Biodiversity Assessment
Former Mullumbimby Hospital Site
April 2023

Prepared by
EarthScapes Consulting

Version	Written by	Date	Reviewed by	Date
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V2	Jane Wickers	April 10 2023	Dr Jo Green	April 17 2023
V3	Jane Wickers	April 17 2023		
Final	Jane Wickers and Dr Jo Green	26/07/2023		

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Note: The information in this plan is subject to clarification or amendment due to changes in legislation, agencies and organisations over time. It is the responsibility of the user to ensure compliance with relevant legislation.

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Acknowledgement

The People of the Bundjalung nation developed and maintained a deep and rich connection with the land of the Byron area. The land nourished all of the person, supplying physical, spiritual, cultural and identity necessities. We wish to acknowledge these First Peoples, and pay our respects to Elders - past, present and future.

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1. Scope

EarthScapes Consulting Pty Ltd has been engaged by Byron Shire Council to undertake a biodiversity assessment of the former Mullumbimby Hospital Site.

1. A site visit will inform the assessment.
2. A vegetation management plan or conservation management plan is not required at planning proposal stage.

2. Objective

The aim of the project is to prepare a technical study to support a planning proposal to amend the statutory planning requirements over the former Mullumbimby Hospital Site.

These planning amendments are a critical step to delivering between 100-129 dwellings and supporting community infrastructure.

The planning proposal is likely to seek:

- a change in zoning from SP2 Infrastructure to R1 General Residential
- a change in height allowance from 8.5m to 11.5m

3. Project Deliverables

Biodiversity assessment, that addresses the following:

- maps that describe the ecological features and biodiversity value of the site (including ground truthing if relying on existing mapping) including threatened ecological communities, threatened species and their habitat including linkages to corridors beyond the site.
- discuss the implications of occurrences of native flora and fauna for future development of the site.
- demonstrate how the proposal has taken appropriate and sufficient steps, as a first step, to avoid or minimise impacts to native vegetation (if relevant)
- make recommended mitigation of the ecological impacts of rezoning (if relevant)
- make recommendations for biodiversity offsets to address any loss of native vegetation (if relevant)
- proposed ownership and management arrangements for residual land such as environmental land, open space and riparian corridors
- discuss specifically the ecological setback requirements as per Byron Shire Council DCP 2014, Chapter B1 Biodiversity
- consider any provisions in the Byron Shire DCP 2014, the Biodiversity Conservation Act and any other relevant legislation deemed relevant to the planning proposal.
- note and comment on any relevant sections of the Former Mullumbimby Hospital Site Strategy and Urban Design Protocol

4. Proposed Works

The former Mullumbimby Hospital site was purchased by Byron Shire Council from the NSW State Government in 2017.

Since that time site remediation works have been ongoing following the demolition and removal of the asbestos contaminated hospital buildings, and discovery of additional contamination areas on the site.

The Mullumbimby Masterplan (Dec 2019), Byron Shire Council and Mullumbimby Hospital Site Project Reference Group Recommendations report (2018) was used to inform the Site Strategy and Urban Design Protocol (SSUDP) report.

It is proposed to deliver between 100-129 dwellings and supporting community infrastructure on the site (refer to Figure 1). There will be no change to the existing Aged Care facility already located at the site.

The planning proposal is likely to seek:

- a change in zoning from SP2 Infrastructure to R1 General Residential
- a change in height allowance from 8.5m to 11.5m

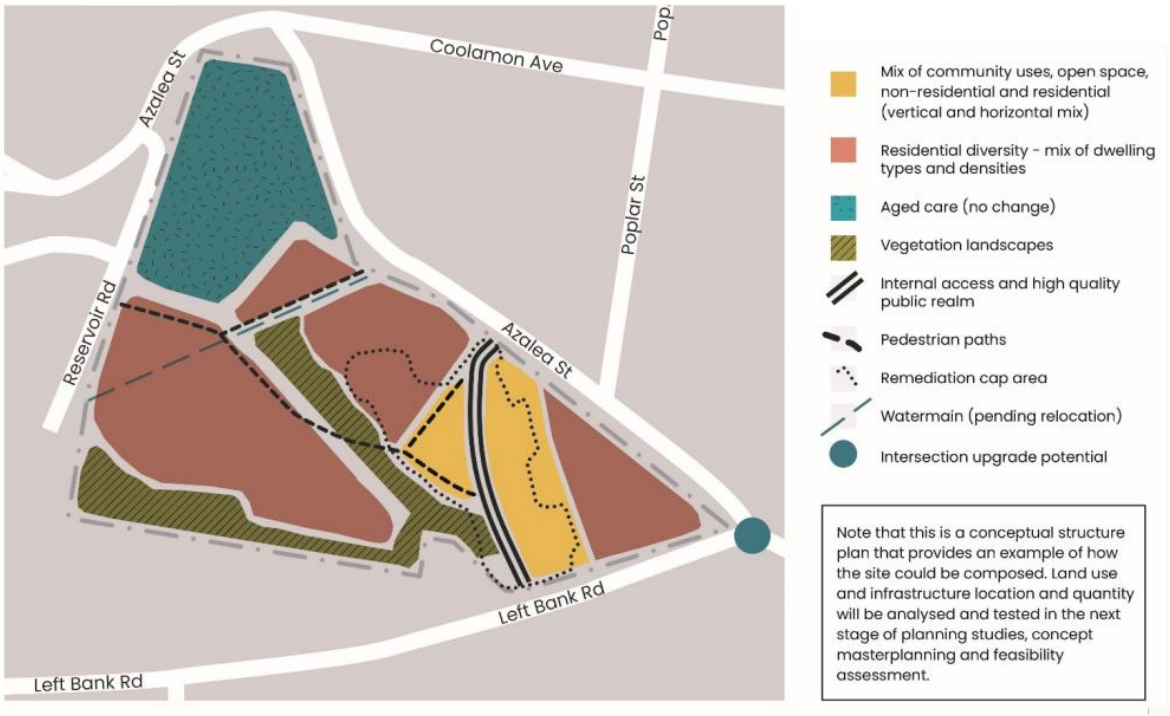

Figure 1 - Concept Structure Plan

The vegetation landscapes shown In Figure 1 will remain intact and native vegetation preserved. Weed removal and management will be required.

5. Site Details

5.1 Site Location

The former Mullumbimby Hospital Site is in Mullumbimby on the corner of Left Bank Road and Azalea Street. It is a 4.4-hectare parcel of land owned by Byron Shire Council.

The parcel is made up of three titles, Lot 188 DP 728535, Lot 1 DP 1159861 and Lot 138 DP 755722 (see Figure 2).

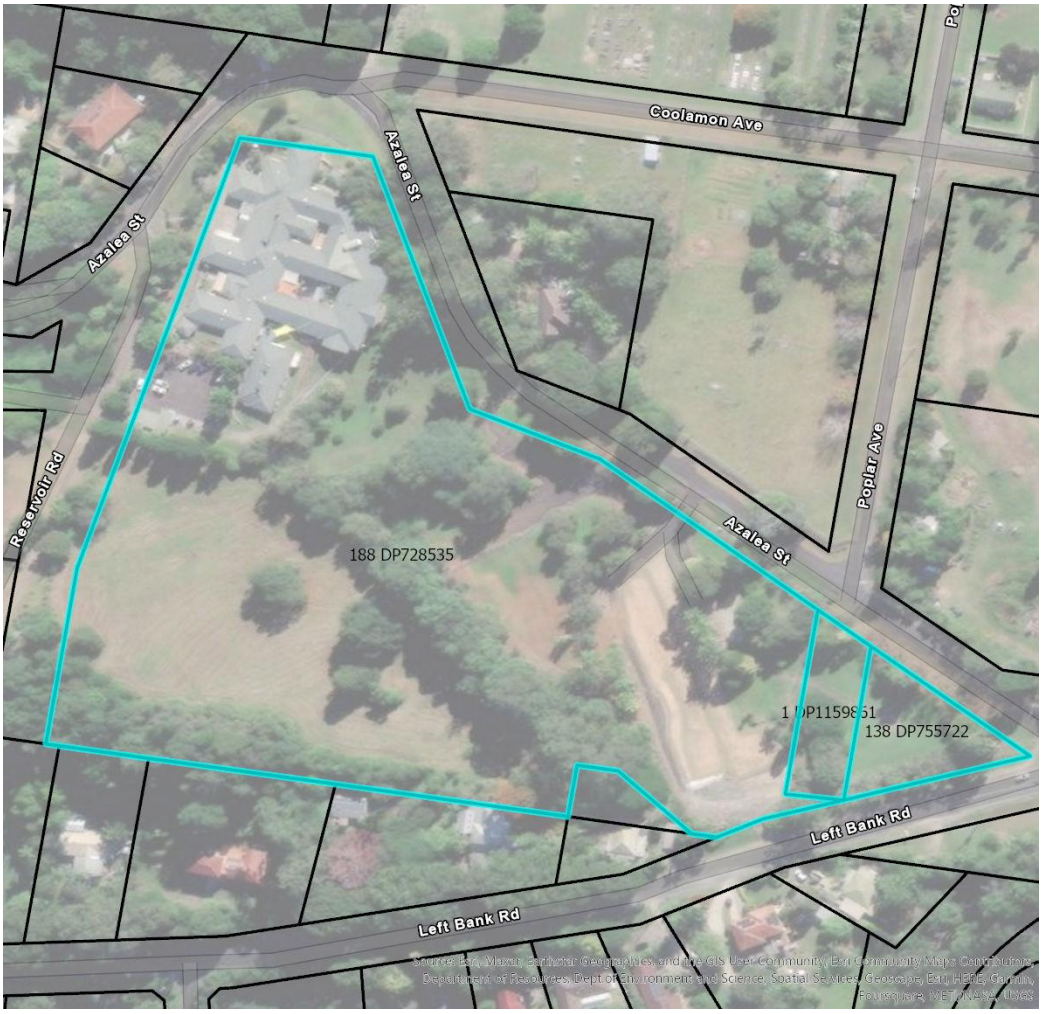

Figure 2 - Former Mullumbimby Hospital Site Location

5.2 Property Details

Key site details are shown in Table 1.

