JWA PTY LTD
Ecological Consultants
ABN 56 066 448 879

KINGS FOREST

PRECINCTS 1 - 5
VEGETATION & WEED MANAGEMENT PLAN

A Report Prepared for
Project 28 Pty Ltd

MARCH 2021

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1 INTRODUCTION

1.1 Background

JWA Pty Ltd have been engaged by Project 28 Pty Ltd (Project 28) to prepare a Vegetation and Weed Management Plan (VWMP) for Precincts 1 - 5 of the Kings Forest project site. The Kings Forest site is 846 hectares in area and is located in the coastal zone of the Tweed Shire Local Government Area (LGA). The site was zoned for residential and commercial development in the early 1990's and has been subject to a lengthy Commonwealth, State and Council approval process. Numerous ecological studies have been completed on the site over the last 30 years including detailed flora, fauna and hydrological surveys.

This VWMP provides specific measures for mitigating and/or minimising the potential impacts on vegetation within Precincts 1 – 5 and associated Environmental Management Areas (EMAs), and the proposed East-West Corridor as a result of development activities. Specific management actions discussed in this VWMP will be triggered and completed on a pre-construction, construction and operational phase basis.

Weed control strategies and the regeneration/revegetation of heath, wetland and Littoral rainforest communities are the focus of this VWMP. Strategies for the management of native vegetation (including retained habitat) and fauna pre and post construction are also included. The Koala Plan of Management (KPoM) (JWA 2019) and Wallum Sedge Frog Management Plan (WSFMP) (JWA 2020a) provide specific management strategies for the koala and the wallum sedge frog respectively including details of compensatory habitat creation.

It should be noted that within Precincts 1 – 5, the weed control strategies outlined in this VWMP will only apply to land zoned as Environmental Protection and associated ecological buffers, and adjacent portions of the Cudgen Nature Reserve. For other parts of the site, the control of weeds is the responsibility of landowners, or where they occur on public land, the responsibility of Tweed Shire Council (TSC).

1.2 Aim and Objectives

This VWMP is intended to assist Project 28 in managing existing native vegetation and other environmentally sensitive areas within Precincts 1 - 5 and associated EMAs, and the proposed East-West Corridor before, during and after development.

The aim of this VWMP is to develop a comprehensive and integrated approach to guide the immediate and long-term management of retained and rehabilitated native vegetation and to ensure its protection and enhancement. Implementation of this VWMP will ensure ongoing sustainable management of native vegetation within EMAs associated with Precincts 1 – 5 and the proposed East-West Corridor on the Kings Forest site, and that land clearing and land modification activities associated with the development are effectively remediated.

Specific objectives of this VWMP are to:

- Protect the environmentally significant site values of areas associated with Precincts 1 - 5 from bulk earthworks and construction activities;
- Remove vegetation from the development footprint in a controlled and an environmentally sustainable way;
- Provide permanent protection for the environmentally significant values within EMAs associated with Precincts 1 - 5 and the proposed East-West Corridor (i.e. threatened flora and fauna species, endangered ecological communities, and wetlands);
- Manage noxious and environmental weeds in an environmentally sustainable manner and prevent the further spread of weeds resulting from the development of Precincts 1 - 5;
- Utilise assisted natural regeneration where appropriate;
- Restore, enhance and manage the retained and protected vegetation including providing guidelines for the revegetation of EMAs and the Cudgen Nature Reserve where required; and
- Monitor the condition of retained and rehabilitated vegetation to assess if the project completion criteria have been met and report where appropriate.

1.3 Compliance with Relevant Approval Conditions

On the 19th January 2007, the NSW Minister for Planning authorised a Concept Plan (06_0318) for a proposed residential community at Kings Forest. The Minister for Planning granted part 3A approval (with conditions) for the Concept Plan for Kings Forest in August 2010. Separate Precincts 1 and 5 Vegetation Management Plan and Precincts 1 and 5 Weed Management Plan were prepared in accordance with the Concept Plan approval conditions.

The Kings Forest Stage 1 Project Application (MP 08_0194) was lodged in November 2011. The Project Application was approved (with conditions) on the 11th August 2013. Conditions of this approval required that all environmental management plans be revised.

On the 21st May 2015, the Commonwealth Department of Environment approved (with conditions) the Kings Forest residential development (EPBC 2012/6328). The Commonwealth approval is confined to the mitigation of impacts of the proposed development on the koala and wallum sedge frog, both of which are listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). There are no EPBC Act approval conditions specifically relating to vegetation or weed management on the Kings Forest development site, however it is noted that the Precinct 1 – 5 EMAs and the proposed East-West Corridor are used extensively for the retention, management and offsetting of koala and wallum sedge frog habitat.

Since the Commonwealth approval decision, Project 28 have been liaising with TSC and the NSW Department of Planning, Industry and Environment (DPI&E) to reconcile all approval conditions.

The Precincts 1 - 5 VWMP has been prepared to comply with all relevant Commonwealth, State and Local Government approval conditions. **APPENDIX 1** contains the details of the following relevant Consolidated Approval Conditions and also notes where they are addressed in this VWMP:

- Concept Plan 06_0318 Consolidated Approval Conditions incorporating the following:
    - Modification No. 1, approved on 22 December 2010;
    - Modification No. 2, approved on 11 August 2013;
    - Modification No. 3, approved on 16 May 2014;
    - Modification No. 4, approved on 20 November 2014;
    - Modification No. 5, approved on 10 November 2015;
    - Modification No. 8, approved on 24 May 2018;
- Project Approval 08_0194 Consolidated Approval Conditions incorporating the following:
    - Modification No. 1, approved on 16 May 2014;
    - Modification No. 2, approved on 20 November 2014;
    - Modification No. 3, approved on 20 February 2017;
    - Modification No. 6, approved on 21 December 2017;
    - Modification No. 7, approved 24 May 2018;
    - Modification No. 8, approved 26 November 2019; and
    - Modification No. 10, approved 7 October 2020.

JWA hereby certify that this VWMP has been prepared in accordance with the requirements of Condition C2 of Concept Plan Approval No. CP06_0318 (as modified) and generally in accordance with the requirements of Conditions 39, 40 and 42 of Major Project Approval No. MP08_0194 (as modified) for Kings Forest Stage 1.

1.4 Related Management Plans Prepared for the Kings Forest Site

Various management plans were completed for the Kings Forest Stage 1 Project Application and approved under Project Approval 08_0194. Subsequent to their approval, significant work has been completed on the site. Several of these management plans have therefore been amended (and others will need to be amended) as required by Condition 39 of MP 08_0194.

This VWMP should be read in conjunction with the following documents prepared for the Kings Forest development:

- Kings Forest Koala Plan of Management (KPoM) (JWA 2019);
- Kings Forest Wallum Sedge Frog Management Plan (WSFMP) (JWA 2020a);
- Kings Forest Precincts 1 - 5 Buffer Management Plan (BMP) (JWA 2020b);
- Kings Forest Precincts 1 - 5 Threatened Species Management Plan (TSMP) (JWA 2020c);
- Kings Forest Flora and Fauna Monitoring Report (FFMR) (JWA 2020d);

- Kings Forest Feral Animal Management Plan (FAMP) (JWA 2020e);
- Kings Forest Stage 1 Bushfire Management Plan (BushfireSafe 2020);
- Kings Forest Koala Fire Management Plan (Wildsite 2020);
- Construction Environmental Management Plan (CEMP) (MUS 2020);
- Kings Forest Summary of Management Plans (SOMP) (G&S 2020a);
- Kings Forest Overall Water Management Plan (OWMP) (G&S 2020b); and
- Kings Forest Drainage Maintenance Management Plan (DMMP) (G&S 2021).

APPENDIX 2 provides further details of these management plans and details of their relationship to the VWMP.

1.5 Amendment History

1.5.1 Background

SECTION 6.14 of this VWMP contains guidelines for the adaptive management of this management plan including conflicts between management plans and changes to management strategies over time. This Adaptive Management Approach has been endorsed by NSW DPI&E, BCD and TSC.

This VWMP has been amended in accordance with the endorsed Adaptive Management Approach in response to conditions of approval received from the NSW DPI&E on the 24th December 2020. Amendments to the VWMP relate to condition wording and conflicts with the approved Drain Maintenance Management Plan (G&S 2021).

1.5.2 Condition Wording

The wording of the relevant approval conditions listed in **APPENDIX 1** were identified to be inconsistent with the current wording of the approval conditions due to the modifications made since the original Project Approval. Minor amendments have been made to **APPENDIX 1** to update the relevant condition wording.

1.5.3 Drain Maintenance Management Works

The approved Drain Maintenance Management Plan (G&S 2021) identifies that 6,639 m^2 of proposed Koala compensatory habitat area will be impacted by a required drain maintenance trail along Blacks Creek. In accordance with the adaptive management approach, an additional 6,639 m^2 of Koala compensatory habitat (dry primary) will be planted within the southern section of Precinct 12 to make up for the shortfall. Plantings for this additional Koala compensatory habitat will occur concurrent with the creation of Koala compensatory habitat in Precinct 5 and will be completed in accordance with the methodology outlined in **SECTION 6.9** and Section 7.6 of the Kings Forest KPoM (JWA 2019). Relevant sections and figures within the VWMP have been updated to include the additional Koala compensatory habitat area.

2 SITE DESCRIPTION

2.1 Location

Kings Forest is located on the far north coast of NSW in the Tweed local government area (LGA) approximately 20 km south of the Queensland/NSW border, 5 km north-west of the village of Bogangar and 4 km south-west of Kingscliff (**FIGURE 1**).

2.2 Subject Site

The Kings Forest site is comprised of fourteen (14) land parcels with a total area of 846 hectares:

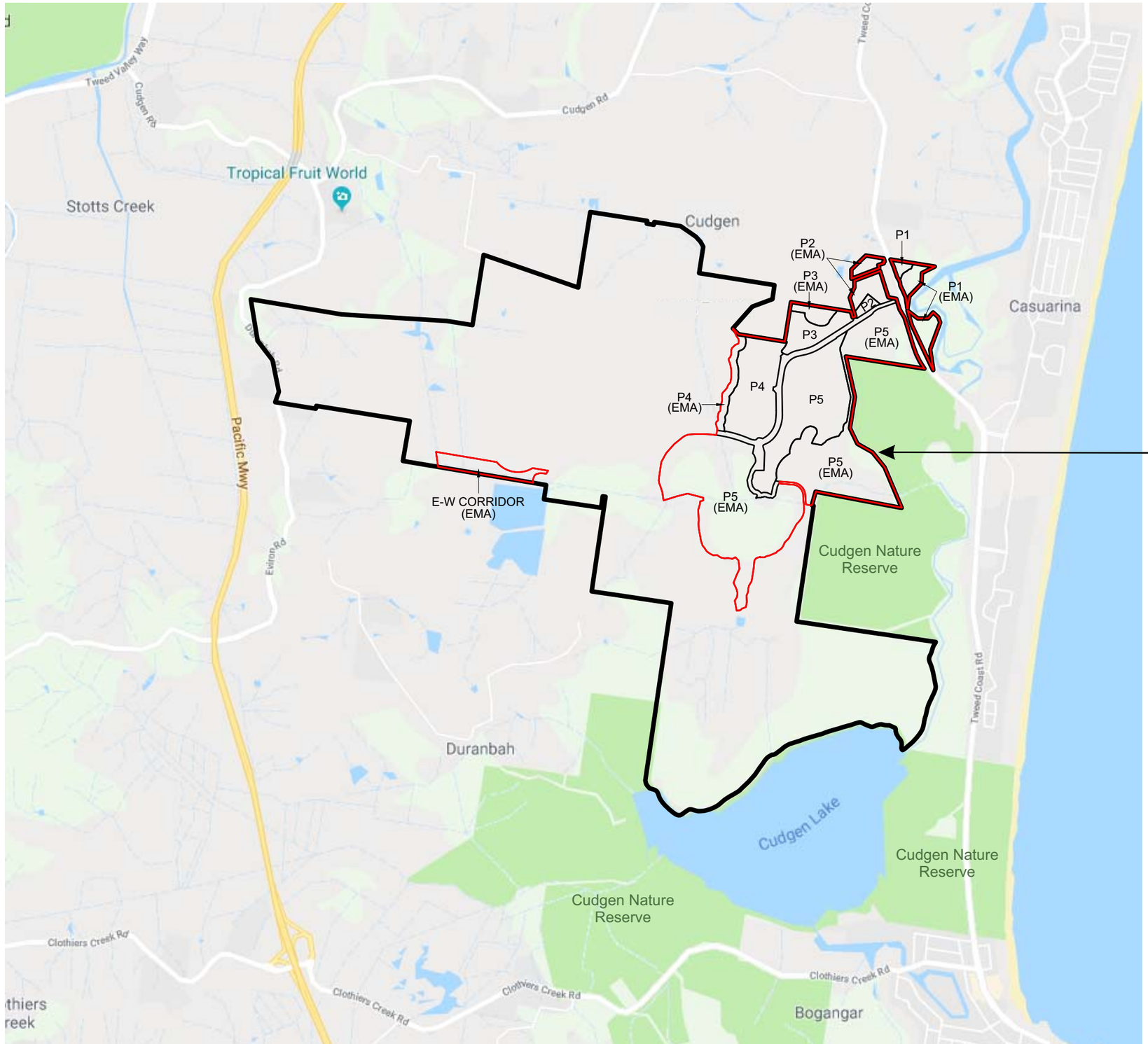
- Lot 76, 272, 323 and 326 in DP 755701;
- Lot 6 in DP 875446;
- Lot 2 in DP 819015;
- Lot 1 in DP 706497;
- Lot 40 in DP 7482;
- Lot 37A in DP 13727;
- Lot 38A in DP 13727;
- Lot 38B in DP 13727;
- Lot 1 in DP 129737;
- Lot 1 in DP 781633; and
- Lot 7 in DP 875447.

Project 28 Pty Ltd owns and manages the site which is currently used for cattle grazing and silviculture. The site consists of a mosaic of natural, partially natural, modified and regenerating plant communities including Heathland, Swamp sclerophyll (Paperbark) forest, Woodland, Pine plantation, Freshwater wetland and Pasture. The majority of the site is maintained as pasture for cattle grazing.

The Kings Forest site abuts agricultural and rural lands to the north, west and south west. Cudgen Nature Reserve (including Cudgen Lake and Cudgen Creek) abuts the site boundaries to the south and east. There are a small number of residential properties along Tweed Coast Road to the north of the site.

2.3 Conservation Reserves/Ecologically Significant Areas in the Locality

The Cudgen Nature Reserve adjoins the southern and (in part) eastern boundaries of the subject site (**FIGURE 2**). Stotts Island Nature Reserve is situated approximately 2 km to the north-west of the site.

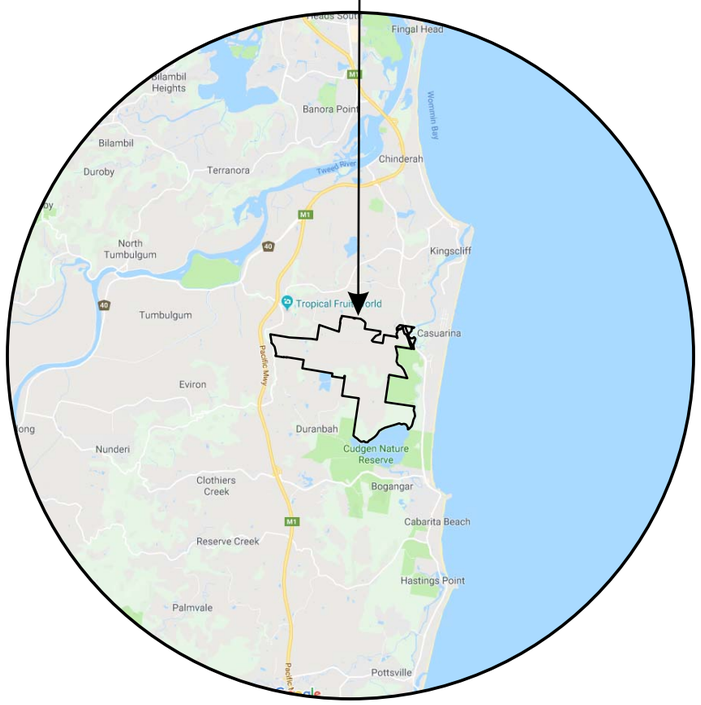


LEGEND

Area Subject to this Management Plan

Kings Forest Boundary

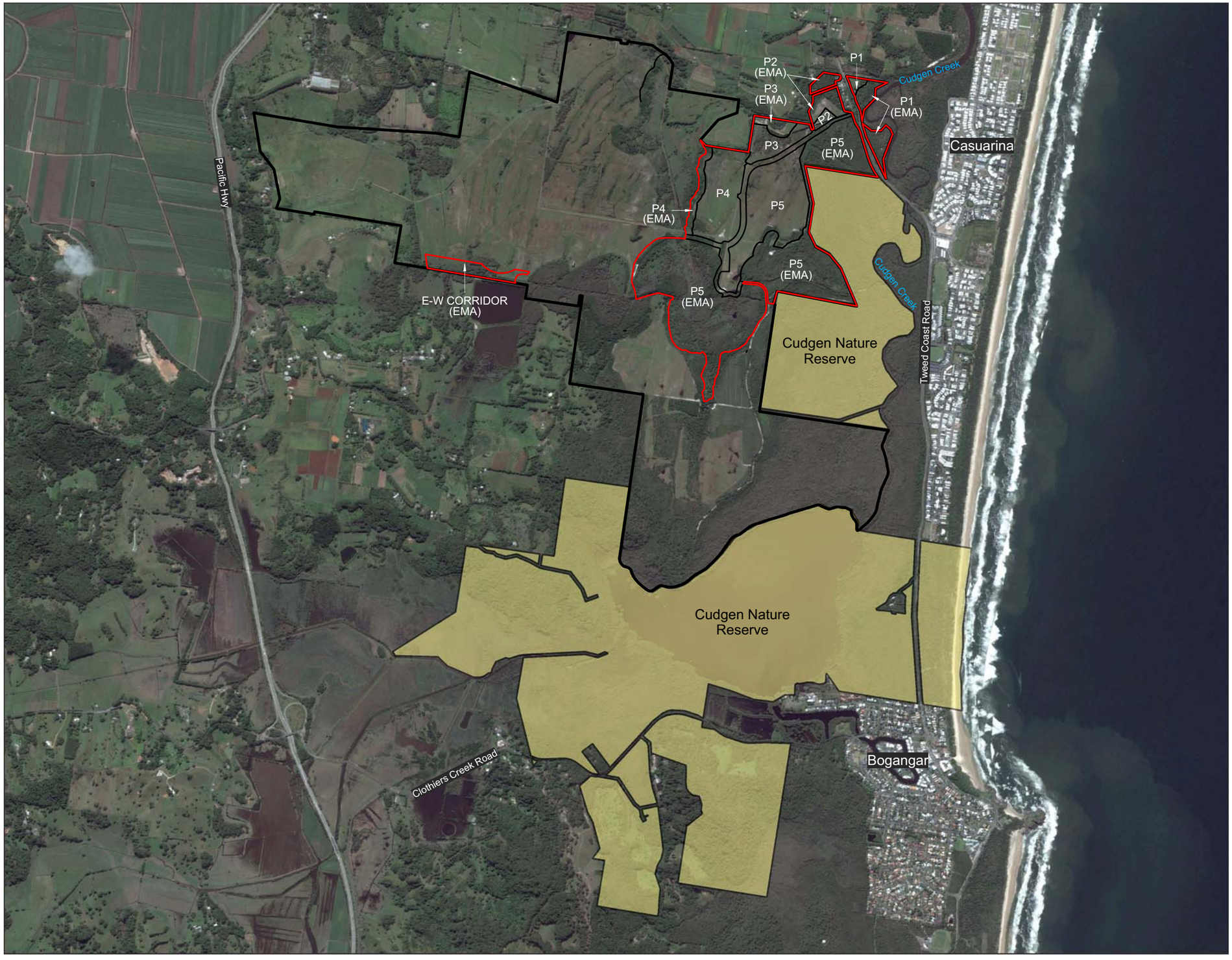
SUBJECT SITE



0 750m

1 : 30 000

SOURCE: Google Maps SCALE: 1 : 30 000 @ A3 JWA PTY LTD Ecological Consultants	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Duranbah, NSW Shire of Tweed	**FIGURE 1** PREPARED: BW DATE: 13 October 2020 FILE: N97017_Locality.cdr	TITLE **LOCALITY PLAN**



N

LEGEND

- Cudgen Nature Reserve
- Area Subject to this Management Plan
- Kings Forest Boundary

0 750m

1 : 30 000

SOURCE: NSW DPI Cadastre
Google Earth Apr 2017 Aerial

SCALE: 1 : 30 000 @ A3

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Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 2

PREPARED: BW
DATE: 13 October 2020
FILE: N97017_Cudgen NR.cdr

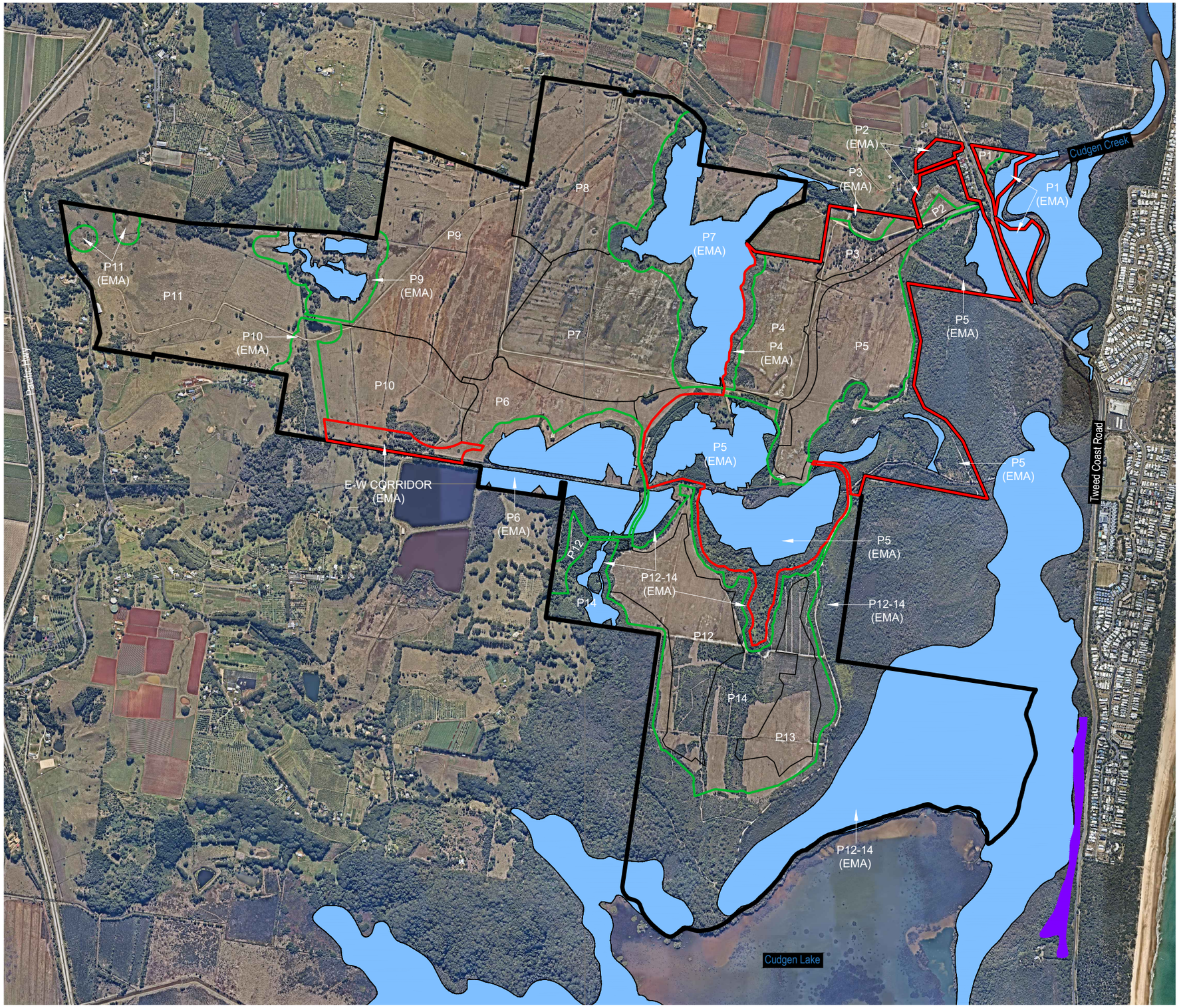
TITLE

CUDGEN NATURE RESERVE

Several Freshwater wetland and Littoral Rainforest areas protected under the (superseded) State Environmental Planning Policy (SEPP) 14 (Coastal Wetlands) and SEPP26 (Littoral Rainforests) exist within and near the site (**FIGURE 3**). These SEPP's have been superseded by State Environmental Planning Policy (SEPP) Coastal Management (2018). Whilst there are areas of discrepancy between the superseded and current SEPP wetland mapping on site, the wetlands generally occur in areas zoned for Environmental Protection on the NSW Planning SEPP Major Development 2005 – Kings Forest land zoning map (**FIGURE 4**). As all relevant approvals were granted prior to the gazettal of the Coastal Management SEPP reference to this mapping has not been shown to avoid confusion.

2.4 Land Use Zones

Land use zones over the Kings Forest development site are identified on the NSW Planning SEPP Major Development 2005 – Kings Forest land zoning map (**FIGURE 4**). SEPP 14 wetland areas, as well as a number of smaller wetland and Littoral rainforest parcels have been designated Environmental Protection (Wetlands and Littoral Rainforests) (7a) zones. Substantial buffer zones occur wherever the 2(c) lands abut neighbouring agricultural land (150 metres) and Environmental Protection zones (50 metre). Lands in the far south of the property are subject to clause 50b of the Tweed LEP, committing them to conservation. Apart from other smaller areas of Environmental Protection (Habitat) (7l), the remainder of the property is zoned Urban Expansion (2c).



N

LEGEND

- SEPP 14 Coastal Wetlands (#1)
- SEPP 26 Littoral Rainforest (#1)
- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#2)
- Precinct Boundary
- Kings Forest Boundary

Note 1:
These SEPP's have been superseded by State Environmental Planning Policy (SEPP) Coastal Management (2018). As all relevant approvals were granted prior to the gazettal of the Coastal Management SEPP, reference to the revised mapping has not been shown to avoid confusion.

Note 2:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

0 500m
1 : 20 000

SOURCE: Landpartners - SEPP14 Wetlands (Amendment 15) & SEPP26 Littoral Rainforest; Near Map 08/08/18 Aerial

SCALE: 1 : 20 000 @ A3

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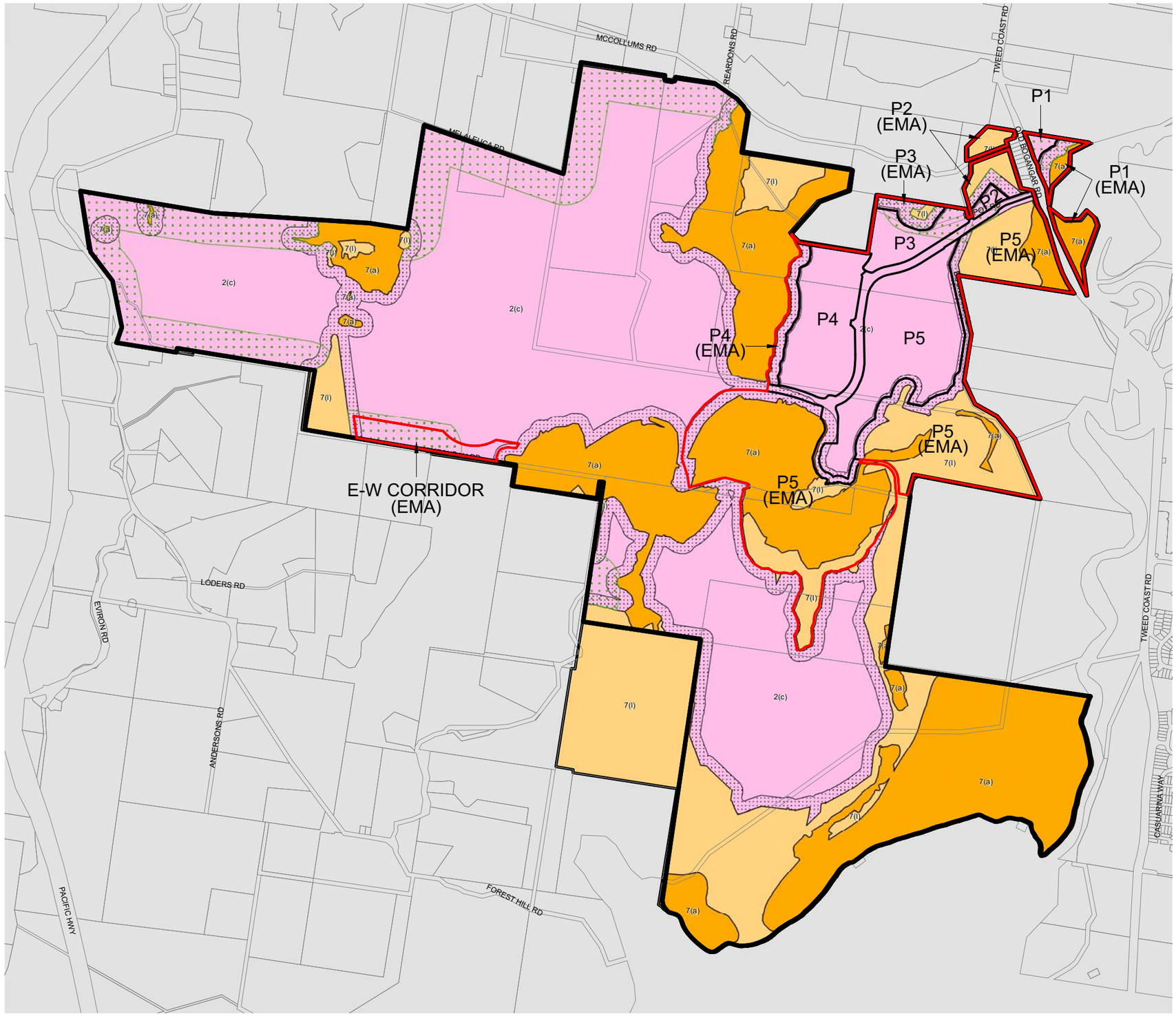
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 3

PREPARED: BW
DATE: 14 October 2020
FILE: N97017_MP 1-5_20201013.dwg

TITLE
SEPP No. 14
COASTAL WETLANDS
& SEPP No. 26
LITTORAL RAINFOREST



N

LEGEND

Area Subject to this Management Plan

Kings Forest Boundary

ZONING

- 2(c) Urban Expansion
- 7(a) Environmental Protection (Wetlands & Littoral Rainforests)
- 7(l) Environmental Protection (Habitat)
- Agricultural Buffer (150m)
- Ecological Buffer (50m)

0 500m

1 : 20 000

SOURCE: NSW Planning SEPP (Major Development) 2005 - Kings Forest Land Zoning Map (Ref: SEPP_MD_KIF_LZN_001_20100201)
SCALE: 1 : 20 000 @ A3

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Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 4

PREPARED: BW
DATE: 13 October 2020
FILE: N97017_Zoning.cdr

TITLE

ZONING PLAN

3 PROPOSED DEVELOPMENT

3.1 Background

The Kings Forest project is a master planned residential community. The total area of the proposed development is 422.32 ha and will include the following in accordance with the Concept Plan Approval (as modified Mods 1 to 5):

- Residential development for approximately 4500 dwellings;
- Town centre and neighbourhood centre for future retail and commercial uses;
- Community and education facilities;
- Employment land;
- 18 hole Golf Course;
- Open space;
- Wildlife corridors;
- Protection and rehabilitation of environmentally sensitive land;
- Utility services infrastructure;
- Water management areas and lake; and
- Roads and pedestrian and bicycle paths.

The proposed development comprises a total of fourteen (14) separate precincts (**FIGURE 5**) and development of the site will be completed on a precinct-by-precinct basis.

