# Habitat Restoration Plan

**Bilambil Holdings**
**Lot 1 DP 1032820**
**1 Walmsley's Road, Bilambil Heights**

October 2021

Bushland Restoration Services

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## DOCUMENT CONTROL

| Revision | Date | Description | Prepared | Reviewed |
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| DRAFT | 26 October 2021 | HRP_Bilambil | S.Pimm | R. James |
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**Disclaimer**

This report is prepared by Bushland Restoration Services Pty Ltd for the client's purposes only. This report is prepared with information supplied by the client and on information obtained using accepted survey and assessment methodology. While due care was taken during field survey and report preparation, no responsibility is accepted for information that is withheld, incorrect or that is inaccurate. This report has been compiled at the level of detail specified in the report and no responsibility is accepted for interpretations made at more detailed levels than so indicated.

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## 1. INTRODUCTION

Bushland Restoration Services was contracted by David Smouha of Bilambil Holdings to prepare a Habitat Restoration Plan to accompany a Voluntary Planning Agreement submitted as part of a Planning Proposal for Lot 1 DP 1032820, corner of Walmsleys Road and Scenic Drive, Bilambil Heights, 2486. The Planning Proposal seeks relocation of the existing northern component of R1 General Residential LEP zoning to consolidate potential development areas on the lot from two into one, with the same total proposed residential area.

The property is approximately 6.3ha in area and medium density development is proposed for the site. A bushfire asset protection zone is required to achieve any proposed dwellings, and this, along with the construction footprint, would involve removal of native vegetation. This Habitat Restoration Plan intends to compensate for this loss through protection and restoration of existing areas of native vegetation on the site, which are currently significantly impacted by weeds.

This plan provides an appraisal of the existing vegetation over the site, including an assessment of vegetation communities and the native and exotic species observed. This informs recommendations for ecological restoration within vegetation management zones across the property, to be protected partly through Environmental Protection zoning and partly through a restriction on the land title within the proposed R1 area.

In summary, this plan recommends 'assisted natural regeneration' in areas of established regrowth native forest with moderate resilience, and 'reconstruction' (planting) to connect the two separated sections of existing rainforest on the property.

The plan includes performance indicators and a monitoring methodology to measure and assess the achievement of aims and objectives during the implementation phase.

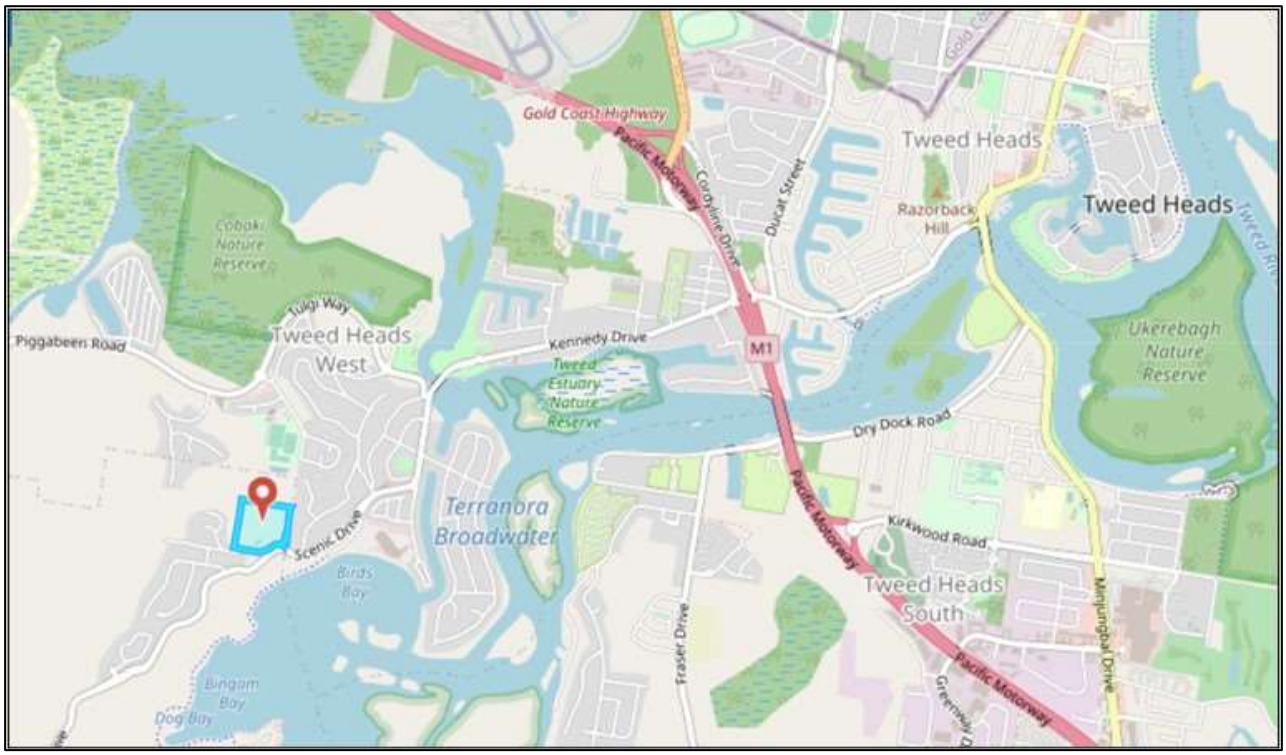


**Figure 1:** Site location is indicated by the red arrow above.

## 2. AIMS AND OBJECTIVES

The aim of this Habitat Restoration Plan is to protect and improve the condition and increase the area of retained native vegetation, threatened species and their habitat on the site. The associated objectives are to:

a) Establish vegetation management zones across the property that will facilitate native habitat conservation.
b) Revegetate a northern corridor within the site to improve habitat connectivity for local flora and fauna species.
c) Carry out strategic and comprehensive weed control and revegetation using best-practice techniques to manage invasive and undesirable exotic flora and encourage natural regeneration and succession of native plant species.


**Figure 2** – Aerial photograph of the subject site showing drainage lines and contours.

# 3. SITE DESCRIPTION

## *3.1 Property Details*

The site consists of an allotment with a total area of approximately 6.3 hectares (refer to **Table 1** & **Figure 2**).

**Table 1** – Summary of site details.

| | |
|---|---|
| Landowners: | Bilambil Holdings Pty Ltd |
| Land Tenure: | Private Freehold |
| Property Address: | Scenic Drive, Bilambil Heights, known as 1 Walmsleys Road, Bilambil Heights |
| Real Property Description (RPD): | Lot 1 DP 1032820 |
| Land Area: | 6.28 hectares |
| Zoning: | R1 General Residential and Deferred Matter, reverting to 7(d) Scenic Escarpment |
| LGA: | Tweed Shire |

## *3.2 Site History*

The property has been previously used for a residential dwelling, home orchard and cattle grazing.

## *3.3 Site Access*

Access to the property is from Scenic Drive and Walmsley Road Bilambil Heights. The main access driveway from Scenic Drive will be required to be upgraded to a sealed internal road network.

## *3.4 Geology and Soils*

The property is largely mapped as the 'Billinudgel' soil landscape (Morand 1996), derived from the Palaeozoic Neranleigh-Fernvale Group. Geology consists of thinly bedded fissile shales, siltstones and sandstones with occasional more massive greywackes, volcanic tuffs, agglomerates and sandstones. Soils are deep, moderately well-drained Red Podzolic Soils on crests; moderately deep, moderately well-drained Yellow Earths and Yellow Podzolic Soils on slopes and in better-drained areas.

The south-west corner contains the 'Carool variant a' soil landscape, derived from Lamington Volcanics; being Tertiary basalt with members of rhyolite, trachyte, tuff, agglomerate and conglomerate. The soil landscape consists of rolling hills on Tertiary basalt caps which overlie hills of the Billinudgel soil landscape. 'Variant a' refers to smaller basalt caps with lower (50–100 m) relief and gentler (10–15%) slopes. Soils in this area are deep, well-drained Krasnozems on upper slopes and crests.

## *3.5 Hydrology*

One first-order and one second-order drainage line occur on the property (see **Figure 2**). The site is part of the catchment of the Tweed River estuary and lies some 200m above Birds Bay in the Terranora Broadwater.

### *3.6 Topography, Aspect and Elevation*

Topography of the area contains rolling low hills. Relief is 50–100 m and slopes range from 10–20%. The property slopes from 10m AHD along the northern boundary to 60m on the elevated ridgeline in the centre-south of the property. The site is generally undulating with easterly and westerly aspects from the ridge. The rezoning is proposed in the largely cleared ridge area of the site.

### *3.7 Landscape Connectivity*

**National Parks and Nature Reserves**

The property lies approximately 1km south of Cobaki Nature Reserve and 1-2km from Tweed Estuary Nature Reserve including Daveys Island, Big Island, Caddies Island and Wommin Island in the Terranora Broadwater. Continuous vegetation almost connects the western vegetation on the lot to Cobaki Nature Reserve.

**Fauna Corridors**

The property (blue outline shape **Figure 3**) is not mapped as part of any Regional or Sub-regional Fauna Corridor, though it lies between connections to the north and south.

**Figure 3** – Regional (green shading) and sub-regional Fauna Corridors surrounding the subject site. Red dots indicate the location of Osprey Nests. The pink dot indicates an active Flying-fox camp and yellow dots indicate previous camps, now inactive.

## *3.8 Threatened Species and Endangered Ecological Communities*

**Endangered Ecological Communities (EEC's)**

The site includes patches of regrowth rainforest that meet most of the benchmarks for the Plant Community Type 887 *Hoop Pine – Yellow Tulipwood dry rainforest of the NSW North Coast Bioregion*, despite significant weed infestation in all strata. This community is a candidate for the EEC *Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions*, listed under the Biodiversity Conservation Act 2016.

**Threatened Flora Species**

Six threatened flora species were recorded on the property during the survey (**Table 2**).
Threatened flora species recorded in Bionet within 10km of the property are listed in **Appendix 4**.

**Table 2**– Threatened flora species recorded during survey.

| Scientific Name | Common Name | Status BC Act | Status EPBC Act |
|---|---|---|---|
| *Cassia marksiana* | Mark's Cassia | Vulnerable | Vulnerable |
| *Cryptocarya foetida* | Stinking Cryptocarya | Vulnerable | Vulnerable |
| *Davidsonia jerseyana* | Davidson's Plum | Endangered | Endangered |
| *Lepiderema pulchella* | Fine-leaved Tuckeroo | Vulnerable | Not Listed |
| *Macadamia tetraphylla* | Rough-shelled Bush Nut | Vulnerable | Vulnerable |
| *Syzygium moorei* | Coolamon | Vulnerable | Vulnerable |

**Threatened Fauna Species**

No threatened fauna species records are present on BioNet within or adjacent the property.
Threatened fauna species recorded in Bionet within 10km of the property are listed in **Appendix 4** and include marine and shorebird species due to proximity to the estuary. None of these are likely to use this elevated site away from water.

The site forms potential habitat for Grey-headed Flying-foxes, and a camp occurs within 2km. Other potential threatened species likely to use the site at times include Superb and Rose-crowned Fruit-doves and other rainforest avifauna. The Common Planigale has been found in similar disturbed sites.