Table 1 - Site Details.

Site Size:	4.4 Ha
Lot Number:	Lot 188 DP 728535, Lot 1 DP 1159861 and Lot 138 DP 755722
LGA:	Byron Shire
Ownership:	Byron Shire Council
Current Zoning (2014 LEP):	SP2

5.3 Physical Characteristics

The site lies between the coastal hinterland slopes and the present-day remains of the Pleistocene coastal plains to the east. The topography is sloping from the 40m to 10m contours.

The former hospital is adjacent to open space in the north (Mullumbimby Cemetery and Mullumbimby High School agricultural land). The remaining surrounding land is residential. It is not contiguous with any wildlife corridors. The closest wildlife corridor is the riparian land along the Mullumbimby creek.

Soil landscapes of the Lismore-Ballina region (Morand 1994) describes the soil types as Erosional Billinudgel (ERbi) and a small section of Alluvial Mullumbimby (ALmu) as shown in Figure 3.

The Billinudgel formation soils are deep (100cm) and are described by Morand (1994) as moderately well-drained yellow and red podzolics/red earths. The dominant geology is still the Neranleigh-Fernvale group with siltstones and sandstones. These soils are described as stony, shallow and highly erodible with low fertility. Drainage is low to moderate.

The Byron Shire Council 2021 vegetation mapping describes the vegetation as Planted (Landscaping/Mixed Plantings) and Rainforest + 10 - 50% Camphor Laurel (see Figure 4).

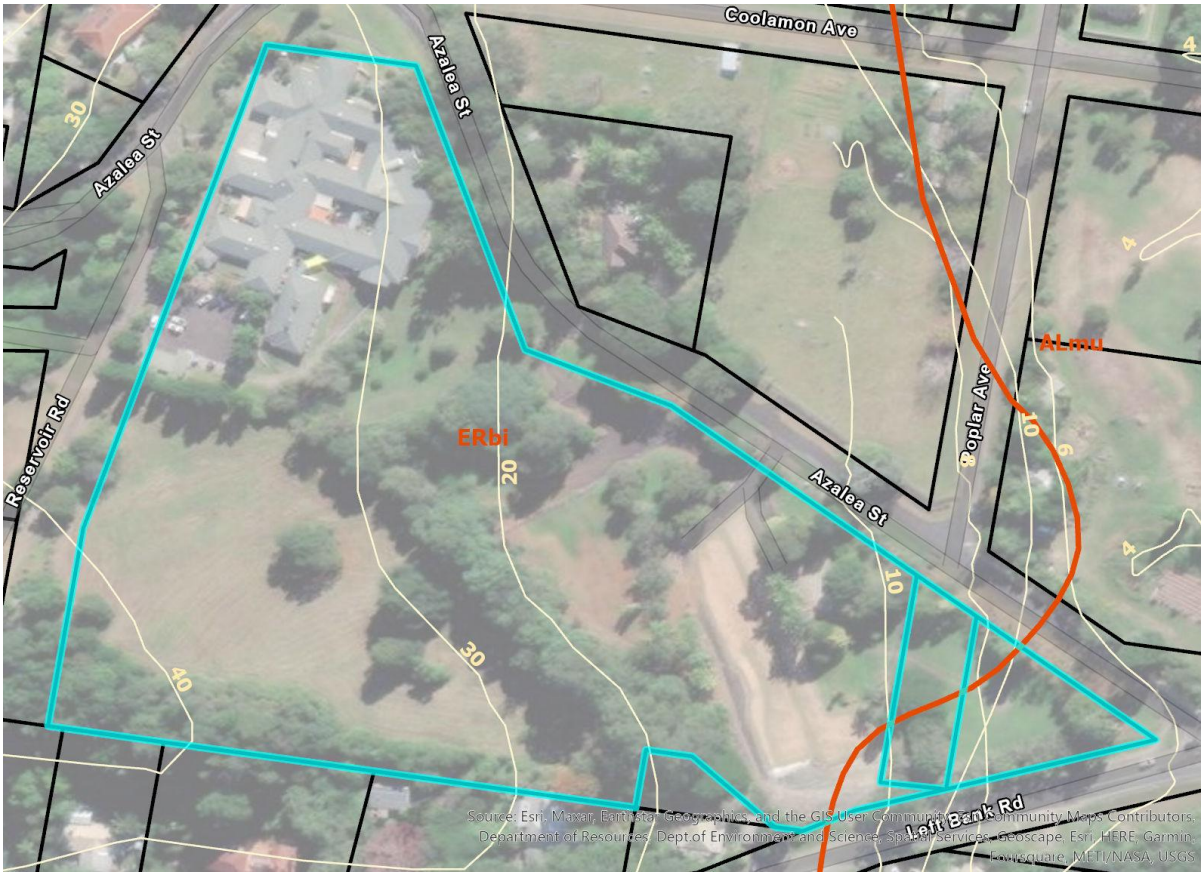

Figure 3 - Soils and Topography of Site described as Erosional Billinudgel (ERbi) and a small section of Alluvial Mullumbimby (ALmu).

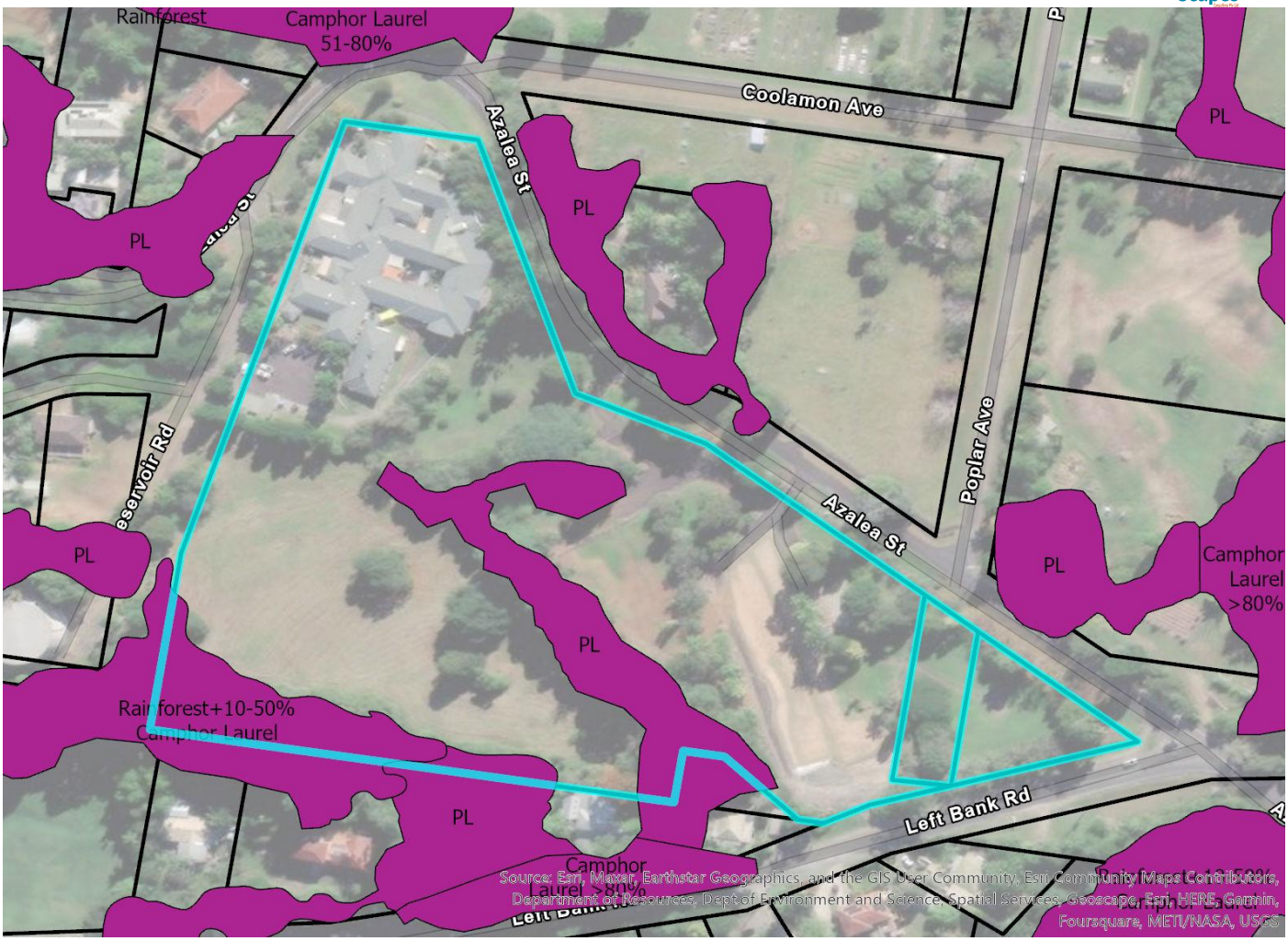

Figure 4 - Byron Shire Council Vegetation Mapping. PL = planted vegetation, Rainforest with Camphor Laurel

No threatened species have been recorded on the site in the previous 20 years according to the NSW Bionet database.