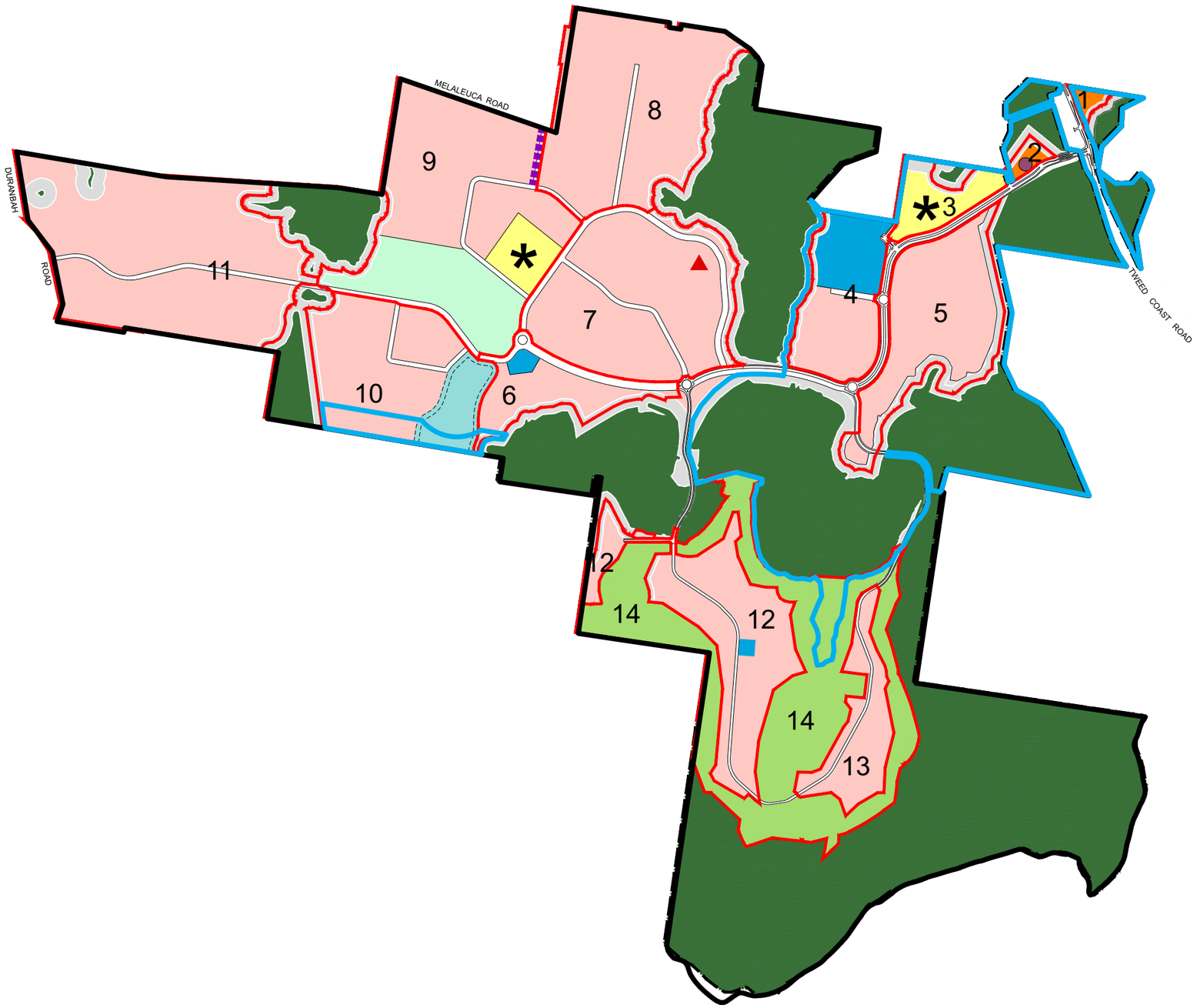
Retained vegetation and habitat areas across the site generally occur within Environmental Protection Zones (EPZs) and associated buffers. To assist in identifying the staging of rehabilitation and management actions, these EPZ and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs). Works within EMAs will be completed in accordance with the staging of the associated Precinct.

Precincts 1 – 5 and the proposed East-West Corridor are the subject of this VWMP. Precincts 1 - 5 occur in the north-eastern portion of the Kings Forest development site. The proposed East-West Corridor occurs in the central western portion of the Kings Forest development site.

3.2 Precinct Descriptions

3.2.1 Precinct 1

Precinct 1 occurs in the far east of the Kings Forest site. Tweed Coast Road traverses the western boundary of Precinct 1 and Cudgen Creek occurs offsite to the east. Precinct 1 is proposed to be developed for the purposes of a Service Station (**FIGURE 6**). An EPZ and associated 50 m buffer zone occur to the south of Precinct 1 (collectively referred to as the Precinct 1 EMA) in which no development works are proposed. Works within the Precinct 1 EMA will include:



LEGEND

- Area Subject to this Management Plan
- Precinct Boundary
- Kings Forest Boundary

PRECINCT PLAN

- Town Centre / Neighbourhood Centre
- Residential
- Community Facilities / Education
- Employment Land
- Structured Open Space (Active)
  (Passive open space to council standards, location subject to urban design)
- Environmental Protection Area
- 50m Ecological Buffer
  (Includes APZs & roads where approved)
- State School Site
- Proposed Zone Substation
  (Subject to Country Energy final approval)
- Potential Affordable Housing Location
- Potential Road Connection to Melaleuca Road

Private Open Space

- Golf Course Area
  (Encompassing ecological buffers where indicated)
- Private Open Space including lake

IMPORTANT NOTE

This plan was prepared as a preliminary concept plan for planning purposes only. As such all particulars, including lot design, areas and densities, are subject to detailed survey, site investigations and to the requirements of council and any other authority which may have requirements under any relevant legislation.
This note is an integral part of this plan.

0 500m
1 : 20 000

SOURCE: RPS Precinct Plan Rev B dated 05/12/13 (Ref: 113691-PSP-4b(PRECINCT PLAN).dwg)
SCALE: 1 : 20 000 @ A3

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Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 5

PREPARED: BW
DATE: 13 October 2020
FILE: N97017_Precinct Plan.cdr

TITLE

PRECINCT PLAN

CONNECT TO EXISTING KOALA EXCLUSION FENCE

1.2MH KOALA EXCLUSION FENCE

SITE BOUNDARY

172.5

10M WIDE VEGETATED BUFFER

KOALA EXCLUSION FENCE

50M ECOLOGICAL BUFFER

7.000 TANKER FILLING POINT

LPG TANKER FILLING POINTS
TANKER REVERSE TO FILLING POINT

SITE BOUNDARY

55.49

DIRECTIONAL SIGNAGE

TWEED COAST ROAD

ENTRY ONLY

ADVERTISING PYLON SIGN

PARKING 10 BAYS

13.500

SRV/ LOADING BAY

DRIVE THRU SIGN

AIR + WATER

VACUUM BAY

DOG WASH BAY

DOG WASH

CAR WASH

PARKING 17 BAYS

GAS

BOWSER 1

BOWSER 2

BOWSER 3

BOWSER 4

BOWSER 5

BOWSER 6

BOWSER 7

BOWSER 8

APPROACH SIDE

CAR BOWSERS

CANOPY ROOF OVER

PWD ACCESIBLE ZONE

PWD BAY

ENTRY

EXIT

STATION SHOP

BIN STORE

PARKING 10 BAYS +2 PWD

T1

T2

T3

T4

T5

T6

FOOTPATH

DRIVE THROUGH

CYCLE PARKING

PARKING 8 BAYS

PEDESTRIAN CROSSING

PARKING 4 BAYS +1 PWD

21.000 APZ

ADVERTISING PYLON SIGN

PEDESTRIAN CROSSING

CYCLE PARKING

72.95

WAITING BAY

HRV LOADING BAY

EXIT ONLY

PEDESTRIAN CROSSING

RING ROADWAY

BIO-RETENTION BASIN

BIO-RETENTION BASIN

SITE BOUNDARY

27.47

REGIONAL SEWER PUMP STATION

CONNECT TO EXISTING KOALA EXCLUSION FEN

N

FLOOR PLAN AREA SUMMARY

GROUND LEVEL

	GFA AREAS
STATION SHOP	TOTAL 180m²
AMENITIES	TOTAL 58 m²
TENANCIES & EATING AREA	TOTAL 760m²
	TOTAL GFA 998m²

DEVELOPMENT SUMMARY

PROPOSED SERVICE STATION INCLUDING SHOP WITH FOOD OUTLETS, CARWASH AND DOG WASH FACILITIES

AREAS

TOTAL SITE AREA	10870 m²
GFA	998 m²
TOTAL STRUCTURAL BUILDING FOOTPRINT	APPROX 1974 m²
CARWASH & DOG WASH	APPROX. 150 m²

PARKING

GENERAL CARPARKING BAYS	32
STAFF CARPARKING BAYS	17
PWD CARPARKING BAYS	3
TOTAL CARPARKING BAYS	52
BICYCLE PARKING CAPACITY	20 BIKES

0 15m

1 : 500

SOURCE: Push DA1000 P3 December 2016 (Ref: 738.12_DA - Current.pdf)

SCALE: 1 : 500 @ A3

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PROJECT
Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 6

PREPARED: BW
DATE: 13 October 2020
FILE: N97017_P1 Layout.cdr

TITLE
PRECINCT 1 PROPOSED DEVELOPMENT LAYOUT

- Protection and maintenance of retained vegetation in accordance with this VWMP and Section 7.5 of the Kings Forest KPoM (JWA 2019); and
- Littoral rainforest regeneration/revegetation works in accordance with this VWMP.

3.2.2 Precinct 2

Precinct 2 is located at the entrance to the Kings Forest site, to the west of Tweed Coast Road and north of the proposed Kings Forest Parkway. Precinct 2 is proposed to be developed for employment purposes. An EPZ and associated 50 m buffer zone occur to the north of Precinct 2 (collectively referred to as the Precinct 2 EMA) in which no development works are proposed. Works within the Precinct 2 EMA will include:

- Protection and maintenance of retained vegetation in accordance with this VWMP and Section 7.5 of the Kings Forest KPoM (JWA 2019); and
- Regeneration/revegetation works (including compensatory koala habitat creation and heath regeneration/revegetation) in accordance with this VWMP and Section 7.6 of the Kings Forest KPoM (JWA 2019).

3.2.3 Precinct 3

Precinct 3 is proposed to be developed as a Community Facility/Education Precinct. A small EPZ and associated 50 m buffer occur adjacent to the central northern portion of the Precinct (collectively referred to as the Precinct 3 EMA) in which no development. Works within the Precinct 3 EMA will include:

- Protection and maintenance of retained vegetation in accordance with this VWMP and Section 7.5 of the Kings Forest KPoM (JWA 2019); and
- Regeneration/revegetation works (including compensatory koala habitat creation and heath regeneration/revegetation) in accordance with this VWMP and Section 7.6 of the Kings Forest KPoM (JWA 2019).

3.2.4 Precinct 4

Precinct 4 is located in the central portion of the Kings Forest site, to the east of the northern SEPP and west of the proposed Kings Forest Parkway. The northern portion of Precinct 4 is proposed to be developed as a Town Centre precinct while the southern portion is proposed to be developed as a residential precinct. A large EPZ associated with Precinct 7 occurs to the west of Precinct 4. A 50 m buffer (referred to as the Precinct 4 EMA) occurs between the Precinct 7 EPZ and Precinct 4 in which no development works are proposed.

Works within the Precinct 4 EMA will include:

- Protection and maintenance of retained vegetation in accordance with this VWMP and Section 7.7 of the Kings Forest WSFMP (JWA 2020a); and
- Regeneration/revegetation works (including compensatory koala and WSF habitat creation and heath regeneration/revegetation) in accordance with this VWMP and the following documents where appropriate:
    - Kings Forest KPoM (JWA 2019) – Section 7.6; and

- Kings Forest WSFMP (JWA 2020a) – Section 7.8.

3.2.5 Precinct 5

Precinct 5 is located at the entrance to the Kings Forest site to the west of Tweed Coast Road and south of the proposed Kings Forest Parkway. Cudgen Nature Reserve occurs to the east of Precinct 5 and Blacks Creek occurs to the south.

Precinct 5 is proposed to be developed as a residential precinct and will also include the construction of a significant portion of the proposed Kings Forest Parkway. Large areas adjacent to Precinct 5 will be retained within EPZs and associated 50 m buffer zones (collectively referred to as the Precinct 5 EMA). Where the 50 m buffer zones occur adjacent to development in Precinct 5, the outer 20 m zone will be utilised for stormwater conveyance and ancillary structures such as fauna exclusion fencing whilst the inner 30 m zone will be utilised for conservation purposes only such as revegetation and assisted regeneration works. Works within the inner 30 m of the Precinct 5 EMA will include:

- Protection and maintenance of retained vegetation in accordance with this VWMP and the following documents where applicable:
  - Kings Forest KPoM (JWA 2019) – Section 7.5; and
  - Kings Forest WSFMP (JWA 2020a) – Section 7.7;
- Regeneration/revegetation works (including compensatory koala and WSF habitat creation and heath regeneration/revegetation) in accordance with this VWMP and the following documents where appropriate:
  - Kings Forest KPoM (JWA 2019) – Section 7.6; and
  - Kings Forest WSFMP (JWA 2020a) – Section 7.8.

FIGURE 7 shows the proposed development for Precinct 5.

3.2.6 East-West Corridor

The proposed East-West Corridor is located in the central west section of the Kings Forest site and extends along the southern boundary of Precinct 10. The proposed East-West Corridor will link the Precincts 6 and 10 EPZs and bolster movement/dispersal corridors in this portion of the Kings Forest site. Works within the proposed East-West Corridor will include compensatory koala habitat creation in accordance with Section 7.6 of the Kings Forest KPoM (JWA 2019).

3.3 Development Staging

The Kings Forest project will likely proceed over many years. The length of time will be dependent, to a certain degree, on the demand for land over time. The development of the site will be completed on a precinct-by-precinct basis in accordance with approved Precinct Plan (**FIGURE 5**). In relation to Precincts 1 – 5 (i.e. the subject of this VWMP) it is intended to construct the Kings Forest Parkway and develop Precincts 1, 2, 5 and the majority of Precinct 4 as Stage 1. Stage 2 of the development will include Precinct 3 and the remainder of Precinct 4.

RESIDENTIAL PRODUCT MIX

TERRACES
- Build to both boundaries
- Rear loaded
- Min. Frontage : 8m
- Min. depth 24m

PLEXES
- Attached Dwelling
- Front loaded parking
- Min Frontage : 18m , Corner : 20m
- Min. Depth : 20m

ZERO - Lot Dwellings
- Detached Dwellings
- Build to one side boundary
- Front loaded parking
- Min. Frontage : 8m with rear lane : 10m with front access, Corner : 10m with rear lane, 12m with front access
- Min. depth : 24m

TRADITIONAL Detached Dwelling
- Detached Dwelling
- Garage may Zero to side boundary
- Front loaded parking
- Min. Frontage : 15m, Corner : 18m
- Min. Depth : 25m

DEVELOPMENT SUMMARY			
LOT CATEGORY	NUMBER OF ALLOTMENTS	NUMBER OF DWELLINGS	PERCENTAGE OF DWELLINGS
TOWNHOUSES	1	20	5%
TERRACES	44	44	10%
PLEXES	25	54	13%
ZERO - LOT DWELLING	192	192	44%
TRADITIONAL DETACHED DWELLINGS	121	121	28%
TOTALS	383	431	100%

LEGEND :

Ⓟ ELECTRICAL TRANSFORMER (Pad Mount)

SOURCE: RPS (Ref: Plan 10 (Indicative Subdivision Plan).pdf dated 28.08.12)

SCALE: 1 : 3000 @ A3

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Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 7

PREPARED: BW
DATE: 13 October 2020
FILE: N97017_P5 Layout.cdr

TITLE
PRECINCT 5 PROPOSED DEVELOPMENT LAYOUT

4 EXISTING SITE VALUES

4.1 Introduction

The following sections detail the existing ecological values contained within Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor. An aerial photograph of these areas is shown in **FIGURE 8.**

4.2 Vegetation

The Kings Forest site has a decades-long history of various land uses and land management practices, including pine plantation, sand mining, pasture improvement and turf production, dairy farming, small cropping and sugar cane production. It is presently used generally for cattle grazing. Over many years the land has been extensively cleared for these activities. There remain, however, large areas of undisturbed vegetation in the eastern and south-eastern portions of the property and within wetland areas throughout. These areas of the site are generally zoned for Environment Protection.

Vegetation at the subject site has been described in varying degrees of detail (Warren 2000, Kingston *et al*. 2004, Callaghan *et al*. 2005). The most comprehensive vegetation mapping over the Kings Forest site was completed by the Australian Koala Foundation (Callaghan *et al*. 2005). However, harvesting of areas of pine plantation, continued infestation of native vegetation with Slash pine (*Pinus elliottii*) wildings and areas of natural heath regeneration has occurred since the preparation of this map.

FIGURE 9 shows the vegetation communities occurring over Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor (as at July 2019) and has been adapted from the Callaghan *et al*. (2005) mapping combined with detailed remapping/ ground-truthing surveys completed by JWA between 2010 – 2019. In total, six (6) broad vegetation types have been mapped within Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor:

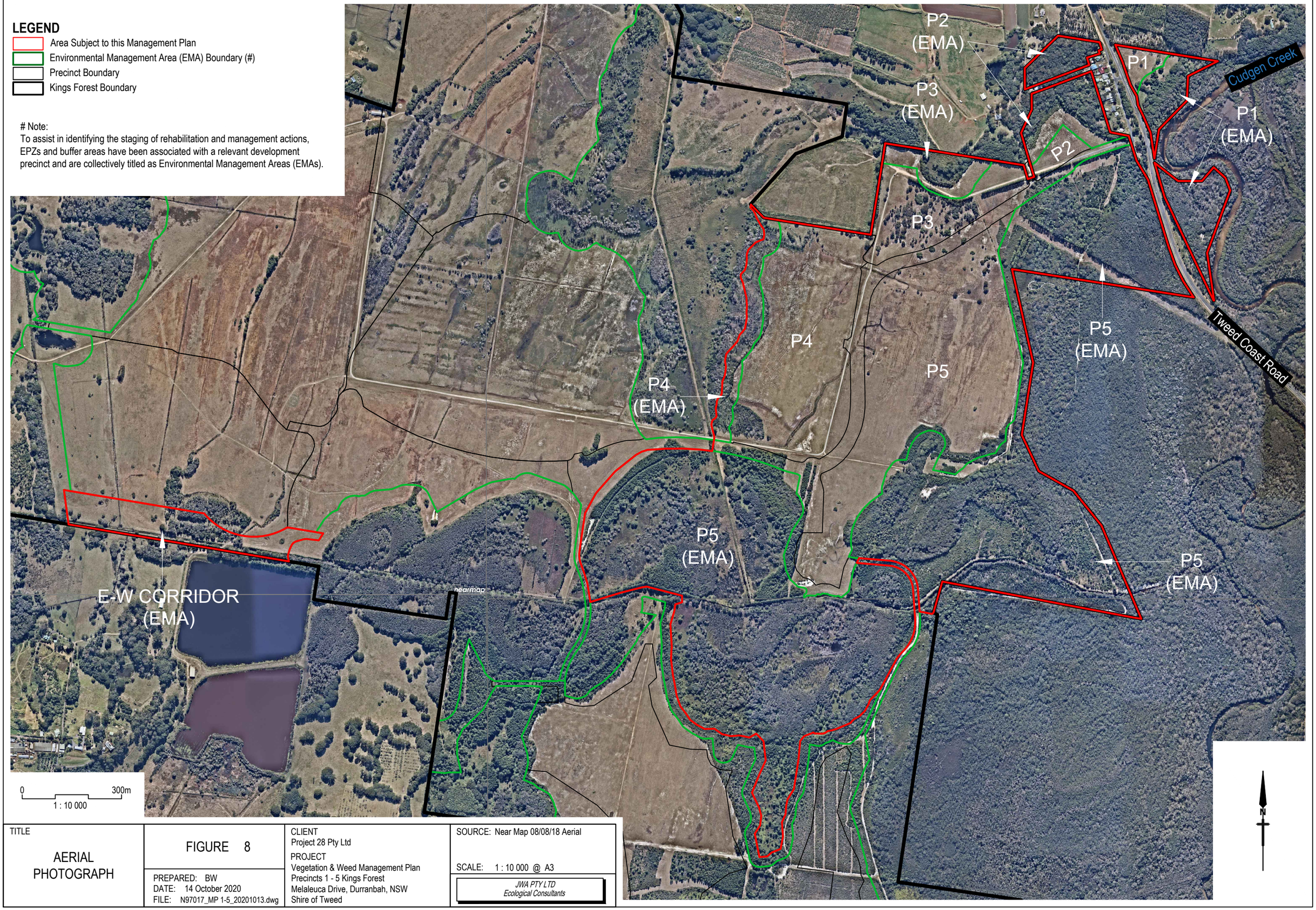
- Highly modified vegetation communities;
- Freshwater wetlands;
- Heathland and shrublands;
- Swamp sclerophyll floodplain forests;
- Dry to moist open forests; and
- Rainforest.

Vegetation community descriptions in this VWMP, including proposed offset/compensatory habitat areas, are discussed in relation to their closest Plant Community Type (PCT) descriptions which were accessed via the Biodiversity and Conservation Division (BCD) (formerly OEH) of the Environment, Energy and Science Group in the NSW DPI&E database (i.e. the BioNet Vegetation Classification System). PCTs are classified based on vegetation types occurring within the Interim Biogeographic Regionalisation for Australia (IBRA) subregions, as developed by the Commonwealth government. The IBRA framework divides Australia landscapes into

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).



TITLE AERIAL PHOTOGRAPH	FIGURE 8 PREPARED: BW DATE: 14 October 2020 FILE: N97017_MP 1-5_20201013.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#1)
- Precinct Boundary
- Kings Forest Boundary

VEGETATION COMMUNITIES (#2)

Community 1 - Highly Modified

- 1(a) Substantially cleared of native vegetation
- 1(b) Camphor laurel dominant closed forest (with rainforest species)
- 1(c) Native plantation/plantings
- 1(e1) Exotic pine plantation
- 1(e2) Exotic pine plantation (with heathland species)
- 1(f) Exotic grassland dominated (with heathland species)
- 1(g) Exotic grassland dominated (with regrowth Acacia & other native species)
- 1(h) Exotic pines with sedgeland/rushland/fernland
- 1(i) Exotic pines with swamp sclerophyll floodplain forest

Community 2 - Freshwater Wetland

- 2(b) Ponds & fringing wetland [PCT 1911, TVMS 701]
- 2(c1) Sedgeland/rushland/fernland [PCT 1911, TVMS 701/702]
- 2(c2) Sedgeland/rushland/fernland (with exotic pines) [PCT 1911, TVMS 701/702]

Community 3 - Heathland & Shrubland

- 3(a1) Dry coastal heathland to shrubland [PCT 663, TVMS 501]
- 3(a2) Dry coastal heathland to shrubland (with exotic pines) [PCT 663, TVMS 501]
- 3(b1) Wet coastal heathland to shrubland [PCT 1297, TVMS 502]
- 3(d) Regenerating wet/dry coastal heathland to shrubland [PCT 1297, TVMS 501/5022]
- 3(e) Regenerating wet/dry coastal heathland to shrubland (with exotic pines) [PCT 1297, TVMS 501/502]

Community 4 - Swamp Sclerophyll Floodplain Forest

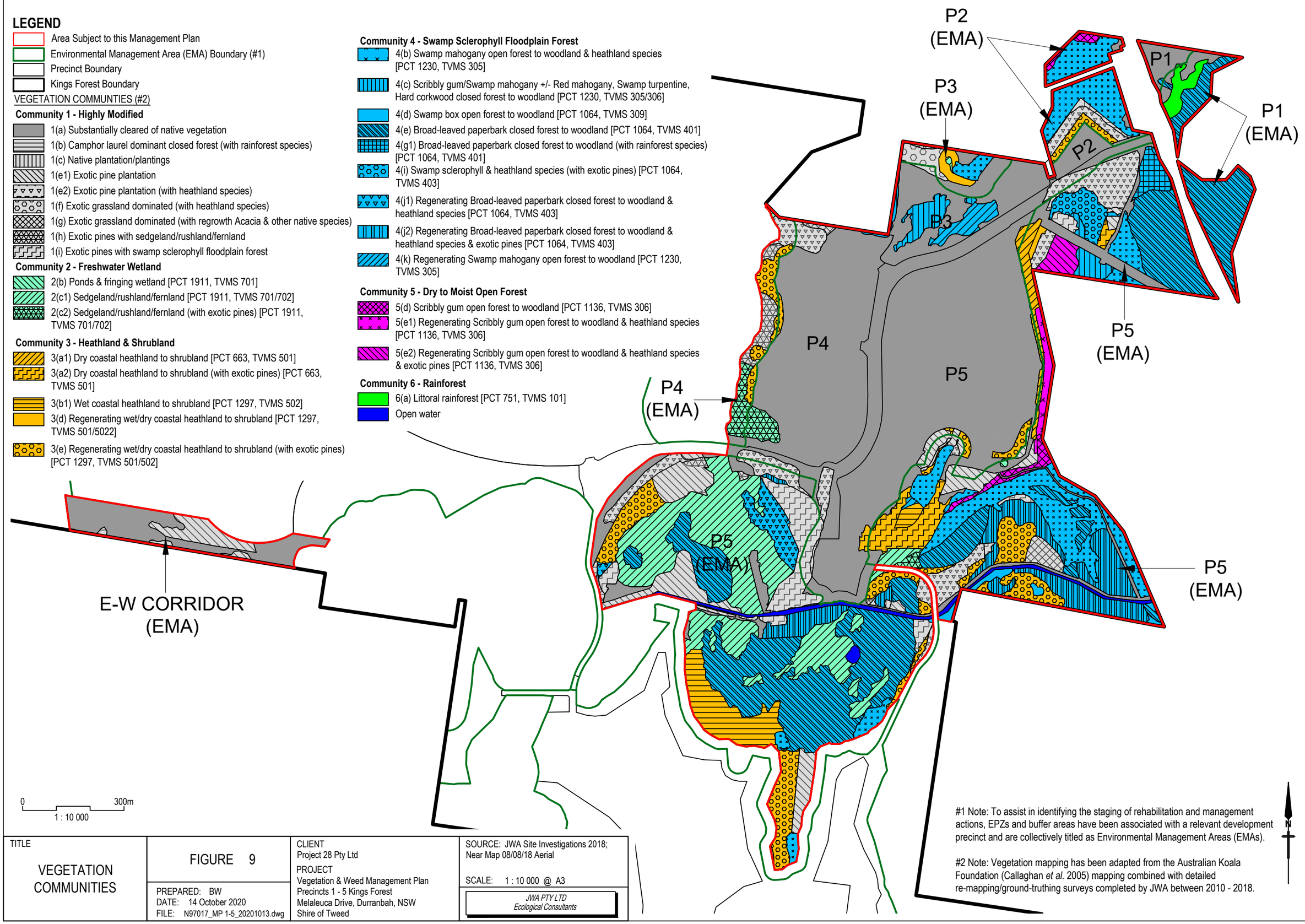
- 4(b) Swamp mahogany open forest to woodland & heathland species [PCT 1230, TVMS 305]
- 4(c) Scribbly gum/Swamp mahogany +/- Red mahogany, Swamp turpentine, Hard corkwood closed forest to woodland [PCT 1230, TVMS 305/306]
- 4(d) Swamp box open forest to woodland [PCT 1064, TVMS 309]
- 4(e) Broad-leaved paperbark closed forest to woodland [PCT 1064, TVMS 401]
- 4(g1) Broad-leaved paperbark closed forest to woodland (with rainforest species) [PCT 1064, TVMS 401]
- 4(i) Swamp sclerophyll & heathland species (with exotic pines) [PCT 1064, TVMS 403]
- 4(j1) Regenerating Broad-leaved paperbark closed forest to woodland & heathland species [PCT 1064, TVMS 403]
- 4(j2) Regenerating Broad-leaved paperbark closed forest to woodland & heathland species & exotic pines [PCT 1064, TVMS 403]
- 4(k) Regenerating Swamp mahogany open forest to woodland [PCT 1230, TVMS 305]

Community 5 - Dry to Moist Open Forest

- 5(d) Scribbly gum open forest to woodland [PCT 1136, TVMS 306]
- 5(e1) Regenerating Scribbly gum open forest to woodland & heathland species [PCT 1136, TVMS 306]
- 5(e2) Regenerating Scribbly gum open forest to woodland & heathland species & exotic pines [PCT 1136, TVMS 306]

Community 6 - Rainforest

- 6(a) Littoral rainforest [PCT 751, TVMS 101]
- Open water



#1 Note: To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

#2 Note: Vegetation mapping has been adapted from the Australian Koala Foundation (Callaghan *et al.* 2005) mapping combined with detailed re-mapping/ground-truthing surveys completed by JWA between 2010 - 2018.

N

TITLE VEGETATION COMMUNITIES	FIGURE 9 PREPARED: BW DATE: 14 October 2020 FILE: N97017_MP 1-5_20201013.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018; Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

bioregions and subsequently subregions based on common features such as climate, geology, landform, and vegetation.

It is noted however that PCT descriptions are still undergoing revision and many remain undescribed for the SEQ03 – Burringbar-Conondale Ranges IBRA subregion. Therefore, corresponding Tweed Vegetation Management Strategy 2004 (TVMS) codes have also been provided.

4.3 Endangered Ecological Communities

Two (2) Endangered Ecological Communities (EECs) as defined by the NSW *Biodiversity Conservation Act 2016* (BC Act) have been mapped within Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor (**FIGURE 10**):

- Freshwater wetlands on coastal floodplains of the NSW North Coast; and
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast.

4.4 Threatened Flora and Fauna

A number of threatened flora and fauna species have been recorded within Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor over the last 30 years. These threatened species are listed in **TABLE 1** and their locations shown in **FIGURE 10.** The conservation status of each species listed in **TABLE 1** is shown in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW BC Act.

TABLE 1
THREATENED SPECIES RECORDED WITHIN PRECINCTS 1 – 5 AND ASSOCIATED EMAS, AND THE PROPOSED EAST-WEST CORRIDOR

Scientific Name	Common Name	BC Act*	EPBC Act#
Threatened flora species			
Endiandra muelleri subsp. *bracteata*	Green-leaved rose walnut	E	-
Phaius australis	Southern swamp orchid	E	E
Cryptocarya foetida	Stinking cryptocarya	V	V
Archidendron hendersonii	White laceflower	V	-
Threatened fauna species			
Ixobrychus flavicollis	Black bittern	V	-
Syconycteris australis	Common blossom bat**	V	-
Falsistrellus tasmaniensis	Eastern false pipistrelle**	V	-
Tyto longimembris	Grass owl	V	-
Pteropus poliocephalus	Grey-headed flying fox	V	V
Phascolarctos cinereus^	Koala	V	V
Miniopterus australis	Little bent-wing bat**	V	-
Tyto novaehollandiae	Masked owl	V	-

Scientific Name	Common Name	BC Act*	EPBC Act#
Pandion cristatus	Eastern osprey	V	-
Ptilinopus regina	Rose-crowned fruit-dove**	V	-
Myotis macropus	Southern myotis**	V	-
Crinia tinnula	Wallum froglet	V	-
Litoria olongburensis	Wallum sedge frog	V	V
Saccolaimus flaviventris	Yellow-bellied sheathtail bat**	V	-

* E – Endangered and V - Vulnerable as listed within schedules of the NSW *BC Act* (2016).

E – Endangered and V - Vulnerable as listed within schedules of the Commonwealth *EPBC Act* (1999).

** These species are highly mobile and were generally recorded foraging opportunistically over the site and are not included in **FIGURE 10.**

^ The koala (combined population in Queensland, New South Wales and the Australian Capital Territory) is listed as a vulnerable species within schedules of the Commonwealth *EPBC Act* (1999). The koala, between the Tweed and Brunswick Rivers east of the Pacific Highway, is listed as an endangered population within schedules of the NSW *BC Act* (2016).

4.5 Weed Assessment

4.5.1 Introduction

Kings Forest has a long history of varied land uses. Disturbance to the natural ecosystems and vegetation communities has resulted in the introduction of a variety of exotic species.

Site surveys indicate that the primary weed species on the Kings Forest site is Slash pine (*Pinus elliottii*), with large areas of recruitment originating from historical pine plantations. Other environmental weeds of note include Camphor laurel (*Cinnamomum camphora*), Lantana (*Lantana camara*), Pampas grass (*Cortaderia selloana*), Blackberry nightshade *(Solanum nigrum)* and Bitou bush (*Chrysanthemoides monilifera*).

4.5.2 Weed Mapping

Areas of weed invasion on the Kings Forest site were originally mapped by LandPartners (2009) in the Revised Weed Management Plan which accompanied the Concept Plan application. Mapping was limited to species considered particularly invasive and therefore a priority for control (e.g. Madeira Vine, Pampas grass, Para grass), or where species occurred over a sufficient area to enable broad scale mapping (notably Slash pine and areas of exotic grass).

Mapped weed infestations within Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor were ground-truthed during the preparation of this VWMP. Due to the large vegetated areas within the EMAs not all areas of vegetation were investigated, however particular attention was paid to ecological buffers (i.e. edges of vegetation to be retained).

The results of weed mapping within Precincts 1 - 5 and associated EMAs, and the proposed East-West Corridor are shown in **FIGURE 11**. The locations of threatened flora have also been included in the figure to provide an indication of threats to these species.