## *3.9 Aboriginal Cultural Heritage*

The Tweed has a long and rich Aboriginal cultural history. It is estimated that Aboriginal people have inhabited the Tweed for at least 40,000 years, based on evidence and current knowledge. With the aims of acknowledging and respecting Aboriginal cultural heritage (ACH) and improving the understanding of ACH, Tweed Shire Council adopted the Aboriginal Cultural Heritage Management Plan 2018 (**ACHMP**) on 5 July 2018. **Map-sheet-014** of the **ACHMP** indicates the entire of the subject property mapped as predicted to be of Aboriginal significance. Since the site comprises part of a ridgeline above an estuarine waterway likely to have plentiful food sources, his
*Source: Predictive areas within the Aboriginal Cultural Heritage Management Plan - accessed online on 26 October 2021* at onlinehttps://www.tweed.nsw.gov.au/files/assets/public/documents/community/arts-and-culture/aboriginal-cultural-heritage/achmp-2018-map-sheet-014


**Figure 4**: High Environmental Value includes the rainforest EEC and the 'SAII threatened species recorded on site. Other threatened species and trees with a dbh of 800mm or greater are also shown.

# 4. FLORA SURVEY

A detailed vegetation survey was undertaken of the vegetation within the proposed development footprint and adjacent vegetation on the east and west within the property at 1 Walmsley Road. The property was surveyed initially on 10th January 2019, again on 30th November 2020 and more recently in May 2021. Initial site survey determined vegetation types and proposed restoration zones, while the 2020 survey mapped threatened species on the site and the habitat value of the small area mapped by Tweed Shire Council as Preferred Koala Habitat. The 2021 surveys determined PCT types and species within the proposed residential zoning and bushfire asset protection zone (APZ) footprints. Trees within the development footprint were tagged and numbered and a list of tree species compiled for all trees with diameter at breast height (dbh) >100mm, as well as all listed threatened species irrespective of size.

Historical evidence indicates that most of the site has been subject to past clearing for a range of agricultural and residential activities. Regrowth native vegetation is concentrated on the east and west of the site as indicated by current aerial photography and survey. The central section of the site is cleared and mown, with established garden areas. Plantings adjacent to the current residential zone include local and non-local natives, as well as local threatened species. There are orchard areas comprised of fruit trees including Lychees and a small plantation of Mango trees. Mature native trees, comprised of two large Moreton Bay Figs *Ficus macrophylla* and associated vegetation, are located centrally on the property. Individual or small clumps of trees occur on the slopes, and planted eucalypts occur in the south-west and along the driveway track from Scenic Drive. The substantial areas of regrowth vegetation on the east and west vary in abundance and diversity of weed and native species but are generally dominated by Camphor Laurel *Cinnamomum camphora*.

## *4.1 Vegetation Description*

Species lists for native plants and weeds are listed in **Appendix 1 and 2**. A comprehensive list of flora species, both native and exotic, was recorded on the site during field survey (**Appendix 1**) to inform the vegetation community descriptions, assess site resilience and vegetation succession, and to guide native species selection for revegetation efforts.

- GPS waypoints for individual flora species within the proposed rezoning footprint, and clumps of vegetation where individual locations could not be accurately separated, are listed in **Appendix 5**.
- A ground-truthed vegetation community map for the site is provided in **Figure 5** overleaf.


**Figure 5**: Vegetation Map of the property and surrounds.

**Vegetation Community 1 - Regrowth Dry Rainforest/Camphor Laurel - PCT 887**

This community occurs on the western and eastern sides of the lot, separated by low cleared land at the northern end (**Figure 5**). It most closely aligns with Tweed Vegetation Code 1002 *Early Regrowth Rainforest* and with NSW Plant Community Type 887 *Hoop Pine – Yellow Tulipwood Dry rainforest of the NSW North Coast Bioregions*.
North Coast NSW revisions have been introduced within the Burringbar Conondale range and the Tweed Byron Holocene dunes
The tallest stratum is sparse to mid-dense and has gaps in some areas. The tallest stratum is mid-high to tall and consists primarily of Black Wattle *Acacia melanoxylon* and Camphor Laurel *Cinnamomum camphora,* with mixed rainforest species such as Cheese Tree *Glochidion ferdinandi*, Brown Kurrajong *Commersonia bartramia* and Foambark *Jagera psuedorhus* throughout, with occasional scattered large trees including Hoop Pine *Araucaria cunninghamii*, Teak *Flindersia australis* and Figs *Ficus macrophylla* and *Ficus watkinsiana*. Weed cover in the tallest stratum is common (20-50%) to dominant (>50%) and consists mainly of Camphor Laurel *Cinnamomum camphora*, with some Slash Pine *Pinus elliotii* present.

The mid stratum is dense and includes a mix of establishing rainforest trees and shrubs such as Hard Quandong *Elaeocarpus obovatus*, Guioa *Guioa semiglauca*, Poison Peach *Trema tomentosa*, Cheese Tree *Glochidion ferdinandi*, Three-veined Laurel *Cryptocarya triplinervis* and Red Kamala *Mallotus phillipinensis*. Weed cover in the mid stratum is dominant and includes species such as Duranta *Duranta repens*, Giant Devil's Fig *Solanum chrysotrichum*, Lantana *Lantana camara*, Tobacco Bush *Solanum mauritianum* and Small-leaved Privet *Ligustrum sinense*.
The ground stratum is generally dense beneath Camphor Laurel and includes rainforest herbs, ferns and shrubs including Rough Maidenhair *Adiantum hispidulum*, Soft Fern *Christella dentata*, Blue Flax Lily *Dianella caerulea* and Forest Lomandra *Lomandra spicata*. Weed cover in the ground stratum is common or dominant and is comprised mainly of Singapore Daisy *Spagneticola trilobata*, Broad-leaved Paspalum *Paspalum mandiocanum* and Giant Panic Grass *Panicum antidotale*.

**Plate 1** above and **Plate 2** below: Regrowth Rainforest / Camphor Laurel forest

**Vegetation Community 2 – Isolated Fig Trees**

Two large Moreton Bay Figs occur within the current and proposed R1 zoned land.
Canopy species are composed only of the two Figs *Ficus macrophylla*, and some signs of senescence are visible.

Native mid-storey species are of limited diversity and include Foambark, Cheese Tree and Sweet Pittosporum *Pittosporum undulatum*. Weed cover in the mid stratum is dominant and includes species such as Umbrella Tree *Schefflera actinophylla*, Jacaranda *Jacaranda mimosifolia*, Giant Devil's Fig, Winter Senna *Senna pendula* var. *glabrata* and Small-leaved Privet. The significant vine weeds Madeira Vine *Anredera cordifolia* and Coastal Morning Glory *Ipomoea cairica* are climbing into mid-storey trees.

Exotic grasses dominate the ground layer, including Setaria *Setaria sphacelata*, Broad-leaved Paspalum *Paspalum mandiocanum* and Queensland Blue Couch *Digitaria didactyla,* along with Singapore Daisy and various annual and perennial garden escapees.

**Plate 3:** Moreton Bay Figs

**Vegetation Community 3 – Open Grassland (exotic)**

This community occurs over all the cleared sections of the property and was formerly grazed. It consists primarily of dense Blue Panic *Panicum antidotale*, though other grass and weed species such as Setaria *Setaria sphacelala*, Elephant Grass *Pennisetum purpureum* and Giant Devil's Fig *Solanum chrysotrichum* are scattered throughout. Weed cover is dense at 96%.

Surrounding the residential precinct, mown grassland is interspersed with planted garden and orchard species including Lychee *Litchi chinensis,* Mango *Mangifera indica*, Alexander Palms *Archontophoenix alexandrae* and Foxtail Palm *Wodyetia bifurcata.* Two threatened species have been planted, being Coolamon *Syzygium moorei* and Rough-shelled Bush Nut *Macadamia tetraphylla.*

**Plates 4 and 5** – Exotic grassland (above) with landscape species including Foxtail Palms (below)

**Vegetation Community 4 - Planted eucalypt forest**

This community occurs in the south-west corner of the allotment near Walmsley's Road.

The tallest stratum is sparse to mid dense and is comprised solely of planted Eucalyptus species, including Flooded Gum *Eucalyptus grandis*, Sydney Blue Gum *Eucalyptus saligna* and Forest Red Gum *Eucalyptus tereticornis*. Weed species are absent in the tallest stratum due to establishment of the eucalypts.

The mid stratum is open in the east where the groundcover is slashed beneath the trees.
The remaining western portion abuts the higher edge of riparian vegetation along an ephemeral gully line, where the mid-stratum becomes mid-dense and consists of a mixture of rainforest tree and shrub seedlings and saplings as per Vegetation Community 1. In the gully area beyond the subject site, weed cover is common to dominant with a range of woody weeds and vines present. It is important to control weeds along this edge as a priority and continue to prevent further weed infiltration.

The ground stratum is generally mid-dense and is dominated by exotic grasses.

**Plate 6**: Mixed Eucalypt planting

## *4.2 Exotic Vegetation / Weeds*

Weed species of all growth forms (i.e. tree, shrub, vine, groundcover / grass) were recorded during the flora survey (**Appendix 2**). A total of fifty-five (55) weed species were recorded on the property, with potential for further weed species not noted during initial survey. The dominant weeds on the property are Umbrella Tree, Camphor Laurel, Lantana, Giant Devils Fig and exotic grasses. See **Appendix 3** for a full list of weeds recorded on the site. **Table 3** lists these weeds and their Biosecurity Priority Categories.

**Biosecurity Act (NSW) 2015**

The *Biosecurity Act 2015* has repealed the *Noxious Weeds Act 1993* which provided regulatory controls and powers to manage noxious weeds in NSW. The new Act and Regulations streamline the way weeds are managed in NSW, with specific legal requirements for State level priority weeds and Regional high risk priority weeds. In keeping with its premise that biosecurity is a shared community responsibility, the new Act introduces the legally enforceable concept of a General Biosecurity Duty.

For weeds *'the General Biosecurity Duty means that any person dealing with plant matter must take measures to prevent, eradicate or minimise / contain the biosecurity risk as far as reasonably practicable*'.

Plant matter includes plants, parts of plants and seeds. Dealing has a broad definition in the Act and includes (but is not limited to) activities such as grazing, cropping, fodder production, horticulture, weed control, seed and other plant production, as well as carrying, sale and distribution of these products as part of a commercial, professional, volunteer or recreational activity or lifestyle.

**North Coast Regional Strategic Weed Management Plan 2017-2022**

The *North Coast Regional Strategic Weed Management Plan 2017-2022*, while not a regulatory document, plays an important role in articulating the shared responsibility principle of the *Biosecurity Act 2015* (the Act) to regulators, stakeholders, public agencies and the wider community. It provides necessary information to enable people to effectively meet the requirements of the General Biosecurity Duty and discharge their obligations under the Act.

