



KINGS FOREST

PRECINCTS 1 - 5 BUFFER MANAGEMENT PLAN

A Report Prepared for
Project 28 Pty Ltd

DECEMBER 2020

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1 INTRODUCTION

1.1 Background

JWA Pty Ltd (JWA) has been engaged by Project 28 Pty Ltd (Project 28) to prepare a Buffer Management Plan (BMP) 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 Kings Forest site was zoned for residential and commercial development in the early 1990s 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.

State Environmental Planning Policy (Major Projects) 2005 (Amendment No 10) was gazetted in November 2006, resolving the zonings of the Kings Forest site. Threatened flora, habitat for threatened fauna, Endangered Ecological Communities (EECs) and State Environmental Planning Policy (SEPP) 14 Wetlands are protected within Environmental Protection Zones (EPZs). Provision was made for a 50 m ecological buffer to these areas. Subsequent to gazettal of the SEPP Amendment, a Concept Plan for Kings Forest was prepared and lodged with NSW Department of Planning (DoP). The objectives of ecological buffers at the Kings Forest site were originally discussed in the BMP (JWA 2009) that accompanied the Concept Plan Application. The 2009 BMP (JWA 2009) included a literature review on the types and purposes of environmental buffers.

This BMP provides specific measures for mitigating and/or minimising the potential impacts on vegetation within Precincts 1 - 5 Environmental Management Areas (EMAs) as a result of development activities through management and maintenance of ecological buffers at the outer edge of these EMAs and at the eastern and western ends of the East-West Corridor. Specific management actions discussed in this BMP will be triggered and completed on a pre-construction, construction and operational phase basis.

1.2 Aim and Objectives

This BMP is intended to assist Project 28 in managing the ecological values of buffers associated with Precincts 1- 5 and the proposed East-West Corridor before, during and after development.

The aim of this BMP is to provide guidelines, strategies and methods for the treatment and management of ecological buffers to Cudgen Nature Reserve and EMAs associated with Precincts 1 - 5 and the proposed East-West Corridor of the Kings Forest development.

Implementation of this BMP will ensure ongoing sustainable management of native vegetation and habitat within buffers and that land clearing and land modification activities associated with the development are effectively remediated.

This BMP has been prepared with consideration of the relevant objectives of ecological buffers under the SEPP (Major Projects) 2005 (Amendment No 10). Clause 7(2) of the SEPP (Major Projects) Amendment states that the objectives of the ecological buffers are:

- a) To protect wetlands or areas of particular habitat significance;

- b) To restrict development so that, as far as practicable, it does not occur within ecological buffers;
- c) To help ensure that development is designed, sited and managed so as to minimise its impact on the ecological and hydrological functions of the ecological buffers; and
- d) To encourage the restoration and maintenance of the native vegetation and ecological processes of the land within and adjacent to wetlands or areas of particular habitat significance.

Clause 7(3) of the SEPP (Major Projects) Amendment requires that development on land within an ecological buffer is to:

- a) incorporate effective measures to manage wetlands or areas of particular habitat significance, and
- b) be designed and sited to maintain connectivity of vegetation and minimise vegetation clearing, soil disturbance and alterations to the rate, volume or quality of surface and ground-water flows, and
- c) retain and maintain all existing native vegetation outside the area immediately required for the development, and
- d) incorporate measures to regenerate native vegetation for all disturbed areas within the buffer, and
- e) incorporate appropriate stormwater and erosion control measures to protect the buffer from surface water run-off or other disturbance.

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. A Precincts 1 and 5 BMP was prepared in accordance with the Concept Plan approval conditions.

The Kings Forest Stage 1 Project Application No. 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 specific EPBC Act approval conditions relating to ecological buffers on the Kings Forest development site, however it is noted that the ecological buffers 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 Tweed Shire Council and the NSW Department of Planning, Industry and Environment (DPI&E) to reconcile all approval conditions.

This Precincts 1 - 5 BMP 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 BMP:

- 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; and
 - Modification No. 7, approved 24 May 2018.

JWA hereby certify that this BMP 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 and 41 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

A number of 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 BMP 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 Vegetation and Weed Management Plan (VWMP) (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); and
- Kings Forest Overall Water Management Plan (OWMP) (G&S 2020b).

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

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 Site Description

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

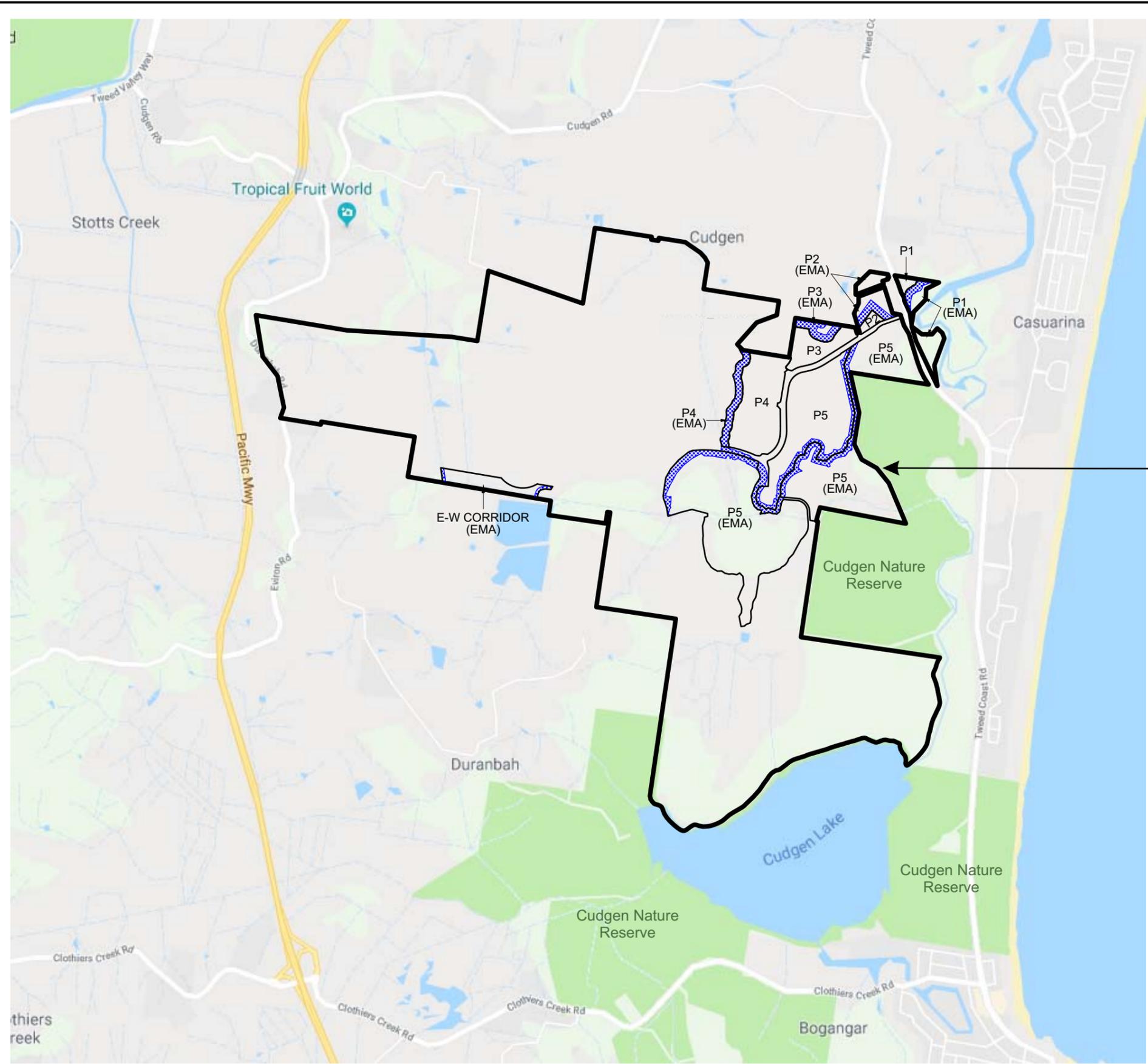
- Lot 76, 272, 323 and 326 in DP 755701;
- Lot 6 in DP 875446;
- Lot 2 in DP 819015;
- Lot 1 in DP 706497;
- Lot 40 in DP 7482;
- Lot 37A in DP 13727;
- Lot 38A in DP 13727;
- Lot 38B in DP 13727;
- Lot 1 in DP 129737;
- Lot 1 in DP 781633; and
- Lot 7 in DP 875447.

