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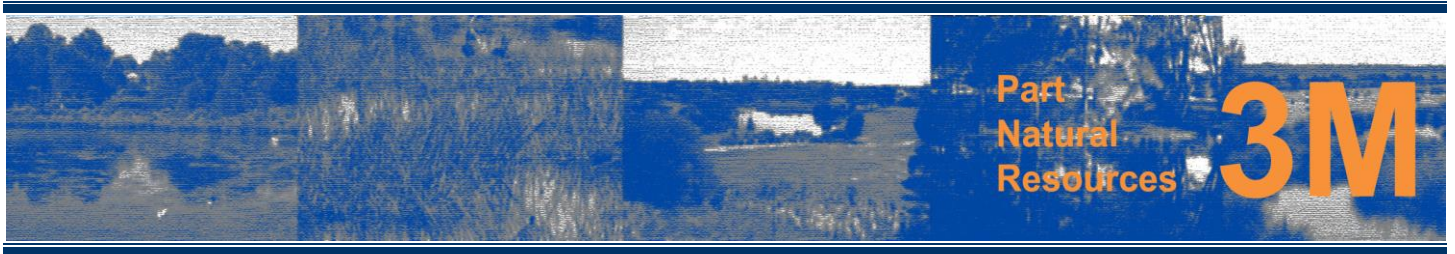
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3M.1 Introduction

The Bayside LEP 2021 identifies wetlands and endangered ecological communities which are significant to the Bayside LGA. The following have been identified:

Endangered Ecological Communities

Sand Based Vegetation Communities

- Bangalay Sand Forest
- Eastern Suburbs Banksia Scrub

Wetland Vegetation Communities

- Sydney Freshwater Wetlands
- Swamp Sclerophyll Forest on Coastal Floodplains

Wetlands

- Wetland Ponds

3M.1.1 Land to which this Part Applies

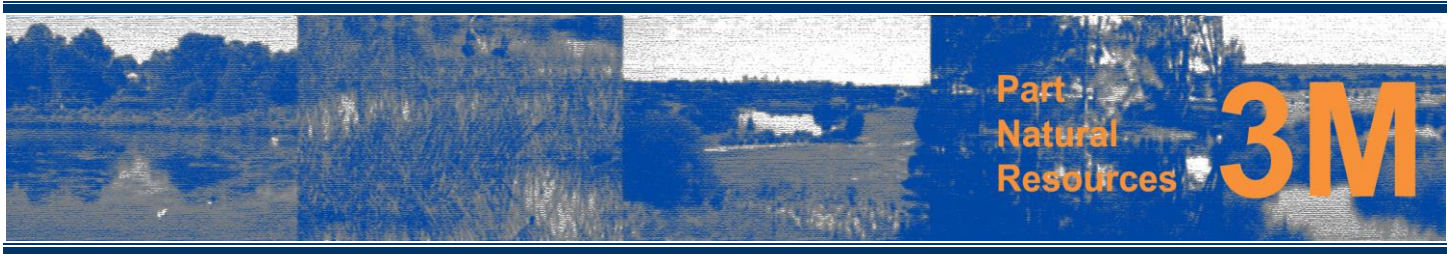
This Part applies to land to which this DCP applies throughout the LGA where Wetlands and Endangered Ecological Communities (refer to **Appendix A**) have been identified in the Bayside LEP 2021 and to all land that drains into the wetlands or has the potential to adversely impact the wetlands (refer to **Appendix B**).

The Wetlands are identified in the Bayside LEP 2021 and include:

- (i) Botany Wetlands located throughout Eastlakes, The Lakes and Bonnie Doon Golf Courses;
- (ii) Mill Pond and Engine Pond areas located east and southeast of Sydney Airport in Botany; and
- (iii) Various pockets of land located adjacent to Foreshore Drive and in Sir Joseph Banks Park, Botany.

This Part needs to be read in conjunction with:

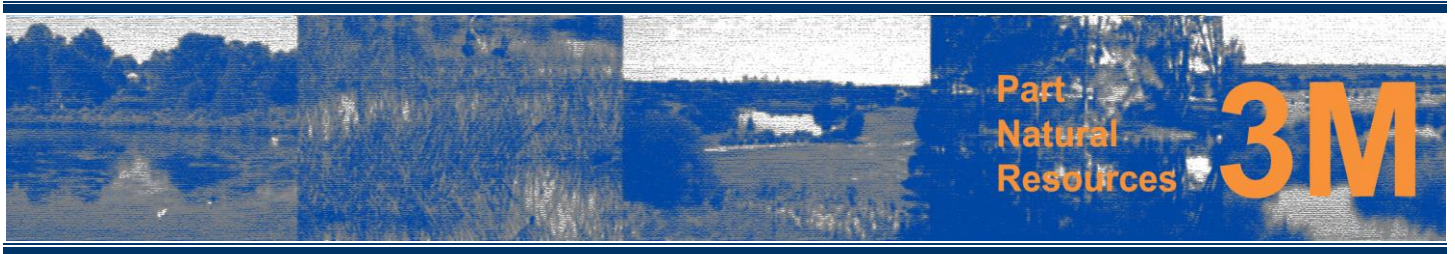
- Part 1 - Introduction
- Part 2 - Notification and Advertising
- Part 3 - General Provisions
- Part 4 - Residential Development
- Part 5 - Business Centres
- Part 6 - Employment Zones
- Part 7 - Other Development Types and Land Uses
- Part 8 - Character Precincts
- Part 9 - Key Sites
- Part 10 – Technical Guidelines



Note: While the wetland and the sand-based communities LEP mapping picks up on the main areas of biodiversity in the LGA, it is acknowledged that there are additional threatened species likely to use habitat in other areas of the LGA. This includes the nationally-listed Green and Golden Bell Frog, *Acacia terminalis* subsp. *terminalis* as well as the Grey-headed Flying-fox. Land that is covered by State Environmental Planning Policy (Three Ports) 2013 contains important biodiversity values including the state and federally-listed Coastal Saltmarsh ecological community, as well as a number of state and federally-listed shorebirds which include the Pied Oystercatcher, Little Tern, Curlew Sandpiper, Great Knot, Black-tailed Godwit and Terek Sandpiper.

3M.1.2 General Objectives

- O1** To protect and improve biodiversity across the LGA;
- O2** To protect the identified Endangered Ecological Communities;
- O3** To protect Wetlands in the Bayside LGA from inappropriate development by preventing and/or regulating developments that have the potential to fragment, pollute, disturb or diminish the values of wetlands; and
- O4** To protect, maintain or restore (as appropriate) ecological processes, natural systems and biodiversity within wetlands in the Bayside LGA.



3M.2 Biodiversity

Biodiversity can be defined as the variability among living organisms. Almost every aspect of human life is affected by biodiversity. For example, vegetation sustains the earth's atmosphere by absorbing carbon dioxide and generating oxygen. Biodiversity conservation aims to create a balanced existence between humans and the environment. People rely directly on biodiversity to live. High or rich biodiversity is a sign of a healthy ecosystem, robust and stable and able to evolve and adapt to changing conditions or competition e.g., weeds, habitat loss, climate change.

Biodiversity can be maintained and enhanced by protecting threatened and endangered species, trees and vegetation, planting vegetation using a variety of locally indigenous species of local provenance as well as native species and by retaining, enhancing and providing new habitat and wildlife corridors to name a few areas. Threatened and endangered species, populations and ecological communities, as well as their habitat, should be maintained and enhanced. Biodiversity is linked intrinsically with sustainability.

The National Local Government Biodiversity Strategy (NLGBS) establishes a common policy direction for all local government across Australia, recognizing the importance of biodiversity. In recognition of this objective, this Part applies to all development or works within the City that may have an impact on existing flora, fauna and wildlife corridors and habitats, or that involve the landscaping of a site.