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary

THREATENED FLORA RECORDS

- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*) - Endangered (BC Act 2016)
- Southern swamp orchid (*Phaius australis*) - Endangered (BC Act 2016 & EPBC Act 1999)
- Stinking cryptocarya (*Cryptocarya foetida*) - Vulnerable (BC Act 2016 & EPBC Act 1999)
- White laceflower (*Archidendron hendersonii*) - Vulnerable (BC Act 2016)

THREATENED FAUNA RECORDS

Birds

- Black bittern (*Ixobrychus flavicollis*) - Vulnerable (BC Act 2016)
- Glossy-black cockatoo (*Calyptorhynchus lathami*) - Vulnerable (BC Act 2016)
- Grass owl (*Tyto longimembris*) - Vulnerable (BC Act 2016)
- Masked owl (*Tyto novaehollandiae*) - Vulnerable (BC Act 2016)
- Osprey (*Pandion haliaetus*) - Vulnerable (BC Act 2016)

Mammals

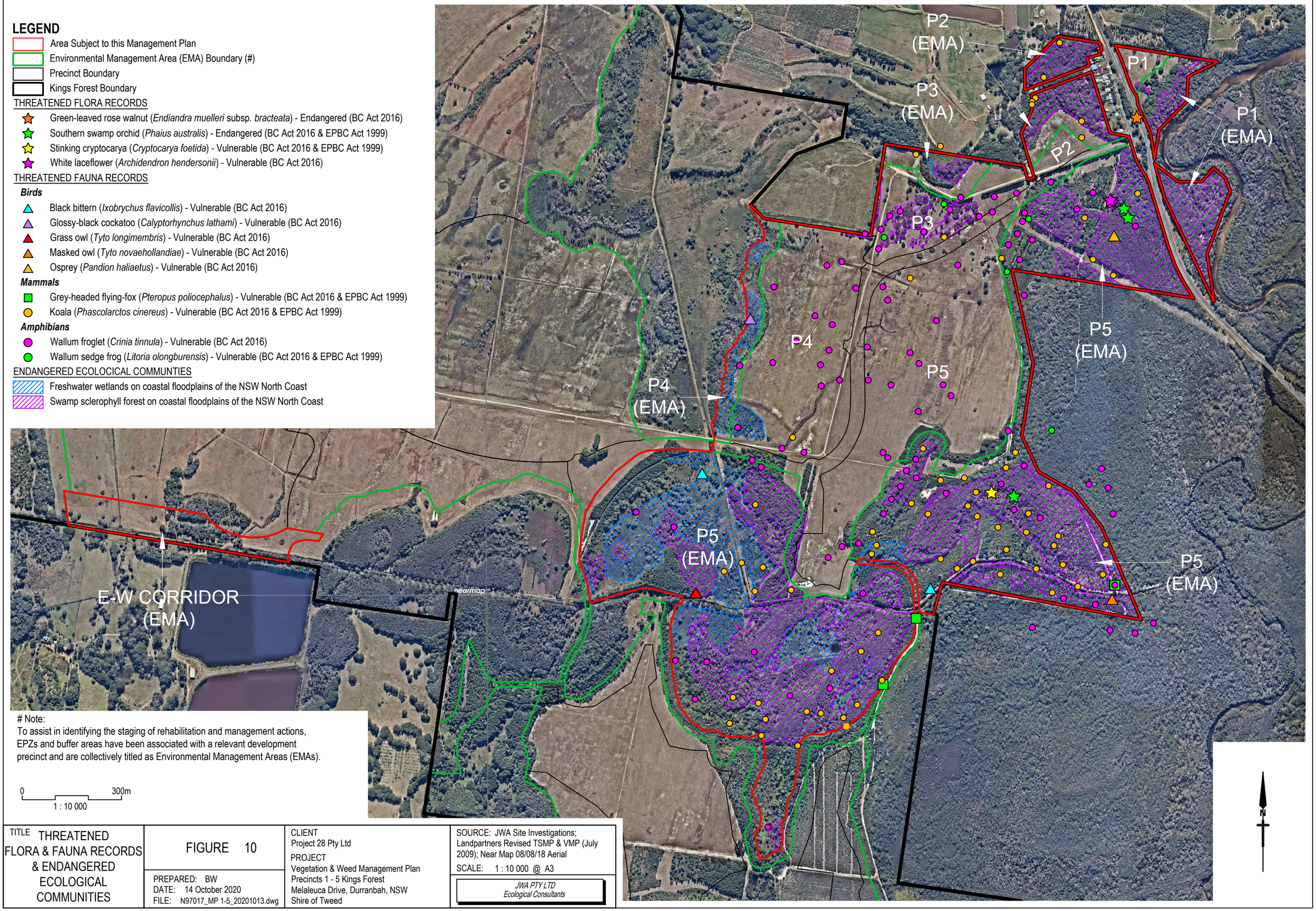
- Grey-headed flying-fox (*Pteropus poliocephalus*) - Vulnerable (BC Act 2016 & EPBC Act 1999)
- Koala (*Phascolarctos cinereus*) - Vulnerable (BC Act 2016 & EPBC Act 1999)

Amphibians

- Wallum froglet (*Crinia tinnula*) - Vulnerable (BC Act 2016)
- Wallum sedge frog (*Litoria olongburensis*) - Vulnerable (BC Act 2016 & EPBC Act 1999)

ENDANGERED ECOLOCICAL COMMUNITIES

- Freshwater wetlands on coastal floodplains of the NSW North Coast
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast



Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

0 300m
1 : 10 000

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TITLE THREATENED FLORA & FAUNA RECORDS & ENDANGERED ECOLOGICAL COMMUNITIES	FIGURE 10 PREPARED: BW DATE: 14 October 2020 FILE: N97017_MP 1-5_20201013.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations; Landpartners Revised TSMP & VMP (July 2009); Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary

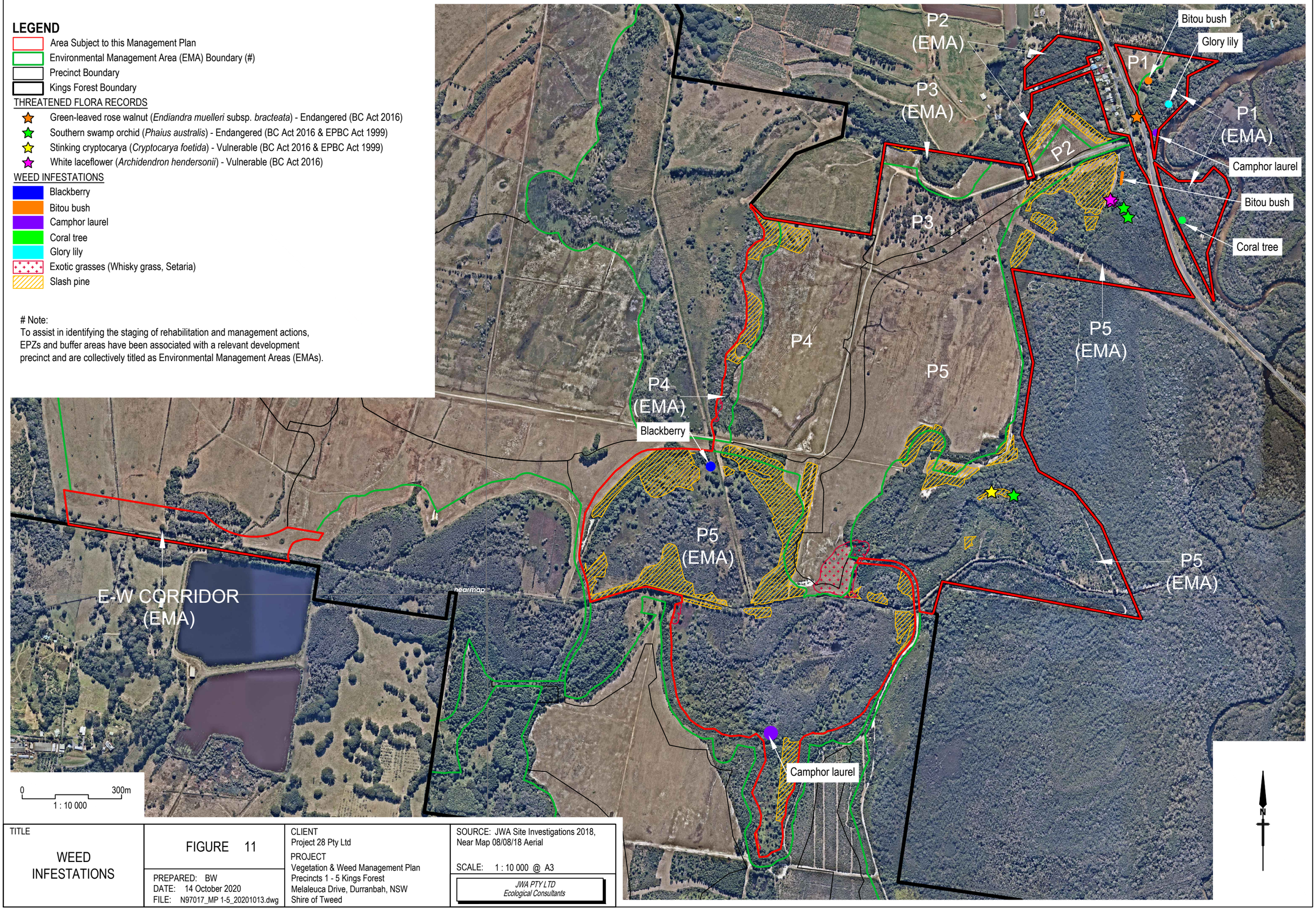
THREATENED FLORA RECORDS

- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*) - Endangered (BC Act 2016)
- Southern swamp orchid (*Phaius australis*) - Endangered (BC Act 2016 & EPBC Act 1999)
- Stinking cryptocarya (*Cryptocarya foetida*) - Vulnerable (BC Act 2016 & EPBC Act 1999)
- White laceflower (*Archidendron hendersonii*) - Vulnerable (BC Act 2016)

WEED INFESTATIONS

- Blackberry
- Bitou bush
- Camphor laurel
- Coral tree
- Glory lily
- Exotic grasses (Whisky grass, Setaria)
- Slash pine

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).



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TITLE WEED INFESTATIONS	FIGURE 11 PREPARED: BW DATE: 14 October 2020 FILE: N97017_MP 1-5_20201013.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018, Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

4.5.3 Weed Species

Various weed species occur on the Kings Forest site however Slash pine is the most common. Slash pine was originally grown as a forestry species but has become naturalised in some areas of the site. Characteristics such as wind pollination and seed dispersal have enabled the species to invade native vegetation communities. Wildlings range in height from 30 cm to 20 m.

The highly invasive vine species Madeira vine (*Anredera cordifolia*) was recorded in one area of degraded land in the north of the Kings Forest site (Precinct 8). Although this is outside Precincts 1 - 5 and the proposed East-West Corridor, and relatively contained, the presence of this species is of concern due to the possibility of spread to areas of good quality vegetation on the site by mechanical means (earthworks, slashing etc).

Several stems of Glory lily (*Gloriosa superba*) occur in the far north-eastern portion of Precinct 1. Bitou bush also occur sparingly at the Kings Forest site in specific localised areas in Precincts 1 - 5 EMAs. Lantana (*Lantana camara*) occurs sporadically within native vegetation communities, particularly on the edges and along tracks.

A complete list of the environmental weeds present on the site has been compiled and is provided in **TABLE 2. APPENDIX 3** lists control methods for each identified weed species.

TABLE 2
IDENTIFIED ENVIRONMENTAL WEEDS AT KINGS FOREST

Common Name	Botanical Name
Balloon Cotton Bush	*Gomphocarpus physocarpus*
Barner Grass	*Pennisetum purpureum*
Billygoat Weed	*Ageratina houstonianum*
Bird of Paradise	*Strelitzia* sp.
Bitou Bush	*Chrysanthemoides monilifera*
Blackberry Nightshade	*Solanum nigrum*
Broad-leaved Paspalum	*Paspalum dilatatum*
Camphor Laurel	*Cinnamomum camphora*
Canna Lily	*Canna indica*
Castor Oil Plant	*Ricinus communis*
Cherry Guava	*Psidium cattleianum*
Chinese Burr	*Triumfetta rhomboidea*
Chinese Elm	*Celtis sinensis*
Coastal Morning Glory	*Ipomoea cairica*
Cocos Palm	*Syagrus romanzoffianum*
Common Carpet Grass	*Axonopus affinis*
Coral Tree	*Erythrina sykesii*
Corky Passionfruit	*Passiflora suberosa*
Crofton Weed	*Ageratina adenophora*
Cuphea	*Cuphea carthagenensis*
Duranta	*Duranta repens*
Edible Passionfruit	*Passiflora edulis*
Exotic Clerodendron	*Clerodendron* sp.

Common Name	Botanical Name
Fireweed	*Senecio madagascariensis*
Fishbone Fern	*Nephrolepis cordifolia*
Fleabane	*Conyza* sp.
Giant Devil's Thorn	*Solanum chrysotrichum*
Glory Lily	*Gloriosa superba*
Happy Plant	*Dracaena* sp.
Inkweed	*Phytolacca octandra*
Lantana	*Lantana camara*
Lemon-scented Teatree	*Leptospermum petersonii*
Madeira Vine	*Anredera cordifolia*
Molasses Grass	*Melinis minutiflora*
Monstera	*Monstera deliciosa*
Morning Glory	*Ipomoea purpurea*
Moth Vine	*Araujia sericiflora*
Mother-in-law's Tongue	*Sansevieria trifasciata*
Ochna	*Ochna serrulata*
Paddy's Lucerne	*Sida rhombifolia*
Pampas Grass	*Cortaderia jubata*
Para Grass	*Brachiaria mutica*
Paspalum	*Paspalum* sp.
Perennial Soybean	*Neonotonia wightii*
Pigeon Grass	*Setaria sphacelata*
Poor Man's Orchid	*Epidendrum* sp.
Redhead Cotton Bush	*Asclepias curassavica*
Red Natal Grass	*Melinis repens*
Rhodes Grass	*Chloris gayana*
Scotch Thistle	*Onopordum acanthium*
Scrobic	*Paspalum scrobiculatum*
Slash Pine	*Pinus elliottii*
Siratro	*Macroptilium atropurpureum*
Small-leaved Privet	*Ligustrum sinense*
Thickhead	*Crassocephalum crepidioides*
Umbrella Tree	*Schefflera actinophylla*
Whiskey Grass	*Andropogon virginicus*
White Passionfruit	*Passiflora subpeltata*
Wild Tobacco	*Solanum mauritianum*
Winter Senna	*Senna pendula* var. *glabrata*

5 MANAGEMENT ZONES

5.1 Identification of Management Zones

The Kings Forest site has been divided into nine (9) zones based on the management intent for each area. These management zones are:

- Zone 1 – Construction zone;
- Zone 2 – Retained koala habitat;
- Zone 3 – Retained wallum sedge frog (WSF) habitat;
- Zone 4 – Koala compensatory habitat;
- Zone 5 – WSF compensatory habitat;
- Zone 6 – Heath regeneration/revegetation;
- Zone 7 - Littoral rainforest regeneration/revegetation (Precinct 1);
- Zone 8 – Wetland regeneration; and
- Zone 9 - Residual lands e.g. tracks and easements.

FIGURE 12 shows the location of management zones applicable to this VWMP. A brief description of each management zone and details of the proposed management intent is provided in the sections below. Specific management actions for each zone are addressed in **SECTION 6**. Monitoring and reporting requirements are detailed in **SECTION 8**.

5.2 Zone 1 – Construction Zone

The construction zone consists of the development footprint of Precincts 1 - 5. The development footprint also includes the 20 m outer buffer zone adjacent to Precinct 5 which will be utilised for stormwater conveyance and ancillary structures such as fauna exclusion fencing (**FIGURE 12**). For clarity, an indicative cross-section of the Precinct 5 ecological buffer is provided in **PLATE 1**.

The management intent of this zone is:

- To remove all existing vegetation within the Construction Zone (consistent with the conditions of approval) prior to bulk earthworks and disposal of cleared vegetation in an environmentally responsible manner;
- To undertake vegetation removal operations in a manner that provides maximum protection of the health and livelihood of native fauna;
- To limit human impacts on retained and compensatory habitat, threatened flora and fauna species or ecological communities; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary
- Waterbodies & Drainage Lines

MANAGEMENT ZONES

- Zone 1 - Construction zone
- Zone 2 - Retained Koala habitat
- Zone 3 - Retained WSF habitat
- Zone 4 - Koala compensatory habitat
- Zone 4 - Additional Koala compensatory habitat for drain maintenance works
- Zone 5 - WSF compensatory habitat
- Zone 6 - Heath regeneration/revegetation
- Zone 7 - Littoral rainforest regeneration/revegetation
- Zone 8 - Wetland regeneration
- Zone 9 - Residual land

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

P2 (EMA)
P3 (EMA)
P1
P1 (EMA)
P2
P3
P4
P5
P5 (EMA)
P4 (EMA)
P5 (EMA)
P5 (EMA)
E-W CORRIDOR (EMA)
ADDITIONAL KOALA COMPENSATORY HABITAT FOR DRAIN MAINTENANCE WORKS (6,640m^2)

0 300m
1 : 10 000

N

TITLE MANAGEMENT ZONES	FIGURE 12 PREPARED: BW DATE: 23 February 2021 FILE: N97017_MP1-5_20210223.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018, Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

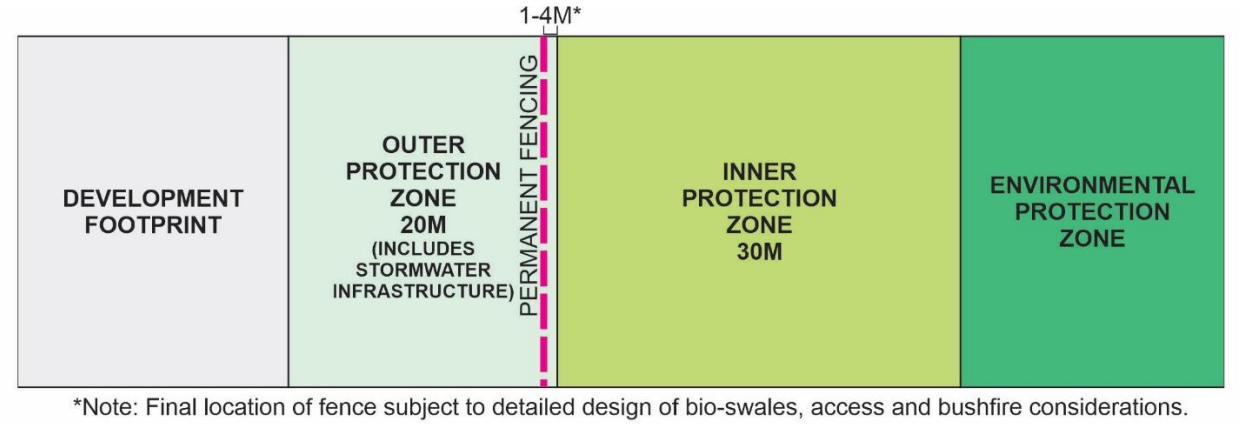


PLATE 1 – INDICATIVE BUFFER ARRANGEMENT FOR PRECINCT 5

5.3 Zone 2 – Retained Koala Habitat

Management Zone 2 consists of existing koala habitat to be retained within the Precincts 1 - 5 EMAs in accordance with the Kings Forest KPoM (JWA 2019) (**FIGURE 12**). The management intent of this zone is:

- To protect, restore (through assisted natural regeneration) and provide for the ongoing maintenance of retained koala habitat;
- To limit human impacts on retained koala habitat; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

5.4 Zone 3 – Retained WSF Habitat

Management Zone 3 consists of existing WSF habitat to be retained within the Precincts 1 - 5 EMAs in accordance with the Kings Forest WSFMP (JWA 2019) (**FIGURE 12**). The management intent of this zone is:

- To protect, restore (through assisted natural regeneration) and provide for ongoing maintenance of retained WSF habitat;
- To limit human impacts on retained WSF habitat;
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable; and
- To ensure the ongoing protection of water quality within retained WSF habitat.

5.5 Zone 4 – Koala Compensatory Habitat

Management Zone 4 consists of koala compensatory habitat areas within Precincts 1 - 5 EMAs, and the proposed East-West Corridor in accordance with the Kings Forest KPoM (JWA 2019) (**FIGURE 12**). The management intent of this zone is:

- To create additional koala habitat through assisted regeneration and revegetation works;

- To limit human impacts on future koala habitat; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

5.6 Zone 5 – WSF Compensatory Habitat

Management Zone 5 consists of WSF compensatory habitat areas within Precincts 1 - 5 EMAs in accordance with the Kings Forest WSFMP (JWA 2020a) (**FIGURE 12**). The management intent of this zone is:

- To create additional WSF habitat through assisted regeneration and revegetation works;
- To limit human impacts on future WSF habitat; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

5.7 Zone 6 – Heath Regeneration/Revegetation

Management Zone 6 consists of heath regeneration areas within the Precincts 1 - 5 EMAs in accordance with this VWMP (**FIGURE 12**). The management intent of this zone is:

- To protect and provide for ongoing maintenance of retained heath;
- To restore existing heath areas through assisted natural regeneration works;
- Revegetation utilising heath species and including re-use of topsoil (where appropriate) likely to contain a suitable seedbank;
- To limit human impacts on retained and restored heath areas; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

5.8 Zone 7 - Littoral Rainforest Regeneration/Revegetation

Management Zone 7 consists of a littoral rainforest regeneration and revegetation area within the Precinct 1 EMAs in accordance with this VWMP (**FIGURE 12**). The management intent of this zone is:

- To protect, restore (through assisted natural regeneration) and provide for ongoing maintenance of retained littoral rainforest;
- To create additional littoral rainforest areas through assisted regeneration and revegetation works;
- To limit human impacts on retained and future littoral rainforest areas; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

5.9 Zone 8 – Wetland Regeneration

Management Zone 8 consists of areas of wetland vegetation to be retained and restored within Precincts 1 - 5 EMAs in accordance with this VWMP (**FIGURE 12**). The management intent of this zone is:

- To protect, restore (through assisted natural regeneration) and provide for ongoing maintenance of retained wetlands;
- To limit human impacts on retained wetlands;
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable; and
- To ensure the ongoing protection of water quality within retained wetlands.

5.10 Zone 9 – Residual Lands

Management Zone 9 consists of residual lands within the Precincts 1 - 5 EMAs (**FIGURE 12**). These areas include fire trails throughout EPZs and a power line easement in the northern section of the Precinct 5 EMA. The management intent of this zone is:

- To maintain the areas in a serviceable condition for their intended purpose; and
- To remove all noxious and environmental weeds in a manner that is environmentally sustainable.

6 MANAGEMENT STRATEGIES

6.1 Introduction

The following sections detail the management strategies to be implemented as part of this VWMP and include:

- Education of site personnel;
- Construction phase management measures;
- Pre-clearing fauna trapping and fauna spotter catcher;
- Exclusion fencing and other infrastructure;
- Re-use of topsoil;
- Management of retained vegetation;
- Weed management;
- Regeneration and revegetation;
- Transfer of land to public ownership;
- Fire management;
- Bond for environmental restoration and maintenance works;
- Environmental and Community Liaison Officer(s); and
- Adaptive management.

These management strategies are apportioned to pre-construction, construction and operational phases of the development in the Implementation Schedules (**SECTION 9**). The applicable management zones for each specific management strategy are outlined in **TABLE 3**.

TABLE 3
MANAGEMENT STRATEGIES

Section	Management Strategy	Applicable Management Zone
6.2	Education of site personnel	1
6.3	Construction phase management measures	All
6.4	Pre-clearing fauna trapping and fauna spotter catcher	1
6.5	Exclusion fencing and other infrastructure	All
6.6	Re-use of topsoil	1 and 6
6.7	Management of retained vegetation	2 - 8
6.8	Weed management	All
6.9	Regeneration and revegetation	2 - 8
6.10	Transfer of land to public ownership	2 - 8
6.11	Fire management	All
6.12	Bond for environmental restoration and maintenance works	2 - 8

Section	Management Strategy	Applicable Management Zone
6.13	Environmental and Community Liaison Officer(s)	All
6.14	Adaptive management	All

The Kings Forest KPoM (JWA 2019) and Kings Forest WSFMP (JWA 2020a) have been prepared outlining specific and detailed management procedures for the protection of koalas and wallum sedge frogs, respectively.

In addition a Precincts 1 - 5 TSMP (JWA 2020c) has been prepared outlining specific and detailed management procedures for the protection of EEC and all other Threatened flora and fauna species which have been known or predicted to occur within Precincts 1 - 5 and associated EMAs, and the proposed East-West Corridor.

6.2 Education of Site Personnel

A key action to be implemented in accordance with the approved Kings Forest KPoM (JWA 2019, Section 7.2.1) is the development of a construction personnel induction program. The program shall be developed by the Proponent and in addition to koala related issues, should highlight the significance of threatened species and EEC's on the site and include a discussion of the management requirements for native vegetation and fauna, threatened species, feral animals and weeds.

The induction program is to be approved by a suitably qualified person prior to construction commencing and all construction personnel, and any other persons/contractors completing works within or adjacent to Precincts 1 – 5, associated EMAs, and the proposed East-West Corridor, need to complete the induction prior to starting work on the site.

The general induction of all construction personnel will aim to ensure the awareness of environmental-related issues and of responsibilities and procedures in relation thereto, covering such matters as:

- Areas of the site in which significant threatened species (including koalas and wallum sedge frogs) are most likely to be encountered;
- Areas of the site in which significant vegetation will be encountered;
- Threats to threatened species, vegetation and fauna associated with construction activities;
- Requirement to report any incidents, and actions required;
- Requirement to report *any* koala sightings or incidents on or near the site, and actions required;
- Prohibition on construction personnel bringing dogs onto the site;
- Requirement to report any evidence of feral animals, particularly dogs within EMA's (sightings, footprints, droppings);

- Requirements of the Precincts 1 - 5 VWMP and TSMP - particularly protocols for vegetation clearing and measures to protect native vegetation and fauna; and
- Requirements of the Kings Forest KPoM and WSFMP.

Specific detail in relation to education protocols will be located in the Kings Forest Stage 1 Construction and Environment Management Plan (CEMP).

6.3 Construction Phase Management Measures

The following vegetation protection strategies will be implemented during the construction phase of the development.

1. All areas to be cleared and retained will be identified on construction plans and in the field prior to the commencement of clearing. No clearing shall occur outside nominated clearing zones.
2. Within the EMAs the following activities will not be permitted:
    - Storage and mixing of materials;
    - Vehicle parking;
    - Liquid disposal;
    - Machinery repairs and/or refuelling;
    - Construction site office or shed;
    - Combustion of any material;
    - Stockpiling of soil, rubble and debris, cleared vegetation and site mulch;
    - Any filling or excavation including trench line, topsoil skimming and/or surface excavation (with the exception of the Precinct 5 outer 20 m zone which will be utilised for stormwater conveyance and ancillary structures such as fauna exclusion fencing, and where necessary for the installation of exclusions fencing); and
    - Unauthorised pesticide, herbicide or chemical applications.
3. All activities in an area adjacent to any retained tree or area are to be carried out in such a manner as to minimise any damage to trees. Trees to be removed will be felled in a direction away from trees to be retained. Where an individual tree to be retained may be impacted by the removal of another tree located at close proximity, the roots of the tree to be disturbed (and the tree to be retained, where required) are to be severed cleanly by a qualified Arborist. All roots are to be exposed first and then cut cleanly with a sharp saw or loppers.
4. Site works shall occur in the following sequence; cutting, shearing of felled vegetation and tub grinding. Where vegetation is cleared or removed, vegetation waste shall be mulched and retained on site for re-use in landscape works. Each area is to be mulched immediately upon completion of clearing and grubbing works. Any vegetation not suitable for mulching (i.e. fertile material from weed species) will not be mulched and will be transported to an appropriate facility.

5. Hollow logs shall not be mulched. If any hollow logs are located on site, they will be relocated to areas proposed for rehabilitation works.
6. Erosion and sedimentation control fencing is to be provided on site in accordance with the Erosion and Sediment Control Plan (G&S 2020d). This will prevent the movement of sediment into ecologically sensitive areas as well prevent the dispersal of weed seeds and vegetative material. All sediment fencing is to be in place prior to the commencement of construction. Prior to any site preparation operations, the Project Manager (or other suitably qualified personnel) shall undertake an inspection of all sediment fencing. The erosion and sediment control measures are to be maintained throughout construction and are not to be dismantled until the works on site have been completed and disturbed areas have been covered by mulch to a minimum depth of 100 mm.
7. The applicant is responsible for the restoration of the site and any adjoining affected lands where sediment deposition has occurred as a consequence of construction activity associated with the development for the duration of works and until the site has been stabilised. Such restoration must be completed in a reasonable timeframe.
8. No soil disturbance is to occur within areas of retained vegetation. Soil disturbance within any areas to be landscaped shall be kept to a minimum to avoid weed recruitment. Areas to be landscaped shall be completed under supervision to avoid unnecessary soil disturbance.
9. Weed or potential weed species shall not be planted during landscaping operations. All nursery stock for landscaping purposes shall be weed, pest and disease free and certified as such by the supplier where feasible. The certificates are to be obtained prior to the commencement of any regeneration/revegetation works on site.
10. Clearing operations are to ensure that propagative material from cleared weeds does not spread across the site. The earthworks machinery must not introduce weed material to the site or spread such material throughout the site.
11. Weeds on the subject site will be managed using suitable control measures (i.e. chemical and/or physical control) in accordance with **SECTION 6.8**.
12. Vehicles shall be restricted to a maximum speed of 50 kph and shall operate only in daylight hours for the duration of the construction phase. Where roads traverse the environmental protection areas vehicles shall be restricted to a maximum speed of 40 kph to minimise the risk of vehicle strike.

6.4 Pre-clearing Fauna Trapping and Fauna Spotter Catcher

6.4.1 Pre-Clearing Fauna Trapping

The following fauna protection strategies will be implemented prior to commencement of any vegetation clearing works.

1. Prior to clearing operations, a suitably qualified ecologist will inspect the site for habitat trees or other habitat features. Habitat trees are defined as those trees that provide suitable refuge and nesting resources for arboreal and avian fauna. These include hollow-bearing trees and trees with fissures, termitaria, etc. Larger, old growth trees are also considered to be habitat trees as they are likely to provide greater

amounts of foraging resources, cover, and a high number of potential tree hollows. Dead (stag) trees are also regarded as important habitat trees as they provide roosting and nesting resources.

2. Any habitat trees or habitat features identified on site will be identified using flagging tape or similar method and shown on appropriately scaled plans. A pre-clearing report shall be prepared prior to clearing which will detail any relevant observations made on site including the presence of habitat trees.

Subsequent to the site inspection, and immediately prior to commencement of site clearing works, a pre-clearing trapping program will be completed within any areas of relatively intact vegetation to be cleared as follows.

1. The trapping program will target Threatened species, in accordance with Section 8.3 of the Precincts 1 - 5 TSMP (JWA 2020c), as well as any other native ground-dwelling and arboreal species. The program will utilise the following trapping methodologies:
    - Pitfall traps/funnel traps;
    - Small (Type A) Elliott traps – installed both on the ground and on platforms on the trunks of trees;
    - Medium (Type B) Elliott traps – installed both on the ground and on platforms on the trunks of trees;
    - Cage traps; and
    - Active searches.
2. All traps will be baited with the universal mixture of peanut butter, honey and rolled oats. Each precinct will be trapped for a minimum of four (4) nights, and any animals captured will be relocated the same day of capture to suitable areas of retained habitat on or adjacent to the site.

6.4.2 Provision of Spotter Catcher and Pre-clearing Site Inspections

The proponent will appoint a suitably qualified fauna spotter catcher to conduct pre-clearing site inspections and to be present during all clearing activities to rescue and relocate any native fauna species as necessary. The spotter catcher is also to direct the civil works contractor in relation to any fauna issues. The contractor will provide access to equipment that may be required by the spotter-catcher (e.g. cherry picker, chainsaw) as well as qualified operators.

The pre-clearance surveys for will commence no more than one (1) day prior to commencement of bulk earth moving activities within each precinct. Specific requirements for the appointment of spotter catchers and pre-clearing koala surveys are outlined in Section 7.2.2 of the Kings Forest KPoM (JWA 2019). Specific requirements for pre-clearing WSF surveys are outlined in Section 7.2.3 of the Kings Forest WSFMP (JWA 2020a).

6.4.3 Under Scrubbing

Immediately after each precinct has been trapped, and the extent of the trapped area clearly identified, the groundcover and midstorey will be cleared utilising a slasher with a mulching

head attachment or similar. Any hollow-bearing trees and/or other significant habitat features identified during the initial site inspection will be retained. All under scrubbing works will be completed with a suitably qualified fauna spotter/catcher in attendance.

6.4.4 Clearing Non-habitat Trees

Immediately after under scrubbing of each area is complete, non-habitat trees (i.e. trees other than those identified as habitat trees) will be cleared and stockpiled for mulching. Clearing of non-habitat trees will only occur where their removal will not impact on identified habitat trees (e.g. canopies do not interconnect with habitat trees). All clearing works will be completed with a suitably qualified fauna spotter/catcher in attendance.

6.4.5 Tree Hollow Inspection and Removal

After under scrubbing and clearing of non-habitat trees, the following tree hollow inspection and removal protocols will be implemented.

1. An elevated work platform or cherry-picker will be used in conjunction with a chainsaw operator and suitably qualified fauna spotter/catcher to inspect and remove tree hollows as necessary prior to habitat tree felling. This method involves the fauna spotter/catcher inspecting each of the potential habitat features (usually tree hollows, dreys and arboreal termite nests) to determine the presence of arboreal fauna. This process is detailed following the step by step basis below:
    a. The fauna spotter/catcher (with arborist unless the fauna spotter/catcher is a qualified chainsaw operator) will inspect each visible tree hollow or potential habitat resource (i.e. ringtail possum drey) identified in each tree using the cherry-picker. This is usually carried out by simply looking into tree hollows with the assistance of a small torch, however, burrow and bore-scopes can also be useful for deep tree hollows.
    b. If fauna is located within a tree hollow, a piece of towel or rag will be firmly placed in the entrance to prevent the wildlife from escaping as in most cases arboreal fauna become aware of the presence of the fauna spotter/catcher and may attempt to flee the nesting/denning tree hollow due to a perceived threat. If an occupied ringtail possum drey is encountered, the fauna spotter/catcher should quietly approach (i.e. avoid contacting other branches) the drey in the cherry-picker bucket and physically capture the possum by placing the entire drey in a catch bag or only the possum if it emerges from the drey. If arboreal fauna are captured, or able to be easily removed from tree hollows, they will be relocated to a suitable retained habitat area/s on or adjacent to the site the same day of capture.
    c. Once the tree hollow entrance has been secured the arborist or fauna spotter/catcher will cut the entire hollow tree limb off below the cavity where the branch remains solid. In circumstances where a tree hollow continues into the main stem of the tree, a small window will be carefully cut into the tree hollow, allowing the fauna spotter/catcher to plug the tree hollow above and below the window, then the hollow tree limb removed and lowered to the ground in sections.

d. When the fauna has been safely secured within its tree hollow, the entire limb can then be placed in the cherry-picker bucket or lowered to the ground using ropes depending on the size of the limb.

e. This limb will then be placed in a cool, quiet location until translocation to a suitable donor site the same day of capture, when at dusk the tree hollow entrance is re-opened to allow the fauna to emerge of its own accord.

2. Once all tree hollows within the habitat trees have been inspected and cleared, the tree may be removed. All clearing works will be completed with a suitably qualified fauna spotter/catcher in attendance.

3. Where possible, the actual felling of the habitat trees shall be conducted in a manner that will maximize the chances of survival for any fauna remaining within the tree. This shall involve pushing rather than cutting, and cushioning the tree fall with other felled timber and foliage. Following felling, a second inspection of the relevant trees shall be carried out to relocate fauna disturbed by the clearing process or remaining within the felled timber to a suitable location.

4. Any fauna captured on site during clearing works will be relocated/translocated by the spotter catcher to a suitable habitat area/s on or adjacent to the site the same day of capture. Any injured animals requiring treatment or euthanasia shall be immediately removed and taken to an appropriately qualified veterinary surgeon. Any animals requiring support or rehabilitation other than vet assistance will be taken to a qualified wildlife carer or centre.