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.

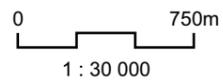
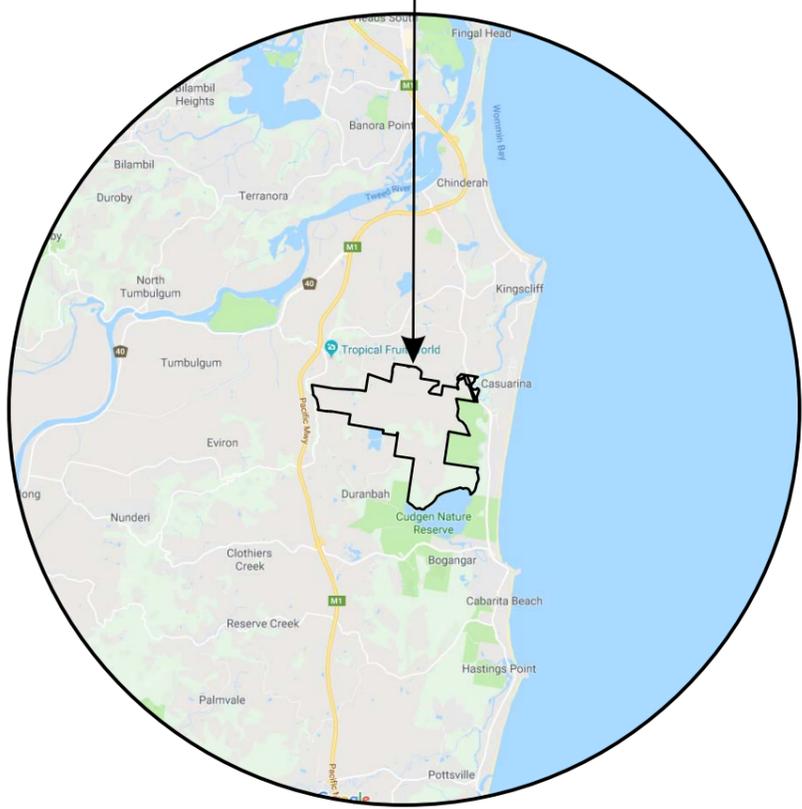
2.3 Conservation Reserves/Ecologically Significant Areas in the Locality

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
 Precincts 1 - 5 and East-West Corridor Ecological Buffers
 Kings Forest Boundary

SUBJECT SITE

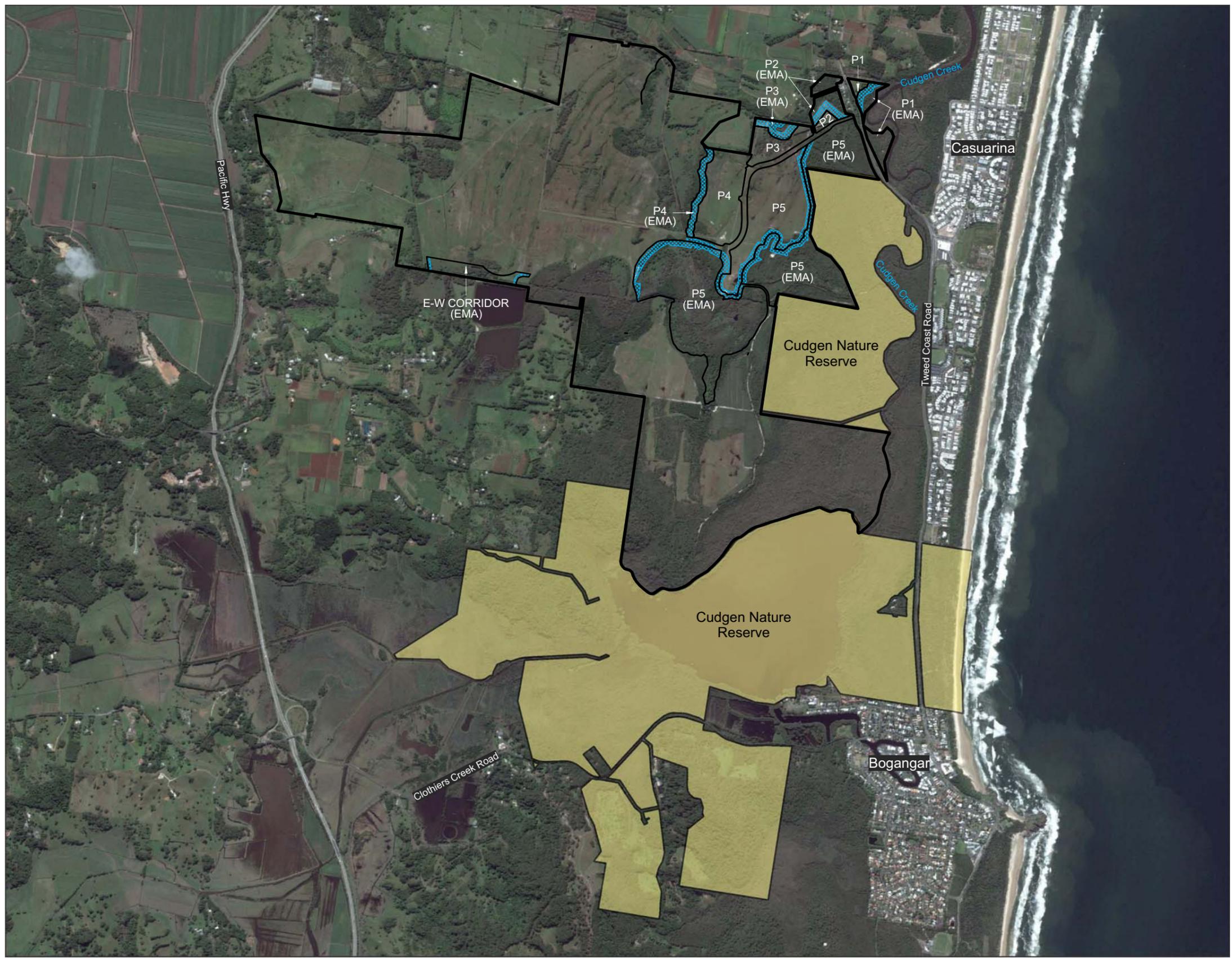


SOURCE: Google Maps
 SCALE: 1 : 30 000 @ A3
JWA PTY LTD
Ecological Consultants

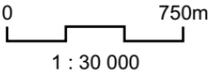
CLIENT
 Project 28 Pty Ltd
 PROJECT
 Buffer Management Plan
 Precincts 1 - 5 Kings Forest
 Melaleuca Drive, Duranbah, NSW
 Shire of Tweed