The flora and fauna species listed in Table 2 have been recorded within 1 Km of the site. The latest Koala record within 1km was 17 years ago in 2006.

Table 2 - Threatened flora and fauna species recorded within 1 Km of the site in the last 20 years.

Scientific Name	Common Name	NSW Status
Acacia bakeri	Marblewood	V
Floydia praealta	Ball Nut	V
Gossia fragrantissima	Sweet Myrtle	E1
Macadamia tetraphylla	Rough-shelled Bush Nut	V
Phyllanthus microcladus	Brush Sauropus	E1
Rhodamnia rubescens	Scrub Turpentine	E4A
Rhodomyrtus psidioides	Native Guava	E4A
Syzygium hodgkinsoniae	Red Lilly Pilly	V
Syzygium moorei	Durobby	V
Tinospora tinosporoides	Arrow-head Vine	V

Phascolarctos cinereus	Koala	E

5.4 Environmental Mapping

The High Environmental Value (HEV) criteria specified by the Biodiversity Conservation Division (BCD) Branch of the NSW Department of Planning and Environment (DPE) are listed in Table 3.

Table 3 - High Environmental Values (HEV) Mapping at Former Mullumbimby Hospital Site

HEV Criteria	**Former Mullumbimby Hospital Site**
Biodiversity Values Map	Does not apply
Over-cleared vegetation types	Does not apply
Vegetation in over-cleared landscapes (Mitchell landscapes)	Applies.
Threatened Ecological Communities listed under the BC Act, the FM Act 1994 or the EPBC Act	Applies
100m buffer on Coastal Wetlands and Littoral Rainforest areas as per the Coastal Management SEPP 2018	Does not apply
Key habitat for threatened species - Key breeding habitats with known breeding occurrence	Does not apply
Key habitat for threatened species - Core Koala Habitat	Does not apply
Key habitat for threatened species - Habitat for known populations of species-credit- species and SAII entities	Does not apply
Key habitat for threatened species - Key habitats for migratory species	Does not apply
Nationally important wetlands	Does not apply
Vulnerable Estuaries and ICOLLs	Does not apply
Karst landscapes	Does not apply
Sites of geological significance included in the State Heritage Register or Heritage Inventory	Does not apply

The Byron Shire Council 2021 vegetation mapped identifies Lowland Rainforest in the south-east of the site, a Threatened Ecological Communities (TEC) under the BC Act and the EPBC Act (see Figure 5).

The same vegetation patch is mapped as over-cleared landscapes (Mitchell landscapes).

Figure 5 - Lowland Rainforest (Threatened Ecological Community)

6. Site Assessment

A two-person targeted survey was undertaken on March 13 2023 to assess vegetation community types, condition, dominant weed species, and habitat values. A second site visit with conducted on April 26 2023 to verify the mapping and complete the flora list.

Dr Jo Green undertook the ecological assessment. Dr Green Holds a PhD in Ecology and has over 20 years experience as an ecologist with experience in Koala surveys, vegetation community and plant identification.

Survey tracks and photo points were recorded with handheld GPS and surveyed flora was classified into vegetation communities by dominant species, vegetation height, percentage vegetation cover (%) and structural formation. Weed species were also recorded.

The biodiversity criteria in Table 4 were assessed as per Byron Shire Development Control Plan 2014 Chapter B1 Biodiversity.

Table 4 - Biodiversity Criteria in Byron Shire DCP Chapter B1 Biodiversity

a. High Environmental Value (HEV) vegetation and habitats on or adjoining the subject site	Present - refer to Figure 9.
b. Land zoned W1 or W2.	Not present.
c. Areas identified under the Biodiversity Conservation Act 2016.	Present - refer to Figure 9.
d. Areas identified under the Local Land Services Act	Not present.

2013.	
e. Areas identified under the Coastal Management SEPP 2018 (e.g. Coastal wetlands, Littoral rainforest and proximity areas).	Not present
f. Areas identified under the Koala Habitat Protection SEPP 2019.	Not present
g. Any adjoining National Parks or Nature Reserves.	Not present
h. Threatened Ecological Communities (TECs) on or adjoining the subject site.	Present - refer to Figure 9.
I. Threatened species records within 1 km of the subject site.	Present - refer to Table 2.
j. Identified wildlife corridors	Not present
k. Threatened fauna habitat	Not present
l. Koala habitat	Not present
m. Koala use tree species including; Species name, height, location and DBH (Diameter at breast height).	Not present
n. Hollow bearing trees including; Species name, height, location, DBH, use and or potential use evaluation.	Not present
o. Flying fox colony on or adjacent to the subject site.	Not present
p. Waterways (including stream order), wetlands and riparian vegetation.	Not present

6.1 Vegetation Communities

Figure 6 shows the vegetation mapping during the site visits at the former Mullumbimby Hospital site.

The vegetation is predominantly a mix of landscaping, planted trees, invasive species and weeds. Subtropical rainforest is present in the south-east of the site.

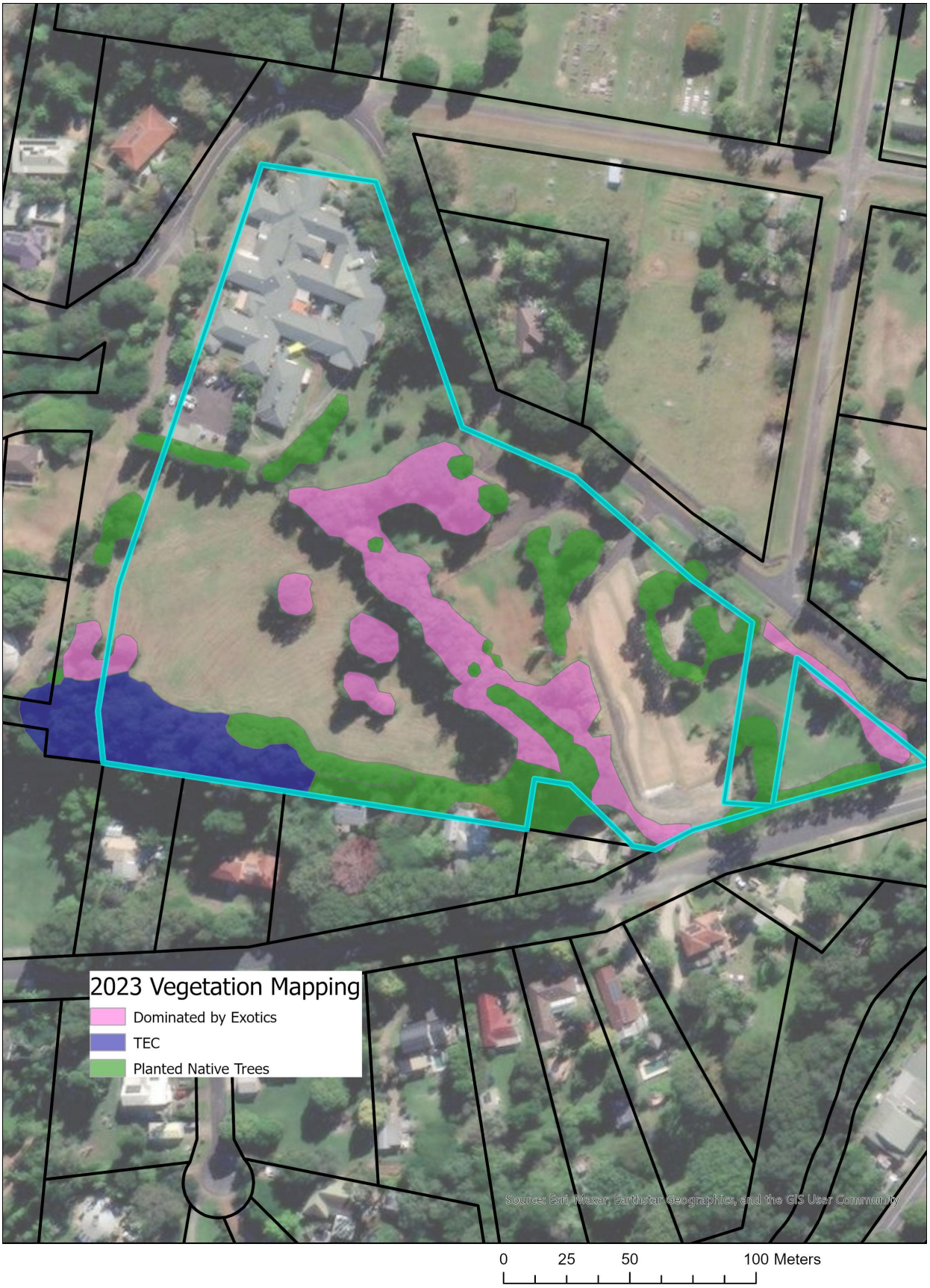

Figure 6 - Vegetation identified during site assessment

6.2 Vegetation assessment – non natives

Exotic and non-endemic weed species of all growth forms (i.e. tree, shrub, vine, groundcover / grass) were recorded during the flora survey (see Appendix B). Overall, the site has a high weed cover and density and will require significant primary and follow up work to facilitate regeneration of native species.