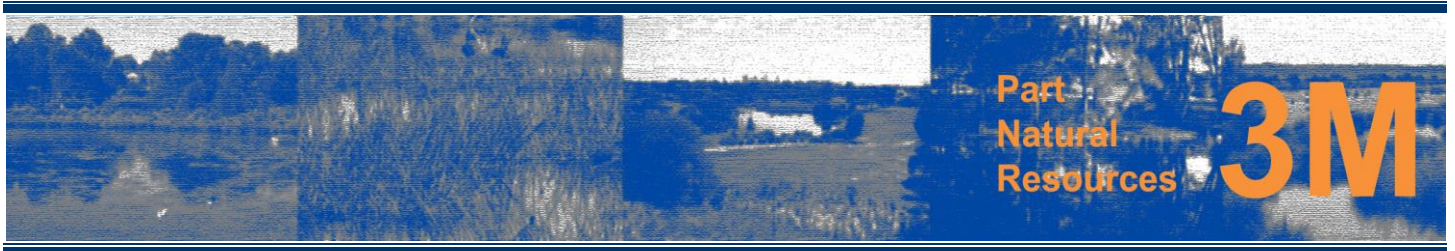
3M.2.1 General Requirements

Objectives

- O1** To ensure the protection of existing habitat features within and adjacent to development sites or to otherwise ensure no net loss of biodiversity values in the Bayside LGA as a result of development;
- O2** To improve the diversity and abundance of locally indigenous flora and fauna species across the LGA;
- O3** To maintain, enhance and/or establish green corridors to assist existing plant and animal communities; and
- O4** To protect and promote the recovery of threatened species, population and endangered ecological communities.

Controls

- C1** Development must comply with **Part 3F - Tree Preservation**.
- C2** Existing habitat features including natural landforms, waterbodies, rock outcrops, trees and vegetation and wildlife corridors are to be retained where possible.



- C3** Potential new wildlife habitats are to be incorporated into new developments or other activities, via trees and vegetation, waterbodies, green roofs and so on wherever possible.

Note: Development Applications may be required to address the airport and wildlife management requirements. Please refer to **Part 3J.4 – National Airports Safeguarding Framework** for more information.

- C4** Opportunities to link to, extend or enhance existing or potential wildlife corridors should be realised in new developments or other activities wherever possible.

- C5** A mix of appropriate and site responsive locally indigenous plant species of local provenance shall be incorporated into landscaping associated with a development or other activity wherever possible as detailed in Council's **Landscape Technical Guidelines for Development Sites**.

A list of locally indigenous species is provided in Council's **Landscape Technical Guidelines for Development Sites**. Where this is not suitable, native plants should be used. Native plants require little or no water, fertiliser or pesticide once established. A list of plant species that are generally known to grow well in the Botany Bay area is provided in the Landscape Technical Guidelines. Each species has particular growth habits and requirements and should therefore be selected and located on that basis. This list is not exhaustive and does not limit or restrict the use of other suitable plants. A minimum of 80% of the species planted on any site are to be native and/or species indigenous to the Bayside LGA.

3M.3 Endangered Ecological Communities

This section applies to development which may have potential to impact on any significant biodiversity or an endangered ecological community.

Sand Based Vegetation Communities

Bangalay Sand Forest

The Bangalay Sand Forest occurs on deep, freely draining to damp sandy soils on flat to moderate slopes within a few kilometres of the sea and at altitudes below 100 metres. The Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions typically has a dense to open tree canopy, approximately 5 - 20 metres tall, depending on exposure and disturbance history (refer to **Photo 1**).

Threats to the Bangalay Sand Forest include:

- (i) Over-frequent burning which can eliminate shrubs and discourage tree regeneration;
- (ii) Weeds; and
- (iii) Land clearing and degradation.

Eastern Suburbs Banksia Scrub (ESBS)

The ESBS once occupied around 5,300 hectares of land between Port Jackson and Botany Bay. Today, less than 3% of the original vegetation remains as a number of small, isolated remnants ranging in size from 0.06 to 8.5 hectares and totalling only 138 hectares (refer to **Photo 2**).

The major threat to ESBS is vegetation clearing and degradation as a result of urban development. Other major threats include:

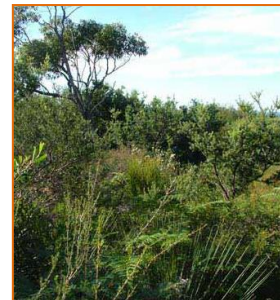
- (i) Erosion from excessive pedestrian use, bicycles and motorcycles;
- (ii) Increased nutrient status from stormwater runoff;
- (iii) Increased/altered soil moisture from over watering and invasion by weed species such as *Chrysanthemoides mollifera* (Bitou Bush); and
- (iv) Physical damage from illegal access and dumping of rubbish.

Photo 1 - Bangalay Sand Forest

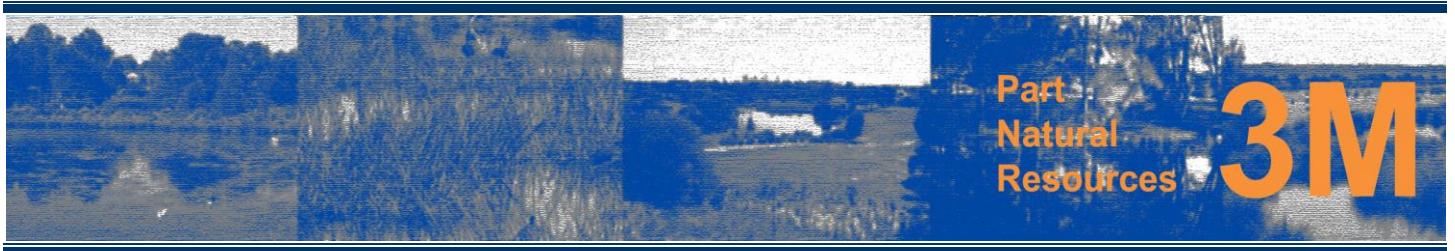


Source: Pittwater Council

Photo 2 - Eastern Suburbs Banksia Scrub



Source: Best Practice Guidelines:
Eastern Suburbs Banksia Scrub



Wetland Vegetation Communities

Sydney Freshwater Wetlands

The Sydney Freshwater Wetlands vegetation community is restricted to freshwater swamps in swales and depressions on sand dunes and low nutrient sand plain sites in coastal areas. Sydney Freshwater Wetlands are a mosaic community with considerable variation due to fluctuating water levels and seasonal conditions. Characteristic vegetation is sedges and aquatics particularly *Eleocharis sphacelata*, *Baumea juncea*, *Baumea rubiginosa*, *Baumea articulata*, *Gahnia sieberiana*, *Ludwigia peploides subsp. montevidensis* and *Persicaria* species.

Threats to the Sydney Freshwater Wetlands include:

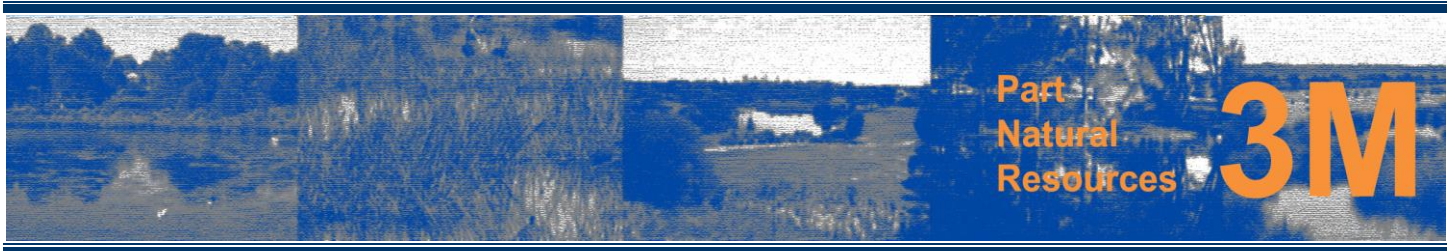
- (i) Extensive clearing;
- (ii) Illegal filling; and
- (iii) Sand extraction.