FIGURE 1
 PREPARED: BW
 DATE: 31 August 2020
 FILE: N97017_Locality.cdr

TITLE
LOCALITY PLAN



- LEGEND**
- Cudgen Nature Reserve
 - Precincts 1 - 5 and East-West Corridor
 - Ecological Buffers
 - Kings Forest Boundary



SOURCE: NSW DPI Cadastre
 Google Earth Apr 2017 Aerial
 SCALE: 1 : 30 000 @ A3

JWA PTY LTD
 Ecological Consultants

CLIENT
 Project 28 Pty Ltd
 PROJECT
 Buffer Management Plan
 Precincts 1 - 5 Kings Forest
 Melaleuca Drive, Duranbah, NSW
 Shire of Tweed

FIGURE 2

PREPARED: BW
 DATE: 31 August 2020
 FILE: N97017_Cudgen NR.cdr

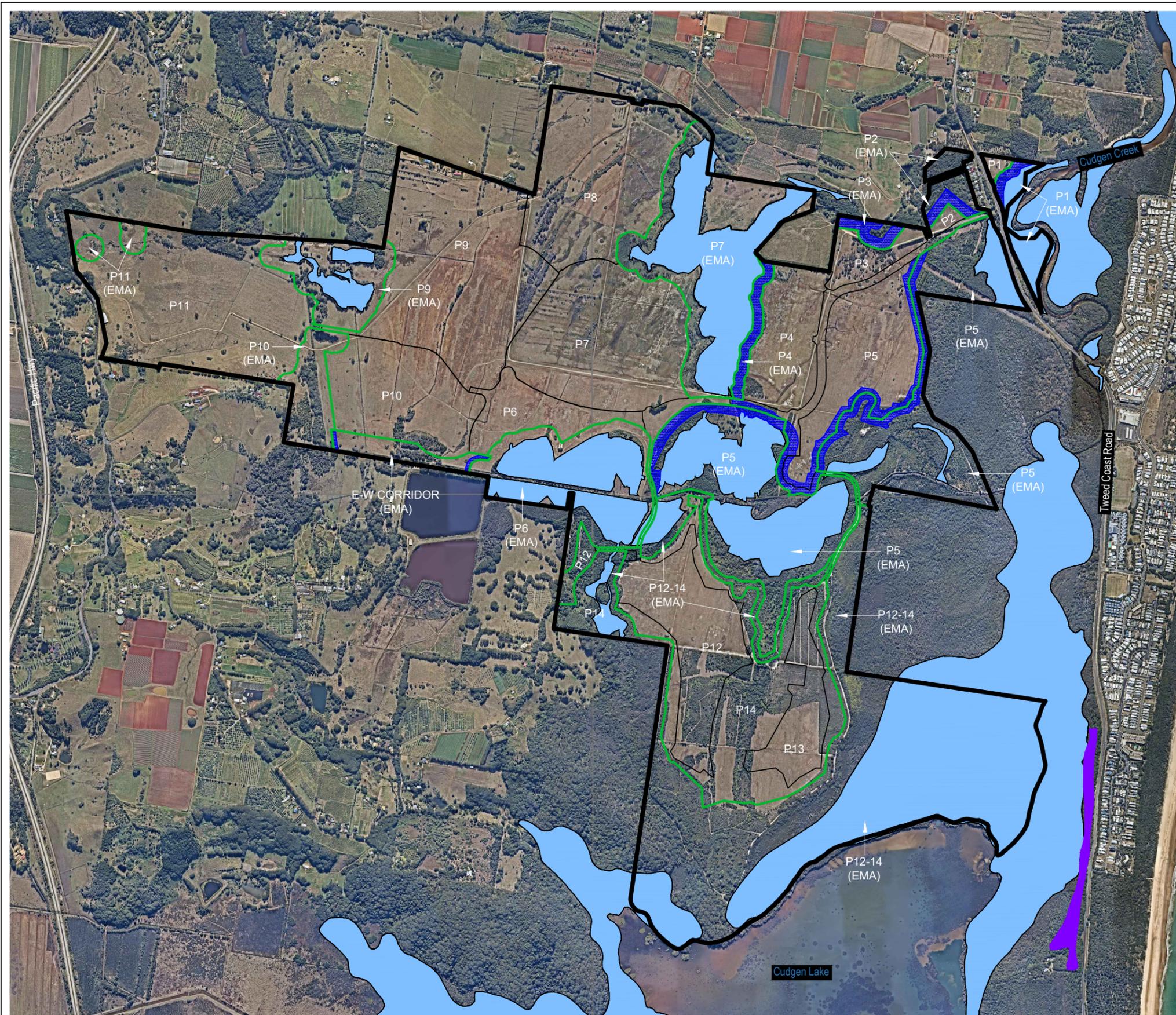
TITLE

**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

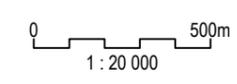
Land use zones over the Kings Forest development site are identified on the NSW Planning SEPP Major Development 2005 - Kings Forest land zoning map (**FIGURE 4**). SEPP 14 wetland areas, as well as a number of smaller wetland and Littoral rainforest parcels have been designated Environmental Protection (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) (7I), the remainder of the property is zoned Urban Expansion (2c).