The State level priority and Regional high risk priority weeds identified on the site within the entire Vegetation Management Areas during field survey are listed in **Table 3,** alongside the applicable management category stipulated in the *North Coast Regional Strategic Weed Management Plan 2017-2022*. The weed control strategy and methods for the removal of these priority weeds are detailed in Section 6 of this plan.

**Table 3** – State level priority (annotated "S") and Regional high risk priority (annotated "R") weeds.

| **Common Name** | **Scientific Name** | **Management Category** | | | | |
|---|---|---|---|---|---|---|
| | | PREVENT | ERADICATE | CONTAIN | ASSET PROTECTION | WATCH |
| Camphor Laurel | *Cinnamomum camphora* | | | | **R** | |
| Coastal Morning Glory | *Ipomoea cairica* | | | | | |
| Giant Devils Fig | *Solanum chrysotrichum* | | | **R** | | |
| Lantana | *Lantana camara* | | | | **S** | |
| Large-leaved Privet | *Ligustrum lucidum* | | | | | |

| Common Name | Scientific Name | Management Category | | | | |
|---|---|---|---|---|---|---|
| | | PREVENT | ERADICATE | CONTAIN | ASSET PROTECTION | WATCH |
| Madeira Vine | *Anredera cordifolia* | | | | | |
| Passionfruit | *Passiflora spp.* | | | | **R** | |
| Slash Pine | *Pinus elliottii* | | | | **R** | |
| Small-leaved Privet | *Ligustrum sinense* | | | | | |
| Umbrella Tree | *Schefflera actinophylla* | | | | **R** | |

Source: *North Coast Regional Strategic Weed Management Plan 2017-2022.*

**Plate 7** Weed-dominated mid and ground layers are common throughout the property.

# 5. RESTORATION STRATEGY

## *5.1 Restoration Approach*

The rehabilitation strategy in this plan is derived from the common approaches described by Chenoweth EPLA & BRS (2012) in **Table 4** below. The selection of a suitable approach depends on the degree of resilience that is present in the existing native vegetation and/or seed bank, as well as the nature and extent of disturbance including weed infestation. A flow chart (**Figure 6**) has been used to guide the selection of a suitable ecological restoration approach for each vegetation management area.

**Table 4** – Common ecological restoration approaches.

| Restoration Approach | Application |
|---|---|
| Natural Regeneration | Where resilience is intact and recovery is automatic with the removal of the cause of damage. |
| Assisted Natural Regeneration | Where degrees of resilience exist and "triggered" interventions (either disturbance or resource provision) can affect recovery by natural regeneration. |
| Reconstruction (Revegetation) | Where resilience is depleted, and abiotic or biotic elements need wholesale importation or major amendment before recovery can commence. |
| Fabrication (Type Conversion) | Where conditions are permanently changed and better-adapted local systems can be regenerated or constructed to restore integrity to the landscape. |

Source: Chenoweth EPLA & BRS 2012.

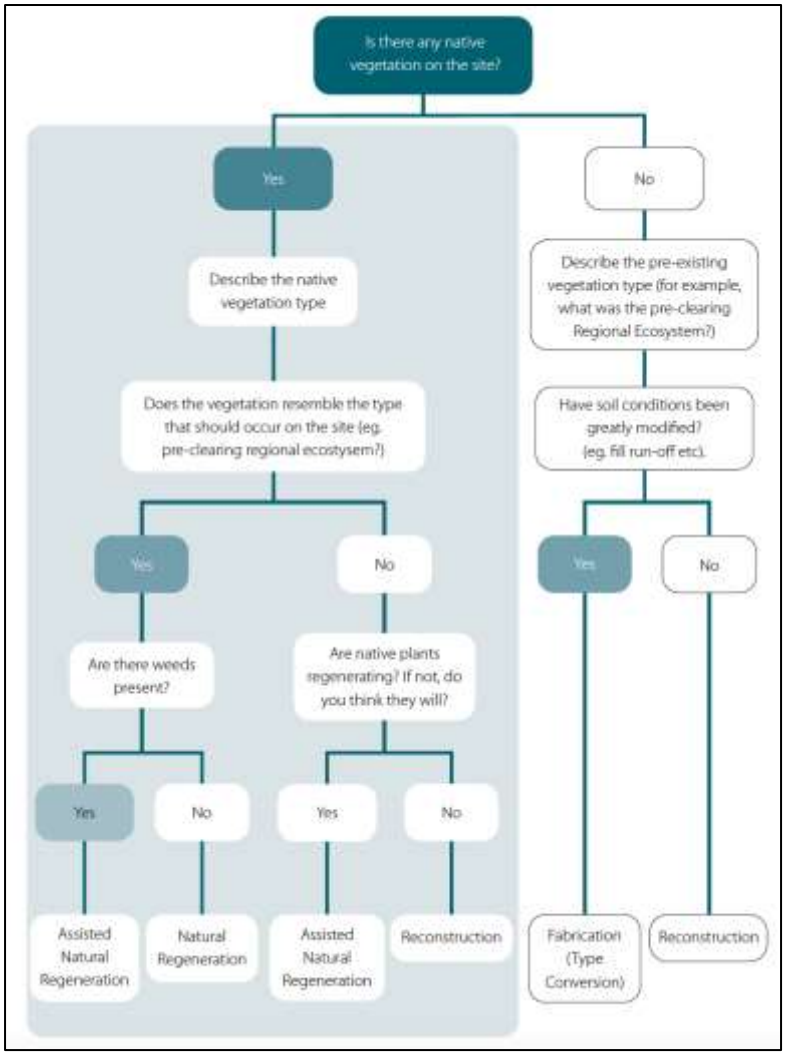


**Figure 6** – Selection of restoration approach. Source: Chenoweth EPLA & BRS 2012.

## *5.2 Vegetation Management Area*

This HRP applies to all vegetation within the site, outside of existing cleared land and planted landscape areas. It includes remnant and regrowth forest, which occupies an eastern and western corridor on the site. This area presents the opportunity to protect and enhance native remnant / regrowth forest and related flora and fauna habitat values, including a range of observed threatened and rare flora and fauna species, as well as to limit the dispersal of weedy propagules from upper gullies into downstream areas of the site.

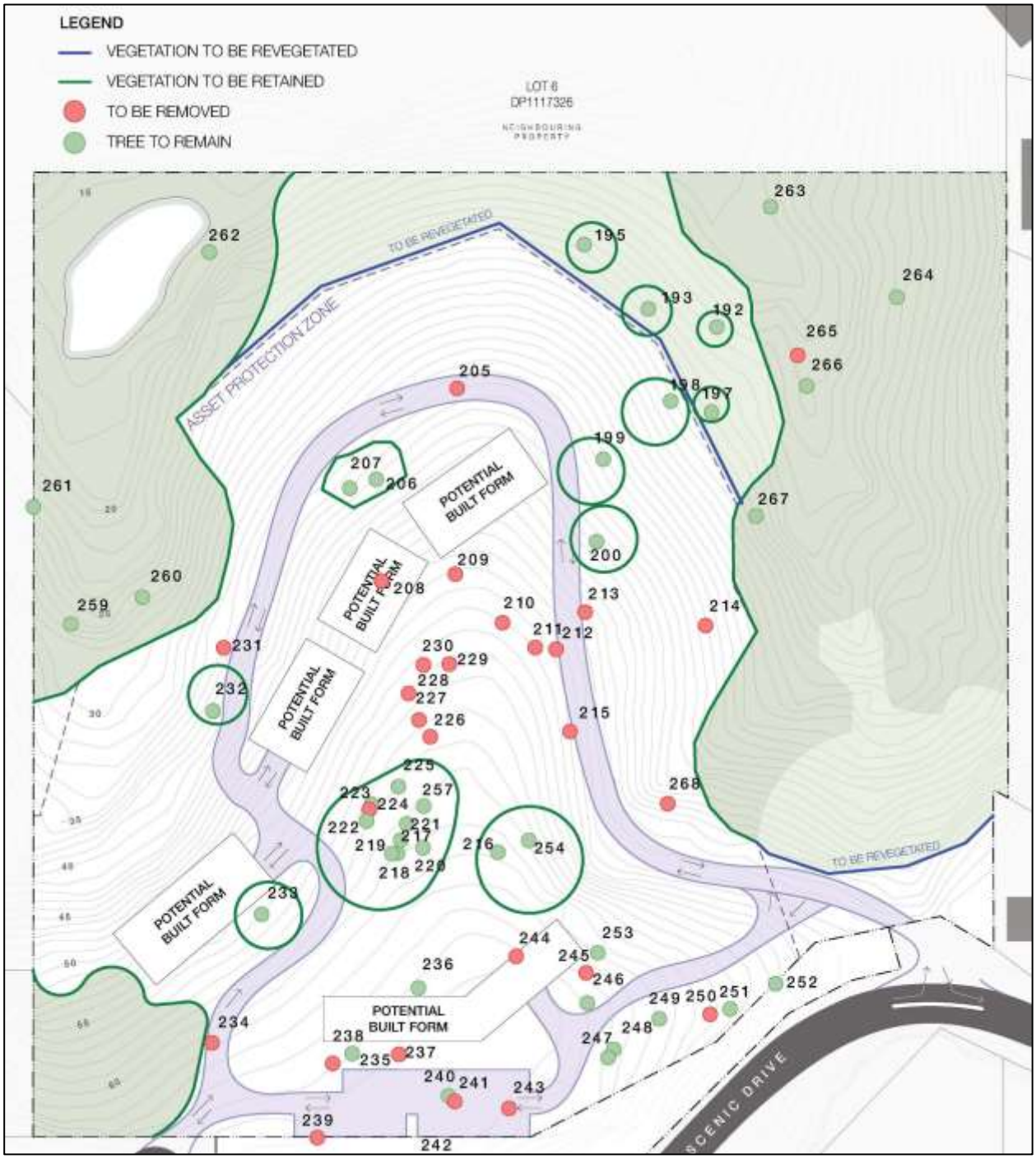


**Figure 7:** The Vegetation Management Area includes the areas shaded green above, as well as the green circled areas in the centre of the property, surrounding numbers 218 and 254. Other green circled areas represent the canopy of large native trees to be retained. The overlain development is representative only and must be designed with protected areas in mind.

## *5.3 Bush Regeneration Work Zones*

The vegetation management area is divided into five bush regeneration work zones (**Figure 8**) based on the vegetation (both native and exotic), the required restoration approach, and accessibility / navigability from existing tracks, fences and other landmarks throughout the property. The recommended sequence of habitat restoration actions for vegetation management are described in **Tables 5 to 9** below**.**

The existing regrowth rainforest on site is split into two areas recorded as: Lowland Rainforest/Camphor Laurel East and West. These areas can be converted over time to high conservation value Lowland Rainforest. These areas designated for Environmental Protection are currently severely impacted by weed. The areas include cleared sections dominated by tall exotic grass and on the west a dam surrounded by tall exotic grasses. The descriptions for Zones 1 and 2 provide details of the dominance of weed species in both locations.

### Restoration Zone 1 (1.34ha) - Regrowth Lowland Rainforest/Camphor Laurel - East

Zone 1 follows the eastern property boundary and occupies most of the eastern side of the property. This work zone varies between 100m wide in the north to 75m wide in the south and has a total area of 1.34ha. Generally, weed density is high throughout Zone 1.