5. A post-clearing spotter catcher report will be provided to the clearing contractor and Council Ecologist within two (2) weeks of completion of clearing activities.

6.4.6 Fauna Incident Reporting Protocols

Any threatened species observation or incident during the construction phase will result in an observation/incident report.

Requirements for koala or WSF incident reports are outlined in Section 7.2.6 of the Kings Forest KPoM (JWA 2019) and 7.2.5 of the Kings Forest WSFMP (JWA 2020a) respectively.

For all other threatened species, the report should contain as a minimum, the date, time and location (grid references) and nature of the incident. Where appropriate, cause (or likely cause) of the incident, sex of animal, age (teeth wear or other evidence) and any other information such as presence of ear tags, general condition (evidence of disease, weight, etc.) should be collected. The report should also describe what action has been taken to date, and any proposed measures to address the incident. This information should be forwarded to BCD and TSC. All Fauna Incident reports (excluding those related to koalas and WSF) will be included in the Annual Threatened Species Monitoring Report in accordance with Section 8.7.2 of the Precincts 1 – 5 TSMP (JWA 2020c).

6.5 Exclusion Fencing and Other Infrastructure

6.5.1 Fauna Exclusion Fencing

Exclusion fencing will be utilised where necessary to effectively separate retained vegetation and compensatory habitat from the development and its related threats. Exclusion fencing will be provided in accordance with the requirements of the Kings Forest KPoM (JWA 2019) and WSFMP (JWA 2020a) and will consist of both temporary and/or permanent fencing during construction and permanent fencing during the operational phase.

Detailed specifications for the design of the temporary and permanent exclusion fencing (including associated koala escape mechanism, gates and signage) to be utilised over the entire Kings Forest site are provided in Section 7.3.2 of the Kings Forest KPoM (JWA 2019) and Section 7.6.2 of the Kings Forest WSFMP (JWA 2020a).

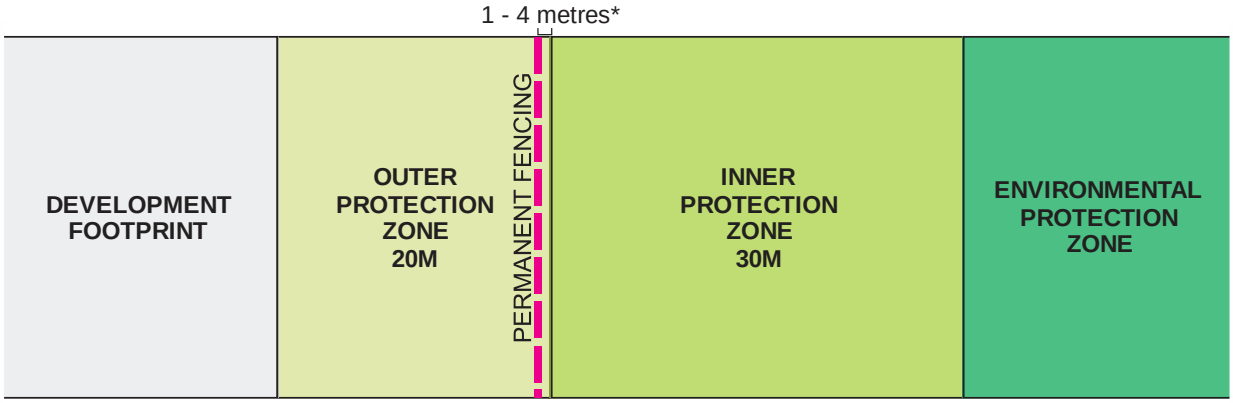
Temporary fencing will be utilised during the construction phase of the development of Precincts 1 – 5 and the proposed East-West Corridor to exclude construction activities from retained vegetation and compensatory habitat areas. Temporary fencing will be comprised of 1.5 m high wire mesh held upright by star pickets (**PLATE 2**).

PLATE 2 – EXAMPLE OF TEMPORARY FENCING

Permanent koala exclusion fencing will be constructed at the end of the construction phase of the development of each applicable Precinct. In some areas temporary fencing will not be

required as permanent fencing will be installed prior to commencement of construction activities on site.

Where the permanent fencing occurs in buffer zones, the fencing will be located within the 20 m Outer Protection Zone, generally 1 – 4 m to the development side of the boundary between the 30 m Inner Protection Zone and 20 m Outer Protection Zone (dependant on the final design of bio-swales etc.). **PLATE 3** provides a visual guide to the location of permanent fencing.



* Note: Final location of fence subject to detailed design of bio-swales, access and bushfire considerations.

PLATE 3 – INDICATIVE FENCING LOCATION GUIDE

The indicative location of exclusion fencing in Precincts 1 – 5 and the proposed East-West Corridor is shown in **FIGURE 13**. The final location of exclusion fencing in Precincts 1 – 5 and the proposed East-West Corridor will be subject to detailed design and will be shown on relevant construction plans to be approved by TSC prior to commencement of works.

All exclusion fencing will be in place prior to the commencement of construction in each relevant Precinct. Temporary fencing will only be removed once fencing in the adjacent precinct is erected.

6.5.2 Access Management

Where the length of fencing (permanent or temporary) in buffer zones is greater than 100 m, a gate will be provided to allow access for routine rehabilitation work and monitoring. Given the number of gates that may be provided on the entire site, no locks on the gates will be required for the duration of the site development. Secure fastening structures must, however, be provided for each gate. At the completion of the monitoring program locks will be provided to all gates. Keys will be held by TSC and BCD (NPWS) where appropriate. Locked gates may be opened in the event of bushfire to allow fauna to escape.

6.5.3 Signage

Temporary signage (during construction phases) will be installed where appropriate in accordance with Section 7.3.6 of the Kings Forest KPoM (JWA 2019). This will include the following types of temporary signage:

LEGEND

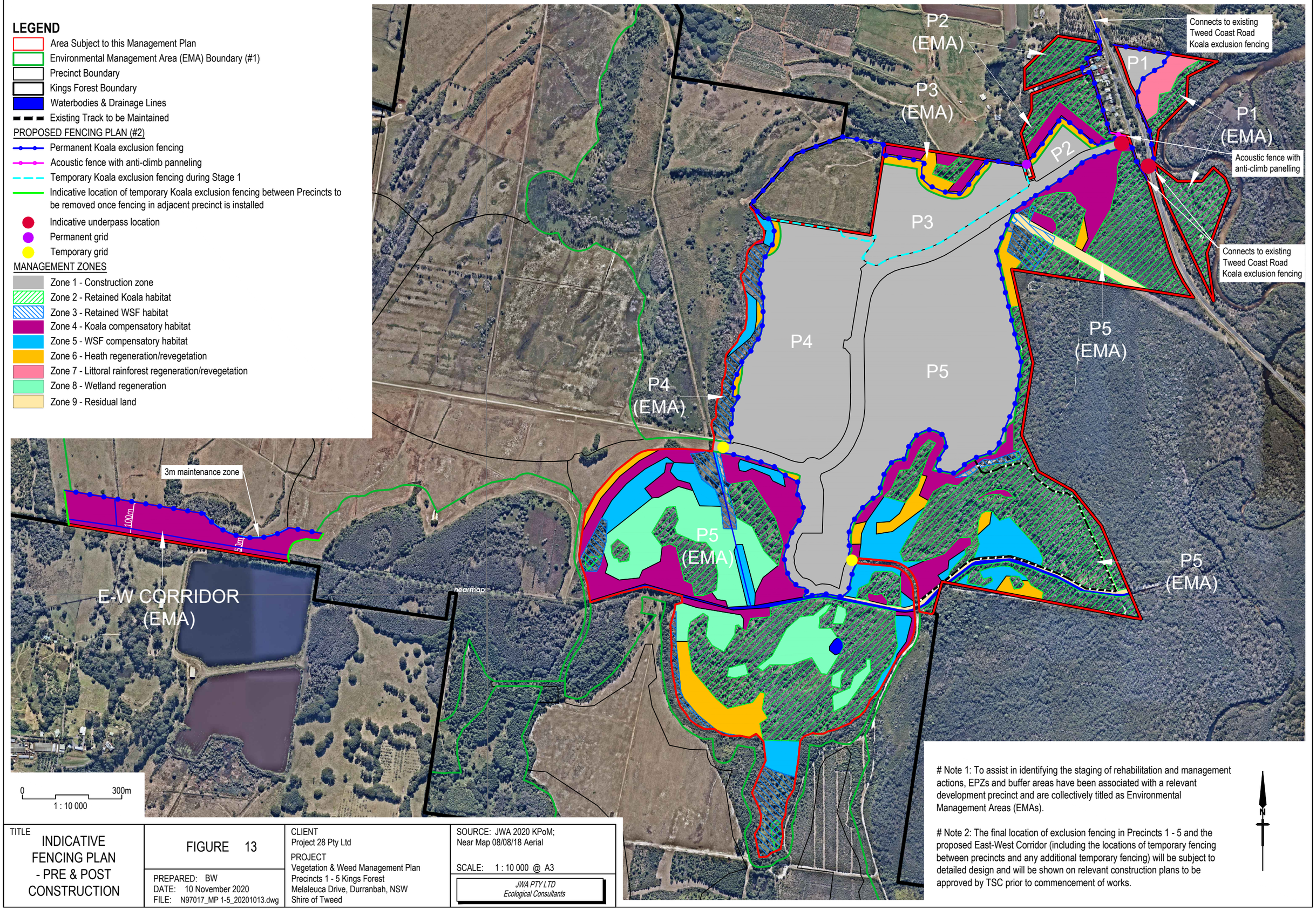
- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#1)
- Precinct Boundary
- Kings Forest Boundary
- Waterbodies & Drainage Lines
- Existing Track to be Maintained

PROPOSED FENCING PLAN (#2)

- Permanent Koala exclusion fencing
- Acoustic fence with anti-climb panneling
- Temporary Koala exclusion fencing during Stage 1
- Indicative location of temporary Koala exclusion fencing between Precincts to be removed once fencing in adjacent precinct is installed
- Indicative underpass location
- Permanent grid
- Temporary grid

MANAGEMENT ZONES

- Zone 1 - Construction zone
- Zone 2 - Retained Koala habitat
- Zone 3 - Retained WSF habitat
- Zone 4 - Koala compensatory habitat
- Zone 5 - WSF compensatory habitat
- Zone 6 - Heath regeneration/revegetation
- Zone 7 - Littoral rainforest regeneration/revegetation
- Zone 8 - Wetland regeneration
- Zone 9 - Residual land



Note 1: To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

Note 2: The final location of exclusion fencing in Precincts 1 - 5 and the proposed East-West Corridor (including the locations of temporary fencing between precincts and any additional temporary fencing) will be subject to detailed design and will be shown on relevant construction plans to be approved by TSC prior to commencement of works.

N

TITLE
INDICATIVE FENCING PLAN - PRE & POST CONSTRUCTION

FIGURE 13

PREPARED: BW
DATE: 10 November 2020
FILE: N97017_MP 1-5_20201013.dwg

CLIENT
Project 28 Pty Ltd

PROJECT
Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Durranbah, NSW
Shire of Tweed

SOURCE: JWA 2020 KPoM; Near Map 08/08/18 Aerial

SCALE: 1 : 10 000 @ A3

JWA PTY LTD
Ecological Consultants

- At appropriate and highly visible locations noting the total prohibition of dogs on the site;
- Beside temporary roads/haul routes noting a 50 km/hr speed limit, or 40 km/hr speed limit where roads traverse the environmental protection areas; and
- At approximately 100 m intervals along all fencing stating "Environmental Protection Zone – No Unauthorised Entry".

Permanent signage will be installed in conjunction with the permanent fencing at intervals of no more than 100 m to be installed during the operational phase in accordance with Section 7.3.6 of the Kings Forest KPoM (JWA 2019). This will include the following types of permanent signage:

- On the fauna exclusion fencing at intervals of no more than 100 m to be installed in conjunction with the permanent fencing, and including:
  - notification of conservation area;
  - warning of total prohibition of dogs within the conservation area;
  - contact details for Friends of the Koala as the primary organization for the rehabilitation of sick and injured koalas on the Tweed Coast;
  - contact information for incident reporting;
- In strategic locations within any public open space area and at fauna underpasses advising residents that koalas are active in the area and dogs should be kept on a leash at all times and encourage residents to keep dogs in enclosed yards between the hours of 6 pm and 6 am; and
- General koala warning signs in strategic locations, particularly where roads traverse or abut the environmental protection areas.

6.5.4 Other Infrastructure

All street lighting will be capped and/or positioned to minimise light spill into retained habitat and habitat rehabilitation areas.

6.5.5 Maintenance Requirements

Exclusion fencing (and associated grids, underpasses, signage etc.) are to be regularly checked and maintenance issues, including vegetation in close proximity to the fencing, addressed as they arise. Monitoring and maintenance of exclusion fencing (and associated grids, underpasses, signage etc.) will be the responsibility of the proponent until ownership of the land is transferred to a third party.

Regular inspections will be completed (at not less than 1 monthly intervals). Any damage to fences or signage will prompt immediate repair, within two (2) working days of the discovery of the damage, by Site or independent contractors as determined by the Site Manager.

6.6 Re-use of Topsoil

6.6.1 Introduction

Topsoil is an important source of seeds and propagules and has been effectively used in the rehabilitation of native vegetation communities (e.g. Bellairs and Bell 1993; Koch and Ward 1994; Ward *et al*. 1996). Handled correctly, the topsoil seedbank can be used to successfully revegetate after disturbances like bulk earthworks. To optimise the recovery of native vegetation rehabilitation areas in areas re-using topsoil the following should be considered:

1. It is important to consider the timing of topsoil recovery. Stripping topsoil immediately after summer seed drop may improve the germinable seed load (Berg 1975).
2. The seed bank is usually concentrated in the upper soil layer (i.e. 40–50 mm) so it is important to only remove this depth of soil. A greater depth will dilute the seed bank and reduce the effectiveness of the soil as a potential mechanism for natural regeneration (Putwain and Gillham 1990).
3. Topsoil should be used as soon as possible after stripping to prevent loss of seed viability (Koch *et al*. 1996; Mahesh *et al*. 1996).
4. Topsoil should be replaced at maximum depths of 100 mm (Rokich *et al*. 2000).

The re-use of topsoil, where appropriate, was conditioned as part of the Concept Plan approval (MP06_0318 – Condition C2). Due to historical land uses, much of the Kings Forest site has been cleared of native vegetation for some time and not all of the land to be developed will contain a suitable topsoil seedbank. Therefore, areas to be developed where a topsoil seedbank is likely to occur have been mapped (**FIGURE 14**) and topsoil in these areas should be conserved for re-use in revegetation areas where appropriate. At the commencement of earthworks at Kings Forest, stockpiles of topsoil from these areas will be created. This soil will then be used in the revegetation of heath areas within EMAs (refer to **SECTION 6.9**).

A specific seedbank translocation methodology has been prepared for the Kings Forest site and is provided in the following sections.

6.6.2 Topsoils Excavation

At the commencement of Bulk Earthworks, soil will be stripped from donor sites (**FIGURE 14**) to a depth of 40 – 50 mm. Material collected from donor sites will include leaf litter, ground plants and topsoil. Excavation work must be carried out as quickly as possible to minimise the amount of time seed-bearing soil is stockpiled and prevent loss of seed viability. It is recommended that the excavation of the donor site only be commenced once the recipient site has been prepared. Stockpiles should be built as long and as low as possible (no more than 1 metre thick), protected by silt fences and covered with weed matting.

6.6.3 Topsoil Translocation

Recipient heath revegetation areas (**FIGURE 14**) should be ripped to increase regeneration potential. All translocated soil spread into nominated recipient sites will remain at its original excavated profile (maximum depth of 100 mm). Following translocation, machinery must be

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary
- Waterbodies & Drainage Lines

REHABILITATION AREAS SUBJECT TO THIS VWMP

- Heath revegetation areas - Dry heath
- Heath regeneration areas - Dry heath
- Heath regeneration areas - Wet heath
- Assisted natural regeneration/revegetation of retained wetland communities
- Littoral rainforest revegetation areas
- Littoral rainforest regeneration areas

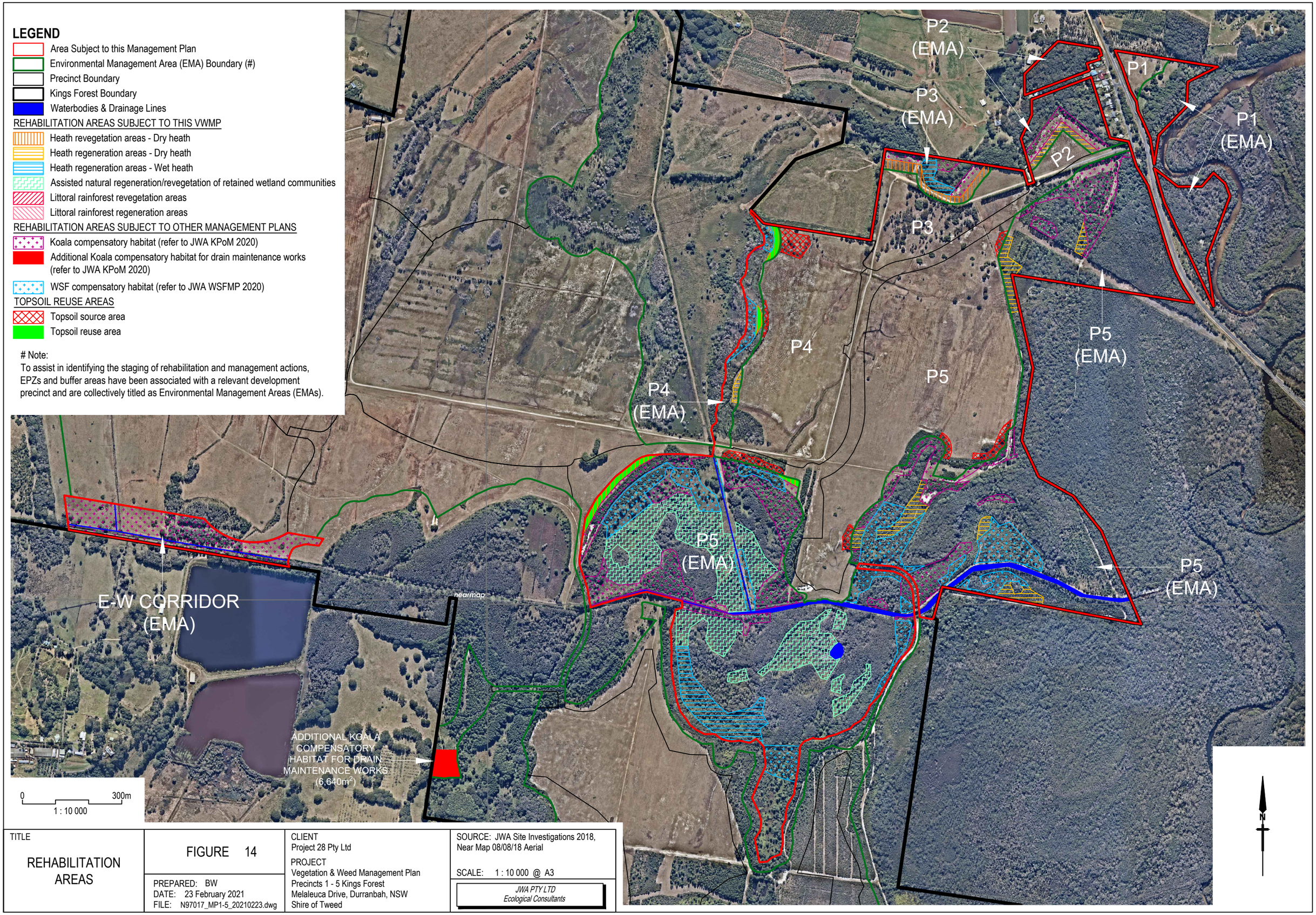
REHABILITATION AREAS SUBJECT TO OTHER MANAGEMENT PLANS

- Koala compensatory habitat (refer to JWA KPoM 2020)
- Additional Koala compensatory habitat for drain maintenance works (refer to JWA KPoM 2020)
- WSF compensatory habitat (refer to JWA WSFMP 2020)

TOPSOIL REUSE AREAS

- Topsoil source area
- Topsoil reuse area

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).



TITLE REHABILITATION AREAS	FIGURE 14 PREPARED: BW DATE: 23 February 2021 FILE: N97017_MP1-5_20210223.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018, Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

kept from entering the recipient site due to the risk of further compaction. Logs and large branches collected from the donor site will be hand rolled into place to provide habitat.

6.6.4 Ongoing Maintenance

The regeneration will be monitored at the recipient areas for five (5) years post translocation. Monitoring floristic diversity and abundance based on accepted benchmarks for the specific vegetation communities on the Kings Forest site will assess the success of the translocation. A suitably qualified bush regeneration company will be engaged to control any weed invasion or erosion problems.

Soil disturbance and exposure of the soil is considered sufficient to stimulate regeneration, however, an ecological burn on the recipient site may be required to stimulate regeneration. Research indicates that burning after soil translocation results in very good initial germination, which produces thick regrowth and limits weed recruitment. However, there are several negative effects attributed to burning:

- The seed bank germinates all at once completely depleting the seed bank;
- Regeneration is of the same age; and
- Due to fast and thick growth, less competitive species may be lost, resulting in a lower-diversity assemblage dominated by second stage pioneers.

For these reasons, an ecological burn is only deemed necessary if regeneration fails.

6.7 Management of Retained Vegetation

The aim of the management of retained vegetation within Precincts 1 - 5 EMAs is the permanent removal of weeds and assisted natural rehabilitation to enable the protection of EPZs and the Cudgen Nature Reserve.

Each retained vegetation area has been assigned an identifier which will be used to identify relevant rehabilitation areas on the ground and for monitoring and maintenance purposes (refer **SECTION 7**). Each different area will be separated by flat (5 cm x 2.5 cm) pegs painted in white at the top with the allocated identifying area number written on the white paint faced towards the relevant area.

Due to the significant disturbance history, Kings Forest supports a variety of weed species. Disturbance during the construction phase will create an opportunity for weeds to colonise and establish, therefore weeds should be diligently controlled during and after construction. Weeds will be controlled in accordance with the protocols described in **SECTION 6.8**. Retained vegetation will also be maintained/improved through assisted natural rehabilitation in accordance with the protocols as described in **SECTION 6.9**.

No areas are to be left bare after weed control works. Appropriate revegetation techniques (as discussed in **SECTION 6.9**) will be implemented where weed control works result in bare areas or areas of exposed topsoil.

6.8 Weed Management

6.8.1 Introduction

The weed management strategies outlined in this section will consist primarily of removal of extensive areas of weeds (e.g. Slash pine seedlings) and targeted removal of individual weed plants. All weed control works are only to be carried out by qualified and experienced personnel using accepted bush regeneration methodology and according to the specifications outlined in this plan. The proponent should appoint a preferred contractor following approval of the project, so that works can commence immediately.

The weed management strategies outlined in the following sections apply to all EMAs within Precincts 1 – 5 and the proposed East-West Corridor. Weed control works will also extend into the adjacent Cudgen Nature Reserve where necessary.

6.8.2 General Weed Management Strategies

The following general management strategies apply to any works on the site completed as part of this VWMP:

- Works should commence on-site once the project is approved.
- The vegetation protective measures, in particular the installation of fencing and erosion and sediment control measures, should be implemented prior to commencing weed control works.
- A long-term program of monitoring and evaluation of weed control sites is essential.
- On the completion of primary weed control works, secondary weed control will be ongoing to ensure weeds are appropriately suppressed. Once the site is occupied, a list of noxious and environmental weeds will be provided to residents and written into the Development Control Plan or other development design requirements for the site, to avoid the use of weed species for planting in private gardens.

6.8.3 Reducing the Spread of Weeds

The spread of weeds and weed seed can be facilitated by disturbance such as vegetation clearing, earthworks and construction activities. Weeds and weed seed can also be dispersed by personnel, equipment and vehicles. The following strategies are recommended to prevent the spread of weeds during earthworks and construction activities:

- Erosion and sediment control devices shall be installed prior to commencement of earthworks within Precincts 1 - 5 in accordance with the Erosion and Sediment Control Plan (G&S 2020d). This will not only prevent the movement of sediment into ecologically sensitive area but also the dispersal of weed seeds and vegetative material.
- A designated shakedown/wash area will be established for personnel, equipment and vehicles. Designated shakedown/wash area will not be located in or immediately adjacent to the EMAs.
- Weed hygiene will apply to machinery entering the site as well as movement within the site to minimise the risk of introducing new weeds and/or spreading existing weeds.

6.8.4 Targeted Weed Control

6.8.4.1 Introduction

As previously discussed, weed species that are considered particularly invasive and therefore a priority for control (e.g. Madeira vine, Pampas grass, Para grass), or that occurred over a sufficient area have been mapped within the Precincts 1 – 5 and associated EMAs, and the proposed East-West Corridor (**SECTION 4.5** and **FIGURE 11)**. Identified areas within the Precincts 1 – 5 EMAs and the proposed East-West Corridor will be targeted for weed control activities utilising techniques described in the following sections. All weeds within Precincts 1 - 5 EMAs and the proposed East-West Corridor will be controlled as part of the rehabilitation works onsite utilising the techniques described in this VWMP.

In addition to the weed control activities to be completed within Precincts 1 - 5 EMAs and the proposed East-West Corridor, targeted weed control will also be completed within the adjacent portions of the Cudgen Nature Reserve as follows:

- Control of immature Pines up to 100 m into adjacent Cudgen Nature Reserve; and
- Control of all other weeds up to 20 m into adjacent Cudgen Nature Reserve.

The abovementioned weed control works in Cudgen Nature Reserve will continue until such time the adjacent EMAs are transferred into public ownership or at an earlier time agreed between the proponent and BCD.

As weed control progresses in the targeted weed control areas, it is possible that new infestations of weeds (or new weed species) may be recorded over time. Recommendations to ensure that additional weed outbreaks are appropriately addressed include:

- A log of any new weed species and/or infestations is to be kept by the personnel in charge. Any new weed records are to be entered into the log with a GPS location, and the location marked with flagging tape;
- Logged records should be assessed as to their need for priority control (e.g. any highly invasive or noxious species should be controlled as a high priority); and
- Once prioritised, logged weed records should be allocated in work plans for specific zones. High priority species should be treated ASAP, while lower priority areas (e.g. pasture grasses) should be treated within the work unit as a whole.

It should be noted that the targeted weed control for Mysore thorn (*Caesalpinia decapetala*) and Giant devil's fig (*Solanum chrysotrichum*) has already commenced (late 2018) throughout the Kings Forest site by Bushland Restoration Services Pty Ltd.

6.8.4.2 Primary Weeding

Primary weed control is the initial process of weed removal through a series of targeted methods. During primary weeding the following procedures will be utilised:

- Primary weeding should commence at the start of the active growing period (approximately November);

- Where appropriate, primary weeding will be undertaken by hand, to prevent damage to native regrowth or seedlings;
- Careful hand weeding will occur for approximately 50 cm in diameter around the retained native species;
- Before any broad-scale spraying commences (i.e. where appropriate) all native species within treatment areas will be located and clearly marked for retention;
- All genetic material seeds, flowers, underground rhizomes, will be removed and disposed of at an approved green waste facility;
- Weed material that does not contain any fertile parts will be mulched and spread on the ground;
- Utmost care must be taken when utilizing chemicals to ensure that no drift occurs outside of the treatment area;
- Spraying should not occur on windy days or within 24 hours of predicted rainfall; and
- All chemical users should be experienced and licensed in accordance with the relevant legislation.

6.8.4.3 Secondary Weeding

Secondary weeding will eradicate weeds that have been overlooked or that re-shoot after primary treatment. Secondary weeding should occur six (6) weeks after primary weed control and then three (3) monthly for one (1) year and then six (6) monthly thereafter.

6.8.4.4 Control Methods

Specific weed control techniques appropriate to the control of each weed species found on the site are identified in **APPENDIX 3**. Descriptions of the weed control methods to be employed are provided in **APPENDIX 4**.

As many weed infestations within Precincts 1 - 5 EMAs occur around wetland environments, 'frog-friendly' forms of Glyphosate will be used at all times. Furthermore, wherever surfactants are used, the most benign equivalent will be used. Works adjacent to wetland environments should also be completed during the drier months of the year.

Operators will adhere to the following general principles:

- Weed trees (e.g. Camphor laurel) with trunk diameters greater than 10 cm and height greater than 1.3 m will be stem injected with a herbicide appropriate to the weed being treated (typically Glyphosate). The poisoned weed tree will be left standing to provide a perch for birds (frugivorous birds, in particular, are good seed disseminators).
- Weed saplings (less than 10 cm diameter), scramblers and shrubs will be either sprayed or the 'cut, scrape and paint' technique employed. Herbicide appropriate to the weed being treated will be used (typically Glyphosate). All plant material severed from the stump will be cut into easily compostable segments and spread on the forest floor in such a manner to minimise vegetative regrowth from the severed plant material.

Some areas of very dense (i.e. multiple stems per m^2) Slash pine wildings, generally to the exclusion of any native vegetation, have been identified throughout areas to be managed under this VWMP. Mechanical removal of these stands of Slash pine, potentially utilising a small tracked machine with a mulching head, should be considered.

6.9 Regeneration and Revegetation

6.9.1 Introduction

Site rehabilitation works will be completed by a suitably qualified bush regeneration company in accordance with the specifications contained in following sections. These specifications provide details of the proposed rehabilitation phases, site preparation, weed control, natural regeneration and revegetation works (including plant species lists). Performance indicators and targets for the proposed rehabilitation strategy to be achieved during the 'establishment period' and 'maintenance period' of the project (as defined within the Project approval MP08_0194) are contained in **SECTION 8.5**, along with corrective actions that are to be implemented if performance targets are not met.

6.9.2 Rehabilitation Area Selection

Assisted natural regeneration and revegetation works to be completed within Precincts 1 - 5 EMAs and the proposed East-West Corridor will, generally, occur within:

- Management Zone 4 - Creation of compensatory koala habitat in accordance with Section 7.6 of the Kings Forest KPoM (JWA 2019);
- Management Zone 5 - Creation of compensatory WSF habitat in accordance with Section 7.8 of the Kings Forest WSFMP (JWA 2020a);
- Management Zone 6 – Regeneration of heath communities including re-use of topsoil where appropriate (in accordance with **FIGURE 14** and **SECTION 6.6**);
- Management Zone 7 - Assisted natural regeneration/revegetation of Littoral rainforest vegetation in Precinct 1;
- Management Zone 8 – Assisted natural regeneration of retained wetland communities.

The methodology utilised in the selection rehabilitation areas and types within each management zone involved a tiered or "top-down" approach. A summary of each major step in the process is described in **APPENDIX 5.** The resulting areas requiring rehabilitation are identified in **FIGURE 14** and summarised in **TABLE 4.**

TABLE 4
REHABILITATION AREAS

Management Zone	Rehabilitation Area	PCT	TVMS	Size
Zone 4	Koala compensatory habitat - Refer to the Kings Forest KPoM (JWA 2019)	1136 / 1230 / 1064	306 / 305 / 401	18.69 ha
Zone 4	Additional Koala compensatory habitat for Drain Maintenance Works	1136	306	0.66 ha
Zone 5	WSF compensatory habitat - Refer to the Kings Forest WSFMP (JWA 2020a)	1290 / 1297 / 663	701 / 502 / 501	11.30 ha
Zone 6	Dry Heath Regeneration	663	501	3.39 ha
	Wet Heath Regeneration	1297	502	3.35 ha
	Dry Heath Revegetation	663	501	2.04 ha
Zone 7	Littoral Rainforest Regeneration	751	101	0.92 ha
	Littoral Rainforest Revegetation	751	101	0.58 ha
Zone 8	Wetland Regeneration	1911	701	12.32 ha
			TOTAL	**53.25 ha**

The assisted natural regeneration of retained vegetation (see **SECTION 6.7**), heath and wetland communities and regeneration/revegetation of Littoral rainforest communities are the focus of this VWMP. Compensatory koala and WSF habitat creation is to be completed in accordance with the Kings Forest KPoM (JWA 2019) and WSFMP (JWA 2020a) respectively.

6.9.3 Rehabilitation Phases

Site rehabilitation works (i.e. assisted natural regeneration and revegetation) will be completed by a suitably qualified[1] bush regeneration company and be undertaken in six (6) phases as follows:

- **Phase 1**: Site preparation of revegetation areas and retained vegetation areas (where necessary).
- **Phase 2**: Initial planting (where necessary) - will commence as soon as the bush regeneration team is satisfied that weed species have been successfully controlled.
- **Phase 3**: Establishment of revegetation sites and initial maintenance of assisted regeneration sites - it is planned that the establishment period will be of a minimum length of twelve (12) months during which time weeds will be controlled and watering will be undertaken on an 'as needs' basis.
- **Phase 4**: Supplementary planting to replace dead seedlings - will commence within two (2) months of the initial planting in each area. Replacement of seedlings/saplings that have died will continue during the approved monitoring period at a rate that will ensure a >90% survival of planted stock.

[1] A Bush Regeneration Company that has demonstrable experience in the rehabilitation or revegetation of native vegetation communities in the Tweed region.

- **Phase 5**: Additional plantings - works can commence where advanced canopy growth is evident, and the bush regeneration team determines that additional planting is necessary to satisfy the objectives of the offset strategy.
- **Phase 6**: Ongoing maintenance - will continue indefinitely on an as needed basis until performance targets have been met. If the performance targets have not been met, corrective actions will be implemented in accordance with **SECTION 8.5.5** of the VWMP.

6.9.4 Site Preparation

Site preparation will include the following actions:

- Erection of protective fencing and signage (as appropriate).
- Identification of retained vegetation and rehabilitation area - each retained vegetation area and rehabilitation area has been assigned an identifier which will be used to identify relevant rehabilitation areas on the ground and for monitoring and maintenance purposes (refer **SECTION 7**). Each different area will be separated by flat (5 cm x 2.5 cm) pegs painted in white at the top with the allocated identifying area number written on the white paint faced towards the relevant area.
- Primary and secondary weed control in accordance with **SECTION 6.8.4**.
- Planting works in accordance with the following sections.