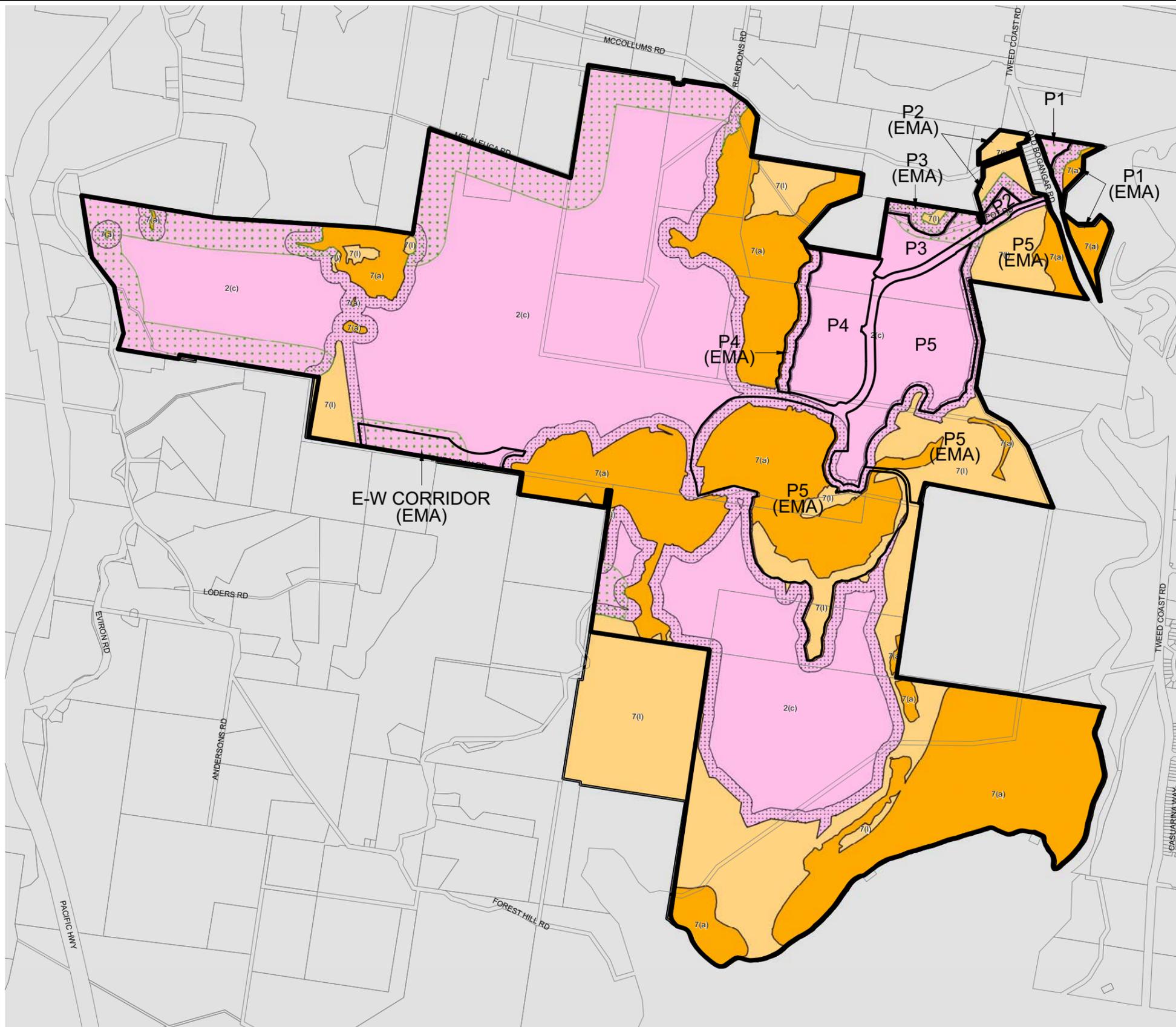
- LEGEND**
- SEPP 14 Coastal Wetlands (#1)
 - SEPP 26 Littoral Rainforest (#1)
 - Precincts 1 - 5 and East-West Corridor Ecological Buffers
 - Environmental Management Area (EMA) Boundary (#2)
 - Precinct Boundary
 - Kings Forest Boundary

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.

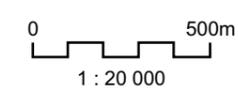
Note 2:
 To assist in identifying the staging of rehabilitation and management actions, EPZs and buffer areas have been associated with a relevant development precinct and are collectively titled as Environmental Management Areas (EMAs).



SOURCE: Landpartners - SEPP14 Wetlands (Amendment 15) & SEPP26 Littoral Rainforest; Near Map 08/08/18 Aerial SCALE: 1 : 20 000 @ A3 <div style="border: 1px solid black; padding: 2px; text-align: center;"> JWA PTY LTD Ecological Consultants </div>	CLIENT Project 28 Pty Ltd PROJECT Buffer Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Duranbah, NSW Shire of Tweed	FIGURE 3	TITLE SEPP No. 14 COASTAL WETLANDS & SEPP No. 26 LITTORAL RAINFOREST
PREPARED: BW DATE: 31 August 2020 FILE: N97017_MP 1-5_20200831.dwg			



- LEGEND**
- 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)



<p>SOURCE: NSW Planning SEPP (Major Development) 2005 - Kings Forest Land Zoning Map (Ref: SEPP_MD_KIF_LZN_001_20100201) SCALE: 1 : 20 000 @ A3</p> <p style="text-align: center;">JWA PTY LTD Ecological Consultants</p>	<p>CLIENT Project 28 Pty Ltd</p> <p>PROJECT Buffer Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Duranbah, NSW Shire of Tweed</p>	<p>FIGURE 4</p> <p>PREPARED: BW DATE: 31 August 2020 FILE: N97017_Zoning.cdr</p>	<p>TITLE</p> <p>ZONING PLAN</p>
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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 4,500 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.

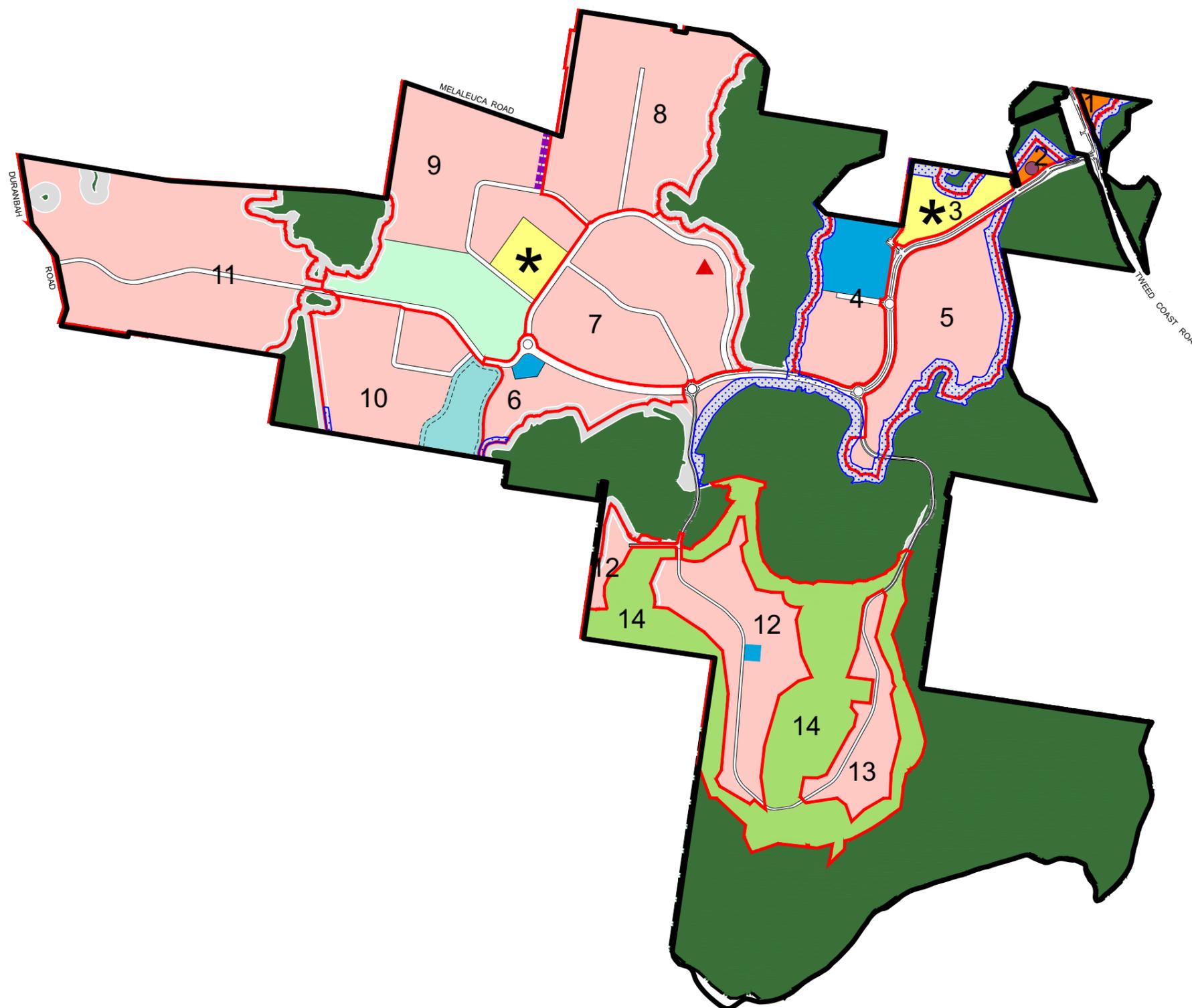
Retained vegetation and habitat areas across the site generally occur within Environmental Protection Zones (EPZs) and associated buffers. To assist in identifying the staging of rehabilitation and management actions, these EPZ and buffer areas have been associated with a relevant development precinct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