The major weed species present are Cadaghi, Camphor Laurel, Winter Senna, Cestrum and a variety of herbaceous weeds.

Weeds presently with low cover due to mowing but with a high potential for spread across the site include Cadaghi, Camphor Laurel, Cocos Palm, Senna, Chinese Burr, and Cestrum

Table 5 shows some of the weed species present at the site.

Table 5 - Weed species present at the site (A; Cocos Palm Winter Senna and other exotics, minimal native recruitment, B: Umbrella Tree, Camphor Laurel)

6.3 Koala Habitat

It was deemed that the planted trees on site do not constitute koala habitat. See Table 6 below. The planted Eucalypt species on site are not considered primary koala food trees but offer secondary value for other species.

Table 6 - Criteria for assessment of Koala habitat on site

Criteria for defining Koala Habitat (as per DCP 2014, ch B1)	
Areas of native vegetation mapped and identified as per Clause 7 of the State Environmental Planning Policy Koala Habitat Protection 2019 (Koala SEPP)	Does not apply to old Mullumbimby Hospital site
Areas identified within the Byron Coast Comprehensive Koala Plan of Management;	Does not apply to old Mullumbimby Hospital site
Areas of native vegetation, including plantings, that comprise koala use tree species found in Schedule 2 of the Koala Habitat Protection SEPP 2019 specific to the North Coast of NSW	Does not apply to old Mullumbimby Hospital site – no area of native vegetation with koala use species with evidence of activity.
Sightings and or records of koalas (within a 2.5km range of koala habitat) persistent over 3 koala generations that may be evidenced by breeding females and or historical records and or survey.	Insufficient evidence from historical koala records (within a 2.5km range of koala habitat) that establish generational persistence and or, b. records of breeding females, or c. sufficient survey to establish generational persistence.

The koala is listed as 'vulnerable to extinction' under the Biodiversity Conservation Act 2016 because of declining numbers and the ongoing pressure of threats.

There was one Koalas sighting recorded within 1 Km of the site in 2006, since then nothing reported on Bionet, and the site does not form part of the 2016 Byron Koala Plan of Management. There were no Koala food trees on site.

Although some of the planted trees in the central are listed in Appendix 1 – Schedule 2: Koala Use Tree Species for the North Coast Koala Management Area (DCP 2014, Chapter B1 Biodiversity), no evidence of use by koala was found. Therefore, these trees were not considered Koala use trees under the DCP. The four trees planted on across the site with possible koala use were Brushbox *Lophostemon confertus*, Flooded Gum *Eucalyptus grandis*, Narrow-leaved Ironbark *Eucalyptus crebra* and very rarely Dunns White Gum *Eucalyptus dunnii*.

Table 7 - Planted trees in the central section, including Dunns White Gum, G=Flooded Gum and Brushbox worthy of keeping on site for future habitat.

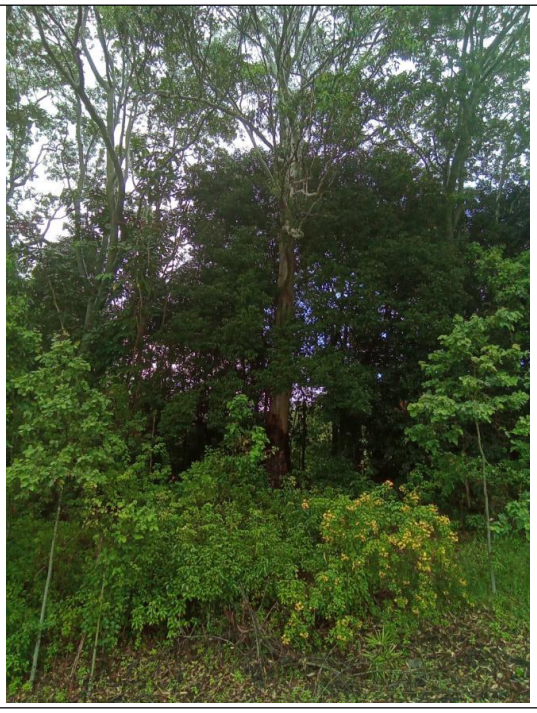	
Photo of Dunns White Gum *Eucalyptus dunnii* on site providing potential habitat . Cadaghi and Senna are weeds in foreground	Photo of *Eucalyptus* on site providing potential habitat with weeds in foreground

6.4 Planted Native Trees

Trees have been planted over time at the site (see Figure 7). It is likely that most were for landscaping purposes.

The southern boundary includes plantings undertaken by local Landcare groups. These plantings could be extended as the dominating Sally Wattles will need to be replaced over time.

Landscaping trees throughout the site include natives and exotics together. Main types are Grevillea, Syzygium, Callistemon, Mango, Jacaranda, Poinciana, Red Cedar and Coolamon. The native trees across the site including Brushbox, and Eucalyptus trees offer potential future habitat as they grow older and develop nesting hollows and should be retained. See Figure 7 for planted native trees on site.

There are two plagues on trees in the centre on the northern side of the gully. The two trees were Red Cedar (*Toona australis*) and Coolamon (*Syzygium moorei*) and were labeled Centennial Tree 91 and 93. It is unknown what this related to or why planted but should be retained.

Additionally, a row of Coolamon trees (*Syzygium moorei*) was planted over 20 years ago on the southern boundary of the Aged Care Facility. This species is Listed as Vulnerable (Biodiversity Conservation Act 2016 (New South Wales): December 2022 list) and should be retained.

Appendix B lists the native flora present at the site.

Figure 7 - Planted trees native and exotic, on the Mullumbimby hospital site.

6.5 Threatened Ecological Community (TEC)

The south-west of the property is mapped as Subtropical Rainforest in Byron Shire Council's 2021 vegetation mapping.

The on-site assessment showed that the extent of this community is less than mapped by BSC with weeds dominant on the edge of the remnant (see Figure 8). The vegetation down slope on the boundary is dominated by Sally Wattle (*Acacia melanoxylon*), which may be prone to falling as these trees senesce. Midway along there is a patch of planted rainforest trees.

The condition of the subtropical rainforest vegetation community in the south-west would be classified as Advanced Regrowth and the Canopy Cover is 51 - 80%.

As per the criteria described in the updated High Environmental Value (HEV) Mapping in Byron Shire February 2023 the vegetation meets the diagnostic criteria for threatened ecological communities under Lowland rainforest on floodplain under the NSW Biodiversity Conservation Act and also meets criteria for the critically endangered Lowland Rainforest under the federal Environment Protection and Biodiversity Conservation Act 1999. Consideration of patch size and surrounding vegetation areas is relevant in determination of threatened ecological community status.

https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10497
Scientific name: *Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion*

Conservation status in NSW: Endangered Ecological Community
Gazetted date: 13 Aug 1999
Profile last updated: 23 Mar 2022

Lowland Rainforest on Floodplain is a rainforest community which now occurs only as small remnants in scattered localities on the NSW north coast, with less than 1000ha in total thought to remain. Larger stands of the community typically have a dense canopy, which blocks most light from reaching the ground, creating cool, moist conditions within. Lowland Rainforest on Floodplain supports a rich diversity of plants and animals. Typical tree species in the community include figs *(Ficus macrophylla, F. obliqua* and *F. watkinsiana),* palms *(Archontophoenix cunninghamiana* and *Livistona australis),* Silky Oak *(Grevillea robusta)*, Black Bean *(Castanospermum australe)* and Brush Cherry *(Syzygium australe).* Animals present include fruit-eating rainforest pigeons, Noisy Pitta, Brush-turkey, pademelons, flying foxes, the Land Mullet skink and rainforest snails.

Figure 8 - EEC Mapping (BSC 2021 and Site Assessment 2023)

Table 8 - Rainforest species in EEC community (A: rainforest canopy, Seedlings present of Red Kamala Red Ash and Broad-leaved Cordyline, Cordyline petiolaris, B: Bangalow Palm under rainforest canopy). Weeds also present.


A


B

7. Discussion

7.1 Legislation

Legislation affecting areas of native vegetation or biodiversity in NSW include:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Biodiversity Conservation Act 2016 (BC Act)
- Local Land Services Act 2013 (LLS Act)

The LLS Act does not apply as the site is categorised as Exempt (refer to Figure 9).

