into a stormwater infrastructure system, operating largely underground. Of the creeks that do remain, such as Parsley Creek and Double Bay Creek, these have been impacted by past or present disturbances such as riparian vegetation loss, sedimentation, and high visitation. Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands is listed as a key threatening process under the *Biodiversity Conservation Act 2016*. Stormwater management in Woollahra is complicated by the numerous stakeholders involved, including Council, private landowners and Sydney Water.

The highly urbanised nature of Woollahra and associated impermeable areas also reduces opportunities for the absorption and filtration of stormwater. As a result, a larger volume of stormwater reaches the foreshores in Woollahra quicker than in more natural areas. Stormwater flows are transferred to the foreshore of Woollahra by creeks, as well as via stormwater drainage infrastructure.

Stormwater carries high levels of sediment and pollutants into urban waterways. Stormwater pollutants include heavy metals and oils, pesticides and fertilisers, animal faeces, plastic litter, sewage, incorrectly disposed of household chemicals and paints, and organic material. These pollutants have the following environmental impacts:

- Increased sedimentation and smothering of marine and aquatic ecosystems
- Reduced oxygen supply for aquatic species as a result of decaying green waste
- Increased nutrient levels stimulating primary productivity, which can lead to algal blooms.

Stormwater in Woollahra discharges into Sydney Harbour, where pollution and sedimentation in the sub- and intertidal zones can also smother seagrass ecosystems and reduce water quality and oxygen availability, ultimately leading to a decline in marine biodiversity.

5.1.3 Recreational use of natural areas

High levels of visitation by the local community and tourists and the associated demand for recreational access places pressure on harbour-side beaches, bushland and coastal headland reserves. Biodiversity value is often sacrificed for competing priorities, such as the need for ovals and open space.

Biodiversity impacts associated with recreational access include:

- Direct loss of habitat
- Erosion and sedimentation of natural waterways
- Litter
- Introduction or dispersal of weeds and pathogens
- Disturbance to native fauna behaviour, including from the presence of dogs on beaches and in reserves.

Off-leash dog areas

Demand for increased access for dogs in parks and reserves and along the foreshore has precipitated an increase in the designation of on- or off-leash areas in Woollahra. This includes sensitive natural areas such as Cooper Park, Gap Park, and beaches. See Section 5.2.4 for further detail.

Fishing

Recreational fishing is a popular activity throughout the Sydney Harbour foreshore. Popular rock fishing locations include McKell Park, Watsons Bay Baths, and Duff Reserve in Point Piper. Impacts of fishing include the direct loss of biodiversity from fish death, and pollution of the environment (plastic bait, fishing line) by irresponsible fishers. While it is not permissible to fish or collect within the intertidal zone of Sydney Harbour, Council does receive reports of non-compliance.

Council does not have authority over Sydney Harbour, and relies on DPI Fisheries to enforce responsible fishing practices and implement protected areas if necessary.

Damage to seagrass beds

Seagrass underpins estuarine ecology, providing breeding and foraging habitat for many marine species, including the endangered White's Seahorse. Seagrass is also crucial for climate change mitigation and resilience through carbon sequestration and shoreline stabilisation.

Seagrass in Sydney Harbour is in rapid decline, in particular the threatened species *Posidonia australis*. The main factors impacting seagrass populations are boating activities and infrastructure (anchors and swing moorings), as well as extreme weather events and coastal development¹². Council has no direct authority over the harbour and boating activities, however can assist with the conservation of seagrass by reducing sedimentation, through community education programs, and collaborating with external agencies such as Transport for NSW and the Sydney Institute of Marine Science (SIMS).



An endangered White's Seahorse on a swimming net
JOHN TURNBULL

Swimming nets

While the natural habitat of seahorses in Sydney Harbour is seagrass meadows, they are also commonly found on artificial structures such as jetty pylons and netted swimming enclosures. Maintenance of these structures, such as cleaning or replacement, can result in loss of seahorse habitat if not correctly managed.

5.2 Introduced species, diseases, pathogens, and problematic native species

5.2.1 Weeds

Terrestrial weeds

Weed invasion is a significant and pervasive threat for all bushland areas in Woollahra. The capacity of Woollahra's bushland to resist and recover from weed invasion has been compromised by a long history of disturbance, including introduced plantings and urban development.

Weeds can have damaging effects on the natural landscape and biodiversity. They damage ecological communities, poison native fauna, contaminate waterways, and ultimately reduce biodiversity. The loss and degradation of native plant and animal habitat by the invasion of weeds and escaped garden plants is recognised as a key threatening process under the BC Act. Weed management is regulated under the *Biosecurity Act 2015*.