3.2 Ecological Buffers

The ecological buffers associated with the Precincts 1 - 5 and East-West Corridor EMAs are the subject of this BMP. 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.

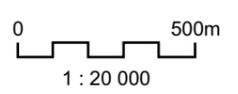
The location and extent of ecological buffers was resolved by SEPP (Major Projects) 2005 (Amendment No 10). Provision was made for 50 m ecological buffers between the Urban Expansion zones and the 7a and 7l lands, and other ecologically significant areas. The 50 m ecological buffer zones are comprised of a 20 m Outer Protection Zone (OPZ) (adjacent to development) and a 30 m Inner Protection Zone (IPZ).

TABLE 1 provides the details of ecological buffers associated with each relevant Precinct/EMA.



- LEGEND**
- Precincts 1 - 5 and East-West Corridor Ecological Buffers
 - 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.



SOURCE: RPS Precinct Plan Rev B dated 05/12/13 (Ref: 113691-PSP-4b(PRECINCT PLAN).dwg) SCALE: 1 : 20 000 @ A3 JWA PTY LTD Ecological Consultants	CLIENT Project 28 Pty Ltd PROJECT Buffer Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durambah, NSW Shire of Tweed	FIGURE 5	TITLE PRECINCT PLAN
		PREPARED: BW DATE: 31 August 2020 FILE: N97017_Precinct Plan.cdr	

TABLE 1
DETAILS OF BUFFERS ASSOCIATED WITH EACH RELEVANT PRECINCT/EMA

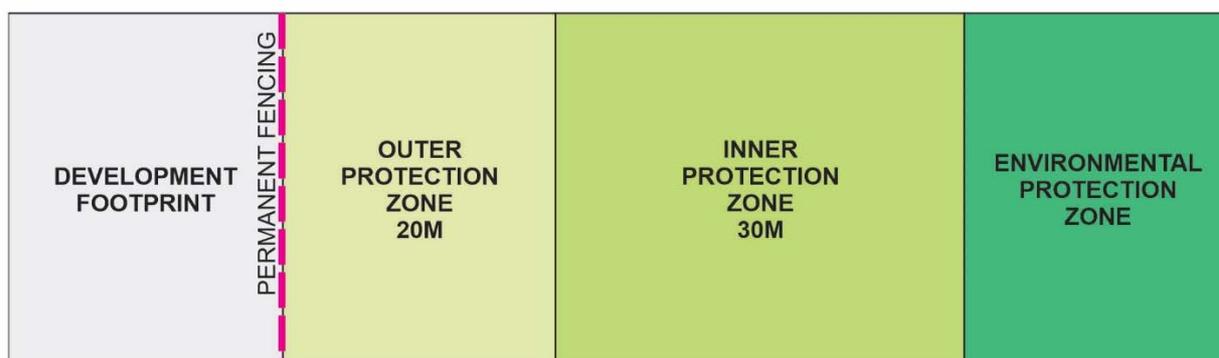
Precinct/EMA	Buffer Area
Precinct 1	1.28 ha
Precinct 2	1.63 ha
Precinct 3	2.47 ha
Precinct 4	3.76 ha
Precinct 5	16.11 ha
East-West Corridor	0.54 ha

3.3 Precinct Descriptions

3.3.1 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. An indicative cross-section of the Precinct 1 ecological buffer is provided in **PLATE 1**. Works within the Precinct 1 ecological buffer will include:

- Protection and maintenance of retained vegetation within the IPZ and OPZ in accordance with the following documents where applicable:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.7; and
 - Kings Forest KPoM (JWA 2019) - Section 7.5.
- Littoral rainforest regeneration/revegetation works within the IPZ and OPZ in accordance with Section 6.9 of the Precincts 1 - 5 VWMP (JWA 2020b).

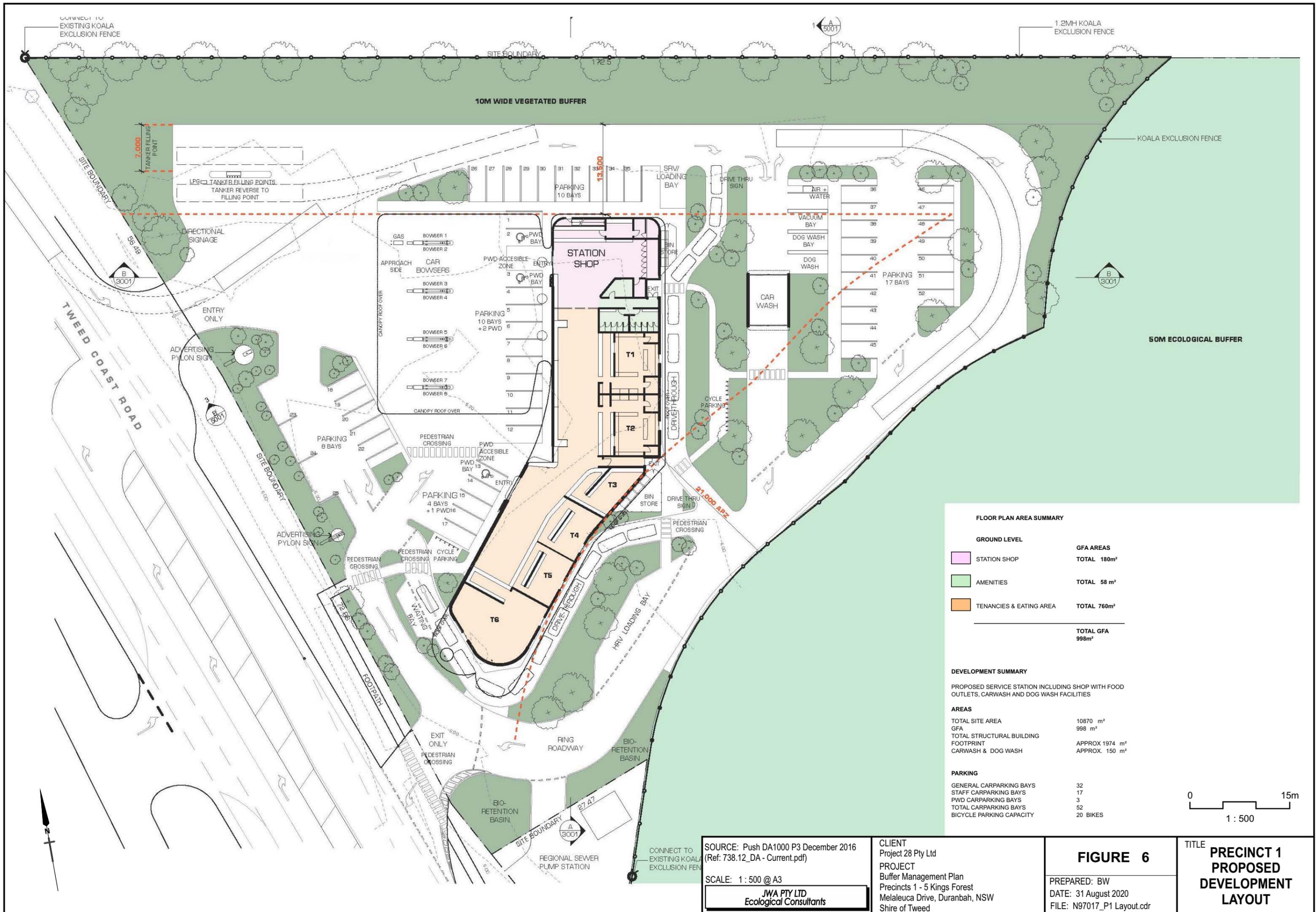


*Note: Final location of fence subject to detailed design of access and bushfire considerations.

PLATE 1 - INDICATIVE BUFFER ARRANGEMENT FOR PRECINCT 1

3.3.2 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



FLOOR PLAN AREA SUMMARY

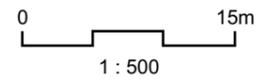
GROUND LEVEL		GFA AREAS
	STATION SHOP	TOTAL 180m ²
	AMENITIES	TOTAL 58 m ²
	TENANCIES & EATING AREA	TOTAL 760m ²
		TOTAL GFA 998m²

DEVELOPMENT SUMMARY

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

AREAS	Area (m ²)
TOTAL SITE AREA	10870 m ²
GFA	998 m ²
TOTAL STRUCTURAL BUILDING FOOTPRINT	APPROX 1974 m ²
CARWASH & DOG WASH	APPROX. 150 m ²

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



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

SCALE: 1 : 500 @ A3

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

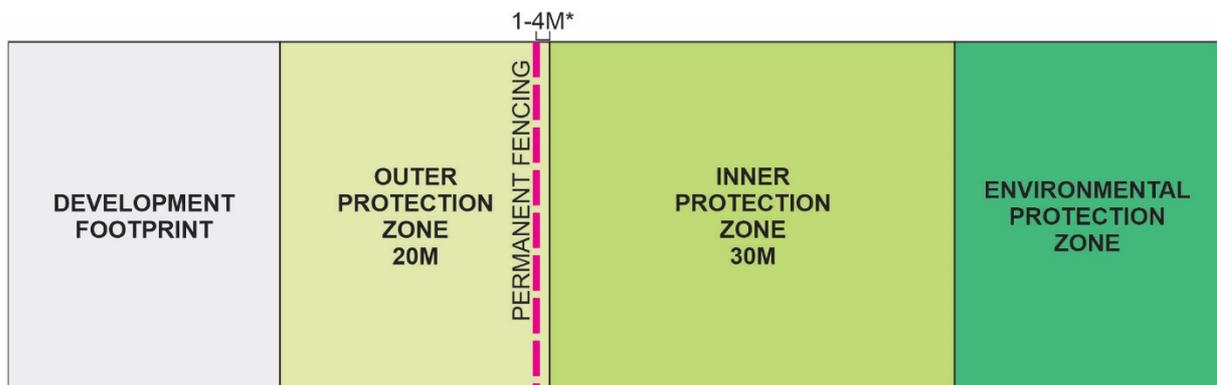
FIGURE 6

PREPARED: BW
DATE: 31 August 2020
FILE: N97017_P1 Layout.cdr

TITLE
**PRECINCT 1
PROPOSED
DEVELOPMENT
LAYOUT**

2 (collectively referred to as the Precinct 2 EMA) in which no development works are proposed. An indicative cross-section of the Precinct 2 ecological buffer is provided in **PLATE 2**. Works within the Precinct 2 ecological buffer will include:

- Protection and maintenance of retained vegetation within the IPZ and OPZ in accordance with the following documents where applicable:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.7; and
 - Kings Forest KPoM (JWA 2019) - Section 7.5.
- Regeneration/revegetation works (including compensatory koala habitat creation and heath regeneration/revegetation) within the IPZ and OPZ in accordance with the following documents where appropriate:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.9; and
 - Kings Forest KPoM (JWA 2019) - Section 7.6.



*Note: Minimum setback for fence location shown. Final location of fence subject to locations of retained and compensatory WSF habitat (refer to WSFMP (JWA 2020b), access and bushfire considerations).

PLATE 2 - INDICATIVE BUFFER ARRANGEMENT FOR PRECINCTS 2 - 4

3.3.3 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. An indicative cross-section of the Precinct 3 ecological buffer is provided in **PLATE 2**. Works within the Precinct 3 ecological buffer will include:

- Protection and maintenance of retained vegetation within the IPZ and OPZ in accordance with the following documents where applicable:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.7; and
 - Kings Forest KPoM (JWA 2019) - Section 7.5.
- Regeneration/revegetation works (including compensatory koala habitat creation and heath regeneration/revegetation) within the IPZ and OPZ in accordance with the following documents where appropriate:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.9; and
 - Kings Forest KPoM (JWA 2019) - Section 7.6.

3.3.4 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 within the IPZ and OPZ in accordance with the following documents where applicable:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.7; and
 - Kings Forest WSFMP (JWA 2020a) - Section 7.7.
- Regeneration/revegetation works (including compensatory koala and WSF habitat creation and heath regeneration/revegetation) within the IPZ and OPZ in accordance with the following documents where appropriate:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.9;
 - Kings Forest KPoM (JWA 2019) - Section 7.6; and
 - Kings Forest WSFMP (JWA 2020a) - Section 7.8.

3.3.5 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 lacks Creek occurs to the south.

