Pyrmont Peninsula Place Strategy - Biodiversity Study

NSW Department of Planning, Industry & Environment





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Abbreviations

Abbreviation	Description
DCP	Development Control Plan
DPIE	NSW Department of Planning, Industry & Environment
MNES	Matters of National Environmental Significance
PPPS	Pyrmont Peninsula Place Strategy
SEPP	State Environmental Planning Policy

1. Introduction

1.1. Context

The Pyrmont Peninsula Place Strategy (PPPS) (DPIE 2020) provides a 20-year framework that identifies areas that can accommodate future growth in Darling Island, Blackwattle Bay, Tumbalong Park and Ultimo sub-precincts, while enabling more gradual growth in the Pirrama, Pyrmont Village and Wentworth Park sub-precincts. The Place Strategy includes measures to protect solar access, heritage and local character, while setting in place other measures, such as identification of additional public benefits and infrastructure to be delivered as development occurs. Sub-precinct master plans are now being developed by DPIE and the City of Sydney, and these will inform amendments to the Sydney Local Environmental Plan 2012 and the Sydney Development Control Plan.

The study area and the sites with potential to change under the PPPS are shown in Figure 1.

1.2. Study objectives

The objectives of this biodiversity study are to:

- identify areas of ecological value in the Pyrmont Peninsula
- provide advice and recommendations for the Pyrmont Peninsula sub-precinct master plans.

1.3. Limitations

This study is based on desktop assessment and site familiarisation. Targeted ecological field survey was not undertaken. An arboricultural assessment was not conducted for this study. This study reviews potential direct and indirect impacts to biodiversity associated with proposed changes arising from the PPPS, although detailed impact assessment has not been undertaken.



Figure 1 Study area and sites with potential to change

2. Literature review

This section contains a review of documents that provide guidance on biodiversity protection and management in Pyrmont. Literature has been grouped as:

- legislation and planning instruments
- strategy and policy
- research on biodiversity.

Legislation	Content
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	The EPBC Act provides protection for Matters of National Environmental Significance (MNES). If an action may have a significant impact on MNES, the action must be assessed by the Commonwealth. Whilst Planning Proposals are not considered an 'action' under the EPBC Act, consideration of MNES early in a planning process is prudent. MNES have been recorded in the study area (e.g. Greyheaded Flying-fox)
Biodiversity Conservation Act 2016 (NSW)	This purpose of this Act is to maintain healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The Act lists threatened ecological communities and threatened species and includes principles to avoid and minimise impacts to biodiversity. The Act does not contain specific provisions relating to Planning Proposals. There are no threatened ecological communities in the study area but threatened species as shown in Figure 2.
Biosecurity Act 2015 (NSW)	This Act provides for the prevention, elimination, minimisation and management of biosecurity risks. These include priority weeds and pest animal species, some of which have been recorded in the PPPS area.
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	This REP is a deemed SEPP. The plan contains provisions for biodiversity values including critical habitat and wetland protection, however neither of these values has been identified by the SEPP as occurring within the PPPS area.
Sydney Development Control Plan City of Sydney 2012	Section 3.5 provides controls for Urban Ecology with objectives to protect existing habitat within and adjacent to development sites and improve the biodiversity and abundance of locally indigenous flora and fauna species.
	Specific provisions include the retention of existing habitat features such as cliff lines, rocky outcrops, waterbodies, trees/shrubs and groundcover; and new habitat features are to be included wherever possible such as trees, shrubs, waterbodies, rockeries, green roofs and walls.
	Schedule 9 provides design considerations for green roofs and walls.