Swamp Sclerophyll Forest on Coastal Floodplains

This swamp community has an open to dense tree layer of eucalypts and paperbarks with stands exceeding 25 metres in height. It is associated with humic clay loams and sandy loams, on waterlogged or periodically inundated alluvial flats and drainage lines associated with coastal floodplains.

Threats to the Swamp Sclerophyll Forest on Coastal Floodplains include:

- (i) Alteration to natural hydrological regimes;
- (ii) Land filling and earthworks associated with development;
- (iii) Pollution from urban runoff;
- (iv) Weed invasion;
- (v) Vegetation clearing;
- (vi) Activation of Acid Sulphate Soils; and
- (vii) Frequent fire.



3M.3.1 General Requirements

Objectives

- O1** To protect Endangered Ecological Communities from pollution, fragmentation and destruction that may occur as a result of development;
- O2** To protect, maintain or restore ecological processes, natural systems and biodiversity within and around the Endangered Ecological Communities; and
- O3** To ensure the management of ESBS endangered ecological community is conducted in accordance with the OEH Best Practice Guidelines: Eastern Suburbs Banksia Scrub.

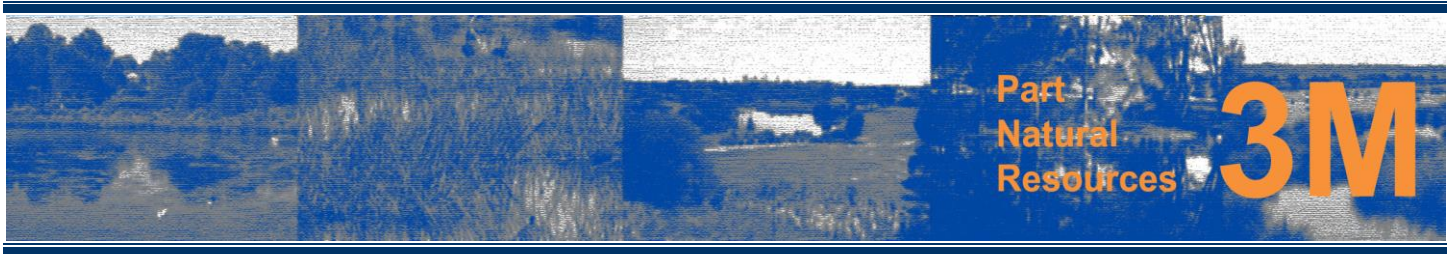
Controls

- C1** Properties which support an Endangered Ecological Community (EEC) will need to undertake an Assessment of Significance for any development or activities that are likely to impact on that EEC. The Assessment of Significance guidelines are on the Office of Environment & Heritage website at: <http://www.environment.nsw.gov.au/threatenedspeciesitsaguide.htm>

Eastern Suburbs Banksia Scrub

- C2** Development Applications on properties supporting Eastern Suburbs Banksia Scrub (ESBS) will need to undertake an Assessment of Significance for any development or activities likely to impact on this EEC.

Note: Council may apply conditions of consent to provide suitable setbacks to the endangered Eastern Suburbs Banksia Scrub ecological community and require bonds to prevent any damage to the community during construction.



3M.4 Wetlands

This section applies to the any Wetland Ponds identified in Bayside and to land that drains into the wetlands or has the potential to adversely impact the wetlands (refer to **Appendix B**). Landowners must take particular care to avoid the impact of development works on wetlands and where this is not possible they should minimise and offset these impacts.

3M.4.1 General Requirements

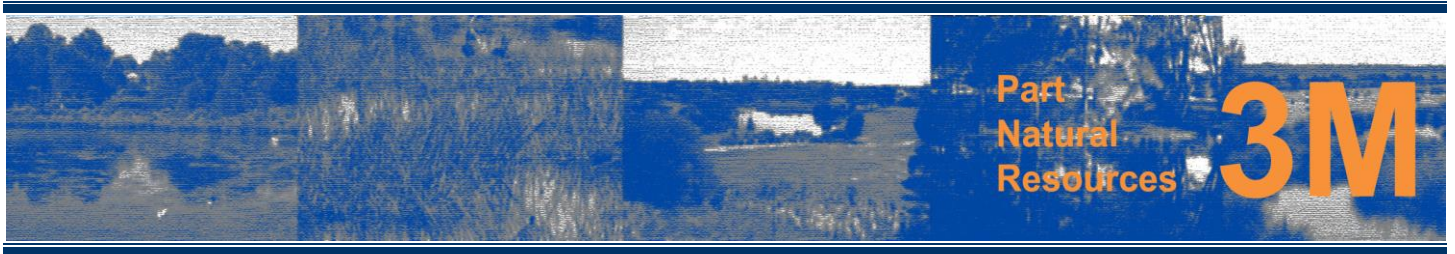
Objective

- O1** To ensure the protection of wetlands and associated endangered ecological communities.

Controls

- C1** Development Applications for certain construction works within the catchment (refer to **Appendix B** for the Catchment Area for the Wetlands) must submit the following:
- (i) Plans of the proposed development including a site plan showing all culverts, drains, paved surfaces and stormwater control mechanisms (existing and proposed);
 - (ii) A Vegetation Management Plan which identifies the measures proposed to protect and manage the Wetlands remnant vegetation and control weed invasion;
 - (iii) A Stormwater Management Plan which addresses measures to minimise impacts on wetlands including:
 - a) The management of erosion and control of pollutants including sediments, nutrients, litter, cement waste, paint, toxins and bacteria; and
 - b) Details of permanent stormwater management measures at the site including on-site detention requirements, permanent treatment ponds, landscape and urban design treatments, and stormwater reuse.
 - (iv) Plans and details of any proposed boardwalks, information signs and viewing platforms adjacent to the Wetlands. The section should explain how these kinds of uses would be constructed, managed and monitored in order to ensure the wetlands are not adversely impacted.
 - (v) An Assessment of Significance as part of a Flora and Fauna report which assesses the impact of the development on the wetland EEC and any threatened species that use habitat associated with the wetland.

Note: Please refer to Council's DA Guide to ascertain if your DA is required to be accompanied by the above information. In any case development applications for change of use of a building or works relating to an existing or new dwelling are exempt from the provisions of the control C1 above.



3M.4.2 Wetlands Hydrology

Altering hydrology is potentially the most damaging modification to Wetlands because water quality and flow is a primary determinant of the health of wetland ecosystems. If the health of wetlands decline, plant and animal diversity can decrease and weed invasion can be more widespread. Cumulative impacts from developments across the catchment can have significant detrimental short and long term hydrological impacts on the wetlands.

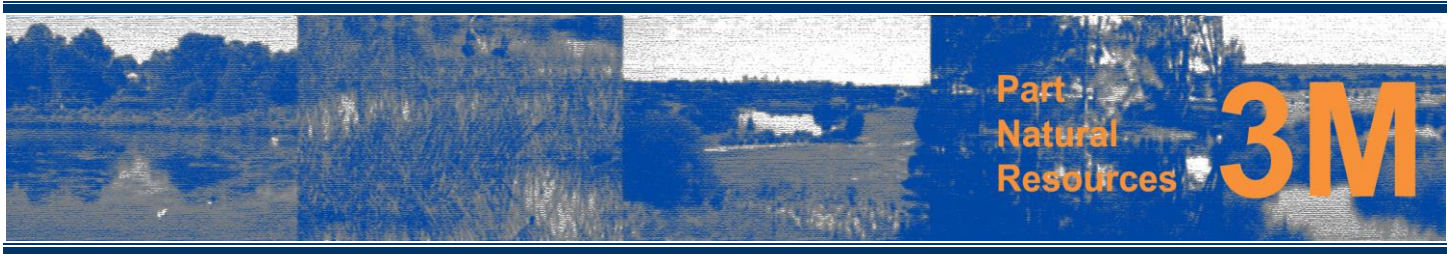
The channelling of surface water flows and increase in area of impervious catchment surfaces has resulted in increased flood discharges and peaks, as well as greater movement of sediment and pollutants from catchment surfaces to receiving waters. This is vastly different to how the water moved over/through the landscape prior to urbanisation. Wetlands have been used as stormwater 'detention areas' with drainage pipes emptying directly into wetlands. Emptying stormwater into a natural wetland may lead to degradation. Wetlands are very delicate ecosystems where too much or too little water can cause degradation. Proposed developments should not significantly alter existing local surface runoff, groundwater flows, wave patterns and tidal regimes.

Objective

- O1** To improve, maintain or restore the physical, chemical and biological processes of the wetland by minimising negative impacts created by changes to wetland hydrology from land uses in the catchment.

Controls

- C1** Culverts, drains and paved surfaces must be designed to minimise changes to the local surface runoff and groundwater flows and ensure that appropriate water flow regimes are maintained to the wetland.
- C2** Development is to be designed to ensure stormwater flows and drainage will mimic natural conditions where possible. This is to ensure a dispersed pattern of flow, avoiding centralised or concentrated discharge points into the wetlands. Stormwater control mechanisms must be installed where development works discharge directly into the wetlands or if the development has the potential to impact on wetland hydrology (refer to **Appendix B - Wetland Catchment Plan**).
- C3** Development Applications must submit a Wetlands Management Plan if the development has the potential to significantly alter the hydrology of the catchment surface and groundwater flows. The Wetlands Management Plan must include the following:
 - (i) Establish the nature and extent of the hydrological impacts of the proposed development;
 - (ii) An assessment of the current hydrological regime including water quality testing before development occurs; and
 - (iii) Commitment to processes for monitoring the actual hydrological impacts of the development such as water quality testing, pre and post development. These results are to be provided to Council once collected.



3M.4.3 Water Quality

Eutrophication occurs when wetlands experience excessive nutrients inputs. It can be caused by run-off from gardening activities, roads, sewerage and manure carrying nutrients such as Nitrogen and Phosphorous flowing into wetlands. This results in the growth of algae and weeds, which suffocate aquatic plants and animals.

Construction activities in Bayside can contribute to large sediment loads and associated nutrients flowing into wetlands. It is an offence to allow soil, cement slurry or other building materials to be pumped, drained or allowed to enter stormwater systems under the *Protection of the Environment Operations Act 1997* and it is generally addressed in a condition of consent on development approvals.

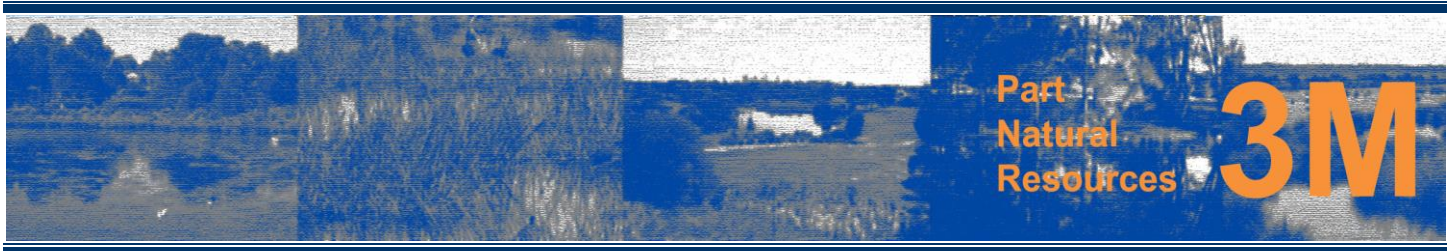
The best way to minimise impacts on water quality in wetlands is to ensure that pollutants do not enter waterways in the first place. This can be minimised through source control and education.

Objective

- O1 To improve, maintain or restore the quality of water within the wetland and entering the wetland to ensure that water quality is not diminished.

Controls

- C1 Development Applications must include measures to limit impacts on temperature, salinity, chemical makeup and sediment loads of water entering the wetland. This may be achieved by incorporating the following:
 - (i) Using production processes that reduce liquid waste;
 - (ii) Grease and oil traps;
 - (iii) Maintenance programs for sediment traps and fences;
 - (iv) Bio-retention swales along car parks; and
 - (v) Point source pollution control devices.
- C2 Development must not disturb stream and wetland sediments. Proposals for earthworks and the like must therefore specify preventive measures to ensure that stream and wetland sediments are not disturbed.
- C3 Nutrient control devices and other storm water treatment measures must be located 50 metres away from freshwater wetlands and ponds.
- C4 Development Applications for large developments must submit a water cycle management strategy to allow pre and post development water quality testing to be conducted.



3M.4.4 Ecology, Habitat and Biodiversity

Urban developments such as housing, playing fields and industries in Sydney have degraded or destroyed the habitat value of many wetlands. Development across a wetlands catchment can significantly increase the amount of sediment and nutrient entering a wetland. Infilling of floodplain wetlands and natural drainage depressions with subsequent urbanisation of the catchment can also exacerbate local flooding.

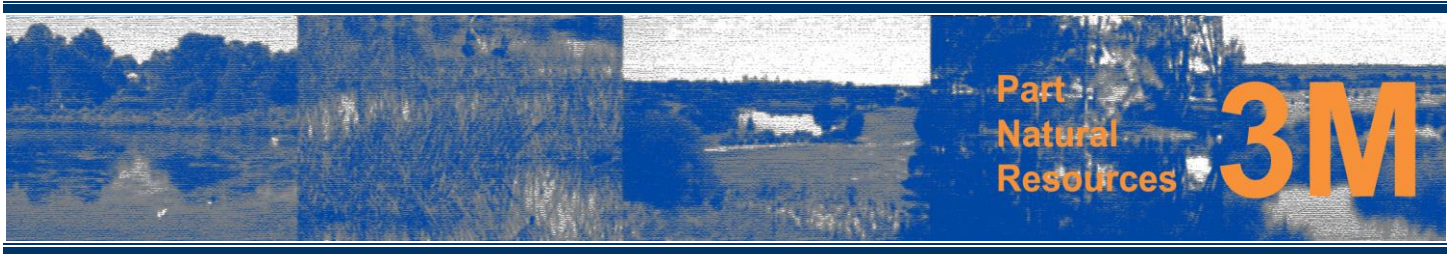
Clearing of vegetation within wetlands and their surrounds is one of the most significant causes of wetland habitat degradation. The impacts include loss of habitat, reduction of wetlands biodiversity, erosion, weed invasion, sedimentation and salinisation.

Objectives

- O1** To protect and enhance the natural value and ecological functions of wetland habitat from potential impacts of adjoining or upstream/downstream land uses including elevated nutrient and sediment loads, stormwater runoff, removal of vegetation and changes to landform;
- O2** To improve, maintain or restore the quality of water within the wetland and entering wetlands; and
- O3** To ensure that water quality is not diminished.

Controls

- C1** Clearing of vegetation around wetlands is restricted.
- C2** The appropriate species to be planted around the wetlands, which are all EECs, are to be those characteristic of that EEC as listed in the NSW Scientific Committees Final Determinations.
- C3** Access to the Sydney Freshwater Wetlands Endangered Ecological Community is to be controlled by installing fencing and signage and rationalising informal tracks on sites where SFW exists.



3M.4.5 Social and Cultural Values

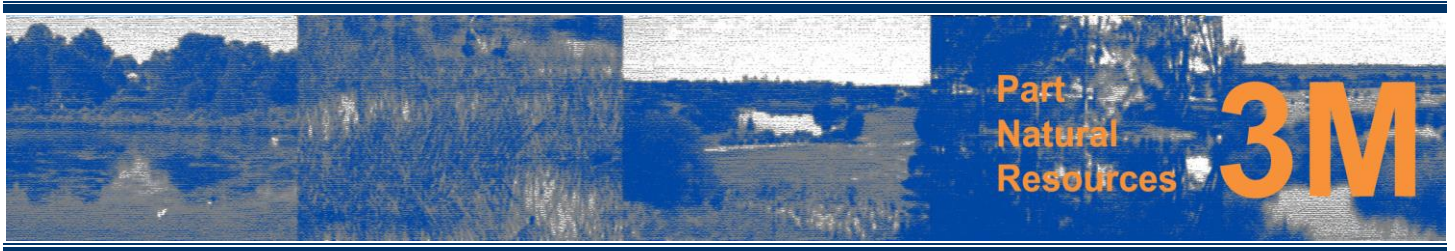
Wetlands can have social and cultural values for many people in the community. These values may be nature conservation, recreation, landscape quality, Aboriginal heritage significance and environmental research and education.

Objective

- O1** To conserve and enhance the indigenous and non-indigenous, social and cultural values of wetlands areas including intrinsic, aesthetic, visual, scientific, cultural heritage, archaeological, educational and recreational values.

Controls

- C1** The appropriate species to be planted around the wetlands, which are all EECs, are to be those characteristic of that EEC as listed in the NSW Scientific Committees Final Determinations.
- C2** Development must be designed to minimise the visual impact on the wetland and ensure that wetlands areas of high scenic value are preserved. This can be achieved by the use of natural and non-reflective materials and landscape screens.
- C3** Development must contribute to the enhancement and maintenance of social, educational and recreational values of the wetlands area. This can be achieved through measures such as boardwalks, information signs, viewing platforms and consideration of Indigenous and non-Indigenous cultural heritage. Development Applications must include details on how these kinds of uses would be constructed, managed and monitored in order to ensure the wetlands are not adversely impacted.
- C4** Development Applications for the Eastlakes Golf Course site must submit an Archaeological Assessment. The Archaeological Assessment must be prepared by a suitably qualified archaeologist in accordance with the guidelines prepared by the Heritage Branch, NSW Department of Planning and include:
- (i) An assessment of the archaeological potential of the item or area of Aboriginal heritage significance;
 - (ii) The Aboriginal heritage significance of the item or area;
 - (iii) The probable impact of the proposed development on the Aboriginal heritage significance of the item or area;
 - (iv) A conservation management strategy for the Aboriginal heritage significance of the item or area; and
 - (v) A statement of compliance with the conservation measures set in the Conservation Management Plan.

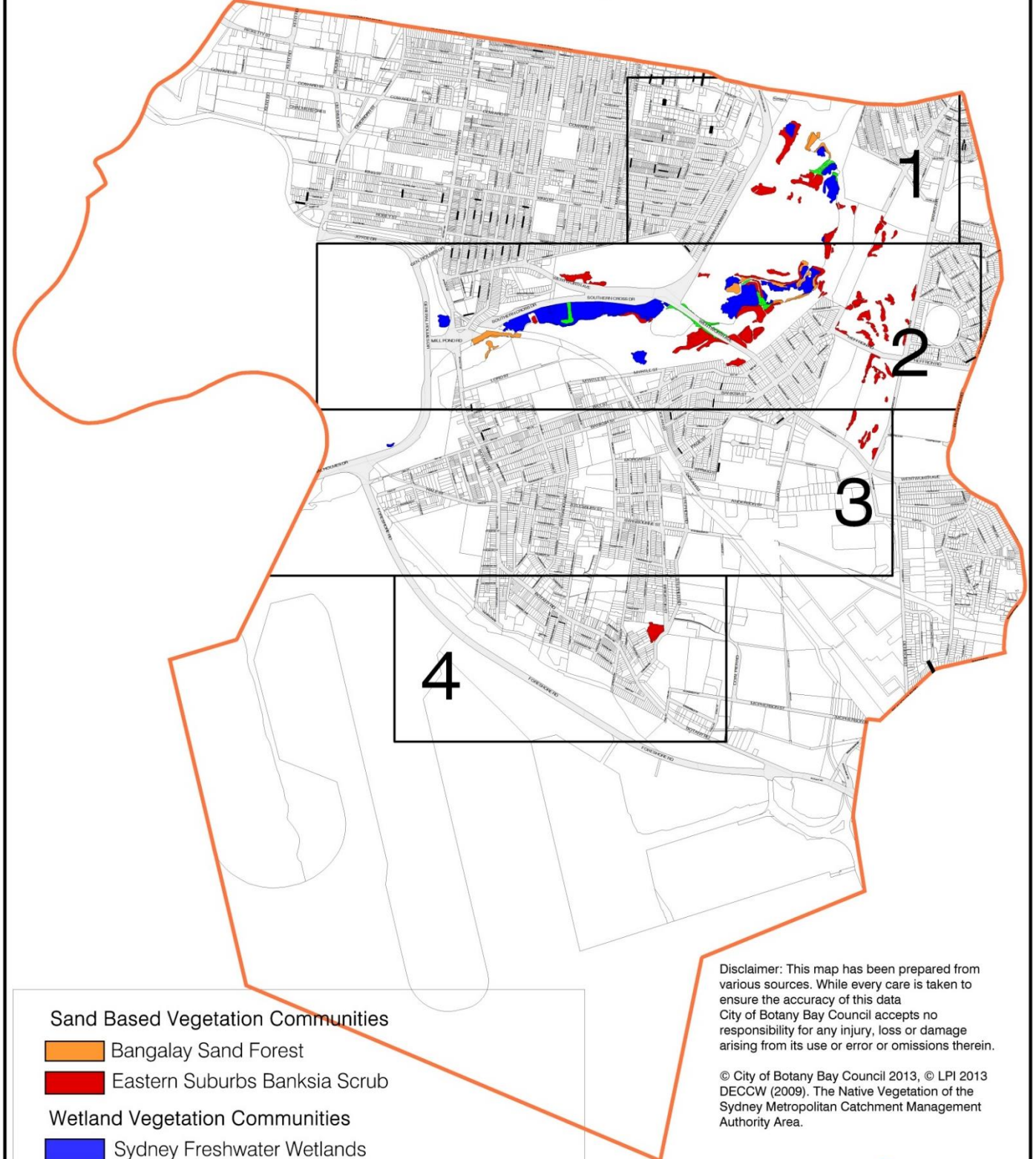


Note: This is required because the Aboriginal Cultural Heritage Study and Plan for Bayside and the La Perouse Local Aboriginal Land Council have identified an Aboriginal burial site located at Eastlakes Golf Course.

- C5** If an item or area of Aboriginal Cultural Heritage is discovered during development works, works must cease. The NSW National Parks and Wildlife Service and Council should be contacted immediately. This may result in the need for the proponent to demonstrate adherence to the Due Diligence Code of Practice and further approvals. For more information on the Due Diligence (refer to <http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf>).

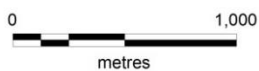
Appendix A - Endangered Ecological Communities Maps

Endangered Ecological Communities

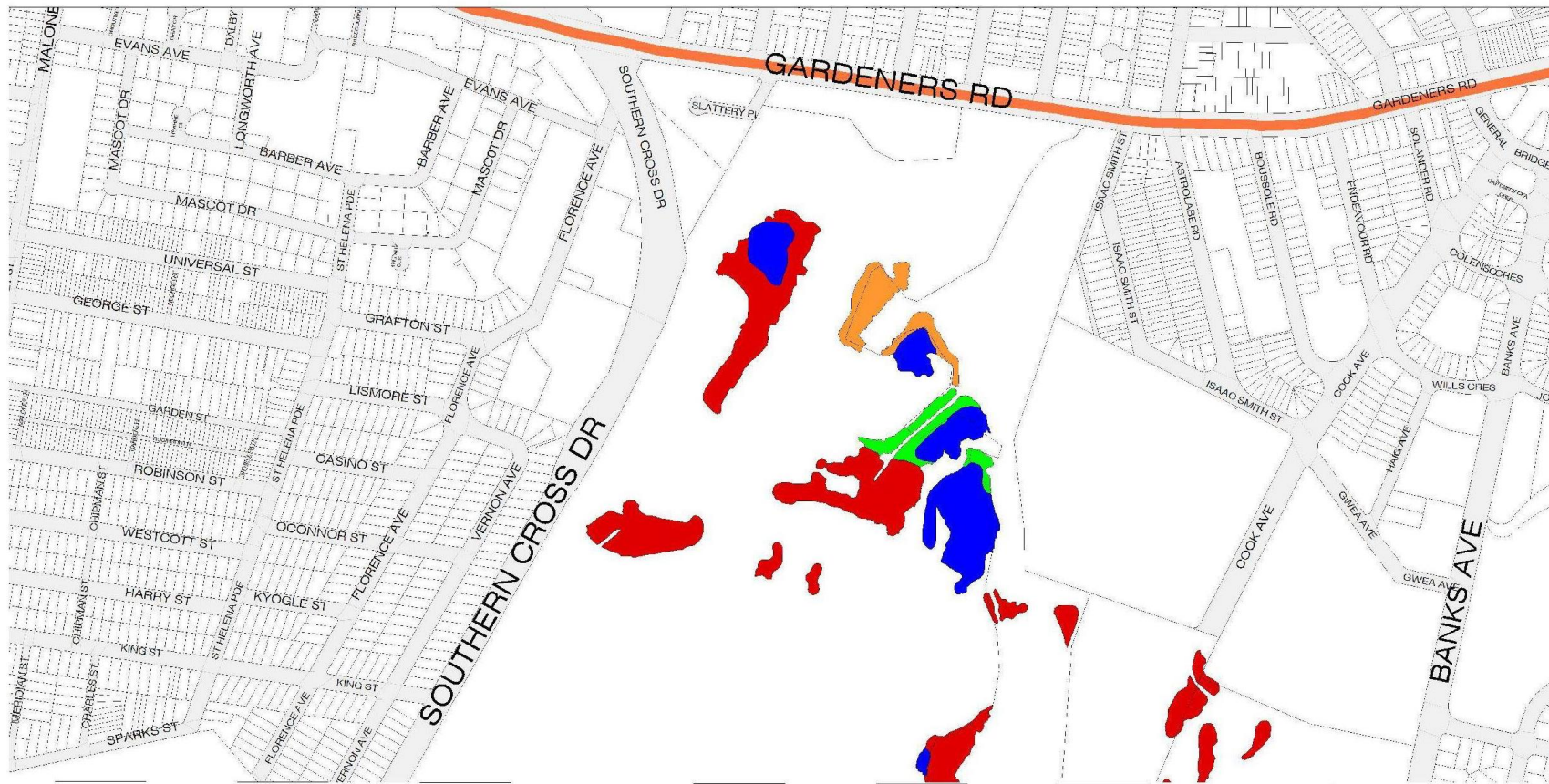


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NORTH



Sand Based Vegetation Communities

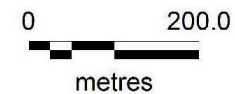
- Bangalay Sand Forest
- Eastern Suburbs Banksia Scrub

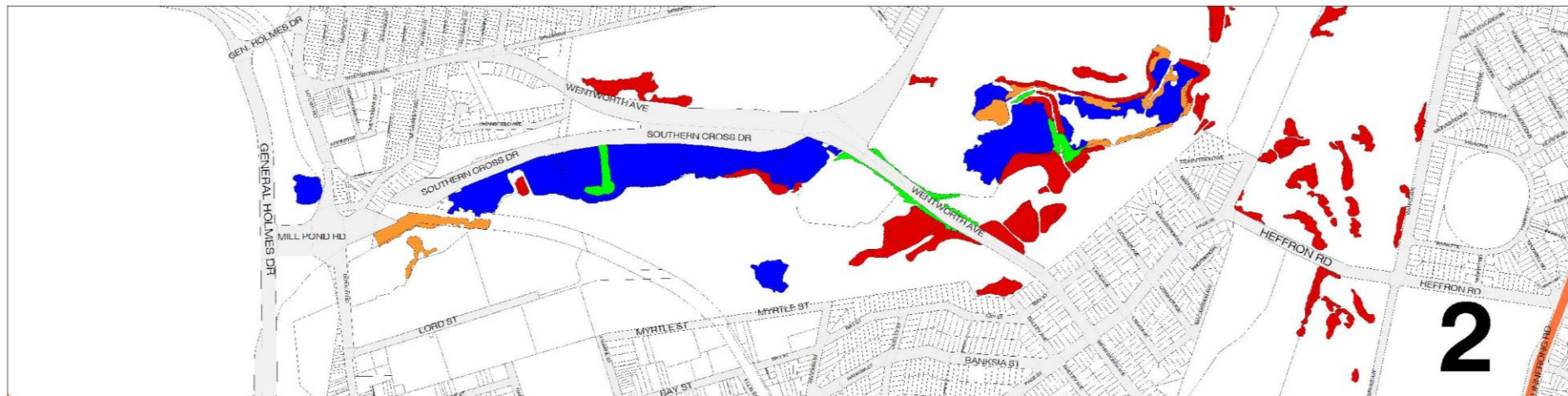
Wetland Vegetation Communities

- Sydney Freshwater Wetlands
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Sand Based Vegetation Communities

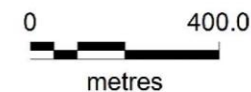
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Sand Based Vegetation Communities

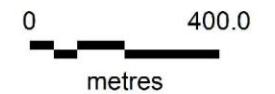
-  Bangalay Sand Forest
-  Eastern Suburbs Banksia Scrub

Wetland Vegetation Communities

-  Sydney Freshwater Wetlands
-  Swamp Sclerophyll Forest on Coastal Floodplains



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Sand Based Vegetation Communities

-  Bangalay Sand Forest
-  Eastern Suburbs Banksia Scrub

Wetland Vegetation Communities

-  Sydney Freshwater Wetlands
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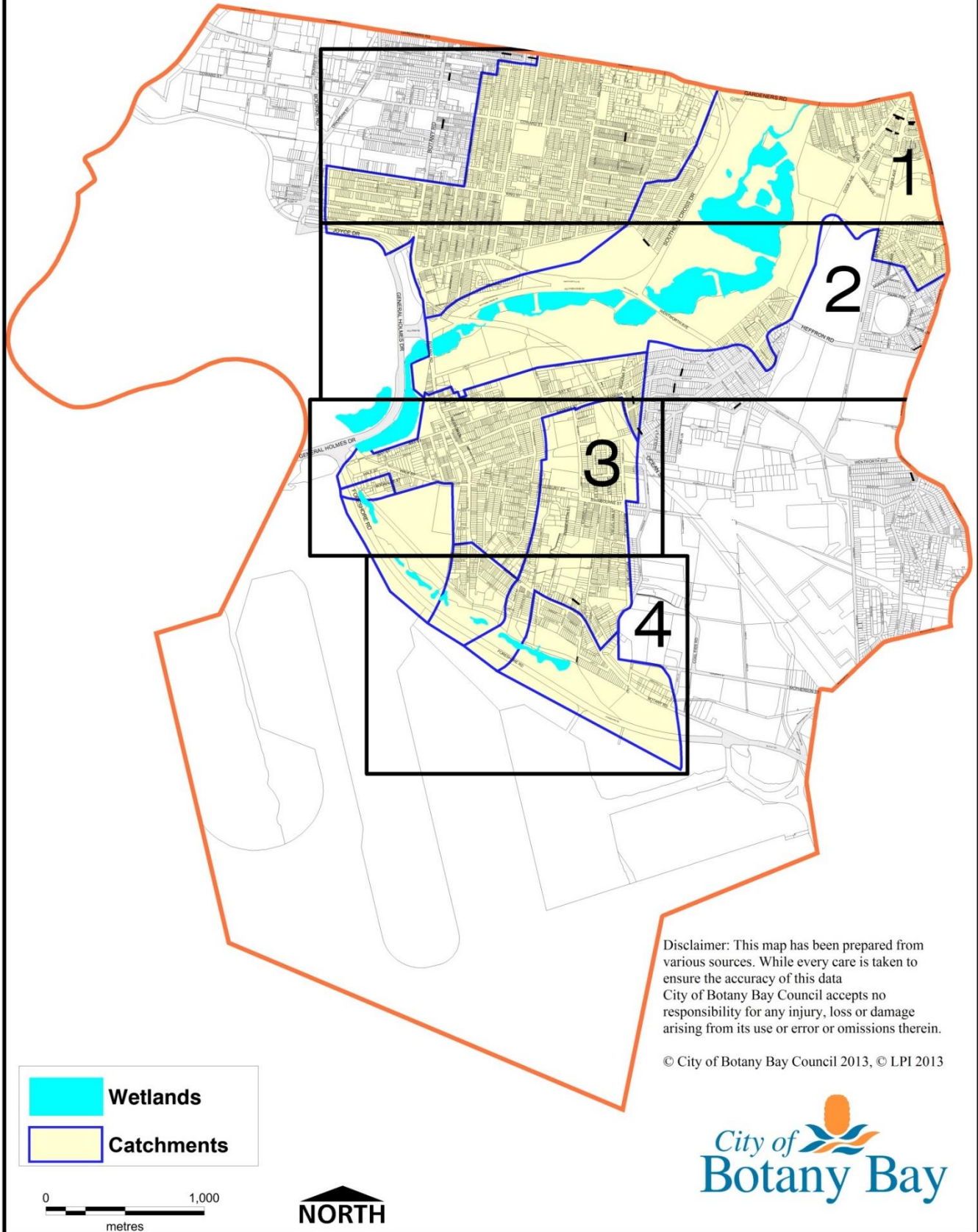
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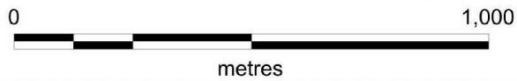
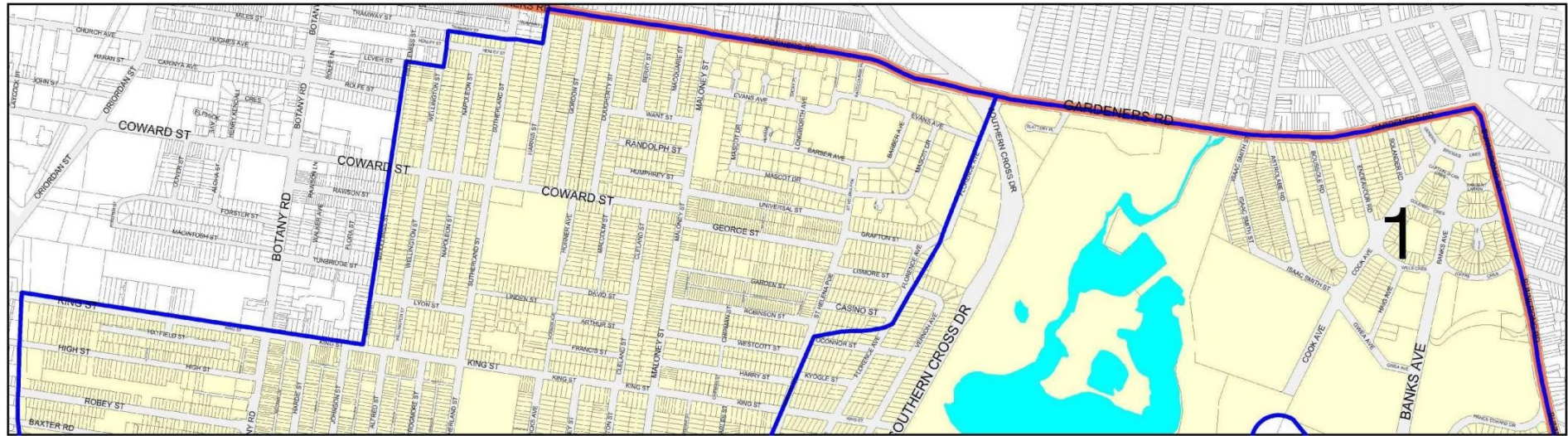
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Appendix B - Wetland Catchment Map

Wetland Catchment Map

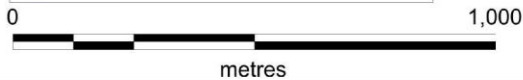
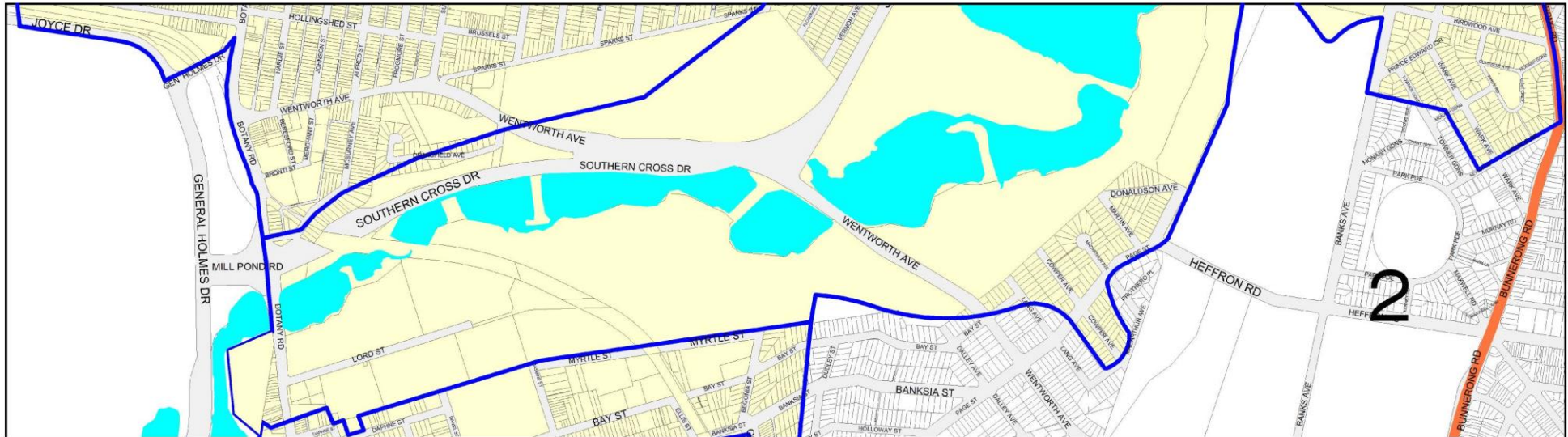