6.9.5 Assisted Natural Regeneration

Natural regeneration refers to the natural process by which plants replace or re-establish themselves. Natural regeneration can be described as the "regrowth" or "vegetative recovery" which occurs spontaneously, by seed or otherwise, after a stress or disturbance (Temple and Bungey 1980). As long as mature and healthy native plants occur on the subject site, natural regeneration is an option.

Natural regeneration is a powerful tool that can be used to re-establish native vegetation. It ensures that the new growth is derived from genetic material (i.e. parents) that currently occupies the site and as such is adapted to local conditions. Additionally, the chance of outbreeding depression is reduced.

Natural regeneration will be encouraged within all retained vegetation (i.e. Management Zones 2 and 3) and rehabilitation areas (i.e. Management Zones 6 – 8). Natural recruitment will be monitored for the life of the rehabilitation project. Where natural recruitment is determined to be not currently occurring within retained vegetation and rehabilitation areas (e.g. areas devoid of native vegetation after weed control works), active revegetation through planting will be completed. Revegetation methods (if necessary) will follow those outlined below.

6.9.6 Revegetation Works

6.9.6.1 Introduction

Revegetation will commence no later than six (6) months after the primary weeding is completed. Successful completion of primary weeding will be determined by the appointed bush regeneration team. At this time, an assessment will be made as to level of natural

regeneration present within retained vegetation and rehabilitation areas. Any areas where the native seedling germination is considered to be low and impeding the achievement of rehabilitation objectives will require revegetation.

6.9.6.2 Sourcing Plants

Plants to be used for revegetation are to be either propagated in a nursery using material (seeds, cuttings, tissues, etc.) from species which occur onsite or obtained from a local nursery able to supply stock from local provenance. Where existing nursery stock from local provenance is not available, collection of propagation material should be carried out as detailed below.

Whenever possible, seed will be removed directly from plants by shaking or cutting branches over a tarpaulin. Secateurs will be sterilised between each use. Seed will be placed in small envelopes with the collection details clearly marked. If the seed is extremely small, it will be stored in glass or plastic vials to avoid undue loss. The seed will be cleaned, its viability checked and prepared for storage. Seed that has lost viability will not be used in the revegetation works due to the dangers of genetic aberration.

The following details will be collected from each source plant:

- Location (GPS position);
- Date of collection;
- Name of collector;
- Soil type;
- Health of plant; and
- Collection method.

The amount of seed collected will not exceed 5% per plant.

It should be noted that the planting list for Management Zone 7 (Littoral Rainforest regeneration/revegetation – see **TABLE 6**) includes two (2) threatened species - Stinking cryptocarya and White laceflower. Seeds and/or cuttings from specimens of these species located on site will be collected and grown for use in revegetation plantings within Management Zone 7.

Under the NSW *BC Act* (2016) a licence will be required for activities which are likely to:

- harm protected plants or a plant that is a threatened species or part of an endangered population or a threatened ecological community
- involve the collection of protected plant specimens or seeds, pick cuttings or whole plants

The Bush Regeneration Company chosen to complete rehabilitation works on the site must hold all necessary license and approvals to undertake the works.

TABLE 5 lists the fruiting times for each Threatened species and discussed the ease of propagation for each species. Comments on the ease of propagation have been obtained from following experienced local sources:

- Mark Dunphy (Manager of the Firewheel Rainforest Nursery); and
- Brett O'Donovan (Manager of Terania Creek Nursery).

TABLE 5
COMMENTS ON PROPAGATION OF THREATENED FLORA TO BE USED IN REVEGETATION WORKS

Species	Fruiting Period	Ease of Propagation	
		Dunphy Comments	O'Donovan Comments
Stinking laurel *(Cryptocarya foetida)*	Fruit ripe June – Aug	Easy	Hard to get seed (compete with birds) – good crop every few years
White laceflower *(Archidendron hendersonii)*	Fruit ripe June – Jan	Easy	Easy - fresh seed lasts a few weeks

It is expected that during the seed collection program, a site will be visited on several occasions to ensure optimum seed ripeness. The seed collection program will be prepared by the bushland restoration team in consultation with TSC and NSW NPWS prior to commencement.

If seed collection proves difficult or impossible, other forms of propagation, such as cuttings, may be attempted.

6.9.6.3 Planting Program

Tube stock seedlings will primarily be used for the plant-out. Seedlings will be sufficiently developed so as to have a significant chance of survival. Plants will be at least the sixth leaf stage and/or 20 cm in height. Tube stock will be sun hardened (plants should be held in full sunlight and systematically stressed to the point of wilting for at least two months prior to planting).

All exclusionary fencing (where applicable) will be in place prior to the commencement of construction and before planting occurs.

Planting will occur at the optimum time of year when there is high soil moisture (between January and May), unless irrigation is available and accessible.

If required, the restoration team may make minor alterations to this revegetation strategy depending on the site requirements. The following strategy will be employed:

- Secondary weeding - Planting sites will be spot sprayed with a frog friendly glyphosate product 3 - 4 weeks prior to commencement;
- All seedlings will be soaked in water overnight prior to planting;

- All seedlings will be provided with a wetting agent such as rain-saver[2] crystals where appropriate;
- Weeds will be controlled, in the short term, through the application of suitable mulch around individual plantings and with spot applications of an appropriate herbicide.
- All seedlings will be protected by a tree guard (commercial tubing or equivalent) or fencing if browsing becomes an issue; and
- Watering will be undertaken after the seedlings have been planted on an 'as needed' basis.

The seedlings shall be planted on the same day (or as soon as practicable) as their transport from the nursery. No seedlings will be left unprotected on the site whilst awaiting planting. Planted seedlings will be marked with a piece of biodegradable tape and staked.

The plants growing medium should be soaked prior to planting and the plant cores should be buried to approximately 1-2 cm deep. Only nitrogenous fertilisers will be used to avoid the introduction of Phosphorous, Potassium and other micronutrients. Planting in areas exposed to full sun or westerly sun will be avoided in the peak summer months, where possible.

6.9.6.4 Planting Density and Species Selection

A list of species to be used for planting within the proposed rehabilitation areas is provided in **TABLE 6**. Other suitable species may be used where appropriate.

The following plant spacings will be adopted:

Management Zone 6 - Heath Regeneration/Revegetation Areas

- Small trees/shrubs = 2-3 m centres; and
- Groundcovers (where necessary) = 1.5 m centres.

Management Zone 7 - Littoral Rainforest Regeneration/ Revegetation Areas

- Trees = 2-3 m centres;
- Small trees/shrubs = 2-3 m centres; and
- Groundcovers (where necessary) = 1.5 m centres.

Management Zone 8 - Wetland Regeneration Areas

- Groundcovers (where necessary) = 1.5 m centres.

[2] Rain-saver is a polymer water crystal that has been specifically developed for plants. The polymer absorbs and holds water and nutrients at a specific tension which makes it available to plant roots but does not release to the soil. Rain-saver has proven very successful in more difficult environments (e.g. Roadside plantings on the Pacific Motorway between Brisbane and the Gold Coast and in frontal dunes at Pottsville (R. Keene *pers comm.* 2000).

TABLE 6
PLANTING DETAILS

Management Zone	Management Intent	Area	PCT/TVMS to be recreated	Indicative trees, shrubs, or groundcover plant species to be planted*
Zone 4 – Koala Compensatory Habitat	Assisted regeneration/ revegetation	18.69 ha	Refer to Section 7.6 of the Kings Forest KPoM (JWA 2019)	
Zone 4 - Additional Koala compensatory habitat for Drain Maintenance Works	Assisted regeneration/ revegetation	0.66 ha	PCT 1136 / TVMS 306	Trees - *Eucalyptus tereticornis (> 50%) +/-Eucalyptus racemosa, Eucalyptus robusta, Corymbia intermedia*
				Small trees/Shrubs – n/a
				Ground – n/a
Zone 5 - Wallum Sedge Frog Compensatory Habitat	Assisted regeneration/ revegetation	11.30 ha	Refer to Section 7.8 of the Kings Forest WSFMP (JWA 2020a)	
Zone 6 - Heath Regeneration/ Revegetation Areas	Dry Heath Revegetation	2.04 ha	PCT 663 TVMS 501	Trees – n/a
				Small trees/Shrubs – *Allocasuarina littoralis; Banksia aemula; Boronia pinnata; Calytrix tetragona; Dillwynia retorta; Leptospermum polygalifolium. Leptospermum semibaccatum; Leptospermum trinervium; Melaleuca nodosa; Monotoca scoparia; Philotheca salsolifolia; Phyllota phylicoides; Xanthorrhoea glauca; Xanthorrhoea spp.*
				Ground – *Caustis recurvata; Coleocarya gracilis; Platysace lanceolata; Pteridium esculentum*
	Dry Heath Assisted regeneration (infill planting if necessary)	3.39 ha	PCT 663 TVMS 501	See dry heath revegetation areas above.

Management Zone	Management Intent	Area	PCT/TVMS to be recreated	Indicative trees, shrubs, or groundcover plant species to be planted*
	Wet Heath regeneration (infill planting if necessary)	3.35 ha	PCT 1297 TVMS 502	Trees – n/a
				Small trees/Shrubs – *Baeckea frutescens, Baeckea linifolia, Banksia ericifolia, Banksia oblongifolia, Banksia robur, Leptospermum juniperinum, Leptospermum liversidgei, Melaleuca nodosa, Sporadanthus interruptus, Xanthorrhoea fulva*
				Ground – *Eurychorda complanata, Pteridium esculentum, Sprengelia sprengelioides*
Zone 7 - Littoral Rainforest Regeneration/ Revegetation Areas	Revegetation	0.58 ha	PCT 751 TVMS 101	Trees – *Archidendron hendersonii; Cupaniopsis anacardioides; Cryptocarya foetida; Cryptocarya triplinervis; Drypetes deplanchei; Lophostemon confertus; Banksia integrifolia subsp. integrifolia; Syzygium smithii; S. oleosum*
				Small trees/Shrubs – *Acronychia imperforata; Guioa semiglauca; Canthium coprosmoides; Cordyline stricta; Wilkiea huegeliana*
				Ground – *Alpinia caerulea; Doodia aspera; Lomandra longifolia*
	Assisted regeneration (infill planting if necessary)	0.92 ha	PCT 751 TVMS 101	See Littoral rainforest revegetation areas above.
Zone 8 – Wetland Regeneration Area	Assisted regeneration (infill planting if necessary)	12.32 ha	PCT 1911 TVMS 701/702	Trees – n/a
				Small trees/Shrubs – n/a
				Ground – *Gahnia sieberiana, Baumea articulata, Baumea rubignosa, Triglochin procera, Shoenus melanostachys, Gleichenia dicarpa*
TOTAL		**53.25 ha**		
* Other suitable species may be used where appropriate.				

6.10 Transfer of Land to Public Ownership

In accordance with Section 7.10 of the Kings Forest KPoM (JWA 2019) a minimum of 150 ha of the Kings Forest site, contiguous with Cudgen Nature Reserve, is to be transferred to public ownership (in accordance with Concept Plan condition C3). Portions of the Precincts 1 – 5 EMAs are included within this 150 ha area (**FIGURE 15**). These areas will be protected by Nature Reserve zoning in perpetuity. The remaining EMAs across the site may also be transferred to public ownership, subject to agreement with TSC. These areas are known as Potential Council Land (PCL).

In accordance with Condition 3 of the Major Project Application 08_0194, Project 28 will submit to the Secretary a form of dealing(s) which will be registered on the title to the future BCD land and PCL. This registration will bind all future landowners to manage the dedicated land for conservation purposes (and to prevent any future development activities), ensure compliance with relevant management plans (in particular the KPoM), permit access by the Department, Council and BCD at all times and provide a release for any public authority from the registered dealing(s).

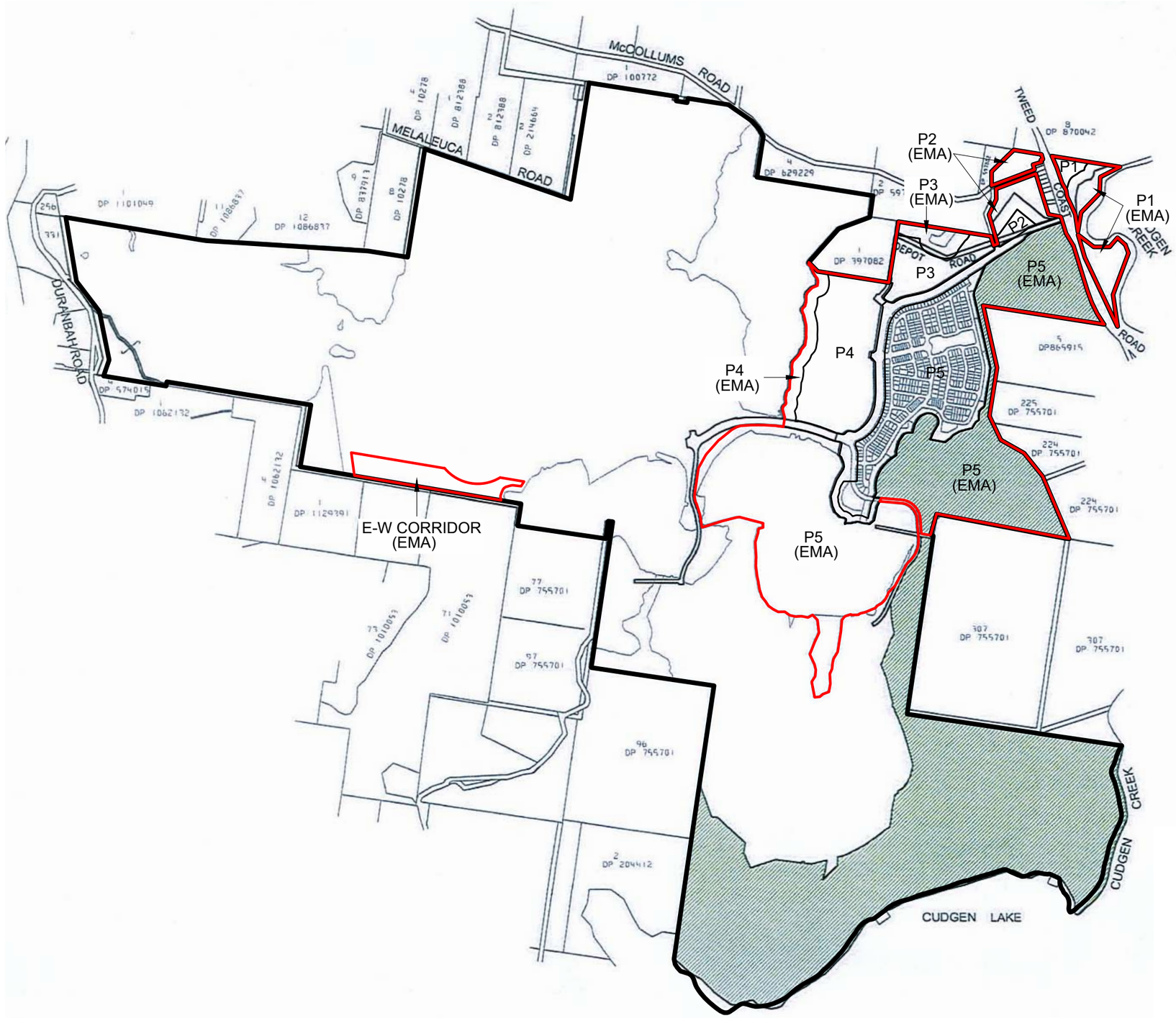
Prior to the commencement of works in a precinct, a registered surveyor will prepare survey plans and permanently mark the boundaries of the future BCD land and the PCL. These plans will be lodged with the Department on a precinct-by-precinct basis.

In accordance the Kings Forest KPoM (JWA 2019), the proponent will engage a suitably qualified independent environmental consultant, reviewed by TSC and approved by the Secretary to complete an environmental audit for each part of the Potential Council Land (PCL). The Audit will monitor the effectiveness of the environmental works (repair, enhancement and/or maintenance) and will aim to confirm that the establishment period and any relevant maintenance period criteria have been met. Details for the requirements of the environmental audits is provided in Section 8.6.3 of the Kings Forest KPoM (JWA 2019).

In accordance with Condition A13 of MP08_0194 (as modified), the proponent will be responsible for the management of all future BCD land and PCL until such time as an agreement is reached regarding the dedication of the land. The Proponent's intention is to dedicate these lands on a precinct by precinct basis, with all lands proposed to be dedicated prior to 2035. The maintenance of land dedicated with each relevant precinct will become the responsibility of the new landowner at the time of dedication.

6.11 Fire Management

The proponent will be responsible for bushfire management in the conserved bushland and wetland areas of the site, until ownership is transferred. In accordance with Section 7.11 of the Kings Forest KPoM (JWA 2019), Project 28 has engaged with BCD, Council and the Rural Fire Service to amend the Bushfire Management Plan (BushfireSafe 2020), which has included preparation of the associated Kings Forest Koala Fire Management Plan (Wildsite 2020), so as to ensure that a co-operative effort to minimise the potential for wildfires and fire frequencies occurs.



LEGEND

Area Subject to this Management Plan

Kings Forest Boundary

INDICATIVE AREAS TO BE DEDICATED TO NPWS

Conservation offset (Nature Reserve addition) land approx total area 180 ha
(150 ha per concept plan condition C3, additional 30 ha subject to agreement with NPWS)

NSW GOVERNMENT
Planning

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No. 08_0194

granted on the 11/8/13

Signed.....

Sheet No. 38 of 41

Note: Final boundaries are subject to agreement with Dept of Planning and Infrastructure

0 500m

1 : 20 000

SOURCE: Landsurv (Ref: Landsurv Revision C.pdf dated 23.08.12)

SCALE: 1 : 20 000 @ A3

JWA PTY LTD
Ecological Consultants

CLIENT
Project 28 Pty Ltd

PROJECT
Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 15

PREPARED: BW
DATE: 13 October 2020
FILE:N97017_Landsurv NPWS ded.cdr

TITLE

PROPOSED AREAS TO BE DEDICATED TO NPWS

Bushfire management actions for the Kings Forest site are detailed in the Kings Forest Stage 1 Bushfire Management Plan (BushfireSafe 2020). The Bushfire Management Plan outlines risk management strategies that aim to protect property and life and to reduce the threat to ecological and environmental assets. A fundamental strategy of the Bushfire Management Plan is to assess and manage fuel loads within the Kings Forest site. The Bushfire Management Plan (BushfireSafe 2020) also incorporates the Kings Forest Koala Fire Management Plan (Wildsite 2020) which details fire management strategies for koala habitat areas on the Kings Forest site. The aim of this plan is to protect and conserve the population and habitat of koalas and other associated biodiversity values in the Kings Forest area through the restoration and maintenance of appropriate fire regimes..

It has previously been noted (**SECTION 4.2**) that continued infestation of native vegetation with Slash pine wildings is occurring over the Kings Forest site. As well as decreasing the diversity and competing with native species, pine invasions can also lead to altered fire regimes. There is often a complete absence of fire where pine plantations occur due to the need to maintain the plantation as an economic resource. However, when fires do occur, they are of high intensity due to the highly flammable nature of pine trees and accumulated leaf litter (Skull 1995, 1998). The control of Slash pine wildings at the Kings Forest site is therefore a key consideration for the control of any future wildfires.

Adjacent to Kings Forest, the particular area of concern in terms of bushfire threat is the Cudgen Nature Reserve, including the lands currently forming part of the Kings Forest site to be added to the Reserve. The Cudgen Nature Reserve Fire Management Plan should be amended to include these additional areas prior to these areas being transferred to BCD.

6.12 Bond for Environmental Restoration and Maintenance Works

In accordance with the Major Project Approval (08-0184) Conditions 45A(8) and 50, environmental restoration and maintenance works within the EMAs are subject to a bond. See Section 7.6.7 of the Kings Forest KPoM (JWA 2019) for further explanation.

6.13 Environmental and Community Liaison Officer(s)

In accordance with the requirements of the Kings Forest KPoM (JWA 2019), the proponent must engage a Community Liaison Officer and an appropriately qualified Environmental Officer(s) for the duration of works. The Community Liaison Officer is required to consult with potentially affected property owners and the department before and during construction works and shall respond to complaints of an environmental impact nature. The Environmental Officer(s) shall oversee environmental compliance until all conditions have been satisfied. The roles of Community Liaison Officer and Environmental Officer may be undertaken by the same person.

Further details of the requirements for environmental and Community Liaison Officer(s) are provided in Section 7.13.3 of the Kings Forest KPoM (JWA 2019).

6.14 Adaptive Management

6.14.1 Introduction

Adaptive management is an approach that involves continually monitoring a process to evaluate its effectiveness, an improving the process based on this evaluation. It requires transparent planning systems and implementation strategies, and a strong emphasis on monitoring and reviewing to ensure emerging information is reflected in future planning. The principles of adaptive management have been incorporated into the administration of restoration projects within a variety of governmental authorities and programs (Thom 1997).

The Kings Forest site is a large and complex project with interrelated management plans and conditions and is expected to be carried out over many years. As the project evolves, it has been acknowledged by NSW DPI&E, BCD and TSC that conflicts between management plans may be identified during the management plan approval process. In addition, changes to site conditions and the results of monitoring (i.e. rehabilitation monitoring) may require amendments to the management actions anticipated in this VWMP and other environmental management plans.

The following sections outline the adaptive management approaches to be utilised to manage conflicts between management plans and to respond to issues identified during routine monitoring.

6.14.2 Management Plan Conflicts

Issues related to conflicts between management plans will be addressed using the following adaptive management approach:

1. Issues of concern will be identified as they are detected during the management plan review and approval process.
2. Approved management plans can only be updated using the adaptive management approach where the inconsistency:
    - results following the approval of an associated management plan, and:
    - is in response to advice from, or acknowledged in writing by TSC or a relevant State agency, and
    - is genuinely minor and/or administrative in nature, and
    - results in no additional environmental impact.

    Discretion as to whether approved management plans may be updated using the adaptive management approach (or may require re-satisfaction or a modification of the Project Approval) rests with the NSW DPI&E, in consultation with TSC, BCD and any other relevant agencies.
3. The management plan under review will be amended to acknowledge the issue(s) of concern and how the issue(s) will be addressed through the adaptive management provisions. Updates must be consistent with the rationale, aims, objectives and expected outcomes of the relevant management plan (e.g. the principles of the Koala Plan of Management) and continue to comply with the relevant conditions of the Project

Approval and any relevant benchmarks. For example, where proposed offset plantings conflict with other uses an alternative offset site will need to be located elsewhere to satisfy the overall offset commitment.

4. Once the plans commence implementation, the recommended adaptive management issues and the relevant management response should be implemented and included in the annual reporting for the affected management plan.
5. When management plans are updated (which is required for each new stage of the development) any changes made to the plan because of adaptive management are to be included in the updated plan and adaptive management log (**SECTION 6.14.4**). A copy of all management plans will be kept on the project website, clearly indicating current and archived versions.

6.14.3 VWMP Adaptive Management

Once the Precincts 1 – 5 VWMP commences implementation, it is possible that routine monitoring will identify issues with the strategies outlined in this report, in particular the health and conditions of the plantings, natural regeneration and the status of the weed infestation. Alteration to the design and maintenance of works may be required to ensure the objectives of the VWMP are achieved and will be addressed through the adaptive management provisions. Adaptive management strategies for this VWMP will be determined by the information provided in monitoring reports. Examples of adaptive management strategies that may be required within this VWMP include:

- Amendment of species list for revegetation works;
- Replacement of enhancement plantings that do not survive; and
- The status of the weed infestation and alteration of weed control methods or timing.

Before the implementation of any adaptive management strategy a brief report is to be provided to Project 28 Pty Ltd and other relevant agencies detailing the proposed management actions and the predicted outcomes. The implementation must be approved by the relevant authority prior to implementation.

When management plans are updated (which is required for each new stage of the development) any changes made to the plan because of adaptive management are to be included in the updated plan and adaptive management log (**SECTION 6.14.4**). A copy of all management plans will be kept on the project website, clearly indicating current and archived versions.

6.14.4 Adaptive Management Log

A log of changes to each management plan will be updated monthly and published on the project website. In addition, a copy of the adaptive management log will be included in the Annual Vegetation Monitoring Report (**SECTION 8.6.2**). The log shall include (as a minimum), the date, the title of the plan affected, an explanation of the inconsistency and update made, and confirmation that TSC, BCD or any relevant agencies support the amendment.

Issues identified with this Precincts 1 – 5 VWMP during the management plan review and approval process to date are outlined in **TABLE 7**.

TABLE 7
ADAPTIVE MANAGEMENT LOG

Date	Affected Management Plans	Conflict	Description of Issue	Proposed Adaptive Management Response	Confirmation of TSC, BCD or Any Relevant Agencies Support the Amendment	Success of Adaptive Management Response
February 2021	Kings Forest KPOM (JWA 2019), Precincts 1-5 VWMP and DMMP (G&S 2021)	The Drain Maintenance Management Plan (G&S 2021) identifies that 6,639 m^2 of proposed Koala compensatory habitat area will be impacted by a required drain maintenance trail along Blacks Creek.	Drainage management maintenance trails identified in the DMMP (G&S 2021) occur within proposed koala compensatory habitat areas.	An additional 6,639 m^2 of Koala compensatory habitat (dry primary) will be planted within the southern section of Precinct 12 to make up for the shortfall. The proposed location of the additional Koala compensatory habitat is shown in **FIGURE 14**. Plantings for this additional Koala compensatory habitat will occur concurrent with the creation of Koala compensatory habitat in Precinct 5 and will be completed in accordance with the methodology outlined in **SECTION 6.9** and Section 7.6 of the Kings Forest KPoM (JWA 2019).		
August 2020	Kings Forest WSFMP (JWA 2019), Precincts 1-5 VWMP and DMMP (G&S 2021)	Shortfall of WSF compensatory habitat	Drainage management maintenance trails identified in the DMMP (G&S 2021) occur within proposed WSF compensatory habitat.	Identify alternate WSF compensatory habitat areas to satisfy the overall offset commitment and update Kings Forest WSFMP to include revised compensatory habitat area(s).		

7 PROJECT WORK PLAN

As detailed in **SECTIONS 6.7 and 6.9**, mapped polygons within Precincts 1 – 5 and the proposed East-West Corridor Management Zones 2 - 8 have been allocated an individual identifying number (**FIGURE 16**) and will be clearly marked and identified on the ground (where necessary). Flat (5 cm x 2.5 cm) pegs (painted in white at the top) with the allocated identifying area number written on the white paint will be placed at each truncation on the boundaries of each polygon. However, where management polygons are encircled by another polygon requiring similar management (e.g. small WSF retained habitat polygon within a larger koala retained habitat polygon), only the outer boundary of the larger polygon will be pegged rather than the individual smaller polygons.

Each management polygon within Precincts 1 - 5 EMAs and the proposed East-West Corridor has been assessed to determine and/or map the following:

- Areas requiring specific management actions (i.e. pegging boundaries, monitoring natural regeneration etc.);
- Areas requiring significant weed control in accordance with **SECTION 6.8**; and
- Areas of cleared/highly disturbed land that will require revegetation in accordance with **SECTION 6.9**.

This process has been completed to ensure that resources are adequately allocated to each management polygon and to areas requiring the greatest level of rehabilitation effort. The results of the above mapping process are shown in **FIGURE 17. APPENDIX 6** provides further details to direct the above management and rehabilitation works.

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary
- Waterbodies & Drainage Lines

MANAGEMENT ZONES

- # Polygon Boundary & Identifier (KR-#, WR-#, KC-#, WC#, H-#, LR-#, W#)
- Zone 1 - Construction zone
- Zone 2 - Retained Koala habitat
- Zone 3 - Retained WSF habitat
- Zone 4 - Koala compensatory habitat
- Zone 4 - Additional Koala compensatory habitat for drain maintenance works
- Zone 5 - WSF compensatory habitat
- Zone 6 - Heath regeneration/revegetation
- Zone 7 - Littoral rainforest regeneration/revegetation
- Zone 8 - Wetland regeneration
- Zone 9 - Residual land

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

P1 (EMA)
P2 (EMA)
P3 (EMA)
P4 (EMA)
P5 (EMA)
E-W CORRIDOR (EMA)

ADDITIONAL KOALA COMPENSATORY HABITAT FOR DRAIN MAINTENANCE WORKS (6,640m^2)

0 300m
1 : 10 000

TITLE POLYGON IDENTIFIERS	FIGURE 16 PREPARED: BW DATE: 04 March 2021 FILE: N97017_MP 1-5_20210304.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018-2020, Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

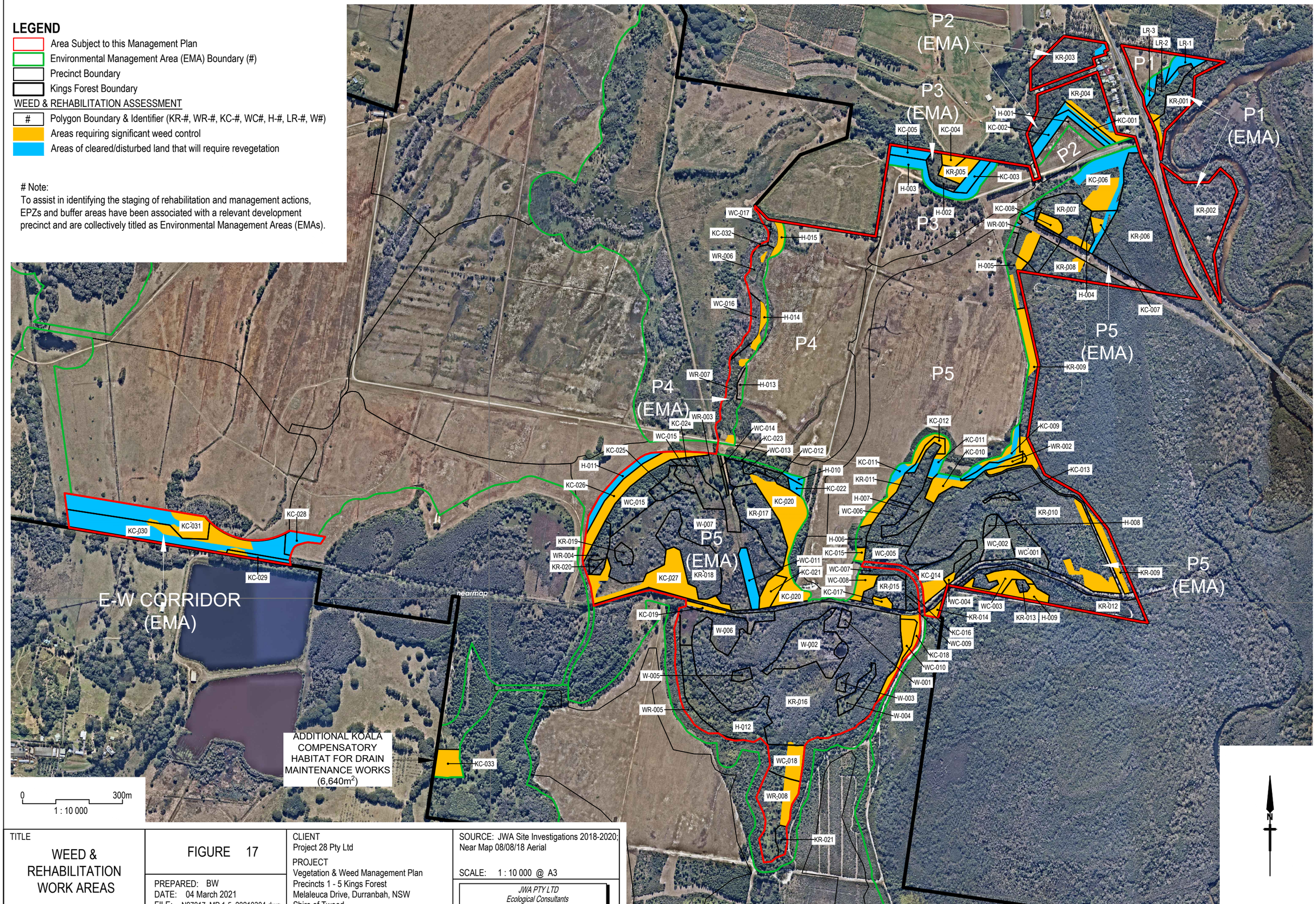
LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary

WEED & REHABILITATION ASSESSMENT

- # Polygon Boundary & Identifier (KR-#, WR-#, KC-#, WC#, H-#, LR-#, W#)
- Areas requiring significant weed control
- Areas of cleared/disturbed land that will require revegetation

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).



TITLE WEED & REHABILITATION WORK AREAS	FIGURE 17 PREPARED: BW DATE: 04 March 2021 FILE: N97017_MP 1-5_20210304.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018-2020; Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*

8 MONITORING AND REPORTING

8.1 Introduction

Monitoring will be undertaken to determine the effectiveness of mitigation measures implemented. Monitoring will be required during the 'establishment period[3]' and 'maintenance period[4]' of the project as defined within the Project approval (MP08_0194). Monitoring of Precincts 1 - 5 EMAs and the proposed East-West Corridor has been separated into three (3) types:

- Baseline monitoring – completed in Management Zones 2 – 8;
- Monitoring of retained vegetation – completed in Management Zones 2 and 3; and
- Rehabilitation monitoring – completed in Management Zones 4 - 8.

Monitoring of exclusion fencing and other infrastructure (e.g. signage) will be completed in accordance with Section 8.5 of the Kings Forest KPoM (JWA 2019).

8.2 Baseline Monitoring

8.2.1 Background

Baseline monitoring will be completed by a suitably qualified ecologists within retained habitat areas (Management Zones 2 and 3), compensatory habitat areas (Management Zones 4 and 5) and other proposed revegetation/ regeneration areas (i.e. Management Zones 6 - 8) in accordance with the following sections. Additionally, the bush regeneration team will gather baseline data at each weed treatment site prior to commencement of weed control (refer to **SECTION 8.3**).