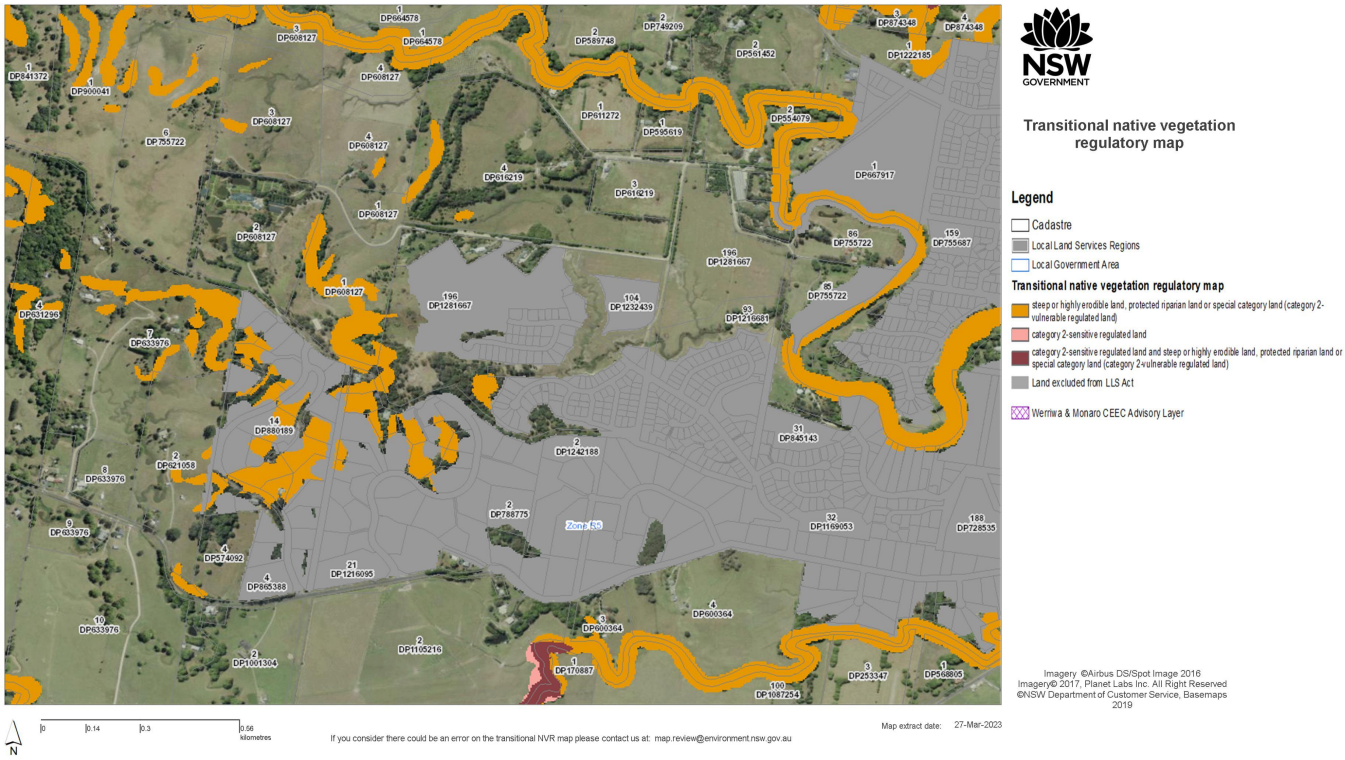

Figure 9 - LLS Regulated Land

State Environmental Planning Policy (Biodiversity and Conservation) 2021 (https://legislation.nsw.gov.au/view/whole/html/inforce/current/epi-2021-0722#statusinformation) does not affect the proposed development as outlined below:

- **Chapter 2 Vegetation in non-rural areas -** does not apply to Byron LGA.
- **Chapter 3 Koala habitat protection 2020 -** only applies to (a) Zone RU1 Primary Production,(b) Zone RU2 Rural Landscape,(c) Zone RU3 Forestry.
- **Chapter 4 Koala habitat protection 2021**
  Does not apply as the site does not include core koala habitat (see Table 6).

  (a) information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject of the development application—
  (i) does not include any trees belonging to the koala use tree species listed in Schedule 3 for the relevant koala management area, or
  (ii) is not core koala habitat
- **Chapter 5 River Murray lands - Does not apply**
- **Chapter 6 Water catchments - Does not apply**
- **Chapters 7 to 12 - repealed.**
- **Chapter 13 Strategic conservation planning - Does not apply to Byron LGA.**

7.2 Biodiversity Assessment Pathway

To determine the required level of biodiversity assessment for the proposed development, the first step is to assess if the Biodiversity Offset Scheme applies (refer to Table 9).

Table 9 - Biodiversity Offset Scheme (BOS) rules from Byron Shire Council DCP 2014, Chapter B1 Biodiversity.

BOS applies to any of the following:	Reference:
Any proposed clearing of native vegetation (see Table 2) or other action prescribed by the Regulations that is on land identified on the Biodiversity Values Map	BC Act: s7.2(1)(b); s7.4(1) BC Regs:s7.1(1)(b), s6.1, s7.3
The development is likely to affect threatened species or ecological communities according to the test of significance	BC Act: s7.2(1)(a), s7.3
Any proposed clearing of native vegetation (Table 2) exceeds the BOS area threshold	BC Act: s7.2(1)(b); s7.4(1) BC Regs: s7.1(1)(a), s7.2
The development is carried out in a declared area of outstanding biodiversity value	BC Act: s7.2(1)(c)

Biodiversity Values Map

The site is not included in the Biodiversity Values Map (Figure 10).

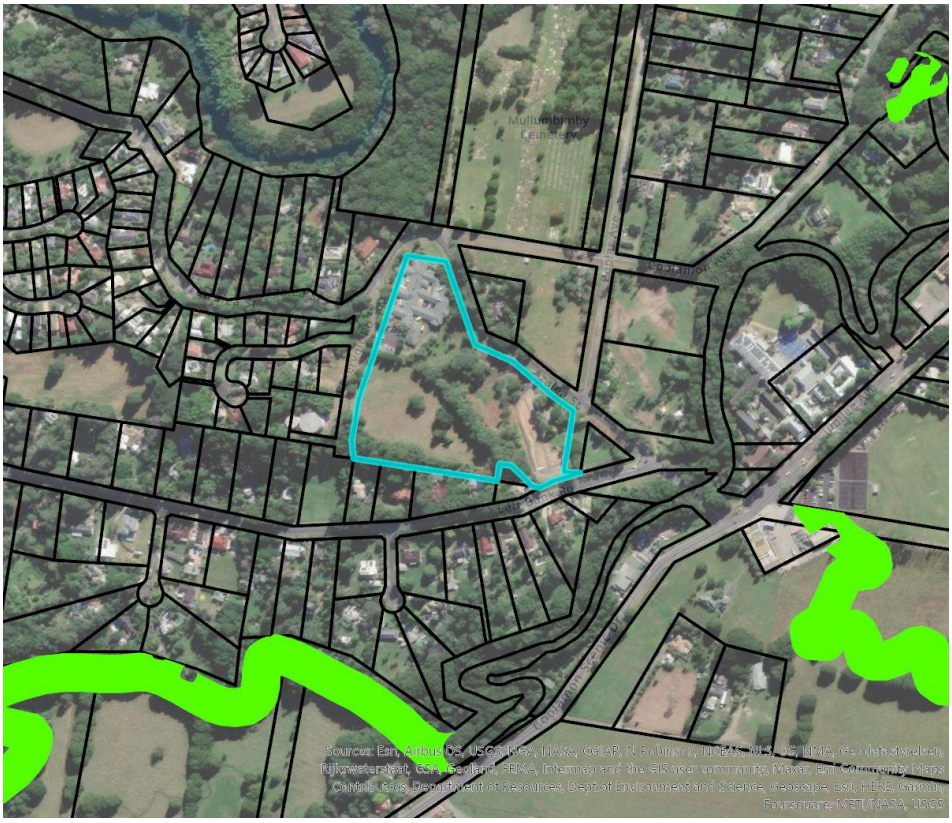

Figure 10 - Biodiversity Values Map

Sourced from: https://datasets.seed.nsw.gov.au/dataset/biodiversity-values-map

Test of significance

Excerpt from section 7.3 of the Biodiversity Conservation Act:

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

c. in relation to the habitat of a threatened species or ecological community:

   i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

e. whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

As noted in Section 6.5, Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions occurs in the south-west of the site. This is an Endangered Ecological Community.

As the proposed works do not include removal or modification to this EEC, and with application of the 30m buffer there is unlikely to be an adverse effect on this vegetation commumity.

Whilst trees that can be used by koala are present at the site, there is no evidence of koala activity on the site and the site is not identified in the Byron KPOM 2016.

It is concluded that the proposed development is unlikely to significantly affect threatened species or ecological communities.

BOS Area clearing threshold

The area threshold varies depending on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan [LEP]), or actual lot size (where there is no minimum lot size provided for the relevant land under the LEP).