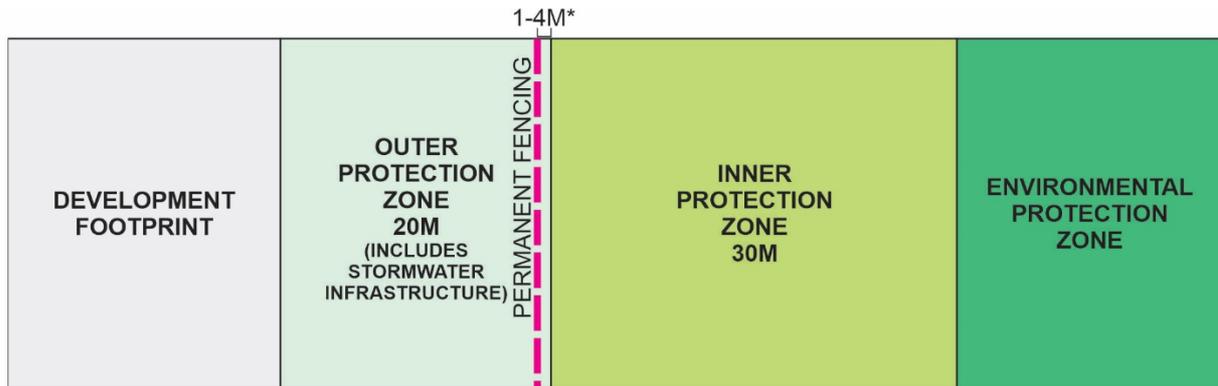
Precinct 5 is proposed to be developed as a residential precinct and will also include the construction of a significant portion of the proposed Kings Forest Parkway. Large areas adjacent to Precinct 5 will be retained within EPZs and associated 50 m buffer zones (collectively referred to as the Precinct 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 (**PLATE 3**). Detail design of the outer 20 m buffer zone has yet to be completed. This Precincts 1 - 5 BMP will be amended once detailed design is completed as required by Condition 39 of MP 08_0194 (**SECTION 6.15**).

Works within the inner 30 m of the Precinct 5 ecological buffer will include:

- Protection and maintenance of retained vegetation within the IPZ in accordance with the following documents where applicable:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.7;
 - 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) within the IPZ and OPZ in accordance with the following documents where appropriate:
 - Precincts 1 - 5 VWMP (JWA 2020b) - Section 6.9;
 - 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.



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

PLATE 3 - INDICATIVE BUFFER ARRANGEMENT FOR PRECINCT 5

3.3.6 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).

3.4 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 BMP) 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

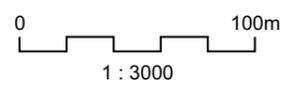
- TERRACES**
 - Build to both boundaries
 - Rear loaded
 - Min. Frontage : 8m
 - Min. depth 24m
- PLEXES**
 - Attached Dwelling
 - Front loaded parking
 - Min Frontage : 18m , Corner : 20m
 - Min. Depth : 20m
- ZERO - Lot Dwellings**
 - Detached Dwellings
 - Build to one side boundary
 - Front loaded 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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Project 28 Pty Ltd
PROJECT
Buffer Management Plan
Precincts 1 - 5 Kings Forest
Melaleuca Drive, Duranbah, NSW
Shire of Tweed

FIGURE 7

PREPARED: BW
DATE: 31 August 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 elliotii*) 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:

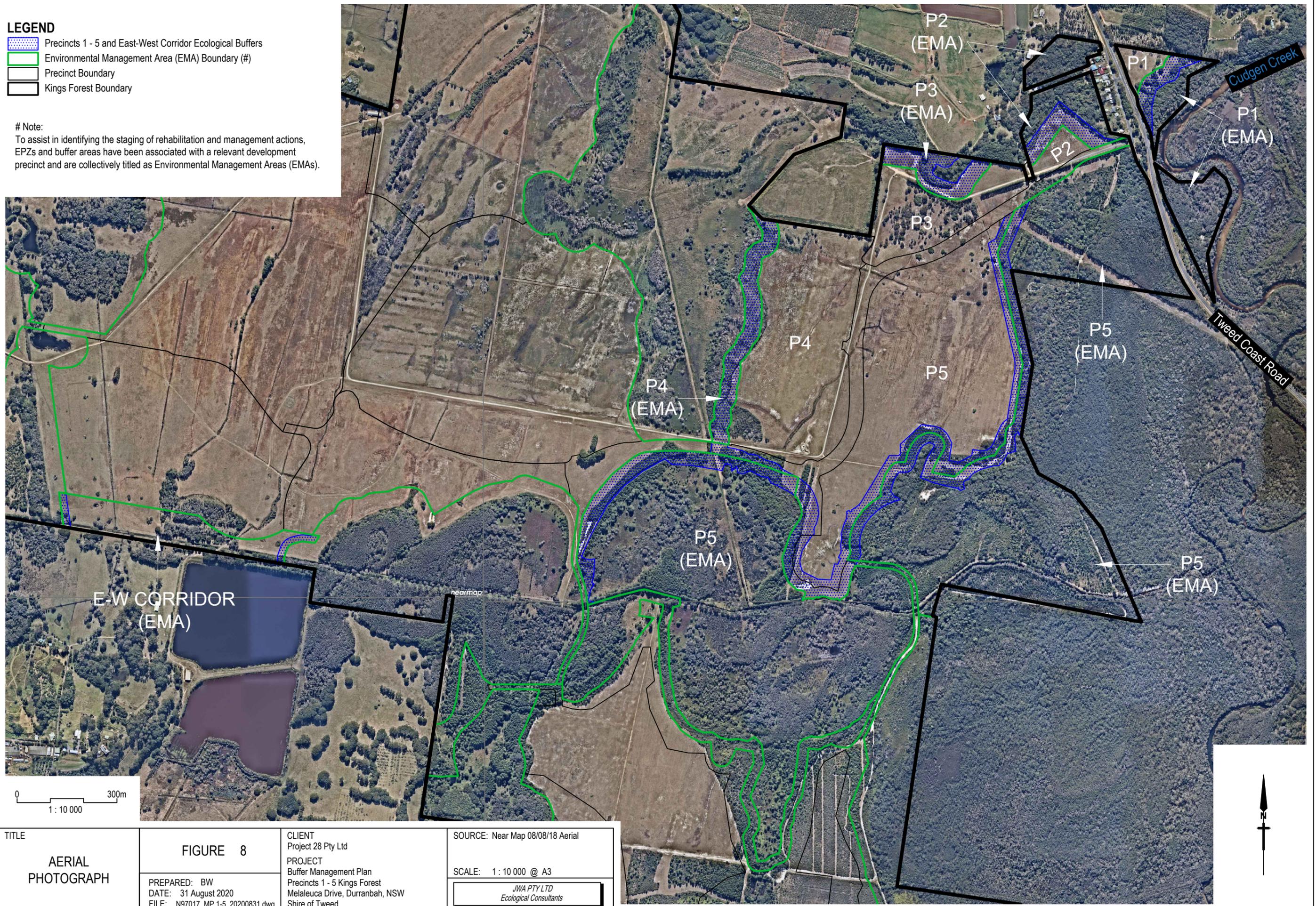
- Highly modified vegetation communities;
- Freshwater wetlands;
- Heathland and shrublands;
- Swamp sclerophyll floodplain forests;
- Dry to moist open forests; and
- Rainforest.

Vegetation community descriptions in this BMP, 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

-  Precincts 1 - 5 and East-West Corridor Ecological Buffers
-  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).



<p>TITLE</p> <p>AERIAL PHOTOGRAPH</p>	<p>FIGURE 8</p> <p>PREPARED: BW DATE: 31 August 2020 FILE: N97017_MP 1-5_20200831.dwg</p>	<p>CLIENT Project 28 Pty Ltd</p> <p>PROJECT Buffer Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durranbah, NSW Shire of Tweed</p>	<p>SOURCE: Near Map 08/08/18 Aerial</p> <p>SCALE: 1 : 10 000 @ A3</p> <p style="text-align: center;"><i>JWA PTY LTD</i> Ecological Consultants</p>
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LEGEND

-  Precincts 1 - 5 and East-West Corridor Ecological Buffers
-  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/fermland
-  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/fermland [PCT 1911, TVMS 701/702]
-  2(c2) Sedgeland/rushland/fermland (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 501/502]
-  3(e) Regenerating wet/dry coastal heathland to shrubland (with exotic pines) [PCT 1297, TVMS 501/502]

Community 4 - Swamp Sclerophyll Floodplain Forest

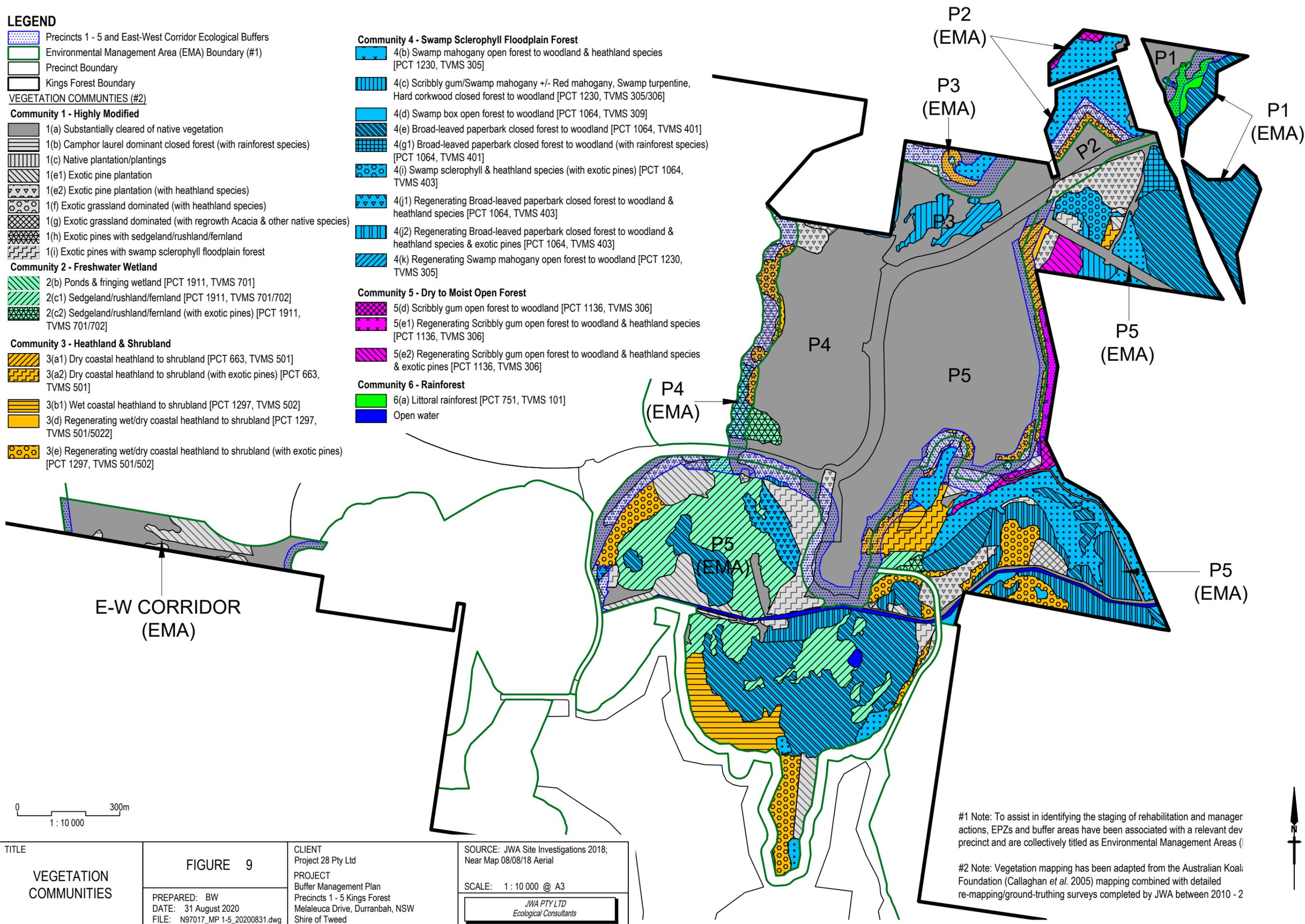
-  4(b) Swamp mahogany open forest to woodland & heathland species [PCT 1230, TVMS 305]
-  4(c) Scribbly gum/Swamp mahogany +/- Red mahogany, Swamp turpentine, Hard corkwood closed forest to woodland [PCT 1230, TVMS 305/306]
-  4(d) Swamp box open forest to woodland [PCT 1064, TVMS 309]
-  4(e) Broad-leaved 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 manager actions, EPZs and buffer areas have been associated with a relevant dev precinct and are collectively titled as Environmental Management Areas (EMA).

#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 - 2012.

<p>TITLE</p> <p>VEGETATION COMMUNITIES</p>	<p>FIGURE 9</p> <p>PREPARED: BW DATE: 31 August 2020 FILE: N97017_MP 1-5_20200831.dwg</p>	<p>CLIENT Project 28 Pty Ltd</p> <p>PROJECT Buffer Management Plan Precincts 1 - 5 Kings Forest Melaleuca Drive, Durrabah, NSW Shire of Tweed</p>	<p>SOURCE: JWA Site Investigations 2018; Near Map 08/08/18 Aerial</p> <p>SCALE: 1 : 10 000 @ A3</p> <p style="text-align: center;">JWA PTY LTD Ecological Consultants</p>
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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 2** and their locations shown in **FIGURE 10**. The conservation status of each species listed in **TABLE 2** is shown in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW BC Act.

TABLE 2
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			
<i>Endiandra muelleri</i> subsp. <i>bracteata</i>	Green-leaved rose walnut	E	-
<i>Phaius australis</i>	Southern swamp orchid	E	E
<i>Cryptocarya foetida</i>	Stinking cryptocarya	V	V
<i>Archidendron hendersonii</i>	White laceflower	V	-
Threatened fauna species			
<i>Ixobrychus flavicollis</i>	Black bittern	V	-
<i>Syconycteris australis</i>	Common blossom bat**	V	-
<i>Falsistrellus tasmaniensis</i>	Eastern false pipistrelle**	V	-
<i>Tyto longimembris</i>	Grass owl	V	-
<i>Pteropus poliocephalus</i>	Grey-headed flying fox	V	V
<i>Phascolarctos cinereus</i> [^]	Koala	V	V
<i>Miniopterus australis</i>	Little bent-wing bat**	V	-
<i>Tyto novaehollandiae</i>	Masked owl	V	-

Scientific Name	Common Name	BC Act*	EPBC Act#
<i>Pandion cristatus</i>	Eastern osprey	V	-
<i>Ptilinopus regina</i>	Rose-crowned fruit-dove**	V	-
<i>Myotis macropus</i>	Southern myotis**	V	-
<i>Crinia tinnula</i>	Wallum froglet	V	-
<i>Litoria olongburensis</i>	Wallum sedge frog	V	V
<i>Saccolaimus flaviventris</i>	Yellow-bellied sheath-tail 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).