8.2.2 Monitoring Locations

The locations of baseline monitoring within Management Zones 2 – 5 will generally utilise field sites sampled in 2010 during the Tweed Coast Koala Habitat Study (Phillips *et al*. 2011) where appropriate. Additional field sites have been identified to ensure representative sampling of all habitat types (**FIGURE 18**). The methodology for the Tweed Coast Koala Habitat Study included the positioning of a 600 m x 600 m grid overlaid on the site so as to ensure uniform and unbiased coverage.

Baseline data for other proposed revegetation/regeneration areas (i.e. Management Zones 6 - 8) will be collected from appropriate locations (i.e. suitable PCTs and/or TVMS communities) within the Cudgen Nature Reserve (**FIGURE 19**). To determine appropriate baseline survey locations within Cudgen Nature Reserve, the TVMS (2004) vegetation mapping was reviewed

[3] means the period commencing with the implementation of the relevant approved environmental management plan(s) and ending when the works specified in that plan meet the establishment period performance criteria (as defined by the relevant approved environmental management plan) to the satisfaction of the Secretary. The establishment period represents the time necessary to carry out initial environmental repair, restoration and monitoring prior to ongoing maintenance.

[4] means the period commencing immediately after the end of the establishment period during which environmental management and monitoring works specified in the relevant approved environmental management plan(s) are to be carried out in accordance with the maintenance period performance criteria (as defined by the relevant approved environmental management plan) to the satisfaction of the Secretary.

LEGEND

- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary
- Waterbodies & Drainage Lines

MONITORING SITES

- Vegetation monitoring site - Transect and photo monitoring site
- Vegetation monitoring site - Photo monitoring site

MANAGEMENT ZONES

- Zone 1 - Construction zone
- Zone 2 - Retained Koala habitat
- Zone 3 - Retained WSF habitat
- Zone 4 - Koala compensatory habitat
- Zone 4 - Additional Koala compensatory habitat for drain maintenance works
- Zone 5 - WSF compensatory habitat
- Zone 6 - Heath regeneration/revegetation
- Zone 7 - Littoral rainforest regeneration/revegetation
- Zone 8 - Wetland regeneration
- Zone 9 - Residual land

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

P2 (EMA)
P3 (EMA)
P1 (EMA)
P4 (EMA)
P5 (EMA)
E-W CORRIDOR (EMA)
P1
P3
P4
P5

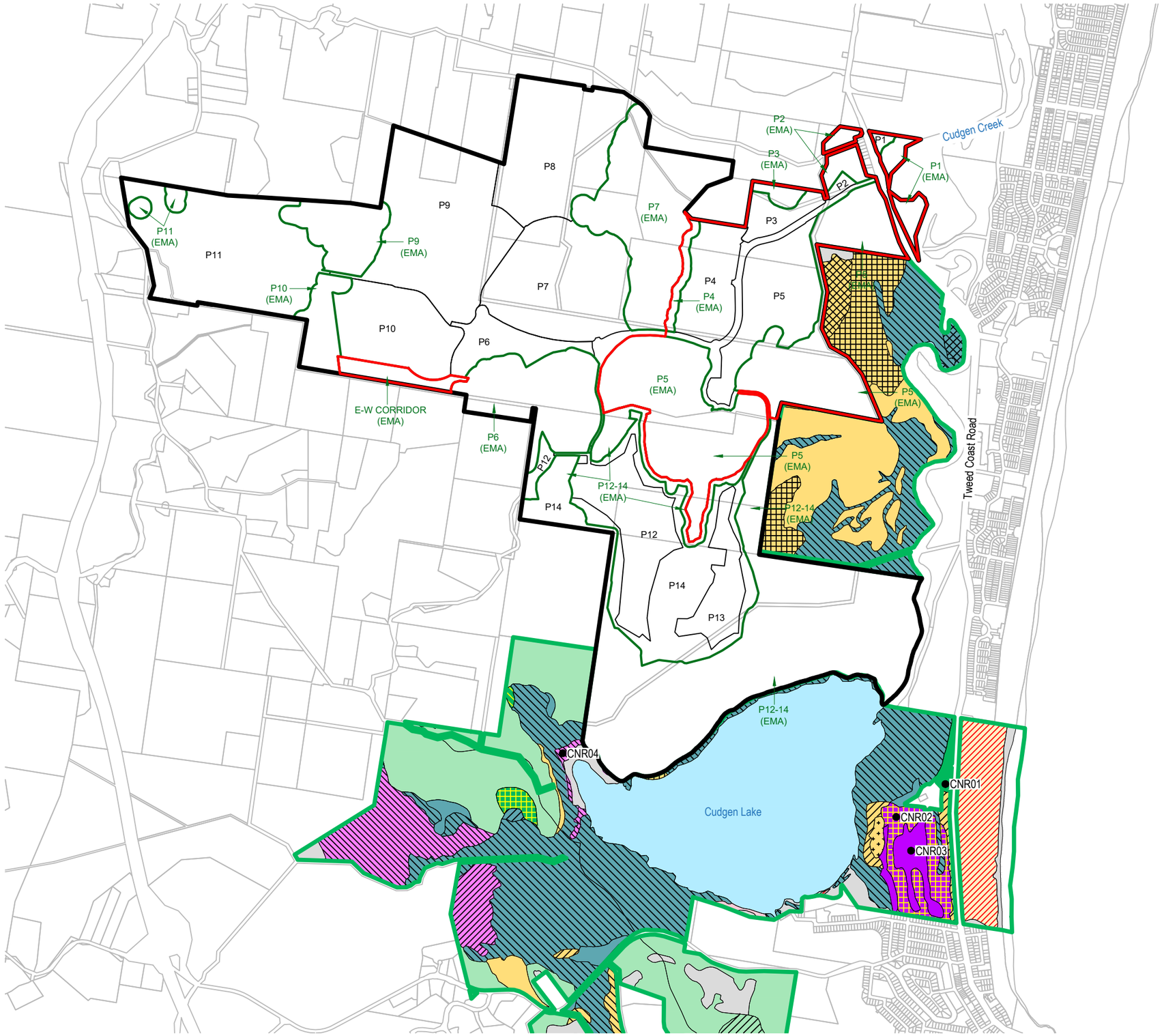
TC300 KR01 LRF01 LRF02 KFM27 KC01 HR14 HR15 KC02 HR17 HR06 HR16 KC03 KR02 KC05 KC04 HR01 KFM33 TC301 KR03 HR02 KFM32 KC15 KFM20 KC16 KR04 WSFC09 WSFC10 WSFC23 WSFC24 KC26 HR12 KC25 WSFR06 HR36 KC06 WSFR04 KC08 KR05 KC07 WSFC11 KFM36 KC21 HR21 HR03 HR05 KFM08 KFM07 WSFC20 KFM06 KR06 WSFC03 WSFC02 KR11 WSFC04 WSFC22 KR08 KC24 WSFC08 WSFC07 KC09 WSFC21 KC22 KC11 HR04 KR07 KR09 WSFC05 KFM04 WR04 WR03 WSFC06 KFM02 KR17 KFM37 KR16 KC40 KC10 KC41

ADDITIONAL KOALA COMPENSATORY HABITAT FOR DRAIN MAINTENANCE WORKS (6,640m^2)

0 300m
1 : 10 000

N

TITLE MONITORING SITES	FIGURE 18 PREPARED: BW DATE: 04 March 2021 FILE: N97017_MP 1-5_20210304.dwg	CLIENT Project 28 Pty Ltd PROJECT Vegetation & Weed Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed	SOURCE: JWA Site Investigations 2018-2020, Near Map 08/08/18 Aerial SCALE: 1 : 10 000 @ A3 *JWA PTY LTD* *Ecological Consultants*



LEGEND

- Cudgen Nature Reserve Baseline Monitoring Site (CNR)
- Cudgen Nature Reserve Boundary
- Area Subject to this Management Plan
- Environmental Management Area (EMA) Boundary (#)
- Precinct Boundary
- Kings Forest Boundary

CUDGEN NATURE RESERVE VEGETATION COMMUNITIES (TSC 2004)

Rainforest and Riparian Communities

- 101 - Littoral Rainforest
- 102 - Sub-tropical / Warm Temperate Rainforest on Bedrock Substrates
- 104 - Lowland Rainforest on Floodplain

Sclerophyll Open Forests on Bedrock Substrates

- 201 - Blackbutt Open Forest Complex
- 207 - Brush Box Open Forest

Sclerophyll Forests / Woodlands on Sand Substrates and Alluvium

- 301 - Coastal Pink Bloodwood Open Forest to Woodland
- 303 - Coastal Brush Box Open Forest to Woodland
- 305 - Coastal Swamp Mahogany Open Forest to Woodland
- 306 - Coastal Scribbly Gum Open Forest to Woodland
- 307 - Coastal Blackbutt Open Forest to Woodland
- 309 - Coastal Swamp Box Open Forest to Woodland
- 312 - Black She-oak Low Open Forest to Woodland

Melaleuca and Swamp She-oak Forests

- 401 - Broad-leaved Paperbark Closed Forest to Woodland
- 402 - Broad-leaved Paperbark / Swamp She-oak Closed Forest to Woodland
- 403 - Broad-leaved Paperbark + Eucalyptus spp. +/- Swamp Box Closed Forest to Woodland
- 601 - Swamp She-oak Closed Forest to Woodland

Heathlands

- 501 - Dry Coastal Heathland to Shrubland
- 502 - Wet Coastal Heathland to Shrubland

Sedgeland and Rushland Communities

- 701 - Sedgeland / Rushland (Murray & James 1998 Study Area Only)
- 702 - Fernland / Forbland (Murray & James 1998 Study Area Only)

Highly Modified / Disturbed

- 902 - Native Grasslands (Murray & James 1998 Study Area Only)
- 1006 - Exotic Plantation
- 1008 - Post-mining Regeneration
- 1099 - Substantially Cleared of Native Vegetation

Miscellaneous Map Units

- 903 - Open Water
- 998 - Not Assessed

Note:
To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).

0 500m
1 : 25 000

SOURCE: Tweed Vegetation Management Strategy 2004

SCALE: 1 : 25 000 @ A3

JWA PTY LTD
Ecological Consultants

CLIENT
Project 28 Pty Ltd

PROJECT
Vegetation & Weed Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 19

PREPARED: BW
DATE: 14 October 2020
FILE: N97017_MP 1-5_20201013.dwg

TITLE
CUDGEN NATURE RESERVE - BASELINE VEGETATION SURVEY SITES

and vegetation types compared to those within Management Zones 6 - 8. Suitable locations for baseline surveys within Cudgen Nature Reserve (i.e. areas comprising the same PCTs/TVMS communities) are identified in **FIGURE 19** and listed in **TABLE 8** below.

TABLE 8
CUDGEN NATURE RESERVE BASELINE MONITORING SITES

Baseline Survey Site	Vegetation Type	PCT	TVMS
CNR01	Littoral rainforest	751	101
CNR02	Dry coastal heathland to shrubland	663	501
CNR03	Wet coastal heathland to shrubland	1297	502
CNR04	Sedgeland/rushland	1911	701

8.2.3 Methodology

8.2.3.1 Introduction

To assess if the project completion criteria have been met, vegetation assessments will be completed using plot-based vegetation surveys (transects) and photo point monitoring at the locations discussed above.

8.2.3.2 Plot-Based Vegetation Surveys

Plot-based vegetation surveys (transects) will be undertaken at the monitoring locations shown on **FIGURE 18** and **FIGURE 19**. Vegetation survey sites will be permanently marked (i.e. star pickets or wooden stakes) and the end positions identified on a sitemap using a hand-held Global Positioning System (GPS).

The plot-based vegetation surveys will be based on a 20 m × 20 m plot (or 400 m^2 equivalent for linear areas). Survey plots should be established around a central 50 m transect as follows:

a) One (1) 400 m^2 plot (standard 20 m x 20 m) is used to assess all performance indicators as set out in **TABLE 9** below.

b) Five (5) 1 m^2 sub-plots can be added to the program for the first monitoring event to assess groundcover recruitment for the plot. A decision as to the utility of these plots can be made after the first or second monitoring events.

The assessor will assess the plot for the information contained in **TABLE 9**.

TABLE 9
VEGETATION SURVEY DATA TO BE COLLECTED

Attribute	Survey Required
Native Canopy Cover	Native canopy cover will be measured via the 'line intercept method' along the 50 m transect. Key canopy species will be noted.
Weed Canopy Cover	Weed canopy cover will be measured via the 'line intercept method' along the 50 m transect. Individual canopy weed species should be assessed separately.

Attribute	Survey Required
Native Midstorey Cover	Estimate the % foliage cover of each native species within the midstorey across the 400 m^2 plot. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…).
Weed Presence in the Midstorey	Estimate the % foliage cover of each weed species within the midstorey across the 400 m^2 plot. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…).
Groundcover	Estimate percentage cover of native species vs. weeds within each of the five (5) 1 m^2 sub-plots. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…). Identify each native and weed groundcover species.

The full species name (genus species) must be recorded for all native species, unless insufficient diagnostic plant material is present, in which case the genus name followed by a species number must be used. Comments should also be included for all attributes (**TABLE 9**) on any notable variations elsewhere in the relevant management polygon - e.g. weeds occurring in the management polygon that are not (or poorly) represented in the transect.

8.2.3.3 Photo Point Monitoring

Photo-monitoring points will be completed as a means of demonstrating compliance or otherwise with performance criteria. Permanent photo stations are to be located at each monitoring location (**FIGURE 18** and **FIGURE 19**). Where transects are to be established, photo points have been located on each transect. Where selected vegetation/habitat polygons are too small in size and/or are not covered by transects, photo point monitoring points will be identified, mapped and included in the baseline monitoring report.

Four (4) photos are to be taken from each photo point. Photos are to be taken to the north, south, east and west. Photos should be labelled with the:

- Transect code or photo point code;
- Direction of view; and
- Date and time.

Photos must be supplied in the Annual Monitoring Reports in a form of prints no smaller than 4” x 6” and must be colour.

8.2.4 Timing of Baseline Monitoring Visits

Collection of baseline data will be completed prior to commencement of construction.

8.3 Bush Regeneration Team Monitoring

The Bush Regeneration Team will be gather baseline data at each weed treatment site prior to commencement of weed control to assist in documenting vegetation recovery in the long term. A baseline monitoring proforma is contained in **APPENDIX 7**.

The bush regeneration team will also keep detailed work sheets for all works completed within retained habitat areas (Management Zones 2 and 3), compensatory habitat areas (Management Zones 4 and 5) and other proposed revegetation/ regeneration areas (i.e. Management Zones 6 - 8), recording the following:

- All work completed each day;
- Site conditions;
- Chemicals used;
- Problems encountered; and
- Future works required.

A daily work sheet template is attached in **APPENDIX 8**. These records and general comments on progress will be provided to the Ecologist for consideration and inclusion in the annual vegetation monitoring reports (**SECTION 8.6.2**).

8.4 Monitoring Retained Vegetation

8.4.1 Background

Ongoing vegetation monitoring will be completed by an Ecologist within retained habitat areas (Management Zones 2 and 3), in accordance with the following sections. In addition, in the event of a planned or unplanned bushfire occurring on the Kings Forest site, an additional vegetation monitoring event is to be completed in accordance with the following sections.

8.4.2 Monitoring Locations

Ongoing vegetation monitoring within retained habitat areas (Management Zones 2 and 3) will utilise the same monitoring locations as the baseline monitoring as discussed in **SECTION 8.2** above.

In the event of a planned or unplanned bushfire on the Kings Forest site, an additional monitoring event is to be completed within the affected area at monitoring sites spaced no more than 100 m. Where possible, this should include any of the standard monitoring sites as shown in **FIGURE 18**.

8.4.3 Methodology

Ongoing vegetation monitoring and additional bushfire monitoring events will utilise the same methodology (i.e. plot-based vegetation surveys and photo point monitoring) as discussed for the baseline monitoring above (**SECTION 8.2**).

8.4.4 Timing of Monitoring Visits

Monitoring events should occur:

- To set up monitoring transects and quadrats, and to collect the first round of monitoring data after 1st event of secondary weeding;
- Six (6) monthly until the establishment period performance criteria are met; and
- Then annually during the maintenance period.

In the event of a planned or unplanned bushfire on the Kings Forest site an additional monitoring event will be completed three (3) to six (6) months after the bushfire to inform any additional maintenance and rehabilitation requirements.

8.4.5 Performance Targets and Corrective Actions

TABLE 10 provides the performance indicators and targets for retained vegetation/habitat within Management Zones 2 and 3. Corrective actions are provided that are to be implemented if performance targets are not met.

TABLE 10
PERFORMANCE TARGETS AND CORRECTIVE ACTIONS

Performance Indicator	Target - Establishment period[1]	Target - Maintenance period[2]	Corrective Actions
Natural recruitment of native species.	Evidence of natural recruitment of shrub and ground cover species.	Increasing natural recruitment of shrub and groundcover species.	Where natural recruitment fails to meet performance targets discussions with BCD and TSC shall be initiated by the proponent or their consultants to consider adjustments to the assisted regeneration strategy being used to improve natural recruitment.
All identified weeds controlled to an acceptable level within retained vegetation areas.	Foliage Projective Cover (FPC) (%) assessed using eye estimates or photo points reduced to <10% within first year.	Foliage Projective Cover (FPC) (%) assessed using eye estimates or photo points: • reduced to <10% within first year; • <10% in second year; • <5% in the third year and consecutive years.	Weed control as necessary.

Performance Indicator	Target - Establishment period[1]	Target - Maintenance period[2]	Corrective Actions
Infrastructure (e.g. protection fencing, signage, erosion and sediment control devices) functional and well-maintained.	Relevant infrastructure maintained.	Relevant infrastructure in condition suitable for hand over to TSC.	Maintenance as necessary.

Notes:

[1] "Establishment period" means the period during which initial environmental repair, restoration and monitoring works required by the relevant approved environmental management plan(s) are undertaken. The establishment period ends when the works meet the establishment period performance criteria, as defined by the relevant approved environmental management plans, to the satisfaction of the Secretary.

[2] "Maintenance period" means the period of environmental management and monitoring works commencing immediately after the end of the establishment period. Maintenance period works are to be carried out in accordance with the relevant performance criteria (as defined by the relevant approved environmental management plan) to the satisfaction of the Secretary.

8.5 Rehabilitation Monitoring

8.5.1 Background

Monitoring is crucial in ensuring the continuing success of the rehabilitation program, including topsoil re-use areas, and will be carried out for the duration of this plan. Monitoring in accordance with this VWMP will be completed within the following revegetation/regeneration areas of the Precincts 1 - 5 EMAs (**FIGURE 12**):

- Management Zone 6 – Heath regeneration/revegetation;
- Management Zone 7 – Littoral rainforest regeneration/revegetation; and
- Management Zone 8 – Wetland regeneration.

Details of the rehabilitation monitoring program in these Management Zones are provided in the following sections.

Monitoring will also be completed within areas of compensatory habitat within the Precincts 1 - 5 EMAs and the proposed East-West Corridor (**FIGURE 12**) as follows:

- Management Zone 4 – Compensatory koala habitat: monitored in accordance with Section 8.4 of the KPoM (JWA 2019); and
- Management Zone 5 – Compensatory WSF habitat: monitored in accordance with Section 8.5 of the WSFMP (JWA 2020a).

The above documents contain detailed monitoring programs respectively including monitoring methodologies, locations, timing of monitoring events, performance targets and corrective actions.

In addition, in the event of a planned or unplanned bushfire occurring on the Kings Forest site, an additional rehabilitation monitoring event is to be completed in accordance with the following sections.

8.5.2 Monitoring Locations

Ongoing rehabilitation monitoring within Management Zones 6 - 8 will occur in locations shown in **FIGURE 18.** Field sites have been selected to ensure representative sampling of all rehabilitation areas within Management Zones 6 - 8 and to ensure uniform and unbiased coverage.

In the event of a planned or unplanned bushfire on the Kings Forest site, an additional monitoring event is to be completed within the affected area at monitoring sites spaced no more than 100 m. Where possible, this should include any of the standard monitoring sites as shown in **FIGURE 18**.

8.5.3 Methodology

Ongoing vegetation monitoring will utilise the same methodology (i.e. plot-based vegetation surveys and photo point monitoring) as discussed for the baseline monitoring above (**SECTION 8.2**), however the assessor will assess the plot for a slightly expanded list of details/data contained in **TABLE 11**.

TABLE 11
VEGETATION SURVEY DATA TO BE COLLECTED

Attribute	Survey Required
Seedling Survival	The first monitoring event will require a count of the total number of seedlings, individual species counts and a count of the number of dead or dying seedlings of each species. Subsequent monitoring events will only require counts of dead or dying seedlings and their species identification.
Native Canopy Cover	Native canopy cover will be measured via the 'line intercept method' along the 50 m transect. Key canopy species will be noted.
Weed Canopy Cover	Weed canopy cover will be measured via the 'line intercept method' along the 50 m transect. Individual canopy weed species should be assessed separately.
Native Midstorey Cover	Estimate the % foliage cover of each native species within the midstorey across the 400 m^2 plot. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…).
Weed Presence in the Midstorey	Estimate the % foliage cover of each weed species within the midstorey across the 400 m^2 plot. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…).

Attribute	Survey Required
Groundcover species	Estimate percentage cover of native species vs. weeds within each of the five (5) 1 m^2 sub-plots. Cover should be recorded in decimals if less than 1% (0.1, 0.2…), or whole numbers up to 5% (1, 2, 3…), or to the nearest 5% where greater than 5% cover (5, 10, 15, 20, 25…). Identify each native and weed groundcover species
Shrub and Groundcover Recruitment	Identify the numbers of native shrub and groundcover species recruiting within each of the five (5) 1 m^2 sub-plots. The identification of individual recruits may not be possible when they first appear. These should be recorded as unidentified until the next or subsequent monitoring events.

The full species name (genus species) must be recorded for all native species, unless insufficient diagnostic plant material is present, in which case the genus name followed by a species number must be used. Comments should also be included for all attributes (**TABLE 11**) on any notable variations elsewhere in the relevant management polygon - e.g. weeds occurring in the management polygon that are not (or poorly) represented in the transect.

8.5.4 Timing of Monitoring Visits

Monitoring events should occur:

- To set up monitoring transects and quadrats, and to collect the first round of monitoring data after 1st event of secondary weeding;
- Six (6) monthly until the establishment period performance criteria are met; and
- Then annually during the maintenance period.

In the event of a planned or unplanned bushfire on the Kings Forest site an additional monitoring event will be completed three (3) to six (6) months after the bushfire to inform any additional maintenance and rehabilitation requirements.

8.5.5 Performance Targets and Corrective Actions

TABLE 12 provides the performance indicators and targets for the proposed rehabilitation strategy within Management Zones 6 - 8. Corrective actions are provided that are to be implemented if performance targets are not met.

TABLE 12
PERFORMANCE TARGETS AND CORRECTIVE ACTIONS

Performance Indicator	Target – Establishment period[1]	Target – Maintenance period[2]	Corrective Actions
Survival and continued growth of seedlings (i.e. planted stock).	>90% survival of plantings during all monitoring events.	>90% survival of plantings during all monitoring events	Irrigation if required. Additional planting if required.
Establishment of native ground cover within revegetation areas.	Planted ground covers substantially established[3].	• >60% after three (3) years;	Supplementary planting.

Performance Indicator	Target – Establishment period[1]	Target – Maintenance period[2]	Corrective Actions
		• >80% after five (5) years;	
Establishment of native canopy cover (where applicable) within revegetation areas.	Planted trees substantially established[3].	• >60% canopy cover of native tree species >1.5 m in height after three (3) years; • >80% canopy cover of native tree species >2.5m in height after five (5) years.	Monitoring and maintenance period must be extended until the targets are met.
Natural recruitment of native species throughout rehabilitation areas.	Evidence of natural recruitment of shrub and ground cover species.	Increasing natural recruitment of shrub and groundcover species.	Where natural recruitment fails to meet performance targets discussions with BCD and TSC shall be initiated by the proponent or their consultants to consider adjustments to the assisted regeneration strategy being used to improve natural recruitment.
All identified weeds controlled to an acceptable level within retained vegetation areas.	Foliage Projective Cover (FPC) (%) assessed using eye estimates or photo points reduced to <10% within first year.	Foliage Projective Cover (FPC) (%) assessed using eye estimates or photo points: • reduced to <10% within first year; • <10% in second year; • <5% in the third year and consecutive years.	Weed control as necessary.
Infrastructure (e.g. protection fencing, signage, erosion and sediment control devices) functional and well-maintained.	Relevant infrastructure maintained.	Relevant infrastructure in condition suitable for hand over to TSC.	Maintenance as necessary.

Notes:

[1] "Establishment period" means the period during which initial environmental repair, restoration and monitoring works required by the relevant approved environmental management plan(s) are undertaken. The establishment

Performance Indicator	Target – Establishment period[1]	Target – Maintenance period[2]	Corrective Actions
period ends when the works meet the establishment period performance criteria, as defined by the relevant approved environmental management plans, to the satisfaction of the Secretary. [2] "Maintenance period" means the period of environmental management and monitoring works commencing immediately after the end of the establishment period. Maintenance period works are to be carried out in accordance with the relevant performance criteria (as defined by the relevant approved environmental management plan) to the satisfaction of the Secretary. [3] "Substantial establishment" of the koala habitat plantings means "the plantings have progressed beyond the need for intensive maintenance e.g. weed control, watering etc. and are clearly established by way of persisting through a recognised growth period and a suitably qualified horticultural/environmental specialist has provided a short report confirming that the plantings are established."			

8.6 Reporting

8.6.1 Baseline Vegetation Monitoring Report

Subsequent to the completion of baseline vegetation monitoring, a report will be prepared outlining the results. The report will be provided to the Commonwealth DoE, NSW DPI&E, NSW BCD and TSC and form the baseline for future monitoring. The Baseline Monitoring Report will be available on the JWA website for twelve (12) months (www.jwaec.com.au/).

8.6.2 Annual Vegetation Monitoring Report

An Annual Vegetation Monitoring Report will be prepared which discusses the results of the monitoring of retained vegetation and rehabilitation areas against the Monitoring Performance Criteria identified in **SECTION 8.4.5** and **SECTION 8.5.5** respectively**.** The information provided in the report should include, but not necessarily be limited to:

- Works undertaken (i.e. A summary of bush regenerators daily reports);
- A presentation of the results of the particular monitoring event/s;
- A detailed discussion of the results of each particular monitoring event including additional monitoring completed after any planned or unplanned bushfire;
- A detailed comparison with the baseline parameters and with previous survey data, as appropriate;
- A statement of compliance with the Monitoring Performance Criteria identified in **SECTION 8.4.5** and **SECTION 8.5.5**;
- Any problems since the previous inspection (death of a significant number of seedlings, broken fences etc.) and what effects these issues have had on the regeneration area;
- Success or failure of measures implemented to rectify previously identified problems;
- Measures to be taken to rectify new problems; and
- Adaptive management log to ensure that the management plan remains relevant and effective (**SECTION 6.14.4**).

Each Annual Vegetation Monitoring Report will be submitted to NSW DPI&E, NSW BCD and TSC within two (2) months of completion of the relevant monitoring. The Annual Vegetation

Monitoring Report will be available on the JWA website for twelve (12) months (www.jwaec.com.au/).

9 IMPLEMENTATION SCHEDULES

9.1 Introduction

Specific management actions discussed in **SECTION 6** will be triggered and completed within Precincts 1 - 5 and associated EMAs, and the proposed East-West Corridor on a pre-construction, construction and operational phase basis. The implementation schedules provided in **TABLES 13 - 15** below summarise all pre-construction, construction and operational phase management strategies and identify the associated management actions, timing, responsibilities and performance measures.

In accordance with Project Approval (MP08_0194) Condition 72, evidence of commencement of implementation of this VWMP shall be provided to the Secretary prior to commencement of bulk earthworks.

Performance indicators and targets for retained vegetation and the proposed rehabilitation strategy to be achieved during the 'establishment period' and 'maintenance period' of the project (as defined within the Project approval MP08_0194) are contained in **SECTION 8.4.5** and **SECTION 8.5.5**. Corrective actions are also provided that are to be implemented if performance targets are not met.

9.2 Development Phases

Management actions outlined in this VWMP will be implemented in three (3) phases:

- **Pre-construction Phase** – The pre-construction phase of the development refers to all preliminary works required to be completed prior to commencement of construction e.g. preliminary survey work, baseline monitoring and commencement of compensatory habitat rehabilitation works.
- **Construction Phase** - The construction phase of the development refers to works completed to construct the development and includes clearing vegetation, bulk earthworks and the construction of infrastructure.
- **Operational Phase** - The operational phase of the development will commence postconstruction and after registration of the plan/s of subdivision for each precinct.

Commencement of construction is defined under Concept Plan Approval Condition B7 and Major Project Approval A13 as any physical works including clearing vegetation, the use of heavy duty equipment for the purpose of breaking ground for bulk earthworks, or infrastructure for the proposed project.

TABLES 13 – 15 detail the specific management actions that will be implemented within each development precinct during the pre-construction phase, construction phase and operational phases respectively.

9.3 Roles and Responsibilities

The successful implementation of this VWMP requires a number of key personnel to complete various roles. As many of the contractors for the project are yet to be appointed, these will be specified and list of key contacts for the project contained in revised versions of the VWMP (in accordance with Conditions B1 and C2 of the Concept Plan Approval 06_0318, MOD 6). A summary of key roles/personnel responsible for the management strategies identified in **TABLES 13 - 15** below includes:

Proponent
Project 28 Pty Ltd is the Proponent for the works as the approval holder.

Construction/Site Manager
The Construction/Site Manager (to be appointed) is a representative of the project team (typically the project engineer) and is responsible for coordinating the project consultants and construction contractor.

Principal Contractor
The Principal contractor (to be appointed) is responsible for the management of all activities involved in the construction phase of the development.

Site Supervisor
The Site Supervisor is a representative of the Principal Contractor (to be appointed) and responsible for overseeing all pre-clearing, clearing and construction activities are undertaken in accordance with this VWMP and subsequent environmental management documentation.

Ecologist
For the purposes of this VWMP means a qualified ecologist with appropriate training and at least five (5) years of experience in undertaking flora and fauna surveys.

Fauna Spotter Catcher
For the purposes of this VWMP means a suitably qualified ecologist/fauna handler agreed to by the Department. It is noted that the Fauna Spotter Catcher must hold a relevant scientific license and ethics approvals and a copy of these permits along with their contact details will be passed on to the Site Supervisor. The engaged Fauna Spotter Catcher will be responsible for the management/relocation of native fauna during any clearing activities.

Bush Regeneration Company
For the purposes of this VWMP means a suitably qualified Bush Regeneration Company that has demonstrable experience in the rehabilitation or revegetation of native vegetation communities in the Tweed region. It is noted that the Bush Regeneration Company must hold the necessary license and approvals. The engaged Bush Regeneration Company will be responsible for rehabilitation and weed management works on the site.

9.4 Implementation Table – Pre-construction Phase

TABLE 13
VEGETATION MANAGEMENT STRATEGIES – PRE-CONSTRUCTION PHASE

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
Environmental Officer(s) / Community Liaison Officer	Zones 1 - 8	Appointment of Environmental Officer(s) / Community Liaison Officer in accordance with **MP08_0194 Condition 70.**	Proponent	Environmental Officer(s) / Community Liaison Officer appointed as detailed in **SECTION 6.13** and Section 7.13.3 of the Kings Forest KPoM (JWA 2019) prior to commencement of bulk earthworks*.
Baseline vegetation surveys and report	Zones 2 - 8	Baseline vegetation monitoring program to be completed within Precincts 1 - 5 in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Baseline vegetation surveys and reports completed in accordance with **SECTION 8.2.** Reports provided to relevant government agencies in accordance with **SECTION 8.6**.
Baseline weed survey	Zones 2 - 8	Baseline weed surveys completed.	Suitably Qualified Bush Regeneration Company	Baseline monitoring data collected at each weed treatment area prior to the commencement of weed control in accordance with **SECTION 8.3**.
Education of construction personnel	Zone 1	A construction personnel induction program shall be developed and implemented by the Proponent prior to commencement of construction.	Principal Contractor / Site Supervisor	A construction personnel induction program development and implemented and an annual report prepared detailing the induction procedure and personnel inducted in accordance with **SECTION 6.2** and Section 7.2.1 of the Kings Forest KPoM (JWA 2019).
Survey plans and permanent marking of dedication areas	Zones 2 - 8	Mark the boundaries of proposed/future dedication areas as required by **MP08_0194 Condition 3.**	Registered Surveyor	Report prepared prior to commencement of construction* containing survey plans showing the boundaries of the proposed dedication areas in accordance with **SECTION 6.10** and Section 7.10 of the Kings Forest KPoM (JWA 2019). Permanent pegs placed in the ground. Survey plans lodged with the NSW DPI&E.
Weed control	Zones 2 - 8	Weeds controlled as required.	Suitably Qualified Bush Regeneration Company	All weeds controlled in accordance with **SECTION 6.8**.
	Within adjacent areas of Cudgen Nature Reserve	Targeted weed control works as required: • Control of immature Pines up to 100 m into adjacent Cudgen Nature Reserve; and • Control of all other weeds up to 20 m into adjacent Cudgen Nature Reserve.	Suitably Qualified Bush Regeneration Company	All weeds controlled as required within adjacent areas of the Cudgen Nature Reserve in accordance with the **SECTION 6.8.**
Management of retained vegetation/habitat	Zones 2 - 3	Areas of retained vegetation to be clearly identified in the field and marked as required**.**	Suitably Qualified Bush Regeneration Company	Each retained vegetation area will be clearly identified on site with marking pegs prior to commencement of construction in each Precinct in accordance with **SECTION 6.7** and Section 7.5 of the Kings Forest KPoM (JWA 2019).
		Retained vegetation/habitat managed as required by **MP08_0194 Conditions 40 and 41.**	Suitably Qualified Bush Regeneration Company	Retained vegetation within the Precincts 1 - 5 EMAs will be protected and maintained in accordance with **SECTION 6.7** and the following documents where applicable: • Kings Forest KPoM (JWA 2019 – Section 7.5; and • Kings Forest WSFMP (JWA 2020a) – Section 7.7.