Tradescantia fluminensis
JOHN HOSKING NSW DPI



Anredera cordifolia
JOHN HOSKING NSW DPI

Key weeds of concern in Woollahra include¹³:

- *Tradescantia fluminensis* (Trad), a trailing herb which outcompetes native flora by forming a dense understorey layer. Trad is particularly problematic in moist, shady sites such as along Double Bay Creek
- *Anredera cordifolia* (Madeira Vine), a fast-growing, climbing vine which smothers all levels of native vegetation, including the canopy. Madeira Vine is present in most bushland areas, particularly Cooper Park, Rose Bay Park, Trumper Park and along the cliffs of Gap Park
- *Opuntia* species (Prickly Pears), cactuses that form dense thickets which outcompete native flora species. Prickly Pears are difficult to control due to their sharp spines, and are problematic in Woollahra along the cliffs at Gap Park
- *Rumex sagittatus* (Turkey Rhubarb) is a perennial climber that smothers shrubs and ground covers. It is present in most bushland reserves including Cooper Park, Trumper Park, and Gap Park



Opuntia species
JOHN HOSKING NSW DPI



Rumex sagittatus
KYLIE VAN DER KOLK



Asparagus aethiopicus
KYLIE VAN DER KOLK



Asparagus plumosus
GR SAINTY

- *Asparagus aethiopicus* (Asparagus Fern), a shrub that forms dense infestations, outcompeting native understorey plants in coastal ecological communities. In Woollahra it is problematic in Cooper Park and Parsley Bay
- *Asparagus plumosus* (Climbing Asparagus), a shrub or vine that outcompetes native plants and smothers ecological communities. It is found in Cooper Park and Parsley Bay
- *Ipomoea* species (Morning Glory), a vine that smothers and outcompetes native plants, including canopy species. It is found in Gap Park, Cooper Park, Trumper Park, and Rose Bay Park.



Ipomoea species
AMANDA SLATER

While weed removal is a key priority for Council in order to improve biodiversity, there are some instances where weed infestations provide habitat for native fauna. Dense, prickly understorey growth associated with shrubby weeds and vines provides sheltering habitat for small birds. Similarly, vine thickets in the tree canopy provide roosting habitat for larger species such as the Powerful Owl. In situations where weed infestations are providing habitat for native wildlife, removal has the potential to reduce species diversity and must be carefully managed.

Water weeds

Water weeds impact the marine environment by altering ecosystem structure and function and reducing oxygen availability. Other impacts include impeding water flow, increasing flooding and erosion, reducing water quality, blocking channels and impeding fish passage, and reducing fish habitat¹⁴.

Caulerpa taxifolia is a highly invasive marine algae that is a threat to Sydney Harbour's seagrass meadows. *Caulerpa* impacts seagrass ecosystems by out-competing native seagrasses, establishing large colonies, and altering ecosystem structure, particularly through reduced invertebrate populations due to lower oxygen levels in sediments¹⁵.

Freshwater weeds are occasionally introduced into Woollahra's waterways and ponds due to inappropriate disposal of private pond and aquarium species or arrival in bushland sites through the stormwater system. These weeds are controlled by



The endangered Magenta Lilly Pilly is highly susceptible to Myrtle Rust

GREG STEENBEEKE

regular identification and removal by Council's bush regeneration staff. The following freshwater weeds are most frequently identified in Woollahra, including in Double Bay Creek, Trumper Park pond, and Parsley Creek:

- *Alternanthera philoxeroides* (Alligator Weed)
- *Ludwigia peruviana* (Water Primrose)
- *Egeria densa* (Leafy elodea)

5.2.2 Pests and Diseases

Several pests and diseases have been detected in Woollahra and pose an ongoing threat to the area's tree population, including *Phytophthora cinnamomi* (Phytophthora dieback), *Puccinia psidii* (Myrtle Rust) and *Armillaria luteobubalina* (Armillaria root rot). The impacts of these are significant, altering ecosystem structure and function and leading to a reduction in biodiversity. The impact of pests and diseases on urban bushland areas is likely to continue to increase, particularly due to increased temperatures associated with climate change. This biodiversity impact is listed as a key threatening process under the BC Act.

5.2.3 Introduced species and problematic native fauna

The impact of introduced animals in Woollahra is significant. A number of introduced animal species prey upon native fauna, including feral foxes and domestic cats. The impacts of these species are listed as key threatening processes impacting biodiversity under the *Biodiversity Conservation Act 2016*. These species directly impact biodiversity through a reduction in native fauna abundance and diversity, particularly smaller ground-dwelling fauna such as native rodents and small birds.

Other introduced species that are present in Woollahra include rabbits, rats, Indian Mynas, pigeons, and honey bees. Feral honey bees occupy large hollows in trees, outcompeting native hollow-nesting fauna. They also compete with native pollinators, such as birds, insects, and flying-foxes. Rabbits and rats impact terrestrial ecosystems by over-grazing understorey vegetation and competing with native species for food. An indirect impact of these species on biodiversity is that rodenticides used to control feral pests can bioaccumulate in

predatory species, potentially leading to death in some cases. Threatened predators such as the Powerful Owl can be impacted by this.

The Red-eared Slider Turtle is a species of invasive turtle that competes with native turtles for food, nesting and basking sites¹⁶. Red-eared Slider Turtles have a high reproductive rate, making control difficult once they have colonised an area. They can also travel through the stormwater system and survive periods of extreme weather by hibernating.



Powerful owlets
SANDI RIGBY

Problematic native species

The Noisy Miner is a highly aggressive honeyeater endemic to eastern Australia. Where other native bird species have largely been negatively impacted by habitat loss, the Noisy Miner has benefitted from fragmentation and modified ecosystems. Landscapes without complex vegetation structure, such as urban parks that lack mid-storey vegetation, allow Noisy Miners to aggressively defend their territories to the exclusion of other woodland birds¹⁷. They are 'cooperative breeders' that work together to exclude other bird species. The aggressive exclusion of birds by Noisy Miners is recognised as a key threatening process impacting biodiversity under the *Biodiversity Conservation Act 2016*.

Noisy Miners and other aggressive birds such as Rainbow Lorikeets and Sulphur-crested Cockatoos also out-compete other hollow-nesting fauna, leading to reduced species diversity. In some cases, these birds have also responded to the presence of a nesting predatory species by attacking fledglings. This has occurred recently in Woollahra with a young Powerful Owlet repeatedly attacked by Noisy Miners and Currawongs.

5.2.4 Domestic pets

Dogs and cats predate upon urban wildlife, particularly cats that roam outdoors at night. Various studies have concluded that the impacts of roaming domestic cats on wildlife is significant, potentially resulting in the loss of up to 8000 native animals per square kilometre annually¹⁸. Domestic cats are permitted to roam under the *NSW Companion Animal Act 1998*, limiting the capacity for Councils' to address this impact. Community education may foster responsible pet ownership.



Responsible pet ownership is essential for biodiversity

Woollahra Council has designated various bushland areas, foreshore reserves, and urban parks as off- or on-leash dog areas. The presence of dogs can impact biodiversity in the following ways:

- Harassing or killing native fauna, particularly in bushland or along the foreshore
- Disturbing wildlife by their scent, sounds, scratching and/or digging
- Decreased presence of ground-dwelling fauna and small birds
- Disease transmission to native wildlife
- Faecal contamination of waterways having potential negative effects for marine species health and water quality
- Pollution and littering of dog waste bags
- Trampling of terrestrial ecological communities, particularly regenerating seedlings
- Trampling of and disturbance to seagrass meadows in intertidal areas.

Non-compliance with dog controls is a major issue in Woollahra. As a result, even those areas where dogs are not permitted are impacted by the above factors.

5.3 Climate change

Climate change is a key driver of biodiversity loss worldwide¹⁹ and is predicted to be the greatest long-term threat to biodiversity in many regions. It is listed as a key threatening process under the BC Act. As a result of climate change, current threats to biodiversity, including habitat loss, weeds, pest animals and drought, are expected to intensify. The most vulnerable ecosystems include coastal ecosystems, alpine areas, rainforests, fragmented terrestrial ecosystems and areas vulnerable to fire or low freshwater availability.

Climate projections likely to impact Woollahra include²⁰:

- Increasing temperatures and temperature extremes
- Increase in average annual rainfall
- Increased intensity of rainfall events, possibly resulting in more frequent and severe floods
- Sea level rise and coastal erosion
- Increased frequency and severity of bushfire weather.

The impacts of climate change that have the potential to affect biodiversity in Woollahra include:

- Inundation of coastal and intertidal areas as a result of sea-level rise
- Saline intrusion of freshwater ecosystems as a result of sea-level rise
- Exacerbation of weed invasion through altered climate patterns
- Reduced health and resilience of ecological communities and mature trees as a result of invasive diseases and pathogens, which are expected to thrive in projected climatic conditions
- Direct loss of native fauna such as Grey-headed Flying-foxes during extreme weather events and heat waves
- Altered fire regimes (see Section 5.1.1 for more information)
- Phenological changes in insect behaviour and flowering seasons of native plants²¹.

Management actions can mitigate against the impacts of climate change, such as improving habitat connectivity, increasing canopy cover to reduce the urban heat island effect, restoring foreshore and riparian vegetation and implementing



Intertidal ecosystems are particularly susceptible to the impacts of climate change and urban development, including sea level rise and stormwater pollution. Hermitage Foreshore, Sydney Harbour National Park.

coastal zone management to improve water quality and reduce coastal erosion, reducing greenhouse gas emissions to improve air quality, monitoring and managing invasive diseases and pathogens, and providing artificial habitat for wildlife where appropriate.

6. Action Plan

The following action plan has been developed to guide management practices to protect and conserve biodiversity in Woollahra.



To ensure that Council's vision for biodiversity in Woollahra is achieved, the actions have been categorised by the objectives outlined in Section 1.1, reproduced below:

- 1 To conserve, restore and improve terrestrial biodiversity and enhance habitat connectivity through our urban forest
- 2 To improve the health and resilience of freshwater ecosystems
- 3 To improve the water quality and habitat value of foreshore and marine ecosystems
- 4 To improve our understanding of biodiversity
- 5 To engage with the community in enhancing biodiversity conservation

Kookaburra and a tree hollow

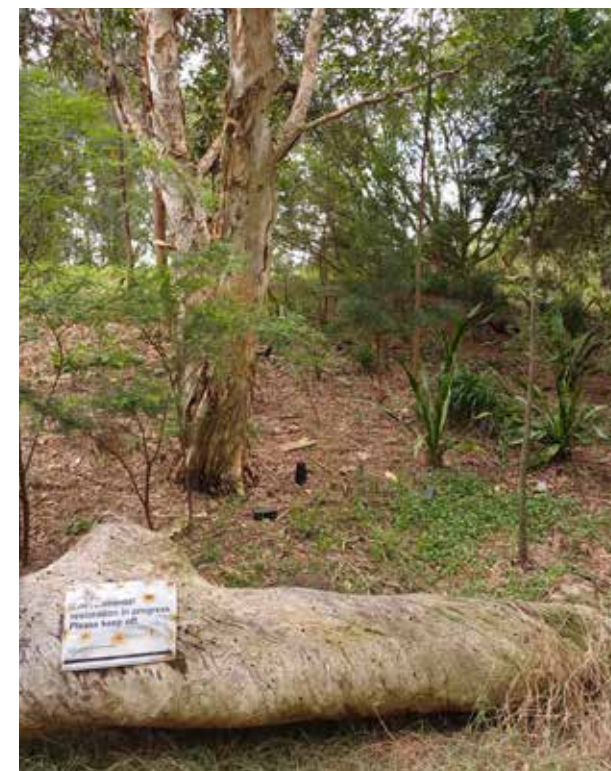
6.1 To conserve, restore and improve terrestrial biodiversity and enhance habitat corridors through our urban forest

Action	Frequency	Priority
Prioritise the use of endemic flora species in bushland reserves and street tree plantings. Use local indigenous stock for planting where available in accordance with Council's procurement policy.	Ongoing	High
Investigate the potential to reintroduce locally extinct species, such as Netted Bottlebrush.	Ongoing	High
During revegetation projects or open space redevelopments, consider the potential to restore endangered ecological communities, such as Eastern Suburbs Banksia Scrub, Swamp Sclerophyll Forest, and Coastal Saltmarsh.	Ongoing	High
Implement hygiene protocols for bush regeneration and tree maintenance staff and contractors to reduce the risk of disease and pathogen spread, particularly Phytophthora dieback and Armillaria root rot.	Within 1 year	High
Develop formal procedure for feral animal management, particularly foxes. Collaborate with neighbouring Councils to maximise success.	Within 2 years	High
Continue to implement the Greater Sydney Local Land Services Regional Weed Strategy actions.	Ongoing	High
Collaborate with the following agencies regarding the management of bushland reserves within Woollahra: • Sydney Harbour Federation Trust – Marine Biological Station Park and Macquarie Light Station • National Parks and Wildlife Service – Sydney Harbour National Park • Museums of History – Vaucluse House and Beach Paddock/Vaucluse Bay • Royal Australian Navy – HMAS Watson	Ongoing	High



Native heathland planting at Christison Park to promote connectivity and improve small bird habitat

Action	Frequency	Priority
Identify potential grant funding sources for biodiversity conservation projects, such as the NSW Environmental Trust's Restoration and Rehabilitation grant program.	Annually	High
Collaborate with Council's Urban Forest Management Team and Tree Management team to incorporate local endemic canopy species into the Street Tree Master Plan.	Within 1 year	High
Collaborate with Council's Urban Forest Management Team and others to implement the Urban Forest Strategy. Facilitate collaboration between Council and external agencies on the implementation.	Ongoing	High
Continue to support the productivity and maintenance of Council's nursery.	Ongoing	High
Supplement Council nursery propagates with other flowering plants to increase flora diversity of reserves.	Annually	High
Develop and implement a <i>Threatened Species Management Plan</i> for threatened flora and fauna present in Woollahra.	Within 2 years	Medium
Develop protocol for testing and recording areas of pest and disease infestation to control the spread.	Within 3 years	Medium
To improve canopy coverage in areas with overhead power lines, maximise the use of medium to very large trees wherever possible.	As required	Medium
Retain tree branches removed for safety on site to provide habitat for reptiles and other native fauna.	Ongoing	Medium



Bush regeneration in Rose Bay, with the use of fallen tree branches as habitat for native species

Action	Frequency	Priority
Implement Phytophthora prevention practices: • Effective drainage for street trees • Education sessions for key staff (Bushland Maintenance team, Tree Maintenance team) • Monitor street trees and bushland reserves for outbreaks • Implement best practice control procedures where necessary • Include implementation of best practice control procedures in procurement and induction process for contractors	Ongoing	Medium
Monitor steep bushland slopes in Cooper Park and Trumper Park. Implement stabilisation and/or regeneration works where necessary.	As required	Medium
Install dog fencing around habitat areas adjacent to off-leash dog areas to protect native fauna, such as small birds and reptiles.	Within 2 years	Medium
Prepare landscape design guide to be included in Development Assessment Guide, targeting native species and habitat elements for urban gardens.	Within 5 years	Medium
Review Council's planning documents to identify opportunities to promote biodiversity conservation, for example: • Update zoning of bushland reserves to C2 Environmental Conservation • Incorporate habitat corridor mapping into LEP or DCP with stronger controls around canopy coverage and landscaping	Within 3 years	Medium
Organise staff tree planting events in key habitat areas.	Annually	Medium
Identify sites for installation of high quality nest boxes, targeting uncommon or threatened species. Monitor success based on inhabitancy and condition of the nest box. Maintain by replacing deteriorating nest boxes and removing non-target species, such as feral honey bees or rats.	1 nest box per year	Medium



Street trees provide valuable connectivity and 'stepping stone' habitat for native fauna, as well as other benefits such as reducing the impacts of climate change.

Action	Frequency	Priority
Removal of weeds or other environmental works in previously undisturbed areas should be undertaken in consultation with Traditional Owner groups to reduce the risk of impact to Aboriginal cultural heritage sites.	Ongoing	Medium
Explore opportunities to incorporate environmentally sensitive design elements in Council projects and upgrades, for example: • ‘Green’ infrastructure (such as roofs or walls) • Artificial habitat • Water Sensitive Urban Design (WSUD) elements	Ongoing	Low
Explore opportunities to replace exotic grasses on sports fields and in parks with native grasses.	Ongoing	Low
Identify sites that would benefit from scarification or an ecological burn.	Within 5 years	Low

6.2 To improve the health and resilience of freshwater ecosystems

Action	Frequency	Priority
Regularly monitor and actively manage the sediment load in streams and creeks.	Ongoing	High
Monitor creeks for bank instability. Actively manage to reduce risk, including through naturalisation and revegetation. Assess the impact of weather events and implement sediment control measures as necessary.	Ongoing	High
Monitor weed incursion in riparian corridors and manage accordingly.	As required	High
Monitor riparian vegetation along creeks and waterways. Undertake revegetation where required.	As required	High
Monitor turtle population, including for the Red-eared Slider Turtle. Contact DPI Biosecurity for advice in the incidence of Red-eared Slider Turtle occurrence.	Ongoing	High
Conduct aquatic fauna assessments in key riparian corridors (e.g. Parsley Bay Creek and Double Bay Creek) as part of Council's environmental and biodiversity monitoring program. Analyse data to identify potential impacts and implement projects to reduce impact where necessary.	Biennially	High
Implement projects to improve fish and frog habitat in important waterways, such as Double Bay Creek, Parsley Creek and Trumper Park pond.	Within 2 years	Medium
Collaborate with Sydney Water on potential 'naturalisation' projects for stormwater infrastructure, such as Rose Bay Creek or Rushcutters Creek.	As required	Medium
Works within previously undisturbed freshwater ecosystems should be undertaken in consultation with Traditional Owner groups to reduce the risk of impact to Aboriginal cultural heritage sites.	Ongoing	Medium
Review potential barriers to fish passage in freshwater ecosystems and identify options for remediation.	As required	Low



Double Bay Creek is an important freshwater ecosystem that can be impacted by urban development and stormwater pollution.

6.3 To improve the water quality and habitat value of foreshore and marine ecosystems

Action	Frequency	Priority
Collaborate with DPI and TfNSW on the management of seagrass habitat in foreshore areas. Advocate for greater protections, such as marine sanctuaries and the installation of environmentally-friendly moorings.	Ongoing	High
Conduct surveys of White's Seahorse populations on swimming nets. Analyse data and assess requirement to implement management actions.	3 times per year	High
Install one gross pollutant trap (GPT) and one Water Sensitive Urban Design (WSUD) element (i.e. raingarden) on Council drainage lines annually to reduce the flow of litter, sediment and other contaminants into Sydney Harbour.	Annually	High
Consider opportunities to incorporate WSUD elements in all developments and infrastructure upgrades.	As required	High
Conduct surveys of marine biodiversity on Council's marine infrastructure.	Biennially	High
Analyse data from Council's environmental and biodiversity monitoring program to identify potential sources of pollution or factors contributing to poor water quality.	Biennially	High
Monitor foreshore for coastal erosion. Actively manage to reduce risk, including through naturalisation, Living Boulders and revegetation.	As required	High
Investigate opportunities for foreshore naturalisation, such as at Rose Bay Park and Vaucluse Bay.	Within 3 years	Medium
Investigate opportunities for Coastal Saltmarsh restoration.	Within 3 years	Medium
Continue to support the community to reduce litter through Council's HarbourCare program.	Ongoing	Medium
Conduct seagrass surveys along the harbour foreshore to identify threats, such as sedimentation. If necessary, implement actions to reduce impact.	Every 5 years	Medium
Assess the feasibility of retrofitting artificial habitat structures to seawalls and other marine infrastructure.	Ongoing	Medium

6.4 To improve our understanding of biodiversity

Action	Frequency	Priority
Conduct environmental and biodiversity monitoring, assessing the following: • Vegetation integrity using the Biodiversity Assessment Method 2020 • Species richness using the Shannon Wiener index (SW index) • Presence of flora and fauna species • Threatened species presence and abundance • Weed density • Water quality • Freshwater ecology Data collected should be compared to previous surveys to establish trends in biodiversity in Woollahra.	Biennially	High
Analyse data from environmental and biodiversity monitoring program to identify sites that would benefit from management actions, such as vegetation or erosion control.	Biennially	High
Engage with Traditional Owner groups to gain a better understanding of predevelopment ecosystems and how this cultural knowledge can be used to improve biodiversity management	Ongoing	High
Advise internal Council staff on biodiversity issues as required to improve understanding across the organisation and reduce potential impacts.	As required	Medium
Promote information sharing and collaboration between Council and external organisations responsible for overseeing landscape/biodiversity management within Woollahra.	Ongoing	Medium
Assess efficacy of environmental and biodiversity monitoring program. Consider amended frequency, method or survey sites if necessary.	Every 5 years	Low



Example of Council signage protecting new plants

6.5 To engage with the community in enhancing biodiversity conservation

Action	Frequency	Priority
Continue to support Council's Bushcare program: • Advertise program at environmental events • Promote program through Council's social media channels	Ongoing	High
Run community education events targeting terrestrial and marine biodiversity.	Quarterly	High
Run National Tree Day event including site preparation by staff, planting with the community and maintenance by staff and/or volunteers.	Annually	High
Continue to implement Council's Backyard Habitat Program. Consider targeting residents within wildlife corridors and in proximity to small bird habitat and sightings.	Annually	High
Run an educational campaign regarding responsible wildlife interactions, in particular targeting the following actions: • Compliance with dog controls • Outdoor access for cats • Feeding wildlife • Use of herbicides and pesticides, particularly rodenticides • Procedure for injured wildlife Install signs at key locations with QR code, linking to Council's webpage with updated information.	Within 2 years	High
Use Council's social media channels to promote biodiversity conservation.	Quarterly	Medium
Establish a demonstration habitat garden in a high profile Council reserve. Install signage to highlight key elements of the garden.	Within 3 years	Medium



Rockpool Ramble event, held annually at Bottle and Glass Point, Vaucluse

6.5 To engage with the community in enhancing biodiversity conservation *continued*

Action	Frequency	Priority
Review Council's Verge Garden Policy to incorporate endemic species and suitable habitat elements: • Prepare a verge garden design guide, including example designs on three different verge styles • Accompany with social media campaign to promote	Within 2 years	Medium
Support local schools to implement habitat planting and native pollinator projects by providing environmental grants and/or supply of plants and advice.	Ongoing	Medium
Educate the community regarding the retention of dead or fallen trees and vegetation in bushland areas to promote biodiversity. Produce educational materials as required such as signage or fact sheets.	As required	Low
Work with Traditional Owner groups such as the Gamay Rangers to gain a better understanding of Traditional Owner priorities and opportunities for collaboration.	Ongoing	High
Promote and encourage community participation in citizen science projects and use of programs such as iNaturalist and Birdata.	Ongoing	Medium



A native bee hive installed at a local school in Woollahra. Native pollinators are important for biodiversity conservation and ecosystem functioning.

6.6 Site specific actions

Site-specific action plans have been developed for those key habitat areas that are under Council management. These actions address the biodiversity value and management constraints associated with each specific area.

6.6.1 Cooper Park

Action	Frequency	Priority
Encourage compliance with dog controls through signage and ranger presence. This should address keeping dogs on-leash where required, picking up dog poo, and staying on the pathways.	Within 1 year	High
Plant macrophytes along creek edges to improve water quality and bank stability, and improve habitat for frogs and other native fauna.	Within 1 year, then as needed	High
Liaise with Council's Engineering team regarding maintenance of the stormwater drains within the park. Dilapidation of these structures is resulting in significant erosion issues in the bush. Nature-based solutions should be investigated, including creating a chain of ponds to slow the flow of water.	Within 1 year	High
Install dog fencing in core areas to protect regenerating vegetation.	Within 2 years, then as needed	High
Undertake weed management and stabilisation in steep areas to enable revegetation and habitat connectivity.	Annually	High



Double Bay Creek in Cooper Park, Bellevue Hill

6.6.1 Cooper Park *continued*

Action	Frequency	Priority
Engage contractors where necessary to assist with the management of problematic weeds in steep areas: Turkey Rhubarb, Madeira Vine, Asparagus Fern, Climbing Asparagus, and Morning Glory.	Annually	High
Remove accumulated sediment from creek/ponds and remediate as necessary.	As required	High
Undertake additional planting to increase structural diversity.	Annually	High
Prioritise habitat for threatened species in ongoing park management: • Powerful Owl • Microbats (Southern Myotis, Little Bent-winged Bat, Large Bent-winged Bat) • Grey-headed Flying-fox	Ongoing	High
Identify appropriate planting site for National Tree Day 2026.	Within 2 years	Medium
Implement strategy to manage Coral Trees. Target small trees and new growth to reduce recruitment.	Ongoing	Medium
Identify sites that would benefit from pile burning or scarification.	Within 5 years	Medium
Monitor planted threatened species for natural recruitment.	Within 3 years	Medium
Use hand weeding where possible to reduce herbicide use, particularly along the creek.	Ongoing	Medium

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Problematic weed – Morning Glory

6.6.1 Cooper Park *continued*

Action	Frequency	Priority
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Engage with bushland neighbours: • Habitat garden planting • Artificial lighting • Responsible disposal of green waste • Stormwater management • Domestic cat management	Within 3 years	Medium
Investigate options for habitat creation, including hollows and nest boxes.	Ongoing	Medium
Identify barriers to fish passage in Double Bay Creek and its tributaries, including in Harbourview Park.	Within 5 years	Low
Develop management strategies to improve water quality in Harbourview Park creek, including sewage and other pollution.	Within 5 years	Low



Double Bay Creek trail

6.6.2 Trumper Park

Action	Frequency	Priority
Encourage compliance with dog controls through signage and ranger presence. This should address keeping dogs on-leash where required, picking up dog poo, and staying on the pathways.	Within 1 year	High
Use hand weeding to reduce herbicide use near the pond.	Ongoing	High
Liaise with Engineering team regarding maintenance of the stormwater drains and pits to ensure water flow to the pond.	As required	High
Plant macrophytes around pond to improve water quality and bank stability, and improve habitat for frogs and other native fauna.	Within 1 year	High
Engage contractors to assist with the management of problematic weeds in steep areas: Turkey Rhubarb, Madeira Vine, Asparagus Fern, Climbing Asparagus, and Morning Glory.	Annually	High
Prioritise habitat for threatened species in ongoing management: • Powerful Owl • Microbats (Large-eared Pied Bat, Large Bent-winged Bat) • Grey-headed Flying-fox	Ongoing	High
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Install educational signage to discourage feeding of wildlife.	Within 2 years	Medium



Council's Bushcare program works to protect and restore vegetation communities and native fauna habitat. Trumper Park, Paddington.

6.6.2 Trumper Park *continued*

Action	Frequency	Priority
Engage with bushland neighbours: • Habitat garden planting • Artificial lighting • Responsible disposal of green waste • Stormwater management • Domestic cat management	Within 3 years	Medium
Consider feasibility of installing reflective shields/canopies on lights along pedestrian walkways.	Within 3 years	Medium



Pedestrian walkway, Trumper Park

6.6.3 Woollahra Golf Club

Action	Frequency	Priority
Protect Powerful Owl habitat with dense planting.	Within 1 year	High
Encourage compliance with dog controls through signage and ranger presence.	Within 1 year	High
Collaborate with Sydney Water and the Golf Club tenants regarding litter management.	Within 1 year	High
Prioritise habitat for threatened species in ongoing management: • Powerful Owl • Microbats (Little Bent-winged Bat, Large Bent-winged Bat, Large-eared Pied Bat)	Ongoing	High
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Engage with bushland neighbours: • Habitat garden planting • Artificial lighting • Stormwater management • Not feeding wildlife • Domestic cat management	Within 2 years	Medium
Continue to support Bushland team's management of 'The Mound' to improve biodiversity, particularly small bird habitat.	As required	Medium
Plant native species around mulch bays near the Rose Bay Community Garden to improve habitat and promote connectivity to the golf course.	As required	Medium



Council has planted a small habitat garden around a hollow-bearing tree within the Woollahra Golf Club, to protect nesting fauna and provide habitat for small birds and mammals.

6.6.3 Woollahra Golf Club *continued*

Action	Frequency	Priority
Increase diversity of vegetation structure to improve small bird habitat and decrease abundance of aggressive native birds such as Noisy Miners and Sulphur-crested Cockatoos.	Within 3 years	Medium
Establish protocols for management of ageing trees, which present hazards for golfers and other users but provide valuable nesting habitat for native fauna.	Within 3 years	Medium



Rose Bay Creek, running through Woollahra Golf Club, has been channelised, reducing biodiversity

6.6.4 Parsley Bay

Action	Frequency	Priority
Encourage compliance with dog controls (on leash only in upper reserve, prohibited elsewhere) through signage and ranger presence.	Within 1 year	High
Use hand weeding where possible to reduce herbicide use, particularly along Parsley Creek.	Ongoing	High
Consider catchment management actions to control and prevent pollution in Parsley Creek and Bay.	Within 1 year	High
Continue to collaborate with Projects and Engineering teams to manage swimming net maintenance to protect the White's Seahorse population.	As required	High
Engage contractors to assist with the management of problematic weeds: Turkey Rhubarb, Madeira Vine, Asparagus Fern, Climbing Asparagus, and Morning Glory.	Annually	High
Prioritise habitat for threatened species in ongoing management: • Powerful Owl • Microbats (Little Bent-winged Bat, Large Bent-winged Bat, Large-eared Pied Bat, Southern Myotis)	Ongoing	High
Undertake additional planting to increase structural diversity.	Within 2 years	Medium
Collaborate with Projects and Engineering teams regarding the upgrade of Council's wharf to ensure protection of the marine environment.	As required	Medium
Plant macrophytes along creek edges to improve water quality and bank stability, and improve habitat for frogs and other native fauna.	Within 3 years	Medium



Powerful Owl roosting with prey in Parsley Bay

6.6.4 Parsley Bay *continued*

Action	Frequency	Priority
Engage with bushland neighbours: • Domestic cat control • Habitat garden planting • Artificial lighting • Responsible disposal of green waste • Stormwater management	Within 3 years	Medium
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Investigate options for habitat creation, including hollows and nest boxes.	Ongoing	Medium



Logs and woody debris provide important habitat for reptiles and other native fauna. Water Dragon basking in bushland at Parsley Bay.

6.6.5 Gap Park, Christison Park, Lighthouse Reserve, and Signal Hill Reserve

Action	Frequency	Priority
Extend planted area through National Tree Day planting.	Within 1 year	High
Encourage compliance with dog controls through signage, ranger presence, and fencing where required.	Within 1 year	High
Continue to improve density and diversity of heathland species plantings to improve habitat for small birds.	Ongoing	High
Prioritise habitat for threatened species in ongoing management: • Powerful Owl • Microbats (Little Bent-winged Bat, Large Bent-winged Bat, Large-eared Pied Bat, Southern Myotis, Eastern False Pipistrelle, Yellow-bellied Sheath-tail-bat)	Ongoing	High
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Reintroduce locally extinct species, particularly flowering shrubs associated with Coastal Banksia Heathland communities.	Ongoing	Medium
Liaise with Waverley Council to maintain and improve connectivity.	As required	Medium
Reintroduce locally extinct Netted Bottle Brush and monitor health of planted individuals.	Within 2 years	Medium



Native heathland species planted to provide connectivity and habitat for small birds. National Tree Day, Christison Park.

6.6.5 Gap Park, Christison Park, Lighthouse Reserve, and Signal Hill Reserve *continued*

Action	Frequency	Priority
Engage with bushland neighbours: • Habitat garden planting • Artificial lighting • Responsible disposal of green waste • Stormwater management	Within 3 years	Medium
Engage contractors to undertake removal of weeds on cliffs and revegetation with appropriate native species. Alternatively consider training Council's Bushland team to undertake this work.	Within 3 years	Medium



Gap Park, Watsons Bay

6.6.6 Estuarine foreshore

Action	Frequency	Priority
Monitor sedimentation and damage to seagrass beds from stormwater. Implement suitable solutions such as GPTs as necessary.	Ongoing	High
Prioritise creation of small bird habitat in foreshore areas where possible.	Ongoing	High
Engage contractors to undertake bush regeneration and revegetation at Rose Bay Park to improve habitat, foreshore protection, and public amenity.	Ongoing	High
Collaborate with Museums of History and external contractors to manage Beach Paddock/Vaucluse Bay to improve habitat and foreshore protection.	Ongoing	High
Create complex piles of woody debris and rocks for reptile basking.	Ongoing	Medium
Consider expansion of Council's environmental and biodiversity monitoring program to include foreshore reserves such as Beach Paddock/Vaucluse Bay and Rose Bay Park.	Within 5 years	Low



Council has engaged contractors to regenerate Rose Bay Park to improve habitat connectivity and amenity of this foreshore reserve.

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