Table 10 - Area clearing threshold test.

Minimum lot size associated with the property	Threshold for clearing, above which the BAM and offsets scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

There is no proposed clearing of native vegetation at the site.

Area of Outstanding Biodiversity Value declarations in New South Wales

- Gould's Petrel – critical habitat declaration
- Little penguin population in Sydney's North Harbour – critical habitat declaration
  Mitchell's Rainforest Snail in Stotts Island Nature Reserve – critical habitat declaration
- Wollemi Pine – critical habitat declaration

These threatened species do not apply to this site.

Based on these criteria, the Biodiversity Offset Scheme (BOS) does not apply at the former Mullumbimby Hospital Site.

7.3 Byron Shire Development Control Plan 2014 Chapter B1 Biodiversity

As the Biodiversity Offset Scheme (BOS) is not triggered, then the DCP Chapter B1 Biodiversity applies to this development.

Appendix D lists the Biodiversity Planning Principles in this Chapter that should apply to the development.

7.4 Development Envelope

The NSW Biodiversity Conservation Investment Strategy 2018 outlines four criteria to guide the identification of priority areas that meet the requirements of the Biodiversity Conservation Act 2016:

Criterion 1: Areas of high environmental value should be prioritised.
Criterion 2: Areas that improve ecological connectivity and resilience to climate change should be prioritised.
Criterion 3: Areas that contribute most towards achieving a comprehensive, adequate and representative protected area system should be prioritised.
Criterion 4: Areas where high environmental value assets are under the greatest pressure should be prioritised.

7.5 Ecological Setback

Appendix C lists the ecological setbacks required for red-flagged areas.

The red-flagged areas that apply to the former Mullumbimby Hospital are shown in Table 11 and mapped in Figure 11.

An ecological setback is a required distance for any development from a natural area. The purpose of the setback is to provide an area for management as an ecological buffer to minimise adverse impacts of the development on biodiversity values. No specific management is required.

The following activities are not permitted in an ecological setback:

- Any form of development.

The following activities are permitted in an ecological setback:

- Weed control works.
- Passive recreation, such as walking and biking.
- Environmental education.
- Environmental protection works.

As defined in the DCP, an Environmental management buffer is a management area within the ecological setback that requires specific management to minimise on-going impacts of the development. The management requirements of the buffer will vary depending on the type of

ecological asset (red-flagged area) it is protecting. Such management actions will be defined in either a vegetation or biodiversity conservation management plan.

In the case of the Mullumbimby Hospital site, the setback area can be mowed grass or a natural buffer planting with consideration of bush fire requirements and any adverse effects on the natural vegetation.

Table 11 - Ecological setbacks required for red-flagged areas. (from Byron Shire DCP 2014 Chapter B1 Biodiversity)

Red Flag	Ecological Setback (m)
Threatened Ecological Communities (includes Critically Endangered, Endangered or Vulnerable listed under State or Commonwealth legislation)	30m
Over-cleared landscapes (A Mitchell landscape in which more than 70% native vegetation cover has been cleared. NSW is divided into 580 relatively homogeneous landscape units in terms of geomorphology, soils and broad vegetation types mapped at a scale of 1: 250000 (Mitchell 2002, 2003), which are colloquially termed "Mitchell Landscapes" after their author).	20m

Figure 11 - Former Mullumbimby Hospital Site Development Setbacks

8. Recommendations

The former Mullumbimby Hospital site contains a mix of planted landscaping, weeds and exotics as well as native vegetation. The site contains biodiversity values, including a threatened Ecological Community - Lowland Rainforest on Floodplain.

The proposed development does not propose to clear native vegetation and the Biodiversity Offset Scheme (BOS) does not apply.

An ecological assessment of the site is required under the Environmental Planning and Assessment Act 1979 as the site contains High Environmental Value (HEV) vegetation and/or red flags.

The following recommendations are made to avoid and minimise adverse impacts on biodiversity values from developments on the site:

To ensure that domestic animals and pest species are considered.

Recommendations to avoid or minimise impacts to native vegetation include:

Protect and retain the area of Lowland Rainforest (EEC) with buffer.
The proposed development should not involve clearing of this area of native vegetation.

Environmental Buffer of Lowland Rainforest (EEC)

An Ecological setback of 30m from the boundary of this vegetation community should be put in place to separate the development envelope from the ecological asset or red-flagged area. The buffer is designed to prevent ecological degradation of the EEC. This would ideally involve a defined boundary and weed control.

The area within this buffer requires specific management to minimise on-going impacts of the development. A vegetation or biodiversity conservation management plan is required to outline biodiversity protection measures.

Protect and retain possible habitat trees

The proposed development should not involve clearing of Flooded Gum (*Eucalyptus grandis*) or Brushbox (*Lophostemon confertus)* at the site. A number of large trees including a Flooded Gum *Eucalyptus grandis*, a Dunns White Gum *Eucalyptus dunnii* and a Brushbox *Lophostemon confertus*, in the central part of the site are possible habitat and should be retained. Weed control especially for Cadaghi, around and near these possible habitat trees is required.

Protect the planted Coolamon trees
The planted Coolamon trees (*Syzygium moorei*) on the southern boundary of the Aged Care facility should be protected. Whilst they have been planted as a landscaping feature, they have historic and biodiversity value. The species is listed as Vulnerable in NSW and Federally.

Rezone Lowland Rainforest to C2 Environmental Conservation
The vegetation in the south-west meets the diagnostic criteria for threatened ecological communities under Lowland rainforest on floodplain under the NSW Biodiversity Conservation Act

and also meets criteria for the critically endangered Lowland Rainforest under the federal Environment Protection and Biodiversity Conservation Act 1999.

This vegetation meets the criteria to be zoned C2 Environmental Conservation.

Incorporate potential bushfire risk mapping information once completed.

Prepare a Vegetation or biodiversity conservation management plan
A vegetation management plan(VMP) or biodiversity management plan would address clauses in DCP as outlined in Appendix D in this report.
A VMP or BCMP should include:

- Impact of domestic animals on biodiversity.
- A pest management strategy for feral species.
- Restoration of degraded vegetation through weed control techniques.
- Suitable wildlife friendly fencing.
- Planting of Koala Feed Trees (KFT).
- Threatened species and their habitat including linkages to corridors beyond the site.
- Management of the rainforest vegetation
- Management of the small remnants and patch diversity on site
- Connectivity for native fauna across the site.

References

Byron Shire Council, Development Control Plan 2014

Morand DT, (1994), Soil Landscapes of the Lismore-Ballina 1:100,000 Sheet report, NSW Department of
Land and Water Conservation, Sydney

Plantnet https://plantnet.rbgsyd.nsw.gov.au/

Appendix A - Invasive Flora/ Weeds Species List

Main Environmental Weeds

TREES AND SHRUBS					
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping
Ambrosia artemisiifolia	Annual Ragweed	Asteraceae	*	*	*
Archontophoenix alexandrei	Alexander Palm	Arecaceae			*
Ardisia crenata	Coral Berry	Primulaceae	*	*	*
Ardisia elliptica	Shoebutton Ardisia	Myrsinaceae	*	*	
Syagrus romanzoffiana	Cocos Palm	Araceae	*	*	*
Bauhina galpini	Red Bauhinia	Leguminosae - Caesalpiniaceae	*		
Cestrum nocturnum	Night Scented Cestrum	Solanaceae	*	*	*
Cinnamomum camphora	Camphor Laurel	Lauraceae	*	*	*
Corymbia torelliana	Cadaghi	Myrtaceae	*	*	*
Dracaena fragrans '	Happy Plant	Agavaceae	*		
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping

Eugenia uniflora	Brazilian Cherry	Myrtaceae	*	*	*
Ficus spp.?	Fig	Moraceae			*
Inga edulis	Ice Cream Bean	Fabaceae			*
Jacaranda mimosifolia	*Jacaranda*	Bignoniaceae	*		*
Koelreuteria paniculata	Golden Rain Tree	Sapindaceae	*	*	*
Lantana camara	Lantana	Verbenaceae	*	*	*
Ligustrum lucidum	Large-leaved Privet	Oleaceae	*	*	*
Ligustrum sinense	Small-leaved Privet	Oleaceae		*	*
Murraya exotica	Orange Jessamine	Rutaceae	*	*	*
Ochna serratifolia	Mickey Mouse Plant	Ochnaceae	*	*	*
Pinus elliotii	Slash Pine		*	*	
Psidium guajava	Yellow Guava	Myrtaceae		*	
Rhaphiolepis indica	Indian hawthorn	Rosaceae	*	*	*
Sambucus nigra	Elderberry	Adoxaceae		*	
Schefflera actinophylla	Umbrella Tree	Araliaceae	*	*	*
Schinus terebinthifolia	Broad-leaved Pepper Tree	Anacardiaceae	*	*	
Senna pendula var. glabrata	Winter Senna	Leguminosae - Caesalpiniaceae		*	
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping

Solanum chrysotrichum	Giant Devils Fig	Solanaceae	*		*
Solanum mauritianum	Tobacco Bush	Solanaceae	*	*	
Spathodea campanulata	Afican Tulip Tree	Bignoniaceae	*		*
Strelitzia nicolai	Giant Bird of Paradise	Strelitziaceae	*		*
Syagrus romanzoffianum	Cocos Palm	Arecaceae	*	*	*
Tecoma stans	Yellow Bells	Bignoniaceae	*		
Triumfetta rhomboidea	Chinese Burr	Sparrmanniaceae	*		
VINES AND CLIMBERS					
Botanical Name	**Common Name**				
Asparagus plumosus	Climbing Asparagus	Asparagaceae	*	*	*
Desmodium unicinatum	Silver-leaf Desmodium	Fabaceae	*	*	*
Ipomoea alba	White Ipomea	Convolvulaceae			
Ipomea cairica	Coastal Morning Glory	Convolvulaceae		*	*
Ipomoea indica	Blue Morning Glory	Convolvulaceae			
Jasminum polyanthum	Jasmin	Oleaceae			
Macroptilium atropurpureum	Siratro	Leguminosae - Papilionaceae	*		
Monstera deliciosa	Monstera	Araceae			
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping

Passiflora subpeltata	White Passionflower	Passifloraceae	*	*	*
Passiflora suberosa	Corky Passionfruit	Passifloraceae	*	*	*
Philodendron cordatum	Philodendron	Araceae			
Solanum seaforthianum	Brazilian Nightshade	Solanaceae	*	*	*
Syngonium podophyllum	Syngonium	Araceae	*	*	*
Neonotonia wightii	White Glycine	Fabaceae	*		
HERBS AND GROUNDCOVERS					
Botanical Name	**Common Name**				
Ageratina adenophora	Crofton Weed	Asteraceae	*		
Ageratina riparia	Mistflower	Asteraceae	*		
Ageratum houstonianum	Blue Billy Goat Weed	Asteraceae	*	*	
Ambrosia artemisiifolia	Annual Ragweed	Asteraceae	*		
Asparagus aethiopicus	Asparagus Fern	Asparagaceae	*	*	*
Bidens pilosa	Cobbler's Pegs	Asteraceae	*	*	*
Canna indica	Canna Lily	Cannaceae	*		
Cirsium vulgare	Spear Thistle	Asteraceae	*		
Commelina benghalensis	Hairy Commelina	Commelinaceae	*	*	
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping

Cuphea carthagenensis	Cuphea	Lythraceae	*		
Helianthus tuberosus	Jerusalem Artichoke	Asteraceae	*		
***Hypoestes** phyllostachya*	Freckleface	Acanthaceae	*		
Lantana montevidensis	Creeping Lantana	Verbenaceae		*	*
Neomarica spp.	Walking Iris	Iridaceae	*		
Oxalis sp.	Oxalis	Oxalidaceae	*		
Ricinus communis	Castor Oil	Euphorbiaceae	*		
Sida rhombifolia	Paddys Lucerne	Malvaceae	*		
Solanum capsicoides	Cockroach Berry	Solanaceae	*		
Sphagneticola trilobata	Singapore Daisy	Asteraceae	*	*	*
Tradescantia fluminensis	White Trad	Commelinaceae	*		
GRASSES/GRASS LIKE					
Botanical Name	**Common Name**				
Cynodon dactylon	Common Couch	Poaceae	*		
Axonopus affinis	Carpet Grass	Poaceae	*		
Axonopus compressus	Carpet Grass	Poaceae	*		
Melinis minutiflora	Molasses Grass	Poaceae		*	
Botanical Name	**Common Name**	**Family**	1 central	2. Rainforest back	3. other /landscaping

Paspalum mandiocanum	Broad-leaved Paspalum	Poaceae	*	*	
Paspalum urvilliae	Vasey Grass	Poaceae	*	*	*
Setaria palmifolia	Palm Grass	Poaceae	*		
Setaria sphacelata	Setaria	Poaceae	*		

Appendix B - Flora Species List

During the EarthScapes site visit in March 2023 the following flora species were identified.

Scientific Name	Common Name	Family	1 landscaping planted	2.subtopical rainforest (SE) and southern boundary
Acacia melanoxylon	Blackwood	Fabaceae (Mimosoideae)	*	*
Acmena ingens	Red Apple	Myrtaceae		*
Acmena smithii	Lilly Pilly	Myrtaceae	*	*
Acronychia oblongifolia				*
Adiantum hispidulum	Rough Maidenhair	Adiantaceae		*
Alphitonia excelsa	Red Ash	Rhamnaceae		*
Aphananthe philippinensis	Rough-leaved Elm	Ulmaceae - common	*	*
Archontophoenix cunninghamiana	Bangalow Palm	Arecaceae	*	*
Asplenium australasicum forma australasicum	Birds Nest Fern	Aspleniaceae		*
Blechnum cartilagineum	Gristle Fern	Blechnaceae		*
Brachychiton acerfolius	Flame Tree	Malvaceae	*	
Breynia oblongifolia	Coffee Bush	Phyllanthaceae		*
Casuarina glauca	Swamp Oak	Casuarinaceae	*	
Cinnamomum camphora	Camphor Laurel	Lauraceae	*	*
Clerodendrum floribundum	Smooth Clerodendrum	Lamiaceae		*
Commelina cyanea	Native Commelina	Commelinaceae		*
Commersonia bartramia	Brown Kurrajong	Malvaceae/Sterculiaceae		*
Cordyline petiolaris	Broad-leaved Palm Lily	Asteliaceae		*
Cryptocarya obovata	Pepperberry	Lauraceae		*
Cupaniopsis anacardioides	Tuckeroo	Sapindaceae		*

Scientific Name	Common Name	Family	1 landscaping planted	2.subtopical rainforest (SE) and southern boundary
Derris involuta	Native Derris	Fabaceae (Faboideae)		*
Dianella caerulea	Blue Flax Lilly	Asphodelaceae		*
Elaeocarpus grandis	Blue Quandong	Elaeocarpaceae		*
Eucalyptus crebra	Narrow-leaved Ironbark	Myrtaceae	*	
Eucalyptus grandis	Flooded Gum	Myrtaceae	*	
Eucalyptus dunni	Dunns White Gum	Myrtaceae	*	
Ficus coronata	Creek Sandpaper Fig	Moraceae		*
Glochidion ferdinandi	Cheese Tree	Phyllanthaceae		*
Glochidion sumatranum	Umbrella Cheese Tree	Phyllanthaceae	*	
Gmelina leichhardtii	White Beech	Lamiaceae		*
Grevillea robusta	Silky Oak	Myrtaceae	*	
Guioa semiglauca	Guioa	Sapindaceae	*	*
Hypolepis muelleri	Harsh Ground Fern	Dennstaedtiaceae		*
Jagera pseudorhus var. pseudorhus forma pseudorhus	Foambark	Sapindaceae	*	*
Lomandra longifolia	Mat-rush	Lomandraceae		*
Macaranga tanarius	Macaranga	Euphorbiaceae	*	*
Mallotus philippensis	Red Kamala	Euphorbiaceae	*	*
Pelatostigma trioculare	Long-leaved Bitter Bark	Picrodenadraceae		*
Pittosporum rhombifoilum	Orange-berried Pittosporum	Pittosporaceae	*	*
Pittosporum undulatum	Sweet Pittosporum	Pittosporaceae	*	*
Platycerium superbum	Staghorn	Polypodiaceae		*
Pyrrosia confluens var. confluens	Horseshoe Felt Fern	Polypodiaceae		*
Streblus brunonianus	Whalebone Tree	Moraceae		*

Syzygium australe	Brush Cherry	Myrtaceae	*	*
Scientific Name	**Common Name**	**Family**	**1 landscaping planted**	**2.subtopical rainforest (SE) and southern boundary**
Syzygium moorei	Coolamon	Myrtaceae	*	
Toechima dasyrrhache	Blunt-leaved Steelwood	Sapindaceae		*
Toona australis	Red Cedar	Meliaceae	*	
Tristaniopsis laurina	Kanooka	Myrtaceae	*	
Waterhousia floribunda (now Syzygium floribundum)	Weeping Lilly-pilly	Myrtaceae	*	
Wilkiea austroqueenslandica	Smooth Wilkiea	Monimiaceae		*
Vines				
Caesalpinia scortechinii	Large Prickle Vine	Fabaceae (Caesalpinioideae)	*	
Cissus antactica	Kangaroo Vine	Vitaceae		*
Austrosteenisia blackii var. blackii	Blood Vine	Fabaceae (Faboideae)	*	
Callerya megasperma	Native Wisteria	Fabaceae (Faboideae)	*	
Understorey				
Cordyline petiolaris	Broad-leaved Palm Lily	Asparagaceae		*
Cyperus tetraphyllus	Black-fruited Sedge	Cyperaceae		*
Doodia aspera	Prickly Rasp Fern	Blechnaceae	*	*
Oplismenus aemulus	Basket Grass	Poaceae	*	*
Ottochloa gracillima	Graceful Grass	Poaceae	*	
Hydrocotyle pedicellosa	Pennywort	Apiaceae	*	*

Appendix C - Ecological setbacks required for red-flagged areas (Byron Shire Development Control Plan 2014 Chapter B1 Biodiversity)