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
Rehabilitation and compensatory habitat works	Zones 4 - 8	Rehabilitation areas to be clearly identified in the field and marked as required.	Suitably Qualified Bush Regeneration Company	Each rehabilitation area will be clearly identified on site with marking pegs prior to commencement of construction in each Precinct in accordance with **SECTION 6.9** and Appendix 8 of the Kings Forest KPoM (JWA 2019).
		Rehabilitation works commenced as required by **MP08_0194 Condition 40 and 41.**	Suitably Qualified Bush Regeneration Company	All regeneration/revegetation works (including compensatory koala and WSF habitat creation) to be commenced in accordance with **SECTION 6.9** and the following documents where appropriate: • Kings Forest KPoM (JWA 2019) – Section 7.6; and • Kings Forest WSFMP (JWA 2020a) – Section 7.8.
Fire management	Zones 1 - 8	Reduction of fire risk.	Proponent (until ownership is transferred)	Fire risk to be managed in accordance with the approved Bushfire Management Plan (BushfireSafe 2020) and associated Kings Forest Koala Fire Management Plan (Wildsite 2020) (**SECTION 6.11**).
Payment of bond and/or bank guarantee	Zones 2 - 8	In accordance with **MP08_0194 Condition 50, a** bond for the implementation of environmental management, with the exception of koala compensatory habitat, is to be lodged with TSC.	Proponent	Prior to commencement of bulk earth works for each precinct, and every two (2) years thereafter, a cash bond or bank guarantee shall be lodged with TSC to ensure that the relevant environmental management plans for the associated Potential Council Land (PCL) are implemented as detailed in **SECTION 6.10** and Section 7.6.7 the Kings Forest KPoM (JWA 2019).
Adaptive management	All Zones	Adaptive Management strategies implemented as required.	Proponent	Adaptive Management Log detailing issues raised and any changes made to this management plan to be updated as monthly and included in the Annual Vegetation Monitoring Report and published on the project website in accordance with **SECTION 6.14**.
Notes: * "Commencement of construction" for the purpose of this project, **Condition B7** (Concept Plan Approval) and **Condition A13** of the Major Project Approval, is taken to mean any physical works including clearing vegetation, the use of heavy duty equipment for the purpose of breaking ground for bulk earthworks, or infrastructure for the proposed project.				

9.5 Implementation Table - Construction Phase

TABLE 14
VEGETATION MANAGEMENT STRATEGIES – CONSTRUCTION PHASE

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
Environmental Officer(s) / Community Liaison Officer	Zones 1 - 8	Environmental Officer(s) / Community Liaison Officer to oversee environmental compliance until all conditions have been satisfied as required by **MP08_0194 Condition 70.**	Environmental Officer(s) / Community Liaison Officer	Duties of the Environmental Officer(s) / Community Liaison Officer completed in accordance with **SECTION 6.13** and Section 7.13.3 of the Kings Forest KPoM (JWA 2019).
Exclusion fencing and other infrastructure	Zones 1 - 8	Fauna exclusion fencing and other infrastructure to be installed and maintained in accordance with **MP08_0194 Conditions 46, 64, 121 and 148** and **EPBC_2012/6328 Conditions 2, 3, and 4.**	Principal Contractor / Site Supervisor	All fencing (temporary and permanent) and associated infrastructure to be constructed prior to commencement of bulk earthworks* in accordance with **SECTION 6.5** and Section 7.3.2 of the Kings Forest KPoM (JWA 2019). Permanent fencing will replace temporary fencing where applicable at the end of the construction phase of the development of each applicable Precinct in accordance with **SECTION 6.5** and Section 7.3.2 of the Kings Forest KPoM (JWA 2019).
Construction phase management measures	Zones 1 - 8	All areas of vegetation to be cleared within each Precinct of the development will be clearly identified on construction plans and in the field prior to the commencement of construction.	Principal Contractor / Site Supervisor / Environmental Officer	All areas of vegetation to be cleared within each Precinct of the development will be clearly identified on construction plans and in the field prior to the commencement of construction in accordance with **SECTION 6.3.**
		All activities in an area adjacent to any retained tree or area are to be carried out in such a manner as to minimise any damage to trees.	Principal Contractor / Site Supervisor / Environmental Officer	No trees to be retained are damaged by construction works in accordance with **SECTION 6.3.**
		No machinery, rubbish or spoil will be stored within EMAs during the construction phase of the development.	Construction Manager	No machinery, rubbish or spoil stored within EMAs in accordance with **SECTION 6.3**.
		No soil disturbance within areas of retained vegetation.	Principal Contractor/ Site Supervisor/ Environmental Officer	Soil is not disturbed within areas of retained vegetation in accordance with **SECTION 6.3.**
		The establishment and propagation of weed species is prevented.	Principal Contractor/ Site Supervisor/ Environmental Officer	No new weed infestations occur during the construction phase in accordance with **SECTION 6.3.**
	Zone 1	Sediment and erosion control devices installed prior to commencement of earthworks and maintained throughout construction phase.	Construction Manager	All erosion and sediment control devices installed and maintained in accordance with the Erosion and Sediment Control Plan (G&S 2020d) (**SECTION 6.3**).
	Zone 1	A designated shakedown/wash area will be established for personnel, equipment and vehicles. Designated shakedown / wash area will not be located in or immediately adjacent to the EMAs.	Construction Manager	All shakedown/wash areas installed prior to commencement of earthworks in accordance with the Erosion and Sediment Control Plan (G&S 2020d) (**SECTION 6.8.3**).
	Zone 1	Pre-clearing fauna trapping program as required.	Qualified Ecologist	Prior to commencement of any vegetation clearing works a pre-clearing site inspection will be completed to identify and mark habitat trees or other habitat features within the clearing area in accordance with **SECTION 6.4.1** and Section 7.2.2 of the Precincts 1 - 5 TSMP (JWA 2020c).

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
				Subsequent to the site inspection, and immediately prior to commencement of site clearing works, a pre-clearing trapping program will be completed within any areas of relatively intact vegetation to be cleared in accordance with **SECTION 6.4.1** and Section 7.2.2 of the Precincts 1 - 5 TSMP (JWA 2020c). Any animals captured to be relocated to suitable areas of retained habitat.
		Appointment of fauna spotter catcher as required by **MP08_0194 Condition 96.**	Proponent	The proponent will appoint a suitably qualified fauna spotter catcher to conduct a pre-clearing site inspections and to be present during all clearing activities to rescue and relocate any native fauna species as necessary in accordance with **SECTION 6.4.2**, Section 7.2.2 of the Kings Forest KPoM (JWA 2019) and Section 7.2.3 of the Kings Forest WSFMP (JWA 2020a).
		A fauna spotter catcher will be present during all vegetation clearing works in accordance with **MP08_0194 Condition 96**.	Fauna Spotter Catcher	A suitably qualified fauna spotter catcher is to be present during all clearing activities to rescue and relocate any native fauna species as necessary in accordance with **SECTION 6.4.2**, Section 7.2.2 of the Kings Forest KPoM (JWA 2019) and Section 7.2.3 of the Kings Forest WSFMP (JWA 2020a).
		Pre-clearing inspections as required by **EPBC_2012/6328 Condition 18.**	Fauna Spotter Catcher	Pre-clearing site inspections will be completed no more than one day prior to commencement of bulk earth moving activities within each precinct in accordance with **SECTION 6.4.2**, Section 7.2.2 of the Kings Forest KPoM (JWA 2019) and Section 7.2.3 of the Kings Forest WSFMP (JWA 2020a).
		Construction phase fauna management procedures to be implemented as required**.**	Principal Contractor / Site Supervisor / Fauna Spotter Catcher	Construction phase fauna management procedures are to be implemented in accordance with **SECTION 6.4.**
		A post-clearing spotter catcher report to be prepared.	Fauna Spotter Catcher	A post-clearing spotter catcher report is submitted to Council (**SECTION 6.4.5**).
		Fauna Incident Reporting Protocols as required by **MP08_0194 Condition 76.**	Principal Contractor	Any koala or WSF observation or incident within the development footprint or buffers during the construction phase will result in an observation/incident report in accordance with **SECTION 6.4.6,** Section 7.2.6 of the Kings Forest KPoM (JWA 2019) and Section 7.2.5 of the Kings Forest WSFMP (JWA 2020a).
Access management	Zones 1 - 9	Gates installed and secured where relevant.	Construction Manager	Where the length of fencing (permanent or temporary) in buffer zones is greater than 100 m, a gate will be provided to allow access for routine maintenance, rehabilitation work and monitoring in accordance with **SECTION 6.5.2**. No locks on the gates will be required for the duration of the site development, however secure fastening structures must be provided for each gate.
Re-use of topsoil	Zones 1 and 6	Topsoil recipient areas prepared for topsoil translocation (Seedbank translocation program - **MP06_0318 – Condition C2)**.	Construction Manager/ Suitably Qualified Bush Regeneration Company	At the commencement of bulk earthworks, topsoil recipient areas will be ripped and prepared for topsoil translocation in accordance with **SECTION 6.6.**
		Topsoil within donor sites to be removed and stockpiled (Seedbank translocation program - **MP06_0318 – Condition C2)**.	Construction Manager	Topsoil from donor sites to be stripped to a depth of 40 - 50 mm in accordance with **SECTION 6.6**. Stockpiles of topsoil will be created no more than 1 m thick, protected by silt fencing and covered with weed matting.
		Logs and large branches collected from donor sites and placed within recipient areas (Seedbank translocation program - **MP06_0318 – Condition C2)**.	Suitably Qualified Bush Regeneration Company	Logs and large branches to be collected from donor sites and hand rolled in to place within recipient areas to provide habitat in accordance with **SECTION 6.6**.
		All stockpiled topsoil spread within recipient areas (Seedbank translocation program - **MP06_0318 – Condition C2)**.	Suitably Qualified Bush Regeneration Company	Topsoil to be spread within designated recipient areas of at a maximum depth of 100 mm in accordance with **SECTION 6.6**.
Weed control	Zones 2 - 8	Weeds controlled as required.	Suitably Qualified Bush Regeneration Company	All weeds controlled as required within the Precincts 1 - 5 EMAs in accordance with the **SECTION 6.8.**

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
	Within adjacent areas of Cudgen Nature Reserve	Targeted weed control works as required: • Control of immature Pines up to 100 m into adjacent Cudgen Nature Reserve; and • Control of all other weeds up to 20 m into adjacent Cudgen Nature Reserve.	Suitably Qualified Bush Regeneration Company	All weeds controlled as required within adjacent areas of the Cudgen Nature Reserve in accordance with the **SECTION 6.8.**
Regeneration and revegetation	Zones 4 - 8	Regeneration and revegetation works carried out as required.	Suitably Qualified Bush Regeneration Company	All regeneration/revegetation works to be carried out in accordance with **SECTION 6.9** and the following documents where appropriate: • Kings Forest KPoM (JWA 2019) - Section 7.6; and • Kings Forest WSFMP (JWA 2020a) - Section 7.8.
Maintenance of retained vegetation	Zones 2 - 3	Retained vegetation/habitat managed as required.	Suitably Qualified Bush Regeneration Company	Retained vegetation protected and maintained in accordance with **SECTION 6.7** and the following documents where applicable: • Kings Forest KPoM (JWA 2019) – Section 7.5; and • Kings Forest WSFMP (JWA 2020a) – Section 7.7.
Retained vegetation monitoring	Zones 2 - 3	Retained vegetation monitoring program to be completed in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Ongoing retained vegetation monitoring program and reporting completed in accordance with **SECTION 8.4**. Reports provided to relevant government agencies in accordance with **SECTION 8.6**.
Rehabilitation monitoring	Zones 4 - 8	Rehabilitation monitoring program to be completed in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Ongoing rehabilitation monitoring program and reporting completed in accordance with **SECTION 8.5**. Reports provided to relevant government agencies in accordance with **SECTION 8.6**.
Monitoring after bushfire	Zones 2 - 8	Additional monitoring completed after bushfires in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Additional monitoring event completed after any planned or unplanned bushfire in accordance with **SECTION 8.4** and **SECTION 8.5.**
Fire management	Zones 1 - 8	Reduction of fire risk.	Proponent (until ownership is transferred)	Fire risk to be managed in accordance with the approved Bushfire Management Plan (BushfireSafe 2020) and associated Kings Forest Koala Fire Management Plan (Wildsite 2020) (**SECTION 6.11**).
Payment of bond and/or bank guarantee	Zones 2 - 8	In accordance with **MP08_0194 Condition 50, a** bond for the implementation of environmental management, with the exception of koala compensatory habitat, is to be lodged with TSC.	Proponent	Prior to commencement of bulk earthworks for each precinct, and every two (2) years thereafter, a cash bond or bank guarantee shall be lodged with TSC to ensure that the relevant environmental management plans for the associated Potential Council Land (PCL) are implemented as detailed in **SECTION 6.12** and Section 7.6.7 the Kings Forest KPoM (JWA 2019).
Adaptive management	All Zones	Adaptive Management strategies implemented as required.	Proponent	Adaptive Management Log detailing issues raised and any changes made to this management plan to be updated as monthly and included in the Annual Vegetation Monitoring Report and published on the project website in accordance with **SECTION 6.14.**
Notes: * "Commencement of construction" for the purpose of this project, **Condition B7** (Concept Plan Approval) and **Condition A13** of the Major Project Approval, is taken to mean any physical works including clearing vegetation, the use of heavy duty equipment for the purpose of breaking ground for bulk earthworks, or infrastructure for the proposed project.				

9.6 Implementation Table - Operational Phase

TABLE 15
VEGETATION MANAGEMENT STRATEGIES – OPERATIONAL PHASE

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
Environmental Officer(s) / Community Liaison Officer	Zones 1 - 8	Environmental Officer(s)/ Community Liaison Officer to oversee environmental compliance until all conditions have been satisfied as required by **MP08_0194 Condition 70.**	Environmental Officer(s) / Community Liaison Officer	Duties of the Environmental Officer(s) / Community Liaison Officer completed in accordance with **SECTION 6.13** and Section 7.13.3 of the Kings Forest KPoM (JWA 2019).
Exclusion fencing and other infrastructure	Zones 1 - 8	Fauna exclusion fencing and other infrastructure to be maintained in accordance with **MP08_0194 Conditions 46, 64, 121 and 148** and **EPBC_2012/6328 Conditions 2, 3, and 4.**	Principal Contractor / Site Supervisor	All fencing and associated infrastructure to be maintained in accordance with **SECTION 6.5** and Section 7.3.2 of the Kings Forest KPoM (JWA 2019).
Access management	Zones 1 - 8	At the completion of the monitoring program locks will be provided to all gates. Keys will be held by Tweed Shire Council and BCD (NPWS) where appropriate.	Construction Manager	All gates installed and maintained in accordance with **SECTION 6.5.2**.
Weed control	Zones 2 - 8	Weeds controlled as required.	Suitably Qualified Bush Regeneration Company	All weeds controlled as required within the Precincts 1 - 5 EMAs in accordance with the **SECTION 6.8.**
	Within adjacent areas of Cudgen Nature Reserve	Targeted weed control works as required: • Control of immature Pines up to 100 m into adjacent Cudgen Nature Reserve; and Control of all other weeds up to 20 m into adjacent Cudgen Nature Reserve.	Suitably Qualified Bush Regeneration Company	All weeds controlled as required within adjacent areas of the Cudgen Nature Reserve in accordance with the **SECTION 6.8.**
Regeneration and revegetation	Zones 4 - 8	Regeneration and revegetation works completed as required**.**	Suitably Qualified Bush Regeneration Company	All regeneration/revegetation works to be completed in accordance with **SECTION 6.9** and the following documents where appropriate: • Kings Forest KPoM (JWA 2019) - Section 7.6; and • Kings Forest WSFMP (JWA 2020a) - Section 7.8.
Maintenance of retained vegetation	Zones 2 - 3	Retained vegetation/habitat managed as required**.**	Suitably Qualified Bush Regeneration Company	Retained vegetation protected and maintained in accordance with **SECTION 6.7** and the following documents where applicable: • Kings Forest KPoM (JWA 2019) – Section 7.5; and • Kings Forest WSFMP (JWA 2020a) – Section 7.7.
Retained vegetation monitoring	Zones 2 - 3	Retained vegetation monitoring program to be completed in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Ongoing retained vegetation monitoring program and reporting completed in accordance with **SECTION 8.4**. Reports provided to relevant government agencies in accordance with **SECTION 8.6**.
Rehabilitation monitoring	Zones 4 - 8	Rehabilitation monitoring program to be completed in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Ongoing rehabilitation monitoring program and reporting completed in accordance with **SECTION 8.5**. Reports provided to relevant government agencies in accordance with **SECTION 8.6**.
Monitoring after bushfire	Zones 2 - 8	Additional monitoring completed after bushfires in accordance with **MP08_0194 Condition 37**.	Qualified Ecologist	Additional monitoring event completed after any planned or unplanned bushfire in accordance with **SECTION 8.4** and **SECTION 8.5.**
Fire management	Zones 1 - 8	Reduction of fire risk**.**	Proponent (until ownership is transferred)	Fire risk to be managed in accordance with the approved Bushfire Management Plan (BushfireSafe 2020) and associated Kings Forest Koala Fire Management Plan (Wildsite 2020) (**SECTION 6.11**).

Management Strategy	Management Zone	Management Action	Responsibility	Performance Measure
Payment of bond and/or bank guarantee	Zones 2 - 8	In accordance with **MP08_0194 Condition 50, a** bond for the implementation of environmental management, with the exception of koala compensatory habitat, is to be lodged with TSC.	Proponent	Prior to commencement of bulk earthworks for each precinct, and every two (2) years thereafter, a cash bond or bank guarantee shall be lodged with TSC to ensure that the relevant environmental management plans for the associated Potential Council Land (PCL) are implemented as detailed in **SECTION 6.12** and Section 7.6.7 the Kings Forest KPoM (JWA 2019).
Adaptive management	All Zones	Adaptive Management strategies implemented as required.	Proponent	Adaptive Management Log detailing issues raised and any changes made to this management plan to be updated as monthly and included in the Annual Vegetation Monitoring Report and published on the project website in accordance with **SECTION 6.14**.

10 INDICATIVE COSTINGS

TABLE 16 contains an indicative costing for the implementation of mitigation measures within Precincts 1 - 5.

It is noted that additional costings for management actions outside the scope of this VWMP (i.e. associated with compensatory koala and WSF habitat, feral animal management, bushfire management etc.) are provided in the relevant management plans.

TABLE 16
INDICATIVE COSTINGS

Management Action/Item	Cost ($)* Establishment Phase	Cost ($)* Maintenance Phase
Construction phase management measures	Subject to arrangements with Principal Contractor	N/A
Baseline vegetation surveys and report	$25,000	N/A
Pre-clearing fauna trapping and fauna spotter catcher	$35,000	N/A
Targeted weed control within adjacent Cudgen Nature Reserve (26.25 ha @ $2,500/hectare)	$65,625	$65,625/year
Management of Retained Vegetation/Habitat (82.27 ha @ $2,500/hectare)		$205,675/year
Rehabilitation and Compensatory Habitat Works#^ – includes seedlings, fertiliser, watering and weeding until sustainable (2.62 ha @ $15,000/hectare)	$39,300	N/A
Maintenance of Rehabilitation and Compensatory Habitat areas#^ (2.62 ha @ $2,500/hectare)	N/A	$6,550/year
Monitoring and Reporting		$50,000/year
Feral animal management	Consult approved Kings Forest FAMP (JWA 2020e)	
Bushfire management	Consult approved Kings Forest Bushfire Management Plan	

* Proposed to be funded from the proponents ongoing cash flow during the development

excluding koala - refer to KPoM (JWA 2019)

^excluding WSF – refer to WSFMP (JWA 2020a)

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APPENDIX 1 – COMPLIANCE WITH RELEVANT APPROVAL CONDITIONS

CONDITION	SECTION OF VWMP
Concept Plan Approval – Condition C2 *Vegetation Management Plan* *"Each Vegetation Management Plan update is to provide details on:* *1) the short, medium and long-term measures to be implemented to rehabilitate degraded areas, and manage remnant vegetation and habitat within the buffers and Environmental Protection zoned land within the site.* *2) revegetation and regeneration including establishment of appropriate canopy (including koala feed trees), sub-canopy, understorey and ground strata.* *3) rehabilitation of creeks and drainage lines.* *4) conserving and re-using, where appropriate, the soil seed bank where good quality native vegetation is being removed.* *5) collection and propagation of endemic native seed for revegetation on the site.* *6) monitoring of water quality and vegetation health within buffers and environmental protection zoned areas.* *7) the design, regeneration/revegetation and management of the east-west wildlife corridor/s.* *8) measurable performance criteria are to be based on appropriate reference sites within the adjacent Cudgen Nature Reserve."*	1. Pre-construction, construction and operational phase measures to be implemented to rehabilitate and manage habitat within EPZs and associated buffers are detailed in **SECTIONS 6 - 9**. 2. Revegetation and rehabilitation measures are provided in **SECTION 6.9**. 3. Revegetation and rehabilitation measures will occur in Management Zones 2, 4, 5 and 8 adjacent to Blacks Creek (**SECTION 6.9, FIGURE 14)**. 4. Re-use of topsoil seed bank is detailed **SECTION 6.6.** 5. Plants to be used for revegetation are to be obtained from a local nursery able to supply stock from local provenance. Where existing nursery stock from local provenance is not available collection from species which occur onsite should be carried out as detailed in **SECTION 6.9**. 6. Detailed monitoring programs for the retained vegetation areas are provided in **SECTION 8.4**. A detailed water quality monitoring program is included in the Overall Water Management Plan (G&S 2020b). 7. Rehabilitation measures for the designated East-West Corridor are

CONDITION	SECTION OF VWMP
	provided in the Kings Forest KPoM (JWA 2019). 8. Measurable performance criteria will be collected from reference sites within Cudgen Nature Reserve (**SECTION 8.2**).
Concept Plan Approval – Condition C2 *Weed Management Plan* *"Each Weed Management Plan update is to detail ongoing weed management measures for each relevant stage".*	This VWMP considers and details ongoing weed management measures for Precinct 1 - 5 and the proposed East-West Corridor of the Kings Forest development site.
Major Project Approval – Condition 39 *"1) All Environmental Management Plans shall be revised to address management actions to be undertaken throughout the life of the project as relevant to the development precincts that the plan covers. This includes a detailed set of agreed establishment and maintenance phase performance completion criteria, ongoing monitoring and an annual maintenance schedule of works following the initial establishment period.* *2) Performance criteria for all management plans are reviewed to ensure they are specific to each precinct and action, measurable, achievable, relevant and timely.* *3) The implementation schedule of all Environmental Management Plans shall be revised to include the following details as relevant to the precincts that the plan covers:* *a. Actions that are specific to the precinct for which they are addressing* *b. Specific map references to identify locations of works for all actions* *c. Total areas to be planted (m2)* *d. Planting density (per m2)* *e. Number of permanent signs to be erected and maintained* *f. Total areas for weed management activities (m2)*	1. All Environmental Management Plans have been updated in accordance with Condition 39. 2. **SECTIONS 8.4.5 and 8.5.5** details the performance criteria. 3. a. The tables in **SECTION 6 and SECTION 7** identify actions related to Precincts 1 – 5 and the proposed East-West Corridor. b. Specific Management Zones are identified in **FIGURE 12.** c. **SECTION 6.9, TABLE 4**. d. **SECTION 6.9**. e. Refer Precincts 1 - 5 BMP (JWA 2020b). f. **SECTION 6.9.**

CONDITION	SECTION OF VWMP
g. Length of any fencing (temporary and permanent) *h. Total areas for heath regeneration and revegetation (m2)* *i. Locations and areas (m2) of proposed threatened species habitat* *j. Timing and frequency of actions* *k. Monitoring requirements (frequency) that are specific to the action".*	g. Refer to the Kings Forest KPoM (JWA 2019) and the Kings Forest WSFMP (JWA 2020a). h. **SECTION 6.9**. i. Locations and areas of proposed threatened species habitat are detailed in the Precincts 1 - 5 TSMP (JWA 2020c), the Kings Forest KPoM (JWA 2019) and the Kings Forest WSFMP (JWA 2020a). j. Timing and frequency of actions are detailed in **SECTIONS 6 - 9.** k. Monitoring requirements and frequency are discussed in **SECTION 8.**
Major Project Approval – Condition 40 *"1) The Works Schedule of all Vegetation Management Plans shall be amended to include "Assisted natural regeneration" as the preferred Proposed Measure for Works Areas 2, 13 and Additional Work Areas and wherever significant natural regeneration is occurring within the EPZ and/or ecological buffer areas. This approach should be adopted in preference to revegetation or rehabilitation programs, incorporated as a guiding principle in the Statement of Commitments and relevant plans.* *2) The final Vegetation Management Plans shall be prepared in consultation with Council and submitted to the Secretary for approval prior to issue of a construction certificate for Stage 1 bulk earthworks."*	1. This VWMP has been amended to include assisted natural regeneration where relevant (**SECTION 6.9**). 2. The VWMP has been prepared in consultation with Council.

CONDITION	SECTION OF VWMP
Major Project Approval – Condition 42 *"The Weed Management Plans shall be amended to ensure that:* *1) Control of all weeds will occur:* – *In Environmental Protection Zones located on the Kings Forest site; and* – *For a distance of 20 metres into the adjacent Cudgen Nature Reserve.* *2) Control of Slash pine only will occur for a further distance of 80 metres into Cudgen Nature Reserve.* *3) Weed management activities should be undertaken utilising bush regeneration techniques including stem injection.* *4) The final Weed Management Plan shall be prepared in consultation with council and submitted to the Secretary prior to issue of a Construction Certificate for Stage 1 bulk earthworks."*	1. Areas to be targeted for weed control activities are outlined in **APPENDIX 5 and FIGURE 17**. 2. Cudgen Nature Reserve weed control activities are outlined in **SECTION 6.8**. **3.** Weed management activities are discussed in **SECTION 6.8.** **4.** The VWMP has been prepared in consultation with Council.

APPENDIX 2 – ADDITIONAL KINGS FOREST MANAGEMENT PLANS AND THEIR RELATIONSHIP TO THE PRECINCTS 1 - 5 VWMP

Management Plan	Relationship to the Precincts 1 - 5 VWMP
Kings Forest Koala Plan of Management (JWA 2019)	The aim of the Kings Forest KPoM is to protect and conserve the koala population in the Kings Forest area to ensure its ongoing survival through appropriate management of project impacts. The objectives are: • To ensure that the proposed development does not remove significant areas of habitat known, or likely to be important for the local koala population; • To ensure that movement corridors for the local koala population are maintained and/or improved; • To protect individual koalas from injury or other adverse impacts during the development phase; • To embellish the habitat values of the site, including the creation of koala habitat as part of a comprehensive offset strategy; • To protect, restore and provide for ongoing maintenance of existing koala habitat; • To ensure that changes in the local environment resulting from the proposed development (e.g. additional traffic, introduction of dogs) do not significantly impact on the local koala population; • To ensure that koalas continue to utilise habitat at Kings Forest; • To ensure appropriate monitoring and management programs are undertaken; • To raise awareness and promote community ownership of environmental management (including the conservation of the local koala population); • Compliance with relevant conditions; and • Further revision of the KPoM as appropriate.

Management Plan	Relationship to the Precincts 1 - 5 VWMP
Kings Forest Wallum Sedge Frog Management Plan (JWA 2020a)	The aim of the Kings Forest WSFMP is to protect and conserve the WSF population in the Kings Forest area to ensure the ongoing survival of the population through appropriate management of project impacts. The objectives are: • To ensure that the proposed development does not remove areas of habitat outside of approved clearing areas; • To ensure that movement corridors for the local WSF population are maintained and/or improved; • To protect WSF from injury or other adverse impacts associated with the construction phase of the development through the implementation of appropriate management actions; • To improve the habitat values of the site, including the creation of WSF habitat as part of a comprehensive and staged offset strategy; • To protect WSF from injury or other adverse impacts associated with the operational (post-construction) phase of the development through the implementation of appropriate management actions; • To ensure that WSF continue to utilise habitat at Kings Forest by way of providing for effective monitoring of performance in relation to the provisions of this WSFMP; • To raise awareness and promote community ownership of environmental management (including the conservation of the local WSF population); • Compliance with relevant conditions; and • Revision of the WSFMP as appropriate.
Kings Forest Precincts 1 - 5 Buffer Management Plan (JWA 2020b)	The aim of the BMP is to provide guidelines, strategies and methods for the treatment and management of ecological buffers to Cudgen Nature Reserve and EPZs. The BMP provides details of the protection of retained and compensatory habitat where these areas occur within ecological buffers within Precincts 1 - 5.

Management Plan	Relationship to the Precincts 1 - 5 VWMP
Kings Forest Precincts 1 - 5 Threatened Species Management Plan (JWA 2020c)	The TSMP has been prepared to address the management of other Threatened species and their habitat/s occurring in Precincts 1 – 5 EMAs and the proposed East-West Corridor. The TSMP contains the following objectives: • weed control measures specific to areas containing listed threatened flora and fauna; • guidelines for the control of human and animal access to areas containing threatened species; • strategies for the embellishment of threatened species habitat through revegetation works and/or the creation of compensatory habitat areas where required.
Kings Forest Flora and Fauna Monitoring Report (JWA 2020d)	The Kings Forest Flora and Fauna Monitoring Report summarises all flora and fauna monitoring requirements of the development including the koala monitoring program.
Kings Forest Feral Animal Management Plan (JWA 2020e)	The aim of the FAMP is to develop a comprehensive and integrated approach to guide the immediate and long-term management of feral animals within the Kings Forest EMAs and to ensure the protection of native fauna species, with a primary focus on threatened species. Specific objectives of the FAMP are to: • Review relevant literature on feral animal control; • Identify feral animals which have been recorded at the site; • Prioritise species considered to warrant priority management; • Examine control and/or eradication methods for 'high priority' feral animals; and • Recommend long-term control methods, including monitoring and reporting.
Kings Forest Stage 1 Bushfire Management Plan (BushfireSafe 2020)	A fundamental strategy of the Kings Forest Stage 1 Bushfire Management Plan is to assess and manage fuel loads within the Kings Forest site. The risk of high intensity fires will be reduced through controlled low intensity burns or mechanical means if and where appropriate. High-intensity hazard reduction burns and wildfires that result in crown scorch or crown fires should be avoided.

Management Plan	Relationship to the Precincts 1 - 5 VWMP
Kings Forest Koala Fire Management Plan (Wildsite 2020)	The Kings Forest Koala Fire Management Plan details fire management strategies for koala habitat areas on the Kings Forest site. The aim of this plan is to protect and conserve the population and habitat of koalas and other associated biodiversity values in the Kings Forest area through the restoration and maintenance of appropriate fire regimes.
Construction Environmental Management Plan (MUS 2020)	The Construction Environmental Management Plan provides details sufficient to understand and avoid, mitigate and remedy all potential environmental impacts of the project during construction.
Kings Forest Summary of Management Plans (G&S 2020a)	The Kings Forest SOMP has been prepared to summarise all of the management requirements of the various management plans.

APPENDIX 3 – SPECIES SPECIFIC WEED CONTROL TECHNIQUES

Target Weed		Recommended Techniques
Common Name	**Botanical Name**	
Balloon Cotton Bush	*Gomphocarpus physocarpus*	• Hand-pull; spray (G 1:100 + surfactant).
Barner Grass	*Pennisetum purpureum*	• Overspray (G 1:100); slash back and spray regrowth.
Billygoat Weed	*Ageratina houstonianum*	• Spray or hand-pull and spray regrowth (G 1:100 + surfactant).
Bird of Paradise	*Strelitzia* sp.	• Hand pull young plants and bag and disposed of appropriately. • Glyphosate (G 1:100 + surfactant) can be applied as a cut stump, stem injection or basal bark application for mature plants.
Bitou Bush	*Chrysanthemoides monilifera*	• Hand pull young plants and hang up. • Cut-scrape-paint at 1:1.5 glyphosate for small plants. • Systematic knapsack over spraying of Roundup at the rate of 1:200 with LI700 at a rate of 5ml per litre if no risk to native seedlings.
Blackberry Nightshade	*Solanum nigrum*	• Spray/hand-pull and spray regrowth (G 1:100 + surfactant).
Broad-leaved Paspalum	*Paspalum dilatatum*	• Spray (G 1:100 + surfactant).
Camphor Laurel	*Cinnamomum camphora*	• Seedlings: hand-pull/spray (G 1:100 + MM [1-2g/10L] + surfactant). • Stems: <100mm CSP (G 1:1) >100mm frill or inject @ <250mm (G 1:1 2ml/cut) >250mm diameter (G neat 2ml/cut).
Canna Lily	*Canna indica*	• Mattock out or Spray (G 1:100 + surfactant).
Castor Oil Plant	*Ricinus communis*	• Spray (G 1:100 + surfactant) or hand remove. C&P (G 1:1.5)
Cherry Guava	*Psidium cattleianum*	• Hand pull seedlings where possible (i.e. wet areas). • Spray seedlings up to 50 cm tall with Glyphosate 1:50 or Glyphosate 1:50 plus Metsulfuron Methyl 1-2 g /10 l H20. • For plants greater than 50 cm tall and less than 5 cm basal diameter apply Access © (1:30 diesel) using basal bark method. Do not use this method within 5 m of creeks. • For plants over 5 cm basal diameter cut and paint immediately with Access © (1:30 diesel).