Strategy & policy	Summary
Eastern City District Plan, Greater Sydney Commission 2018 updated	 District Plans inform the preparation of Local Strategic Planning Statements and the preparation of Planning Proposals. The Eastern City District Plan contains recommendations relating to biodiversity including: E15: Protecting and enhancing bushland and biodiversity
Greener Places Government Architect NSW 2020	 Framework for ensuring connection and integration of green assets, ensuring their contribution to quality of life. The Design Guide describes the operational processes to implement the design framework including: Open Space for Recreation – Green infrastructure for people Urban Tree Canopy – Green infrastructure for climate adaptation and resilience Bushland and Waterways – Green infrastructure for habitat and ecological health.
Greening Sydney Plan City of Sydney 2012	The Greening Sydney Plan provides the strategic context for the many tree-related programs run by the City
Street Tree Masterplan City of Sydney2011	Provides direction for management of street trees including a list of preferred species for each precinct.
Urban Ecology Strategic Action Plan City of Sydney 2013	The vision for this plan is to restore and conserve resilient urban ecosystems that support a diverse range of locally indigenous flora and fauna species, and in so doing to create a liveable city for all its inhabitants. The strategy identifies six priority sites, one of which is 'Pyrmont – sandstone cliffs and outcrops and bush restoration sites'.
Urban Forest Strategy City of Sydney 2013	 This strategy sets out the importance of urban forests and tree canopy cover. Based on 2008 imagery, Pyrmont had an estimated 7-9% canopy cover. The strategy sets a target of 25% canopy cover for suburbs such as Pyrmont with urban residential/light commercial landuses. The Strategy includes priority actions to: Protect existing forest Increase canopy cover Improve forest diversity (i.e age and species diversity) Community engagement
Green Roofs and Walls Policy City of Sydney 2014	This policy encourages the installation of quality green roofs and walls and is a statement of commitments by the City of Sydney to implementing the policy.
Significant Tree Register City of Sydney	 This register lists 2,674 trees based on their historical, cultural, social, ecological or outstanding visual and aesthetic appeal throughout the City of Sydney LGA. Within the study area, the register includes: 16 trees in Carmichael Park, Pyrmont. Of particular note is a large Sydney Blue Gum (<i>Eucalyptus saligna</i>). 41 Moreton Bay Figs and 15 Hills Weeping Figs in Wentworth Park on Bridge Road, Glebe.
Landscape Code City of Sydney 2016	City of Sydney have adopted two Landscape Codes for single dwellings and all other development excluding single dwellings. The codes provide requirements on matters such as site planning, tree retention, green roofs etc

Table 2 Biodiversity related strategy and policy

Document	Key points
Broadbent (2010) Transformations: Ecology of Pyrmont Peninsula 1788- 2008	Broadbent provides a comprehensive description of the flora and fauna of Pyrmont at the time of European settlement, its transformation over the following 230 years and a description of the current flora and fauna as of 2010.
Davies, P., Corkery, L., Nipperess, D. (2017). Urban Ecology: theory, policy and practice in New South Wales, Australia. National Green Infrastructure Network.	This comprehensive review of urban ecology protection and planning in NSW contains an extensive literature review on the topic and 47 recommendations to be applied at state, regional, metropolitan, district, local and lot levels. At the local and lot scale, the report recommends enforcement of planning controls; incentive mechanisms to promote and maximise urban ecological outcomes; establishment of green roof; planning open space to capture ecosystem services; creating novel ecosystems that benefit local biodiversity; implementing soft/ecological engineering practices for shoreline protection and coastal revetments; establishing maximum built-lot coverage requirements to ensure sufficient area for landscaping; establishing deep soil requirements to support canopy plantings on private land.; retaining large mature hollow-bearing trees.
Gonsalves and Law (2017) Distribution and key foraging habitat of the Large-footed Myotis Myotis macropus in the highly modified Port Jackson estuary, Sydney, Australia: an overlooked, but vulnerable bat.	The Large-footed Myotis is a threatened microbat that forages for aquatic prey. Gonsalves and Law study the presence of this species throughout Sydney harbour. The study showed that the species is found in 92% of the sites surveyed, with the most important roosting site being a wharf with 'lift holes'. Presence of bushland was a poor indicator of bat activity, which also points to the potential importance of built structures. Southern Myotis was not recorded in Blackwattle Bay by Gonsalves and Law (2017) but was recorded in surveys undertaken in Blackwattle Bay for the new Sydney Fish Markets.

Table 3: Research on biodiversity values

3. Biodiversity values

As described in Broadbent (2010) and the Urban Ecology Strategic Plan (2013), the habitat of Pyrmont has undergone extensive change with very little if any remnant habitat. Small parks, private gardens, cliff faces, street trees, footpaths and foreshores all provide potential fauna habitat in highly urbanised areas such as Pyrmont. The table below provides an overview of habitat types found within Pyrmont. The location of habitat types is shown in Figures 1-4.

There are records of threatened flora and fauna species within the Pyrmont Peninsula and near-by areas (Figure 2). The only threatened flora species recorded in the area (*Syzgium paniculatum* or Magenta Lilly Pilly) which naturally occurs in rainforests and is often planted as a street tree. Threatened fauna recorded in the area include many records of Grey-headed Flying fox, although there are no known camps within the study area. Powerful Owl (*ninox strenua*) and Dusky Woodswallow (*Artamus cyanopterus*) and Southern Myotis (*Myotis Macropus*) have also recorded in the study area.