The cover of the tallest stratum is sparse to mid-dense, with canopy gaps in places. The tallest stratum is mid-high to tall and consists primarily of Black Wattle *Acacia melanoxylon* and Camphor Laurel *Cinnamomum camphora,* with mixed rainforest species such as Cheese Tree *Glochidion ferdinandi*, Brown Kurrajong *Commersonia bartramia* and Foambark *Jagera psuedorhus* occasional throughout. Weed cover in the tallest stratum is common (20-50%) or dominant (>50%) and consists mainly of Camphor Laurel.

The mid stratum is dense and includes a mix of establishing rainforest trees and shrubs. Weed cover in the mid stratum is dense and includes species such as Duranta *Duranta repens*, Giant Devil's Fig *Solanum chrysotrichum*, Lantana *Lantana camara* and Small-leaved Privet *Ligustrum sinense*. An apparently isolated patch of Madeira Vine *Anredera cordifolia* was recorded in the zone near tree number 266 on **Figure 4**.

The ground stratum includes rainforest herbs, ferns and shrubs and is generally dense unless beneath mature Camphor Laurel. Weed cover in the ground stratum is common or dominant and is comprised mainly of Singapore Daisy *Spagneticola trilobata*, Broad-leaved Paspalum *Paspalum mandiocanum* and Blue Panic *Panicum antidotale.*

**Table 5** on page 19 provides a list of recommended management actions for Zone 1 and Zone 2.
Refer to the complete weed species list for a more comprehensive range of exotic species requiring treatment.

**Table 7** provides a proposed planting list, should assisted natural regeneration prove unsuccessful in the southern end of Zone 1. This would follow assessment of Year 1 monitoring results – specifically am indication that no or few individual native plants have recruited in the zone - such that reconstruction is considered necessary to achieve the performance criteria (cover/ height) within the allocated five-year timeframe. Consultation and agreement with Tweed Shire Council would precede such a decision.

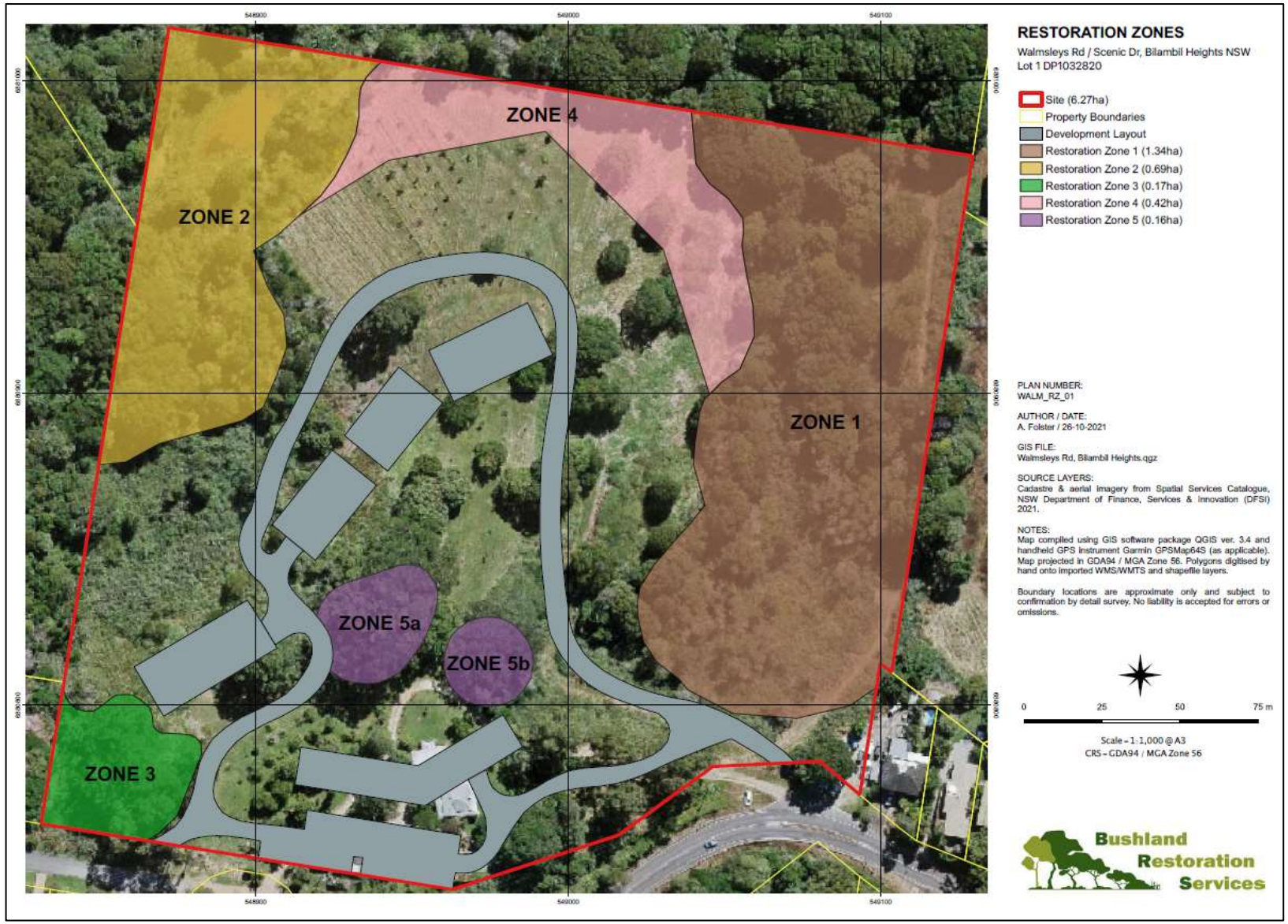


**Figure 9** Habitat Restoration Zones

### Restoration Zone 2 (0.69ha) - Regrowth Lowland Rainforest /Camphor Laurel (West) -

The tallest stratum is sparse to mid-dense and has occasional gaps, with a very sparse canopy in some areas, where the need for planting will be assessed following primary work. The tallest stratum is mid-high to tall and consists primarily of *Acacia melanoxylon* and *Cinnamomum camphora* with mixed rainforest species such as Cheese Tree, Guioa *Guioa semiglauca* and *Foambark* throughout. Weed cover in the tallest stratum is common (20-50%) and consists mainly of *Cinnamomum camphora*, though some Slash Pine *Pinus elliotii* are present.
The mid stratum is dense and includes a mix of establishing rainforest trees and shrubs. Weed cover in the mid stratum is dominant and includes species such as *Duranta repens, Solanum chrysotrichum, Lantana camara* and Tobacco Bush *Solanum mauritianum.* This zone contains an individual specimen of Mark's Cassia *Cassia marksiana*, a flora species listed as Endangered under the *Biodiversity Conservation Act 2016*. The GPS location of the individual has been recorded and another record occurs on the property to the north, which is currently under ecological restoration. Care must be taken to avoid any impact on this threatened species, and to encourage seed set and regeneration over lower parts of Zone 2.
The ground stratum includes rainforest herbs, ferns and shrubs and is generally dense unless beneath mature *Cinnamomum camphora* where the canopy is sparse. Weed cover in the ground stratum is common or dominant and is comprised mainly of Broad-leaved Paspalum *Paspalum mandiocanum,* Mistflower *Ageratina riparia* and Blue Panic *Panicum antidotale.*

It is proposed that works commence along the southern and western boundaries of Zone 2 to address the high diversity and abundance of weed species which radiate out from the adjacent dwelling precinct. Many of the weed species in this area should be treated as priorities for control - to restrict further spread into adjacent bushland. Primary works undertaken in Zone 2 should include a range of manual weed control techniques including hand weeding, cut-scrape-paint, scrape and paint, stem injection, spot-spraying and over-spraying. The following schedule provides a list of recommended management actions for Zone 1 and Zone 2.

**Table 5:** Zone 1 and Zone 2 restoration actions and sequence

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Primary Work<br>Year 1 | Camphor Laurel<br>Umbrella Tree<br>Wild Tobacco<br>Giant Devils Fig<br>Lantana<br>Small-leaved Privet<br>Night Flowering Jasmine | ▪ Cut, scrape and paint (CSP) Camphor Laurel, Umbrella Tree and all woody weeds.<br>▪ Stem inject larger trees such as mature Camphor Laurel, Slash Pine and Umbrella Tree.<br>▪ Lop all cut stems into 40cm billets and spread on the ground. Do not pile up discarded weed material.<br>▪ Isolated plants can be hand pulled.<br>▪ Work systematically and comprehensively through the zone. |
| | Madeira Vine<br>Passiflora sp.<br>Cats Claw Creeper | ▪ Madeira Vine stems to be scraped and painted - do not cut, and leave in situ.<br>▪ Cut other exotic vines at shoulder height, hang biomass above the ground and paint the cut base of the plant with herbicide. Small or shallow rooted specimens can be hand pulled. |
| | Singapore Daisy<br>BL Paspalum<br>Molasses Grass<br>Palm Grass<br>Blue Panic<br>Blue Billy Goat Weed<br>Mistflower | ▪ Isolate and prepare suitable weed infestations for over spraying or spot spraying.<br>▪ Spot spray all exotic grasses, herbs and groundcover weeds throughout the zone, working thoroughly and systematically.<br>▪ Follow up the spot spray every 2 months depending on season and prevailing weather conditions. |

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Follow Up<br>Year 2 & 3 | Regrowth of woody weeds, exotic vines, grasses and groundcovers | ▪ Follow up spot spray (approx. 4 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |
| Maintenance<br>Year 4 & 5 | As per Follow Up (Year 2 & 3) described above | ▪ Follow up spot spray (approx. 3 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |

### Restoration Zone 3 (0.17ha) - Planted eucalypts

The cover of the tallest stratum is sparse to mid dense and comprised solely of planted *Eucalyptus* species. Weed cover in the tallest stratum is sparse due to establishment of the eucalypts.

The mid stratum is open in the east where the groundcover is regularly slashed beneath the trees. Weed cover in the remaining western portion is sparse – though a range of woody weeds and vines are present amongst a mixture of establishing rainforest trees and shrubs beyond the property boundary to the west.

The ground stratum is generally dense and is dominated by exotic grasses.

It is proposed that works commence along the eastern boundary of Zone 3, then progress westward to meet the upper edge of riparian vegetation along the adjacent drainage line, focusing on the exotic grass infestations on the subject property. Primary works undertaken in Zone 3 should include a range of manual weed control techniques including hand weeding, cut-scrape-paint, stem injection and spot spraying.
Recommended management actions for Zone 3 are shown in **Table 6** below.

**Table 6**: Zone 3 restoration actions and sequence

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Primary Work<br>Year 1 | BL Paspalum<br>Molasses Grass<br>Guinea Grass<br>Red Natal Grass<br>Siratro<br>Crofton Weed | ▪ Isolate and prepare weed infestations for over spraying or spot spraying<br>▪ Spot spray all exotic grasses, herbs and groundcover weeds throughout the zone, working thoroughly and systematically.<br>▪ Follow up the spot spray every 2 months depending on season and prevailing weather conditions. |
| | Corky Passionflower<br>White Passionflower | ▪ Cut exotic vines at shoulder height, hang biomass above the ground and paint the cut base of the plant with herbicide. Small or shallow rooted specimens can be hand pulled. |
| | Camphor Laurel<br>Umbrella Tree<br>Wild Tobacco<br>Giant Devils Fig | ▪ Cut, scrape and paint (CSP) Camphor Laurel, Umbrella Tree and all woody weeds<br>▪ Isolated plants can be hand pulled.<br>▪ Work systematically and comprehensively through the zone. |

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Follow Up<br>Year 2 & 3 | Regrowth of woody weeds, exotic vines, grasses and groundcovers | ▪ Follow up spot spray (approx. 4 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |
| Maintenance<br>Year 4 & 5 | As per Follow Up (Year 2 & 3) described above | ▪ Follow up spot spray (approx. 3 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |

## Restoration Zone 4 (0.42ha)

Zone 4 is located in the centre-north of the property and consists of cleared exotic grassland with occasional Camphor Laurel and isolated native trees such as Teak *Flindersia australis*. Part of this area includes young mango trees planted as an orchard, which will require removal. Zone 4 is intended for rainforest planting (following weed control) with the aim to connect the eastern and western rainforest corridors.

Most of Zone 4 is maintained as low grassland and regularly slashed, amongst native and fruit trees. Other weeds are sparse in maintained areas. Umbrella Tree and vine weeds are the most prevalent exotics in Zone 4.
The following schedule provides a list of recommended management actions for Zone 4.

**Table 7:** Zone 4 restoration actions and sequence

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Primary Work<br>Year 1 | Umbrella Tree<br>Mango<br>Camphor Laurel | ▪ Cut, scrape and paint (CSP) all woody weeds<br>▪ Stem inject larger trees such as Umbrella Tree, Camphor Laurel and larger Mango trees<br>▪ Work systematically and comprehensively through the zone |
| | BL Paspalum<br>Molasses Grass<br>Guinea Grass<br>Red Natal Grass | ▪ Spot spray or overspray all exotic grasses and groundcover weeds throughout the zone, working thoroughly and systematically.<br>▪ Follow up the spot spray in preparation for planting. |
| Planting<br>Year 1 | | ▪ Auger holes on day of planting.<br>▪ Plant 1800 mixed rainforest species as per **Table 7** below.<br>▪ Water and fertilise<br>▪ Follow up watering as required. |
| Follow Up<br>Year 2 & 3 | Regrowth of woody weeds, grasses and groundcovers | ▪ Follow up spot spray (approx. 4 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |
| Maintenance<br>Year 4 & 5 | As per Follow Up (Year 2 & 3) described above | ▪ Follow up spot spray (approx. 3 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |

**Table 8** - Planting list – 2 - 3m spacings (Zone 4 - and Zone 1 south, if required)

| ***Scientific Name*** | **Common Name** | **Numbers** |
|---|---|---|
| *Acacia melanoxylon* | Blackwood | 180 |
| *Araucaria cunninghamii* | Hoop Pine | 180 |
| *Alphitonia exelsa* | Red Ash | 180 |
| *Commersonia bartramia* | Brown Kurrajong | 180 |
| *Flindersia australia* | Teak | 180 |
| *Flindersia bennettiana* | Bennett's Ash | 180 |
| *Grevillea robusta* | Silky Oak | 180 |
| *Jagera pseudorhus* | Foam Bark | 180 |
| *Glochidion ferdinandi* | Cheese Tree | 180 |
| *Guioa semiglauca* | Guioa | 180 |
| ***Total*** | | **1800** |

*Includes Zone 1 (south – planting list), should the Year 1 monitoring results indicate a fallback position is warranted - if native species regeneration is deemed insufficient following Year 1 Primary works.*

## Restoration Zone 5 (0.16ha) – Moreton Bay Figs

Restoration Zone 5 occurs in the centre of the proposed *R1 General Residential* landuse zone in the centre of the property. The zone consists of two large Moreton Bay Figs *Ficus macrophylla* and associated native species regeneration amongst significant weed cover. It is proposed that Zone 5a and 5b, will be retained and protected as a condition of consent and will be a conservation feature within the Development Envelope boundary.

The canopy layer consists of the two large mature Fig trees, with isolated Camphor Laurel and Umbrella Tree in the mid-storey. The mid-storey meed cover is mid-dense is  and contains Umbrella Tree as the most prevalent weed, along with moderate levels of Ochna *Ochna serrulata*, Lantana, Winter Senna *Senna pendula* var. *glabrata* and vine weeds including Coastal Morning Glory *Ipomoea cairica,* White Passionflower *Passiflora subpeltata* and Corky Passionflower *Passiflora suberosa.* The ground layer is weed-dominated and contains exotic grasses and Singapore Daisy.

Threatened species identified during survey within Zone 5 include Stinking Cryptocarya *Cryptocarya foetida* and Fine-leaved Tuckeroo *Lepiderema pulchella*. Outside the canopy area, Zone 5 is regularly slashed to a low grassland. Under the Fig canopy, lots of regenerating native species occur, with common weeds around edges.

It is proposed that works commence along the southern boundary boundary of Zone 5a and 5b progressing northward with each subsequent treatment line. Primary works undertaken in Zone 5 should include a range of manual weed control techniques including hand weeding, cut-scrape-paint and spot spraying. The following schedule provides a list of recommended management actions for zone 5.

**Table 8**: Zone 5a and 5b restoration actions and sequence

| Sequence of Work | Dominant Weed Species | Management Actions |
|---|---|---|
| Primary Work (Year 1) | Umbrella Tree<br>Small-leaved Privet<br>Camphor Laurel<br>Wild Tobacco<br>Giant Devils Fig<br>Lantana | ▪ Cut, scrape and paint (CSP) Camphor Laurel, Umbrella Tree and all woody weeds.<br>▪ Stem inject larger saplings such as Camphor Laurel and Umbrella Tree.<br>▪ Lop all cut stems into 40cm billets and spread on the ground. Do not pile up discarded weed material.<br>▪ Isolated plants can be hand pulled.<br>▪ Work systematically and comprehensively through the zone |
| | Coastal Morning Glory<br>White Passionflower | ▪ Cut all exotic vines at shoulder height, hang biomass above the ground and paint the cut base of the plant with herbicide. Small or shallow rooted specimens can be hand pulled. |
| | Singapore Daisy<br>Wandering Dew<br>Exotic grasses<br>Garden escapees | ▪ Isolate and prepare suitable weed infestations for over spraying or spot spraying<br>▪ Spot spray all exotic grasses, herbs and groundcover weeds throughout the zone, working thoroughly and systematically.<br>▪ Follow up the spot spray every 2 months depending on season and prevailing weather conditions. |
| Follow Up (Year 2 & 3) | Regrowth of woody weeds, exotic vines, grasses and groundcovers | ▪ Follow up spot spray (approx. 4 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |
| Maintenance (Year 4 & 5) | As per Follow Up (Year 2 & 3) described above | ▪ Follow up spot spray (approx. 3 visits / year) depending on season and prevailing weather conditions.<br>▪ Encourage recruitment of native species by well-timed control of weeds. |

# 6. IMPLEMENTATION MEASURES

## *6.1 Schedule of Works*

This plan specifies a five (5) year duration for the weed control program (**Table 9)** comprising primary weed control and planting (Year 1), then follow-up weed control (Year 2 & 3) followed by site maintenance (Year 4 & 5).

**Table 9** – Five (5) year implementation schedule for bush regeneration and planting works.

| Year | Activity |
|---|---|
| 1 | ▪ Two (2) photo-points to be set up within each restoration zone and baseline monitoring data recorded prior to commencement of any habitat restoration works.<br>▪ Primary weed control in restoration zones 1, 2, 3 and 5, and site preparation for planting in Zone 4.<br>▪ Planting in Zone 4 (and in Zone 1 gaps if required after Year 1 monitoring) - Subtropical Rainforest pioneer species as per Table 7.<br>▪ Follow up weed control in all vegetation management zones every 2 months or as required.<br>▪ Repeat photo point monitoring at the end of Year 1.<br>▪ Submit annual progress report with monitoring results to Tweed Shire Council. |
| 2 & 3 | ▪ Maintenance weed control in all zones (approx. 4 visits / year)<br>▪ Repeat photo point monitoring at the end of Year 2 & 3.<br>▪ Submit annual progress report with monitoring results to Tweed Shire Council. |
| 4 & 5 | ▪ Maintenance weed control in all zones (approx. 3 visits / year)<br>▪ Repeat photo point monitoring at the end of Year 4 & 5.<br>▪ Submit final evaluation report with all monitoring results to Tweed Shire Council. |

## *6.2 Weed Control Methods*

Weeds must be controlled in such a way that they are replaced by native species. Weed control in this context consists of several stages including (a) primary weed control, (b) follow up weed control, and (c) maintenance of the site. The sequence of proposed works is based upon the need to arrest the degradation factors while maximising the regeneration potential in the vegetation management zone. Seasonal weather conditions and the need to systematically follow up weed control are also important considerations. Weed control methods are provided in **Appendix 3.**

# 7. GENERAL GUIDELINES

## *7.1 Bush Regenerators*

On ground weed control works and maintenance must be undertaken by qualified bush regenerators holding TAFE Conservation & Land Management Certificate 3 (and supervisor holding CLM Certificate 4) or equivalent and with minimum 3 years' experience working in local rainforest and sclerophyll forest vegetation communities. A qualified bush regenerator will be capable of advising on the extent and timing of works, record keeping, selected locations and appropriate species for planting, and site maintenance program.

Supervising bush regenerators must hold an appropriate licence (issued under the *Biodiversity Conservation Act 2016*) to work in the habitat of threatened species and endangered ecological communities prior to commencing on-ground weed control works.

## *7.2 Pesticide Application*

Use of chemicals such as herbicides and their additives must only be carried out by personnel who hold current chemical users' certificates. These chemicals must be used in accordance with label directions unless an off-label use permit is procured from the Australian Pesticides and Veterinary Medicines Authority (APVMA).

Chemical use records must also be kept and include weather conditions, areas treated, amounts used and application rates in accordance with the *NSW Pesticides Act 1999*.

## *7.3 Workplace Health and Safety*

All works are to adhere to the relevant industry standards, permits, certificates and regulations. In accordance with the *Work Health and Safety Act* 2011 and *Work Health and Safety Regulations* 2017 workers will comply to ensure safety in the workplace. Contractors are also required to provide WorkCover for employees or ensure sub-contractors hold individual personal insurance for bush regeneration work. Contractors approved by Tweed Shire Council need to ensure they have submitted and adhere to an approved current Work Health and Safety System as per Council requirements.

## *7.4 Aboriginal Cultural Heritage*

The site contains areas mapped as 'Predictive Aboriginal Cultural Heritage' under the *Tweed Shire Council Aboriginal Cultural Heritage Management Plan 2018.* All staff will be inducted into aspects of Aboriginal culture that may arise on the site, such as discovery or unearthing of artefacts/midden sites.