Target Weed		Recommended Techniques
Common Name	**Botanical Name**	
		• Alternate methods (off label, requires permit): cut and paint with Garlon © (1:60 diesel) or Starane © (35 ml per l diesel) or basal bark application with Garlon © (1:60 diesel) or Starane © (35 ml per l diesel).
Chinese Burr	*Triumfetta rhomboidea*	• Spray (G 1:100 + surfactant).
Chinese Elm	*Celtis sinensis*	• Seedlings: Hand pull or spray - 1 part Glyphosate to 50 parts water, surfactant, or for better results spray 1 part Glyphosate to 50 parts water + 1.5g Metsulfuron methyl:10L water, spray adjuvant. • Saplings: Cut, scrape and paint - 1 part Glyphosate to 1.5 parts water. • Trees: Stem injection - 1 part Glyphosate to 1.5 parts water.
Coastal Morning Glory	*Ipomoea cairica*	• Roll up long runners CSP (G 1:1.5). • Spray (G 1:100 + surfactant). • Stem: Scrape and paint (G 1:1.5).
Cocos Palm	*Syagrus romanzoffianum*	• Seedling: hand-pull/crown seedlings • Stem: mattock out small trees or cut at ground level below growing joint.
Common Carpet Grass	*Axonopus affinis*	• Spray (G 1:100 + surfactant).
Coral Tree	*Erythrina sykesii*	• Frill with glyphosate (1:1) – requires deep cuts with chainsaw/axe and a large volume of herbicide.
Corky Passionfruit	*Passiflora suberosa*	• Seedling and regrowth: Spray (G 1:100+ surfactant or G 1:100 + MM 1-1.5gm/10L + surfactant). • Stems: CS&P (G 1:1.5).
Crofton Weed	*Ageratina adenophora*	• Spray: (G 1:100 or MM 1g/10L + surfactant).
Cuphea	*Cuphea carthagenensis*	• Spray (G 1:100 + LI700®).
Duranta	*Duranta repens*	• Hand-pull seedlings or spray (G 1:100 + LI700®); cut, scrape and paint saplings (G 1:1.5); frill or spear trees (G (1:1.5). Best time for treatment early summer or when actively growing.
Edible Passionfruit	*Passiflora edulis*	• Handpulling, Cut Scrape and Paint with 1:1 glyphosate. • Spraying of seedlings with 1:100 glyphosate + surfactant (note: spraying is not the most effective control as waxy leaves prevent herbicide uptake).

Target Weed		Recommended Techniques
Common Name	**Botanical Name**	
Exotic Clerodendron	*Clerodendron* sp.	• Roll up long runners CSP (G 1:1.5). • Spray (G 1:100 + surfactant). • Stem: Scrape and paint (G 1:1.5).
Fireweed	*Senecio madagascariensis*	• Hand pull and bag and dispose of appropriately. • Flowering plants can be spot sprayed with herbicides containing aminopyralid or metsulfuron-methyl. The best time to treat fireweed with herbicide is late autumn.
Fishbone Fern	*Nephrolepis cordifolia*	• Spraying of seedlings with 1:50 glyphosate + Brushoff ® mix (1.5g/10L) and Protec®.
Fleabane	*Conyza* sp.	• Spray: (G + surfactant).
Giant Devil's Thorn	*Solanum chrysotrichum*	• Seedling: Hand-pull / spray (G 1:100 + surfactant). • Stems: <100mm CSP (G 1:1.5) • >100mm frill or inject (G 1:1.5 2ml/cut).
Glory Lily	*Gloriosa superba*	• Control prior to fruiting; • 2 sprays required; • First in December using 1:50 glyphosate and 1 g/10 litres Brushoff® with 1% pulse. • Second in February as above. • Ongoing monitoring and treatment required to achieve eradication.
Happy Plant	*Dracaena* sp.	• Cut and paint (G 1:1.5); Cut, scrape and paint (G 1:1.5); Spray (G 1:100 + surfactant).
Inkweed	*Phytolacca octandra*	• Manual removal with mattock or Spray: (G 1:100 + surfactant).
Lantana	*Lantana camara*	• Hand pull/brushhook. • Spray: (G 1:100 +surfactant) or splatter gun (G 1:9). • Stem: CSP (G 1:1).
Lemon-scented Teatree	*Leptospermum petersonii*	• Grub out with bulldozer
Madeira Vine	*Anredera cordifolia*	• Spray: ground infestation (G 1:50 + Pulse®). • Stem: scrape as much stem as possible (inner part of vine on one side only) and paint (G neat).

Target Weed		Recommended Techniques
Common Name	**Botanical Name**	
		• Tubers: scrape/gouge and paint (G neat). Bag any tubers or small hand-weeded vines and remove from site or compost under black plastic.
Molasses Grass	*Melinis minutiflora*	• Spray: (G 1:100 + surfactant).
Monstera	*Monstera deliciosa*	• Mattock out and remove from site or Overspray Spray: (G 1:100 + Brushoff ® mix (1.5g/10L)
Morning Glory	*Ipomoea purpurea*	• Roll up long runners and hang up to dry; scrape and paint (G 1:1.5); spray (G 1:100 + surfactant).
Moth Vine	*Araujia sericiflora*	• Spray: (G 1:100 + surfactant). Hand pull seedlings. Cut and paint (G 1:1.5) large stems.
Mother-in-law's Tongue	*Sansevieria trifasciata*	• Hand removal of all pants where possible. • Spray plantlets with glyph. 1:50 with Brushoff® 1.5 g/10l and Protec®.
Ochna	*Ochna serrulata*	• Seedlings: Spray (G 1:50 + MM 1-1.5g/10L + surfactant) • Stems: <100mm CSP >100mm frill or inject (G 1:1.5 + MM 1g/L]). Best treatment in late spring.
Paddy's Lucerne	*Sida rhombifolia*	• Spray: (G 1:100 + surfactant).
Pampas Grass	*Cortaderia jubata*	• Spray: (G 1:100 + surfactant) for plants <1m, or use a higher rate (e.g. 1:77) for larger plants. Spray before flowering.
Para Grass	*Brachiaria mutica*	• Spray: (G 1:77 + surfactant) or hand remove (crown out)
Paspalum	*Paspalum* sp.	• Spray (G 1:100 + surfactant).
Perennial Soybean	*Neonotonia wightii*	• Cut and paint (G 1:1.5); Cut, scrape and paint (G 1:1.5); Spray (G 1:100 + surfactant).
Pigeon Grass	*Setaria sphacelata*	• Spray: (G 1:100 + surfactant).
Poor Man's Orchid	*Epidendrum* sp.	• Hand pull, bag and remove. • Spray: 1:50 glyphosate + 1.5 g Associate®:10 L of water + surfactant (e.g. Pulse®) + dye.
Redhead Cotton Bush	*Asclepias curassavica*	• Hand-pull; spray (G 1:100 + surfactant).
Red Natal Grass	*Melinis repens*	• Spray: (G 1:100 + surfactant).
Rhodes Grass	*Chloris gayana*	• Spray: (G 1:100 + surfactant).

Target Weed		Recommended Techniques
Common Name	**Botanical Name**	
Scotch Thistle	*Onopordum acanthium*	• Spray: (G 1:100 + surfactant).
Scrobic	*Paspalum scrobiculatum*	• Spray: (G 1:100 + surfactant).
Slash Pine	*Pinus elliottii*	• Stem injection of trees with glyphosate (using axe or drill) at 1:1.5 or slash.
Siratro	*Macroptilium atropurpureum*	• Spray: (G 1:50 + MM 1-2gm/10L + surfactant). • Stem: CSP (G 1:1).
Small-leaved Privet	*Ligustrum sinense*	• Seedlings: hand-pull or spray (G 1:50 + surfactant or G 1:50 + MM 1.5gms/10L + wetting agent or MM 1-2gms/10L + wetting agent); Saplings: CS&P or C&P (1:1.5); Trees: F/I (1:1.5).
Thickhead	*Crassocephalum crepidioides*	• Spray: (G 1:50 + MM 1-2gm/10L + surfactant). • Stem: CSP (G 1:1).
Umbrella Tree	*Schefflera actinophylla*	• Seedlings: hand-pull/spray (G 1:50 + surfactant or G 1:50 + MM 1-2gms/10L + Ag 2ml/10L) • Stem: <100mm CSP >100mm frill or inject (G 1:1.5). Best treatment in late spring.
Whiskey Grass	*Andropogon virginicus*	• Spray: (G 1:100 + surfactant).
White Passionfruit	*Passiflora subpeltata*	• Handpulling, Cut Scrape and Paint with 1:1 glyphosate. • Spraying of seedlings with 1:100 glyphosate + surfactant (note: spraying is not the most effective control as waxy leaves prevent herbicide uptake).
Wild Tobacco	*Solanum mauritianum*	• Spray: Hand pull/spray (G 1:100 + surfactant). • Stem: CSP (G 1:1).
Winter Senna	*Senna pendula* var. *glabrata*	• Seedlings: hand-pull/spray (G 1:100 + surfactant) • Stem: <100mm CSP >100mm frill or inject (G 1:1.5). Best time for treatment early summer or when actively growing.

APPENDIX 4 – WEED CONTROL METHODS

Weed Control Method	Technique
Bagging	Plants which can reproduce from plant material such as bulbs, tubers, corms, runners (stolons), underground horizontal stems (rhizomes), and plantlets formed on leaves should be bagged and removed from the site. Bagged plant material can be composted, burned or disposed in a landfill. Compost piles should be well anchored and positioned away from the flooding zone and from cattle. Compost piles should be appropriately monitored. Any burning should be undertaken away from the riparian zone and from native vegetation.
Basal bark treatment	Used for saplings up to approximately 75 mm in diameter. The entire surface of the stem is treated from ground level to about 300 mm above the ground. Herbicide can be applied by brush or by spraying with a low pressure setting.
Cut	The cut stump method must involve completely cutting the trunk or stem of the plant, at a level below the first branches or as near as practicable to ground level. Follow up maintenance (on an annual or bi-annual basis) to suppress regrowth, suckering and coppicing is essential.
Cut, scrape and paint	The cut, scrape and paint method must involve completely cutting the trunk or stem of the plant, at a level below the first branches or as near as practicable to ground level. Herbicide must then be immediately applied to the cut surface of the cut trunk or stem. Following the cut and paint, the exposed stem or root surface is scraped till a light green coloured layer is visible. Herbicide is then immediately applied to the scraped surfaces.
Debris management	In the case of non-locally indigenous plants species that reproduce or regenerate vegetatively, debris should be managed in a manner to ensure complete death and should not be stacked and burned within 20 m of remaining native vegetation.
Hand held foliar spraying	Foliar spraying involves spraying the foliage of the plant with an appropriate herbicide. Herbicide should be applied with a low-pressure concentrated spray stream sufficient to avoid misting and spray drift. Foliar spraying should only be used on plants that have a total height of 1.5 m or less. In the case of deciduous plants, foliar spraying should only be undertaken when foliage is present on the target weeds and before yellowing and leaf fall commences. Foliar spraying should only be undertaken in a manner that does not cause harm to any adjacent native vegetation. Any native vegetation within one metre of the target plant must be adequately protected from direct spray, splash or drift. Foliar spraying must not occur over any water body (whether still or flowing) or in any manner which may result in direct or indirect application to a water body. Foliar spraying must only be carried out in calm conditions and must avoid spray drift.

Weed Control Method	Technique
Hand pulling	Hand pulling must involve gripping and pulling the stem of the plant by hand to carefully remove the whole stem and root system from the ground. Hand pulling should only be used for plants that can be removed with minimal disturbance to the soil and existing litter or vegetative groundcover. Hand pulling is most effective when the plants to be removed are small and the soil is moist.
Herbicide use	All use of herbicide involved in the carrying out of clearing activities must comply with: • The directions on the attached labelling; or • The National Registration Authority "North Coast Off-label Permit", or NRA permit PER3512 covering methods listed in the Appendix to Common Weeds of Northern NSW Rainforests published by the Big Scrub Rainforest Landcare Group. Any mixing of herbicide must be carried out at least 20 metres away from any watercourse and used herbicide containers must be disposed of in an appropriate manner. All use of herbicide must be undertaken with regard to the provisions of the *Protection of the Environment Operations Act (1997)*. If a risk of pollution exists, a licence may be required from the Environment Protection Authority before work commences. Herbicide clearing methods must only be undertaken, or actively supervised, by a person or persons who have training and accreditation in the safe use and handling of chemicals. Herbicide clearing methods should only be used whilst the target plants are actively growing
Ringbarking	Ringbarking must involve the placing of a continuous sharp cut line (frill) around the entire trunk, to a depth below the sap flow zone, generally using an axe or tomahawk.

Weed Control Method	Technique
Scrape and paint	The scrape/gouge and paint, method is used for vine weeds with tubers such as Madeira vine (*Anredera cordifolia*). Sections of stem at least 300 mm long are scraped firmly, exposing the fibres of the stem, and the scraped sections are painted with herbicide (for Madeira vine, 75% Glyphosate is used). The stems must not be severed. Gouging may also be used in the case of plants with fleshy tubers. Gouging is like 'eying' a potato except that a deeper well is gouged with the tip of a knife and then filled with herbicide.
Stem injection – frilling, drilling, spearing	A series of drill-holes or cuts must be made into the sapwood around the trunk below the branches of the plant. Herbicide must then be immediately injected into each hole or cut at the recommended dosage. Holes and cuts must be angled downwards into the trunk to prevent herbicide escape. Stem injection must not be undertaken immediately before or after rain. In the case of deciduous plants, stem injection must be undertaken during late summer to early autumn. Plants that have been stem injected should be left in place undisturbed for a minimum of 12 months after herbicide application.
Vine removal	Where the vines are generally prostrate on the ground, aerial parts of the vine (stems and leaves) should be rolled into heaps then cut and paint or hand pulling applied. Where the vines are hanging from trees then cut and paint or hand pulling applied. Hand pulling of Madeira vine, Cape ovy and Climbing cactus must be avoided.

APPENDIX 5 - REHABILITATION AREA SELECTION CRITERIA

It should be noted that as part of the reconciliation of Commonwealth and State conditions, the exhibition process and the subsequent assessment of submissions, a number of supplementary recommendations from DoPE, BCD and TSC have been incorporated into the rehabilitation area selection process.

Previous versions of the Precincts 1 - 5 VWMP (Landpartners 2009, JWA 2012) referred to numerous identified "work areas". However, the methodology utilised in the selection and confirmation of current rehabilitation areas involved a tiered or "top-down" approach, which, essentially means starting with the big picture and working down to the finer detail.

A summary of each major step in the process is described below. Each step often involved review and amendments to vegetation and/or habitat mapping:

- Step One - An initial assessment/review of pre-clearing vegetation types (Terrestria 2014) across all of the EMAs was completed. The New South Wales VIS database was interrogated to determine the appropriate PCTs which equated to the pre-clearing vegetation types. The Tweed Vegetation Management Strategy (Kingston *et al*. 2004) was also reviewed to determine appropriate corresponding vegetation codes.
- Step Two – Areas of EMAs committed to other uses were then filtered out of the candidate rehabilitation areas. The areas filtered out were:
    - Retained koala habitat - to be protected and enhanced in accordance with the KPoM (JWA 2019).
    - Retained WSF habitat - to be protected and enhanced in accordance with the WSFMP (JWA 2020a).
    - Compensatory koala habitat (JWA 2019) – avoided/no overlaps in accordance with MP08_0194 (MOD 4) Condition 41.
    - Compensatory WSF habitat (JWA 2020a) – avoided/no overlaps in accordance with MP08_0194 (MOD 4) Condition 41.
- Step Three - Small areas (<1,000 m^2) isolated from any other similar compensatory or retained habitat area were excluded (as requested by BCD during the exhibition and submission phases in 2017/2018 and also by the EPBC Approval of 2015).
- Step Four – Each of the remaining rehabilitation areas were allocated to a relevant PCT. Vegetation to be rehabilitated on the Kings Forest site needs to be consistent with NSW BCD standards to allow comparison with relevant vegetation descriptions and their benchmarks. In this regard, the PCT benchmark descriptions were accessed via the NSW BCD database (i.e. the BioNet Vegetation Classification System) to determine appropriate PCT descriptions for each proposed rehabilitation area. It is noted however that PCT descriptions are still undergoing revision, and many remain undescribed for the IBRA subregion and therefore corresponding Tweed Vegetation Management Strategy 2004 (TVMS) codes have also been provided.

- Step Five – A final filter was applied in the process whereby any small, thin or irregularly shaped polygons of a particular habitat type were merged with adjacent vegetation types to create larger, more intact, and more manageable habitat areas.

APPENDIX 6 - MANAGEMENT ZONE IDENTIFICATION AND SPECIFIC VEGETATION MANAGEMENT REQUIREMENTS

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KR-001	Zone 2: Retained Koala Habitat	Secondary A Habitat	1	1. Primary weed control of Lantana (*Lantana camara*), Winter senna (*Senna pendula* var. *glabrata*), Ochna (*Ochna serrulata*), Bitou bush (*Chrysanthemoides monilifera*) and pasture grasses along Tweed Coast Road in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-002	Zone 2: Retained Koala Habitat	Secondary A Habitat	1	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-003	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	2	1. Monitor natural regeneration within small area of cleared/highly disturbed land adjoining Tweed Coast Road in accordance with **SECTION 8.4.** 2. Infill planting/revegetation within small area of cleared/highly disturbed land adjoining Tweed Coast Road (if monitoring shows necessary) in accordance with **SECTIONS 6.7 and 6.9.**
KR-004	Zone 2: Retained Koala Habitat	Primary Habitat	2	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-005	Zone 2: Retained Koala Habitat	Primary Habitat	3	1. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-006	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.**

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-007	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-008	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	5	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-009	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	5	1. Primary weed control of scattered mature Slash pine and pine wildings in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-010	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	5	1. Primary weed control of scattered mature Slash pine and pine wildings in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-011	Zone 2: Retained Koala Habitat	Primary Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-012	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KR-013	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-014	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-015	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Peg boundaries. 2. Primary weed control of Slash pine in accordance with **SECTION 6.8.4.2**. 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-016	Zone 2: Retained Koala Habitat	Primary / Secondary A Habitat	5	1. Primary weed control of Slash pine, particularly in the north-eastern portion, in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KR-017	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-018	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KR-019	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-020	Zone 2: Retained Koala Habitat	Secondary A Habitat	5	1. Habitat maintenance/assisted natural regeneration in accordance with **SECTIONS 6.7 and 6.9.** 2. Where weed control works result in bare areas or areas of exposed topsoil, appropriate revegetation techniques will be implemented in accordance with **SECTION 6.9**.
KR-021	Zone 2: Retained Koala Habitat	Primary Koala Habitat	5	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WR-001	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries within powerline easement to ensure no continued/future slashing. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WR-002	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
WR-003	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and Blackberry in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WR-004	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WR-005	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WR-006	Zone 3: Retained WSF Habitat	Forage Habitat	4	1. Peg boundaries.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				2. Primary weed control of scattered Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WR-007	Zone 3: Retained WSF Habitat	Forage Habitat	4	1. Peg boundaries. 2. Primary weed control of scattered Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WR-008	Zone 3: Retained WSF Habitat	Forage Habitat	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration within cleared/highly disturbed land in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
KC-001	Zone 4: Koala Compensatory Habitat	Dry Primary	2	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019).

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-002	Zone 4: Koala Compensatory Habitat	Dry Primary plus Dry Heath	2	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with the Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-003	Zone 4: Koala Compensatory Habitat	Dry Primary	3	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2.** 3. Revegetation utilising koala food trees in accordance with the Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-004	Zone 4: Koala Compensatory Habitat	Dry Primary	3	1. Peg boundaries. 2. Primary weed control of dense Barner grass in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-005	Zone 4: Koala Compensatory Habitat	Wet Primary	3	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3.**
KC-006	Zone 4:	Dry Primary plus Dry Heath	5	1. Peg boundaries.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
	Koala Compensatory Habitat			2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2.** 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance **SECTION 6.8.4.3**.
KC-007	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and scattered Bitou bush in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-008	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2.** 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-009	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of very dense Slash pine wildings and mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-010	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				2. Primary weed control of very dense Slash pine wildings in accordance with **SECTION 6.8.4.2.** 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-011	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of very dense Slash pine wildings in accordance with **SECTION 6.8.4.2.** 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-012	Zone 4: Koala Compensatory Habitat	Dry Primary plus Dry Heath	5	1. Peg boundaries. 2. Primary weed control of very dense Slash pine wildings and mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-013	Zone 4: Koala Compensatory Habitat	Wet Secondary	5	1. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 2. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KC-014	Zone 4: Koala Compensatory Habitat	Dry Primary plus Dry Heath	5	1. Peg boundaries. 2. Primary weed control of very dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-015	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of very dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-016	Zone 4: Koala Compensatory Habitat	Wet Primary plus Wet Heath	5	1. Peg boundaries. 2. Primary weed control of dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-017	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KC-018	Zone 4: Koala Compensatory Habitat	Dry Primary plus Dry Heath	5	1. Peg boundaries. 2. Primary weed control of dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-019	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of scattered mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-020	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of dense Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-021	Zone 4: Koala Compensatory Habitat	Wet Secondary	5	1. Primary weed control of dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 2. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KC-022	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-023	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Primary weed control of dense Slash pine wildings in accordance with **SECTION 6.8.4.2**. 2. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-024	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of dense Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-025	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KC-026	Zone 4: Koala Compensatory Habitat	Dry Primary	5	1. Peg boundaries. 2. Primary weed control of dense Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-027	Zone 4: Koala Compensatory Habitat	Wet Primary	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance **SECTION 6.8.4.3**.
KC-028	Zone 4: Koala Compensatory Habitat	Dry Primary	E-W Corridor	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-029	Zone 4: Koala Compensatory Habitat	Dry Primary	E-W Corridor	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
KC-030	Zone 4: Koala Compensatory Habitat	Wet Primary	E-W Corridor	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-031	Zone 4: Koala Compensatory Habitat	Dry Primary	E-W Corridor	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-032	Zone 4: Koala Compensatory Habitat	Wet Primary	4	1. Primary weed control in accordance with **SECTION 6.8.4.2**. 2. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
KC-033	Zone 4: Koala Compensatory Habitat (Additional Koala compensatory habitat for Drain Maintenance Works)	Dry Primary	12	1. Peg boundaries. 2. Prior to any rehabilitation works the White yiel yiel trees will be identified and clearly marked in accordance with the Precinct 12 – 14 TSMP (JWA 2020f). 3. Primary weed control of Camphor laurel in accordance with **SECTION 6.8.4.2**. 4. Revegetation utilising koala food trees in accordance with Section 7.6 of the KPoM (JWA 2019). 5. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
WC-001	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of exotic pasture grasses and scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation (if monitoring shows necessary) in accordance with **SECTION 6.9**.
WC-002	Zone 5: WSF Compensatory Habitat	Forage Habitat – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-003	Zone 5: WSF Compensatory Habitat	Forage Habitat – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-004	Zone 5: WSF Compensatory Habitat	Forage Habitat – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
WC-005	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Sedgeland	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-006	Zone 5: WSF Compensatory Habitat	Forage Habitat – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-007	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-008	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Sedgeland	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-009	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a).

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-010	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2.** 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-011	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Sedgeland	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-012	Zone 5: WSF Compensatory Habitat	Forage Habitat – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-013	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-014	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of pasture grasses and Blackberry in accordance with **SECTION 6.8.4.2**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-015	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Primary weed control of scattered Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 2. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-016	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Sedgeland	4	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-017	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Sedgeland	4	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings, Lantana, Camphor laurel and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
WC-018	Zone 5: WSF Compensatory Habitat	Breeding Habitat – Wet Heath	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation in accordance with Section 7.8 of the WSFMP (JWA 2020a). 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
H-001	Zone 6:	Heath Regeneration –	2	1. Peg boundaries.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
	Heath Regeneration/ Revegetation	Dry Heath		2. Monitor natural regeneration in accordance with the **SECTION 8.4**. 3. Infill planting/revegetation with dry heath species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-002	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Wet Heath	3	1. Peg boundaries. 2. Monitor natural regeneration in accordance with the **SECTION 8.4**. 3. Infill planting/revegetation with wet heath species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-003	Zone 6: Heath Regeneration/ Revegetation	Heath Revegetation – Dry Heath	3	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising with dry heath species in accordance with **SECTION 6.9**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
H-004	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-005	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of mature Slash pine and scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-006	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-007	6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-008	6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-009	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of scattered Slash pine wildings in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-010	Zone 6: Heath Regeneration/ Revegetation	Heath Revegetation – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 6. Revegetation utilising with dry heath species in accordance with **SECTION 6.9** and including re-use of topsoil (where appropriate) in accordance with **SECTION 6.6.** 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
H-011	Zone 6: Heath Regeneration/ Revegetation	Heath Revegetation – Dry Heath	5	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising with dry heath species in accordance with **SECTION 6.9**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
H-012	Zone 6: Heath Regeneration/ Revegetation	Heath Regeneration – Wet Heath	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**. 2. Infill planting/revegetation with wet heath species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-013	Zone 6:	Heath Regeneration – Dry Heath	4	1. Peg boundaries.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
	Heath Regeneration/ Revegetation			2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation within cleared/highly disturbed land (if monitoring shows necessary) in accordance with **SECTION 6.9**.
H-014	Zone 6: Heath Regeneration/ Revegetation	Heath Revegetation – Dry Heath	4	1. Peg boundaries. 2. Primary weed control of Slash pine in accordance with **SECTION 6.8.4.2**. 3. Revegetation utilising with dry heath species in accordance with **SECTION 6.9** and including re-use of topsoil (where appropriate) in accordance with **SECTION 6.6**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
H-015	Zone 6: Heath Regeneration/ Revegetation	Heath Revegetation – Dry Heath	4	1. Peg boundaries. 2. Primary weed control of Slash pine in accordance with SECTION 6.8.4.2. 3. Revegetation utilising with dry heath species in accordance with SECTION 6.9 and including re-use of topsoil (where appropriate) in accordance with SECTION 6.6. 4. Secondary weed control/maintenance in accordance with SECTION 6.8.4.3.
LR-1	Zone 7: Littoral Rainforest Regeneration/ Revegetation	Revegetation	1	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation with Littoral rainforest species in accordance with **SECTION 6.9**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
LR-2	Zone 7: Littoral Rainforest Regeneration/ Revegetation	Regeneration	1	1. Peg boundaries. 2. Primary weed control of Lantana, Winter senna, Ochna, Bitou bush and pasture grasses along Tweed Coast Road in accordance with **SECTION 6.8.4.2**. 3. Monitor natural regeneration in accordance with the **SECTION 8.4**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 5. Infill planting/revegetation (if monitoring shows necessary) in accordance with **SECTION 6.9**.
LR-3	Zone 7: Littoral Rainforest Regeneration/ Revegetation	Revegetation	1	1. Peg boundaries. 2. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 3. Revegetation with Littoral rainforest species in accordance with **SECTION 6.9**. 4. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**.
W-001	Zone 8: Wetland Regeneration	N/A	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**. 2. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-002	Zone 8: Wetland Regeneration	N/A	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**. 2. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-003	Zone 8: Wetland Regeneration	N/A	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**. 2. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-004	Zone 8: Wetland Regeneration	N/A	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**.

ID	Management Zone	Sub-type	Precinct	Specific Vegetation Management Requirements
				2. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-005	Zone 8: Wetland Regeneration	N/A	5	1. Monitor natural regeneration in accordance with the **SECTION 8.4**. 2. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-006	Zone 8: Wetland Regeneration	N/A	5	1. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 2. Monitor natural regeneration in accordance with the **SECTION 8.4**. 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 4. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.
W-007	Zone 8: Wetland Regeneration	N/A	5	1. Primary weed control of pasture grasses in accordance with **SECTION 6.8.4.2**. 2. Monitor natural regeneration in accordance with the **SECTION 8.4**. 3. Secondary weed control/maintenance in accordance with **SECTION 6.8.4.3**. 4. Infill planting/revegetation with wetland species (if monitoring shows necessary) in accordance with **SECTION 6.9**.

APPENDIX 7 - BASELINE DATA PROFORMA

Work Area Number:	**Date:**
Climatic Condition:	
Vegetation type: ☐ Rainforest ☐ Sclerophyll Forest ☐ Wetland ☐ Woodland ☐ Heath ☐ Riparian Veg	
Native Regeneration Scoring at Time of Assessment: ☐ Negligible ☐ Poor ☐ Moderate ☐ Good ☐ Exceptional	

NATIVE PLANT SPECIES LIST *Details of native plant species present and their abundance within the work area*			
Stratum	**Native Plants**		**Abundance**
	Common Name	**Scientific Name**	
Lower			
Mid			
Upper			

THREATENED PLANT SPECIES/ENDANGERED ECOLOGICAL COMMUNITIES LIST *List of threatened plant species/Endangered Ecological Communities found at the work area*		
Species and Conservation Status	**Number of Plants**	**Management Implications**

Endangered Ecological Community	**Management Implications**

HABITAT FEATURES	
Fauna observed: *e.g. Turkey mound present on site.*	
Fauna habitat features present on site:	
☐ Hollows in trees	☐ Wet or damp areas (including soaks / springs)
☐ Mature or over-mature trees	☐ Leaf litter
☐ Dead standing trees	☐ Native grasses, rushes and sedges
☐ Rocks and boulders	☐ Fleshy fruited trees and shrubs
☐ Fallen logs	☐ Nectar bearing trees and shrubs
☐ Caves, mineshafts or overhangs	☐ Dense understorey shrubs
☐ Springs	☐ Prickly understorey shrubs
☐ Lagoons	☐ Seasonal cracks in the soil
☐ Pools	☐ Other (please specify):
☐ Watercourses / gullies	
☐ Riparian areas	
Comments:	

ENVIRONMENTAL WEED SPECIES LIST *Details of weed species present and their abundance within the work area*			
Stratum	**Major Environmental Weeds**		**Percentage Cover %**
	Common Name	**Scientific Name**	
Lower			
Mid			
Upper			

OTHER THREATS OR IMPACTS			
Feral Animal Presence:	**Area of Most Disturbance**	**Impact**	**Management Implications**
EXAMPLE: Cane Toad	*Open disturbed area*	*On native fauna*	*Monitor presence*

Possible Negative Impacts	**Impact**	**Management Implications**
EXAMPLE: Stock intrusion	*On regenerating native plants*	*Stock intrusion is unlikely, however if evidence of significant negative impact of regenerating native vegetation is detected, then fencing of stock may be required.*
EXAMPLE: Herbicide drift	*On threatened XXXX plant and on native plants*	*Use of herbicides to control weeds around the threatened plants will have to be done with utmost care and only by experienced bush regenerators. In any case weed control using herbicides must comply with current Best Management Practice*

ENVIRONMENTAL RESTORATION ISSUES	
Weaknesses	
EXAMPLES: Exposed, no canopy, high light. Copious weed regeneration following disturbance. Sloping site difficult to work in. XXX threatened species present in abundance.	
Strengths	
EXAMPLES: Good seed source for native recruitment. Some native regeneration occurring.	
Restoration Objectives for Work Area	
EXAMPLE: To undertake all enhancement plantings and the first stage weed control program by the release of the subdivision certificate, and to achieve an 80% native species canopy cover in all areas by November 2009.	

APPENDIX 8 - DAILY WORK RECORD PROFORMAS

This form is to be filled by the team leader for each workday. The team leader will need to allow 15 minutes each day to gather any relevant information for team members and to fill in this form.

Name of Team Leader:	**Date:**
Vegetation Type:	**Site Number:**
Weather Conditions:	
Specific Work Zone/s:	

Work Team Details

Name	Zone No	Time Started	Time Finished	Hours Worked
Total No of Workers:		**Total No of Hours:**		

Description of Work Undertaken
(e.g. spraying, hand weeding, replanting, etc.). Mark work progress on project map.

Weed Control Undertaken	Weed Species	Material Used (tools/machinery)	Chemical Application (type/ratio/volume)	Zone No(s)	Area Worked (m^2)	No of People	Total Hours Worked
Spraying							
Tree injections							
Cut and paint							
Hand weeding							
Other (specify)							

Replanting Undertaken	Material Used (tools/machinery)	Fertilizer, Mulch, Tree Protection Used (type/ratio/volume)	Zone No(s)	No trees Planted	No of People	Total Hours Worked

Fencing Undertaken	Type of Fence	Material Used (tools/machinery)	Zone No(s)	Km of Fence	No of People	Total Hours Worked

Other Work (describe activity)	Material Used (tools/machinery)	Zone No(s)	Quantity	No of People	Total Hours Worked

Observations:
New native species or native species not previously recorded in work zone (please note date and zone no):

Name and date of any native plant species in flower or fruit, sudden and abundant regeneration of a particular species, or other relevant observations:

New weed species or weed species not previously recorded in work zone (please note date and zone no):

Any animal sightings (please indicate if by visual identification, called, nests, footprints, scats, clawmarks, shed skin, diggings, smell, feeding etc.):

Blank Project Map:
Use map to indicate work undertaken for each day (e.g. hatching weed control progress).

Signature:

Chemical Operators Data Sheet

This form is to be filled by the team leader for each workday. The team leader will need to allow 15 minutes each day to gather any relevant information for team members and to fill in this form.

Location:	**Date:**	**Time:**
Operators:		

Herbicide	Batch No	Dilution Rate	Total	Operator	Equipment
Glyphosate:					
☐ RoundupBioactive®					
☐ Weedmaster Duo®					
Metsulfuron Methyl:					
☐ Brushkiller®					
☐ Brushoff®					
Glyphosate *PLUS* Metsulfuron Methyl:					
☐ RoundupBioactive®					
☐ Weedmaster Duo®					
☐ Brushoff®					
Triclopyr & Picloram:					
☐ Grazon®					
☐ Tordon T/C®					
Marker Dye:					
☐ White field marker					
☐ Red marker					
☐ Other					
Additive:					
☐ LI 700®					
☐ Agral®					
Other:					

Growing Conditions	Temperature	Weather Conditions	Wind Strength	Wind Direction
☐ Very Good	☐ Cool <20º	☐ Showers	☐ Strong	
☐ Good	☐ Warm 21º – 25º	☐ Overcast	☐ Gusty	
☐ Poor	☐ V/Warm 26º – 30º	☐ Clear Sky	☐ Light	
☐ Very Poor	☐ Hot >30º	☐ Variable	☐ Calm	

Zone/Area:
Comments:

Signature: