

Biodiversity Management Plan

323 McCarrs Creek Road, Terrey Hills NSW 2084

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1. BIODIVERSITY MANAGEMENT PLAN

East Coast Ecology (ECE) was engaged by Brent Gasson (the proponent) to prepare a Biodiversity Management Plan (BMP), for the proposed development at 323 McCarrs Creek Road, Terrey Hills, NSW 2084 (Lot 369/DP752017). The development proposes to make alterations and additions to the existing built structures to facilitate the construction of ‘Bed and Breakfast accommodation’. The area to be maintained under this BMP is referred to as the ‘Subject Land’ and is shown in **Figure 1**.

This BMP has been prepared at the instruction of the proponent in response to the environmental requirements of Council’s Request for Information (DA2023/1794):

“Vegetation within this area is to be managed under a Biodiversity Management Plan (BMP) in accordance with Northern Beaches Council’s Biodiversity Requirements for Development Applications. The BMP is to be prepared by a suitably qualified professional and should not be onerous in nature, however, have a practical approach to management of the site.”

1.1 Project Background

The aim of this BMP is to provide a working document that will successfully protect, maintain, and enhance the native vegetation within the Subject Land. The BMP provides quantifiable goals and strategies on how this can be achieved.

The aims of this BMP are to:

- Achieve the relevant objectives identified within Guideline 3: Biodiversity Management Plan of the Northern Beaches Council’s Biodiversity Requirements for Development Applications
- Be consistent with other related environmental legislation and policies, for example *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the *Biosecurity Act 2015* (NSW), and
- Assist in the protection and management of important native vegetation and fauna habitat within and around the Subject Land.

1.2 Objectives

The overarching objective of this BMP was to satisfy the local planning provisions and biodiversity management requirements of the Northern Beaches Council. The vegetation and potential habitat within the Subject Land is to be protected, maintained, and enhanced such that the proposal does not result in an overall decline in biodiversity value. Importantly, the BMP also describes control measures for the infestation of priority and environmental weeds identified within the Subject Land. Other key objectives include:

- Protect native vegetation communities that may occur elsewhere on the site
- Enhance the natural structure, species diversity and ecological processes of the native vegetation community that is found throughout the site
- To limit the impact of development upon existing native vegetation
- To ensure that environmentally sensitive techniques are employed during the establishment of approved asset protection zones, and
- Provide educational material to promote responsible management of native vegetation areas.



Figure 1. The Subject Land.

1.3 Site Description

The property is located within the suburb of Terrey Hills, in the Northern Beaches Council Local Government Area (LGA). The Subject Land covers approximately 0.5ha, all of which is to be managed under this BMP) (Figure 1). The remainder of the property (excluded from BMP) includes an existing dwelling and shed, with an Asset Protection Zone (APZ). Access to the property is provided via an existing driveway off McCarrs Creek Road.

1.4 Topography, Geology and Soils

The Subject Land has a varied topography with a relatively flat western portion at an elevation of 193m above sea level (asl), with the eastern portion dropping gradually in elevation to 175m asl. The Subject Land is situated across the Somersby soil landscape, characterised by gently undulating to rolling rises in deeply weathered Hawkesbury Sandstone plateau in Ku-ring-gai Chase National Park, North Seaford, Ingleside and Terrey Hills (NSW DCCEW, 2024c).

1.5 Hydrology

No mapped waterbodies were identified within the Subject Land. A first-order tributary of McCarrs Creek lies 170m east of the eastern property border.

1.6 Field-validated Vegetation Mapping

The following vegetation communities were identified within the Subject Land:

- PCT 3814: Woronora Plateau Heath-Mallee, and
- Urban Native/Exotic.

1.7 Management Zones

Two (2) management zones were stratified within the Subject Land, based on condition, future usage, and management measures (Figure 2):

- Management Zone 1: Conservation Area, and
- Management Zone 2: Environmental Restoration Area.

Detailed descriptions of each management zone and recommended management measures are provided below.



Figure 2. Management Zones within the Subject Land.

Management Zone 1: Conservation Area	
Description of the Vegetation within the Management Zone	
Vegetation within Management Zone 1 appeared to be in good condition with some evidence of priority and environmental weed encroachment Native vegetation identifiable both in the southeastern extent in and in the central region of the Subject Land included a tree canopy dominated by <i>Corymbia gummifera</i> (Red Bloodwood) and <i>Eucalyptus haemostoma</i> (Scribbly Gum) amidst scattered <i>Banksia serrata</i> (Old-man Banksia) and <i>Eucalyptus racemosta</i> (Narrow-leaved Scribbly Gum). Within the mid-stratum and shrub layers; <i>Acacia terminalis</i> (Sunshine Wattle), <i>Leucopogon microphyllus</i> , <i>Acacia suaveolens</i> (Sweet Wattle), <i>Epacris longiflora</i> (Fuscia Heath), <i>Actinotus helianthi</i> (Flannel Flower), <i>Phyllota phyllicoides</i> (Heath Phyllota), <i>Juncus usitatus</i> (Soft Rush), <i>Monotoca scoparia</i> (Prickly Broom Heath), <i>Platysace linearifolia</i> , <i>Xanthorrhoea resinosa</i> (Grass Tree) were identified coinciding with a ferny underlayer of <i>Pteridium esculentum</i> (Bracken Fern) and <i>Histiopteris incisa</i> (Water Fern). Fauna habitat features included rocky outcrops and crevices, coarse woody debris and leaf litter.	
Total area	0.18 ha
Objectives	<ul style="list-style-type: none"> To protect and conserve the vegetative state of the management zone To avoid further infestation and encroachment from priority and environmental weeds detected within the Subject Land
Management Requirements	
APZ Management	This zone is located entirely outside the APZ. No APZ considerations are required for this zone.
Weed Removal and Management	All priority and environmental weeds should be prevented from occurring within this zone. Should weeds occur from the time of the initial assessment, active removal is required in accordance with the <i>Biosecurity Act NSW 2015</i> . Details pertaining to weed management can be found in Table 2 of this BMP.
Soil Preparation	Not applicable.
Revegetation	Not applicable.
Erosion Control	Adequate erosion and sediment measures will be in place at all times during construction activities in case of minor sediment run off and/or disruption to soil profiles such as those listed in the 'Blue Book' (Landcom 2004). Appropriate sediment fencing should be installed around the construction area prior to any excavation works being undertaken. No temporary structures and/or stockpiles are to be located within the zone.
Fencing	Not applicable.
Signage	Not applicable.
Monitoring and Reporting	See section 2 for details on monitoring and reporting obligations.



Plate 1. Photo Point 2



Plate 2. Photo Point 3.

Management Zone 2: Environmental Restoration Area	
Description of the Vegetation within the Management Zone	
Vegetation within this zone was largely comprised of exotic lawn and planted lawn beds, with some remnant native tree species including <i>Angophora costata</i> (Sydney Red Gum), <i>Eucalyptus saligna</i> (Blue Gum), <i>Eucalyptus robusta</i> (Swamp Mahogany and <i>Syncarpia glomulifera</i> (Turpentine Tree). Exotic species both planted and naturally occurring included <i>Jacaranda mimosifolia</i> (Blue Jacaranda), <i>Liquidambar styraciflua</i> (Sweet Gum), <i>Washingtonia robusta</i> (Mexican Fan Palm) and <i>Heptapleurum arboricola</i> (Dwarf-umbrella Tree). A suite of environmental weeds was identified within this zone and are listed in Table 1 . No fauna habitat features were identified.	
Total area	0.33 ha
Objectives	<ul style="list-style-type: none"> To revegetate the zone and aid in biodiversity recovery To avoid further infestation and encroachment from priority and environmental weeds detected within the Subject Land
Management Requirements	
APZ Management	This zone is located entirely outside the APZ. No APZ considerations are required for this zone. Mowing should be stopped and self-sown native vegetation allowed to regenerate.
Weed Removal and Management	All priority and environmental weeds should be removed and monitored for reoccurrence within this zone. Details pertaining to weed management can be found in Table 2 of this BMP.
Soil Preparation	Not applicable.
Revegetation	Not applicable. Assisted natural regeneration is proposed, given the soil bank exhibits high resilience.
Erosion Control	Adequate erosion and sediment measures will be in place at all times during construction activities in case of minor sediment run off and/or disruption to soil profiles such as those listed in the 'Blue Book' (Landcom 2004). Appropriate sediment fencing should be installed around the construction area prior to any excavation works being undertaken. No temporary structures and/or stockpiles are to be located within the zone.
Fencing	Not applicable.
Signage	Not applicable.
Monitoring and Reporting	See section 2 for details on monitoring and reporting obligations.



Plate 3. Photo Point 1.



Plate 4. Photo Point 4.

2. MANAGEMENT ACTIONS, WORK SCHEDULE AND TIMING

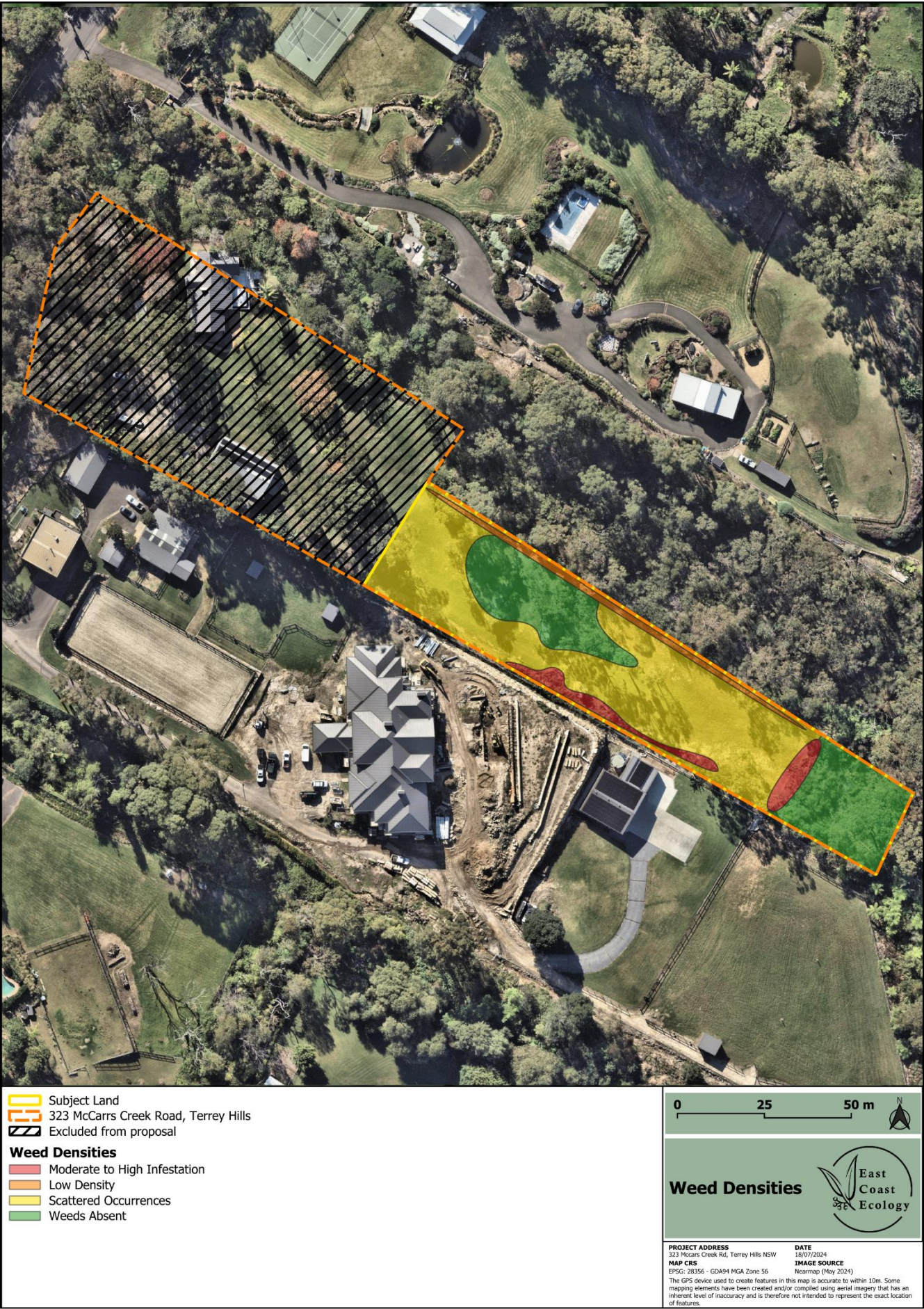
Task	Process for Completion	Time Required (estimate)	Responsibility	Scheduling					
				Year 1	Year 2	Year 3	Year 4	Year 5	Ongoing
Appointment of relevant contractors	• Appointment of a Qualified Bushland Regenerator Contractor or Landscape Gardener to undertake weed removal and planting for revegetation.	At completion of construction works.	Proponent or Project Manager acting on behalf of the Proponent	✓					
	• Appointment of a Qualified Bushfire Consultant to assess APZ compliance.	At completion of construction works.		✓					
Implement Hygiene Protocol	• Basic weed avoidance prevention measures include: Ensuring that all tools, shoes, vehicles (including tyres) and machinery are clean and made free of attached soil or mud prior to arrival at the site.	Required at all stages of construction, weed management, erosion control, revegetation and annual monitoring.	Contractor, Project Ecologist, Bush Regeneration Contractors/Landscape Gardener, Bushfire Consultant, Land Owner	✓	✓	✓	✓	✓	✓
Erosion Control	<ul style="list-style-type: none"> Adequate erosion and sediment measures must be in place at all times during construction activities in case of minor sediment run off and/or disruption to soil profiles. Preceding construction works, the 'Blue Book' (Landcom 2004) should be consulted to ensure any additional necessary erosion controls are adequately installed. Appropriate sediment control should be installed around the construction area prior to any excavation works being undertaken, where possible. 	Prior to the commencement of construction and ongoing for the life of construction works.	Bush Regeneration Contractors/Landscape Gardener	✓	✓	✓	✓	✓	✓
Primary Weeding	<ul style="list-style-type: none"> All exotic vegetation removed must be taken from site and disposed of at an appropriate green waste facility and pile burned under permit from RFS if applicable. Periodic removal of woody weeds to be conducted using the cut and paint and scrape and paint methods, as to not displace any fauna species. Perform careful mosaic spraying using enviro-friendly Roundup Biactive to target pockets of weeds where minimal native collateral damage is likely to occur to promote natural regeneration. 	As recommended by Bush Regeneration Contractor	Bush Regeneration Contractors/Landscape Gardener	✓	✓				
Secondary Weeding	<ul style="list-style-type: none"> Continue periodic removal of all woody weeds. Continue careful mosaic spraying method to target large pockets of weeds remaining to promote natural regeneration. Follow up spraying or digging out of any remaining priority weeds. 	As recommended by Bush Regeneration Contractor	Bush Regeneration Contractors/Landscape Gardener		✓	✓			
Maintenance Weeding	• Bush regenerators to sweep through the site targeting any regrowth of priority weeds using hand weeding or spot spraying.	As recommended by Bush Regeneration Contractor	Bush Regeneration Contractors/Landscape Gardener			✓	✓	✓	✓
Formal Monitoring and Reporting	• Assess progress of rehabilitation, weed removal and erosion control through annual monitoring including photo monitoring plots.	General monitoring done annually (spring):	Proponent or Project Manager acting on behalf of the Proponent	✓	✓	✓	✓	✓	

Table 1. Dominant weed species identified within the Subject Land.

Common Name	Scientific Name	WoNS	Priority	Weed Density
Fireweed	<i>Senecio madagascariensis</i>		X	Moderate
Pampas Grass	<i>Cortaderia selloana</i>		X	Low
Lantana	<i>Lantana camara</i>		X	Moderate
Crofton Weed	<i>Ageratina adenophora</i>	X		High
Black-Jack	<i>Bidens pilosa</i>	X		Moderate
Clover	<i>Trifolium repens</i>	X		Moderate
Purple Top Vervain	<i>Verbena bonariensis</i>	X		Moderate
Nodding Thistle	<i>Carduus nutans</i>	X		Low
Arum Lily	<i>Zantedeschia aethiopica</i>	X		Low
Ragleaf	<i>Crassocephalum crepidioides</i>	X		Low

Table 2. Weed removal and management guidelines.

Technique	Method
Cut and Paint	Woody weeds are to be treated using the cut and paint method, which involves the cutting of the stem approximately 3cms of the ground and applying herbicide to the freshly exposed stem.
Scrape and Paint	Weeds with a deep tap root will need to be treated utilising the cut and paint method which involves taking a knife and scrapping up the stem from the base to as high as possible and then applying herbicide to the exposed section of the stem.
Manual Removal	Weeds such as will be required to be dug out with a trowel or shovel, trying not to remove too much soil you must dig to expose and remove the crown.



2.1 Reporting and Review

Reporting is required after each monitoring event in the form of a concise monitoring report including key observations and supporting photographic evidence. Monitoring reports are to be produced annually (Spring) following monitoring events. These are to be produced by a suitably qualified Ecologist and are to include the following:

- A summary of annual weed management works;
- A site assessment based on performance targets;
- Presentation of photographic evidence in relation to designated photo points;
- Any management issues/recommendations required to meet performance targets;
- Update work specifications as required to meet performance targets, and
- Management/maintenance requirements or recommendations to inform any subsequent management of the site (beyond the 1st year maintenance period)

This BMP should be reviewed by a qualified Ecologist at least every five years from the date of its adoption.

2.2 References

Australian Standard 4970 (2009) Protection of Trees on Development Sites

Landcom (2004) Managing Urban Stormwater: Soils and Construction ‘The Blue Book’, Volume 1, Fourth Edition, New South Wales Government, ISBN 0-9752030-3-7

NSW Department of Primary Industries (2024) NSW WeedWise <https://weeds.dpi.nsw.gov.au/>

NSW Rural Fire Service (RFS) (2019) Planning for Bush Fire Protection – A guide for councils, planners, fire authorities and developers.

NSW Rural Fire Service (RFS) (n.d.) Standards for asset protection zones https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf

Appendix A. Photo Point Monitoring Locations.

Photo Point	Management Zone	Coordinates		Bearing
		Easting	Northing	
1	2	336320.218	6271804.853	5
2	1	336314.900	6271794.687	20
3	1	336243.146	6271831.519	210
4	2	336210.456	6271873.923	140



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