Table 4 Biodiversity values

Biodiversity value

Sandstone walls and outcrops

Habitat value: provide habitat for ferns, grasses, lizards and insects. May offer cavity habitat for microbats. Most exposed sandstone in Pyrmont is due to quarrying. <u>Date source for mapping</u>: (City of Sydney, Urban Ecology Strategic Plan)



Trees

Habitat value: nesting, roosting and foraging habitat for birds and bats. The trees pictured (Wentworth Park) provide foraging habitat for Grey-headed flying fox.

Data source: City of Sydney

Note, the tree data focuses on street trees and did not include data on trees within private property and back yards etc.



Biodiversity value

Foreshores

Habitat value: The foreshores of Pyrmont are predominately wharves (both wooden and concrete) with some small sections of vertical sandstone seawall. No foreshore areas remain in their original state. Constructed foreshores can provide habitat for aquatic/marine species of algae, molluscs, crustaceans, fish and well as occasionally providing roosting habitat for birds, bats and rodents.



Buildings

Habitat value: birds and bats are known to inhabit buildings, particularly derelict buildings with gaps, crevices and roof space. The use of buildings by species does not necessarily imply they need to be kept in this state, however measures may be required to ensure minimal harm to species when such buildings are redeveloped.





Figure 2 Biodiversity values

4. Potential biodiversity impacts

The PPPS identifies sites with the potential for change - subject to detailed design and investigation. Site re-development can impact on biodiversity in the following ways:

- Direct impacts such as the removal of trees or habitat to allow for redevelopment.
- Indirect impacts such as shadowing, changes to drainage and removal of built-form habitat.

The above impacts can be permanent or temporary – such as though the construction phase.

The following table quantifies the potential direct impacts that may result from redevelopment of the sites identified in the PPPS. We have assumed that vegetation and habitat within the site and within 5 metres of the site has the potential to be impacted. Given the application of City of Sydney Landscape Code and the strict controls applied during the construction phase, these impacts may not occur. However the purpose of the table and associated mapping is to highlight areas of concern for sub-precinct masterplans and development applications.

Selected habitat	Current total	Total potential impact	Potential impact as % of total
Native trees	1070	263	25%
Exotic trees	807	330	41%
Seawall Length (m)	6048	2034	34%
Bush Regeneration Sites (ha)	0.93	0.048	5%
Coastal Sandstone Outcrop Complex (ha)	0.23	0.01	6%

Table 5: Potential direct and indirect biodiversity impacts



Figure 3: Potential biodiversity impacts - overview



Figure 4 Potential biodiversity impacts - detail



Figure 5 Potential biodiversity impacts - detail



Figure 6 Potential biodiversity impacts - detail



Figure 7 Potential biodiversity impacts - detail



Figure 8 Potential biodiversity impacts - detail



Figure 9 Potential biodiversity impacts - detail

5. Recommendations

Maintaining and improving biodiversity in Pyrmont is consistent with legislation, plans and policies, and will enhance the liveability and value of the area for residents and visitors. It is recommended that priority be given to protecting and improving vegetation, particularly native vegetation, and habitat for native species. The long history of development in Pyrmont means that planting and new habitats will be in small managed public and private spaces such as roadsides, parks and landscapes areas within development sites. The following recommendations provide high-level direction for drafting the sub-precinct plans and DCP controls.

Recommendation	Sub-precinct	Directions for Sub-Precinct Plans and DCP
		Sub-precinct Plans to show locations of significant trees as per Council register.
Protection of significant trees	Wentworth Park and Blackwattle Bay	Development to complement significant trees and not compromise tree health by building within the Tree Protection Zone unless an arborist has confirmed the construction would not threaten survival of the tree.
Protection of sandstone outcrops	Blackwattle Bay, Pirrama, Darling Island	Identify areas on sub-precinct plans and include objectives to retain and protect sandstone outcrops. Development should generally be set back from these areas.
Protection of street trees	All	Include DCP objectives and DA consent conditions for the protection of street trees. This will include avoidance of trees during design and tree protection during construction.
Provision of habitat	Blackwattle Bay, Pirrama, Darling Island	Promote the provision of habitat through design. DCP to promote green roofs and green walls and provide for deep soil landscape areas where possible. Redevelopment of foreshore areas to include requirements for habitat enhancement.
Planting guide	All	Guideline to be prepared and made available to developers and landowners listing preferred native species for planting in different conditions. Implement a tree planting program for streets and parks to gradually replace unsuitable exotic species with suitable native species.

Table 6: Recommendations





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