Red flag[a]	Ecological setback[b] (m)
HEV Vegetation[c]	
Threatened Ecological Communities (includes Critically Endangered, Endangered or Vulnerable listed under State or Commonwealth legislation)	30
Over-cleared vegetation types (A vegetation type of which more than 70% has been cleared in the Catchment Management Area).	20
Over-cleared landscapes (A Mitchell landscape in which more than 70% native vegetation cover has been cleared. NSW is divided into 580 relatively homogeneous landscape units in terms of geomorphology, soils and broad vegetation types mapped at a scale of 1: 250000 (Mitchell 2002, 2003), which are colloquially termed “Mitchell Landscapes” after their author).	20
Old growth (old-growth forests are ecologically mature forests, often diverse in structure and species with relatively large old trees, some of which may contain tree hollows).	30
Important wetlands (Wetlands protected under NSW State or Commonwealth legislation or policy. Includes wetlands mapped under the NSW State Environmental Planning Policy (SEPP) Coastal Management 2018, previously SEPP 14 Wetlands).	50
Other wetlands (Any other wetland other than an Important wetland. Wetland has the same meaning as defined within NSW Wetland Policy: Wetlands are areas of land that are wet by surface water or groundwater, or both, for long enough periods that the plants and animals in them are adapted to, and depend	20

Appendix D - Biodiversity Planning Principles (DCP Chapter B1 - Biodiversity)

The following principles underpin the provisions within this chapter. All development should wherever possible demonstrate consistency with these principles, which may also be used to guide more complex or novel development proposals.

P1. Ecologically Sustainable Development

The principles of Ecologically Sustainable Development will be followed in the exercise of Council responsibilities:

a.

The precautionary principle

If there are *threats* of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: (a) careful evaluation to avoid, wherever practicable, serious or irreversible damage, and (b) an rigorous and science-based assessment of the risk – weighted consequences of various options;

b.

Inter-generational equity requires the present generation to ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;

c.

Conservation of biological diversity and ecological integrity

The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making, including in the formulation, adoption and implementation of any economic and other development plan, program or project.

Biological diversity means the diversity of life and comprises:

i.

Genetic diversity (the variety of genes in a population)

ii.

Species diversity (the variety of species)

iii.

Ecosystem diversity (the variety of communities and ecosystems).

d.

Improved valuation, pricing and incentive mechanisms

Environmental factors should be included in the valuation of assets and services such as; (a) the polluter pays principle, where those who generate pollution and waste should bear the costs of containment, avoidance or abatement, (b) the user of goods and services should pay prices based on the full life cycle of the costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste, (c) environmental goals, having been established, should be pursued in the most cost-effective way.

P2. Consistency with overarching biodiversity strategies

Council's decision making should be consistent with, and contribute to, targets set out in any relevant adopted local, regional, NSW State or National strategy that addresses the conservation and/or management of biodiversity (e.g., NSW Biodiversity Conservation Investment Strategy 2018). Byron Shire Development Control Plan 2014 – Chapter B1 – Biodiversity Adopted 10 December 2020 Effective 15 December 2020

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P3. No net loss

The carrying out of development should maintain or improve biodiversity outcomes wherever possible within Byron Shire.

P4. Climate change

Development should not compromise or impact the ability of any native flora and fauna species to respond to the impacts of climatic change.

Habitat Retention

P5. In situ conservation

Biodiversity is best conserved in situ (on site). The prevention of habitat loss and degradation is the first priority. This is significantly more cost-effective and has less risk than providing for ongoing mitigation or the reconstruction of habitat in another area (i.e., offsetting biodiversity). This further supports climate change adaptation through increasing the **resilience** of natural areas.

P6. Habitat fragmentation and connectivity

Council decision-making should not contribute to habitat fragmentation and wherever possible, increase landscape connectivity.

Natural areas are strongly influenced by the landscape in which they are embedded. The larger, less disturbed and better-connected natural areas are, the more likely they are to retain a higher level of biodiversity and **resilience** to impacts.

P7. Small remnants

Small patches of habitat should be retained where possible and measures taken to mitigate edge effects and other relevant threats.

Small, isolated patches of habitat are often vulnerable to edge effects and other threats from the adjacent landscape. However, such areas often support a wide range of native species (Including **threatened species**), represent communities of 'over-cleared' vegetation while providing **refugia** and /or steppingstones across the landscape for flora and fauna. Such **refugia** found in small remnants may be crucially important to the survival of certain species into the future under changing climate conditions.

P8. Disturbed habitats

Where possible, measures should be taken to retain and restore disturbed habitats.

There are few natural areas that remain free of disturbance or threatening processes. Disturbed habitats represent opportunities for natural regeneration, restoration and Byron Shire Development Control Plan 2014 – Chapter B1 – Biodiversity

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enhancement, increasing ecological **resilience**, while playing an important role in protecting native flora and fauna and in many instances, **threatened species**.

P9. Patch diversity

Measures should be taken to conserve biodiversity at patch scale.

Patches of bushland or other natural areas (e.g., wetlands) containing multiple vegetation communities commonly support high species diversity in conjunction with ecosystem. diversity.

P10. Fauna habitat

Key fauna habitat resources should be retained and where possible enhanced.

Many native fauna including **threatened species** have specific resource requirements (e.g. feeding, nesting, and roosting) for their continued survival. Also, most native animals are not confined to a single ecological community and make use of resources across a range of different habitats. As ranges change, resource use has, and will continue to evolve across urban and other developed land.

P11. Watercourses

Natural watercourses and the riparian land adjoining them should be retained and rehabilitated where possible. These areas provide critical resources and refuge during extreme weather events particularly during drought and or fire.

P12. Under reserved and over-cleared vegetation communities

Ecological communities that have been over-cleared or under-reserved in the formal reserve system (e.g. National Parks and Nature Reserves) should be retained and where possible enhanced.

Many vegetation communities have been disproportionately cleared since European settlement or are poorly reserved in the formal reserve system. Their long-term future will depend on their conservation on private land e.g., Saline Wetlands. (See Far North Coast Regional Conservation Plan pg. 26)

Impact Assessment and Mitigation

P13. Avoid and minimise

Priority should be given to avoid any impacts at their source. In this context 'avoid' means "to

keep away from". Evidence of avoidance may be illustrated through the use of ecological buffers, the design of a development footprint, or by regulating the timing or location of activities. If it is not possible to avoid impacts, then opportunities should be sought to minimise the impacts. Minimise means "reduce to the smallest possible amount or degree". Byron Shire Development Control Plan 2014 – Chapter B1 – Biodiversity. Adopted 10 December 2020 Effective 15 December 2020.

P14. Biodiversity offsets and compensation

Subject to P13 above, where avoidance and minimisation have been clearly considered and illustrated, unavoidable residual impacts arising from development may be allowable. In such instances, an acceptable arrangement to compensate for, or offset the loss of **biodiversity values** should only occur on or near the impact site.

P15. Habitat heterogeneity

Ecological mapping and assessments should recognise that there can be considerable local variation within and between habitats belonging to individual ecological communities. described at regional scales.

Ecological communities are commonly described regionally in general terms but are characterised at specific sites by local variations. Individual site-specific responses to environmental and climatic conditions, disturbance regimes and cumulative impacts and location may all contribute to these distinctions.

P16. Indirect and cumulative impacts

Ongoing pressures on biodiversity arising from indirect and/or cumulative impacts of development must be understood, minimised and effectively mitigated.

P17. Habitat restoration and management

As much of Byron Shire contains fragmented landscapes, it is not sufficient to simply prevent direct habitat loss. Retained habitats associated with development should be actively managed (through a management plan or other mechanism) to prevent the ongoing degradation of **biodiversity values** and will contribute to climate adaptation.

P18. Ecological setback

Developments adjoining natural areas are to provide for an effective **ecological setback** to avoid and minimise adverse impacts on **biodiversity values**.

P19. Bushfire

Measures to mitigate bushfire risk should take into account the natural fire regimes essential for supporting the relevant ecological community(s) and avoid negative impacts on biodiversity.

P20. Weeds and cultivated plantings

Development adjacent to natural areas should avoid the use of non-indigenous plants or have measures in place (such as slashed bushfire asset protection zones) to limit their dispersal into natural areas. Byron Shire Development Control Plan 2014 – Chapter B1 – Biodiversity
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P21. Introduced animals

Development should not cause or exacerbate adverse impacts on biodiversity from the introduction of animals.

P22. Fauna protection

Where appropriate, developments should integrate measures to protect and facilitate native fauna occupancy and movement (such as the suitable design of swimming pools, fences, landscaping, road crossings, nature strips and nest structures etc.).

P23. Construction impacts

Where appropriate, measures to ensure any impacts on biodiversity and other natural resources are effectively mitigated throughout the construction phase of the development.

P24. Ecological assessment

The assessment of **biodiversity values** should address site, landscape and regional values in accordance with contemporary best practice.

P25. Costs of ongoing management

In accordance with the principles of Ecologically Sustainable Development (see P1) the proponent or development should bear the costs of managing ongoing pressures placed on **biodiversity values** as a result of development.