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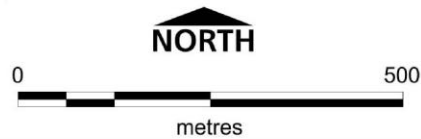
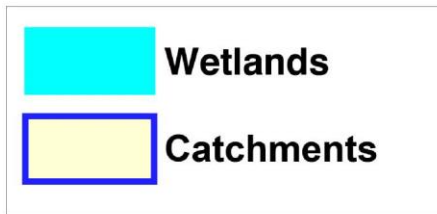
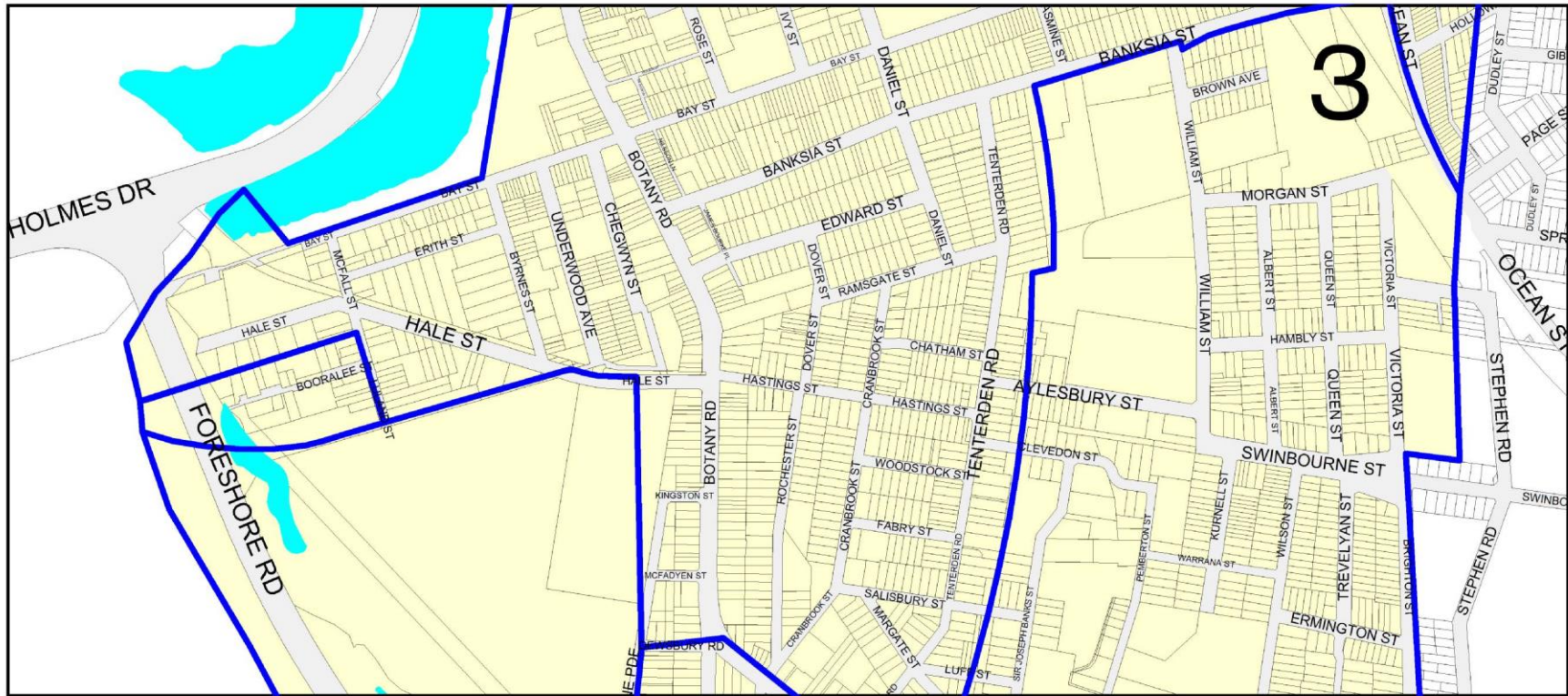




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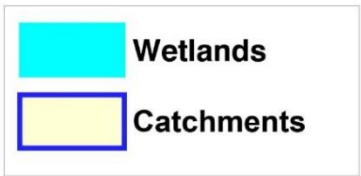
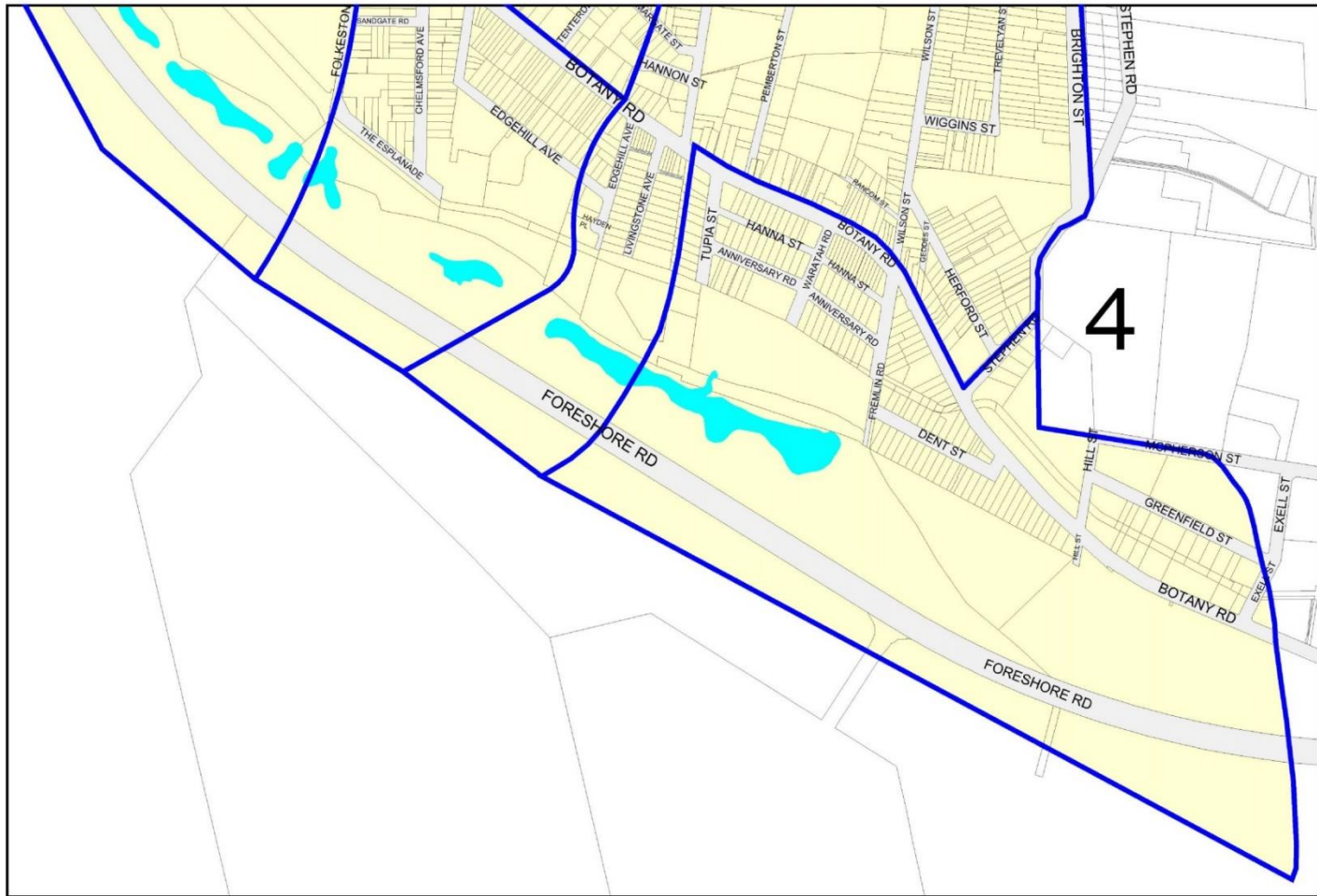




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