If cultural heritage objects are found on site, work must immediately cease and the Aboriginal Sites Officer of the Biodiversity Conservation Division of DPIE and TSC Project Officer be notified. Work will not continue until permission is granted by DPIE or the local Tweed Byron Local Aboriginal Land Council.

## 8. MONITORING AND REPORTING

Effective monitoring and evaluation of relevant vegetation attributes provides evidence that agreed project objectives and outputs are being delivered. It also assists in implementing site-specific adaptive management approaches. Effective monitoring and evaluation rely on consistent comparisons between quality baseline data and data collected at regular intervals during the progression of on-ground works.

### *8.1 Monitoring Methodology*

The habitat restoration program will be monitored annually using photo points. Two (2) photo points are to be set up within each bush regeneration work zone prior to commencement of work. The photo point location should be determined using a GPS, with point coordinates recorded in the work diary or Daily Record Sheet and marked on a map of the site. The compass orientation of each photo should also be noted. The photo points are to be set up as follows:

- Photo point location marked using a star picket with protective cap on the top.
- The marker to be located in the centre of the photo to provide a reference point.
- Photos to be taken in the same direction and time of the day each time.
- The camera lens, angle and height to be the same for each photo.

The photo points are to be repeated on an annual basis for five (5) years and photos included within annual progress reports to Tweed Shire Council.

### *8.2 Performance Indicators*

The monitoring program which measures performance indicators (**Table 10)** has been designed to gauge the progressive success of the program and allow for the early detection of risk factors that may impede the achievement of project objectives. This provides an opportunity for adaptive management and improves the chances of success for the project.

**Table 10** – Summary of Performance Indicators for each Restoration Zone.

| **Vegetation Management Area** | **Objective** (Section 2) | **Performance Indicator** | **Timing** | **Responsibility** |
|---|---|---|---|---|
| All remnant and regrowth forest outside cleared land | Weed control, natural regeneration | ▪ Retained vegetation adequately protected with no encroachments.<br>▪ Weed cover reduced to <10% in all vegetation strata.<br>▪ Weed cover reduced to <5% in all vegetation strata.<br>▪ Weed cover reduced to 0% in all vegetation strata.<br>▪ Increase in natural plant recruitment compared to previous year. | Annual<br>Year 1<br>Year 2<br>Year 3-5<br>Annual | Bush regeneration contractor |

**Table 11:** Performance Indicators for Zone 4 (and Zone 1 if required) - planting

| Performance Indicator |
|---|
| Planted stock to achieve 90% survival rate at completion of year one. |
| Primary treatment of all weeds in the vegetation management zone to achieve environmental weed cover of less than 10% ground cover and less than 5% shrub and tree layer species at completion of year two. |
| During years 3-5 (maintenance period) environmental weeds are to be progressively treated to ensure no weeds are present at completion of year five. |
| Growth of planted tree stock to achieve average 1m growth by year three. |
| Growth of planted tree stock to achieve average 1.5 m by year five. |
| Growth of planted tree stock to achieve cumulative cover of 80% by year five. |
| Planting stock to achieve a survival rate of 90 % by year 5. |
| During the establishment and maintenance period increased recruitment of native species and increased percentage cover of native species to be achieved. |

### *8.3 Reporting*

The bush regeneration contractor undertaking the weed control and revegetation works must provide an annual progress report to Tweed Shire Council for the duration of the five (5) year program. The annual report is to include:

- A brief discussion of works completed to date, including an update on the progress of plantings, weed control and assisted natural regeneration works.
- A description of project issues and potential resolution (i.e. adaptive management).
- A self-assessment against the Performance Indicators provided in this plan.
- Repeat photo point monitoring.
- Recommendations for future vegetation management works.
- Copies of Daily Record Sheets.

In addition to progress reports, a final evaluation report is to be prepared at the end of the five-year program. The evaluation report will summarise the monitoring data over the five-year period, discuss findings and provide recommendations for future management of the site.

### *8.4 Adaptive Management*

A key factor for project success will be the ability of those implementing the plan to respond to changing site conditions. The purpose of regular monitoring, recording and reporting is not only to document the progress of the project, but also to respond to unanticipated site circumstances, provide feedback on the success or failure of the plan, and allow adaptation of the management actions and implementation measures to achieve maximum effectiveness in vegetation and fauna management. Where necessary, an adaptive management statement should be prepared and detail the nature of any issues that may threaten the achievement of project objectives as well as appropriate corrective actions, for review and endorsement by Tweed Shire Council.

## 9. REFERENCES

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## APPENDIX 1 – Native Flora Species List

| Scientific Name | Common Name |
|---|---|
| *Acacia melanoxylon* | Blackwood |
| *Adiantum hispidulum* | Maiden-hair Fern |
| *Alpinia caerulea* | Native Ginger |
| *Aphananthe phillipinensis* | Rough-leaved Elm |
| *Araucaria cunninghamiana* | Hoop Pine |
| *Archontophoenix cunninghamii* | Bangalow Palm |
| *Asplenium australasicum* | Birds Nest Fern |
| *Baloghia inophylla* | Brush Bloodwood |
| *Capparis arborea* | Caper Bush |
| ***Cassia marksiana*** | **Brush Cassia** |
| *Casuarina glauca* | Swamp Oak |
| *Christella dentata* | Soft Fern |
| *Cissus anarctica* | Kangaroo Vine |
| *Cissus hypoglauca* | Native Grape |
| *Commersonia bartramia* | Brown Kurrajong |
| *Cordyline petiolaris* | Broad-leaved Palm Lily |
| *Corymbia citriodora** | Lemon-scented Gum |
| *Cupaniopsis anacardioides* | Tuckeroo |
| ***Cryptocarya foetida*** | **Stinking Cryptocarya** |
| *Cryptocarya triplinervis* | Three-veined Laurel |
| *Cyathea cooperi* | Tree Fern |
| *Cyperus polystachyos* | Bunchy Sedge |
| ***Davidsonia jerseyana**** | **Davidson's Plum** |
| *Denhamia celastroides* | Denhamia |
| *Derris involuta* | Fish Poison Vine |
| *Dianella caerulea* | Blue Flax Lily |
| *Elaeocarpus obovatus* | Hard Quandong |
| *Eucalyptus grandis** | Flooded Gum |
| *Eucalyptus robusta** | Swamp Mahogany |
| *Eucalyptus saligna** | Sydney Blue Gum |
| *Ficus coronata* | Creek Sandpaper Fig |
| *Ficus fraseri* | Sandpaper Fig |
| *Ficus macrophylla* | Moreton Bay Fig |
| *Ficus rubiginosa* | Rusty Fig |
| *Ficus watkinsiana* | Strangler Fig |
| *Flindersia australis* | Teak |
| *Flindersia bennetiana* | Bennett's Ash |
| *Glochidion ferdinadii* | Cheese Tree |
| *Glochidion sumatranum* | Umbrella Cheese Tree |
| *Guioa semiglauca* | Guioa |
| *Grevillea robusta* | Silky Oak |
| *Hibbertia scandens* | Yellow Guinea Flower |

| Scientific Name | Common Name |
|---|---|
| *Jagera psuedorhus* | Foambark |
| ***Lepiderema pulchella*** | **Fine-leaved Tuckeroo** |
| *Linospadix monostachyos* | Walking Stick Palm |
| *Lomandra spicata* | Forest Lomandra |
| ***Macadamia tetraphylla**** | **Rough-shelled Bush Nut** |
| *Macaranga tanarius* | Macaranga |
| *Maclura cochinchinensis* | Cockspur |
| *Mallotus phillipinensis* | Red Kamala |
| *Neolitsea dealbata* | White Bolly Gum |
| *Notelaea longifolia* | Large Mock-olive |
| *Parsonsia stramanea* | Common Silkpod |
| *Pilidiostigma glabrum* | Plum Myrtle |
| *Pittosporum undulatum* | Sweet Pittosporum |
| *Poutaria australis* | Black Apple |
| *Pteridium esculentum* | Bracken Fern |
| *Schoenoplectiella mucronata* | Bog Bullrush |
| *Smilax australis* | Smilax |
| *Spargarnium subglandulosum* | Burr Plant |
| *Stephania japonica* | Snake Vine |
| *Streblus brunonianus* | Whalebone Tree |
| *Synoum glandulosum* | Scentless Rosewood |
| ***Syzygium moorei**** | **Coolamon** |
| *Toona ciliata* | Red Cedar |
| *Trema tormentosa* | Poison Peach |
| *Typha orientalis* | Typha |

**KEY**

**Species in Bold** = Threatened species

*Species asterixed = Planted around house site and in Eucalypt plantation

## APPENDIX 2: Exotic species recorded on the property

| Scientific Name | Common Name |
|---|---|
| *Ageratina adenophora* | Crofton Weed |
| *Ageratina riparia* | Mistflower |
| *Ageratum houstonianum* | Blue Billygoat Weed |
| *Anredera cordifolia* | Maderia Vine |
| *Archontophoenix alexandre* | Alexander Palm |
| *Asparagus aethiopicus* | Ground Asparagus |
| *Brachiaria decumbens* | Signal Grass |
| *Cestrum nocturnum* | Night Jasmine |
| *Chloris gayana* | Windmill Grass |
| *Cinnamomum camphora* | Camphor Laurel |
| *Cuphea carthagenensis* | Cuphea |
| *Desmodium uncinatum* | Silver-leaf Desmodium |
| *Dolichandra unguis-cati* | Cat's Claw Creper |
| *Duranta repens* | Duranta |
| *Eclipta prostrata* | False Daisy |
| *Erythrina X sykesii* | Coral Tree |
| *Eugenia uniflora* | Brazilian Cherry |
| *Ipomoea cairica* | Coastal Morning Glory |
| *Lantana camara* | Lantana |
| *Ligustrum lucidum* | Large-leaved Privet |
| *Ligustrum sinense* | Small-leaved Privet |
| *Ludwigia peruviana* | Peruvian Water Primrose |
| *Macroptilium atropurpureum* | Siratro |
| *Macrotyloma axillare* | Horse Gram |
| *Magnifera sp* | Mango |
| *Megathyrsus maximus* | Guinea Grass |
| *Melinis minutiflora* | Molasses Grass |
| *Melinis repens* | Red Natal Grass |
| *Murraya koenigii* | Curry Leaf Tree |
| *Murraya paniculata* | Orange Jessamine |
| *Neotonia wightii* | Glycine |
| *Nymphaea caerulea* | Blue Lotus |
| *Ochna serrulata* | Mickey Mouse Plant |
| *Panicum antidotale* | Blue Panicum |
| *Paspalum mandiocanum* | Broad-leaved Paspalum |
| *Passiflora edulis* | Edible Passionfruit |
| *Passiflora suberosa* | Corky Passionflower |
| *Passiflora subpeltata* | White Passionflower |
| *Pennisetum purpureum* | Elephant Grass |
| *Pinus elliottii* | Slash Pine |
| *Rubus ellipticus* | Golden Himalayan Raspberry |
| *Schefflera actinophylla* | Umbrella Tree |

| Scientific Name | Common Name |
|---|---|
| *Schefflera* arboricola | Dwarf Schefflera |
| *Schinus terebinthifolia* | Broad-leaved Pepper Tree |
| *Senna pendula* var *glabrata* | Winter Senna |
| *Senna septemtrionalis* | Smooth Senna |
| *Setaria sphaecelata* | Pigeon Grass |
| *Solanum capsicoides* | Devil's Apple |
| *Solanum chrysotrichum* | Giant Devil's Fig |
| *Solanum mauritianum* | Tobacco Bush |
| *Sorghum halepense* | Johnson Grass |
| *Sphagneticola trilobata* | Signapore Daisy |
| *Syagrus romazoffianum* | Cocos Palm |
| *Triumfetta rhomboidea* | Chinese Burr |
| *Verbena* sp | Verbena |

## APPENDIX 3 – Weed Control Methods

"**Cut-scrape-paint" method**: This method applies to all woody shrubs, trees and some vines e.g. Camphor laurel, Senna, Lantana.
(a) Cut plant low to the ground at an angle.
(b) Apply herbicide immediately at the rate of 1 part glyphosate to 1 part water with a paintbrush approximately 1.5 cms. wide.
(c) Scrape sides lightly to reveal green tissues and apply the herbicide to the scraped area.
(d) Take care that the brush is not contaminated with soil.

**Stem Injection:** This method applies to all woody trees and shrubs with a stem diameter >6 cms, e.g Camphor Laurel trees.
(a) With a drill (10mm bit), drill a hole at a downwards and transverse angle into the stem.
(b) Apply herbicide immediately into the cut using a tree injecting device (using glyphosate, apply at the rate of 1: 0.5).
(c) Repeat at spaces of 10cm around the circumference of the tree, as close to the ground as possible. Where the presence of a crotch angle makes this difficult, make a hole above it. (**Note**: One row is sufficient. larger trunk diameters will need correspondingly more).
(d) Treat all visible lateral roots as per (a).

**Spot Spraying:** This is carried out using a 15 litre back-pack spray unit with a modified spray nozzle that gives a solid spray pattern. Glyphosate is the main herbicide used, with the addition of the red marker dye. For plants which show some resistance to herbicides, or when growing conditions are not optimal, a penetrant is also added. A mixture of glyphosate and Metsulphuron methyl is approved for plants that are difficult to control with glyphosate alone (Note: an appropriate permit is required for this 'off-label' herbicide usage).

**Overspray:** This method is applicable to large, dense infestations of such plants as Lantana and exotic grasses where it is desirable to leave the dead plants intact to prevent erosion and over-exposure of large areas, to protect native seedlings from predators such as wallabies and to avoid trampling by humans.
(a) Spray over the top of the infestation, using a solution of glyphosate (Note: any native plants that may be under the weed will be protected by the foliage cover of the weed).
(b) Leave the sprayed plants intact so that native seedlings can establish under the shelter provided.
Note: For Lantana, the usual dilution rate is glyphosate 1**:**75 water**;** for exotic grasses glyphosate 1**:**100 water.
Alternatively, weeds can be cut and flattened with brush-hooks or loppers and the subsequent regrowth sprayed with glyphosate.

**Crowning:** This method is applicable to weeds which have their growing points below the surface of the ground (corms, bulbs, rhizomes, clumped or fibrous root systems etc. e.g. Asparagus spp. and exotic grasses).
(a) Grasp the leaves or stems and hold them tightly so that the base of the plant is visible. Plants with sharp leaves or stems should be cut back first.
(b) Insert the knife close to the base of the plant at a slight angle, with the tip well under the root system.
(c) Cut through the roots close to the base. Depending on the size of the plant, two or more cuts may be needed to sever all the roots.
(d) Remove the plant. Make sure that the base of the plant where the roots begin is completely removed.

**Hand Pull**: Gently pull seedling out by the roots, wriggling the plant to fully free them.

## APPENDIX 4 – Threatened flora and fauna species recorded within 10km of the site (BioNet)

| Family | Scientific name | Common Name | BCAct | EPBC Act | Number |
|---|---|---|---|---|---|
| Apocynaceae | *Marsdenia longiloba* | Slender Marsdenia | E1 | V | 1 |
| Apocynaceae | *Ochrosia moorei* | Southern Ochrosia | E1 | E | 1 |
| Cunoniaceae | *Davidsonia johnsonii* | Smooth Davidson's Plum | E1 | E | 1 |
| Ebenaceae | *Diospyros mabacea* | Red-fruited Ebony | E1 | E | 3 |
| Ebenaceae | *Diospyros yandina* | Shiny-leaved Ebony | E1 | | 5 |
| Euphorbiaceae | *Acalypha eremorum* | Acalypha | E1 | | 2 |
| Fabaceae ) | ***Cassia marksiana*** | **Brush Cassia** | **E1** | | **32** |
| Fabaceae (Mimosoideae) | *Acacia bakeri* | Marblewood | V | | 34 |
| Fabaceae (Mimosoideae) | *Archidendron hendersonii* | White Lace Flower | V | | 24 |
| Lauraceae | ***Cryptocarya foetida*** | **Stinking Cryptocarya** | **V** | **V** | **28** |
| Lauraceae | *Endiandra hayesii* | Rusty Rose Walnut | V | V | 8 |
| Lauraceae | *Endiandra muelleri subsp. bracteata* | Green-leaved Rose Walnut | E1 | | 8 |
| Myrtaceae | *Gossia fragrantissima* | Sweet Myrtle | E1 | E | 28 |
| Myrtaceae | *Rhodamnia rubescens* | Scrub Turpentine | E4A | | 3 |
| Myrtaceae | *Rhodomyrtus psidioides* | Native Guava | E4A | | 4 |
| Myrtaceae | *Syzygium hodgkinsoniae* | Red Lilly Pilly | V | V | 6 |
| Myrtaceae | ***Syzygium moorei*** | **Durobby** | **V** | **V** | **31** |
| Orchidaceae | *Geodorum densiflorum* | Pink Nodding Orchid | E1,P,2 | | 4 |
| Orchidaceae | *Peristeranthus hillii* | Brown Fairy-chain Orchid | V,P,2 | | 5 |
| Orchidaceae | *Phaius australis* | Southern Swamp Orchid | E1,P,2 | E | 6 |
| Orobanchaceae | *Centranthera cochinchinensis* | Swamp Foxglove | E1 | | 1 |
| Polypodiaceae | *Drynaria rigidula* | Basket Fern | E1,3 | | 2 |
| Proteaceae | *Floydia praealta* | Ball Nut | V | V | 1 |
| Proteaceae | *Grevillea hilliana* | White Yiel Yiel | E1 | | 32 |
| Proteaceae | *Hicksbeachia pinnatifolia* | Red Boppel Nut | V | V | 3 |

| Family | Scientific name | Common Name | BCAct | EPBC Act | Number |
|---|---|---|---|---|---|
| Proteaceae | *Macadamia integrifolia* | Macadamia Nut | | V | 1 |
| Proteaceae | ***Macadamia tetraphylla*** | **Rough-shelled Bush Nut** | **V** | **V** | **88** |
| Rubiaceae | *Randia moorei* | Spiny Gardenia | E1 | E | 44 |
| Rutaceae | *Acronychia littoralis* | Scented Acronychia | E1 | E | 1 |
| Rutaceae | *Bosistoa transversa* | Yellow Satinheart | V | V | 17 |
| Rutaceae | *Coatesia paniculata* | Axe-Breaker | E1 | | 3 |
| Sapindaceae | *Cupaniopsis serrata* | Smooth Tuckeroo | E1 | | 1 |
| Sapindaceae | *^Diploglottis campbellii* | Small-leaved Tamarind | E1,2 | E | 27 |
| Sapindaceae | ***Lepiderema pulchella*** | **Fine-leaved Tuckeroo** | **V** | | **84** |
| Sapotaceae | *Niemeyera whitei* | Rusty Plum, Plum Boxwood | V | | 2 |

**Threatened Fauna Species**

No threatened fauna species are mapped within or adjacent the property.

Threatened fauna species recorded in Bionet within 10km of the property are listed in**Table 6** below.

An assessment was made on whether each of these species was likely to occur within the subject site based on presence or absence of suitable habitat. The assessment applied the criteria listed at the bottom of Table 6.

**Table 5**– Threatened fauna species recorded within 10km of the site.

| Scientific Name | Common Name | NSW status | Comm. status | No. Records in 10km |
|---|---|---|---|---|
| *Crinia tinnula* | Wallum Froglet | V,P | | 147 |
| *Litoria brevipalmata* | Green-thighed Frog | V,P | | 1 |
| *Litoria olongburensis* | Olongburra Frog | V,P | V | 47 |
| *Chelonia mydas* | Green Turtle | V,P | V | 1 |
| *Anseranas semipalmata* | Magpie Goose | V,P | | 7 |
| *Ptilinopus magnificus* | Wompoo Fruit-Dove | V,P | | 4 |
| *Ptilinopus regina* | Rose-crowned Fruit-Dove | V,P | | 14 |
| *Hirundapus caudacutus* | White-throated Needletail | P | V,C,J,K | 17 |
| *Ephippiorhynchus asiaticus* | Black-necked Stork | E1,P | | 39 |

| Scientific Name | Common Name | NSW status | Comm. status | No. Records in 10km |
|---|---|---|---|---|
| *Ixobrychus flavicollis* | Black Bittern | V,P | | 2 |
| *Haliaeetus leucogaster* | White-bellied Sea-Eagle | V,P | | 95 |
| *Hieraaetus morphnoides* | Little Eagle | V,P | | 2 |
| *Lophoictinia isura* | Square-tailed Kite | V,P,3 | | 1 |
| *Pandion cristatus* | Eastern Osprey | V,P,3 | | 284 |
| *Falco subniger* | Black Falcon | V,P | | 1 |
| *Amaurornis moluccana* | Pale-vented Bush-hen | V,P | | 7 |
| *Burhinus grallarius* | Bush Stone-curlew | E1,P | | 8 |
| *Esacus magnirostris* | Beach Stone-curlew | E4A,P | | 2 |
| *Haematopus fuliginosus* | Sooty Oystercatcher | V,P | | 6 |
| *Haematopus longirostris* | Pied Oystercatcher | E1,P | | 113 |
| *Charadrius leschenaultii* | Greater Sand-plover | V,P | V,C,J,K | 8 |
| *Irediparra gallinacea* | Comb-crested Jacana | V,P | | 26 |
| *Calidris canutus* | Red Knot | P | E,C,J,K | 1 |
| *Calidris ferruginea* | Curlew Sandpiper | E1,P | CE,C,J,K | 28 |
| *Calidris tenuirostris* | Great Knot | V,P | CE,C,J,K | 1 |
| *Limosa limosa* | Black-tailed Godwit | V,P | C,J,K | 1 |
| *Numenius madagascariensis* | Eastern Curlew | P | CE,C,J,K | 253 |
| *Xenus cinereus* | Terek Sandpiper | V,P | C,J,K | 27 |
| *Sternula albifrons* | Little Tern | E1,P | C,J,K | 6 |
| *Calyptorhynchus lathami* | Glossy Black-Cockatoo | V,P,2 | | 1 |
| *Glossopsitta pusilla* | Little Lorikeet | V,P | | 4 |
| *Ninox connivens* | Barking Owl | V,P,3 | | 2 |
| *Ninox strenua* | Powerful Owl | V,P,3 | | 1 |
| *Tyto longimembris* | Eastern Grass Owl | V,P,3 | | 3 |

| Scientific Name | Common Name | NSW status | Comm. status | No. Records in 10km |
|---|---|---|---|---|
| *Tyto novaehollandiae* | Masked Owl | V,P,3 | | 2 |
| *Todiramphus chloris* | Collared Kingfisher | V,P | | 28 |
| *Climacteris picumnus victoriae* | Brown Treecreeper (eastern subspecies) | V,P | | 1 |
| *Lichenostomus fasciogularis* | Mangrove Honeyeater | V,P | | 19 |
| *Daphoenositta chrysoptera* | Varied Sittella | V,P | | 6 |
| *Coracina lineata* | Barred Cuckoo-shrike | V,P | | 2 |
| *Carterornis leucotis* | White-eared Monarch | V,P | | 7 |
| *Dasyurus maculatus* | Spotted-tailed Quoll | V,P | E | 3 |
| *Planigale maculata* | Common Planigale | V,P | | 10 |
| *Phascolarctos cinereus* | Koala | V,P | V | 169 |
| *Petaurus norfolcensis* | Squirrel Glider | V,P | | 3 |
| *Potorous tridactylus* | Long-nosed Potoroo | V,P | V | 3 |
| *Potorous tridactylus* | Long-nosed Potoroo, Cobaki Lakes and Tweed Heads West population | E2,V,P | V | 2 |
| *Nyctimene robinsoni* | Eastern Tube-nosed Bat | V,P | | 1 |
| *Pteropus poliocephalus* | Grey-headed Flying-fox | V,P | V | 46 |
| *Saccolaimus flaviventris* | Yellow-bellied Sheathtail-bat | V,P | | 2 |
| *Micronomus norfolkensis* | Eastern Coastal Free-tailed Bat | V,P | | 1 |
| *Ozimops lumsdenae* | Northern Free-tailed Bat | V,P | | 13 |
| *Chalinolobus nigrogriseus* | Hoary Wattled Bat | V,P | | 1 |
| *Myotis macropus* | Southern Myotis | V,P | | 8 |
| *Nyctophilus bifax* | Eastern Long-eared Bat | V,P | | 9 |
| *Miniopterus australis* | Little Bent-winged Bat | V,P | | 62 |

| Scientific Name | Common Name | NSW status | Comm. status | No. Records in 10km |
|---|---|---|---|---|
| *Miniopterus orianae oceanensis* | Large Bent-winged Bat | V,P | | 12 |
| *Phyllodes imperialis southern subspecies* | Southern Pink Underwing Moth | E1 | E | 7 |
| *Thersites mitchellae* | Mitchell's Rainforest Snail | E1 | CE | 2 |

**V = Vulnerable, E = Endangered, CE = Critically Endangered.*

## APPENDIX 3 – Numbered Flora species recorded on the property

**Legend** for the below species list, indicating numbered trees and shrubs shown **on Figure 7**.

- Serious and Irreversible Impact species (SAII), as listed under the NSW Biodiversity Conservation Act 2016. Species include the three listed in the Table below.

| Scientific Name | Common Name | Status BC Act | Status EPBC Act | SAII species? – Principles* |
|---|---|---|---|---|
| *Cassia marksiana* | Mark's Cassia | Vulnerable | Vulnerable | Yes – Principle 1: *currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline* and Principle 2: *the population size of the species or ecological community is currently observed, estimated, inferred or reasonably suspected to have a very small population size.* |
| *Lepiderema pulchella* | Fine-leaved Tuckeroo | Vulnerable | | Yes – Principle 2. |
| *Syzygium moorei* | Coolamon | Vulnerable | Vulnerable | Yes – Principle 1. |

- Threatened Species, not listed as SAII - Species include the three listed in the Table below

| Scientific Name | Common Name | Status BC Act | Status EPBC Act | SAII species |
|---|---|---|---|---|
| *Cryptocarya foetida* | Stinking Cryptocarya | Vulnerable | Vulnerable | No |
| *Davidsonia jerseyana* | Davidson's Plum | Endangered | Endangered | No |
| *Macadamia tetraphylla* | Rough-shelled Bush Nut | Vulnerable | Vulnerable | No |

## Trees Listed with corresponding GPS number – as indicated on Figure 4

192- 1 Jagera psuedorhus DBH 800mm
193- 1 Jagera pseudorhus DBH 800mm / 1 Jagera pseudorhus DBH 600mm / Mallotus philipinensis, Guioa semiglauca.
194- false record
195- 1 Jagera pseudorhus DBH 1200mm
196- 1 Jagera pseudorhus DBH 350mm / Pittosporum undulatum
197- 1 Jagera pseudorhus DBH 800mm
198- 1 Jagera pseudorhus DBH 1200mm / 5 Cinnamomum camphora DBH 200-800mm / Cupaniopsis anacardioides, Mallotus phillipinensis, Guioa semiglauca.
199- 1 Flindersia australis DBH 1400mm / Cupaniopsis anacardioides DBH 500mm / Cinnamomum camphora, Mallotus phillipinensis, Ficus fraseri, Jagera pseudorhus.
200- Cryptocarya foetida 1@ 500mm height
201- 1 Flindersia australis 600mm DBH / 2 Cinnamomum camphora DBH 300-500mm / Macaranga tanarius, Ligustrum lucidum
202- 1 Glochidion sumatranum DBH 700mm / 6 Cinnamomum camphora DBH 200-400mm
203- 7 Elaeocarpus obovatus DBH 200-300mm plus coppicing stems
204- 1 Cupaniopsis anacarioides DBH 600mm
205- 1 Pinus ellotii DBH 600mm
**206- 1 Flindersia australis DBH 800 / 2 Jagera pseudorhus DBH 250mm / 2 Cinnamomum camphora DBH 200mm**
**207- 1 Flindersia australis DBH 1200mm / 1 Cinnamomum camphora DBH 300mm / Cupaniopsis anacardioides, Guioa semiglauca, Mallotus phillipinensis.**
208- 3 Acacia melanoxylon DBH 200mm
209- 1 Cupaniopsis anacardioides DBH 400mm
210- 1 Cupaniopsis anacardioides DBH 600mm
211- 1 Glochidion ferdinandi DBH 500mm
212- 2 Cinnamomum camphora DBH 800-1000mm / 1 Elaeocarpus obovatus DBH 300mm / 2 Glochidion sumatranum DBH 300mm / Jagera pseudorhus, Cupaniopsis anacardioides, Pittospermum undulatum.
213- 1 Glochidion sumatranum DBH 500mm / 1 Cinnamomum camphora DBH 300mm / Macaranga tanarius, Cupaniopsis anacardioides, Acacia melanoxylon.
214- 1 Cinnamomum camphora multiple stems DBH 300mm / *Not native veg as suggested on original site map
215- 1 Acacia melanoxylon DBH 200mm
216- 1 Ficus watkinsiana DBH 2000mm
217- 1 Ficus macrophylla DBH 1500mm
218- 1 Ficus macrophylla DBH 2000mm
219- Cryptocarya foetida 8 stems up to 1000mm height
220- 1 Ficus obliqua DBH 3500mm
221- Cryptocarya foetida 5 stems up to 1000mm height
222- Lepiderema pulchella 1@1500mm height
223- 1 Jacaranda Spp DBH 1300mm
224- Lepiderema pulchella 2@ 1000mm
225-1 Ficus macrophylla DBH 2500mm
226- 1 Magnifera spp DBH 1000mm
227- 1 Magnifera spp DBH 1200 plus Dolichandra unguis-cati
228- 1 Magnifera spp DBH 1200mm
229- 1 Magnifera spp DBH 1300mm
230- 1 Jagera pseudorhus DBH 400mm
231- 1 Pinus ellotii DBH 600mm
232- 1 Ficus rubignosa DBH 1500mm
233 – 1 Elaeocarpus obovatus DBH 1700mm / 1 Cinnamomum camphora DBH 400mm / 2 Briedelia exaltata DBH 600mm
234- Approximately 20 planted Eucalypts (Forest Red Gum and Flooded Gum??) Guessing
235- 1 Davidsonia jerseyana 2000mm height. Planted

236- 1 Grevillea robusta DBH 800mm
237- 3 Grevillea robusta DBH 600mm / 1 Brachychiton acerifolius DBH 300mm / Elaeocarpus grandis DBH 250mm / 3 Archontophoenix cunnighammii DBH 200mm / Toona ciliata DBH 250mm / Hymenospermum flavum DBH / Gmelia leichartii / Syzygium luemannii / Cupaniopsis anacardioides DBH 250mm / Lagunaria spp 250mm (all planted)
238- 1 Diploglottis australis DBH 500mm
239- 1 Araucaria cunninghammii DBH 400mm (planted)
240- 1 Macadamia tetraphylla DBH 400mm (heavily pruned)
241- 1 Litchi spp DBH 300mm (not native veg as per original site plan)
242- 1 Ficus fraseri DBH 200mm
243- 5 Archontophoenix alexandrae and Golden cane palms around pool and garden. Also planted Stenocarpus sinuatus, Hymenospermum flavum.
244- 1 Schefflera actinophylla DBH 300mm / 2 Cupaniopsis anacardioides DBH 200mm / 2 Jagera pseudorhus DBH 250mm
245- 2 Cupaniopsis anacardioides DBH 250mm / 1 Jagera pseudorhus DBH 250mm / Dipploglottis australis
246- 1 Syzygium mooreii 4000mm height (planted)
247- 1 Ficus rubiginosa DBH 2500 + Dolichandra unguis-cati (Fig is almost dead)
248- 1 Davidsonia jerseryana DBH 3000mm (planted)
249- 1 Davidsonia jerseryana DBH 2000mm (planted)
250- 1 Eucalyptus robusta DBH 700mm
251- Cryptocarya foetida 1@1500mm
252- 1 Corymbia intermedia DBH 800mm / Cupaniopsis anarcadioides DBH 300mm
253- 1 Cryptocarya foetida 5000mm height
254- 1 Ficus macrophylla DBH 1500mm
255- Photo Point (2 images)
256- Photo Point (2 images)
257- Cryptocarya foetida 5@ 1000-4000mm height
258- Photo Point (Looking at Cassia marksiana)
259- Cryptocarya foetida 1@2000mm height
260- Cassia marksianna DBH 700mm + seedling
261- Cryptocarya foetida 1@500mm height
262- Lepiderema pulchella
263- Lepiderema pulchella 1@3000mm height
264- Lepiderema pulchella 1@9000mm height
265- Anredera cordifolia  Weed
266- Cryptocarya foetida 2@5000mm height
267- Lepiderema pulchella 1@3000mm height
268- Erythrina X sykseii  Weed